CITY OF KINGMAN
MEETING OF THE COMMON COUNCIL
Council Chambers
310 N. 4th Street

5:30 PM **AGENDA** **Tuesday, April 5, 2016**

REGULAR MEETING

CALL TO ORDER AND ROLL CALL

INVOCATION

The invocation will be given by Grif Vautier of Kingman Presbyterian Church.

PLEDGE OF ALLEGIANCE

THE COUNCIL MAY GO INTO EXECUTIVE SESSION FOR LEGAL COUNSEL IN ACCORDANCE WITH A.R.S.38-431.03(A) 3 TO DISCUSS ANY AGENDA ITEM. THE FOLLOWING ITEMS MAY BE DISCUSSED, CONSIDERED AND DECISIONS MADE RELATING THERETO:

1. APPROVAL OF MINUTES

a. The Regular Meeting minutes of March 15, 2016

2. APPOINTMENTS

a. Consideration of appointing a candidate to the Planning & Zoning Commission to replace Tyler Angle

Tyler Angle moved out of the corporate limits of the City of Kingman and therefore was not able to continue to serve on the commission. The commission met on March 8, 2016 and considered five candidates to fill the remainder of Mr. Angle's term, which ends December 31, 2017. Two of the five candidates, Thomas Schulte and Terry Shores, attended the March 8, 2016 commission meeting. **The Planning & Zoning Commission recommends that Council appoint either Thomas Schulte or Terry Shores to fill the unexpired term of Tyler Angle.**

b. Consideration of appointing a new Historic Preservation Commission (HPC) member

The Historic Preservation Commission has two vacant terms that expire in December, 2017. On March 21, 2016 the commission voted 5-0 to recommend Jacqueline Huntoon for appointment to the commission. **Staff recommends approval.**

3. AWARDS/RECOGNITION

a. Employee recognition

In appreciation for their hard work, dedication, and loyalty, the Council would like to recognize employees who have reached years of service milestones, beginning at five years of service and continuing at each five year interval.

Yrs of Service	Name	Title	Department
20	Shilling, William	Principal Planner	Development Services
15	Coffin, David	Police Sergeant	Police
15	Wyatt, Joseph	Equipment Operator A	Public Works
10	Bailey, William	Water Technician A	Public Works
10	Jeppson, Gary	Development Services Director	Development Services
10	Heitman, Daniel	Groundskeeper	Parks & Recreation
10	White, Noland	Groundskeeper	Parks & Recreation
10	Baker, Jeff	Information Technology Coordinator	Information Technology
5	Garcia, Jesse	Equipment Mechanic	Parks & Recreation
5	Hambrick, Burley	Project Manager	Public Works

5	Robert Olivas	Equipment Operator B	Public Works

The Council would like to congratulate the following retirees on their retirement:
Tom Blum who retired from Public Works on January 4, 2016 with over 30 years of outstanding service.
Dean Pethers who retired from Public Works on January 7, 2016 with over 30 years of outstanding service.
Chris Kimrey who retired from the Fire Department on December 26, 2015 with over 21 years of outstanding service.
Ricky Pierce who retired from Public Works on January 14, 2016 with over 15 years of outstanding service.
Roy Ratliff who retired from Public Works on February 1, 2016 with over 14 years of outstanding service.
Jeff Campbell who retired from the Fire Department on January 7, 2016 with over 9 years of outstanding service.

b. Proclamation for KABAM! Festival Day

Literacy is the foundation of the economic, educational and cultural wellbeing of a community. The Mohave Library Alliance seeks to promote literacy, the love of books and the joy of reading and has received the support of various local organizations and groups. The Mohave Library Alliance is sponsoring the KABAM! (Kingman Area Books Are Magic) Festival to promote literacy in the Kingman area.

4. CALL TO THE PUBLIC - COMMENTS FROM THE PUBLIC

Those wishing to address the Council should fill out request forms in advance. Action taken as a result of public comments will be limited to directing staff to study the matter or rescheduling the matter for consideration and decision at a later time. Comments from the Public will be restricted to items not on the agenda with the exception of those on the Consent Agenda. There will be no comments allowed that advertise for a particular person or group. Comments should be limited to no longer than 3 minutes.

5. CONSENT AGENDA

All matters listed here are considered to be routine by the City Council and will be enacted by one motion. There will be no separate discussion of these items. If discussion is desired, that item will be removed from the CONSENT AGENDA and will be considered separately.

a. Special event liquor license application

Applicant Regina M. Musumeci of the Kingman Powerhouse Kiwanis has applied for a Series 15 Special Event Liquor License for an event to take place Saturday, May 21, 2016, from 4 P.M. to 11:59 P.M. at 201 N. 4th Street in Kingman. **Staff recommends approval.**

b. Consideration of waiving requirements outlined in Ordinance 1795

On April 7, 2015, Council passed Ordinance 1795 for property located at 503 E. Spring Street which changed the zoning from Residential Single Family to C-1 Commercial Neighborhood Convenience. Part of the ordinance requires compliance with the 2012 Edition of the International Building Code (IBC) and the Americans with Disabilities Act (ADA) requirements including off-street parking to the rear of the building, constructing a six foot wall, and maintaining the historic character and appearance of the primary building. The City standards require nine off-street parking spaces due to the square footage of the building. The owner has requested that the parking requirements be waived. Staff believes the existing wall is sufficient and recommends waiving the parking requirement due to lack of space on the property. **Council discretion.**

c. Resolution 5003: approval of intergovernmental agreement (IGA) with the Mohave County Flood Control District for disbursement of Fiscal Year 2016/2017 tax revenues (ENG16-0010)

The City of Kingman has received its annual IGA from the Mohave County Flood Control District. This IGA will provide $542,062.00 in funds for flood control related projects in the City of Kingman including projects for storm drains in Sycamore, Southern and Coronado Avenue, Eighth Street improvements, Beverly Avenue drainage easement, Southern Vista and Steamboat Drive drainage improvements, land acquisition for the drainage projects and parcels, and various drainage and maintenance erosion protection projects. **Staff recommends approval.**

d. Application for temporary liquor license extension of premises/patio permit

Applicant Noble Zubaid of 66 on 66 Bar and Grill, LLC dba Canyon 66 Restaurant and Lounge has submitted a temporary application for extension of premises/patio permit for April 28, 2016 through May 1, 2016 located at 3100 E. Andy Devine in Kingman. **Staff recommends approval.**

e. Payment to the Arizona Department of Transportation (ADOT) for Project ENG14-039

The total project cost is slightly higher than the original budget and Staff has received an invoice from ADOT for the project. Construction costs were originally budgeted at $256,768.00. Those costs have increased to $276,312.00, a difference of $19,544.00. Due to savings during the design phase, the overmatch of $19,544.00 can be reduced to the invoiced amount of $7,312.00. There are also savings in the I-40 feasibility study which can be used to offset the overmatch for this project. **Staff recommends authorizing the use of Capital Project funds in the amount of $7,312.00 to pay the invoice dated March 17, 2016.**

f. Resolution 5007: approving a sewer extension variance for 569 Anson Smith Road (ENG16-0009)

On March 24, 2016, the Municipal Utility Commission (MUC) reviewed a request for a sewer extension variance to 569 W. Anson Smith Road. The subject property is approximately 1.14 acres in size and is located at the intersection of Anson Smith Road and N. Harvard Street. The applicant submitted a letter requesting that the sewer extension occur only along the portion of the Anson Smith frontage adjacent to the home. Section 7.2 (A) of the Utility Regulations requires that the sewer extension take place along the total frontage of the property to be served, which includes both the Anson Smith and Harvard Street fronts. In 2014, Council approved Resolution 4906, which allowed a corner lot to extend across one full frontage only. Resolution 5007 approves a variance to the Utility Regulations by allowing the sewer extension to occur across the Anson Smith property frontage instead of the total property frontage. The MUC voted 5-0 to recommend approval of this sewer extension exception, citing the previous variance. **Staff recommends approval.**

g. Consideration of Amendment 3 to Engineering Contract ENG14-084

On March 17, 2015, Council approved construction contract ENG14-084 with Freiday Construction, Inc. to begin Phase One of a series of water and sewer projects throughout the City. Staff previously recommended that the construction manager at risk (CMAR) project be broken into separate construction phases. Amendment 3 will add an additional 180 calendar days to the construction contract time and provide additional funding to the project. **Staff recommends approval.**

h. Proposed Resolution 5008: approving the release of a portion of the cash escrow assurance for Sunrise Business Park, Tract 6037

Mohave Engineering Associates, Inc., project engineer, on behalf of the property owner, Lingenfelter Family Trust, has requested the approval of a release of a portion of the cash escrow assurance. The request is to release $116,021.00 for the completion of curbs, gutters and sidewalks, as well as utility conduit within the subdivision. The City Engineer and Public Works inspectors are in the process of verifying that the improvements are complete and in compliance with the terms of the final plat and requirements of the City of Kingman Subdivision Ordinance. **Staff recommends approval.**

6. OLD BUSINESS

a. Splash Pad development agreement

The development agreement between the City and Venture Club for the construction of the Splash Pad at Cecil Davis Park has been completed. The goal is to have the project finished by Memorial Day. **Staff recommends approval of the Development Agreement for the construction of the Splash Pad at Cecil Davis Park.**

b. Splash Pad II

The Venture Club has raised the significant funds for building a Splash Pad in one of the parks. There is a difference of opinion between the Club, contractor and Staff as to what is essential and what is unnecessary. The two significant items that Staff is requesting are sand filters and VFD pumps. **Staff recommends including sand filters and VFD pumps as they are vitally important for long term maintenance issues and keeping the pad operational. Staff strongly recommends the above request be included in the product that will be turned over to the City for long term operation. Council discretion.**

c. Kingman Crossing vs. Prospector Interstate 40 (I-40) crossing

At the March 15, 2016 Council meeting the Council voted 3-2 to direct Staff to proceed with plans to put the north-south access over or under I-40 at Prospector Street. Councilmember Carver and Councilmember Yocum both requested the item be brought back for further consideration. **Staff recommends approving the Kingman Crossing location.**

d. Update and possible action on fireworks fundraising efforts

Kingman resident Erin Cochran will give a presentation to Council on her fundraising efforts for the July Fourth fireworks display. Staff would like direction from Council on whether money should be budgeted to cover any shortage in the fundraising efforts. The bids for the show are due on April 22, 2016 and Staff will need to lock in a vendor shortly thereafter. **Council discretion.**

e. Public hearing and consideration of Ordinance 1799R: revision to Ordinance 1799 in an effort to reduce publication costs

On October 6, 2015, Council adopted Ordinance 1799 which extended the sunset date of June 30, 2016 on the 0.5% TPT rate increase to December 31, 2017. When Ordinance 1799 was drafted all of Article IV and a portion of Article VI of the Kingman Tax Code were included. Because ARS §9-812 requires publication of ordinances, publishing the entire ordinance would have cost the City approximately $14,000. Staff was given direction at the Council priorities work session in January to revise the ordinance in an effort to reduce publication costs. Staff has revised the ordinance to reference each affected category rather than reference the details of each affected category. Although Ordinance 1799R does not amend the TPT rate adopted in Ordinance 1799, ARS §9-499.15 and ARS §42-6054 require the City to meet notification and public hearing requirements. **Staff recommends approval.**

f. Council Handbook draft

The current draft is a work in progress that may have some internal inconsistencies as well as sections Staff does not recommend. It is a blend of many different Council handbooks based on Council request and will take more time to complete based on the input from Council. Staff requests Council review and comment on the draft handbook. **Council discretion.**

7. NEW BUSINESS

a. Presentation of Reclaimed Water Study (ENG15-047)

On August 4, 2015, the City hired Sunrise Engineering to prepare a report on options for reusing effluent from the Hilltop Wastewater Treatment Plant (HTWWTP). The study specifically examines three options for A+ reuse as follows: groundwater injection, airport industrial use and City golf course and parks reuse. The consultant will provide a presentation on the three reuse options. **Staff believes all three options are viable and can work simultaneously in the future. Groundwater injection is the cheapest option and is the recommended starting point for the City's reuse opportunities.**

b. Presentation of Sewer Master Plan Study (ENG14-112)

On January 6, 2015, the City hired Sunrise Engineering to prepare a Sewer Master Plan update and Infiltration Study. The planning area for the study includes the entire City water service boundary. The report examines the existing sewer system, provides recommendations on areas that have sewer pipe capacity concerns, and makes recommendations on the future expansion of the sewer system. The study also examines areas of inflow and infiltration into the downtown sewer system and provides recommendations on projects to eliminate such inflow and infiltration. Sunrise Engineering will be at the meeting to present the results of the study. This presentation is for informational purposes only.

c. Consideration of Resolution 5005: approval to vacate (abandon) the subdivision plat for Granite Bluffs III, Tract 1996-A

A request from Kingman Associates 3, LLC, applicant and property owner, for the vacation (abandonment) of the subdivision plat of Granite Bluffs III, Tract 1996-A. This undeveloped subdivision consists of 27 lots and several unimproved public streets located on 8.83 acres. The property is located along the west side of Mission Boulevard, northwest of Granite Bluffs Drive. The applicant is requesting the abandonment of the subdivision to allow the release of a $407,933.00 performance bond. The bond was accepted by the City when the subdivision was approved in 2007 to assure the completion of the required subdivision improvements based on an engineer's cost estimate at

that time. If the subdivision is vacated it will revert the property to a single 8.83 acre parcel. There will be no effect on the zoning which will remain R-1-10: Residential, Single Family, 10,000 square foot lot minimum. The vacation of the subdivision will also relieve the City of any liability for the completion of the improvements should the developer fail to perform. An existing public utility easement along Mission Boulevard was recorded prior to the subdivision and will remain in place. An easement located along Granite Bluffs Drive that was dedicated with the subdivision plat will need to be replaced with a new easement as there are electric, phone and cable utilities currently in this easement. Also an extension of the right-of-way for Granite Bluffs Drive is recommended to provide proper access to this easement. The Planning and Zoning Commission met on March 8, 2016 to consider this request. There were public comments from property owners in the adjoining Granite Bluffs subdivision who were generally opposed to the proposed abandonment. **The Planning and Zoning Commission voted 3-2 to recommend the approval of the request to vacate Granite Bluffs III, Tract 1996-A.**

d. Consideration of initiating a Zoning Ordinance text amendment to permit storage containers in the C-2 Zoning District

Staff has received comments concerning the current prohibition of permitting storage containers in the downtown area as well as in other areas of the City that are zoned "C-2." Other C-2 zoned areas are along Stockton Hill Road, east of Rancho Santa Fe, east of Kingman Crossing, the west side of Bank Street and other areas in the City. Currently, the *Zoning Ordinance of the City of Kingman* permits storage containers in the industrial zoning districts and in the C-3 Zoning District. This item has been placed on the agenda to allow the Council to provide direction to Staff on this matter. If initiated, the Planning and Zoning Commission could hold a public hearing on May 10, 2016 and the Council could hold a public hearing on June 7, 2016 to consider an ordinance. **Council direction.**

8. REPORTS

a. Board, Commission and Committee reports by Council Liaisons

9. ANNOUNCEMENTS BY MAYOR, COUNCIL MEMBERS, CITY MANAGER

Limited to announcements, availability/attendance at conferences and seminars, requests for agenda items for future meetings.

ADJOURNMENT

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: City Clerk's Office

MEETING DATE: April 5, 2016

AGENDA SUBJECT: The Regular Meeting minutes of March 15, 2016

SUMMARY:

FISCAL IMPACT:

STAFF RECOMMENDATION:
Approve minutes.

ATTACHMENTS:

Description

Regular Meeting minutes of March 15, 2016

REVIEWERS:

Department	Reviewer	Action	Date
City Clerk	Roper, Erin	Approved	3/30/2016 - 7:49 PM

CITY OF KINGMAN
MEETING OF THE COMMON COUNCIL
Council Chambers
310 N. 4th Street
DRAFT

5:30 PM **MINUTES** **Tuesday, March 15, 2016**

REGULAR MEETING

CALL TO ORDER AND ROLL CALL

Members	Officers	Visitors Signing in
Richard Anderson – Mayor	John Dougherty, City Manager	See attached list
Carole Young – Vice-Mayor	Carl Cooper, City Attorney	
Mark Abram - EXCUSED	Jackie Walker, Human Resources Director	
Larry Carver	Keith Eaton, Assistant Fire Chief	
Kenneth Dean	Greg Henry, City Engineer	
Jen Miles - EXCUSED	Robert DeVries, Chief of Police	
Stuart Yocum	Mike Meersman, Parks and Recreation Director	
	Tina Moline, Finance Director	
	Gary Jeppson, Development Services Director	
	Rob Owen, Public Works Director	
	Joe Clos, Information Services Director	
	Sydney Muhle, City Clerk	
	Erin Roper, Deputy City Clerk and Recording Secretary	

Mayor Anderson called the meeting to order at 5:30 P.M. All councilmembers were present except for Councilmember Miles and Councilmember Abram, who were excused.

INVOCATION

The invocation will be given by City Attorney Carl Cooper.

Mayor Anderson announced there would be a moment of silence, after which the Pledge of Allegiance was said in unison.

PLEDGE OF ALLEGIANCE

THE COUNCIL MAY GO INTO EXECUTIVE SESSION FOR LEGAL COUNSEL IN

ACCORDANCE WITH A.R.S.38-431.03(A) 3 TO DISCUSS ANY AGENDA ITEM. THE FOLLOWING ITEMS MAY BE DISCUSSED, CONSIDERED AND DECISIONS MADE RELATING THERETO:

1. APPROVAL OF MINUTES

a. The Regular Meeting minutes of March 1, 2016

Councilmember Carver made a MOTION to APPROVE the Regular Meeting minutes of March 1, 2016. Vice-Mayor Young SECONDED and it was APPROVED by a vote of 5-0.

2. APPOINTMENTS

a. Consideration of appointing a new Economic Development and Marketing Commission (EDMC) member

The EDMC has one vacant term that expires in December, 2017. On March 9, 2016 the EDMC voted 4-0 to recommend Phillip R. Forrest for appointment to the EDMC. **Staff recommends approval.**

Applicant Phillip R. Forrest stated he served 28 years in the Navy and was the commanding officer of a reserve fleet hospital unit. Mr. Forrest stated the hospital went from non-deployable to fully operational in six months under his leadership. Mr. Forrest stated the City had a cash flow problem and could develop industry to alleviate the problem. Mr. Forrest stated he had experience writing grants for people who wanted to start businesses. Mr. Forrest stated he had ideas on how to promote Kingman and bring in new businesses.

Councilmember Carver made a MOTION to APPOINT Phillip R. Forrest to the Economic Development and Marketing Commission. Councilmember Yocum SECONDED and it was APPROVED by a vote of 5-0.

3. CALL TO THE PUBLIC - COMMENTS FROM THE PUBLIC

Those wishing to address the Council should fill out request forms in advance. Action taken as a result of public comments will be limited to directing staff to study the matter or rescheduling the matter for consideration and decision at a later time. Comments from the Public will be restricted to items not on the agenda with the exception of those on the Consent Agenda. There will be no comments allowed that advertise for a particular person or group. Comments should be limited to no longer than 3 minutes.

Gary Rucker of the Kingman Airport Users Association stated the organization's goal was to transform the way business was conducted at the Kingman Airport and Industrial Park. Mr. Rucker stated the group was comprised of stakeholders at the airport. Mr. Rucker stated he was a business owner, had been doing business at the airport since 1980, was a professional pilot, and owned a hanger. Mr. Rucker stated he served on the Kingman Airport Authority (KAA) on and off since the mid-1990s, including serving on the board of directors and as the secretary. Mr. Rucker stated the association ran a newspaper advertisement declaring no confidence in the KAA. Mr. Rucker stated the organization had a similar goal as the P.E.A.K. group in Kingman, but had a better idea of how to transform airport business because its membership was invested in airport operations. Mr. Rucker stated the KAA leadership did not have the same type of investment in the airport. Mr. Rucker stated the organization tried to transform the KAA from the inside, but was unable to do so. Mr. Rucker stated the

organization had a plan to transform the airport and circulated petitions to seek out support. Mr. Rucker asked the City to bring the petitions and testimony of interested parties to light as these were serious accusations. Mr. Rucker stated he hoped someone would be concerned enough to try to change operations at the airport, especially the leadership.

Mayor Anderson directed City Attorney Carl Cooper and City Manager John Dougherty to contact Mr. Rucker.

4. CONSENT AGENDA

All matters listed here are considered to be routine by the City Council and will be enacted by one motion. There will be no separate discussion of these items. If discussion is desired, that item will be removed from the CONSENT AGENDA and will be considered separately.

a. Special event liquor license application

Applicant Steven C Robinson of the Mohave County Republican Party has applied for a Series 15 Special Event Liquor License for an event to take place Saturday, March 19, 2016 from 4:00 P.M. to 12:30 A.M. at the Boys & Girls Club of Kingman at 301 N 1st St in Kingman. **Staff recommends approval.**

b. Proposed Resolution 5001: declaring the City's intent to collect paybacks for a sewerline extension in Pinal Street (ENG14-044)

The Engineering Department finalized a sewer payback calculation sheet for an extension of approximately 327 linear feet of 8-inch PVC SDR-35 sewer line extension with one (1) manhole cover in Pinal Street. The City intends to collect paybacks on behalf of the installing party on these sewer lines in accordance with the Municipal Utility Regulations. **Staff recommends approval.**

c. Approval of Resolution 5002: agreement for architectural services

The Kingman Fire Department has selected the professional services of Selberg Associates, Inc. for the design and development of documents for preparation of Fire Station 2 and Fire Station 5. Resolution 5002 approves the agreement for architectural services for the design and drawings of the fire stations. **Staff recommends approval.**

d. 2016 Governor's Office of Highway Safety (G.O.H.S.) grant award

The Kingman Police Department has been awarded $1,000 from the G.O.H.S. The funding will support continued enforcement programs focused on safety belt and child passenger safety laws during the "Buckle Up Arizona....It's the Law!" campaign. **Staff recommends approval.**

e. Approval of transfer of funds from Contingency Account

The Dispatch Center is in need of new monitors for the dispatcher consoles in order to support recent equipment upgrades. **Staff recommends Council approves acceptance of the transfer from the Dispatch Center's excess contingency fund account in the amount of $3,823.47 to cover the quote for monitors.**

f. Engineering Building improvements construction manager at risk (CMAR) design contract (ENG15-052)

Staff has completed the process for selecting a CMAR for the Engineering Building improvements. The selection committee, comprised of Staff and a licensed local

contractor, has ranked T.R. Orr, Inc. as the most qualified contractor. Staff has requested a fee proposal from T.R. Orr, Inc. to cover the preconstruction/design phase of the project. T.R. Orr, Inc. has prepared a proposal to complete the design phase assistance for a not to exceed price of $5,515.00. **Staff recommends that the agreement with T.R. Orr, Inc. be approved.**

g. Special event liquor license application

Applicant James Guillot of the Mohave County Fair Association has applied for a Series 15 Special Event Liquor License for an event to take place Thursday, April 28, Friday, April 29 and Saturday, April 30 from 9 A.M. to 6 P.M., at Mother Road Harley Davidson, 2501 E. Beverly in Avenue in Kingman. **Staff recommends approval.**

Mayor Anderson stated the applicant requested item "4a" be removed from the agenda.

Mr. Dougherty requested item "4f" be pulled from the agenda for discussion purposes.

Councilmember Yocum made a MOTION to APPROVE Consent Agenda items "4b" through "4e" and item "4g." Vice-Mayor Young SECONDED and it was APPROVED by a vote of 5-0.

Mr. Dougherty stated Council and Staff discussed working with the Kingman Unified School District (KUSD) board regarding consolidating City facilities into one campus at Palo Christi School. Mr. Dougherty asked for direction from Council on how much money they wanted to spend taking care of building the City may no longer need. Mr. Dougherty item "4f" would approve $5,000 to make improvements to the current Engineering building.

City Engineer Greg Henry stated the Engineering Department discussed replacing the roof and air conditioning during the budget process last year. Mr. Henry stated item "4f" was the first phase of the design contract to price different options for the upgrades. Mr. Henry stated anything the City did to the building would help in its eventual sale. Mr. Henry stated the Engineering Department would return to Council for approval of the construction phase. Mr. Henry stated he was concerned about delaying approval of the project to the point where he would not be able to have it approved before the end of the budget. Mr. Henry stated the money for the project was included in the budget.

Councilmember Carver made a MOTION to APPROVE item "4f." Councilmember Yocum SECONDED and it was APPROVED by a vote of 5-0.

5. OLD BUSINESS

a. Consideration of Resolution 5000: declaring 10,133 square feet of right-of-way located at Monroe Street and Karen Avenue as surplus property and authorizing the City to deed such right-of-way to the adjoining property owner, which is the Loyal Order of the Moose Lodge #1704

This is a request from KC Orr Builders, Inc., applicant, and Loyal Order of the Moose Lodge #1704, abutting property owner, to vacate (abandon) a portion of Monroe Street located between Marlene Street and Karen Avenue. The request is to facilitate construction of a parking lot, landscaping, retention area, and street improvements associated with the renovation of the fire damaged lodge facilities. The Planning & Zoning Commission held a public hearing on February 9, 2016 and voted 6-0 to recommend

approval of the vacation of the portions of Monroe Street as requested by the applicant. Staff report conditions included a recommended value of the vacated right-of-way to be no less than $6,000. The Planning and Zoning Commission recommended to Council that the $6,000 be waived for the Moose Lodge due to the street and sidewalk improvements they intend to construct along their property. This waiver would violate Article 9, Section 7 of the Arizona Constitution related to the Gift Clause if a public benefit is not found by deeding the property without payment. Two options of Resolution 5000 have been prepared for the Council's consideration. Option "A" abandons the right-of-way without the $6,000 acquisition cost if the Moose Lodge agrees to make the street, curb, gutter, and sidewalk improvements along the respective street frontages. Option "B" abandons the respective right-of-way upon payment of the $6,000 by the applicant. **Staff recommends approval of option "A" of Resolution 5000.**

Development Services Director Gary Jeppson presented the slides included in the agenda packet. On slide one Mr. Jeppson stated the item was previously tabled to allow for the applicant to be present. Mr. Jeppson reviewed slide two. Mr. Jeppson stated slide three contained a map showing what was discussed at the previous meeting. Mr. Jeppson stated Council asked Staff to explore whether there was a way to waive the acquisition cost, which depended on proving public benefit greater than the land value. On slide four Mr. Jeppson stated further research showed the street improvements were not mandatory as the construction was taking place due to fire damage and not renovation. On slide five Mr. Jeppson stated if the Moose Lodge completed street improvements that were at least $6,000 in value then the fee for the land could be waived. Mr. Jeppson stated Resolution 5000 was presented in two versions to allow the Council to decide between waiving the fee or requiring payment.

Moose Lodge member Donna Kraus stated a right-of-way was created for public use, however this portion of the right-of-way was no longer required or a benefit to the public. Ms. Kraus stated cities often abandoned unused right-of-ways to avoid liability and street maintenance. Ms. Kraus stated the City already faced challenges for street maintenance and some burden would be lifted by allowing the Moose Lodge to maintain the property. Ms. Kraus stated the Moose Lodge originally dedicated a portion of the property at no cost and operated their property in a safe and appealing manner. Ms. Kraus asked the Council to support abandoning the property at no additional cost other than the improvements necessary to pave it for Moose Lodge parking.

Kingman Resident Joe Longoria stated he did not see the public benefit. Mr. Longoria stated the Council was currently not viewed favorably in the press and there was a lot of mistrust. Mr. Longoria stated the property belonged to the citizens of Kingman and the Council should not let it go lightly. Mr. Longoria stated the Moose Lodge would receive the most benefit from the land as it would increase their property value.

Moose Lodge Administrator Dick Shawn stated it was unfortunate the Moose Lodge burned down and he hoped the City would donate the land. Mr. Shawn stated the Moose Lodge had maintained the property for the last 30 to 40 years. Mr. Shawn stated $6,000 was a lot of money for the organization and hoped the Council would agree to accept less.

Councilmember Yocum asked if the Moose Lodge members knew the property was owned by the City before the fire.

Mr. Shawn stated some members probably knew while others did not.

Councilmember Yocum stated this was a housekeeping matter that should have been taken care of when the alignment was no longer required. Councilmember Yocum asked if the Moose Lodge could have acquired the property at a lower price when the land was first became irrelevant for public use.

Mr. Jeppson stated the $6,000 figure came from the appraisal the Moose Lodge submitted to the City. Mr. Jeppson stated the City did not come up with the price. Mr. Jeppson stated Staff recommended waiving the fee in lieu of improvements.

Vice-Mayor Young asked what the total cost would be to improve the street.

GUY stated the estimate was $18,000 and the Moose Lodge was willing to pay for the improvements.

Mayor Anderson made a MOTION to APPROVE Resolution 5000 Option "A." Councilmember Carver SECONDED.

Councilmember Carver asked Mr. Cooper to clarify "public benefit."

Mr. Cooper stated the City could not give anything away. Mr. Cooper stated the benefit had to directly impact the public and in this case the street improvements would qualify as a direct public benefit since the Moose Lodge is not required to construct them. Mr. Cooper stated the fire did not trigger the mandatory improvements and the City was trading the value of the improvements for the value of the property. Mr. Cooper stated this was a very good deal for the City.

Mayor Anderson called for a VOTE and it was APPROVED by a vote of 5-0.

b. Consideration of acceptance of an offer of dedication of right-of-way at the southeast corner of Monroe Street and Marlene Avenue

A right-of-way has been offered to the City for certain property located at the southeast corner of Monroe Street and Marlene Avenue. The property owner, Kingman Lodge No. 1704 Loyal Order of Moose, is offering to dedicate the right-of-way for roadway, utilities, and other public purposes in conjunction with the abandonment of a portion of Monroe Street south of this location. **Staff recommends accepting the deed of dedication**.

Councilmember Dean made a MOTION to APPROVE accepting the deed of dedication. Vice-Mayor Young SECONDED and it was APPROVED by a vote of 5-0.

c. Proposed modifications to animal ordinances

Staff, at the direction of Council and with input from interested parties, has modified Chapter 3, Article II, Section 3-22 of the Code of Ordinances and created Chapter 3, Article III, Section 3-45 of the Code of Ordinances with options relating to number of animals per residence, number of poultry and fowl permitted per square feet of residence, definition of types of birds, and livestock substitutions relating to goats, sheep and horses. **Staff recommends approval of Ordinance 1810R and recommends that Council choose and approve one of the two options for Ordinance 1811. Staff alternatively requests further direction in the event that Council desires rewording or further modifications to the ordinances currently being reviewed.**

Assistant City Attorney Lee Hocking stated Staff was directed to draft an ordinance with input from Jerry Olson, University of Arizona Agriculture & Life Sciences staff member, and other interested parties. Mr. Hocking stated the Kingman Municipal Code currently outlawed poultry in City limits. Mr. Hocking stated the proposed ordinances added definitions for birds and separated the code sections that outlined the allowed number of birds from the allowed number of dogs and cats. Mr. Olson requested one bird per 1,000 square feet of property and the Kingman Police Department requested prohibiting birds on lots under 20,000 square feet as they had concerns about odor and feces. Mr. Hocking stated Council could adopt either ordinance.

Kingman resident Judy Lent asked the Council to adopt option "A." Ms. Lent stated she was involved with the 4-H program for over 25 years and not all the participants could raise large animals because of where they lived in town. Ms. Lent stated option "A" would let participants have one or two chickens and learn about agriculture. Ms. Lent stated there were also a lot of people who wanted to raise their own chickens for eggs, including those who had allergic reactions to commercially farmed eggs. Ms. Lent stated option "B" would eliminate most of the people who lived in the City limits. Ms. Lent stated urban agriculture was important to many people today.

Mr. Olson distributed a copy of the City's zoning map, which is included at the end of this report. Mr. Olson stated a cross section of people, including local residents and 4-H parents and participants, worked with Staff to create option "A." Mr. Olson stated he wanted to see ducks included in the ordinance, but was not going to push for that inclusion at the moment. Mr. Olson stated the only lots allowed to have poultry under option "B" were the blue and bright yellow lots on the City zoning map. Mr. Olson stated option "B" would exclude the majority of City residents. Mr. Olson stated a person could legally own three rottweilers on a lot under 40,000 square feet, which created more waste and noise than three chickens. Mr. Olson stated his group made recommendations on nuisance issues to allow problems to be addressed. Mr. Olson stated option "A" allowed everyone's property rights to remain intact while permitting urban agriculture efforts.

Mr. Cooper thanked Mr. Olson and the rest of the participants for their input. Mr. Cooper stated the group provided excellent additions to the ordinance.

Councilmember Yocum made a MOTION to ADOPT Ordinance 1810R and 1811 option "A." Councilmember Carver SECONDED.

Councilmember Dean asked what percentage of cities allowed these types of animals in city limits.

Mr. Olson stated most cities were moving towards allowing these types of animals inside city limits thanks to urban agriculture efforts, but he did not have a percentage.

Vice-Mayor Young asked if the City ordinance would supersede a home owner association (HOA) covenants, conditions and restrictions (CC&Rs) that prohibited poultry.

Mr. Cooper stated the ordinance would not overrule CC&Rs as a HOA was allowed to have more restrictive property use guidelines. Mr. Cooper stated CC&Rs were not handled by the City.

Councilmember Dean stated a lot of people lived in city limits because they wanted an urban lifestyle. Councilmember Dean stated people may not want that type of livestock located next to them. Councilmember Dean stated he was in favor of option "B."

Councilmember Carver asked what the penalty was for violating the ordinances.

Mr. Hocking stated it was a class three misdemeanor.

Mayor Anderson called for a VOTE and it was APPROVED by a vote of 3-2 with Vice-Mayor Young and Councilmember Dean voting NAY.

6. NEW BUSINESS

a. Presentation of Interstate 40 (I-40) crossing alternatives (ENG15-042)

On August 4, 2015, the City hired AECOM Technical Services to prepare a Feasibility Study to evaluate potential crossings of I-40 at Prospector Street and Kingman Crossing Boulevard. The City is in need of a crossing of I-40 to meet public safety and transportation demands on the east side of town. The Feasibility Study examines a total of five alternatives for crossing I-40, including four alternatives for Prospector Street and one alternative for Kingman Crossing Boulevard. Dale Wiggins, PE, the Project Engineer for AECOM, will provide a presentation of the study and will be available to answer any questions. **Staff recommends review and direction from Council.**

Dale Wiggins of AECOM Technical Services displayed the slides included in the agenda packet. Slide one was an introductory slide and Mr. Wiggins reviewed slide two. On slide three Mr. Wiggins stated the east Kingman area had very limited access. Mr. Wiggins stated "KC TI" stood for Kingman Crossing traffic interchange and "RSFP TI" stood for Rancho Santa Fe Parkway traffic interchange. On slide four Mr. Wiggins stated reviewed the area studied. On slide five Mr. Wiggins stated the study examined what the traffic would be in the future on the streets included in the study and conducted a travel time analysis. On slide six Mr. Wiggins stated the study reviewed the information in the Kingman area transportation study (KATS) and completed two model runs based on existing conditions and the KATS model. Mr. Wiggins stated slide seven contained the conclusion of the study. Mr. Wiggins stated the bottom four light blue lines reflected the existing street networks and any access that crossed I-40 would significantly reduce traffic on Airway Avenue. Mr. Wiggins stated Eastern Street would eventually have 24,000 cars travelling on it per day if improvements were not made. Mr. Wiggins stated crossing I-40 provided a more direct route from north to south and would reduce volumes by half on Eastern Street. Mr. Wiggins stated the traffic on Rancho Santa Fe Parkway was not as high as anticipated. On slide eight Mr. Wiggins stated the study examined the lane requirements for various roads. Mr. Wiggins reviewed slide nine. On slide 10 Mr. Wiggins reviewed the scenario routes on the map. Mr. Wiggins reviewed slides 11, 12 and 13. Mr. Wiggins reviewed slides 14, 15, 16, and 17. On slide 18 Mr. Wiggins stated two quarters were examined for creating alignment alternatives and he reviewed the routes, two of which took into account existing utilities. Mr. Wiggins reviewed slide 19. On slide 20 Mr. Wiggins stated the interim roadway would be half of the recommended lanes and this was used to develop the construction costs. On slide 21 Mr. Wiggins stated all the alternatives would share a few common alignments. On slide 22 and 23 Mr. Wiggins reviewed alternative one, which was the Kingman Crossing Alignment. Mr. Wiggins reviewed alternative two on slide 24, alternative three on slide 25, alternative four on slide 26, and alternative five on slide 27.

Mr. Wiggins reviewed slide 28 and 29 and skipped ahead to the summary of project costs slide. Mr. Wiggins stated the west alignment titled alternative three was the least expensive option and the Kingman Crossing alignment titled alternative one was the most expensive alternative. Mr. Wiggins reviewed the recommendation slide.

Mayor Anderson asked if a time analysis was conducted for a person travelling from the southeastern quadrant south of Southern Street and east of Prospector Street extension to arrive at the hospital.

Mr. Wiggins stated the individual would have to travel through neighborhoods to reach a faster street.

Councilmember Dean stated he did not approve of the 90 degree corner on alternative one.

Mr. Wiggins stated the turn was designed for travel at 20 miles per hour with wider lanes for trucks.

Mr. Henry stated the reason to use a 90 degree turn was used in order to minimize the amount of right of way that needed to be dedicated. Mr. Henry stated the alternatives were concepts and not design plans. Mr. Henry stated the turn could sweep out more but the City would have less property to develop.

Mr. Dougherty asked if the road would eventually connect straight to Louise Avenue.

Mr. Wiggins stated it would.

Vice-Mayor Young stated alternative one would require the City to pay for infrastructure related to Kingman Crossing, but if alternative three was built the City could assign responsibility to the developer for the Kingman Crossing costs.

Mr. Dougherty stated that was theoretically true.

Kingman resident Doug Dickmeyer stated none of the options addressed economic growth of the City and travel between the north and south areas. Mr. Dickmeyer stated the options would force people to drive through residential areas. Mr. Dickmeyer stated the study should have focused on Eastern Street and Rancho Santa Fe Parkway and the alternatives only seemed to address travelling to the schools on Prospector Street. Mr. Dickmeyer stated the choice should not go forward without a town hall meeting and it needed to tie into the Kingman Airport.

Vice-Mayor Young stated access to Rancho Santa Fe Parkway needed to be addressed for airport access. Vice-Mayor Young stated the study was done to address congestion on Eastern Street and Airway Avenue, which was caused by the schools.

Mr. Dickmeyer stated the alternatives would create a lot of dead end infrastructure.

Mayor Anderson stated the Rattlesnake Wash traffic interchange was required, but it would be very expensive. Mayor Anderson stated putting in the Rattlesnake Wash traffic interchange would create the problem Lake Havasu City had with its shopping center: there was not enough infrastructure in-between to support it. Mayor Anderson stated the Rattlesnake Wash interchange would place the infrastructure on an end that

was undeveloped and would require a lot of other roads to complete.

Mr. Henry stated Staff supported alternative one as any construction that occurred there would reduce future traffic interchange construction costs by $7 million.

Mayor Anderson stated the City had many retirees that needed health care and the City needed to utilize the Hualpai Mountain hospital campus. Mayor Anderson stated alternative one would allow the hospital to expand. Mayor Anderson stated there were three priorities: access, developing the hospital, and retail.

Vice-Mayor Young stated alternative three was the best because it would be better to have the developer pay for the infrastructure.

Mr. Dougherty stated the fire department would not put a new station in the area until there was access across I-40. Mr. Dougherty stated building a fire station in Rancho Santa Fe was a waste of money because response would always have to travel down. Mr. Dougherty stated a station in the Kingman Crossing area would allow response from many directions. Mr. Dougherty stated putting in the Kingman Crossing alternative would also make the property more attractive to developers. Mr. Dougherty stated there was too much congestion on Prospector Street for a fire station.

Mr. Henry stated there was no need to rush to make a decision.

Councilmember Carver stated alternative three was the cheapest option and opened up access from north to south without leapfrogging current infrastructure.

Councilmember Yocum stated the Council should try to get Kingman Crossing underway.

Vice-Mayor Young made a MOTION to APPROVE Alternative 3. Councilmember Carver SECONDED.

Mayor Anderson asked if there was a way to encourage the hospital to enlarge its footprint at the Hualapai Mountain campus.

Councilmember Carver stated that would not happen until the town grew.

Mayor Anderson stated the Council should seek KRMC's input on the alternatives to see if any would impact their growth and development.

Vice-Mayor Young stated it may help incentivize them to pay for it.

Councilmember Dean stated the hospital should pay for an interchange if they needed it so badly.

Mayor Anderson called for a VOTE and it was APPROVED by a vote of 3-2 with Mayor Anderson and Councilmember Yocum voting NAY.

b. Discussion on future annexation

Mayor Anderson and Vice-Mayor Young would like to have an open discussion with the Council concerning annexation in the future. Annexation of Butler is not being proposed. **Staff recommends the discussion take place and Council direct Staff**

to investigate the potential annexation of specific areas.

Mayor Anderson stated the options for annexation would be along Interstate 40 (I-40) to the east and towards the airport. Mayor Anderson stated the New Kingman/Butler area would entail immediate cost and the City did not have the funds to handle the cost of services to the area. Mayor Anderson stated he wanted Staff to look at what revenue could be picked up and what the cost would be to take on some property. Mayor Anderson stated he was not looking to direct Staff to implement annexation at this time.

Vice-Mayor Young stated she wanted to have maps that showed available vacant land with associated details such as landowners, benefits and history.

Councilmember Dean asked for the costs associated with annexing vacant land.

Vice-Mayor Young stated there were many variables involved as some parcels may have certain costs that others did not.

Mayor Anderson stated the City and Mohave County needed to anticipate the growth that would come with Interstate 11 (I-11). Mayor Anderson stated Mohave County was the fifth largest county geographically in the United States, but had a very low population and included a lot of state, federal and tribal lands. Mayor Anderson stated there were County tax payers that required services and it was difficult for the County to get to a lot of the areas. Mayor Anderson stated the County wanted the incorporated areas to grow to reduce the burden on County resources. Mayor Anderson stated the City had assets like the Kingman Airport and I-40 that it needed to use to its advantage.

Vice-Mayor Young stated the City should plan now for what could occur 10 years in the future. Vice-Mayor Young stated some businesses may want to locate along I-40 and the City would want to collect sales tax from those businesses.

Councilmember Carver stated he wanted to see a map like Vice-Mayor Young described. Councilmember Carver stated the City needed to take emergency response into consideration. Councilmember Carver stated the Council was always talking about how tight the budget was and it could not keep adding vacant land with the hope that it was going to develop without considering the costs associated with expanding City limits.

7. REPORTS

a. Board, Commission and Committee reports by Council Liaisons

Mayor Anderson stated the Clean City Commission held a cleanup event on Saturday, March 12, 2016.

8. ANNOUNCEMENTS BY MAYOR, COUNCIL MEMBERS, CITY MANAGER

Limited to announcements, availability/attendance at conferences and seminars, requests for agenda items for future meetings.

Mr. Dougherty stated a historic preservation architect would travel to Kingman to give a tour of Palo Christi School. Mr. Dougherty stated he would email the Council three days to choose from and asked them to respond as soon as possible.

Councilmember Carver made a MOTION to ADJOURN. Councilmember Yocum SECONDED and it was APPROVED by a vote of 7:42 P.M.

ADJOURNMENT

ATTEST:	APPROVED:
_____	_____
Sydney Muhle City Clerk	Richard Anderson Mayor

STATE OF ARIZONA)
COUNTY OF MOHAVE)ss:
CITY OF KINGMAN)

CERTIFICATE OF COUNCIL MINUTES
I, Erin Roper, Deputy City Clerk and Recording Secretary of the City of Kingman, Arizona, hereby certify that the foregoing Minutes are a true and correct copy of the Minutes of the Regular Meeting of the Common Council of the City of Kingman held on March 15, 2016.

Dated this 4th day of April, 2016.

_____
Erin Roper, Deputy City Clerk and Recording Secretary

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Gary Jeppson

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Consideration of appointing a candidate to the Planning & Zoning Commission to replace Tyler Angle

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SUMMARY:
Commissioner Tyler Angle moved out of the corporate limits of the City of Kingman and therefore was not able to continue to serve on the Planning and Zoning Commission. The Planning and Zoning Commission met on March 8, 2016 and considered five candidates to fill the remainder of Commissioner Angle's term, which ends December 31, 2017. Two of the five candidates, Thomas Schulte and Terry Shores, attended the March 8, 2016 Planning and Zoning Commission meeting. The Planning and Zoning Commission recommended that the City Council chose either Thomas Schulte or Terry Shores.

FISCAL IMPACT:
None

STAFF RECOMMENDATION:
Appoint either Thomas Schulte or Terry Shores to the Planning and Zoning Commission to fill the unexpired term of Tyler Angle.

ATTACHMENTS:

Description

Candidate Applications

REVIEWERS:

Department	Reviewer	Action	Date
Development Services	Jeppson, Gary	Approved	3/10/2016 - 11:06 AM
City Attorney	Cooper, Carl	Approved	3/10/2016 - 11:20 AM
City Manager	Dougherty, John	Approved	3/12/2016 - 1:59 PM

CITY OF KINGMAN
BOARDS AND COMMISSIONS APPLICATION

FOR MEMBERSHIP ON THE P + Z '15 DEC 9 10:11 13s

Estimated hours per month you can devote to this group: 10

Name BURT DUBIN Home Phone # 928-753-5315

Address 1841 CLUB AV Alternative Phone # —

Zip Code 86401

Email BURT@BURTDUBIN.COM Resident (Yes) No

Length of Residency 25 YEARS Are you a registered voter? (Yes) No

If asked, I would be willing to serve on another board or Commission. (Yes) No

List other boards or commissions interested in:

ECONOMIC DEVELOPMENT

1. List your educational background.

SOME COLLEGE

MANY COURSES CONCERNING THE HUMAN CONDITION

2. Please state your occupational background as it relates to the board or commission you are applying for beginning with your current occupation and employer. NONE

SIMPLY A SENSITIVITY TO BEING A GOOD CITIZEN

3. Describe your involvement in the Kingman community. NONE UP TO NOW

4. Describe your leadership roles and/or any special expertise you have which would be applicable to the position for which you are applying.

A DEEP CONCERN FOR ~~FO~~ THE HUMAN CONDITION — PLUS A DESIRE FOR BETTERMENT OF KINGMAN

5. Describe why you are interested in serving in this position.

I AM MOSTLY RETIRED AND HAVE THE TIME AND THE CIVIC CONCERN

6. If you are appointed to any of the boards or commissions you have listed interest in, please list potential conflicts of interest. Explain: BUSTLOOSE.NET

NONE - (SEE BURTDOBIN.COM

I AM AN AUTHOR & I WRITE ABOUT THE PROCESS OF BECOMING THE POSSIBLE HUMAN

Appointment to this board, commission or advisory committee will require your consistent attendance at regularly scheduled meetings. Please note the times below for each Board or Commission. All meetings are held at the Council Chambers, 310 N. 4th Street, Kingman.

Board of Adjustment	As Needed
Building Board of Appeals	As Needed
Business License Review Board	As Needed
Clean City Commission	3rd Thursday/Monthly @ 5:00PM
Economic Development Marketing Commission	2nd Wednesday/Monthly @ 7:30 AM
Golf Course Advisory Committee	3rd Wednesday/odd months @ 4:30PM
Historical Preservation Commission	4th Tuesday/odd months @ 5:30PM
Industrial Development Board	As Needed
Local Public Safety Personnel Retirement Board	As Needed
Municipal Property Corporation	As Needed
Municipal Utilities Commission	4th Thursday/Monthly @ 5:30 PM
Parks & Recreation Commission	3rd Wednesday/odd months @ 6:30PM
Personnel Board	As Needed
Planning & Zoning Commission	2nd Tuesday/Monthly @ 6:00PM
Tourism Development Commission	1st Thursday/Monthly @ 7:30AM
Transit Advisory Commission	2nd Tuesday/1st month of Quarter @10:00

This application is subject to the Arizona Open Records law and should not be considered confidential.

Signature of Applicant [signature] Date 8 DECEMBER 2015

Please return this application to:
City of Kingman
City Clerk's Office Fax (928) 753-6867
310 North Fourth Street
Kingman, AZ 86401

For further information, please call: City Clerk's office at (928) 753-5561.

Thank you for taking the time to fill out this application. Volunteers play a vital role in the City of Kingman government. We appreciate your interest.

CITY OF KINGMAN
BOARDS AND COMMISSIONS APPLICATION

FOR MEMBERSHIP ON THE PLANNING & ZONING COMMISSION
Estimated hours per month you can devote to this group: _____

ame BROOKE FIX Home Phone # _____

Address 143 CHESTNUT STREET Alternative Phone # 928-753-5684

Zip Code 86401-5613

Email RBFIX70@GMAIL.COM Resident Located in -

Kingman City Limits ☑

Mohave County ☐

Length of Residency 10 YEARS Are you a registered voter? Yes ✓ No ____

If asked, I would be willing to serve on another board or Commission. Yes ✓ No ____
List other boards or commissions interested in:

1. List your educational background.

HIGH SCHOOL GRADUATE 2 YEARS COLLEGE - NO DEGREE

.. Please state your occupational background as it relates to the board or commission you are applying for beginning with your current occupation and employer.

I AM A RETIRED MANUFACTURING ENGINEER. DURING MY WORKING YEARS I WAS V.P. & GENERAL MANAGER OF A COMPANY WITH 600 EMPLOYEES. ALSO PRESIDENT OF A SMALLER COMPANY WITH 65 EMPLOYEES

3. Describe your involvement in the Kingman community. CURRENT PRESIDENT OF KINGMAN TENNIS CLUB, INC. FORMED THE CLUB AND VERY ACTIVE NOW.

I. Describe your leadership roles and/or any special expertise you have which would be applicable to the position for which you are applying.

CURRENTLY SERVING ON CITY'S PERSONELL BOARD.
ALSO SERVED TWO YEARS ON ~~PUBLIC~~ MUNICIPAL UTILITIES COMMISSION and WAS CHAIRMAN OF THAT COMMISSION

5. Describe why you are interested in serving in this position. _____

IT LOOKS LIKE THERE IS AN OPENNING AND I WANT TO HELP

6. If you are appointed to any of the boards or commissions you have listed interest in, please list potential conflicts of interest. Explain: _____

Appointment to this board, commission or advisory committee will require your consistent attendance at regularly scheduled meetings. Please note the times below for each Board or Commission. All meetings are held at the Council Chambers, 310 N. 4th Street, Kingman.

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Tourism Development Commission	1st Thursday/Monthly @ 7:30AM
Transit Advisory Commission	2nd Tuesday/1st month of Quarter @10:00

This application is subject to the Arizona Open Records law and should not be considered confidential.

Signature of Applicant _____ Date 12-4-2015

Please return this application to:
City of Kingman
City Clerk's Office
310 North Fourth Street
Kingman, AZ 86401

Fax (928) 753-6867

For further information, please call: City Clerk's office at (928) 753-5561.

Thank you for taking the time to fill out this application. Volunteers play a vital role in the City of Kingman government. We appreciate your interest.

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'15 DEC 14 11:54 25s

CITY OF KINGMAN
BOARDS AND COMMISSIONS APPLICATION

R MEMBERSHIP ON THE PLANNING & ZONING COMMISSION

..imated hours per month you can devote to this group:

ame HARLEY J. PETTY Home Phone # 928-753-0329

ldress 3787 DAKOTA ROAD, KINGMAN, AZ Alternative Phone # 928-530-2535

p Code 86401

nail harley@npgcable.com

Resident Located in -

Kingman City Limits ☑

Mohave County ☐

ngth of Residency 13 YEARS Are you a registered voter? Yes ✓ No

asked, I would be willing to serve on another board or Commission. Yes ✓ No

st other boards or commissions interested in:

BOARD OF ADJUSTMENT PERSONNEL BOARD

BOARD OF APPEALS PUBLIC SAFETY PERSONNEL RETIREMENT BOARD

List your educational background. HIGH SCHOOL GRADUATE. 1½ YEARS COLLEGE

OB RELATED SCHOOLS - FATERNAL ORDER SCHOOLS - O.J.T.

Please state your occupational background as it relates to the board or commission you are applying for ginning with your current occupation and employer.

I'VE BEEN INVOLVED, AS A CITIZEN, IN PLANNING & ZONING SSUES FOR OVER 10 YEARS IN KINGMAN

Describe your involvement in the Kingman community. CURRENTLY A COMMISSIONER ITH TOURISM. PAST VOLUNTEER POLICE SERVICE. CO-FOUNDER E KINGMAN BOOMERS AND R-A.I.D.

Describe your leadership roles and/or any special expertise you have which would be licable to the position for which you are applying.

AS A LEADER I DON'T ARGUE, I DEBATE ISSUES. THIS KEEPS OU ON THE TOPIC AND AWAY FROM PERSONALITY ATTACKS.

5. Describe why you are interested in serving in this position. AS STATED BEFORE I'VE BEEN INTERESTED AND INVOLVED IN PLANNING AND ZONING ISSUES IN THE CITY FOR OVER 10 YEARS

6. If you are appointed to any of the boards or commissions you have listed interest in, please list potential conflicts of interest. Explain: I CANNOT THINK OF ANY CONFLICTS OF INTEREST. I'M A PRIVATE CITIZEN, RETIRED.

Appointment to this board, commission or advisory committee will require your consistent attendance at regularly scheduled meetings. Please note the times below for each Board or Commission. All meetings are held at the Council Chambers, 310 N. 4th Street, Kingman.

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Transit Advisory Commission	2nd Tuesday/1st month of Quarter @10:00

This application is subject to the Arizona Open Records law and should not be considered confidential.

Signature of Applicant [signature] Date DEC. 14, 2015

Please return this application to:
City of Kingman
City Clerk's Office
310 North Fourth Street
Kingman, AZ 86401

Fax (928) 753-6867

For further information, please call: City Clerk's office at (928) 753-5561.

Thank you for taking the time to fill out this application. Volunteers play a vital role in the City of Kingman government. We appreciate your interest.

CITY OF KINGMAN
PLANNING & ZONING

DEC 7 2015

RCY'D Sandi
TIME 2:27 pm

CITY OF KINGMAN
BOARDS AND COMMISSIONS APPLICATION

FOR MEMBERSHIP ON THE Planning and Zoning Commission
Estimated hours per month you can devote to this group: 40+ or As Needed

Name Thomas L. Schulte Home Phone # 928-529-2202

Address 3080 Cherri Circle, Kingman Alternative Phone # 928-315-1239

Zip Code 86401

Email TLSchulte01@Gmail.com Resident Located in -

Kingman City Limits ☒

Mohave County ☐

Length of Residency Since 10/08/14 Are you a registered voter? Yes X No ____

If asked, I would be willing to serve on another board or Commission. Yes X No ____

List other boards or commissions interested in:

Golf Course advisory

Parks and Rec advisory

1. List your educational background. BS/ Business Admin, Grand School American Management Assoc courses, Quality Control course, Police Academy

2. Please state your occupational background as it relates to the board or commission you are applying for beginning with your current occupation and employer.

Please see attached supplement

3. Describe your involvement in the Kingman community.

Please see attached Supplement

4. Describe your leadership roles and/or any special expertise you have which would be applicable to the position for which you are applying.

Please see attached Supplement

5. Describe why you are interested in serving in this position. _____

Please see attached Supplement

6. If you are appointed to any of the boards or commissions you have listed interest in, please list potential conflicts of interest. Explain: NONE

Appointment to this board, commission or advisory committee will require your consistent attendance at regularly scheduled meetings. Please note the times below for each Board or Commission. All meetings are held at the Council Chambers, 310 N. 4th Street, Kingman.

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Transit Advisory Commission	2nd Tuesday/1st month of Quarter @10:00

This application is subject to the Arizona Open Records law and should not be considered confidential.

Signature of Applicant _____ Date 12/7/15

Please return this application to:
City of Kingman
City Clerk's Office
310 North Fourth Street
Kingman, AZ 86401

Fax (928) 753-6867

For further information, please call: City Clerk's office at (928) 753-5561.

Thank you for taking the time to fill out this application. Volunteers play a vital role in the City of Kingman government. We appreciate your interest.

Thomas L. Schulte

Supplement to City of Kingman Boards and Commissions Application:

Question #2: Please state your occupational background as it relates the board of commission you are applying for beginning with your current occupation and employer:

Presently I am retired. Most recently I was a senior executive in the Facilities Management and Security Industries. These positions involved major project planning, contract review (involving city, state and federal codes and regulations), and budget preparation/review/approval.

Question #3: Please describe your involvement in the Kingman Community:

At this time I am a member of the Moose lodge and a volunteer Course ranger at Cerbat Cliffs Golf Course.

Question #4: Describe your leadership roles and/or any special expertise you have which would be applicable to the position for which you are applying:

As a senior manager I have developed the ability to review and understand projects and requests. This also involves understanding the "unintended consequences" and your decisions. This expertise comes from extensive training in Six Sigma and Kiazen.

Through many years of business/military and law enforcement experience, I have learned how to function as part of a team, while retaining my independence. Sometime it is important to be able to say "no" to a project or request.

Additional, I have served in several different leadership roles for the International Facility Management Association.

I think it is important to realize balance between Kingman's Historical significance and need for controlled growth.

Question #5: Describe why you are interested in serving in this position:

After spending several years researching retirement locations, my wife and I fell in love with Kingman. Throughout my business career I have been involved in several non-profit charities, civic and professional organization, all in an effort to make our communities a better place. While there are many who will complain, I would like to be known as one who worked to solve the issue.

I firmly believe my past experience and involvement can add valve to Kingman, in what I believe could be a most interesting position.

(1440

CITY OF KINGMAN
BOARDS AND COMMISSIONS APPLICATION

FOR MEMBERSHIP ON THE Planning & Zoning
Estimated hours per month you can devote to this group: 15-20 hrs

16 FEB 12 14:53 58s

Name TERRY SHORES Home Phone # 928-757-4846
Address 236 Woodcrest Cir Alternative Phone # _____
Zip Code 86409
Email TERRY01@CITLINK.NET Resident Located in -
Kingman City Limits ☒
Mohave County ☐

Length of Residency 40 years Are you a registered voter? Yes X No____
If asked, I would be willing to serve on another board or Commission. Yes X No____
List other boards or commissions interested in:

1. List your educational background.

2. Please state your occupational background as it relates to the board or commission you are applying for beginning with your current occupation and employer.

3. Describe your involvement in the Kingman community.

4. Describe your leadership roles and/or any special expertise you have which would be applicable to the position for which you are applying.

Please see attachment.

5. Describe why you are interested in serving in this position. spirit in life have more time on my Hands.

6. If you are appointed to any of the boards or commissions you have listed interest in, please list potential conflicts of interest. Explain: n/a only p.m. meetings.

Appointment to this board, commission or advisory committee will require your consistent attendance at regularly scheduled meetings. Please note the times below for each Board or Commission. All meetings are held at the Council Chambers, 310 N. 4th Street, Kingman.

Board of Adjustment	As Needed
Building Board of Appeals	As Needed
Business License Review Board	As Needed
Clean City Commission	3rd Thursday/Monthly @ 5:00PM
Economic Development Marketing Commission	2nd Wednesday/Monthly @ 7:30 AM
Golf Course Advisory Committee	3rd Wednesday/odd months @ 4:30PM
Historical Preservation Commission	4th Tuesday/odd months @ 5:30PM
Industrial Development Board	As Needed
Local Public Safety Personnel Retirement Board	As Needed
Municipal Property Corporation	As Needed
Municipal Utilities Commission	4th Thursday/Monthly @ 5:30 PM
Parks & Recreation Commission	3rd Wednesday/odd months @ 6:00PM
Personnel Board	As Needed
Planning & Zoning Commission	2nd Tuesday/Monthly @ 6:00PM
Tourism Development Commission	1st Thursday/Monthly @ 7:30AM
Transit Advisory Commission	2nd Tuesday/1st month of Quarter @10:00

This application is subject to the Arizona Open Records law and should not be considered confidential.

Signature of Applicant [signature] Date 12/16/15

Please return this application to:
City of Kingman
City Clerk's Office Fax (928) 753-6867
310 North Fourth Street
Kingman, AZ 86401

For further information, please call: City Clerk's office at (928) 753-5561.

Thank you for taking the time to fill out this application. Volunteers play a vital role in the City of Kingman government. We appreciate your interest.

Terry Shores

Kingman, AZ 86401
Phone Number: 928-757-4866

Qualifications

Over 5 years with Arizona State including Family Assistance Administration and Employment Administration. Knowledge of various types; customer service, inbound and outbound calling, office equipment, multi-tasking customer service and one-on-one, knowledge of Federal, State and agency statutes, rules and regulations, training, supervising, management, case management, data entry, multi-phone lines, career guidance/counseling, partner program knowledge and local community services, reports, medical records, bookkeeping, processing, maintaining, compiling confidential records: medical, legal, and sensitive information; computer proficient, Word, Excel, PowerPoint, Microsoft Office, 10 key, Windows, Bg01, Mainframe, Guide, databases, AJC, Outlook, AZTECS, and VOS.

Work History

Benefit Specialist
Family Assistance Administration
Kingman, AZ
August 2012-Present
Determine eligibility of persons applying to receive assistance from government programs and agency resources, such as welfare, unemployment benefits, social security, and public housing.

Eligibility Worker
Family Assistance Administration
Kingman, AZ
February 2011-August 2012
Interviewing and customer service techniques in person and in a call center environment; basic call center procedures and etiquette; general office equipment, basic mathematical, ability to determine public assistance eligibility, use of computers, software, and systems, data entry, resolving customer concerns via telephone and written communications; working in a high volume and fast paced local office, knowledge of basic Federal, State and agency statutes, rules and regulations, develop and maintain effective working relations with both internal and external clients including other state agencies and community resources; provide program information in a positive and professional manner explaining division policies, procedures, laws, statutes, rules and regulations; make determinations.

Employment Representative
State of Arizona
Kingman, AZ
June 2010-February 2011
Responsible for a wide range of applicant and employment services; interviewing applicants to assess skills, knowledge, and abilities; making appropriate referrals to job openings; referring clients to appropriate supportive services; follows up to verify referral results; writes job orders; apply federal, state and agency statutes, rules and regulations; resolve issues with customers; make determinations; establish and maintain effective working relationships.

Office Manager
Dr. Uldrickson DMD
Kingman, AZ
January 2009-November 2009
Independently managed and organized dental office, interviewed and supervised staff, payroll, patient financial services, patient treatment plans one-on-one customer service preparation and presentation, work with financial institutions, and government services, submit insurance claims electronic and paper, new patient processing and inputting and verification of insurance and coverage, reconcile bank and lab statements and all processing of insurance payments, purchasing supplies and medical inventories, checking prices from different vendors for best prices and delivery information, work front office schedule appointments, routing slips, answer phones, filing, pulling charts and new patient packets, computer work to include all processing, data entry, softdent software, doctor dictation, x-rays.

Business Manager
Dr. Carlson DMD
Kingman, AZ
September 2005-December 2008
Patient financial services, patient treatment plan preparation and presentation, work with financial institutions, and government services, submit insurance claims electronic and paper, new patient processing and inputting and verification on insurance and coverage, reconcile bank and lab statements and all processing of insurance payments, purchasing supplies and medical inventories, checking prices from different vendors for best prices and delivery information, work front office schedule appointments, routing slips, answer phones, filing, pulling charts and new patient packets, computer work to include all processing, data entry, softdent software, doctor dictation, x-rays.

Flight Attendant
Ryan International
Wichita, KS
October 2004-April 2005
Customer service, full operations of aircraft, certified in MD80, 737,757, extensive FAA required safety training, responsible for many lives on board the aircraft, trained in evacuation procedures and emergency on board aircraft.

Education

Softdent software
3 Years CEU training
Digital imaging on teeth
INS Training
Time Management
Stress Management
CPR Provider Level
Windows XP
Microsoft Office
Word
Internet Training
Payroll
CCHT Trained and Certified
Advanced Intradermal Cosmetic Technician
Customer Service
FAA Certified Flight Attendant

References Available Upon Request

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO:	Honorable Mayor and Common Council
FROM:	City Clerk's Office
MEETING DATE:	April 5, 2016
AGENDA SUBJECT:	Consideration of appointing a new Historic Preservation Commission (HPC) member

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SUMMARY:
The Historic Preservation Commission has two vacant terms that expire in December, 2017. On March 21, 2016 the commission voted 5-0 to recommend Jacqueline Huntoon for appointment to fill one of terms expiring December 2017. The commission decided to table the second seat recommendation until all applicants could be present.

FISCAL IMPACT:
None

STAFF RECOMMENDATION:
Staff recommends approval.

ATTACHMENTS:

Description

Consideration of appointing a new Historical Preservation (HPC) Member

REVIEWERS:

Department	Reviewer	Action	Date
City Clerk	Muhle, Sydney	Rejected	3/23/2016 - 12:51 PM
City Clerk	Steadman, Donna	Approved	3/23/2016 - 12:59 PM
City Clerk	Muhle, Sydney	Approved	3/23/2016 - 2:46 PM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 10:53 AM
City Manager	Dougherty, John	Approved	3/28/2016 - 1:20 PM

CITY OF KINGMAN
BOARDS AND COMMISSIONS APPLICATION

'16 MAR 11 13:59 42s

FOR MEMBERSHIP ON THE HISTORICAL PRESERVATION COMMISSION
Estimated hours per month you can devote to this group: _____

Name JACQUELINE HUNTOON Home Phone # [redacted]

Address [redacted] Alternative Phone # [redacted] cell

Zip Code 86401

Email [redacted] Resident Located in -

Kingman City Limits ☑

Mohave County ☐

Length of Residency 13 YEARS Are you a registered voter? Yes ✓ No ____

If asked, I would be willing to serve on another board or Commission. Yes ____ No ✓

List other boards or commissions interested in:

1. List your educational background. B. ARCH UNIVERSITY OF ARIZONA

2. Please state your occupational background as it relates to the board or commission you are applying for beginning with your current occupation and employer.
NOT CURRENTLY EMPLOYED. PREVIOUSLY EMPLOYED: JACQUELINE HUNTOON, ARCHITECT, PAA ARCHITECTS AND PLANNERS, ROBISON ALLYN ASSOCIATES ARCHITECTS

3. Describe your involvement in the Kingman community. I HAVE TAUGHT PRE-SCHOOL SUNDAY SCHOOL FOR YEARS, TUTORED MIDDLE SCHOOL STUDENTS IN ALL SUBJECTS, PARTICIPATED IN FOOD DRIVES + COMMUNITY CLEAN UPS EVERY YEAR HERE.

4. Describe your leadership roles and/or any special expertise you have which would be applicable to the position for which you are applying.
I AM A PAST PRESIDENT OF THE CONSTRUCTION SPECIFICATIONS INSTITUTE, SOUTHERN AZ CHAPTER WITH EXPERIENCE REHABILITATING SEVERAL HISTORIC PROPERTIES.

5. Describe why you are interested in serving in this position. I HAVE ALWAYS HAD A LOVE OF HISTORY WITH A CAREER FOCUS ON PRESERVATION. THIS POSITION IS IN LINE WITH THOSE INTERESTS.

6. If you are appointed to any of the boards or commissions you have listed interest in, please list potential conflicts of interest. Explain: NONE. I HAVE NO CURRENT PROJECT / POLITICAL TIES.

Appointment to this board, commission or advisory committee will require your consistent attendance at regularly scheduled meetings. Please note the times below for each Board or Commission. All meetings are held at the Council Chambers, 310 N. 4th Street, Kingman.

Board of Adjustment	As Needed
Building Board of Appeals	As Needed
Business License Review Board	As Needed
Clean City Commission	3rd Thursday/Monthly @ 5:00PM
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Historical Preservation Commission	4th Tuesday/odd months @ 5:30PM
Industrial Development Board	As Needed
Local Public Safety Personnel Retirement Board	As Needed
Municipal Property Corporation	As Needed
Municipal Utilities Commission	4th Thursday/Monthly @ 5:30 PM
Parks & Recreation Commission	3rd Wednesday/odd months @ 6:00PM
Personnel Board	As Needed
Planning & Zoning Commission	2nd Tuesday/Monthly @ 6:00PM
Tourism Development Commission	1st Thursday/Monthly @ 7:30AM
Transit Advisory Commission	2nd Tuesday/1st month of Quarter @10:00

This application is subject to the Arizona Open Records law and should not be considered confidential.

Signature of Applicant Jacqueline Hunter Date 3/10/16

Please return this application to:
City of Kingman
City Clerk's Office Fax (928) 753-6867
310 North Fourth Street
Kingman, AZ 86401

For further information, please call: City Clerk's office at (928) 753-5561.

Thank you for taking the time to fill out this application. Volunteers play a vital role in the City of Kingman government. We appreciate your interest.

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Jackie Walker, Human Resources Director

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Employee recognition

SUMMARY:

In appreciation for their hard work, dedication, and loyalty the Mayor and Council would like to recognize employees who have reached years of service milestones, beginning at five years of service and continuing at each five year interval. Tonight the Mayor and Council hereby convey their earnest appreciation to:

Yrs of Service	Name	Title	Department
20	Shilling, William	Principal Planner	Development Services
15	Coffin, David	Police Sergeant	Police
15	Wyatt, Joseph	Equipment Operator A	Public Works
10	Bailey, William	Water Technician A	Public Works
10	Jeppson, Gary	Development Services Director	Development Services
10	Heitman, Daniel	Groundskeeper	Parks & Recreation
10	White, Noland	Groundskeeper	Parks & Recreation
10	Baker, Jeff	Information Technology Coordinator	Information Technology
5	Garcia, Jesse	Equipment Mechanic	Parks & Recreation
5	Hambrick, Burley	Project Manager	Public Works
5	Robert Olivas	Equipment Operator B	Public Works

Mayor and Council would like to congratulate the following retirees on their retirement:
Tom Blum who retired from Public Works on January 4, 2016 with over 30 years of outstanding service.
Dean Pethers who retired from Public Works on January 7, 2016 with over 30 years of outstanding service.
Chris Kimrey who retired from the Fire Department on December 26, 2015 with over 21 years of outstanding service.
Ricky Pierce who retired from Public Works on January 14, 2016 with over 15 years of outstanding service.
Roy Ratliff who retired from Public Works on February 1, 2016 with over 14 years of outstanding service.
Jeff Campbell who retired from the Fire Department on January 7, 2016 with over 9 years of outstanding service.

FISCAL IMPACT:

STAFF RECOMMENDATION:

REVIEWERS:

Department	Reviewer	Action	Date

Human Resources	Walker, Jackie	Approved	3/17/2016 - 7:38 PM
City Attorney	Cooper, Carl	Approved	3/21/2016 - 10:33 AM
City Manager	Dougherty, John	Approved	3/28/2016 - 2:57 PM

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM:

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Proclamation for KABAM! Festival Day

SUMMARY:
Literacy is the foundation of the economic, educational and cultural wellbeing of a community. The Mohave Library Alliance seeks to promote literacy, the love of books and the joy of reading and has received the support of various local organizations and groups. The Mohave Library Alliance is sponsoring the KABAM! (Kingman Area Books Are Magic) Festival to promote literacy in the Kingman area.

FISCAL IMPACT:

STAFF RECOMMENDATION:

ATTACHMENTS:

Description

KABAM! Festival Day Proclamation

REVIEWERS:

Department	Reviewer	Action	Date
City Clerk	Muhle, Sydney	Approved	3/23/2016 - 8:25 PM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 10:56 AM
City Manager	Dougherty, John	Approved	3/28/2016 - 3:06 PM

PROCLAMATION

WHEREAS, Literacy is the foundation of the economic, educational and cultural well being of a community; and

WHEREAS, The Mohave Library Alliance seeks to promote literacy, the love of books and the joy of reading; and

WHEREAS, The Mohave Library Alliance has received the support of various local government, educational organizations, businesses and civic groups; and

WHEREAS, The Mohave Library Alliance is sponsoring the KABAM! Festival (Kingman Area Books Are Magic), a book festival to promote literacy in the Kingman Area.

NOW, THEREFORE, I, Richard Anderson, Mayor of the City of Kingman, Arizona, do hereby proclaim April 23, 2016, as

"KABAM! Festival Day"

and encourage all citizens of Kingman to attend the festival at Metcalfe Park from 10:00 a.m. to 4:00 p.m. on that day.

IN WITNESS WHEREOF, I have hereunto set my hand and caused to be affixed the Seal of the City of Kingman, Arizona this 5th day of April, 2016.

_____

Richard Anderson, Mayor

_____

Sydney Muhle, City Clerk

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: City Clerk's Office

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Special event liquor license application

SUMMARY:
Applicant Regina M. Musumeci of the Kingman Powerhouse Kiwanis has applied for a Series 15 Special Event Liquor License for an event to take place Saturday, May 21, 2016, from 4 P.M. to 11:59 P.M. at 201 N. 4th Street in Kingman. **Staff recommends approval.**

FISCAL IMPACT:
None

STAFF RECOMMENDATION:
Staff recommends approval.

ATTACHMENTS:

Description

Special Event Liquor License

REVIEWERS:

Department	Reviewer	Action	Date
City Clerk	Muhle, Sydney	Approved	3/21/2016 - 2:12 PM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 10:56 AM
City Manager	Dougherty, John	Approved	3/28/2016 - 3:09 PM

Arizona Department of Liquor Licenses and Control
800 W Washington 5th Floor
Phoenix, AZ 85007-2934
www.azliquor.gov
(602) 542-5141

FOR DLLC USE ONLY
Event Date(s):
Event time start/end:
CSR:
License:

APPLICATION FOR SPECIAL EVENT LICENSE
Fee= $25.00 per day for 1-10 days (consecutive)
Cash Checks or Money Orders Only

A service fee of $25.00 will be charged for all dishonored checks (A.R.S. § 44-6852)

IMPORTANT INFORMATION: This document must be fully completed or it will be returned.
e Department of Liquor Licenses and Control must receive this application ten (10) business days prior to the event. If the special ent will be held at a location without a permanent liquor license or if the event will be on any portion of a location that is not covered the existing liquor license, this application must be approved by the local government before submission to the Department of uor Licenses and Control (see Section 15).

CTION 1 Name of Organization: Kingman Powerhouse Kiwanis

CTION 2 Non-Profit/IRS Tax Exempt Number: 260-123-849

CTION 3 The organization is a: (check one box only)
☑ Charitable ☐ Fraternal (must have regular membership and have been in existence for over five (5) years)
☐ Religious ☐ Civic (Rotary, College Scholarship) ☐ Political Party, Ballot Measure or Campaign Committee

CTION 4 Will this event be held on a currently licensed premise and within the already approved premises? ☐ Yes ☒ No

Name of Business _____ License Number _____ Phone (Include Area Code) _____

CTION 5 How is this special event going to conduct all dispensing, serving, and selling of spirituous liquors? Please read R-19-3 for explanation (look in special event planning guide) and check one of the following boxes.
☐ Place license in non-use
☐ Dispense and serve all spirituous liquors under retailer's license
☒ Dispense and serve all spirituous liquors under special event
☐ Split premise between special event and retail location

ot using retail license, submit a letter of agreement from the agent/owner of the licensed premise to suspend the license during the event. e special event is only using a portion of premise, agent/owner will need to suspend that portion of the premise.)

CTION 6 What is the purpose of this event? ☑ On-site consumption ☐ Off-site (auction) ☐ Both

CTION 7 Location of the Event: Beale Celebrations

Address of Location: 201 N 4th St (Street) Kingman (City) Mohave (COUNTY) AZ (State) 86401 (Zip)

CTION 8 Will this be stacked with a wine festival/craft distiller festival? ☐ Yes ☒ No

CTION 9 Applicant must be a member of the qualifying organization and authorized by an Officer, Director or Chairperson he Organization named in Section 1. (Authorizing signature is required in Section 13.)

Applicant: Musumeci (Last) Regina (First) M (Middle) [redacted] (Date of Birth)

Applicant's mailing address: [redacted] (Street) Rd Kingman (City) AZ (State) 86401 (Zip)

Applicant's home/cell phone: (928) [redacted] Applicant's business phone: (928) 753-0722

Applicant's email address: [redacted] @ CITLINK.NET

Individuals requiring ADA accommodations call (602)542-9027.

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: John A. Dougherty, City Manager

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Consideration of waiving requirements outlined in Ordinance 1795

SUMMARY:
On April 7, 2015 the City Council passed the above ordinance for property located at 503 E. Spring Street changing zoning from Residential Single Family to C-1 Commercial Neighborhood Convenience. Part of said ordinance requires that the permit comply with 2012 Edition of the IBC and the Americans with Disabilities Act requirements. Part of the requirements for this ordinance are that off-street parking shall be provided to the rear of the building, a six foot wall be constructed, and the historic character and appearance of the primary building not be altered.

By the city standards the 9 off-street parking spaces must be available based on the square footage of the dwelling.

Owner has requested that the parking requirements be waived (agrees to provide two handicapped off-street parking spaces and the existing 5' 8" wall be deemed sufficient.

FISCAL IMPACT:
None

STAFF RECOMMENDATION:
Prior to being made aware of this ordinance I told Mr. Barnes that the off-street parking requirements would be waived as the required number cannot be fit onto this property and in light of recent Council action waiving the requirement for the Central Christian Church and surrounding businesses in the downtown. The existing wall is sufficient and four more inches cause undue hardship on property owner.

REVIEWERS:

Department	Reviewer	Action	Date
City Manager	Dougherty, John	Approved	3/15/2016 - 2:59 PM
City Attorney	Cooper, Carl	Approved	3/15/2016 - 3:01 PM
City Manager	Dougherty, John	Approved	3/15/2016 - 3:00 PM

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Engineering Services

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Resolution 5003: approval of intergovernmental agreement (IGA) with the Mohave County Flood Control District for disbursement of Fiscal Year 2016/2017 tax revenues (ENG16-0010)

SUMMARY:
The City of Kingman has received its annual IGA from the Mohave County Flood Control District. This IGA will provide $542,062.00 in funds for flood control related projects in the City of Kingman.

This IGA includes projects for storm drains in Sycamore, Southern and Coronado Avenue, Eighth Street improvements, Beverly Avenue drainage easement, Southern Vista & Steamboat Drive drainage improvements, Land Acquisition for the drainage projects and parcels, and various Drainage and Maintenance erosion protection projects.

FISCAL IMPACT:
The City will receive $542,062.00 in revenue from the Flood Control District

STAFF RECOMMENDATION:
Staff recommends approval of Resolution No. 5003.

ATTACHMENTS:

Description

Resolution No. 5003

IGA

REVIEWERS:

Department	Reviewer	Action	Date
Engineering	Henry, Greg	Approved	3/21/2016 - 5:42 PM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 10:56 AM
City Manager	Dougherty, John	Approved	3/28/2016 - 3:07 PM

CITY OF KINGMAN

RESOLUTION NO. 5003

A RESOLUTION BY THE MAYOR AND COMMON COUNCIL OF THE CITY OF KINGMAN, ARIZONA, APPROVING THE INTERGOVERMENTAL AGREEMENT BETWEEN THE CITY OF KINGMAN AND THE MOHAVE COUNTY FLOOD CONTROL DISTRICT

WHEREAS, City of Kingman, Arizona, is a political subdivision of the State of Arizona, (hereinafter the "**City**") as prescribed within the Arizona Constitution, Article XIII, Section 1; and

WHEREAS, the State of Arizona has, in Arizona Revised Statutes ("**A.R.S.**") Title 9, Chapter 1, Article 2, Section 9-137, authorized the City Council (the "**Council**") to do that which is necessary to carry out its functions; and

WHEREAS, A.R.S. Title 11, Chapter 7, Article 3, Section 11-951, *et seq*, authorizes the joint exercise of powers between the City and another political subdivision, including the Mohave County Flood Control District, a political subdivision of the State of Arizona, (the "**District**") where it will further the public interest; and

WHEREAS, the City Council desires to enter into the attached Intergovernmental Agreement (the "**IGA**") with which to further the flood control programs of the City in cooperation with the District for the drainage and flood control projects as described in the IGA; and

WHEREAS, the City is empowered by reasons including without limitation A.R.S. Title 9, Chapter 1, Article 2, Section 9-137 and Title 11, Chapter 7, Article 3, Section 11-952 and to enter into the IGA; and

NOW THEREFORE, BE IT RESOLVED the City Council hereby approves the attached IGA with the District pertaining to the project drainage improvements described therein; and,

BE IT FURTHER RESOLVED, the City Council authorizes the City Mayor, as its representative, to execute the IGA on behalf of the City; and

BE IT ALSO FURTHER RESOLVED, that the terms of this Resolution including the approval of the Agreement shall be effective immediately upon it being fully executed and recorded in the official records of the Mohave County Recorder.

PASSED, AND ADOPTED, by the Mayor and Common Council, of the City of Kingman, Arizona, this 5th day of April, 2016.

ATTEST:

_____
Sydney Muhle, City Clerk

APPROVED:

_____
Richard Anderson, Mayor

APPROVED AS TO FORM:

_____
Carl Cooper, City Attorney

INTERGOVERNMENTAL AGREEMENT
BETWEEN THE MOHAVE COUNTY FLOOD CONTROL DISTRICT AND
THE CITY OF KINGMAN, ARIZONA, FOR FLOOD CONTROL

THIS INTERGOVERNMENTAL AGREEMENT BETWEEN THE MOHAVE COUNTY FLOOD CONTROL DISTRICT AND THE CITY OF KINGMAN, ARIZONA, FOR FLOOD CONTROL (the "**Agreement**") is entered into, effective this _____ day of _____, 2016, between the Mohave County Flood Control District, a political subdivision of the State of Arizona, (the "**District**") and the City of Kingman, a municipal corporation of the State of Arizona, (the "**City**"). The District and the City are sometimes collectively referred to as the "**Parties**" or individually as the "**Party**".

RECITALS

WHEREAS:

A. The City is authorized to enter into this Agreement under the Constitution of Arizona, Article XIII, Section 1, and other applicable laws including Arizona Revised Statutes, Title 9, Chapter 1.

B. The District is authorized to enter into this Agreement under the Constitution of Arizona, Article XIII, Section 7, and other applicable laws including Arizona Revised Statutes, Title 48, Chapter 21.

C. The District administers the Federal Emergency Management Agency ("**FEMA**") Regulations under the National Flood Insurance Program.

D. The District and City are within the geographical boundaries of Mohave County, a body politic and corporate of the State of Arizona, ("**Mohave County**" or the "**County**").

E. The District, City, and County are separate and distinct political subdivisions, but each can provide for the benefit of the other(s), for the benefit of public health, safety and welfare, and other public purposes.

F. The District and City desire to participate jointly in a flood control project as proposed by the City (the "**Project**"), as described on **Exhibit "A"** attached hereto, to increase safety and protect public and private property and persons within the City.

G. Among other things, the District receives tax proceeds as general funding for the planning, construction, and maintenance of flood control improvements.

H. Under the budgeting process for the District, a category of "Special Projects" has been established, setting aside monies that may be utilized by the various political subdivisions located within the boundaries of Mohave County, provided they are flood or drainage related and a part of an overall plan, cost effective, a benefit to the County, District, and, as here, City communities, and in accordance with FEMA Regulations.

I. The City has prepared a budget for the Project, which has been reviewed by the District, and upon which the District relies.

J. The City has previously participated in flood control projects during prior fiscal years, for which it has received funds. A spread sheet showing an accounting for allocations received, monies spent, and account balances (if any) is attached hereto as **Exhibit "B"**.

K. The City desires to receive District Special Projects funds (the "**Funding**") for the fiscal year, for part of the funds the City anticipates projected as necessary for its current Project, which Funding is described on **Exhibit "C"** attached hereto.

L. Pursuant to the requirements of and powers granted by Arizona Revised Statutes ("**A.R.S.**") Title 11, Chapter 7, Article 3, Section 11-952; Title 48, Chapter 21, Article 1, Section 48-3603; and, Title 9, the Parties desire to enter into this Agreement.

M. Acting through its duly elected governing body, by Resolution, the District's Board approved the District entering into this Agreement, and authorized the District's Chairman as its representative to execute the same on behalf of the District.

N. Acting through its duly elected governing body, by Resolution, the City's Council approved the City to enter into this Agreement, and authorized the City's Mayor as its representative to execute the same on behalf of the City.

AGREEMENTS

NOW THEREFORE, for good and valuable consideration, including consideration of the mutual promises, terms and conditions hereinafter set forth, including the mutual promises and obligations to be performed by the Parties hereto, the Parties agree as follows:

1. INCORPORATION BY REFERENCE. The above Recitals shall be incorporated by reference as part of the Parties' agreements and/or as the basis of consideration for this Agreement.

2. COMMENCEMENT, DURATION, AND TERMINATION.

2.1 The effective date shall be set forth on page one (1) of this Agreement. Performance under this Agreement shall commence following the effective date and it shall continue in full force and effect until the completion of the Project, unless earlier terminated as provided hereinafter. This Agreement shall terminate of its own accord upon the satisfactory completion of all its terms and conditions, or upon one (1) year from its effective date, whichever is longer, unless extended by the Parties in writing.

2.2 Either Party may terminate this Agreement, with or without cause, by one Party serving upon the other, a thirty (30)-day prior written Notice of Termination.

2.3 This Agreement may be canceled in accordance with A.R.S. Title 38, Chapter 3, Article 8, Section 38-511.

2.4 Nothing to the contrary withstanding, the termination or cancellation of this Agreement does not terminate the responsibility for the City's full accounting of funding and its return of any then unused funds; the continuing obligations of legal compliance under Section 5; indemnification, hold harmless and defense obligations under Section 7; and the continuing of applicable terms of this agreement as to past matters including as to funds disbursed by the District to the City as is herein otherwise set forth.

3. PURPOSES. The basic purpose of this Agreement is to set forth the terms and conditions of the Project, Project Work, and the financing of it regarding the Parties' roles therein.

4. RESPONSIBILITIES [INCLUDING FINANCING AND BUDGET]. The Parties shall be responsible as follows:

4.1 District. The District shall:

4.1.1 Review the request for proposal scope of work, drawings (plans), and specifications for this Project generally described on **Exhibit "A"** for comment, if the District, in its discretion, desires to make comment. Such review or comment that may occur does not place any responsibility or liability on the District for the integrity of the Project or its work (the "**Project Work**").

4.1.2 Review the budget prepared by the City (**Exhibit "B"** hereto).

4.1.3 Provide Funding as available and appropriate upon the City's application to the District, as provided on **Exhibit "C"**. The Funding shall be made available following the effective date of this Agreement. The Funding is to be included in the current City Flood Control District Allocation balance or a total balance set forth on **Exhibit "C"**. Funding is to be used for the Project(s) in Fiscal Year, 2016-2017.

4.2 City. The City shall:

4.2.1 Provide Project design plan and specifications, in accordance with City, District, State, and Federal standards, to the District for its review and approval.

4.2.2 Prepare and keep current a budget for the Project within which parameters the City will fiscally generate for this Project and its completion, unless the City provides any required additional funding.

4.2.3 Utilize properly Arizona licensed engineers and contractors for the Project and all the Project Work.

4.2.4 Properly bond the Project as required for Public Works' projects pursuant to A.R.S. Title 34, Chapter 2, Article 1, Section 34-201 and Article 2, Section 34-222.

4.2.5 Furnish the District with a written, notarized statement of the Project engineer, contractor, and City to certify the completion of the Project Work and the City's satisfaction with the Project Work.

4.2.6 Provide the District with proof of final payments to the engineer, contractor, subcontractors, and that no liens exist against the County, District, City, or contractor in relation to the Project or the real property associated therewith.

4.2.7 As necessary, timely provide additional amounts beyond the Funding, for full funding for full completion of this Project.

4.2.8 Establish a special account for the Funding to be received and spent on this Project.

4.2.9 Provide for an independent audit by a certified public accountant setting forth the use and/or status of the Project Funding, and forward a copy of the audit to the District.

4.2.10 Return to the District, any unused Funding (if any there be) within four (4) calendar weeks of completion, termination, or cancellation of the Project.

4.2.11 The City shall contract directly for all Project Work, including its design, supervision, and construction, and be responsible for the proper disbursement of Funding paid by the Parties, pursuant to the express terms of this Agreement.

4.2.12 The City, and not the District or the County, shall be directly responsible for maintaining the Project and/or the Project Work.

4.3 **Jointly.** The District and City mutually agree:

4.3.1 To not incur legal liability for the actions of one another, other than under the terms and conditions of this Agreement. Each Party will be solely and entirely responsible for its own acts and acts of its own Board or Council members, officials, agents, and employees during the performance of this Agreement.

4.3.2 Nothing to the contrary withstanding, the Parties recognize the funds to be used by both Parties pursuant to this Agreement are tax funds. The agreements herein for Funding are based upon projected tax funds to be received. In the event the project income is not received, there is the possibility that some or all of the funds anticipated by this Agreement and set forth herein will not be available. In the event income falls short of the projected income for either Party, then either Party may otherwise, in its sole discretion, reduce or delete some of the Funding set forth in this Agreement. Each Party will make best effort to give ten (10) days notice to the other Party in the event such funds will not be available, and will therewith give as much notice as possible as to the amount the Funding must be reduced. Should either Party be unable to provide some or all of the Funding set forth in this Agreement, following notice of same to the other Party, the Parties agree this Agreement automatically will be amended or canceled to reflect said change(s) without further action, without any claim of damages by either Party, and without penalty to either Party.

4.3.3 All Project Work is the sole responsibility of the City, and not that of the District or County. All real property and its appurtenances (the "**Property**") upon which Project Work will occur, is owned or under the control of the City and not owned or under the control of the District or County.

4.3.4 **Exhibits "D"** and **"E"** attached hereto are authenticated copies of the Resolutions of the County and City, authorizing said Parties to enter into this Agreement.

4.3.5 It is noted that as a part of this Agreement are the written determinations of the attorneys for the Parties that this Agreement is in proper form and within the powers and authority granted to said Parties under the laws of the State of Arizona.

4.3.6 To act for the good faith implementation of this Agreement and its covenants, including full and complete timely performance.

5. LAWS. The Parties shall each be fully responsible for compliance with all statutes, ordinances, codes, regulations, rules, court decrees or other laws (hereinafter collectively "**Laws**") applicable to it as part of fully performing the Project with regards to their respective roles. This Agreement shall not relieve either Party of any obligation or responsibility imposed upon it by Laws.

6. NOTICE. Any notice that is necessary shall be in writing and given by telefax, personal delivery, by deposit with an overnight express delivery service such as Federal Express, or by deposit in the United States Mail, certified mail-return receipt requested, postage prepaid, addressed to a Party at the address set forth below, or such other address as a Party may designate in writing by prior notice. The date notice is given shall be the date on which the notice is delivered if notice is given by personal delivery or overnight express delivery service, or three (3) days from the date of deposit in the Mail, if the notice is sent through the United States Mail. Notice shall be deemed to have been received on the date on which the notice is delivered, if notice is given by personal delivery or overnight express delivery service, or three (3) days following the date of deposit in the mail, if notice is sent through the United States Mail.

DISTRICT:
Mail or Deliver To:
Nicholas S. Hont, P.E.
Development Services Department Director
Mohave County Flood Control District
P.O. Box 7000 or 3250 E. Kino Avenue
Kingman, Arizona 86402-7000 Kingman, Arizona 86409

Copy To:
Matthew J. Smith, County Attorney
Mohave County Attorney's Office
Attention: Mohave County Development Services
P. O. Box 7000 or 3250 E. Kino Avenue
Kingman, Arizona 86402-7000 Kingman, Arizona 86409

CITY:

Mail or Deliver To:	**Copy To:**
John Dougherty, City Manager	Carl Cooper, City Attorney
City of Kingman	City of Kingman
310 N. 4th Street	310 N. 4th Street
Kingman, AZ 86401	Kingman, AZ 86401

7. INDEMNIFICATION. To the fullest extent permitted by law, each Party (as "indemnitor") shall defend, indemnify and hold harmless the other Party (as "indemnitees") its officers, officials, employees, agents, volunteers, successors, and assigns ("Indemnified Group") for claims, damages, losses, liabilities and expenses of any nature whatsoever (including but not limited to reasonable attorneys' fees, court costs, the costs of appellate proceedings, and all claim adjusting and handling expense) relating to, arising out of, resulting from or alleged to have resulted from the indemnitor's acts, errors, mistakes or omissions relating to any action or inaction of this Agreement including but not limited to work, services, acts, errors, mistakes, or omissions in the performance of this Agreement by anyone directly or indirectly employed by or contracting with the indemnitor, or any person for whose acts and liabilities are the obligation of the indemnitor.

8. OTHER CONDITIONS OR PROVISIONS

8.1 Incorporation of Exhibits. All terms and conditions of the Exhibits not inconsistent herewith shall be and are incorporated herein by reference into this Agreement. The Exhibits to this Agreement are as follows:

Exhibit "A"	Project Description
Exhibit "B"	Accounting of Prior Funding and Balance
Exhibit "C"	Project Funding
Exhibit "D"	District Resolution
Exhibit "E"	City Resolution

8.2 Severability. The terms of this Agreement are severable. Any waiver by the Parties of any provision herein shall not impair the right of any Party to enforce any other provision of the Agreement. Such provision of this Agreement shall be interpreted in a manner as to be effective and valid under applicable Laws. Such provision shall be ineffective solely to the extent of such prohibition of invalidity. Such prohibition or invalidity shall not invalidate the remainder of the provisions or any other provision.

8.3 Voluntary Execution. The Parties acknowledge having read the Agreement in its entirety and voluntarily sign the Agreement with the intended purpose that it be fully binding as set forth.

8.4 Arbitration. In the event of a dispute, the Parties agree to use arbitration only to the extent it is required by A.R.S. § 12-1518 or otherwise required by Arizona Rules of Civil Procedure. The Parties shall agree to fully exhaust administrative remedies before filing litigation.

8.5 Trust and Repose. The City acknowledges the District places trust and repose in the City, its council members, officials, officers, employees, and agents. The City avows and warrants it will faithfully and fully perform under the terms of this Agreement, including obtaining and maintaining or having obtained and maintained any State of Arizona or local licenses or permits through the entire Project in order to perform or have properly, timely and fully performed the services and activities required. Therewith, the City shall maintain all bonds and insurances required by Laws and herein.

8.6 Record Retention. Records for this Project shall be retained not less than five (5) years from the date of final completion.

8.7 Independent Parties. Each Party acknowledges, understands, and agrees that it undertakes its responsibilities and obligations independent of the other, and that neither Party nor its employees or agents shall be considered an employee of the other under this Agreement or the activities resultant therefrom.

8.8 No Implied Authority. This Agreement shall not be considered to imply authority to perform any tasks, accept any responsibility, or to do any other thing in relation hereto, not expressly set forth herein.

IN WITNESS WHEREOF, the Parties have signed this Agreement on the dates set forth below. This Agreement shall be effective as of the date first above written, but without limitation, the District Board approving this Agreement, which the Board may or may not do, in its discretion.

City of Kingman, a municipal corporation of the State of Arizona

_____ By _____
Date Signed Richard Anderson, Mayor of the City of Kingman

MOHAVE COUNTY FLOOD CONTROL DISTRICT,
a political subdivision of the State of Arizona

_____By _____
Date Signed Jean Bishop, Chairman of the District

REVIEWED AND RECOMMENDED:

MOHAVE COUNTY FLOOD CONTROL DISTRICT

_____ By _____
Date Signed Nicholas S. Hont, P.E., Flood Control District Engineer

APPROVED AS TO FORM AND IN COMPLIANCE WITH A.R.S. § 11-952:

CITY OF KINGMAN ATTORNEY

_____ By _____

Date Signed Carl Cooper, City Attorney

APPROVED AS TO FORM AND IN COMPLIANCE WITH A.R.S. § 11-952:

MOHAVE COUNTY ATTORNEY

_____ By _____

Date Signed Matthew J. Smith, County Attorney

ATTESTATION OF CITY APPROVAL

I, Sydney Muhle, Clerk of the City of Kingman, Arizona, hereby certify that the City Council of the City of Kingman, Arizona, on the _____ day of _____ , 2016, approved on behalf of the City of Kingman, an Arizona municipal corporation, for the purposes stated, the foregoing Agreement.

_____

Sydney Muhle, Clerk of the City of Kingman

(Seal)

ATTESTATION OF COUNTY APPROVAL

I, Ginny Anderson, Clerk of the Board of Supervisors of Mohave County, a body politic and corporate of the State of Arizona, sitting as the Directors of the Mohave County Flood Control District, a political subdivision of the State of Arizona, hereby certify that said Flood Control District on the _____ day of _____, 2016, approved on behalf of the Flood Control District for the purposes stated, the foregoing Agreement.

_____

Ginny Anderson, Clerk of the Mohave County Board of Supervisors

(Seal)

EXHIBIT "A"

INTERGOVERNMENTAL AGREEMENT BETWEEN THE MOHAVE COUNTY FLOOD CONTROL DISTRICT AND CITY OF KINGMAN, ARIZONA, FOR FLOOD CONTROL

PROJECT DESCRIPTION (Fiscal Year 2016-2017)

No.	Project	Estimated Cost	Description
1	Sycamore Avenue Storm Drain	$400,000	Construct a storm drain between Western Avenue and Stockton Hill Road
2	Southern Vista & Steamboat Drainage	$250,000	Reconstruct drainage channels and install grouted riprap within City Easements and Parcels
3	8th Street Underpass	$75,000	Prepare design to address flood issues at the 8th Street RR Crossing in Downtown Kingman.
4	Railroad Diversion Channel	$100,000	Acquire right of way for future channel identified in the Kingman Area Master Drainage Plan & URS DCR
5	Bull Mountain Drainage Channel	$100,000	Acquire right of way for future channel identified in the Kingman Area Master Drainage Plan
6	Drainage Maintenance & Erosion Protection	$300,000	Install curbs, asphalt, concrete, grouted riprap or shotcrete at various locations which have had continuing erosion problems, including maintenance of drainage channels
7	Land Acquisition Drainage	$100,000	Acquire drainage parcels in problem areas of existing subdivisions
8	Drainage Master Plan Update	$400,000	This project will update the existing Kingman Area Master Drainage Plan from June of 1988. A grant from FEMA is being pursued to fund new Aerials.
9	Beverly Avenue	$50,000	Acquire right of way for Beverly Avenue drainage between Western avenue and Stockton Hill Road
10	Southern Avenue Storm Drain	$200,000	Construct a storm drain between Eastern Street and Franklin Drive
11	Coronado Avenue Storm Drain	$200,000	Construct a storm drain between Irving Street and Mohave Channel
	Total	**$2,175,000**	

CITY OF KINGMAN

EXHIBIT "B"

FY	ALLOCATIONS	EXPENDITURES	BALANCE	DESCRIPTION
86/87	$127,580.00		$127,580.00	FY 86/87 Allocation
86/87		$252,100.00	$0.00	Complete Kingman Area Master Drainage Study-City Match of $127,540
86/87		$525.00	$0.00	Title Reports Lake Mohave Country Club Estates Unit 3
87/88	$140,000.00		$140,000.00	FY 88/89 Allocation
87/88		$140,000.00	$0.00	Purchase Lot 11, Blk S & Lot 19 Blk R Lake Mohave Country Club Est.
87/88		$750.00	$0.00	Lot Appraisals Lake Mohave Country Club Estates
88/89	$100,000.00		$100,000.00	FY 88/89 Allocation
88/89		$100,000.00	$0.00	Expansion of Santa Fe Railroad Bridge No. 509.1
89/90	$100,000.00		$100,000.00	FY 89/90 Allocation
89/90		$49,000.00	$0.00	Field surveying of drainage channels Phase I & II
89/90		$43,453.00	$7,547.00	Aerial Mapping of Bull Mountain, Mohave & Railroad Channels
90/91	$100,000.00		$107,547.00	FY 90/91 Allocation
90/91		$100,000.00	$7,547.00	Aerial Mapping & R/W Surveys Bull Mtn., Mohave & Railroad Channels
91/92	$100,000.00		$107,547.00	FY 91/92 Allocations
91/92		$6,290.00	$101,257.00	Design Box Culvert Hualapai Mountain Road
91/92		$13,000.00	$88,257.00	Purchase 10 Lots, Golden Gate Addition
91/92		$6,575.00	$81,682.00	Purchase Lot, Lake Mohave Country Club Estates
91/92		$1,325.00	$80,357.00	Appraisals, Title Reports
91/92		$9,725.00	$70,632.00	Drainage Analysis - N 1/2, Sec 13, R21W, T17N
91/92		$57,704.00	$12,928.00	Drainage Improvements Hualapai Foothill Estates
91/92		$7,290.00	$5,638.00	Design & construction Admin Hualapai Mountain Rd. box culvert
92/93	$100,000.00		$105,638.00	FY 92/93 Allocation
92/93		$86,733.00	$18,905.00	Box culvert construction Hualapai Mountain Road
92/93		$4,041.00	$14,864.00	Western Avenue drainage culverts
93/94	$128,647.00		$143,511.00	FY 93/94 Allocation
93/94		$56,765.00	$86,746.00	Construction of drainage improvements in the Golf Course Drainage Area, per Master Drainage Plan prepared by Mohave Engineering Assc., Inc.
93/94		$180,000.00	$0.00	Design, construction & project admin for extension of Airway Ave., box culvert over the Mohave Channel per Dibble & Assc. Design Study
94/95	$128,647.00		$128,647.00	FY 94/95 Allocation
94/95		$315,000.00	$0.00	Box culvert construction on N. Willow Rd. crossing Mohave Channel & R/W
95/96	$128,647.00		$128,647.00	FY 95/96 Allocation
95/96		$456,988.00	$0.00	Storm drain system for Airway Ave. reconstruction
96/97	$128,647.00		$128,647.00	FY 96/97 Allocation
96/97		$153,760.00	$0.00	
97/98	$128,647.00		$128,647.00	FY 97/98 Allocation
97/98		$83,145.00	$45,502.00	Gunnite Hillcrest Drainage Easement, + Headwall/rip-rap at culverts-Louise, Southern, South 7th St., and Gordon/Stockton Hill intersection
97/98		$7,000.00	$38,502.00	Drainage Study for Riata Valley subdivision
97/98		$40,000.00	($1,498.00)	Drainage improvements to Harrison Street
98/99	$365,372.00		$365,372.00	FY 98-99 Allocation
98/99		$1,498.00	$363,874.00	Remaining money paid on the improvements to Harrison Street
98/99		$61,933.54	$301,940.46	Railroad Channel Drainage Study
98/99		$264,750.00	$37,190.46	Box culvert construction Stockton Hill/Devlin Channel
98/99		$25,000.00	$12,190.46	Main Street drainage improvements - design

CITY OF KINGMAN

EXHIBIT "B"

FY	ALLOCATIONS	EXPENDITURES	BALANCE	DESCRIPTION
99/00	$375,746.00		$387,936.46	FY 99/2000 Allocation
99/00		$115,000.00	$272,936.46	Main Street Drainage Improvements - Construction
99/00		$160,000.00	$112,936.46	Purchase Blocks 7 & 8 Golden Gate Addition for detention basin
99/00		$70,000.00	$42,936.46	Drainage improvements to the golf course/Sunrise Ave. area
99/00		$15,000.00	$27,936.46	Riata Valley area drainage improvements - land appraisals & preliminary design
99/00		$165,000.00	$0.00	Purchase that portion of Se 9, T21N, R16W lying South of I-40 for drainage detention/retention
00/01	$387,564.00		$387,564.00	FY 00/01 Allocation
00/01		$223,255.00	$164,309.00	Stockton Hill Road Drainage Design - Gordon to Sierra Vista - Mohave Engineering Associates
00/01		$24,990.00	$139,319.00	Engineering Design - Detention Basin - Blocks 7 & 8, Golden Gate Addition
00/01		$6,500.00	$132,819.00	Appraisals, Drainage Channel, Lots 15-18, Block T, Lake Mohave Country Club Estates, Unit 3
00/01		$209,000.00	($76,181.00)	Drainage Participation in East Golden Gate Improvement District
01/02	$401,927.00		$401,927.00	FY 01/02 Allocation
01/02		$19,495.00	$382,432.00	Drainage Right-Of-Way Purchase, Lots 15 - 18, Block T, Lake Mohave Country Club Estates, Unit 3
01/02		$232,350.00	$150,082.00	Gordon Box Culvert & Channel Construction, Lots 14, Block T, Lake Mohave Country Club Estates, Unit 3
01/02		$300,000.00	($149,918.00)	Blocks 7&8 Golden Gate Addition Detention Basin Construction
02/03	$428,032.00		$428,032.00	FY 02/03 Allocation
02/03		$70,298.00	$357,734.00	Right-of-Way: Mohave Channel - LMCCE Unit 2; Bull Mt. Channel - LMCCE Unit 3
02/03		$320,000.00	$37,734.00	Drainage Channel Construction, Lots 15-17, Block T, Lake Mohave Country Club Estates Unit 3
02/03		18319	$19,415.00	Blocks 7&8 Golden Gate Addition Detention Basin Construction
		$5,327.00	$14,088.00	Preliminary Design - Louise (Getz Station) Detention Basin
02/03		$8,000.00	$6,088.00	Appraisals for Bull Mt. Drainage Channel - Block R, Lake Mohave Country Club Estates Unit 3
03/04	$422,169.00		$428,257.00	03/04 Allocation + Balance Forward
03/04		$100,000.00	$328,257.00	Reconstruction of Airfield Avenue
03/04		$413,000.00	($84,743.00)	Purchase of Louise (Getz Station) Detention Property from BNSF
04/05	$446,401.00		$446,401.00	04/05 Allocation
04/05		$30,000.00	$416,401.00	Design of Louise (Getz Station) Detention Basin
04/05		$300,000.00	$146,401.00	Construction of Louise (Getz Station) Detention Basin
04/05		$150,000.00	($3,599.00)	Bull Mt. Drainage Channel right-of-way acquisition - Block R, Lake Mohave Country Club Estates Unit 3
05/06	$504,542.00	$615,563.00	($111,021.00)	Airfield Avenue, Bull Mountain Drainage Construction
06/07	$586,321.00	$833,935.70	($247,614.70)	Getz Station Detention Basin, Mohave Wash Channelization repayment
07/08	$715,334.00		$715,334.00	Mohave Wash Channelization repayment, misc drainage walls/erosion protection
07/08		$410,000.00	$305,334.00	Mohave Wash Channelization repayment
07/08		$25,000.00	$280,334.00	Land Acquisition in Golden Gate Addition Improvement District
08/09	$715,334.00		$995,668.00	08/09 Allocation + Balance Forward
08/09		$347,656.00	$648,012.00	Mohave Wash Channelization Repayment - Final
08/09		$171,437.44	$476,574.56	Drainage Land and Right of Way Acquisition
08/09		$118,648.00	$357,926.56	Bull Mountain Channel
08-09		$406,431.00	($48,504.44)	Bank Street Design & Improvements
09/10	$870,424.00		$870,424.00	09/10 Allocation
09/10		$25,745.66	$844,678.34	Last Avenue
09/10		$1,598.00	$843,080.34	Grading Erosion Southern
09/10		$7,786.73	$835,293.61	Bull Mountain Channel
09/10		$686.00	$834,607.61	Fence - Bank Street

CITY OF KINGMAN

EXHIBIT "B"

FY	ALLOCATIONS	EXPENDITURES	BALANCE	DESCRIPTION
09/10		$1,757.00	$832,850.61	Freiday Construction - Bank Street
09/10		$1,500.00	$831,350.61	Landscape Replacement
09/10		$35,000.00	$796,350.61	Bull Mountain Channel Land Acquisition
10/11	$855,178.00		$1,651,528.61	10/11 Allocation + Balance Forward
10/11		$1,500,000.00	$151,528.61	Box Culvert and Channelization of Johnson Canyon Wash at Downtown Waste Water Treatment Plant
11/12	$509,893.00		$661,421.61	11/12 Allocation + Balance Forward
11/12		$500,000.00	$161,421.61	Airway Avenue - Western to Stockton Hill
11/12		$220,000.00	($58,578.39)	Western Avenue - Sycamore Avenue to Airway Avenue
11/12		$75,000.00	($133,578.39)	Pacific Avenue - N. Melody Street to N. Evans Street
11/12		$35,000.00	($168,578.39)	Channel Erosion Protection
11/12		$36,450.00	($205,028.39)	Drainage Land Acquisition
12/13	$798,834.00		$593,805.61	12/13 Allocation + Balance Forward
12/13		$250,000.00	$343,805.61	Airway Avenue at Walgreens
12/13		$60,000.00	$283,805.61	Prospector Road Right of Way
12/13		$283,805.61	($0.00)	Drainage Maintenance & Erosion Protection
13/14	$726,491.00		$726,491.00	13/14 Allocation + Balance Forward
13/14		$150,000.00	$576,491.00	Drainage Land Acquisition
13/14		$350,000.00	$226,491.00	Drainage Maintenance & Erosion Protection
13/14		$15,256.00	$211,235.00	Sycamore West Drainage Study
14/15	$566,267.00		$777,502.00	14/15 Allocation + Balance Forward
14/15		$14,744.00	$762,758.00	Sycamore West Drainage Study
14/15		$187,223.00	$575,535.00	Detroit Avenue, Railroad Steet, Harvard Street
14/15		$20,939.00	$554,596.00	Ranch Santa Fe Drainage Parcel
14/15		$67,583.00	$487,013.00	Drainage Maintenance & Erosion Protection
15/16	$542,062.00		$1,029,075.00	15/16 Allocation + Balance Forward
15/16		$77,500.00	$951,575.00	Drainage Land Acquisition
15/16		$60,000.00	$891,575.00	Mohave County CTP Grant
15/16		$16,533.00	$875,042.00	Drainage Maintenance & Erosion Protection

EXHIBIT "C"

TO

INTERGOVERNMENTAL AGREEMENT BETWEEN THE MOHAVE COUNTY FLOOD CONTROL DISTRICT AND THE CITY OF KINGMAN, ARIZONA, FOR FLOOD CONTROL

PROJECT FUNDING PER FLOOD CONTROL RESOLUTION 2016-03

The Funding for the Project and Project Work is described as follows:

The District shall provide Five Hundred Forty-Two Thousand Sixty-Two Dollars ($542,062) following the effective date of the Agreement.

Said Funding shall be used as part of the City's share of Project and Project Work described within the Agreement.

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: City Clerk's Office

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Application for temporary liquor license extension of premises/patio permit

---

SUMMARY:
Applicant Noble Zubaid of 66 on 66 Bar and Grill, LLC dba Canyon 66 Restaurant and Lounge has submitted a temporary Application for Extension of Premises/Patio Permit for April 28, 2016 through May 1, 2016 located at 3100 E. Andy Devine in Kingman. **Staff recommends approval.**

FISCAL IMPACT:
None

STAFF RECOMMENDATION:
Staff recommends approval.

ATTACHMENTS:

Description

Application for Temporary Liquor License Extension of Premises/Patio Permit

REVIEWERS:

Department	Reviewer	Action	Date
City Clerk	Muhle, Sydney	Approved	3/21/2016 - 6:51 PM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 10:53 AM
City Manager	Dougherty, John	Approved	3/28/2016 - 1:20 PM

Arizona Department of Liquor Licenses and Control
800 W Washington 5th Floor
Phoenix AZ 85007-2934
www.azliquor.gov
(602) 542-5141

FOR DLLC USE ONLY
Date payment received:
____/____/____
CSR initials: _____

APPLICATION FOR EXTENSION OF PREMISES/PATIO PERMIT
This application must be returned to the Department of Liquor
(Notice: Allow 30-45 days to process permanent change of premises)

☐ Permanent change of area of service. **A NON-REFUNDABLE $50 FEE WILL APPLY.** Specific purpose for change:

_____

■ Temporary change for date(s) of: 4 / 28 / 16 through 5 / 01 / 16 List specific purpose for change:
We will be hosting River Run and Fun Run guests at our property with live entertainment.

1. Licensee's Name: 66 on 66 Bar & Grill, LLC dba Canyon 66 Restaurant & Lounge
   Last First Middle
2. Mailing Address: 3100 E Andy Devine Ave | Kingman | AZ | 86401
   Street City State Zip
3. Business Name: Canyon 66 Restaurant & Lounge License # 12083515
4. Business Address: 3100 E Andy Devine Ave | Kingman | AZ | 86401
   Street City State Zip
5. Contact phone: ([redacted] Business phone: (928) 529-5010
6. Email: noblezubaid@gmail.com
7. Is extension of premises/patio complete?
   ■N/A ☐Yes ☐No If no, what is your estimated completion date? ___/___/___
8. Do you understand Arizona Liquor Laws and Regulations?
   ■Yes ☐No
9. Does this extension bring your premises within 300 feet of a church or school?
   ☐Yes ■No
10. Have you received approved Liquor Law Training?
    ■Yes ☐No If yes, when does your Certificate expire? Date: 02/ 27/18
11. What security precautions will be taken to prevent liquor violations in the extended area?
    We will have staff on-property in the extension area monitoring guests.
12. **IMPORTANT**: ATTACH THE REVISED FLOOR PLAN CLEARLY DEPICTING YOUR LICENSED PREMISES AND WHAT YOU PROPOSE TO ADD.

Individuals requiring ADA accommodations call (602)542-9027.

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Engineering

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Payment to the Arizona Department of Transportation (ADOT) for Project ENG14-039

SUMMARY:
The bids for the Andy Devine pedestrian signal (City of Kingman Project Number ENG14-039, ADOT Project Number H861201C) were opened on February 26 and approved at the March 18 ADOT Transportation Board meeting. The total project cost is slightly higher than the original budget, and staff has received an invoice from ADOT for the project . The amount of $7,312.00 is needed to fully fund the project along with standard contingencies.

The original IGA allowed for a total amount of $333,798.00, of which $66,760.00 was the City's match. This match has been paid. Construction costs were originally budgeted at $256,768.00. Those costs have increased to $276,312.00, a difference of $19,544.00. Due to savings during the design phase, the overmatch of $19,544.00 can be reduced to the invoiced amount of $7,312.00

There are savings in the I-40 feasibility study which can be used to offset the overmatch for this project.

FISCAL IMPACT:
The Cost for this work will be a maximum of $7,312.00. The funding will consist of budgeted City funds as depicted in the FY 2016 CIP budget as noted above.

STAFF RECOMMENDATION:
Staff recommends authorizing the use of Capital Project funds in the amount of $7,312.00 to pay the invoice dated March 17, 2016.

ATTACHMENTS:

Description

Invoice March 17, 2016

REVIEWERS:

Department	Reviewer	Action	Date
Engineering	Henry, Greg	Approved	3/25/2016 - 5:40 PM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 10:55 AM
City Manager	Dougherty, John	Approved	3/28/2016 - 2:59 PM

ADOT

DTALA2016000100DT0016

Customer Name		INVOICE
Kingman, City Of		
Customer Number	Invoice Number	Invoice Date
DT0016	LA2016000100	03-17-16
	AR Dept:BP80	Due Date
	DTA:LA010	04-16-16
	Amount Due	Amount Enclosed
	$7,312.00	

Remit to:

ARIZONA DEPARTMENT OF TRANSPORTATION
Local Agency
206 S 17TH AVE
MAILDROP 203B
PHOENIX AZ 85007
United States

Bill to:

Kingman, City Of
310 N 4Th St
Kingman AZ 86401
United States

Payment Method: Check ☐ Money Order ☐

☐ Please check if address has changed. Write correct address on back of stub and attach with payment.

Please write Invoice No. on front of check or money order.
DO NOT MAIL CASH.

Please detach the above stub and return with your remittance

ADOT
ORIGINAL

Page 1 of 1
(Indicates pages within invoice only)

Customer Number	Original Invoice Date	Original Due Date
DT0016	03-17-16	04-16-16

Customer Name	Invoice Number	Invoice Date
Kingman, City Of	LA2016000100	03-17-16

Invoice Charges

Ref Line No.	Description	Billing Date	No. of Units	Unit of Measure	Unit Price	Charges/Credit
1	City overmatch for Construction	03-17-16				$7,312.00
					Total Invoice Charges	$7,312.00

Other Charges

Description	Date	Charges
	Total Other Charges	

Credit Payments Applied	$0.00
Total Amount Due	$7,312.00

Additional Notes:

City overmatch for Construction

Instructions

Please contact our office for payment and billing questions.

Contact:

LA - AR (602) 712-7534 accountsreceivable@azdot.gov

Leslie Carey

From: Sandra Simmons
Sent: Wednesday, March 16, 2016 3:35 PM
To: AccountsReceivable
Cc: Gregory Johnson
Subject: FW: Invoice Request - Kingman SR66 - H861201C
Attachments: 03.16.16 PIRT.pdf; REQUEST FOR INVOICE.doc

Categories: Les Carey

Accounts Receivable, please see Greg's request.

Greg, future requests need to go to Accounts Receivable, Resource Admin does not process invoices, we only add the budget after the funds are received.

Thank you,

Sandy Simmons
FMS Resource Admin Supervisor
Arizona Department of Transportation
206 S 17th Avenue, #200B
Phoenix, AZ 85007
602-712-8428
ssimmons@azdot.gov

ADOT
www.azdot.gov

From: Gregory Johnson
Sent: Wednesday, March 16, 2016 2:35 PM
To: Resource Admin
Cc: fmarbury@cityofkingman.gov
Subject: Invoice Request - Kingman SR66 - H861201C

RE: SR66, Andy Devine AV & First ST, Kingman
Proj#: H861201C

Attached is a Request for Invoice for the above mentioned project. This is for a City overmatch due to a higher construction bid from the low bid contractor.

Thanks,

Greg Johnson, Project Manager
Project Management Group
205 S. 17th Avenue, MD 614E
Phoenix, AZ. 85007

***REQUEST FOR INVOICE**

Local Agency Name:		City of Kingman
Program and sub-phase (TRACS):		H8612 01C
AMOUNT TO BE INVOICED		**$7,312**
Why are we invoicing:		
	JPA Number (if applicable)	
	Additional Design Fees for Contract Mod? Y or N	
	Additional PMDR? Y or N	
	Local's Construction funds? Y or N	City Overmatch for Construction
	For this request, is the Budget in place? Y or N	
	What is Current Budget?	$
	Final Budget per this request	$
Local Agency Contact Name:		Frank Marbury
	Email Address:	fmarbury@cityofkingman.gov

*Include Copy of PIRT Screen

Re-Run | <-- Back

PROJECT & SCHEDULE INFO

==Click HERE if this Info is Incorrect==

3/16/2016 2:11:56 PM

CPS ID: NZ1M

RTE	CO	MP	TRACS
66	MO	49.4	H861201C
			H861201D

COG \ MPO: WACOG

LOCAL TIP: KNG13-108

PROJECT NAME: SR 66 ANDY DEVINE AV & FIRST ST IN KINGMAN

BID OPENING: 2/5/2016

TYPE OF WORK: PEDESTRIAN CROSSING IMPROVEMENTS

DBE %: 05%

IGA ONLY:

PROJECT MANAGER: GREGORY JOHNSON 602-712-7774

5YR PLAN ITEM#s: Item Number

DIST	FY	LENGTH	PROJ BUDGET
K	16	0.2	$ 256,000

RECId (TPD):

FEDERAL ID #: SB -AZ1-2(002)T

RESOURCE #:

BID ADVERTISEMENT DATE: Advertised for bid on: 12/22/2015.

PROJECT TYPE: L

PROJECT COMMENTS: Lee Makler on 12/30/2015

Schedule | Team List | R/W | Journal | YourGroup

PRE DESIGN COMP:	NEPA APPROVAL:	P.E. FED AUTHORIZ: 09/27/2013 A	BID PACKG READY DATE: 11/23/2015 A
OPTIMUM START DATE:	NEPA RE-EVALUATION:	STAGE 1 PLANS:	BID AWARD DATE:
KICK-OFF MTNG DATE: 01/23/2014 A	ENVIRONMENTAL CLEARANCE: 06/09/2015 A	STAGE 2 PLANS:	EST CONST DURATION:
MAP / SURVEY COMP.:	RIGHT OF WAY CLEARANCE: 08/12/2015 A	STAGE 3 PLANS: 10/24/2014 A	TRAFFIC CNTRL PLANS:
VALUE ANALYSIS:	UTILITY / RR CLEARANCE: 08/20/2015 A	STAGE 4 PLANS: 07/07/2015 A	ACTUAL AWARD DATE:
GEOTECH SURVEY COMP:	MATERIAL MEMO COMP: 04/14/2015 A	STAGE 5 PLANS: 08/20/2015 A	CONSTRUCTION COMPLETE:

(All dates are projected, unless an "A" Follows. "A" = "ACTUAL FINISH")

Click Blue Labels to view AIDW Documents OR VIEW ALL DOCS

Project Scheduler is Jeff Ross @ 712-8477

Email Project Scheduler

EXIT

Click to go to

View PRB Actions | View PM Report | View Project Reference | DICE Application

View Schedule | View E2C2 Info | View EPG PTS Report | View DICE Report

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Engineering Services

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Resolution 5007: approving a sewer extension variance for 569 Anson Smith Road (ENG16-0009)

SUMMARY:
On March 24, 2016, the Municipal Utility Commission reviewed a request from Gene and Jennifer Chambers for a sewer extension variance to 569 W. Anson Smith Road. The subject property is approximately 1.14 acres in size and is located at the intersection of Anson Smith Road and N. Harvard Street. The onsite septic system on the property is failing and the owners have been advised that a sewer extension is required in accordance with the Utility Regulations. The Chambers have submitted a letter requesting that the sewer extension occur only along the portion of the Anson Smith frontage adjacent to the home.

Section 7.2 (A) of the Utility Regulations requires that the sewer extension take place along the total frontage of the property to be served, which includes both the Anson Smith and Harvard Street fronts. The subject property has approximately 209 feet of frontage on each street. In 2014, Council approved Resolution No. 4906, which allowed a corner lot to extend across one full frontage only.

Resolution No. 5007 approves a variance to the Utility Regulations by allowing the sewer extension to occur across the Anson Smith property frontage instead of the total property frontage. The Municipal Utility Commission voted 5-0 to recommend approval of this sewer extension exception, citing the previous variance.

FISCAL IMPACT:
Expansion of the sewer system is vital to the sewer debt payments and customer rates.

STAFF RECOMMENDATION:
The Utility Commission voted 5-0 to recommend approval of a sewer extension variance to 569 Anson Smith Road. Staff recommends approval of Resolution No. 5007, requiring the sewer extension across the full frontage of Anson Smith Road with no extension in N. Harvard Street.

ATTACHMENTS:

Description

Resolution No. 5007

March 24 MUC Report

REVIEWERS:

Department	Reviewer	Action	Date
Engineering	Henry, Greg	Approved	3/28/2016 - 12:39 PM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 12:47 PM
City Manager	Dougherty, John	Approved	3/28/2016 - 3:09 PM

CITY OF KINGMAN
RESOLUTION NO. 5007

A RESOLUTION BY THE MAYOR AND COMMON COUNCIL OF THE CITY OF KINGMAN, ARIZONA, GRANTING A SEWER EXTENSION VARIANCE TO 569 W. ANSON SMITH ROAD (TAX PARCEL 305-14-010D) FOR GENE AND JENNIFER CHAMBERS

WHEREAS, Gene and Jennifer Chambers have submitted a request for a sewer extension variance to 569 W. Anson Smith Road (Tax Parcel 305-14-010D). This property is located inside the City Limits in Section 12, Township 21 North, Range 17 West. The private onsite septic system located on the property has failed to work properly; and

WHEREAS, Section 4.2 (c) in the City of Kingman Utility Regulations states:

> "*After a public sewer is available, no permits shall be issued to construct any private sewage disposal system*"; and

WHEREAS, Section 7.2 (A) (2) in the City of Kingman Utility Regulations states:

> *"A public water or sewer extension shall be required to extend across the total frontage of the property to be served"*; and

WHEREAS, the subject property is a corner lot fronting both Anson Smith Road and N. Harvard Street, and Section 7.2 (A) (2) requires the sewer extension across both frontages; and

WHEREAS, the Municipal Utility Commission reviewed this request at their March 24, 2016 meeting and recommended that the sewer extension variance be approved.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Common Council of the City of Kingman, Arizona, that the sewer extension to 569 W. Anson Smith Road (Tax Parcel 305-14-010D) is hereby approved as follows:

1. The sewer extension shall extend across the full length of the Anson Smith Road property frontage only.

PASSED AND ADOPTED by the Mayor and Common Council of the City of Kingman, Arizona, on this 5th day of April 2016.

ATTEST:

_____
Sydney Muhle, City Clerk

APPROVED:

_____
Richard Anderson, Mayor

APPROVED AS TO FORM:

_____
Carl Cooper, City Attorney

CITY OF KINGMAN
MUNICIPAL UTILITY COMMISSION
COMMUNICATION

TO: Chairman and Commission Members

FROM: Engineering Services

MEETING DATE: March 24, 2016

AGENDA SUBJECT: Request for variance to waive the requirement to extend sewer across the frontage of 569 Anson Smith Road, ENG16-0009

SUMMARY: Staff has received a request for a variance to the Utility Regulations regarding extension of sewer mains. The property in question is a corner lot located at the intersection of Anson Smith Road and N. Harvard Street with an address of 569 Anson Smith Road and a parcel number of 305-14-010D. The property owners, Gene and Jennifer Chambers, have submitted a letter requesting (1) to waive the requirement to extend sewer in N. Harvard Street, and (2) to extend sewer across only a portion of the Anson Smith frontage.

The subject property is approximately 1.14 acres in size and has a single family home built in 1967, which utilizes a septic disposal system. It is understood that the septic system has failed. There is an existing manhole at the intersection of Harvard Street and Anson Smith Road, which will serve as the point of sewer connection.

Section 7.2 A (2) of the Utility Regulations requires that the sewer extension be made across the frontage of both Anson Smith Road and N. Harvard Street. In 2014, the City reviewed a similar request for a property at Airfield Avenue and Apache Drive (ENG14-026). Ultimately, City Council required the 2014 applicant to extend a sewer main across one full frontage.

Staff recommends requiring a sewer extension across the full property frontage of Anson Smith Road – a total distance of approximately 240 feet.

ATTACHMENTS: MUC Application
Request for Variance Letter of March 4, 2016
Maps
Utility Regulations Section 7.2 A (2)

CITY OF KINGMAN

ENGINEERING DEPARTMENT

MUNICIPAL UTILITY COMMISSION
UTILITY SERVICE APPLICATION FOR REVIEW

310 N. 4th Street Kingman, AZ 86401 Ph: (928) 753-8122 Fax: (928) 753-8118

Date: 3/3/16

Applicant Information:

Name: GENE A & JENNIFER CHAMBERS Company Name:

Phone: (928) 757-7240 Fax:

Address: PO Box 6342 City, State, Zip:

Email: genejen@hotmail.com

Agent Information (if applicable):

Name: Company Name:

Phone: Fax:

Address: City, State, Zip:

Email:

Application For:

☐ Water Service to Unsubdivided Parcel ($250 application fee)

☐ Water Service to Subdivision ($250 application fee)

☒ Other (please explain or attach additional sheets as needed): SEWER CONNECTION

Site/Project Information:

Mohave County Tax Parcel Number: 305-14-010D

Property Address : 569 ANSON SMITH RD

Proposed Facility or Use for Water Request:

Applicant Signature: Jennifer Chambers

CITY OF KINGMAN ENGINEERING DEPARTMENT USE ONLY

Date Received: 3-4-16 Received By: mgs Date Admin Complete: 3-4-16

COK Project Number: ENG16-0009 Fee Paid:

Check Number: Charge Card Type: Receipt Number:

City of Kingman

310 Nth 4th St

Kingman Az. 86401

Request for Variance – Sewer Installation

We, the owners of property in the City of Kingman Parcel #305-14-010D

Address 569 W. Anson Smith Rd. Kingman Az. 86409 hereby request a variance

To NOT have to install a sewer line on N. Harvard St. (3200 block) Kingman Az 86409.

We request a permit to install a sewer line on W. Anson Smith Rd. (500 block) only

In order to service the above referenced property as far as the residence, not to the property line.

Signed Gene A. Chambers

Gene A. Chambers

Signed Jennifer Chambers

Jennifer Chambers

CITY OF KINGMAN
ENGINEERING

MAR 0 4 2015

RECV'D _____

Project ENG16-0009
569 Anson Smith Road
Gene and Jennifer Chambers

N
W
E
S
3355 N HARVARD ST
305-14-001B
ASTOR AVE
626 SYCAMORE AVE 000000000
305-16-031
3335 N HARVARD ST KINGMAN 86401
305-14-010F
Subject Property
N HARVARD ST
305-16-028
21N 17W
305-14-010E
305-14-010A
12
305-14-010D
569 ANSON SMITH RD 000000000
3270 N HARVARD ST KINGMAN 864090000
Requested
Sewer
Extension
+/- 115 Feet
ANSON SMITH RD
Recommended
Sewer
Extension
+/- 240 Feet
305-14-013C
305-51-070
305-51-069
305-51-068
305-51-067
305-51-066
305-51-065
VISTA GRANDE DR
305-51-132B
8" PVC

7.2 LOCATION

A. Generally

1. All extensions to the City of Kingman water and sewer system shall begin at the nearest point determined to be adequate by the Water and Wastewater Superintendents. Generally water system extensions shall not be connected to transmission mains. If connection is allowed a valve shall be inserted in the transmission main adjacent to proposed tee if necessary to satisfy applicable valve spacing requirements for distribution systems. [Ord.1756, 6/18/13]

2. A public water or sewer extension shall be required to extend across the total frontage of the property to be served. In instances where, due to topography, location, or surroundings, the engineering design shows that the water or sewer line can not be extended further to serve additional properties, the City Engineer may allow the developer to end the line without crossing the total frontage.

   a. The line must be constructed to provide for any extensions to property that can be developed.

   b. In the case of a sewer line, a cleanout shall be provided at the end of the extension. [Ord. 7l4, 8/0l/88]

   c. In the case of a water line, the line shall be looped to the system or provided with a fire hydrant in the discretion of the Water Superintendent. [Ord. 7l4, 8/0l/88; Ord.1756, 6/18/13]

   d. Any developer who is dissatisfied with a decision under this paragraph may appeal to Council.

   e. The requirement to extend a water or sewer line across the total frontage of the property to be served does not apply at the Kingman Airport Industrial Park. [Ord 759, 8/07/89]

B. Public water or sewer extensions shall be installed in dedicated public rights-of-way. Extensions may be constructed in open easements upon approval of the Water or Wastewater Superintendent. [Ord. 701, 4/04/88; Ord.1756, 6/18/13]

]

7.3 DESIGN

A. Minimum Size

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Engineering Services

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Consideration of Amendment 3 to Engineering Contract ENG14-084

SUMMARY:
On March 17, 2015, Council approved construction contract ENG14-084 with Freiday Construction, Inc. to begin Phase One of a series of water and sewer projects throughout the City. Staff has previously recommended that the CMAR project be broken into separate construction phases. The third phase will include the following new projects:

ENG16-0002: Water Line Extension in Southern Avenue East of Jackson Street ($16,380.00)

ENG14-094: Water Line Replacement in Spruce Street and First Street ($65,007.00)

ENG14-095: Water Line Pressure Reducing Valve on 14" Water Line near Southside Park ($74,800.00)

ENG15-002: Castle Rock Tank Water Surge Tank ($152,500.00)

This amendment includes cost modifications to the following current projects:

ENG12-021: Sewer Line Extension in Southern Avenue, Jackson to Monroe. Increase project cost by $13,786.66 for a total project cost of $58,267.19 for staff recommended alignment change to avoid conflicts with existing utilities.

ENG14-088: Sewer Line Extension in Southern Avenue, Monroe to Adams. Increase project cost by $15,204.34 for a total project cost of $36,705.14 for staff recommended alignment change to avoid conflicts with existing utilities.

ENG14-105: Castle Rock forebay restoration. Increase project cost by $13,405.78 for a total project cost of $293,732.23 for staff recommended lead paint removal, containment and disposal for south Castle Rock storage tank.

ENG13-045: Stirrup Drive water line replacement. Increase project cost by $16,521.00 for a total project cost of $168,810.00 for staff recommended installation of additional fire hydrant, additional air release valve, and increased trench asphalt patching due to rocky subgrade conditions and poor pavement edges.

Amendment No. 3 will add an additional 180 calendar days to the construction contract time, extending it to September 27, 2016.

FISCAL IMPACT:
Amendment No. 3 will increase the Contract ENG14-084 cost by $367,604.78 and will be paid as follows:
$28,991.00 from the Sewer Line Expansion Fund (512-3720-536.92-93)
$338,613.78 from the Water Distribution Line Fund (510-3515-590.92-95)

STAFF RECOMMENDATION:
Staff recommends approval of Amendment 3 to Construction Contract ENG14-084

ATTACHMENTS:

Description
Amendment No. 3 and Exhibits nb

REVIEWERS:

Department	Reviewer	Action	Date
Engineering	Prior, Mike	Approved	3/28/2016 - 2:51 PM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 2:52 PM
City Manager	Dougherty, John	Approved	3/28/2016 - 2:56 PM

AMENDMENT NO. 3

BETWEEN THE CITY OF KINGMAN AND FREIDAY CONSTRUCTION, INC. FOR CONSTRUCTION MANAGER AT RISK SERVICES RELATED TO THE CONSTRUCTION OF WATER AND SEWER PROJECTS ENGINEERING CONTRACT ENG14-084

This Amendment shall be made to the Construction Services Agreement dated March 18, 2015 by and between the City of Kingman (City) and Freiday Construction, Inc. (Contractor).

The effective date of this Amendment is _____, 2016.

The undersigned agree to the following additions to the original scope of work as follows:

1. Freiday Construction, Inc. agrees to furnish labor, material and equipment necessary for or incidental to the construction and completion of all work for various water and sewer projects as follows: ENG16-0002, ENG14-094, ENG14-095, ENG15-002 and modifications to ENG12-021, ENG14-088, ENG14-105, ENG13-045 as further described on the fee proposals attached as Exhibit A. The City agrees to pay Freiday Construction, Inc. a Not to Exceed sum of $367,604.78 as compensation for this work.

2. The new completion date for all Work under the Agreement shall be September 27, 2016.

3. Both parties agree that the above described work shall be in accordance with the MAG Standards and Specifications, the 2012 International Building Code (IBC) and other applicable City Ordinances.

CITY OF KINGMAN, ARIZONA Attest:

_____ _____

RICHARD ANDERSON, MAYOR SYDNEY MUHLE, CITY CLERK

FREIDAY CONSTRUCTION, INC.

_____

WILLIAM FREIDAY, PRESIDENT

State of Arizona)
)ss
County of Mohave)

Subscribed and Sworn to Before Me

This _____ day of_____, 2016.

_____
Notary Public

My Commission Expires:_____

EXHIBIT A

FREIDAY CONSTRUCTION, INC.

GMP PROPOSALS

FREIDAY
CONSTRUCTION, Inc.

3360 North Bank Street
P.O. Box 4267
Kingman, AZ. 86402
(928) 757-2176
(928) 757-4638 FAX
freiday@freidayconstruction.com

March 23, 2016

Greg Henry
COK Engineering Dept.
220 N. Fourth St.
Kingman, AZ. 86401

Greg:

The GMP for Southern Ave. waterline extension (ENG 16-0002) should be $12,380.00, contingency should be $2,000.00 each, for a total GMP of $16,380.00.

Sincerely,

Bill Freiday

nms

FREIDAY
CONSTRUCTION, Inc.

3360 North Bank Street
P.O. Box 4267
Kingman, AZ. 86402
(928) 757-2176
(928) 757-4638 FAX
freiday@freidayconstruction.com

March 23, 2016

Greg Henry
COK Engineering Dept.
220 N. Fourth St.
Kingman, AZ. 86401

Greg:

The GMP for the Spruce Street Waterline (ENG 14-094) should be $65,007.00.

This includes $6,000.00 in contingencies.

Sincerely,

Bill Freiday

nms

FREIDAY
CONSTRUCTION, Inc.

3360 North Bank Street
P.O. Box 4267
Kingman, AZ. 86402
(928) 757-2176
(928) 757-4638 FAX
freiday@freidayconstruction.com

March 23, 2016

Greg Henry
COK Engineering Dept.
220 N. Fourth St.
Kingman, AZ. 86401

Greg:

The GMP for the 14" PRV ENG 14-095 should be $54,800.00. That is $36,800.00 in materials & $18,000.00 in equipment & labor.

The GMP includes removal of old PRV & F.H. & addition of new F.H., TEE & Valve on the south side of the tracks.

There are still several items undecided currently, so I would suggest $10,000.00 a piece for contingency, for a total GMP of $74,800.00.

Sincerely,

Bill Freiday

nms

FREIDAY
CONSTRUCTION, Inc.

3360 North Bank Street
P.O. Box 4267
Kingman, AZ. 86402
(928) 757-2176
(928) 757-4638 FAX
freiday@freidayconstruction.com

March 23, 2016

Greg Henry
COK Engineering Dept.
220 N. Fourth St.
Kingman, AZ. 86401

Greg:

The GMP for Castle Rock Surge Tank should be $152,500.00 (ENG 15-002), including $8,675.00 a piece for contingencies because we have a lot of unknowns.

Sincerely,

Bill Freiday

nms

FREIDAY
CONSTRUCTION, Inc.

3360 North Bank Street
P.O. Box 4267
Kingman, AZ. 86402
(928) 757-2176
(928) 757-4638 FAX
freiday@freidayconstruction.com

March 23, 2016

Greg Henry
COK Engineering Dept.
220 N. Fourth St.
Kingman, AZ. 86401

Greg:

We need to amend the GMP by $13,786.66 for Southern Ave. Sewer line (ENG 12-021) to a total of $58,267.19. This includes $4,000.00 in contingencies.

The reason for the increase is that the planned alignment was completely used up by telephone & gas lines, requiring us to divert into the pavement & necessitate crossing several additional lines with each sewer service.

Sincerely,

Bill Freiday

nms

FREIDAY
CONSTRUCTION, Inc.

3360 North Bank Street
P.O. Box 4267
Kingman, AZ. 86402
(928) 757-2176
(928) 757-4638 FAX
freiday@freidayconstruction.com

March 23, 2016

Greg Henry
COK Engineering Dept.
220 N. Fourth St.
Kingman, AZ. 86401

Greg:

We need to amend the GMP by $15,204.34 for Southern Ave. Sewer line (ENG 14-088) to a total of $36,705.14. This includes $3,891.13 in contingencies.

The reason for the increase is that the planned alignment was completely used up by telephone & gas lines, requiring us to divert into the pavement & necessitate crossing several additional lines with each sewer service.

Sincerely,

Bill Freiday

nms

FREIDAY
CONSTRUCTION, Inc.

3360 North Bank Street
P.O. Box 4267
Kingman, AZ. 86402
(928) 757-2176
(928) 757-4638 FAX
freiday@freidayconstruction.com

March 23, 2016

Greg Henry
COK Engineering Dept.
220 N. Fourth St.
Kingman, AZ. 86401

Greg:

This letter is to advise you that after completion of the Castle Rock Tank Rehabilitation (ENG 14-105) job there was a cost overrun of $13,405.78 (See attached breakdown).

The overrun is entirely due to the necessity of replacing the bottom of the north tank. It was unexpected & exceeded our available contingencies.

I apologize for the overrun, but no one could have predicted it.

Sincerely,

Bill Freiday

nms

FREIDAY
CONSTRUCTION, Inc.

3360 North Bank Street
P.O. Box 4267
Kingman, AZ. 86402
(928) 757-2176
(928) 757-4638 FAX
freiday@freidayconstruction.com

March 23, 2016

Greg Henry
COK Engineering Dept.
220 N. Fourth St.
Kingman, AZ. 86401

Greg:

The GMP for the Stirrup Drive Water line replacement (ENG 13-045) should increase $16,521.00, for a total project cost of $168,810.00.

This increase is for staff recommended installation of additional fire hydrant, additional air release valve & increased trench asphalt patching due to rocky subgrade conditions & poor pavement edges.

Sincerely,

Bill Freiday

nms

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Rich Ruggles, Development Services

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Proposed Resolution 5008: approving the release of a portion of the cash escrow assurance for Sunrise Business Park, Tract 6037

SUMMARY:
The final plat, improvement plans, and surety for Sunrise Business Park, Tract 6037 were approved under Resolution No. 4964 on July 21, 2015. This subdivision is located along the north side of Detroit Avenue, east of Western Avenue and consists of five commercial lots on 10.74 acres. The final plat and surety in the form of a cash escrow assurance agreement in the amount of $449,437.30 held by Pioneer Title Agency, Inc., was recorded on July 29, 2015. $50,000 was released from the assurance in October for the completion of rock excavation during grading.

Mohave Engineering Associates, Inc., project engineer, on behalf of the property owner, Lingenfelter Family Trust, has requested the approval of another release of a portion of the cash escrow assurance. The request is to release $116,021.00 for the completion of curbs, gutters and sidewalks, as well as utility conduit within the subdivision.

The City Engineer and Public Works inspectors are in the process of verifying that the aforementioned improvements are completed in compliance with the terms of the final plat and requirements of the City of Kingman Subdivision Ordinance.

FISCAL IMPACT:
None expected.

STAFF RECOMMENDATION:
Approve Resolution No. 5008

ATTACHMENTS:

Description
Resolution No. 5008
Request for Partial Release of Assurances

REVIEWERS:

Department	Reviewer	Action	Date
Development Services	Jeppson, Gary	Approved	3/28/2016 - 5:43 PM

City Attorney	Cooper, Carl	Approved	3/29/2016 - 10:22 AM
City Manager	Dougherty, John	Approved	3/28/2016 - 6:03 PM

WHEN RECORDED HOLD FOR
KINGMAN CITY CLERK
310 N. 4th Street
Kingman, Arizona 86401

CITY OF KINGMAN
RESOLUTION NO. 5008

A RESOLUTION BY THE MAYOR AND COMMON COUNCIL OF THE CITY OF KINGMAN, ARIZONA; RELEASING A PORTION OF THE CASH ESCROW ASSURANCE AGREEMENT FOR SUNRISE BUSINESS PARK, TRACT 6037 AND PRESCRIBING CONDITIONS

WHEREAS, the final plat, improvement plans, and a cash escrow assurance agreement for Sunrise Business Park, Tract 6037 was approved by the City of Kingman Common Council under Resolution No. 4964 on July 21, 2015 and

WHEREAS, the final subdivision plat for Sunrise Business Park, Tract 6037 was recorded on July 29, 2015 at Fee No. 2015033788, and

WHEREAS, a financial surety for Sunrise Business Park, Tract 6037 in the form of a cash escrow assurance agreement in the amount of $449,437.30 held by Pioneer Title Agency, Inc., was recorded on July 29, 2015 at Fee No. 2015033790, and

WHEREAS, on October 20, 2015 the City of Kingman Common Council released $50,000.00 from the cash escrow for the completion of grading based on the approved Engineer's Opinion of Probable Cost, and

WHEREAS, Mohave Engineering Associates, Inc., a licensed civil engineering firm in the State of Arizona, has requested on behalf of the property owner, Lingenfelter Family Trust dated 1/31/1992, the release a portion of the remaining cash escrow agreement in the amount of $116,021.00 for the completion of curb, gutter and sidewalks, driveways and utility conduit, based on the approved Engineer's Opinion of Probable Cost, and

WHEREAS, the improvements have been inspected by the City Engineer and Public Works Inspectors and were found to be in compliance with the terms of the final plat and the requirements of the City of Kingman Subdivision Ordinance.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Common Council of the City of Kingman, Arizona: That an amount equal to $116,021.00 shall be permitted to be released from the cash escrow assurance agreement for Sunrise Business Park, Tract 6037.

PASSED AND ADOPTED by the Honorable Mayor and Common Council of the City of Kingman, Arizona this 5th day of April, 2016.

ATTEST:

_____
Sydney Muhle, City Clerk

APPROVED:

_____
Richard Anderson, Mayor

APPROVED AS TO FORM:

_____
Carl Cooper, City Attorney

MOHAVE ENGINEERING ASSOCIATES, INC.

Land Development Consultants

Civil Engineering
Land Surveying
Materials Testing

Date 2016-03-28

Rich Ruggles, Principal Planner
City of Kingman
310 North 4th Street
Kingman, AZ 86401

Re: Sunrise Business Park Tract 6037, MEAI Project # 09-123, Second partial assurance release request.

Dear Mr Ruggles,

Please find the following items for your review and consideration:

- Construction and Assurance Release Status document dated 03-23-2016

A partial assurance has been released in the amount of $50,000 (for item # 21 "Rock excavation during grading" as included in the approved cost estimate dated 07-21-2015) by the City council through resolution # 4977 dated 10-20-2015. The intent of this letter is to request a second partial assurance release for the items (2,3,10, and 22) indicated in the attached Construction and Assurance Release Status document for the amount of **$116,021**

Please do not hesitate to contact Mohave Engineering Associates, Inc. if you have any questions or need additional information.

Respectfully,

Jaimini Upadhyaya
Encl.
cc: file

Jaimini A Upadhyaya

Registered Professional Engineer (Civil)
CERTIFICATE NO
51369
JAIMINI
UPADHYAYA
Date Signed 03-28-16
ARIZONA U.S.A.
Expires 9/30/2016

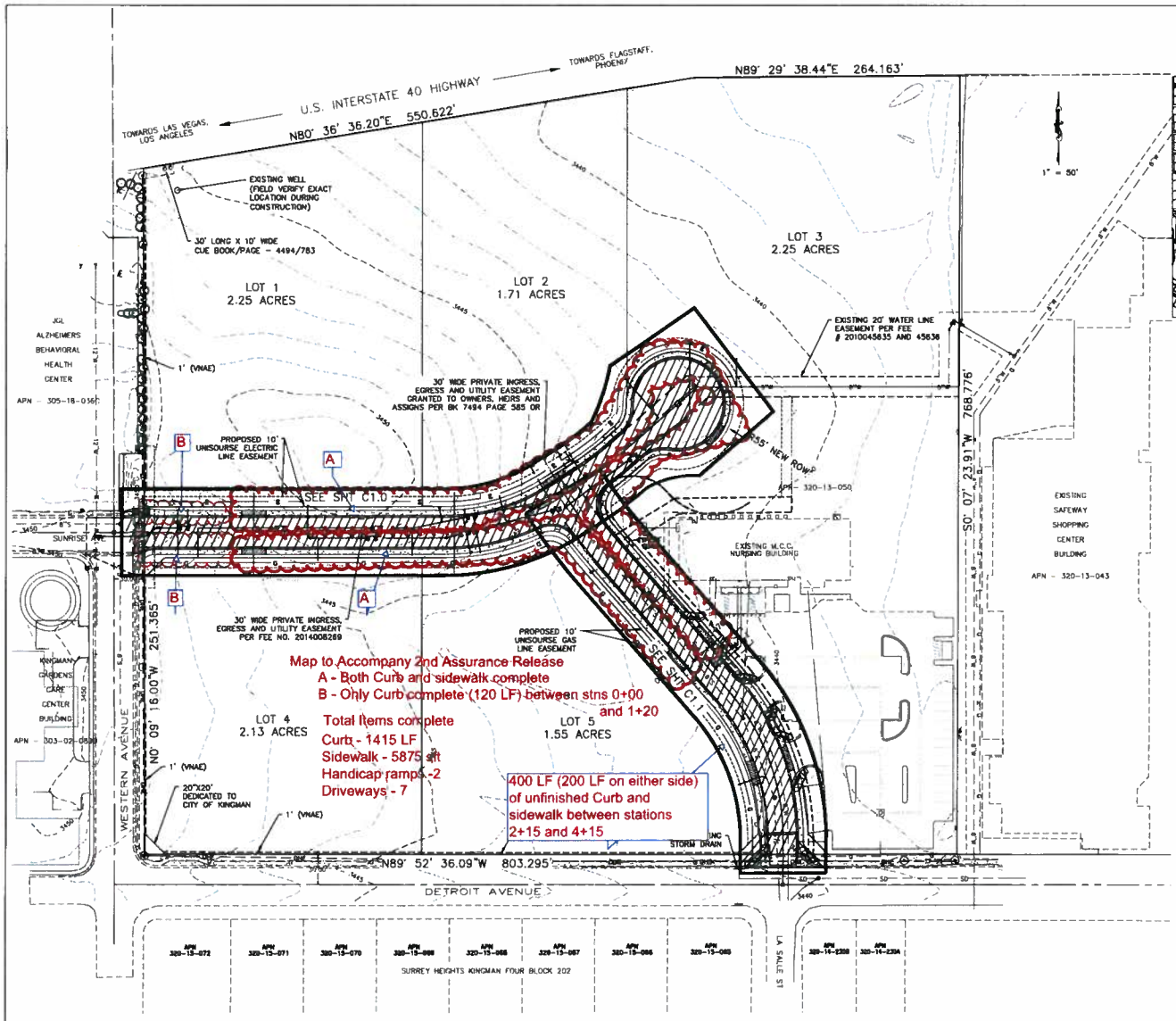
2153 Gordon Drive • Suite I • Kingman , AZ 86409
TEL 928-753-2627 • FAX 928-753-9118 • www.mohave-engineering.com

MOHAVE ENGINEERING ASSOCIATES, INC.
CIVIL ENGINEERING • LAND SURVEYING

Construction and Assurance Release Status
Sunrise Business Park Improvements
03/25/16

	Original Assurance Quantities and Cost				Assurance Release #1 10/20/15	Assurance Release #2 03/23/16	Remaining
Civil Improvements	**Quantity**	**Unit**	**Unit Price**	**Amount**			
1. 3" AC/6" ABC/Subgrade	3393	S.Y.	$21.00	$71,253.00	$0	$0	$71,253
2. 4" Sidewalk (5 foot wide)	8560	S.F.	$4.50	$38,520.00	$0	$26,437	$12,083
3. Type "A" curb and Gutter	1815	L.F.	$14.00	$25,410.00	$0	$19,810	$5,600
4. Mass Grading (max of cut and fill)	2850	C.Y.	$4.00	$11,400.00	$0	$0	$11,400
5. 8" PVC water line	452	L.F.	$26.00	$11,752.00	$0	$0	$11,752
6. 8" PVC sewer line	454	L.F.	$24.00	$10,896.00	$0	$0	$10,896
7. Sewer Manhole	3	E.A.	$3,000.00	$9,000.00	$0	$0	$9,000
8. Fire Hydrant	2	E.A.	$2,500.00	$5,000.00	$0	$0	$5,000
9. New PRV	1	E.A.	$8,000.00	$8,000.00	$0	$0	$8,000
10 New sidewalk ramps (LaSalle/Detroit) (Western/Sunrise), (Sunrise/LaSalle)	5	E.A.	$3,000.00	$15,000.00	$0	$6,000	$9,000
11 Single Water services	5	E.A.	$600.00	$3,000.00	$0	$0	$3,000
12 Sewer services	5	E.A.	$700.00	$3,500.00	$0	$0	$3,500
13 New Driveways on MCC	2	E.A.	$3,000.00	$6,000.00	$0	$0	$6,000
14 8" DIP water line	122	L.F.	$32.00	$3,904.00	$0	$0	$3,904
15.8" DIP sewer line	20	L.F.	$30.00	$600.00	$0	$0	$600
16-New valley gutter on Detroit/LaSalle	60	S.F.	$4.00	$240.00	$0	$0	$240
17 Traffic signs (onsite and offsite)	21	E.A.	$250.00	$5,250.00	$0	$0	$5,250
18 Stop bars	3	E.A.	$100.00	$300.00	$0	$0	$300
19 Catch basin and inlet	4	E.A.	$3,500.00	$14,000.00	$0	$0	$14,000
20 New 18" storm drain pipe	303	L.F.	$32.00	$9,696.00	$0	$0	$9,696
21 Rock excavation during grading	1	L.S.	L.S	$50,000.00	$50,000	$0	$0
22 New driveways for 5 lots	9	E.A.	$3,000.00	$27,000.00	$0.00	$21,000	$6,000
Sub Total Civil Improvements				**$329,721.00**	**$50,000**	**$73,247**	**$206,474**
Utility Conduit							
Electrical line extension	5	E.A.	$1,500	$7,500.00	$0	$7,500	$0
Gas line Extension	5	E.A.	$1,000	$5,000.00	$0	$5,000	$0
Telephone line	5	E.A.	$700	$3,500.00	$0	$3,500	$0
Sub Total Utilities				**$16,000.00**	**$0.00**	**$16,000**	**$0**
Total Improvements				**$345,721.00**	**$50,000**	**$89,247**	**$206,474**
Total Improvements @ 130%				**$449,437.30**	**$50,000**	**$116,021**	**$283,416**

2153 Gordon Drive • Suite I • Kingman , AZ 86409
TEL 928-753-2627 • FAX 928-753-9118 • www.mohave-engineering.com



Map to Accompany 2nd Assurance Release
A - Both Curb and sidewalk complete
B - Only Curb complete (120 LF) between stns 0+00 and 1+20

Total Items complete
Curb - 1415 LF
Sidewalk - 5875 sft
Handicap ramps - 2
Driveways - 7

400 LF (200 LF on either side) of unfinished Curb and sidewalk between stations 2+15 and 4+15

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:
PIONEER TITLE AGENCY INC. UNDER THE LINGENFELTER FAMILY TRUST DATED 01/31/1992, NOT PERSONALLY, HAS SUBDIVIDED UNDER THE NAME OF "SUNRISE BUSINESS PARK, TRACT 8037". THE ABOVE DESCRIBED PROPERTY WITHIN THE CITY OF KINGMAN, AS SHOWN AND PLATTED HEREON, AND HEREBY PUBLISHES THIS PLAT AS THE PLAT OF "SUNRISE BUSINESS PARK, TRACT 8037", AND HEREBY DECLARES THAT THE SURVEY AND STAKING THEREOF INTO LOTS, BLOCKS, PARCELS, STREETS AND EASEMENTS AS APPEARS ON THIS PLAT IS WITH THE FREE CONSENT AND ACCORDING TO THE DESIRES OF THE UNDERSIGNED OWNER AND PROPRIETOR; THAT THE FOREGOING IS A CORRECT PLAT OF SAID SUBDIVISION AND STAKED INTO LOTS, BLOCK, PARCELS AND EASEMENTS, AND THAT THE DIMENSIONS OF SAME ARE CORRECTLY SHOWN BY FIGURES REPRESENTING FEET AND HUNDREDTHS OF A FOOT AND THE COURSES OF THE LOTS, BLOCKS, PARCELS, STREETS AND EASEMENTS ARE CORRECTLY SHOWN HEREON, AND THAT THE OWNER HEREBY GRANTS TO THE CITY OF KINGMAN AND DULY FRANCHISED UTILITY COMPANIES USE OF THE EASEMENTS WITHIN THE BOUNDARIES OF SAID SUBDIVISION AS SHOWN ON THE PLAT, AND DEDICATES THE STREETS TO THE PUBLIC FOR PUBLIC ROADWAY USE AS SHOWN HEREON TO THE PUBLIC AND THE CITY OF KINGMAN FOR PUBLIC UTILITY PURPOSES.

FLOOD ZONE

FEMA FLOOD ZONE "X" PER COMMUNITY PANEL NUMBER 04015C DATED 11/18/2009. THESE AREAS ARE DETERMINED TO BE OUTSIDE OF THE ANNUAL CHANGE FLOOD PLAIN

EXISTING ZONING AND LAND USE

ZONING - C3
LAND USE - COMMERCIAL SERVICE BUSINESS

GEOTECHNICAL REPORT

(FOR THE EXISTING MCC NURSING SCHOOL BUILDING)
VANN ENGINEERING
9013 N 24TH AVE. SUITE 7
PHOENIX AZ 85021-2851
TEL- 602-943-8997
FAX- 602-943-7179
REPORT# 1999 DATED 07/15/2009

ADDITIONAL GEOTECHNICAL REPORT PREPARED BY VANN ENGINEERING DATED 11-14-2014, PROJECT # 23333, 9013 NORTH, 24TH AVENUE, SUITE 7, PHOENIX, AZ 85021, TEL - 602-9436997

PROJECT AND LEGAL DESCRIPTION

COMMERCIAL DEVELOPMENT OF 5 (LOTS 1 THRU 5) LOTS AS SHOWN ON THIS PLAN CONFORMING TO EXISTING ZONING AND LAND USE DESIGNATION T21N R16W SEC 7 THAT PORTION OF GOV'T LOT 12 BOUNDED ON THE WEST BY WESTERN AVE, ON THE SOUTH BY DETROIT AVE AND LYING ON THE SOUTH SLY RIGHT OF WAY LINE OF I-40 TOPOCK-KINGMAN HIGHWAY AND WEST OF THE FOLL DESCRIBED LINE: COMM AT A POINT ON THE WEST SEC LINE 500 DEG 25' 13 E 622.44' FROM THE NW SEC CORNER; THE N80 DEG 28'58E 580.85'; THE N89 DEG 20'02 E 264.12' TO THE TRUE POB; THE S00 DEG 02'52E TO A POINT ON THE NORTH LINE OF DETROIT AVE DIVIDED AS PARCEL A-2 ON RS 39/28 6/2/09 2009-033037 CONT (320-13-050 & 51) 2010 TAX ROLL

DATUM

CITY OF KINGMAN

TOPOGRAPHY

MEAN DATED 2007
SUPPLEMENTAL TOPOGRAPHY BY MEAN DATED 11-07-2014

SHEET INDEX

C0.0	COVER SHEET
C0.1	SPECS AND DETAILS
C0.2	SPECS AND DETAILS
C0.3	EXISTING CONDITIONS/REMOVAL PLAN
C1.0	PLAN AND PROFILE FOR SUNRISE AVE
C1.1	PLAN AND PROFILE FOR LASALLE ST
C1.2	LASALLE STREET CROSS SECTIONS
C1.3	TRENCH DRAIN DETAILS
C2.0	UTILITY PLAN
C2.1	PLAN AND PROFILE FOR WATER AND SEWER
C2.2	WATERLINE TEE ADJUSTMENT
C3.0	GRADING AND DRAINAGE PLAN
C3.1	GRADING AND DRAINAGE PLAN
C3.2	CROSS SECTIONS/GRADING NOTES
C4.0	SIGNING AND STRIPING PLAN

SUBMITTAL AND REVISION TRACKING

PLAN SEAL DATE	DESCRIPTION
12-05-2014	1ST SUBMITTAL TO COK (FINAL PLAT)
03-20-2015	2ND SUBMITTAL TO COK (FINAL PLAT)
05-28-2015	3RD SUBMITTAL TO COK (FINAL PLAT)
06-24-2015	4TH SUBMITTAL TO COK (FINAL PLAT)
07-06-2015	5TH SUBMITTAL TO COK (FINAL PLAT)

VICINITY MAP

TRAFFIC IMPACT ANALYSIS REPORT

TRAFFIC IMPACT ANALYSIS REPORT PREPARED BY SOUTHWEST TRAFFIC ENGINEERING , LLC., 3838 N CENTRAL AVENUE, SUITE 1810, PHOENIX, AZ 85012.
TEL - 602-266-7983
DATED 2015-05-25

SITE INFORMATION

TOTAL ACREAG	=	11.09 ACRES±
TOTAL LOT AREA	=	9.88 ACRES±
MINIMUM LOT SIZE	=	1.55 ACRES±
MAXIMUM LOT SIZE	=	2.25 ACRES±
AVERAGE DENSITY	=	1.98 ACRES±
TOTAL LOTS	=	5 LOTS

UTILITIES

WATER: CITY OF KINGMAN - PUBLIC WORKS
GEORGE SEDICH; PH:(928) 692-3136

SEWER: CITY OF KINGMAN - PUBLIC WORKS;
PH:(928) 692-3125

FIRE PROTECTION: CITY OF KINGMAN - FIRE DEPT.
PH: (928) 753-2891

ELECTRICITY: UNISOURCE ELECTRIC
MARVIN YARBROUGH; PH:(928) 681- 8928

GARBAGE: CITY OF KINGMAN - (TO CERBAT LANDFILL)
ED TAPIA; PH:(928) 692-3102

GAS: UNISOURCE GAS
PH:(928) 681-6510

TELEPHONE: FRONTIER COMMUNICATIONS
PH:(928) 757-0271

CABLE: SUDDENLINK
PH:(928) 757-4060

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION, ATLAS MAPS AS MAY BE AVAILABLE FROM MUNICIPALITIES OR UTILITY COMPANIES, AND EXISTING DRAWINGS. MEAI MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. MEAI FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. MEAI HAS NOT PHYSICALLY LOCATED UNDERGROUND UTILITIES.

NOTICE

ALL REPORTS REFERENCED ON THIS SHEET ARE CONSIDERED PART OF THESE PLANS AND MUST BE CONSULTED PRIOR TO BIDDING OR CONSTRUCTION. NOTIFY MEAI IF THERE IS A DISCREPANCY BETWEEN SAID REPORTS AND THESE PLANS

BENCHMARK

C.O.K. BENCHMARK #95-2-103A 2" BC IN TOP OF CURB APPROX. 20' WEST OF RETURN ON SOUTH CURB AT INTERSECTION OF WESTERN AND SUNRISE AVENUE

COK APPROVAL BLOCK

APPROVED FOR:
THE CITY OF KINGMAN

CITY ENGINEER OR DESIGNEE

AS-BUILT CERTIFICATION:
I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED ENGINEER
DATE

REGISTRATION NUMBER _____

MOHAVE ENGINEERING ASSOCIATES, INC.
2153 E.GORDON DRIVE, SUITE 1
P.O. BOX 6347 KINGMAN, AZ. 86402
P: 928.753.2827 F: 928.753.9118
MOHAVE-ENGINEERING.COM
INFO@MEAAZ.COM

CALL TWO WORKING DAYS BEFORE YOU DIG
602-263-1100
1-800-STAKE-IT
(MARICOPA COUNTY)

SHEET TITLE
COVER

SUNRISE BUSINESS PARK TRACT #8037
PORTION OF SECTION 7, T21N, 16W,
KINGMAN, ARIZONA

OWNER / ENGINEER

PROJECT ENGINEER:
MOHAVE ENGINEERING ASSOCIATES, INC.
2153 GORDON DR., STE 1 KINGMAN, AZ. 86409 PH:(928) 753-2827
FAX:(928) 753-9118

CONTACT
LINGENFELTER FAMILY TRUST
FRED AND SANDY LINGENFELTER
1080 IRATA VALLEY ROAD
KINGMAN, AZ 86409
TEL- 928-715-6331

STORM WATER POLLUTION PREVENTION PLAN

A STORM WATER POLLUTION PREVENTION PLAN WILL BE PREPARED BY THE CONTRACTOR BEFORE CONSTRUCTION BEGINS. ADDITIONALLY THE CONTRACTOR WILL FILE A NOTICE OF INTENT (NOI) AND SUBMIT TO THE STATE OF ARIZONA TO OBTAIN COVERAGE UNDER THE ADEQ AZPDES GENERAL PERMIT EFF 08-03-2013 FOR THE STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITY.

DESIGN REPORT

REFER TO THE PRELIMINARY DESIGN REPORT PREPARED BY MEAI DATED 08-29-2014 AND THE FINAL DESIGN REPORT PREPARED BY MEAI DATED 12-05-2014

DRAINAGE REPORT

PRELIMINARY-REFER TO THE DRAINAGE REPORT PERPARED BY MEAI DATED:08/05/20014 AND 09-19-20104 (REVISED)

FINAL DRAINAGE REPORT PREPARED BY MEAI DATED 2014-12-05 AND DATED 2015-03-16 AND 2015-05-26

SETBACK REQUIREMENTS

YARD ABUTTING STREET: NO MINIMUM

SIDE YARD AND REAR YARD: THERE SHALL BE NO REQUIREMENTS, EXCEPT WHERE A SIDE OR REAR LOT LINE COINCIDES WITH A LOT LINE IN AND ADJACENT RESIDENTIAL DISTRICT. SUCH YARD SHALL NOT BE LESS THAN 10 FEET IN DEPTH AND SUCH YARD MAY NOT BE USED FOR PARKING

THIS DRAWING HAS BEEN APPROVED BY AND IS THE PROPERTY OF MOHAVE ENGINEERING ASSOC., INC ANY USE OR REPRODUCTIONS OF THE DRAWING WITHOUT THE CONSENT OF MOHAVE ENGINEERING ASSOC., INC. IS PROHIBITED.

PLOT DATE:	PLOTTED BY:	FILE PATH:	DESIGNED BY:	DRAWN BY:	CHECKED BY:	DATE:	PROJECT NUMBER:	DRAWING NUMBER:
12/29/2015 3:11 PM	CHAD HENDRICKSON	09-123_CS.KDWG	J.U.	C.H.	P.P.	12/24/15	09-123	C0.0

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Park and Recreation Department

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Splash Pad development agreement

SUMMARY:
The details of the Development Agreement between the City of Kingman and Venture Club for the construction of the Splash Pad at Cecil Davis Park have been worked out thanks to the hard work of the Venture Club. We are all anxious to get the project started so that the Splash Pad can be open by Memorial Day. This is going to be a great addition to this Park thanks to the Venture club and all of the citizens that contributed to this amazing fund raising event.

FISCAL IMPACT:
None

STAFF RECOMMENDATION:
Staff recommends Council approval of the Development Agreement for the construction of the Splash Pad at Cecil Davis Park.

ATTACHMENTS:

Description

Development Agreement Splash Pad- Final 3-8-16

DA Exhibit A Revised 3-31-16

REVIEWERS:

Department	Reviewer	Action	Date
Parks & Recreation	Meersman, Michael	Approved	3/17/2016 - 10:40 AM
City Attorney	Cooper, Carl	Approved	3/21/2016 - 10:35 AM
City Manager	Dougherty, John	Approved	3/28/2016 - 3:10 PM

DEVELOPMENT AGREEMENT
BY AND BETWEEN THE CITY OF KINGMAN AND VENTURE CLUB OF KINGMAN, INC. AN ARIZONA NON-PROFIT CORPORATION, FOR THE DESIGN AND CONSTRUCTION OF A SPLASH PAD ABOVE GROUND WATER FEATURE AT CECIL DAVIS PARK.

This Development Agreement (the "Agreement") has been made into as of the _____ day of _____, 2016 (the "Effective Date") between the CITY OF KINGMAN, ARIZONA (the "City"), a municipal corporation and political subdivision duly organized and validly existing under the Constitution and laws of the State of Arizona, and Venture Club of Kingman, Inc., an Arizona non-profit corporation (the "The Organizing Group").

WITNESSETH:

WHEREAS, The Organizing Group desires to design and install a splash pad, above ground water feature area (the "Splash Pad Project") at Cecil Davis Park (the "Subject Site") per the requirements listed in Exhibit A; and

WHEREAS, the Kingman Building and Construction Rules and Regulations required that the Organizing Group prepare an Analysis to analyze the conditions associated with improvement at the Subject Site; and

WHEREAS, The Organizing Group is required to post a cash assurance to assure that the proposed improvements to the Subject Site will be completed; and

NOW, THEREFORE, in consideration of the premises and the mutual obligations of the parties set forth in this Agreement, each of them does hereby covenant and agree as follows:

1. The Organizing Group will provide a cash assurance equal to one hundred and twenty five percent (125%), of the estimated value for all improvements installed on behalf of the Organizing Group at the Subject Site.

2. The Organizing Group will provide one hundred percent (100%) of the design and construction costs for the Splash Pad Project.

3. The final Design and Construction Documents shall be provided to the City no less than 60 days prior to the anticipated start of construction. The City shall have thirty (30) days to approve in writing; the Design and Construction Documents prior to the start of construction of the Splash Pad Project. Such requirement is intended to allow the City reasonable time to review and approve such documents.

4. The City will waive all City required plan review, permit, and inspection fees for the Splash Pad Project.

5. The Organizing Group is responsible for any and all permits, inspections, and plan

reviews that may be required by Mohave County and the State of Arizona, as well as any fees imposed. The Organizing Group shall provide copies of any required permits to the City.

6. The Organizing Group will comply with ARS 34-103 et. al.

7. If the Organizing Group does not complete the work within eight months and does not seek and acquire an extension of time within which to complete the Project, then the City may complete the work using the cash assurance and the City shall be entitled to retain 10% of the total cash assurance amount for administrative costs. The remainder of the cash assurance shall be returned to the Organizing Group.

8. This Agreement shall not be assigned without the acknowledgment of both parties by written amendments to this Agreement.

9. The City will accept the Splash Pad Project for maintenance and operation upon successful completion of all work as required by the approved Plans, Specifications and Permits, including all necessary training and maintenance procedures. The Organizing Group shall assign its warranties for the work to the City. Should any defects develop within one year from the date of final acceptance due to faults in workmanship or materials the Organizing Group shall, assist the City in coordinating with the Contractor for the necessary repairs. Such work shall include the repair or replacement of other work or materials damaged or affected by making the above repairs or corrective work, all at no cost to the City, provided that the such additional repairs are not as a result of an error or omission by the City.

10. The Organizing Group shall be the facilitator and administrator of the Splash Pad Project and will contract with the contractor selected by the Organizing Group.

11. The City hereby grants a license to the Organizing Group, its contractors and any applicable subcontractors to enter upon the Subject Site, as reasonably necessary or appropriate for construction of the Splash Pad Project. The City represents that it has authority to permit the Splash Pad Project at the Subject Site and to enter into this Agreement pursuant to applicable City ordinances and regulations

12. The City further represents that City will own and properly maintain the Splash Pad Project upon its substantial completion, and will dedicate the Splash Pad Project for community use and benefit. It is the intent of both Parties that the Splash Pad shall be free to use by the Community, but it is understood that the City may have to charge a fee in the future based on operating and maintenance costs.

13. No principal/agent, partnership, or joint venture relationship is created between Organizing Group and the City by the Organizing Group's funding or construction management of the Splash Pad Project.

14. The Organizing Group shall have the sole and exclusive right to control the construction of the Splash Pad Project and provide direction to all contractors or subcontractors in connection therewith. The Organizing Group shall, for the duration of construction and up until final acceptance of the project by the City, be responsible for safety at the construction site. The Organizing Group shall furnish, install and maintain all required safety barricades, fencing and temporary facilities that are reasonable and necessary to maintain a safe construction site.

15. The Organizing Group may place suitable signage regarding the Splash Pad with an acknowledgement of the funding group after review and written approval by the City.

16. Compliance with Federal and State Laws:

The Organizing Group will hire a contractor that is in compliance with all federal and state laws. The Organizing Group understands and acknowledges the applicability to it of the American with Disabilities Act, the Immigration Reform and Control Act of 1986 and the Drug Free Workplace Act of 1989.

Under the provisions of A.R.S. §41-4401, the Organizing Group warrants to the City that its Contractor and each of its subcontractors ("Subcontractors") will comply with, and are contractually obligated to comply with, all Federal Immigration laws and regulations that relate to their employees and A.R.S. §23-214(A) (hereinafter "Contractor Immigration Warranty").

A breach of the Contractor Immigration Warranty shall constitute a material breach of this agreement and shall subject the Organizing Group and the Contractor to penalties up to and including termination of this Contract at the sole discretion of the City.

The City retains the legal right to inspect the papers of the Organizing Group and any Contractor or Subcontractor's employee who works on this agreement to ensure that the Organizing Group and the Contractor or Subcontractor is complying with the Contractor Immigration Warranty. The City may, at its sole discretion, conduct random verification of the employment records of the Organizing Group and the Contractor and any of the subcontractors to ensure compliance with Contractor's Immigration Warranty. The Organizing Group agrees to assist the City in regard to any such inspections. The Organizing Group and the Contractor and its subcontractors warrant to keep the papers and records open for random inspection during normal business hours by the City. The Organizing Group and the Contractor and its subcontractors shall cooperate with the City's random inspections including granting the City entry rights onto its property to perform the random inspections and waiving their respective rights to keep such papers and records confidential.

Neither the Organizing Group or the Contractor nor any of the Subcontractors shall be deemed to have materially breached the Contractor Immigration Warranty if The Organizing Group or the Contractor or Subcontractor establishes that they have complied with the employment verification provisions prescribed by sections 274A

and 274B of the Federal Immigration and Nationality Act and the E-Verify requirements prescribed by A.R.S. §23-214, Subsection A.

The following is only applicable to construction contracts: The Organizing Group, the Contractor, and any Subcontractors must also comply with A.R.S. § 34-301, "Employment of Aliens on Public Works Prohibited", and A.R.S. § 34-302, as amended, "Residence Requirements for Employees".

17. To the fullest extent permitted by law, each Party (as "Indemnitor") shall defend, indemnify and hold harmless each of the other Party (as "Indemnitees") its officers, officials, employees, agents, volunteers, successors, and assigns for claims, damages, losses, liabilities and expenses of any nature whatsoever (including but not limited to reasonable attorneys' fees, court costs, the costs of appellate proceedings, and all claim adjusting and handling expense) relating to, arising out of, resulting from or alleged to have resulted from the Indemnitor's acts, errors, mistakes or omissions relating to any action or inaction of this Agreement (collectively, "Claims") including but not limited to work, services, acts, errors, mistakes, or omissions in the performance of this Agreement by anyone directly or indirectly employed by or contracting with the Indemnitor, or any person for whose acts and liabilities are the obligation of the Indemnitor.

    The amount and type of insurance coverage requirements set forth below will in no way be construed as limiting the scope of the indemnification.

18. Insurance: The Organizing Group shall obtain, pay for and maintain, or cause its Contractor to obtain, pay for and maintain, the insurance coverage listed below during the duration of this contract without reimbursement obligation on the part of the City. Carriers must be duly licensed to business in the State of Arizona, possessing a current A.M. Best, Inc. rating of A- or better. In the event any insurance policy(ies) required herein is(are) written on a "claims made" basis, coverage shall extend for two years past completion and acceptance of project.

The insurance requirements herein are minimum requirements for this Agreement and in no way limit the indemnity covenants contained in this Agreement.

Minimum Limits of Coverage:

- Commercial General Liability (CGL), including coverage for bodily injury, broad form property damage, personal injury, contractual and products/completed operations - $1,000,000 each occurrence/$2,000,000 General Aggregate.
- Commercial Automotive Liability - $1,000,000 CSL each occurrence
- Professional Liability Insurance covering errors and omissions arising out of the work or services performed by Organizing Group, or anyone employed by Organizing Group, or anyone for whose acts, mistakes, errors and omissions Organizing Group is legally liable - $1,000,000/each occurrence/ $1,000,000 General Aggregate.

- Worker's Compensation insurance to cover obligations imposed by Arizona state statutes. Worker's Compensation insurance to cover obligations imposed by Arizona state statutes.

Additional Insured: Except for workmen's compensation and professional liability, the City of Kingman, its officers, officials, and employees are to be covered as additional insureds on the CGL and automobile liability policies with respect to liability arising out of work or operations performed by or on behalf of the Organizing Group. Commercial general liability shall be written on an occurrence basis.

Organizing Group shall require City the Contractor's and any Subcontractors to meet the requirement of this insurance section, and shall obtain and forward to the City certificates of insurance and policy endorsements required herein . Such policies shall also be endorsed providing Organizing Agency and the City as additional insured. (Subcontractors not involved in the design of the project are not subject to the Professional Liability provision). Organizing Group and Contractor's CGL insurance coverage shall be endorsed to be primary insurance.

Certificates of Insurance and policy endorsements meeting requirements herein shall be received prior to commencement of performance under this Agreement; and as Subcontractors are added, before commencement of their performance. If a policy does expire during the life of the project, a renewal certificate of the required coverage will be sent to the City not less than five (5) days prior to the expiration date. If a policy is to be cancelled, changed or not renewed, a proper notice of such action will be sent to the City not less than thirty (30) days prior to any such action.

In the event that any professional liability insurance required by this Agreement is written on a claims-made basis, Organizing Group warrants coverage shall extend for two (2) years past completion and acceptance of project and shall forward to City certificate of insurances and required endorsements during the two (2) year period. Certificate of Insurance, Endorsements, and Notice(s) shall be sent to:

City of Kingman
Risk Management Department
310 N. 4th Street
Kingman, Arizona 86401

IN WITNESS WHEREOF, the City and The Organizing Group have each caused their duly authorized representatives to execute this AGREEMENT as of the date aforesaid.

[Signature page to follow]

CITY OF KINGMAN, ARIZONA

By:_____
Richard Anderson, Mayor

VENTURE CLUB OF KINGMAN, INC.

By:_____
Mary Hollingsworth, President

ATTEST:

_____
Syndey Mule, City Clerk

APPROVED AS TO FORM

By:_____
Carl Cooper, City Attorney

Date:_____

Exhibit A

A. General Background

This project will be constructed on Cecil Davis Park property belonging to the City of Kingman. The project is being funded entirely through funds raised by the Organizing Group. As such, the Organizing Group will be completely responsible for all aspects of administering this project. A representative from the City of Kingman Parks and Recreation Department will be assist in oversight of all construction phases, including, plan review and approval, onsite inspections, change orders or unforeseen construction delays. The Organizing Group shall appoint a project or project managers throughout the course of the project to assist in overseeing the progress of the project. Upon completion, the project will be turned over and dedicated to the City of Kingman.

B. Existing General Site Conditions

At Cecil Davis Park an electrical line runs through the middle of the project site. The Organizing Group will coordinate relocation of the electrical with an independent contractor and approval by the City of Kingman.
Construct a vented equipment room large enough to contain all electronic controls, weather sensitive equipment, tanking and allow enough room to work on equipment (minimum of 3' clearance). Equipment room to be engineered and constructed to match the existing building with Split face Birdseye block 8x8x16 and include access with a 36"x 6'-6" metal door and 5' x 7' roll up door for equipment repair/maintenance.
Upgrading, extending and/or relocating all necessary electrical, water, and sewer utilities to the site will be the responsibility of the Organizing Group and its contractor. This shall include applying for and paying all fees for new electrical service from Unisource Energy Services, and installing new underground service drops, transformer pad, meter and service entrance section (SES) in accordance with adopted Codes and as required for the Splash Pad project. The Organizing Group shall apply for new water and sewer connections through the City Engineering Department. The Organizing Group shall be responsible for connections to the existing water and sewer mains, and for extending new water and sewer services to the Splash Pad project, including trenching, backfill, compaction, curb, sidewalk and pavement replacement and traffic control, all in accordance with applicable City Codes and Standard Details.

C. Work

The Organizing Group and its Contractor shall perform and carry out in a professional manner those services necessary to complete the turnkey engineer stamped design, supply, construction, and installation of a Splash Pad, mechanical equipment enclosure, and sidewalks connecting the Splash Pad to the parking lot and bathroom facilities. The Organizing Group is required to comply with all City, County, and State permitting requirements.

D. General Requirements

Construct/install a 3,000 square foot commercial grade, zero depth, concrete splash pad, minimum 4" thickness, rebar or wire mesh reinforced, sloped for drainage, designed into three zones for a variety of ages and logically separated by age. Concrete pad to be constructed of 4000 PSI concrete, with #3 rebar 24" O.C.
Provide a grading and drainage plan based on the splash pad design. Contractor shall be responsible to grade site so no storm water runoff ever runs onto splash pad.
Construct/install a 6' medium broom finish sidewalk from the splash pad to connect to the existing bathroom facilities to the north, to the existing playground facilities to the south and to the parking lot to the east.
Provide three (3) complete sets of "As-Built' drawing plans in both PDF and (if possible), AutoCAD format.
Furnish at least two sets of complete installation and operating manuals. The installation manual will illustrate the installation of the entire system. It shall describe the start-up procedure and day-to-day operation of the system.
Supply a list of component parts and replacement costs.
All piping should be schedule 80 PVC for high chlorine content water.
All feature bases should be Stainless Steel, no Fiberglass, no PVC bases, no PVC ground sprays.
All nozzles are to be Stainless Steel or brass nozzles, No plastic nozzles.
Manifold should be SS, no PVC manifolds.
Upon completion of construction, provide city employees adequate training on facility operations and maintenance. Specify the type of training, length of time and who will be providing it.

E. Additional Specifications
1. General Features:
   Manifold and upgraded electronic control system w/ multiple programs.
2. All equipment supplied must be NSF 50 listed. Recirculating General Features:
   System can be either a single loop or double loop system. If a double loop system is chosen then the filtration rate must match the flow rate to the features.
   Must have Two TR140 Sand filter system, in-line chlorinator, and an ultraviolet filtration system with a remote controller that contains an alarm system that shall close all valves to the aquatic play features in case of loss of proper ultra violet disinfection and remotely, telephonically contact city staff.

   Complete recirculation system including a minimum 4,000 gallon holding tank, (2) VFD 3HP feature pumps, (1) 1.5HP pump, (1) 3HP recirculation pump (or as needed by pad size), and UV disinfection. Turnover rate for the 4000 gallon tank to be 30 minutes or less.
   Provide remote monitoring and automated water chemistry controllers to track the water quality. Auto shut down when water is out of balance with remote alerts to alarms. Include the use of a VFD (Variable Frequency Drive) pump in a single loop system and for both VFD pumps if a double loop system. The chemical

controller shall have an alarm system that shall prevent any sequence of the aquatic play features in case of a loss of proper water chemistry.

The chemical controller shall not be capable of injecting chemicals into the system whenever the pump is off. Ensure that there is approximately 60 AMPS of 230 VAC power either single or three phase for recirculating.

The system will include a drain shut off overflow system.

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: John A. Dougherty, City Manager

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Splash Pad II

SUMMARY:
The Venture Club has raised the significant funds for building a Splash Pad in one of the parks. There is a difference of opinion between the Club and contractor and city staff as to what is essential and what is unnecessary. The two significant issues that staff is requesting are:
Sand filters - since the beginning of the process staff has specified 2 TR140 sand filters. In the event one filter is out of commission, being backwashed, plugged with dippers, debris, etc. the splash can remain in operation while staff works on them or when they can get to working on it. Currently we have sand filters at both our pools and they work great with little maintenance and the filtration value is not affected adversely by degradation.

VFP pumps - VFD pumps are important as they are far more energy efficient, create a lot less water hammer on the piping, prevent wear and tear on all the spray features and will add longevity to the entire system. Staff has said from day one that it is important to bid that all pumps must be VFD.

It is very important to the Parks and Recreation Department that the splash pad function safely, as efficiently as possible and has minimal long term maintenance issues.

FISCAL IMPACT:
Approximately $50,000

STAFF RECOMMENDATION:
Staff recommendation remains that sand filters and VFD pumps are vitally important for long term maintenance issues and keeping the pad in operation. Whether Council wants to contribute the funds to do this is at Council discretion, staff strongly recommends that the above request be included in the product that will be turned over to us for long term operations.

REVIEWERS:

Department	Reviewer	Action	Date
City Manager	Dougherty, John	Approved	3/31/2016 - 6:15 PM
City Attorney	Cooper, Carl	Approved	3/31/2016 - 6:22 PM
City Manager	Dougherty, John	Approved	3/31/2016 - 6:15 PM

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: John A. Dougherty, City Manager

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Kingman Crossing vs. Prospector Interstate 40 (I-40) crossing

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SUMMARY:
At the March 15 City Council Meeting the Council voted 3-2 to direct staff to proceed with plans to put the north-south access over or under I 40 at Prospector Street. Council Member Carver has requested that it be put back on the Agenda for reconsideration and Council Member Yocum requested that it be brought back when all the Council is present.

The proposed project at Kingman Crossing benefits residents in two ways: 1) quicker access than the current drive to the schools located in the area and: 2) further development of the hospital property located at this intersection.

Both projects have pros and cons but both long and short term Kingman Crossing will take place, while Prospector can be put off to a much later date, perhaps even after the Rancho Santa Fe TI.

FISCAL IMPACT:
Between six and nine million dollars.

STAFF RECOMMENDATION:
Staff recommends the Kingman Crossing location. This location is where future plans are for an interchange, and this will kick start development on both sides of the 40, showing the city is serious about this development. In addition, the crossing at this location is estimated to save $7M in costs for future development. This theoretically will also increase the value of the city land which we are hoping to have developed in the future.

ATTACHMENTS:

Description

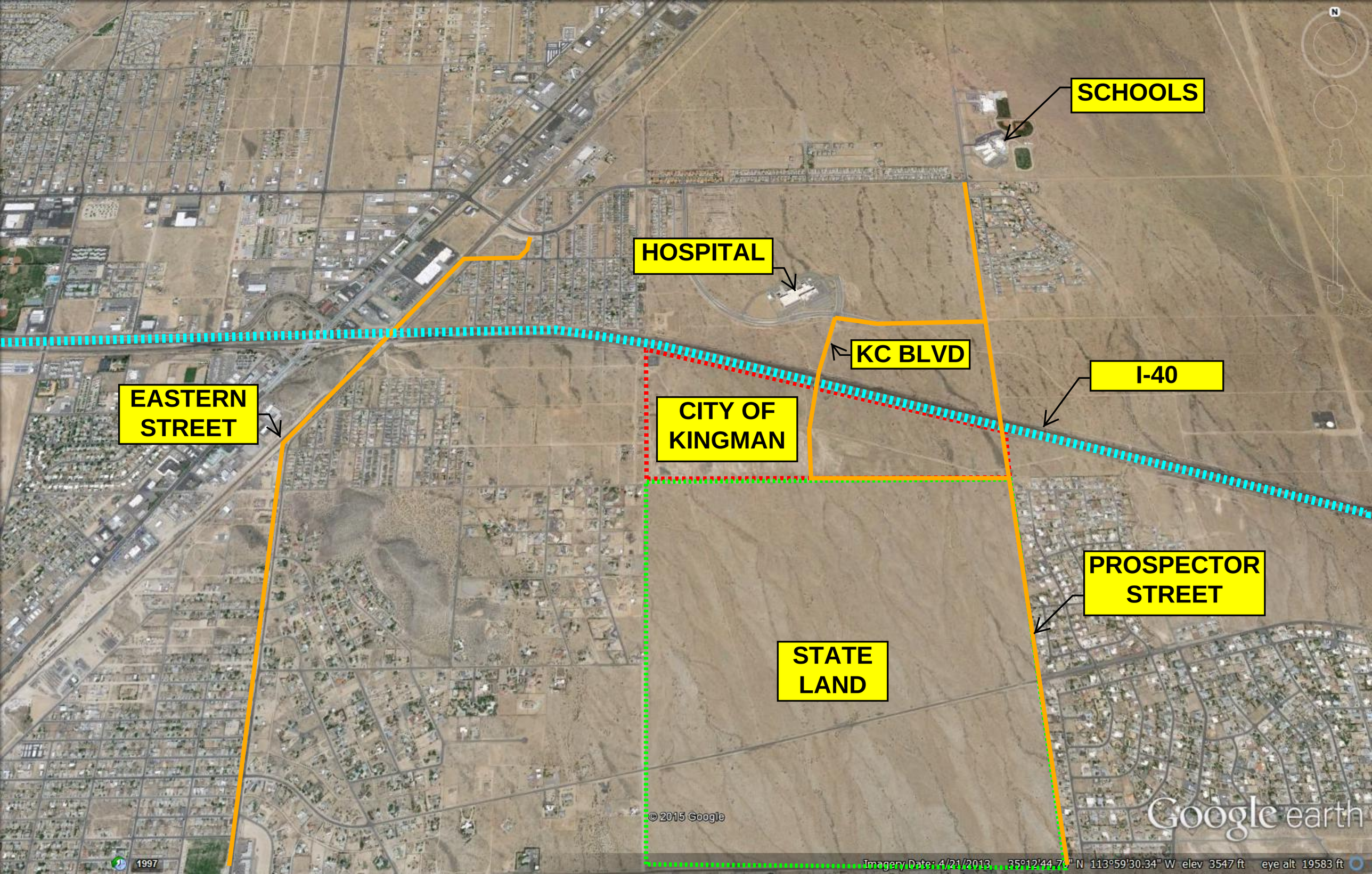
Map

Presentation

REVIEWERS:

Department	Reviewer	Action	Date
City Manager	Dougherty, John	Approved	3/28/2016 - 2:58 PM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 2:59 PM

City Manager	Dougherty, John	Approved	3/28/2016 - 2:58 PM


SCHOOLS
HOSPITAL
KC BLVD
I-40
EASTERN STREET
CITY OF KINGMAN
PROSPECTOR STREET
STATE LAND
© 2015 Google
Google earth
1997
Imagery Date: 4/21/2013 35°12'44.76" N 113°59'30.34" W elev 3547 ft eye alt 19583 ft

Presentation to City Council

Feasibility Study
Prospector Street Interim Roadway
& I-40 Grade Separation

March 15, 2016

Agenda

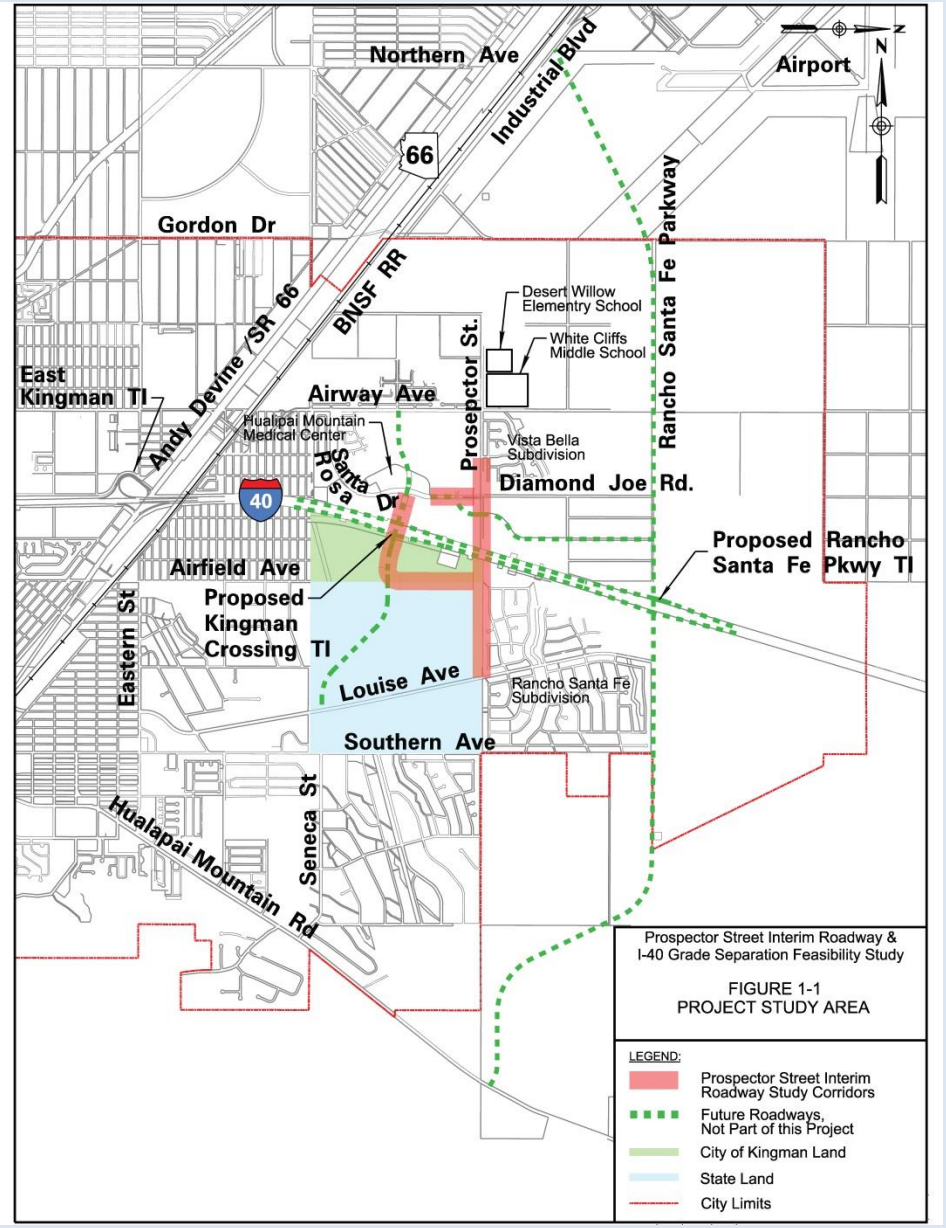
- Purpose & Need
- Project Limits
- Traffic Analysis Results
- Alternatives Considered
- Evaluation of Alternatives
- Recommendations

Purpose and Need

- Improve access between the lands north and south of I-40 east of the BNSF tracks
- KC TI and RSFP TI not funded and construction is time frame is unknown
- Eastern Ave currently provide the only access across I-40 requiring significant out of direction travel and travel time
- Reduce congestion at the Airway Ave & Diamond St/Yavapai St Couplet traffic signal

Project Limits

- Interim Roadway Study Corridors
  - Prospector Street Section Line Alignment
  - Proposed Kingman Crossing Blvd Alignment

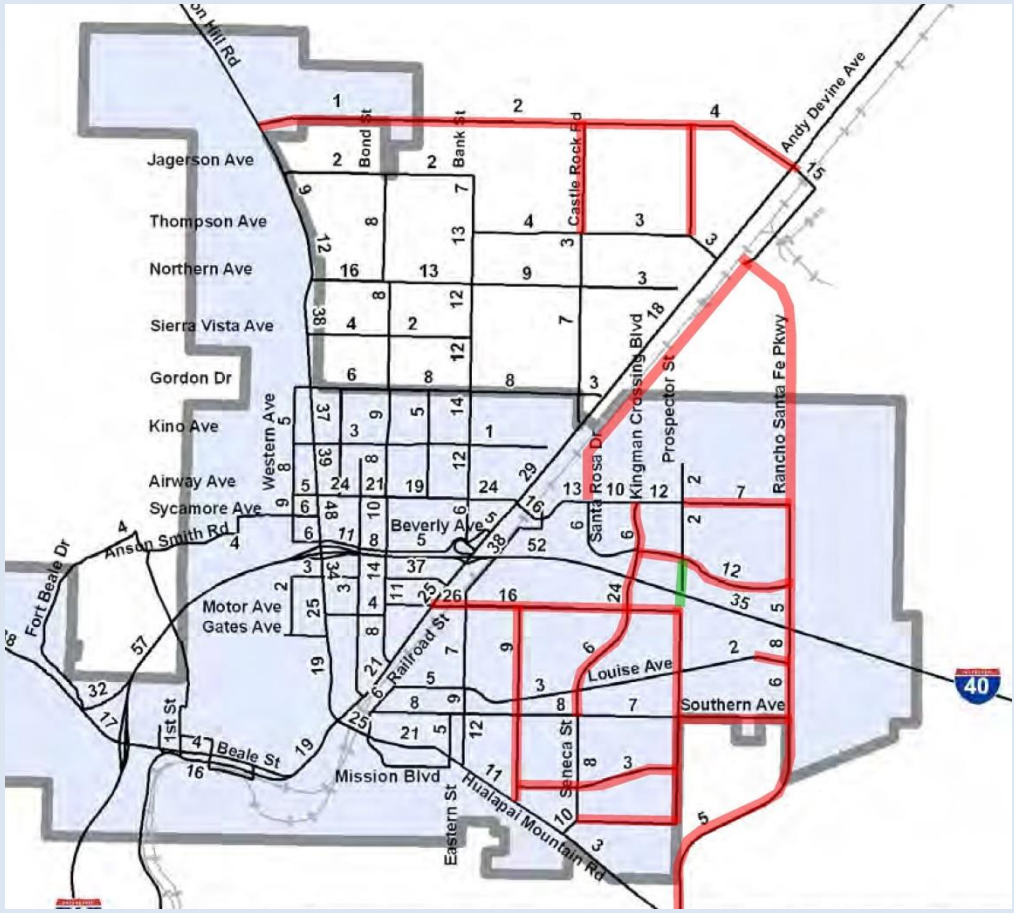


Traffic Analysis

- Determine 2030 Traffic Volumes
  - Interim Prospector Street
  - Kingman Crossing Blvd
  - Rancho Santa Fe Parkway
  - Eastern Street
- Determine LOS & Interim Lane Requirements
- Travel Time Analysis

2030 Travel Forecast Model

- Update 2011 KATS TransCAD Model
  - 2030 Existing conditions
  - 2030 Full Build
- Model Scenarios
  - No TI's @ KC & RSFP
  - KC TI + RSFP TI
  - KC TI Only
  - KC TI + RSFP TI + PGS
  - PGS Only
  - KC TI + PGS
  - RSFP TI + PGS



City of Kingman

Feasibility Study
Prospector Street Interim Roadway & I-40 Grade Separation

AECOM

Summary of 2030 Daily Traffic Volumes

Scenario	Daily Two-way Roadway Volumes (1000's)				
	Airway Ave. (Between Andy Devine and Eastern)	Eastern St. (Between Airway Ave & Airfield Ave)	Kingman Crossing Blvd (N/S)*	Prospector St. (Crossing over I-40)	Rancho Santa Fe Pkwy (N/S)*
1 – KATS Full Build (No TI's)	31.9	14.7	-	-	-
2 - KATS Full Build (KCTI & RSFP TI)	26.0	0.2	20.9 / 22.0	-	5.0 / 6.3
3 - KATS Full Build (KCTI Only)	26.3	0.2	25.7/27.1	-	-
4 - KATS Full Build (KCTI+PGS+RSFP TI)	26.0	0.2	18.1 / 19.3	3.0	4.9 / 6.2
5 - KATS Full Build (PGS only)	35.4	6.1	-	12.3	-
6 - KATS Full Build (KCTI+PGS)	26.4	0.2	20.6 / 22.4	5.3	-
7 - KATS Full Build (PGS+RSFP TI)	29.8	4.0	-	8.3	6.6 / 7.6
8 – KATS Existing Network (No TI's)	38.1	23.5	-	-	-
9 - KATS Existing Network (KCTI Only)	32.7	3.9	25.4 / 33.9	-	-
10 – KATS Existing Network (PGS only)	41.6	7.8	-	19.2	-
11 – KATS Existing Network (KCTI+PGS)	32.8	3.8	31.6 / 23.0	2.5	-

KCTI = Kingman Crossing Boulevard TI, PGS = Prospector Grade Separation, RSFP TI = Rancho Santa Fe Parkway TI
* (N/S) = North of I-40 / South of I-40

Summary of LOS & Recommended Number of Lanes - 2030

Scenario	Eastern St		Kingman Crossing Blvd		Prospector St.		Rancho Santa Fe Pkwy	
	No. of Lanes (Prop)	LOS	No. of Lanes (Prop)	LOS	No. of Lanes (Prop)	LOS	No. of Lanes (Prop)	LOS
1 – KATS Full Build (No TI's)	2 / 4	C–D/ >C	-	-	-	-	-	-
2 - KATS Full Build (KCTI & RSFP TI)	2	>C	4	>C	-	-	2	>C
3 - KATS Full Build (KCTI Only)	2	>C	4	>C	-	-	-	-
4 - KATS Full Build (KCTI + PGS + RSFP TI)	2	>C	4	>C	2	>C	2	>C
5 - KATS Full Build (PGS only)	2	>C	-	-	2 / 4	C–D/ >C	-	-
6 - KATS Full Build (KCTI + PGS)	2	>C	4	>C	2	>C	-	-
7 - KATS Full Build (PGS + RSFP TI)	2	>C	-	-	2	>C	2	>C
8 – KATS Existing Network (No TI's)	4	C	-	-	-	-	-	-
9 – KATS Existing Network (KCTI Only)	2	>C	4	C - D	-	-	-	-
10 – KATS Existing Network (PGS only)	2	>C	-	-	4	C	-	-
11 – KATS Existing Network (KCTI + PGS)	2	>C	4	C - D	2	>C	-	-

Travel Time Analysis

- Compare travel time between alternatives on three travel routes

Feasibility Study
Prospector Street Interim Roadway & I-40 Grade Separation

City of Kingman

AECOM

Travel Time Analysis

Travel Time Analysis Summary

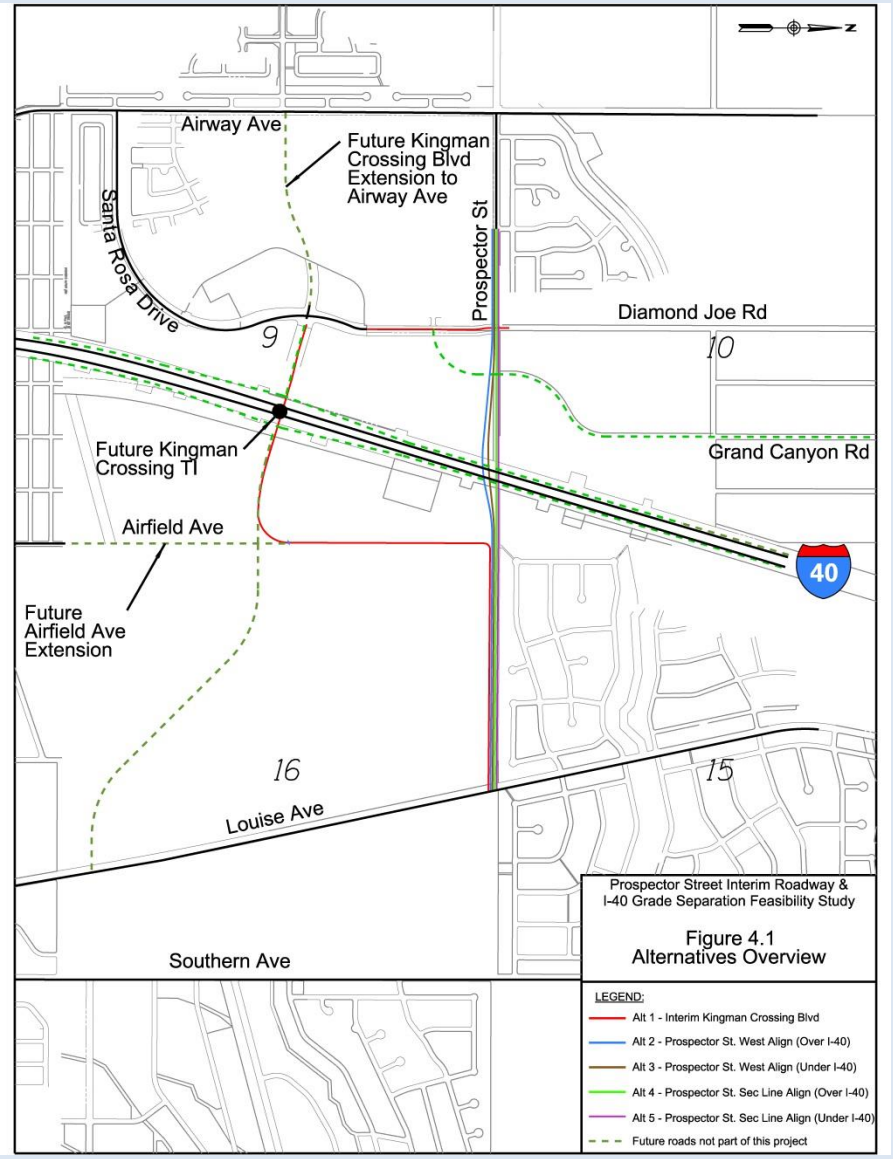
Travel Time Scenario No.	Origin	Destination	Alternative Alignment	Total Length (miles)	Total Travel Time (min)	Total Travel Time (min) (Reverse Direction)
1	Prospector St. & Louise Ave. Intersection	Prospector St. & Airway Ave. Intersection	No-Build (Louise-Eastern-Airway)	5.5	11.0	11.5
			Corridor 1 - Kingman Crossing Alignment	2.7	5.4	5.4
			Corridor 2 - Prospector Street Alignment	1.7	3.3	3.3
2	Eastern St & Louise Ave. Intersection	Prospector St. & Airway Ave. Intersection	No-Build (Louise-Eastern-Airway)	3.5	7.0	7.5
			Corridor 1 - Kingman Crossing Alignment	4.8	9.5	9.3
			Corridor 2 - Prospector Street Alignment	3.7	7.4	7.3
3	Eastern St. and Airfield Ave. Intersection	Prospector St. & Airway Ave. Intersection	No-Build (Louise-Eastern-Airway)	2.7	5.7	6.2
			Corridor 1 - Kingman Crossing Alignment	5.5	11.0	10.9
			Corridor 2 - Prospector Street Alignment	4.5	9.0	8.9

Traffic Analysis Conclusions

- Traffic is significantly reduced on Eastern St with all build scenarios
- Traffic congestion reduced at the Andy Devine/I-40 interchange with build scenarios that include new TI's on I-40
- Two-Lanes needed for Prospector Grade Separation
- Travel time significantly reduced

Alignment Alternatives

- Alt 1 – Kingman Crossing Alignment
- Alt 2 – Prospector Street West Alignment (Over I-40)
- Alt 3 – Prospector Street West Alignment (Under I-40)
- Alt 4 – Prospector Street Section Line Alignment (Over I-40)
- Alt 5 – Prospector Street Section Line Alignment (Under I-40)



City of Kingman

Feasibility Study
Prospector Street Interim Roadway & I-40 Grade Separation

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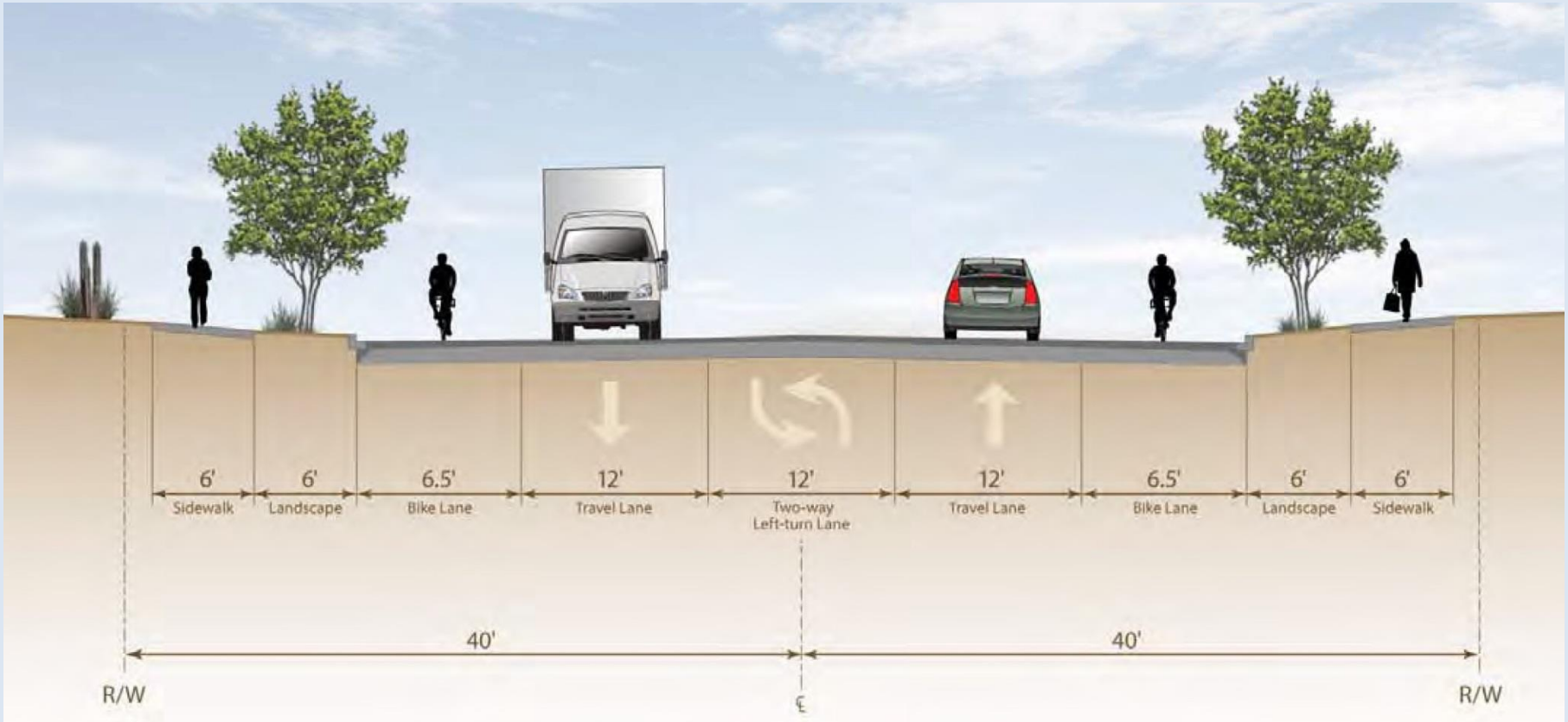
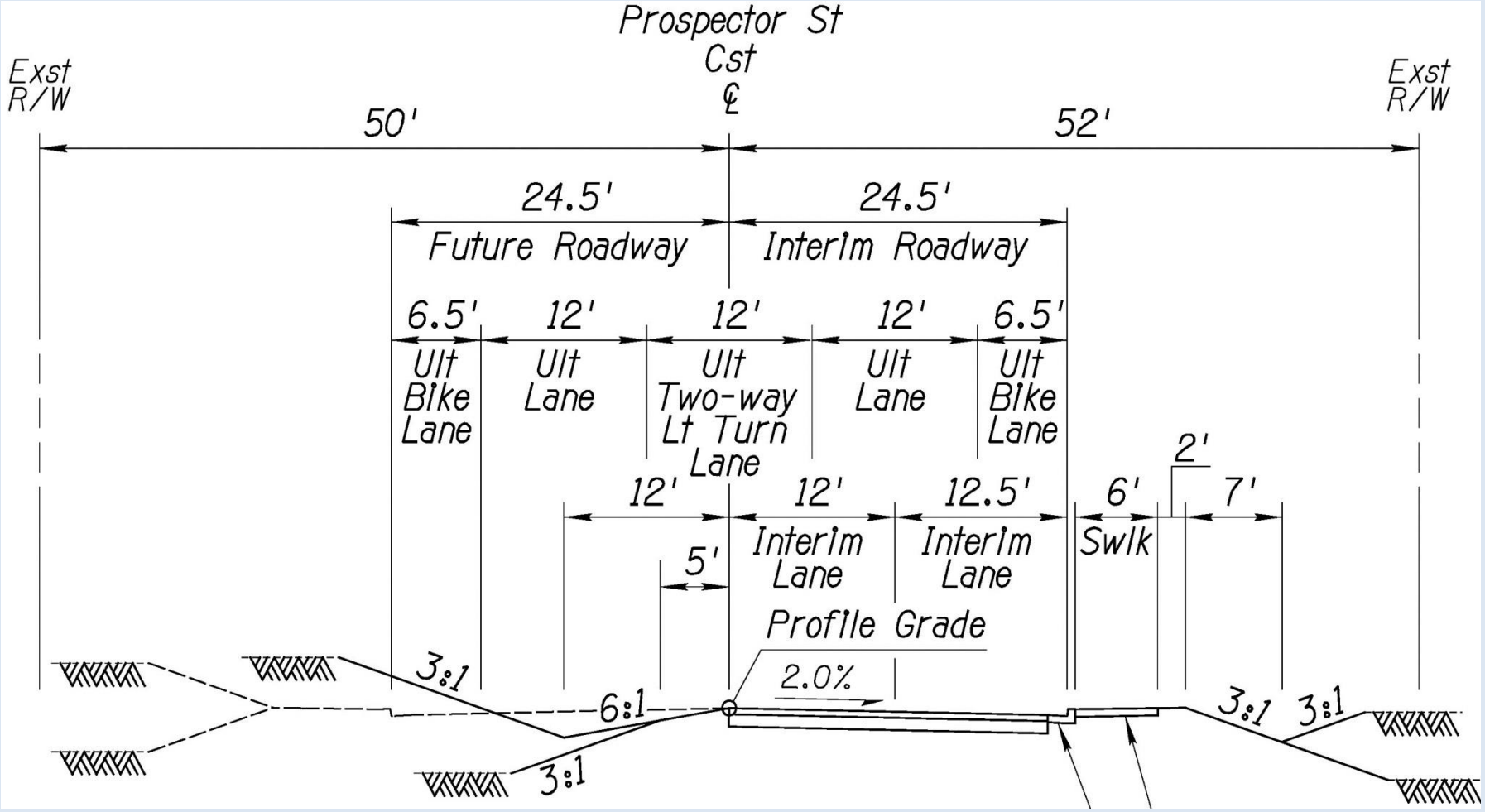
Typical Roadway Section



2-Lane Collector With Curb

Interim Typical Roadway Section



Feasibility Study
Prospector Street Interim Roadway & I-40 Grade Separation

City of Kingman

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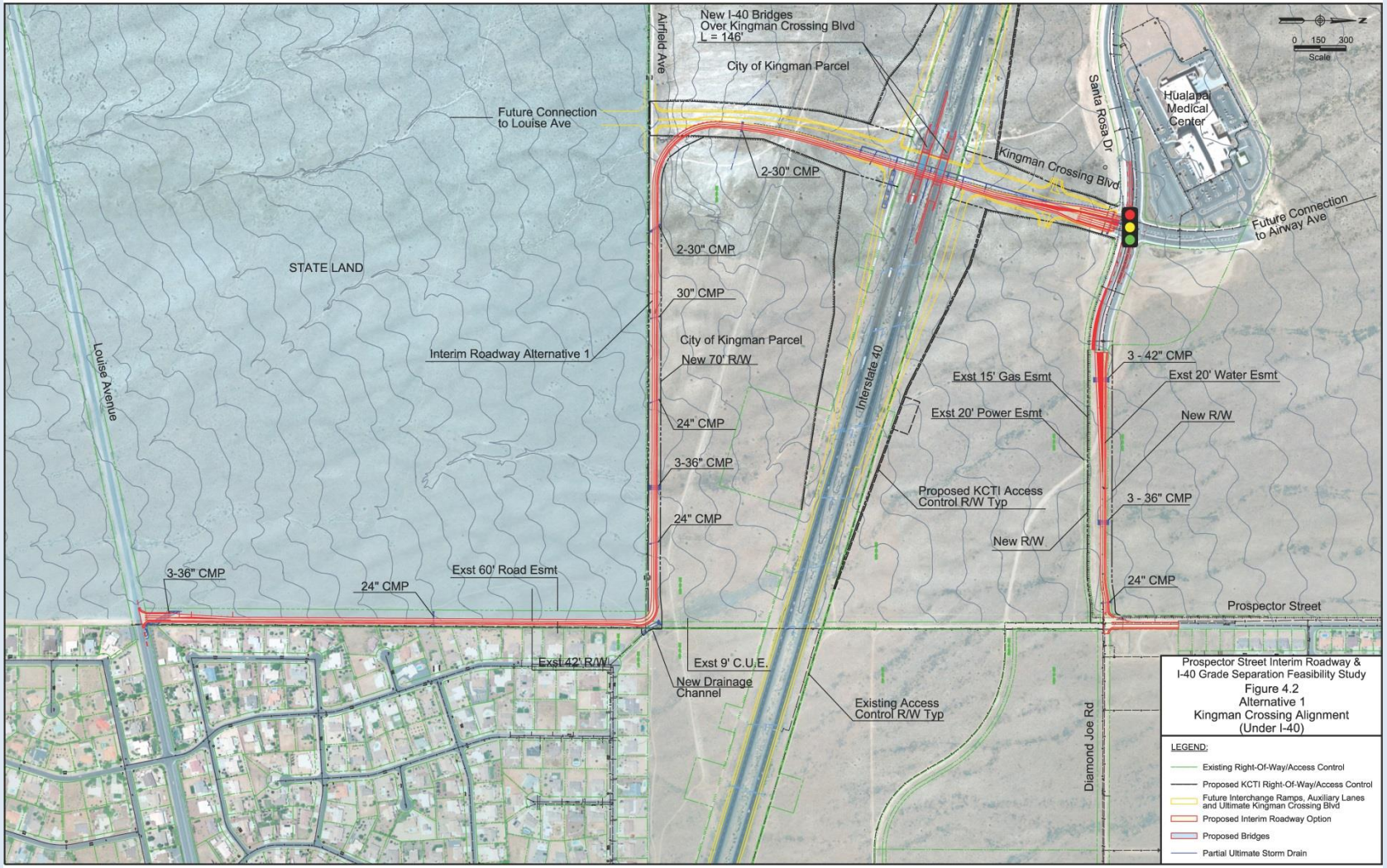
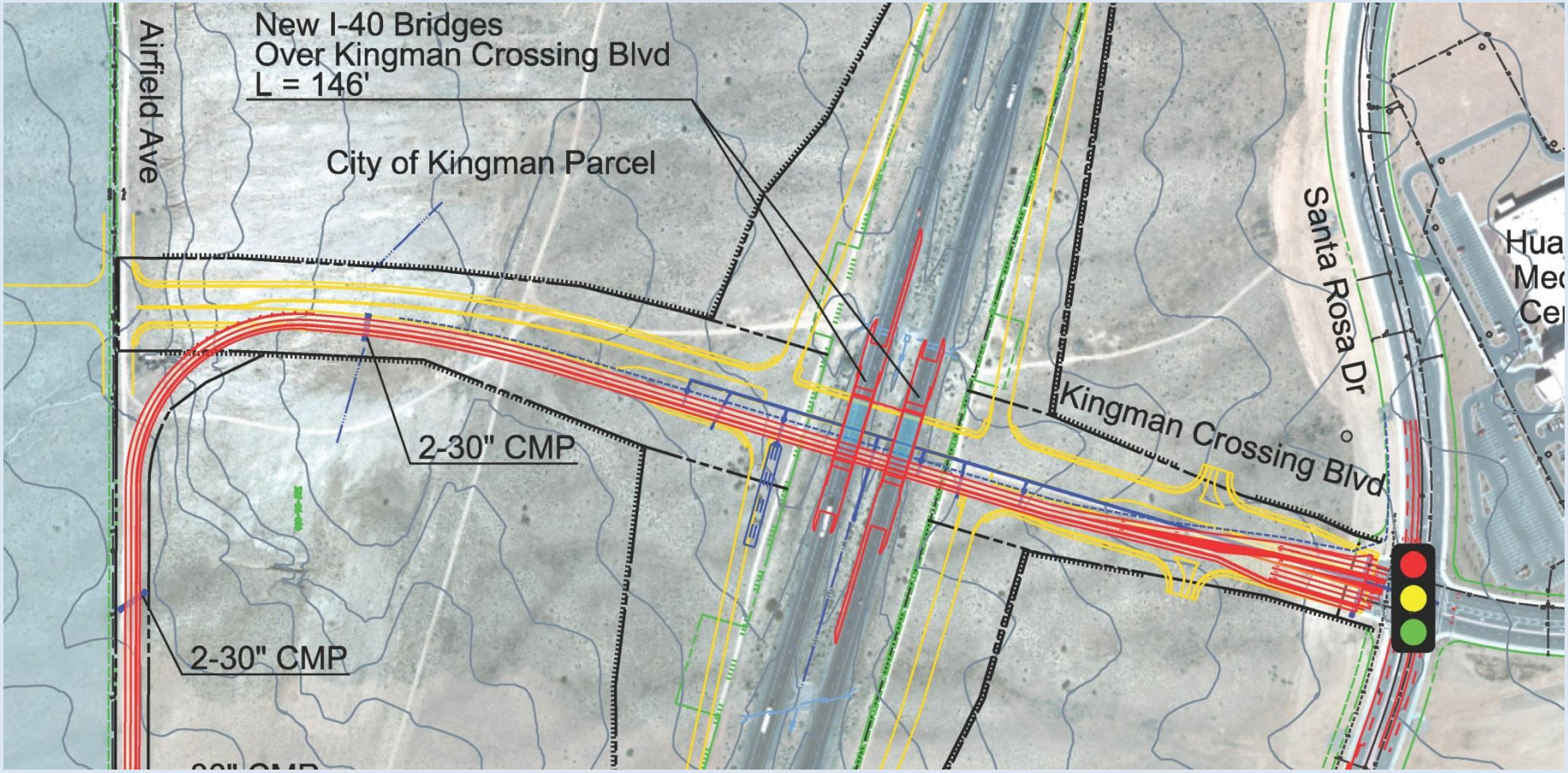
Alt 1 – Kingman Crossing Alignment



Alt 1 – Kingman Crossing Alignment



Feasibility Study
Prospector Street Interim Roadway & I-40 Grade Separation

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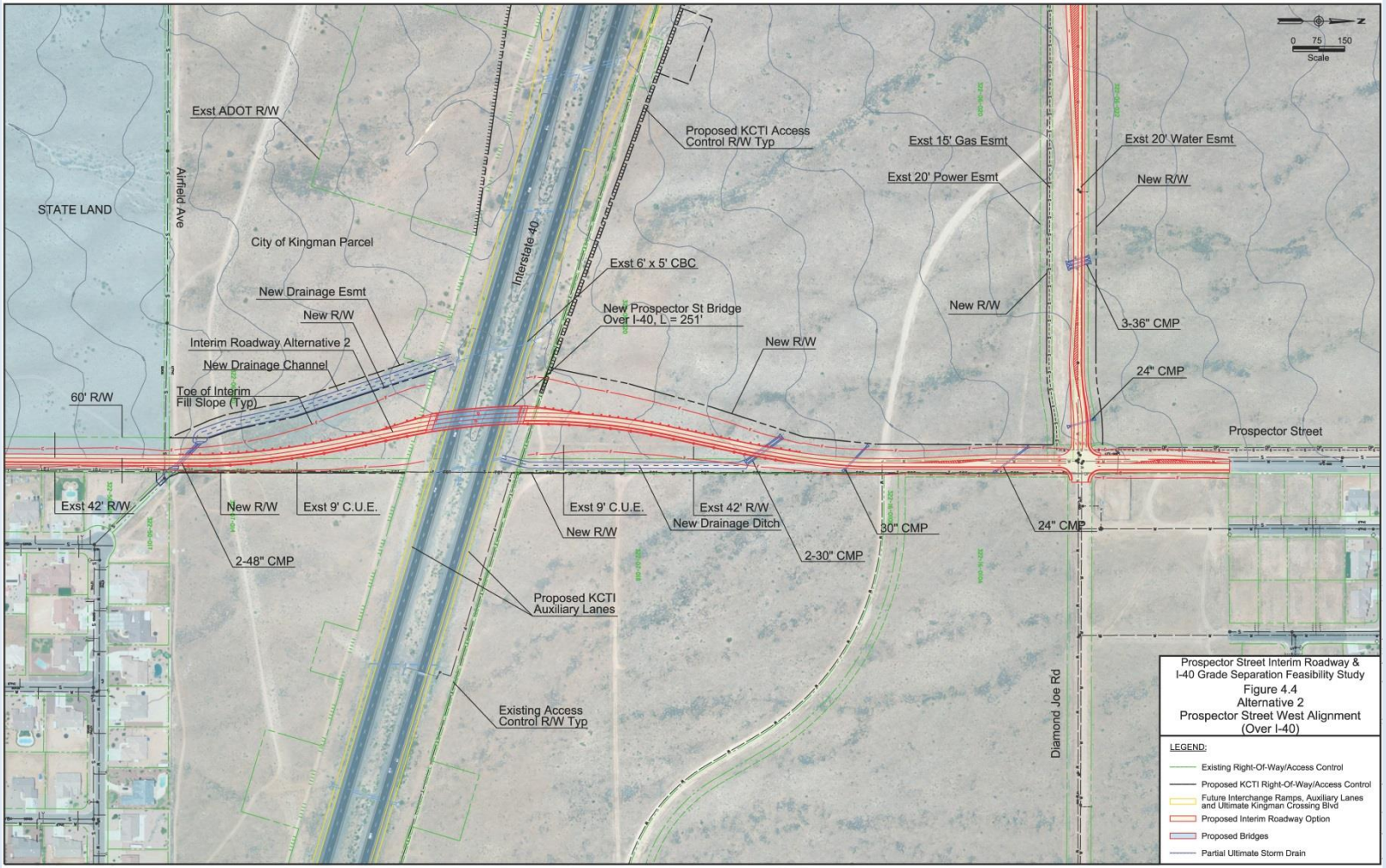
Alt 2 – Prospector Street West Alignment (Over I-40)



Feasibility Study
Prospector Street Interim Roadway & I-40 Grade Separation

City of Kingman

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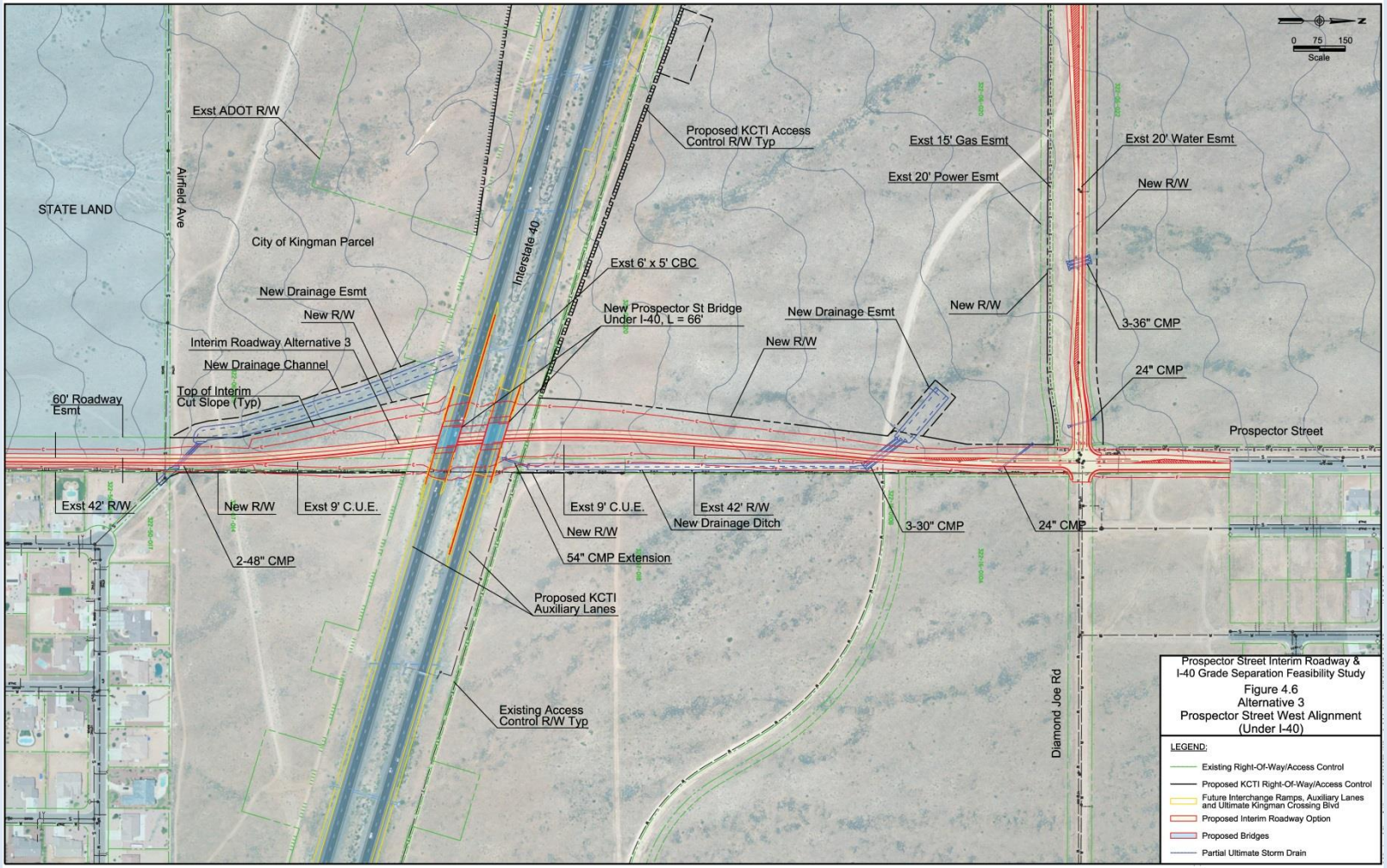
Alt 3 – Prospector Street West Alignment (Under I-40)



Feasibility Study
Prospector Street Interim Roadway & I-40 Grade Separation

City of Kingman

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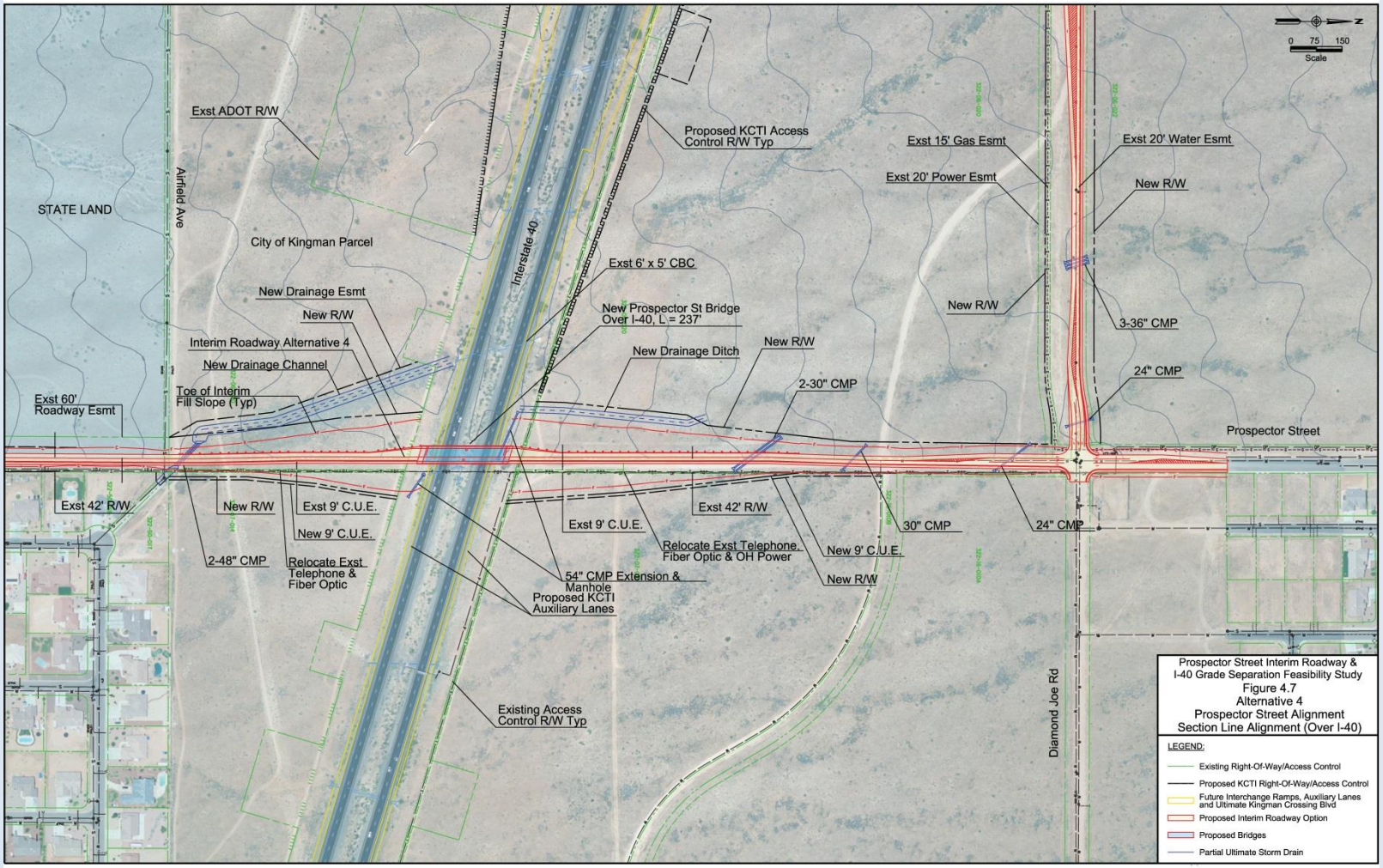
Alt 4 – Prospector Street Section Line Alignment (Over I-40)



Feasibility Study
Prospector Street Interim Roadway & I-40 Grade Separation

City of Kingman

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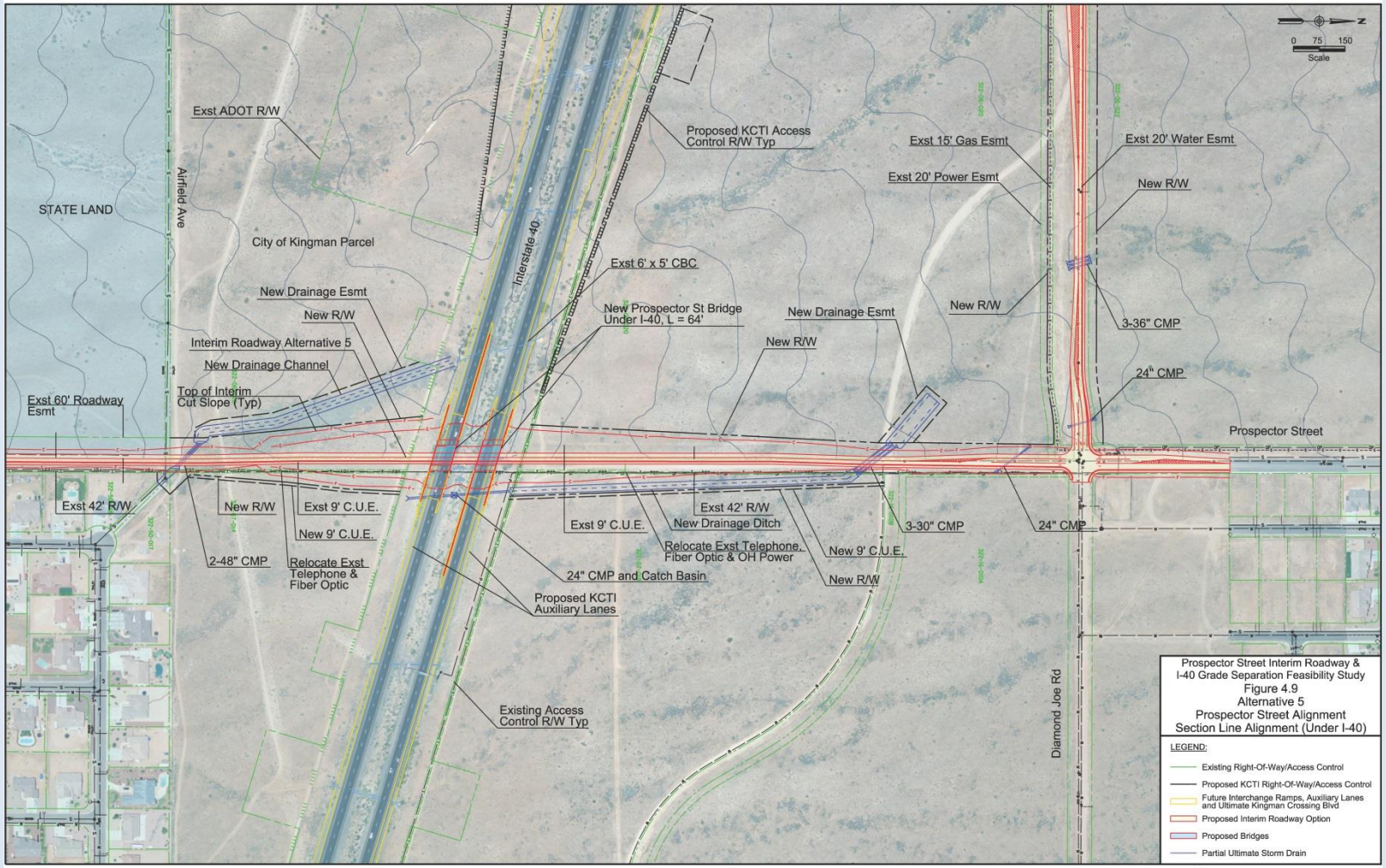
Alt 5 – Prospector Street Section Line Alignment (Under I-40)



Feasibility Study
Prospector Street Interim Roadway & I-40 Grade Separation

City of Kingman

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Evaluation of Alternatives

EVALUATION CRITERIA	ALTERNATIVE 1 KINGMAN CROSSING ALIGNMENT (UNDER I-40)	ALTERNATIVE 2 PROSPECTOR STREET WEST ALIGNMENT (OVER I-40)	ALTERNATIVE 3 PROSPECTOR STREET WEST ALIGNMENT (UNDER I-40)	ALTERNATIVE 4 PROSPECTOR STREET SECTION LINE ALIGNMENT (OVER I-40)	ALTERNATIVE 5 PROSPECTOR STREET SECTION LINE ALIGNMENT (UNDER I-40)
Construction, Engineering and R/W Costs (2015)	• Constr, Uitl & Eng. costs = $9,075,000 • Right-of-Way Cost = $255,000 • Total Project Cost = $9,330,000	• Constr, Util & Eng. costs = $6,935,000 • Right-of-Way Cost = $253,000 • Total Project Cost = $7,188,000	• Constr, Util & Eng. costs = $6,375,000 • Right-of-Way Cost = $243,000 • Total Project Cost = $6,618,000	• Constr, Util & Eng. costs = $6,810,000 • Right-of-Way Cost = $260,000 • Total Project Cost = $7,070,000	• Constr, Util & Eng. costs = $6,460,000 • Right-of-Way Cost = $268,000 • Total Project Cost = $6,728,000
	Net Effect: Disadvantage	*Net Effect: Neutral*	*Net Effect: Advantage*	*Net Effect: Neutral*	*Net Effect: Advantage*
Roadway Geometry & Safety **Horizontal Alignment** **Vertical Alignment**	• Two 90° horizontal curves, 1 meets 35 mph design criteria, the other meets 20 mph design criteria • Vertical alignment meets 45 mph design criteria	• Three horizontal curves (R=1909') required to avoid utilities. All curves meet 45 mph design criteria. • Vertical alignment meets 45 design criteria	• Three horizontal curves (R=3819', 3819', & 5729') required to avoid utilities. All curves meet 45 mph design criteria. • Vertical alignment meets 45 design criteria	• No horizontal curves required. Meets 45 mph Design Speed • Vertical alignment meets 45 design criteria	• No horizontal curves required. Meets 45 mph Design Speed • Vertical alignment meets 45 design criteria
	Net Effect: Disadvantage	*Net Effect: Neutral*	*Net Effect: Neutral*	*Net Effect: Neutral*	*Net Effect: Neutral*
Earthwork **Total Excavation Volume** **Borrow/Waste Volume** **Borrow/Waste Haul**	• Requires 182,000 CY of excavation to construct the undercrossing of I-40. • Requires hauling off 151,000 CY of waste material. Potential waste sites include the old ADOT borrow pits on adjacent City of Kingman land • Earthwork cost = $910,000	• Requires 98,000 CY of borrow material to construct the roadway embankment from Louise Ave to Santa Rosa. • Will require long hauls from borrow pits that are as far as 20 miles away depending on the quantity and suitability of borrow material available. • Earthwork cost = $712,000	• Requires 74,000 CY of excavation to construct the undercrossing of I-40. • Requires hauling off 60,000 CY of waste material. Potential waste sites include the old ADOT borrow pits on adjacent City of Kingman land. • Earthwork cost = $391,000	• Requires 84,000 CY of borrow material to construct the roadway embankment from Louise Ave to Santa Rosa. • Will require long hauls from borrow pits that are as far as 20 miles away depending on the quantity and suitability of borrow material available. • Earthwork cost = $564,000	• Requires 75,000 CY of excavation to construct the undercrossing of I-40. • Requires hauling off 61,000 CY of waste material. Potential waste sites include the old ADOT borrow pits on adjacent City of Kingman land. • Earthwork cost = $391,000
	Net Effect: Disadvantage	*Net Effect: Disadvantage*	*Net Effect: Advantage*	*Net Effect: Neutral*	*Net Effect: Advantage*
Traffic Operational Impacts **Traffic Volumes & LOS** **Travel Time**	• Eliminates the need for future widening of Eastern Street. • Improves the traffic operations at the Airway Ave/Diamond St/Yavapai St signal • Travel time between the Prospector St. & Louise Ave. Intersection and the Prospector St. & Airway Ave. Intersection = 5.4 minutes (2.7 miles)	• Eliminates the need for future widening of Eastern Street. • Improves the traffic operations at the Airway Ave/Diamond St/Yavapai St signal • Travel time between the Prospector St. & Louise Ave. Intersection and the Prospector St. & Airway Ave. Intersection = 3.3 minutes (1.7 Miles)	• Eliminates the need for future widening of Eastern Street. • Improves the traffic operations at the Airway Ave/Diamond St/Yavapai St signal • Travel time between the Prospector St. & Louise Ave. Intersection and the Prospector St. & Airway Ave. Intersection = 3.3 minutes(1.7 Miles)	• Eliminates the need for future widening of Eastern Street. • Improves the traffic operations at the Airway Ave/Diamond St/Yavapai St signal • Travel time between the Prospector St. & Louise Ave. Intersection and the Prospector St. & Airway Ave. Intersection = 3.3 minutes(1.7 Miles)	• Eliminates the need for future widening of Eastern Street. • Improves the traffic operations at the Airway Ave/Diamond St/Yavapai St signal • Travel time between the Prospector St. & Louise Ave. Intersection and the Prospector St. & Airway Ave. Intersection = 3.3 minutes(1.7 Miles)
	Net Effect: Neutral	*Net Effect: Advantage*	*Net Effect: Advantage*	*Net Effect: Advantage*	*Net Effect: Advantage*
Structures **Bridge Type** **Length & Deck Area**	• Structure Type: Twin Single-span precast-prestressed AASHTO Type VI I-girder • Bridge Length: 146' • Structure Width: 45.17' • Total Bridge area: 13,190 SF • Bridge Cost: $1,570,000	• Structure Type: Single Two-span precast-prestressed AASHTO Type VI I-girder • Bridge Length: 251' • Structure Width: 52.33' • Total Bridge area: 13,135 SF • Bridge Cost: $1,410,000	• Structure Type: Twin Single-span precast-prestressed AASHTO Type VI I-girder • Bridge Length: 66' • Structure Width: 57.17' • Total Bridge area: 7,546 SF • Bridge Cost: $1,420,000	• Structure Type: Single Two-span precast-prestressed AASHTO Type VI I-girder • Bridge Length: 237' • Structure Width: 52.33' • Total Bridge area: 12,402 SF • Bridge Cost: $1,380,000	• Structure Type: Twin Single-span precast-prestressed AASHTO Type VI I-girder • Bridge Length: 64' • Structure Width: 57.17' • Total Bridge area: 7,318 SF • Bridge Cost: $1,410,000
	Net Effect: Disadvantage	*Net Effect: Neutral*	*Net Effect: Neutral*	*Net Effect: Neutral*	*Net Effect: Neutral*

Feasibility Study
Prospector Street Interim Roadway & I-40 Grade Separation

City of Kingman

AECOM

Evaluation of Alternatives

EVALUATION CRITERIA	ALTERNATIVE 1 KINGMAN CROSSING ALIGNMENT (UNDER I-40)	ALTERNATIVE 2 PROSPECTOR STREET WEST ALIGNMENT (OVER I-40)	ALTERNATIVE 3 PROSPECTOR STREET WEST ALIGNMENT (UNDER I-40)	ALTERNATIVE 4 PROSPECTOR STREET SECTION LINE ALIGNMENT (OVER I-40)	ALTERNATIVE 5 PROSPECTOR STREET SECTION LINE ALIGNMENT (UNDER I-40)
Utility Impacts **Number & Type** **Length of Relocation**	• Will require the relocation of the T1 carrier line located along the existing north I-40 right-of-way line. Length = 300’	• Will require the relocation of the T1 carrier line located along the existing north I-40 right-of-way line. Length = 300’	• Will require the relocation of the T1 carrier line located along the existing north I-40 right-of-way line. Length = 300’	• Will require the relocation of the T1 carrier line located along the existing north I-40 right-of-way line. Length = 300’ • Will require the relocation of the Fiber Optic & Telephone line located along the Prospector Street Section line between Airfield and future Santa Rosa Drive extension. Length = 2100’ • Will require the relocation of the overhead power line located along the Prospector Street Section line between I-40 and future Santa Rosa Drive extension. Length = 1100’	• Will require the relocation of the T1 carrier line located along the existing north I-40 right-of-way line. Length = 300’ • Will require the relocation of the Fiber Optic & Telephone line located along the Prospector Street Section line between Airfield and future Santa Rosa Drive extension. Length = 2100’ • Will require the relocation of the overhead power line located along the Prospector Street Section line between I-40 and future Santa Rosa Drive extension. Length = 1100’
	Net Effect: Neutral	*Net Effect: Neutral*	*Net Effect: Neutral*	*Net Effect: Disadvantage*	*Net Effect: Disadvantage*
Impacts to I-40	• Given that the new EB and WB I-40 overpasses will be constructed at-grade on the existing alignments, temporary detours will be required during construction. • Temporary two–lane median cross overs on I-40 will need to be constructed to maintain two-lanes in each direction on I-40 for the long term closure required to construct each bridge.	• Traffic can be maintained on I-40 with minimal closures. • Nighttime closures of I-40 will be required to place the bridge girders. Temporary one–lane median cross overs on I-40 will need to be constructed before placing the bridge girders. Only one-lane cross overs are necessary during nighttime closures due to lower traffic volumes at night.	• Given that the new EB and WB I-40 overpasses will be constructed at-grade on the existing alignments, temporary detours will be required during construction. • Temporary two–lane median cross overs on I-40 will need to be constructed to maintain two-lanes in each direction on I-40 for the long term closure required to construct each bridge.	• Traffic can be maintained on I-40 with minimal closures. • Nighttime closures of I-40 will be required to place the bridge girders. Temporary one–lane median cross overs on I-40 will need to be constructed before placing the bridge girders. Only one-lane cross overs are necessary during nighttime closures due to lower traffic volumes at night.	• Given that the new EB and WB I-40 overpasses will be constructed at-grade on the existing alignments, temporary detours will be required during construction. • Temporary two–lane median cross overs on I-40 will need to be constructed to maintain two-lanes in each direction on I-40 for the long term closure required to construct each bridge.
	Net Effect: Disadvantage	*Net Effect: Advantage*	*Net Effect: Disadvantage*	*Net Effect: Advantage*	*Net Effect: Disadvantage*
Drainage **Floodplains** **Drainage Crossings**	• Grade separation and interim road improvements require 11 culvert crossings. • Minimal impacts to existing drainage patterns. • Requires constructing 2100’ of the ultimate Kingman Crossing TI storm drain system. • Does not impact any I-40 cross culverts	• Grade separation and interim road improvements require 10 culvert crossings. • Minimal impacts to existing drainage patterns. • Does not impact any I-40 cross culverts	• Grade separation and interim road improvements require 8 culvert crossings. • Requires diversion channel to maintain existing drainage patterns. • Requires the extension of one culvert under I-40	• Grade separation and interim road improvements require 10 culvert crossings. • Minimal impacts to existing drainage patterns. • Does not impact any I-40 cross culverts	• Grade separation and interim road improvements require 8 culvert crossings. • Requires diversion channel to maintain existing drainage patterns. • Requires the extension of one culvert under I-40
	Net Effect: Disadvantage	*Net Effect: Neutral*	*Net Effect: Neutral*	*Net Effect: Neutral*	*Net Effect: Neutral*
Environmental Considerations	No known adverse impacts.	No known adverse impacts.	No known adverse impacts.	No known adverse impacts.	No known adverse impacts.
	Net Effect: Neutral	*Net Effect: Neutral*	*Net Effect: Neutral*	*Net Effect: Neutral*	*Net Effect: Neutral*

Summary of Project Costs

Alternative	Total Construction Costs	Design Costs	Right-of-way Costs	Utility Relocation Costs	Total Project Costs
1	$8,480,000	$590,000	$255,000	$5,000	**$9,330,000**
2	$6,480,000	$450,000	$253,000	$5,000	**$7,188,000**
3	$5,950,000	$420,000	$243,000	$5,000	**$6,618,000**
4	$6,300,000	$440,000	$260,000	$70,000	**$7,070,000**
5	$5,970,000	$420,000	$268,000	$70,000	**$6,728,000**

Recommendations

- Alternative 1 – Interim Kingman Crossing Blvd and Alternative 3 – Prospector St West Alignment (Under I-40) recommended for further development
  - Alternative 1 would utilize the proposed KCTI location minimizing overall construction costs and impacts to area.
  - Alternative 3 provides the lowest construction and right-of-way costs

Questions & Answers

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: John A. Dougherty, City Manager

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Update and possible action on fireworks fundraising efforts

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SUMMARY:
Fund raiser extraordinaire Erin Cochran will give a presentation to Council on her fund raising efforts for the July 4th Fire Works display. After Erin's presentation staff would like direction from Council on whether money should be budgeted to cover any short comings in the fund raising efforts. It has been discussed but direction has not been decided on what, if any, of the funding the Council is willing to contribute if the fund raising falls short. The RFQs are due on April 22 and staff will need to lock in a vendor shortly thereafter.

FISCAL IMPACT:
Variable, depending on report given by Erin Cochran. Council can set a not to exceed limit or only the funds raised (no fiscal impact at all).

STAFF RECOMMENDATION:
Neutral but keep in mind that there will be expenses for the block party that same weekend.

REVIEWERS:

Department	Reviewer	Action	Date
City Manager	Dougherty, John	Approved	3/14/2016 - 7:47 PM
City Attorney	Cooper, Carl	Approved	3/15/2016 - 3:00 PM
City Manager	Dougherty, John	Approved	3/28/2016 - 3:11 PM

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Tina D. Moline, Financial Services Director

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Public hearing and consideration of Ordinance 1799R: revision to Ordinance 1799 in an effort to reduce publication costs

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SUMMARY:
On October 6, 2015, City Council adopted Ordinance 1799 which extended the sunset date of June 30, 2016 on the ½% TPT rate increase to December 31, 2017. When Ordinance 1799 was drafted, all of Article IV and a portion of Article VI of the Kingman Tax Code were included in it. Because ARS §9-812 requires publication of Ordinances, publishing the entire Ordinance would have cost the City approximately $14,000. Staff was given direction at the Council priorities work session in January to revise the Ordinance in an effort to reduce publication costs. Staff has revised the Ordinance to reference each affected category rather than reference the details of each affected category.
Although Ordinance 1799R does not amend the City's TPT rate already adopted in Ordinance 1799, ARS §9-499.15 and ARS §42-6054 require the City to meet notification and public hearing requirements.

FISCAL IMPACT:
If Ordinance 1799R is adopted, the City will save more than $13,000 in publication costs.

STAFF RECOMMENDATION:
Staff recommends adopting Ordinance 1799R in an effort to reduce publication costs associated with Ordinance 1799.

ATTACHMENTS:

Description
Ordinance 1799R
Ordinance 1799

REVIEWERS:

Department	Reviewer	Action	Date
Finance	Moline, Tina	Approved	3/19/2016 - 1:43 PM
City Attorney	Cooper, Carl	Approved	3/21/2016 - 10:34 AM
City Manager	Dougherty, John	Approved	3/28/2016 - 3:07 PM

ORDINANCE NO. 1799R

AN ORDINANCE OF THE CITY OF KINGMAN, ARIZONA, RELATING TO THE TRANSACTION PRIVILEGE AND USE TAX; AMENDING THE CITY TAX CODE BY EXTENDING THE SUNSET DATE ON THE TWO AND FIFTY HUNDREDTHS PERCENT (2.5%) INCREASED RATE OF TAXATION FROM JUNE 30, 2016 TO DECEMBER 31, 2017; PROVIDING PENALTIES FOR THE VIOLATION THEREOF; AND PROVIDING FOR SEVERABILITY.

WHEREAS, the City of Kingman Common Council (the "Council") desires to provide an excise tax revenue source combined with other federal, state and local resources for adequate funding of City public safety and general services and to protect the financial integrity of the City of Kingman (the "City"); and

WHEREAS, the Council further desires to provide an excise tax revenue source combined with other federal, state and local funding for construction and maintenance of capital infrastructure, capital projects and equipment identified as priorities within the capital and infrastructure improvements plan and budget; and

WHEREAS, in order to provide sufficient revenues necessary for the delivery of public safety and general services, and capital improvements it is deemed necessary to extend the sunset date on the two and fifty hundredths percent (2.5%) increased rate in the transaction privilege and use tax rate from June 30, 2016 to December 31, 2017.

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF KINGMAN, ARIZONA:

Section 1. The following sections of the City Tax Code will remain at two and fifty hundredths percent (2.5%) from June 30, 2016 to December 31, 2017:

Sec. 8A-405. Advertising.
Sec. 8A-410. Amusements, exhibitions, and similar activities.
Sec. 8A-415. Construction contracting: construction contractors.
Sec. 8A-416. Construction contracting: speculative builders.
Sec. 8A-417. Construction contracting: owner-builders who are not speculative builders.
Sec. 8A-425. Job printing.
Sec. 8A-427. Manufactured buildings.
Sec. 8A-430. Timbering and other extraction.
Sec. 8A-435. Publishing and periodicals distribution.
Sec. 8A-444. Hotels.
Sec. 8A-450. Rental, leasing, and licensing for use of tangible personal property.
Sec. 8A-460. Retail sales: measure of tax; burden of proof; exclusions.
Sec. 8A-470. Telecommunication services.
Sec. 8A-475. Transporting for hire.
Sec. 8A-480. Utility services.
Sec. 8A-610. Use tax.

Section 2. The following section of the City Tax Code will remain at three and fifty hundredths percent (3.5%) from June 30, 2016 to December 31, 2017:

Sec. 8A-455. Restaurants and Bars.

Section 3. Any person found guilty of violating any provision of these amendments to the tax code shall be guilty of a class one misdemeanor. Each day that a violation continues shall be a separate offense punishable as herein above described.

Section 4. If any section, subsection, sentence, clause, phrase or portion of this ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions thereof.

Section 5. The provisions of this ordinance shall become effective on ~~July 1, 2013 through June 30, 2016~~ June 1, 2016 through December 31, 2017.

Section 5. ~~The tax increase imposed pursuant to Section 1 of this ordinance shall not apply to contracts entered into prior to the effective date of this ordinance~~.

Section 6. The revenue generated from the additional 0.5% incremental increase in the tax rate will be designated ~~as follows: restore and maintain general fund unreserved fund balance to no less than 25% of general fund operating expenditures; fund necessary police and fire mobile data terminal system; replace aged and obsolete breathing apparatus used by public safety personnel to operate in hazardous environments; replace fully depreciated public safety equipment and fleet; comply with state mandated automated fingerprinting system; reconstruction and improvements to Airway Avenue west of Stockton Hill Road; establish and install measures for a quiet zone in downtown Kingman; and if there~~ to maintain general fund unreserved fund balance to no less than 25% of general fund operating expenditures; and any excess revenues ~~in future years, said revenues~~ will be applied to projects, public safety and general services as appropriated by the Council.

PASSED AND ADOPTED by the Mayor and Council of the City of Kingman, Arizona, this 5th day of April 2016.

ATTEST:

_____ _____

Sydney Muhle, Clerk Richard Anderson, Mayor

APPROVED AS TO FORM:

_____

Carl Cooper, City Attorney

ORDINANCE NO. 1799

AN ORDINANCE OF THE CITY OF KINGMAN, ARIZONA, RELATING TO THE TRANSACTION PRIVILEGE AND USE TAX; AMENDING THE CITY TAX CODE BY EXTENDING THE SUNSET DATE ON THE TWO AND FIFTY HUNDREDTHS PERCENT (2.5%) INCREASED RATE OF TAXATION FROM JUNE 30, 2016 TO DECEMBER 31, 2017; PROVIDING PENALTIES FOR THE VIOLATION THEREOF; AND PROVIDING FOR SEVERABILITY.

WHEREAS, the City of Kingman Common Council (the "Council") desires to provide an excise tax revenue source combined with other federal, state and local resources for adequate funding of City public safety and general services and to protect the financial integrity of the City of Kingman (the "City"); and

WHEREAS, the Council further desires to provide an excise tax revenue source combined with other federal, state and local funding for construction and maintenance of capital infrastructure, capital projects and equipment identified as priorities within the capital and infrastructure improvements plan and budget; and

WHEREAS, in order to provide sufficient revenues necessary for the delivery of public safety and general services, and capital improvements it is deemed necessary to extend the sunset date on the two and fifty hundredths percent (2.5%) increased rate in the transaction privilege and use tax rate from June 30, 2016 to December 31, 2017.

NOW, THEREFORE, BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF KINGMAN, ARIZONA:

Section 1. The following section of the City Tax Code is amended to read:

CHAPTER 8A - PRIVILEGE AND EXCISE TAXES

Article IV - Privilege Taxes

Sec. 8A-400. Imposition of Privilege Taxes; presumption.

(a) There are hereby levied and imposed, subject to all other provisions of this Chapter, the following Privilege Taxes for the purpose of raising revenue to be used in defraying the necessary expenses of the City, such taxes to be collected by the Tax Collector:
   (1) a Privilege Tax upon persons on account of their business activities, to the extent provided elsewhere in this Article, to be measured by the gross income of persons, whether derived from residents of the City or not, or whether derived from within the City or from without.
   (2) (Reserved)

(b) <u>Taxes imposed by this Chapter are in addition to others</u>. Except as specifically designated elsewhere in this Chapter, each of the taxes imposed by this Chapter shall be in addition to

all other licenses, fees, and taxes levied by law, including other taxes imposed by this Chapter.

(c) Presumption. For the purpose of proper administration of this Chapter and to prevent evasion of the taxes imposed by this Chapter, it shall be presumed that all gross income is subject to the tax until the contrary is established by the taxpayer.

(d) Limitation of exemptions, deductions, and credits allowed against the measure of taxes imposed by this Chapter. All exemptions, deductions, and credits set forth in this Chapter shall be limited to the specific activity or transaction described and not extended to include any other activity or transaction subject to the tax.

Sec. 8A-405. Advertising.

(a) The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the gross income from the business activity upon every person engaging or continuing in the business of "local advertising" by billboards, direct mail, radio, television, or by any other means. However, commission and fees retained by an advertising agency shall not be includable in gross income from "local advertising". All delivery or disseminating of information directly to the public or any portion thereof for a consideration shall be considered "Local Advertising", except the following:

(1) the advertising of a product or service which is sold or provided both within and without the State by more than one "commonly designated business entity" within the State, and in which the advertisement names either no "commonly designated business entity" within the State or more than one "commonly designated business entity". "Commonly Designated Business Entity" means any person selling or providing any product or service to its customers under a common business name or style, even though there may be more than one legal entity conducting business functions using the same or substantially the same business name or style by virtue of a franchise, license, or similar agreement.

(2) the advertising of a facility or of a service or activity in which neither the facility nor a business site carrying on such service or activity is located within the State.

(3) the advertising of a product which may only be purchased from an out-of-State supplier.

(4) political advertising for United States Presidential and Vice Presidential candidates only.

(5) advertising by means of product purchase coupons redeemable at any retail establishment carrying such product but not product coupons redeemable only at a single commonly designated business entity.

(6) advertising transportation services where a substantial portion of the transportation activity of the business entity advertised involves interstate or foreign carriage.

(b) (Reserved)

Sec. 8A-407. (Reserved)

Sec. 8A-410. Amusements, exhibitions, and similar activities.

(a) The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the gross income from the business activity upon every person engaging or continuing in the business of providing amusement that begins in the city or takes place entirely within the City, which includes the following type or nature of businesses:

(1) operating or conducting theaters, movies, operas, shows of any type or nature, exhibitions, concerts, carnivals, circuses, amusement parks, menageries, fairs, races, contests, games, billiard or pool parlors, bowling alleys, skating rinks, tennis courts, golf courses, video games, pinball machines, public dances, dance halls, sports events, jukeboxes, batting and driving ranges, animal rides, or any other business charging admission for exhibition, amusement, or entertainment.

(2) (Reserved)

(b) Deductions or exemptions. The gross proceeds of sales or gross income derived from the following sources is exempt from the tax imposed by this Section:

(1) (Reserved)

(2) Amounts retained by the Arizona Exposition and State Fair Board from ride ticket sales at the annual Arizona State Fair.

(3) Income received from a hotel business subject to tax under Section 8A-444, if all of the following apply:

(A) The hotel business receives gross income from a customer for the specific business activity otherwise subject to amusement tax.

(B) The consideration received by the hotel business is equal to or greater than the amount to be deducted under this subsection.

(C) The hotel business has provided an exemption certificate to the person engaging in business under this section.

(4) Income that is specifically included as the gross income of a business activity upon which another Section of this Article imposes a tax, that is separately stated to the customer and is taxable to the person engaged in that classification not to exceed consideration paid to the person conducting the activity.

(5) Income from arranging transportation connected to amusement activity that is separately stated to the customer, not to exceed consideration paid to the transportation business.

(c) The tax imposed by this Section shall not include arranging an amusement activity as a service to a person's customers if that person is not otherwise engaged in the business of operating or conducting an amusement themselves or through others. This exception does not apply to businesses that operate or conduct amusements pursuant to customer orders and send the billings and receive the payments associated with that activity, including when the amusement is performed by third party independent contractors. For the purposes of this paragraph, "arranging" includes billing for or collecting amusement charges from a person's customers on behalf of the persons providing the amusement.

Sec. 8A-415. Construction contracting: construction contractors.

(a) The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the gross income from the business upon every construction contractor engaging or continuing in the business activity of construction contracting within the City.

(1) However, gross income from construction contracting shall not include charges related to groundwater measuring devices required by A.R.S. Section 45-604.

(2) (Reserved)

(3) Gross income from construction contracting shall not include gross income from the sale of manufactured buildings taxable under Section 8A-427.

(4) For taxable periods beginning from and after July 1, 2008, the portion of gross proceeds of sales or gross income attributable to the actual direct costs of providing architectural or engineering services that are incorporated in a contract is not subject to tax under this Section. For the purposes of this subsection, "direct costs" means the portion of the actual costs that are directly expended in providing architectural or engineering services.

(b) Deductions and exemptions.

(1) Gross income derived from acting as a "subcontractor" shall be exempt from the tax imposed by this Section.

(2) All construction contracting gross income subject to the tax and not deductible herein shall be allowed a deduction of thirty-five percent (35%).

(3) The gross proceeds of sales or gross income attributable to the purchase of machinery, equipment or other tangible personal property that is exempt from or deductible from privilege or use tax under:

(A) Section 8A-465, subsections (g) and (p)

(B) Section 8A-660, subsections (g) and (p)

shall be exempt or deductible, respectively, from the tax imposed by this Section.

(4) The gross proceeds of sales or gross income that is derived from a contract entered into for the installation, assembly, repair or maintenance of income-producing capital equipment, as defined in Section 8A-110, that is deducted from the retail classification pursuant to Section 8A-465(g) that does not become a permanent attachment to a building, highway, road, railroad, excavation or manufactured building or other structure, project, development or improvement shall be exempt from the tax imposed by this Section. If the ownership of the realty is separate from the ownership of the income-producing capital equipment, the determination as to permanent attachment shall be made as if the ownership was the same. The deduction provided in this paragraph does not include gross proceeds of sales or gross income from that portion of any contracting activity which consists of the development of, or modification to, real property in order to facilitate the installation, assembly, repair, maintenance or removal of the income-producing capital equipment. For purposes of this paragraph, "permanent attachment" means at least one of the following:

(A) to be incorporated into real property.

(B) to become so affixed to real property that it becomes part of the real property.

(C) to be so attached to real property that removal would cause substantial damage to the real property from which it is removed.

(5) The gross proceeds of sales or gross income received from a contract for the construction of an environmentally controlled facility for the raising of poultry for the production of eggs and the sorting, or cooling and packaging of eggs shall be exempt from the tax imposed under this Section.

(6) The gross proceeds of sales or gross income that is derived from the installation, assembly, repair or maintenance of clean rooms that are deducted from the tax base of the retail classification pursuant to Section 8A-465, subsection (g) shall be exempt from the tax imposed under this Section.

(7) The gross proceeds of sales or gross income that is derived from a contract entered into with a person who is engaged in the commercial production of livestock, livestock products or agricultural, horticultural, viticultural or floricultural crops or products in this State for the construction, alteration, repair, improvement, movement, wrecking or demolition or addition to or subtraction from any building, highway, road, excavation, manufactured building or other structure, project, development or improvement used directly and primarily to prevent, monitor, control or reduce air, water or land pollution shall be exempt from the tax imposed under this Section.

(8) The gross proceeds of sales or gross income received from a post construction contract to perform post-construction treatment of real property for termite and general pest control, including wood destroying organisms, shall be exempt from tax imposed under this Section.

(9) Through December 31, 2009, the gross proceeds of sales or gross income received from a contract for constructing any lake facility development in a commercial enhancement reuse district that is designated pursuant to A.R.S. § 9-499.08 if the contractor maintains the following records in a form satisfactory to the Arizona Department of Revenue and to the City:

(A) The certificate of qualification of the lake facility development issued by the City pursuant to A.R.S. § 9-499.08, subsection D.

(B) All state and local transaction privilege tax returns for the period of time during which the contractor received gross proceeds of sales or gross income from a contract to construct a lake facility development in a designated commercial enhancement reuse district, showing the amount exempted from state and local taxation.

(C) Any other information considered to be necessary.

(10) Any amount attributable to development fees that are incurred in relation to the construction, development or improvement of real property and paid by the taxpayer as defined in the model city tax code or by a contractor providing services to the taxpayer. For the purposes of this paragraph:

(A) the attributable amount shall not exceed the value of the development fees actually imposed.

(B) the attributable amount is equal to the total amount of development fees paid by the taxpayer or by a contractor providing services to the taxpayer and the total development fees credited in exchange for the construction of, contribution to or dedication of real property for providing public infrastructure, public safety or other public services necessary to the development. The real property must be the subject of the development fees.

(C) "development fees" means fees imposed to offset capital costs of providing public infrastructure, public safety or other public services to a development and authorized pursuant to A.R.S. Section 9-463.05, A.R.S. Section 11-1102 or A.R.S. Title 48 regardless of the jurisdiction to which the fees are paid.

(11) For taxable periods beginning from and after July 1, 2008 and ending before January 1, 2017, the gross proceeds of sales or gross income derived from a contract to provide and install a solar energy device. The contractor shall register with the

department of revenue as a solar energy contractor. By registering, the contractor acknowledges that it will make its books and records relating to sales of solar energy devices available to the department of revenue and the city, as applicable, for examination.

(c) Subcontractor means a construction contractor performing work for either:

(1) a construction contractor who has provided the subcontractor with a written declaration that he is liable for the tax for the project and has provided the subcontractor his City Privilege License number.

(2) an owner-builder who has provided the subcontractor with a written declaration that:

(A) the owner-builder is improving the property for sale; and

(B) the owner-builder is liable for the tax for such construction contracting activity; and

(C) the owner-builder has provided the contractor his City Privilege License number.

(3) a person selling new manufactured buildings who has provided the subcontractor with a written declaration that he is liable for the tax for the site preparation and set-up; and provided the subcontractor his City Privilege License number.

Subcontractor also includes a construction contractor performing work for another subcontractor as defined above.

Sec. 8A-416. Construction contracting: speculative builders.

(a) The tax shall be equal to two and fifty hundredths percent (2.5%) of the gross income from the business activity upon every person engaging or continuing in business as a speculative builder within the City.

(1) The gross income of a speculative builder considered taxable shall include the total selling price from the sale of improved real property at the time of closing of escrow or transfer of title.

(2) "Improved Real Property" means any real property:

(A) upon which a structure has been constructed; or

(B) where improvements have been made to land containing no structure (such as paving or landscaping); or

(C) which has been reconstructed as provided by Regulation; or

(D) where water, power, and streets have been constructed to the property line.

(3) "Sale of Improved Real Property" includes any form of transaction, whether characterized as a lease or otherwise, which in substance is a transfer of title of, or equitable ownership in, improved real property and includes any lease of the property for a term of thirty (30) years or more (with all options for renewal being included as a part of the term). In the case of multiple unit projects, "sale" refers to the sale of the entire project or to the sale of any individual parcel or unit.

(4) "Partially Improved Residential Real Property," as used in this Section, means any improved real property, as defined in subsection (a)(2) above, being developed for sale to individual homeowners, where the construction of the residence upon such property is not substantially complete at the time of the sale.

(b) Exclusions.

(1) In cases involving reconstruction contracting, the speculative builder may exclude from gross income the prior value allowed for reconstruction contracting in determining his taxable gross income, as provided by Regulation.

(2) Fair market value of land. Gross income from the sale of improved real property shall not include the "fair market value" of the land which is included in the real property sold, when a charge for such land is included in the total selling price of the real property sold.

(A) Except as provided in subsection (b)(2)(B) below, the taxpayer must document such "fair market value" to the satisfaction of the Tax Collector, and maintain and provide such documentation upon demand in addition to and in like manner to the books and records required in Article III.

(B) In lieu of the documented fair market value of land allowed in subsection (b)(2)(A) above, an amount equal to twenty percent (20%) of the total selling price may be used to estimate the "fair market value" of land.

(3) (Reserved)

(4) A speculative builder may exclude gross income from the sale of partially improved residential real property as defined in (a)(4) above to another speculative builder only if all of the following conditions are satisfied:

(A) The speculative builder purchasing the partially improved residential real property has a valid City privilege license for construction contracting as a speculative builder; and

(B) At the time of the transaction, the purchaser provides the seller with a properly completed written declaration that the purchaser assumes liability for and will pay all privilege taxes which would otherwise be due the City at the time of sale of the partially improved residential real property; and

(C) The seller also:

(i) maintains proper records of such transactions in a manner similar to the requirements provided in this chapter relating to sales for resale; and

(ii) retains a copy of the written declaration provided by the buyer for the transaction; and

(iii) is properly licensed with the City as a speculative builder and provides the City with the written declaration attached to the City privilege tax return where he claims the exclusion.

(5) For taxable periods beginning from and after July 1, 2008, the portion of gross proceeds of sales or gross income attributable to the actual direct costs of providing architectural or engineering services that are incorporated in a contract is not subject to tax under this section. For the purposes of this subsection, “direct costs” means the portion of the actual costs that are directly expended in providing architectural or engineering services.

(c) Tax liability for speculative builders occurs at close of escrow or transfer of title, whichever occurs earlier, and is subject to the following provisions, relating to exemptions, deductions and tax credits:

(1) Exemptions.

(A) The gross proceeds of sales or gross income attributable to the purchase of machinery, equipment or other tangible personal property that is exempt from or deductible from privilege or use tax under:

(i) Section 8A-465, subsections (g) and (p)

(ii) Section 8A-660, subsections (g) and (p)

shall be exempt or deductible, respectively, from the tax imposed by this Section.

(B) The gross proceeds of sales or gross income received from a contract for the construction of an environmentally controlled facility for the raising of poultry for the production of eggs and the sorting, or cooling and packaging of eggs shall be exempt from the tax imposed under this Section.

(C) The gross proceeds of sales or gross income that is derived from the installation, assembly, repair or maintenance of clean rooms that are deducted from the tax base of the retail classification pursuant to Section 8A-465, subsection (g) shall be exempt from the tax imposed under this section.

(D) The gross proceeds of sales or gross income that is derived from a contract entered into with a person who is engaged in the commercial production of livestock, livestock products or agricultural, horticultural, viticultural or floricultural crops or products in this state for the construction, alteration, repair, improvement, movement, wrecking or demolition or addition to or subtraction from any building, highway, road, excavation, manufactured building or other structure, project, development or improvement used directly and primarily to prevent, monitor, control or reduce air, water or land pollution shall be exempt from the tax imposed under this Section.

(E) Any amount attributable to development fees that are incurred in relation to the construction, development or improvement of real property and paid by the taxpayer as defined in the model city tax code or by a contractor providing services to the taxpayer shall be exempt from the tax imposed under this section. For the purposes of this paragraph:

(i) the attributable amount shall not exceed the value of the development fees actually imposed.

(ii) the attributable amount is equal to the total amount of development fees paid by the taxpayer or by a contractor providing services to the taxpayer and the total development fees credited in exchange for the construction of, contribution to or dedication of real property for providing public infrastructure, public safety or other public services necessary to the development. The real property must be the subject of the development fees.

(iii) "development fees" means fees imposed to offset capital costs of providing public infrastructure, public safety or other public services to a development and authorized pursuant to A.R.S. Section 9-463.05, A.R.S. Section 11-1102 or A.R.S. Title 48 regardless of the jurisdiction to which the fees are paid.

(2) <u>Deductions.</u>

(A) All amounts subject to the tax shall be allowed a deduction in the amount of thirty-five percent (35%).

(B) The gross proceeds of sales or gross income that is derived from a contract entered into for the installation, assembly, repair or maintenance of income-producing capital equipment, as defined in Section 8A-110, that is deducted from the retail classification pursuant to Section 8A-465(g), that does not become a permanent attachment to a building, highway, road, railroad, excavation or manufactured building or other structure, project, development or improvement shall be exempt from the tax imposed by this Section. If the ownership of the realty is separate from the ownership of the income-

producing capital equipment, the determination as to permanent attachment shall be made as if the ownership was the same. The deduction provided in this paragraph does not include gross proceeds of sales or gross income from that portion of any contracting activity which consists of the development of, or modification to, real property in order to facilitate the installation, assembly, repair, maintenance or removal of the income-producing capital equipment. For purposes of this paragraph, "permanent attachment" means at least one of the following:

(i) to be incorporated into real property.

(ii) to become so affixed to real property that it becomes part of the real property.

(iii) to be so attached to real property that removal would cause substantial damage to the real property from which it is removed.

(C) For taxable periods beginning from and after July 1, 2008 and ending before January 1, 2017, the gross proceeds of sales or gross income derived from a contract to provide and install a solar energy device. The contractor shall register with the department of revenue as a solar energy contractor. By registering, the contractor acknowledges that it will make its books and records relating to sales of solar energy devices available to the department of revenue and the city, as applicable, for examination.

(3) Tax credits.

The following tax credits are available to owner-builders or speculative builders, not to exceed the tax liability against which such credits apply, provided such credits are documented to the satisfaction of the tax collector:

(A) A tax credit equal to the amount of city privilege or use tax, or the equivalent excise tax, paid directly to a taxing jurisdiction or as a separately itemized charge paid directly to the vendor with respect to the tangible personal property incorporated into the said structure or improvement to real property undertaken by the owner-builder or speculative builder.

(B) A tax credit equal to the amount of privilege taxes paid to this City, or charged separately to the speculative builder, by a construction contractor, on the gross income derived by said person from the construction of any improvement to the real property.

(C) No credits provided herein may be claimed until such time that the gross income against which said credits apply is reported.

Sec. 8A-417. Construction contracting: owner-builders who are not speculative builders.

(a) At the expiration of twenty-four (24) months after improvement to the property is substantially complete, the tax liability for an owner-builder who is not a speculative builder shall be at an amount equal to two and fifty hundredths percent (2.5%) of:

(1) the gross income from the activity of construction contracting upon the real property in question which was realized by those construction contractors to whom the owner-builder provided written declaration that they were not responsible for the taxes as prescribed in Subsection 8A-415(c)(2); and

(2) the purchase of tangible personal property for incorporation into any improvement to real property, computed on the sales price.

(b) For taxable periods beginning from and after July 1, 2008, the portion of gross proceeds of sales or gross income attributable to the actual direct costs of providing architectural or engineering services that are incorporated in a contract is not subject to tax under this section. For the purposes of this subsection, "direct costs" means the portion of the actual costs that are directly expended in providing architectural or engineering services.

(c) The tax liability of this Section is subject to the following provisions, relating to exemptions, deductions and tax credits:

(1) Exemptions.

(A) The gross proceeds of sales or gross income attributable to the purchase of machinery, equipment or other tangible personal property that is exempt from or deductible from privilege or use tax under:

(i) Section 8A-465, subsections (g) and (p)

(ii) Section 8A-660, subsections (g) and (p)

shall be exempt or deductible, respectively, from the tax imposed by this Section.

(B) The gross proceeds of sales or gross income received from a contract for the construction of an environmentally controlled facility for the raising of poultry for the production of eggs and the sorting, or cooling and packaging of eggs shall be exempt from the tax imposed under this Section.

(C) The gross proceeds of sales or gross income that is derived from the installation, assembly, repair or maintenance of clean rooms that are deducted from the tax base of the retail classification pursuant to Section 8A-465, subsection (g) shall be exempt from the tax imposed under this Section.

(D) The gross proceeds of sales or gross income that is derived from a contract entered into with a person who is engaged in the commercial production of livestock, livestock products or agricultural, horticultural, viticultural or floricultural crops or products in this state for the construction, alteration, repair, improvement, movement, wrecking or demolition or addition to or subtraction from any building, highway, road, excavation, manufactured building or other structure, project, development or improvement used directly and primarily to prevent, monitor, control or reduce air, water or land pollution shall be exempt from the tax imposed under this Section.

(E) Any amount attributable to development fees that are incurred in relation to the construction, development or improvement of real property and paid by the taxpayer as defined in the model city tax code or by a contractor providing services to the taxpayer shall be exempt from the tax imposed under this section. For the purposes of this paragraph:

(i) the attributable amount shall not exceed the value of the development fees actually imposed.

(ii) the attributable amount is equal to the total amount of development fees paid by the taxpayer or by a contractor providing services to the taxpayer and the total development fees credited in exchange for the construction of, contribution to or dedication of real property for providing public infrastructure, public safety or other public services necessary to the development. The real property must be the subject of the development fees.

(iii) "development fees" means fees imposed to offset capital costs of providing public infrastructure, public safety or other public services to a development and authorized pursuant to A.R.S. Section 9-463.05,

A.R.S. Section 11-1102 or A.R.S. Title 48 regardless of the jurisdiction to which the fees are paid.

(2) Deductions.

(A) All amounts subject to the tax shall be allowed a deduction in the amount of thirty-five percent (35%).

(B) The gross proceeds of sales or gross income that is derived from a contract entered into for the installation, assembly, repair or maintenance of income-producing capital equipment, as defined in Section 8A-110, that is deducted from the retail classification pursuant to Section 8A-465(g), that does not become a permanent attachment to a building, highway, road, railroad, excavation or manufactured building or other structure, project, development or improvement shall be exempt from the tax imposed by this Section. If the ownership of the realty is separate from the ownership of the income-producing capital equipment, the determination as to permanent attachment shall be made as if the ownership was the same. The deduction provided in this paragraph does not include gross proceeds of sales or gross income from that portion of any contracting activity which consists of the development of, or modification to, real property in order to facilitate the installation, assembly, repair, maintenance or removal of the income-producing capital equipment. For purposes of this paragraph, "permanent attachment" means at least one of the following:

(i) to be incorporated into real property.

(ii) to become so affixed to real property that it becomes part of the real property.

(iii) to be so attached to real property that removal would cause substantial damage to the real property from which it is removed.

(C) For taxable periods beginning from and after July 1, 2008 and ending before January 1, 2017, the gross proceeds of sales or gross income derived from a contract to provide and install a solar energy device. The contractor shall register with the department of revenue as a solar energy contractor. By registering, the contractor acknowledges that it will make its books and records relating to sales of solar energy devices available to the department of revenue and the city, as applicable, for examination.

(3) Tax credits.

The following tax credits are available to owner-builders and speculative builders, not to exceed the tax liability against which such credits apply, provided such credits are documented to the satisfaction of the tax collector:

(A) A tax credit equal to the amount of city privilege or use tax, or the equivalent excise tax, paid directly to a taxing jurisdiction or as a separately itemized charge paid directly to the vendor with respect to the tangible personal property incorporated into the said structure or improvement to real property undertaken by the owner-builder or speculative builder.

(B) A tax credit equal to the amount of privilege taxes paid to this City, or charged separately to the speculative builder, by a construction contractor, on the gross income derived by said person from the construction of any improvement to the real property.

(C) No credits provided herein may be claimed until such time that the gross income against which said credits apply is reported.

(d) The limitation period for the assessment of taxes imposed by this Section is measured

based upon when such liability is reportable, that is, in the reporting period that encompasses the twenty-fifth (25th) month after said unit or project was substantially complete. Interest and penalties, as provided in Section 8A-540, will be based on reportable date.

(e) (Reserved)

Sec. 8A-418. (Reserved)

Sec. 8A-420. (Reserved)

Sec. 8A-425. Job printing.

(a) The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the gross income from the business activity upon every person engaging or continuing in the business of job printing, which includes engraving of printing plates, embossing, copying, micrographics, and photo reproduction.

(b) The tax imposed by this Section shall not apply to:
   (1) job printing purchased for the purpose of resale by the purchaser in the form supplied by the job printer.
   (2) out-of-City sales.
   (3) out-of-State sales.
   (4) (Reserved)
   (5) sales of job printing to a qualifying hospital, qualifying community health center or a qualifying health care organization, except when the property sold is for use in activities resulting in gross income from unrelated business income as that term is defined in 26 U.S.C. Section 512.
   (6) (Reserved)

Sec. 8A-427. Manufactured buildings.

(a) The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the gross income, including site preparation, moving to the site, and/or set-up, upon every person engaging or continuing in the business activity of selling manufactured buildings within the City. Such business activity is deemed to occur at the business location of the seller where the purchaser first entered into the contract to purchase the manufactured building.

(b) Sales of used manufactured buildings are not taxable.

(c) The sale prices of furniture, furnishings, fixtures, appliances, and attachments that are not incorporated as component parts of or attached to a manufactured building are exempt from the tax imposed by this Section. Sales of such items are subject to the tax under Section 8A-460.

(d) Under this Section, a trade-in will not be allowed for the purpose of reducing the tax liability.

Sec. 8A-430. Timbering and other extraction.

(a) The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the gross income from the business activity upon every person engaging or continuing in the following businesses:
   (1) felling, producing, or preparing timber or any product of the forest for sale, profit, or commercial use.
   (2) extracting, refining, or producing any oil or natural gas for sale, profit, or commercial use.

(b) The rate specified in subsection (a) above shall be applied to the value of the entire product extracted, refined, produced, or prepared for sale, profit, or commercial use, when such activity occurs within the City, regardless of the place of sale of the product or the fact that delivery may be made to a point without the City or without the State.

(c) If any person engaging in any business classified in this Section ships or transports products, or any part thereof, out of the State without making sale of such products, or ships his products outside of the State in an unfinished condition, the value of the products or articles in the condition or form in which they existed when transported out-of-State and before they enter interstate commerce shall be the basis for assessment of the tax imposed by this Section.

(d) (Reserved)

Sec. 8A-432. Mining.

(a) The tax rate shall be at an amount equal to one tenth of one percent (.1%), not to exceed one tenth of one percent, of the gross income from the business activity upon every person engaging or continuing in the business of mining, smelting, or producing for sale, profit, or commercial use any copper, gold, silver, or other mineral product, compound, or combination of mineral products; but not including the extraction, removal, or production of sand, gravel, or rock from the ground for sale, profit, or commercial use.

(b) The rate specified in subsection (a) above shall be applied to the value of the entire product mined, smelted or produced for sale, profit, or commercial use, when such activity occurs within the City, regardless of the place of sale of the product or the fact that delivery may be made to a point without the City or without the State.

(c) If any person engaging in any business classified in this Section ships or transports products, or any part thereof, out of the State without making sale of such products, or ships his products outside of the State in an unfinished condition, the value of the products or articles in the condition or form in which they existed when transported out-of-State and before they enter interstate commerce shall be the basis for assessment of the tax imposed by this Section.

Sec. 8A-435. Publishing and periodicals distribution.

(a) The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the

gross income from the business activity upon every person engaging or continuing in the business activity of:

(1) publication of newspapers, magazines, or other periodicals when published within the City, measured by the gross income derived from notices, subscriptions, and local advertising as defined in Section 8A-405. In cases where the location of publication is both within and without this State, gross income subject to the tax shall refer only to gross income derived from residents of this State or generated by permanent business locations within this State.

(2) distribution or delivery within the City of newspapers, magazines, or other periodicals not published within the City, measured by the gross income derived from subscriptions.

(b) "Location of Publication" is determined by:

(1) location of the editorial offices of the publisher, when the physical printing is not performed by the publisher; or

(2) location of either the editorial offices or the printing facilities, if the publisher performs his own physical printing.

(c) "Subscription income" shall include all circulation revenue of the publisher except amounts retained by or credited to carriers or other vendors as compensation for delivery within the State by such carriers or vendors, and further except sales of published items, directly or through distributors, for the purpose of resale, to retailers subject to the Privilege Tax on such resale.

(d) "Circulation," for the purpose of measurement of gross income subject to the tax, shall be considered to occur at the place of delivery of the published items to the subscriber or intended reader irrespective of the location of the physical facilities or personnel of the publisher. However, delivery by the United States mails shall be considered to have occurred at the location of publication.

(e) Allocation of taxes between cities and towns. In cases where publication or distribution occurs in more than one city or town, the measurement of gross income subject to tax by the City shall include:

(1) that portion of the gross income from publication which reflects the ratio of circulation within this City to circulation in all incorporated cities and towns in this State having substantially similar provisions; plus

(2) only when publication occurs within the City, that portion of the remaining gross income from publication which reflects the ratio of circulation within this City to the total circulation of all incorporated cities or towns in this State within which cities the taxpayer maintains a location of publication.

(f) The tax imposed by this Section shall not apply to sales of newspapers, magazines or other periodicals to a qualifying hospital, qualifying community health center or a qualifying health care organization, except when the property sold is for use in activities resulting in gross income from unrelated business income as that term is defined in 26 U.S.C. Section 512.

Sec. 8A-440. (Reserved)

Sec. 8A-444. Hotels.

The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the gross income from the business activity upon every person engaging or continuing in the business of operating a hotel charging for lodging and/or lodging space furnished to any:

(a) Person.

(b) Exclusions. The tax imposed by this Section shall not include:
   (1) Income derived from incarcerating or detaining prisoners who are under the jurisdiction of the United States, this State or any other state or a political subdivision of this State or of any other state in a privately operated prison, jail or detention facility.
   (2) Gross proceeds of sales or gross income that is properly included in another business activity under this Article and that is taxable to the person engaged in that business activity, but the gross proceeds of sales or gross income to be deducted shall not exceed the consideration paid to the person conducting the activity.
   (3) Gross proceeds of sales or gross income from transactions or activities that are not limited to transients and that would not be taxable if engaged in by a person not subject to tax under this Article.
   (4) Gross proceeds of sales or gross income from transactions or activities that are not limited to transients and that would not be taxable if engaged in by a person subject to taxation under Section 8A-410 or Section 8A-475 due to an exclusion, exemption or deduction.
   (5) Gross proceeds of sales or gross income from commissions received from a person providing services or property to the customers of the hotel. However, such commissions may be subject to tax under Section 8A-445 or Section 8A-450 as rental, leasing or licensing for use of real or tangible personal property.
   (6) Income from providing telephone, fax or Internet services to customers at an additional charge, that is separately stated to the customer and is separately maintained in the hotel's books and records. However, such gross proceeds of sales or gross income may be subject to tax under Section 8A-470 as telecommunication services.

Sec. 8A-445. Rental, leasing, and licensing for use of real property.

(a) The tax rate shall be at an amount equal to two percent (2%) of the gross income from the business activity upon every person engaging or continuing in the business of leasing or renting real property located within the City for a consideration, to the tenant in actual possession, or the licensing for use of real property to the final licensee located within the City for a consideration including any improvements, rights, or interest in such property; provided further that:
   (1) Payments made by the lessee to, or on behalf of, the lessor for property taxes, repairs, or improvements are considered to be part of the taxable gross income.
   (2) Charges for such items as telecommunications, utilities, pet fees, or maintenance are considered to be part of the taxable gross income.
   (3) However, if the lessor engages in telecommunication activity, as evidenced by installing individual metering equipment and by billing each tenant based upon

actual usage, such activity is taxable under Section 8A-470.

(b) If individual utility meters have been installed for each tenant and the lessor separately charges each single tenant for the exact billing from the utility company, such charges are exempt.

(c) Charges by a qualifying hospital, qualifying community health center or a qualifying health care organization to patients of such facilities for use of rooms or other real property during the course of their treatment by such facilities are exempt.

(d) Charges for joint pole usage by a person engaged in the business of providing or furnishing utility or telecommunication services to another person engaged in the business of providing or furnishing utility or telecommunication services are exempt from the tax imposed by this Section.

(e) (Reserved)

(f) A person who has less than three (3) apartments, houses, trailer spaces, or other lodging spaces rented, leased or licensed or available for rent, lease, or license within the State and no units of commercial property for rent, lease, or license within the State, is not deemed to be in the rental business, and is therefore exempt from the tax imposed by this Section on such income. However, a person who has one (1) or more units of commercial property is subject to the tax imposed by this Section on rental, lease and license income from all such lodging spaces and commercial units of real estate even though said person may have fewer than three (3) lodging spaces.

(g) (Reserved)

(h) (Reserved)

(i) (Reserved)

(j) Exempt from the tax imposed by this Section is gross income derived from the activities taxable under Section 8A-444 of this code.

(k) (Reserved)
(l) (Reserved)
(m) (Reserved)

(n) Notwithstanding the provisions of Section 8A-200(b), the fair market value of one (1) apartment, in an apartment complex provided rent free to an employee of the apartment complex is not subject to the tax imposed by this Section. For an apartment complex with more than fifty (50) units, an additional apartment provided rent free to an employee for every additional fifty (50) units is not subject to the tax imposed by this Section.

(o) Income derived from incarcerating or detaining prisoners who are under the jurisdiction of the United States, this State or any other state or a political subdivision of this State or of any other state in a privately operated prison, jail or detention facility is exempt from the

tax imposed by this Section.

(p) Charges by any hospital, any licensed nursing care institution, or any kidney dialysis facility to patients of such facilities for the use of rooms or other real property during the course of their treatment by such facilities are exempt.

(q) Charges to patients receiving "personal care" or "directed care", by any licensed assisted living facility, licensed assisted living center or licensed assisted living home as defined and licensed pursuant to Chapter 4 Title 36 Arizona Revised Statutes and Title 9 of the Arizona Administrative Code are exempt.

(r) Income received from the rental of any "low-income unit" as established under Section 42 of the Internal Revenue Code, including the low-income housing credit provided by IRC Section 42, to the extent that the collection of tax on rental income causes the "gross rent" defined by IRC Section 42 to exceed the income limitation for the low-income unit is exempt. This exemption also applies to income received from the rental of individual rental units subject to statutory or regulatory "low-income unit" rent restrictions similar to IRC Section 42 to the extent that the collection of tax from the tenant causes the rental receipts to exceed a rent restriction for the low-income unit. This subsection also applies to rent received by a person other than the owner or lessor of the low-income unit, including a broker. This subsection does not apply unless a taxpayer maintains the documentation to support the qualification of a unit as a low-income unit, the "gross rent" limitation for the unit and the rent received from that unit.

(s) The gross proceeds of sales or gross income derived from a commercial lease in which a reciprocal insurer or a corporation leases real property to an affiliated corporation. For the purposes of this paragraph:

(1) "Affiliated Corporation" means a corporation that meets one of the following conditions:

(A) the corporation owns or controls at least eighty percent of the lessor.

(B) the corporation is at least eighty percent owned or controlled by the lessor.

(C) the corporation is at least eighty percent owned or controlled by a corporation that also owns or controls at least eighty percent of the lessor.

(D) the corporation is at least eighty percent owned or controlled by a corporation that is at least eighty percent owned or controlled by a reciprocal insurer.

(2) For the purposes of subsection (1), ownership and control are determined by reference to the voting shares of a corporation.

(3) "Reciprocal Insurer" has the same meaning as prescribed in A.R.S. Section 20-762.

Sec. 8A-446. (Reserved)

Sec. 8A-447. Rental, leasing, and licensing for use of real property: additional tax upon transient lodging.

In addition to the taxes levied as provided in Section 8A-444, there is hereby levied and shall be collected an additional tax in an amount equal to four percent (4%) of the gross income from the

business activity of any hotel engaging or continuing within the City in the business of charging for lodging and/or lodging space furnished to any transient

Sec. 8A-450. Rental, leasing, and licensing for use of tangible personal property.

(a) The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the gross income from the business activity upon every person engaging or continuing in the business of leasing, licensing for use, or renting tangible personal property for a consideration, including that which is semi-permanently or permanently installed within the City as provided by Regulation.

(b) Special provisions relating to long-term motor vehicle leases. A lease transaction involving a motor vehicle for a minimum period of twenty-four (24) months shall be considered to have occurred at the location of the motor vehicle dealership, rather than the location of the place of business of the lessor, even if the lessor's interest in the lease and its proceeds are sold, transferred, or otherwise assigned to a lease financing institution; provided further that the city or town where such motor vehicle dealership is located levies a Privilege Tax or an equivalent excise tax upon the transaction.

(c) Gross income derived from the following transactions shall be exempt from Privilege Taxes imposed by this Section:
   (1) rental, leasing, or licensing for use of tangible personal property to persons engaged or continuing in the business of leasing, licensing for use, or rental of such property.
   (2) rental, leasing, or licensing for use of tangible personal property that is semi-permanently or permanently installed within another city or town that levies an equivalent excise tax on the transaction.
   (3) rental, leasing, or licensing for use of film, tape, or slides to a theater or other person taxed under Section 5.04.410, or to a radio station, television station, or subscription television system.
   (4) rental, leasing, or licensing for use of the following:
      (A) prosthetics.
      (B) income-producing capital equipment.
      (C) mining and metallurgical supplies.
      These exemptions include the rental, leasing, or licensing for use of tangible personal property which, if it had been purchased instead of leased, rented, or licensed by the lessee or licensee, would qualify as income-producing capital equipment or mining and metallurgical supplies.
   (5) rental, leasing, or licensing for use of tangible personal property to a qualifying hospital, qualifying community health center or a qualifying health care organization, except when the property so rented, leased, or licensed is for use in activities resulting in gross income from unrelated business income as that term is defined in 26 U.S.C. Section 512 or rental, leasing, or licensing for use of tangible personal property in this State by a nonprofit charitable organization that has qualified under Section 501(c)(3) of the United States Internal Revenue Code and that engages in and uses such property exclusively for training, job placement or rehabilitation programs or testing for mentally or physically handicapped persons.
   (6) separately billed charges for delivery, installation, repair, and/or maintenance as provided by Regulation.
   (7) charges for joint pole usage by a person engaged in the business of providing or

furnishing utility or telecommunication services to another person engaged in the business of providing or furnishing utility or telecommunication services.

(8) (Reserved)

(9) rental, leasing, or licensing of aircraft that would qualify as aircraft acquired for use outside the State, as prescribed by Regulation, if such rental, leasing, or licensing had been a sale.

(10) rental, leasing and licensing for use of an alternative fuel vehicle if such vehicle was manufactured as a diesel fuel vehicle and converted to operate on alternative fuel and equipment that is installed in a conventional diesel fuel motor vehicle to convert the vehicle to operate on an alternative fuel, as defined in A.R.S. Section 1-215.

(11) rental, leasing, and licensing for use of solar energy devices, for taxable periods beginning from and after July 1, 2008. The lessor shall register with the department of revenue as a solar energy retailer. By registering, the lessor acknowledges that it will make its books and records relating to leases of solar energy devices available to the department of revenue and city, as applicable, for examination.

Sec. 8A-452. (Reserved)

Sec. 8A-455. Restaurants and Bars.

(a) The tax rate shall be at an amount equal to three and fifty hundredths percent (3.5%) of the gross income from the business activity upon every person engaging or continuing in the business of preparing or serving food or beverage in a bar, cocktail lounge, restaurant, or similar establishment where articles of food or drink are prepared or served for consumption on or off the premises, including also the activity of catering. Cover charges and minimum charges must be included in the gross income of this business activity.

(b) Caterers and other taxpayers subject to the tax who deliver food and/or serve such food off premises shall also be allowed to exclude separately charged delivery, set-up, and clean-up charges, provided that the charges are also maintained separately in the books and records. When a taxpayer delivers food and/or serves such food off premises, his regular business location shall still be deemed the location of the transaction for the purposes of the tax imposed by this Section.

(c) The tax imposed by this Section shall not apply to sales to a qualifying hospital, qualifying community health center or a qualifying health care organization, except when sold for use in activities resulting in gross income from unrelated business income as that term is defined in 26 U.S.C. Section 512.

(d) The tax imposed by this Section shall not apply to sales of food, beverages, condiments and accessories used for serving food and beverages to a commercial airline, as defined in A.R.S. § 42-–5061(A)49, that serves the food and beverages to its passengers, without additional charge, for consumption in flight.

(e) The tax imposed by this Section shall not apply to sales of prepared food, beverages, condiments or accessories to a public educational entity, pursuant to any of the provisions of Title 15, Arizona Revised Statutes, to the extent such items are to be prepared or served to individuals for consumption on the premises of a public educational entity during school

hours.

(f) For the purposes of this Section, "accessories" means paper plates, plastic eating utensils, napkins, paper cups, drinking straws, paper sacks or other disposable containers, or other items which facilitate the consumption of the food.

Sec. 8A-460. Retail sales: measure of tax; burden of proof; exclusions.

(a) The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the gross income from the business activity upon every person engaging or continuing in the business of selling tangible personal property at retail.

(b) The burden of proving that a sale of tangible personal property is not a taxable retail sale shall be upon the person who made the sale.

(c) Exclusions. For the purposes of this Chapter, sales of tangible personal property shall not include:
   (1) sales of stocks, bonds, options, or other similar materials.
   (2) sales of lottery tickets or shares pursuant to Article I, Chapter 5, Title 5, Arizona Revised Statutes.
   (3) sales of platinum, bullion, or monetized bullion, except minted or manufactured coins transferred or acquired primarily for their numismatic value as prescribed by Regulation.
   (4) gross income derived from the transfer of tangible personal property which is specifically included as the gross income of a business activity upon which another Section of this Article imposes a tax, shall be considered gross income of that business activity, and are not includable as gross income subject to the tax imposed by this Section.
   (5) sales by professional or personal service occupations where such sales are inconsequential elements of the service provided.

(d) (Reserved)

(e) When this City and another Arizona city or town with an equivalent excise tax could claim nexus for taxing a retail sale, the city or town where the permanent business location of the seller at which the order was received shall be deemed to have precedence, and for the purposes of this Chapter such city or town has sole and exclusive right to such tax.

(f) The appropriate tax liability for any retail sale where the order is received at a permanent business location of the seller located in this City or in an Arizona city or town that levies an equivalent excise tax shall be at the tax rate of the city or town of such seller's location.

(g) Retail sales of prepaid calling cards or prepaid authorization numbers for telecommunications services, including sales of reauthorization of a prepaid card or authorization number, are subject to tax under this Section.

Sec. 8A-465. Retail sales: exemptions.

Income derived from the following sources is exempt from the tax imposed by Section 8A-460:

(a) sales of tangible personal property to a person regularly engaged in the business of selling such property.

(b) out-of-City sales or out-of-State sales.

(c) charges for delivery, installation, or other direct customer services as prescribed by Regulation.

(d) charges for repair services as prescribed by Regulation, when separately charged and separately maintained in the books and records of the taxpayer.

(e) sales of warranty, maintenance, and service contracts, when separately charged and separately maintained in the books and records of the taxpayer.

(f) sales of prosthetics.

(g) sales of income-producing capital equipment.

(h) sales of rental equipment and rental supplies.

(i) sales of mining and metallurgical supplies.

(j) sales of motor vehicle fuel and use fuel which are subject to a tax imposed under the provisions of Article I or II, Chapter 16, Title 28, Arizona Revised Statutes; or sales of use fuel to a holder of a valid single trip use fuel tax permit issued under A.R.S. Section 28-5739, or sales of natural gas or liquefied petroleum gas used to propel a motor vehicle.

(k) sales of tangible personal property to a construction contractor who holds a valid Privilege Tax License for engaging or continuing in the business of construction contracting where the tangible personal property sold is incorporated into any structure or improvement to real property as part of construction contracting activity.

(l) sales of motor vehicles to nonresidents of this State for use outside this State if the vendor ships or delivers the motor vehicle to a destination outside this State.

(m) sales of tangible personal property which directly enters into and becomes an ingredient or component part of a product sold in the regular course of the business of job printing, manufacturing, or publication of newspapers, magazines, or other periodicals. Tangible personal property which is consumed or used up in a manufacturing, job printing, publishing, or production process is not an ingredient nor component part of a product.

(n) sales made directly to the Federal government to the extent of:
   (1) one hundred percent (100%) of the gross income derived from retail sales made by a manufacturer, modifier, assembler, or repairer.
   (2) fifty percent (50%) of the gross income derived from retail sales made by any other person.

(o) sales to hotels, bars, restaurants, dining cars, lunchrooms, boarding houses, or similar establishments of articles consumed as food, drink, or condiment, whether simple, mixed, or compounded, where such articles are customarily prepared or served to patrons for consumption on or off the premises, where the purchaser is properly licensed and paying a tax under Section 8A-455 or the equivalent excise tax upon such income.

(p) sales of tangible personal property to a qualifying hospital, qualifying community health center or a qualifying health care organization, except when the property sold is for use in activities resulting in gross income from unrelated business income as that term is defined in 26 U.S.C. Section 512 or sales of tangible personal property purchased in this State by a nonprofit charitable organization that has qualified under Section 501(c)(3) of the United States Internal Revenue Code and that engages in and uses such property exclusively for training, job placement or rehabilitation programs or testing for mentally or physically handicapped persons.

(q) sales of food for home consumption.

(r) (Reserved)
  (1) (Reserved)
  (2) (Reserved)
  (3) (Reserved)
  (4) (Reserved)

(s) sales of groundwater measuring devices required by A.R.S. Section 45-604.

(t) (Reserved)

(u) sales of aircraft acquired for use outside the State, as prescribed by Regulation.

(v) sales of food products by producers as provided for by A.R.S. Sections 3-561, 3-562 and 3-563.

(w) (Reserved)
(x) (Reserved)
(y) (Reserved)
(z) (Reserved)

(aa) the sale of tangible personal property used in remediation contracting as defined in Section 8A-100 and Regulation 8A-100.5.

(bb) sales of materials that are purchased by or for publicly funded libraries including school district libraries, charter school libraries, community college libraries, state university libraries or federal, state, county or municipal libraries for use by the public as follows:
  (1) printed or photographic materials.
  (2) electronic or digital media materials.

(cc) sales of food, beverages, condiments and accessories used for serving food and beverages to a commercial airline, as defined in A.R.S. § 42-5061(A)(49), that serves the food and

beverages to its passengers, without additional charge, for consumption in flight. For the purposes of this subsection, "accessories" means paper plates, plastic eating utensils, napkins, paper cups, drinking straws, paper sacks or other disposable containers, or other items which facilitate the consumption of the food.

(dd) in computing the tax base in the case of the sale or transfer of wireless telecommunication equipment as an inducement to a customer to enter into or continue a contract for telecommunication services that are taxable under Section 8A-470, gross proceeds of sales or gross income does not include any sales commissions or other compensation received by the retailer as a result of the customer entering into or continuing a contract for the telecommunications services.

(ee) for the purposes of this Section, a sale of wireless telecommunication equipment to a person who holds the equipment for sale or transfer to a customer as an inducement to enter into or continue a contract for telecommunication services that are taxable under Section 8A-470 is considered to be a sale for resale in the regular course of business.

(ff) sales of alternative fuel as defined in A.R.S. § 1-215, to a used oil fuel burner who has received a Department of Environmental Quality permit to burn used oil or used oil fuel under A.R.S. § 49-426 or § 49-480.

(gg) sales of food, beverages, condiments and accessories to a public educational entity, pursuant to any of the provisions of Title 15, Arizona Revised Statutes; to the extent such items are to be prepared or served to individuals for consumption on the premises of a public educational entity during school hours. For the purposes of this subsection, "accessories" means paper plates, plastic eating utensils, napkins, paper cups, drinking straws, paper sacks or other disposable containers, or other items which facilitate the consumption of the food.

(hh) sales of personal hygiene items to a person engaged in the business of and subject to tax under Section 8A-444 of this code if the tangible personal property is furnished without additional charge to and intended to be consumed by the person during his occupancy.

(ii) For the purposes of this Section, the diversion of gas from a pipeline by a person engaged in the business of operating a natural or artificial gas pipeline, for the sole purpose of fueling compressor equipment to pressurize the pipeline, is not a sale of the gas to the operator of the pipeline.

(jj) Sales of food, beverages, condiments and accessories to a nonprofit charitable organization that has qualified as an exempt organization under 26 U.S.C Section 501(c)(3) and regularly serves meals to the needy and indigent on a continuing basis at no cost. For the purposes of this subsection, "accessories" means paper plates, plastic eating utensils, napkins, paper cups, drinking straws, paper sacks or other disposable containers, or other items which facilitate the consumption of the food.

(kk) sales of motor vehicles that use alternative fuel was manufactured as a diesel fuel vehicle and converted to operate on alternative fuel and sales of equipment that is installed in a conventional diesel fuel motor vehicle to convert the vehicle to operate on an alternative fuel, as defined in A.R.S. § 1-215.

(ll) Sales of solar energy devices, for taxable periods beginning from and after July 1, 2008. The retailer shall register with the department of Revenue as a solar energy retailer. By registering, the retailer acknowledges that it will make its books and records relating to sales of solar energy devices available to the department of revenue and city, as applicable, for examination.

Sec. 8A-470. Telecommunication services.

(a) The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the gross income from the business activity upon every person engaging or continuing in the business of providing telecommunication services to consumers within this City.

(1) Telecommunication services shall include:

(A) two-way voice, sound, and/or video communication over a communications channel.

(B) one-way voice, sound, and/or video transmission or relay over a communications channel.

(C) facsimile transmissions.

(D) providing relay or repeater service.

(E) providing computer interface services over a communications channel.

(F) time-sharing activities with a computer accomplished through the use of a communications channel.

(2) Gross income from the business activity of providing telecommunication services to consumers within this City shall include:

(A) all fees for connection to a telecommunication system.

(B) toll charges, charges for transmissions, and charges for other telecommunications services; provided that such charges relate to transmissions originating in the City and terminating in this State.

(C) fees charged for access to or subscription to or membership in a telecommunication system or network.

(D) charges for monitoring services relating to a security or burglar alarm system located within the City where such system transmits or receives signals or data over a communications channel.

(E) charges for telephone, fax or Internet access services provided at an additional charge by a hotel business subject to taxation under Section 8A-444.

(b) Resale telecommunication services. Gross income from sales of telecommunication services to another provider of telecommunication services for the purpose of providing the purchaser's customers with such service shall be exempt from the tax imposed by this Section; provided, however, that such purchaser is properly licensed by the City to engage in such business.

(c) Interstate transmissions. Charges by a provider of telecommunication services for transmissions originating in the City and terminating outside the State are exempt from the tax imposed by this Section.

(d) Tax credit offset for franchise fees. There shall be allowed as an offset, up to the amount of tax due, any amounts paid to the City for license fees or franchise fees, but such offset

shall not be allowed against taxes imposed by any other Section of this Chapter. Such offset shall not be deemed in conflict with or violation of subsection 8A-400(b).

(e) However, gross income from the providing of telecommunication services by a cable television system, as such system is defined in A.R.S. Section 9-505, shall be exempt from the tax imposed by this Section.

(f) Prepaid calling cards. Telecommunications services purchased with a prepaid calling card that are taxable under Section 8A-460 are exempt from the tax imposed under this Section.

(g) Internet Access Services - the gross income subject to tax under this section shall not include sales of internet access services to the person's subscribers and customers. For the purposes of this subsection:
   (1) "Internet" means the computer and telecommunications facilities that comprise the interconnected worldwide network of networks that employ the transmission control protocol or internet protocol, or any predecessor or successor protocol, to communicate information of all kinds by wire or radio.
   (2) "Internet Access" means a service that enables users to access content, information, electronic mail or other services over the internet. Internet access does not include telecommunication services provided by a common carrier.

Sec. 8A-475. Transporting for hire.

The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the gross income from the business activity upon every person engaging or continuing in the business of providing the following forms of transportation for hire from this City to another point within the State:

(a) transporting of persons or property by railroad; provided, however, that the tax imposed by this subsection shall not apply to transporting freight or property for hire by a railroad operating exclusively in this State if the transportation comprises a portion of a single shipment of freight or property, involving more than one railroad, either from a point in this State to a point outside this State or from a point outside this State to a point in this State. For purposes of this paragraph, “a single shipment” means the transportation that begins at the point at which one of the railroads first takes possession of the freight or property and continues until the point at which one of the railroads relinquishes possession of the freight or property to a party other than one of the railroads.

(b) transporting of oil or natural or artificial gas through pipe or conduit.

(c) transporting of property by aircraft.

(d) transporting of persons or property by motor vehicle, including towing and the operation of private car lines, as such are defined in Article VII, Chapter 14, Title 42, Arizona Revised Statutes; provided, however, that the tax imposed by this subsection shall not apply to:
   (1) gross income subject to the tax imposed by Article IV, Chapter 16, Title 28, Arizona Revised Statutes.

(2) gross income derived from the operation of a governmentally adopted and controlled program to provide urban mass transportation.
(3) (Reserved)
(4) (Reserved)

(e) (Reserved)

(f) Deductions or exemptions. The gross proceeds of sales or gross income derived from the following sources is exempt from the tax imposed by this Section:
(1) income that is specifically included as the gross income of a business activity upon which another Section of Article IV imposes a tax, that is separately stated to the customer and is taxable to the person engaged in that classification not to exceed consideration paid to the person conducting the activity.
(2) income from arranging amusement or transportation when the amusement or transportation is conducted by another person not to exceed consideration paid to the amusement or transportation business.

(g) The tax imposed by this Section shall not include arranging transportation as a convenience to a person's customers if that person is not otherwise engaged in the business of transporting persons, freight or property for hire. This exception does not apply to businesses that dispatch vehicles pursuant to customer orders and send the billings and receive the payments associated with that activity, including when the transportation is performed by third party independent contractors. For the purposes of this paragraph, "arranging" includes billing for or collecting transportation charges from a person's customers on behalf of the persons providing the transportation.

Sec. 8A-480. Utility services.

(a) The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the gross income from the business activity upon every person engaging or continuing in the business of producing, providing, or furnishing utility services, including electricity, electric lights, current, power, gas (natural or artificial), or water to:
(1) consumers or ratepayers who reside within the City.
(2) consumers or ratepayers of this City, whether within the City or without, to the extent that this City provides such persons utility services, excluding consumers or ratepayers who are residents of another city or town which levies an equivalent excise tax upon this City for providing such utility services to such persons.

(b) Exclusion of certain sales of natural gas to a public utility. Notwithstanding the provisions of subsection (a) above, the gross income derived from the sale of natural gas to a public utility for the purpose of generation of power to be transferred by the utility to its ratepayers shall be considered a retail sale of tangible personal property subject to Sections 8A-460 and 8A-465, and not considered gross income taxable under this Section.

(c) Resale utility services. Sales of utility services to another provider of the same utility services for the purpose of providing such utility services either to another properly licensed utility provider or directly to such purchaser's customers or ratepayers shall be exempt and deductible from the gross income subject to the tax imposed by this Section,

provided that the purchaser is properly licensed by all applicable taxing jurisdictions to engage or continue in the business of providing utility services, and further provided that the seller maintains proper documentation, in a manner similar to that for sales for resale, of such transactions.

(d) Tax credit offset for franchise fees. There shall be allowed as an offset any franchise fees paid to the City pursuant to the terms of a franchise agreement. However, such offset shall not be allowed against taxes imposed by any other Section of this Chapter. Such offsets shall not be deemed in conflict with or violation of subsection 8A-400(b).

(e) The tax imposed by this Section shall not apply to sales of utility services to a qualifying hospital, qualifying community health center or a qualifying health care organization, except when sold for use in activities resulting in gross income from unrelated business income as that term is defined in 26 U.S.C. Section 512.

(f) The tax imposed by this Section shall not apply to sales of natural gas or liquefied petroleum gas used to propel a motor vehicle.

(g) The tax imposed by this Section shall not apply to:
   (1) revenues received by a municipally owned utility in the form of fees charged to persons constructing residential, commercial or industrial developments or connecting residential, commercial or industrial developments to a municipal utility system or systems if the fees are segregated and used only for capital expansion, system enlargement or debt service of the utility system or systems.
   (2) revenues received by any person or persons owning a utility system in the form of reimbursement or contribution compensation for property and equipment installed to provide utility access to, on or across the land of an actual utility consumer if the property and equipment become the property of the utility. This exclusion shall not exceed the value of such property and equipment.

(h) The tax imposed by this Section shall not apply to sales of alternative fuel as defined in A.R.S. § 1-215, to a used oil fuel burner who has received a Department of Environmental Quality permit to burn used oil or used oil fuel under A.R.S. § 49-426 or § 49-480.

Sec. 8A-485. (Reserved)

Article V - Administration

Sec. 8A-500. Administration of this Chapter; rule making.

(a) The administration of this Chapter is vested in and exercised by the City of Kingman, and except as otherwise provided, and all payments shall be made to the City of Kingman. The City may, pursuant to an intergovernmental agreement, contract with the State of Arizona Department of Revenue for the administration of the tax. In such cases, "Tax Collector" shall also mean the Arizona Department of Revenue, when acting as agent in administering this tax.

(b) The Tax Collector shall prescribe the forms and procedures necessary for the administration of the taxes imposed by this Chapter.

(c) Except where such Regulations would conflict with administrative regulations adopted by the City Council or with provisions of this Chapter, all regulations on the Transaction Privilege Tax adopted by the Arizona Department of Revenue under the authority of A.R.S. Section 42-1005 shall be considered Regulations of this Chapter and enforceable as such.

(d) Taxpayers shall be subject to the State taxpayer bill of rights (A.R.S. § 42-2051 et. seq.)

(e) The unified audit committee shall publish uniform guidelines that interpret the model city tax code and that apply to all cities and towns that have adopted the model city tax code as provided by A.R.S. Section 42-6005.
   (1) Prior to finalization of uniform guidelines that interpret the model city tax code, the unified audit committee shall disseminate draft guidelines for public comment.
   (2) Pursuant to A.R.S. Section 42-6005(D), when the state statutes and the model city tax code are the same and where the Arizona Department of Revenue has issued written guidance, the department's interpretation is binding on cities and towns.

Sec. 8A-510. Divulging of information prohibited; exceptions allowing disclosure.

(a) Except as specifically provided, it shall be unlawful for any official or employee of the City to make known information obtained pursuant to this Chapter concerning the business financial affairs or operations of any person.

(b) The City Council may authorize an examination of any return or audit of a specific taxpayer made pursuant to this Chapter by authorized agents of the Federal Government, the State of Arizona, or any political subdivisions.

(c) The Tax Collector may provide to an Arizona county, city, or town any information concerning any taxes imposed in this Chapter relative to the taxing ordinances of that county, city, or town.

(d) Successors, receivers, trustees, personal representatives, executors, guardians,

administrators, and assignees, if directly interested, may be given information by the Tax Collector as to the items included in the measure and amounts of any unpaid tax, interest, and penalties required to be paid.

(e) Upon a written direction by the City Attorney or other legal advisor to the City designated by the City Council, officials or employees of the City may divulge the amount and source of income, profits, leases, or expenditures disclosed in any return or report, and the amount of such delinquent and unpaid tax, penalty, or interest, to a private collection agency having a written collection agreement with the City.

(f) The Tax Collector shall provide information to appropriate representatives of any Arizona city or town to comply with the provisions of A.R.S. Section 42-6003, A.R.S. Section 42-6005, and A.R.S. Section 42-6056.

(g) The Tax Collector may provide information to authorized agents of any other Arizona governmental agency involving the allocation of taxes imposed by Section 8A-435 upon publishing and distribution of periodicals.

(h) The Tax Collector may provide information regarding the enforcement and collection of taxes imposed by this Chapter to any governmental agency with which the City has an agreement.

Sec. 8A-515. (Reserved)

Sec. 8A-516. (Reserved)

Sec. 8A-517. (Reserved)

Sec. 8A-520. Reporting and payment of tax.

(a) The taxpayer shall be required to use the report form authorized by the Tax Collector and shall mail or deliver the same, together with remittance for the amount of tax due, payable to the City of Kingman, to the Tax Collector or any City representative or agent authorized to receive such payment. The tax return shall be signed by the taxpayer or his authorized agent, and such signature shall be evidence that the person signing the return verifies the accuracy of the information supplied in the return.

(b) Payment. If payment is made in any form other than United States legal tender, the tax obligation shall not be satisfied until the payment has been honored in funds.

(c) Requirement of Security. If a taxpayer has remitted payment in the form of a check or other form of draw upon a bank or third party and such remittance has not been honored in funds, the Tax Collector may demand security for future payments.

(d) Method of Reporting. Each taxpayer shall elect to report on either a cash receipts basis or an accrual basis and shall indicate the choice on the Privilege License application. A

taxpayer shall not change his reporting method without receiving prior written approval by the Tax Collector.

(1) Taxpayers must report all gross income subject to the tax using the same basis of reporting.

(2) Taxes imposed upon construction contracting shall be reported as follows:

(A) Construction contractors shall report on either a progressive billing ("accrual") basis or cash receipts basis.

(B) Speculative builders shall report the gross income derived from sale of improved real property at close of escrow or at transfer of title or possession, whichever occurs earlier.

(C) Owner-builders who are not speculative builders shall report taxable amounts as provided in Section 8A-417.

Sec. 8A-530. When tax due; when delinquent; verification of return; extensions.

(a) Except as otherwise specified in this Section, the taxes levied under this Chapter shall be due, payable, and delinquent on the dates specified for the State Transaction Privilege Taxes in A.R.S. Section 42-5014. The taxpayer shall report on the taxes imposed by this Chapter at such frequency to be identical to the taxpayer's reporting frequency for the reporting of State Transaction Privilege Taxes.

(b) (Reserved)
(c) (Reserved)
(d) (Reserved)

(e) The Tax Collector may for good cause extend the date for making any return required under the provisions of this Section as prescribed by A.R.S. Section 42-1107.

Sec. 8A-540. Interest and civil penalties.

Any taxpayer who shall have failed to timely pay any taxes imposed by this Chapter, or file a report for the same in a timely manner, or fail or refuse to allow examination of records by the Tax Collector, shall be subject to any interest or civil penalties on such tax in like manner as such interest and penalties are provided in A.R.S. Sections 42-1123 and 42-1125 for the State Transaction Privilege Tax.

(a) (Reserved)
(b) (Reserved)
(c) (Reserved)
(d) (Reserved)
(e) (Reserved)
(f) (Reserved)
(g) (Reserved)
(h) (Reserved)
(i) (Reserved)

Sec. 8A-541. (Reserved)

Sec. 8A-542. Prospective application of new law or interpretation or application of law.

(a) Unless expressly authorized by law, the Tax Collector shall not apply any newly enacted legislation retroactively or in a manner that will penalize a taxpayer for complying with prior law.

(b) If the Tax Collector adopts a new interpretation or application of any provision of this Chapter or determines that any provision applies to a new or additional category or type of business and the change in interpretation or application is not due to a change in the law:
   (1) the change in interpretation or application applies prospectively only unless it is favorable to taxpayers.
   (2) the Tax Collector shall not assess any tax, penalty or interest retroactively based on the change in interpretation or application.

(c) For purposes of subsection (b), "new interpretation or application" includes policies and procedures which differ from established interpretations of this Chapter.

(d) (Reserved)

Sec. 8A-545. Deficiencies; when inaccurate return is filed; when no return is filed; estimates.

(a) If a taxpayer has failed to file a return or if the Tax Collector is not satisfied with the return or payment of tax required, the Tax Collector may redetermine the tax due, plus penalties and interest, and notify the taxpayer, as provided and prescribed by A.R.S. Sections 42-1108 and 42-1109.

   (1) (Reserved)
   (2) (Reserved)

(b) Estimates by the Tax Collector. Any estimate made by the Tax Collector is to be made on a reasonable basis. The existence of another reasonable basis of estimation does not, in any way, invalidate the Tax Collector's estimate. It is the responsibility of the taxpayer to prove that the Tax Collector's estimate is not reasonable and correct, by providing sufficient documentation of the type and form required by this Chapter or satisfactory to the Tax Collector.

Sec. 8A-546. (Reserved)

Sec. 8A-550. Limitation periods.

(a) Except as provided elsewhere in this Chapter, deficiency assessments for the taxes imposed by this Chapter must be issued within the limitation periods prescribed in A.R.S.

Section 42-1104, and must meet the provisions of A.R.S. Section 42-1108.

(b) (Reserved)

(c) In cases of failure to file a return or a false or fraudulent return, the limitation period shall be as prescribed in A.R.S. Section 42-1109.

(d) Special provisions relating to owner-builders. The limitation for an owner-builder subject to the tax as prescribed in Section 8A-417 shall be based upon the date such tax liability is reportable or was reported, as provided in Section 8A-417.

Sec. 8A-555. Tax Collector may examine books and other records; failure to provide records.

(a) The Tax Collector may require the taxpayer to provide and may examine any books, records, or other documents of any person who, in the opinion of the Tax Collector, might be liable for any tax under this Chapter, for any periods available to him under Section 8A-550.

(b) (Reserved)
(c) (Reserved)

(d) The Tax Collector may use any generally accepted auditing procedures, including sampling techniques, to determine the correct tax liability of any taxpayer. The Tax Collector shall ensure that the procedures used are in accordance with generally accepted auditing standards.

(e) The fact that the taxpayer has not maintained or provided such books and records which the Tax Collector considers necessary to determine the tax liability of any person does not preclude the Tax Collector from making any assessment. In such cases, the Tax Collector is authorized to use estimates, projections, or samplings, to determine the correct tax. The provisions of Section 8A-545(b), concerning estimates, shall apply.

(f) (Reserved)

Sec. 8A-556. (Reserved)

Sec. 8A-560. Erroneous payment of tax; credits and refunds; limitations.

(a) Except as provided in Section 8A-565, the period within which a claim, meeting the requirements of subsection (c) of this Section, for credit may be filed, or refund allowed or made if no claim is filed, shall be as provided in A.R.S. Sections 42-1106 and 42-1118. For purposes of this Section, "claimant" means a taxpayer that has paid a tax imposed under this article and has submitted a credit or refund claim under this Section. Except where the taxpayer has granted a customer a power of attorney to pursue a credit or refund claim on the taxpayer's behalf, claimant does not include any customer of such taxpayer,

whether or not the claimant collected the tax from customers by separately stated itemization.

(b) (Reserved)

(c) A credit or refund claim submitted by a claimant for credit or refund of any taxes, penalties, or interest paid must be in writing and:
(1) Identify the name, address and city tax identification number of the taxpayer; and
(2) Identify the dollar amount of the credit or refund requested; and
(3) Identify the specific tax period involved; and
(4) Identify the specific grounds upon which the claim is based.

(d) (Reserved)
(e) (Reserved)

(f) Interest shall be allowed on the overpayment of tax for any credit or refund authorized pursuant to this Section at the rate and in the manner set forth in Section 8A-540(a). Interest shall be calculated from the date the Tax Collector receives the claimant's written claim meeting the requirements of subsection (c) of this Section.

(g) The denial of a refund by the Tax Collector is subject to the provisions of A.R.S. Section 42-1119.

(h) Claimants shall be subject to the State taxpayer bill of rights (A.R.S. Section 42-2051 et. seq.), except that reasonable fees and other costs may be awarded and are not subject to the monetary limitations of A.R.S. Section 42-2064 if the Tax Collector's position was not substantially justified or was brought for the purpose of harassing the claimant, frustrating the credit or refund process or delaying the credit or refund. For the purposes of this Section, “reasonable fees and other costs" means fees and other costs that are based on prevailing market rates for the kind and quality of the furnished services, not to exceed the amounts actually paid for expert witnesses, the cost of any study, analysis, report, test, project or computer program that is found to be necessary to prepare the claimant's case and necessary fees for attorneys or other representatives.

(i) (Reserved)

(j) Any refund paid under the provisions of this Section shall be paid from the Privilege Tax revenue accounts.

Sec. 8A-565. Payment of tax by the incorrect taxpayer or to the incorrect Arizona city or town.

(a) When it is determined that taxes have been reported and paid to the City by the wrong taxpayer, any taxes erroneously paid shall be transferred by the City to the privilege tax account of the person who actually owes and should have paid such taxes, provided that the City receives an assignment and waiver signed by both the person who actually paid the tax and the person who should have paid the tax.

(b) An assignment and waiver provided under this Section, must:
   (1) identify the name and City privilege license number of the person who erroneously paid the tax and the person who should have paid the tax.
   (2) provide that the person who erroneously paid the tax waives any right such person may have to a refund of the taxes erroneously paid.
   (3) authorize the City Treasurer to transfer the erroneously paid tax to the privilege tax account of the person who should have paid the tax.

(c) When it is determined that taxes have been reported and paid to the wrong Arizona city or town, such taxes shall be remitted to the correct city or town, provided that the city or town to whom the taxes were erroneously paid receives an assignment and waiver signed by both the person who actually paid the tax and the person who should have paid the tax. Where the person who actually paid the tax and the person who should have paid the tax are one and the same, no assignment and waiver need be provided. The City shall neither pay nor charge any interest or penalty on any overpayment or underpayment except such interest and penalty actually paid by the taxpayer relating to such tax.

(d) This Section in no way limits or restricts the applicability of any remedies which may otherwise be available under A.R.S. Section 42-6003. The limitations and procedures set forth in A.R.S. Section 42-6003 shall apply to all payments under this Section.

(e) When reference is made in this Section to this City or an Arizona city or town, and payments made to or requested from this City or an Arizona city or town, the provisions shall be applicable to the Arizona Department of Revenue when it is acting for or on behalf of this City or an Arizona city or town.

Sec. 8A-567. (Reserved)

Sec. 8A-570. Administrative review; petition for hearing or for redetermination; finality of order.

(a) Closing agreements between the Tax Collector and a taxpayer have no force of law unless made in accordance with the provisions of A.R.S. Section 42-1113.

(b) Administrative review.
   (1) Petitions of appeal shall be made to, and hearings shall be conducted by, the Arizona Department of Revenue, in accordance with the provisions of A.R.S. Section 42-1251, as modified by Section 8A-571.
   (2) (Reserved)
   (3) (Reserved)
   (4) (Reserved)
   (5) Hearings shall be held by the Arizona Department of Revenue in accordance with the provisions of A.R.S. Section 42-1251. The Department's decision may be appealed to the State Board of Tax Appeals, in accordance with the provisions of A.R.S. Section 42-1253.

(6) (Reserved)
(7) (Reserved)
(8) (Reserved)

(c) (Reserved)
(d) (Reserved)

(e) Taxpayers shall be subject to the State taxpayer bill of rights (A.R.S. § 42-2051 et. seq.).

Sec. 8A-571. Jeopardy assessments.

(a) If the Tax Collector believes that collection of any amounts imposed by this Chapter will be jeopardized by delay, he shall issue notice to the taxpayer in accordance with the provisions of A.R.S. Section 42-1111.

(b) In cases where such jeopardy notice has been issued, the taxpayer must meet the provisions of A.R.S. Section 42-1111, concerning appeals of jeopardy assessments, before any request for administrative review shall be honored. Any bond or collateral that may be required shall meet the provisions of A.R.S. Section 42-1102.

(c) (Reserved)
(d) (Reserved)
(e) (Reserved)

Sec. 8A-572. (Reserved)

Sec. 8A-575. Judicial review.

(a) Appeal of a State Board of Tax Appeals decision to the courts is valid only if all the provisions of A.R.S. Section 42-1254 are met.

(b) (Reserved)
(c) (Reserved)
(d) (Reserved)

(e) The City has the burden of proof by a preponderance of the evidence in any court proceeding regarding any factual issue relevant to ascertaining the tax liability of a taxpayer. This subsection does not abrogate any requirement of this Chapter that requires a taxpayer to substantiate an item of gross income, exclusion, exemption, deduction, or credit. This subsection applies to a factual issue if a preponderance of the evidence demonstrates that:
(1) the taxpayer asserts a reasonable dispute regarding the issue.
(2) the taxpayer has fully cooperated with the tax collector regarding the issue, including providing within a reasonable period of time, access to and inspection of all witnesses, information and documents within the taxpayer's control, as reasonably requested by the tax collector.

(3) the taxpayer has kept and maintained records as required by the City.

(f) The issuance of an adjusted or corrected assessment or notice of refund due to the taxpayer, where made by the Tax Collector pursuant to the decision of the Hearing Officer, shall not be deemed an acquiescence by the City or the Tax Collector in said decision, nor shall it constitute a bar or estoppel to the institution of an action or counterclaim by the City to recover any amounts claimed to be due to it by virtue of the original assessment.

(g) After the initiation of any action in the appropriate court by either party, the opposite party may file such counterclaim as would be allowed pursuant to the Arizona Rules of Civil Procedure.

Sec. 8A-577. (Reserved)

Sec. 8A-578. (Reserved)

Sec. 8A-580. Criminal penalties.

(a) It is unlawful for any person to knowingly or willfully:
   (1) fail or refuse to make any return required by this Chapter.
   (2) fail to remit as and when due the full amount of any tax or additional tax or penalty and interest thereon.
   (3) make or cause to be made a false or fraudulent return.
   (4) make or cause to be made a false or fraudulent statement in a return, in written support of a return, or to demonstrate or support entitlement to a deduction, exclusion, or credit or to entitle the person to an allocation or apportionment or receipts subject to tax.
   (5) fail or refuse to permit any lawful examination of any book, account, record, or other memorandum by the Tax Collector.
   (6) fail or refuse to remit any tax collected by such person from his customer to the Tax Collector before the delinquency date next following such collection.
   (7) advertise or hold out to the public in any manner, directly or indirectly, that any tax imposed by this Chapter, as provided in this Chapter, is not considered as an element in the price to the consumer.
   (8) fail or refuse to obtain a Privilege License or to aid or abet another in any attempt to intentionally refuse to obtain such a license or evade the license fee.
   (9) reproduce, forge, falsify, fraudulently obtain or secure, or aid or abet another in any attempt to reproduce, forge, falsify, or fraudulently obtain or secure, an exemption from taxes imposed by this Chapter.

(b) The violation of any provision of subsection (a) above shall constitute a Class One Misdemeanor.

(c) In addition to the foregoing penalties, any person who shall knowingly swear to or verify any false or fraudulent statement, with the intent aforesaid, shall be guilty of the offense of

perjury and on conviction thereof shall be punished in the manner provided by law.

Sec. 8A-590. Civil actions.

(a) Liens.

(1) Any tax, penalty, or interest imposed under this Chapter which has become final, as provided in this Chapter, shall become a lien when the City perfects a notice and claim of lien setting forth the name of the taxpayer, the amount of the tax, penalty, and interest, the period or periods for which the same is due, and the date of accrual thereof, the amount of the recording costs by the county recorder in any county in which the taxpayer owns real property and the documentation and lien processing fees imposed by the City council and further, stating that the City claims a lien therefore.

(2) The notice of claim of lien shall be signed by the tax collector under his official seal or the official seal of the City, and, with respect to real property, shall be recorded in the office of the County Recorder of any county in which the taxpayer owns real property, and, with respect to personal property shall be filed in the office of the Secretary of State. After the notice and claim of lien is recorded or filed, the taxes, penalties, interest and recording costs and lien processing fees referred to above in the amounts specified therein shall be a lien on all real property of the taxpayer located in such county where recorded, and all tangible personal property of the taxpayer within the State, superior to all other liens and assessments recorded or filed subsequent to the recording or filing of the notice and claim of lien.

(3) Every tax and any increases, interest, penalties, and recording costs and lien processing fees referred to above, shall become from the time the same is due and payable a personal debt from the person liable to the City, but shall be payable to and recoverable by the Tax Collector and which may be collected in the manner set forth in subsection (b) below.

(4) Any lien perfected pursuant to this Section shall, upon payment of the taxes, penalties, interest, recording costs and lien processing fees referred to above and lien release fees imposed by the county recorder in any county in which the lien was recorded, thereby, be released by the Tax Collector in the same manner as mortgages and judgments are released. The Tax Collector may, at his sole discretion, release a lien in part, that is, against only specified property, for partial payment of moneys due the City.

(b) Actions to recover tax. The Arizona Department of Revenue, or any agent or representative authorized by that Department, may bring action, in the name of the City, to recover taxes as provided in A.R.S. Section 42-1114.

Sec. 8A-595. Collection of taxes when there is succession in and/or cessation of business.

(a) In addition to any remedy provided elsewhere in this City Code that may apply, the Tax Collector may apply the provisions of subsections (b) through (d) below concerning the collection of taxes when there is succession in and/or cessation of business.

(b) The taxes imposed by this Chapter are a lien on the property of any person subject to this Chapter who sells his business or stock of goods, or quits his business, if the person fails to make a final return and payment of the tax within fifteen (15) days after selling or quitting his business.

(c) Any person who purchases, or who acquires by foreclosure, by sale under trust deed or warranty deed in lieu of foreclosure, or by any other method, improved real property or a portion of improved real property for which the Privilege Tax imposed by this Chapter has not been paid shall be responsible for payment of such tax as a speculative builder or owner builder, as provided in Sections 8A-416 and 8A-417.

(1) Any person who is a creditor or an affiliate of creditor, who acquires improved real property directly or indirectly from the creditor's debtor by any means set forth in this subsection, shall pay the tax based on the amount received by the creditor or its affiliate in a subsequent sale of such improved real property to a party unrelated to the creditor, regardless of when such subsequent sale takes place. Such tax shall be due in the month following the month in which the sale of the improved real property by the creditor or its affiliate occurs. Notwithstanding the foregoing, if the real property meets the definition of partially improved residential real property in Section 8A-416(a)(4) and all of the requirements of Section 8A-416(b)(4) are met by the parties to the subsequent sale transaction, then the tax shall not apply to the subsequent sale.

(2) In the event a creditor or its affiliate uses the acquired improved real property for any business purpose, other than operating the property in the manner in which it was operated, or was intended to be operated, before the acquisition or in any other manner unrelated to selling the property, the tax shall be due. The gross income upon which the tax shall be determined pursuant to Sections 8A-416 and 8A-417 shall be the fair market value of the improved real property as of the date of acquisition. The tax shall be due in the month following the month in which such first business use occurs. When applicable, the credit bid shall be deemed to be the fair market value of the property as of the date of acquisition.

(3) Once the subsequent sale by the creditor or its affiliate has occurred and the creditor or its affiliate has paid the tax due from it pursuant to this subsection, neither the creditor nor its affiliate, nor any future owner, shall be liable for any outstanding tax, penalties or interest that may continue to be due from the debtor based on the transfer from the debtor to the creditor or its affiliate.

(4) If the tax liability imposed by either Section 8A-416 or Section 8A-417 on the transfer of the improved real property to the creditor or its affiliate, or any part thereof, is paid to the tax collector by the debtor subsequent to payment of the tax by the creditor or its affiliate, the amount so paid may constitute a credit, as equitably determined by the tax collector in good faith, against the tax imposed on the creditor or its affiliate by either paragraph 1 or paragraph 2 of this subsection.

(5) Notwithstanding anything in this chapter to the contrary, if a creditor or its affiliate is subject to tax as described in paragraph 1 or paragraph 2 of this subsection and such creditor or affiliate has not previously been required to be licensed, such creditor or affiliate shall become licensed no later than the date on which the tax is due.

(d) A person's successors or assignees shall withhold from the purchase money an amount sufficient to cover the taxes required to be paid, and interest or penalties due and payable, until the former owner produces a receipt from the Tax Collector showing that all City tax has been paid or a certificate stating that no amount is due as then shown by the records of the Tax Collector. The Tax Collector shall respond to a request from the seller for a certificate within fifteen (15) days by either providing the certificate or a written notice stating why the certificate cannot be issued.

(1) If a subsequent audit shows a deficiency arising before the sale of the business, the deficiency is an obligation of the seller and does not constitute a liability against a buyer who has received a certificate from the Tax Collector.

(2) If the purchaser of a business or stock of goods fails to obtain a certificate as provided by this Section, he is personally liable for payment of the amount of taxes required to be paid by the former owner on account of the business so purchased, with interest and penalties accrued by the former owner or assignees.

Sec. 8A-596. (Reserved)

Sec. 8A-597. (Reserved)

Article VI - Use Tax

Sec. 8A-600. Use tax: definitions

For the purposes of this Article only, the following definitions shall apply, in addition to the definitions provided in Article I:

"Acquire (for Storage or Use)" means purchase, rent, lease, or license for storage or use.

"Retailer" also means any person selling, renting, licensing for use, or leasing tangible personal property under circumstances which would render such transactions subject to the taxes imposed in Article IV, if such transactions had occurred within this City.

"Storage (within the City)" means the keeping or retaining of tangible personal property at a place within the City for any purpose, except for those items acquired specifically and solely for the purpose of sale, rental, lease, or license for use in the regular course of business or for the purpose of subsequent use solely outside the City.

"Use (of Tangible Personal Property)" means consumption or exercise of any other right or power over tangible personal property incident to the ownership thereof except the holding for the sale, rental, lease, or license for use of such property in the regular course of business.

Sec. 8A-601. (Reserved)

Sec. 8A-602. (Reserved)

Sec. 8A-610. Use tax: imposition of tax; presumption.

(a) There is hereby levied and imposed, subject to all other provisions of this Chapter, an excise tax on the storage or use in the City of tangible personal property, for the purpose of raising revenue to be used in defraying the necessary expenses of the City, such taxes to be collected by the Tax Collector.

(b) The tax rate shall be at an amount equal to two and fifty hundredths percent (2.5%) of the:
   (1) cost of tangible personal property acquired from a retailer, upon every person storing or using such property in this City.
   (2) gross income from the business activity upon every person meeting the requirements of subsection 8A-620(b) or (c) who is engaged or continuing in the business activity of sales, rentals, leases, or licenses of tangible personal property to persons within the City for storage or use within the City, to the extent that tax has been collected upon such transaction.
   (3) cost of the tangible personal property provided under the conditions of a warranty, maintenance, or service contract.
   (4) cost of complimentary items provided to patrons without itemized charge by a

restaurant, hotel, or other business.

(5) cost of food consumed by the owner or by employees or agents of the owner of a restaurant or bar subject to the provisions of Section 8A-455 of this Chapter.

(c) It shall be presumed that all tangible personal property acquired by any person who at the time of such acquisition resides in the City is acquired for storage or use in this City, until the contrary is established by the taxpayer.

(d) Exclusions. For the purposes of this Article, the acquisition of the following shall not be deemed to be the purchase, rental, lease, or license of tangible personal property for storage or use within the City:

(1) stocks, bonds, options, or other similar materials.

(2) lottery tickets or shares sold pursuant to Article I, Chapter 5, Title 5, Arizona Revised Statutes.

(3) Platinum, bullion, or monetized bullion, except minted or manufactured coins transferred or acquired primarily for their numismatic value as prescribed by Regulation.

(e) (Reserved)

Sec. 8A-620. Use tax: liability for tax.

The following persons shall be deemed liable for the tax imposed by this Article; and such liability shall not be extinguished until the tax has been paid to this City, except that a receipt from a retailer separately charging the tax imposed by this Chapter is sufficient to relieve the person acquiring such property from further liability for the tax to which the receipt refers:

(a) Any person who acquires tangible personal property from a retailer, whether or not such retailer is located in this City, when such person stores or uses said property within the City.

(b) Any retailer not located within the City, selling, renting, leasing, or licensing tangible personal property for storage or use of such property within the City, may obtain a License from the Tax Collector and collect the Use Tax on such transactions. Such retailer shall be liable for the Use Tax to the extent such Use Tax is collected from his customers.

(c) Every agent within the City of any retailer not maintaining an office or place of business in this City, when such person sells, rents, leases, or licenses tangible personal property for storage or use in this City shall, at the time of such transaction, collect and be liable for the tax imposed by this Article upon the storage or use of the property so transferred, unless such retailer or agent is liable for an equivalent excise tax upon the transaction.

(d) Any person who acquires tangible personal property from a retailer located in the City and such person claims to be exempt from the City Privilege or Use tax at the time of the transaction, and upon which no City Privilege Tax was charged or paid, when such claim is not sustainable.

(e) Every person storing or using tangible personal property under the conditions of a warranty, maintenance, or service contract.

Sec. 8A-630. Use tax: recordkeeping requirements.

All deductions, exclusions, exemptions, and credits provided in this Article are conditional upon adequate proof of documentation as required by Article III or elsewhere in this Chapter.

Sec. 8A-640. Use tax: credit for equivalent excise taxes paid another jurisdiction.

In the event that an equivalent excise tax has been levied and paid upon tangible personal property which is acquired to be stored or used within this City, full credit for any and all such taxes so paid shall be allowed by the Tax Collector but only to the extent Use Tax is imposed upon that transaction by this Article.

Sec. 8A-650. Use tax: exclusion when acquisition subject to Use Tax is taxed or taxable elsewhere in this Chapter; limitation.

The tax levied by this Article does not apply to the storage or use in this City of tangible personal property acquired in this City, the gross income from the sale, rental, lease, or license of which were included in the measure of the tax imposed by Article IV of this Chapter; provided, however, that any person who has acquired tangible personal property from a vendor in this City without paying the City Privilege Tax because of a representation to the vendor that the property was not subject to such tax, when such claim is not sustainable, may not claim the exclusion from such Use Tax provided by this Section.

Sec. 8A-660. Use tax: exemptions.

The storage or use in this City of the following tangible personal property is exempt from the Use Tax imposed by this Article:

(a) tangible personal property brought into the City by an individual who was not a resident of the City at the time the property was acquired for his own use, if the first actual use of such property was outside the City, unless such property is used in conducting a business in this City.

(b) tangible personal property, the value of which does not exceed the amount of one thousand dollars ($1,000) per item, acquired by an individual outside the limits of the City for his personal use and enjoyment.

(c) charges for delivery, installation, or other customer services, as prescribed by Regulation.

(d) charges for repair services, as prescribed by Regulation.

(e) separately itemized charges for warranty, maintenance, and service contracts.

(f) prosthetics.

(g) income-producing capital equipment.

(h) rental equipment and rental supplies.

(i) mining and metallurgical supplies.

(j) motor vehicle fuel and use fuel which are used upon the highways of this State and upon which a tax has been imposed under the provisions of Article I or II, Chapter 16, Title 28, Arizona Revised Statutes.

(k) tangible personal property purchased by a construction contractor, but not an owner-builder, when such person holds a valid Privilege License for engaging or continuing in the business of construction contracting, and where the property acquired is incorporated into any structure or improvement to real property in fulfillment of a construction contract.

(l) sales of motor vehicles to nonresidents of this State for use outside this State if the vendor ships or delivers the motor vehicle to a destination outside this State.

(m) tangible personal property which directly enters into and becomes an ingredient or component part of a product sold in the regular course of the business of job printing, manufacturing, or publication of newspapers, magazines or other periodicals. Tangible personal property which is consumed or used up in a manufacturing, job printing, publishing, or production process is not an ingredient nor component part of a product.

(n) rental, leasing, or licensing for use of film, tape, or slides by a theater or other person taxed under Section 8A-410, or by a radio station, television station, or subscription television system.

(o) food served to patrons for a consideration by any person engaged in a business properly licensed and taxed under Section 8A-455, but not food consumed by owners, agents, or employees of such business.

(p) tangible personal property acquired by a qualifying hospital, qualifying community health center or a qualifying health care organization, except when the property is in fact used in activities resulting in gross income from unrelated business income as that term is defined in 26 U.S.C. Section 512.

(q) food for home consumption.

(r) (Reserved)
  (1) (Reserved)
  (2) (Reserved)
  (3) (Reserved)
  (4) (Reserved)

(s) groundwater measuring devices required by A.R.S. Section 45-604.

(t) (Reserved)

(u) aircraft acquired for use outside the State, as prescribed by Regulation.

(v) sales of food products by producers as provided for by A.R.S. Sections 3-561, 3-562 and 3-563.

(w) (Reserved)

(x) (Reserved)

(y) tangible personal property donated to an organization or entity qualifying as an exempt organization under 26 U.S.C Section 501(c)(3); if and only if:
   (1) the donor is engaged or continuing in a business activity subject to a tax imposed by Article IV; and
   (2) the donor originally purchased the donated property for resale in the ordinary course of the donor's business; and
   (3) the donor obtained from the donee a letter or other evidence satisfactory to the Tax Collector of qualification under 26 U.S.C. Section 501(c)(3) from the Internal Revenue Service or other appropriate federal agency; and
   (4) the donor maintains, and provides upon demand, such evidence to the Tax Collector, in a manner similar to other documentation required under Article III.

(z) tangible personal property used or stored by this City.

(aa) tangible personal property used in remediation contracting as defined in Section 8A-100 and Regulation 8A-100.5.

(bb) materials that are purchased by or for publicly funded libraries including school district libraries, charter school libraries, community college libraries, state university libraries or federal, state, county or municipal libraries for use by the public as follows:
   (1) printed or photographic materials.
   (2) electronic or digital media materials.

(cc) food, beverages, condiments and accessories used for serving food and beverages to a commercial airline, as defined in A.R.S. § 42-5061(A)(49), that serves the food and beverages to its passengers, without additional charge, for consumption in flight. For the purposes of this subsection, "accessories" means paper plates, plastic eating utensils, napkins, paper cups, drinking straws, paper sacks or other disposable containers, or other items which facilitate the consumption of the food.

(dd) wireless telecommunication equipment that is held for sale or transfer to a customer as an inducement to enter into or continue a contract for telecommunication services that are taxable under Section 8A-470.

(ee) (Reserved)

(ff) alternative fuel as defined in A.R.S. § 1-215, by a used oil fuel burner who has received a Department of Environmental Quality permit to burn used oil or used oil fuel under A.R.S. § 49-426 or § 49-480.

(gg) food, beverages, condiments and accessories purchased by or for a public educational entity, pursuant to any of the provisions of Title 15, Arizona Revised Statutes; to the extent such items are to be prepared or served to individuals for consumption on the premises of a public educational entity during school hours. For the purposes of this subsection, "accessories" means paper plates, plastic eating utensils, napkins, paper cups, drinking straws, paper sacks or other disposable containers, or other items which facilitate the consumption of the food.

(hh) personal hygiene items purchased by a person engaged in the business of and subject to tax under Section 8A-444 of this code if the tangible personal property is furnished without additional charge to and intended to be consumed by the person during his occupancy.

(ii) The diversion of gas from a pipeline by a person engaged in the business of operating a natural or artificial gas pipeline, for the sole purpose of fueling compressor equipment to pressurize the pipeline, is not a sale of the gas to the operator of the pipeline.

(jj) Food, beverages, condiments and accessories purchased by or for a nonprofit charitable organization that has qualified as an exempt organization under 26 U.S.C Section 501(c)(3) and regularly serves meals to the needy and indigent on a continuing basis at no cost. For the purposes of this subsection, "accessories" means paper plates, plastic eating utensils, napkins, paper cups, drinking straws, paper sacks or other disposable containers, or other items which facilitate the consumption of the food.

(kk) sales of motor vehicles that use alternative fuel if such vehicle was manufactured as a diesel fuel vehicle and converted to operate on alternative fuel and sales of equipment that is installed in a conventional diesel fuel motor vehicle to convert the vehicle to operate on an alternative fuel, as defined in A.R.S. § 1-215.

(ll) the storage, use or consumption of tangible personal property in the city or town by a school district or charter school.

Section 2. Any person found guilty of violating any provision of these amendments to the tax code shall be guilty of a class one misdemeanor. Each day that a violation continues shall be a separate offense punishable as herein above described.

Section 3. If any section, subsection, sentence, clause, phrase or portion of this ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions thereof.

Section 4. The provisions of this ordinance shall become effective on ~~July 1, 2013 through June 30, 2016~~ December 1, 2015 through December 31, 2017.

Section 5. ~~The tax increase imposed pursuant to Section 1 of this ordinance shall not apply to contracts entered into prior to the effective date of this ordinance~~.

Section 6. The revenue generated from the additional 0.5% incremental increase in the tax rate will be designated ~~as follows: restore and maintain general fund unreserved fund balance to no less than 25% of general fund operating expenditures; fund necessary police and fire mobile data terminal system; replace aged and obsolete breathing apparatus used by public safety personnel to operate in hazardous environments; replace fully depreciated public safety equipment and fleet; comply with state mandated automated fingerprinting system; reconstruction and improvements to Airway Avenue west of Stockton Hill Road; establish and install measures for a quiet zone in downtown Kingman; and if there~~ to maintain general fund unreserved fund balance to no less than 25% of general fund operating expenditures; and any excess revenues ~~in future years, said revenues~~ will be applied to projects, public safety and general services as appropriated by the Council.

PASSED AND ADOPTED by the Mayor and Council of the City of Kingman, Arizona, this 6th day of October 2015.

ATTEST:

_____ _____

Sydney Muhle, Clerk Richard Anderson, Mayor

APPROVED AS TO FORM:

_____

Carl Cooper, City Attorney

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Carl Cooper, City Attorney and Sydney Muhle, City Clerk

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Council Handbook draft

SUMMARY:
Attached is a draft version of the Council Handbook. Staff requests that Council review and comment. This is a work in progress that may have some internal inconsistencies as well as sections that Staff does not recommend. It is a blend of many different Council handbooks from across the state (and California) based on Council request. It is expected to take more time to complete based on the input from Council. A hard copy has been placed in your mailboxes as well for you to mark up.

FISCAL IMPACT:

STAFF RECOMMENDATION:
review and comment

ATTACHMENTS:

Description

Council Handbook Draft

REVIEWERS:

Department	Reviewer	Action	Date
City Attorney	Cooper, Carl	Approved	3/28/2016 - 12:56 PM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 12:56 PM
City Manager	Dougherty, John	Approved	3/28/2016 - 2:55 PM

KINGMAN CITY COUNCIL HANDBOOK RULES AND PROCEDURE

(ADOPTED DAY/MONTH/YEAR)

SECTION 1. RULES OF PROCEDURE/AUTHORITY

1.1 PROCEDURES

The following are the basis for and are used in conjunction with these basic Rules of Procedure for meetings of the Council, Boards, Commissions and Committees:

A. State Law

B. City Code, including these Council Rules

C. Roberts Rules of Order

In case of inconsistency, conflict, or ambiguity among the documents listed above, such documents shall govern in the order in which they are listed. Failure to follow these procedures does not necessarily invalidate the actions taken by the Council.

1.2 PRESIDING OFFICER

As provided by the City Code, the Mayor, or in the Mayor's absence, the Vice-Mayor, is the Presiding Officer of all Meetings of the Council. In the absence or disability of both the Mayor and the Vice-Mayor, the Meeting shall be called to order by the City Clerk, whereupon, the City Clerk shall immediately call for the selection of a temporary Presiding Officer. If a majority of the Councilmembers present are unable to agree on a Presiding Officer for the meeting, then the meeting shall automatically be adjourned and all agenda items shall be carried over to the next regular Council Meeting.

1.3 PARLIAMENTARIAN

The City Attorney shall serve as Parliamentarian for all Meetings. The City Clerk shall act as Parliamentarian in the absence of the City Attorney and the City Manager shall act as Parliamentarian in the absence of both the City Attorney and City Clerk.

1.4 SUSPENSION OF THE RULES

The Council, by a three-quarter vote of all members present, may suspend strict observance of these Council Rules or other policies and procedures for the timely and orderly progression of the Meeting; provided, however, that a simple majority of the Council may cause a change in the order of items on the Agenda.

SECTION 2. DEFINITIONS

2.1 AGENDA

As set forth in the Order of Business, an Agenda is a formal listing of items to be considered by (i) the Council at a noticed meeting of the Council or (ii) the applicable Board, Commission or Committee at a noticed meeting of that body. The content of the Agenda should not be changed less than 96 hours prior to the public meeting, except in exceptional circumstances, but in no event shall the Agenda be altered less than 24 hours prior to the public meeting, unless otherwise authorized by State law.

2.2 AGENDA PACKET

A compilation of documents supporting the items listed on the Agenda and requiring Council consideration or action, which may be used by Council, staff and the public for more in-depth information than may be presented in an oral report. The Agenda Packet should be made available electronically to the Council or to any citizen on the City's website: www.CityofKingman.gov by 12:00 p.m. the Friday prior to the date of the meeting.

2.3 CONSENT AGENDA

Items listed on the Consent Agenda are considered to be routine, non-controversial matters and will be enacted by one motion and one vote of the Council. All motions and subsequent approvals of Consent Agenda items will include all recommended staff stipulations unless otherwise stated. There will be no

separate discussion of these items unless a Councilmember or member of the public so requests. If a Councilmember or member of the public wishes to discuss an item on the consent agenda, he/she may request so prior to the motion to accept the Consent Agenda or by notifying the City Manager prior to the date of the meeting.

2.4 COUNCIL
Collectively, the Mayor and Common Council of the City of Kingman.

2.5 COUNCIL RULES
These City of Kingman, Arizona, City Council Rules of Procedure.

2.6 MEETING
The gathering, in person or by technological devices, of a quorum of the Council, Boards, Commissions or Committees, at which the Councilmembers, Board members, Commissioners, or Committee members discuss, propose or take legal action, including any deliberations by a quorum with respect to such action. If a quorum is not present, those in attendance will be named for the record by the City Clerk or the staff liaison for a Board, Commission or Committee.

2.7 NEWSPAPER
A daily or weekly paid publication of general circulation within the City of Kingman, Arizona.

2.8 NOTICE
A formal announcement to the public that sets the date, time and the place at which a Meeting will be held. Such notice of Meetings shall be in accordance with the State law, the City Code and these Council Rules.

2.9 QUORUM
The minimum number of Members of the Council, Board, Commission, or Committee that must be present in order for business to be legally transacted. With a seven-member body, a quorum is four Members, unless otherwise specifically authorized by State law.

2.10 CITY
The City of Kingman, an Arizona municipal corporation.

SECTION 3. MEETINGS

3.1 REGULAR MEETINGS
A. Regular Meeting Date; Time. The Council shall hold regular Meetings on the first and third Tuesday of each month at 5:30 p.m. When deemed appropriate, any regular Meeting date of the Council may be changed or cancelled by a majority of the Council. Notice of the rescheduled or cancelled meeting shall be given to the public as is reasonable and practicable under the circumstances. All regular Meetings shall be held at the City Hall Council Chambers or at such place as may be prescribed by the Mayor or the City Manager.
B. Holidays. When the day for a regular Meeting of the Council falls on a legal holiday, no Meeting shall be held on such holiday, but such Meeting shall be held at the same time and the same location on the day designated by the Council that is not a holiday, unless the meeting is otherwise cancelled by the Council.

3.2 ADJOURNED MEETINGS

Any Meeting may be adjourned to a time, place and date certain, but not beyond the next regular Council Meeting. Once adjourned, the Meeting may not be reconvened except at the time, date and place provided for in the motion to adjourn.

3.3 SPECIAL MEETINGS

Special meetings may be called by the City Manager, three or more members of the Council, or by the Mayor. The Council may hold any other meetings it deems necessary at such times and locations as it determines appropriate under the circumstances for the purposes of addressing specific issues, specific neighborhood's concerns, strategic planning, budgeting, or for any other purpose allowed by law, so long as notice of such meeting has been given in accordance with the Arizona Open Meeting Law. The City Clerk shall prepare written notice of special sessions, stating time, place, and agenda; this notice shall be placed in the mailbox, or by telephone, to each member of the Council, the City Manager, and the City Attorney, and shall be posted no later than twenty-four hours in advance of the special meeting. If an emergency requires an earlier meeting of the Council than allowed by this rule, then state statute controls.

3.4 WORK SESSIONS

A. How Convened; When Convened; Notice. The Mayor or the City Manager (at the City Manager's own discretion or upon the written request of three Councilmembers) may convene the Council in a Work Session at any time after giving notice at least 24 hours in advance of such Meeting to members of the Council and the general public. The notice shall include the date, place, hour and purpose of such special Meeting.

B. Purpose. Work sessions are held for the purpose of presentations and discussions on such issues that require more in-depth consideration of the Council than may be possible at a regular Meeting. No formal action of the Council may be taken at such Meetings, other than general consensus or conveying direction to staff for further action. These Meetings shall not provide for a "Call to the Public."

C. At workshop meetings the Council will receive information and presentation of issues from the City Manager and City staff. Council may ask questions and may request that certain information be provided or issues be addressed when items are considered further at another workshop meeting or a regular meeting of Council. Council may direct that matters under consideration be brought forward for formal action at a regular meeting, that further study be conducted if appropriate, that matters under consideration not be pursued further (except for matters requiring a public hearing), or that modifications be made before a matter is considered further. Final action on items is not taken at workshop or study sessions. No formal vote of the Council in favor or against any agenda item may be taken at a workshop or study session.

D. Workshops are not public hearings. On public hearing items, public testimony will be taken before Council action on the item at a regular meeting. No member of the public or interested party has the right to make a presentation or address the Council on an item under consideration in a workshop or study session. Questions may be directed by the Council to a member of the public or another interested party or, in appropriate circumstances, a brief presentation may be permitted by a member of the public or another interested party on an agenda item or a particular question related to an agenda item. The Mayor may limit or end the time for such response to questions or presentation.

3.5 EXECUTIVE SESSIONS

Subject to applicable State law, the Council may hold such closed executive sessions as necessary to conduct the business of the City.

3.6 EMERGENCY MEETINGS

As provided for by State law, the Mayor and Council or the City Manager may call a special emergency Meeting to discuss or take action on an unforeseen issue where time is of the essence and sufficient time does not provide for the posting of a Meeting notice 24 hours or more before the Meeting. Notice of an emergency Meeting of the Council will be posted within 24 hours following the holding of an emergency

Meeting. The notice will include the emergency Meeting's Agenda and a brief but complete description of the nature of the emergency. Emergency Meetings shall not provide for a "Call to the Public."

3.7 MEETINGS TO BE PUBLIC

A. Open to Public. With exception of executive sessions, all regular, special and work session Meetings of the Council, Boards, Commissions, and Committees shall be open to the public.

B. Public Comment. Public comment (Call to the public) is not taken at work sessions, emergency Meetings or at special Meetings, unless the special Meeting includes a public hearing on the Agenda.

3.8 MINUTES OF MEETINGS

A. Staffing. The City Manager shall ensure staff attendance at all regular, special, work session, emergency and executive session Meetings of the Council for the purpose of taking notes and/or audio recordation of the Meeting. The City staff liaison to each Board, Commission or Committee shall ensure staff attendance at all Meetings for the purpose of taking notes and/or audio recordings of the Meetings.

B. Recordings; written minutes. To the extent possible, all open, public Meetings shall be recorded by means of audio or video technology. In addition, written minutes reflecting legislative intent shall be taken so that an accounting of the issues discussed and actions taken is compiled and entered into the permanent Minute Book of the City and kept on file and of record in the Office of the City Clerk. Audio or video recordings of Meetings will be retained for a period of time in accordance with the current City of Kingman and/or State of Arizona approved records retention and disposition schedules. Minutes shall identify speakers by name and shall indicate whether they are Kingman residents, and whether they support or oppose the proposed action (i.e. "for" or "against") along with a summary of the speakers' verbal comments provided at the meeting.

C. Availability. All Meeting minutes of the Council, Boards, Commissions, and Committees are deemed to be public records, with the exception of executive session minutes, which, while they fall under the definition of and are considered public records by State law, are deemed confidential and are only available under limited conditions or by Court Order. Transcribed minutes, or the audio or video recordings of all open Meetings of the Council, Boards, Commissions, and Committees are made available through the City's Web Site, www.CityofKingman.gov within two working days following their approval, or as provided by State law.

D. Executive Sessions. Minutes of executive sessions (1) shall be confidential, (2) are maintained and secured by the City Clerk and (3) may be accessed only as provided by State law.

E. Approval. Minutes of all Meetings of the Council (other than Executive Sessions) may be approved under the consent agenda, unless removed for discussion and separate action.

SECTION 4. NOTICE AND AGENDA

4.1 POSTING NOTICES

A. Time. The City Clerk, or authorized designee, shall prepare all public Meeting notices of the Council, and shall ensure posting of the Meeting notices no less than 24 hours before the date and time set for said Meetings in accordance with State law. The staff liaison to each Board, Commission or Committee shall ensure that agendas are posted in the same manner as for the Council.

B. Locations. Meeting notices shall be posted at a minimum of three locations within the City, including the City Engineering, 220 N. Fourth Street; Development Services, 310 N. Fourth Street, First Floor; City Hall, 310 N. Fourth Street, Second Floor/Spring Street Entrance; and the City's website, www.CityofKingman.gov.

4.2 AGENDA PREPARATION

A. Availability. The City Manager and Mayor, or authorized designee, shall prepare the Agendas for all Meetings of the Council as set forth below. Agendas of all Meetings of the Council shall generally be available to the public no less than 96 hours prior to said Meetings, except in exceptional circumstances.

In no event shall the Agenda be made available less than 24 hours prior to said Meeting. Agendas and Agenda packet materials are made available through the City's web site. The staff liaison to each Board, Commission or Committee shall ensure that the agenda is available in the same manner as required for the Council.

B. Submittal Process. Items may be placed on the Council Agenda for discussion and possible action by the following process (the Agenda process for Boards, Commissions or Committees shall be as determined by the applicable Department Head which shall be substantially the same as the Council agenda submittal process):

1. All Departments: Submittal by Novus Agenda with approvals of the department director and staff (including all attachments) not later than the 5:00 p.m, Monday Agenda Packet preparation week. The City Attorney reviews submitted items for legal conformity. City Manager approves/amends items and signs off, finalizing the item for inclusion in the Agenda Packet.

2. Mayor and Councilmembers: The Mayor or any Councilmember may direct the City Manager through a written request to place an item on an Agenda for action. Any Councilmember may direct the City Manager to place an item on a future Agenda during the "Announcements" portion of a Meeting for discussion relating only to the propriety of (i) placing such item on a future Agenda for action or (ii) directing staff to conduct further research and report back to the Council.

3. City Manager and City Attorney: The City Manager or City Attorney may place an item on the Agenda by including appropriate documentation.

4. Citizen or Group: A citizen or group may apply to have an item placed on the Agenda as follows:

a. Obtain a "Scheduled Public Appearance/Presentation" form from the City Clerk and, when completed, return it to the City Clerk for submission to the City Manager.

b. The City Manager or authorized designee shall research the issue to determine if it may be handled administratively or will require Council discussion. If it is determined that the matter should be placed before the Council, the City Manager shall ensure that documentation, if any, is compiled and the material included in the Agenda Packet. If the City Manager determines that the subject should not be placed on the Agenda, an individual wishing to have an item on the Agenda may (i) ask that the request be forwarded to the Mayor for consideration or (ii) obtain the written request of three members of the Council to place the item on the Agenda, and submit that request to the City Manager.

c. The City Manager may postpone the requested appearance/presentation date, if additional staff time is needed to research a proposed Agenda item.

C. Audio/Visual Requests: Any requests requiring audio/visual support must be submitted to the City Clerk for coordination with the information and technology division a minimum of 48 hours prior to the Meeting to ensure proper coordination and preparation. Department directors are responsible for obtaining presentation materials from applicants or presenters involved in their respective Agenda items.

D. Agenda Item Submittals for Council Executive Sessions. Items may be placed on the Agenda for Council executive session discussion (if in compliance with the City Code and applicable State Statutes) by the following process:

1. Submission by a Councilmember, the City Manager or the City Attorney (with notice to all Councilmembers).

2. Submission by the Mayor (with notice to all Councilmembers).

3. The City Manager and the City Attorney shall review the submittal for executive session discussion, prior to placement on the Agenda, to ensure that the item is the proper subject of an executive session pursuant to State law.

4. The City Attorney shall advise the City Clerk regarding the appropriate Agenda language of executive session items.

E. Agenda Packets. Full Agenda Packets for all noticed Meetings (except executive session documentation) of the Council shall be made available to Councilmembers electronically, generally five days before Meetings; provided, however, that Agenda Packets may be supplemented later under special circumstances so long as no Agenda Packet material is made available less than 24 hours prior to the Meeting, except in the case of exceptional circumstances or an emergency Meeting.

F. Removal Requests. Requests to remove items from the Consent Agenda occurring after the 96 hour posting deadline will be announced by the Mayor at the beginning of the meeting at which the item was scheduled. The posted Agenda will remain unchanged.

4.3 DISTRIBUTION OF NOTICES AND AGENDAS

A. Copies. The City Clerk shall ensure that the Mayor and Council receive copies of all Meeting notices and Agendas and any documentation provided for said Meeting electronically, not less than 72 hours prior to the Meeting, unless exceptional circumstances require a later delivery.

B. Distribution. The City Clerk shall ensure that the Meeting notices, Agendas and packet documentation, as deemed necessary, are posted to the City's website: www.CityofKingman.gov and made available to the Mayor and Council, the public, City Manager, City Attorney, and staff electronically by 12:00 p.m. on the Thursday prior to the date of the meeting.

C. Amendments. A posted Agenda may be amended up to 96 hours prior to such meeting. In exceptional circumstances, such Agenda may be amended up to, but not less than, 24 hours prior to the designated Meeting, unless otherwise authorized by State Law. Amended Agendas shall indicate the date amended.

SECTION 5. ORDER OF BUSINESS

5.1 ORDER OF BUSINESS

The Order of Business of each Meeting shall be as contained in the Agenda. The Agenda shall be a sequentially numbered listing by topic and a brief description of business items that shall be taken up for consideration.

5.2 REGULAR MEETINGS

The Agenda shall be prepared in the following order:
Call To Order
Invocation/Moment of Reflection
Pledge Of Allegiance
Roll Call
Approval of Minutes
Appointments
Awards/Recognition
Call to the Public
Consent Agenda
Old Business
New Business
Department Reports
Council Liaison Reports
Announcements by Mayor, Council Members, and City Manager
Executive Session
Adjournment

All Agendas shall have the following statement placed at the bottom:
The City of Kingman endeavors to make all public Meetings accessible to persons with disabilities. Please call XXX-XXX-XXXX (voice) or 1-800-XXX-XXXX (TDD) 48 hours prior to the Meeting to request a reasonable accommodation to participate in this Meeting or to obtain Agenda information in large print format.

A. Roll Call. Before the Call to Order and the Pledge of Allegiance, the Moment of Reflection or Invocation and before proceeding with the business of the Council, the Presiding Officer shall direct the City Clerk or authorized designee to call the Roll, and the names of Councilmembers both present and

absent shall be entered into the minutes. The order of roll call shall be: Mayor, Vice Mayor and then Councilmembers alphabetically.

B. Proclamations: All requests should be submitted to the Mayor, through the City Clerk's Office, for consideration. The subject or recipient should be City related. It is within the Mayor's discretion whether to prepare such a document and/or place it on the agenda.

C. Call to the Public.

1. All citizens and interested parties will be limited to a maximum of three minutes to address the Council on a non-Agenda item.

2. All citizens and interested parties wishing to speak before the Council shall fully complete a speaker's request form. Speaker Cards submitted by those who indicate they will not speak will be grouped together in the order in which the cards were received and by the categories of "for" and "against" relating to the item indicated on the Speaker Card. The City Clerk will announce the number of cards received, if any, and number received per category.

3. At the conclusion of each citizen's comments, the Presiding Officer may take any or all of the following actions:

a. Thank speaker for addressing issue.

b. Ask staff to review matter.

c. Ask that a matter be put on a future Agenda.

d. Permit individual Councilmembers to respond to criticism raised during the Call to the Public after all requests to speak have taken place.

4. Light and/or sound signals shall be used to indicate the commencement of the time for speaking and a warning light may flash to show that the appropriate time has passed. A red light will signal that there is no longer any remaining time.

D. Consent Agenda.

1. The Consent Agenda includes items that are of such a nature that discussion is not required, or issues that have been previously studied by the Council. These items may be adopted by one motion.

2. There is no detailed discussion on items listed under the Consent Agenda, unless a member of the Council or any member of the public in attendance at the Meeting requests that an item or items be removed for discussion. Councilmembers or the public may not ask a question without removal of the item from the Consent Agenda.

3. Items removed from the Consent Agenda are considered in their normal sequence as listed on the Agenda.

E. Action Items.

1. At the time each business item is presented to the Council, the City staff shall present a report on the subject and the applicant, if any, may also speak. The Mayor or the City Clerk, or authorized designee, will then call the speaker cards of those citizens desiring input and comments. If allowed, citizens and interested parties wishing to speak before the Council shall fully complete speaker request forms and submit the forms to the City Clerk, or authorized designee, prior to Council discussion of that Agenda item. Sufficient speaker request forms shall be located at the City Clerk's position on the dais. Completed speaker request forms will be retained by the City Clerk until the draft minutes are approved by the Council at a subsequent meeting. Speakers' names and comments will be summarized and included in the meeting minutes. Speakers will be called in the order in which the speaker cards were received. If a speaker chooses not to speak when called, such speaker will be deemed to have waived his/her opportunity to speak on that matter.

2. Those speaking before Council will be allowed three contiguous minutes to address Council, but time limits may be waived by consensus of the Council at a Meeting. Speakers may not reserve a portion of their time for a later time or transfer any portion of their time to another speaker.

3. The purpose of all public comments is to provide information and the speaker's views for Council consideration. It is not appropriate for the speakers to question directly, or debate the matter under consideration with staff, other speakers, the audience or Councilmembers; all remarks will be addressed to the Presiding Officer and not to individual Councilmembers. All comments shall be addressed through

the Presiding Officer who shall decide if any response is warranted and who, if anyone, shall address the concern. Councilmembers may request, upon recognition by the Presiding Officer, clarification of comments or materials presented by the speakers, any applicant's representatives or City staff; provided, however, that no Councilmember shall engage in debate directly with such speakers, representatives or City staff.

4. Proper decorum must be observed by Councilmembers, by speakers in providing testimony and remarks and by the audience. In order to conduct an orderly business Meeting, the Presiding Officer shall keep control of the Meeting and shall require the speakers and audience to refrain from abusive or profane remarks, disruptive outbursts, applause, protests or other conduct that disrupts or interferes with the orderly conduct of the business of the Meeting. Personal attacks on Councilmembers, City staff or members of the public are not allowed.

5. Generally, Agenda items requiring public hearings, other than those of a quasi-judicial nature, shall be conducted in the following order:

a. The Presiding Officer will announce the matter that is set forth for a public hearing and, if appropriate, ask the staff to provide a report of the matter.

b. The Presiding Officer will then ask the applicant to speak regarding the matter.

c. At the conclusion of the staff report and/or presentation by the applicant, the Presiding Officer will open the public hearing for comments from the public.

d. After all public comments are heard, the Presiding Officer will close the public hearing, and may ask staff or the applicant to respond to the comments.

e. The Presiding Officer may then call for a motion and second, if applicable, and ask if Council wishes to discuss the issue. Council may then proceed to discuss the matter.

f. Upon the conclusion of Council comment, the Presiding Officer will call for action on the motion.

g. Exhibits, letters, petitions, and other documentary items presented or shown to the Council on a public hearing item become part of the record of the public hearing and shall be maintained by the City Clerk.

h. Ten collated sets of written or graphic materials should be provided by the speaker to the City Clerk prior to the commencement of the hearing to allow for distribution to the Council, key City staff and the City Clerk for inclusion in the public record. Reduced copies (8 ½" X 11") of large graphic exhibits should be provided as part of the sets of materials for distribution as provided above. The appropriate staff member shall be responsible to notify applicants of this requirement.

6. Questions or comments from the public shall be limited to the subject under consideration. Depending upon the extent of the Agenda and the number of persons desiring to speak on an issue, the Presiding Officer may, at the beginning of the Agenda item, limit repetitive testimony, but in no event to less than three minutes per topic. Upon approval of (a) the Presiding Officer or (b) a majority of the Council, persons may be allowed to speak longer than three minutes. Councilmembers may ask the individual speaker questions through the Presiding Officer.

7. Quasi-judicial hearings shall be conducted in accordance with the principles of due process, and the City Attorney shall advise the Council in this regard.

F. Announcements. The Council may (1) give direction to the City Manager to follow-up on matters presented at that Meeting, (2) to bring an item before the Council on a future Agenda for discussion and possible action, or (3) direct staff to conduct further research and report back to the Council. The Mayor, individual Councilmembers and the City Manager may present a brief summary on current events and/or activities. The Arizona open meeting law does not allow discussion or action on any matter mentioned during this summary.

G. Adjournment. The open, public Meetings of the Council may be adjourned by consensus of the Council.

5.3 SPECIAL MEETINGS

A. As Substitute for Regular Meeting. If a Special Meeting is being held as an extension of or in place of a Regular Meeting, the Agenda shall be as set forth for a Regular Meeting.

B. Generally. For all other Special Meetings, the Agenda shall be prepared in the following order:

AGENDA
Call To Order
Roll Call
Consent Agenda (if needed – explanatory paragraph same as regular Meeting)
Action Items (grouped by subject to the extent possible)
Adjournment

5.4 WORK SESSION MEETINGS
The primary purpose of work session Meetings is to provide the Council with the opportunity for in-depth discussion and study of specific subjects. Public comment is not provided for on the Agenda and may be made only as approved by consensus of the Council. In appropriate circumstances, a brief presentation may be permitted by a member of the public or another interested party on an Agenda item if invited by the Mayor and Council to do so. The Presiding Officer may limit or end the time for such presentations.
The work session Agenda shall be prepared in the following order:
Call To Order
Roll Call
Work Session Statement (explanatory statement)
All Items Listed Are For Discussion Only. No Action Can Or Will Be Taken.
The primary purpose of work session Meetings is to provide the Council with the opportunity for in-depth discussion and study of specific subjects. Public comment is not provided for on the Agenda and may be made only as approved by consensus of the Council. In appropriate circumstances, a brief presentation may be permitted by a member of the public or another interested party on an Agenda item if invited by the Mayor or the City Manager to do so. The Presiding Officer may limit or end the time for such presentations.
Agenda Items For Discussion (Items Numbered For Order)
Adjournment

SECTION 6. PROCEDURES FOR CONDUCTING THE MEETING

6.1 CALL TO ORDER
A Meeting of the Council shall be called to order by the Presiding Officer, (the Mayor or in his/her absence, by the Vice-Mayor). In the absence of both the Mayor and Vice-Mayor, the Meeting shall be called to order by the City Clerk, who shall immediately call for the selection of a temporary Presiding Officer.

6.2 PARTICIPATION OF PRESIDING OFFICER
The Presiding Officer may debate from the Chair, subject only to such limitations of debate as are imposed on all Councilmembers, and he/she shall not be deprived of any of the rights and privileges of a Councilmember by reason of his/her acting as Presiding Officer. The Presiding Officer is responsible for the conduct of the Meeting.

6.3 QUESTION TO BE STATED
The Presiding Officer shall verbally restate, or shall ask the City Clerk to verbally restate, each question immediately prior to calling for discussion and the vote. Following the vote, the Presiding Officer shall ask the City Clerk or authorized designee to verbally announce the results of voting, including the ayes, nays and abstentions. The Presiding Officer shall publicly state the effect of the vote for the benefit of the audience before proceeding to the next item of business. Formal votes shall not be taken at work sessions or executive sessions.

6.4 RULES/DECORUM/ORDER

A. Points of Order. The Presiding Officer shall determine all points of order after consultation with the Parliamentarian, subject to the right of any member to appeal such determination to the whole Council. If any appeal is taken, the question (motion) shall be substantially similar to the following: "Shall the decision of the Presiding Officer be sustained?" In which event, following a second, a majority vote shall govern, and conclusively determine such question of order.
B. Order and Decorum.
1. Councilmembers: Any Councilmember desiring to speak shall address the Presiding Officer and, upon recognition by the Presiding Officer, may speak.
2. Employees: Members of the administrative staff and employees of the City shall observe the same rules of procedure and decorum applied to Councilmembers. The City Manager shall ensure that all City employees observe such decorum and will direct the participation of any staff member in the discussion of the Council. The City Manager shall first be recognized by the Presiding Officer prior to addressing the Council. Any staff member desiring to speak shall first be recognized by the City Manager.
3. Public: Members of the public attending the Meetings shall observe the same rules of order and decorum applicable to the Council. Unauthorized remarks or demonstrations from the audience, such as applause, stamping of feet, whistles, boos or yells shall not be permitted by the Presiding Officer, who may direct a law enforcement officer to remove such offender/s from the room.
C. Enforcement of Decorum. Proper decorum is to be maintained during all Meetings by the Council, staff and guests. It is the responsibility of the Presiding Officer of the Meeting to ensure compliance with this Policy. The Presiding Officer shall request that a speaker refrain from improper conduct; if the speaker refuses, the Presiding Officer may end the speaker's time at the podium. If the speaker refuses to yield the podium after being asked to do so by the Presiding Officer, the Presiding Officer may (1) recess the Meeting for a brief time (2) end the speaker's time at the podium or (3) direct a law enforcement officer present at the Meeting to remove from the Meeting the person whose conduct is disorderly or disruptive.

6.5 TELECONFERENCE PROCEDURE
Meetings may be conducted by teleconference as follows:
A. Prior Notice. When a Councilmember is unable to attend a Meeting and desires to participate in the Meeting by telephone, the Councilmember shall be permitted to do so provided he/she gives the City Clerk, or authorized designee, notice of his/her inability to be present at the Meeting at least 24 hours prior to the Meeting.
B. Notation on Agenda. The notice of the Meeting and the Agenda shall include the following: "Councilmembers of the City of Kingman will attend either in person or by telephone conference call."
C. Public Access. Facilities will be used at the Meeting to permit the public to observe and hear all telephone communications.
D. Notation in Minutes. The Minutes of the Meeting shall clearly set forth which members are present in person and which are present by telephone.

6.6 ADDRESSING THE COUNCIL
A. Manner of Addressing the Council.
1. Any member of the public desiring to address the Council shall proceed to the podium after having been recognized by the Presiding Officer. There shall be no loud vocalization (shouting or calling out) from the seating area of the Council Chamber. At the podium, the speaker shall clearly state his/her name for the record and shall indicate if he/she is a City resident.
2. Special assistance for sight and/or hearing-impaired persons can be provided. Anyone requiring such assistance should contact the City Clerk 48 hours before a Meeting to request an accommodation to participate in the Meeting.
B. Limitation Regarding Public Comment and Reports. The making of oral communications to the Council by any member of the public during the "Call to the Public: (Non-Agenda Items)" or under an action item, shall be subject to the following limitations:

1. All citizens wishing to address the Council shall complete and submit a speaker's request form and turn it in to the City Clerk, indicating the speaker's name, address, and the agenda item on which he or she wishes to speak. Persons wishing to speak under "Call to the Public" shall designate a subject matter on which they will speak. On agenda items that are not scheduled for public hearing, brief public comment may be allowed, time permitting. The time permitted for such public comment by each speaker will be limited as provided for public hearing items.
2. The Presiding Officer may limit the number of speakers heard on the "Call to the Public" section of the Meeting to allow the Meeting to proceed and end in a timely manner.
3. If it appears that several speakers desire to provide repetitive comments regarding a single topic, the Presiding Officer may limit the number of speakers. The Mayor may close the public comment on non-public hearing agenda items, even if not all interested parties have spoken, or end the time for comment by a speaker, to allow the meeting to proceed.
4. Speakers may be limited to less than three minutes each in consideration of the number of people wishing to speak, the length of the agenda, the number of public hearing items, and the timely and orderly progression of the meeting. Applicants on public hearing items and their attorneys, representatives, experts and supporting witnesses are not necessarily limited to a set time, but must be concise and coordinate their presentations to avoid repetition and unnecessary length. At the discretion of the Chair, rebuttal comments by the applicant or applicants' representative may be allowed. If allowed, rebuttal comments will address matters and questions raised in the public hearing, answers to questions by Council, and must be brief. Other than any rebuttal, no person will be allowed to address the Council after the public hearing is closed or after a motion is made on a non-public hearing item, without first securing the permission to do so.
5. Speakers on any items, whether a public hearing, other item on the agenda, or Call to the Public, should address their comments to matters pertinent to the agenda item or subject matter at hand and should avoid repetition of the comments of previous speakers on the item. Simply stating agreement with the points raised by the prior speaker(s) will help move the meeting along so that all who wish to speak have the opportunity to do so within a reasonable time. Large groups whose members wish to speak on a matter may designate a spokesperson.
6. The purpose of public comment is to provide information and the speaker's views for Council consideration. Any questions raised by the speaker will not be answered by Council during the public hearing, but will be referred for follow-up by the City Manager or City staff after the conclusion of the public hearing. It is not appropriate in the public hearing or public comment period on another agenda item for the speakers to debate the matter under consideration with other speakers, the audience, or members of the Council. All comments should be addressed through the Chair. Questions may be posed to the speakers, any applicant's representatives, and City staff, by the Council, after being recognized by the Chair. Except when answering a direct question from a Councilmember, all remarks will be addressed to the Council as a whole, and not to individual members.
7. Proper decorum must be observed by members of the Council, by speakers in providing testimony and remarks, and by the audience. The Mayor shall keep control of the meeting and require the speakers and audience to refrain from abusive or profane remarks, disruptive outbursts, applause, protests, or other conduct which disrupts or interferes with the orderly conduct of the business of the meeting. Personal attacks on Councilmembers, City staff, or members of the public are not allowed. It is inappropriate to utilize the public hearing or other agenda item for purposes of making political speeches, including threats of political action. Engaging in such conduct, and failing to cease such conduct upon request of the Mayor, will be grounds for ending a speaker's time at the podium or for removal of any disruptive person from the meeting room, at the direction of the Presiding Officer.
8. Exhibits, letters, petitions and other documentary items presented or shown to the Council on a public hearing item become part of the records of the public hearing. Eleven collated sets of written or graphic materials should be provided to the City Clerk by the speaker prior to the commencement of the hearing to allow for distribution to the Mayor and Council, key City staff, and a copy for the City Clerk to include in the public record of the hearing, whenever possible. Reduced copies (8 ½ x 11 or 8 ½ x 14) of large

graphic exhibits should be provided as part of the sets of materials for distribution to the Council, staff, and for the record. This requirement may be waived for signed petitions submitted by neighborhoods or other citizen groups, although these groups also are encouraged to provide eleven sets of petitions where possible.

C. Motions.

1. Processing of Motions: When a motion is made and seconded, it shall be stated by the Presiding Officer before debate.

2. Precedence of Motions: When a motion is before the Council, no motion shall be entertained except the following, which shall have precedence in the following order:

a. Fix the time to adjourn
b. Adjourn
c. Recess
d. Raise a question of Privilege
e. Table
f. Limit or extend limits of debate
g. Postpone to a certain time and date
h. Amend
i. Postpone Indefinitely
j. Main Motion

3. Motion to Postpone Indefinitely: A motion to postpone indefinitely is used to dismiss an item on the Agenda. This motion is debatable, and because it can be applied only to the main question, it can, therefore, only be made while the main question is immediately pending (a motion and second is on the floor). This motion is commonly used to postpone an item until a more appropriate time.

4. Motion to Table: A motion to table enables the assembly to lay the pending question aside temporarily when something else of immediate urgency has arisen, in such a way that there is no set time for taking the matter up again. A motion to table shall be used to temporarily by-pass the subject. A motion to table shall not be debatable and shall preclude all amendments or debate of the subject under consideration. If the motion shall prevail, the matter may be "taken from the table" at any time prior to the end of the next regular Meeting.

5. Motion to Limit or Terminate Discussion: Such a motion shall be used to limit or close debate on, or further amendment to, the main motion. This is referred to as "Call for the Question" and is the motion used to cut off debate and to bring the group to an immediate vote on the pending motion; it requires a two-thirds vote. The vote shall be taken by voice. If the motion fails, debate shall be reopened; if the motion passes, a vote shall be taken on the main motion.

6. Motion to Amend:

a. A motion to amend shall be debatable only as to the amendment. A motion to amend an amendment on the floor shall not be in order.

b. An amendment modifying the intention of a motion shall be in order, but an amendment relating to a different matter shall not be in order.

c. Amendments shall be voted on first, prior to consideration of subsequent amendments. After all amendments have been voted on, the Council shall vote on the main motion (as amended, if applicable).

7. Motion to Continue: Motions to continue shall be debatable only as to the propriety of postponement. Motions to continue to a definite time shall be amendable and debatable as to propriety of postponement and time set only.

D. Addressing the Council after Motion is Made. After the motion has been made, or after a public hearing has been closed, no member of the public shall address the Council without first securing permission from the Presiding Officer.

E. Voting Procedure. After discussion has been concluded and the Mayor, the Councilmember who made the motion or the City Clerk has restated the motion under consideration, the following procedure shall apply:

1. Casting a Vote:

a. In acting upon every motion, the vote shall be taken by casting a mechanical yes/no vote, voice, roll call or any other method as determined by the Presiding Officer, by which the vote of each member of the Public Body can be clearly ascertained and recorded in the Meeting minutes. Upon the request of the Mayor or a Councilmember, the vote shall be taken by roll call.
b. The vote on each motion shall be entered into the record by names of the Councilmembers voting for or against. The Record also shall include the names of any member not casting a vote by reason of being absent from the room at the time of the vote.
c. If a Councilmember has declared a Conflict of Interest, the City Clerk shall include a statement such as "Abstained due to declared Conflict of Interest" in the Official Minutes as part of the results of the vote.
d. If the roll call method of voting is used, the City Clerk or designee shall call the names of all members in random order with each new vote. Members shall respond "Aye" or "Nay."
2. Failure to Vote:
a. All Councilmembers in attendance at a duly called Meeting that requires formal Council action are required to vote. A member may abstain from voting only if he/she has a conflict of interest under State law, in which case such member shall take no part in the deliberations on the matter in question.
b. Should a Councilmember fail to vote or offer a voluntary abstention, his/her vote shall be counted with the majority of votes cast, unless the Councilmember's vote is excused by the State law; however, in the event of a tie vote, his/her vote shall be counted as "Aye."
3. Reconsideration: Any Councilmember who voted with the majority may move a reconsideration of any action at the same or next regular Meeting. After a motion for reconsideration has once been acted upon, no other motion for reconsideration thereof shall be made without the unanimous consent of the Council.
4. The affirmative vote of a majority of a Quorum shall be required for passage of any matter before the Council.

6.7 INVOCATION
Prayer/Invocation at Council Voting Meetings In order to solemnize proceedings of the City Council, it is the policy of the City Council to allow for an invocation or prayer to be offered at its meetings for the benefit of the City Council and the community.
The following guidelines allow for an invocation, which may include prayer, reflective moment of silence, or short solemnizing message.
1. No member of the Council, employee of the City, or any other person in attendance at the meeting shall be required to participate in any prayer or invocation that is offered.
2. The prayer/invocation shall be voluntarily delivered by any person who has offered.
3. The speaker shall not receive compensation for his or her service.
4. No speaker shall proselytize or otherwise openly seek to promote certain aspects of doctrine or faith; openly advocate or campaign for conversion of individuals or groups; or openly advance any faith, belief, doctrine, or dogma. No prayer/ invocation shall disparage the religious faith or non-religious views of others.
5. It is recommended that the prayer/invocation be no more than two minutes in length.

The above guidelines are not intended, and shall not be implemented or construed in anyway, to affiliate the City Council with, nor express the Council's preference for, any faith or religious denominations. Rather, these guidelines are intended to acknowledge and express the City Council's respect for the diversity of both organized and unorganized religious denomination, as well as other faiths represented and practiced among the citizens of the City of Kingman. Anyone violating of these guidelines is subject to disqualification from offering future prayers/invocations.

As the Presiding Officer, the Mayor shall advise the speaker that their time is up in order to keep with the orderly operation of the meeting.

1. In no event shall a speaker be scheduled to offer a prayer/invocation at consecutive meetings of the Council.
2. In no event shall a speaker offer the prayer/invocation more than three times in one fiscal year. Similarly, no speaker from the same denomination, faith or sect shall speak more times than three in one fiscal year.
3. Neither the Council nor staff shall engage in any inquiry, examination, restriction, review of, or involvement in, the content of any prayer to be offered.
4. In the event that there is no scheduled speaker to offer the prayer/invocation, then the Mayor should offer a Moment of Silence.

The following language shall be included on every agenda:
"Any prayer/invocation that may be offered before the start of regular Council business shall be the voluntary offering of a private citizen, for the benefit of the Council and the citizens present. The views or beliefs expressed by the prayer/invocation speaker have not been previously reviewed or approved by the Council, and the Council does not endorse the religious beliefs or views of this, or any other speaker. A list of volunteers is maintained by the City Clerk's Office and interested persons should contact the Mayor's office for further information."

City officials should not give the impression that they are expressing an official City religion, are speaking on the City's behalf or that City residents attending the meeting are expected to participate in the prayer/invocation.
Process:
1. The City Clerk's office will maintain a list of volunteers.
2. Volunteers will be able to sign up via the website, a hard copy request form also available on the website, or submitted in person to a representative of the City Clerk's Office.
3. As the requests are received they will be placed in that order. The speakers will be contacted in order of date and then time received and requested to speak at a future meeting of the Council.
4. The City Clerk's Office will follow up with letter setting forth the date and time that the speaker should be prepared to offer the invocation/prayer. Additionally, the letter will remind the intended speaker that the prayer/invocation being offered cannot seek to proselytize in favor of one religion or sect or disparage another region or belief.

SECTION 7. CONFLICT OF INTEREST

7.1 INTRODUCTION
Occasionally, a Councilmember may find himself/herself in a situation that requires a Councilmember remove himself/herself from participation in discussion and voting on a matter before the Council. This situation exists when the Councilmember has a "conflict of interest" as defined by the Arizona Conflict of Interest Law. This law establishes minimum standards for the conduct of public officers and employees who, in their official capacity, are, or may become involved with, a decision, which might unduly affect their personal interests or those of their close relatives.

7.2 PURPOSE OF CONFLICT OF INTEREST LAWS
The purpose of Arizona's Conflict of Interest Law is to prevent self-dealing by public officials and to remove or limit any improper influence, direct or indirect, which might bear on an official's decision, as well as to discourage deliberate dishonesty.

7.3 APPLICABILITY OF THE ARIZONA CONFLICT OF INTEREST LAW
The Arizona Conflict of Interest Law, as now set forth or as amended in the future, applies to all actions taken by Councilmembers, Board members, Commissioners, and Committee members.

7.4 DISCLOSURE OF INTEREST
Any Councilmember, Board member, Commissioner, or Committee member who may have a conflict of interest should seek the opinion of the City Attorney as to whether a conflict exists under the State law. Any member who has a conflict of interest in any decision must disclose that interest at the Meeting and in writing on a form provided by the City Clerk. The disclosure of the conflict shall include a statement that the member withdraws from further participation regarding the matter. The City Clerk or designee shall maintain for public inspection all documents necessary to memorialize all disclosures of a conflict of interest by a member.

7.5 WITHDRAWAL FROM PARTICIPATION
Having disclosed the conflict of interest and withdrawn in the matter, the Councilmember, Board member, Commissioner, or Committee member must not communicate about the matter with anyone involved in the decision making process in any manner. Further, the member should not otherwise attempt to influence the decision and should remove himself/herself from the Council Chamber, or other location where a meeting is being held, while the matter is considered.

7.6 RULE OF IMPOSSIBILITY
In the unlikely situation that the majority of Councilmembers, Board members, Commissioners, or Committee members have a conflict of interest and the Council, Board, Commission or Committee is unable to act in its official capacity, members may participate in the discussion and decision after making known their conflicts of interest in the official records.

7.7 IMPROPER USE OF OFFICE FOR PERSONAL GAIN
Public officers and employees are prohibited from using or attempting to use their official positions to secure valuable things or benefits for themselves, unless such benefits are (A) part of the compensation they would normally be entitled to for performing their duties or (B) otherwise permitted according to State Law.

7.8 SANCTIONS FOR VIOLATIONS
Violations of the conflict of interest provisions set forth herein shall be punished as provided for in State law.

7.9 NON-STATUTORY CONFLICTS OF INTEREST
Occasionally, a Councilmember, Board member, Commissioner, or Committee member may feel that he/she should ethically refrain from participation in a decision even though the circumstances may not amount to a conflict of interest under the State law described above. It is the policy of the Council to encourage members to adhere to strongly held ethical values, which are exercised in good faith. However, good governance encourages participation in the decision making process unless the matter involves a statutory conflict of interest set forth by State law.

SECTION 8. KEY TO THE CITY
The "Key to the City" is a symbolic gesture of appreciation and welcome to a person or entity. Because it is one of the City's highest honors, the Key will only be presented in a manner consistent with the City's visions, mission, and goals.

A review panel shall be convened by the City Manager on an as needed basis upon the receipt of nominations under the "Key to the City" program. The Panel shall consist of members from other public agencies and/or the public drawn from an eligibility pool approved by the Mayor. Meetings of the Panel will be open to the public subject to the open meetings law. The Panel shall submit recommendations to the City Council for final approval.

The “Key to the City” of Kingman is intended to honor:
Professional or amateur sports
Entertainment industry
Military service
Public service
Humanitarian efforts
A Kingman resident reaching the age of 100 years
A person that performed an act of heroism in the city limits
A visiting dignitary or celebrity visiting the City of Kingman

A request for a Key to the City nomination should be submitted to the City Manager for consideration. Requests for a Key to be presented in recognition of circumstances other than those listed above shall be considered on a case by case basis by the Review Panel.

SECTION 9. BOARDS, COMMISSIONS, AND COMMITTEES

The Kingman City Council may create such boards, commissions, and committees as deemed necessary to assist in the conduct of the operation of City government. The Council may authorize and direct the City Manager to establish ad hoc committees as needed in order to provide additional flexibility with regard to conducting City business.

9.1 REGULARLY SCHEDULED OR UNSCHEDULED BOARDS, COMMISSIONS AND COMMITTEES

A. Classification. All boards, commissions, and committees of the City shall be classified as regularly scheduled or unscheduled boards, commissions, and committees. Regularly scheduled boards, commissions, and committees are those that meet on a regularly scheduled basis. Unscheduled boards, commissions, and committees meet on an as-called basis and may be quasi-judicial in nature.
B. Regularly Scheduled. Regularly scheduled boards, commissions, and committees include:
1. Clean City Commission
2. Economic Development and Marketing Commission
3. Golf Course Advisory Commission
4. Historic Preservation Commission
5. Municipal Utilities Commission
6. Parks and Recreation Commission
7. Planning and Zoning Commission
8. Tourism Development Commission
9. Transit Advisory Commission
10. Youth Advisory Commission

C. Unscheduled. Unscheduled boards, commissions, and committees:
1. Ad Hoc Committees
2. Board of Adjustment
3. Building Board of Appeals
4. Business License Review Boards
5. Historic District Design Review
6. Industrial Development Board
7. Local Public Safety Personnel Retirement Board
8. Municipal Property Corporation
9. Business License Review Board
10. Personnel Board

D. Sunset. Except for the Planning and Zoning Commission and Board of Adjustment, any board, commission, or committee created shall cease to exist (1) upon the accomplishment of the special purpose for which it was created or (2) when abolished by a majority vote of the Council.

9.2 SELECTION OF BOARD, COMMISSION, OR COMMITTEE MEMBERS

A. Applications. Except in the instance of Ad Hoc Committees, application forms shall be uniform for all bodies and shall be available from the city clerk.

1. Completed applications shall be returned to the city clerk and retained for the balance of that calendar year and one (1) calendar year thereafter. Applications are deemed public records and shall be available for public inspection. The downloadable application will be placed on the City's website for public access with hard copies made available to the public through the City Clerk's Office.
2. If a member whose term will be expiring wishes to reapply for an additional term on the same board, commission or committee, such member is exempt from filing a new application. However, such member shall submit in writing a request for the Council's consideration of reappointment. The member may include any new or additional information that is relevant to the original application already on file.

B. Advertising/Timing and Location. From time to time the city clerk shall publish in the newspaper an ad, in such form as the city clerk deems appropriate, listing vacancies and describing the application procedure, via:

1. The City's government access channel.
2. Newspaper advertising.
3. The City website.

C. Advertisement Contents. Advertisement of vacancies shall include the following:

1. The name of the board, commission, or committee.
2. The number of vacancies to be filled.
3. A brief description of the board, commission, or committee.
4. A brief description of the qualifications, skills and experience background applicants should possess, if any.
5. An overview of when the board, commission, or committee meet.
6. Listing of applicant information required and location where applications may be obtained.
7. Staff liaison contact information.
8. The dates of publication in the local paper.

D. Staff Review. Individuals applying for boards, commissions, or committees must submit to the appropriate Staff Liaison those items as listed in Subsection 9.2(A) above. The Staff Liaison will review the application(s) to ensure that the applicant(s) meet the qualifications as listed in Subsection 9.4(A) below.

E. Council Materials. The staff liaison to the board, commission, or committee will assemble and copy all application packets and provide all supporting materials to all Councilmembers.

F. Subcommittee Review/Interview. The Council subcommittee shall interview all applicants, unless there are more than five applicants for each vacancy, in which case the subcommittee may choose, at its discretion, to limit the number of interviewed applicants to five per vacancy after meeting to review all of the applications. The staff liaison will schedule an appropriate time to interview qualified applicants in person or via telephone. Interviews shall be conducted in Executive Session unless the applicant requests the interview be held at a public meeting.

G. Subcommittee Recommendation. After the interviews have concluded, the staff liaison or the Council Subcommittee chair shall advise the Mayor of the subcommittee's discussion and appointment recommendation(s).

H. Council Consideration. The staff liaison shall submit the agenda item to the City Clerk according to the submission deadline for the next appropriate Council Meeting Agenda, including the following information: (1) a review of the steps taken to recruit applicants, (2) the number of vacancies to be filled

along with the names of those members whose terms expire, (3) the number of applications received and (4) the specific term to be filled.
I. Notification of Council Meeting. The staff liaison shall notify the appointee(s) that he/she is a possible candidate for appointment to a board, commission, or committee and suggest that he/she may want to be present at the scheduled meeting when the recommendation is presented to the Council.
J. Notification of Council Action. Following the Council's approval of the Mayor's appointment(s) to a board, commission, or committee, the staff liaison shall notify appointees as to their appointment. Those applicants not chosen to fill a vacancy on a board, commission, or committee, will be provided written notification by the staff liaison outlining the Council's appointments and they will be provided with an application of interest for consideration of applying for any other board, commission and committee vacancies.
K. Appointee Orientation . The staff liaison will provide specific details to the new appointees relative to: (1) their attendance at the "official" board, commission, or committee orientation, (2) taking the "oath of office" prior to attending their first board, commission, or committee meeting, (3) reading and signing the ethics policy, (4) the Open Meeting Law Letter advising of the State's requirement for a person elected or appointed to review Arizona's Open Meeting Law materials at least one day before the day that person takes office, (5) all official literature, agendas, minutes, or other materials specific to their appointment and (6) information relating to the City's annual Arizona Open Meeting Law training.

9.3 RECOMMENDATIONS FOR APPOINTMENTS TO BOARDS, COMMISSIONS AND COMMITTEES

A. Appointments Subcommittee. The Mayor may annually appoint Council Subcommittees for board, commission and committee appointments. Each subcommittee shall be made up of three Councilmembers. The Mayor may appoint himself/herself to this subcommittee. If no such subcommittee is appointed, at a minimum, a quorum of the City of Kingman Council shall review applications and conduct interviews for the various boards, commissions, and committees to fill vacancies based upon the applicants' skills, experience, and background as required under Section 9.4 below.
B. Subcommittee Purpose. The purpose of this Council Subcommittee is to review applications, interview applicants and provide a recommendation to the Mayor for possible appointment to fill vacancies based upon the applicants' skills, experience, and background as required under Section 9.4 below.
C. Appointment Timing. The process of application review and interviews will be conducted in such a manner as to allow for the appointments to coincide with the term expiration of the current board, commission or committee member(s) term or as soon thereafter as reasonably possible.

9.4 QUALIFICATIONS FOR APPOINTMENTS; EMPLOYEES OR APPOINTED OFFICERS AS MEMBERS

A. Minimum Qualifications. All members of boards, commissions, and committees shall meet the following minimum qualifications upon their appointment to any board, commission, or committee. Each member must be:
1. Eighteen years of age or older, for any board, commission, or committee seats, designated by Council; except for members appointed to Youth Commissioner position for youth representation.
2. A City of Kingman resident for at least one hundred eighty (180) days, unless the Council specifically waives this time for a specific board, commission or committee.
3. A qualified elector for at least one hundred eighty (180) days, except youth appointees.
4. Notwithstanding subsections 9.4 (A)(1) and (2) of this section, the membership of the following bodies (which are responsible for facilities or services available to nonresidents as well as residents) may include a maximum of two (2) members (or, for bodies with more than seven (7) members, a maximum of one-third (1/3) of the members) who are nonresidents of the city but have maintained their primary residences within the greater Kingman area (as defined below) for at least fifty (50) days before their appointments:
a) Golf Course Advisory Commission
b) Parks and Recreation Commission

c) Municipal Utilities Commission
d) Tourism Development Commission
e) Clean City Commission
f) Transit Advisory Commission
g) Economic Development and Marketing Commission
5. Such a member shall continue to reside in the greater Kingman area during the term of his or her appointment or may be required to resign as provided in subsection (f)(1)(b) of this section. As used in this subsection, "greater Kingman area" shall include actual residences that have a Kingman or Golden Valley residential mailing address.
6. *Special bodies.* There are no residency requirements for members of special bodies.
B. Prohibited Appointees. City employees or appointed officers shall not be eligible for appointment to any board, commission, or committee but may be requested to provide staff support thereto. Councilmembers are prohibited from serving on regularly scheduled commissions as listed in Subsection 9.1(B) above and the Board of Adjustment.

9.5 TERMS, VACANCIES, REMOVAL
A. Terms. All members of unscheduled boards, commissions, and committees shall serve a term of up to three years, or until the board, commission, or committee is dissolved, unless Council action, City Code, or Arizona Revised Statutes specifically designates terms.
B. Staggered Terms. For regularly scheduled boards, commissions, and committees the terms of office shall be staggered so that no more than three terms shall expire in any single year when possible; provided, however, that no staggering of terms shall be required for any boards, commission, or committee that will be in existence for a single term.
C. Simultaneous Service Limitation. No individual may serve as a voting member on more than one regularly scheduled or unscheduled board, commission, and committee at one time. This prohibition shall not apply to membership on a special body, or on the board of adjustment, building board of appeals, business license review board, historic district design review board, industrial development board, volunteer firemen's relief and pension fund, public safety personnel retirement board, municipal property corporation, personnel board, or a non-city board, committee, or commission; provided, however, no member of the Planning And Zoning Commission shall simultaneously serve as a member of the Board of Adjustment.
E. Vacancies. A vacancy on a board, commission, or committee shall be deemed to have occurred upon the following:
1. Death or resignation of a member of a board, commission, or committee.
2. A member ceasing to be a resident of the City of Kingman, unless the Council has provided that such member may be a non-resident.
3. Three successive unexcused or unexplained absences by a member from any regular or special board, commission, or committee meetings. However, the term of all members shall extend until their successors are appointed and qualified.
F. Removal. A member of a body may be removed, with or without cause, by a majority vote of the common council. A body, with the approval of the council, may specify matters constituting cause for removal of its members. Such matters shall constitute cause for removal when reported to the mayor by the body. Such matters shall not, however, limit the discretion of the council to remove members for other reasons.
G. Filling Vacancy. Whenever a vacancy has occurred on one board, commission, or committee procedures described above will be used to generate applicants, interview applicants, and make a recommendation for a potential appointee.
H. Re-appointment. An incumbent of a board, commission, or committee member whose term will be expiring seeking to reapply for an additional term on the same board, commission or committee, such member is exempt from filing a new application. However, such member shall submit in writing a request

for the Council's consideration of reappointment. The member may include any new or additional information that is relevant to the original application already on file.

9.6 APPLICABILITY OF THE ARIZONA OPEN MEETING LAW
All boards, commissions, and committees are subject to the Arizona Open Meeting Law and therefore shall attend the City's Annual Open Meeting Law training.

9.7 RESIDENCY REQUIREMENT
Members of all boards, commissions or committees shall be residents of the City unless otherwise designated.

SECTION 10 STANDARDS FOR CONDUCTING CITY BUSINESS FOR ELECTED OFFICIALS AND BOARDS AND COMMISSIONS

10.1 General Background
The City of Kingman has a Council-Manager form of government. Subject to the limitations imposed by the State Constitution and so long as consistent with State law, all powers of the City are vested in the elected City Council. The City Council, which is comprised of six council members and the Mayor, enacts local legislation, adopts budgets, determines policies, and appoints the City Manager, City Attorney, and City Magistrate.

The City Council is committed to ensuring active public participation in their decision-making processes:
(a) Through the appointment of citizens to the City's advisory boards and commissions.
(b) Through special assignment of citizens to issue-oriented task forces.
(c) By hosting or attending neighborhood meetings and events.
(d) By sponsoring regional and community forums on such topics as youth, transportation, economic development and parks.

10.2 Roles and Responsibilities of Elected Officials
NOTE: For the purpose of the Code of Ethics and Code of Conduct, the term council member refers to Mayor and Council; all members of the City Council.
THE MAYOR
The Mayor shall be the chairman of the council and preside over its deliberations. He or she may make and second motions and shall have a voice and vote in all its proceedings. He or she shall be recognized as head of the city government for all ceremonial purposes and by the governor for purposes of military law, but shall have no regular administrative duties.
THE VICE-MAYOR
The council shall designate one (1) of its members as Vice Mayor, who shall serve in such capacity at the pleasure of the council. The vice mayor shall perform the duties of the mayor during the mayor's absence or disability. Should the office of mayor become vacant for any reason during a term of office, the vice-mayor will become the mayor automatically as appointed by the city council.
THE COUNCIL MEMBERS
All powers of the city, not in conflict with the constitution and state statute shall be vested in the council, who shall enact appropriate legislation and do and perform any and all acts and things which may be necessary and proper to carry out these powers.

10.3 Code of Conduct For Elected Officials

This Code of Conduct is designed to describe the manner in which council members should treat one another, city staff, constituents, and others they come into contact with in representing the City of Kingman. The constant and consistent theme through all of the conduct guidelines is "respect." Elected

officials are called upon to exhibit behavior consistent with the Code of Conduct and Code of Ethics at all times.

A Council Conduct with One Another

1. Use formal titles

The council should refer to one another formally during public meetings as Mayor, Vice Mayor or Council Member followed by the individual's last name.

2. Use civility and decorum in discussions and debate

Difficult questions, tough challenges to a particular point of view, and criticism of ideas and information are legitimate elements of free democracy in action. This does not allow, however, council members to make belligerent, personal, impertinent, slanderous, threatening, abusive, or personally disparaging comments in public meetings or during individual encounters. No shouting or physical actions that could be construed as threatening or demeaning will be acceptable.

If a council member is personally offended by the remarks of another council member, the offended council member should make notes of the actual words used and call for a “point of personal privilege” that challenges the other council member to justify or apologize for the language used.

3. Honor the role of the Chair in maintaining order

It is the responsibility of the Mayor, as Chair of the council, to keep the comments of council members on track during public meetings. Council members should honor efforts by the Mayor to focus discussion on current agenda items. If there is disagreement about the agenda or the Mayor’s actions, those objections should be voiced politely and with reason, following commonly recognized parliamentary procedure.

4. Demonstrate effective problem-solving approaches

Council members have a public forum to show how individuals with disparate points of view can find common ground and seek a compromise that benefits the community as a whole. This public forum should be used in the most effective and beneficial manner.

B. Council Conduct with City Staff

1. Treat all staff as professionals

Clear, honest communication that respects the abilities, experience, and dignity of each individual is expected. Poor behavior towards staff is not acceptable. Council members should refer to staff by their title followed by the individual’s last name in public meetings when first introduced.

2. Limit contact to specific City staff

Questions of City staff and/or requests for additional background information shall be directed to the City Manager, City Attorney, or City Magistrate. Requests for follow-up or directions to staff should be made only through the City Manager or the City Attorney when appropriate. When in doubt about what staff contact is appropriate, council members should ask the City Manager for direction. Materials supplied to a council member in response to a request will be made available to all members of the council so that all have equal access to information.

3. Do not disrupt City staff from their jobs

Council members should not disrupt City staff while they are in meetings, on the phone, or engrossed in performing their job functions in order to have their individual needs met.

4. Never publicly criticize an individual employee

Council should never express concerns about the performance of a City employee in public, to the employee directly, or to the employee's manager. Comments about staff performance should only be made to the City Manager through private correspondence or conversation. Comments about staff in the office of the appointed officials should be made directly to appointed official.

5. Do not get involved in administrative functions

Neither the council nor any of its members shall interfere with the execution by the City Manager of his or her powers and duties, or order, directly or indirectly, the appointment by the City Manager of any person to an office or employment or his removal there from. Except for purposes of inquiry, the council and its members shall deal with the administrative service under the City Manager solely through the City Manager, and neither the council nor any member thereof shall give orders to any subordinate of the City Manager, either publicly or privately.

Nothing in this section shall be construed, however, as prohibiting the council while in open session from fully and freely discussing with or suggesting to the City Manager anything pertaining to city affairs or the interests of the city.

6. Do not attend meetings with City staff unless requested by staff.

Even if the council member does not say anything, the council member's presence implies support, shows partiality, intimidates staff, and hampers staff's ability to do their job objectively.

7. Do not solicit political support from staff

Council members should not solicit any type of political support (financial contributions, display of posters or lawn signs, name on support list, collection of petition signatures, etc.) from City staff. City staff may, as private citizens within constitutional rights, support political candidates but all such activities must be done away from the workplace and the staff cannot identify themselves in any manner as City employees.

10.4 Council Conduct with The Public

In Public Meetings

Making the public feel welcome is an important part of the democratic process. No signs of partiality, prejudice or disrespect should be evident on the part of individual council members toward an individual participating in a public forum. Every effort should be made to be fair and impartial in listening to public testimony.

A. Be welcoming to speakers and treat them with care and gentleness

For many citizens, speaking in front of council is a new and difficult experience. Under such circumstances many are nervous. Council members are expected to treat citizens with care and respect during public hearings. Council members should commit full attention to the speakers or any materials relevant to the topic at hand. Comments and non-verbal expressions should be appropriate, respectful and professional. Questions by council members to speakers should seek to clarify or expand information.

B. Be fair and equitable in allocating public hearing time to individual speakers

The Mayor will determine and announce time limits on speakers at the start of the public hearing process. Generally, each speaker will be allocated three minutes with applicants and appellants or their designated representatives allowed more time. If many speakers are anticipated, the Mayor may shorten the time limit and/or ask speakers to limit themselves to new information and points of view not already covered by previous speakers. Each speaker may only speak once during the public hearing unless the council requests additional clarification later in the process. After the close of the public hearing, no more public testimony will be accepted unless the Mayor reopens the public hearing for a limited and specific purpose.

C. Active listening

Council members shall actively listen to and be attentive to speakers.

D. Ask for clarification, but avoid debate and argument with the public

Only the Mayor, not the individual council members, should interrupt a speaker during a presentation. However, a council member can ask the Mayor for a point of order if the speaker is off the topic or exhibiting behavior or language the council member finds disturbing. Questions by council members to members of the public testifying should seek to clarify or expand information.

E. Follow parliamentary procedure in conducting public meetings

The City Attorney serves as advisory parliamentarian for the City and is available to answer questions or interpret situations according to parliamentary procedures. Final rulings on parliamentary procedure are made by the Mayor, subject to the appeal of the full council.

F. Make no promises on behalf of the Council in unofficial settings.

Council members will frequently be asked to explain a council action or to give their opinion about an issue as they meet and talk with constituents in the community.

It is appropriate to give a brief overview of City policy and to refer to City staff for further information. Overt or implicit promises of specific council action, or to promise City staff will take some specific action are to be avoided.

10.5 Council Conduct with Other Public Agencies

A. Be clear about representing the city or personal interests

If a council member appears before another governmental agency or organization to give a statement on an issue, the council member must clearly state 1) whether his or her statement reflects personal opinion or is the official stance of the City; 2) whether this is the majority or minority opinion of the council.

B. Representation of the City on an Outside Board, Commission, or to an Outside Agency

If the council member is representing the City, that council member must consistently support and advocate the City's official position on an issue and cannot foster or further a personal viewpoint that is inconsistent with the official City position.

Council members must inform the council of their involvement in an outside organization if that organization is or may become involved in any issue within the City's jurisdiction. If an individual council member publicly represents or speaks on behalf of another organization whose position differs from the City's official position on any issue, the council member must clearly communicate the organization upon whose behalf they are speaking and must withdraw from voting as a council member upon any action that has bearing upon the conflicting issue.

C. Correspondence also should be equally clear about representation

City letterhead shall be used only when the council member is solely representing and speaking on behalf of the City and within the council member's official capacity. A copy of official correspondence should be given to the City Clerk to be maintained as a public record.

D. Representation of the City on Intergovernmental Commissions and Other Outside Entities

Council members serving on committees or boards as the City representative on outside entities or agencies shall properly communicate with other council members on issues pertinent to the city.

10.6 Council Conduct With Boards and Commissions

A. Limit contact with Board and Commission members to questions of clarification

Council members shall not contact a Board or Commission member to lobby on behalf of an individual, business, or developer. Council members may contact Board or Commission members in order to clarify a position taken by the Board or Commission or a member of that Board or Commission. Council members may respond to inquiries from Board and Commission members. Communications should be for information only.

B. If attending a Board or Commission meeting, be careful to only express personal opinions

Council members may attend any Board or Commission meeting, which are always open to any member of the public. However, they should be sensitive to the way their participation—especially if it is on behalf of an individual, business or developer—could be viewed as unfairly affecting the process.

Public comments by a council member at a Board or Commission meeting should be clearly made as individual opinion and not a representation of the feelings of the council.

C. Remember that Boards and Commissions serve the community, not individual council members

The City Council appoints individuals to serve on Boards and Commissions, and it is the responsibility of Boards and Commissions to follow policy established by the council. However, Board and Commission members do not report to individual council members, nor should council members feel they have the power or right to threaten Board and Commission members with removal if they disagree about an issue.

D. Be respectful of diverse opinions

A primary role of Boards and Commissions is to represent many points of view in the community and to provide the council with advice based on a full spectrum of concerns and perspectives. Council members may have a closer working relationship with some individuals serving on Boards and Commissions, but must be fair and respectful of all citizens serving on Boards and Commissions.

E. Keep political support away from public forums

Board and Commission members may offer political support to a council member, but not in a public forum while conducting official duties. Conversely, council members may support Board and Commission members who are running for office, but not in an official forum in their capacity as a council member.

10.7 Council Conduct with the Media

A. Expression of Positions on Issue

When communicating with the media, council members should clearly differentiate between personal opinions and the official position of the City. All council members represent one vote of seven and until a vote on any issue is taken, council members' positions are merely their own.

B. Discussions Regarding Staff Members

Council members should not discuss personnel issues or other matters regarding individual staff members in the media. Any issues pertaining to staff should only be addressed directly to the City Manager.

SECTION 11 CODE OF ETHICS FOR ELECTED OFFICIALS AND BOARDS AND COMMISSIONS

11.1 Preamble

The citizens of Kingman are entitled to have fair, ethical and accountable local government which has earned the public's full confidence. In keeping with the City of Kingman commitment to effective functioning of democratic government, public officials, both elected and appointed, shall comply with both the letter and spirit of the laws and policies affecting the operations of government; be independent, impartial and fair in their judgment and actions; use their office for the public good and not for personal gain. All public deliberations and processes shall be conducted openly, unless to be held confidential in accordance with the law, and in an atmosphere of respect and civility.

To this end, the Kingman City Council has adopted a Code of Ethics for members of the City Council and of the City's boards and commissions to assure public confidence in the integrity of local government and its effective and fair operation.

11.2 Keep the Public Interest Paramount

Recognizing that stewardship of the public interest is their primary concern, all members will work for the common good of the people of Kingman and not for any private or personal interest, and they will assure fair and equal treatment of all persons and issues coming before the Kingman City Council, boards and commissions.

11.3 Comply with the Law

Members shall comply with the laws of the nation, the State of Arizona and the City of Kingman in the performance of their public duties. These laws include, but are not limited to: the United States and Arizona constitutions; laws pertaining to conflicts of interest, election campaigns, financial disclosures, employer responsibilities, and open processes of government; and City ordinances and policies.

11.4 Conduct of Members

The professional and personal conduct of members must be above reproach and avoid even the appearance of impropriety. Members, in compliance with the Code of Conduct, shall refrain from abusive conduct, personal charges or verbal attacks upon the character or motives of other members of council, boards and commissions, the staff or public.

11.5 Respect for Process

Members shall perform their duties in accordance with the processes and rules of order established by the City Council and board and commissions.

11.6 Conduct of Public Meetings

Members shall prepare themselves for public issues; listen courteously and attentively to all public discussions before the body; and focus on the business at hand. They shall refrain from interrupting other

speakers; making personal comments not germane to the business of the body; or otherwise interfering with the orderly conduct of meetings.

11.7 Decisions Based on Merit
Members shall base their decisions on the merits and substance of the matter at hand, rather than on unrelated considerations.

11.8 Communication
Members shall publicly share substantive information that is relevant to a matter under consideration by the council or boards and commissions, which they may have received from sources outside of the public decision making process.

11.9 Conflict of Interest
In order to assure their independence and impartiality on behalf of the common good, members shall not use their official positions to influence government decisions in which they have a material financial interest or where they have an organizational responsibility, employment, or personal relationship which may give the appearance of a conflict of interest. Furthermore, members shall comply with the law and rules with respect to all actual or potential conflicts of interest.

11.10 Gifts and Favors
Members shall not take any special advantage of services or opportunities for personal gain that are not available to the public in general. They shall refrain from accepting any gifts, favors or promises of future benefits which might compromise their independence of judgment or action or give the appearance of being compromised. Members shall comply with state laws pertaining to the disclosure of gifts or prohibits against gift in any specific and applicable circumstances.

11.11 Confidential Information
Members shall respect the confidentiality of information concerning the property, personnel, or affairs of the City. They shall neither disclose confidential information without proper legal authorization, nor use such information for private interests, financial gain, or any other personal purposes.

11.12 Use of Public Resources
Members shall not use public resources not available to the public in general, such as City staff time, equipment, supplies or facilities, for private gain or personal purposes.

11.13 Representation of Private Interests
In keeping with their role as stewards of the public interest, members of council shall not appear on behalf of the private interests of third parties before the council or any board, commission or proceeding of the City, nor shall members of boards and commissions appear before their own bodies or before the council on behalf of the private interests of third parties on matters related to the areas of service of their bodies.

11.14 Advocacy
Members shall represent the official policies or positions of the City Council, board or commission to the best of their ability when designated as delegates for this purpose. When presenting their individual opinions and positions, members shall explicitly state they do not represent their body or the City of Kingman, nor will they allow the inference that they do.

11.15 Policy Role of Members
Members shall respect and adhere to the council-manager form of government. Members therefore shall not interfere with the administrative functions of the City or the professional duties of City staff; nor shall they impair the ability of staff to implement council policy decisions.

11.16 Independence of Boards and Commissions
Because of the value of the independent advice of boards and commissions to the public decision-making process, members of council shall refrain from using their position to unduly influence the deliberations or outcomes of board and commission proceedings.

11.17 Positive Work Place Environment
Members shall support the maintenance of a positive and constructive work place environment for City employees and for citizens and businesses dealing with the City. Members shall recognize their special role in dealings with City employees to in no way create the perception of inappropriate direction to staff.

11.18 Implementation
As an expression of the standards of conduct for members, the Code of Ethics for Elected Officials and Board and Commission Members is intended to be self-enforcing. It therefore becomes most effective when members are thoroughly familiar with it and embrace its provisions.

A Compliance and Enforcement Procedures
1. Process for Councilmembers
(a) The first and most important step in this section is the requirement that the offended Council member address the concern with the offending Council member including a description of the specific action observed, the relationship of that event to the Code and, if applicable, the impact it had on the offended Council member. The purpose of this first step is to assure that an attempt has been made to discuss the issue and resolve the conflict without proceeding further. This step requires no formal action and no involvement of other Council members.
(b) Either party may request, and both must agree, to seek a third party who will assist in facilitating the discussion toward a mutually satisfactory conclusion. If any expenses are incurred they will be paid for equally from the City's funds of each member engaged in the mediation.
(c) If the situation cannot be settled through the process in steps (1) and (2), either Council member may choose to refer the concern to the entire Council for their review. The Council will serve as a committee of the whole for purposes of Code violation and sanction consideration.
(d) To present the concern to the Council, the offended member must advise the offending Council member that the issue will be taken to the Council and subsequently ask the City Manager or Mayor to place it on the agenda. All laws pertaining to executive session will apply. Included in those rules is the option for the offending Council member to exercise their right to request that the discussion be held in an open hearing. The City Attorney's Office will prepare notice to the Council member or Council members that are to be discussed in executive session as required by law.
(e) The Council will discuss the issue in order to:

(1) become fully informed;
(2) determine if there appears to be a violation of the Code of Conduct;
(3) seek resolution without further action or, if necessary schedule the issue for an upcoming public hearing for final determination regarding whether a violation occurred and if necessary;
(4) determine what sanction is most appropriate; customarily, sanctions are limited to a letter of reprimand or censure.
(f) A 2/3 vote of the Council at a regular council meeting will be required for a determination that a violation has occurred and likewise, a 2/3 vote for the sanction to be imposed.
(g) If a sanction is imposed, the language will follow a specific format to be established by the Council and used consistently as such situations occur.

B. Process for Board and Commission Members
Inappropriate behavior can lead to removal. Inappropriate behavior by a Board or Commission member should be communicated to the Mayor, the City Manager, or the City Attorney. If inappropriate behavior

continues, the situation will be brought to the attention of the council and the individual is subject to removal from the Board or Commission in accordance with any applicable ordinance.

C. Effects of Violations

The Code of Ethics alone does not provide a basis for challenging the validity of any final enactment, resolution, decision, determination, or recommendation of the council, a board or a commission.

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Engineering Services

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Presentation of Reclaimed Water Study (ENG15-047)

SUMMARY:
On August 4, 2015, the City hired Sunrise Engineering to prepare a report on options for reusing effluent from the Hilltop Wastewater Treatment Facility (WWTF). The Hilltop WWTF is currently permitted to produce up to 1 million gallons per day of A+ reclaimed water, and up to 5.1 million gallons per day of B+ reclaimed water. The study specifically examines three options for A+ reuse as follows: (1) Groundwater Injection, (2) Airport Industrial Use and (3) City Golf Course and Parks Reuse.

Option 1 (Groundwater Injection) involves drilling a well at the Hilltop WWTF and injecting A+ water into the aquifer, thereby replenishing the supply. Option 1 is the cheapest and simplest option to implement. Option 2 involves the installation of pumps and a reclaimed distribution system from the Hilltop Facility to the Kingman Airport. Option 2 is the most expensive option and would require charging rates higher than potable water, in order to fund the option. This option may be more feasible if a large user (1 million gallons per day) were to open in the Airport Park. Option 3 (Golf Course/Schools reuse) involves the installation of pumps and a reclaimed distribution system from the Hilltop Facility to the Golf Course. The reclaimed distribution line would be located to pass as many schools and parks as possible. Option 3 is the second most expensive option and would allow for the watering of multiple turf areas, which are currently irrigated with potable water.

The Consultant will provide a presentation of the three reuse options and will be here to answer any questions.

FISCAL IMPACT:

The cost for each option is as follows:

Option 1 - Groundwater Injection: $1,055,000

Option 2 - Airport Park Reuse: $10,754,000

Option 3 - Golf Course/Parks Reuse: $8,260,000

STAFF RECOMMENDATION:
Staff believes that all three options are viable, and that they all can work simultaneously in the future. Groundwater injection is by far the cheapest option and is therefore the recommended starting point for the City's

reuse opportunities.

ATTACHMENTS:

Description

Reclaimed Water Reuse Study

REVIEWERS:

Department	Reviewer	Action	Date
Engineering	Henry, Greg	Approved	3/24/2016 - 11:45 AM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 10:55 AM
City Manager	Dougherty, John	Approved	3/28/2016 - 3:04 PM

Reclaimed Water Reuse Study

Final Report - February 2016

CITY OF KINGMAN
FOUNDED 1882

SUNRISE
ENGINEERING

RECLAIMED WATER REUSE STUDY

FOR

FEBRUARY 2016

Prepared for:
City of Kingman
310 North 4th Street
Kingman, Arizona 86401
928.753.8329
Attn. Gregory T. Henry, P.E.

Prepared by:
Sunrise Engineering, Inc.
2152 South Vineyard, Suite 123
Mesa, Arizona 85210
480.768.8600

Registered Professional Engineer (Civil)
CERTIFICATE NO.
60459
K. JUSTIN
VAN DE GRAAFF
Date Signed 2/25/16
ARIZONA U.S.A.
EXPIRES: 9/30/2018

Project Team Leads:
Justin Van De Graaff, P.E.
Project Engineer/ Project Manager

Greg Potter, P.E.
Project Principal

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ABBREVIATIONS LIST

AAC	Arizona Administrative Code
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
AMA	Active Management Area
APP	Aquifer Protection Permit
ARS	Arizona Revised Statues
DIP	Ductile iron pipe
ft	foot or feet
gal	gallon
GPM	gallons per minute
GPD	gallons per day
LF	linear feet
Max	Maximum
MGD	million gallons per day
O&M	Operations and Maintenance
TCE	Temporary Construction Easement
psi	pounds per square inch
PVC	Polyvinyl chloride
WWTF	Wastewater Treatment Facility

EXECUTIVE SUMMARY

The City of Kingman owns and operates their Hilltop Wastewater Treatment Facility (WWTF) north of the City of Kingman located at 5925 E Highway 66 in Kingman, Arizona. This facility has the capacity and is permitted through the Arizona Department of Environmental Quality (ADEQ) to treat and redistribute up to 1 MGD of Class A+ reclaimed water. Currently, however, the WWTF only treats the wastewater to a Class B+ condition and then discharges the effluent to the Mohave Wash and to wetlands northwest of the facility.

Per ADEQ, Class A+ reclaimed water is wastewater that has been treated to a high standard of cleanliness and is cleared for human contact. Class B+ reclaimed water is also wastewater that has been treated, but to a lesser standard of cleanliness although it is still safe for human contact.

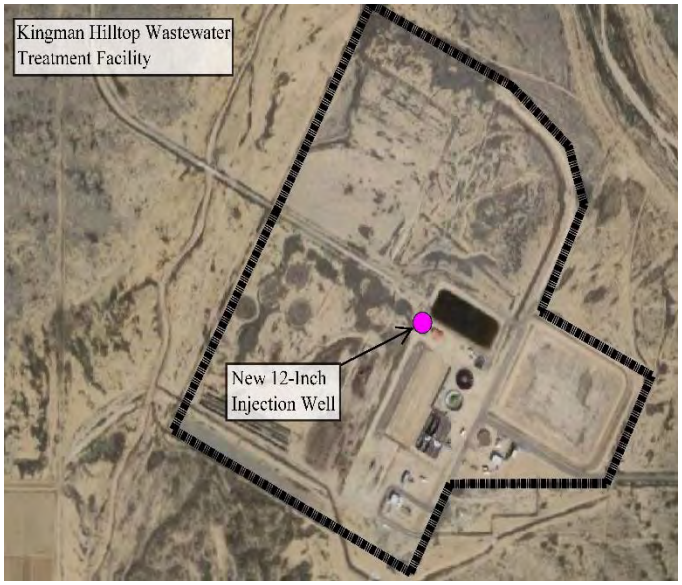
The City of Kingman would like to produce and utilize Class A+ reclaimed water and has contracted with Sunrise Engineering to perform a study of Options that would best serve Kingman's interests. These options include the following:

- Injection of the reclaimed water back into the Hualapai Valley Basin aquifer
- Distribution of the reclaimed water to the Kingman Airport Industrial Park
- Distribution of the reclaimed water to the Cerbat Cliffs Golf Course, Kingman schools and Kingman parks.

In order to determine which of the three above mentioned Options would best serve the City of Kingman, an analysis of these options was performed and is listed below.

Option 1 – Groundwater Injection:

This Option analyzed the benefits of injecting 1 MGD of Class A+ reclaimed water back into the Hualapai Valley Basin aquifer. An analysis of the Basin aquifer was performed and it was noted that groundwater levels in the Kingman and surrounding areas have been declining over time. Injection of Class A+ reclaimed water into the Basin aquifer would help to stabilize and/or raise groundwater levels.



Option 1 – Groundwater Injection

Injection Conceptual Design:
In order to achieve this injection a few options were considered. The City owns and operates a few drinking water wells within a three mile radius of the WWTF and these wells were analyzed to determine their injection capacities. It was determined that City Well #6 has enough capacity to inject the desired 1 MGD of reclaimed water and that City Well #1 only has the capacity to inject 264K GPD of reclaimed water. In order to reduce initial capital of installing a distribution

system to these wells, a third option for groundwater injection was analyzed and ultimately decided upon. This option includes drilling a new injection well at the WWTF and allowing the 1 MGD of reclaimed water to gravity flow into this new well.

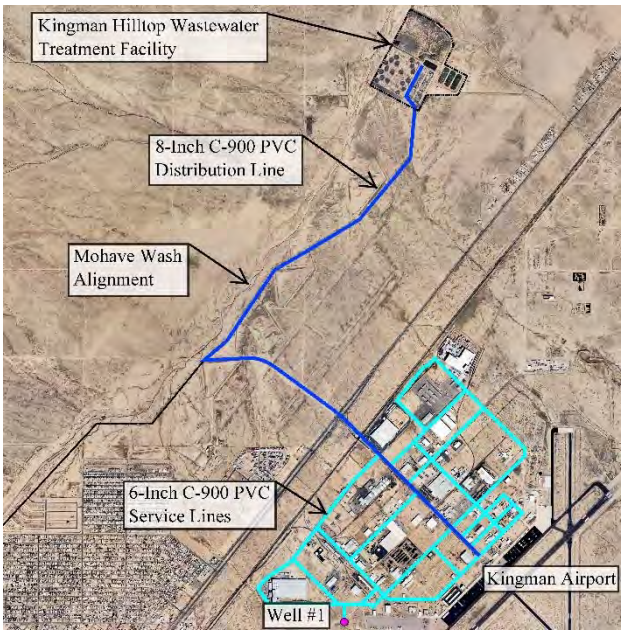
Permitting:
Permitting for Option 1 – Groundwater Injection would require that the City amend their current ADEQ Aquifer Protection Permit (APP) no. P-100611 to include groundwater injection as a form of discharge.

Capital and Long Term O&M Costs:
With the injection well being installed onsite, projected capital costs are approximately $1 Million and has minimal long term operations and maintenance (O&M) costs as there are no pumps, storage tanks or distribution line to maintain.

Option 2 – Airport Industrial Park Reuse:

This Option analyzed the feasibility of distributing Class A+ reclaimed water from the Hilltop Wastewater Treatment Facility to the property and business owners of the Kingman Municipal Airport Industrial Park.

Water Usage Study:
Current and historic water usage was analyzed to help project future reclaimed water usage demands for the next 20-years at the Airpark with an assumed 6% growth rate. Surprisingly, the projected reclaimed water peak demand was under 350K GPD with the average reclaimed water demand even lower.



Option 2 – Airport Industrial Park Reuse

Distribution Conceptual Design:
The design to distribute reclaimed water to the Airpark would include a booster station to pump reclaimed water from the City's tertiary treatment facility to a new steel water storage tank onsite, a pump station to pump the stored reclaimed water to the Airpark and an 8-inch C-900 PVC distribution line from the WWTF to the Airpark with 6-inch C-900 PVC service lines from the distribution line to the tenants at the Airpark.

This distribution line would follow the City's existing sewer easement along the Mohave Wash alignment north to the Grace Neal Parkway alignment and then run east boring under AZ Highway 66 and on to the Airpark. Option 2 would also include the option to recharge groundwater at the City's Well #1 near the Airpark. As mentioned above, this well has the capacity to inject up to 264K GPD.

Permitting:
The ADEQ permitting required for this Option would include a Type III user's permit which would allow for the City to act as the agent for the reuse of reclaimed water. This would allow the City to determine who could reuse reclaimed water and it would be the responsibility of the City to guarantee that the reclaimed water is being used appropriately and that end users are in compliance with all Arizona Administrative Code (AAC) requirements and regulations. Also, the City would need to amend their APP permit no. P-100611 to allow for reclaimed water to be discharged into the Basin aquifer.

Capital and Long Term O&M Costs:
Projected capital costs for this Option are the highest of all three Options coming in at just over $10.7 Million. Long term O&M costs are also high as there are pump stations, a storage tank and several miles of distribution lines to operate and maintain.

Rate Analysis:
A rate analysis was performed on this Option to determine by how much the reclaimed water base rates at the Airpark would need to be adjusted to in order to fund this project. Low water demand spread over a limited amount of users equated to a reclaimed water base rate increase of approximately $1,057 higher than the City's current water base rate.

Capital Savings:
Option 2 does, however, provide approximately $1.9 Million of capital savings by reducing the demands on the City's water system thereby freeing up water infrastructure.

Survey:
A survey for this Option was prepared and sent to the tenants of the Airpark to gauge interest in a reclaimed water system. To date, most of the responses have not been in favor of this system.

Option 3 – Golf Course, Schools and Parks Reuse:

This Option analyzed the feasibility of distributing Class A+ effluent from the Hilltop Wastewater Treatment Facility to Cerbat Cliffs Golf Course in Kingman with the possibility to have connections to the Kingman High School, Kingman Middle School, Kingman Academy of Learning, Firefighter's Memorial Park, Centennial Park and the Mohave County Fairgrounds.

Water Usage Study:
Historic irrigation water usage at the golf course, schools, parks and fairgrounds were analyzed to determine which entity had the highest demand. It was immediately determined that the golf course's irrigation water demand was almost 1 MGD in the summer months with the next highest water demand being the Kingman High School with a peak 2011 summer usage of approximately 292K GPD. Since the golf course's irrigation demands are three times higher than the next entity's irrigation water demands, it was decided that the conceptual design for Option 3 should include a distribution line from the WWTF to the golf course.

Distribution Conceptual Design:
A route was selected for this distribution line that follows the City's existing sewer easement along the Mohave Wash alignment from the WWTF into town, briefly exiting the Mohave Wash alignment to pass by the Kingman High School and then return to the Wash. At Airway Avenue, the distribution line would again exit the Mohave Wash alignment and head east to N Burbank Street. The distribution line would then turn south passing by the Kingman Academy of Learning, Centennial Park, boring under Interstate 40, and passing by Firefighter's Memorial Park, Kingman Middle School and the Mohave County Fairgrounds.

Option 3 – Golf Course, Schools and Parks Reuse

The distribution line would be a combination of 12-inch DIP for the higher pressured section near the WWTF and C-900 PVC for the lower pressured section near the golf course. This distribution line would be sized for future growth. Also, as part of the conceptual design for Option 3 there would be a booster station at the WWTF to pump the reclaimed water to the golf course.

The reclaimed water would then be stored at an available pond at the golf course with another booster station to pressurize the reclaimed water into their irrigation system. Possible service lines to the schools, parks and fairgrounds could be provided, however, all these entities except the Kingman High School would need to add additional booster stations onsite to pressurize their irrigation systems.

Permitting:
As with Option 2, this Option would only require a Type III user's permit which would allow for the City to act as the agent for the reuse of reclaimed water.

Capital and Long Term O&M Costs:
Projected capital costs for this Option were significantly higher than Option 1 but were not as high as Option 2. Projected capital costs for Option 3 came in just over $8.2 million. Long term O&M costs are also high as there are multiple pump stations to power and maintain and a long distribution line to maintain.

Rate Analysis:
To determine how much the City's current water rates would need to be adjusted to in order to fund this Option, a rate analysis was performed. Water base rates Citywide would need to increase approximately $3.16 to fund this Option.

Capital Savings:
This Option does however provide approximately $3.6 Million of capital savings by reducing the demands on the City's water system thereby freeing up water infrastructure.

Benefits Analysis:

A benefits analysis of all three Options was performed to weigh the pros and cons and help determine which of these Options best serves the City's interests. To equally compare all three Options, a list of unbiased selection criteria with assigned points possible was prepared. Criteria with a higher level of importance, such as capital costs and long term O&M were given higher points possible. A total of 200 points was possible for scoring.

Option 1 – Groundwater Injection:
This Option was the least costly of all three Options and therefore scored the highest in the capital cost criteria. It did not, however, provide any capital savings or provide any connections for future developments and therefore scored low in these criteria. This Option scored 120 points out of a possible 200 points and was ranked second of the three Options.

Option 2 – Airport Industrial Park Reuse:
This Option provides a high probability for positive community economic impact and is available for green funding and therefore scored high in these criteria. This Option was, however, the most expensive project in the study, had the highest long term O&M costs and would increase user rates the highest, therefore scoring low in these criteria. This Option scored 95 points out of a possible 200 points and was ranked last of the three Options.

Option 3 – Golf Course, Schools and Parks Reuse:
This Option provided the highest capital savings, provided a high probability for positive community economic impact and was eligible for green funding and therefore scored high in these criteria. It did not, however provide any groundwater recharging and although its capital costs and long term O&M costs were not as high as Option 2, they were significantly higher than Option 1's costs and therefore this Option scored low in these criteria. This Option scored 129 points out of a possible 200 points and was ranked first of the three Options.

Recommendations:

Option 1 Recommendation
If the City of Kingman would prefer a project with low capital costs, low long term O&M costs and an Option that provides groundwater recharging, Option 1 – Groundwater Injection is recommended.

This Option only provides groundwater injection and will be the easiest to construct. It also is the least expensive Option in this study and has the lowest O&M costs.

Option 3 Recommendation
If the City of Kingman would like to service multiple entities with reclaimed water, free up existing water infrastructure and has options for funding, Option 3 – Golf Course, Schools and Parks Reuse is recommended.

This option would use approximately 1 MGD of reclaimed water as irrigation water for the Cerbat Cliffs Golf Course with possible connections to the schools, parks and the fairgrounds. Its capital and O&M costs are higher than Option 1, but it will qualify for WIFA funding and will provide capital savings by reducing the demands on the City's water system thereby freeing up water infrastructure. Also, water base rates Citywide would only need to rise slightly in order to fully fund this Option.

Option 3 is the most flexible/scalable Option in the study. It would pass near the Airpark (approximately one mile away), multiple schools and parks, the fairgrounds and City wells that could be retrofitted for groundwater injection.

This Option would also positively impact the community economy as it has the possibility to attract new "green" businesses that want to use reclaimed water.

1.0 INTRODUCTION

1.1 Purpose and Scope of Work

The purpose of this report is to present to the City of Kingman the feasibility of three different options to reuse their reclaimed water that is produced at their Hilltop Wastewater Treatment Facility. These three options include the following:

- Groundwater Injection
- Airport Industrial Reuse
- Golf Course, Schools and Parks Reuse

This study will provide the City of Kingman with current water usage analysis, conceptual designs, capital cost estimates, long term O&M cost estimates, rate and capital savings analysis and benefits analysis. Projections for systems sizings of conceptual designs, long term O&M costs and rate and capital savings analysis will be based on a 20-year period with a 3% inflation rate, a 6% growth rate at the Airpark and a 3% growth rate for the City of Kingman. Each option will be compared to determine the pros and cons, helping the City of Kingman to determine which option or combination of options is best suited for their needs and budget.

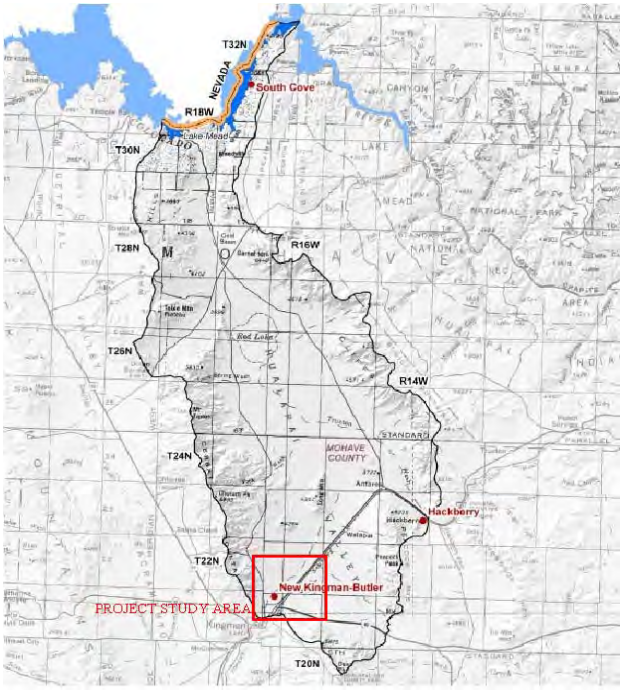


Figure 1.2 - Project Study Area

1.2 Project Study Area

The project study area focuses on the City of Kingman area within the southwestern portion of the Hualapai Valley Basin in Mohave County, Arizona as shown in Figure 1.2 – Project Study Area

1.3 Background Information

Kingman Hilltop Wastewater Treatment Facility

The City of Kingman owns and operates the Hilltop Wastewater Treatment Facility located at 5925 E Highway 66 in Kingman, Arizona (see Figure 1.3 - Kingman Wastewater Treatment Facility). From July 2014 to July 2015, the daily average sewage inflow was 1.58 million gallons per day (MGD) with a maximum inflow of 1.67 MGD. The daily average effluent flow was 1.55 million gallons with a maximum flow of 1.69 MGD (see Appendix A - Hilltop WWTF Inflow/Effluent Flows).

Once effluent has passed through secondary treatment, it goes to a chlorine contact pond. Here the effluent reaches Class B+ status and it is then discharged to the Mohave Wash on the north side of the plant. The facility is permitted with ADEQ to discharge a maximum of 5.1 MGD of Class B+ reclaimed water down the Mohave Wash and to existing wetlands located to the northwest of the facility.

The facility also has the capacity to further treat effluent. Prior to the chlorine contact tank, effluent may be diverted to a tertiary treatment facility that can treat a maximum of 1 MGD (694 GPM), resulting in Class A+ reclaimed water. The Hilltop WWTF is permitted with the ADEQ to discharge a maximum of 1 MGD of Class A+ reclaimed water for beneficial reuse under a valid reclaimed water permit. Beneficial reuse is defined by ADEQ as "direct reuse of reclaimed water".

Figure 1.3 - Kingman Hilltop Wastewater Treatment Facility

Per ADEQ, Class A+ reclaimed water is wastewater that has been treated to a high standard of cleanliness and is cleared for human contact. Access to areas that use Class A+ reclaimed water do not need to be controlled. Class A+ reclaimed water is allowed for use as irrigation for food crops, recreational areas and open access irrigation, toilet flushing, fire protection systems, industrial purposes etc. It cannot, however, be used in production for human consumption.

Class B+ reclaimed water is also wastewater that has been treated, but to a lesser standard of cleanliness. It is still safe for human contact, though. Access to areas that use Class B+ reclaimed water must be controlled. Class B+ reclaimed water is allowed for use as golf course irrigation, dust control, concrete mixing, livestock watering and irrigation to restricted access areas to name a few.

Kingman currently does not use its tertiary treatment capabilities but in the past, the tertiary treatment has been used to provide minimal amounts of Class A+ reclaimed water for a local contractor to be used for dust control measures.

ADEQ Permits

The Hilltop Wastewater Treatment Facility currently has three permits in place with ADEQ to operate and discharge (see Appendix B – Current Permits). These permits are as follows:

- **Aquifer Protection Permit (APP) no. P-100611** – This ADEQ permit authorizes the City of Kingman, Arizona to operate their Hilltop Wastewater Treatment Facility over groundwater of the Hualapai Valley basin. This permit became effective June 3, 2014 and is valid for the life of the treatment facility. This permit also allows for the

City to discharge a maximum of 5.1 MGD of Class B+ effluent to the Mohave Wash and wetlands under a valid Arizona Pollution Discharge Elimination System (AZPDES) permit or to be beneficially reused under a valid reclaimed water permit.

- **Aquifer Protection Permit (APP) no. P-106051** – This ADEQ permit authorizes the City of Kingman, Arizona to operate their Hilltop Tertiary Wastewater Treatment Facility over groundwater of the Hualapai Valley basin. This permit became effective June 25th, 2010 and is valid for the life of the treatment facility. Tertiary treatment of effluent shall be obtained through use of tertiary filters and chlorine disinfection. This permit also allows for the City to produce a maximum of 1 MGD of Class A+ effluent which may be reused for beneficial use under a valid reclaimed water permit. Any Class A+ effluent not delivered for beneficial reuse shall be discharged to the Hilltop WWTF equalization basin for discharge under APP P-100611.

- **Arizona Pollutant Discharge Elimination System (AZPDES) no. AZ0025844**– This ADEQ permit authorizes the City of Kingman, Arizona to discharge treated domestic wastewater from their Hilltop Wastewater Treatment Facility into the Mohave Wash in accordance with effluent limitations, monitoring requirements and other conditions set forth within the Standard AZPDES Permit Conditions. This permit became effective March 1, 2011 and will expire February 29, 2016.

Reuse Rules and Regulations

The City of Kingman currently has reclaimed rules and regulations in place for effluent reuse. These rules and regulations can be found in their Utility Regulations and include policies, requirements and permitting. In addition, ADEQ has a comprehensive regulatory framework of rules, standards and permits which foster reuse while protecting water quality and human health.

The Arizona Administrative Code (AAC) outlines rules for reuse of reclaimed water. The following are the AAC rules pertaining to reuse:

- **(AAC) Title 18 Chapter 9** (R18-9-601 through R18-9-603). These set of codes outline the conveyance of reclaimed water including definitions, pipeline conveyance and open water conveyance of reclaimed water.

- **(AAC) Title 18 Chapter 9** (R18-9-701 through R18-9-720). These set of codes outline the direct reuse of reclaimed water from definitions and general requirements to required permits, enforcement and penalties.

- **(AAC) Title 18 Chapter 11** (R18-11-301 through R18-11-309). These set of codes outline the Reclaimed Water Quality standards and include definitions, applicability and requirements.

2.0 OPTION 1 – GROUNDWATER INJECTION

2.1 Introduction

Option 1 of this study is groundwater injection. Currently, the majority of all water consumed by the City of Kingman and surrounding areas is provided by groundwater derived from the Hualapai Valley Basin aquifer. Option 1 would determine the benefits of injecting 1 MGD of Class A+ effluent back into the Hualapai Valley Basin aquifer. This analysis will include the following:

- An analysis of the geologic and available groundwater studies of the Hualapai Valley Basin aquifer to determine feasibility of groundwater injection.
- A conceptual design of a system that can inject the A+ effluent from the Hilltop WWTF into the aquifer.
- A capital cost estimate based on the conceptual design.
- Long term Operations and Maintenance (O&M) costs to permit, own and operate such a system.
- A benefits analysis of pros and cons of this Option to compare against other Options in this study.

2.2 Hualapai Valley Basin Groundwater Conditions

The Hualapai Valley is a basin that trends south-north and is approximately 60 miles long (See Figure 2.2. – Hualapai Valley Basin Groundwater Conditions). The Basin is relatively deep with its sediments divided into three units; young basin fill, intermediate basin fill and older basin fill. The younger basin fill consists of streambed deposits, the intermediate basin fill consists of course grained sands, silts and clays and the older basin fill consists of clastic sedimentary, limestone and basaltic flows. The older basin fill is the primary water supply in the Hualapai Valley Basin with depths of up to 1,200 feet (Ref-1).

The Hualapai Valley basin has between 5 million to 5.3 million acre-feet of stored water within the aquifer with an annual recharge of approximately 2,000 acre-feet to 3,000 acre-feet per year (Ref-1).

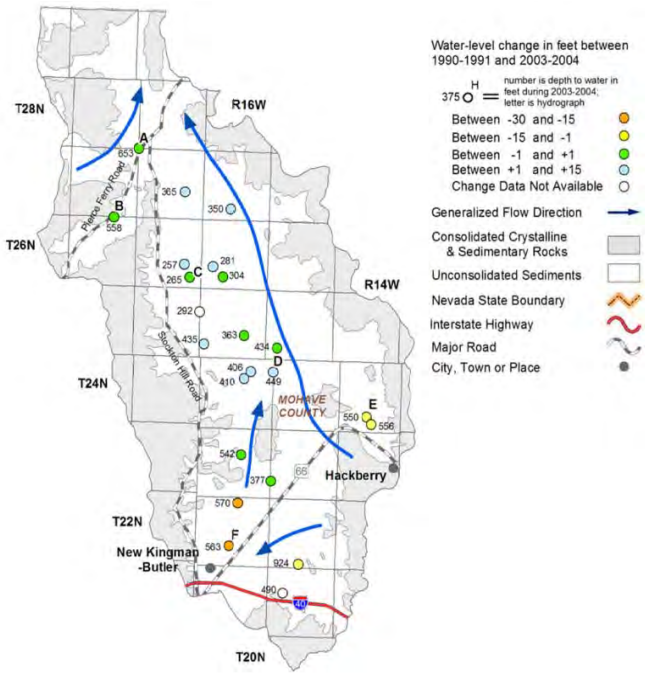


Figure 2.2 - Hualapai Valley Basin Groundwater Conditions

Usage of the Hualapai Valley Basin water is primarily derived from large volumes of municipal well pumpage by the City of Kingman. Median reported well yields are at approximately 900 GPM. Currently, there are no Active Management Areas (AMA) in the Kingman area that manage the groundwater resources. As a result, usage of the Hualapai Valley Basin aquifer is almost three times

more than that of recharge. Water levels in the southern portions of the Hualapai Valley Basin near Kingman have been declining and water levels in the central and northern parts of the Basin have been relatively stable or rising.

With no AMA present in the area, the City would receive no official credits for groundwater recharge. However, injection of Class A+ reclaimed water into the Basin aquifer would help to stabilize and/or raise groundwater levels and prove beneficial to the Kingman Area.

2.3 Conceptual Design

The City of Kingman's Hilltop Wastewater Treatment Plant has the capability to produce 1 MGD of Class A+ effluent. For the groundwater injection option, as much of that effluent as possible would be injected into the Hualapai Valley Basin aquifer by means of an injection well. ADEQ defines an injection well as "a well that receives a discharge through pressure or gravity flow." For the conceptual design of Option 1, all options of injections wells were considered to be gravity flow injection wells.

There were three options to review for injection well locations prior to designing the remainder of the injection system. The three different options of injection well locations are as followed:

- Retrofitting the City of Kingman's Well #1 into a gravity flow injection well.
- Retrofitting the City of Kingman's Well #6 into a gravity flow injection well.
- Drilling and installing a new gravity flow injection well onsite.

City Well #1

Well # 1 is a drinking water supply well owned by the City of Kingman. It is registered as Well no. 612667 with the Arizona Department of Water Resources (ADWR). The well is located in the southeast ¼ of the southeast ¼ of the southeast ¼ of Section 27, Township 22 North, Range 16 West, and is adjacent to the Kingman Airport.

Figure 2.3.1 – City of Kingman Well #1

Well #1 was completed in March 1968 with a static water level recorded at 590-feet. It has a 14-inch diameter casing drilled to a depth of 1,015-feet and has the capacity to pump 700 GPM. Currently, Well #1 is not operational. The last recorded static water level taken in June, 2006 was at 663.5-feet, providing a decline in the static groundwater level of 73.5-feet over 38 years.

Information about Well #1 is limited. ADWR records and City records have no data concerning the duration of the pumping tests performed at the time of install as well as bore hole data and perforation depths. With this information not available, it was assumed that Well #1's injection

capacity would be equal to a percentage of its pumping capacity in comparison to Well #6's pumping and injection capacities.

Well #1's data is shown in Table 2.3.1 below and Appendix D – Existing Well Data.

Table 2.3.1 – Well #1 Data

Casing Diameter (in)	Well Depth (ft)	Static Water Level (ft)	Pumping Capacity (GPM)
14	1,015	663.5	700

Well #6

Well # 6 is a drinking water supply well owned by the City of Kingman. It is registered as Well no. 529815 with ADWR. The well is located in the southeast ¼ of the southeast ¼ of the southeast ¼ of Section 17, Township 22 North, Range 16 West, approximately 2.5 miles southwest of the Hilltop Wastewater Treatment Plant.

The well was completed in September 1994 with a static water level recorded at 650-feet. It has an 18-inch diameter casing drilled to a depth of 1,200-feet and has the capacity to pump 1,600 GPM.

Figure 2.3.2 – City of Kingman Well #6

The driller's logs were very conclusive for Well #6. The casing was perforated at the following intervals: 640-820 feet, 840-1,020 feet, and 1,040 to 1,200 feet below grade with a total perforation of 520 feet. Materials encountered during drilling were primarily decomposed granite. A 49-hour constant rate pumping test was conducted in July 1991 at a pumping rate of 2,713 GPM. Subsequent 21-hour recovery data was also collected. Analysis of the drawdown versus time data yielded a transmissivity value of approximately 14,080 feet2/day.

Well #6 data is shown below in Table 2.3.2 and Appendix D – Existing Well Data.

Table 2.3.2 – Well #6 Data

Casing Diameter (in)	Well Depth (ft)	Static Water Level (ft)	Pumping Capacity (GPM)
18	1,200	650	1,600

New Onsite Injection Well

This study also included analyzing an option to drill a new injection well onsite at the Hilltop Wastewater Treatment Facility. Per ADEQ, there are no restrictions to drilling an injection well within close proximity to a WWTF or existing monitoring well. Discussions with ADEQ yielded only one potential issue which was to verify that the introduction of reclaimed water into the aquifer would not negatively affect the surrounding buildings.

To help determine groundwater conditions onsite, the closest well to the Hilltop Wastewater Treatment Facility was analyzed. This well is a monitoring well onsite registered with the Arizona Department of Water Resources (ADWR), registry no. 529463. It is a 16-inch diameter well that was drilled to a depth of 650-feet. This well currently indicates groundwater at a depth of 423-feet deep. With groundwater at that depth, 1 MGD of injection would not affect the surrounding buildings (see Figure 2.3.3 – Water Level vs Distance).

By having an injection well that recharges the groundwater onsite at the WWTF, nitrates in the aquifer in the immediate area could potentially be cleared up through dilution much quicker than without the injection.

In analyzing the onsite monitoring well data, however, it was realized that the geological data for the well was insufficient to determine injection rates for varying well sizes (See Appendix D – Existing Well Data). In order to design a functioning injection well capable of injecting 1 MGD at the Hilltop Wastewater Treatment Facility, geological and groundwater data from Well #6 was assumed. See Table 2.3.5 – Onsite Injection Wells for injection well sizes and perforation intervals. For future design, a full geotechnical report on the underlying strata is recommended.

Injection Well Capacity Analysis

The maximum allowable injection rate can be estimated using the following equation developed by Mathews and Russell (Ref 2):

$$Q = \frac{\Delta p\, kb}{162.6\mu} \frac{1}{\log \frac{kt}{\emptyset \mu C r^2} - 3.23}$$

Where

Q	=	injection rate in barrels/day;
k	=	permeability in millidarcies;
b	=	thickness of aquifer in feet;
t	=	injection time in hours;
r	=	distance from center of well in feet;
Δp	=	pressure at well in feet;
μ	=	viscosity of injected water in centipoises;
$\emptyset$	=	aquifer porosity in fraction; and
C	=	water compressibility in psi^{-1}.

For Well #6, the following values were used in the injection capacity analysis:

Table 2.3.3 – Well #6 Injection Capacity Parameters

Parameter	Value	Unit	Comment
k	301	millidarcies	
b	520	feet	perforation intervals
t	175,200	hours	20 years
r	0.75	feet	18 inches in diameter
Δp	649	feet	static water level minus well loss (<1 foot)
μ	0.98	centipoises	assumes 70°F
Ø	0.20	fraction	
C	3.08×10^{-6}	psi^{-1}	

Using the parameter values in Table 2.3.3 – Well #6 Injection Capacity Parameters above, the maximum allowable injection rate was estimated to be approximately 1,058,520 GDP (see Appendix D – Existing Well Data). Well #6 has enough injection capacity for the proposed 1 MGD reclaimed water. Assuming the water level in the aquifer does not change, injection of 1 MGD of reclaimed water into the aquifer would raise the water table in surrounding areas over a period of 20-years. See Figure 2.3.3 – Water Level vs Distance.

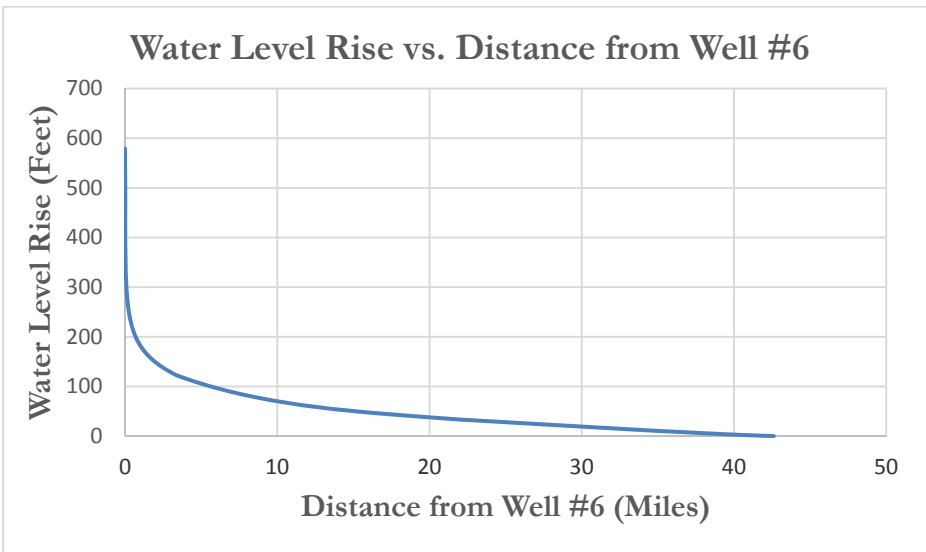


Figure 2.3.3 – Water Level vs Distance

For Well #1, an accurate estimate for the maximum allowable injection rate could not be provided since there is no detailed well construction information available. Nonetheless, the maximum allowable injection rate for Well #1 should be about ¼ of that for Well #6 based on the pumping capacity for the two wells and is shown in Table 2.3.4.

Table 2.3.4 – City Injection Wells

Well #	Casing Diameter (in)	Well Depth (ft)	Perforation Intervals (ft)	Injection Capacity (GPD)
1	14	1,015	Unknown	264,630
6	18	1,200	520	1,058,520

Since there was insufficient well information for the monitoring well onsite, well data from Well #6 was assumed for the design of a new injection well onsite. With the assumed geological and groundwater data from Well #6, three different injection well sizes with perforations were analyzed and are listed in Table 2.3.5. This analysis determined the minimal amount of perforation intervals necessary to achieve a 1 MGD injection capacity.

Table 2.3.5 – Onsite Injection Wells

Casing Diameter (in)	Well Depth (ft)	Perforation Intervals (ft)	Injection Capacity (GPD)
12	1,200	520	1,004,576
18	1,200	500	1,017,888
24	1,200	480	1,001,169

With a 12-inch well casing diameter and 520-ft perforation interval injection capacity was slightly more than a 24-inch well with a 480-ft perforation interval. Additional injection capacity could be attained by increasing the perforation interval or by installing multiple injection wells.

Injection Well Conceptual Design

In order to utilize Well #1 or Well #6 the existing water productions well would need to be retrofitted for injection. The pump, column pipe, well shaft, yard piping and appurtenances would need to be removed. The column pipe would then need to be re-inserted and the reclaimed water distribution line would need to be tapped into the column pipe.

For a new injection well onsite, a new well would need to be drilled and installed per ADEQ Bulletin 10, Chapter 3 (Ref 3). This well would include the casings with perforations, an empty column pipe for injection flow and appurtenances. Geological and groundwater data from the nearby monitoring well onsite did not have sufficient data to determine injection rates, therefore data from Well #6 was assumed. In moving forward with a design utilizing any onsite injection wells, a full hydrogeological report on the underlying strata is recommended.

In discussions with local drilling companies, a 12-inch injection well would cost significantly less to construct than an 18-in or 24-inch injection well. And since the 12-inch injection well has the capacity for a minimum of 1 MGD of injection, it was selected as the diameter for an onsite well.

The estimated costs associated with retrofitting or installing a new gravity flow injection well are listed below in Table 2.3.6 – Injection Well Cost Estimate.

Table 2.3.6 –Injection Well Cost Estimate

Injection Well	Well Diameter (in)	Well Depth (ft)	Perforation Intervals (ft)	Injection Capacity (GPD)	Estimated Cost
Well #1	14	1,015	Unknown	264,630	$200,000
Well #6	18	1,200	520	1,058,520	$200,000
Onsite	12	1,200	520	1,004,576	$650,000

Distribution Conceptual Design

Well #6 and all the new injection well options installed onsite have more injection capacity than the required 1 MGD whereas Well #1 injection does not. Therefore the idea of routing reclaimed water to Well #1 as part of this Option was not considered.

For the conceptual design of Option 1 – Groundwater Injection, reclaimed water from the Hilltop Wastewater Treatment Facility will be delivered to a new 12-inch diameter gravity flow injection well with 520-feet of perforations in the casing. This injection well has the capacity to inject 1,004,576 MGD of reclaimed water.

The well would be drilled within close proximity to the tertiary treatment facility onsite. A new 10-inch C-900 PVC line would tie into the existing 10-inch pipe that currently drains the tertiary chlorine contact tank and would allow for gravity flow from the tertiary to the column pipe in the injection well. A new 10-inch check valve and flowmeter would be installed inside a concrete vault below grade along the distribution line (See Exhibit 2.3.3 – Option 1 – Groundwater Injection). The concrete vault would be sized large enough for current design and future expansion of another injection well. For a list of all the required items needed for the Option 1 conceptual design and associated costs see Table 2.5 – Option 1 Conceptual Design Capital Cost.

2.4 Permitting

The permits which the City of Kingman currently operate under for their Hilltop Wastewater Treatment Facility allow for the disposal of effluent to the Mohave Wash (See Section 1.3 – Background Information). The City's current ADEQ Aquifer Protection Permit (AAP) P-100611 allows for the beneficial reuse of the effluent generated at the WWTF. According to ADEQ, groundwater injection is not classified as direct reuse or beneficial reuse. Therefore, for the City to adopt Option 1 – Groundwater Injection, APP permit no. P-100611 would need to be amended to allow for up to 1 MGD of Class A+ reclaimed water to be discharged into the Hualapai Valley Basin aquifer. The cost to amend this permit is shown in Table 2.4. Once the amendment has been made, the permit is valid for the life of the WWTF as long as no other changes are made.

Table 2.4 – Groundwater Injection Permit Costs

Permit Action	Initial Cost	Add'n Review
Amend AAP P-100611	$2,000	$122.00/hr

2.5 Capital Costs

Option 1 – Groundwater Injection is the least expensive option for reclaimed water in this study. The Engineer's estimated capital costs to design and construct Option 1 – Groundwater injection as described in Section 2.3 –Conceptual Design are listed below in Table 2.5 and in Appendix E – Engineer's Opinion of Probable Cost.

Table 2.5– Option 1 – Conceptual Design Capital Cost Estimate

Item Description	Total
Site Work (includes clearing and grubbing, grading & backfill)	$8,000
10" C-900 PVC Distribution Piping (includes valves, bends, tees, appurtenances, trenching & backfill)	$6,000
New 12-inch diameter injection well (includes, drilling, casings, column pipe, perforations and appurtenances)	$650,000
Concrete Vault	$16,000
Flowmeter	$6,000
Backflow Preventer	$15,000
Site Electrical	$25,000
25% Contingency	$182,000
Professional Engineering Services	$88,000
Construction Administration	$59,000
TOTAL	**$1,055,000**

2.6 Long-Term Operations and Maintenance

Operations and maintenance (O&M) for Option 1 – Groundwater Injection is significantly less than the other Options in this study. Many factors were assumed in determining the O&M expenses. Some of these expenses are listed below. For a list of all the O&M expenses and associated costs see Appendix F – Operations & Maintenance Expenses.

- Employee Salaries –
- Equipment Supplies and System Maintenance
- Sub consultant Engineering
- Travel/Education Expenses
- Administrative Services and Office Supplies
- ADEQ Permitting
- Power Consumption

Some assumptions were taken in determining long term O&M costs. Employee salaries were determined based on the assumption that the City would be able to operate and maintain the injection system with their current staff working a few additional hours a month. Costs for equipment supplies, maintenance, sub-consultant engineering and travel/education expenses were determined and then spread out over a 20-year period. An analysis of the power consumption/costs of four well sites was done to determine an average power cost. And although ADEQ permitting costs as shown in Table 2.4 are only $2, 000 with $122/hour for review, it was assumed the final cost would be $8,000. An

As outlined in Section 1.1 – Purpose and Scope of Work, the project analysis was based on a 20-year period with a 3% inflation rate and a 3% City growth rate. Costs for the above mentioned expenses, adjusted for inflation over a 20-year period were calculated and added to a debt service amount for the total amount of Option 1 with a 3% interest rate. The annual O&M, debt service payment, total annual net expenses and cumulative net expenses for a 1, 5, 10, 15 and 20 year period for Option 1 – Groundwater Injection are shown in Table 2.6.

Table 2.6 – Option 1 Long Term O&M and Debt Service Expenses

Item Description	Year 1	Year 5	Year 10	Year 15	Year 20
Annual O&M Expenses (adjusted for inflation)	$19,377	$12,795	$14,834	$17,196	$19,935
Debt Service Payment	$70,913	$70,913	$70,913	$70,913	$70,913
Annual Net Expense	($90,290)	($83,707)	($85,746)	($88,109)	($90,847)
Cumulative Expense	($90,290)	($422,928)	($847,459)	($1,283,135)	($1,731,730)

The reason for the higher O&M costs in the first year are for the ADEQ permitting as explained in Section 2.4 – Permitting. Once ADEQ permitting has been paid for the first year, no further ADEQ permitting would be required for the life of the WWTF.

2.7 Benefits Analysis

To help analyze the pros and cons in each Option of this study, a list of selection criteria was developed to help evaluate the pros and cons of all three Options. This selection criteria was weighted and each one of the criteria was assigned a point value depending upon the level of importance that the Option provided for the City (see Appendix K – Benefits Analysis).

Then each Option's pros and cons were analyzed and the Option was assigned a point value to each selection criteria. The assigned points for each Option's selection criteria were then summed to help determine which Option was to be recommended as part of this study.

Prior to assigning a score to each selection criteria for Option 1, the pros and cons for this Option were analyzed and are listed below in Table 2.7.1.

Table 2.7.1 – Option 1 Pros vs. Cons

Pros	Cons
Least expensive Option	Only recharges to groundwater
Lowest O&M costs	Provides no connections for future developments
Provides groundwater injection @ WWTF	Provides no capital savings for City's water system
Utilizes 1 MGD immediately	No credits for recharge (No AMA)
Has simple ADEQ permitting	
Potential to reduce nitrates at the WWTF	

Assigned points for the selection criteria for Option 1 are shown in Table 2.7.2 below.

Table 2.7.2 – Option 1 Selection Criteria Score

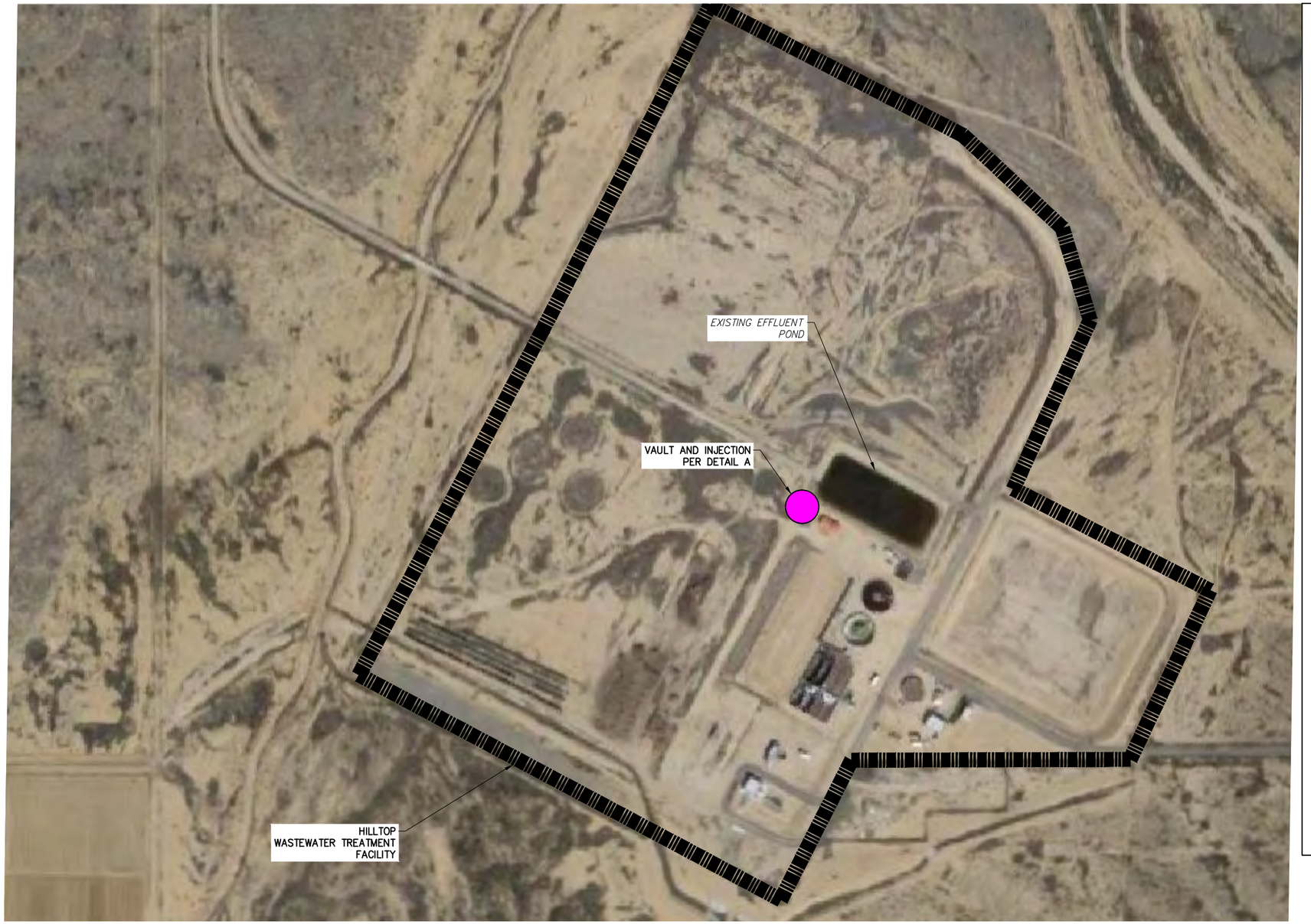
Selection Criteria	Points Possible	Option 1 Score
Capital Cost	30	30
Long Term O&M	30	30
Reduces Drinking Water System Requirements	30	0
Community Economic Impact	30	0
Flexible/Scalable	25	5
Eligible for Green Funding	20	20
Negatively Affects Water User Base Rates	15	15
Recharges Groundwater	10	10
Ease/Cost of Permitting	5	5
Ease of Constructability	5	5
Total	**200**	**120**

After the pros and cons for this Option were analyzed and points assigned for selection criteria, it was determined that Option 1 – Groundwater Injection scored 120 points of 200 total.

Section 2 Exhibits

Exhibit 2.3.3 – Option 1 – Groundwater Injection Conceptual Design

EXHIBIT 2.3.3



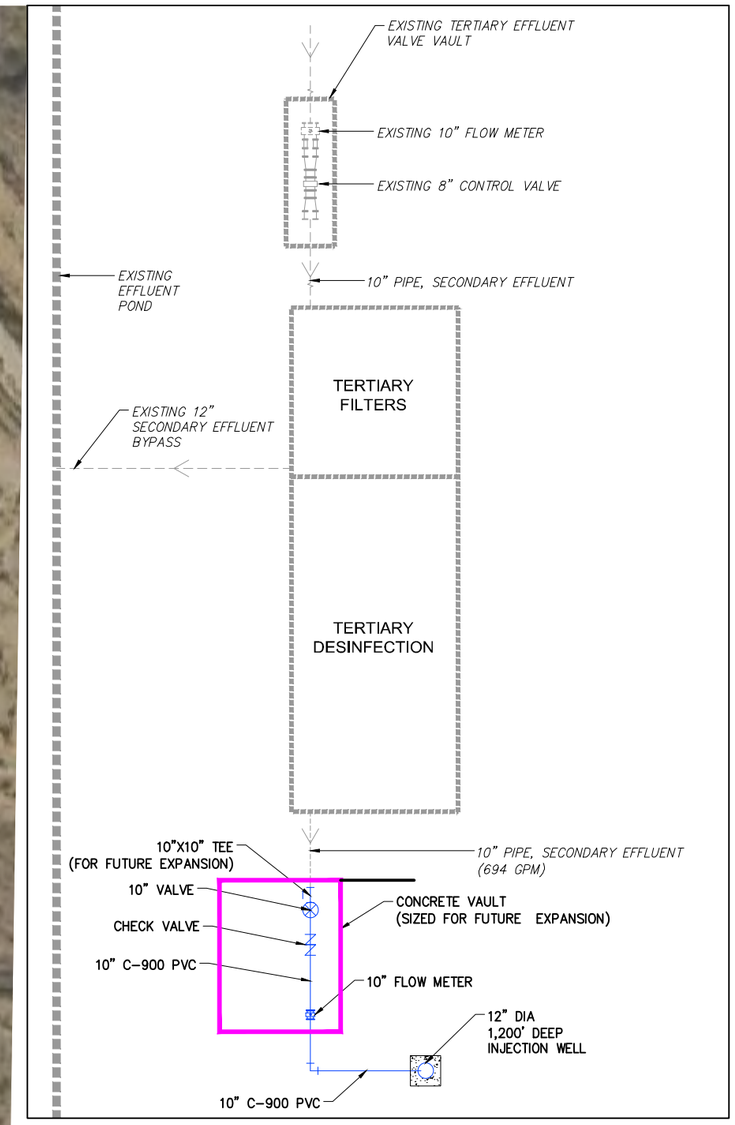


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EXHIBIT 2.3.3 - OPTION 1 - GROUNDWATER INJECTION CONCEPTUAL DESIGN

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3.0 OPTION 2 – AIRPORT INDUSTRIAL PARK REUSE

3.1 Introduction

Option 2 of this study analyzes the feasibility of distributing Class A+ reclaimed water from the Hilltop Wastewater Treatment Facility to the business/property owners of the Kingman Municipal Industrial Park. This analysis will include the following:

- A conceptual design of a system that can distribute the A+ reclaimed water from the Hilltop WWTF to the Kingman Airport Industrial Park and Well #1.
- A capital cost estimate based on the conceptual design.
- Long term Operation and Maintenance (O&M) costs to permit, own and operate such a system.
- A rate/capital savings analysis to determine water usage revenue vs expenditures for the Airpark and how to financially pay for this option.
- A survey to the Airpark tenants to gauge interest in using a reclaimed water system.
- A benefits analysis of pros and cons of this Option to compare against other Options in this study.

The Kingman Municipal Airport and the Airport Industrial Park are located approximately two miles southeast of the Hilltop Wastewater Treatment Facility. Historically there has been 70 business/property owners that have operated at the Airpark, however currently there are approximately 64 that operate within the Airpark. From 2010 to 2014, the average daily water usage from these tenants was 64,181 GPD with a peak usage of 125,863 GPD in July of 2010.

Figure 3.1.1 – City of Kingman Airport Industrial Park

Historically, more water was used in the summer months than the winter months. This leads to show that there is a large amount of water that is used for either irrigation purposes, evaporative coolers or that some of the business/property owners at the Airpark are seasonal. Water usage at the Airpark from 2010 to 2015 is shown in Figure 3.1.2.

By utilizing reclaimed water at the Airpark to meet the demands of irrigation and industrial purposes, clean drinking water infrastructure could be freed up for future growth and expansion. In addition, by having a reclaimed system in place, it could possibly bring in new "green" businesses that are willing to utilize this system, thus having a positive community economic impact.

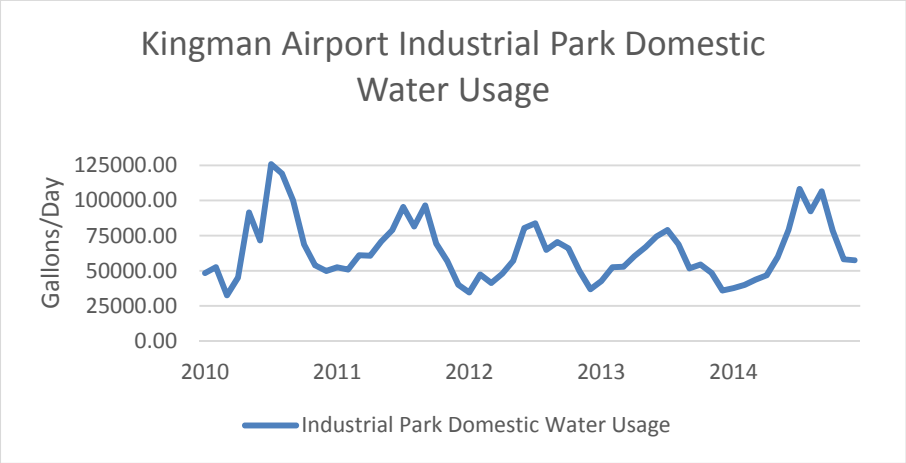


Figure 3.1.2 – 2010 – 2015 Kingman Airpark Water Usage

3.2 Conceptual Design

Future Use Study

Prior to the design of a system capable of delivering reclaimed water to the Airpark, future water demands needed to be accounted for. Using the historical water usage data and some assumptions as listed below, the water usage for the next 20 years at the Airpark was calculated. Below is a list of the assumptions used to calculate the reclaimed water demand for the next 20 years:

- 80% of the Airport Industrial Park's water usage from 2010 to 2015 was used for industrial purposes.
- 20% of the Airport Industrial Park's water usage from 2010 to 2015 was used for domestic usage (i.e. human consumption).
- If a the primary business is food related, 100% of the water usage from 2010 to 2015 was used for domestic usage (i.e. human consumption).
- The Airport Industrial Park will see a 6% growth rate over the next 20 years
- This system will not be designed to provide fire flow.

Contact was made with the Kingman Airport Authority to determine an estimated growth rate. They provided a growth anticipation in terms of development and employee growth which does not necessarily translate into water usage growth. Therefore it was determined that a 6% growth rate would be applied to the water usage at the Airpark.

This calculated reclaimed water usage after the 80/20 split helped to determine the required reclaimed water storage necessary, the pump sizing and the distribution line sizes necessary for the next 20 years and is shown in Table 3.2.1 and in Appendix C – Industrial Park Flows and Calculations.

Table 3.2.1 – Kingman Airpark Projected Water Usage

Item Description	Year 1	Year 5	Year 10	Year 15	Year 20
Average Water Usage (GPD)	80,219	101,275	135,529	181,369	242,712
Peak Water Usage (GPD)	128,867	162,692	217,718	291,356	389,900
Average Reclaimed Usage (GPD)	64,176	81,020	108,423	145,095	194,170
Peak Reclaimed Usage (GPD)	103,094	130,153	174,175	233,085	311,920

Table 3.2.1 shows the maximum calculated reclaimed water demand in 20 years for the Airpark would not exceed the tertiary treatment facility's capability to produce 1 MGD.

For an overview of the Option 2 conceptual design, see Exhibit 3.2.3 – Option 2 – Airport Industrial Park Reuse Conceptual Design. For a summary list of the required items needed for the Option 2 conceptual design and associated costs see Table 3.4 – Option 2 Conceptual Design Capital Cost.

Storage Conceptual Design

In order to provide reclaimed water to the Airpark, there needs to be a storage system for the reclaimed water exiting the tertiary treatment facility. To save on costs, this system would need to be able to store more than the average demand but not more than the peak demand. The tertiary treatment is capable of treating up to 1 MGD, which is significantly higher than the 20-year peak demand. If the average demand storage becomes depleted, flows exiting the tertiary treatment facility would be able to meet the peak demands. It would be expected that the tertiary treatment facility would constantly be running at an average 694 GPM.

In speaking with local tank manufactures and contractors, a wider, shallower tank is financially more beneficial than a higher, slimmer tank. This is due to the engineering and design required to withstand wind loads. Also, an above grade tank costs significantly less to construct than a below grade tank. Therefore it is recommended that an above grade 288,000 gallon reclaimed water storage tank be used. This tank's dimensions would be 24-feet tall by 48-feet in diameter.

Because the tertiary treatment facility is gravity flow, a booster station would need to be installed prior to a storage tank in order to fill the tank. This would include two 750 GPM horizontal split case pumps capable of overcoming 35-feet of head (15 psi). One of these pumps would be on standby. The pumps and appurtenances would be installed in a below grade concrete vault to intercept gravity flows from the tertiary. There would need to be a high-level sensor installed in the tank and it would need to be able to communicate with the pumps so that when the tank is full, the pumps could shut off and the reclaimed water from the tertiary would be diverted to the existing effluent pond to the north through a 12-inch overflow installed at the tertiary.

Distribution Conceptual Design

The Airpark is located approximately 2 miles southeast of the Hilltop Wastewater Treatment Facility. The Airpark is approximately 3,390-feet above sea level with the WWTF being approximately 3,240-feet above sea level. In order to convey the reclaimed water to the Airpark another onsite booster station is needed. This booster station would include two 300 GPM horizontal split case pumps capable of overcoming 270-feet of head (116 psi). One of these pumps would be on standby. This pump size would be sufficient to overcome elevation difference, head losses in the 8-inch distribution line and still provide the highest point in elevation at the Airpark

with a minimum of 92-feet of head (40 psi). No pressure calculations were performed for the 6-inch service lines.

There would also need to be a low-level sensor installed in the tank and it would need to be able to communicate with the distribution pumps so that when the tank is empty, the pumps could shut off. These pumps would be installed on a concrete pad above grade. In addition a backflow preventer immediately after the booster station and then a flow meter downstream of the backflow preventer is required prior to the distribution line returning to below grade and onto the Airpark.

The distribution line from the WWTF to the Airpark would be an 8-inch C-900 PVC pipe and include various valves and fittings. Valves were spaced every 1,000 feet for conservative cost estimating purposes. An 8-inch line size would allow for a conveyance of the calculated 20-year peak demand of 311,920 GPD (217 GPM) with a velocity that would not exceed 5 feet per second. See Appendix J – Distribution Line Size Analysis for line size calculations.

This distribution line would be installed 4-feet minimum below grade within the existing 30-foot wide sewer easement from Kingman to the WWTF, following the Mohave Wash alignment. The line would be installed a minimum of two feet from the northwestern edge of the easement (See Exhibit 3.2.3 – Option 2 – Airport Industrial Park Re-use Conceptual Design). A temporary construction easement (TCE) on the north-west side of the easement may be necessary. However, having the reclaimed distribution line run so close to the edge of the easement would allow for easier construction of a future sewer outfall line. The distribution line would exit this easement at the Grace Neal Parkway alignment and run east in the Grace Neal Parkway right-of way, bore under AZ Highway 66 and BNSF Railroad and then follow on through to the Airpark.

6-inch service lines would tee off from the 8-inch distribution line and loop throughout the Airpark with commercial meters installed at each property that would be receiving reclaimed water. It would then be the responsibility of each of the business/property owners to plumb their buildings accordingly for use of reclaimed water and to tie into the reclaim service lines at the meter.

Well #1 Injection Conceptual Design

There is also an option to route reclaimed water to Well #1 for injection as part of the Option 2 – Airport Industrial Park Reuse option. As mentioned in Section 2.3 – Conceptual Design, Well #1 is located adjacent to the Kingman Airport. The distribution line throughout the Airpark would include a service line to Well #1. Injection capacities for Well #1 is shown in Table 2.3.6.

In order to utilize Well #1 the existing water production well would need to be retrofitted for injection. The pump, column pipe, well shaft, yard piping and appurtenances would need to be removed. The column pipe would then need to be re-inserted and the reclaimed water distribution line would need to be tapped into the column pipe.

3.3 Permitting

There are two different kinds of permits issued by ADEQ for the beneficial reuse of reclaimed water and are listed below and in Table 3.3:

- **Type II Permit** – This ADEQ issued permit allows for the end user to act as their own agent and directly reuse reclaimed water per AAC R18-9-708. It would be the responsibility of the end user to comply with all the requirements and regulations of AAC R18-9-708. It would also be the responsibility of the end user to pay for and maintain the permit as long as reclaimed water is being used. Per AAC R18-14-110, there is a $600 application fee. The permit is valid for five years per AAC R18-9-709 with a renewal fee of $450 per AAC R18-14-110.

- **Type III Permit** – This ADEQ issued permit would allow for the City to act as the agent for the reuse reclaimed water per AAC R18-9-708. This would allow the City to determine who can reuse reclaimed water. It would be the responsibility of the City to maintain contracts with the designated end users to guarantee the reclaimed water is being used appropriately and that the end users are in compliance with all the requirements and regulations of AAC R18-9-708. It is also the responsibility of the City to pay for and maintain the permit as long as reclaimed water is being used. Per AAC R18-14-110, there is a $1,500 application fee. The permit is valid for five years per AAC R18-9-709 with a renewal fee of $1,250 per AAC R18-14-110.

ADEQ indicates that most municipalities use a Type III permit for the reuse of reclaimed water.

Table 3.3 –ADEQ Reclaimed Water Reuse Permit Costs

ADEQ Permit Type	Agent/Responsibility	Application Cost	Duration of Permit	Renewal Cost
Type II	End User	$600/EA	5-years	$450/EA
Type III	City	$1,500	5-years	$1,250

As mentioned in Section 2.4 – Permitting, in order to utilize Well #1 for groundwater injection, the Hilltop Wastewater Treatment Facility's current ADEQ Aquifer Protection Permit (APP) no. P-100611 would need to be amended to allow for up to 1 MGD of Class A+ reclaimed water to be discharged into the Hualapai Valley Basin aquifer. See Table 2.4 – Groundwater Injection Permit Costs for initial costs and review fees.

3.4 Capital Costs

Option 2 – Airport Industrial Park Reuse is the most expensive option for reclaimed water in this study. The Engineer's estimated capital costs to design and construct Option 2 – Airport Industrial Park Reuse as described is Section 3.2 – Conceptual Design are listed below in Table 3 and in Appendix E – Engineer's Opinion of Probable Cost.

Table 3.4– Option 2 – Conceptual Design Capital Cost Estimate

Item Description	Total
Site Work (includes clearing and grubbing, grading & backfill)	$15,000
8" C-900 PVC Distribution Piping (includes valves, bends, tees, appurtenances, trenching & backfill)	$1,500,000
6" C-900 PVC Service Lines (includes valves, bends, tees, appurtenances, trenching & backfill)	$3,000,000
Jack and Bore Reuse Line Under AZ Highway 66	$300,000
Jack and Bore Reuse Line Under BNSF Railroad	$150,000
Pump Station to Fill Storage Tank (includes two 750 GPM pumps, valves, bends, appurtenances and vault)	$150,000
Booster Station (includes two 300 GPM pumps, valves, bends, appurtenances and concrete pad)	$150,000
Flow Meter @ WWTF	$6,000
Water Meter For Industrial Park	$75,000
Backflow Preventer @ WWTF	$30,000
288,000 Gallon Steel Water Storage Tank, coating (interior/exterior) & Foundation	$300,000
Remove and Replace Existing Asphalt, Concrete, Curb and Gutter	$1,240,000
Electrical & SCADA	$300,000
Retrofit Well #1 (includes all demo items, re-installation and connection)	$200,000
25% Contingency	$1,854,000
Engineering Design Services	$890,000
Construction Administration	$594,000
TOTAL	**$10,754,000**

3.5 Long-Term Operations and Maintenance

Long term O&M for Option 2 – Airport Industrial Park Reuse is higher than the other Options in this study. Many factors were assumed in determining the O&M expenses. Some of these expenses are listed below. For a list of all the O&M expenses and associated costs see Appendix F – Operations & Maintenance Expenses.

- Employee Salaries and Benefits
- Equipment Supplies and System Maintenance
- Sub consultant Engineering
- Vehicle and Travel/Education Expenses
- Administrative Services and Office Supplies
- ADEQ Permitting
- Power Consumption

Some assumptions were taken in determining long term O&M costs. Employee salaries were determined based on the assumption that the City would need to hire additional staff to be able to operate and maintain the distribution system. Costs for vehicle expenses, equipment supplies, maintenance, sub-consultant engineering, travel/education expenses and ADEQ permitting were

determined and then spread out over a 20-year period. An analysis of the power consumption/costs of four well sites was done to determine an average power cost.

As outlined in Section 1.1 – Purpose and Scope of Work, the project analysis was based on a 20-year period with a 3% inflation rate and a 6% water usage growth rate at the Airpark. Costs for the above mentioned expenses, adjusted for inflation over a 20-year period were calculated and added to a debt service amount for the total amount of the project with a 3% interest rate. The annual O&M, debt service payment, total annual net expenses and cumulative net expenses for a 1, 5, 10, 15 and 20 year period for Option 2 – Airport Industrial Park Reuse is shown in Table 3.5.

Table 3.5 – Option 2 Long Term O&M and Debt Service Expenses

Item Description	Year 1	Year 5	Year 10	Year 15	Year 20
Annual O&M Expenses (adjusted for inflation)	$164,200	$183,449	$212,667	$246,539	$285,807
Debt Service Payment	$722,838	$722,838	$722,838	$722,838	$722,838
Annual Net Expense	($887,038)	($906,286)	($935,504)	($969,377)	($1,008,644)
Cumulative Expense	($887,038)	($4,480,740)	($9,098,098)	($13,875,235)	($18,837,600)

3.6 Rate Analysis and Capital Savings

At the Airpark, there are approximately 70 business/property owners connected to Kingman's domestic water system. As mentioned in Section 3.2 – Conceptual Design, it was assumed that 80% of the historic water usage was used for industrial purposes and that the remaining 20% was used for domestic purposes.

An average monthly water usage for all users was determined and applied to the current City of Kingman non-residential, outside City limits water rates. These rates are shown in Table 3.6.

Table 3.6.1 – City of Kingman Water Rates

Water Usage	Cost
Base Service Charge Fee	$9.64
Capital Renewal Fee	$3.75
All usage per 1,000 gallons	$2.95

In order to make the connection from domestic water to reclaimed water attractive to the Airpark tenants, it was assumed that the reclaimed water rates would not exceed the current water rates. The estimated revenue of water users over the course of a 20-year period using the current water rates and adjusted for a 6% water usage growth rate at the Airpark is shown in Table 3.6.2.

Table 3.6.2– Option 2 Projected Revenue at Current Water Rates

Item Description	Year 1	Year 5	Year 10	Year 15	Year 20
Reclaimed Water Revenue	$77,348	$210,803	$471,382	$884,115	$1,522,116
Domestic Water Revenue	$27,773	$35,063	$46,922	$62,791	$84,029
Total Revenue	$105,121	$245,866	$518,304	$946,906	$1,606,145

Table 3.5 shows the revenue that needs to be earned over a 20-year period is significantly higher than the projected revenue earned after 20-years, utilizing the current water base rates as shown in Table 3.6.2– Option 2 Projected Revenue at Current Water Rates.

After discussions with the City of Kingman, it was determined that this Option should be self-funded and the cost of it should not be borne by the all the City's water users as this Option only services a small amount of users. Also, the City stated that an increase to sewer rates would not be considered. Therefore, in order to balance Option 2, the base rate for reclaimed water was analyzed and determined that it would need to increase significantly to balance this Option. Only the base rate was adjusted since the amount of water used per connection may vary and is susceptible to change. Rate analysis for Option 2 – Airport Industrial Park Reuse is shown in Appendix G – Rate Analysis.

Aside from raising reclaimed water rates, there are other available options to provide funding for this Option or to reduce the initial capital. The City could apply for WIFA funding, water smart grants, or re-direct City water funds to help pay for this Option.

Another item to take into consideration when deciding upon this Option is the capital savings this Option will provide. Table 3.2.1 – Kingman Airpark Projected Water Usage, the 20-year analysis shows a projected average reclaimed water usage of 194,170 GPD with a peak reclaimed usage of 311,920 GPD by the tenants at the Airpark. By meeting this demand with reclaimed water, clean drinking water and infrastructure could be freed up for future growth and expansion. The estimated value associated with that freed up infrastructure for 311,920 GPD is seen in Table 3.6.3 – Option 2 Projected Capital Savings and in Appendix H – Capital Savings Analysis.

Table 3.6.3 – Option 2 Projected Capital Savings

Item Description	Total
220 GPM Well (includes well, pump, motor, control valves, chlorination and yard piping)	$850,000
220 GPM Booster Station (includes two pumps, valves, backflow preventer, flowmeter, fittings, appurtenances and concrete pad)	$80,000
100,000 Gallon Steel Water Storage Tank, coating (interior & exterior) and foundation	$150,000
Electrical	$250,000
25% Contingency	$333,000
Professional Engineering Services	$160,000
Construction Administration	$107,000
TOTAL	**$1,930,000**

After analysis of capital costs, rate analysis and capital savings, Option 2 – Airport Industrial Park Reuse does not appear to be a very financially feasible project and is not recommended.

3.7 Water Reuse Survey

In order to gauge the interest of using reclaimed water at the Airpark, a survey was prepared and sent to the 64 business/property owners of the Airpark that are currently using domestic water. The survey contained ten questions which were aimed to determine their thoughts about using reclaimed water at their facility and knowledge about reclaimed water. To see the complete survey that was sent to the tenants of the Airpark and result to the survey, see Appendix I – Reuse Water Survey and Results.

Table 3.7 shows four questions from the survey and actual results that best helped to determine the business/property owner's willingness to use reclaimed water at their facility. These results were last updated at the time of final preparation of this report.

Table 3.7 – Water Reuse Survey and Results

Survey Question	Yes	No	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Do you have processes at your facility that could use Class A+ reclaimed water in lieu of drinking water	3	15	-	-	-	-	-
I would support using Class A+ reclaimed water at my facility because it is an environmentally friendly alternative	-	-	4	1	4	6	3
I would support using Class A+ reclaimed water at my facility if it were cheaper than using drinking water	-	-	3		6	5	4
If the City of Kingman were to provide Class A+ reclaimed water to my facility, I would connect to and use this service	-	-	3	3	7	2	3

Table 3.7 shows results from business/property owner's are contradictory. A strong majority of tenants stated that they do not have processes that would use reclaimed water, yet a small majority of tenants stated that they support using reclaimed at their facility. A large majority of tenants stated, however, that they are either neutral or won't connect to a reclaimed service if provided by the City.

From the results of the survey, it appears that most water users at the Airport would be somewhat reluctant to use reclaimed water provided by the City at their facility.

3.8 Benefits Analysis

For Option 2, the pros and cons were analyzed and are listed below in Table 3.8.1.

Table 3.8.1 – Option 2 Pros vs. Cons

Pros	Cons
Uses 300K+ of reclaimed water	Is the most expensive Option
Provides for some recharge into the groundwater	Highest O&M costs
Expandable	Received negative community input
Positive economic impact	Requires service changeover for Airpark business/property owners
Adds capacity to the City's drinking water system	High user base rates
	Limited users benefited
	Has a high construction/community impact
	Requires City involvement to enforce ADEQ codes

Assigned points for the selection criteria for Option 2 is shown in Table 3.8.2 – Option 2 Selection Criteria Score.

Table 3.8.2 – Option 2 Selection Criteria Score

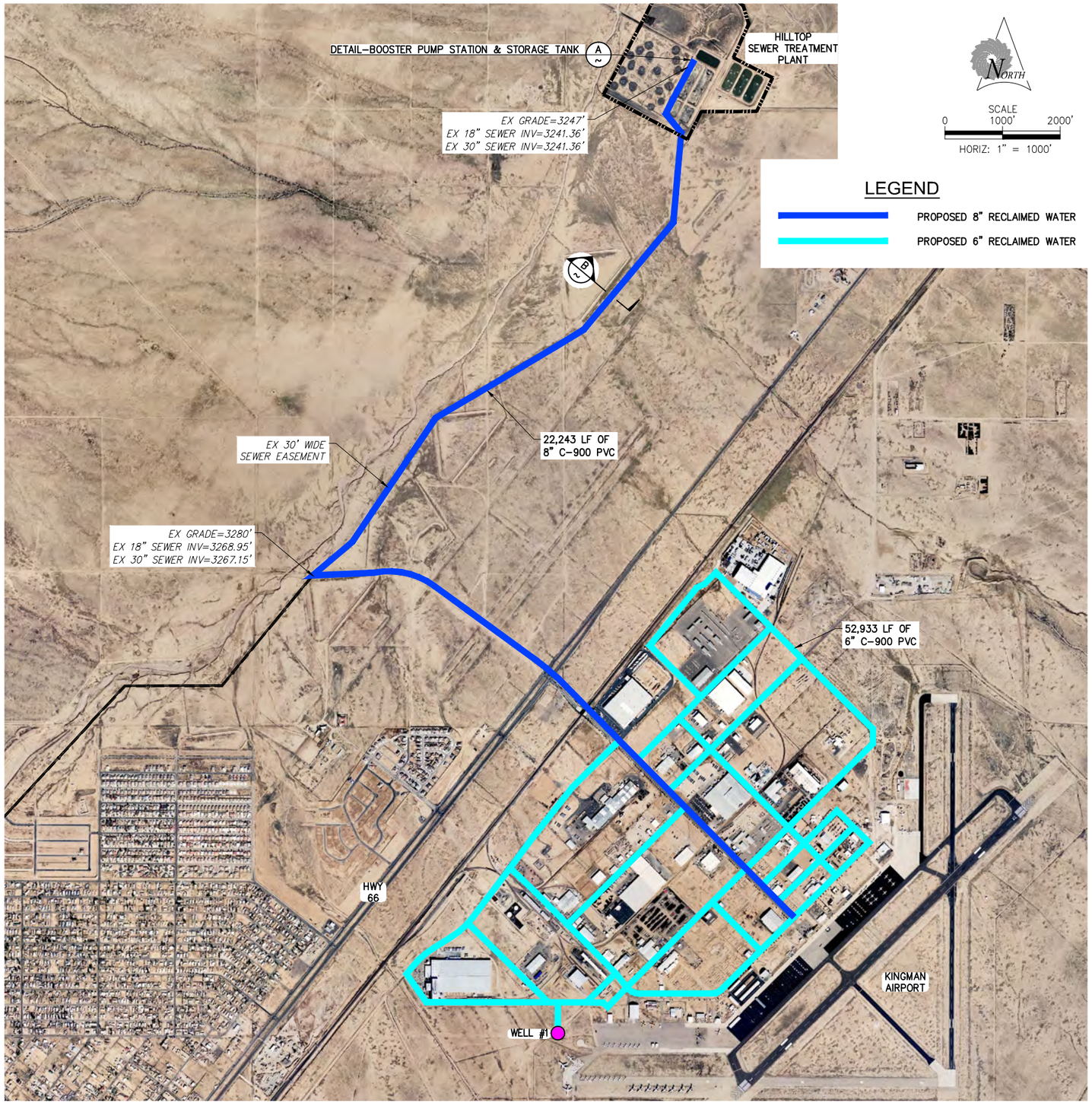
Selection Criteria	Points Possible	Option 2 Score
Capital Cost	30	5
Long Term O&M	30	5
Reduces Drinking Water System Requirements	30	15
Community Economic Impact	30	30
Flexible/Scalable	25	13
Eligible for Green Funding	20	20
Negatively Affects Water User Base Rates	15	0
Recharges Groundwater	10	4
Ease/Cost of Permitting	5	2
Ease of Constructability	5	1
Total	**200**	**95**

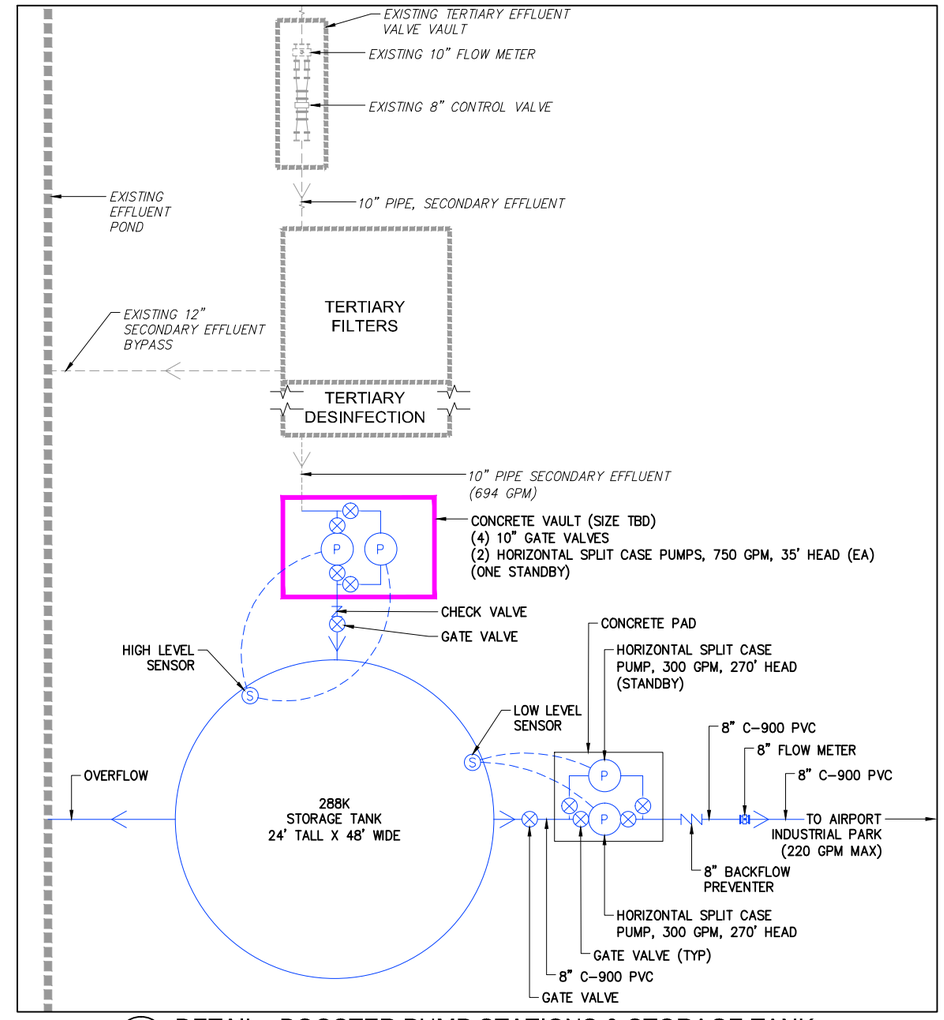
After the pros and cons for this Option were analyzed and points assigned for selection criteria, it was determined that Option 2 – Airport Industrial Park Reuse scored 95 points of 200 total.

Section 3 Exhibits

Exhibit 3.2.3 – Option 2 – Airport Industrial Park Re-use Conceptual Design

EXHIBIT 3.2.3





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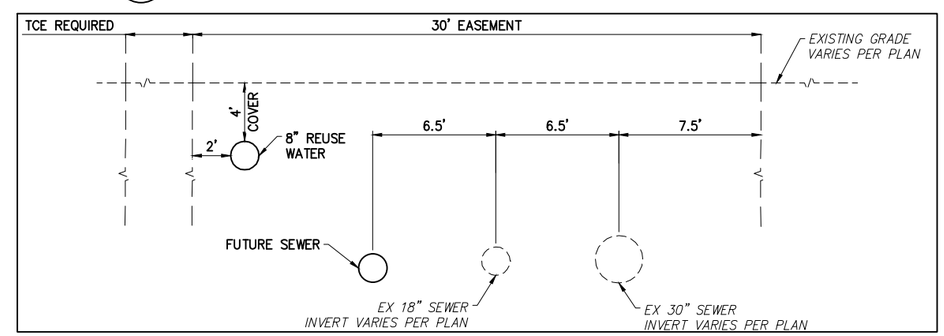
NOT TO SCALE



B ~ SECTION - SEWER EASMENT UTILITIES
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EXHIBIT 3.2.3 - OPTION 2 - AIRPORT INDUSTRIAL PARK REUSE CONCEPTUAL DESIGN

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4.0 OPTION 3 – GOLF COURSE, SCHOOLS AND PARKS REUSE

4.1 Introduction

Option 3 of this study will determine the feasibility of distributing Class A+ effluent from the Hilltop Wastewater Treatment Facility to the Cerbat Cliffs Golf Course in Kingman with the possibility to have connections to the Kingman High School, Kingman Middle School, Kingman Academy of Learning, Firefighter's Memorial Park, Centennial Park and the Mohave County Fairgrounds. This analysis will include the following:

- A conceptual design of a system that can distribute the A+ effluent from the Hilltop WWTF to the Cerbat Cliffs Golf Course with possible services to schools, parks and the Mohave County Fairgrounds.
- A capital cost estimate based on the conceptual design.
- Long term Operations and Maintenance (O&M) costs to permit, own and operate such a system.
- A rate/capital savings analysis to determine water usage revenue vs expenditures, capital saved in infrastructure for future growth as a result of a reduction in drinking water usage and how to financially afford this option.
- A benefits analysis of pros and cons of this Option to compare against other Options in this study.

Figure 4.1.1 - Cerbat Cliffs Golf Course

As shown in Figures 4.1.2, 4.1.3 and 4.1.4 below, the Cerbat Cliffs Golf Course historically has used more water for irrigation purposes than the schools and fairgrounds combined. From 2010 to 2014, the average daily irrigation water usage for the golf course was 456K GPD with a peak usage of 969K GPD in July of 2011. The average daily irrigation water usage from 2010 to 2014 for the schools and parks was approximately 140K GPD with a maximum usage of 501K GPD. Data for park irrigation usage was only included starting 2014 to 2015, hence the reason for the increase in Figure 4.1 for those years. The average daily water usage at the Mohave County Fairgrounds was approximately 8.5K GPD with a maximum usage of 28K GPD (see Appendix L – Golf Course, Schools and Parks Flows and Calculations). As a result, it was determined to route the reclaimed water from the WWTF to the Cerbat Cliffs Golf Course.

The golf course is the furthest destination from the WWTF, being approximately eight miles southwest of the WWTF. In order to maximize the amount of locations that could connect to a reclaimed water line, the distribution line to the golf course was aligned such that it would pass directly by the Kingman High School, Kingman Middle School, Kingman Academy of Learning, Firefighter's Memorial Park, Centennial Park and the Mohave County Fairgrounds. Any excess reclaimed water not used by the golf course could be used by these entities. See Exhibit 4.1.5 – Option 3 – Golf Course, School and Parks Reuse Conceptual Design.

Pressures in the distribution line from the WWTF to the golf course for the current design range from 142 psi to atmosphere (0 psi). Pressures at the Kingman Middle School, Firefighter's Memorial Park, Mohave County Fairgrounds, Kingman Academy for Learning and the Centennial Park are anticipated to be less than 40 psi, therefore these entities would need to supply additional booster pumps to obtain pressures sufficient for their irrigation systems. Pressure in the distribution line at the Kingman High School are anticipated to be around 60 psi and should be sufficient for their irrigation system.

Water usage for the Cerbat Cliffs Golf Course from 2010 to 2015 is shown in Figure 4.1A. Water usage for the Kingman Schools from 2010 to 2015 is shown in Figure 4.1B and water usage for the Mohave County Fairgrounds is shown in Figure 4.1C.

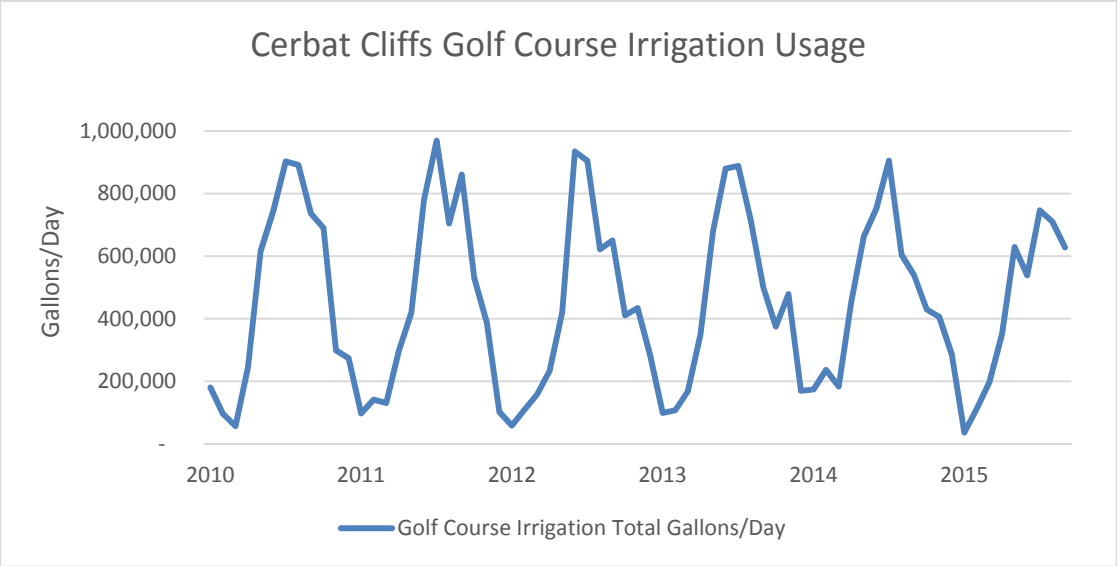


Figure 4.1.2 – 2010 – 2015 Cerbat Cliffs Golf Course Irrigation Water Usage

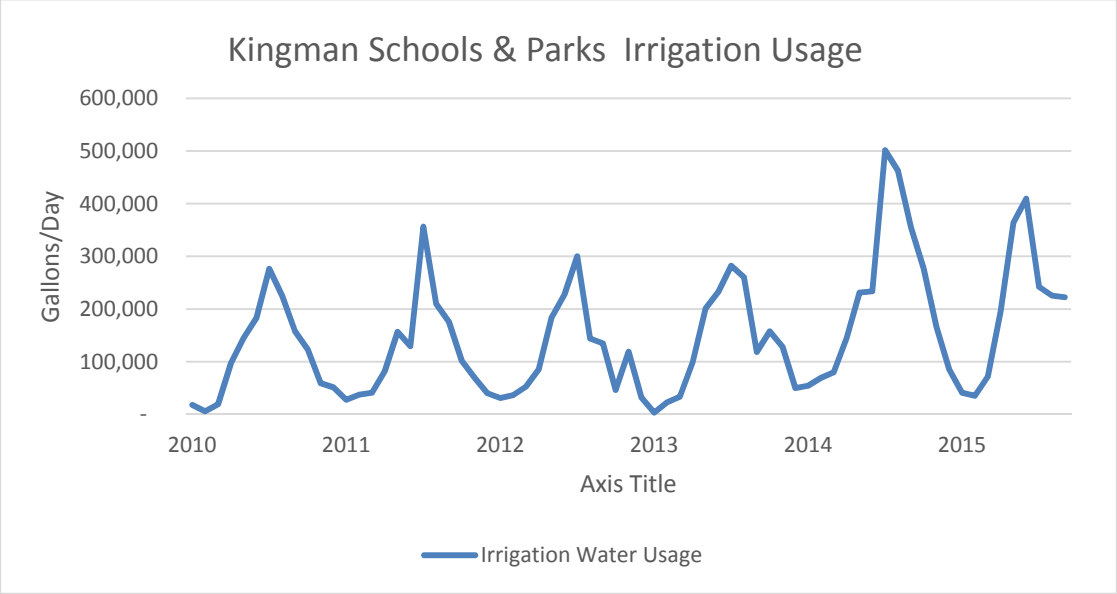


Figure 4.1.3 – 2010 – 2015 Kingman Schools & Parks Irrigation Water Usage

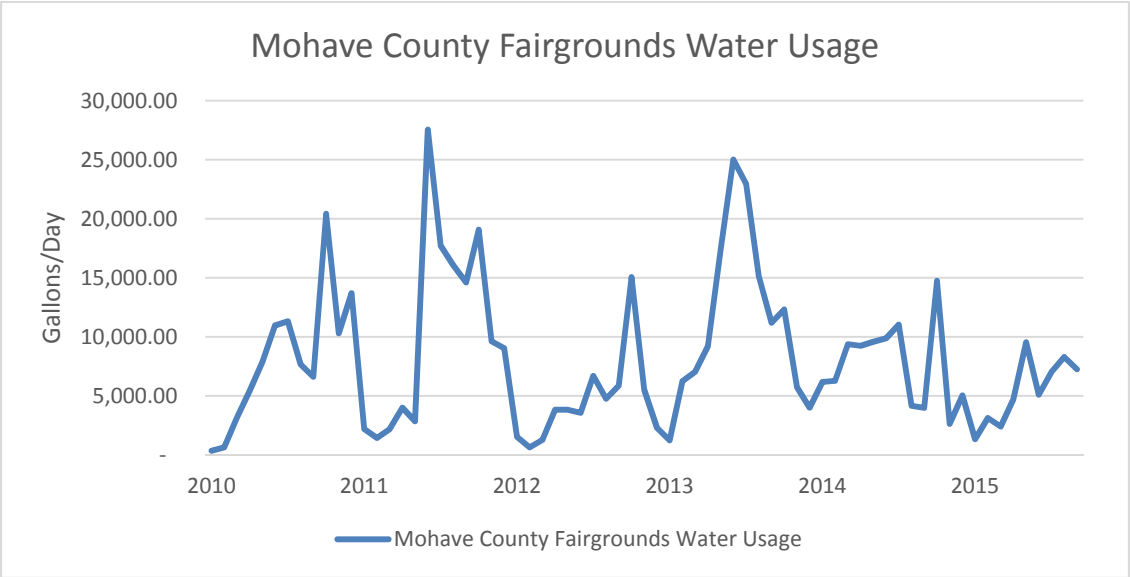


Figure 4.1.4 – 2010 – 2015 Mohave County Fairgrounds Water Usage

By utilizing reclaimed water at the golf course to meet the demands of irrigation purposes, clean drinking water infrastructure could be freed up for future growth and expansion. In addition, by having a reclaimed system that is sized for future growth in place, new "green" businesses could possibly be attracted, creating a positive community economic impact. In order for these new businesses to tie into the system, however, the tertiary outflow would need to be increased as the majority of the reclaimed water in the summer months will be used up by the golf course.

Option 3 is the most flexible/scalable Option in the study. It would pass the Airpark, multiple schools and parks, the fairgrounds and City wells that could be retrofitted for groundwater injection.

4.2 Conceptual Design

Distribution Conceptual Design

The conceptual design for Option 3 – Golf Course, Schools and Parks will consist of a distribution line from the Hilltop Wastewater Treatment Facility to the Cerbat Cliffs Golf Course, passing by the Kingman High School, the Kingman Academy of Learning, Kingman Middle School, Firefighter's Memorial Park, Centennial Park and the Mohave County Fairgrounds.

Currently the WWTF produces more effluent flows than what is permitted to be reused as Class A+ reclaimed water. And with future growth expected, the City could amend their current APP no. P-106051 and upgrade their tertiary treatment facility to increase the maximum amount of Class A+ effluent that could be reused for beneficial use.

In order to determine the proper size for the distribution line with accounting for future growth an analysis of 8-inch, 10-inch, 12-inch and 16-inch line sizes was performed (see Appendix I – Distribution Line Size Analysis). This analysis determined the maximum capacity of the line without exceeding a maximum velocity of 5 feet/second and without exceeding 315 psi (90% of the working pressure rating for DIP).

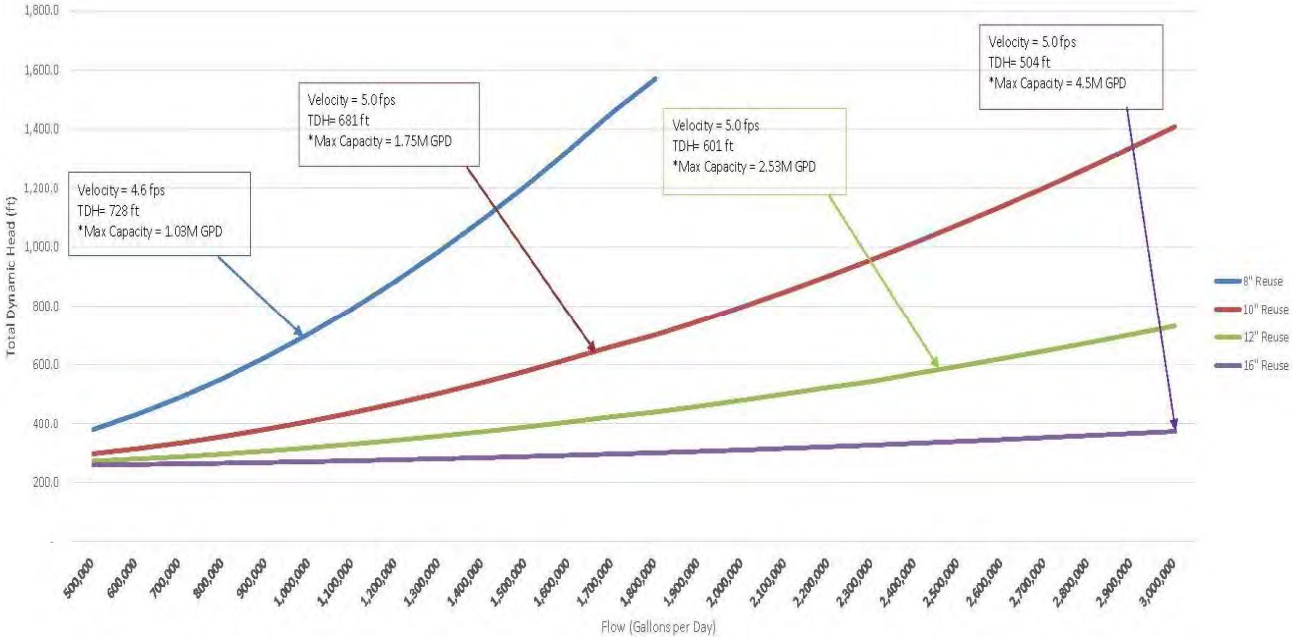


Figure 4.2 – Option 3 Distribution Line Size Analysis

Figure 4.2 shows that the 12-inch (green) line has a maximum capacity of 2.53 MGD with a maximum velocity of 5 feet per second and a pressure of 601 total dynamic head (253 psi). The capacity of this line would allow for more than double the amount of reuse flow than what is currently permitted therefore the Option 3 conceptual design included a 12-inch pipe (see Appendix J – Distribution Line Size Analysis).

The distribution line from the WWTF to the golf course would be a combination of 12-inch ductile iron pipe and 12-inch C-900 PVC pipe with valves and fittings. Valves were spaced every 1,000 feet for conservative cost estimating purposes. Pressures in the lower section of the distribution line near the WWTF were expected to much higher than the pressures experienced in the upper section of the line near the golf course. Also, with future growth expected, the anticipated pressure coming out of the pumps at the WWTF would be closely approaching the max working pressure ratings of C-900 PVC. Therefore, to be conservative, the lower section of the distribution line was selected to be ductile iron pipe with a working pressure of 350 psi. The upper section of the distribution line was selected to be C-900 PVC. A line with less thickness is required as the line moves up towards Kingman.

This distribution line would be installed 4-feet minimum below grade within the existing 30-foot wide sewer easement from Kingman to the WWTF, following the Mohave Wash alignment. A temporary construction easement (TCE) on the north-west side of the easement may be necessary. However, having the reclaimed distribution line run so close to the edge of the easement would allow for easier construction of a future sewer outfall line. The distribution line would briefly exit the Mohave Wash alignment to pass by the Kingman High School and then return to the Wash. At Airway Avenue, the distribution line would again exit the Mohave Wash alignment and head east to N Burbank Street. The distribution line would then turn south passing by the Kingman Academy of Learning, Centennial Park, Firefighter's Memorial Park, Kingman Middle School and the Mohave County Fairgrounds.

The golf course is located approximately eight miles southwest of the Hilltop Wastewater Treatment Facility. The golf course is approximately 3,490-feet above sea level and the WWTF is approximately 3,240-feet above sea level. In order to convey the reclaimed water to the golf course an onsite booster station is needed. This booster station would include two 680 GPM horizontal split case pumps capable of overcoming 330-feet of head (142 psi) and two 320 GPM horizontal split case pumps capable of overcoming 330-feet of head (142 psi). One of each of these pumps would be on standby. These pumps would be installed on a concrete pad above grade. There would need to be installed a backflow preventer immediately after the booster station and then a flow meter downstream of the backflow preventer prior to the distribution line returning to below grade and onto the golf course. See Exhibit 4.1.5 – Option 3 – Golf Course, School and Parks Reuse Conceptual Design.

Figures 4.1.2, 4.1.3 and 4.1.4 above show the golf course, schools, parks and fairgrounds have historically used more water in the summer months than the winter months. Also, according to the City of Kingman, the golf course typically uses the majority of their water for irrigation in the nighttime hours. For this reason there are two sets of booster pumps at the WWTF. During the summer months and during the nighttime hours, when the demand for water is high, the 680 GPM pump would be used, suppling the required reclaimed water. During the winter months and daytime hours when the demand is low, the 380 GPM pump would be used for supply.

Golf Course Storage and Irrigation Conceptual Design

There are two available water storage ponds at the Cerbat Cliffs Golf Course (see Exhibit 4.1.5 – Option 3 – Golf Course, School and Parks Reuse Conceptual Design). One is a 1.5 million gallon storage pond and the other is a 3.74 million gallon storage pond. The reclaimed water for the golf course's demands would be pumped up to the larger storage pond. This would allow for ample storage for the approximately 1 MGD of reclaimed water required in the summer months and for future growth.

Water losses due to seepage and evaporation were taken into account when deciding upon the use of the pond for storage. After speaking with the Director at the golf course, seepage does not seem to be an issue. The ponds stay full for quite some time after filling and the golf course believes there is a natural bedrock below the ponds. The average evaporation rate in the Kingman area is approximately 115 inches/year. Calculations to determine the amount of water loss due to evaporation is shown in Table 4.2 below and in Appendix M – Evaporation Calculations.

Table 4.2 – Option 3 Evaporation Losses

Surface Area of Pond (sf)	Evaporation Rate (in/yr)	Evaporation Rate (ft/day)	Water Losses (cf/day)	Water losses (gal/day)
136,204	115	0.0263	3,576	26,749

The storage ponds at the golf course are located at a lower elevation than most of the rest of the golf course. Therefore, in order to convey the reclaimed water from the storage pond to the golf course's irrigation system an onsite pump station is needed. This pump station would include two 700 GPM horizontal split case pumps capable of overcoming 100-feet (43 psi) of head. One of these pumps would be on standby. These pumps would be installed in a concrete vault below grade for aesthetics. There would need to be installed a backflow preventer immediately after the booster station. See Exhibit 4.1.5 – Option 3 – Golf Course, School and Parks Reuse Conceptual Design.

4.3 Permitting

Option 3 – Golf Course, Schools and Parks Reuse would require ADEQ permitting. As described in Section 3.3 – Permitting, ADEQ offers two types of permitting:

- **Type II Permit –** This ADEQ issued permit allows for the end user to act as their own agent and directly reuse reclaimed water per AAC R18-9-708.

- **Type III Permit** – This ADEQ issued permit would allow for the City to act as the agent for the reuse reclaimed water per AAC R18-9-708.

According to ADEQ, most municipalities use a Type III permit for the reuse of reclaimed water. Also, the golf course and parks that would receive reclaimed water as part of this Option are City owned. Therefore a Type III permit is recommended for this Option. The cost of this permit is shown in Table 3.3.

4.4 Capital Costs

Option 3 – Golf Course, Schools and Parks Reuse is more expensive than Option 1 of this study, yet it is not as expensive as Option 2. The Engineer's estimated capital costs to design and construct Option 3 – Golf Course, Schools and Parks Reuse as described is Section 4.2 –Conceptual Design are listed below in Table 4.4 and in Appendix E – Engineer's Opinion of Probable Cost.

Table 4.4– Option 3 – Conceptual Design Capital Cost Estimate

Item Description	Total
Site Work (includes clearing and grubbing, grading & backfill)	$10,000
12" C-900 (DR 14) PVC Waterline (includes waterline, valves, bends, tees, appurtenances, trenching and backfill)	$1,900,000
12" DIP Waterline (includes waterline, valves, bends, tees, appurtenances, trenching and backfill)	$2,250,000
Jack and Bore Reuse Line Under Stockton Hill Rd	$120,000
Jack and Bore Reuse Line Under Interstate 40	$360,000
Booster Station (includes two 320 GPM pumps, two 680 GPM pumps valves, bends, appurtenances and concrete pad)	$190,000
Flow Meter @ WWTF	$6,000
Backflow Preventer (@WWTF, Golf Course, 3 Schools, 2 Parks and Fairgrounds)	$105,000
Pump Station @ Golf Course (includes two 700 GPM pumps, backflow preventer, valves, bends, appurtenances and concrete pad)	$160,000
Remove and Replace Existing Asphalt, Concrete, Curb and Gutter	$320,000
Electrical	$275,000
25% Contingency	$1,424,000
Professional Engineering Services	$684,000
Construction Administration	$456,000
TOTAL	**$8,260,000**

4.5 Long-Term Operations and Maintenance

Long term O&M for Option 3 – Golf Course, Schools and Parks Reuse is higher than Option 1 in this study but less than Option 2. Many factors were assumed in determining the O&M expenses. Some of these expenses are listed below. For a list of all the O&M expenses and associated costs see Appendix F – Operations & Maintenance Expenses.

- Employee Salaries and Benefits
- Equipment Supplies and System Maintenance
- Sub consultant Engineering
- Vehicle and Travel/Education Expenses
- Administrative Services and Office Supplies
- ADEQ Permitting
- Power Consumption

Some assumptions were taken in determining long term O&M costs. Employee salaries were determined based on the assumption that the City would need to hire additional staff to be able to operate and maintain the distribution system. Costs for vehicle expenses, equipment supplies, maintenance, sub-consultant engineering, travel/education expenses and ADEQ permitting were determined and then spread out over a 20-year period. An analysis of the power consumption/costs of four well sites was done to determine an average power cost.

As outlined in Section 1.1 – Purpose and Scope of Work, the project analysis was based on a 20-year period with a 3% inflation rate and a 3% growth rate Citywide. Costs for the above mentioned expenses, adjusted for inflation over a 20-year period were calculated and added to a debt service amount for the total amount of the project with an assumed 3% interest rate. The annual O&M, debt service payment, total annual net expenses and cumulative net expenses for a 1, 5, 10, 15 and 20 year period for Option 3 – Golf Course, Schools and Parks Reuse is shown in Table 4.5.

Table 4.5 – Option 3 Long Term O&M and Debt Service Expenses

Item Description	Year 1	Year 5	Year 10	Year 15	Year 20
Annual O&M Expenses (adjusted for inflation)	$157,753	$176,192	$204,255	$236,788	$274,502
Debt Service Payment	$555,202	$555,202	$555,202	$555,202	$555,202
Annual Net Expense	($712,955)	($731,394)	($759,457)	($791,898)	($829,704)
Cumulative Expense	($712,955)	($3,608,333)	($7,347,831)	($11,240,789)	($15,311,647)

4.6 Rate Analysis and Capital Savings

Option 3 of this study includes a reclaimed water distribution line from the Hilltop Wastewater Treatment Facility to the Cerbat Cliffs Golf Course with the possibility to have connections to the Kingman High School, Kingman Middle School, Kingman Academy of Learning, Firefighter's Memorial Park, Centennial Park and the Mohave County Fairgrounds.

The irrigation water currently being used by the golf course and parks is provided free of charge by the City and the City has stated that there is no desire to begin to charge the golf course or themselves for the use of reclaimed water as irrigation water at these locations.

Table 4.5 shows the revenue that needs to be earned over a 20-year period to pay for this Option is high. After discussions with the City, it was determined that this Option should be self-funded and the cost of it could be borne by the all the City's water users. With that in mind, an analysis was performed based on the estimated number of connections to the City's water system, the average water use per connection and the City's residential, in-town water base rates. Only the base rate was adjusted since the amount of water used per connection may vary and is susceptible to change.

Assuming a 3% growth rate for the City over the next 20-years with a WIFA loan for the full amount of the Option at 3% interest rate a slight increase to the water base rates Citywide would provide enough capital to fully fund this project. See Appendix G – Rate Analysis for the base rate analysis. To keep the increased to base rates even lower, the City could re-direct City water funds.

Another item to take into consideration when deciding upon this Option is the capital savings this Option will provide. If the golf course, schools, parks and fairgrounds mentioned received approximately 1 MGD of reclaimed water for irrigation purposes, this would free up 1 MGD of drinking water and infrastructure for future growth. The estimated value associated with that freed up infrastructure for 1 MGD is seen in Table 4.6 – Option 3 Capital Savings and in Appendix H – Capital Savings Analysis

Table 4.6 – Option 3 Capital Savings Estimate

Item Description	Total
700 GPM Well (includes well, pump, motor, control valves, chlorination and yard piping)	$1,500,000
700GPM Booster Station (includes two pumps, valves, backflow preventer, flowmeter, fittings, appurtenances and concrete pad)	$150,000
500,000 Gallon Steel Water Storage Tank, coating (interior & exterior) and foundation	$560,000
Electrical	$275,000
25% Contingency	$622,000
Professional Engineering Services	$299,000
Construction Administration	$199,000
TOTAL	**$3,605,000**

4.7 Benefits Analysis

For Option 3, the pros and cons were analyzed and are listed below in Table 4.7.1.

Table 4.7.1 – Option 3 Pros vs. Cons

Pros	Cons
Adds the highest capacity to the City's drinking water system	Change over for most water users requires additional booster station
Benefits multiple high-water users	Initial capital cost is high
Expandable	High O&M costs
Simpler ADEQ permitting than Option 2	No groundwater recharge
Positive economic impact	

Assigned points for the selection criteria for Option 3 is shown in Table 4.7.3

Table 4.7.3 – Option 3 Selection Criteria Score

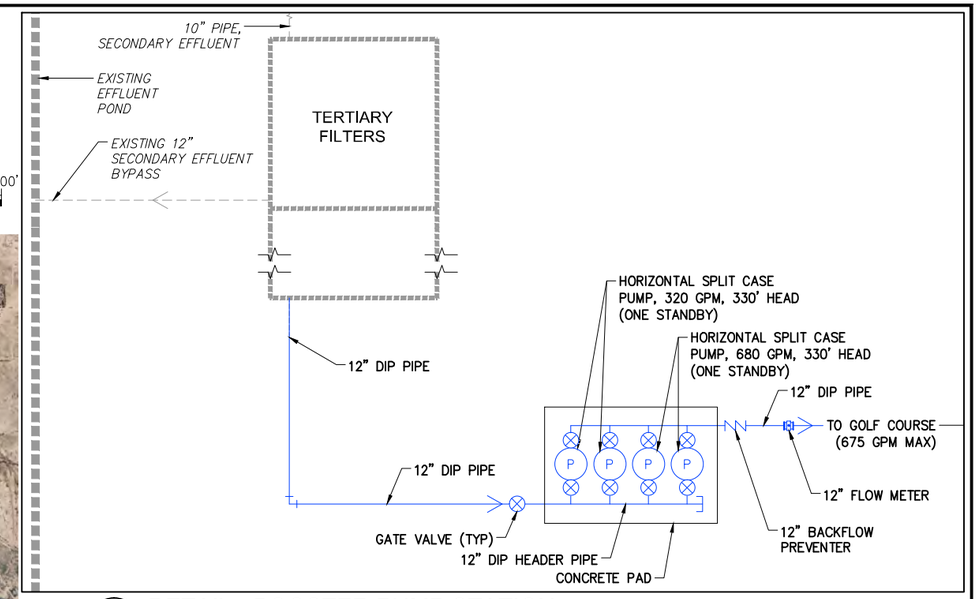
Selection Criteria	Points Possible	Option 3 Score
Capital Cost	30	10
Long Term O&M	30	5
Option Reduces Drinking Water System Requirements	30	30
Option has Community Economic Impact	30	20
Option is Flexible/Scalable	25	20
Option is Eligible for Green Funding	20	20
Option Negatively Affects Water User Base Rates	15	10
Option Recharges Groundwater	10	0
Ease/Cost of Permitting	5	2
Ease of Constructability	5	2
Total	**200**	**129**

After the pros and cons for this Option were analyzed and points assigned for selection criteria, it was determined that Option 3 – Golf Course, Schools and Parks Reuse scored 129 points of 200 total.

Section 4 Exhibits

Exhibit 4.1.5 – Option 3 – Golf Course, School and Parks Reuse Conceptual Design

EXHIBIT 4.1.5



A DETAIL - BOOSTER PUMP STATION
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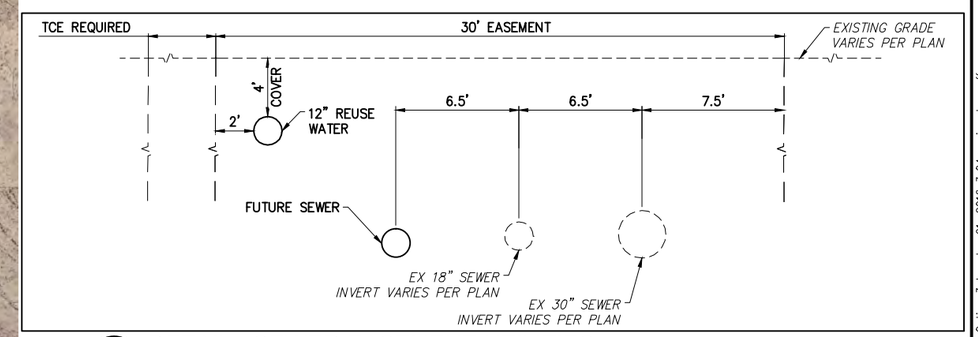
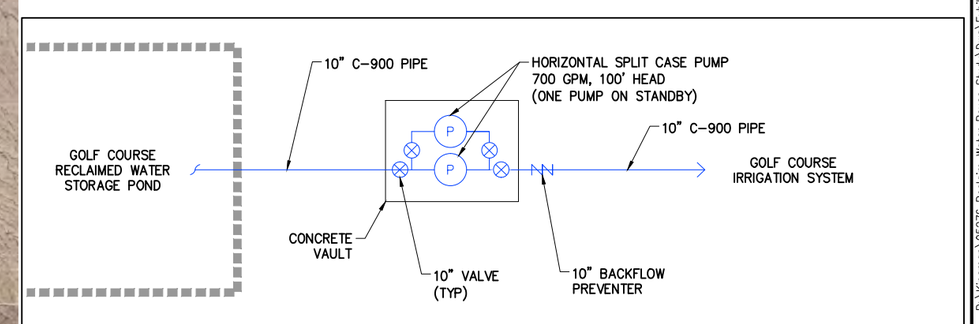


B DETAIL - SEWER EASTMENT UTILITIES
NOT TO SCALE



C DETAIL - PUMP STATION
NOT TO SCALE

EXHIBIT 4.1.5 - OPTION 3 - GOLF COURSE, SCHOOLS AND FAIRGROUNDS REUSE CONCEPTUAL DESIGN

SUNRISE ENGINEERING
2152 SOUTH VINEYARD, SUITE 123
MESA, ARIZONA 85210
TEL 480.768.8600 · FAX 480.768.8609
www.sunrise-eng.com

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5.0 CONCLUSION

5.1 Closing Summary

The City of Kingman's Hilltop Wastewater Treatment Facility has the capacity and is permitted to treat and reuse up to 1 MGD of Class A+ reclaimed water. However, currently the WWTF only treats the effluent to Class B+ standards and such effluent is discharged to the Mohave Wash and to wetlands to the northwest.

The City would like to utilize this reclaimed water and this study has analyzed the following three possible Options:

- Groundwater Injection
- Airport Industrial Park Reuse
- Golf Course, Schools and Parks Reuse

In order to determine which Option is best suited for the City, an analysis of each of the Options was performed. A brief summary of each of the Options and results of the analysis are as follows:

Table 5.1 – Summarized Comparison of Options

Item Description	Option 1	Option 2	Option 3
Project Type	Groundwater injection	Distribution line and groundwater injection	Distribution line
Areas Serviced	Basin aquifer	Airpark and Basin aquifer	Golf course, schools, parks and fairgrounds
Conceptual Design	Injection well onsite	Distribution line to Airpark with injection at Well #1	Distribution line to Golf Course
Capital Cost	$1,055,000	$10,754,000	$8,260,000
First Yr O&M Costs	$19,377	$164,200	$157,753
Rate Analysis	N/A	Increase non-residential reclaimed water rates by $1,056 for Airpark business/property owners only	Increase to in-town residential water base rates by $3.16 Citywide
Capital Savings	N/A	$1,930,000	$3,605,000
Benefits Analysis Score	120	95	129

5.2 Recommendations

A benefits analysis of all three Options was performed to weigh the pros and cons of each Option and help determine which of these would best serve the City's interests. A summary of all three options and their scores based upon their pros and cons is shown in Table 5.2 below.

Table 5.2 – Summarized Selection Criteria Scores

Selection Criteria	Points Possible	Option 1 Score	Option 2 Score	Option 3 Score
Capital Cost	30	30	5	10
Long Term O&M	30	30	5	5
Option Reduces Drinking Water System Requirements	30	0	8	30
Option has Community Economic Impact	30	0	30	20
Option is Flexible/Scalable	25	5	13	20
Option is Eligible for Green Funding	20	20	20	20
Option Negatively Affects Water User Base Rates	15	15	0	10
Option Recharges Groundwater	10	10	4	0
Ease/Cost of Permitting	5	5	2	2
Ease of Constructability	5	5	1	2
Total	**200**	**120**	**95**	**129**

In closing, this study has provided enough information to make an engineered recommendation to the City of Kingman as to which Option they should use to utilize their reclaimed water.

Option 1 Recommendation

If the City of Kingman would prefer a project with low capital costs, low long term O&M costs and provides groundwater recharging, Option 1 – Groundwater Injection is recommended.

This Option only provides groundwater injection and will be the easiest to construct. It also is the least expensive Option in this study and has the lowest O&M costs.

Option 3 Recommendation

If the City of Kingman would like to service multiple entities with reclaimed water, free up existing water infrastructure and has options for funding, Option 3 – Golf Course, Schools and Parks Reuse is recommended.

This option would use approximately 1 MGD of reclaimed water as irrigation water for the Cerbat Cliffs Golf Course with possible connections to the schools, parks and the Fairgrounds. Its capital and O&M costs are higher than Option 1, but it will qualify for WIFA funding and will provide capital savings by reducing the demands on the City's water system thereby freeing up water infrastructure. Also, water base rates Citywide would only need to rise slightly in order to fully fund this Option.

Option 3 is the most flexible/scalable Option in the study. It would pass the Airpark, multiple schools and parks, the fairgrounds and City wells that could be retrofitted for groundwater injection.

This Option could also positively impact the community economy as it has the possibility to attract new "green" businesses.

6.0 REFERENCES

1. Arizona Department of Water Resources (ADWR), 2009, Arizona Water Atlas, Volume 4, Upper Colorado River Planning Area

2. Matthews, C.S. and Russell, D.G.. 1967. Pressure Buildup and Flow Tests in Wells.

3. Arizona Department of Environmental Quality, Guidelines for the Construction of Water System, Engineering Bulletin No. 10, May 1978

4. City of Kingman Utility Regulations, March1, 2015

APPENDICES

Appendix A – Hilltop WWTF Inflow/Effluent Flows

Appendix B - Current Permits

Appendix C – Industrial Park Flows and Calculations

Appendix D – Existing Well Data

Appendix E – Engineer's Opinion of Probable Cost

Appendix F – Operations & Maintenance Expenses

Appendix G – Rate Analysis

Appendix H – Capital Savings Analysis

Appendix I – Reuse Water Survey and Results

Appendix J – Distribution Line Size Analysis

Appendix K – Benefits Analysis

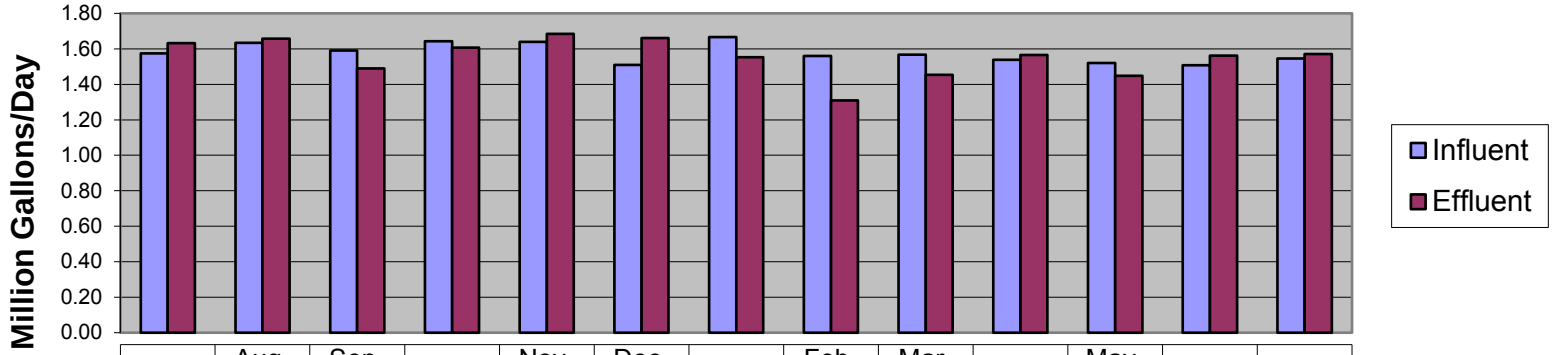
Appendix L – Golf Course, Schools and Parks Flows and Calculations

Appendix M – Evaporation Calculations

APPENDIX A

Hilltop WWTF Inflow/Effluent Flows

Hilltop WWTF



	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15
Influent	1.57	1.63	1.59	1.64	1.64	1.51	1.67	1.56	1.57	1.54	1.52	1.51	1.55
Effluent	1.63	1.66	1.49	1.61	1.69	1.66	1.55	1.31	1.45	1.57	1.45	1.56	1.57

City of Kingman
Hilltop Wastewater Treatment Plant
Inflow/Effluent Flows
(in million gallons)

	Monthly Influent Total	Daily Average	Monthly Effluent Total	Monthly Average
Jul-14	48.784	1.57	50.571	1.63
Aug-14	47.388	1.63	44.761	1.66
Sep-14	47.708	1.59	44.690	1.49
Oct-14	50.911	1.64	49.818	1.61
Nov-14	49.182	1.64	50.556	1.69
Dec-14	46.813	1.51	51.495	1.66
Jan-15	51.649	1.67	48.143	1.55
Feb-15	43.655	1.56	36.66	1.31
Mar-15	48.574	1.57	45.047	1.45
Apr-15	44.634	1.54	45.418	1.57
May-15	47.139	1.52	44.885	1.45
Jun-15	45.203	1.51	46.848	1.56
Jul-15	47.913	1.55	48.677	1.57
	Average	Average	Average	Average
	47.63	1.58	46.43	1.55
	Maximum	Maximum	Maximum	Maximum
	51.65	1.67	51.50	1.69

APPENDIX B

Current Permits

STATE OF ARIZONA
AQUIFER PROTECTION PERMIT NO. P-100611
PLACE ID 987, LTF 58694
OTHER AMENDMENT

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Articles 1, 2, and 3, Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 1 and 2, A.A.C. Title 18, Chapter 11, Article 4 and amendments thereto, and the conditions set forth in this permit, the Arizona Department of Environmental Quality (ADEQ) hereby authorizes City of Kingman to operate the City of Kingman Hilltop Wastewater Treatment Plant located at 5925 E. Highway 66, in Kingman, Arizona, in Mohave County, over groundwater of the Hualapai Valley basin, in Township 22 N, Range 16 W, Sections 2, 11 and 14 of the Gila and Salt River Baseline and Meridian.

This permit becomes effective on the date of the Water Quality Division Director's signature and shall be valid for the life of the facility (operational, closure, and post-closure periods) unless suspended or revoked pursuant to A.A.C. R18-9-A213. The permittee shall construct, operate and maintain the permitted facilities:

1. Following all the conditions of this permit including the design and operational information documented or referenced below, and
2. Such that Aquifer Water Quality Standards (AWQS) are not violated at the applicable point(s) of compliance (POC) set forth below or if an AWQS for a pollutant has been exceeded in an aquifer at the time of permit issuance, that no additional degradation of the aquifer relative to that pollutant and as determined at the applicable POC occurs as a result of the discharge from the facility.

1.1 PERMITTEE INFORMATION

Facility Name:	City of Kingman Hilltop Wastewater Treatment Plant
Facility Address:	5925 E. Highway 66 Kingman, Arizona 86401
County:	Mohave
Permittee:	City of Kingman
Permittee Address:	3700 E. Andy Devine Avenue Kingman, Arizona 86401
Facility Contact:	Rob Owen, Public Works Director
Emergency Phone No.:	(928) 692-3101
Latitude/Longitude:	35° 18' 00" N/ 113° 57' 00" W
Legal Description:	Township 22 N, Range 16 W, Sections 2, 11 and 14 of the Gila and Salt River Baseline and Meridian

1.2 AUTHORIZING SIGNATURE

Michael A. Fulton, Director
Water Quality Division
Arizona Department of Environmental Quality

Signed this 3rd day of June, 2014

THIS AMENDED PERMIT SUPERCEDES ALL PREVIOUS PERMITS

2.0 SPECIFIC CONDITIONS [A.R.S. §§ 49-203(4), 49-241(A)]

2.1 Facility / Site Description [A.R.S. § 49-243(K)(8)]

The City of Kingman is authorized to operate the Hilltop Wastewater Treatment Plant (WWTP) with a maximum average monthly flow of 5.1 million gallons per day (mgd). The WWTP process consists of an influent pump station, headworks with screening and a grit chamber, two (2) oxidation ditches, two (2) secondary clarifiers, an equalization basin, a gas chlorination system, a de-chlorination system using sulfur dioxide, a sludge holding tank, and a belt filter press. After clarification, up to 1.0 mgd of effluent may be diverted to the City of Kingman Hilltop Tertiary WWTP (a separately permitted facility, see APP #P-106051) for additional treatment resulting in Class A+ reclaimed water. The remaining effluent may be discharged to Mohave Wash under a valid Arizona Pollution Discharge Elimination System (AZPDES) permit (#AZ0025844) and/or beneficially reused under a valid reclaimed water permit. In addition, effluent may be discharged to the constructed wetlands to keep the wetland vegetation alive. Effluent from this facility may be discharged to Rapid Infiltration Basins (RIBs) on an emergency basis only. The sludge, including screenings, grit, and scum, shall be treated and dewatered on-site, then hauled off-site to a landfill for disposal in accordance with state and federal regulations.

Depth to groundwater at the WWTP site ranges from approximately 415 to 490 feet below ground surface. The direction of groundwater flow at the WWTP site is believed to be to the south-southwest. The WWTP is designed and constructed according to plans approved by the Arizona Department of Environmental Quality (ADEQ).

The WWTP will produce reclaimed water meeting Class B+ reclaimed water standards (A.A.C. R18-11, Article 3) that may be delivered for beneficial use under a valid reclaimed water permit under A.A.C. R18-9, Article 7.

All industrial hookups and other non-residential hookups to the treatment system shall be authorized according to the applicable federal, state or local regulations.

The purpose of this amendment is to established Alert Level (AL) and Aquifer Quality Limits (AQLs) for nitrogen species at point of compliance (POC) wells #1 and #2.

The site includes the following permitted discharging facilities:

Facility	Latitude	Longitude
Hilltop WWTP	35° 18' 00" N	113° 57' 00" W
Constructed Wetland Cells	35° 18' 51" N	113° 57' 30" W
22 Rapid Infiltration Basins (RIBs)	35° 19' 15" N	113° 57' 00" W

Annual Registration Fee [A.R.S. § 49-242 and A.A.C. R18-14-104]

The Annual Registration Fee for this permit is established by A.R.S. § 49-242 and is payable to the Arizona Department of Environmental Quality (ADEQ) each year. The design flow is 5.1 million gallons per day. The permittee shall notify ADEQ of any change in the facility contact information according to Section 2.7.7.

Financial Capability [A.R.S. § 49-243(N) and A.A.C. R18-9-A203]

The permittee has demonstrated financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203. The permittee shall maintain financial capability throughout the life of the facility. The estimated dollar amount demonstrated for financial capability is $10,062,000.00. The financial capability was demonstrated through A.A.C. R18-9-A203(B)(1) and (2).

STATE OF ARIZONA
AQUIFER PROTECTION PERMIT NO. P-106051
PLACE ID 987, LTF 48583

1.0 AUTHORIZATION

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Articles 1, 2 and 3, Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 1 and 2, A.A.C. Title 18, Chapter 11, Article 4 and amendments thereto, and the conditions set forth in this permit, the City of Kingman is hereby authorized to operate the Hilltop Tertiary Wastewater Treatment Plant, located at 5925 East Highway 66 in Kingman, Arizona, in Mohave County, over groundwater of the Hualapai Valley groundwater basin, in Township 22 N, Range 16 W, Sections 11 and 14 of the Gila and Salt River Baseline and Meridian.

This permit becomes effective on the date of the Water Quality Division Director's signature and shall be valid for the life of the facility (operational, closure, and post-closure periods) unless suspended or revoked pursuant to A.A.C. R18-9-A213. The permittee shall construct, operate and maintain the permitted facilities:

1. Following all the conditions of this permit including the design and operational information documented or referenced below, and
2. Such that Aquifer Water Quality Standards (AWQS) are not violated at the applicable point(s) of compliance (POC) set forth below or if an AWQS for a pollutant has been exceeded in an aquifer at the time of permit issuance, that no additional degradation of the aquifer relative to that pollutant and as determined at the applicable POC occurs as a result of the discharge from the facility.

1.1 PERMITTEE INFORMATION

Facility Name:	Hilltop Tertiary Wastewater Treatment Plant
Facility Address:	5925 East Highway 66 Kingman, Arizona 86401
County:	Mohave
Permittee:	City of Kingman
Permittee Address:	3700 East Andy Devine Avenue Kingman, Arizona 86401
Facility Contact:	Jeff Corwin, Wastewater Superintendent
Emergency Phone No.:	(928) 692-3125
Latitude/Longitude:	35° 17' 58.4" N/ 113°57' 0.4" W
Legal Description:	Township 22 N, Range 16 W, Sections 11 and 14 of the Gila and Salt River Baseline and Meridian

1.2 AUTHORIZING SIGNATURE

Michael A. Fulton, Director
Water Quality Division
Arizona Department of Environmental Quality

Signed this 25th day of June, 2010

2.0 SPECIFIC CONDITIONS [A.R.S. §§ 49-203(4), 49-241(A)]

2.1 Facility / Site Description [A.R.S. § 49-243(K)(8)]

The City of Kingman is authorized to operate Hilltop Tertiary Wastewater Treatment Plant (WWTP), a 1.0 million gallons per day (mgd) facility. This facility shall apply tertiary treatment to a portion of the secondary treated effluent produced by Hilltop WWTP, which operates under APP No. P-100611. The Hilltop Tertiary WWTP treatment process shall use tertiary filters, chlorine disinfection, and an effluent pump station.

Hilltop Tertiary WWTP effluent shall be beneficially reused under a valid reclaimed water permit. Any effluent not delivered for beneficial reuse shall be discharged to the Hilltop WWTP equalization basin for discharge under APP No. P-100611.

Hilltop Tertiary WWTP shall produce reclaimed water meeting Class A+ Reclaimed Water Standards (A.A.C. R18-11, Article 3) which may be delivered for beneficial use under a valid reclaimed water permit under A.A.C. R18-9, Article 7. Reclaimed water delivered for beneficial reuse shall be disinfected by chlorination.

The depth to groundwater is approximately 415 to 490 feet below the ground surface, and the direction of groundwater flow is to the south-southwest.

Hilltop Tertiary WWTP is designed and constructed according to plans approved by the ADEQ APP and Reuse Unit.

All industrial hookups and other non-residential hookups to the treatment system shall be authorized according to the applicable federal, state or local regulations.

The site includes the following permitted discharging facility:

Facility	Latitude	Longitude
Hilltop Tertiary WWTP	35° 17' 58.4" N	113° 57' 0.4" W

Annual Registration Fee [A.R.S. § 49-242]

The Annual Registration Fee for this permit is established by A.R.S. § 49-242(E) and is payable to the Arizona Department of Environmental Quality (ADEQ) each year. The design flow is 1.0 million gallons per day (mgd).

Financial Capability [A.R.S. § 49-243(N) and A.A.C. R18-9-A203]

The permittee has demonstrated financial capability under A.R.S. § 49-243(N) and A.A.C. R18-9-A203(1) and (2). The permittee shall maintain financial capability throughout the life of the facility. The estimated dollar amount demonstrated for financial capability is $414,600.00.

2.2 Best Available Demonstrated Control Technology [A.R.S. § 49-243(B) and A.A.C. R18-9-A202(A)(5)]

Hilltop Tertiary WWTP shall be designed, constructed, operated, and maintained to meet the treatment performance criteria for new facilities as specified in Arizona Administrative Code R18-9-B204.

The facility shall meet the requirements for pretreatment by conducting monitoring as per R18-9-B204(B)(6)(b)(i).

ADEQ Inventory No. 100611
LTF No. 49696

Permit No. AZ0025844

AUTHORIZATION TO DISCHARGE UNDER THE ARIZONA POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Arizona Revised Statutes (A.R.S.) Title 49, Chapter 2, Article 3.1; the Federal Water Pollution Control Act, (33 USC §1251 et. seq., as amended), and Arizona Administrative Code (A.A.C.) Title 18, Chapter 9, Articles 9 and 10, and amendments thereto,

City of Kingman
Hilltop Wastewater Treatment Plant
3700 East Andy Devine Avenue
Kingman, Arizona 86409

is authorized to discharge treated domestic wastewater from the wastewater treatment plant located at 5925 East Highway 66, Kingman in Mohave, Arizona to Mohave Wash in the Colorado Lower Gila Watershed at:

Outfall No.	Latitude	Longitude	Legal
001	35° 18' 09" N	113° 56' 48" W	Township 22 N, Range 16 W, Section 11

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein, and in the attached "Standard AZPDES Permit Conditions."

This permit shall become effective on March 1, 2011.

This permit and the authorization to discharge shall expire at midnight, **February 29, 2016.**

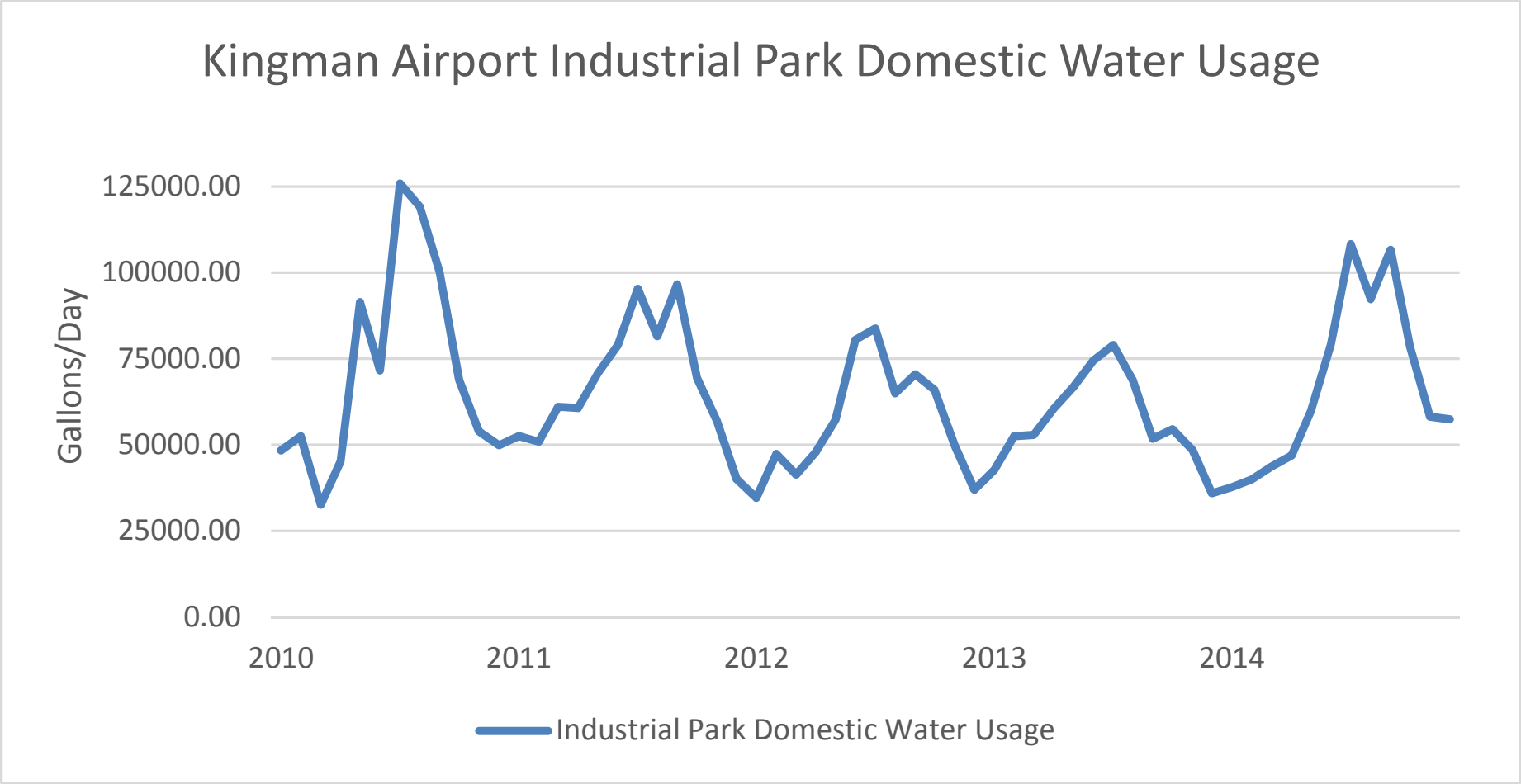
/S/ December 18, 2009
Henry R. Darwin, Acting Director
Water Quality Division
Department of Environmental Quality

Minor modification signed this 19th day of April, 2014

Michael A. Fulton, Director
Water Quality Division
Department of Environmental Quality

APPENDIX C

Industrial Park Flows and Calculations


Kingman Airport Industrial Park Domestic Water Usage
Gallons/Day
125000.00
100000.00
75000.00
50000.00
25000.00
0.00
2010
2011
2012
2013
2014
Industrial Park Domestic Water Usage

City of Kingman
Airport Industrial Park
Water Usage
(in thousands of gallons)

					Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
											2010						
BUSINESS	**SERVICE ADDRESS**	**CUSTOMER**	**LOCATION 1**	**LOCATION 2**	**LOCATION 3**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUNE**	**JULY**	**AUG**	**SEPT**	**OCT**	**NOV**	**DEC**
Aero-Flite, Inc.	4800 Flightline Dr	33956	11237	31807		2	6	11.8	17.3	15	3.7	24.7	6.3	22	12	39	3.5
Honeywell	4805 Mohave Airport Dr	27962	24833			21	22	11	17	24	48	88	92	40	66	63	78
Air'Zona Aircraft Services	7100 Flightline Dr	WA 9082	WA 10307			18	14	9	19	25	35	88	63	57	50	22	20
Air'Zona Aircraft Services	7100 Flightline Dr	IRR 9082	IRR 10307														
Air Treads/Goodyear	4105 Mohave Airport Dr	8506	11223			26.5	26.9	30.9	26.4	60.3	67.6	215.2	180.9	107.6	71.1	35.9	35.7
American Woodmark	4475 Mohave Airport Dr	8614	11165			360.9	383.1	303.5	355.1	354.9	354.2	638.5	571.3	557.5	364.8	285.4	281.1
Aquarium Décor, Inc.	4730 Finance Way	8820	11255			0	1	0	1	2	1	1	1	2	1	1	1
Arizona Hydraulics Engineering	9450 Commerce Dr	84810	40599			0.87	0.97	1.46	0.98	1.11	17.71	3.24	3.56	3.17	2.18	0.99	1.03
BLM	9990 Flightline Dr	34852	28321			2	15	1	2	1	1	2	3	1	1	1	1
Brackett Aircraft	7045 Flightline Dr	8542	11029			5	6	7	6	7	12	29	27	19	26	29	11
Cantex, Inc.	4045 Bonanza Dr	WA 77548	WA 40197			23	29	36	46	45	126	838	1022	538	448	343	364.8
Cantex, Inc.	4045 Bonanza Dr	IRR 77548	IRR 40197			0.15	0.47	0.15	0.03	0	0	0	116.02	32.34	22.18	26.16	31.08
Cascades Tissue Group	4625 Interstate Way	90486	11137	40429						0	20.4	42.9	37.2	37.5	32.1	40	42.1
Composite Solutions	4510 Flighline Dr	82816	40301			6	4	1	2	1	1	0	1	1	1	1	1
Custom Aluminum Radiators	4925 Finance Way	56746	10991														
Desert Diamond Distillers	4875 Olympic Way	86710	40765			3.15	1	7.11	6.89	11.61	12.39	13.99	18.16	15.47	12.18	11.92	8.97
Dillon Transportation	4445 Interstate Way	100860	31683														
Guardian Air	7010 Flightline Dr	44434	29455			4	4	4	5	4	5	4	4	4	4	4	4
Hav-a-Lube Inc	9350 Shipping Lane	80996	40181			11.52	3.23	3.8	3.4	3.54	3.26	5.3	1.41	1.13	5.17	6.14	5.97
Hi-Desert Delivery	5005 1/2 Interstate Way	76536	11341			1	1	1	1	1	1	3	1	2	1	1	1
I-Corp Arizona, Inc.	4155 Finance Way	38988	27759			2.84	2.61	2.96	11.41	3.31	5.39	25.61	22.85	17.37	13.07	6.25	2.97
Import Corner	9000 Government Way	54954	10261			2	1	1	5	7	15	20	8	5	8	2	4
Insteel Wire Products	4750 Olympic Dr	92772	27067														
Interstate Group	4400 Interstate Way	56440	31745			7	14	12	19	24	17	23	35	3	11	13	12
ISCO Industries	4725 Flightline Dr	92130	41003													0	10.85

BUSINESS	SERVICE ADDRESS	CUSTOMER	LOCATION 1	LOCATION 2	LOCATION 3	2010 JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Jasper Engines & Transmissions	9400 Commerce Dr	83184	40451			1.26	1.54	1.65	2.08	2.56	3.58	6.51	5.95	6.22	4.1	3.25	2.15
Jim Straube's Aircraft Service	4890 Flightline Dr	25482	10703			6	45	7	9	10	10	6	4	9	4	12	13
J-M Manufacturing	4620 Olympic Dr	61118	11125			48	39	24	30	33	38	44	41	35	32	28	35
Karnak Chemical	4585 Interstate Way	90616	39365								0	0.02	0.34	0.3	0.25	0.63	1.03
Kingman Airport Café		9086	10679			12	15	25	86	57	49	68	63	66	58	59	47
Kingman Army Airfield Museum	4540 Flightline Dr	48506	23547			0	1	1	0	1	3	4	2	3	3	3	2
Kingman Property LLC	4625 Interstate Way	54676	33281			3.9	3.8	2.7	2.5	2.2	1.8	2.5	2.2	2	2	2.5	4.2
Knauf Insulation	4200 Industrial Blvd	WA 109200	WA 29433														
Knauf Insulation	4200 Industrial Blvd	IRR109200	IRR 29433														
Lander Industries	9000 Transport Way	105776	29751														
Laron Incorporated	4545 Interstate Way	8526	11193	25065	32517	7	4	13	12	6	45	62	60	53	42	30	65
Lomanco West	4450 Airport Dr	8606	11151			5	4	6	6	7	7	9	8	8	6	5	7
Luseaux Laboratories, Inc	4625 Sante Fe Dr	28662	24667			75.4	66.9	67.8	88.2	83.5	70.2	70.6	61.2	65.7	67.8	51.7	58
Mohave Materials	8055 Flightline Dr	8564	11063			2	1	2	4	3	5	16	12	4	3	2	3
MC2	9300 Commerce Dr	83162	39339			13.5	7.9	7.5	4.8	4.4	23.5	34.4	50.8	31.5	18.6	6.6	6.5
Monsey Products/Henry Company	4685 Finance Way	8522	10977			180.1	216.9	188.8	260.4	282	224.7	392.1	336.9	270.7	262.7	222.5	129.2
Musket Corporation	4400 Industrial Blvd	57132	31981			2	1	0	1	1	0	1	0	1	0	1	1
Pepsi-Cola Company	7100 Commerce Dr	11688	26741			2	3	2	2	5	4	9	6	6	5	5	6
Performance Specialists, Inc.	4906 Olympic Dr	68588	36485			2.87	3.56	3.11	3.89	3.67	3.3	4.8	3.37	3.2	3.1	2.95	3.45
Plastic Express	7300 Commerce Dr L-1	99790	40199														
Potters Industries, Inc.	4665 Finance Way	8512	10969			9	6	8	8	11	9	25	27	26	20	11	5
Schwan Food Company	5055 Interstate Way	8772	11241			2	1	2	2	1	2	2	2	2	2	1	2
Scot Industries	4550 Mohave Airport Dr	101548	11181														
Southwest Alarm Services	4855 Finance Way	8548	11039			3	3	2	3	3	3	4	5	6	3	3	4
Southwire	4900 Industrial Blvd	54002	11207			229.6	159.3	0.04	0	689	254	310	121	242	26	3	31
Solution Dispersion Inc/Chromascape	4430 Sante Fe	WA 43534	WA 11293			4	6	5	6	7	5	6	7	7	8	7	9

BUSINESS	SERVICE ADDRESS	CUSTOMER	LOCATION 1	LOCATION 2	LOCATION 3	2010 JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Solution Dispersion Inc/Chromascape	4430 Sante Fe	IRR 43534	IRR 11293			33.9	28.6	37.4	61.7	68.7	78.4	82.7	97.4	82.6	84.4	41.3	39.7
StarRfoam Manufacturing, Inc.	4555 Olympic Dr	75342	38863			69	103.4	94.1	144.4	197	190.9	153	218.6	202	198.5	103.1	45.8
Sun State Components	4505 Mohave Airport Dr	30596	25793			12	10	14	7	7	8	30	20	20	13	10	10
Support Source Inc	5005 Olympic Dr	106260	38595														
Telling Industries	4425 Windrose Lane	86868	40677			3.88	3.4	3.99	4.75	4.74	4.31	8.76	4.69	5.37	4.09	4.83	4.98
Tri-State Care Flight	5880 Flightline Dr	89316	40909			N/A	0	0	3.37	5.8	5.34	5.91	5.19	5.94	5.44	5.31	6.21
True Value	4005 Mohave Airport Dr	9134	10809			19	18	21	29	23	21	21	18	25	27	22	22
Ultimate Systems Limited	4550 Interstate Way	8840	11259			0	0	0	0	0	0	0.01	0	0	0	0	0
UPS	4745 Finance Way	8752	11233			5	3	4	4	5	6	12	10	7	6	6	5
West Coast Netting	5070 Flightline Dr	22608	23887			17	16	17	18	26	42	87	68	51	33	21	20
Viking Freight System/FedEx Freight	4955 Interstate Way	8872	11307			2	2	1	2	2	1	2	2	2	2	2	2
Inactive Accounts																	
Acton Welding	4765 Interstate Way	8758	11235														
Irby Construction Co	5005 Interstate Way	24894	10733														
Skyview Construction	4655 Mohave Airport Dr	71416	30809														
Allied Signal	4790 Olympic Dr	24262	11077			3	3	4	5	4	30	47	97	48	11	5	4
Southwire	4900 Industrial Blvd	54002	11207			229.6	159.3	0.04	0	689	254	310	121	242	26	3	31
Mracek, Beverly	7045 Government Way	9118	10781														
Vacant-2	4910 Industrial Blvd	22030	11239														
Action Delivery	4985 A Interstate Way	11263	4905														
					Total Thousand Gallons/Month	1499.94	1470.88	1009.81	1354.60	2835.34	2148.68	3901.75	3695.34	3004.61	2132.76	1615.43	1546.29
					Total Thousand Gallons /Day	**48.39**	**52.53**	**32.57**	**45.15**	**91.46**	**71.62**	**125.86**	**119.20**	**100.15**	**68.80**	**53.85**	**49.88**
					Total Gallons/Day	48385.16	52531.43	32574.52	45153.33	91462.58	71622.67	125862.90	119204.52	100153.67	68798.71	53847.67	49880.32

2010 Average Usage	71,826
2010 Peak Usage	100,154
2010 Minimum Usage	91,463
2010 - 2014 Average Usage	62,320
2010 - 2014 Peak Usage	108,199
2010 - 2014 Minimum Usage	34,565

City of Kingman
Airport Industrial Park
Water Usage
(in thousands of gallons)

					Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
											2011						
BUSINESS	**SERVICE ADDRESS**	**CUSTOMER**	**LOCATION 1**	**LOCATION 2**	**LOCATION 3**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUNE**	**JULY**	**AUG**	**SEPT**	**OCT**	**NOV**	**DEC**
Aero-Flite, Inc.	4800 Flightline Dr	33956	11237	31807		7.1	20.6	7.4	11.1	6.3	9.5	8.3	10.1	5.3	12.6	76.5	7.6
Honeywell	4805 Mohave Airport Dr	27962	24833			33	12	12	10	12	33	63	66	69	34	19	11
Air'Zona Aircraft Services	7100 Flightline Dr	WA 9082	WA 10307			18	17	16	17	33	66	36	57	51	32	15	12
Air'Zona Aircraft Services	7100 Flightline Dr	IRR 9082	IRR 10307														
Air Treads/Goodyear	4105 Mohave Airport Dr	8506	11223			26.2	34.5	32.3	31.9	33.2	74	140.4	154.9	223.1	102.1	67.4	80.2
American Woodmark	4475 Mohave Airport Dr	8614	11165			240.7	245.5	297.8	277.8	318.6	377.4	568.5	573.1	670.5	402.7	356.5	232
Aquarium Décor, Inc.	4730 Finance Way	8820	11255			2	1	1	0	1	1	2	1	0	1	1	0
Arizona Hydraulics Engineering	9450 Commerce Dr	84810	40599			0.73	0.92	0.96	1.5	1.25	1.34	3.54	3.2	3.19	2.17	1.03	1.11
BLM	9990 Flightline Dr	34852	28321			31	0	0	20	1	2	5	2	3.67	0.97	0.76	0.87
Brackett Aircraft	7045 Flightline Dr	8542	11029			4	7	5	5	4	11	23	23	16	12	6	5
Cantex, Inc.	4045 Bonanza Dr	WA 77548	WA 40197			272.9	288	322	412	510	211	9	8	8	9	7	10
Cantex, Inc.	4045 Bonanza Dr	IRR 77548	IRR 40197			22.21	22.35	15.38	28.05	38.43	370.84	522.7	81.07	137.37	274.38	78.16	103.47
Cascades Tissue Group	4625 Interstate Way	90486	11137	40429		84.9	96.6	37.6	36.9	38.6	38.1	35.5	36	52.5	46.4	48.1	46.2
Composite Solutions	4510 Flighline Dr	82816	40301			1	1	1	1	0	1	2	1	0	1	0	1
Custom Aluminum Radiators	4925 Finance Way	56746	10991														
Desert Diamond Distillers	4875 Olympic Way	86710	40765			6.35	10.85	14.16	20.75	14.4	12.8	13.8	6.86	13.24	9.12	13.67	10.36
Dillon Transportation	4445 Interstate Way	100860	31683														
Guardian Air	7010 Flightline Dr	44434	29455			4	4	4	5	4	4	4	5	5	3	4	6
Hav-a-Lube Inc	9350 Shipping Lane	80996	40181			4.88	1.67	0.72	3.02	1.88	1.52	5.25	1.03	0.95	1.66	2.44	2.14
Hi-Desert Delivery	5005 1/2 Interstate Way	76536	11341			1	1	1	1	1	2	1	0	2	0	1	0
I-Corp Arizona, Inc.	4155 Finance Way	38988	27759			2.51	2.93	3.13	3.15	3.46	13.35	24.44	27.14	24.36	7.6	3.37	2.87
Import Corner	9000 Government Way	54954	10261			1	2	4	5	7	13	15	14	14	6	5	3
Insteel Wire Products	4750 Olympic Dr	92772	27067			0	51.2	47.6	85.8	285.1	146.6	186.3	217.8	293.3	170	108.9	67.7
Interstate Group	4400 Interstate Way	56440	31745			11	11	18	16	19	15	15	10	10	8	8	8
ISCO Industries	4725 Flightline Dr	92130	41003			7.93	8.14	11.13	26.01	17.94	29.32	46.07	49.64	52.32	20.56	6.91	3.08

BUSINESS	SERVICE ADDRESS	CUSTOMER	LOCATION 1	LOCATION 2	LOCATION 3	2011 JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Jasper Engines & Transmissions	9400 Commerce Dr	83184	40451			1.63	2.01	1.84	1.56	1.26	1.99	3.44	3.57	3.79	3.96	3.32	2.16
Jim Straube's Aircraft Service	4890 Flightline Dr	25482	10703			47	29	9	9	11	5	6	7	7	9	7	10
J-M Manufacturing	4620 Olympic Dr	61118	11125			31	31	34	68	67	65	79	62	85	64	78	67
Karnak Chemical	4585 Interstate Way	90616	39365			0.42	0.81	0.69	0.55	0.56	5.56	16.17	20.43	11.34	5.88	2.89	1.48
Kingman Airport Café		9086	10679			31	33	34	47	75	51	51	62	70	62	57	11
Kingman Army Airfield Museum	4540 Flightline Dr	48506	23547			2	1	0	1	1	1	1	0	1	7	0	1
Kingman Property LLC	4625 Interstate Way	54676	33281			3.1	3.1	3.9	6.6	5.7	5	4.7	4.8	5	4.7	6.1	2.8
Knauf Insulation	4200 Industrial Blvd	WA 109200	WA 29433														
Knauf Insulation	4200 Industrial Blvd	IRR109200	IRR 29433														
Lander Industries	9000 Transport Way	105776	29751														
Laron Incorporated	4545 Interstate Way	8526	11193	25065	32517	17	7	9	4	11	15	49	32	20	4	4	5
Lomanco West	4450 Airport Dr	8606	11151			6	9	8	9	10	12	10	12	12	10	10	9
Luseaux Laboratories, Inc	4625 Sante Fe Dr	28662	24667			59	55.5	65.9	61.7	75.6	77.2	62.8	55.4	66.9	54.4	74.6	46.9
Mohave Materials	8055 Flightline Dr	8564	11063			2	3	4	3	4	4	7	4	15	3	2	6
MC2	9300 Commerce Dr	83162	39339			17.5	6.6	17.4	16.3	11.7	7	38.2	44.5	34.8	17.3	4.3	5.5
Monsey Products/Henry Company	4685 Finance Way	8522	10977			118.2	164.4	165.6	240.6	228.1	300.3	358.8	348.8	285.3	293.5	274.8	187.6
Musket Corporation	4400 Industrial Blvd	57132	31981			0	0	1	0	1	0	0	1	0	0	0	0
Pepsi-Cola Company	7100 Commerce Dr	11688	26741			6	5	6	5	6	6	6	6	7	7	5	6
Performance Specialists, Inc.	4906 Olympic Dr	68588	36485			2.89	2.97	3.73	3.64	4.02	3.63	3.65	3.36	4.23	3.57	3.56	3.65
Plastic Express	7300 Commerce Dr L-1	99790	40199														
Potters Industries, Inc.	4665 Finance Way	8512	10969			35	4	4	5	5	7	16	17	24	14	12	7
Schwan Food Company	5055 Interstate Way	8772	11241			1	2	2	2	2	2	2	2	1	2	1	2
Scot Industries	4550 Mohave Airport Dr	101548	11181														
Southwest Alarm Services	4855 Finance Way	8548	11039			3	3	4	4	3	4	5	5	4	4	4	3
Southwire	4900 Industrial Blvd	54002	11207			143	24	238	59	35	0	28	16	25	19	0	24
Solution Dispersion Inc/Chromascape	4430 Sante Fe	WA 43534	WA 11293			8	8	9	9	10	11	12	11	12	12	16	23

BUSINESS	SERVICE ADDRESS	CUSTOMER	LOCATION 1	LOCATION 2	LOCATION 3	2011 JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Solution Dispersion Inc/Chromascape	4430 Sante Fe	IRR 43534	IRR 11293			26.2	23.2	31.9	60	79.3	91.1	100.2	101.7	112.7	75.1	56.2	37.2
StarRfoam Manufacturing, Inc.	4555 Olympic Dr	75342	38863			53.1	58.3	68.5	47.6	48.7	113.8	104.6	124.9	189.3	168.2	185.7	68.5
Sun State Components	4505 Mohave Airport Dr	30596	25793			16	10	5	4	5	10	8	7	9	15	6	5
Support Source Inc	5005 Olympic Dr	106260	38595														
Telling Industries	4425 Windrose Lane	86868	40677			9.07	8.74	10.91	10.45	9.99	9.96	9.66	8.48	10.04	13.55	8.88	8.06
Tri-State Care Flight	5880 Flightline Dr	89316	40909			5.24	5.6	5.78	5.86	5.47	5.61	5.53	5.08	6.09	4.98	4.32	5.08
True Value	4005 Mohave Airport Dr	9134	10809			26	18	26	23	26	26	24	38	26	24	20	23
Ultimate Systems Limited	4550 Interstate Way	8840	11259			0	0	0	0	0	0	0.01	0.01	0.01	0	0	0
UPS	4745 Finance Way	8752	11233			7	4	4	8	6	8	11	9	9	9	6	4
West Coast Netting	5070 Flightline Dr	22608	23887			17	19	20	22	51	59	94	87	84	45	21	25
Viking Freight System/FedEx Freight	4955 Interstate Way	8872	11307			5	2	2	2	1	2	2	2	1	2	2	2
Inactive Accounts																	
Acton Welding	4765 Interstate Way	8758	11235														
Irby Construction Co	5005 Interstate Way	24894	10733														
Skyview Construction	4655 Mohave Airport Dr	71416	30809														
Allied Signal	4790 Olympic Dr	24262	11077			3	17	5	4	9	25	79	61	75	18	2	4
Southwire	4900 Industrial Blvd	54002	11207			143	24	238	59	35	0	28	16	25	19	0	24
Mracek, Beverly	7045 Government Way	9118	10781														
Vacant-2	4910 Industrial Blvd	22030	11239														
Action Delivery	4985 A Interstate Way	11263	4905														
					Total Thousand Gallons/Month	1627.76	1423.49	1890.33	1819.84	2195.56	2367.92	2955.56	2525.87	2896.30	2150.40	1707.41	1243.53
					Total Thousand Gallons /Day	**52.51**	**50.84**	**60.98**	**60.66**	**70.82**	**78.93**	**95.34**	**81.48**	**96.54**	**69.37**	**56.91**	**40.11**
					Total Gallons/Day	52508.39	50838.93	60978.39	60661.33	70824.52	78930.67	95340.65	81479.68	96543.33	69367.74	56913.67	40113.87

2011 Average Usage	67,875
2011 Peak Usage	96,543
2011 Minimum Usage	40,114

City of Kingman
Airport Industrial Park
Water Usage
(in thousands of gallons)

BUSINESS	SERVICE ADDRESS	CUSTOMER	LOCATION 1	LOCATION 2	LOCATION 3	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
					Days in Month	31	29	31	30	31	30	31	31	30	31	30	31
						2012											
Aero-Flite, Inc.	4800 Flightline Dr	33956	11237	31807		6.4	15.4	7.1	21.27	30.57	20.18	15.3	6.78	5.37	4.02	30.19	5.76
Honeywell	4805 Mohave Airport Dr	27962	24833			8	9	10	12	17	32	43	31	26	21	15	12
Air'Zona Aircraft Services	7100 Flightline Dr	WA 9082	WA 10307			15	16	19	21	30	43	54	44	42	47	31	24
Air'Zona Aircraft Services	7100 Flightline Dr	IRR 9082	IRR 10307														0
Air Treads/Goodyear	4105 Mohave Airport Dr	8506	11223			148.1	97.4	34.9	42.3	62.9	126.5	155.3	108.7	105	104.3	78.9	27.9
American Woodmark	4475 Mohave Airport Dr	8614	11165			221.7	365	257.3	317.2	402	502.6	571.3	412.2	410.9	420.8	293.5	259.3
Aquarium Décor, Inc.	4730 Finance Way	8820	11255			1	0	0	1	0	1	1	1	1	0	1	1
Arizona Hydraulics Engineering	9450 Commerce Dr	84810	40599			0.97	1.31	1.21	1.83	2.28	3.82	3.74	2.85	2.64	2.6	1.38	1.03
BLM	9990 Flightline Dr	34852	28321			0	0	0	0	1.1	0.9	2.49	5.08	3.92	1.11	0.97	0
Brackett Aircraft	7045 Flightline Dr	8542	11029			4	6	6	7	12	23	26	23	17	14	7	4
Cantex, Inc.	4045 Bonanza Dr	WA 77548	WA 40197			7	10	12	12	9	8	10	9	12	11	11	6
Cantex, Inc.	4045 Bonanza Dr	IRR 77548	IRR 40197			51.52	26.61	63.04	30.86	21.58	19.28	70.2	29.41	31.03	39.86	32.57	20.52
Cascades Tissue Group	4625 Interstate Way	90486	11137	40429		35.2	41.4	42.8	48.6	42.6	42.5	44.8	47.2	45.5	36.2	20.4	21.3
Composite Solutions	4510 Flighline Dr	82816	40301			1	0	4	6	12	12	7	1	0	1	1	0
Custom Aluminum Radiators	4925 Finance Way	56746	10991						0	1	8	9	6	5	3	1	0
Desert Diamond Distillers	4875 Olympic Way	86710	40765			10.56	11.12	11.71	16.56	10.23	13.71	11.22	9.73	6.89	12.83	14.37	10.57
Dillon Transportation	4445 Interstate Way	100860	31683														
Guardian Air	7010 Flightline Dr	44434	29455			4	5	4	9	4	5	6	6	8	9	6	7
Hav-a-Lube Inc	9350 Shipping Lane	80996	40181			1.66	1.24	1.64	1.4	1.17	4.04	4.23	2.73	2.14	1.22	0.74	0.7
Hi-Desert Delivery	5005 1/2 Interstate Way	76536	11341			1	1	1	1	0	1	2	1	0	N/A	1	1
I-Corp Arizona, Inc.	4155 Finance Way	38988	27759			3.15	3.32	2.67	3.41	5.17	19.14	19.7	12.5	18.48	24.43	3.34	2.69
Import Corner	9000 Government Way	54954	10261			1	1	2	5	8	17	12	2	2	5	6	5
Insteel Wire Products	4750 Olympic Dr	92772	27067			40.2	54.6	50.7	63	87.1	110.3	127.5	99.7	117.4	169.1	102.6	86.5
Interstate Group	4400 Interstate Way	56440	31745			6	10	11.1	12.4	8.5	8.5	7.3	8	8.3	7.1	6.3	5.7
ISCO Industries	4725 Flightline Dr	92130	41003			3.14	21.29	3.52	3.22	7.33	45.11	49.87	33.23	27.67	26.02	6.87	6.75

BUSINESS	SERVICE ADDRESS	CUSTOMER	LOCATION 1	LOCATION 2	LOCATION 3	2012 JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Jasper Engines & Transmissions	9400 Commerce Dr	83184	40451			1.81	2.21	2.11	2.64	2.41	5.92	5.14	4.87	3.12	3.01	1.6	1.88
Jim Straube's Aircraft Service	4890 Flightline Dr	25482	10703			12	12	14	6	13	8	5	7	9	9	7	9
J-M Manufacturing	4620 Olympic Dr	61118	11125			61	50	57	54	40	58	78	68	72	58	40	45
Karnak Chemical	4585 Interstate Way	90616	39365			1.23	1.02	1.02	4.03	10.56	14.17	18.86	30.08	6.07	6.11	3.5	1.72
Kingman Airport Café		9086	10679			27	31	25	41	88	87	101	89	52	13	14	11
Kingman Army Airfield Museum	4540 Flightline Dr	48506	23547			0	0	1	0	1	0	0	1	0	1	0	0
Kingman Property LLC	4625 Interstate Way	54676	33281			6.1	7	2.1	4	10.4	7.6	12.3	3.8	4.6	4.5	4.6	5.1
Knauf Insulation	4200 Industrial Blvd	WA 109200	WA 29433														
Knauf Insulation	4200 Industrial Blvd	IRR109200	IRR 29433														
Lander Industries	9000 Transport Way	105776	29751														
Laron Incorporated	4545 Interstate Way	8526	11193	25065	32517	8	4	4	5	3	41	42	33	33	10	6	3
Lomanco West	4450 Airport Dr	8606	11151			10	9	5	5	8	7	13	10	14	12	9	18
Luseaux Laboratories, Inc	4625 Sante Fe Dr	28662	24667			43.1	65.6	56.7	71.6	89.4	71.4	64	64.9	76	61.4	53.7	51.4
Mohave Materials	8055 Flightline Dr	8564	11063			4	2	2.66	1.82	6.07	8.61	5.37	3.22	6.54	2	4.6	12.88
MC2	9300 Commerce Dr	83162	39339			6.4	5	4.3	7.1	6.6	17.6	37.4	25	75.1	54.4	5.6	4.9
Monsey Products/Henry Company	4685 Finance Way	8522	10977			161.9	211.9	172.2	284.6	248.4	336.3	351	366.2	372.7	375.6	349	169.4
Musket Corporation	4400 Industrial Blvd	57132	31981			0	0	0.31	0.4	0.3	0.28	0.35	0.39	0.48	0.6	0.38	0.27
Pepsi-Cola Company	7100 Commerce Dr	11688	26741			6	6	5	6	26	5	8	6	7	7	6	4
Performance Specialists, Inc.	4906 Olympic Dr	68588	36485			3.57	3.98	3.91	4.14	4.46	4.22	5.44	3.43	3.47	3.86	3.06	3.18
Plastic Express	7300 Commerce Dr L-1	99790	40199														
Potters Industries, Inc.	4665 Finance Way	8512	10969			6	7	6	10	16	15	22	23	15	12	19	25
Schwan Food Company	5055 Interstate Way	8772	11241			1	1	1	1	2	2	1	2	1	2	1	2
Scot Industries	4550 Mohave Airport Dr	101548	11181														
Southwest Alarm Services	4855 Finance Way	8548	11039			4	3	4	4	5	7	8	4	2	5	3	3
Southwire	4900 Industrial Blvd	54002	11207			N/A	16	89	21	75	101	45	10	60	31	18	21
Solution Dispersion Inc/Chromascape	4430 Sante Fe	WA 43534	WA 11293			16	18	16	14	5	12	11	6	4	6	4	4

BUSINESS	SERVICE ADDRESS	CUSTOMER	LOCATION 1	LOCATION 2	LOCATION 3	2012 JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Solution Dispersion Inc/Chromascape	4430 Sante Fe	IRR 43534	IRR 11293			31.1	38	27.5	58.4	67.9	142.7	123.4	82.3	94.1	79.6	61.8	27.5
StarRfoam Manufacturing, Inc.	4555 Olympic Dr	75342	38863			27.3	89	76.7	95.7	86.1	94.9	101.4	93.5	93.8	159.2	90.2	129.5
Sun State Components	4505 Mohave Airport Dr	30596	25793			6	5	5	5	7	7	32	9	7	10	23	1
Support Source Inc	5005 Olympic Dr	106260	38595														
Telling Industries	4425 Windrose Lane	86868	40677			7.13	7.81	7.39	6.92	5.63	5.97	6.27	6.46	7.76	8.01	6.74	7.09
Tri-State Care Flight	5880 Flightline Dr	89316	40909			4.28	4.26	3.83	4.44	3.85	3.81	4.46	3.77	4.11	4.73	3.6	3.9
True Value	4005 Mohave Airport Dr	9134	10809			20	26	23	26	26	31	25	21	23	26	29	23
Ultimate Systems Limited	4550 Interstate Way	8840	11259			0	2	2	2	4	9	7	4	4	2	1	1
UPS	4745 Finance Way	8752	11233			4	4	4	5	5	10	14	9	9	10	7	5
West Coast Netting	5070 Flightline Dr	22608	23887			18	21	18	22	41	70	87	68	64	59	22	18
Viking Freight System/FedEx Freight	4955 Interstate Way	8872	11307			2	2	3.18	2.34	1.65	1.75	1.66	1.59	1.63	1.69	1.39	1.18
Inactive Accounts																	
Acton Welding	4765 Interstate Way	8758	11235														
Irby Construction Co	5005 Interstate Way	24894	10733														
Skyview Construction	4655 Mohave Airport Dr	71416	30809														
Allied Signal	4790 Olympic Dr	24262	11077			2	5	2	6	14	62	62	40	31	16	5	2
Southwire	4900 Industrial Blvd	54002	11207			N/A	16	89	21	75	101	45	10	60	31	18	21
Mracek, Beverly	7045 Government Way	9118	10781														
Vacant-2	4910 Industrial Blvd	22030	11239														
Action Delivery	4985 A Interstate Way	11263	4905														
					Total Thousand Gallons/Month	1071.52	1372.47	1279.60	1438.18	1773.26	2414.81	2596.00	2011.62	2114.72	2045.30	1493.90	1144.62
					Total Thousand Gallons /Day	**34.57**	**47.33**	**41.28**	**47.94**	**57.20**	**80.49**	**83.74**	**64.89**	**70.49**	**65.98**	**49.80**	**36.92**
					Total Gallons/Day	34565.16	47326.55	41277.42	47939.33	57201.94	80493.67	83741.94	64890.97	70490.67	65977.42	49796.67	36923.23

2012 Average Usage	56,719
2012 Peak Usage	83,742
2012 Minimum Usage	34,565

City of Kingman
Airport Industrial Park
Water Usage
(in thousands of gallons)

					Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
											2013						
BUSINESS	**SERVICE ADDRESS**	**CUSTOMER**	**LOCATION 1**	**LOCATION 2**	**LOCATION 3**	**JAN**	**FEB**	**MAR**	**APR**	**MAY**	**JUNE**	**JULY**	**AUG**	**SEPT**	**OCT**	**NOV**	**DEC**
Aero-Flite, Inc.	4800 Flightline Dr	33956	11237	31807		3.5	5.61	9.33	15.92	5.53	13.8	11.75	14.32	8.21	2.7	13.96	3.72
Honeywell	4805 Mohave Airport Dr	27962	24833			11	11	10	12	13	26	33	19	11	12	9	8
Air'Zona Aircraft Services	7100 Flightline Dr	WA 9082	WA 10307			15	7	8	10	11	20	27	23	16	8	6	6
Air'Zona Aircraft Services	7100 Flightline Dr	IRR 9082	IRR 10307			2.3	13.42	6.72	7.2	36.66	27.22	46.75	30.63	21.84	11.01	7.69	3.15
Air Treads/Goodyear	4105 Mohave Airport Dr	8506	11223			27.2	29.3	30.1	24.6	59.1	148	162.5	100.1	81.5	68	44.7	31.9
American Woodmark	4475 Mohave Airport Dr	8614	11165			225.2	318.7	645.8	481.9	303.7	444.5	464.6	385.6	294.5	331.2	289.4	205.9
Aquarium Décor, Inc.	4730 Finance Way	8820	11255			0	0	1	0	1	1	1	1	1	0	0	1
Arizona Hydraulics Engineering	9450 Commerce Dr	84810	40599			1.07	1.27	1.4	1.43	1.72	3.93	4.23	4.02	2.31	1.66	1.16	1.43
BLM	9990 Flightline Dr	34852	28321			0	0	0	0.33	0.71	0.56	9.57	1.17	1.47	0.83	0.1	0
Brackett Aircraft	7045 Flightline Dr	8542	11029			6	7	7	6	11	20	58	24	15	11	7	5
Cantex, Inc.	4045 Bonanza Dr	WA 77548	WA 40197			8	12	11	10.1	11	25	10	10	10	11	10	11
Cantex, Inc.	4045 Bonanza Dr	IRR 77548	IRR 40197			25.25	37.92	19.44	12.28	23.44	44.29	65.84	44.81	41.9	39.33	51.49	37.34
Cascades Tissue Group	4625 Interstate Way	90486	11137	40429		23.8	24.3	21.7	53.9	30.6	17.2	16.9	18.8	18	38.2	30.2	25.7
Composite Solutions	4510 Flighline Dr	82816	40301			0	6	0	0	4	8	3	0	1	0	0	1
Custom Aluminum Radiators	4925 Finance Way	56746	10991			1	0	0	0	1	4	6	4	3	1	0	0
Desert Diamond Distillers	4875 Olympic Way	86710	40765			11.49	8.36	10.69	10.88	16.52	14.38	4.35	14.76	8.64	10.15	11.99	7.05
Dillon Transportation	4445 Interstate Way	100860	31683						0	0.02	0.13	1.53	1.39	0.42	0.99	1.03	9.4
Guardian Air	7010 Flightline Dr	44434	29455			9	5	5	6	11	3	5	4	4	3	4	4
Hav-a-Lube Inc	9350 Shipping Lane	80996	40181			1.06	1.03	1.01	0.8	1.15	3.28	3.61	3.98	1.97	1.24	0.82	1.06
Hi-Desert Delivery	5005 1/2 Interstate Way	76536	11341			1	0	1	1	1	2	2	1	1	3	2	1
I-Corp Arizona, Inc.	4155 Finance Way	38988	27759			2.67	3.06	3.29	2.47	3.68	16.99	23.92	24.21	18	5.95	2.88	2.61
Import Corner	9000 Government Way	54954	10261			2	4	2	10	14.2	16.52	24.71	9.05	1.87	5.7	4.13	2.25
Insteel Wire Products	4750 Olympic Dr	92772	27067			98	74.3	88.6	135.8	228.9	297.1	337.3	138.9	96.3	86.3	68.6	49.5
Interstate Group	4400 Interstate Way	56440	31745			4.7	5.5	6.6	6.6	7.4	9.2	8.6	8.7	7.7	7	7	6.2
ISCO Industries	4725 Flightline Dr	92130	41003			6.98	16.46	6.5	6.2	10.07	51.16	41.13	30	23.19	10.76	6.31	5.61

BUSINESS	SERVICE ADDRESS	CUSTOMER	LOCATION 1	LOCATION 2	LOCATION 3	2013 JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Jasper Engines & Transmissions	9400 Commerce Dr	83184	40451			1.63	1.87	1.95	2.23	2.22	5.47	6.21	4.88	4.79	3.69	3.17	2.56
Jim Straube's Aircraft Service	4890 Flightline Dr	25482	10703			10	5	14	8	8	10	6	10	7	7	12	6
J-M Manufacturing	4620 Olympic Dr	61118	11125			81	47	24	40	33	50	92	46	63	40	66	69
Karnak Chemical	4585 Interstate Way	90616	39365			17.21	2.35	2.91	5.58	7.6	12.3	23.28	20.65	23.01	16.57	3	3.23
Kingman Airport Café		9086	10679			12	11	13	122	120	116	84	82	74	92	84	62
Kingman Army Airfield Museum	4540 Flightline Dr	48506	23547			1	9	1	1	0	0	1	0	1	1	0	1
Kingman Property LLC	4625 Interstate Way	54676	33281			5.6	4.7	4.2	3.5	3.8	4.3	5.8	7.6	4.1	6.3	6.6	4.8
Knauf Insulation	4200 Industrial Blvd	WA 109200	WA 29433														
Knauf Insulation	4200 Industrial Blvd	IRR109200	IRR 29433														
Lander Industries	9000 Transport Way	105776	29751														
Laron Incorporated	4545 Interstate Way	8526	11193	25065	32517	6	4	6	4	9	18	57	12	16	7	6	5
Lomanco West	4450 Airport Dr	8606	11151			4	3	3	4	6	5	13	7	5	6	4	3
Luseaux Laboratories, Inc	4625 Sante Fe Dr	28662	24667			43.2	76.2	76	65.6	80.1	72.6	63.6	97.6	100.7	72.8	57.2	52.8
Mohave Materials	8055 Flightline Dr	8564	11063			51.25	81.88	2.05	4.14	4.02	9.96	11.26	6.88	4.75	3.8	2.97	1.6
MC2	9300 Commerce Dr	83162	39339			7.7	5.7	6	8.7	6.5	33.8	54.9	47.7	23.5	11.1	4.6	6
Monsey Products/Henry Company	4685 Finance Way	8522	10977			183.2	196.5	190.1	288.6	265.5	227.9	5.7	355	96	376	301	188
Musket Corporation	4400 Industrial Blvd	57132	31981			0.4	0.32	0.24	0.33	0.46	0.27	0.44	0.32	0.31	0.48	1.11	0.87
Pepsi-Cola Company	7100 Commerce Dr	11688	26741			3	3	3	3	3	6	6	4	6	13	5	2
Performance Specialists, Inc.	4906 Olympic Dr	68588	36485			3.81	3.13	3.47	3.29	3.68	3.1	3.68	3.42	2.68	3.65	3.44	3.25
Plastic Express	7300 Commerce Dr L-1	99790	40199			0.1	47.1	0.3	0.3	1.5	1.4	89.5	1.2	1.1	0.9	1	0.9
Potters Industries, Inc.	4665 Finance Way	8512	10969			13	15	15	17	20	21	28	21	15	12	12	13
Schwan Food Company	5055 Interstate Way	8772	11241			1	1	1	1	1	1	1	1	0	1	1	1
Scot Industries	4550 Mohave Airport Dr	101548	11181								0	4	4	3	4	4	2
Southwest Alarm Services	4855 Finance Way	8548	11039			2	2	2	3	3	5	8	5	3	5	3	2
Southwire	4900 Industrial Blvd	54002	11207			84	38	39	27	23	1	1	1	0	1	2	1
Solution Dispersion Inc/Chromascape	4430 Sante Fe	WA 43534	WA 11293			5	5	7	5	6	5	5	6	6	5	6	8

BUSINESS	SERVICE ADDRESS	CUSTOMER	LOCATION 1	LOCATION 2	LOCATION 3	2013 JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Solution Dispersion Inc/Chromascape	4430 Sante Fe	IRR 43534	IRR 11293			29.8	24.2	27.4	74.3	70.6	83.5	101.7	115.5	82.4	55.5	40	24.4
StarRfoam Manufacturing, Inc.	4555 Olympic Dr	75342	38863			124	173.5	195.5	209.1	465.5	119.3	135.9	147.8	148.4	142.8	157.2	142.6
Sun State Components	4505 Mohave Airport Dr	30596	25793			0	7	1	0	14	7	16	9	20	19	6	4
Support Source Inc	5005 Olympic Dr	106260	38595														
Telling Industries	4425 Windrose Lane	86868	40677			7.22	6.42	8.25	6.43	10.12	16.11	19.53	10.87	6.45	6.12	5.65	6.73
Tri-State Care Flight	5880 Flightline Dr	89316	40909			5.24	3.87	3.69	3.85	3.54	4.06	4.2	3.87	3.94	4.08	3.99	3.96
True Value	4005 Mohave Airport Dr	9134	10809			28	19	18	17	23	20	39	25	34	40	39	34
Ultimate Systems Limited	4550 Interstate Way	8840	11259			0	0	1	1	1	2	5	3	3	0	1	1
UPS	4745 Finance Way	8752	11233			6	5	6	6	5	10	11	10	8	10	9	6
West Coast Netting	5070 Flightline Dr	22608	23887			12	12	20	25	21	64	94	75	44	29	9	6
Viking Freight System/FedEx Freight	4955 Interstate Way	8872	11307			1.62	1.2	1.45	1.33	1.53	1.49	1.24	1.37	1.41	1.4	1.26	2.21
Inactive Accounts																	
Acton Welding	4765 Interstate Way	8758	11235														
Irby Construction Co	5005 Interstate Way	24894	10733														
Skyview Construction	4655 Mohave Airport Dr	71416	30809														
Allied Signal	4790 Olympic Dr	24262	11077			3	26	5	9	17	79	76	71	49	20	11	13
Southwire	4900 Industrial Blvd	54002	11207			84	38	39	27	23	1	1	1	0	1	2	1
Mracek, Beverly	7045 Government Way	9118	10781														
Vacant-2	4910 Industrial Blvd	22030	11239														
Action Delivery	4985 A Interstate Way	11263	4905														
					Total Thousand Gallons/Month	1323.20	1470.17	1637.69	1812.69	2070.07	2233.82	2447.23	2134.10	1550.36	1688.21	1453.65	1113.73
					Total Thousand Gallons /Day	**42.68**	**52.51**	**52.83**	**60.42**	**66.78**	**74.46**	**78.94**	**68.84**	**51.68**	**54.46**	**48.46**	**35.93**
					Total Gallons/Day	42683.87	52506.07	52828.71	60423.00	66776.45	74460.67	78942.90	68841.94	51678.67	54458.39	48455.00	35926.77

2013 Average Usage	57,332
2013 Peak Usage	78,943
2013 Minimum Usage	35,927

City of Kingman
Airport Industrial Park
Water Usage
(in thousands of gallons)

BUSINESS	SERVICE ADDRESS	CUSTOMER	LOCATION 1	LOCATION 2	LOCATION 3	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
					Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
						2014											
Aero-Flite, Inc.	4800 Flightline Dr	33956	11237	31807		4.56	5.73	10.84	31.47	4.26	9.36	6.49	3.37	2.14	7.02	4.09	7.23
Honeywell	4805 Mohave Airport Dr	27962	24833			11	12	11	12	16	23	23	47	43	67	13	9
Air'Zona Aircraft Services	7100 Flightline Dr	WA 9082	WA 10307			8	5	7	6	10	8	30	20	26	16	13	5
Air'Zona Aircraft Services	7100 Flightline Dr	IRR 9082	IRR 10307			9.93	8.01	22.87	22.28	30.11	47.22	38.43	27.88	29.94	25.05	17.72	17.49
Air Treads/Goodyear	4105 Mohave Airport Dr	8506	11223			22.8	26.8	26	26.6	53.3	98.1	140.2	95.7	150.3	51.2	38.9	34.6
American Woodmark	4475 Mohave Airport Dr	8614	11165			284.2	265	281.1	247.8	473.5	391.5	457.9	377.2	394.8	305.1	256.8	210.1
Aquarium Décor, Inc.	4730 Finance Way	8820	11255			20	8	1	0	0	0	1	1	0	1	0	0
Arizona Hydraulics Engineering	9450 Commerce Dr	84810	40599			1.44	1.28	1.37	1.79	2.24	3.45	4.39	3.25	2.84	2.03	1.32	1.31
BLM	9990 Flightline Dr	34852	28321			0	0	0	0.14	1	1.11	2.11	0.91	1.22	0.77	0.81	0.04
Brackett Aircraft	7045 Flightline Dr	8542	11029			9	7	5	7	17	41	39	27	23	18	11	9
Cantex, Inc.	4045 Bonanza Dr	WA 77548	WA 40197			10	11	10	10	0	20	10	4	31	18	18	8
Cantex, Inc.	4045 Bonanza Dr	IRR 77548	IRR 40197			27.98	23.82	14.9	21.21	57.75	390.01	584.54	492.42	700.21	470.32	243.06	434.95
Cascades Tissue Group	4625 Interstate Way	90486	11137	40429		21.9	19.6	31.8	27.7	26.36	19.9	25.13	20.24	27.37	27.29	29.9	42.15
Composite Solutions	4510 Flighline Dr	82816	40301			1	0	1	1	1	2	1	0	0	2	0	1
Custom Aluminum Radiators	4925 Finance Way	56746	10991			1	1	0	1	0	4	5	5	4	2	1	0
Desert Diamond Distillers	4875 Olympic Way	86710	40765			6.45	8.35	7.19	10.61	11.94	7.7	3.01	2.04	13.19	8.74	4.96	5.18
Dillon Transportation	4445 Interstate Way	100860	31683			3.74	1.44	1.59	3.18	4.36	7.44	9.91	10.95	11.09	4.8	7.42	5.59
Guardian Air	7010 Flightline Dr	44434	29455			3	3	3	3	4	2	3	5	2	4	4	4
Hav-a-Lube Inc	9350 Shipping Lane	80996	40181			1.16	1.04	1.29	1.74	1.75	1.74	5.79	4.54	2.39	1.63	1.04	1
Hi-Desert Delivery	5005 1/2 Interstate Way	76536	11341			1	1	2	1	1	1	1	1	0	1	1	0
I-Corp Arizona, Inc.	4155 Finance Way	38988	27759			2.79	3.26	3.67	2.86	3.49	17.26	20.71	12.57	6.51	5.63	3.52	3.13
Import Corner	9000 Government Way	54954	10261			2.45	1.99	4.78	6.44	15.15	12.01	12.9	8.71	4.8	5.4	5.42	2.01
Insteel Wire Products	4750 Olympic Dr	92772	27067			54.7	51.3	142.9	119.1	113	154.6	217	177.4	191.4	130.4	97.7	74.1
Interstate Group	4400 Interstate Way	56440	31745			6.7	6.2	8.7	8.2	9.7	8.9	10	40.6	9.4	7	7.6	6.1

BUSINESS	SERVICE ADDRESS	CUSTOMER	LOCATION 1	LOCATION 2	LOCATION 3	2014 JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
ISCO Industries	4725 Flightline Dr	92130	41003			6.7	5.75	6.74	6.26	13.59	30.74	48.8	36.94	32.96	17.6	10.16	8.34
Jasper Engines & Transmissions	9400 Commerce Dr	83184	40451			2.53	2.51	2.73	3.46	4.69	6.5	7.79	6.33	5.87	3.53	2.54	2.43
Jim Straube's Aircraft Service	4890 Flightline Dr	25482	10703			9	7	11	8	14	6	6	7	8	17	7	8
J-M Manufacturing	4620 Olympic Dr	61118	11125			32	56	52	74	46	46	57	62	74	28	48	71
Karnak Chemical	4585 Interstate Way	90616	39365			2.68	3.29	3.48	6.33	14.06	10.11	17.81	12.2	12.04	10.15	7.44	6.2
Kingman Airport Café		9086	10679			14	10	11	39	68	59	67	56	69	64	64	34
Kingman Army Airfield Museum	4540 Flightline Dr	48506	23547			1	1	0	1	0	1	0	0	1	0	0	1
Kingman Property LLC	4625 Interstate Way	54676	33281			2.2	3.4	10.9	4.4	4.2	3.8	3.2	3.5	4	2.5	4.8	3
Knauf Insulation	4200 Industrial Blvd	WA 109200	WA 29433									NA	NA	NA	NA	NA	NA
Knauf Insulation	4200 Industrial Blvd	IRR109200	IRR 29433									NA	NA	NA	NA	NA	NA
Lander Industries	9000 Transport Way	105776	29751									Started Service	17	37	9	5	4
Laron Incorporated	4545 Interstate Way	8526	11193	25065	32517	3	3	5	10	3	69	111	143	112	36	30	27
Lomanco West	4450 Airport Dr	8606	11151			4	2	6	7	23	9	12	10	8	5	5	4
Luseaux Laboratories, Inc	4625 Sante Fe Dr	28662	24667			64.7	76.8	56.3	53.6	68.7	50.6	80.6	49.4	56.7	73.8	54.3	49.5
Mohave Materials	8055 Flightline Dr	8564	11063			2.67	2.56	2.44	0.28	0.27	3.85	3.65	2.83	4.08	5.49	4.06	1.57
MC2	9300 Commerce Dr	83162	39339			15.2	6.1	7.8	6.8	7.6	31	60.5	63.3	47.7	24.7	5.9	7.4
Monsey Products/Henry Company	4685 Finance Way	8522	10977			201	195	269	333	366	342	568	429	411	403	354	216
Musket Corporation	4400 Industrial Blvd	57132	31981			0.32	0.39	0.24	0.62	0	27.74	96.64	197.33	156.96	204.17	54.21	207.21
Pepsi-Cola Company	7100 Commerce Dr	11688	26741			3	3	3	3	8	22	52	39	36	21	10	3
Performance Specialists, Inc.	4906 Olympic Dr	68588	36485			3.31	2.94	2.86	3.86	4.04	2.85	3.18	2.63	3.16	2.57	2.71	2.99
Plastic Express	7300 Commerce Dr L-1	99790	40199			1.1	0.7	1.1	0.8	1.3	1.1	0.8	2.2	2	1.2	0.7	0.6
Potters Industries, Inc.	4665 Finance Way	8512	10969			11	19	13	10	18	18	34	21	21	12	18	21
Schwan Food Company	5055 Interstate Way	8772	11241			1	1	1	1	1	1	1	1	1	0	1	1
Scot Industries	4550 Mohave Airport Dr	101548	11181			2	4	5	5	6	5	6	4	8	3	5	5
Southwest Alarm Services	4855 Finance Way	8548	11039			3	3	2	2	4	5	5	4	3	4	3	2
Southwire	4900 Industrial Blvd	54002	11207			2	1	1	2	1	0	48	1	1	47	0	0

BUSINESS	SERVICE ADDRESS	CUSTOMER	LOCATION 1	LOCATION 2	LOCATION 3	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
						2014											
Solution Dispersion Inc/Chromascape	4430 Sante Fe	WA 43534	WA 11293			8	3	6	4	4	3	7	4	5	3	5	4
Solution Dispersion Inc/Chromascape	4430 Sante Fe	IRR 43534	IRR 11293			30.2	29.1	28	51.3	77	81.4	90.4	73	97	44.7	58.2	33.4
StarRfoam Manufacturing, Inc.	4555 Olympic Dr	75342	38863			164.4	151.4	178.9	146.2	147.7	170.8	177.8	132.9	180.3	139.4	141.9	125.2
Sun State Components	4505 Mohave Airport Dr	30596	25793			1	9	13	2	5	4	7	4	12	4	3	2
Support Source Inc	5005 Olympic Dr	106260	38595			0	0	0	0	0	0	NA	Started Service	1.03	0.14	0.56	0.17
Telling Industries	4425 Windrose Lane	86868	40677			5.43	4.94	4.79	5.62	6.96	6.3	9.27	6.56	7.25	7.26	6.87	6.55
Tri-State Care Flight	5880 Flightline Dr	89316	40909			4.49	3.88	3.79	3.84	4.57	3.56	4.82	3.75	5.02	3.6	4.49	3.94
True Value	4005 Mohave Airport Dr	9134	10809			22	18	25	20	35	21	26	18	23	20	20	18
Ultimate Systems Limited	4550 Interstate Way	8840	11259			0	1	0	1	1	2	5	4	2	0	1	1
UPS	4745 Finance Way	8752	11233			7	4	6	4	5	7	9	6	10	7	9	5
West Coast Netting	5070 Flightline Dr	22608	23887			7	8	14	9	31	51	75	51	61	28	14	13
Viking Freight System/FedEx Freight	4955 Interstate Way	8872	11307			1.16	1.25	1.31	1.32	1.45	1.15	1.41	1.11	1.5	1.52	1.66	1.43
Inactive Accounts																	
Acton Welding	4765 Interstate Way	8758	11235														
Irby Construction Co	5005 Interstate Way	24894	10733														
Skyview Construction	4655 Mohave Airport Dr	71416	30809														
Allied Signal	4790 Olympic Dr	24262	11077			13	2	1									
Southwire	4900 Industrial Blvd	54002	11207			2	1	1	2	1	0						
Mracek, Beverly	7045 Government Way	9118	10781														
Vacant-2	4910 Industrial Blvd	22030	11239														
Action Delivery	4985 A Interstate Way	11263	4905														
					Total Thousand Gallons/Month	1167.89	1117.83	1355.38	1403.81	1853.04	2373.80	3354.18	2862.76	3197.17	2434.71	1743.76	1780.91
					Total Thousand Gallons /Day	**37.67**	**39.92**	**43.72**	**46.79**	**59.78**	**79.13**	**108.20**	**92.35**	**106.57**	**78.54**	**58.13**	**57.45**
					Total Gallons/Day	37673.87	39922.50	43721.94	46793.67	59775.48	79126.67	108199.35	92347.10	106572.33	78539.03	58125.33	57448.71

2014 Average Usage	67,354
2014 Peak Usage	108,199
2014 Minimum Usage	37,674

APPENDIX D

Existing Well Data

Well #1 Data

Run Date: 11/27/2013

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

Location B 22.0 16.0 27 D D D

Well Reg.No 55 - 612667

AMA NOT WITHIN ANY AMA OR INA

Registered Name KINGMAN, CITY OF,
310 N 4TH ST

KINGMAN AZ 86401

File Type REGISTERED WELL
Application/Issue Date 06/04/1982

Owner OWNER
Driller No. 150
Driller Name MIKE WININGER DRILLING COMPANY
Driller Phone
County MOHAVE
Parcel No. 310-21-014
Intended Capacity GPM 0.00

Well Type NON-EXEMPT
SubBasin HUALAPAI VALLEY
Watershed COLORADO RIVER
Registered Water Uses MUNICIPAL USES
Registered Well Uses WATER PRODUCTION
Discharge Method METER
Power ELECTRIC MOTOR > 100 HP

Well Depth	1,015.00	**Case Diam**	14.00	**Tested Cap**	700.00
Pump Cap.	700.00	**Case Depth**	1,015.00	**CRT**	X
Draw Down	44.00	**Water Level**	663.00	**Log**	
		Acres Irrig	0.00	**Finish**	STEEL - PERFORATED OR SLOTTED CASING

Contamination Site: NO - NOT IN ANY WQARF SITE

Tribe: Not in a tribal zone

Comments City of Kingman Well #1. Well is located adjacent to the Kingman Airport. As of 2/17/05, the Public Water System (PWS) sign that is posted on the fence surrounding the wellsite indicated that Well #1 is registered as 55-612671. A check of the wells registered with ADWR in B(22-16)27 lists City of Kingman well 55-612667. The well that is assigned 55-612671 is a 2-inch diameter, 32 foot in depth stock well that is located in the area of Yuma, AZ. Will attempt to contact the city engineer in order to correct this obvious mistake. File update conducted 3/7/05. From 1986 through 6/4/06, this well was equipped with an ADWR installed Quarterly Recorder (Sounder) which provided water level measurements to ADWR's Basic Data Section. The last recorded water level was at 663.5 feet. It should be noted that the Registration of Existing Well form that was filed by the City of Kingman on 6/4/82 reflects that the depth of the well is at 1015-feet. On the other hand, Basic Data reports that the depth of this well is at 970-feet. As a copy of the 1968 well file is missing, there appears to be some confusion between the City of Kingman and Basic Data over the true depth of this well. File update conducted 6/3/09. mib

Current Action

6/3/2009 856 CHANGE OF BOOK/MAP/PARCEL DATA
Action Comment: mib

Action History

6/2/2009 880 CHANGE IN REMEDIAL ACTION SITE CODE
Action Comment: OLD WQARF code: null

6/6/1997 805 PUMP INSTALLATION COMPLETION REPORT RECEIVED
Action Comment: mib

3/28/1968 755 WELL CONSTRUCTION COMPLETED
Action Comment:

Michael I. Ball

From: Michael I. Ball
Sent: Friday, November 29, 2013 4:27 PM
To: 'Paul Gaines'
Cc: Stella A. Murillo
Subject: RE: Quick question about my local well station
Attachments: DOC (1000).pdf; DOC (088).pdf

Mr. Gaines,

It appears that the last time the Department took a close look at this well was in 2006. At that time the well was equipped with a 200-hp electric turbine pump which was capable of producing 534-gpm. According to a pump report that was filed by the City of Kingman in 1997, the well produced 700-gpm. If you really need the current production details for this well, you should contact the City of Kingman's Water Department. I have attached a number of documents that pertain to this well.

Mike Ball
Compliance Enforcement Officer

From: Paul Gaines [mailto:alpha-zulu@outlook.com]
Sent: Tuesday, November 26, 2013 10:44 AM
To: Michael I. Ball
Subject: Quick question about my local well station

Mr. Michael Ball;
I was told you could help me out. I had a question about a well station near my business. The registry ID # is 55-612667. I was just wondering if this pump is still operational? Also, I understand this pump was recently under investigation, and I would like to know more about this matter. If you could please return my e-mail as soon as possible I would really appreciate it.

Thank you!

Arizona Department of Water Resources GWSI Well Report

Well Site ID 351514113572801 **Local ID** B-22-16 27DDD **Quad Name** KINGMAN AIRPORT

Meridian	Site Type	Reliability	Topo Setting	Source	Map Scale	Latitude	Longitude	Accuracy	Lat DD	Long DD
G	W	C	V	USGS	24000	35 15 14.5	113 57 28.2	5	35.254028	-113.957833

ADWR File 55- Num	Altitude	Altitude Method	Altitude Accuracy	USGS Basin	Sub Basin	ADWR Basin	State	County	Site Uses	Water Uses	Hole Depth	Well Depth
612667	3373.6	L	0.1	HUA	HUA	HUA	AZ	15	W	P	970	970

Geo Unit	Date Created	Complete?	Current Index Book
	8/8/1980		

Well Completion

Date Completed	Complete?	Drill Method	Finish	Source	Driller Name
3/5/1968		H	P	*	MIKE WINNINGER

Casing

Top	Bottom	Diameter	Material
0	0	14	S

No Bore Hole Data Found

No Perforation Data Found

Well Lifts

Date Visited	Complete?	Lift	Power	Meter Number	Pwr Co	Hp	Account Number	Divider	Source	Method
3/19/1980		T	E			0		0		
1/16/1986		N				0		0		
7/9/1999		T	E	61266	CIT	200		1256	A	P
6/14/2006		T	E	74552	CIT	200		1548	A	P

Well Log

Log Type	Log Start	Log End	Source
D	0	970	D

Owner Site Names

Other ID	Assigner
CITY NO 1	CITY OF KINGMAN
YW	FORMER ADWR RECORDER

Well Owners

Date Entered	Complete?	Last Name	First Name	MI
3/19/1980		KINGMAN	CITY OF	

Report genenerated on 11/29/2013

Arizona Department of Water Resources GWSI Well Report

Well Site ID 351514113572801 **Local ID** B-22-16 27DDD **Quad Name** KINGMAN AIRPORT

Pumping Discharges	Date Measured	Complete?	Discharge Rate	Method	Source	Production Water Level	Static Water Level	Static Method	Static Source	Pumping Period	Specific Capacity	Well Drawdowns
	3/19/1980		700	M	A	0	0			0	0	0
	5/24/1983		700	M	A	0	0			0	0	0
	7/9/1999		679	S	A	0	0			0	0	0
	6/14/2006		534	S	A	663.5	628.7	V	A	30	15.3	34.8

Remarks	Date Entered	Complete?	Remark
	6/23/1988		ADWR QUARTERLY RECORDER SITE

Site Inventories	Date Inventoried	Complete?	Inventoried By
	3/19/1980		REMICK

Water Levels	Date Measured	Complete?	Depth to Water	Method	Source	Water Level Elevation	Remark
	1/13/1986		601.4	V	A	2772.2	
	5/18/1988		603.6	V	A	2770	
	8/12/1988		604.1	V	A	2769.5	
	10/27/1988		604.2	V	A	2769.4	
	1/26/1989		604.4	V	A	2769.2	
	4/19/1989		604.8	V	A	2768.8	
	7/25/1989		605.1	V	A	2768.5	
	11/2/1989		605.8	V	A	2767.8	
	2/28/1990		605.7	V	A	2767.9	
	5/30/1990		606.2	V	A	2767.4	
	8/29/1990		606.4	V	A	2767.2	
	11/12/1990		606.8	V	A	2766.8	
	2/11/1991		606.7	V	A	2766.9	
	5/7/1991		607	V	A	2766.6	
	8/7/1991		607.4	V	A	2766.2	
	11/11/1991		607.6	V	A	2766	
	2/11/1992		607.9	V	A	2765.7	

Arizona Department of Water Resources GWSI Well Report

Well Site ID 351514113572801 **Local ID** B-22-16 27DDD **Quad Name** KINGMAN AIRPORT

Water Levels

Date Measured	Complete?	Depth to Water	Method	Source	Water Level Elevation	Remark
5/13/1992		608.2	V	A	2765.4	
8/13/1992		608.75	V	A	2764.85	
11/10/1992		608.6	V	A	2765	
2/10/1993		609	V	A	2764.6	
5/12/1993		609.2	V	A	2764.4	
8/17/1993		609.5	V	A	2764.1	
11/17/1993		610.1	V	A	2763.5	
2/15/1994		610.1	V	A	2763.5	
5/17/1994		610.3	V	A	2763.3	
8/16/1994		610.4	V	A	2763.2	
11/16/1994		610.65	V	A	2762.95	
2/14/1995		610.6	V	A	2763	
5/16/1995		611.05	V	A	2762.55	
8/16/1995		611.3	V	A	2762.3	
11/15/1995		612.3	V	A	2761.3	
1/12/2006		628.7	V	A	2744.9	
6/14/2006		663.5	V	A	2710.1	P

Measuring Points

Date Established	Complete?	Msmt Point Height	Description
1/13/1986		1	HTCA
5/18/1988		1	HOLE IN TABLE TOP
1/10/2006		1.5	AIRL,HBOP,N

Water Quality

Date Collected	Complete?	Specific Conductance	Fluoride	Deg C	Ph	Alkilinity	Disolved Oxygen	Disolved Solids
9/20/1982		345	2.5	28	0	0	0	0
5/24/1983		345	2.5	29	7.8	0	0	0
7/9/1999		340	0	30	7.3	0	0	0
6/14/2006		0	0	28	7.9	0	0	0

DEPARTMENT OF WATER RESOURCES
99 EAST VIRGINIA AVENUE
PHOENIX, ARIZONA 85004

RECEIVED JUN 4 1982 DEPT. OF WATER RESOURCES

REGISTRATION OF EXISTING WELLS

READ INSTRUCTIONS ON BACK OF THIS FORM BEFORE COMPLETING
PRINT OR TYPE — FILE IN DUPLICATE

02

FOR OFFICE USE ONLY	
REGISTRATION NO. 55-	612667
FILE NO.	B(22-16)27 ddd
FILED (DATE)	6-4-82
AT (TIME)	3 pm
INA	✓
AMA	✓

REGISTRATION FEE (CHECK ONE)	
EXEMPT WELL (NO CHARGE)	☐
NON-EXEMPT WELL — $10.00	☒

1. Name of Registrant:
CITY OF KINGMAN City Well #1
310 North Fourth Street, Kingman, AZ 86401
(Address) (City) (State) (Zip)

2. File and/or Control Number under previous groundwater law:
(B-22-16) 27-1 (File Number) 35- (Control Number)

3. a. The well is located within the SE ¼ SE ¼ SE ¼, Section 27, of Township 22N N/S, Range 16W E/W, G & SRB & M, in the County of MOHAVE.
b. If in a subdivision: Name of subdivision N/A, Lot No. _____, Address _____.

4. The principal use(s) of water (Examples: irrigation - stockwater - domestic - municipal - industrial)
Municipal.

5. If for irrigation use, number of acres irrigated from well _____.

6. Owner of land on which well is located. If same as Item 1, check this box ☒XX
(Address) (City) (State) (Zip)

7. Well data (If data not available, write N/A)
a. Depth of Well 1015' feet
b. Diameter of casing 14" inches
c. Depth of casing 1015' feet
d. Type of casing Steel.
e. Maximum pump capacity 700 gpm gallons per minute.
f. Depth to water 590' feet below land surface.
g. Date well completed Mar (Month) 28 (Day) 1968 (Year).

8. The place(s) of use of water. If same as Item 3, check this box ☐.
____¼ ____¼ ____¼, Section ____ Township ____ Range ____
____¼ ____¼ ____¼, Section ____ Township ____ Range ____
KINGMAN MUNICIPAL WATER SYSTEM SERVICE AREA
Attach additional sheet if necessary.

9. DATE 6/2/82 SIGNATURE OF REGISTRANT Louis G. Foreman

CITY OF KINGMAN
310 N FOURTH ST
KINGMAN AZ 86401

STATE OF ARIZONA
DEPARTMENT OF WATER RESOURCES
WATER RIGHTS ADMINISTRATION
99 EAST VIRGINIA
PHOENIX, ARIZONA 85004

RECEIPT

KIND ENTRY	FILE REFERENCE NO.
55	612653
	THRU
55	612667

(15)

FUND SOURCE	ACCOUNT NO. AGENCY	CHAPTER	DIV.	INT. ACCT.	ITEM DESCRIPTION	RATE	$ AMOUNT
					Filing fee for Registration of	10.00	150.00
					Existing Wells		
					55-612653 B(21-17)15bcc 55-612661 B(21-17)24cdb 55-612654 B(21-17)3 cda 55-612662 B(21-17)24cdd		
					55-612655 B(22-17)34dcd 55-612663 B(21-17)24dbc 55-612656 B(22-17)34bda 55-612664 B(22-16)34 cbc		
					55-612657 B(22-16)15ccc 55-612665 B(22-16)33cdc 55-612658 B(22-16)19baa 55-612666 B(22-16)33bcd		
					55-612659 B(22-16)28bad 55-612667 B(22-16)27ddd 55-612660 B(21-17)1 dbc		

WRITER	PAYMENT
GUESTS	15
CHK NO	3267
152	10.00
55-I	150.00
TAX	0.00
TOTL	150.00
GEN.CHEK	150.00

Check No. 3267

TOTAL $ # 308 A 12:37- 150.00

7/13/82 jc

STATE OF ARIZONA
ARIZONA DEPARTMENT OF WATER RESOURCES
GROUNDWATER MANAGEMENT SUPPORT SECTION

500 North Third Street, Phoenix, Arizona 85004-3903
Phone (602) 417-2470

RECEIVED JUN - 6 1997 RECORDS MGT

COMPLETION REPORT
(Pump Installation Report)

1. Per A.R.S. § 45-600, the Completion Report is to be filed with the Department within 30 days after installation of pump equipment by the registered well owner.

2. Drawdown of the water level for a non-flowing well should be measured in feet after not less than 4 hours of continuous operation. For a flowing well the shut-in pressure should be measured in feet above the land or in pounds per square inch at the land surface.

3. The static groundwater level should be measured in feet from the land surface immediately prior to the well capacity test.

4. The tested pumping capacity of the well in gallons per minute for a non-flowing well should be determined by measuring the discharge of the pump after continuous operation for at least 4 hours and for a flowing well by measuring the natural flow at the land surface.

REGISTRATION NO: 55- 612667 **FILE NO:** B(22-16)27DDD

ENTERED JUN 6 1997

LOCATION OF THE WELL:

22N N/S (Township) 16W E/W (Range) 27 (Section) ¼ SE (10-acre) ¼ SE (40-acre) ¼ SE (160-acre)

EQUIPMENT INSTALLED:

Kind of pump Turbine (Turbine, submersible, centrifugal, etc.) Kind of power Electric (Electric, natural gas, gasoline, etc.)

H.P. Rating of Motor 200 Pumping Capacity 700 GPM Date Pump Installed 8-10-96

WELL TEST:

Test pumping capacity 700 (Gallons per minute) Date Well Tested: 10-23-96

Method of Discharge Measurement McCrometer Flow Meter (Weir, orifice, current meter, etc.)

Static Groundwater Level 610 ft. Drawdown 44 ft.

Total Pumping Lift 654 ft. Drawdown _____ lbs. (Flowing Well)

I HEREBY CERTIFY that the above statements are true to the best of my knowledge and belief.

City of Kingman, 310 N. Fourth St, Kingman, AZ 86401
Print Well Owner's Name | Address | City | State | Zip

Peter R Johnson, City Engr. 520-753-8122 06-04-97
Signature of Well Owner | Phone Number | Date

DWR 55-56 (Rev 10/95)

City of Kingman
310 NORTH FOURTH STREET • KINGMAN • ARIZONA • 86401 • 520 • 753-5561

June 4, 1997

RECEIVED
JUN - 6 1997
RECORDS MGT

Arizona Department of Water Resources
Groundwater Management Support Section
500 North Third Street
Phoenix, Arizona 85004

Re: Kingman City Well No. 1, ADWR No. 55-612667

Enclosed is a copy of a Pump Installation Report for the City of Kingman's City Well No. 1. The pump installation was completed in October 1996. The completion report was not submitted at that time because of questions about its applicability since it was not the first time a pump had been installed in this well.

City Well No. 1 was used by the City of Kingman for a number of years and then taken out of service in the early 1980's. It is being reactivated now to increase the system supply capabilities.

Please let me know if you have questions or need additional information.

Sincerely,

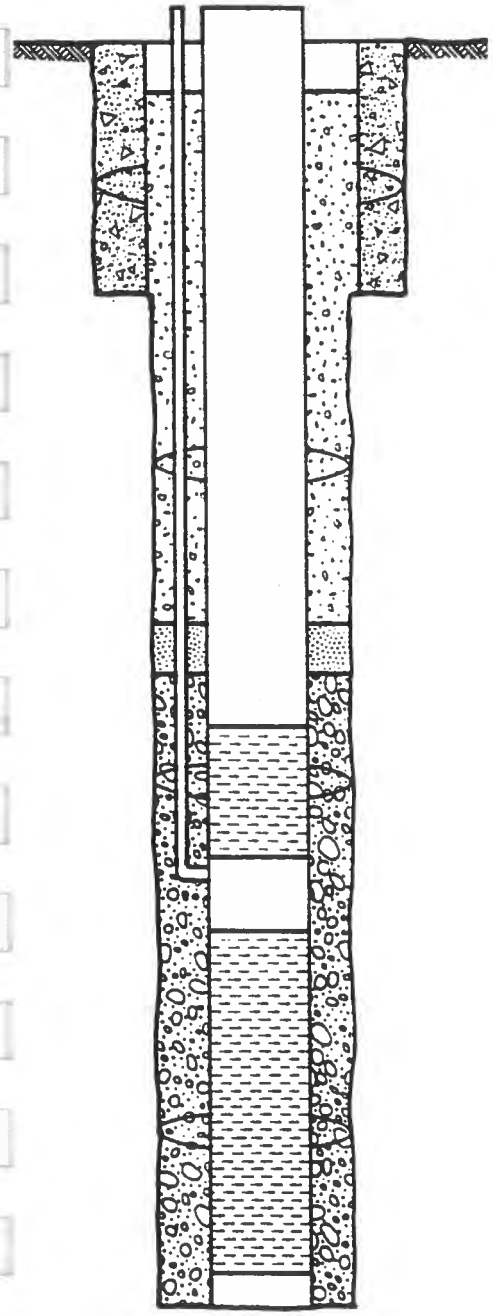
Peter R. Johnson

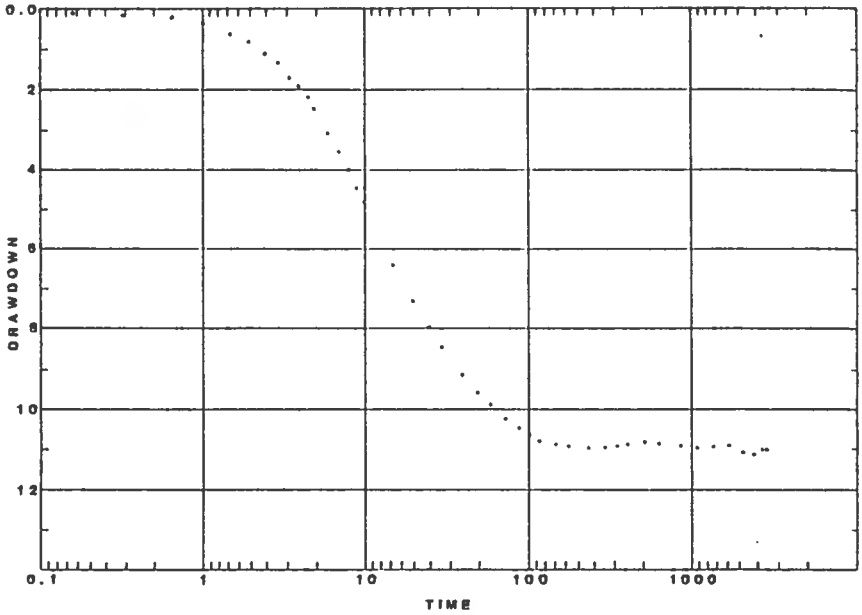
Peter R. Johnson, P.E.
City Engineer

c: Scott Yocum, Utilities Superintendent
City Well No. 6 file

Well #6 Data

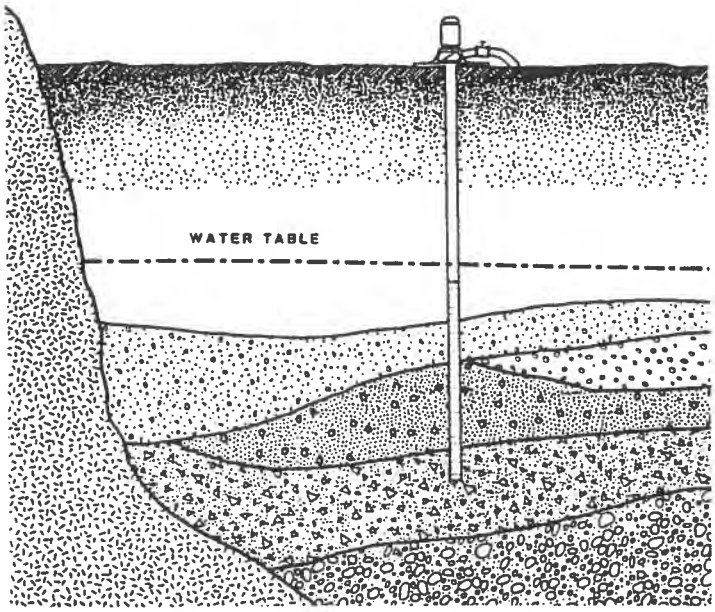
City of Kingman





CITY WELL NO. 6

DESIGN, CONSTRUCTION, AND TESTING COMPLETION REPORT



CELLA BARR ASSOCIATES

KINGMAN CITY WELL NO. 6
WELL CONSTRUCTION
AND
TESTING RESULTS
October 14, 1991

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Appendix VI: Well Development Notes

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Differential Temperature

Sonic VDL

Electric

Spinner Observation Well (Static Run)

Spinner Observation Well (Non-Pumping Log)

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1.0 INTRODUCTION

Over the last ten years, the City of Kingman has grown steadily to a population of almost 13,000 according to the 1990 census (DES, 1991 and DES, 1990). The City Water Department, however, serves over 27,000 people. Because of continued growth, a greater demand has been placed upon the municipal water system especially during the peak summer months when water use is generally at its highest level. Though the City wells can meet the current demand, some have been removed from service due to high chromium levels stemming from natural sources. In recognition of these factors, the City expanded their existing system by constructing a new large diameter well. In the following paragraphs, a brief chronology of the major events are given for construction City Well No. 6.

On August 24, 1990, the City of Kingman hired Cella Barr Associates (CBA) to prepare the contract documents and bid specifications for City Well No. 6. According to the work plan developed by the City and CBA, an observation well would be constructed to 1,200 feet in order to provide an evaluation of the suitability of the proposed well site (Figure 1) for the installation of a sand-free, gravel-enveloped water well capable of a minimum continuous yield of 1,500 gallons per minute (gpm). When completed, the well would be equipped with a test pump and both a step test and a continuous discharge test performed. In mid October 1990, the city assumed the responsibility of bidding the project and selecting the driller. Four firms responded including: All American Water Supply Inc., Beylik Drilling Inc., Campbell's Drilling, and Layne Western Co. Inc. Of these, Campbell's Drilling was awarded the contract on the basis of the bid price and qualifications to perform the work. Notice to proceed was issued on December 10, 1990 with a specified project completion of 75 days on March 15, 1991.

Actual construction of the observation well commenced sometime shortly after January 1, 1991. The well was drilled to a total depth of 1,200 feet, having a six inch diameter. Welenco of Bakersfield, California, performed the downhole geophysical surveys. After logging, four inch schedule 80 PVC casing was set, perforated at the following intervals: 600 to 780, 800 to 980, and 1,000 to 1,180. The hole was then cleaned by alternating

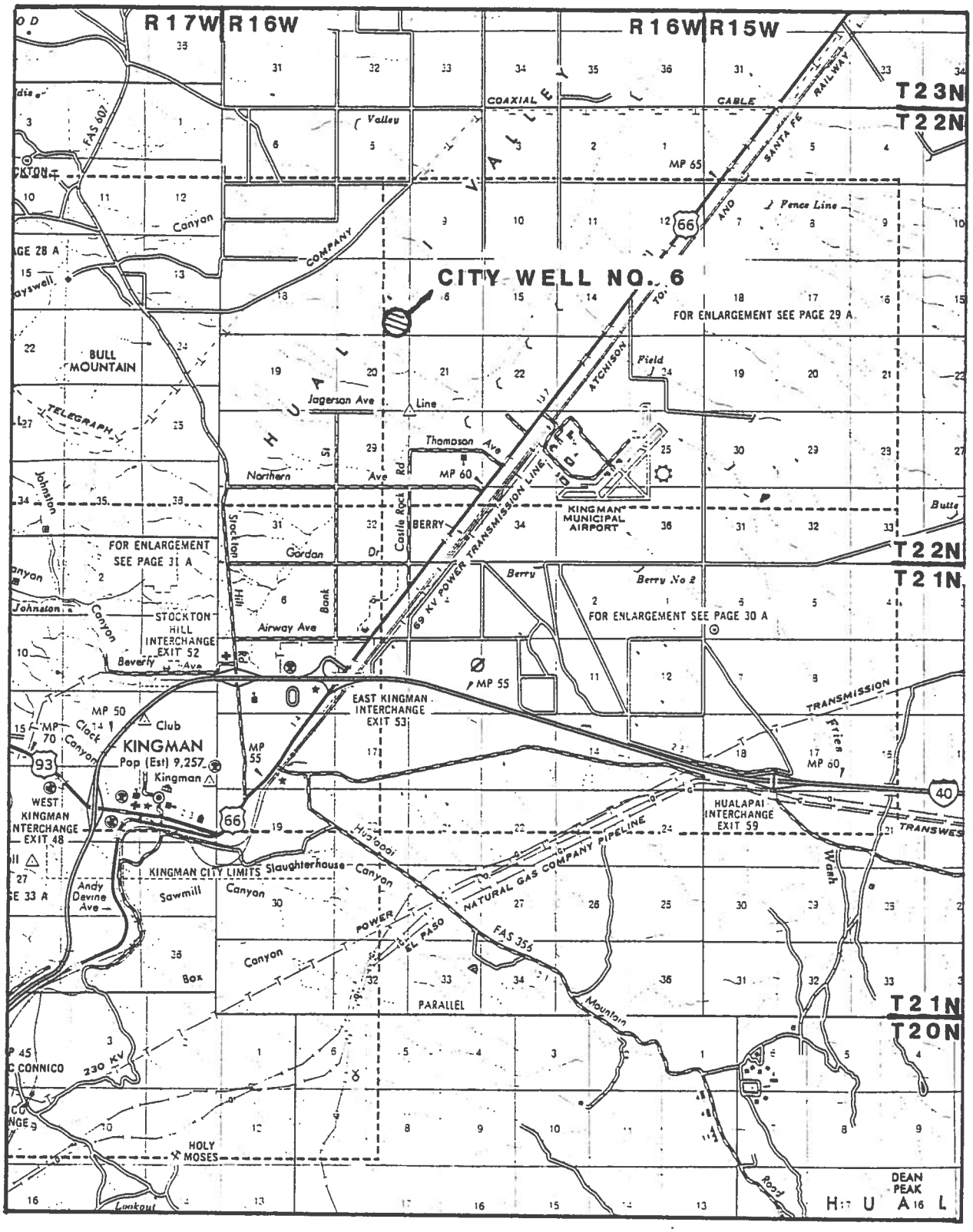

FIGURE 1:
KINGMAN CITY WELL NO. 6

CELLA BARR ASSOCIATES

between water and air lifting. At varying intervals CBA collected water samples during air lifting and also under static conditions. Completion of the well and surveys was on February 4, 1991.

Between February 4 and March 5, 1991, additional data were collected relative to the design of the production well. Some water testing left questions regarding chromium levels in the host aquifer and time was needed to process additional water samples and check the results. A downhole spinner log was run at two sites to determine the direction and velocity of groundwater flow. Cutting samples from the observation well were analyzed by CBA, Drilling Equipment and Supply, and Johnson Filtration Systems for size and location of the well screen.

The City issued Campbell's Drilling a contract extension of 55 days from March 5, 1991 to April 29, 1991 because of the delay caused by additional testing. A special agent was hired by the City to monitor construction of the production well. Construction commenced April 3, 1991 with the emplacement of surface casing, and was completed on June 26, 1991 with well development services provided by the driller. The finished well had a 26-inch diameter bore housing an 18-inch diameter casing with a total depth of 1,040 feet.

On July 12, 1991 Gilbert Pump Company performed a step test followed, on July 15, 1991, by a constant rate test lasting 49 hours. During both pumping periods, water level measurements were recorded from both the pumping and observation wells; and, water samples were collected for quality analysis.

A combination of low specific capacity values and elevated chromium levels, led to questions about full development of the well by the Driller and indicated that additional well development might increase flow. For this reason, over a 13 day period from July 18 to July 31, 1991 the well was further developed by alternate pumping and surging. It should be noted that there were several off times during this 13 day period due to equipment repairs and schedules. During the surging process water samples were collected with some checked in the field for hexavalent chromium using a Hach water

test kit. When surging and supplemental testing were complete, all pumping equipment was removed and the well capped.

With the preceding paragraphs as an overview for construction of City Well No. 6, the remainder of this document details the results from the initial observation well logging, aquifer pump testing, development, water quality analysis, and recommendations. In addition, a complete set of appendices is included with pertinent test data and analytical results as noted in the text.

2.0 OBSERVATION WELL CONSTRUCTION AND LOGGING

Construction of the observation well, B(22-16)17ddd, commenced shortly after January 1, 1991. The well penetrated three alluvial units reaching a finished depth of 1,200 feet. Methods employed to construct the well consisted of a combination of air percussion and mud rotary. The hole was air drilled from the land surface down to 950 feet. At this point the driller added foam due to an increase in hydraulic resistance and subsequent loss of bit pressure. At 1,100 feet it was necessary to switch over to mud rotary drilling. With completion of the drilling operation, the observation well was logged and four inch, schedule 80 PVC casing set. Finish construction is shown on Figure 2.

2.1 Sample Collection

In the process of constructing the observation well, sediment samples, weighing approximately three pounds each, were collected at ten foot intervals. When the drill bit reached the bottom portion of the sampling point, cuttings were allowed to circulate to the surface for collection at the end of the discharge pipe. Cuttings were then placed in cotton sample bags labeled with the well location, sample depth, date and time, and stored in a nearby City facility for analysis. Once the samples were logged, a set was given to the City Engineer, and another set kept on file with CBA. The remainder of the samples will be filed with Arizona Geological Survey in Tucson, Arizona for incorporation to the State's geologic archives.

2.2 Sample Analysis

Samples collected from the observation well were initially logged by CBA, where the major alluvial units could be identified. The samples were then run through a series of sieves for particle sizing.

2.2.1 Lithologic Analysis

Sediments from the observation well revealed three main units consisting of older, intermediate, and younger alluvium. The younger alluvial (Qs) deposits, of Quaternary age, ran from land surface to 10 feet deep in the form of a sandy loam soil. Directly underlying the younger alluvium is the intermediate alluvium (QTs) of Quaternary and Tertiary age, extending from 10 feet to 520 feet below the land surface. This unit is

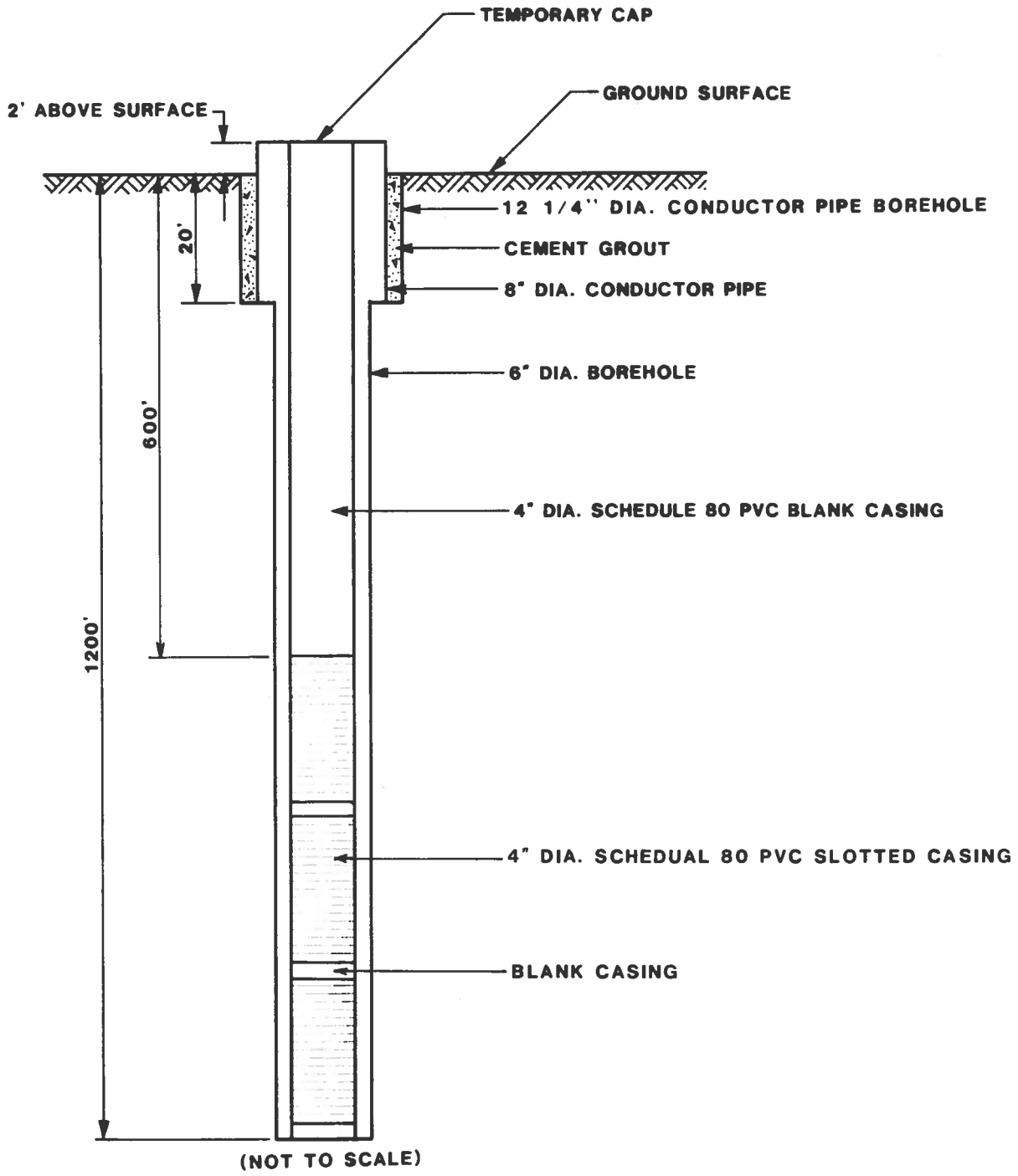

FIGURE 2:
OBSERVATION WELL

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composed predominantly of weakly consolidated fragments of granite, schist, gneiss, and volcanic rocks, having a grain size of fine gravel, sand and silt. From 520 feet to 1,200 feet, the older alluvium (Ts) of Tertiary age was penetrated. This is the principal aquifer of the Hualapai Valley consisting of moderately consolidated fragments of granite, schist, gneiss and volcanic rocks in a brownish-gray silty clay or sand matrix containing some weakly consolidated tuff and agglomerate. CBA's detailed lithological log is supplied in Appendix I.

2.2.2 Sieve Analysis

In order to adequately size the openings for the well screen, the Driller delivered the samples to Drilling Equipment and Supply, in Phoenix, Arizona, for sieve analysis. The interval targeted for water production ran from 730 to 1,020 feet. The sieve results were sent to Johnson Filtration Systems, of St. Paul, Minnesota, who made recommendations for screen placement, slot size and adjustments in the artificial filter pack. Appendix II provides the details of this analysis.

2.3 Geophysical Logs

At the conclusion of drilling the observation well, Welenco, of Bakersfield, California, performed a series of downhole geophysical surveys. The suite of logs included: Caliper, differential temperature, sonic and electric logs. These surveys allowed a correlation of geologic units and sediment characteristics in the observation well. About 30 days later, spinner logs were run in the observation well and at Long Mountain #2 to check direction and flow velocity components regarding water quality testing. The results of the spinner logs, as checked by CBA and Welenco, showed virtually no movement. Copies of the geophysical logs follow the appendices.

2.4 Summary

Construction and logging of the observation well enabled CBA to determine the final design for City Well No. 6. According to the data, groundwater would be received from the older alluvium having a static water level of 585 feet below the topographic land surface. The total depth of the production well was planned at 1,040 feet and the screened intervals would lie between 740 and 1,020 feet. Complete construction details are provided in the following section.

3.0 PRODUCTION WELL CONSTRUCTION

Construction of Kingman City Well No. 6 began with drilling and setting of the conductor pipe casing on April 3, 1991. Over the course of this operation, the City hired a special agent to monitor construction activities. Because of the 26-inch diameter borehole, mud rotary was the selected drilling method. On June 6, 1991 the Driller reached the planned depth of 1,040 feet, and on June 7, 1991 Welenco performed the required directional surveys. Copies of the survey can be found in Appendix III.

Finished construction of City Well No. 6 is shown on Figure 3. An additional detailed drawing depicting the water production intervals below the static water level is illustrated on Figure 4. Considering this design, Gilbert Pump and Equipment, of Phoenix, Arizona, set an overhead line shaft driven turbine test pump with the intake located in the blank 40 foot interval between 800 and 840 feet. This is also the planned setting for the permanent water production pump.

Development of City Well No. 6 occurred in two phases. These will be discussed following the constant rate test section.

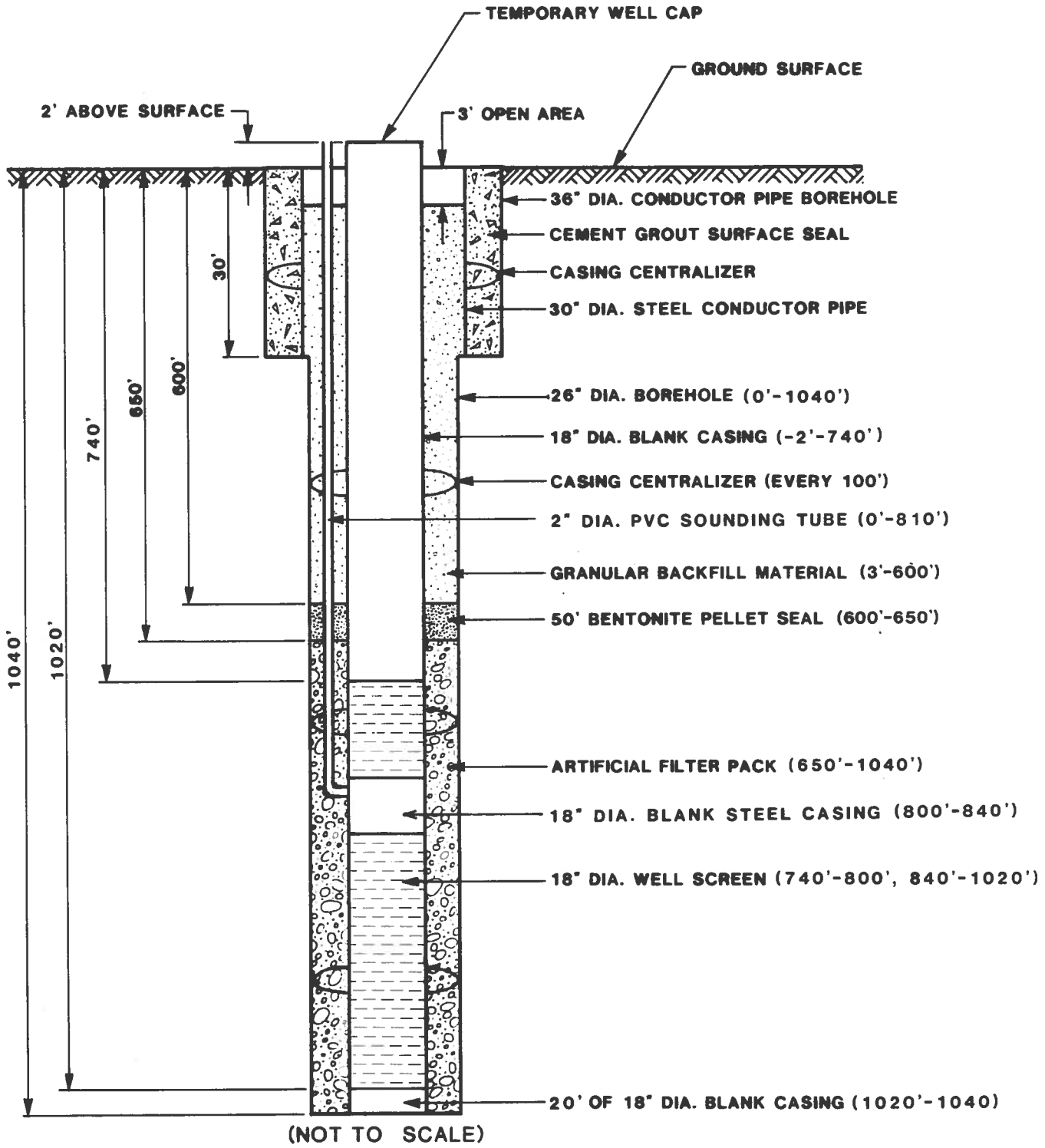
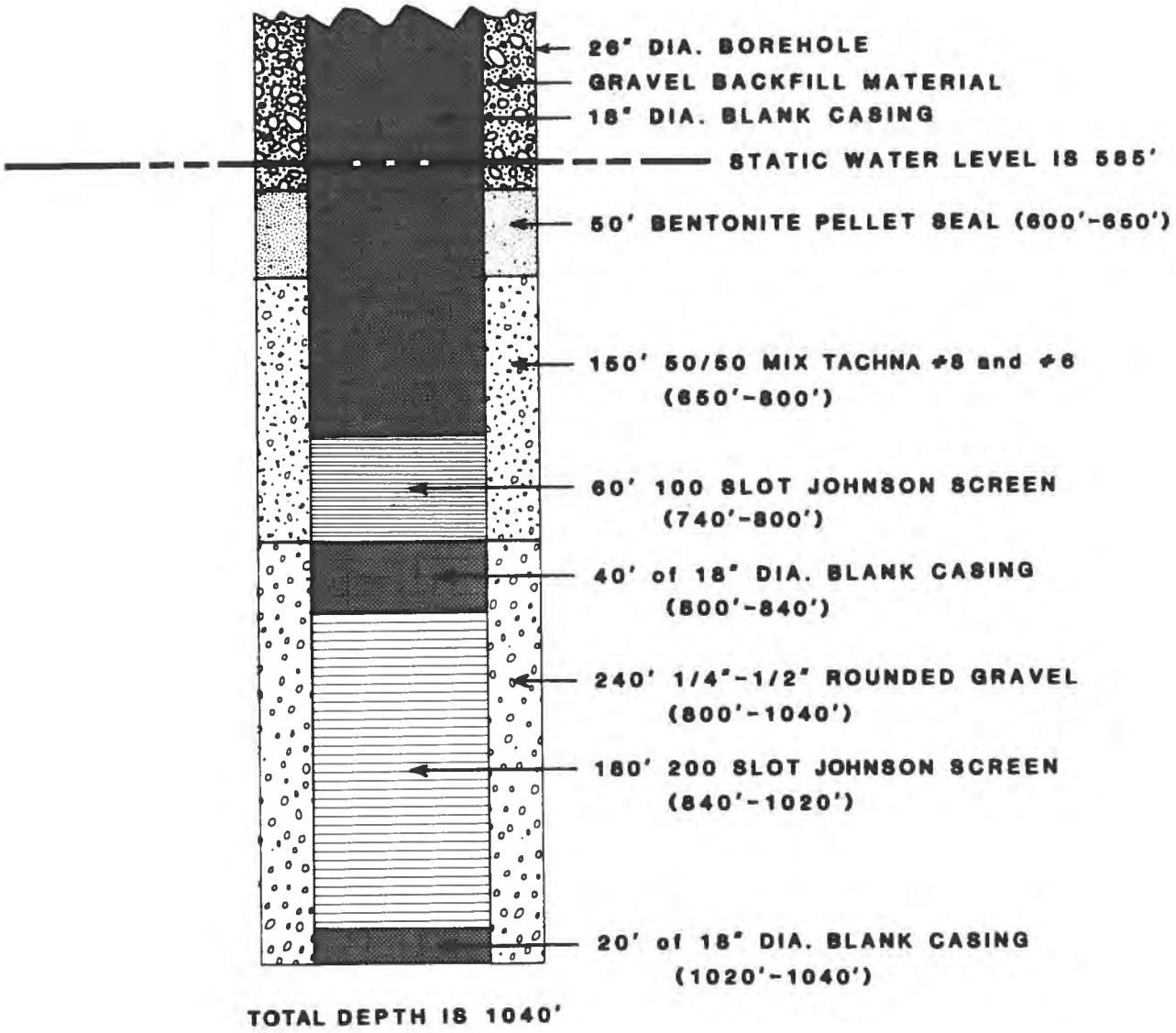


FIGURE 3:
KINGMAN CITY WELL NO. 6

CELLA BARR ASSOCIATES



SCALE: 1"=100'

FIGURE 4:

CITY WELL NO. 6 PLACEMENT OF ARTIFICIAL FILTER PACK AND WELL SCREEN

CELLA BARR ASSOCIATES

4.0 STEP TEST

Gilbert Pump and Equipment provided all equipment necessary to test pump City Well No. 6. The test pump consisted of an overhead line shaft turbine pump powered by a Caterpillar 3412-TA diesel engine capable of delivering 2,100 RPM at 700 HP. Two air lines provided points to measure water levels; one for reading pressure and the other for electric soundings. Discharge rates were recorded from readings near the 10-inch orifice plate (USBR, 1984 and 1977). Discharge for three steps ran from 2,000 to 2,435, ending at 2,850 gpm.

The step test began on July 11, 1991 at 1526. For performance calculations, the first step of 2,000 gpm started at 1625 and ended at 1830. Because of the late start time, the pump was shut down until morning. On July 12, 1991, step testing commenced again having discharge rates of 2,435 and 2,850 gpm. At the close of the test, concern was raised regarding the validity of measured water levels in the pumping well. The air line readings appeared high, and the electric sounder could not duplicate the pumping level measurements. Since the observation well would be used to monitor water levels for the constant rate test, it was decided to continue with the aquifer testing program.

At this point it would be helpful to mention the problems encountered while trying to measure water levels in the pumping well. In the process of the constant rate test, there were problems with the air gauges. Most of the measurements could not be duplicated. Also, the air line for the electric sounder would not allow passage of the line cord to monitor pumping levels at the higher discharge rates. Though a sounding tube was installed during well construction, it became clogged at some time when the Driller developed the well. Attempts to clear the tube proved unsuccessful. In addition, during the constant rate test three sounding wires got stuck in various accesses to the well. When the decision was made to conduct a supplemental step test, after development by pump surging, a PVC line was hung free and allowed reliable electric sounder readings.

The supplemental step test started at 0750 on July 31, 1991 having discharges of 1,200, 1,810 and 2,232 gpm. It should be noted that because of excessive wear on the pump bowls during development, the last step of the test could not go beyond 2,232 gpm at full throttle. The data plot for each successive step is shown on Figure 5. Specific capacity vs. discharge is illustrated on Figure 6. Appendix IV lists water level measurements collected during the test from the pumping well.

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KEUFFEL & ESSER CO. MADE IN U.S.A.
46 5490

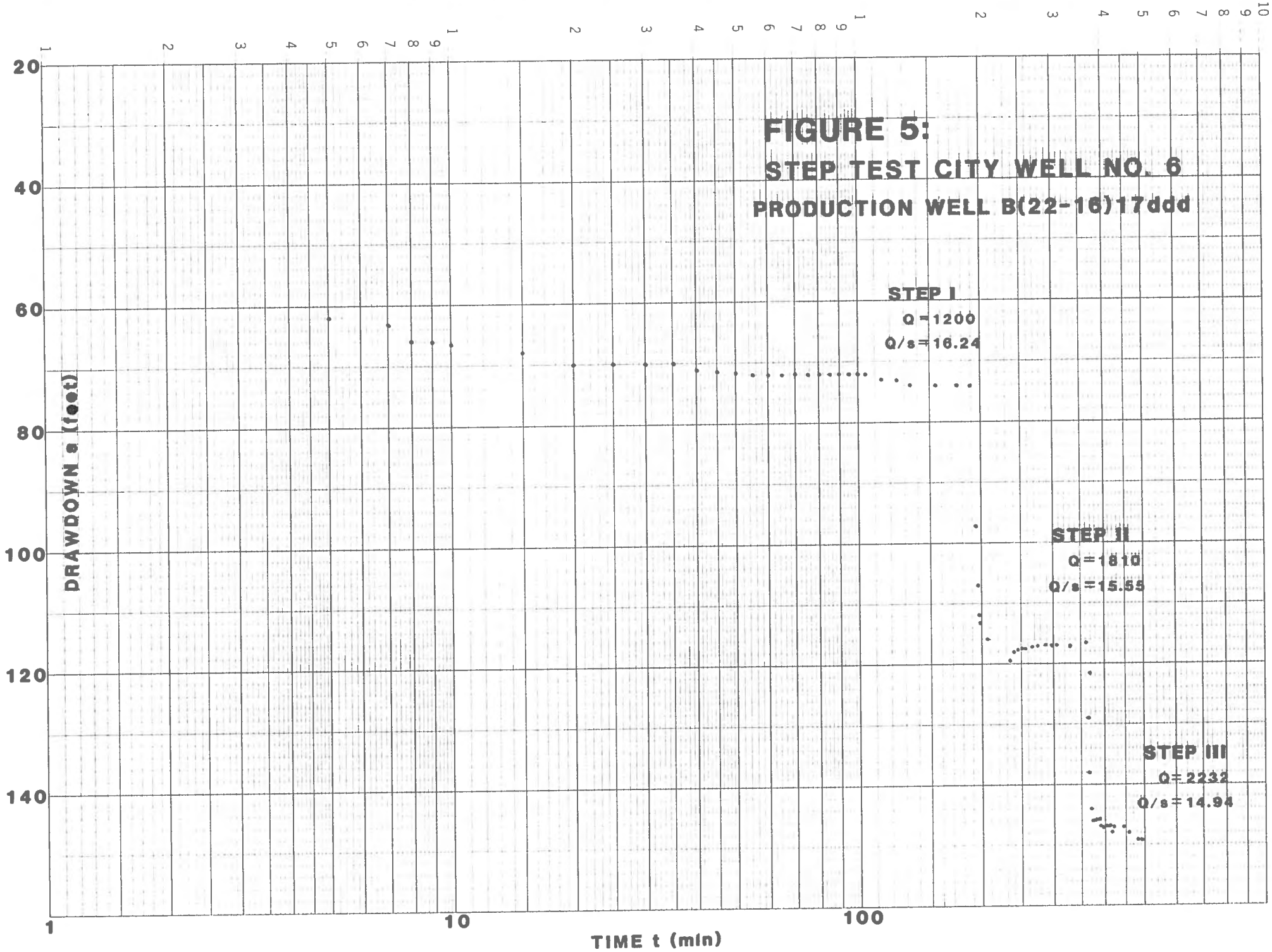

FIGURE 5:
STEP TEST CITY WELL NO. 6
PRODUCTION WELL B(22-16)17ddd

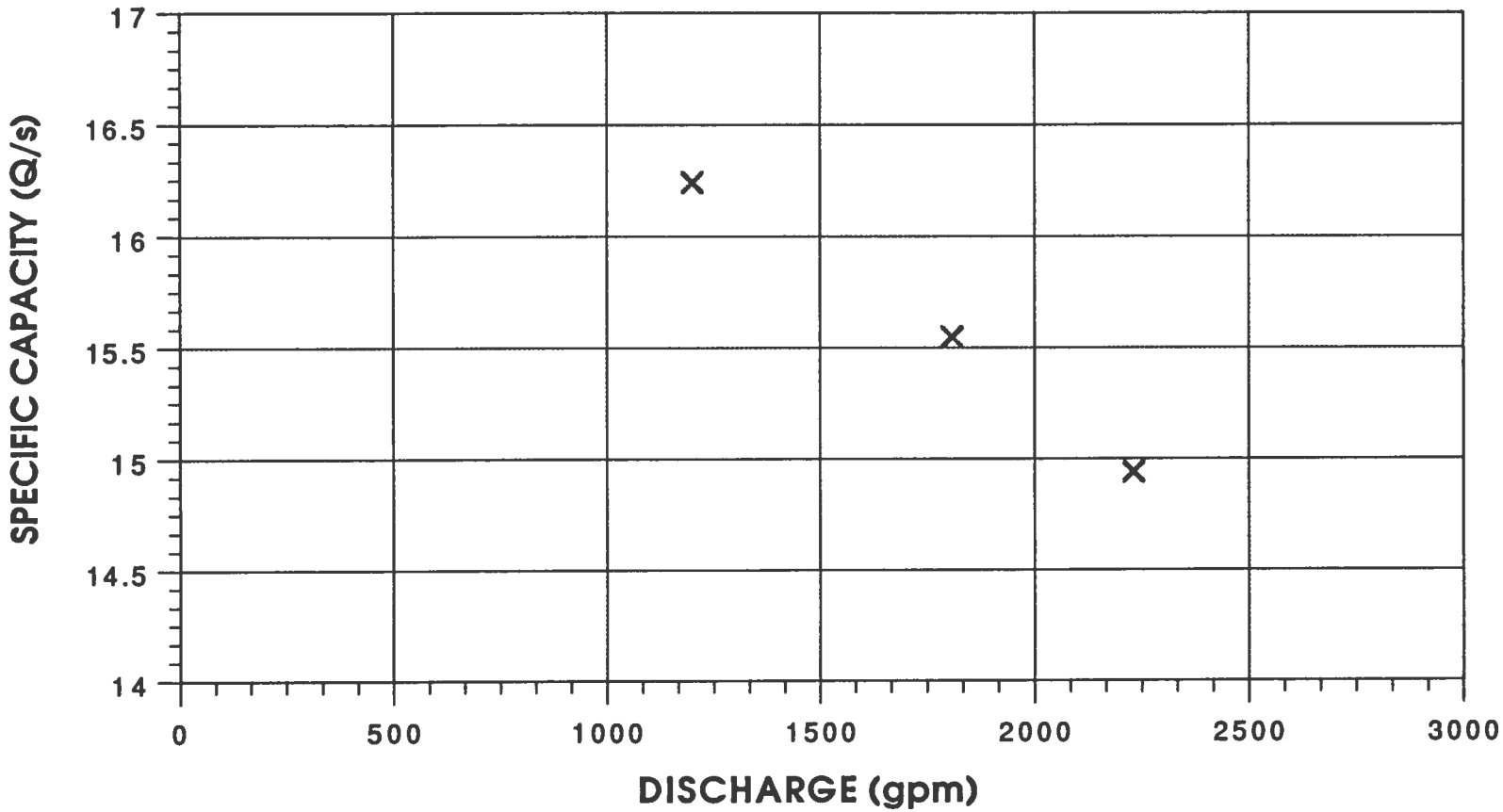

FIGURE 6:
SPECIFIC CAPACITY vs. DISCHARGE

2-41503-02-0302/LPO00554.MAC/Kingman Well

5.0 CONSTANT RATE TEST

The aquifer test at City Well No. 6 commenced at 1020 on July 15, 1991. An observation well, 105 feet west of Well No. 6, provided a point from which to monitor water levels during the course of the test. The pumping rate over the 49 hour time frame averaged 2,713 gallons per minute (gpm) as monitored from an orifice plate. Figures included in this analysis are data plots reflecting changes in the observation well. On the graphs, drawdown "s" is along the scale of the ordinate and time "t" along the scale of the abscissa. The actual field data is listed in Appendix V.

During the initial 60 minutes of the test, water levels in the observation well fell rapidly, then gradually leveled off for the remainder of the test. From this, two things could be postulated. First, it is possible that the host aquifer is capable of delivering more water to the well than could be discharged with the test pump. Secondly, and probably more likely, the effects of delayed yield from storage, or gravity response had not taken place. For the purpose of this analysis the later is assumed.

In selecting an appropriate method of analysis, CBA viewed the data in light of similar testing, performed in two other Arizona alluvial filled basins. In these tests, drawdown in attendant observation wells fell rapidly at the start of testing, leveled off for approximately six days, then continued to drop until the tests were completed several months later. From these tests it was noticed that aquifer transmissivity remained relatively the same during the early and late time segments. The storage coefficient, however, changed from artisan or confined conditions early in the test to unconfined water table conditions after the effects of delayed yield from storage had taken place. With this in mind, data collected at the Kingman test site was analyzed using early time data by mathematical techniques devised by Jacob-Cooper, Chow, and Theis.

5.1 Jacob-Cooper Analysis

The Jacob-Cooper approximation method is a straight line graphical approach directly applicable to confined conditions and is suitable for use, with limitations, in unconfined aquifers. These limitations are analogous to the percentage of drawdown in observation wells as related to the total aquifer saturated thickness. If the drawdown is less than 25 percent of the saturated thickness, the transient flow equations may be used. Furthermore, if the percentage is less than 10, little error is introduced (USBR, 1977). The total drawdown measured in observation well B(22-16)17ddd over the a 49 hour pumping period amounted to 11.07 feet. Based upon a penetrated well depth of 1200 feet and depth to water of 585 feet, the saturated thickness is about 615 feet. This represents less than 2 percent of the total saturated thickness of the aquifer. For this reason the Jacob-Cooper is one method that has been selected to determine the aquifer transmissivity and storage based upon data collected during the aquifer test. Using the semilogarithmic data plot (Figure 7), the change in drawdown is determined over one log cycle and amounts to about 7.2 feet.

Transmissivity can be calculated by applying the Jacob-Cooper equation that takes the form:

$$T = 2.303\ Q/4\pi\Delta s$$

Where: T = Transmissivity, gpd/ft
Q = Discharge, gpm
Δs = Drawdown over one log cycle, ft

The storage coefficient is determined by the Jacob-Cooper method from the following equation:

$$S = 2.25Tt_o/r^2$$

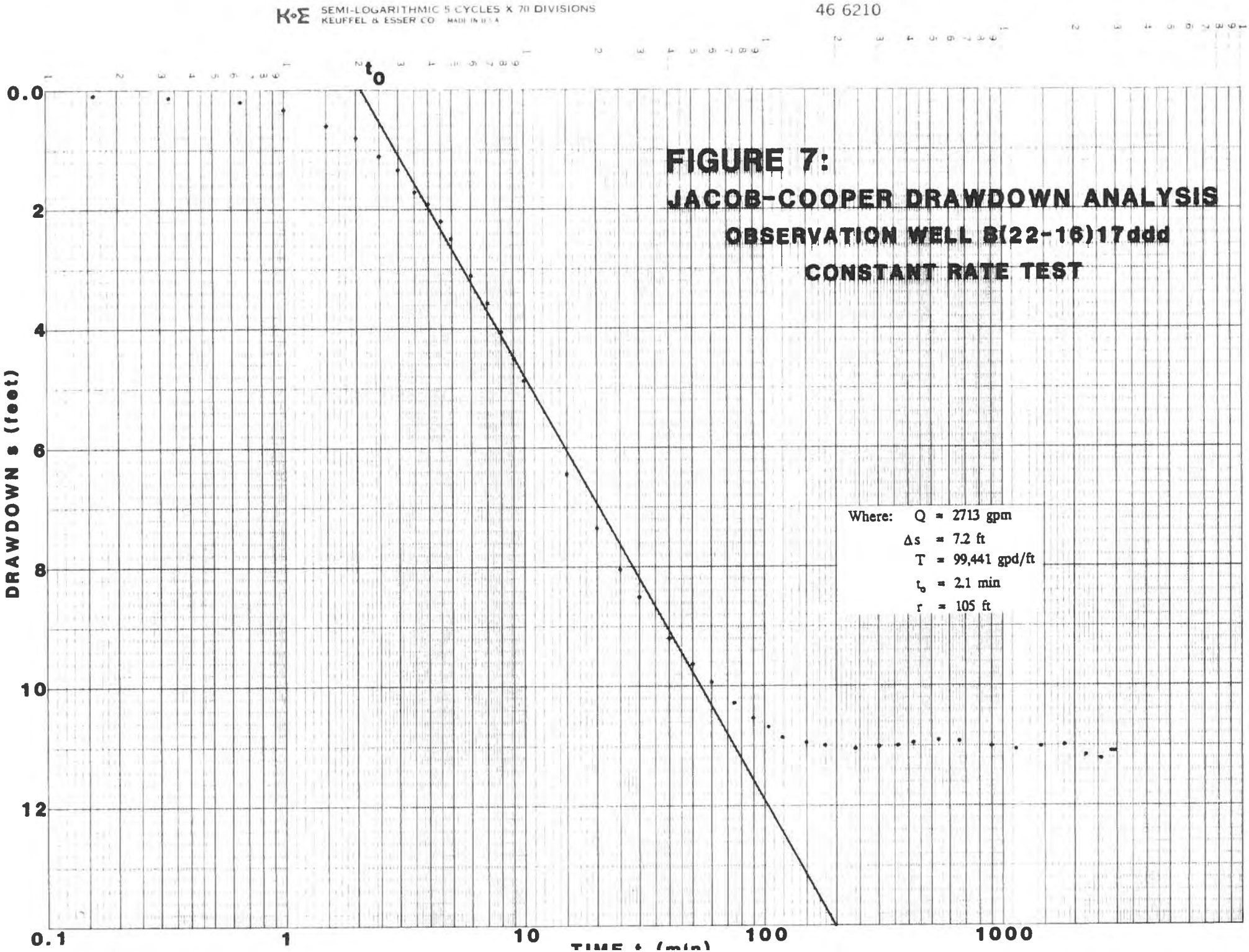
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FIGURE 7:
JACOB-COOPER DRAWDOWN ANALYSIS
OBSERVATION WELL S(22-16)17ddd
CONSTANT RATE TEST
Where: Q = 2713 gpm
Δs = 7.2 ft
T = 99,441 gpd/ft
t0 = 2.1 min
r = 105 ft
t0
DRAWDOWN s (feet)
0.0
2
4
6
8
10
12
0.1
1
10
100
1000
TIME t (min)

Where: S = Storage coefficient

T = Transmissivity, gpd/ft

t_o = Time, min

r = Radius, ft

Substituting information into the Jacob-Cooper equation, transmissivity is calculated as shown below:

Where: Q = 2713 gpm

Δs = 7.2 ft

Transmissivity (T)

$$T = 2.303 \times Q/4\pi\Delta s$$
$$= 2.303 \times 2713 \text{ gpm} \times 1440 \text{ min}/4 \times 3.14 \times 7.2 \text{ ft}$$
$$= \underline{\underline{99{,}441 \text{ gpd/ft}}}$$

The storage coefficient is then calculated by:

Where: T = 99,441 gpd/ft

t_o = 2.1 min

r = 105 ft

Storage (S)

$$S = 2.25\ Tt_o/r^2$$
$$= 2.25 \times 99{,}441 \text{ gpd/ft } (2.1 \text{ min}/1440 \text{ min})/7.48 \text{ gal } (105 \text{ ft})^2$$
$$= \underline{\underline{3.96 \times 10^{-3}}}$$

5.2 Chow's Method of Analysis

The Chow technique offers another straight-line solution that avoids type curve fitting and is not restricted in its application as some other graphical methods (Bouwer, 1978, Kruseman, 1976, and Todd, 1976). As with the Jacob-Cooper approximation analysis, the data plot on Figure 8 is used to evaluate aquifer parameters. Once the slope of the of the time-drawdown plot is established, an arbitrary point is selected with the "s" and

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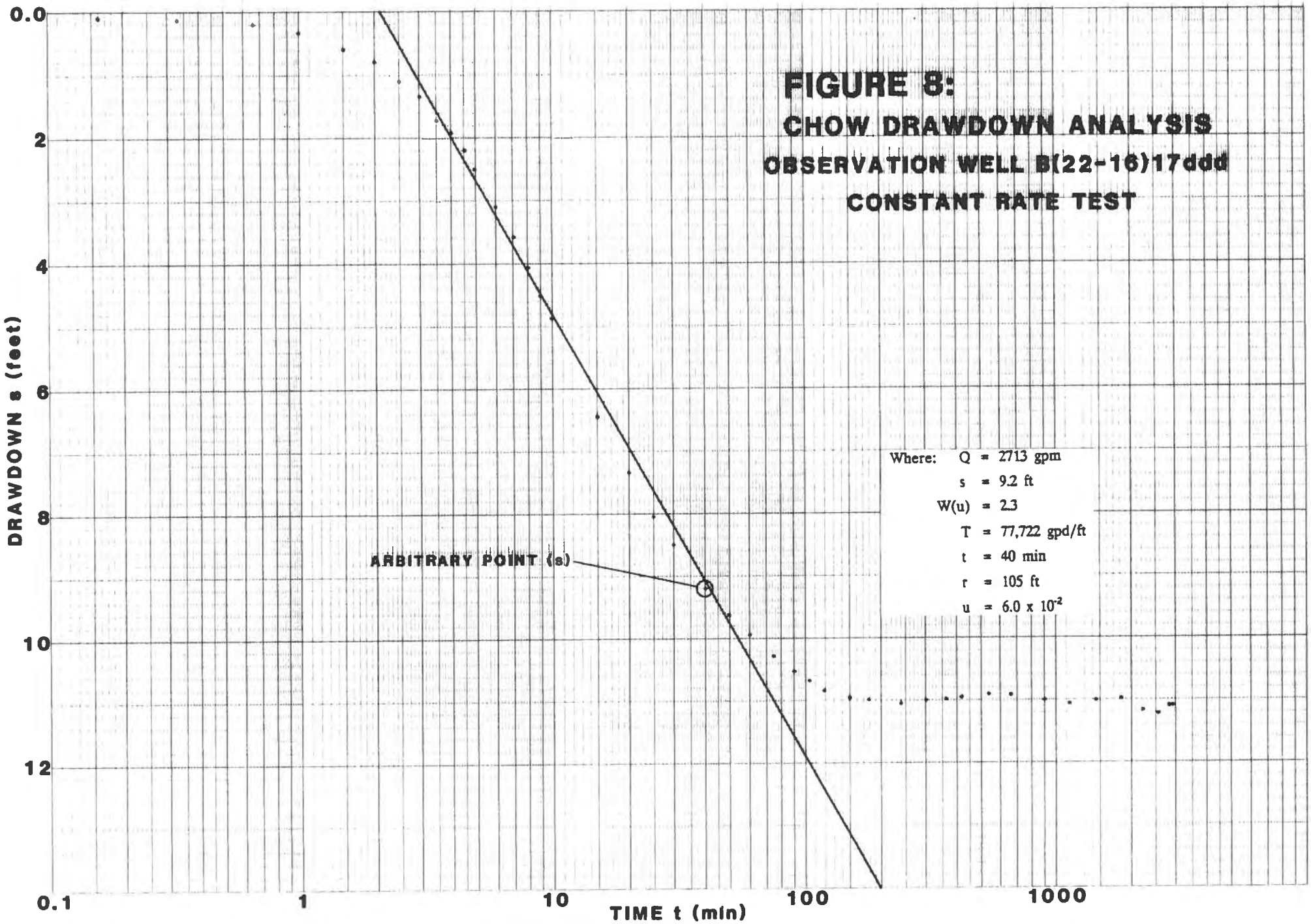

FIGURE 8:
CHOW DRAWDOWN ANALYSIS
OBSERVATION WELL B(22-16)17ddd
CONSTANT RATE TEST

"t" coordinates noted. Next, a line is drawn tangent with the data at the chosen point and the change in drawdown (Δs) over one log cycle is noted. Using this information, the function F(u) is computed from:

$$F(u) = s/\Delta s$$

Where: F(u) = Function of $s/\Delta s$
s = Arbitrary point, ft.
Δs = Drawdown over one log cycle, ft

The arbitrary point along the drawdown curve has been selected at 9.2 feet. The change in drawdown over one log cycle amounted to 7.2 feet. F(u) can now be calculated as shown below:

$$\begin{aligned} F(u) &= s/\Delta s \\ &= 9.2/7.2 \\ &= 1.28 \end{aligned}$$

Because the value of F(u) is greater than 2.0, W(u) is calculated from the formula:

$$\begin{aligned} W(u) &= 2.3 \times F(u) \\ &= 2.3 \times 2.3 \\ &= 5.29 \end{aligned}$$

Since F(u) is equal to 1.28, a nomogram is used to relate this value to W(u) and u. From the nomogram, W(u) is 2.3 and the corresponding value of u is 6.0×10^{-2} as determined by comparing the functions (Bouwer, 1978). With this information, transmissivity and storage can be determined by use of the Theis equation. Transmissivity is calculated by:

$$T = Q/4\pi\ s \times W(u)$$

Where: T = Transmissivity, gpd/ft
Q = Discharge, gpm
s = Drawdown, ft
$W(u)$ = Well function of u, dimensionless

Storage is calculated from the Theis equation by:

$$S = 4Tt/r^2 \times u$$

Where: S = Storage Coefficient
T = Transmissivity, gpd/ft
t = Time, min
r = Radius, ft
u = Lower limit of integration, dimensionless

Substituting the information into the Theis equation transmissivity is calculated as shown below:

Where: Q = 2713 gpm
s = 9.2 ft
$W(u)$ = 2.3

Transmissivity (T)

$$T = Q/4\pi s \times W(u)$$
$$= (2713 \text{ gpm} \times 1440 \text{ min}/4 \times 3.14 \times 9.2 \text{ ft}) \times 2.3$$
$$= \underline{\underline{77{,}722 \text{ gpd/ft}}}$$

The storage coefficient is calculated below:

Where: T = 77,722 gpd/ft
t = 40 min
r = 105 ft
u = 6.0×10^{-2}

Storage (S)

$$S = (4Tt/r^2) \times u$$
$$= [4 \times 77{,}722 \text{ gpd/ft } (40 \text{ min}/1440 \text{ min})/7.48 \text{ gal } (105 \text{ ft})^2] \times 6.0 \times 10^{-2}$$
$$= \underline{\underline{6.28 \times 10^{-3}}}$$

5.3 Theis Recovery Method

At the close of the test, recovery measurements were initiated immediately and continued at the test well for a total of 4,180 minutes. Recovery measurements are listed at the end of Appendix V.

Recovery analysis of the constant rate test was accomplished by using a corollary to the nonequilibrium formula devised by Theis for the recovery of a pumped well (Todd, 1980). In theory, if a well is allowed to discharge for a known period of time, and then shut down, the drawdown observed thereafter is the same as if the discharge had been continued and a recharge well with the same flow were superimposed on the discharging well at the instant the discharging well is shut down. From this principle, the recovery equation is written in the form:

$$T = 2.303 \quad Q/4\pi s \; [\log (t/t')]$$

Where:
- T = Transmissivity, in gpd/ft
- Q = Discharge, in gpd
- s = Change in water level, in ft
- t = Time since pumping started, in min.
- t' = Time since pumping ceased, in min.

In order to apply the Theis recovery formula, a plot of the residual drawdown must be made. The residual drawdown at any time during the recovery period is defined as the difference between the observed water level and the static water level prior to the aquifer test. Recovery measurements are then plotted on semi-log paper with residual drawdown, s, along the arithmetic scale of the ordinate and the ratio "t/t'" on the logarithmic scale of the abscissa (Figure 9). The relationship between t and t' spans the entire aquifer test from the time pumping started up to and including the time since

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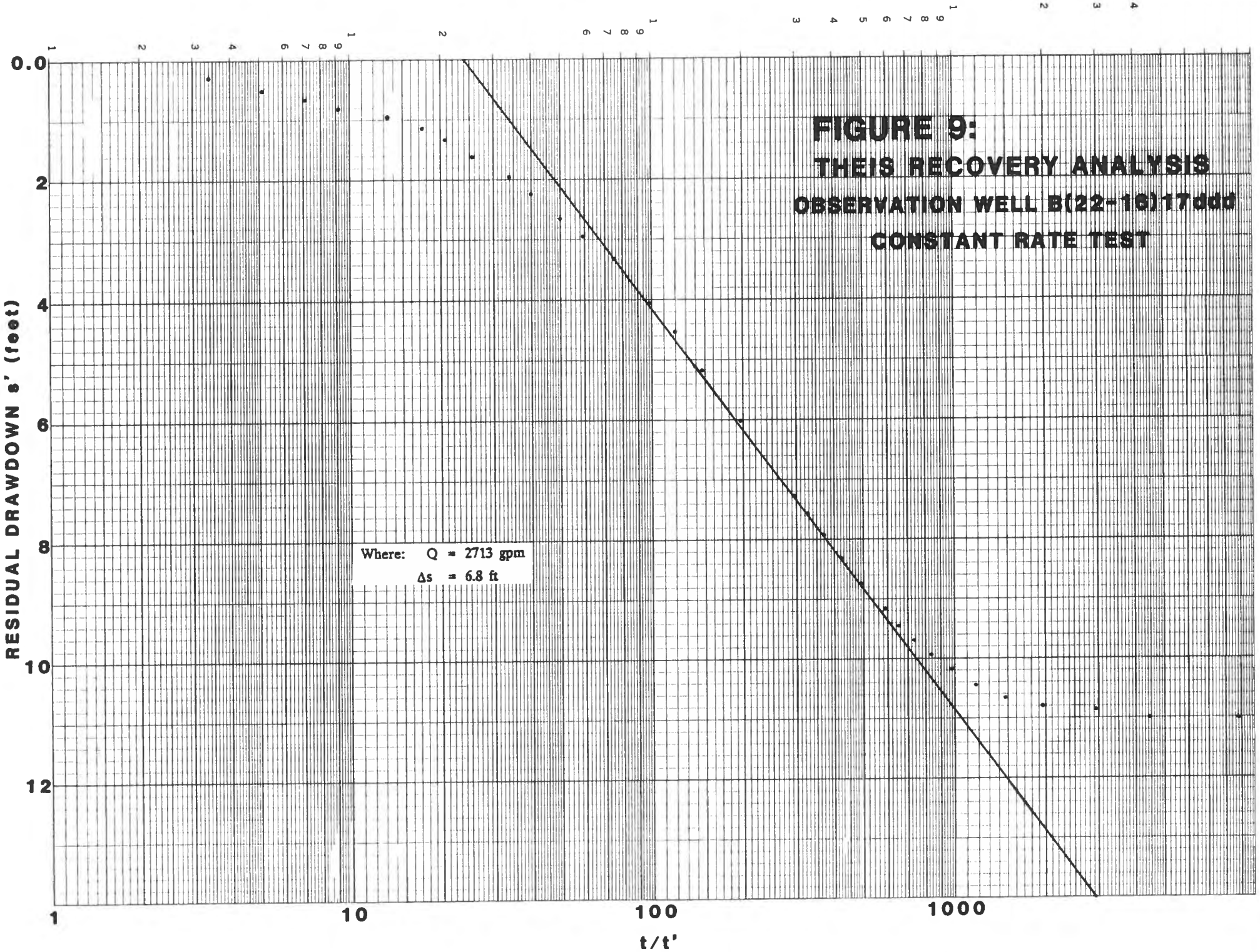

FIGURE 9:
THEIS RECOVERY ANALYSIS
OBSERVATION WELL B(22-16)17ddd
CONSTANT RATE TEST

pumping ceased. A line of best fit is then drawn through the later data points, extrapolated over one log cycle, to determine the drawdown s from t/t' values. Once this value is established it is possible to calculate the transmissivity from the reduced form of the Theis equation:

$$T = 2.303 \quad Q/4\pi\Delta s$$

Substituting the data into the equation we find:

Where: $Q = 2713$ gpm

$\Delta s = 6.8$ ft

Transmissivity (T)

$$T = 2.303 \times Q/4\pi\Delta s$$
$$= 2.303 \times 2713 \text{ gpm} \times 1440 \text{ min}/4 \times 3.14 \times 6.8 \text{ ft}$$
$$= \underline{\underline{105{,}290 \text{ gpd/ft}}}$$

5.4 Jacob Recovery Analysis

When measurements are recorded in an observation well, the Jacob recovery analysis allows for calculation of transmissive and storage parameters. In order to use this method, a time-recovery data plot must be made on semi-log paper as shown on Figure 10. It should be noted, however, that the Jacob analysis differs from the Theis technique in that t'_o, as needed for storage, cannot be determined from the unitless ratio t/t' on Figure 9 (Driscoll, 1986). For this reason, Figure 10 provides the necessary data arrangement and units required for characterization of the aquifer.

Using the later portion of the data plot, a line of best fit is drawn through the points and projected to the x-axis at the top of the graph. From this, t'_o is 2.75 minutes and the change in recovery over one log cycle is 6.8 feet. Transmissivity and storage can then be calculated by the same equation used for the Jacob-Cooper drawdown analysis.

Where: $Q = 2713$ gpm

$\Delta s = 6.8$ ft

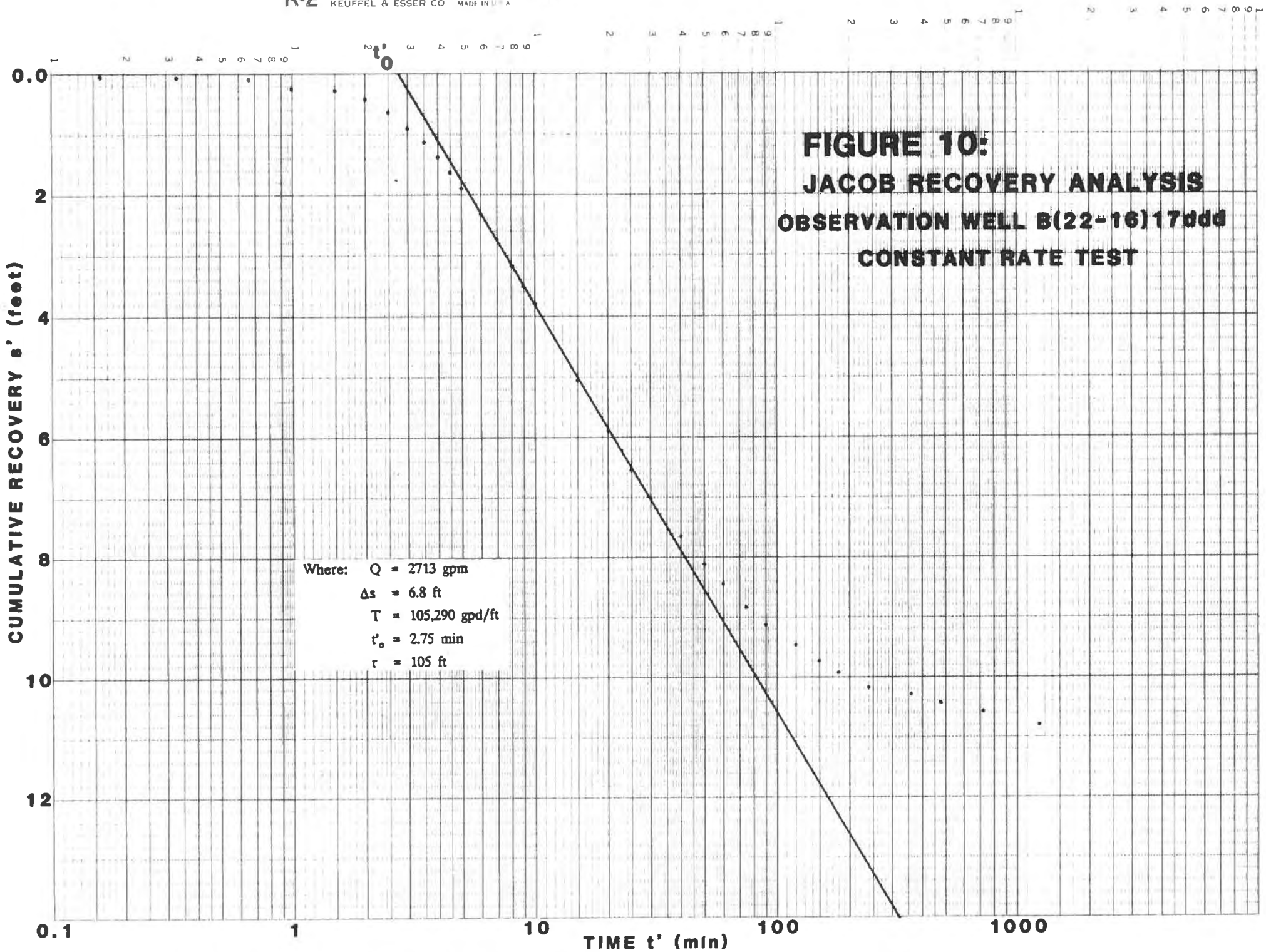
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FIGURE 10:
JACOB RECOVERY ANALYSIS
OBSERVATION WELL B(22-16)17ddd
CONSTANT RATE TEST
Where: Q = 2713 gpm
Δs = 6.8 ft
T = 105,290 gpd/ft
t'o = 2.75 min
r = 105 ft
t'o
CUMULATIVE RECOVERY s' (feet)
0.0
2
4
6
8
10
12
0.1
1
10
100
1000
TIME t' (min)

Transmissivity (T)

$$T = 2.303 \times Q/4\pi\Delta s$$
$$= 2.303 \times 2713 \text{ gpm} \times 1440 \text{ min}/4 \times 3.14 \times 6.8 \text{ ft}$$
$$= \underline{105{,}290 \text{ gpd/ft}}$$

Substituting information into the Jacob-Cooper equation, storage is calculated at:

Where: $T = 105{,}290$ gpd/ft

$t'_o = 2.75$ min

$r = 105$ ft

Storage (S)

$$S = 2.25\ Tt_o/r^2$$
$$= 2.25 \times 105{,}290 \text{ gpd/ft } (2.75 \text{ min}/1440 \text{ min})/7.48 \text{ gal } (105 \text{ ft})^2$$
$$= \underline{5.49 \times 10^{-3}}$$

5.5 Summary of Analysis

The aquifer test at City Well No. 6 consisted of a pumping period lasting 49 hours, and recovery time of almost 21 hours. Using a simplified graphic straight-line analysis and early time data, transmissivity averaged 91,500 gpd/ft; and, disregarding high and low outliers, storage is in the artesian range at about 5.50×10^{-3}. The results are listed below.

Method of Analysis	Condition	Transmissivity	Storage
Jacob-Cooper	Drawdown	77,722	3.96×10^{-3}
Chow	Drawdown	77,722	6.28×10^{-3}
Theis	Recovery (t/t')	105,290	Not applicable
Jacob	Recovery	105,290	5.49×10^{-3}

In 1990, CBA prepared a report for the City of Kingman entitled "Geohydrologic Study for the Kingman Red Lake Sub-Area of the Hualapai Basin. In this study, limited aquifer test data from the USGS showed the following transmissive properties for Area I (Area I encompassed the City of Kingman) at the listed well sites:

Well Location	Discharge (gpm)	Transmissivity gpd/ft
B(22-16)26bac	660	44,000
B(23-13)20ccd	580	22,000

In comparison, testing at City Well No. 6 showed transmissivity averaging about 91,500 gpd/ft. When combining the earlier USGS results, testing at City Well No. 6 shows almost a three-fold increase. This could be due to any number of factors including; testing location, availability of observation wells, or the length of the test to name a few.

Storage properties were noted by other authors to lay in the artesian range (10^{-3} to 10^{-5}). This agrees with testing at City Well No. 6 in lieu of extended aquifer testing where the effects of delayed yield from storage or gravity response begin to take effect.

6.0 WELL DEVELOPMENT

With construction completed at City Well No. 6, development took place, as monitored by CBA, in accordance with Item 5.2 of the well specifications as noted below (CBA, October, 1990):

> Development shall be by alternating high velocity, horizontal jetting and airlift pumping. A booster compressor with a capacity of not less than 600 cfm at 250 psi shall be available for the air lift operation.
>
> The minimum exit velocity of the jetting fluid at the jet nozzle shall be 150 ft./sec. The tool shall be rotated at a speed less than one rpm. It shall be positioned at one level for not less than two minutes and then shall be moved to the next level approximately 6 inches vertically from the preceding jetting level. After jetting approximately a 30 foot interval, the same interval shall be airlifted. Alternate jetting and pumping shall proceed from the bottom of the screen to the top. All water used for jetting shall be potable water from an approved source and shall contain less than 1 ppm suspended solids.

In order to meet the required 150 ft./sec. jetting velocity, the Driller fabricated a tool approved by the City Engineer and CBA. Actual well development began on June 18, 1991 and ended June 26, 1991 with some down-time between these dates. For development, the Driller used source water made available from a two inch metered City waterline delivering approximately 120 gpm to the drilling rig. Clear water was jetted, commencing at the lower portion of the well, and allowed to rise to the surface. Attempts at air lifting proved unsuccessful in reaches of the well below 800 feet. Because of this the City Engineer and CBA approved the use of foam to assist with sediment removal. It is possible if more cubic feet per minute (cfm) were employed, the well could of been air lifted without using foam. Even though an additional compressor was on site, to boost the cfm from 900 to 1,900, the costs to deliver the additional air by the Driller would have been prohibitive to the City. Therefore, development was completed for the contracted time. After this the Driller moved his equipment off of the well. Other details regarding development by the Driller are supplied from CBA notes in Appendix VI.

In the process of aquifer testing, low specific capacity values and water quality results led to questions regarding full development of the well. Because of this, the well was surged with the test pump over several days with the addition of Hexametaphosphate to breakdown drilling fluids in the formation. In the course of surging and pumping the well clear, at varying discharge rates, substantial amounts of drilling fluid were removed. Specific capacity increased slightly along with water quality.

7.0 WATER QUALITY

Prior to implementation of the City's drilling program, there was some concern over chromium levels in the underlaying aquifer. For many years the City has been faced with a natural source chromium problem in their water with levels in some wells near or above the current limit of 0.05 mg/l. Approximately 1.5 miles west of the project site lies Long Mountain #4 where total chromium has been relatively low at 0.024 mg/l (3/30/90). However, one mile east of the site, Long Mountain #6 has been removed from service because total chromium levels reached 0.061 mg/l (4/25/84). With this in mind, the drilling program was approached on the basis of favorable geologic conditions and acceptable water quality. While constructing the observation well and City Well No. 6, several samples were collected and checked by two certified state labs. At one point in the sampling program the testing labs were checked by a control lab using a known chromium standard. Both labs passed the test. The sampling program for both wells are given below.

7.1 Observation Well Sampling

While constructing the observation well, water samples were collected at three progressively deeper intervals air lifting water to the surface. Because drilling was in progress, the samples contained a considerable amount of sediment. Test results for total chromium ranged from 0.028 to 0.74 mg/l. Based upon this, additional samples were collected while the observation well was being cleaned and developed by air lifting. Again, drilling fluids and formation sediments could not be separated in the field for a clean set of samples. Lab results showed total chromium levels from 0.057 to 0.26 mg/l. It should be mentioned that at the 1,000 foot level, the total chromium value for an unfiltered sample was 0.260 mg/l. When filtered, this value dropped to 0.150 mg/l. Because of this a round of stratigraphic samples were collected and checked for total chromium and dissolved chromium. Since the dissolved chromium levels were substantially lower, it was decided to drill the production well at the same project site. It was possible that sediment in the water samples was producing much higher total chromium levels than were actually represented in this portion of the aquifer. A complete list of testing dates and results are given in Appendix VII.

7.2 City Well No. 6

During the first step test, CBA collected water samples for primary and secondary drinking water analysis at discharge rates of 2,000, 2,435 and 2,850 gpm. Prior to sampling, pumping levels stabilized at each rate increase and water was clear and free from sediment. Lab results showed a commensurate rise in total chromium with each increase in pumping rate. Values ranged from 0.071 to 0.092 mg/l.

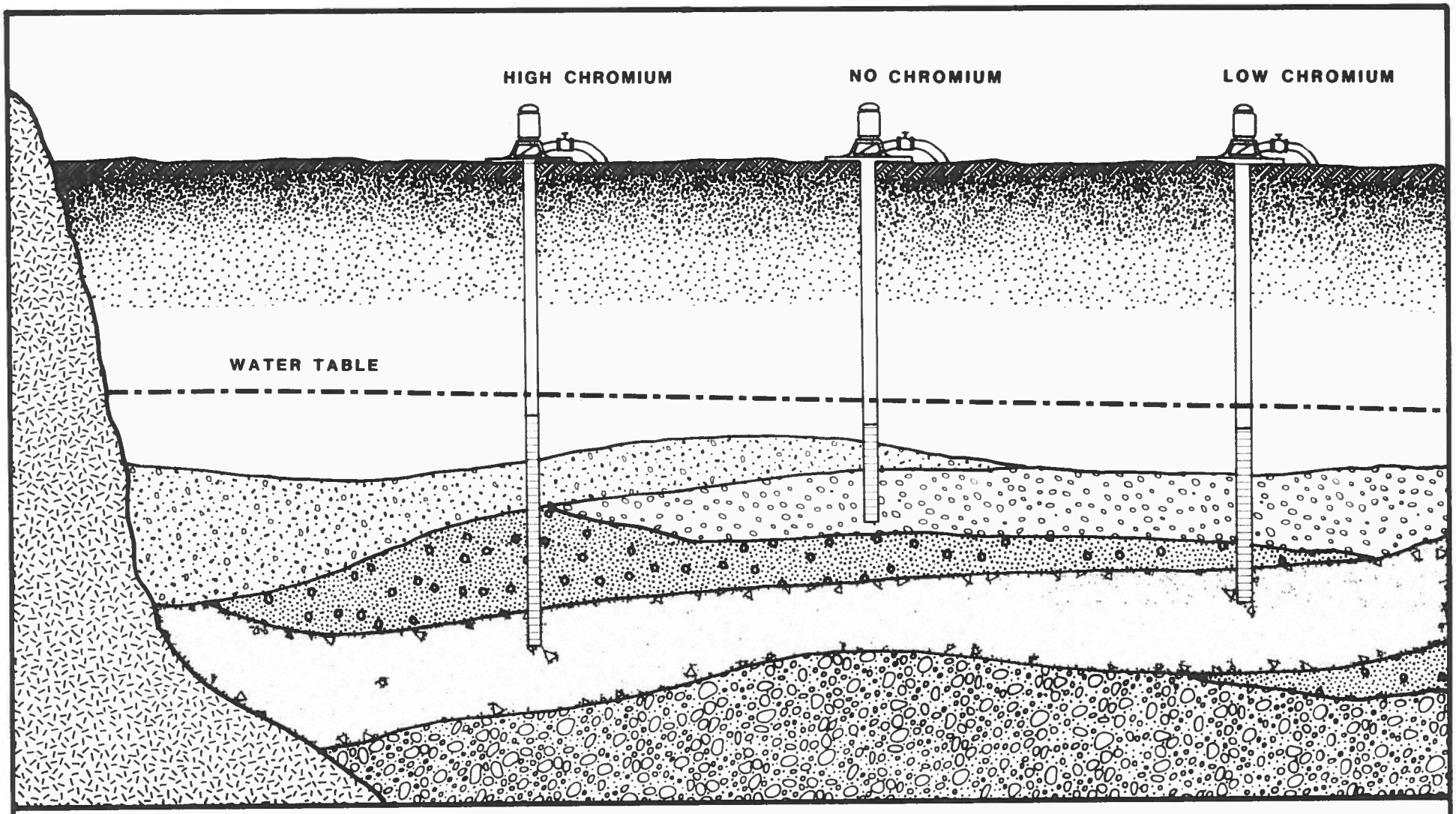
After the step test, additional water samples were gathered in the process of the constant rate test. Primary and secondary samples were taken about five hours into the test and radio chemistry, EPA method 502.2, 608, 615 and turbidity analysis samples were collected at 49 hours, prior to shut-down of the pump. The pumping rate was maintained at 2,713 gpm, and total chromium amounted to 0.110 mg/l.

The well was surged and pumped for several days and then pumped clear at 2,461 gpm. Total chromium testing at this time showed 0.130 mg/l.

A supplemental step test was conducted and samples collected at 1,200, 1,810 and 2,232 gpm. Total chromium values were 0.092, 0.100, and 0.099, respectively. The analytical testing results and field measurements can be found in Appendix VIII.

7.3 Summary

From data collected during the City Well No. 6 drilling program, it is evident that elevated levels of chromium found in this portion of the Hualapai Basin originate from natural geologic sources. Chromium levels are dependent upon location and subsurface lithology where one well may receive water from high source chromium sediments, while another well taps sediments with significantly lower values, even though both wells have similar perforated intervals. Figure 11 illustrates this concept. The problem, however, is identifying intervals where undesirable water is coming from. When the source area is detected, there are various methods of sealing this portion of the well off, allowing higher quality water to be received. Equipment to locate these intervals is in the process of being developed.



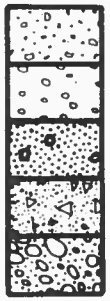


FIGURE 11:
CONCEPTUAL AQUIFER CROSS-SECTION SHOWING SEDIMENTARY SEQUENCE AND SOURCE AREAS FOR CHROMIUM

CELLA BARR ASSOCIATES

8.0 RECOMMENDATIONS

After reviewing the geologic and water quality information collected during the construction of City Well No. 6, CBA offers the following recommendations for future water development at this site.

1. Though chromium levels at this site were higher than expected, they are not high enough to require total abandonment of the well. Since total chromium levels appear to be less concentrated at lower discharge rates, the well could be equipped with a pump in the range of 1,500 to 2,000 gpm. This should provide water with chromium levels low enough to make blending a feasible option. In addition, the results of the pumping tests and well development indicate that, as further development occurs, chromium levels may drop. In any event, by July, 1992, the U.S. Environmental Protection Agency intends to adopt a higher standard for total chromium in drinking water (0.1 mg/l); and, the Arizona Department of Environmental Quality (ADEQ) will follow their lead (Ohnmeiss, 1991). We believe that City Well No. 6 could meet this standard without blending. Given the time necessary to specify, select, order, receive and install a new pump in the system, the well would probably not be ready until the spring anyway and would not need to be brought on line until it became necessary to meet peak summer demands.

2. To speed the adoption process for these new standards, the City should contact Dale Ohnmeiss at ADEQ and offer to assist with the public hearing program. This will probably be implemented sometime after the first of the year.

3. Since sediment samples are available from construction of the observation well, it would be advantageous to the City to have the samples analyzed by a testing lab. The interval targeted for analysis should cover 760 to 1020 feet. This corresponds to the water production portion of City Well No. 6. The total number of samples would be 26. After contact with Laboratory Consultants, of Tempe and a few other reliable sources, the following analysis plan is offered.

a. First, analyze all sediment samples for chromium by EPA method 3050. This method will determine all hexavalent and most trivalent chromium present in the sediment. Digestion by EPA method 3050 and analysis of digest for chromium would be about $32.00 per sample.

b. Second, analyze samples identified by EPA method 3050 above that contain "high" chromium for extractable chromium. This method would involve equilibrating 1 part sediment with 5 parts deionized water for 5 days at room temperature. Such a test would approximate aquifer conditions and provide an estimate of the relative amount of chromium that will dissolve into the groundwater. Select "low" chromium samples could be analyzed by this method for relative comparison purposes. This test is not EPA approved but should indicate zones of chromium contamination in the well. Aqueous extraction and analysis for total, hexavalent and trivalent chromium would amount to $42.00 per sample.

c. If it becomes necessary to determine total chromium in sediments a more rigorous digestion involving nitric and perchloric acid would be utilized. As with the extractable chromium test, this method is not EPA approved. Aqueous extraction and analysis for total chromium is $32.00 per sample.

4. As a follow-up to point Number 3, this well could still provide valuable insight into the local chromium problem. Since it is located in an area where chromium levels have historically been lower and an observation well is in place, it's relationship to these other wells should be explored along with a more detailed assessment of how chromium levels change, with time, during pumping.

5. Finally, if the decision is made to abandon this well, a new well site could be located in a chromium free area. This well, however, would probably be some distance from the existing service lines making interconnection with the existing system difficult and costly.

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APPENDIX E

Engineer's Opinion of Probable Cost

SUNRISE ENGINEERING, INC.
2152 S. Vineyard, Suite 123
Mesa, Arizona 85210
Tel: (480) 768-8600 Fax: (480) 768-8609

Engineer's Opinion of Probable Cost *

Project: Reclaimed Water Re-Use Study
Option 1 - Onsite Groundwater Injection
Owner: City of Kingman
Prepared By: JV

No.	Item Description - Construction	QTY	Unit	Unit Price	Total
	New 18-inch Diameter Injection Well Conceptual Design				
1	Site Work (Includes all clearing and grubbing, grading and backfilling)	1	LS	$8,000	$8,000
2	10" C900 PVC Waterline (includes waterline, valves, bends, tees, appurtenances, trenching and backfill)	40	LF	$150	$6,000
3	New 12-inch Injection Well (includes drilling, casing, perforations, column pipe and appurtenances)	1	LS	$650,000	$650,000
4	Concrete Vault	1	LS	$16,000	$16,000
5	Flow Meter @ WWTP	1	EA	$6,000	$6,000
6	Backflow Preventer @ WWTP	1	EA	$15,000	$15,000
7	Electrical	1	LS	$25,000	$25,000
				Sub-Total A	**$726,000**
				25% Contingency	$182,000
				Professional Engineering Services	$88,000
				Construction Administration	$59,000
				GRAND TOTAL A	**$1,055,000**

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SUNRISE ENGINEERING, INC.
2152 S. Vineyard, Suite 123
Mesa, Arizona 85210
Tel: (480) 768-8600 Fax: (480) 768-8609

Engineer's Opinion of Probable Cost *

Project: Reclaimed Water Re-Use Study
Option 2 - Airport Industrial Park Reuse
Owner: City of Kingman
Prepared By: JV

No.	Item Description - Construction	QTY	Unit	Unit Price	Total
	Airport Industrial Park Distribution				
1	Site Work (Includes all clearing and grubbing, grading and backfilling)	1	LS	$15,000	$15,000
2	8" C900 PVC Waterline (includes waterline, valves, bends, tees, appurtenances, trenching and backfill)	22,636	LF	$65	$1,500,000
3	6" C900 PVC Service Lines (includes waterline, valves, bends, tees, appurtenances, trenching and	53,120	LF	$55	$3,000,000
4	Jack and Bore Reuse Line Under Highway 66	1	LS	$300,000	$300,000
5	Jack and Bore Reuse Line Under BNSF Railroad	1	LS	$150,000	$150,000
6	Pump Station to Fill Storage Tank (includes two 750 GPM pumps, valves, bends, appurtenances and	1	LS	$150,000	$150,000
7	Booster Station (includes two 300 GPM pumps, valves, bends, appurtenances and concrete pad)	1	LS	$150,000	$150,000
8	Flow Meter @ WWTP	1	EA	$6,000	$6,000
9	Water Meter For Industrial Park	63	EA	$1,190	$75,000
10	Backflow Preventer @ WWTP	2	EA	$15,000	$30,000
11	288,000 Gallon Steel Water Storage Tank, coating (interior/exterior) & Foundation	1	LS	$300,000	$300,000
12	Remove and Replace Existing Asphalt, Concrete, Curb and Gutter	1	LS	$1,240,000	$1,240,000
13	Electrical & SCADA	1	LS	$300,000	$300,000
				Sub-Total A	**$7,216,000**
				15% Contingency	$1,804,000
				Professional Engineering Services	$866,000
				Construction Administration	$578,000
				GRAND TOTAL A	**$10,464,000**
	Well #1 Injection				
14	Retrofit Well #1 (includes all demo items, re-installation and connection)	1	LS	$200,000	$200,000
				Sub-Total B	**$200,000**
				15% Contingency	$50,000
				Engineering Design Services	$24,000
				Construction Administration	$16,000
				GRAND TOTAL B	**$290,000**
				GRAND TOTAL A+B	**$10,754,000**

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SUNRISE ENGINEERING, INC.
2152 S. Vineyard, Suite 123
Mesa, Arizona 85210
Tel: (480) 768-8600 Fax: (480) 768-8609

Engineer's Opinion of Probable Cost *

Project: Reclaimed Water Re-Use Study
Option 3 - Golf Course Reuse
Owner: City of Kingman
Prepared By: JV

No.	Item Description - Construction	QTY	Unit	Unit Price	Total
	Golf Course Distribution				
1	Site Work (Includes all clearing and grubbing, grading and backfilling)	1	LS	$10,000	$10,000
2	12" C-900 (DR 14) PVC Waterline (includes waterline, valves, bends, tees, appurtenances, trenching and backfill)	23,350	LF	$80	$1,900,000
3	12" DIP Waterline (includes waterline, valves, bends, tees, appurtenances, trenching and backfill)	25,000	LF	$90	$2,250,000
4	Jack and Bore Reuse Line Under Stockton Pass Rd	1	LS	$120,000	$120,000
5	Jack and Bore Reuse Line Under Interstate 40	1	LS	$360,000	$360,000
6	Booster Station (includes two 320 GPM pumps, two 680 GPM pumps valves, bends, appurtenances and concrete pad)	1	LS	$190,000	$190,000
7	Flow Meter @ WWTP	1	EA	$6,000	$6,000
8	Backflow Preventer (@WWTP, Golf Course, 3 Schools, 2 Parks and Fairgrounds)	7	EA	$15,000	$105,000
9	Pump Station @ Golf Course (includes two 700 GPM pumps, backflow preventer, valves, bends, appurtenances and concrete pad)	1	LS	$160,000	$160,000
10	Remove and Replace Existing Asphalt, Concrete, Curb and Gutter	1	LS	$320,000	$320,000
11	Electrical & SCADA	1	LS	$275,000	$275,000
				Sub-Total A	**$5,696,000**
				25% Contingency	$1,424,000
				Professional Engineering Services	$684,000
				Construction Administration Services	$456,000
				GRAND TOTAL	**$8,260,000**

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APPENDIX F

Operations & Maintenance Expenses

City of Kingman
Option 2 - Airport Industrial Park Reuse
CASHFLOW SPREAD SHEET

Existing Number of Connections (Dec 2014)		70
Average Water Use per Connection - (1,000 gal/mo)		33.34
Annual Inflation Rate		3%
Annual Growth Rate - Kingman, Arizona		6%
Outside (Non-Residential) City Limits Rates		
Base Service Charge Fee	$	9.64
Capital Renewal Fee	$	3.75
All usage gallons, per 1,000 gallons	$	2.95

Year	1	2	3	4	5	6	7	8	9	10
YEAR	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Number of Connections	70	74	79	83	88	94	99	105	112	118
Average Reuse Use per Connection (80%) - (gal/mo)	27	27	27	27	27	27	27	27	27	27
Average Water Use per Connection (20%) - (gal/mo)	7	7	7	7	7	7	7	7	7	7
Reuse Base Rate Per Month + Capital Renewal Fee	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39
Reuse Rate per 1,000 gallons	$ 2.95	$ 3.95	$ 4.95	$ 5.95	$ 6.95	$ 7.95	$ 8.95	$ 9.95	$ 10.95	$ 11.95
Water Use Base Rate Per Month + Capital Renewal Fee	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39
Water Use Rate per 1,000 gallons	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95
Monthly Reuse Fee per Connection	$ 92.08	$ 118.76	$ 145.43	$ 172.11	$ 198.78	$ 225.46	$ 252.13	$ 278.81	$ 305.48	$ 332.15
Yearly Reuse Fee per Connection	$ 1,104.97	$ 1,425.07	$ 1,745.17	$ 2,065.27	$ 2,385.37	$ 2,705.46	$ 3,025.56	$ 3,345.66	$ 3,665.76	$ 3,985.86
Monthly Water Use Fee per Connection	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06
Yearly Water Use Fee per Connection	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75
REVENUES:										
Yearly Reuse Income:	$ 77,347.96	$ 105,740.15	$ 137,260.95	$ 172,183.59	$ 210,802.80	$ 253,436.45	$ 300,427.26	$ 352,144.59	$ 408,986.46	$ 471,381.63
Water Use Income:	$ 27,772.69	$ 29,439.05	$ 31,205.39	$ 33,077.72	$ 35,062.38	$ 37,166.12	$ 39,396.09	$ 41,759.86	$ 44,265.45	$ 46,921.37
Total Revenues:	$ 105,120.65	$ 135,179.20	$ 168,466.35	$ 205,261.30	$ 245,865.18	$ 290,602.58	$ 339,823.35	$ 393,904.44	$ 453,251.90	$ 518,303.00
OPERATION & MAINTENANCE EXPENSES:										
Employee Salaries	$ 30,000.00	$ 30,900.00	$ 31,827.00	$ 32,781.81	$ 33,765.26	$ 34,778.22	$ 35,821.57	$ 36,896.22	$ 38,003.10	$ 39,143.20
Employee Benefits	$ 11,250.00	$ 11,587.50	$ 11,935.13	$ 12,293.18	$ 12,661.97	$ 13,041.83	$ 13,433.09	$ 13,836.08	$ 14,251.16	$ 14,678.70
Equipment Supplies	$ 2,700.00	$ 2,781.00	$ 2,864.43	$ 2,950.36	$ 3,038.87	$ 3,130.04	$ 3,223.94	$ 3,320.66	$ 3,420.28	$ 3,522.89
System Maintenance	$ 20,000.00	$ 20,600.00	$ 21,218.00	$ 21,854.54	$ 22,510.18	$ 23,185.48	$ 23,881.05	$ 24,597.48	$ 25,335.40	$ 26,095.46
Office Supplies	$ 300.00	$ 300.00	$ 309.00	$ 318.27	$ 327.82	$ 337.65	$ 347.78	$ 358.22	$ 368.96	$ 380.03
Subconsultant Engineering	$ 3,850.00	$ 3,965.50	$ 4,084.47	$ 4,207.00	$ 4,333.21	$ 4,463.21	$ 4,597.10	$ 4,735.01	$ 4,877.06	$ 5,023.38
Travel & Education	$ 1,100.00	$ 1,133.00	$ 1,166.99	$ 1,202.00	$ 1,238.06	$ 1,275.20	$ 1,313.46	$ 1,352.86	$ 1,393.45	$ 1,435.25
Vehicle Lease/Finance	$ 3,600.00	$ 3,708.00	$ 3,819.24	$ 3,933.82	$ 4,051.83	$ 4,173.39	$ 4,298.59	$ 4,427.55	$ 4,560.37	$ 4,697.18
Administrative Services	$ 3,600.00	$ 3,708.00	$ 3,819.24	$ 3,933.82	$ 4,051.83	$ 4,173.39	$ 4,298.59	$ 4,427.55	$ 4,560.37	$ 4,697.18
ADEQ Permitting	$1,500	$ 309.00	$ 318.27	$ 327.82	$ 337.65	$ 347.78	$ 358.22	$ 368.96	$ 380.03	$ 391.43
Power Consumption	$86,300	$ 88,889.00	$ 91,555.67	$ 94,302.34	$ 97,131.41	$ 100,045.35	$ 103,046.71	$ 106,138.11	$ 109,322.26	$ 112,601.93
Operation & Maintenance Expenses:	$ 164,200.00	$ 167,881.00	$ 172,917.43	$ 178,104.95	$ 183,448.10	$ 188,951.54	$ 194,620.09	$ 200,458.69	$ 206,472.45	$ 212,666.63
City Expenditures	$ 105,120.65	$ 135,179.20	$ 168,466.35	$ 205,261.30	$ 245,865.18	$ 290,602.58	$ 339,823.35	$ 393,904.44	$ 453,251.90	$ 518,303.00
Net Revenue Less Expense:	$ (164,200.00)	$ (167,881.00)	$ (172,917.43)	$ (178,104.95)	$ (183,448.10)	$ (188,951.54)	$ (194,620.09)	$ (200,458.69)	$ (206,472.45)	$ (212,666.63)
DEBT SERVICE EXPENSE:										
WIFA Loan ($8,232,500, 20years @ 3%):	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72
Debt Service Reserve	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Service Payment	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72
NET REVENUE LESS EXPENSES	$ (887,037.72)	$ (890,718.72)	$ (895,755.15)	$ (900,942.67)	$ (906,285.82)	$ (911,789.26)	$ (917,457.81)	$ (923,296.41)	$ (929,310.17)	$ (935,504.35)
CUMULATIVE REVENUE LESS EXPEN	$ (887,037.72)	$ (1,777,756.44)	$ (2,673,511.59)	$ (3,574,454.26)	$ (4,480,740.08)	$ (5,392,529.35)	$ (6,309,987.16)	$ (7,233,283.57)	$ (8,162,593.74)	$ (9,098,098.09)

City of Kingman
Option 2 - Airport Industrial Park Reuse
CASHFLOW SPREAD SHEET

Existing Number of Connections (Dec 2014)		70
Average Water Use per Connection - (1,000 gal/mo)		33.34
Annual Inflation Rate		3%
Annual Growth Rate - Kingman, Arizona		6%
Outside (Non-Residential) City Limits Rates		
Base Service Charge Fee	$	9.64
Capital Renewal Fee	$	3.75
All usage gallons, per 1,000 gallons	$	2.95

Year	11	12	13	14	15	16	17	18	19	20
YEAR	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**
Number of Connections	125	133	141	149	158	168	178	188	200	212
Average Reuse Use per Connection (80%) - (gal/mo)	27	27	27	27	27	27	27	27	27	27
Average Water Use per Connection (20%) - (gal/mo)	7	7	7	7	7	7	7	7	7	7
Reuse Base Rate Per Month + Capital Renewal Fee	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39
Reuse Rate per 1,000 gallons	$ 12.95	$ 13.95	$ 14.95	$ 15.95	$ 16.95	$ 17.95	$ 18.95	$ 19.95	$ 20.95	$ 21.95
Water Use Base Rate Per Month + Capital Renewal Fee	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39
Water Use Rate per 1,000 gallons	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95
Monthly Reuse Fee per Connection	$ 358.83	$ 385.50	$ 412.18	$ 438.85	$ 465.53	$ 492.20	$ 518.88	$ 545.55	$ 572.23	$ 598.90
Yearly Reuse Fee per Connection	$ 4,305.96	$ 4,626.06	$ 4,946.15	$ 5,266.25	$ 5,586.35	$ 5,906.45	$ 6,226.55	$ 6,546.65	$ 6,866.75	$ 7,186.84
Monthly Water Use Fee per Connection	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06
Yearly Water Use Fee per Connection	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75
REVENUES:										
Yearly Reuse Income:	$ 539,791.87	$ 614,714.37	$ 696,684.32	$ 786,277.69	$ 884,114.21	$ 990,860.50	$ 1,107,233.54	$ 1,234,004.24	$ 1,372,001.39	$ 1,522,115.78
Water Use Income:	$ 49,736.66	$ 52,720.86	$ 55,884.11	$ 59,237.15	$ 62,791.38	$ 66,558.87	$ 70,552.40	$ 74,785.54	$ 79,272.67	$ 84,029.03
Total Revenues:	$ 589,528.53	$ 667,435.23	$ 752,568.43	$ 845,514.85	$ 946,905.59	$ 1,057,419.37	$ 1,177,785.94	$ 1,308,789.78	$ 1,451,274.06	$ 1,606,144.82
OPERATION & MAINTENANCE EXPENSI										
Employee Salaries	$ 40,317.49	$ 41,527.02	$ 42,772.83	$ 44,056.01	$ 45,377.69	$ 46,739.02	$ 48,141.19	$ 49,585.43	$ 51,072.99	$ 52,605.18
Employee Benefits	$ 15,119.06	$ 15,572.63	$ 16,039.81	$ 16,521.00	$ 17,016.63	$ 17,527.13	$ 18,052.95	$ 18,594.54	$ 19,152.37	$ 19,726.94
Equipment Supplies	$ 3,628.57	$ 3,737.43	$ 3,849.55	$ 3,965.04	$ 4,083.99	$ 4,206.51	$ 4,332.71	$ 4,462.69	$ 4,596.57	$ 4,734.47
System Maintenance	$ 26,878.33	$ 27,684.68	$ 28,515.22	$ 29,370.67	$ 30,251.79	$ 31,159.35	$ 32,094.13	$ 33,056.95	$ 34,048.66	$ 35,070.12
Office Supplies	$ 391.43	$ 403.17	$ 415.27	$ 427.73	$ 440.56	$ 453.78	$ 467.39	$ 481.41	$ 495.85	$ 510.73
Subconsultant Engineering	$ 5,174.08	$ 5,329.30	$ 5,489.18	$ 5,653.85	$ 5,823.47	$ 5,998.17	$ 6,178.12	$ 6,363.46	$ 6,554.37	$ 6,751.00
Travel & Education	$ 1,478.31	$ 1,522.66	$ 1,568.34	$ 1,615.39	$ 1,663.85	$ 1,713.76	$ 1,765.18	$ 1,818.13	$ 1,872.68	$ 1,928.86
Vehicle Lease/Finance	$ 4,838.10	$ 4,983.24	$ 5,132.74	$ 5,286.72	$ 5,445.32	$ 5,608.68	$ 5,776.94	$ 5,950.25	$ 6,128.76	$ 6,312.62
Administrative Services	$ 4,838.10	$ 4,983.24	$ 5,132.74	$ 5,286.72	$ 5,445.32	$ 5,608.68	$ 5,776.94	$ 5,950.25	$ 6,128.76	$ 6,312.62
ADEQ Permitting	$ 403.17	$ 415.27	$ 427.73	$ 440.56	$ 453.78	$ 467.39	$ 481.41	$ 495.85	$ 510.73	$ 526.05
Power Consumption	$ 115,979.98	$ 119,459.38	$ 123,043.16	$ 126,734.46	$ 130,536.49	$ 134,452.59	$ 138,486.17	$ 142,640.75	$ 146,919.97	$ 151,327.57
Operation & Maintenance Expenses:	$ 219,046.63	$ 225,618.03	$ 232,386.57	$ 239,358.16	$ 246,538.91	$ 253,935.08	$ 261,553.13	$ 269,399.72	$ 277,481.71	$ 285,806.16
City Expenditures	$ 589,528.53	$ 667,435.23	$ 752,568.43	$ 845,514.85	$ 946,905.59	$ 1,057,419.37	$ 1,177,785.94	$ 1,308,789.78	$ 1,451,274.06	$ 1,606,144.82
Net Revenue Less Expense:	$ (219,046.63)	$ (225,618.03)	$ (232,386.57)	$ (239,358.16)	$ (246,538.91)	$ (253,935.08)	$ (261,553.13)	$ (269,399.72)	$ (277,481.71)	$ (285,806.16)
DEBT SERVICE EXPENSE:										
WIFA Loan ($8,232,500, 20years @ 3%):	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72
Debt Service Reserve	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Service Payment	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72
NET REVENUE LESS EXPENSES	$ (941,884.35)	$ (948,455.75)	$ (955,224.29)	$ (962,195.88)	$ (969,376.63)	$ (976,772.80)	$ (984,390.85)	$ (992,237.44)	$ (1,000,319.43)	$ (1,008,643.88)
CUMULATIVE REVENUE LESS EXPEN	$ (10,039,982.44)	$ (10,988,438.18)	$ (11,943,662.47)	$ (12,905,858.35)	$ (13,875,234.98)	$ (14,852,007.77)	$ (15,836,398.62)	$ (16,828,636.06)	$ (17,828,955.50)	$ (18,837,599.38)

City of Kingman
Option 3 - Golf Course, Schools and Parks Reuse
CASHFLOW SPREAD SHEET

Existing Population (July 1, 2014)[1]	28,549
Persons per Household (2010-2014)[1]	2.54
Estimated Number of Connections[2]	18,846
Total Possible Number of Connections	70
Average Water Use per Capita (gal/day)[3]	200
Average Water Use per Connection (gal/day)	508
Average Water Use per Connection (gal/mo)	15,240
Annual Inflation Rate	3%
Annual Growth Rate - Kingman, Arizona	3%

Inside (Residential) City Limits Rates		
Base Service Charge Fee	$	7.21
Capital Renewal Fee	$	3.75
0-10,000 gallons, per 1,000 gallons	$	1.93
10,001-45,000 gallons, per 1,000 gallons	$	2.42
Over 45,000 gallons, per 1,000 gallons	$	3.64

	Year	1	2	3	4	5	6	7	8	9	10
	YEAR	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Estimated Number of Connections		18,846	19411	19994	20594	21211	21848	22503	23178	23874	24590
Average Water Use per Connection (gal/mo)		15,240	15,240	15,240	15,240	15,240	15,240	15,240	15,240	15,240	15,240
Water Use Base Rate Per Month + Capital Renewal Fee	$	10.96	$ 10.96	$ 10.96	$ 10.96	$ 10.96	$ 10.96	$ 10.96	$ 10.96	$ 10.96	$ 10.96
Water Use Rate (10,001-45,000 gallons)	$	2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42
Monthly Water Use Fee per Connection	$	43.00	$ 43.00	$ 43.00	$ 43.00	$ 43.00	$ 43.00	$ 43.00	$ 43.00	$ 43.00	$ 43.00
Yearly Water Use Fee per Connection	$	516.01	$ 516.01	$ 516.01	$ 516.01	$ 516.01	$ 516.01	$ 516.01	$ 516.01	$ 516.01	$ 516.01
REVENUES:											
Water Use Income:	$	9,724,716.92	$ 10,016,458.43	$ 10,316,952.18	$ 10,626,460.75	$ 10,945,254.57	$ 11,273,612.21	$ 11,611,820.57	$ 11,960,175.19	$ 12,318,980.45	$ 12,688,549.86
Total Revenues:	$	9,724,716.92	$ 10,016,458.43	$ 10,316,952.18	$ 10,626,460.75	$ 10,945,254.57	$ 11,273,612.21	$ 11,611,820.57	$ 11,960,175.19	$ 12,318,980.45	$ 12,688,549.86
OPERATION & MAINTENANCE EXPENSES:											
Employee Salaries	$	30,000.00	$ 30,900.00	$ 31,827.00	$ 32,781.81	$ 33,765.26	$ 34,778.22	$ 35,821.57	$ 36,896.22	$ 38,003.10	$ 39,143.20
Employee Benefits	$	11,250.00	$ 11,587.50	$ 11,935.13	$ 12,293.18	$ 12,661.97	$ 13,041.83	$ 13,433.09	$ 13,836.08	$ 14,251.16	$ 14,678.70
Equipment Supplies	$	3,200.00	$ 3,296.00	$ 3,394.88	$ 3,496.73	$ 3,601.63	$ 3,709.68	$ 3,820.97	$ 3,935.60	$ 4,053.66	$ 4,175.27
System Maintenance	$	12,000.00	$ 12,360.00	$ 12,730.80	$ 13,112.72	$ 13,506.11	$ 13,911.29	$ 14,328.63	$ 14,758.49	$ 15,201.24	$ 15,657.28
Office Supplies	$	300.00	$ 300.00	$ 309.00	$ 318.27	$ 327.82	$ 337.65	$ 347.78	$ 358.22	$ 368.96	$ 380.03
Subconsultant Engineering	$	3,500.00	$ 3,605.00	$ 3,713.15	$ 3,824.54	$ 3,939.28	$ 4,057.46	$ 4,179.18	$ 4,304.56	$ 4,433.70	$ 4,566.71
Travel & Education	$	2,500.00	$ 2,575.00	$ 2,652.25	$ 2,731.82	$ 2,813.77	$ 2,898.19	$ 2,985.13	$ 3,074.68	$ 3,166.93	$ 3,261.93
Vehicle Lease/Finance	$	3,600.00	$ 3,708.00	$ 3,819.24	$ 3,933.82	$ 4,051.83	$ 4,173.39	$ 4,298.59	$ 4,427.55	$ 4,560.37	$ 4,697.18
Administrative Services	$	3,600.00	$ 3,708.00	$ 3,819.24	$ 3,933.82	$ 4,051.83	$ 4,173.39	$ 4,298.59	$ 4,427.55	$ 4,560.37	$ 4,697.18
ADEQ Permitting		$1,500	$ 309.00	$ 318.27	$ 327.82	$ 337.65	$ 347.78	$ 358.22	$ 368.96	$ 380.03	$ 391.43
Power Consumption		$86,303	$ 88,892.09	$ 91,558.85	$ 94,305.62	$ 97,134.79	$ 100,048.83	$ 103,050.30	$ 106,141.80	$ 109,326.06	$ 112,605.84
Operation & Maintenance Expenses:	$	157,753.00	$ 161,240.59	$ 166,077.81	$ 171,060.14	$ 176,191.95	$ 181,477.70	$ 186,922.04	$ 192,529.70	$ 198,305.59	$ 204,254.76
City Expenditures	$	9,724,716.92	$ 10,016,458.43	$ 10,316,952.18	$ 10,626,460.75	$ 10,945,254.57	$ 11,273,612.21	$ 11,611,820.57	$ 11,960,175.19	$ 12,318,980.45	$ 12,688,549.86
Net Revenue Less Expense:	$	(157,753.00)	$ (161,240.59)	$ (166,077.81)	$ (171,060.14)	$ (176,191.95)	$ (181,477.70)	$ (186,922.04)	$ (192,529.70)	$ (198,305.59)	$ (204,254.76)
DEBT SERVICE EXPENSE:											
WIFA Loan ($8,232,500, 20years @ 3%):	$	555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74
Debt Service Reserve	$	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Service Payment	$	555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74
NET REVENUE LESS EXPENSES	$	(712,954.74)	$ (716,442.33)	$ (721,279.55)	$ (726,261.89)	$ (731,393.69)	$ (736,679.45)	$ (742,123.78)	$ (747,731.44)	$ (753,507.33)	$ (759,456.50)
CUMULATIVE REVENUE LESS EXPENSES	$	(712,954.74)	$ (1,429,397.08)	$ (2,150,676.63)	$ (2,876,938.52)	$ (3,608,332.21)	$ (4,345,011.66)	$ (5,087,135.44)	$ (5,834,866.88)	$ (6,588,374.21)	$ (7,347,830.71)

[1] From US Census Bureau website:
http://quickfacts.census.gov/qfd/states/04/0437620.html
[2] Estimated number of connections provided from The City of Kingman Financial Servises Department
[3] From The City of Kingman Water System Master Plan by C5 Engineering, Inc. (May 25, 2005)

City of Kingman
Option 3 - Golf Course, Schools and Parks Reuse
CASHFLOW SPREAD SHEET

Existing Population (July 1, 2014)[1]		28,549
Persons per Household (2010-2014)[1]		3
Estimated Number of Connections[2]		18,846
Total Possible Number of Connections		70
Average Water Use per Capita (gal/day)[3]		200
Average Water Use per Connection (gal/day)		508
Average Water Use per Connection (gal/mo)		15,240
Annual Inflation Rate		3%
Annual Growth Rate - Kingman, Arizona		3%
Inside (Residential) City Limits Rates		
Base Service Charge Fee	$	7.21
Capital Renewal Fee	$	3.75
0-10,000 gallons, per 1,000 gallons	$	1.93
10,001-45,000 gallons, per 1,000 gallons	$	2.42
Over 45,000 gallons, per 1,000 gallons	$	3.64

Year		11	12	13	14	15	16	17	18	19	20
YEAR		**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**
Estimated Number of Connections		25327	26087	26870	27676	28506	29361	30242	31150	32084	33047
Average Water Use per Connection (gal/mo)		15,240	15,240	15,240	15,240	15,240	15,240	15,240	15,240	15,240	15,240
Water Use Base Rate Per Month + Capital Renewal Fee	$	10.96	10.96	10.96	10.96	10.96	10.96	10.96	10.96	10.96	10.96
Water Use Rate (10,001-45,000 gallons)	$	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42	2.42
Monthly Water Use Fee per Connection	$	43.00	43.00	43.00	43.00	43.00	43.00	43.00	43.00	43.00	43.00
Yearly Water Use Fee per Connection	$	516.01	516.01	516.01	516.01	516.01	516.01	516.01	516.01	516.01	516.01
REVENUES:											
Water Use Income:	$	13,069,206.36	13,461,282.55	13,865,121.02	14,281,074.65	14,709,506.89	15,150,792.10	15,605,315.86	16,073,475.34	16,555,679.60	17,052,349.99
Total Revenues:	$	13,069,206.36	13,461,282.55	13,865,121.02	14,281,074.65	14,709,506.89	15,150,792.10	15,605,315.86	16,073,475.34	16,555,679.60	17,052,349.99
OPERATION & MAINTENANCE EXPENSES:											
Employee Salaries	$	40,317.49	41,527.02	42,772.83	44,056.01	45,377.69	46,739.02	48,141.19	49,585.43	51,072.99	52,605.18
Employee Benefits	$	15,119.06	15,572.63	16,039.81	16,521.00	17,016.63	17,527.13	18,052.95	18,594.54	19,152.37	19,726.94
Equipment Supplies	$	4,300.53	4,429.55	4,562.43	4,699.31	4,840.29	4,985.50	5,135.06	5,289.11	5,447.79	5,611.22
System Maintenance	$	16,127.00	16,610.81	17,109.13	17,622.40	18,151.08	18,695.61	19,256.48	19,834.17	20,429.20	21,042.07
Office Supplies	$	391.43	403.17	415.27	427.73	440.56	453.78	467.39	481.41	495.85	510.73
Subconsultant Engineering	$	4,703.71	4,844.82	4,990.16	5,139.87	5,294.06	5,452.89	5,616.47	5,784.97	5,958.52	6,137.27
Travel & Education	$	3,359.79	3,460.58	3,564.40	3,671.33	3,781.47	3,894.92	4,011.77	4,132.12	4,256.08	4,383.77
Vehicle Lease/Finance	$	4,838.10	4,983.24	5,132.74	5,286.72	5,445.32	5,608.68	5,776.94	5,950.25	6,128.76	6,312.62
Administrative Services	$	4,838.10	4,983.24	5,132.74	5,286.72	5,445.32	5,608.68	5,776.94	5,950.25	6,128.76	6,312.62
ADEQ Permitting	$	403.17	415.27	427.73	440.56	453.78	467.39	481.41	495.85	510.73	526.05
Power Consumption	$	115,984.02	119,463.54	123,047.44	126,738.87	130,541.03	134,457.26	138,490.98	142,645.71	146,925.08	151,332.83
Operation & Maintenance Expenses:	$	210,382.40	216,693.87	223,194.69	229,890.53	236,787.24	243,890.86	251,207.59	258,743.81	266,506.13	274,501.31
City Expenditures	$	13,069,206.36	13,461,282.55	13,865,121.02	14,281,074.65	14,709,506.89	15,150,792.10	15,605,315.86	16,073,475.34	16,555,679.60	17,052,349.99
Net Revenue Less Expense:	$	(210,382.40)	(216,693.87)	(223,194.69)	(229,890.53)	(236,787.24)	(243,890.86)	(251,207.59)	(258,743.81)	(266,506.13)	(274,501.31)
DEBT SERVICE EXPENSE:											
WIFA Loan ($8,232,500, 20years @ 3%):	$	555,201.74	555,201.74	555,201.74	555,201.74	555,201.74	555,201.74	555,201.74	555,201.74	555,201.74	555,201.74
Debt Service Reserve	$	-	-	-	-	-	-	-	-	-	-
Total Debt Service Payment	$	555,201.74	555,201.74	555,201.74	555,201.74	555,201.74	555,201.74	555,201.74	555,201.74	555,201.74	555,201.74
NET REVENUE LESS EXPENSES	$	(765,584.14)	(771,895.61)	(778,396.43)	(785,092.27)	(791,988.99)	(799,092.60)	(806,409.33)	(813,945.56)	(821,707.87)	(829,703.06)
CUMULATIVE REVENUE LESS EXPENSES	$	(8,113,414.86)	(8,885,310.47)	(9,663,706.90)	(10,448,799.17)	(11,240,788.16)	(12,039,880.76)	(12,846,290.09)	(13,660,235.65)	(14,481,943.52)	(15,311,646.58)

[1] From US Census Bureau website:
http://quickfacts.census.gov/qfd/states/04/0437620.html
[2] Estimated number of connections provided from The City of Kingman Financial Servises Department
[3] From The City of Kingman Water System Master Plan by C5 Engineering, Inc. (May 25, 2005)

CASHFLOW SPREAD SHEET
City of Kingman
Sunrise Engineering, Inc.

Total Power Used

Sites	Kilowatts/Yr	Total Cost/Yr	Average Cost/Kw
Rattlesnake	39,520	$ 4,745.13	$ 0.12
Roosevelt	1,666,160	$ 129,447.64	$ 0.08
Castlerock	1,800,480	$ 210,541.29	$ 0.12
Hualapai	2,609	$ 476.77	$ 0.18
Yearly Average	877,192	$ 86,302.71	$ 0.124

Avg $/Month	**$**	**7,192**
High $/Month	**$**	**17,545**
Low $/Month	**$**	**40**

APPENDIX G

Rate Analysis

City of Kingman
Option 2 - Airport Industrial Park Reuse
CASHFLOW SPREAD SHEET

Existing Number of Connections (Dec 2014)		70
Average Water Use per Connection - (gal/mo) (thousand gallons)		33.34
Annual Inflation Rate		3%
Annual Growth Rate - Kingman, Arizona		6%
Outside (Non-Residential) City Limits Rates (Reuse ONLY)		
Base Service Charge Fee	$	1,066.00
Capital Renewal Fee	$	3.75
All usage gallons, per 1,000 gallons	$	2.95
Outside (Non-Residential) City Limits Rates (Water ONLY)		
Base Service Charge Fee	$	9.64
Capital Renewal Fee	$	3.75
All usage gallons, per 1,000 gallons	$	2.95

Reuse Base Rate Increase		
$	1,056.36	11058%

Year	1	2	3	4	5	6	7	8	9	10
YEAR	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Number of Connections	70	74	79	83	88	94	99	105	112	118
Average Reuse Use per Connection (80%) - (gal/mo)	27	27	27	27	27	27	27	27	27	27
Average Water Use per Connection (20%) - (gal/mo)	7	7	7	7	7	7	7	7	7	7
Reuse Base Rate Per Month + Capital Renewal Fee	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75
Reuse Rate per 1,000 gallons	$ 2.95	$ 3.95	$ 4.95	$ 5.95	$ 6.95	$ 7.95	$ 8.95	$ 9.95	$ 10.95	$ 11.95
Water Use Base Rate Per Month + Capital Renewal Fee	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39
Water Use Rate per 1,000 gallons	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95
Monthly Reuse Fee per Connection	$ 1,148.44	$ 1,175.12	$ 1,201.79	$ 1,228.47	$ 1,255.14	$ 1,281.82	$ 1,308.49	$ 1,335.17	$ 1,361.84	$ 1,388.51
Yearly Reuse Fee per Connection	$ 13,781.29	$ 14,101.39	$ 14,421.49	$ 14,741.59	$ 15,061.69	$ 15,381.78	$ 15,701.88	$ 16,021.98	$ 16,342.08	$ 16,662.18
Monthly Water Use Fee per Connection	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06
Yearly Water Use Fee per Connection	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75
REVENUES:										
Yearly Reuse Income:	$ 964,690.36	$ 1,046,323.09	$ 1,134,278.87	$ 1,229,022.58	$ 1,331,052.13	$ 1,440,900.75	$ 1,559,139.41	$ 1,686,379.47	$ 1,823,275.43	$ 1,970,527.94
Water Use Income:	$ 27,772.69	$ 29,439.05	$ 31,205.39	$ 33,077.72	$ 35,062.38	$ 37,166.12	$ 39,396.09	$ 41,759.86	$ 44,265.45	$ 46,921.37
Total Revenues:	$ 992,463.05	$ 1,075,762.14	$ 1,165,484.27	$ 1,262,100.30	$ 1,366,114.51	$ 1,478,066.87	$ 1,598,535.50	$ 1,728,139.32	$ 1,867,540.88	$ 2,017,449.32
OPERATION & MAINTENANCE EXPENSES:										
Employee Salaries	$ 30,000.00	$ 30,900.00	$ 31,827.00	$ 32,781.81	$ 33,765.26	$ 34,778.22	$ 35,821.57	$ 36,896.22	$ 38,003.10	$ 39,143.20
Employee Benefits	$ 11,250.00	$ 11,587.50	$ 11,935.13	$ 12,293.18	$ 12,661.97	$ 13,041.83	$ 13,433.09	$ 13,836.08	$ 14,251.16	$ 14,678.70
Equipment Supplies	$ 2,700.00	$ 2,781.00	$ 2,864.43	$ 2,950.36	$ 3,038.87	$ 3,130.04	$ 3,223.94	$ 3,320.66	$ 3,420.28	$ 3,522.89
System Maintenance	$ 20,000.00	$ 20,600.00	$ 21,218.00	$ 21,854.54	$ 22,510.18	$ 23,185.48	$ 23,881.05	$ 24,597.48	$ 25,335.40	$ 26,095.46
Office Supplies	$ 300.00	$ 300.00	$ 309.00	$ 318.27	$ 327.82	$ 337.65	$ 347.78	$ 358.22	$ 368.96	$ 380.03
Subconsultant Engineering	$ 3,850.00	$ 3,965.50	$ 4,084.47	$ 4,207.00	$ 4,333.21	$ 4,463.21	$ 4,597.10	$ 4,735.01	$ 4,877.06	$ 5,023.38
Travel & Education	$ 1,100.00	$ 1,133.00	$ 1,166.99	$ 1,202.00	$ 1,238.06	$ 1,275.20	$ 1,313.46	$ 1,352.86	$ 1,393.45	$ 1,435.25
Vehicle Lease/Finance	$ 3,600.00	$ 3,708.00	$ 3,819.24	$ 3,933.82	$ 4,051.83	$ 4,173.39	$ 4,298.59	$ 4,427.55	$ 4,560.37	$ 4,697.18
Administrative Services	$ 3,600.00	$ 3,708.00	$ 3,819.24	$ 3,933.82	$ 4,051.83	$ 4,173.39	$ 4,298.59	$ 4,427.55	$ 4,560.37	$ 4,697.18
ADEQ Permitting	$1,500	$ 309.00	$ 318.27	$ 327.82	$ 337.65	$ 347.78	$ 358.22	$ 368.96	$ 380.03	$ 391.43
Power Consumption	$86,300	$ 88,889.00	$ 91,555.67	$ 94,302.34	$ 97,131.41	$ 100,045.35	$ 103,046.71	$ 106,138.11	$ 109,322.26	$ 112,601.93
Operation & Maintenance Expenses:	$ 164,200.00	$ 167,881.00	$ 172,917.43	$ 178,104.95	$ 183,448.10	$ 188,951.54	$ 194,620.09	$ 200,458.69	$ 206,472.45	$ 212,666.63
City Expenditures	$ 105,120.65	$ 135,179.20	$ 168,466.35	$ 205,261.30	$ 245,865.18	$ 290,602.58	$ 339,823.35	$ 393,904.44	$ 453,251.90	$ 518,303.00
Net Revenue Less Expense:	$ 723,142.40	$ 772,701.94	$ 824,100.49	$ 878,734.04	$ 936,801.23	$ 998,512.75	$ 1,064,092.06	$ 1,133,776.19	$ 1,207,816.52	$ 1,286,479.69
DEBT SERVICE EXPENSE:										
WIFA Loan ($8,232,500, 20years @ 3%):	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72
Debt Service Reserve	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Service Payment	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72
NET REVENUE LESS EXPENSES	$ 304.68	$ 49,864.22	$ 101,262.77	$ 155,896.32	$ 213,963.51	$ 275,675.03	$ 341,254.34	$ 410,938.47	$ 484,978.80	$ 563,641.97
CUMULATIVE REVENUE LESS EXPENSES	$ 304.68	$ 50,168.91	$ 151,431.68	$ 307,328.00	$ 521,291.51	$ 796,966.55	$ 1,138,220.89	$ 1,549,159.36	$ 2,034,138.16	$ 2,597,780.13

City of Kingman
Option 2 - Airport Industrial Park Reuse
CASHFLOW SPREAD SHEET

Existing Number of Connections (Dec 2014)		70
Average Water Use per Connection - (gal/mo) (thousand gallons)		33.34
Annual Inflation Rate		3%
Annual Growth Rate - Kingman, Arizona		6%
Outside (Non-Residential) City Limits Rates (Reuse ONLY)		
Base Service Charge Fee	$	1,066.00
Capital Renewal Fee	$	3.75
All usage gallons, per 1,000 gallons	$	2.95
Outside (Non-Residential) City Limits Rates (Water ONLY)		
Base Service Charge Fee	$	9.64
Capital Renewal Fee	$	3.75
All usage gallons, per 1,000 gallons	$	2.95

Reuse Base Rate Increase		
$	1,056.36	11058%

Year	11	12	13	14	15	16	17	18	19	20
YEAR	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**
Number of Connections	125	133	141	149	158	168	178	188	200	212
Average Reuse Use per Connection (80%) - (gal/mo)	27	27	27	27	27	27	27	27	27	27
Average Water Use per Connection (20%) - (gal/mo)	7	7	7	7	7	7	7	7	7	7
Reuse Base Rate Per Month + Capital Renewal Fee	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75	$ 1,069.75
Reuse Rate per 1,000 gallons	$ 12.95	$ 13.95	$ 14.95	$ 15.95	$ 16.95	$ 17.95	$ 18.95	$ 19.95	$ 20.95	$ 21.95
Water Use Base Rate Per Month + Capital Renewal Fee	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39	$ 13.39
Water Use Rate per 1,000 gallons	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95	$ 2.95
Monthly Reuse Fee per Connection	$ 1,415.19	$ 1,441.86	$ 1,468.54	$ 1,495.21	$ 1,521.89	$ 1,548.56	$ 1,575.24	$ 1,601.91	$ 1,628.59	$ 1,655.26
Yearly Reuse Fee per Connection	$ 16,982.28	$ 17,302.38	$ 17,622.47	$ 17,942.57	$ 18,262.67	$ 18,582.77	$ 18,902.87	$ 19,222.97	$ 19,543.07	$ 19,863.16
Monthly Water Use Fee per Connection	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06	$ 33.06
Yearly Water Use Fee per Connection	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75	$ 396.75
REVENUES:										
Yearly Reuse Income:	$ 2,128,886.97	$ 2,299,155.17	$ 2,482,191.57	$ 2,678,915.38	$ 2,890,310.15	$ 3,117,428.20	$ 3,361,395.30	$ 3,623,415.71	$ 3,904,777.54	$ 4,206,858.50
Water Use Income:	$ 49,736.66	$ 52,720.86	$ 55,884.11	$ 59,237.15	$ 62,791.38	$ 66,558.87	$ 70,552.40	$ 74,785.54	$ 79,272.67	$ 84,029.03
Total Revenues:	$ 2,178,623.62	$ 2,351,876.03	$ 2,538,075.68	$ 2,738,152.53	$ 2,953,101.53	$ 3,183,987.06	$ 3,431,947.70	$ 3,698,201.25	$ 3,984,050.22	$ 4,290,887.54
OPERATION & MAINTENANCE EXPENSES:										
Employee Salaries	$ 40,317.49	$ 41,527.02	$ 42,772.83	$ 44,056.01	$ 45,377.69	$ 46,739.02	$ 48,141.19	$ 49,585.43	$ 51,072.99	$ 52,605.18
Employee Benefits	$ 15,119.06	$ 15,572.63	$ 16,039.81	$ 16,521.00	$ 17,016.63	$ 17,527.13	$ 18,052.95	$ 18,594.54	$ 19,152.37	$ 19,726.94
Equipment Supplies	$ 3,628.57	$ 3,737.43	$ 3,849.55	$ 3,965.04	$ 4,083.99	$ 4,206.51	$ 4,332.71	$ 4,462.69	$ 4,596.57	$ 4,734.47
System Maintenance	$ 26,878.33	$ 27,684.68	$ 28,515.22	$ 29,370.67	$ 30,251.79	$ 31,159.35	$ 32,094.13	$ 33,056.95	$ 34,048.66	$ 35,070.12
Office Supplies	$ 391.43	$ 403.17	$ 415.27	$ 427.73	$ 440.56	$ 453.78	$ 467.39	$ 481.41	$ 495.85	$ 510.73
Subconsultant Engineering	$ 5,174.08	$ 5,329.30	$ 5,489.18	$ 5,653.85	$ 5,823.47	$ 5,998.17	$ 6,178.12	$ 6,363.46	$ 6,554.37	$ 6,751.00
Travel & Education	$ 1,478.31	$ 1,522.66	$ 1,568.34	$ 1,615.39	$ 1,663.85	$ 1,713.76	$ 1,765.18	$ 1,818.13	$ 1,872.68	$ 1,928.86
Vehicle Lease/Finance	$ 4,838.10	$ 4,983.24	$ 5,132.74	$ 5,286.72	$ 5,445.32	$ 5,608.68	$ 5,776.94	$ 5,950.25	$ 6,128.76	$ 6,312.62
Administrative Services	$ 4,838.10	$ 4,983.24	$ 5,132.74	$ 5,286.72	$ 5,445.32	$ 5,608.68	$ 5,776.94	$ 5,950.25	$ 6,128.76	$ 6,312.62
ADEQ Permitting	$ 403.17	$ 415.27	$ 427.73	$ 440.56	$ 453.78	$ 467.39	$ 481.41	$ 495.85	$ 510.73	$ 526.05
Power Consumption	$ 115,979.98	$ 119,459.38	$ 123,043.16	$ 126,734.46	$ 130,536.49	$ 134,452.59	$ 138,486.17	$ 142,640.75	$ 146,919.97	$ 151,327.57
Operation & Maintenance Expenses:	$ 219,046.63	$ 225,618.03	$ 232,386.57	$ 239,358.16	$ 246,538.91	$ 253,935.08	$ 261,553.13	$ 269,399.72	$ 277,481.71	$ 285,806.16
City Expenditures	$ 589,528.53	$ 667,435.23	$ 752,568.43	$ 845,514.85	$ 946,905.59	$ 1,057,419.37	$ 1,177,785.94	$ 1,308,789.78	$ 1,451,274.06	$ 1,606,144.82
Net Revenue Less Expense:	$ 1,370,048.47	$ 1,458,822.77	$ 1,553,120.68	$ 1,653,279.52	$ 1,759,657.03	$ 1,872,632.62	$ 1,992,608.63	$ 2,120,011.74	$ 2,255,294.44	$ 2,398,936.56
DEBT SERVICE EXPENSE:										
WIFA Loan ($8,232,500, 20years @ 3%):	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72
Debt Service Reserve	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Service Payment	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72	$ 722,837.72
NET REVENUE LESS EXPENSES	$ 647,210.75	$ 735,985.05	$ 830,282.96	$ 930,441.80	$ 1,036,819.31	$ 1,149,794.90	$ 1,269,770.91	$ 1,397,174.03	$ 1,532,456.72	$ 1,676,098.84
CUMULATIVE REVENUE LESS EXPENSES	$ 3,244,990.87	$ 3,980,975.93	$ 4,811,258.89	$ 5,741,700.69	$ 6,778,520.00	$ 7,928,314.90	$ 9,198,085.82	$ 10,595,259.84	$ 12,127,716.56	$ 13,803,815.40

City of Kingman
Option 3 - Golf Course, Schools and Parks Reuse
CASHFLOW SPREAD SHEET

Existing Population (July 1, 2014)[1]	28,549
Persons per Household (2010-2014)[1]	2.54
Estimated Number of Connections[2]	18,846
Total Possible Number of Connections	70
Average Water Use per Capita (gal/day)[3]	200
Average Water Use per Connection (gal/day)	508
Average Water Use per Connection (gal/mo)	15,240
Annual Inflation Rate	3%
Annual Growth Rate - Kingman, Arizona	3%

Inside (Residential) City Limits Rates		
Base Service Charge Fee	$	10.37
Capital Renewal Fee	$	3.75
0-10,000 gallons, per 1,000 gallons	$	1.93
10,001-45,000 gallons, per 1,000 gallons	$	2.42
Over 45,000 gallons, per 1,000 gallons	$	3.64

Base Rate Increase	
$	3.16

Year	1	2	3	4	5	6	7	8	9	10
YEAR	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**
Estimated Number of Connections	18,846	19411	19994	20594	21211	21848	22503	23178	23874	24590
Average Water Use per Connection (gal/mo)	15,240	15,240	15,240	15,240	15,240	15,240	15,240	15,240	15,240	15,240
Water Use Base Rate Per Month + Capital Renewal Fee	$ 14.12	$ 14.12	$ 14.12	$ 14.12	$ 14.12	$ 14.12	$ 14.12	$ 14.12	$ 14.12	$ 14.12
Water Use Rate (10,001-45,000 gallons)	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42
Monthly Water Use Fee per Connection	$ 46.16	$ 46.16	$ 46.16	$ 46.16	$ 46.16	$ 46.16	$ 46.16	$ 46.16	$ 46.16	$ 46.16
Yearly Water Use Fee per Connection	$ 553.93	$ 553.93	$ 553.93	$ 553.93	$ 553.93	$ 553.93	$ 553.93	$ 553.93	$ 553.93	$ 553.93
Base vs Adjusted Monthly Increase Per Connection	$ 3.16	$ 3.16	$ 3.16	$ 3.16	$ 3.16	$ 3.16	$ 3.16	$ 3.16	$ 3.16	$ 3.16
Base vs Adjusted Annual Increase Per Connection	$ 37.92	$ 37.92	$ 37.92	$ 37.92	$ 37.92	$ 37.92	$ 37.92	$ 37.92	$ 37.92	$ 37.92
REVENUES:										
Water Use Income:	$ 10,439,357.24	$ 10,752,537.96	$ 11,075,114.10	$ 11,407,367.52	$ 11,749,588.55	$ 12,102,076.20	$ 12,465,138.49	$ 12,839,092.64	$ 13,224,265.42	$ 13,620,993.39
Total Revenues:	$ 10,439,357.24	$ 10,752,537.96	$ 11,075,114.10	$ 11,407,367.52	$ 11,749,588.55	$ 12,102,076.20	$ 12,465,138.49	$ 12,839,092.64	$ 13,224,265.42	$ 13,620,993.39
OPERATION & MAINTENANCE EXPENSES:										
Employee Salaries	$ 30,000.00	$ 30,900.00	$ 31,827.00	$ 32,781.81	$ 33,765.26	$ 34,778.22	$ 35,821.57	$ 36,896.22	$ 38,003.10	$ 39,143.20
Employee Benefits	$ 11,250.00	$ 11,587.50	$ 11,935.13	$ 12,293.18	$ 12,661.97	$ 13,041.83	$ 13,433.09	$ 13,836.08	$ 14,251.16	$ 14,678.70
Equipment Supplies	$ 3,200.00	$ 3,296.00	$ 3,394.88	$ 3,496.73	$ 3,601.63	$ 3,709.68	$ 3,820.97	$ 3,935.60	$ 4,053.66	$ 4,175.27
System Maintenance	$ 12,000.00	$ 12,360.00	$ 12,730.80	$ 13,112.72	$ 13,506.11	$ 13,911.29	$ 14,328.63	$ 14,758.49	$ 15,201.24	$ 15,657.28
Office Supplies	$ 300.00	$ 300.00	$ 309.00	$ 318.27	$ 327.82	$ 337.65	$ 347.78	$ 358.22	$ 368.96	$ 380.03
Subconsultant Engineering	$ 3,500.00	$ 3,605.00	$ 3,713.15	$ 3,824.54	$ 3,939.28	$ 4,057.46	$ 4,179.18	$ 4,304.56	$ 4,433.70	$ 4,566.71
Travel & Education	$ 2,500.00	$ 2,575.00	$ 2,652.25	$ 2,731.82	$ 2,813.77	$ 2,898.19	$ 2,985.13	$ 3,074.68	$ 3,166.93	$ 3,261.93
Vehicle Lease/Finance	$ 3,600.00	$ 3,708.00	$ 3,819.24	$ 3,933.82	$ 4,051.83	$ 4,173.39	$ 4,298.59	$ 4,427.55	$ 4,560.37	$ 4,697.18
Administrative Services	$ 3,600.00	$ 3,708.00	$ 3,819.24	$ 3,933.82	$ 4,051.83	$ 4,173.39	$ 4,298.59	$ 4,427.55	$ 4,560.37	$ 4,697.18
ADEQ Permitting	$1,500	$ 309.00	$ 318.27	$ 327.82	$ 337.65	$ 347.78	$ 358.22	$ 368.96	$ 380.03	$ 391.43
Power Consumption	$86,303	$ 88,892.09	$ 91,558.85	$ 94,305.62	$ 97,134.79	$ 100,048.83	$ 103,050.30	$ 106,141.80	$ 109,326.06	$ 112,605.84
Operation & Maintenance Expenses:	$ 157,753.00	$ 161,240.59	$ 166,077.81	$ 171,060.14	$ 176,191.95	$ 181,477.70	$ 186,922.04	$ 192,529.70	$ 198,305.59	$ 204,254.76
City Expenditures	$ 9,724,716.92	$ 10,016,458.43	$ 10,316,952.18	$ 10,626,460.75	$ 10,945,254.57	$ 11,273,612.21	$ 11,611,820.57	$ 11,960,175.19	$ 12,318,980.45	$ 12,688,549.86
Net Revenue Less Expense:	$ 556,887.32	$ 574,838.94	$ 592,084.11	$ 609,846.63	$ 628,142.03	$ 646,986.29	$ 666,395.88	$ 686,387.76	$ 706,979.39	$ 728,188.77
DEBT SERVICE EXPENSE:										
WIFA Loan ($8,232,500, 20years @ 3%):	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74
Debt Service Reserve	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Service Payment	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74
NET REVENUE LESS EXPENSES	$ 1,685.58	$ 19,637.19	$ 36,882.36	$ 54,644.89	$ 72,940.29	$ 91,784.55	$ 111,194.13	$ 131,186.01	$ 151,777.64	$ 172,987.03
CUMULATIVE REVENUE LESS EXPENSES	$ 1,685.58	$ 21,322.77	$ 58,205.13	$ 112,850.02	$ 185,790.30	$ 277,574.85	$ 388,768.99	$ 519,955.00	$ 671,732.64	$ 844,719.67

[1] From US Census Bureau website:
http://quickfacts.census.gov/qfd/states/04/0437620.html
[2] Estimated number of connections provided from The City of Kingman
Financial Servises Department
[3] From The City of Kingman Water System Master Plan by C5
Engineering, Inc. (May 25, 2005)

City of Kingman
Option 3 - Golf Course, Schools and Parks Reuse
CASHFLOW SPREAD SHEET

Existing Population (July 1, 2014)[1]	28,549
Persons per Household (2010-2014)[1]	3
Estimated Number of Connections[2]	18,846
Total Possible Number of Connections	70
Average Water Use per Capita (gal/day)[3]	200
Average Water Use per Connection (gal/day)	508
Average Water Use per Connection (gal/mo)	15,240
Annual Inflation Rate	3%
Annual Growth Rate - Kingman, Arizona	3%

Inside (Residential) City Limits Rates		
Base Service Charge Fee	$	10.37
Capital Renewal Fee	$	3.75
0-10,000 gallons, per 1,000 gallons	$	1.93
10,001-45,000 gallons, per 1,000 gallons	$	2.42
Over 45,000 gallons, per 1,000 gallons	$	3.64

Year		11	12	13	14	15	16	17	18	19	20
YEAR		**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**	**2034**	**2035**	**2036**
Estimated Number of Connections		25327	26087	26870	27676	28506	29361	30242	31150	32084	33047
Average Water Use per Connection (gal/mo)		15,240	15,240	15,240	15,240	15,240	15,240	15,240	15,240	15,240	15,240
Water Use Base Rate Per Month + Capital Renewal Fee	$	14.12	$ 14.12	$ 14.12	$ 14.12	$ 14.12	$ 14.12	$ 14.12	$ 14.12	$ 14.12	$ 14.12
Water Use Rate (10,001-45,000 gallons)	$	2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42	$ 2.42
Monthly Water Use Fee per Connection	$	46.16	$ 46.16	$ 46.16	$ 46.16	$ 46.16	$ 46.16	$ 46.16	$ 46.16	$ 46.16	$ 46.16
Yearly Water Use Fee per Connection	$	553.93	$ 553.93	$ 553.93	$ 553.93	$ 553.93	$ 553.93	$ 553.93	$ 553.93	$ 553.93	$ 553.93
Base vs Adjusted Monthly Increase Per Connection	$	3.16	$ 3.16	$ 3.16	$ 3.16	$ 3.16	$ 3.16	$ 3.16	$ 3.16	$ 3.16	$ 3.16
Base vs Adjusted Annual Increase Per Connection	$	37.92	$ 37.92	$ 37.92	$ 37.92	$ 37.92	$ 37.92	$ 37.92	$ 37.92	$ 37.92	$ 37.92
REVENUES:											
Water Use Income:	$	14,029,623.19	$ 14,450,511.88	$ 14,884,027.24	$ 15,330,548.06	$ 15,790,464.50	$ 16,264,178.43	$ 16,752,103.79	$ 17,254,666.90	$ 17,772,306.91	$ 18,305,476.11
Total Revenues:	$	14,029,623.19	$ 14,450,511.88	$ 14,884,027.24	$ 15,330,548.06	$ 15,790,464.50	$ 16,264,178.43	$ 16,752,103.79	$ 17,254,666.90	$ 17,772,306.91	$ 18,305,476.11
OPERATION & MAINTENANCE EXPENSES:											
Employee Salaries	$	40,317.49	$ 41,527.02	$ 42,772.83	$ 44,056.01	$ 45,377.69	$ 46,739.02	$ 48,141.19	$ 49,585.43	$ 51,072.99	$ 52,605.18
Employee Benefits	$	15,119.06	$ 15,572.63	$ 16,039.81	$ 16,521.00	$ 17,016.63	$ 17,527.13	$ 18,052.95	$ 18,594.54	$ 19,152.37	$ 19,726.94
Equipment Supplies	$	4,300.53	$ 4,429.55	$ 4,562.43	$ 4,699.31	$ 4,840.29	$ 4,985.50	$ 5,135.06	$ 5,289.11	$ 5,447.79	$ 5,611.22
System Maintenance	$	16,127.00	$ 16,610.81	$ 17,109.13	$ 17,622.40	$ 18,151.08	$ 18,695.61	$ 19,256.48	$ 19,834.17	$ 20,429.20	$ 21,042.07
Office Supplies	$	391.43	$ 403.17	$ 415.27	$ 427.73	$ 440.56	$ 453.78	$ 467.39	$ 481.41	$ 495.85	$ 510.73
Subconsultant Engineering	$	4,703.71	$ 4,844.82	$ 4,990.16	$ 5,139.87	$ 5,294.06	$ 5,452.89	$ 5,616.47	$ 5,784.97	$ 5,958.52	$ 6,137.27
Travel & Education	$	3,359.79	$ 3,460.58	$ 3,564.40	$ 3,671.33	$ 3,781.47	$ 3,894.92	$ 4,011.77	$ 4,132.12	$ 4,256.08	$ 4,383.77
Vehicle Lease/Finance	$	4,838.10	$ 4,983.24	$ 5,132.74	$ 5,286.72	$ 5,445.32	$ 5,608.68	$ 5,776.94	$ 5,950.25	$ 6,128.76	$ 6,312.62
Administrative Services	$	4,838.10	$ 4,983.24	$ 5,132.74	$ 5,286.72	$ 5,445.32	$ 5,608.68	$ 5,776.94	$ 5,950.25	$ 6,128.76	$ 6,312.62
ADEQ Permitting	$	403.17	$ 415.27	$ 427.73	$ 440.56	$ 453.78	$ 467.39	$ 481.41	$ 495.85	$ 510.73	$ 526.05
Power Consumption	$	115,984.02	$ 119,463.54	$ 123,047.44	$ 126,738.87	$ 130,541.03	$ 134,457.26	$ 138,490.98	$ 142,645.71	$ 146,925.08	$ 151,332.83
Operation & Maintenance Expenses:	$	210,382.40	$ 216,693.87	$ 223,194.69	$ 229,890.53	$ 236,787.24	$ 243,890.86	$ 251,207.59	$ 258,743.81	$ 266,506.13	$ 274,501.31
City Expenditures	$	13,069,206.36	$ 13,461,282.55	$ 13,865,121.02	$ 14,281,074.65	$ 14,709,506.89	$ 15,150,792.10	$ 15,605,315.86	$ 16,073,475.34	$ 16,555,679.60	$ 17,052,349.99
Net Revenue Less Expense:	$	750,034.43	$ 772,535.47	$ 795,711.53	$ 819,582.88	$ 844,170.36	$ 869,495.47	$ 895,580.34	$ 922,447.75	$ 950,121.18	$ 978,624.82
DEBT SERVICE EXPENSE:											
WIFA Loan ($8,232,500, 20years @ 3%):	$	555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74
Debt Service Reserve	$	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Total Debt Service Payment	$	555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74	$ 555,201.74
NET REVENUE LESS EXPENSES	$	194,832.69	$ 217,333.72	$ 240,509.79	$ 264,381.13	$ 288,968.62	$ 314,293.73	$ 340,378.59	$ 367,246.00	$ 394,919.44	$ 423,423.07
CUMULATIVE REVENUE LESS EXPENSES	$	1,039,552.35	$ 1,256,886.08	$ 1,497,395.86	$ 1,761,776.99	$ 2,050,745.61	$ 2,365,039.34	$ 2,705,417.93	$ 3,072,663.94	$ 3,467,583.37	$ 3,891,006.44

[1] From US Census Bureau website:
http://quickfacts.census.gov/qfd/states/04/0437620.html
[2] Estimated number of connections provided from The City of Kingman
Financial Servises Department
[3] From The City of Kingman Water System Master Plan by C5
Engineering, Inc. (May 25, 2005)

APPENDIX H

Capital Savings Analysis

SUNRISE ENGINEERING, INC.
2152 S. Vineyard, Suite 123
Mesa, Arizona 85210
Tel: (480) 768-8600 Fax: (480) 768-8609

Engineer's Opinion of Probable Cost *

Project: Reclaimed Water Re-Use Study
Option 2 - Airport Industrial Park Reuse Capital Savings
Owner: City of Kingman
Prepared By: JV

No.	Item Description - Construction	QTY	Unit	Unit Price	Total
	Option 2 Capital Savings				
1	220 GPM Well (includes well, pump, motor, control valves, chlorination and yard piping)	1	LS	$850,000	$850,000
2	220 GPM Booster Station (includes two pumps, valves, backflow preventer, flowmeter, fittings, appurtenances and concrete pad)	1	LS	$80,000	$80,000
3	100,000 Gallon Steel Water Storage Tank, coating (interior/exterior) & Foundation	1	LS	$150,000	$150,000
4	Electrical & SCADA	1	LS	$250,000	$250,000
				Sub-Total A	**$1,330,000**
				25% Contingency	$333,000
				Professional Engineering Services	$160,000
				Construction Administration	$107,000
				GRAND TOTAL A	**$1,930,000**

*In providing opinions of probable construction cost the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as the accuracy if such opinions compared to bid or actual costs.

SUNRISE ENGINEERING, INC.
2152 S. Vineyard, Suite 123
Mesa, Arizona 85210
Tel: (480) 768-8600 Fax: (480) 768-8609

Engineer's Opinion of Probable Cost *

Project: Reclaimed Water Re-Use Study
Option 3 - Golf Course Reuse Capital Savings
Owner: City of Kingman
Prepared By: JV

No.	Item Description - Construction	QTY	Unit	Unit Price	Total
	Option 3 Capital Savings				
1	700 GPM Well (includes well, pump, motor, control valves, chlorination and yard piping)	1	LS	$1,500,000	$1,500,000
2	700 GPM Booster Station (includes two pumps, valves, backflow preventer, flowmeter, fittings, appurtenances and concrete pad)	1	LS	$150,000	$150,000
3	500,000 Gallon Steel Water Storage Tank, coating (interior/exterior) & Foundation	1	LS	$560,000	$560,000
11	Electrical & SCADA	1	LS	$275,000	$275,000
				Sub-Total A	**$2,485,000**
				25% Contingency	$622,000
				Professional Engineering Services	$299,000
				Construction Administration Services	$199,000
				GRAND TOTAL	**$3,605,000**

APPENDIX I

Reuse Water Survey and Results

SUNRISE ENGINEERING

Date: December 16, 2015

To: Name
Company
Address 1
Address 2
Phone (000) 000-0000

Subject: **Kingman Water Reuse Survey – SEI Project No. 05726**

Dear Recipient,

On behalf of the City of Kingman, Sunrise Engineering requests your participation in a brief online survey that may affect how water is supplied to your facility. Please complete the enclosed survey at your earliest convenience and use the provided envelope to return it to Sunrise Engineering at no cost to you. If you prefer, the survey may also be completed online at the following web address:

https://www.surveymonkey.com/r/8LH5WFD

If you would like to receive future correspondence via email or if you have trouble completing the survey, please contact me at jvandegraaff@sunrise-eng.com. We value your input and thank you for your participation.

Sincerely,
SUNRISE ENGINEERING, INC.

Justin Van De Graaff, P.E.
Project Engineer

City of Kingman
Reuse Water Survey

In general, how important do you feel it is to reuse/recycle water in Kingman?

Unimportant Somewhat Important Important Very Important

How knowledgeable are you regarding water quality standards in Arizona?

Not at all Somewhat Knowledgeable Knowledgeable Very Knowledgeable

Approximately what percentage of water used at your facility comes in contact with food or beverages or is otherwise used for human consumption?

0% Less than 25% 25-50% 50-75% Greater than 75%

Do you have processes at your facility that could use A+ reclaimed water in lieu of drinking water?

Yes No

Does all of the water used at your facility need to be potable (drinkable)?

Yes No Unsure

Please indicate how much you agree with the following statements:

I would support using A+ reclaimed water at my facility because it is an environmentally friendly alternative.

Strongly disagree Disagree Neutral Agree Strongly Agree

I would support using A+ reclaimed water at my facility if it were cheaper than using drinking water.

Strongly disagree Disagree Neutral Agree Strongly Agree

I would support using A+ reclaimed water at other facilities in my area, but not mine.

Strongly disagree Disagree Neutral Agree Strongly Agree

I am opposed to the use of A+ reclaimed water in general.

Strongly disagree Disagree Neutral Agree Strongly Agree

If the City of Kingman were to provide A+ reclaimed water to my facility, I would connect to and use this new service.

Strongly disagree Disagree Neutral Agree Strongly Agree

SUNRISE ENGINEERING

City of Kingman- Water Reuse Survey Results

In general, how important do you feel it is to reuse/recycle water in Kingman?	Unimportant	Somewhat Important	Important	Very Important
	2	5	7	4

How knowledgeable are you regarding water quality standards in Arizona?	Not at All	Somewhat Knowledgeable	Knowledgeable	Very Knowledgeable
	7	7	3	1

Approximately what percentage of water used at your facility comes in contact with food or beverage or is otherwise used for human consumption?	0%	Less than 25%	25-50%	50-75%	Greater than 75%
	2	10	3	1	2

Do you have processes at your facility that could use A+ reclaimed water in lieu of drinking water?	Yes	No
	3	15

Does all of the water used at your facility need to be potable(drinkable)?	Yes	No	Unsure
	6	12	

I would support using A+ reclaimed water at my facility because it is an environmentally friendly alternative.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	4	1	4	6	3

I would support using A + reclaimed water at my facility if it were cheaper than using drinking water.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	3		**6**	**5**	**4**

I would support using A+ reclaimed water at other facilities in my area, but not mine.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	3	1	11	2	1

I am opposed to the use of A+ reclaimed water in general.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	6	9	2		1

If the city of Kingman were to provide A+ reclaimed water to my facility, I would connect to and use this new service.	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
	3	3	7	2	3

APPENDIX J

Distribution Line Size Analysis

City of Kingman
Option 1 - Onsite Well Injection
Line Sizing Analysis

FLOW

Average Flow	**675**	**gpm**
Max Flow	**675**	**gpm**

Water Elevation	
Point A	3240
Point B	3235
Difference	5

HEAD LOSS CALCULATIONS

Minor Loss Formula	$h_l = K_l*(V^2/(2g))$

Head Loss Formula	$hf = 10.44(L_{ft})(Q_{gpm})^{1.85}/C^{1.85}/dia_{in}^{4.8655}$

Enter the following information:

Pipe ID	10	in			Flow	694	gpm
Area of pipe	0.545	ft^2	Velocity	2.8 fps		1.55	cfs
Hazen-Williams coefficient	130				Length of Pipe	40	ft

FITTING	QTY	Coeff K_l	Total	Equiv. Length (ft)
VALVES				
Gate valve (fully open)	1	0.2	0.2	7.91
(3/4 open)		1	0	
(1/2 open)		5.6	0	
(1/4 open)		17	0	
Globe valve (fully open)		10	0	
Angle valve (fully open)		5	0	
Butterfly valve (fully open)		0.4	0	
Swing check valve (fully open)	1	2.5	2.5	98.92
Lift check valve (fully open)		12	0	
Ball check valve (fully open)		70	0	
Foot valve (fully open)		15	0	
Plug valve (fully open)		0.98	0	
MISCELLANEOUS				
Tee (Branch)		1	0	
Tee (Through)		0.2	0	
Flow meter		1	0	
Enlargement - estimate		1	0	
Reducer - estimate		0.06	0	
ENTRANCE				
Rounded	1	0.25	0.25	9.89
Square		0.5	0	
Reentrant		0.4	0	

FITTING	QTY	Coeff K_l	Total	Equiv. Length (ft)
BENDS				
90°				
bend rad / pipe dia				
1		0.5	0	
2		0.3	0	
4		0.25	0	
6		0.15	0	
8	1	0.15	0.15	5.94
45°				
bend rad / pipe dia				
1		0.37	0	
2		0.22	0	
4		0.19	0	
6		0.11	0	
8		0.11	0	
22.5°				
bend rad / pipe dia				
1		0.25	0	
2		0.15	0	
4		0.12	0	
6		0.08	0	
8		0.08	0	
Exit				
Exit	1	1	1	39.57

TOTAL MINOR LOSS COEFFICIENT **4.1**

Head loss due to minor losses	0.512 ft		Head loss due to pipe	0.13 ft
Equivalent length of minor losses	162.23 ft		**Total Combined Head Loss (Elevation, minor and pipe)**	**5.64 ft**
			Line Velocity	**2.84 fps**

City of Kingman
Option 2 - Airport Industrial Park Reuse
Line Sizing Analysis

FLOW

Average Flow	**135**	**gpm**
Max Flow	**217**	**gpm**

Water Elevation	
Point A	3390
Point B	3240
Difference	150
Minimum Required Pressure (ft)	92.4

HEAD LOSS CALCULATIONS

Minor Loss Formula $h_l = K_l*(V^2/(2g))$

Head Loss Formula $hf = 10.44(L_{ft})(Q_{gpm})^{1.85}/C^{1.85}/dia_{in}^{4.8655}$

Enter the following information:

Pipe ID 8 in

Area of pipe 0.349 ft^2

Velocity 1.4 fps

Flow 217 gpm

0.48 cfs

Hazen-Williams coefficient 130

Length of Pipe 22243 ft

FITTING	QTY	Coeff K_l	Total	Equiv. Length (ft)
VALVES				
Gate valve (fully open)	4	0.2	0.8	21.92
(3/4 open)		1	0	
(1/2 open)		5.6	0	
(1/4 open)		17	0	
Globe valve (fully open)		10	0	
Angle valve (fully open)		5	0	
Butterfly valve (fully open)		0.4	0	
Swing check valve (fully open)	2	2.5	5	137.00
Lift check valve (fully open)		12	0	
Ball check valve (fully open)		70	0	
Foot valve (fully open)		15	0	
Plug valve (fully open)		0.98	0	
MISCELLANEOUS				
Tee (Branch)		1	0	
Tee (Through)	1	0.2	0.2	5.48
Flow meter	1	1	1	27.40
Enlargement - estimate		1	0	
Reducer - estimate		0.06	0	
ENTRANCE				
Rounded	1	0.25	0.25	6.85
Square		0.5	0	
Reentrant		0.4	0	

FITTING	QTY	Coeff K_l	Total	Equiv. Length (ft)
BENDS				
90°				
bend rad / pipe dia				
1		0.5	0	
2		0.3	0	
4		0.25	0	
6		0.15	0	
8	5	0.15	0.75	20.55
45°				
bend rad / pipe dia				
1		0.37	0	
2		0.22	0	
4		0.19	0	
6		0.11	0	
8	2	0.11	0.22	6.03
22.5°				
bend rad / pipe dia				
1		0.25	0	
2		0.15	0	
4		0.12	0	
6		0.08	0	
8		0.08	0	
Exit				
Exit	1	1	1	27.40

TOTAL MINOR LOSS COEFFICIENT **9.22**

Head loss due to minor losses 0.275 ft

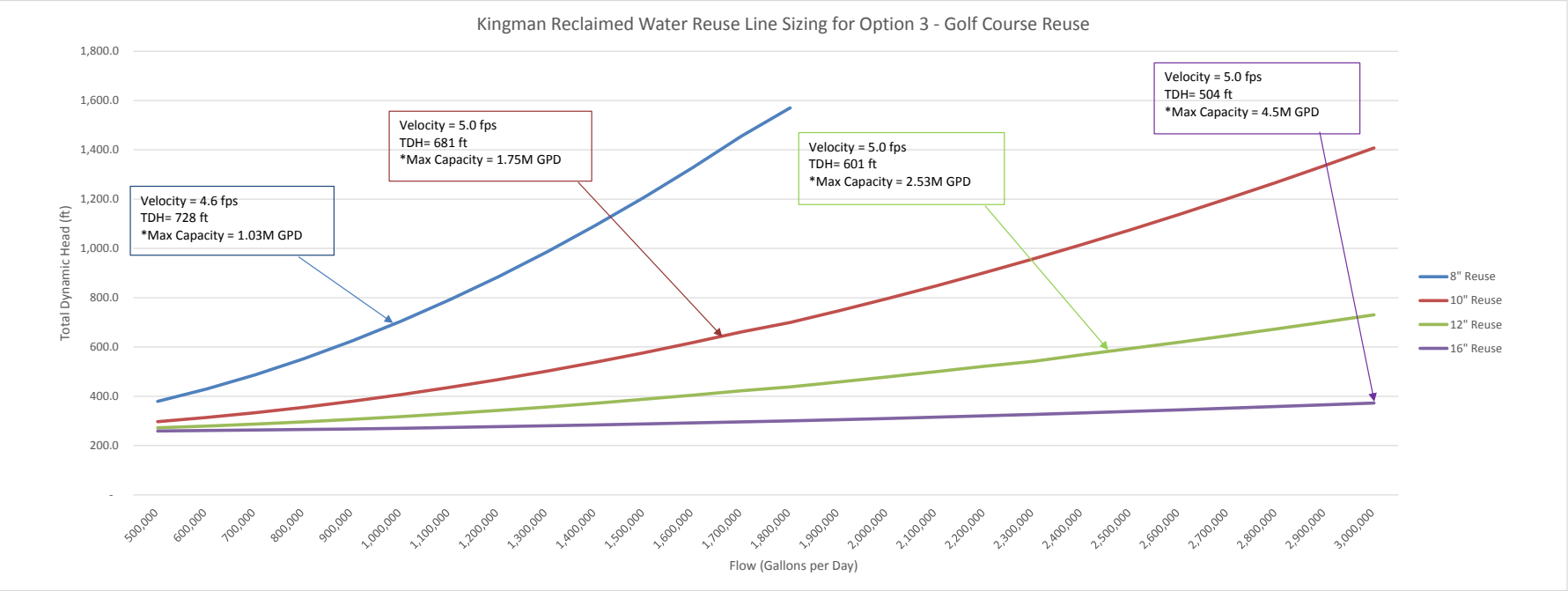
Equivalent length of minor losses 252.62 ft

Head loss due to pipe 24.19 ft

Total Combined Head Loss (Elevation, Minor and Pipe) **266.86 ft**

Line Velocity **1.39 fps**

The City of Kingman Reclaimed Water Reuse Study
Option 3 - Golf Course, Schools and Parks Reuse
Line Sizing vs Capacity vs Costs



*Max Capacity is based on a max velocity of approximatley 5ft/sec in the line and a max pressure of 90% of 350 psi = 315 psi (728 ft head).

Reuse Line Size and Type	Max Capacity (GPD)	Max Capacity (GPM)	**$/LF	LF	***Total Cost
8" Reuse Line	910,000	632	$ 65	46,700	$ 3,035,500
10" Reuse Line	1,650,000	1,146	$ 75	46,700	$ 3,502,500
12" Reuse Line	2,525,000	1,753	$ 80	46,700	$ 3,736,000
16" Reuse Line	4,000,000	2,778	$ 95	46,700	$ 4,436,500

**$/LF is an average between the costs of DIP and C-900, assuming the lower 1/2 of the line will be DIP and the upper 1/2 will be C-900. This assumption has been made due to the higher pressures that will be experienced in the lower 1/2 the reuse line.

***Total cost are the Engineer's estimate made on the basis of the Engineer's qualifications and experienceand are not actual construction costs. The Engineer makes no warranty, expressed or implied, as the accuracy if such opinions compared to bid or actual costs.

A. Ductile Iron Pipe has a working pressure rating of 350 psi (All sizes)
B. C-900 (DR-14) has a working pressure rating of 305 psi and comes in sizes 4" through 12"
C. C-909 (DR-18) has a working pressure of 235 psi and comes in sizes 14" to 24"

City of Kingman

Option 3 - Golf Course, Schools and Parks Reuse

CURRENT Line Sizing Analysis

The pipe will be completely submerged, therefore the the Hazen Williams method will be used

FLOW

Average Flow	**700**	**gpm**
Max Flow	**700**	**gpm**

Water Elevation	
Point A	3490
Point B	3240
Difference	250

HEAD LOSS CALCULATIONS

Minor Loss Formula	$h_l = K_l*(V^2/(2g))$

Head Loss Formula	$hf = 10.44(L_{ft})(Q_{gpm})^{1.85}/C^{1.85}/dia_{in}^{4.8655}$

Enter the following information:

Pipe ID	12	in			Flow	700	gpm	
Area of pipe	0.785	ft^2	Velocity	1.99	fps	1.56	cfs	
Hazen-Williams coefficient	130				Length of Pipe	47000	ft	

FITTING	QTY	Coeff K_l	Total	Equiv. Length (ft)	FITTING	QTY	Coeff K_l	Total	Equiv. Length (ft)
VALVES					**BENDS**				
Gate valve (fully open)	8	0.2	1.6	74.23	90°				
(3/4 open)		1	0		bend rad / pipe dia				
(1/2 open)		5.6	0		1		0.5	0	
(1/4 open)		17	0		2		0.3	0	
Globe valve (fully open)		10	0		4		0.25	0	
Angle valve (fully open)		5	0		6		0.15	0	
Butterfly valve (fully open)		0.4	0		8	15	0.15	2.25	104.38
Swing check valve (fully open)	2	2.5	5	231.96	45°				
Lift check valve (fully open)		12	0		bend rad / pipe dia				
Ball check valve (fully open)		70	0		1		0.37	0	
Foot valve (fully open)		15	0		2		0.22	0	
Plug valve (fully open)		0.98	0		4		0.19	0	
					6		0.11	0	
MISCELLANEOUS					8	2	0.11	0.22	10.21
Tee (Branch)		1	0		22.5°				
Tee (Through)	1	0.2	0.2	9.28	bend rad / pipe dia				
Flow meter	1	1	1	46.39	1		0.25	0	
Enlargement - estimate		1	0		2		0.15	0	
Reducer - estimate		0.06	0		4		0.12	0	
					6		0.08	0	
ENTRANCE					8		0.08	0	
Rounded	1	0.25	0.25	11.60					
Square		0.5	0		**Exit**				
Reentrant		0.4	0		Exit	1	1	1	46.39

TOTAL MINOR LOSS COEFFICIENT **11.52**

Head loss due to minor losses	0.705	ft	Head loss due to pipe	62.04	ft
Equivalent length of minor losses	534.44	ft	**Total Combined Head Loss**	**312.75**	**ft**
			Line Velocity	**1.99**	**fps**

City of Kingman

Option 3 - Golf Course, Schools and Parks Reuse

FUTURE Line Sizing Analysis

The pipe will be completely submerged, therefore the the Hazen Williams method will be used

FLOW

Average Flow	**1,760**	**gpm**
Max Flow	**1,760**	**gpm**

Water Elevation	
Point A	3490
Point B	3240
Difference	250

HEAD LOSS CALCULATIONS

Minor Loss Formula	$h_l = K_l*(V^2/(2g))$
Head Loss Formula	$hf = 10.44(L_{ft})(Q_{gpm})^{1.85}/C^{1.85}/dia_{in}^{4.8655}$

Enter the following information:

Pipe ID	12	in			Flow	1,760	gpm
Area of pipe	0.785	ft^2	Velocity	4.99	fps	3.92	cfs
Hazen-Williams coefficient	130				Length of Pipe	47000	ft

FITTING	QTY	Coeff K_l	Total	Equiv. Length (ft)	FITTING	QTY	Coeff K_l	Total	Equiv. Length (ft)
VALVES					**BENDS**				
Gate valve (fully open)	8	0.2	1.6	85.24	90°				
(3/4 open)		1	0		bend rad / pipe dia				
(1/2 open)		5.6	0		1		0.5	0	
(1/4 open)		17	0		2		0.3	0	
Globe valve (fully open)		10	0		4		0.25	0	
Angle valve (fully open)		5	0		6		0.15	0	
Butterfly valve (fully open)		0.4	0		8	15	0.15	2.25	119.86
Swing check valve (fully open)	2	2.5	5	266.37	45°				
Lift check valve (fully open)		12	0		bend rad / pipe dia				
Ball check valve (fully open)		70	0		1		0.37	0	
Foot valve (fully open)		15	0		2		0.22	0	
Plug valve (fully open)		0.98	0		4		0.19	0	
					6		0.11	0	
MISCELLANEOUS					8	2	0.11	0.22	11.72
Tee (Branch)		1	0		22.5°				
Tee (Through)	1	0.2	0.2	10.65	bend rad / pipe dia				
Flow meter	1	1	1	53.27	1		0.25	0	
Enlargement - estimate		1	0		2		0.15	0	
Reducer - estimate		0.06	0		4		0.12	0	
					6		0.08	0	
ENTRANCE					8		0.08	0	
Rounded	1	0.25	0.25	13.32					
Square		0.5	0		**Exit**				
Reentrant		0.4	0		Exit	1	1	1	53.27

TOTAL MINOR LOSS COEFFICIENT **11.52**

Head loss due to minor losses	4.460	ft	Head loss due to pipe	341.54	ft
Equivalent length of minor losses	613.71	ft	**Total Combined Head Loss**	**596.00**	**ft**
			Line Velocity	**4.99**	**fps**

APPENDIX K

Benefits Analysis

City of Kingman
Reclaimed Water Reuse Study Option 1, 2 & 3 Summary
Benefits Analysis

	Selection Criteria	Possible Points	Selection Criteria Description	Option 1 Score	Option 2 Score	Option 3 Score
1	Capital Cost	**30**	Option scores higher if it has a lower capital cost	**30**	**5**	**10**
2	Long Term O&M	**30**	Option scores higher if it has a lower long term O&M cost	**30**	**5**	**15**
3	Option Reduces Drinking Water System Requirements	**30**	Option scores higher if it provides for future drinking water infrastructure savings	**0**	**15**	**30**
4	Option has Community Economic Impact	**30**	Option scores higher if it offers positive impact for current/future Community Economy and provides for future development connection	**0**	**30**	**20**
5	Option is Flexibility/Scalable	**25**	Option scores higher for it's ease of flexibility with other Options or if it is scalable for future growth	**5**	**13**	**20**
6	Option is Eligible for Green Funding	**20**	Option scores higher if it is eligible for green funding through WIFA	**20**	**20**	**20**
7	Option Negatively Affects User Base Rates	**15**	Option scores lower if the user base rates must be adjusted to fund the Option	**15**	**0**	**10**
8	Option Recharges Groundwater	**10**	Option scores higher for the more amount of groundwater it recharges	**10**	**4**	**0**
9	Ease/Cost of Permitting	**5**	Option scores higher if the ADEQ permitting costs and maintenance are low	**5**	**2**	**2**
10	Ease of Constructability	**5**	Option scores higher if the project is easier to contruct and less of the community is impacted during construction	5	1	2
	Total Possible Points	**200**		**120**	**95**	**129**

City of Kingman
Reclaimed Water Reuse Study Option 1 - Groundwater Injection
Benefits Analysis

	Selection Criteria	Possible Points	Selection Criteria Description	Option 1 Score	Scoring Comments
1	Capital Cost	**30**	Option scores higher if it has a lower capital cost	**30**	Option 1 has the lowest capital cost
2	Long Term O&M	**30**	Option scores higher if it has a lower long term O&M cost	**30**	Option 1 has the lowest long term O&M costs
3	Option Reduces Drinking Water System Requirements	**30**	Option scores higher if it provides for future drinking water infrastructure savings	**0**	Option 1 offers no savings to the City's drinking water infrastructure
4	Option has Community Economic Impact	**30**	Option scores higher if it offers positive impact for current/future Community Economy and provides for future development connection	**0**	Option 1 offers no positive impact to the community economy as there are no connections for future developments
5	Option is Flexibility/Scalable	**25**	Option scores higher for it's ease of flexibility with other Options or if it is scalable for future growth	**5**	Option is scalable, but incorporating the other Options would add significant costs to this Option
6	Option is Eligible for Green Funding	**20**	Option scores higher if it is eligible for green funding through WIFA	**20**	Option qualifies for WIFA funding
7	Option Negatively Affects User Base Rates	**15**	Option scores lower if the user base rates must be adjusted to fund the Option	**15**	User base rates for Option 1 woould increse the least, if at all
8	Option Recharges Groundwater	**10**	Option scores higher for the more amount of groundwater it recharges	**10**	Option 1 offers the most groundwater recharge
9	Ease/Cost of Permitting	**5**	Option scores higher if the ADEQ permitting costs and maintenance are low	**5**	Although Option 1 ADEQ permit fees are initially high, the permit is valid for the life of the WWTF
10	Ease of Constructability	**5**	Option scores higher if the project is easier to construct and less of the community is impacted during construction	**5**	Option 1 is the easiest to construct and has no negative impact to the community during construction
	Total Possible Points	**200**		**120**	

City of Kingman
Reclaimed Water Reuse Study Option 2 - Airport Industrial Park Reuse
Benefits Analysis

	Selection Criteria	Possible Points	Selection Criteria Description	Option 2 Score	Scoring Comments
1	Capital Cost	**30**	Option scores higher if it has a lower capital cost	**5**	Option 2 has the highest capital cost
2	Long Term O&M	**30**	Option scores higher if it has a lower long term O&M cost	**5**	Option 2 has the highest long term O&M cost
3	Option Reduces Drinking Water System Requirements	**30**	Option scores higher if it provides for future drinking water infrastructure savings	**15**	Option 2 provides less than 400K GPD (after 20-years) of water system infrastructure savings
4	Option has Community Economic Impact	**30**	Option scores higher if it offers positive impact for current/future Community Economy and provides for future development connection	**30**	Option 2 offers a positie impact to the current and future community economy
5	Option is Flexibility/Scalable	**25**	Option scores higher for it's ease of flexibility with other Options or if it is scalable for future growth	**13**	Option 2 is flexible with the other 2 Options and is scalable
6	Option is Eligible for Green Funding	**20**	Option scores higher if it is eligible for green funding through WIFA	**20**	Option qualifies for WIFA funding
7	Option Negatively Affects User Base Rates	**15**	Option scores lower if the user base rates must be adjusted to fund the Option	**0**	Raised user base rates would only affect the Airpark tenants and would raise significantly higher than any other Option
8	Option Recharges Groundwater	**10**	Option scores higher for the more amount of groundwater it recharges	**4**	Option 2 provides for less than 300K GPD of groundwater recharge
9	Ease/Cost of Permitting	**5**	Option scores higher if the ADEQ permitting costs and maintenance are low	**2**	Although initial ADEQ permitting costs are low, the permitting would need to be renewed every five years. Also, the City would have the responsibilty to enforce ADEQ requirements at all facilities that use reclaimed water
10	Ease of Constructability	**5**	Option scores higher if the project is easier to construct and less of the community is impacted during construction	**1**	Option 2 would require construction phasing, crossings at multiple streets and would impact the Airport and the industrial Park
	Total Possible Points	**200**		**95**	

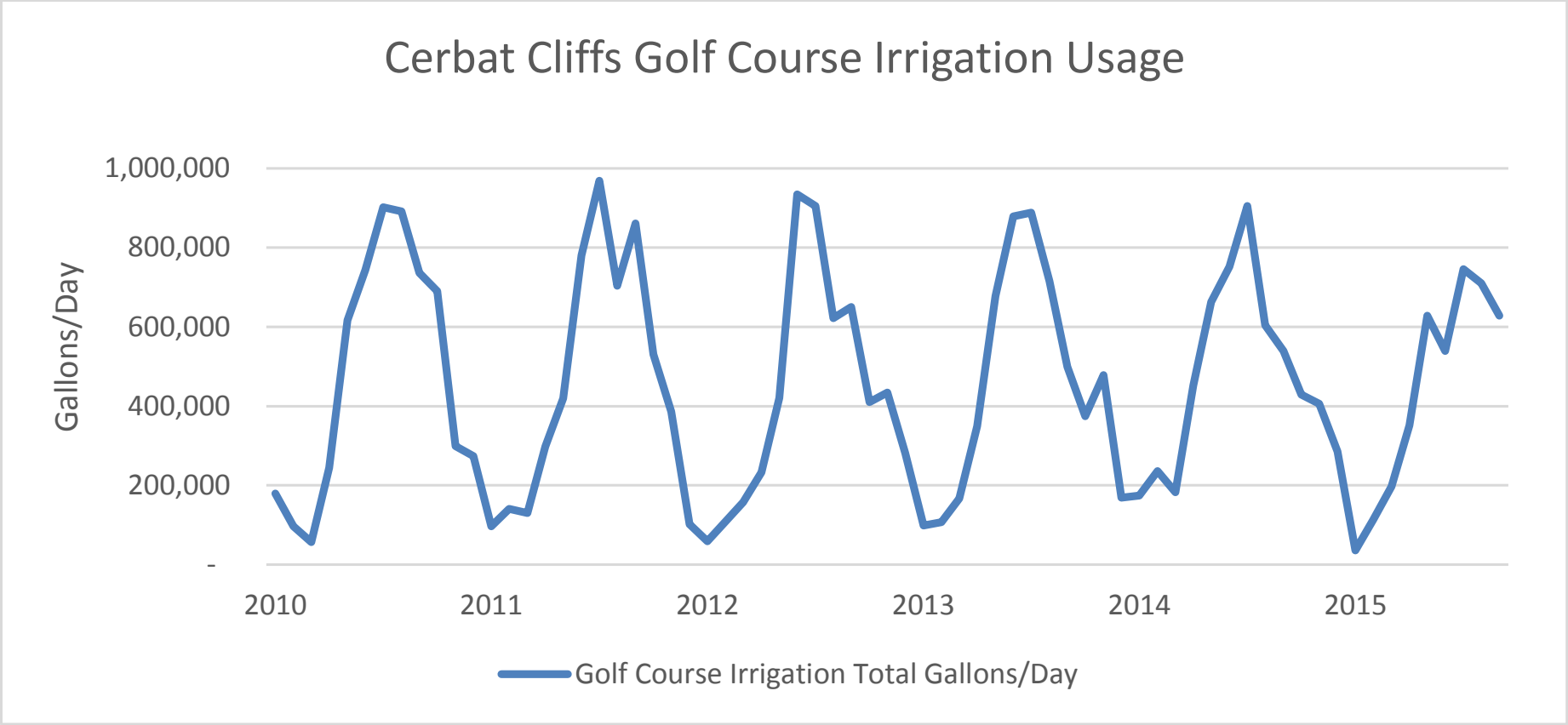
City of Kingman
Reclaimed Water Reuse Study
Benefits Analysis

Option 3 - Golf Course, School and Parks Reuse

	Selection Criteria	Possible Points	Selection Criteria Description	Option 3 Score	Scoring Comments
1	Capital Cost	**30**	Option scores higher if it has a lower capital cost	**10**	Option 3 capital costs are significantly higher than Option 1 but less than Option 2
2	Long Term O&M	**30**	Option scores higher if it has a lower long term O&M cost	**15**	Option 3 long term O&M costs are more than Option 1 but less than Option 2
3	Option Reduces Drinking Water System Requirements	**30**	Option scores higher if it provides for future drinking water infrastructure savings	**30**	Option 3 provides approximatley 1 million GPD of water system infrastructure savings immediatley
6	Option has Community Economic Impact	**30**	Option scores higher if it offers positive impact for current/future Community Economy and provides for future development connection	**20**	Option 3 offers a positie impact to the current and future community economy
5	Option is Flexibility/Scalable	**25**	Option scores higher for it's ease of flexibility with other Options or if it is scalable for future growth	**20**	Option 3 has the most flexibility with the other Options and is scalable
4	Option is Eligible for Green Funding	**20**	Option scores higher if it is eligible for green funding through WIFA	**20**	All of Option 3 is eligible for WIFA funding
7	Option Negatively Affects User Base Rates	**15**	Option scores lower if the user base rates must be adjusted to fund the Option	**10**	Raised user base rates would affect the the entire City and would slightly need to be raised
8	Option Recharges Groundwater	**10**	Option scores higher for the more amount of groundwater it recharges	**0**	Option 3 offers no groundwater recharge
9	Ease/Cost of Permitting	**5**	Option scores higher if the ADEQ permitting costs and maintenance are low	**2**	Although initial ADEQ permitting costs are low, the permitting would need to be renewed every five years. Also, the City would have the responsibilty to enforce ADEQ requirements at all facilities that use reclaimed water
10	Ease of Constructability	**5**	Option scores higher if the project is easier to construct and less of the community is impacted during construction	**2**	The majority of Option 3 follows the Mohave Wash alignment and has less community impact during construction than Option 2.
	Total Possible Points	**200**		**129**	

APPENDIX L

Golf Course, Schools and Parks Flows and Calculations


Cerbat Cliffs Golf Course Irrigation Usage
Gallons/Day
1,000,000
800,000
600,000
400,000
200,000
-
2010
2011
2012
2013
2014
2015
Golf Course Irrigation Total Gallons/Day

City of Kingman
Cerbat Cliffs Golf Course
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2010											
Name	**Service Address**	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Golf Course Irrigation	Gates Avenue	6	23757	97.42	44.82	26.29	106.17	265.48	298.00	375.65	369.52	312.00	293.87	132.67	124.52
Golf Course Irrigation	1003 Gates Ave	6	25049	24.35	13.00	9.19	35.40	96.39	117.90	133.48	136.68	97.77	108.19	48.77	38.84
Golf Course Irrigation	1005 Gates Ave	6	25051	24.06	15.25	8.68	41.63	98.97	126.13	159.52	153.58	131.27	106.81	49.50	40.87
Golf Course Irrigation	1007 Gates Ave	6	25053	21.19	13.75	7.74	36.50	89.65	118.07	144.65	140.61	120.10	108.32	37.67	42.19
Golf Course Irrigation	1009 Gates Ave	6	25055	11.90	8.93	4.55	24.90	64.52	82.10	87.68	89.84	74.10	71.26	28.13	26.68
Golf Course Irrigation	1013 Gates Ave	6	28703	1.04	0.47	0.00	0.11	1.46	1.75	1.57	1.41	0.98	1.36	1.88	0.47
Golf Course Irrigation	Total Gallons/Day			179,971	96,221	56,452	244,707	616,455	743,953	902,542	891,636	736,216	689,808	298,615	273,569

2010 Avg Usage	477,512
2010 Peak Usage	902,542
2010 Min Usage	56,452
2010-2014 Avg Usage	456,625
2010-2014 Peak Usage	968,936
2010-2014 Min Usage	56,452

City of Kingman
Cerbat Cliffs Golf Course
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2011											
Name	**Service Address**	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Golf Course Irrigation	Gates Avenue	6	23757	55.81	80.71	69.68	147.33	174.19	328.33	408.39	296.77	370.33	225.16	187.17	52.90
Golf Course Irrigation	1003 Gates Ave	6	25049	9.71	2.96	3.61	23.03	72.39	117.90	157.13	107.19	127.77	81.10	54.83	17.16
Golf Course Irrigation	1005 Gates Ave	6	25051	11.68	22.04	22.32	49.60	65.87	135.00	158.90	121.90	141.30	87.42	56.53	10.55
Golf Course Irrigation	1007 Gates Ave	6	25053	11.39	20.57	20.45	44.83	60.90	120.57	147.84	107.77	130.00	81.68	54.00	13.19
Golf Course Irrigation	1009 Gates Ave	6	25055	8.03	14.04	14.29	32.37	45.32	77.43	95.90	69.71	90.27	54.65	33.47	7.13
Golf Course Irrigation	1013 Gates Ave	6	28703	0.51	0.54	0.09	0.38	0.59	0.81	0.77	0.81	1.07	0.51	0.52	0.50
Golf Course Irrigation	Total Gallons/Day			97,124	140,860	130,449	297,547	419,267	780,047	968,936	704,163	860,734	530,512	386,518	101,437

2011 Avg Usage	451,466
2011 Peak Usage	968,936
2011 Min Usage	97,124

City of Kingman
Cerbat Cliffs Golf Course
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	29	31	30	31	30	31	31	30	31	30	31
				2012											
Name	**Service Address**	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Golf Course Irrigation	Gates Avenue	6	23757	27.10	47.07	73.55	104.00	176.77	382.00	378.39	270.97	284.00	175.32	187.83	120.97
Golf Course Irrigation	1003 Gates Ave	6	25049	12.77	27.28	33.10	38.87	81.90	151.90	142.35	92.97	104.67	63.45	67.87	46.26
Golf Course Irrigation	1005 Gates Ave	6	25051	7.23	13.97	22.10	35.30	66.71	165.97	162.16	103.10	106.97	70.39	74.03	48.06
Golf Course Irrigation	1007 Gates Ave	6	25053	7.26	11.59	14.26	32.80	56.48	140.93	135.29	98.48	94.10	60.97	64.37	41.81
Golf Course Irrigation	1009 Gates Ave	6	25055	4.06	8.10	14.32	21.53	38.19	92.37	85.87	55.55	59.37	39.94	39.60	24.19
Golf Course Irrigation	1013 Gates Ave	6	28703	0.00	0.51	0.58	0.37	0.66	1.07	0.68	0.65	0.77	0.47	0.46	0.28
Golf Course Irrigation	Total Gallons/Day			58,422	108,510	157,906	232,872	420,726	934,236	904,746	621,715	649,873	410,530	434,159	281,569

2012 Avg Usage	434,605
2012 Peak Usage	934,236
2012 Min Usage	58,422

City of Kingman
Cerbat Cliffs Golf Course
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2013											
Name	**Service Address**	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Golf Course Irrigation	Gates Avenue	6	23757	40.00	53.21	65.32	118.83	295.81	376.67	379.68	305.32	214.17	163.23	204.67	78.71
Golf Course Irrigation	1003 Gates Ave	6	25049	19.26	11.68	30.13	85.10	105.97	129.03	128.61	103.06	72.13	53.19	75.57	25.94
Golf Course Irrigation	1005 Gates Ave	6	25051	17.00	17.29	29.45	59.73	114.94	150.17	159.23	125.48	87.77	64.77	79.30	26.06
Golf Course Irrigation	1007 Gates Ave	6	25053	12.39	15.36	26.42	51.67	100.81	138.20	133.29	109.42	75.33	56.06	72.83	23.19
Golf Course Irrigation	1009 Gates Ave	6	25055	10.00	9.89	16.10	34.20	59.97	85.10	86.90	71.35	49.87	37.19	45.70	14.42
Golf Course Irrigation	1013 Gates Ave	6	28703	0.02	0.02	0.00	0.18	0.20	0.27	0.63	0.51	0.55	0.49	0.60	0.76
Golf Course Irrigation	Total Gallons/Day			98,666	107,446	167,419	349,708	677,688	879,439	888,343	715,159	499,816	374,937	478,662	169,082

2013 Avg Usage	450,530
2013 Peak Usage	888,343
2013 Min Usage	98,666

City of Kingman
Cerbat Cliffs Golf Course
Irrigation Meter Readings
(in thousand gallons)

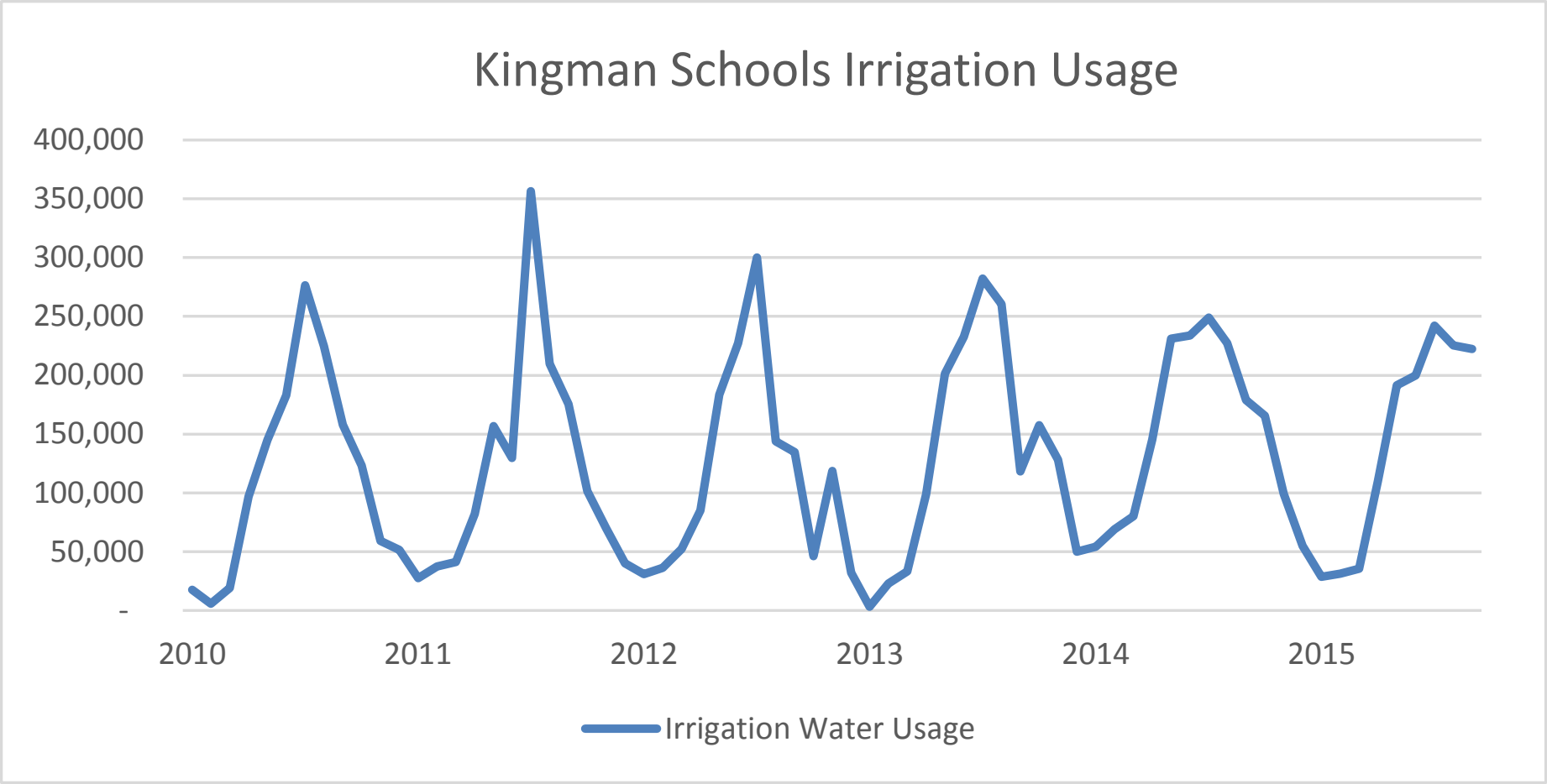
			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2014											
Name	**Service Address**	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Golf Course Irrigation	Gates Avenue	6	23757	79.35	106.07	83.39	192.50	294.35	324.83	398.39	262.58	222.00	186.13	181.17	122.10
Golf Course Irrigation	1003 Gates Ave	6	25049	25.48	35.18	24.68	63.37	93.68	101.90	117.23	85.13	73.30	56.65	56.23	41.52
Golf Course Irrigation	1005 Gates Ave	6	25051	28.61	38.71	32.71	82.00	116.35	131.93	160.87	105.71	100.40	74.81	65.10	49.84
Golf Course Irrigation	1007 Gates Ave	6	25053	24.94	33.79	25.58	69.90	99.00	111.87	137.55	90.81	83.57	68.03	65.93	45.45
Golf Course Irrigation	1009 Gates Ave	6	25055	15.35	22.32	16.71	43.63	58.65	80.60	90.87	59.06	59.33	43.48	37.23	26.23
Golf Course Irrigation	1013 Gates Ave	6	28703	0.25	0.00	0.00	0.42	0.49	0.44	0.39	0.49	0.44	0.41	0.48	0.21
Golf Course Irrigation	Total Gallons/Day			173,988	236,071	183,065	451,823	662,518	751,569	905,290	603,777	539,044	429,506	406,145	285,334

2014 Avg Usage	469,011
2014 Peak Usage	905,290
2014 Min Usage	173,988

City of Kingman
Cerbat Cliffs Golf Course
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2015											
Name	**Service Address**	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Golf Course Irrigation	Gates Avenue	6	23757	19.68	60.36	98.06	153.67	273.39	236.50	253.06	387.26	240.00	0.00	0.00	0.00
Golf Course Irrigation	1003 Gates Ave	6	25049	5.48	15.93	29.81	47.50	87.77	74.13	158.35	44.68	116.10	0.00	0.00	0.00
Golf Course Irrigation	1005 Gates Ave	6	25051	4.55	17.93	29.42	57.47	112.45	89.00	142.97	107.84	109.10	0.00	0.00	0.00
Golf Course Irrigation	1007 Gates Ave	6	25053	5.48	16.29	29.97	55.47	98.39	85.23	108.35	105.81	90.47	0.00	0.00	0.00
Golf Course Irrigation	1009 Gates Ave	6	25055	0.65	2.93	9.45	36.87	56.35	53.43	82.87	64.26	71.70	0.00	0.00	0.00
Golf Course Irrigation	1013 Gates Ave	6	28703	0.00	0.18	0.41	0.44	0.43	0.43	0.43	0.60	0.44	0.00	0.00	0.00
Golf Course Irrigation	Total Gallons/Day			35,839	113,609	197,118	351,403	628,787	538,731	746,044	710,444	627,805	-	-	-

2015 Avg Usage	329,148
2015 Peak Usage	746,044
2015 Min Usage	35,839


Kingman Schools Irrigation Usage
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
-
2010
2011
2012
2013
2014
2015
Irrigation Water Usage

City of Kingman
City of Kingman Schools
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2010											
School	**Address**	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Kingman High School	4182 Bank St	IRR16027	11597	-	-	1	4	5	10	16	15	10	9	1	0
Kingman High School	4182 Bank St	IRR16028	11597	10	1	15	70	118	146	208	161	103	67	32	22
		Total Gallons/Day		9,516	500	15,677	74,663	123,632	155,533	223,929	176,861	112,840	76,323	33,077	22,032
Kingman Middle School	1969 Detroit St	WA5896	23725	7	5	3	22	21	27	52	47	44	46	26	29
		Total Gallons/Day		6,526	5,232	3,303	21,773	21,077	27,367	52,074	47,232	44,223	46,332	25,790	29,019
Kingman Academy Middle School	3400 Burbank	IRR37868	40067	2	0	0	0	0	0	0	1	1	0	0	0
Kingman Academy Middle School	3269 Harrison	IRR37868	28979	-	-	-	-	-	-	-	-	0	-	-	-
		Total Gallons/Day		1,673	45	7	267	234	179	344	564	674	474	287	315
		Total Gallons/Day		17,715	5,778	18,988	96,704	144,943	183,079	276,347	224,657	157,737	123,129	59,153	51,367

2010 Avg Usage	113,300
2010 Max Usage	276,347
2010 Min Usage	5,778
2010-2014 Avg Usage	125,902
2010-2014 Max Usage	356,486
2010-2014 Min Usage	3,176

City of Kingman
City of Kingman Schools
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2011											
School	**Address**	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Kingman High School	4182 Bank St	IRR16027	11597	1	4	5	13	12	16	12	13	14	6	5	2
Kingman High School	4182 Bank St	IRR16028	11597	12	31	28	59	133	70	279	145	111	61	38	19
		Total Gallons/Day		13,223	34,464	33,203	71,293	145,113	85,417	291,758	157,377	125,110	66,503	42,377	21,265
Kingman Middle School	1969 Detroit St	WA5896	23725	14	3	8	11	11	44	65	52	50	35	27	19
		Total Gallons/Day		14,265	2,764	7,742	10,540	11,326	43,873	64,542	52,287	50,243	34,935	27,267	18,658
Kingman Academy Middle School	3400 Burbank	IRR37868	40067	0	0	0	0	0	0	0	0	0	0	-	-
Kingman Academy Middle School	3269 Harrison	IRR37868	28979	-	-	-	-	-	-	-	-	-	-	-	-
		Total Gallons/Day		173	132	114	150	168	209	186	210	192	161	-	-
		Total Gallons/Day		27,660	37,360	41,059	81,983	156,607	129,499	356,486	209,875	175,546	101,599	69,643	39,923

2011 Avg Usage	118,937
2011 Max Usage	356,486
2011 Min Usage	27,660

City of Kingman
City of Kingman Schools
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	29	31	30	31	30	31	31	30	31	30	31
				2012											
School	**Address**	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Kingman High School	4182 Bank St	IRR16027	11597	3	3	3	5	8	10	14	15	12	3	6	2
Kingman High School	4182 Bank St	IRR16028	11597	20	24	29	51	141	160	239	81	72	10	64	19
		Total Gallons/Day		22,703	27,400	31,726	56,270	149,487	170,343	252,584	96,277	83,533	13,161	70,500	21,355
Kingman Middle School	1969 Detroit St	WA5896	23725	8	9	21	29	34	57	47	48	51	33	48	10
		Total Gallons/Day		8,129	8,971	20,639	28,940	33,790	56,927	47,458	47,519	51,087	33,003	48,077	10,406
Kingman Academy Middle School	3400 Burbank	IRR37868	40067	0	-	0	-	0	0	0	0	0	-	0	0
Kingman Academy Middle School	3269 Harrison	IRR37868	28979	-	-	-	-	-	-	-	-	-	-	-	-
		Total Gallons/Day		1	-	1	-	93	160	170	145	125	-	107	132
		Total Gallons/Day		30,834	36,371	52,365	85,210	183,370	227,430	300,212	143,942	134,745	46,165	118,684	31,893

2012 Avg Usage	115,935
2012 Max Usage	300,212
2012 Min Usage	30,834

City of Kingman
City of Kingman Schools
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2013											
School	**Address**	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Kingman High School	4182 Bank St	IRR16027	11597	0	2	2	3	11	13	16	23	17	12	8	0
Kingman High School	4182 Bank St	IRR16028	11597	0	17	26	80	158	158	206	161	47	113	65	7
		Total Gallons/Day		258	19,643	28,290	83,167	168,774	170,933	221,452	184,194	64,433	124,645	72,667	7,032
Kingman Middle School	1969 Detroit St	WA5896	23725	3	3	5	15	32	62	61	76	53	33	55	43
		Total Gallons/Day		2,771	2,929	4,790	15,480	32,268	61,547	60,613	75,739	53,477	32,784	55,190	42,713
Kingman Academy Middle School	3400 Burbank	IRR37868	40067	0	0	0	0	0	0	0	0	0	0	0	0
Kingman Academy Middle School	3269 Harrison	IRR37868	28979	0	0	-	-	-	-	-	-	-	-	-	-
		Total Gallons/Day		147	154	127	130	141	159	246	353	447	260	155	135
		Total Gallons/Day		3,176	22,725	33,208	98,777	201,183	232,639	282,311	260,285	118,357	157,689	128,012	49,880

2013 Avg Usage	132,354
2013 Max Usage	282,311
2013 Min Usage	3,176

City of Kingman
City of Kingman Schools
Irrigation Meter Readings
(in thousand gallons)

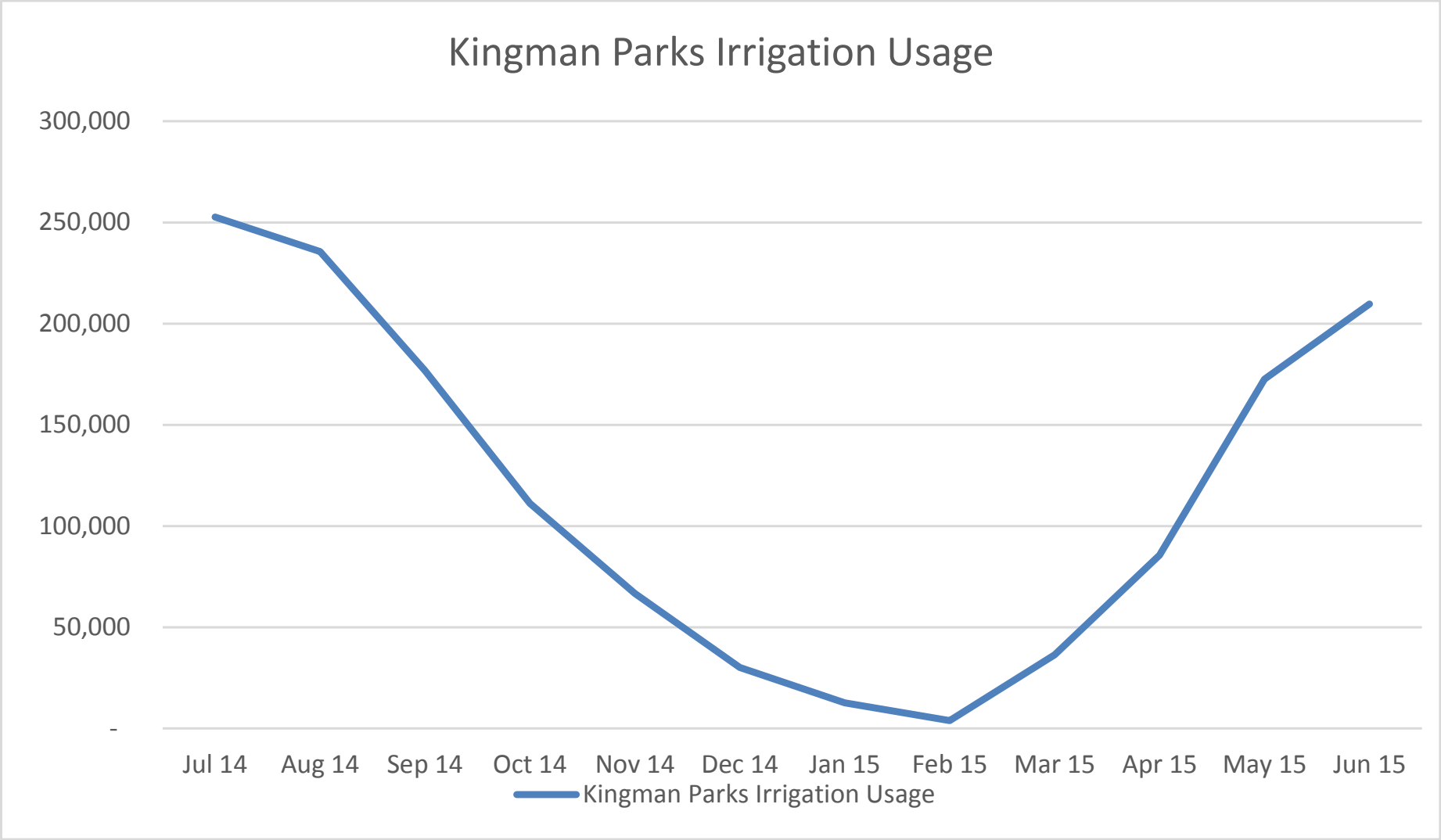
			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2014											
School	**Address**	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Kingman High School	4182 Bank St	IRR16027	11597	0	0	5	14	16	16	19	16	13	13	5	1
Kingman High School	4182 Bank St	IRR16028	11597	33	37	46	99	168	155	164	131	102	96	37	14
		Total Gallons/Day		33,194	36,536	51,032	113,333	183,968	170,800	183,226	147,161	114,667	108,871	42,567	15,613
Kingman Middle School	1969 Detroit St	WA5896	23725	21	32	29	32	47	63	65	80	64	56	56	39
		Total Gallons/Day		20,942	32,464	28,781	31,633	46,974	62,620	65,400	79,942	63,977	56,361	56,480	38,974
Kingman Academy Middle School	3400 Burbank	IRR37868	40067	0	0	0	0	0	0	0	0	0	0	0	0
Kingman Academy Middle School	3269 Harrison	IRR37868	28979	-	-	-	-	-	-	-	-	-	0	-	-
		Total Gallons/Day		162	149	144	159	186	191	222	189	243	259	182	209
		Total Gallons/Day		54,298	69,149	79,957	145,126	231,128	233,611	248,847	227,293	178,886	165,492	99,229	54,796

2014 Avg Usage	148,984
2014 Max Usage	248,847
2014 Min Usage	54,298

City of Kingman
City of Kingman Schools
Irrigation Meter Readings
(in thousand gallons)

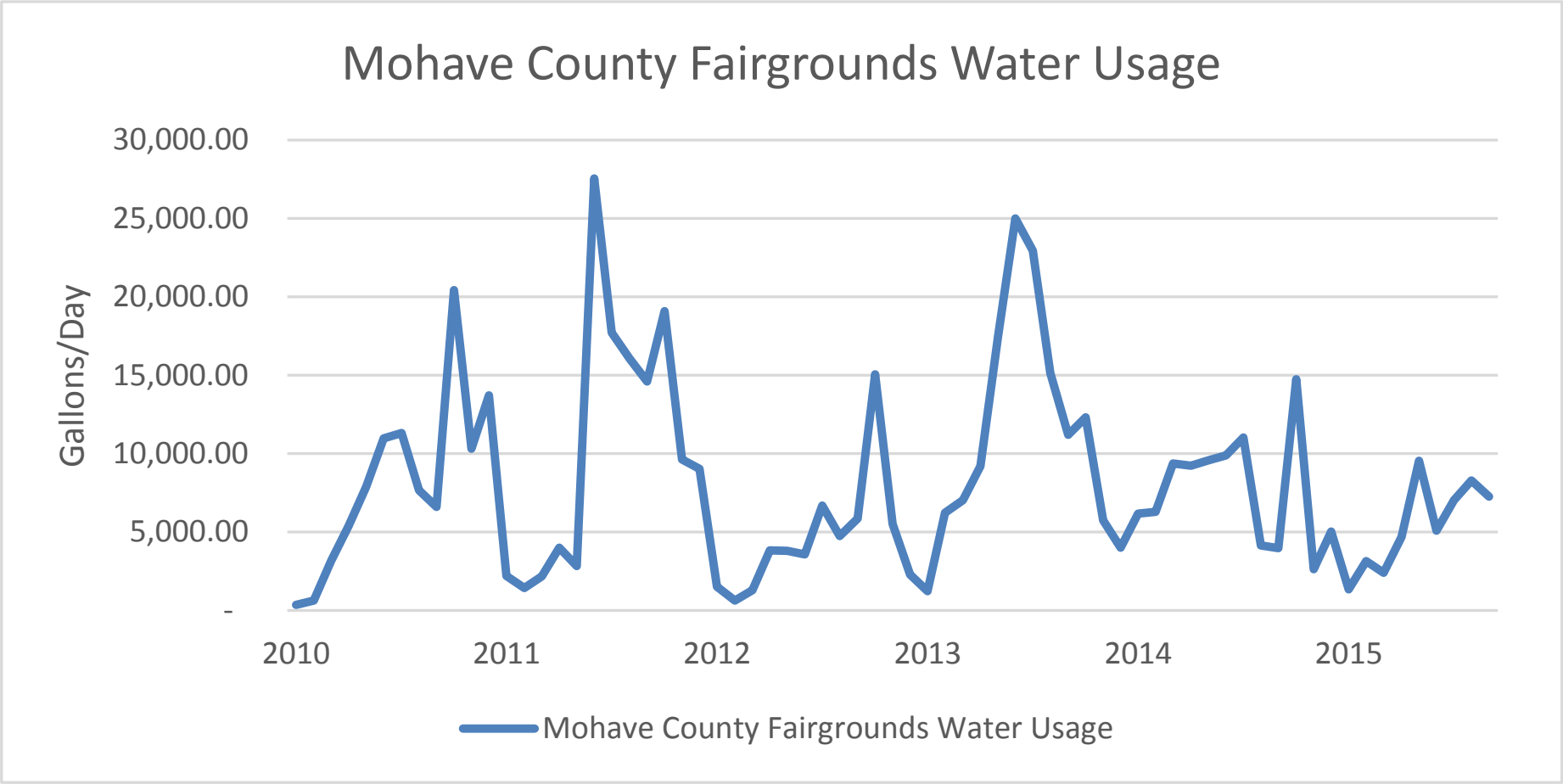
			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2015											
School	**Address**	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Kingman High School	4182 Bank St	IRR16027	11597	-	1	1	3	9	10	9	11	8	-	-	-
Kingman High School	4182 Bank St	IRR16028	11597	0	10	14	71	139	137	166	132	145	-	-	-
		Total Gallons/Day		452	11,536	14,935	74,000	148,484	146,833	175,032	143,774	153,267	-	-	-
Kingman Middle School	1969 Detroit St	WA5896	23725	28	20	20	36	43	53	67	81	69	-	-	-
		Total Gallons/Day		27,852	19,668	20,148	35,797	42,629	52,857	66,816	81,448	68,810	-	-	-
Kingman Academy Middle School	3400 Burbank	IRR37868	40067	0	0	0	0	0	0	0	0	0	-	-	-
Kingman Academy Middle School	3269 Harrison	IRR37868	28979	-	-	-	-	-	-	-	-	-	-	-	-
		Total Gallons/Day		199	254	215	255	234	233	232	205	222	-	-	-
		Total Gallons/Day		28,502	31,458	35,299	110,052	191,347	199,923	242,081	225,427	222,299	-	-	-

2015 Avg Usage	107,199
2015 Max Usage	242,081
2015 Min Usage	-


Kingman Parks Irrigation Usage
300,000
250,000
200,000
150,000
100,000
50,000
-
Jul 14
Aug 14
Sep 14
Oct 14
Nov 14
Dec 14
Jan 15
Feb 15
Mar 15
Apr 15
May 15
Jun 15
Kingman Parks Irrigation Usage

City of Kingman
City of Kingman Parks
Irrigation Meter Readings
(in thousand gallons)

Park	Address	Customer	Location	Jul 14	Aug 14	Sep 14	Oct 14	Nov 14	Dec 14	Jan 15	Feb 15	Mar 15	Apr 15	May 15	Jun 15
Parks & Irrigation	3333 Harrison St.	6	8045	106.19	82.83	62.31	38.93	18.50	12.06	3.12	1.89	14.43	25.90	52.99	57.97
Parks & Irrigation	Firefighters Memorial Park	6	23721	61.39	75.68	53.37	36.77	33.70	7.97	4.81	0.07	5.84	20.47	49.94	79.33
Parks & Irrigation	1 Burbank St./Centennial Park	6	27927	85.06	77.00	61.03	35.45	14.43	10.13	4.61	1.90	16.06	39.23	69.61	72.43
		Total Gallons/Day		252,645	235,504	176,710	111,155	66,630	30,162	12,543	3,854	36,337	85,600	172,542	209,732


Mohave County Fairgrounds Water Usage
30,000.00
25,000.00
20,000.00
15,000.00
10,000.00
5,000.00
-
Gallons/Day
2010
2011
2012
2013
2014
2015
Mohave County Fairgrounds Water Usage

City of Kingman
Mohave County Fairgrounds
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2010											
	Address	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High Desert 66 BMX Racetrack	2600 Fairgrounds	103654	41663	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fairgrounds Front Inside	2600 Fairgrounds	18646	23715	0.33	0.61	3.15	5.22	7.45	10.89	11.12	7.58	6.25	7.62	2.79	2.75
Fairgrounds Racetrack 1	2600 Fairgrounds	18646	23717	0.00	0.00	0.00	0.15	0.39	0.05	0.06	0.03	0.15	1.34	0.02	0.27
Fairgrounds Racetrack 2	2600 Fairgrounds	18646	23719	0.03	0.02	0.02	0.04	0.05	0.03	0.14	0.05	0.21	11.46	7.50	10.69
			Total Gallons/Day	358.06	632.14	3,174.19	5,417.33	7,876.13	10,970.00	11,317.74	7,656.13	6,616.00	20,420.97	10,306.00	13,706.45

2010 Avg Usage	8,204
2010 Max Usage	20,421
2010 Min Usage	358
2010-2014 Avg Usage	8,488
2010-2014 Max Usage	27,553
2010-2014 Min Usage	358

City of Kingman
Mohave County Fairgrounds
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2011											
	Address	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High Desert 66 BMX Racetrack	2600 Fairgrounds	103654	41663	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fairgrounds Front Inside	2600 Fairgrounds	18646	23715	1.88	1.40	0.70	2.21	2.04	6.18	3.16	8.51	14.11	11.46	9.57	9.04
Fairgrounds Racetrack 1	2600 Fairgrounds	18646	23717	0.02	0.02	0.08	0.23	0.35	0.19	0.15	0.11	0.00	1.14	0.05	0.00
Fairgrounds Racetrack 2	2600 Fairgrounds	18646	23719	0.29	0.03	1.40	1.56	0.45	21.19	14.41	7.45	0.49	6.48	0.01	0.01
			Total Gallons/Day	2,202.26	1,443.93	2,187.74	3,997.00	2,845.48	27,553.00	17,727.74	16,059.03	14,603.67	19,083.55	9,628.00	9,044.84

2011 Avg Usage	10,531
2011 Max Usage	27,553
2011 Min Usage	1,444

City of Kingman
Mohave County Fairgrounds
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2012											
	Address	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High Desert 66 BMX Racetrack	2600 Fairgrounds	103654	41663	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fairgrounds Front Inside	2600 Fairgrounds	18646	23715	1.51	0.63	1.27	3.20	3.11	3.11	6.20	4.53	5.67	9.48	2.86	1.65
Fairgrounds Racetrack 1	2600 Fairgrounds	18646	23717	0.00	0.00	0.00	0.25	0.63	0.31	0.13	0.02	0.15	1.02	0.05	0.01
Fairgrounds Racetrack 2	2600 Fairgrounds	18646	23719	0.01	0.01	0.01	0.38	0.08	0.14	0.37	0.20	0.04	4.55	2.62	0.64
			Total Gallons/Day	1,526.13	641.38	1,277.42	3,822.00	3,817.74	3,562.33	6,701.29	4,755.81	5,867.67	15,051.61	5,528.33	2,295.48

2012 Avg Usage	4,571
2012 Max Usage	15,052
2012 Min Usage	641

City of Kingman
Mohave County Fairgrounds
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2013											
	Address	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High Desert 66 BMX Racetrack	2600 Fairgrounds	103654	41663	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fairgrounds Front Inside	2600 Fairgrounds	18646	23715	1.04	2.70	1.98	2.57	10.85	16.76	13.92	10.53	7.24	4.88	2.27	1.87
Fairgrounds Racetrack 1	2600 Fairgrounds	18646	23717	0.00	0.98	1.22	0.68	1.03	0.48	0.36	0.91	1.53	2.10	0.75	0.05
Fairgrounds Racetrack 2	2600 Fairgrounds	18646	23719	0.19	2.56	3.85	5.95	5.52	7.78	8.67	3.69	2.42	5.34	2.71	2.07
			Total Gallons/Day	1,229.03	6,243.57	7,039.03	9,205.67	17,395.48	25,015.33	22,955.48	15,136.13	11,194.67	12,320.97	5,735.00	3,994.52

2013 Avg Usage	11,455
2013 Max Usage	25,015
2013 Min Usage	1,229

City of Kingman
Mohave County Fairgrounds
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2014											
	Address	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High Desert 66 BMX Racetrack	2600 Fairgrounds	103654	41663	0.00	0.16	0.28	0.45	0.61	1.34	0.94	0.63	0.54	0.35	0.42	0.33
Fairgrounds Front Inside	2600 Fairgrounds	18646	23715	2.69	2.10	2.44	2.02	3.88	2.19	3.54	1.90	1.21	5.05	1.20	1.26
Fairgrounds Racetrack 1	2600 Fairgrounds	18646	23717	0.17	0.14	5.01	0.66	0.94	0.73	0.36	0.05	0.07	1.65	0.19	0.14
Fairgrounds Racetrack 2	2600 Fairgrounds	18646	23719	3.33	3.88	1.66	6.11	4.14	5.62	6.19	1.58	2.16	7.70	0.83	3.31
			Total Gallons/Day	6,186.77	6,280.71	9,381.94	9,239.67	9,575.81	9,878.33	11,032.58	4,154.84	3,979.00	14,750.00	2,632.67	5,040.65

2014 Avg Usage	7,678
2014 Max Usage	14,750
2014 Min Usage	2,633

City of Kingman
Mohave County Fairgrounds
Irrigation Meter Readings
(in thousand gallons)

			Days in Month	31	28	31	30	31	30	31	31	30	31	30	31
				2015											
	Address	**Customer**	**Location**	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
High Desert 66 BMX Racetrack	2600 Fairgrounds	103654	41663	0.11	0.14	0.16	0.43	0.80	0.86	0.56	0.71	0.61	0.00	0.00	0.00
Fairgrounds Front Inside	2600 Fairgrounds	18646	23715	0.98	1.01	0.61	1.69	2.11	2.08	3.25	3.85	2.76	0.00	0.00	0.00
Fairgrounds Racetrack 1	2600 Fairgrounds	18646	23717	0.00	0.10	0.00	0.00	3.24	0.04	0.06	0.03	0.04	0.00	0.00	0.00
Fairgrounds Racetrack 2	2600 Fairgrounds	18646	23719	0.24	1.89	1.62	2.58	3.38	2.11	3.16	3.71	3.84	0.00	0.00	0.00
			Total Gallons/Day	1,332.58	3,135.36	2,395.16	4,699.67	9,539.03	5,090.33	7,038.06	8,300.97	7,255.33	-	-	-

2015 Avg Usage	4,066
2015 Max Usage	9,539
2015 Min Usage	-

APPENDIX M

Evaporation Calculations

City of Kingman
Option 3 - Golf Course, Schools and Parks Reuse
Evaporation Calculations

Surface Area of Pond (sf)	Evaporation Rate (in/yr)	Evaporation Rate (ft/day)	Water Losses (cf/day)	Water Losses (gal/day)
136,204	115	0.0263	3,576	26,749

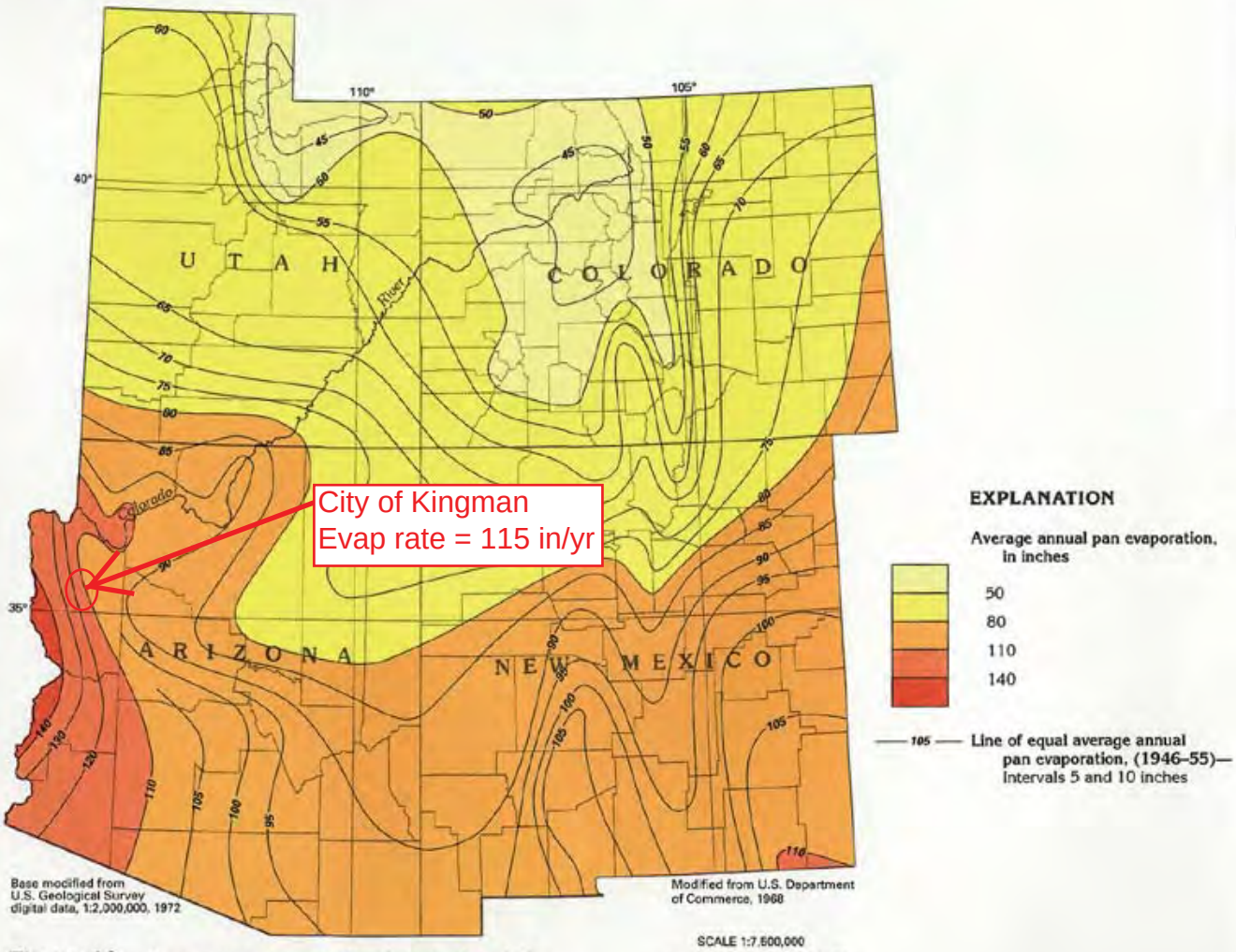


Figure 10. *Average annual evaporation is as much as 140 inches in western Arizona and is in excess of annual precipitation in almost all of Segment 2.*

KINGMAN EVAPORATION @ GOLF COURSE.

MAX AREA of POND = 136,204 sf ≈ 3.12 ac-ft

KINGMAN'S AVG ANNUAL EVAP RATE = 115 in/yr
= 0.315 in/day
= 0.0262 ft/day

$0.0262 \frac{ft}{day} (136{,}204 sf) = 3{,}568.55$ cf/day

$3{,}568.55 \text{ cf/day} \left(\frac{7.48 \text{ gal}}{1 \text{ cf}}\right) = \boxed{26{,}692.72 \text{ gal/day}}$

MAX GOLF COURSE USAGE (2010-2014) = 968,936 gal/DAY

Option 3 provides 1M GAL/DAY

1,000,000 GAL/DAY
− 968,936
31,064 gal/DAY Left OVER in POND.

After Evaporation: 31,064 gal
− 26,692 gal
4,372 gal

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Engineering Services

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Presentation of Sewer Master Plan Study (ENG14-112)

SUMMARY:
On January 6, 2015, the City hired Sunrise Engineering to prepare a Sewer Master Plan update and Infiltration Study. The planning area for the study includes the entire City Water Service Boundary. The report examines the existing sewer system and provides recommendations on areas that have sewer pipe capacity concerns, as well as recommendations on the future expansion of the sewer system. In addition, the study examines areas of inflow and infiltration into the downtown sewer system and provides recommendations on projects to eliminate such inflow and infiltration (I&I).

The Report is attached in two parts due to file size, and the appendices have been excluded. The full report is available on the City website (http://www.cityofkingman.gov/Departments/Engineering/DesignStudiesandReports.aspx). Sunrise Engineering will be at the meeting to present the results of the study and to answer any questions.

FISCAL IMPACT:
The report includes recommendations for short term and long term capital projects. Staff has included in the five year Capital Improvement Plan those projects with the highest priorities.

STAFF RECOMMENDATION:
This presentation is for informational purposes only.

ATTACHMENTS:

Description
Sewer Master Plan Report - Part 1
Sewer Master Plan Report - Part 2

REVIEWERS:

Department	Reviewer	Action	Date
Engineering	Henry, Greg	Approved	3/25/2016 - 5:25 PM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 10:55 AM

City Manager	Dougherty, John	Approved	3/28/2016 - 3:05 PM

Wastewater Master Plan Update & Inflow/Infiltration Study

Final Report - March 2016

WASTEWATER MASTER PLAN UPDATE & INFLOW/INFILTRATION STUDY

FOR

MARCH 2016

Prepared for:
City of Kingman
310 North 4th Street
Kingman, Arizona 86401
928.753.8329
Attn. Gregory T. Henry, P.E.

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Randy M. Perham, P.E., CFM
Project Manager/Sewer Modeler

Christina Christian, E.I.T.
Assistant Project Manger

Registered Professional Engineer (Civil)
CERTIFICATE NO.
58514
RANDY M.
PERHAM
Date Signed 3/22/16
ARIZONA U.S.A.

EXPIRES: 9/30/17

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1.0 INTRODUCTION

1.1 SCOPE OF WORK

The purpose of this Wastewater Master Plan Update and Inflow/Infiltration Study is to provide the City of Kingman (City) with an evaluation of the interceptor wastewater collection system for both the Downtown and Hilltop Service Areas. The most recent wastewater master plan and interceptor model for the Hilltop Service Area was developed in 2003 and the most recent report for Downtown was prepared in 2011. While both reports are being utilized, they do not sufficiently meet the current planning needs. The City's General Plan has been updated, as such, land usage has changed, and there have been changes and expansions to the City's collection system. The interceptor modeling and analysis performed under this project reflects the sewer network as currently constructed, includes the impact of land use updates, and includes an inflow/infiltration study for the Downtown. It is intended that this report will function as a planning tool to determine deficiencies with existing facilities, as well as sizing of future facilities and provide a comprehensive analysis of the City's entire network.

The scope of work for the project consisted of 6 major tasks including:

- Data Collection & Supplemental Manhole Survey
- Sewer Interceptor Model Data Input
- Existing (2016) Sewer Interceptor Modeling & Analysis – Hilltop Service Area
- Existing (2016) Sewer Interceptor Modeling & Analysis – Downtown Service Area
- Inflow/Infiltration Study – Downtown Service Area
- Future Sewer Interceptor Modeling & Analysis – Hilltop Service Area

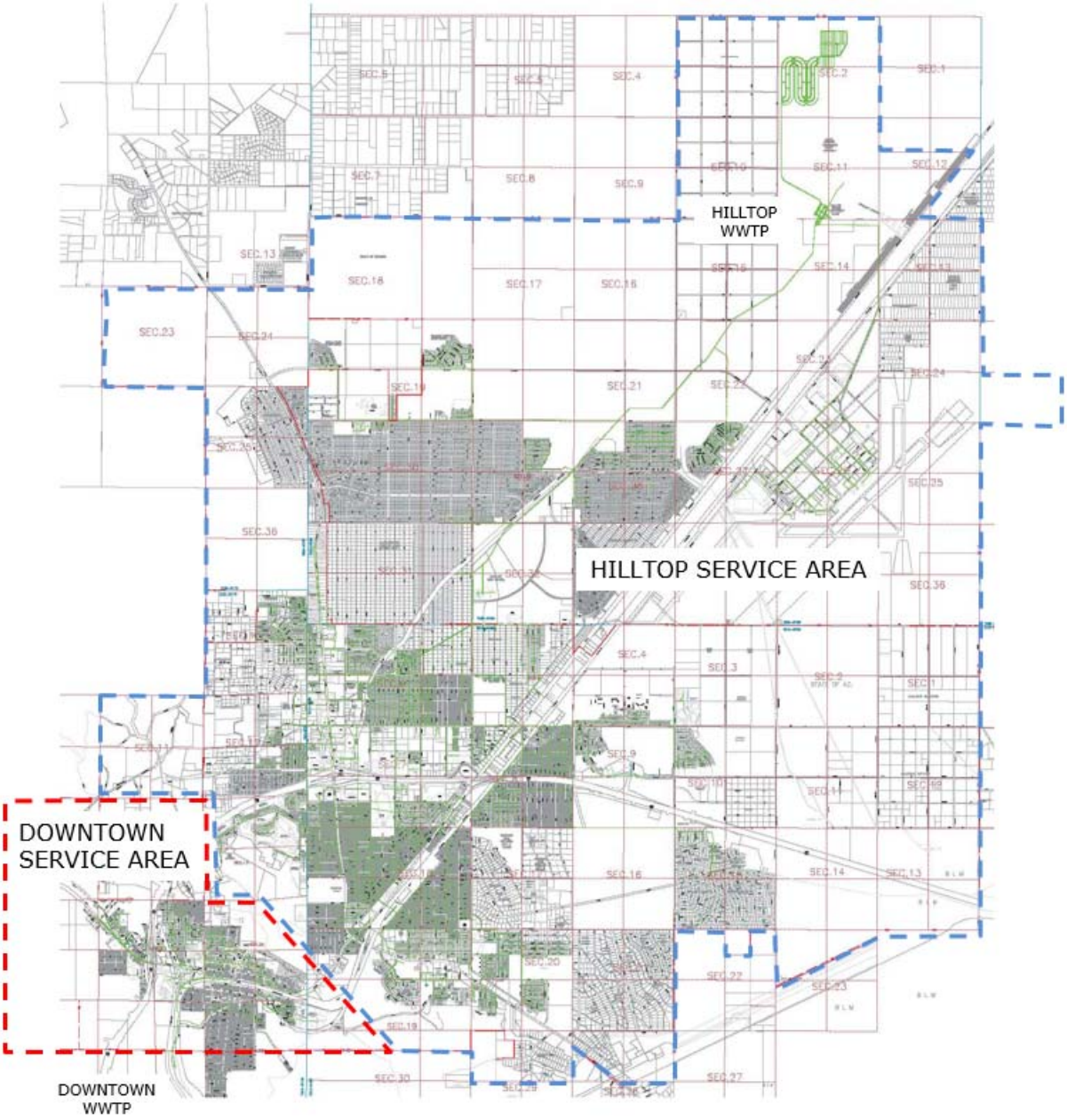
This Wastewater Master Plan Update provided modeling and analysis for wastewater service within the entire City boundary and a substantial portion of the General Plan 2030 boundary. The study boundaries were selected by the City and closely mimic the current Water Service Boundary. Further analysis and master-planning will be required for those areas outside of the study boundary.

1.2 PROJECT PLANNING AREA

The City of Kingman is located in Mohave County in Northwestern Arizona along historic Route 66. The City is approximately 150 miles west of Flagstaff and 100 miles southeast of Las Vegas. Nearby communities include Bullhead City and Laughlin 35 miles to the west and Lake Havasu City 60 miles to the southwest. The project study boundary is within a portion of the City of Kingman 2030 planning boundary and is shown on the map in **Figure 1.2.1 – Project Study Boundary**. This boundary was established by the City to accommodate projected short and long term planning needs.

The majority of the area within the study boundary falls within the Hilltop Service Area. The remainder of the study area falls within the Downtown Service Area which is located in the southwestern portion of the City roughly bound by Sunrise Ave to the North, Western Ave to the East, and the study boundary to the South and West.

Figure 1.2.1



1.3 BACKGROUND INFORMATION

Growth and development in Kingman has necessitated the expansion of the City's interceptor system. Over the years, different analyses, master plans and sewer interceptor models have been developed to service the planning areas defined by the City. Most recently, the main tools utilized for sizing and routing of these expansions have been the *Trunk Sewer Master Plan*, May 2003, by Burgess & Niple for the Hilltop Service Area and the *Sewer Master Plan for Kingman Commercial Center*, January 2011, by Shephard-Wesnitzer for the Downtown Service Area. However, both of these reports are limited in their scope and do not address all of the current planning needs. For instance, the *Trunk Sewer Master Plan* analyzes a smaller planning boundary and focuses on the deficiencies of existing trunk mains for both existing and buildout conditions. In addition, the City's General Plan has changed since the completion of this report, which has a direct impact on the flow loading of the City's interceptor system. Secondly, the *Sewer Master Plan for Kingman Commercial Center* doesn't include an interceptor model, focuses only on a portion of the Downtown Service Area, and doesn't address inflow/infiltration (I&I) concerns.

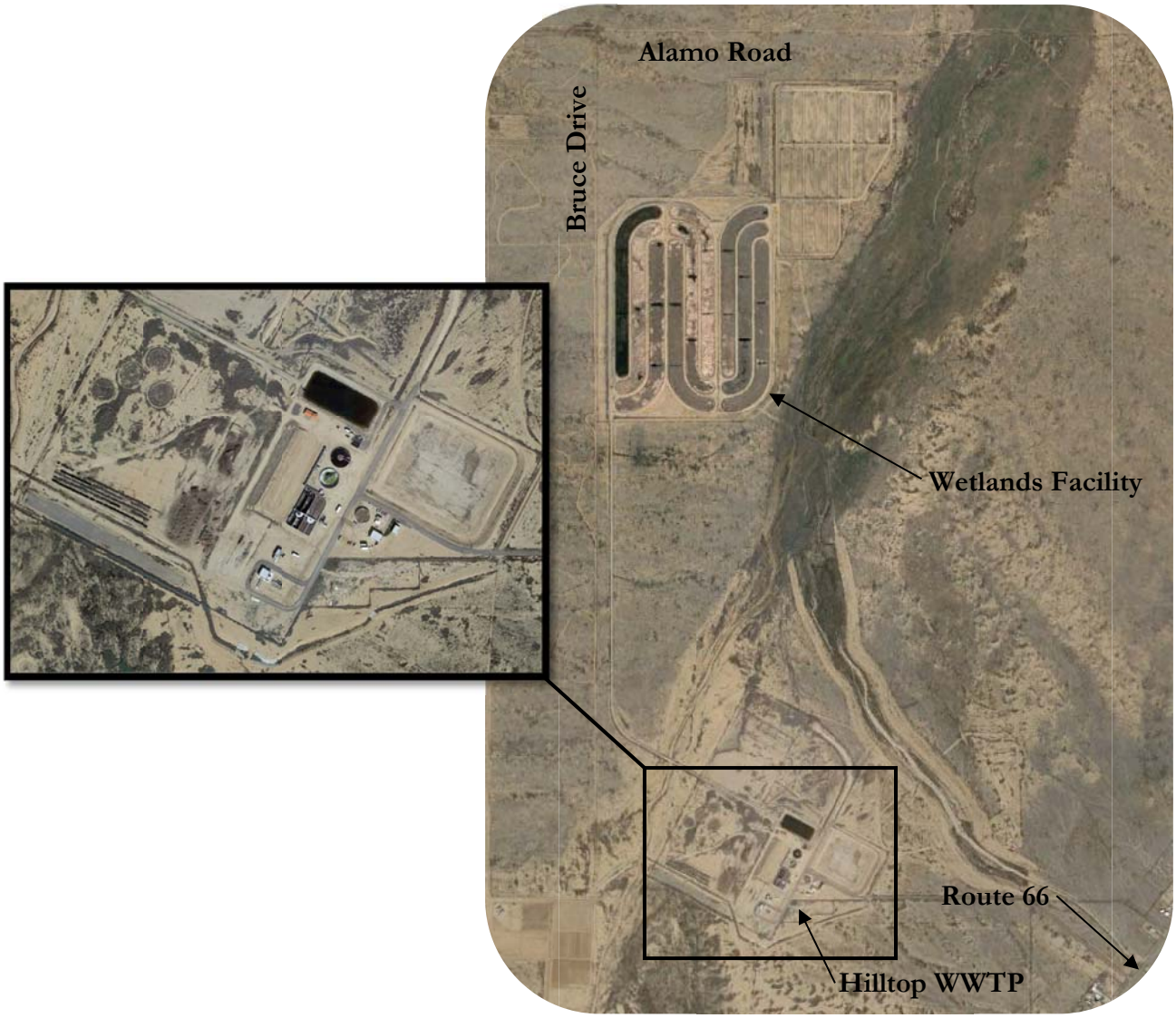
There are three main reasons for a Wastewater Master Plan Update and Inflow/Infiltration Study. The first reason is to provide an analysis of City's interceptor sewer system based on the latest General Plan and the changes that have occurred since the previous reports were written. The second purpose is to provide a comprehensive modeling tool for the entire planning boundary. The City may utilize these models to easily modify sizing due to updated land use, topography, or flow loading and perform additional analyses for future development and service area expansions. Lastly, this report investigates sources of I&I causing significant storm surge (wet weather peaking) at the Downtown Wastewater Treatment Plant (WWTP).

1.4 OUTFALL CAPACITIES

The topography of the Hilltop Service Area generally slopes in a southeasterly direction at approximately 1.5% to 3.5% north of the Mohave Wash and in a northwesterly direction at approximately 1.3% to 3.0% south of the Mohave Wash. The Mohave Wash flows diagonally from southwest to northeast across the Project Study Boundary and is roughly parallel to Arizona Highway 66. The City's two major outfall interceptors run adjacent to the Mohave Wash. As expected from the topography, all of the City's trunk mains feed into the two main outfall interceptors which eventually convey flow to the ultimate outfall at the Hilltop Wastewater Treatment Plant. The Hilltop WWTP is owned and operated by the City of Kingman and has a current capacity of 5.1 MGD. The City of Kingman will likely expand this facility beyond the current capacity to 10.1 MGD to meet future demand.

Figure 1.4.1 – Hilltop WWTP shows the aerial view of the Hilltop Wastewater Treatment Plant located at the northeast corner of Project Study Boundary and north of Route 66.

Figure 1.4.1



The topography of the Downtown Service Area is highly variable, characterized by rocky hills, canyons, and washes. Slopes vary but generally run in a southwesterly direction east of the Johnson Wash and southeasterly direction west of the Johnson Wash. The Johnson Wash flows from north to south in between Route 66 and the Old Trails Road. All of the Downtown trunk mains feed into the main outfall interceptor, an above ground, ductile iron sewer main running along the edge of the Johnson Wash. This line eventually conveys flow to the ultimate outfall at the Downtown Wastewater Treatment Plant. The Downtown WWTP is also owned and operated by the City of Kingman and has a current capacity of 0.62 MGD.

Figure 1.4.2 – Downtown WWTP shows the aerial view of the Downtown Wastewater Treatment Plant located at the southwest corner of Project Study Boundary.

Figure 1.4.2

1.5 PREVIOUS STUDIES

The analysis shown in this report primarily used background data from two previous wastewater collection system reports, three wastewater treatment plant reports, and the latest General Plan. The reports, ordered by date, are as follows:

Trunk Sewer Master Plan, May 2003, *Burgess & Niple*: This study provided an analysis of the City's existing sewer system for the Hilltop Service Area. More specifically it analyzed six major trunk mains (Airway West, Fairgrounds, Harrison Street, East Trunk, Kino, and Airport) under existing loading conditions and build out conditions. The proposed sewer interceptor improvements for future loading are parallel lines along the existing trunk mains. This report did not size any future interceptors outside of the parallel trunk mains proposed in the recommendations. This report did include a sewer model and flow monitoring. The vertical data (manhole rims and invert elevations) was useful in verifying and supplementing the as-built data used to build the Hilltop interceptor model for this project.

Request for Amendment to 208 Area-Wide Water Quality Management Plan, August 2007, *Brown and Caldwell*: This study provided an analysis of the City's planned upgrades and expansions to the Hilltop WWTP in compliance with the Mohave County regional Water Quality Management Plan.

Hilltop Wastewater Treatment Plant Aquifer Protection Program (APP) Permit Amendment Application (and supporting documentation), August 2007, *Brown and Caldwell*: This included the Arizona Department of Environmental Quality (ADEQ) APP Amendment form, as well as, all necessary attachments to amend the City's current APP (P-100611). The purpose of the amendment is to allow for the expansion and upgrade of the Hilltop WWTP. The report discusses all aspects of the expansion which would increase the plants flow capacity and allow them to produce higher quality effluent for discharge and reuse.

Downtown Wastewater Treatment Plant Upgrade and Expansion Preliminary Design Report (PDR), November 2009, *Brown and Caldwell*: This study provided a preliminary analysis and options for replacing the Downtown WWTP aerated lagoons system with a different treatment process. The replacement of the aerated lagoon system was triggered by the inability to meet ADEQ effluent standards.

Sewer Master Plan for Kingman Commercial Center (and surrounding areas), January 2011, *Shephard – Wesnitzer*: This study provided an analysis of a portion of the Downtown Service Area called the Kingman Commercial Center and the surrounding area. The report provided recommendations for alternative routing for the failing outfall interceptor for this area and for relocating sewer lines that crossed into private property.

City of Kingman General Plan Update 2030, March 2014, *City of Kingman:* This study provides a comprehensive reference for guiding future growth and development within the City limits and planning boundary. The report includes land use descriptions and a summary of recent upgrades to the City's WWTPs.

1.6 MODELING SOFTWARE

The modeling software employed in this analysis was H_2OMAP Sewer Pro Suite version 10.5, by *Innovyze*. H_2OMAP Sewer is a powerful, stand-alone GIS-based computer program for use in the planning, design, analysis, and expansion of sanitary, storm and combined sewer collection systems. The program can be effectively used to model both dry-weather and wet-weather flows and determine the most cost-effective and reliable method of wastewater collection. The software allows the user to seamlessly view, manipulate, and exchange GIS data sets with relative ease. This feature is particularly beneficial because all hydraulic and geometric data sets generated from the project modeling can be fully integrated into the City's future GIS database. The City may utilize the stand-alone H_2OMAP Sewer or convert to the GIS based InfoSewer, also by *Innovyze*, which runs within ArcGIS.

Both H_2OMAP Sewer and InfoSewer allow various shapefiles and images to be brought into the modeling environment for reference purposes or data storage. For example, parcel shapefiles can be utilized to store a specified allocation manhole. In other words, every parcel in the City could store the unique manhole ID to which it contributes flow. This same file could store land use data or utilize an overlaid land use shapefile and, using H_2OMAP Sewer's Load Allocator module, allocate sewer flow and population loads to a specific manhole. This is a powerful tool for the City staff to utilize when land usage and/or load factors change and thereby keep the interceptor model up to date with changing conditions.

2.0 DATA COLLECTION

Every attempt was made to ensure that model input data was current and representative of the actual physical system. This included analyzing a sewer infrastructure network map provided by City and comparing it against supplemental survey data, as well as sewer record drawings and available technical reports.

2.1 CITY DATA COLLECTION

The first project task involved coordination with the City's engineering department to retrieve any pertinent sewer data for inclusion in the model. This data consisted of a digital CAD drawing showing all of the City's sewer infrastructure which included pipe sizing, material data, and as-built reference numbers. Other appurtenant files which supported the completion of the collection system mapping and model setup were also provided. The files collected included the following:

- Aerial Imagery
- Sewer As-built Record Drawings
- Previous Interceptor Model
- Parcel Information (City and County)
- Mohave County Topography (contours)
- AutoCAD Infrastructure Drawing
  - Manholes (dwg)
  - Gravity Pipes (dwg)
  - Force Mains (dwg)
- Land Use Data
  - City Zoning Map (dwg)
  - General Plan 2020 Map (dwg)
  - General Plan 2030 Map (pdf)
- Sewer Flow Data
  - Significant Industrial Users
  - Jail and Hospital Flows
  - Subdivision Design Flows
  - WWTP Influent Flow

In general, the data provided appeared to be consistent with the horizontal datum NAD 27 (North American Datum of 1927) and the vertical datum NGVD 29 (National Geodetic Vertical Datum of 1929). The major exception to this was the CAD drawing which was on the horizontal datum NAD 83, AZ State Plane Zone West, US Survey Feet, with ground correction. Other exceptions include a few record sewer as-built drawings on unidentified datum; most likely utilizing localized coordinates. Per the City's request, all data was converted to the horizontal datum AZ83CIF (Arizona State Plan Coordinates, NAD83, West Zone, International Feet) and the vertical datum NAVD 88, prior to being entered into model.

The CAD drawing was useful for providing a relatively accurate horizontal layout of the sewer interceptors. However, all vertical data (manhole rims and pipe inverts) had to be gathered from the as-builts and reports and manually entered. This vertical data was added as object data onto the manholes and pipes within AutoCAD Civil 3D and then exported out as shapefiles. A shapefile can easily be imported into H_2OMAP Sewer and all object data can be mapped to the correct hydraulic field within the model. Considerable time was taken to ensure that elevations were accurate throughout the interceptor model. As part of that effort, whenever missing or questionable data was observed, field-survey data was obtained (See **Section 2.2**) to verify or correct elevations at various points in the network.

2.2 INTERCEPTOR MANHOLE SURVEY

The City requested that any deficiencies in the as-builts or reports (i.e. missing/questionable vertical and horizontal data) be supplemented with survey to refine the model input data. A field survey of approximately 100 sewer interceptor manholes was conducted as part of the data collection effort. Surveyors collected the following data for each manhole: horizontal location (northing & easting), rim elevation, depth to pipe inverts, and compass direction of inverts. This data was then input into the model. Manhole rim elevations at other locations in the interceptor network were spot checked using the latest aerial topography from Mohave County and the City. This review indicated general consistency between the aerial topography and the as-built data. The addition of field survey data, along with as-built maps and technical reports allowed for the completion of the interceptor models. The approximate location of all of the surveyed manholes are shown in **Table 2.2.1** (Hilltop) and **Table 2.2.2** (Downtown):

Table 2.2.1

Manhole ID	Location (Hilltop Service Area)
76	Monroe St & Karen Ave
78	Jackson St & Karen Ave
79*	Jackson St & Karen Ave
80	Van Buren St & Karen Ave
81	Van Buren St & Karen Ave
712	Historic Rte 66 & Hall St
713	Historic Rte 66 & Hall St
651	Sunset & Fairgrounds Blvd
718	Sunset Blvd & Main St
954	Sunset Blvd & Main St
1000	Sunset Blvd & Kingman Ave
1002	Sunset Blvd & Kingman Ave
657	Wikieup & Fairgrounds Ave
658	Mullen & Fairgrounds Ave
659*	Mullen & Fairgrounds Ave
724	Wikieup Ave & Main St
725*	Mullen Ave & Main St
831*	Airway Ave & N Rainbow Dr
868*	Airway Ave & N Rainbow Dr
870*	Airway Ave & N Rainbow Dr
894	Airway Ave & N Rainbow Dr
957*	Airway Ave & N Rainbow Dr
535	Kino Ave & N Bank St
956	Kino Ave & N Bank St
556*	Heather Ave
557*	Heather Ave
558*	Heather Ave
561*	Airway Ave & Castle Rock Rd
154	Gordon Dr & N Bank St

Manhole ID	Location (Hilltop Service Area)
674	Motor & Fairgrounds Ave
675	Hope & Fairgrounds Ave
738	Hope Ave & Main St
832*	Hope Ave & Main St
833	Hope & Fairgrounds Ave
953*	Motor & Fairgrounds Ave
148	Del Mar Ave & Legacy Dr
407	Coronado Ave & N Irving St
433	Will Rogers Way & N Glen Rd
434	Will Rogers Way & N Glen Rd
435	Jimmy Stewart Dr & N Glen Rd
450	Kino Ave & Mohave Wash
451	Kino Ave & Mohave Wash
708	Kino Ave & Bond St
709	Kino Ave & Bond St
134*	Airway Ave & Harrison St
136	Airway Ave & Harrison St
137	Airway Ave & Harrison St
879	Airway Ave & N Pinal St
880	Airway Ave & Coolidge St
882	Airway Ave & Roosevelt St
884	Airway Ave & Rutherford St
885*	Airway Ave & Rutherford St
592	Airway Ave & Castle Rock Rd
593	Airway Ave & Castle Rock Rd
594	Airway Ave & Santa Rosa Dr
595	Airway Ave & Santa Rosa Dr
598	Quarter Cir Ave & Rawhide Dr
599	Quarter Cir Ave & Rawhide Dr

155	Gordon Dr & N Bank St
229	Gordon Dr & N Bank St
230	Gordon Dr & N Bank St
404	Gordon Dr & N Bank St
178	Thompson & Mohave Wash
256	Thompson & Mohave Wash

600	Quarter Cir Ave & Rawhide Dr
601*	Quarter Cir Ave & Rawhide Dr
602*	Quarter Cir Ave & Rawhide Dr
161	N of Kingman HS Ball Fields
163	N of Kingman HS Ball Fields
238	N of Kingman HS Ball Fields
240	N of Kingman HS Ball Fields

*Horizontal Data Only.

Table 2.2.2

Manhole ID	Location (Downtown Service Area)
45	W Beale St & Fort Beale Dr
11	W Beale St & I-40
15	W Beale St & Johnson Wash
16	W Beale St & Johnson Wash
17	W Beale St & Johnson Wash
61	W Oak St & Parkview Ave
62*	W Oak St & Parkview Ave
20*	W Beale St & Parkview Ave
22*	SW of LWHS Ball Fields
70*	W Oak St & Parkview Ave
71*	W Oak St & Grandview Ave
72*	W Oak St & Grandview Ave
25*	Locomotive Park
87	N of LWHS Ball Fields
88	S of LWHS Ball Fields

Manhole ID	Location (Downtown Service Area)
28	SW of Powerhouse Museum
96	Historic Rte 66 & N 1st St
97	Historic Rte 66 & N 1st St
99*	Historic Rte 66 & N 1st St
100	S of Powerhouse Museum
101*	Historic Rte 66 & N 10th St
102	Historic Rte 66 & N 10th St
124	Park & S 6th St
125*	Park & S 6th St
128	Hubbs & S 4th St
131	Goldroad & S 4th St
134	Goldroad & S 2nd St
135*	Goldroad & S 2nd St
144*	Golconda Ave & S 2nd St

*Horizontal Data Only.

Through analyzing the survey data, as-builts, and reports, multiple flow split locations were identified in the interceptor model for the Hilltop Service Area. No flow splits were identified for the Downtown Service Area model. The approximate location of all of the flow split manholes are shown in **Table 2.2.3**:

Table 2.2.3

Manhole ID	Flow Split Location (Hilltop Service Area)
88	Harrod Ave & Van Buren St
116	Van Marter Dr & Harrison St
119	Detroit Ave & Harrison St
137	Airway Ave & N Willow Rd
144	Del Mar Ave & N Willow Rd (200' North of Kino Ave)

Manhole ID	Flow Split Location (Hilltop Service Area)
720	Simms Ave & Main St
770	Detroit & Western Ave
831	Airway Ave & N Rainbow Dr
858	Walapai Ave & Railroad St

2.3 CITY OF KINGMAN LAND USE

Two sources were used to define land use for the Interceptor Sewer Models; the current City of Kingman Official Zoning Map and the General Plan 2030 Map (See Appendix B).

For developed parcels within the existing city limits, land use was primarily based on the City's Zoning Map. However, in some residential areas, the density (DU/Acre) within existing subdivisions was found to be different than the density defined by the current zoning. The modeling was adjusted to more accurately reflect the true density during flow calibrations (See Appendix D, 2016 Flow Data, Calibration).

Undeveloped parcels within the existing city limits could have been defined by either the current Zoning Map or the General Plan 2030 Map. In general, variations in land use between the two maps were minimal and the current zoning densities are consistent with the range of densities described in the General Plan 2030 Report. The City decided to utilize the General Plan 2030 for undeveloped lots within City limits because, in some instances, the General Plan uses were denser than current zoning. Undeveloped parcels outside of the existing city limits but within the planning boundary were solely defined by the General Plan 2030 Map.

Defining land usage within the study boundary was a critical component in developing the loading factors for the model. Loading factors allow you to apply a sewer flow rate per unit area, usually gallons per day per acre (GPD/Acre) or cubic feet per second per acre (CFS/Acre). For residential areas the load factor can be derived from a known density (DU/Acre) for a given land use, a known occupancy (persons/DU), and a known capita flow rate (GPD/person).

2.4 VACANT AND OCCUPIED LAND PARCELS

In order to make a clear distinction between occupied parcels and vacant land, the 2016 Connections Map was developed (See **Exhibit 2.4.1**). The occupied land parcels have been divided into two groups; Existing and Septic. The Existing group includes developed parcels that are currently connected to the City's sewer infrastructure network. The Septic group was determined to be those parcels where a dwelling unit was present but adjacent sewer facilities were not. The vacant land parcels have been divided into three groups; Existing Committed, Vacant (Future Connections), and Vacant (Restrictive Slope). Committed parcels include undeveloped land that the City either already has infrastructure in place to serve or plans to develop infrastructure to serve in the near future. Vacant (Future Connections) parcels include undeveloped land that will eventually connect to the City's sanitary network but no infrastructure is currently constructed. Vacant (Restrictive Slope) parcels include undeveloped land that are unlikely to be constructed on due to steep grades and, therefore, unlikely to connect to the City's sanitary network. It is possible that some scattered development may occur in these restrictive slope areas in the future. If this occurs, interceptor modeling should be adjusted to account for the additional flow.

While most parcels could easily be delineated into their respective group based on physical observations (e.g. existing buildings), the Existing Committed parcels required additional coordination with the City staff. The City was responsible for defining which parcels should fall under this category. In general, most of these parcels fell within partially built subdivisions that already had a recorded plat. An existing platted subdivision would have filed a Notice of Intent to Discharge (Sewage Collection System) with the Arizona Department of Environmental Quality (ADEQ) or the City and would likely have already received will-serve letters from the City.

Multiple files were provided from the City's engineering department including a map showing the physical locations of the parcels to be included in the Existing Committed group. Each of the parcels was also listed in a spreadsheet that had projected design flows and an associated lot count (each corresponding to the provided map). These specific sewer loads were used in lieu of the allocated loads for the committed parcels in the model. Design flows are generally greater than flows defined by the current land-use, i.e. more conservative estimates of future flows. Some of the design flows provided by the City included parcels that were already constructed. These design flows were removed from the specific sewer loads for the committed parcels because they were already accounted for in the Existing group.

Developing the Connections Map and defining the land-use groups was also necessary for defining the four main model scenarios for the project:

1. Existing (2016) Scenario - Hilltop – Includes Existing and Existing Committed parcels.
2. Future Scenario - Hilltop – Includes everything in the 2016 Existing Scenario, Septic and Vacant (Future Connections), i.e. all areas within the project study boundary limits other than areas with restrictive slopes.
3. Existing (2016) Scenario - Downtown – Includes Existing and Existing Committed parcels.
4. I&I Scenario - Downtown – Includes everything in the 2016 Existing Scenario and simulated wet weather flow loading.

These model scenarios will allow City staff to determine what improvements need to be made to service current customers and determine what infrastructure must precede development on undeveloped parcels to be served. This will allow the City to designate CIP projects and funds for appropriate solutions.

Note: There are a few large parcels that have an existing facility constructed on them (e.g. golf course, airport runway, etc.) but are not contributing sewage flows. Consequently there are a few parcels that are shown as Existing on the 2016 Connections Map that aren't truly connected. This has been taken into consideration when modeling the 2016 Existing Scenarios. Each of these facilities is a permanent structure and therefore will not contribute flows under future loading conditions.

2.5 HISTORIC SEWAGE FLOWS

Existing and projected flow rates within the sewer model have a direct correlation to the land use definitions for the service area. Once the land use for all parcels within both the current City boundary and the study boundary were identified, a loading chart was developed for each of these land uses. This chart shows the land usage type and ultimately the unit load (GPD/Acre) that was used for each parcel type and acreage within the model. The development of load factors is more thoroughly discussed in **Section 3.0 Design Criteria**. As may be surmised, loading factors vary widely between the different residential, commercial, and industrial land uses. Load factors for the same land use type may also vary depending on whether they are being applied to an existing conditions model scenario or a proposed conditions model scenario. That is, proposed loading charts are typically more conservative, i.e. larger load factors, and conform to ADEQ requirements for design flows.

The module which runs within the H_2OMAP Sewer software and utilizes load factors and parcel acreage to develop sewer flows (and contributing populations) is known as the Load Allocator. Consequently, all sewer loads developed in the model using this tool are known as Allocated Loads. This was the primary method used to develop sewage flows for each of the three model scenarios. There were also loads that were entered manually for each of the scenarios which are referred to as Known Loads. The Known Loads for the 2016 Scenario consisted of known, permitted, or metered flow rates from the heavy users, including those categorized as a Significant Industrial User (SIU) or a Categorical Industrial User (CIU). In the Future Scenario, known loading was entered for large parcels that required a loading greater than that which was defined by the land use designation. For example, one of the vacant parcels being loaded into the Future Scenario was designated as Park/Open Space per the General Plan 2030 but was likely to be developed into Community Commercial.

After initial model loading (Allocated and Known), flow monitoring results were used to calibrate the Existing Scenarios to more accurately represent the field measurements observed. This was a critical step in the modeling process as the existing conditions provide the base for which all other scenarios are built upon. The City provided metered sewage flows for both the Hilltop and Downtown WWTP. In addition, as part of the scope of this project, 15 other critical locations within the interceptor network were also monitored (See **Exhibit 2.5.1** Flow Monitoring Map). On average, three to four weeks of continuous monitoring time was provided for each site. Flow monitoring results were used to iterate different load variations. While loading was not adjusted to match the monitoring data exactly, adjustments were made to the load chart in order to make the model as representative of the existing system, as possible. This was accomplished by calibrating the load factor input data: daily flow per capita (gallons/capita/day), occupancy (people/DU), and density (DU/Acre).

As a result of the flow monitoring, it was revealed that the zoning density (DU/Acre) was not accurate for several land uses. The density was adjusted to more accurately reflect densities of these land uses in the existing system. After calibration, modeled flows in the existing conditions model remain more conservative than the monitoring data. This was expected as calibrating load factors down to match metered flows exactly would require developing load factors for each land use that weren't justifiable.

Further calibration of the model should be conducted when the City has in place a more extensive monitoring program. Adding more flow monitoring sites could improve the accuracy of the modeling and monitoring flows throughout the year would allow the City to capture flow variations due to population increases from seasonal visitors and wet weather conditions. Interceptors that will see the greatest fluctuation due to "seasonal flow" are those adjacent to high density retirement communities or any residential developments with concentrated groups of seasonal visitors. As part of an expanded monitoring program, the City should be able to start tracking and quantifying these changes. For this study, all parcels with existing homes and sewer connections were loaded into the model, therefore seasonal visitors were accounted for in the existing service area.

2.6 RAINFALL DATA

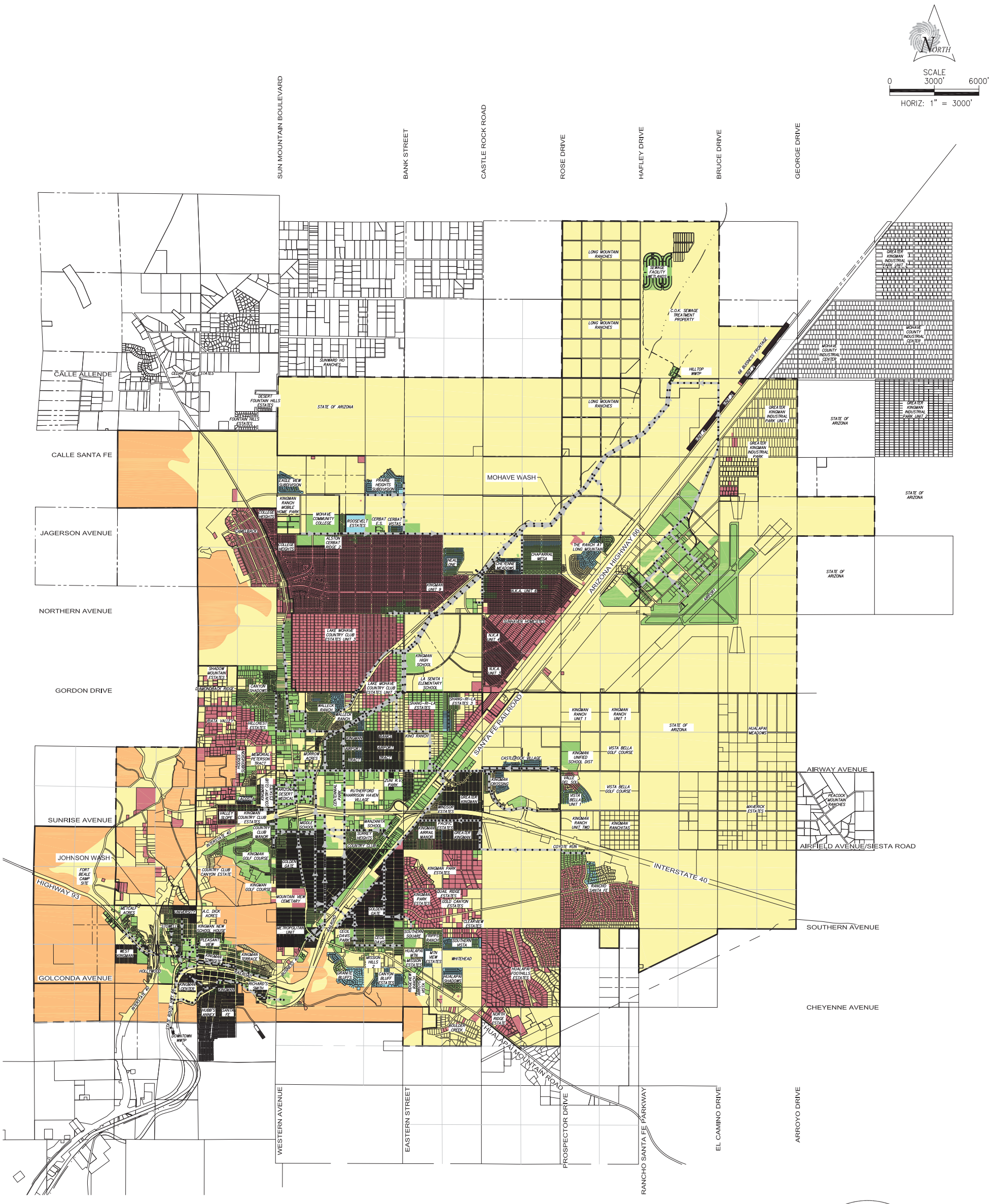
In order to determine the how the sewer system operated during wet weather conditions, the City requested that flow monitoring data be collected during the monsoon season. Flow monitors operated at various locations throughout the City between 6-29-15 and 9-11-15. Rainfall data was then collected for this same period of time in order to correlate peak flows observed during monitoring with the various storms that took place. The primary source for rainfall data was the Mohave County ALERT website. The County maintains a number of rain gauge stations in around the City of Kingman. Five of the County's gauges which fell within the project study boundary were used for this project. In addition, one rain gauge maintained by the City, located at the Downtown Fire Station, was also used. The names of rain gauge stations utilized for this project are:

- Holy Moses Wash
- Fire Station 1 (City of Kingman)
- Mohave Wash @ Airway Ave
- Kingman
- Diagonal Wash
- Upper Devlin Wash

The location of the six rain gauge sites along with a summary of the rainfall data collected can be found on **Exhibit 2.6.1** Rain Gauge Map. In total, 17 separate storm events were observed during the flow monitoring period. This data was used to distinguish which peak flows observed during flow monitoring were caused by storm events. Additional flows caused by wet weather conditions is called storm surge and typically creates a wet weather peak in the system.

Note: The rain gauges maintained by the County only create a rainfall data log when 0.04 inches of rain is observed. In other words, very low intensity rain events won't register any rainfall on data logger. For this project, the larger storms were of more interest to the study than the low intensity events.

SECTION 2
FIGURES & EXHIBITS



CONNECTIONS AREA LEGEND

- EXISTING CONNECTIONS (SEE NOTE 2)
- EXISTING COMMITTED CONNECTIONS
- SEPTIC (ONSITE WASTEWATER TREATMENT)
- VACANT LAND (FUTURE CONNECTIONS)
- VACANT LAND (RESTRICTIVE SLOPE)

LEGEND

- CITY LIMITS
- STUDY LIMITS (WATER BOUNDARY)
- EXISTING SEWER 2016
- MANHOLE
- EXISTING CANAL
- EXISTING WASH
- FM — FORCE MAIN
- LS — LIFT STATION

NOTE
1. SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.
2. EXISTING CONNECTIONS INCLUDE AREAS WHERE PERMANENT FACILITIES (E.G. GOLF COURSE, AIRPORT RUNWAY, ETC) PROHIBIT THE DEVELOPMENT OF A FUTURE CONNECTION.

CITY OF KINGMAN
FOUNDED 1882

CITY OF KINGMAN
INTERCEPTOR SEWER MODELING
EXHIBIT 2.4.1
2016 CONNECTIONS MAP

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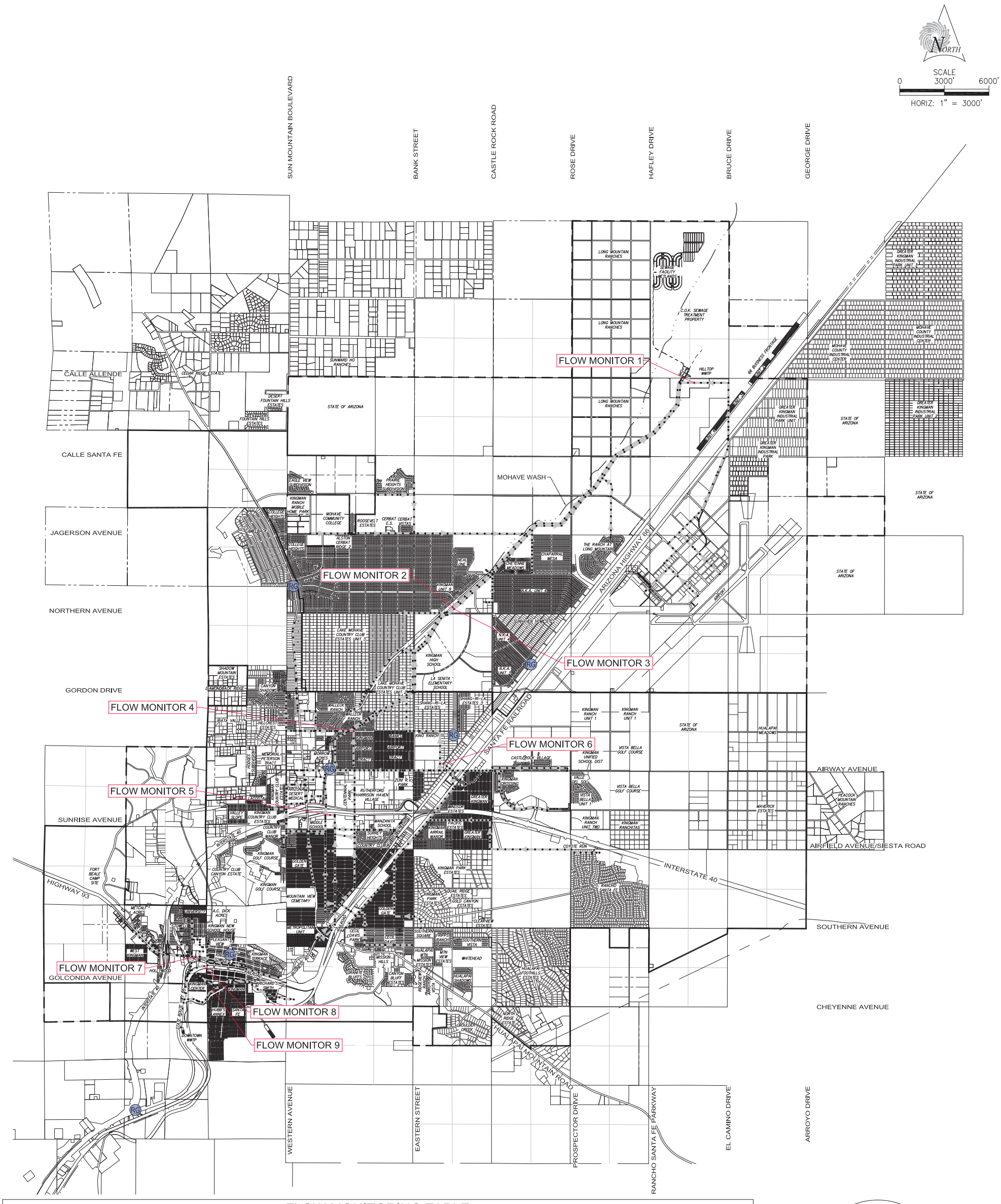

FLOW MONITORING TABLE

FLOW MONITOR	LOCATION	Diameter	Qave gpm	Qpeak gpm	$Q_w$peak* gpm	Qave cfs	Qpeak cfs	$Q_w$peak* cfs	Qave mgd	Qpeak mgd	$Q_w$peak* mgd	Date
1	Airport Outfall	18"	49	103	1,343	0.11	0.23	2.99	0.071	0.148	1.934	6–29–15 TO 7–20–15
2	Mohave Wash & Northern Avenue	15"	256	428	580	0.57	0.95	1.29	0.368	0.616	0.835	6–29–15 TO 7–20–15
3	Mohave Wash & Northern Avenue	24"	960	1,490	2,012	2.14	3.32	4.48	1.383	2.146	2.897	6–29–15 TO 7–20–15
4	Willow Road & Kino Avenue	15"	139	230	241	0.31	0.51	0.54	0.200	0.331	0.347	7–21–15 TO 8–10–15
5	Fairgrounds Bldv & I–40 (M.S. Ball Field)	8"	99	164	197	0.22	0.37	0.44	0.142	0.236	0.283	7–20–15 TO 8–10–15
6	Shangri La Drive & Sunshine Drive	15"	462	800	N/A	1.03	1.78	N/A	0.666	1.152	N/A	7–20–15 TO 8–10–15
WWTP	Hilltop	–	1,085	2,018	3,361	2.42	4.50	7.49	1.562	2.905	4.840	6–30–15 TO 8–3–15
7	Beale Street & Grandview Avenue	8"	4	70	N/A	0.01	0.16	N/A	0.006	0.101	N/A	8–10–15 TO 9–11–15
8	Old Power House (Route 66 Museum)	8"	121	202	208	0.27	0.45	0.46	0.175	0.291	0.300	8–10–15 TO 9–11–15
9	2nd Street & Goldroad Avenue	8"	36	84	N/A	0.08	0.19	N/A	0.052	0.122	N/A	8–10–15 TO 9–11–15
WWTP	Downtown	8"	179	705	1,019	0.40	1.57	2.27	0.258	1.016	1.467	8–10–15 TO 9–10–15

* BASED ON LARGEST STORM SURGE OBSERVED DURING FLOW MONITORING.

LEGEND

- CITY LIMITS
- STUDY LIMITS (WATER BOUNDARY)
- EXISTING SEWER 2015
- FM — FORCE MAIN
- LS — LIFT STATION
- EXISTING CANAL
- EXISTING WASH
- RG — RAIN GAUGE
- FLOW MONITORING EQUIPMENT
- MANHOLE

NOTE
SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.

CITY OF KINGMAN
FOUNDED 1882

CITY OF KINGMAN
INTERCEPTOR SEWER MODELING
EXHIBIT 2.5.1
FLOW MONITORING MAP

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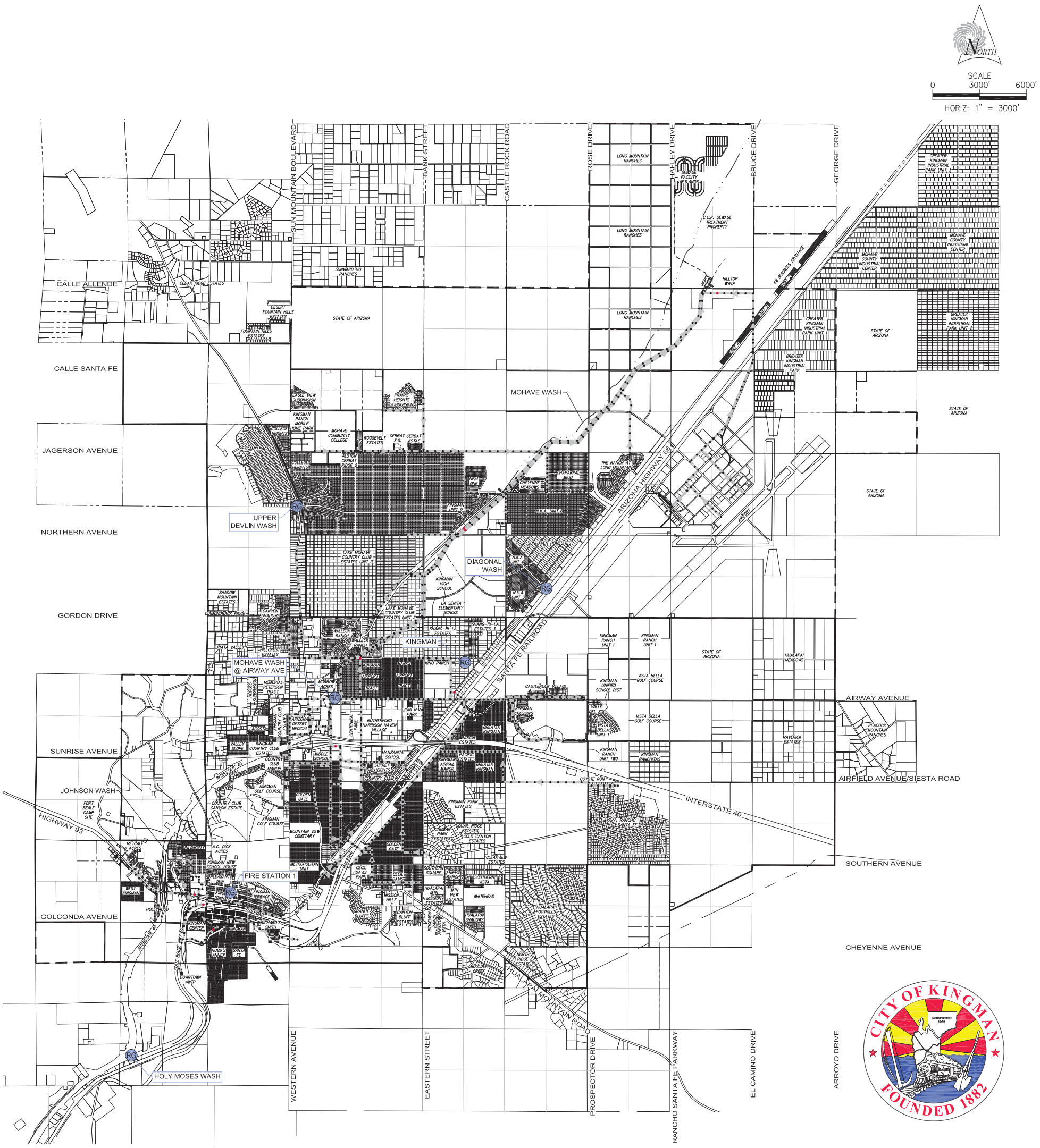

RAIN GAUGE TABLE

DATE	HOLY MOSES WASH			FIRE STATION 1			MOHAVE WASH			KINGMAN			DIAGONAL WASH			UPPER DEVLIN WASH		
	RAIN (IN)	DURATION (HOURS)	MAX INT. (IN/HOUR)	RAIN (IN)	DURATION (HOURS)	MAX INT. (IN/HOUR)	RAIN (IN)	DURATION (HOURS)	MAX INT. (IN/HOUR)	RAIN (IN)	DURATION (HOURS)	MAX INT. (IN/HOUR)	RAIN (IN)	DURATION (HOURS)	MAX INT. (IN/HOUR)	RAIN (IN)	DURATION (HOURS)	MAX INT. (IN/HOUR)
7/2/15	–	–	–	–	–	–	0.11	1.17	1.03	–	–	–	–	–	–	–	–	–
7/6/15	0.12	0.47	0.69	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
7/18/15*,**	0.31	13.25	0.60	–	–	–	0.59	8.93	0.72	0.59	8.18	1.29	0.67	20.85	0.78	0.55	12.00	1.60
8/7/15 *	0.36	11.93	0.03	–	–	–	0.51	11.97	0.80	0.55	12.00	0.05	0.75	12.00	0.34	0.75	24.00	0.05
8/13/15*,**	0.15	5.33	0.80	–	–	–	0.48	5.45	0.96	0.19	4.72	1.01	0.20	5.32	0.80	0.23	4.45	1.92
8/25/15	–	–	–	–	–	–	–	–	–	–	–	–	0.12	6.80	0.06	–	–	–
8/27/15	0.32	3.72	0.90	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
9/8/15	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.47	0.28	1.66
9/12/15	0.12	8.17	0.62	0.24	N/A	N/A	–	–	–	–	–	–	–	–	–	–	–	–
9/13/15	–	–	–	0.35	N/A	N/A	–	–	–	–	–	–	–	–	–	–	–	–
10/5/15	0.87	11.50	6.21	0.27	N/A	N/A	0.28	13.93	0.60	0.35	26.83	2.40	0.43	12.03	3.15	0.27	8.43	1.16
10/18/15	–	–	–	–	–	–	–	–	–	0.20	9.67	1.37	0.20	0.10	2.23	–	–	–
10/20/15	0.15	8.68	0.72	–	–	–	0.12	10.77	0.15	–	–	–	0.19	7.62	0.73	0.16	4.00	0.35
11/4/15	0.28	12.92	0.40	0.23	N/A	N/A	0.55	14.70	0.90	0.47	10.67	0.70	0.40	13.00	0.60	0.35	8.62	0.48
11/5/15	–	–	–	0.15	N/A	N/A	–	–	–	–	–	–	–	–	–	–	–	–
11/15/15	0.16	2.40	1.20	–	–	–	0.20	4.38	1.07	0.20	10.18	2.40	0.15	2.63	0.83	0.20	9.28	1.41
11/16/15	–	–	–	0.12	N/A	N/A	–	–	–	–	–	–	–	–	–	–	–	–

* CAUSED Q_wPEAK FOR FLOW MONITORING LOCATION(S)
** CAUSED Q_wPEAK FOR WWTP

LEGEND

- CITY LIMITS
- STUDY LIMITS (WATER BOUNDARY)
- EXISTING SEWER 2015
- FM — FORCE MAIN
- LS — LIFT STATION
- EXISTING CANAL
- EXISTING WASH
- RG — RAIN GAUGE
- FLOW MONITORING EQUIPMENT
- MANHOLE

NOTE
SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.

CITY OF KINGMAN
INTERCEPTOR SEWER MODELING
EXHIBIT 2.6.1
RAIN GAUGE MAP

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3.0 DESIGN CRITERIA

3.1 ADEQ REQUIREMENTS

This report utilized the Arizona Department of Environmental Quality (ADEQ) minimum sewer collection system design guidelines in the Arizona Administrative Code (AAC) Title 18, Chapter 9, Article 3, Part E. Type 4 General Permits (Last amended on Nov. 12, 2005) as the basis for the design criteria. See **Appendix A - ADEQ Minimum Standards** for AAC codes and minimum sewer system design constraints relating to sewer collection systems including Table 1, Unit Design Flows.

Per ADEQ standards (R18-9-E301.4.01), all proposed sewer interceptors were designed and all existing interceptors were checked against the following criteria:

- Slopes that ensure a minimum velocity of 2 feet per second (ft/s) and a maximum velocity of 10 ft/s when flowing full, using a Manning's roughness coefficient of 0.013.
- Base design flow shall be 80 gal/capita/day.
- Maximum manhole spacing is dependent on interceptor sizing and shall not exceed that which is prescribed by ADEQ for a given pipe diameter.
- Maintain minimum cover of 3 feet over all proposed sewer pipes.
- Ratio of flow depth to the pipe diameter (d/D) shall not exceed 0.75 in peak dry weather conditions
- Population-based Peaking Factors (applied to cumulative loading for all pipes)

3.2 CITY OF KINGMAN REQUIREMENTS

In addition to ADEQ requirements, this report is guided by design standards established by the City of Kingman. These requirements were directly outlined by the City Engineer for this project. The design criteria that governed the analysis, modeling and master planning for the project are as follows:

1. For the purposes of this project, modeling shall only be conducted for sewer interceptors ("trunk lines"). An interceptor is defined, in general, as any sanitary sewer pipe, within the City's system, 10 inches in diameter or greater. However, some 8-inch and 6-inch diameter pipes were included in the model analysis because they were determined to be part of an outfall line for a given sewer shed and thereby functioning as an interceptor.

2. The City believes, based on the observed flows and the proliferation of water-saving technologies, 80 gal/capita/day is sufficient for planning purposes. This design flow was used for sizing proposed interceptors in all residential areas within the City's planning area and for determining equivalent populations for commercial and industrial flows.

3. The City Engineer directed that loading rates (gallons/day/acre) for parcels that are zoned commercial, business, or industrial be consistent with the loading rates of similarly sized communities in Arizona.

4. In general proposed interceptor sewers will be located within or adjacent to the right-of-way of existing or future section line roads.

5. All rim elevations for proposed manholes shall match the best available topographic data; City contours, Mohave County contours, or USGS maps.

6. Mohave Wash crossings should be avoided wherever possible.

7. Railroad/Arizona Highway 66 crossing locations should be minimized.

8. The master planning shall conform to the current City Design Standards unless otherwise directed by the City Engineer.

9. Under future loading conditions, parallel interceptors are preferred to upsizing (i.e. removing & replacing) the existing interceptors.

10. The master plan should not include interim sizing. All sizing should be based on future flow conditions to avoid the costs of replacing a newly constructed line or necessitating a parallel line. However, the development of a flushing plan may be required in the interim between construction of the interceptor and build out of the sewer shed

11. Average household size shall be based on the most current census data (2010) – 2.46 persons/household.

12. The sewer model shall be set up as two separate interceptor models; one for the Downtown Service Area and one for the Hilltop Service Area.

13. SIUs with known flow rates, such as hospitals and jails, shall be manually loaded into the model based on metered data.

14. The project datum and coordinates shall be based on NAD83, Arizona West, International Feet (AZ83WIF) for horizontal and NAVD88 for vertical.

15. The City has requested that the sewer customer address database be utilized in verifying septic vs existing connections.

16. All recommendations for proposed interceptors shall take into consideration the current design plans for sewer infrastructure on the City's CIP list (e.g. Mohave Channel Sewer Line).

17. All undeveloped parcels within platted subdivisions classified as "Committed" by the City shall be included in the Existing (2016) Scenario and recommendations shall be adjusted accordingly.

18. Loading of undeveloped parcels within the City boundary shall be based on the General Plan 2030 instead of the City of Kingman Official Zoning Map.

19. Any industrial sites that are vacated or are currently not in operation shall be removed from the Existing (2016) Scenario.

3.3 RESIDENTIAL FLOW RATES

A majority of connections within the existing system (and the future system) fall under a residential land use. Under the City's current zoning there are a range of different residential uses including:

- R-1-6 (Single Family Housing, 6,000 SF Lot Minimum)
- R-1-6PDD (Planned Development District, 6,000 SF Lot Minimum)
- R-1-8 (Single Family Housing, 8,000 SF Lot Minimum)
- R-1-10 (Single Family Housing, 10,000 SF Lot Minimum)
- R-1-10PDD (Planned Development District, 10,000 SF Lot Minimum)
- R-1-20 (Single Family Housing, 20,000 SF Lot Minimum)
- R-1-40 (Single Family Housing, 40,000 SF Lot Minimum)
- R-2 (Multiple Family Housing, Low Density)
- R-2PDD (Planned Development District, Multiple Family Housing)
- R-3 (Multiple Family Housing, Medium Density)
- R-4 (Multiple Family Housing, High Density)
- R-MH-6 (Manufactured Home, 6,000 SF Lot Minimum)
- R-MH-20 (Manufactured Home, 20,000 SF Lot Minimum)
- R-MH-40 (Manufactured Home, 40,000 SF Lot Minimum)
- R-R (Rural Residential)

For each of the residential uses described, a unique loading factor (cfs/acre) was developed in order to calculate the anticipated flow rates for parcels that fell within that land use. Beyond the City limits, land use is solely defined by the General Plan 2030. The General Plan residential uses encompass a much broader range of densities and uses within each category. Unique loading factors were developed for these, as well.

Load factors areas are initially established using the maximum density (DU/Acre) allowed per the zoning, the average household occupancy (2.46 people/DU), and the design flow (80 gal/capita/day). This method gives very conservative values for determining sewer flows for residential land uses. It was determined early on in the project that load factors developed using this method needed to be adjusted based on more current data and the flow monitoring results.

According to ADEQ requirements, collection system design flows must be calculated based on 80 gal/capita/day (excluding peaking factors), but allow for "lower unit flow values in the served area due to significant use of low-flow fixtures, hydrographs of actual flows, or other factors." A comparison of the monitored sewage flow rates with the design flow rate required by ADEQ was investigated to determine if a "lower unit flow value" was justified. According to the flow monitoring results, an average sewer flow contribution of 70 gal/capita/day was justified for the Hilltop Service Area but not for the Downtown Service Area.

Given the recent flow monitoring data, the Existing (2016) Scenario - Hilltop load factors were based on a lower unit flow value of 70 gal/capita/day. Load factors for the Future Scenario - Hilltop used the ADEQ minimum standard of 80 gal/capita/day. Based on water saving technology that will likely result in lower flows per capita in the future, using a loading factor of 80 gal/day/person is reasonable for future planning. The Downtown showed slightly higher per capita usage than the Hilltop Service Area and therefore both the Existing (2016) Scenario – Downtown and the I&I Scenario – Downtown utilized a unit flow value of 80 gal/capita/day.

For the analysis of existing facilities and the design of new facilities, 2.46 people per dwelling unit was used based on the average household size for residents of Kingman. This is consistent with the most current census data (2010) and the flow monitoring results. It should be noted, however, that not all of the loading factors for residential usage utilized 2.46 people/DU. This occupancy was viewed as a base for "typical" residential units. A multi-family residential usage, for example, may have justified a slightly lesser occupancy, while a single-family rural (i.e. low-density) warranted the use of a higher occupancy.

While developing load factors for the Existing (2016) Scenarios, it was necessary to reduce the density for several residential uses based on the flow monitoring results. In many municipalities, zoning densities are not always representative of true density. Kingman is not an exception to this, and it became necessary during calibration to reduce densities for both the Hilltop and Downtown Service Areas. For the Future Scenario no density reductions were necessary. For planning purposes, it is better to utilize more conservative load factors.

The Loading Tables for the four model scenarios can be found in Appendix E – 2016 Flow Data and Appendix F – Future Flow Data. The Loading Tables include both the initial loading and final (calibrated) loading. These load factors were entered into the model to develop the Allocated Loads for both existing and future residential development. Known Loads from residential land uses were manually entered into the model for the Existing (2016) and Future Scenarios. Known Loads consisted of design flow rates that had been calculated for residential developments.

3.4 COMMERCIAL FLOW RATES

Commercial load factors in this report are based upon those utilized by comparable municipal entities in Arizona, in particular those of the Town of Gilbert, the Town of Queen Creek, and the City of Casa Grande. The unit loads used to estimate sewage flows from commercial developments were established using the load factors (in gallons per day per acre) of these municipalities. The commercial flow rates utilized in their Wastewater Master Plans are representative of the City of Kingman's existing development. **Figure 3.4.1 - Commercial Flow Rate Comparison** correlates City of Kingman Zoning & General Plan commercial land uses and unit loads to the land uses and flows of these municipalities.

Load factors applied to the interceptor model for the various commercial zones are shown in the Loading Tables (Appendix E & F). The City's commercial zones include:

- C-1 (Neighborhood Convenience)
- C-2 (Community Business)
- C-2PDD (Community Business, Planned Development District)
- C-2-HMR (Hualapai Mountain Road Design Overlay)
- HMMC-PDD (Hualapai Mountain Medical Center, Planned Development District)
- C-3 (Service Business)
- C-3PDD (Service Business, Planned Development District)

Load factors applied to the interceptor model for the various commercial uses defined by the General Plan 2030 are also shown in the Loading Tables (Appendix E & F). The commercial uses defined by the General Plan include:

- Neighborhood Commercial
- Community Commercial
- Regional Commercial
- Highway Service Commercial

These load factors were entered into the model to develop the Allocated Loads for both existing and future commercial land use. Again, load factors were adjusted for the Existing (2016) Scenarios during the model calibration. Future Scenario load factors were not adjusted. Known Loads from commercial land uses are typically manually entered into the model for the Existing and Future Scenarios. However, for this project only the Allocated Loads were utilized for commercial areas.

3.5 INDUSTRIAL FLOW RATES

Compared to residential and commercial users, industrial land use areas contribute the least amount of sewer flow within the system. There are three different industrial uses under the City's current zoning including I-1 (Light Industry), I-1PDD (Light Industry, Planned Development District) and I-2 (Heavy Industry). As with other land uses described, a unique loading factor (GPD/Acre) was developed in order to calculate the anticipated flow rates for

parcels within that land use. The General Plan industrial uses fall under 2 categories; Light Industrial and Manufacturing Industrial. Loading factors developed for the General Plan areas were similar for those defined by the current zoning. However, for the Existing (2016) Scenario – Hilltop, the General Plan loading factors were greatly reduced during calibration. The reason for this was that industrial flows coming from the Airport Industrial Park were uncharacteristically low, according to the flow monitoring results. Although, depending on the type of industrial user, wastewater flow contribution can vary significantly.

Load factors were initially established at 900 gallons per day per acre for Light Industrial users and 1,200 gallons per day per acre for Heavy/Manufacturing Industrial users. These factors were applied to the model for the Existing (2016) Scenarios and for the Future Scenario.

In addition to the load factors developed for Allocated Loads, metered flow rates from industrial connections, provided by the City, were manually entered into the model. Known Loads from significant industrial users (SIUs) were used in both the Hilltop and Downtown interceptor models and include flows from the following:

- Mohave County Jail
- Mohave County Juvenile Detention
- Kingman Regional Medical Center (Main Hospital)
- Kingman Regional Medical Center (Hualapai Mountain Campus)

Peaking factors from these users was not provided, therefore average base flow from the industrial users was entered into the model and peaked according to a known occupancy or an equivalent population. Note that all flow loading for SIUs was based on the flow monitoring results provided by the City for the respective users and not necessarily the permitted capacities. Known Loads were manually entered for both Existing and Future Scenarios.

The Flow Data appendices for each scenario (Appendix E & F) give the estimated industrial user flow rates based on land usage and all known industrial flows. They represent all industrial flows applied to the hydraulic model of the City's sewer interceptor system.

Note: Load factors were also developed for those land uses not categorized as either Residential, Commercial, or Industrial per the City's Official Zoning Map or the General Plan 2030 Map. These land uses include:

- O (Recreational Open Space) - Zoning
- Public/Quasi-Public – General Plan 2030
- Parks/Open Space – General Plan 2030

Load factors for these areas varied greatly. For instance Public land has the potential for significant flow contribution while Parks may contribute no flow at all.

3.6 PEAKING FACTORS

Dry Weather Peaking Factors were applied to all flows within the model based upon the total population upstream of the calculation point. ADEQ recommended peaking factors per R18-9-E301 (See **Appendix A - ADEQ Minimum Standards**, Dry Weather Peaking Factor Table) were entered into the model via a table showing peaking factor versus population. For populations greater than 1,000 the peaking factor must be calculated based upon given equations. These equations were also entered into the model.

The H_2OMAP Sewer Pro model applies peaking factors to flows by first adding the population of the upstream manholes. Next it applies the appropriate peaking factor from the loaded table based on the cumulative population total. This allows the model to develop a unique peaking factor based on the upstream population at each manhole node. The peaking factor is applied to the total non-peaked flow to that point.

Population calculations were used for calculating peaking factors only. Actual City population projections were not estimated for this project. Where applicable, residential peaking factor populations were calculated using a value of 2.46 people per dwelling unit for existing and future conditions. For commercial and industrial land uses, peaking factors were developed from equivalent populations, which were simulated by taking the flow rate of the land area (GPD/Acre) and dividing by historic usage rate per person of 70 GPD/capita (80 GPD/capita for the future conditions).

Proposed pipes in the system were then designed such that the d/D (ratio of flow depth in the pipe to the diameter of the pipe) did not exceed 0.75 when the peaked dry weather flow was applied. Existing pipes in the system were also checked to see if they exceed 0.75 d/D.

3.7 INFLOW AND INFILTRATION

R18-9-C305.2.05 General Permit: Capacity, Management, Operation and Maintenance (CMOM) of a Sewage Collection System requires that Cities demonstrate "how to maintain sufficient capacity to convey the base flows and peak wet weather flow of a 10-year, 24-hour storm event for all parts of the collection system owned or managed by the permittee (City) or under the permittee's operational control." While the City of Kingman operates under a separate CMOM plan, R18-9-C305.2.05 is a useful guideline of minimum standards established by the Arizona Department of Environmental Quality (ADEQ).

In order to comply with R18-9-C305.2.05, the City included a comprehensive inflow and infiltration (I&I) study of the Downtown Service Area as part of this project (see **Section 5 - Inflow and Infiltration**). In the past the City has observed significant flow increases at the Downtown WWTP during heavy rainfall events. Based on these observation and the relative age of the infrastructure, it was concluded that Downtown was the most susceptible area under wet weather conditions. The study determined the magnitude and location of the wet weather surcharging on the existing sewer network and includes recommendations for mitigation efforts by the City to reduce I&I throughout the system.

The historic inflow and infiltration rate during a 10-yr, 24 hr event, estimated from the I&I study was incorporated into the model as a surcharge load in order to demonstrate the collection system's capacity to convey this flow. According to ADEQ standards (R18-9-E301.4.01), peak wet weather flow may be determined by adding to the peak dry weather flow "a wet weather infiltration and inflow rate based on either a percentage of peak dry weather flow or a gallons per acre rate of flow." The results of the study showed a percent (%) increase in flow during the 10yr, 24hr storm event due to infiltration and inflow. In the model, the flow increase may be added to the dry weather peak flows**,** by applying a global multiplier to peak dry weather flows or manually distributing the known storm surge flow rate from the WWTP amongst the loading manholes in the interceptor network.

While determination of inflow and infiltration (I&I) flows was part of the Downtown analysis, it was beyond the scope of work for this study for the Hilltop Service Area. Instead all future pipes in the Hilltop area were designed to adhere to a depth to diameter ratio (d/D) no greater than 0.75 during peak dry weather conditions. The future pipes were also designed to provide relief to pipes flowing at or near capacity, thereby reducing the peak dry weather flows at those locations and reducing the chance of wet weather surcharging to the existing system. The City may conduct a comprehensive I&I Study for the Hilltop area in the future. This would necessitate increased flow monitoring efforts at multiple locations in the system prior to and during the rainy season to track increased flows due to I&I. Significant storm events could potentially cause adverse surcharging in pipes that are currently flowing at or near full flow capacity in the peak dry weather conditions. It should be noted that newly constructed sewer is typically less prone to I&I flow, therefore it is unlikely that any of the recommended sizing for proposed interceptors in this report will need to be modified once peak wet weather flow is determined. Depending on the findings of the future I&I study, recommendations for upsizing existing facilities may need to be expanded or a plan developed to remediate I&I sources in the Hilltop Service Area.

SECTION 3
FIGURES & EXHIBITS

Figure 3.4.1 - Commercial Load Comparison

Usage Type	Category	Land Use Descriptions (Kingman)	Unit Load (Kingman, GPD/AC)	Land Use Descriptions (Casa Grande)	Unit Load (Casa Grande, GPD/AC)	Land Use Descriptions (Town of Queen Creek)	Unit Load (Town of Queen Creek, GPD/AC)	Land Use Descriptions (Gilbert)	Unit Load (Gilbert, GPD/AC)
C-1	Commercial	Neighborhood Convenience	600	Neighborhood Business Zone	1,000.00	Neighborhood Commercial	600.00	Commercial	600.00
C-2	Commercial	Community Business	600	General Business Zone	1,000.00	Commercial Services	600.00	Commercial	600.00
C-2-HMR	Commercial	HMR - Design Overlay	100	Central Business Zone	1,000.00	Regional Commercial Center	800.00	Regional Commercial	800.00
C-2-PDD	Commercial	Community Business - PDD	600	Commercial Office Zone	1,000.00	Office/Services	600.00	Commercial	600.00
C-3	Commercial	Service Business	1,000	Community Service Zone	1,000.00	Mixed Use/Town Center	1,300.00	Vertical Development	1,300.00
I-1	Industrial	Light Industry	900	Garden & Light Industrial Zone	1,500.00 *	Employment Type A&B	400.00	Industrial	400.00
I-2	Industrial	Heavy Industry	1,200	General Industrial Zone	1,500.00 *	Employment Type A&B	400.00	Industrial	400.00

*Industrial standard is actually 1,000 GPD/AC, however, 1,500 GPD/AC is more representative of actual flows per City of Casa Grande Engineering Staff

4.0 2016 INTERCEPTOR MODELING

The goal of the 2016 interceptor modeling is to create a hydraulic simulation of the City's wastewater collection system as it currently exists. The models were created using information provided by the City (CAD drawings, mapping, record drawings, influent flows, etc.), field survey of interceptor manholes, and wastewater flow measurement. The results of this modeling are intended to show how the current (2016) interceptor system performs under current loading conditions.

4.1 PHYSICAL MODEL

In order to develop the interceptor model the first step was to create the physical elements. The input data for the model mathematically simulates the physical characteristics of the interceptor system. The input data used for the simulation is as follows:

- **Manhole Information**
  Location (Northing & Easting)
  Rim Elevation
  Invert Elevation
  Pipe Connectivity
- **Pipe Information**
  Pipe Size (Diameter)
  Pipe Length
  Pipe Slope (From Inverts & Pipe Length)
  Pipe Roughness (Manning's n=0.013)

As previously stated, the input data was gathered through meetings and coordination with the City, record drawings, and field survey of manholes within the interceptor system. The results of this physical modeling are best depicted in maps of the existing systems which are shown in **Exhibit 4.1.1 - 2016 System Map – Hilltop** and **Exhibit 4.1.2 – 2016 System Map – Downtown.**

The existing models include the latest improvements to the network including one interceptor that is currently in the design phase called the Mohave Channel Sewer Line. Installation of this sewer pipe will likely begin within one year and will serve portions of Walleck Ranch and Mohave Country Club Estates Unit 3. The 12 inch interceptor, which runs along the north bank of the Mohave Wash, was sized by the City for build-out of the contributing area (i.e. existing and future flows).

There are a number of flow splits at various locations throughout the City's system (see **Table 2.2.3** in **Section 2.2 Interceptor Manhole Survey**). H_2OMAP Sewer is capable of splitting the sewer flows automatically based on invert elevations and downstream pipe slope. However, in some cases it becomes necessary to input a flow split criteria at a given manhole structure, e.g. when pipes switch from open-channel (free surface) and switch to pressurized flow. The manual flow split can be based on a simple percentage of incoming flow (other methods are also available). For the 2016 Scenario, there are six manual flow splits, all in the Hilltop Service Area. These were added to refine the model based on the flow monitoring results.

4.2 SEWERSHED DEFINITIONS

After the physical model was created, sewersheds were defined for areas that contribute to each interceptor from the existing service area. This was completed using the latest available topography, aerial photography, as-builts and other available data. Aerial photographs were used to determine if homes were built within the platted subdivisions, or commercial and industrial developments in non-residential areas. Empty parcels within partially developed subdivisions were not considered to contribute flow to the system. Subdivisions that were platted but construction had not begun were not considered to contribute flow to the system. Developed areas that are not connected to the sewer system (i.e. lots with septic systems) were not shown as contributing. Maps of the defined sewer sheds within the system are shown in **Exhibit 4.2.1 - 2016 Sewershed Map – Hilltop** and **Exhibit 4.2.2 – Sewershed Map –Downtown**.

Sewersheds include all land within a given area of the project planning boundary that ultimately outfalls at a certain location on the sewer network. The **2016 Sewershed Maps** only highlight those areas within the "ultimate sewer shed" that are currently contributing. In other words, the boundary of an existing sewer shed may expand in future model scenario if the contributing area is not currently built out.

A sewer infrastructure drawing, provided by the City, which incorporated every sewer pipe in the collection system (not just interceptors), was used to determine the exact sewer shed delineations. This map of the entire sewer collection system is available online through the County's GIS website.

4.3 SEWER CONNECTIONS & FLOW CALCULATIONS

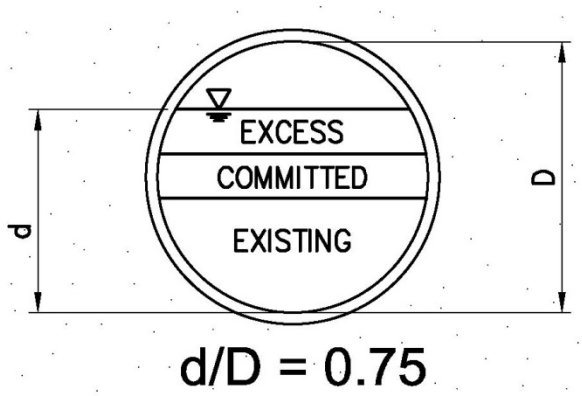
The number of sewer connections in each sewershed was calculated using aerial imagery, a list of active sewer customers provided by the City, and parcel shapefiles. Each parcel within a sewershed is assigned an existing downstream manhole on the interceptor network where it ultimately contributes sewer flow. Sewersheds were further broken down into sub-basins made up of all the parcels that contribute flow to a specific manhole. All the flows from individual sub-basins make up the total sewer shed outfall flow. The sub-basins are not shown on **Exhibit 4.2.1 or 4.2.2**; however, they may be viewed in the H_2OMAP Sewer interceptor model. The software allows you to store the outfall manhole data associated with each parcel within the parcel shapefile itself. Total acreage for each sewer shed is found in **Appendix H - 2016 Sewer Shed Legends**.

The sewer flow calculations in the model simulate the current (2016) flows within the interceptor system. Each manhole in the system was allocated specific parcels that are associated with a land use defined by the Zoning or the General Plan 2030. In order to simulate flows, each manhole was "loaded" with a flow rate using the Load Allocator. Loads were calculated by multiplying the allocated parcels acreage by the unit load (cfs/acre) for the parcel's land use. This simulated the average daily flow (ADF) from each developed parcel within the system. Later, peaking factors were applied in accordance with **Section 3.6**, to obtain the ultimate peak flow (design flow). Known Loads from SIUs were also entered into the model manually but were stored separately from the Allocated Loads in the model database.

Per the City's request, Known Loads from committed parcels were also entered into the model. All committed loads were entered as additional flow after the calibration of the model with existing loading only. Committed parcels are residential developments that will likely connect to the system in the immediate future. All committed parcels are located within the Hilltop Service Area. These flows were stored separately in the model database from the Allocated Loads and Known Loads for existing connections. The outfall manhole data associated with each committed parcel was also stored within a separate committed parcel shapefile. This shapefile, although not used for this project, will allow the City to use the Load Allocator for these areas. The City may decide, at a later date, to utilize Allocated Loads instead of Known Loads for the committed parcels.

The purpose of adding the committed loading onto the Existing (2016) Scenario was to determine the true excess capacity (or deficiencies) of the system if all committed parcels were to be built-out within the project planning boundary (See **Figure 4.3.1**). The City believed it was in the best interest of the public to analyze the available capacity of the existing interceptors under these loading conditions. Available or excess capacity is defined as the additional flow that may be added to existing flows while maintaining a d/D of 0.75 in peaked dry weather conditions. Without loading the committed developments, the apparent excess capacity in a given interceptor may have been misrepresented because, in reality, that capacity was already reserved.

Figure 4.3.1



The respective flow loads within the Manhole Hydraulic Model Data Table (within the model database) are as follows:

- LOAD 1 – Allocated Loads based on the existing (2016) connections
- LOAD 2 – Known Loads based on given flow rates from SIUs (2016)
- LOAD 3 – Allocated Loads based on the committed connections
- LOAD 4 – Known Loads based on given flow rates for committed connections

Table 4.3.1 – 2016 Load Data – Hilltop

Model Load Data	ADF (MGD)
LOAD 1	2.17
LOAD 2	0.10
LOAD 3	0.00
LOAD 4	0.50

Table 4.3.2 – 2016 Load Data - Downtown

Model Load Data	ADF (MGD)
LOAD 1	0.46
LOAD 2	0.04
LOAD 3	0.00
LOAD 4	0.00

All land within the project planning boundary was divided into five main categories (**Section 2.4**), Existing, Existing Committed, Septic, Vacant (Future Connections), and Vacant (Restrictive Slope). Septic, Vacant (Future Connections), and Vacant (Restrictive Slope) parcel areas are not considered to be contributing to the system within the Existing (2016) Scenario model. Septic parcels, i.e. existing lots that are currently being serviced by individual on-site treatment systems, will eventually be connected to the City's sewer system but are not simulated until the Future Scenario.

The total flow output per land use type (Allocated Loads) and metered flow data from SIUs (Known Loads) applied to the model is shown in **Appendix E - 2016 Flow Data**. The total given flow data from committed developments (Known Loads) applied to the model is also shown in **Appendix E.**

4.4 MODEL CALIBRATION

Creating the existing conditions scenarios was a critical step in the modeling process, as all other scenarios (I&I and Future) build upon the 2016 Scenarios. As such, great care was taken to calibrate the model and ensure that modeled flows were as representative of actual flows as possible. Calibration efforts included:

1. Comparison of modeled flow rates (ADF and peak flows) against flow monitoring results.
2. Investigation of zoned density versus actual density and adjusting the loading factors accordingly.
3. Other load factor adjustments were made based on occupancy data (person per dwelling unit) and capita flow rates (gallons per person per day). For instance, daily flow per capita was reduced to 70 gallons/capita/day and occupancy for various residential uses were also adjusted.
4. Investigation of flow split locations throughout the interceptor network and applying manual flow splits as necessary to match existing conditions.

To review all of the adjustments that were made to the model loading factors, compare the Initial versus the Calibrated Loading Tables in **Appendix E**. When calibrating an interceptor sewer model it becomes problematic to match flow monitoring results exactly at each flow monitoring location throughout the system. Instead a close, preferably more conservative, representation of existing system flows is attained. Such was the case when calibrating the Hilltop and Downtown interceptor models.

4.5 INTERCEPTOR MODELING RESULTS

Once the physical model described in **Section 4.1** was loaded with the sewer flows described in **Section 4.3** to create the completed interceptor sewer models, simulations were run with peaking factors (**Section 3.5)** for the Existing (2016) Scenarios.

In general, the 2016 interceptor modeling showed that the existing interceptor system is adequate to convey the existing Average Daily Flow, and Dry Weather Peaked Flow. However, there is one area of concern at this time for the Hilltop interceptor system. The Dry Weather Peaked Flows cause surcharging over full flow capacity at the intersection of Jagerson and N Bank Street. The locations of this sections of pipe is clearly shown in red on **Exhibit 4.5.1 – 2016 d/D Map – Hilltop.**

The model also revealed sections of pipe that exceed 0.75 d/D under dry weather peaked conditions at various locations on the main outfall interceptor for the Downtown system. The locations of these sections are clearly shown in red on **Exhibit 4.5.2**. **2016 d/D Map – Downtown**.

The total flow at the outfall from the models is compared with the actual total outfall flows recorded by the City at the WWTPs in **Table 4.5.1 – 2016 Outfall Flows – Hilltop** and **Table 4.5.2 – 2016 Outfall Flows – Downtown**.

Table 4.5.1 – 2016 Outfall Flows – Hilltop*

Location/Source	ADF, MGD	Peak, MGD
Hilltop WWTP/Sewer Model	2.27	3.90
Hilltop WWTP/Flow Monitoring	1.56	2.91

* Excludes committed flows.

Table 4.5.2 – 2016 Outfall Flows – Downtown

Location/Source	ADF, MGD	Peak, MGD
Downtown WWTP/Sewer Model	0.50	0.96
Downtown WWTP/Flow Monitoring	0.26	1.01

Appendix E – 2016 Flow Data shows the calibration data comparing the model flows with the actual flows at each of the flow monitoring sites.

4.6 2016 RECOMMENDATIONS

The 2016 interceptor modeling showed that most of the existing interceptor system is adequate to convey the existing and committed flows experienced by the system for Average Daily Flow and Dry Weather Peaked Flow. Only one improvement is recommended at this time for the Hilltop interceptor system.

Hilltop Service Area

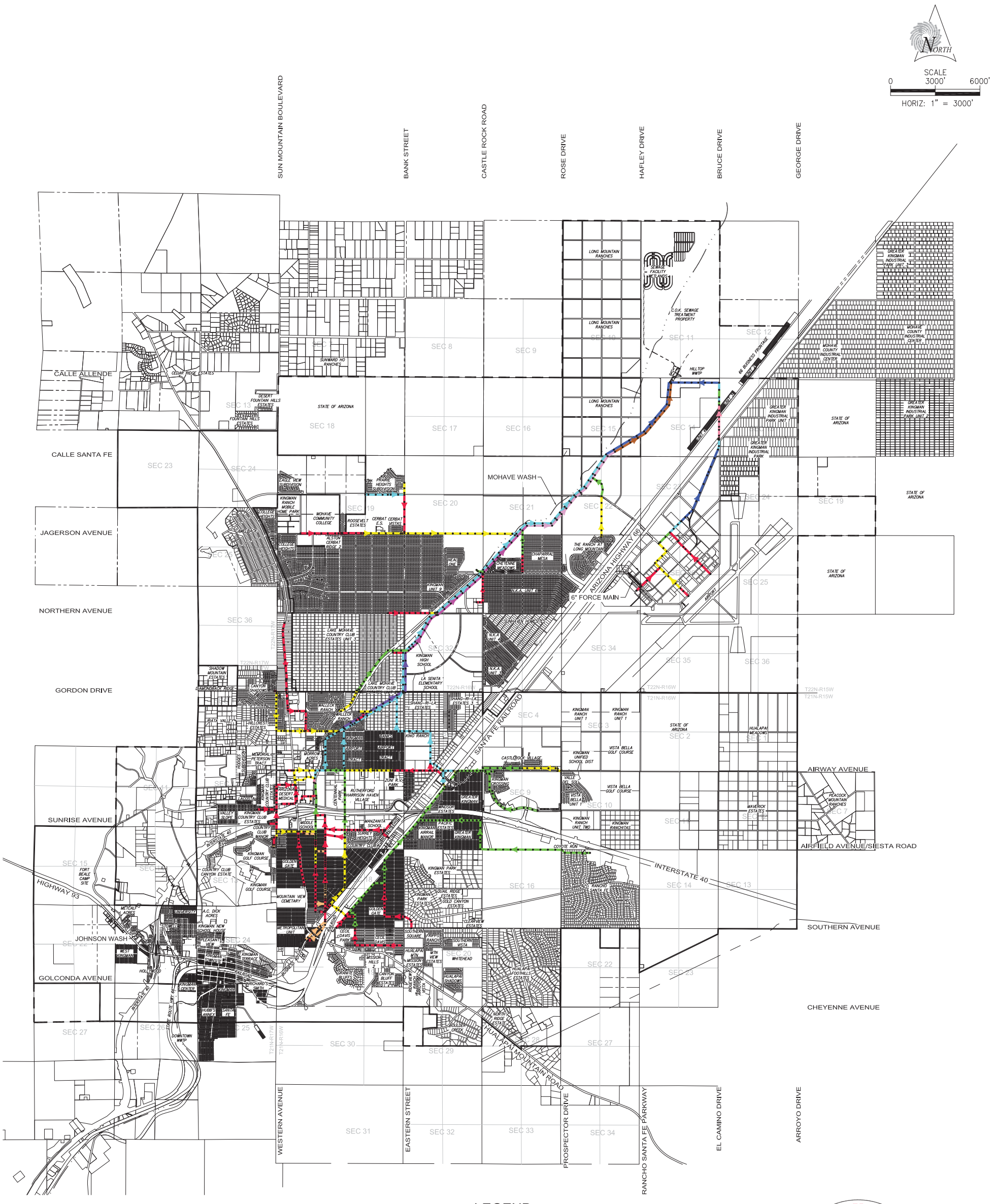
To relieve the surcharging on the Jagerson Avenue interceptor, a portion of the 10 inch interceptor should be upsized to a 12 inch pipe (Project 1). The majority of the Jagerson Avenue interceptor can convey the existing dry weather peaked flows at 0.75 d/D, however, from the intersection with N Bank Street and 250 feet to the east, sewer flow exceeds the full flow capacity of the pipe. It should be noted that the 2016 Scenario includes committed flows from the Eagle View and Prairie Heights subdivisions which outfall to the Jagerson Avenue interceptor. It should be further noted that under the future load conditions (see **Section 6.5 Future Recommendations**) a parallel interceptor will be required along Jagerson Avenue from N Bank Street to the Mohave Wash. Rather than spend money replacing the 250 feet of interceptor for 2016 Scenario loading conditions, the City may wait and apply those funds for a larger CIP project recommended under future loading conditions. In the interim the City can monitor this location which, although it is exceeding full flow capacity in the model, is only experiencing minor surcharging when the committed subdivisions are contributing.

There are no other improvements recommended for the Hilltop system. Several locations are approaching the 0.75 d/D capacity. These locations should be monitored during wet weather conditions to determine the magnitude of the storm surge on a case by case basis. **Exhibit 4.6.1 - 2016 Recommendations Map** shows the pipes that will require replacement due to lack of capacity. **Figure 4.6.1 - 2016 Recommendations Cost Estimate** shows the cost estimates of the removal and replacement of the recommended improvements. Pipe segment lengths shown on the estimate are approximate, true lengths will be determined in final design.

Downtown Service Area

There are no improvements recommended for the Downtown system under existing dry weather peaked flows. However, under existing peak wet weather conditions the interceptor network and the Downtown WWTP experience significant storm surge. **Section 5.0 Inflow and Infiltration** investigates the magnitude and potential sources of I&I in the system. All recommended improvements for the Downtown Hilltop Service Area focus on the mitigation of I&I sources rather than sizing larger interceptors for the system.

SECTION 4
FIGURES & EXHIBITS



CITY OF KINGMAN

INTERCEPTOR SEWER MODELING

EXHIBIT 4.1.1

2016 SYSTEM MAP - HILLTOP

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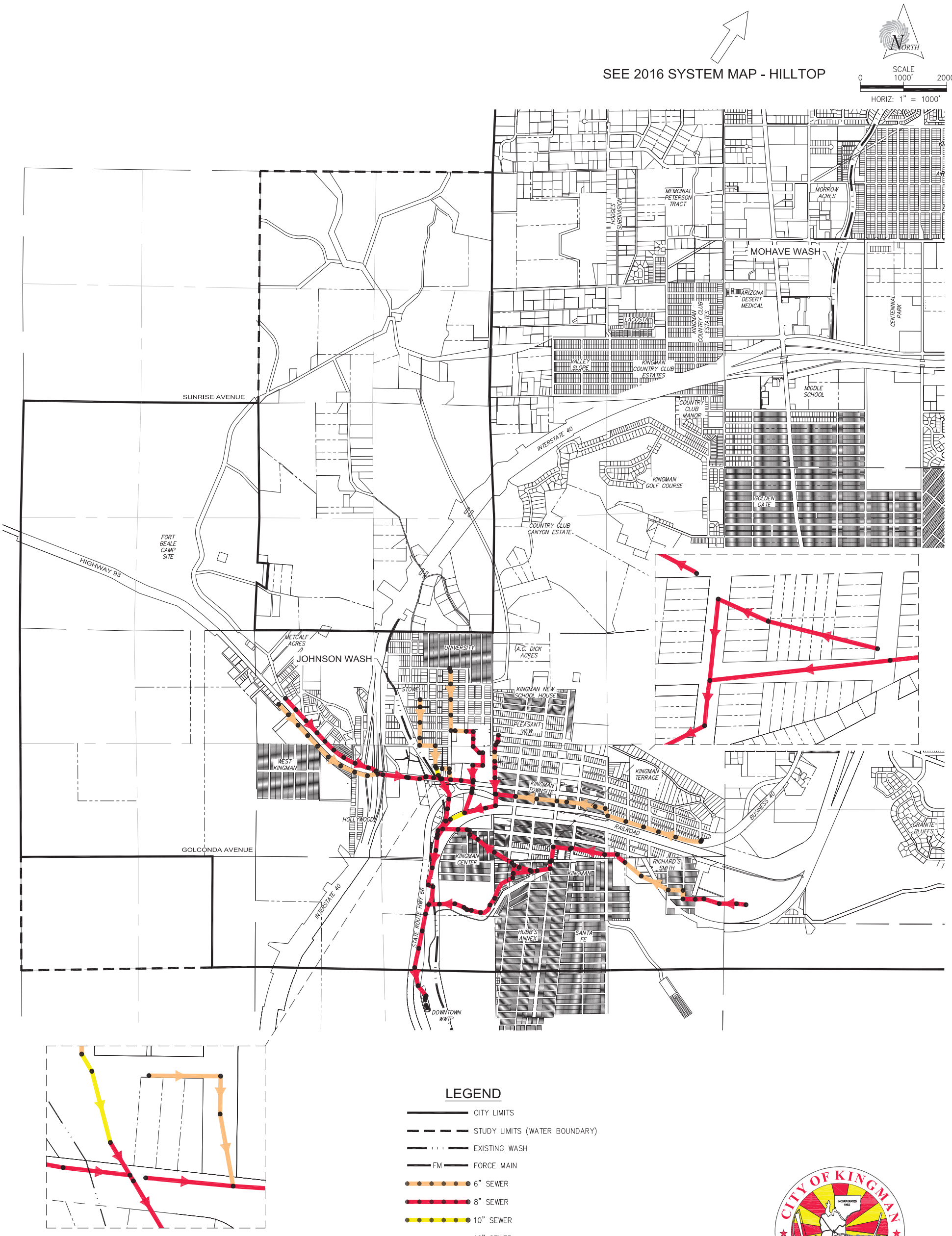

LEGEND

- CITY LIMITS
- STUDY LIMITS (WATER BOUNDARY)
- EXISTING WASH
- FM — FORCE MAIN
- 6" SEWER
- 8" SEWER
- 10" SEWER
- 12" SEWER
- MANHOLE

NOTE
SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.

CITY OF KINGMAN

INTERCEPTOR SEWER MODELING

EXHIBIT 4.1.2

2016 SYSTEM MAP - DOWNTOWN

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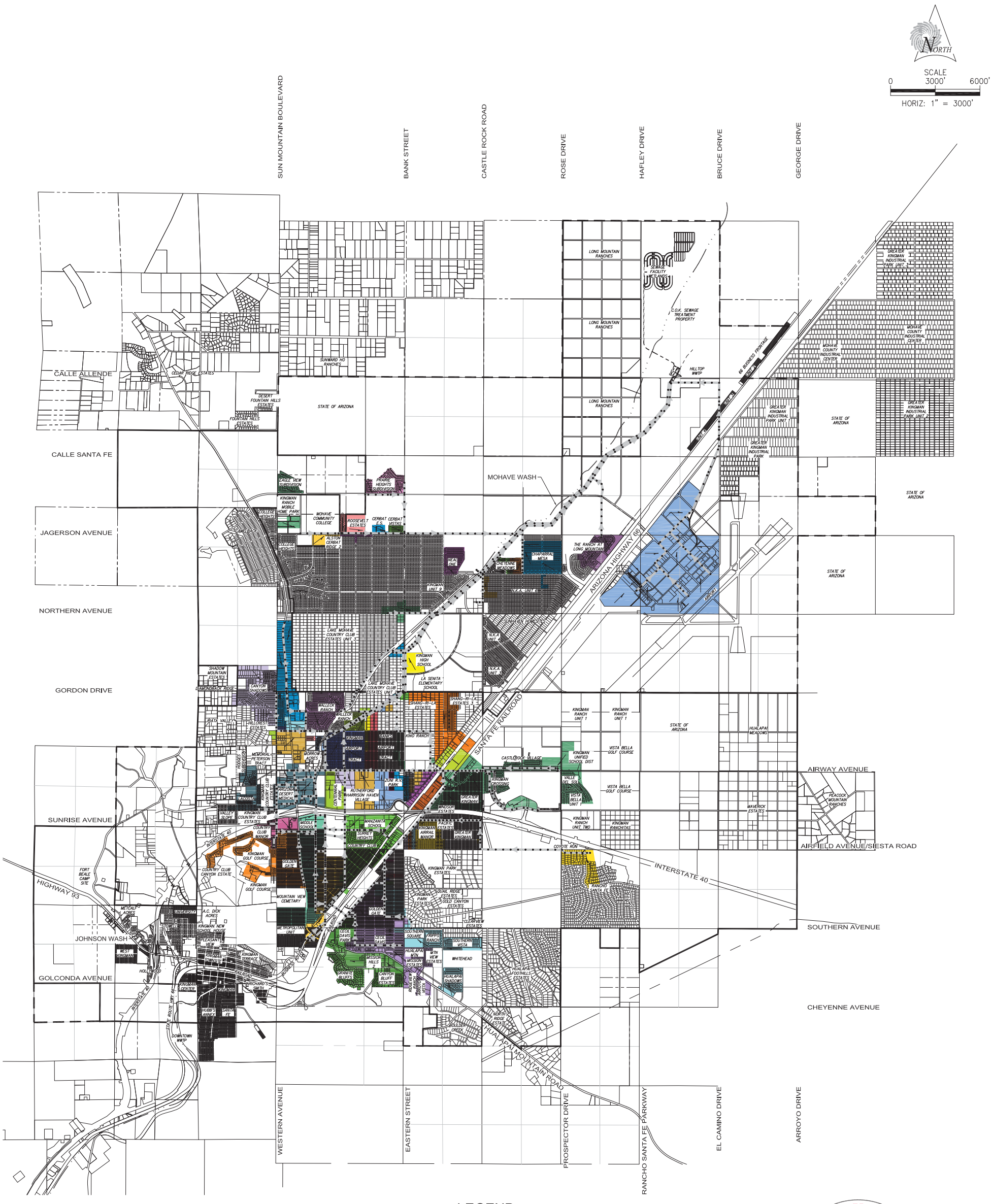

LEGEND

- CITY LIMITS
- STUDY LIMITS (WATER BOUNDARY)
- EXISTING WASH
- EXISTING SEWER
- MANHOLE
- FLOW DIRECTION
- LS — LIFT STATION

NOTE
1. SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.
2. SEE APPENDIX H FOR SEWER SHED LEGEND.

CITY OF KINGMAN
FOUNDED 1882

CITY OF KINGMAN
INTERCEPTOR SEWER MODELING
EXHIBIT 4.2.1
2016 SEWER SHED MAP - HILLTOP

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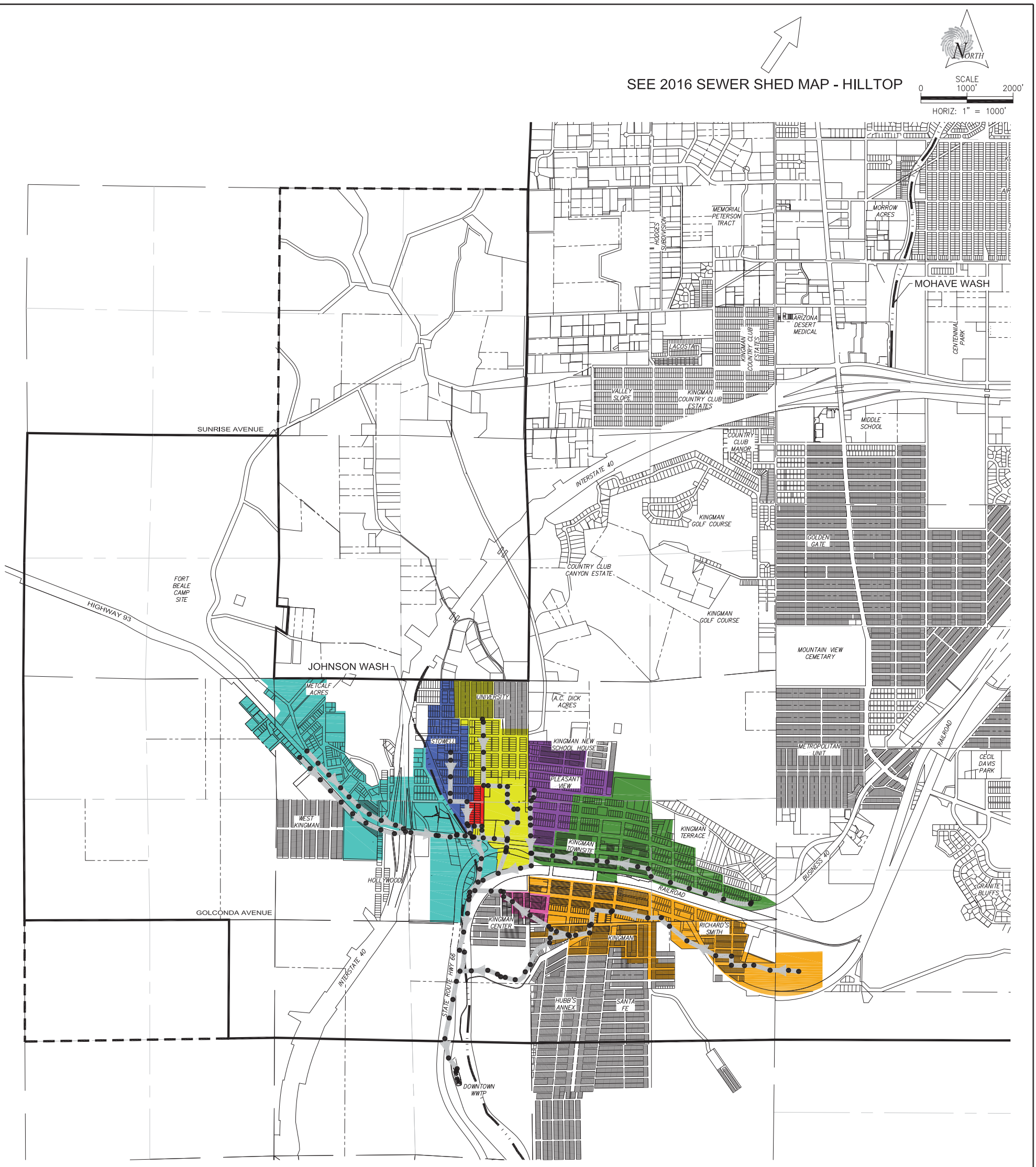

NOTE
SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.

CITY OF KINGMAN

INTERCEPTOR SEWER MODELING

EXHIBIT 4.2.2

2016 SEWER SHED MAP - DOWNTOWN

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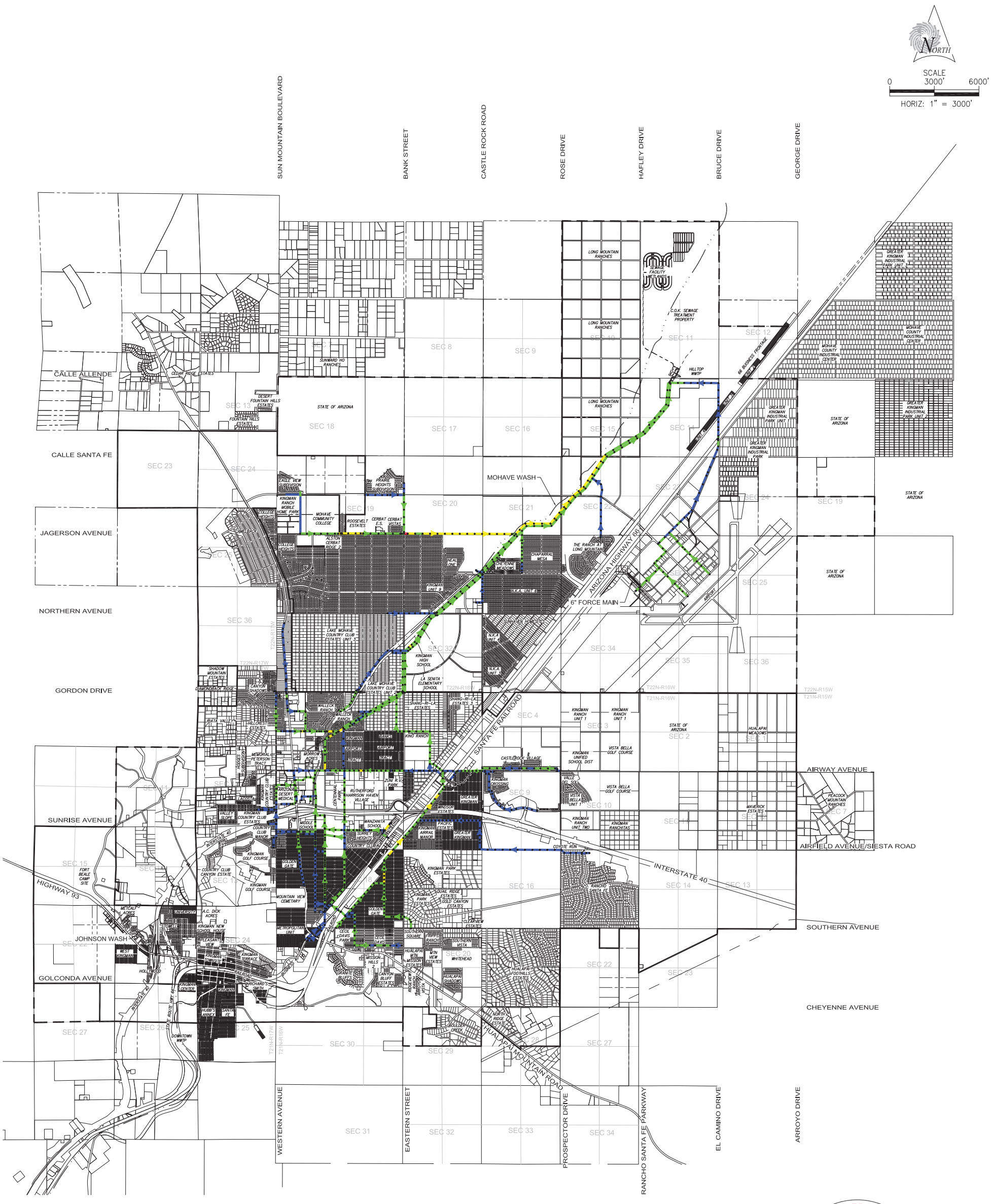

LEGEND

- CITY LIMITS
- STUDY LIMITS (WATER BOUNDARY)
- EXISTING WASH
- FM — FORCE MAIN
- MANHOLE
- LS — LIFT STATION
- 0.00 TO 0.25 d/D
- 0.25 TO 0.50 d/D
- 0.50 TO 0.75 d/D
- 0.75 TO 1.00 d/D

NOTE
SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.

CITY OF KINGMAN
FOUNDED 1882

CITY OF KINGMAN
INTERCEPTOR SEWER MODELING
EXHIBIT 4.5.1
2016 d/D MAP - HILLTOP

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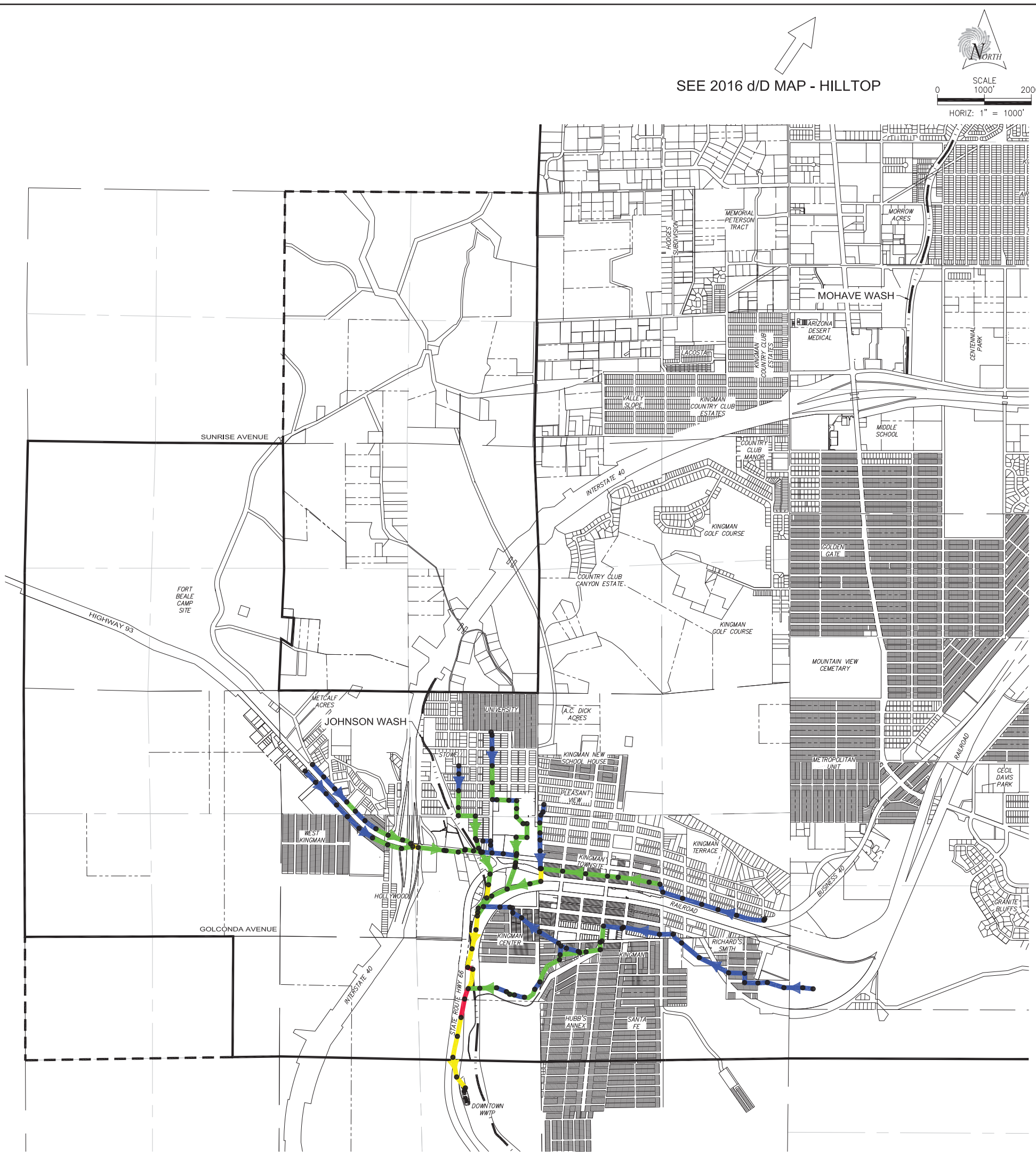
SEE 2016 d/D MAP - HILLTOP
NORTH
SCALE
0
1000'
2000'
HORIZ: 1" = 1000'
MEMORIAL PETERSON TRACT
HODGES SUBDIVISION
MORROW ACRES
MOHAVE WASH
ARIZONA DESERT MEDICAL
CENTENNIAL PARK
KINGMAN COUNTRY CLUB ESTATES
VALLEY SLOPE
KINGMAN COUNTRY CLUB ESTATES
MIDDLE SCHOOL
SUNRISE AVENUE
COUNTRY CLUB MANOR
INTERSTATE 40
KINGMAN GOLF COURSE
GOLDEN GATE
COUNTRY CLUB CANYON ESTATE
KINGMAN GOLF COURSE
FORT BEALE CAMP SITE
HIGHWAY 93
MOUNTAIN VIEW CEMETARY
METCALF ACRES
JOHNSON WASH
UNIVERSITY
A.C. DICK ACRES
STOWELL
KINGMAN NEW SCHOOL HOUSE
PLEASANT VIEW
METROPOLITAN UNIT
RAILROAD
CECIL DAVIS PARK
WEST KINGMAN
KINGMAN TERRACE
KINGMAN TOWNSITE
BUSINESS 40
HOLLYWOOD
RAILROAD
GRANITE BLUFFS
GOLCONDA AVENUE
KINGMAN CENTER
RICHARD'S SMITH
KINGMAN
INTERSTATE 40
STATE ROUTE HWY 66
HUBB'S ANNEX
SANTA FE
DOWNTOWN WWTP
LEGEND
CITY LIMITS
STUDY LIMITS (WATER BOUNDARY)
EXISTING WASH
FM
FORCE MAIN
0.00 TO 0.25 d/D
0.25 TO 0.50 d/D
0.50 TO 0.75 d/D
0.75 TO 1.00 d/D
MANHOLE
NOTE
SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.
CITY OF KINGMAN
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INCORPORATED 1952
CITY OF KINGMAN
INTERCEPTOR SEWER MODELING
EXHIBIT 4.5.2
2016 d/D MAP - DOWNTOWN
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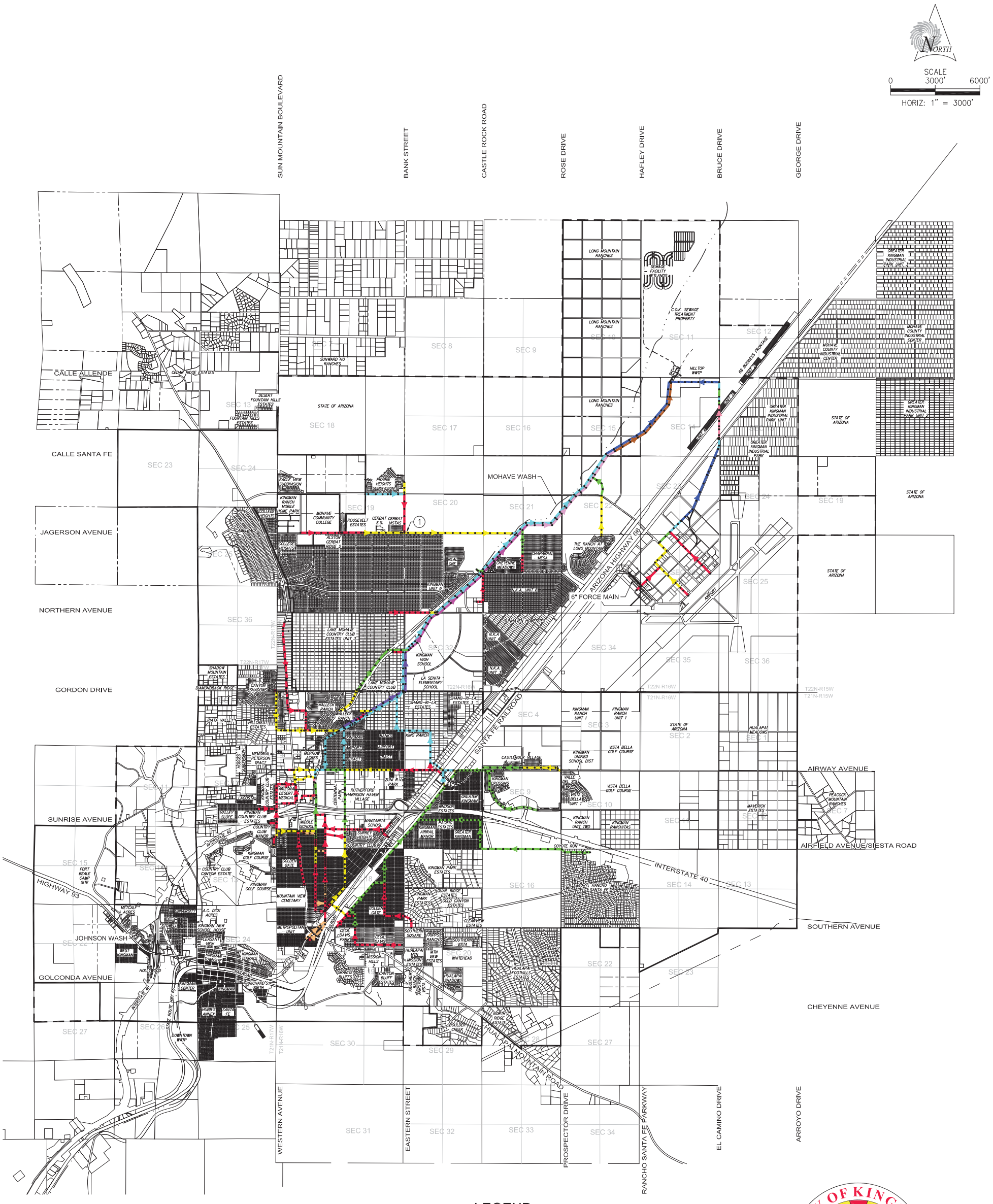

LEGEND

- CITY LIMITS
- STUDY LIMITS (WATER BOUNDARY)
- EXISTING WASH
- MANHOLE
- LS LIFT STATION
- X PROJECT NUMBER
- FM FORCE MAIN
- 6" SEWER
- 8" SEWER
- 10" SEWER
- 12" SEWER
- 14" SEWER
- 15" SEWER
- 16" SEWER
- 18" SEWER
- 21" SEWER
- 24" SEWER
- 27" SEWER
- 30" SEWER

NOTE
1. SEE APPENDIX G FOR INDIVIDUAL PROJECT COST ESTIMATES.
2. SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.

CITY OF KINGMAN
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CITY OF KINGMAN

INTERCEPTOR SEWER MODELING
EXHIBIT 4.6.1
2016 RECOMMENDATIONS MAP - HILLTOP

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2016 Projects

SUNRISE ENGINEERING
2152 S. Vineyard, Suite 123
Mesa, Arizona 85210
Tel: (480) 768-8600 Fax: (480) 768-8609

Figure 4.6.1 - 2016 Recommendations Cost Estimate *

Project: Sewer Master Plan Update and Inflow/Infiltration Study 1/22/16
Owner: City of Kingman
Prepared By: RP/JB

No.	Item Description - Construction	Quantity	Unit	Unit Price	Total
1	8" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$140.00	$0
2	10" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$145.00	$0
3	12" Gravity Sewer Pipe (PVC SDR 35 ASTM)	252	LF	$150.00	$37,800
4	15" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$160.00	$0
5	18" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$180.00	$0
6	21" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$190.00	$0
7	24" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$200.00	$0
8	27" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$225.00	$0
9	30" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$250.00	$0
10	36" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$270.00	$0
11	42" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$325.00	$0
12	48" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$380.00	$0
13	54" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$435.00	$0
14	60" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$490.00	$0
15	60" Manhole (Precast Concrete)	2	EA	$12,000.00	$18,048
16	Jack & Bore Major Highway Crossing	0	LF	$2,500.00	$0
17	Jack & Bore Major Canal Crossing	0	LF	$2,500.00	$0
18	Jack & Bore Railroad Crossing	0	LF	$2,500.00	$0
19	Mohave Wash Crossing	0	LF	$3,000.00	$0
20	Lift Station	0	EA	$300,000.00	$0
21	Force Main	0	LF	$20.00	$0
22	Remove or Abandon Existing 60" Manhole	2	EA	$2,500.00	$5,000
23	Sawcut, Remove & Replace A.C. Pavement (Included w/Pipe Cost)	0	SY	$70.00	$0
24	Remove or Abandon Existing 10" Gravity Sewer Pipe	252	LF	$18.00	$4,536
29	Mobilization	5%	LS	$3,269.20	$3,269
30	Traffic Control	10%	LS	$6,538.40	$6,538
31	Engineering & Administration	10%	LS	$6,538.40	$6,538
32	Staking and Construction Management	10%	LS	$6,538.40	$6,538
				Sub-Total	**$88,268**

20% Contingency	$17,654
PROJECT TOTAL	**$106,000**

*In providing opinions of probable construction cost the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as the accuracy if such opinions compared to bid or actual costs.

5.0 INFLOW & INFILTRATION

As mentioned in **Section 3.7**, in order to comply with R18-9-C305.2.05, the City requested a comprehensive inflow and infiltration (I&I) study of the Downtown Service Area. Based on observed flow increases at the Downtown WWTP during rainfall events and on the condition of the infrastructure, this area was determined to be the most critical for I&I. The purpose of the study is to determine the magnitude and location of the wet weather surcharging on the existing sewer network and develop recommendations for reducing I&I throughout the system.

5.1 FLOW MONITORING & RAIN GAUGE RESULTS

In order to model the effects of I&I on the Downtown Service Area, storm surge data from actual rain events needed to be collected. This was accomplished by monitoring flows at multiple locations in the system (including the WWTP) prior to and during a storm. **Exhibit 2.5.2 – Flow Monitoring Map** shows the location of the flow monitoring sites, as well as, a summary table of the data collected. **Appendix D** gives a more complete chart showing the observed flows for the entire monitoring period for each site. Rainfall data was also collected from various rain gauge sites located within the project vicinity. **Exhibit 2.6.1 – Rain Gauge Map** shows the location and names of all of the rain gauge sites, as well as, dates and measurements for each storm event. **Appendix C** gives a complete breakdown of all the data logged for rainfall during the analysis. The main purpose for tracking rainfall data in the City was to determine the effects of various sized storm events on the flow capacity of the interceptor network. Every peak flow event recorded during flow monitoring both at the WWTP and at the flow monitoring sites was compared to the rainfall data. This involved determining the location, time, duration and magnitude of each of the storms that hit during a peak flow period. If a significant storm event occurred directly before a "spike" was registered at a flow monitoring site, causation was usually inferred; especially if the storm event took place in the vicinity of the monitoring site. Using this method was useful in distinguishing the wet weather peak flows from the dry weather peak flows. The combination of rainfall and flow monitoring data was utilized in determining the inflow and infiltration rate during the design storm.

The design storm for an I&I analysis should be based on the 10 year-24 hour storm event per ADEQ standards. However, the City did not experience a 10yr-24hr storm during the flow monitoring period. Instead, a representative storm was selected to approximate the effects of the design storm on the interceptor network. The storm that was selected on occurred on 8-13-15. This rainfall event caused the greatest wet weathering peaking observed during flow monitoring both at the WWTP and at a majority of the flow monitoring sites. While the overall rainfall depth and duration was less than the 10yr-24hr storm, the event experienced intensities greater than the average intensity of the 10yr-24hr event. According to the NOAA Atlas 14 isopluvial for Kingman, the 10yr-24hr rainfall depth is roughly 2.8 inches. This translates to an average intensity of 0.12 in/hr. The max intensity recorded for the selected event was 0.8 in/hr. The storm occurred approximately between 1:20 PM and 6:40 PM and the Downtown WWTP recorded the greatest peak flow that was observed during the flow monitoring period at 6:21 PM

Note: A 10yr-24hr event will experience max intensities greater than average intensity of 0.12 in/hr. The storm may or may not experience max intensities greater than 0.8 in/hr. However, given that the storm event on 8-13-15 registered intensities greater than the average intensity of 10yr-24hr event and caused the largest flow peak at the WWTP, it was selected as the design storm for the analysis. This represented the best available data to base storm surge calculations upon. Also, instantaneous peaks from slug loads recorded at the plant were not considered true peaked flow events for the system.

Utilizing the flow monitoring data results, it was determined that the storm surge on the system from the design storm was 1.67 cfs (1.08 MGD). Flow monitoring data collected at the plant during the storm was compared to flow monitoring data for the same time period for the day before event, the day after the event, and a dry weather day for the same day of the week. The storm surge was the difference between the peaked wet weather flow recorded at the WWTP and the peak dry weather flow recorded during the same time period at the WWTP.

5.2 MODELING RESULTS

The inflow and infiltration rate during the design storm, estimated from the analysis described in **Section 5.1**, was incorporated into the model as a surcharge load in order to demonstrate the collection system's capacity to convey this flow. The wet weather flows were added to the dry weather peaked flows by manually distributing the known storm surge flow rate from the WWTP amongst the loading manholes in the interceptor network

Based on the flow monitoring results, several areas within Downtown contributed very minimal storm surge. As such, the manholes in these areas were not loaded with additional storm flow. Instead the calculated storm surge for the design storm was distributed among the manholes along interceptors known to contribute I&I flows. The respective flow loads within the Manhole Hydraulic Model Data Table (within the model database) for the I&I Scenario are as follows:

- LOAD 1 – Allocated Loads based on the existing (2016) connections
- LOAD 2 – Known Loads based on given flow rates from SIUs (2016)
- LOAD 3 – Not used
- LOAD 4 – Known Loads based on estimated I&I flow rates

Table 5.2.1 – I&I Load Data

Model Load Data	ADF (MGD)
LOAD 1	0.46
LOAD 2	0.04
LOAD 3	0.00
LOAD 4	1.08

The contributing areas include all land within the project planning boundary designated as Existing, and Existing Committed. Septic, Vacant (Future Connections), and Vacant (Restrictive Slope) parcel areas are not considered to be contributing to the system within the I&I Scenario model.

The total flow output per land use type (Allocated Loads) and metered flow data from SIUs (Known Loads) applied to the model remains unchanged from the Existing (2016) Scenario. I&I flows were added as an additional surcharge flow to the model. Once the physical model was loaded, simulations were run with peaking factors (**Section 3.5)** for the I&I Scenario.

The I&I interceptor modeling indicates that the existing interceptor system is not adequate to convey the Wet Weather Peaked Flow. Multiple locations in the existing interceptor system have insufficient capacity and therefore are unable to handle the projected flows. The model revealed sections of pipe with minor surcharging under peaked conditions, i.e. the hydraulic grade lines of the pipes flowing full are right at the top of pipe or just above it (less than 2'). The locations of these sections are shown in red on **Exhibit 5.2.1 – 2016 I&I d/D Map** so that the problem areas can be easily visualized (Note: The exhibit also shows any pipe that exceed 0.75 d/D as red. The interactive H2OMap Sewer model must be utilized to distinguish the pipes exceeding 0.75 d/D from those that are exceeding full flow capacity).

The Wet Weather Peaked Flows cause significant surcharging over full flow capacity for the following:

- A majority of the 8 inch interceptor running north to south along the Johnson Wash and terminating at the Downtown WWTP. This is the main outfall interceptor for the Downtown Service Area (MH 36 to MH 44).
- Approximately 600 feet of 8 inch interceptor running east to west between the Old Trails Road and Goldroad Avenue. This is the most westerly portion of the interceptor, close to the main Downtown outfall interceptor (MH 142 to MH 155).

The total flow at the Downtown WWTP outfall from the I&I Scenario model is shown in Table 5.2.2 – I&I Outfall Flows. This table includes outfall flow contributions from both the I&I Scenario and the Existing (2016) Scenario.

Table 5.2.2 – I&I Outfall Flows

Location/Source	Scenario	ADF, MGD	ADF, Cumulative	Peak, MGD	Peak, Cumulative
Downtown WWTP/Sewer Model	2016	0.50	0.50	0.96	0.96
Downtown WWTP/Sewer Model	I&I	1.08	1.58	1.08	2.04

5.3 FIELD INVESTIGATION

As part of the I&I study, an extensive field investigation was conducted to identify the main sources of inflow and infiltration within the Downtown Service Area. Typical I&I sources include the following:

Inflow

- Vented or Damaged Manhole frame and cover
- Cross Connections from storm drain facilities
- Roof Drain Connections to the sanitary sewer

Infiltration

- Groundwater Seepage into cracked/damaged sewer pipes
- Groundwater Seepage into cracked/damaged sewer manholes

The field investigation was broken into two phases. Phase one involved a visual inspection of the majority of the manholes in the system along interceptor and non-interceptor sewers. While walking or driving the sewer alignments, infiltration sources and potential storm drain connections were also identified. Any storm drain facilities (catch basin, scupper, etc.) adjacent to a manhole or sanitary sewer pipe were noted during this investigation. Sewer pipe located directly in or adjacent to a wash or exposed drainage channel was also identified for infiltration potential. Sewers located below a pervious surface (gravel, dirt, turf, etc.) were also identified; however, potential for infiltration at these locations is minimal. The type and condition of each manhole varied greatly throughout the system. Also, based on the relative location of the facility to a drainage path, the potential risk for inflow to the system also varied. General categories were developed to describe the characteristics of the manholes that were inspected. The categories, ranked in order of potential inflow risk, are:

- Highly Susceptible – Varied risk factors: visually damaged manhole frame/cover, located in a drainage path, manhole adjacent to a storm drain facility, etc. These manholes did not fit into any other category identified during the field visit but still represented high risk to the system for inflow.

- Vented, in drainage – Multiple holes in the manhole cover and located within a drainage path.

- Partially Vented, in drainage – 3 or less holes in the manhole cover and located within a drainage path.

- Non-Water Tight, in drainage – Any visible gap between the frame and cover and located within a drainage path.

- Solid Rim, in drainage – No visible gap between frame and cover and located within a drainage path.

- Vented – Multiple holes in the manhole cover

- Partially Vented – 3 or less holes in the manhole cover
- Non-Water Tight – Any visible gap between the frame and cover
- Solid Rim – No visible gap between frame and cover
- Not Found, Inaccessible – Manhole was not located during the investigation

Pictures were taken of most of the manholes inspected during the field investigation Examples of each category may be found in **Appendix L**. **Exhibit 5.3.1 – I&I Map** shows the location of every manhole in the Downtown system and color coding to identify risk potential based on the above descriptions.

The second phase focused solely on potential roof drain connections within the historic Downtown business/residential district. The bounds of this district are approximately Andy Devine Avenue (Historic Route 66) to the south, 1st Street to the West, Chestnut Street to the north and 10th Street to the east. This area was identified by the City for having the most potential for this type of inflow. Potential for roof drain connections outside of this area was very low. This task involved an inspection of the buildings that fell within the area of concern. In most cases, access from public sidewalks and alleys was sufficient to inspect the entire exterior of a building. Local residents and business owners were also accommodating in allowing access to their properties. However, in some cases, limited accessibility to the property impeded visibility to the entire building. **Exhibit 5.3.2 – Drain Connections Map** shows the location of sites identified during this investigation and color codes each property according to risk potential. Sites where a likely outfall for the roof drain was identified are coded green. If an outfall was discovered but connectivity with the roof drain line was inconclusive, the site was coded yellow. If no outfall was discovered and the location of the roof drain termination was underground, the site was considered high risk for a potential roof drain connection and coded red. Each site was also given a number. These numbers correspond to pictures and descriptions in **Appendix M**. Some of the facilities identified in this analysis were not roof drains but another potential source of inflow to the system.

5.4 INFLOW & INFILTRATION RECOMMENDATIONS

The modeling results from the I&I Scenario showed that portions of the existing interceptor system in the Downtown Service Area were not adequate to convey the Wet Weather Peaked Flow without causing significant surcharging. The City's goal is to reduce I&I flows in this area to a manageable level. As such, all recommendations for the I&I scenario are for remediation on the existing infrastructure, rather than upsizing existing pipe sizes or running parallel sewer lines. A map showing the recommendations based on the I&I modeling and field investigation is shown in **Exhibit 5.4.1 – 2016 Recommendations Map - Downtown**. Only one critical improvement project is recommended at this time (Project 2) but it encompasses the entire Downtown Service area. This project involves remediation of all 46 manholes in the system which have the highest inflow potential. These 46 manholes fall within the top 3 risk categories discussed in **Section 5.3** and are shown on **Exhibit 5.3.1**.

Figure 5.4.1 – I&I Recommendations Cost Estimates show the cost of remediating the high risk manholes. The intent behind these estimates is to provide the City with a range of options for addressing inflow at these locations. **Table 5.4.1** also lists the remediation options and associated costs. It is recommended that the most economical option that effectively reduces or eliminates inflow risk should be selected. The City will likely utilize a combination of these options to reduce inflow to their system.

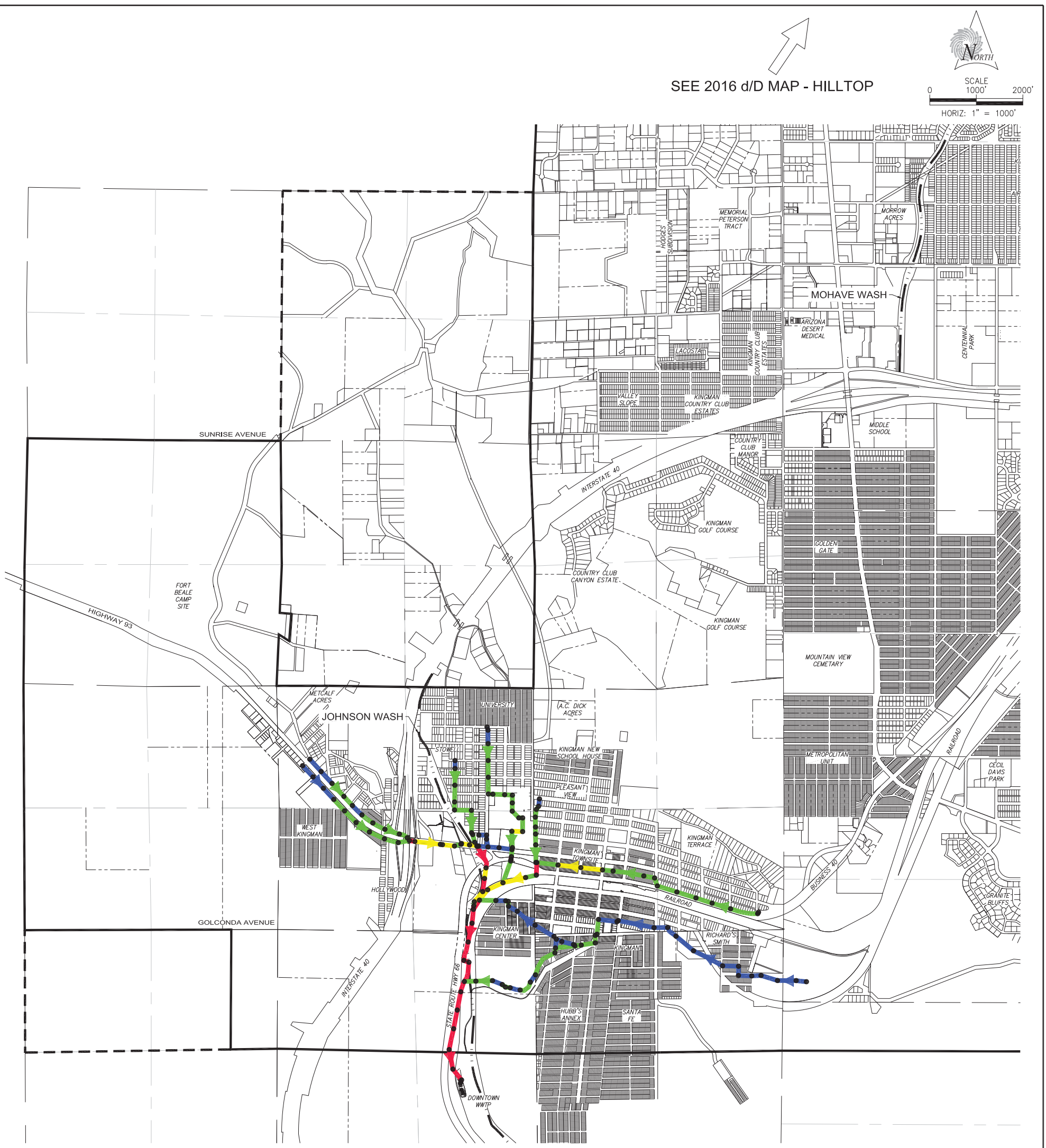
Table 5.4.1 – I&I Remediation Options

Remediation Description	Unit	Unit Price
Manhole Inserts	EA	$80.00
Manhole Cover	EA	$460.00
Replace Manhole Frame and Cover	EA	$1,838.00
Curtain or Probe Grouting	EA	$1,200.00
Manhole Lining	EA	$8,000.00
Manhole Removal & Replacement	EA	$14,500.00

It is also recommended that the City allocate time for staff to visit each of the properties identified on the **Exhibit 5.3.2 Drain Connections Map** to verify the outfall location of the roof drains. If an outfall cannot be located, the City should partner with the property owner in re-routing the drains to outfall to the historic drainage path. The City should also allocate time for the facilities maintenance staff to utilize the CCTV inspection cameras at their disposal to investigate the interceptor system for storm drain cross connections at the locations indicated on **Exhibit 5.3.1 – I&I Map**.

Other improvements are not recommended at this time, however, the City may choose to budget for future remediation of manholes that fall within the lower risk categories (e.g. Non-Water Tight, In Drainage). Infiltration remediation is not recommended at this time until inflow concerns are addressed. However, a line item has been included in the cost estimate for CIPP (cured-in-place pipe) remediation of the sewer interceptors if the City chooses to address infiltration in the future. The unit price is based on the ultraviolet light curing method for CIPP.

SECTION 5
FIGURES & EXHIBITS



LEGEND

- CITY LIMITS
- STUDY LIMITS (WATER BOUNDARY)
- EXISTING WASH
- FM — FORCE MAIN
- 0.00 TO 0.25 d/D
- 0.25 TO 0.50 d/D
- 0.50 TO 0.75 d/D
- 0.75 TO 1.00 d/D
- MANHOLE

NOTE
SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.

CITY OF KINGMAN
FOUNDED 1882

CITY OF KINGMAN

INTERCEPTOR SEWER MODELING

EXHIBIT 5.2.1

2016 I & I d/D MAP - DOWNTOWN

SUNRISE ENGINEERING
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NORTH

SCALE

0 500' 1000'

HORIZ: 1" = 500'

LEGEND

- EXISTING WASH
- SEWER LINE
- SEWER LINE, SUSCEPTIBLE TO INFILTRATION
- SEWER LINE, PERVIOUS SURFACE

MH	CO	INFLOW POTENTIAL
●	○	HIGHLY SUSCEPTIBLE – 26 TOTAL
●	○	VENTED, IN DRAINAGE – 6 TOTAL
●	○	PARTIALLY VENTED, IN DRAINAGE – 14 TOTAL
●	○	NON–WATER TIGHT, IN DRAINAGE – 89 TOTAL
●	○	SOLID RIM, IN DRAINAGE – 17 TOTAL
●	○	VENTED – 4 TOTAL
●	○	PARTIALLY VENTED – 11 TOTAL
●	○	NON–WATER TIGHT – 110 TOTAL
●	○	SOLID RIM – 29 TOTAL
●	○	NOT FOUND, INACCESSIBLE – 130 TOTAL
*		ADJACENT STORM DRAIN FACILITIES

NOTE
SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.

CITY OF KINGMAN
FOUNDED 1882
INCORPORATED 1952

CITY OF KINGMAN

INTERCEPTOR SEWER MODELING

EXHIBIT 5.3.1

I & I MAP - DOWNTOWN

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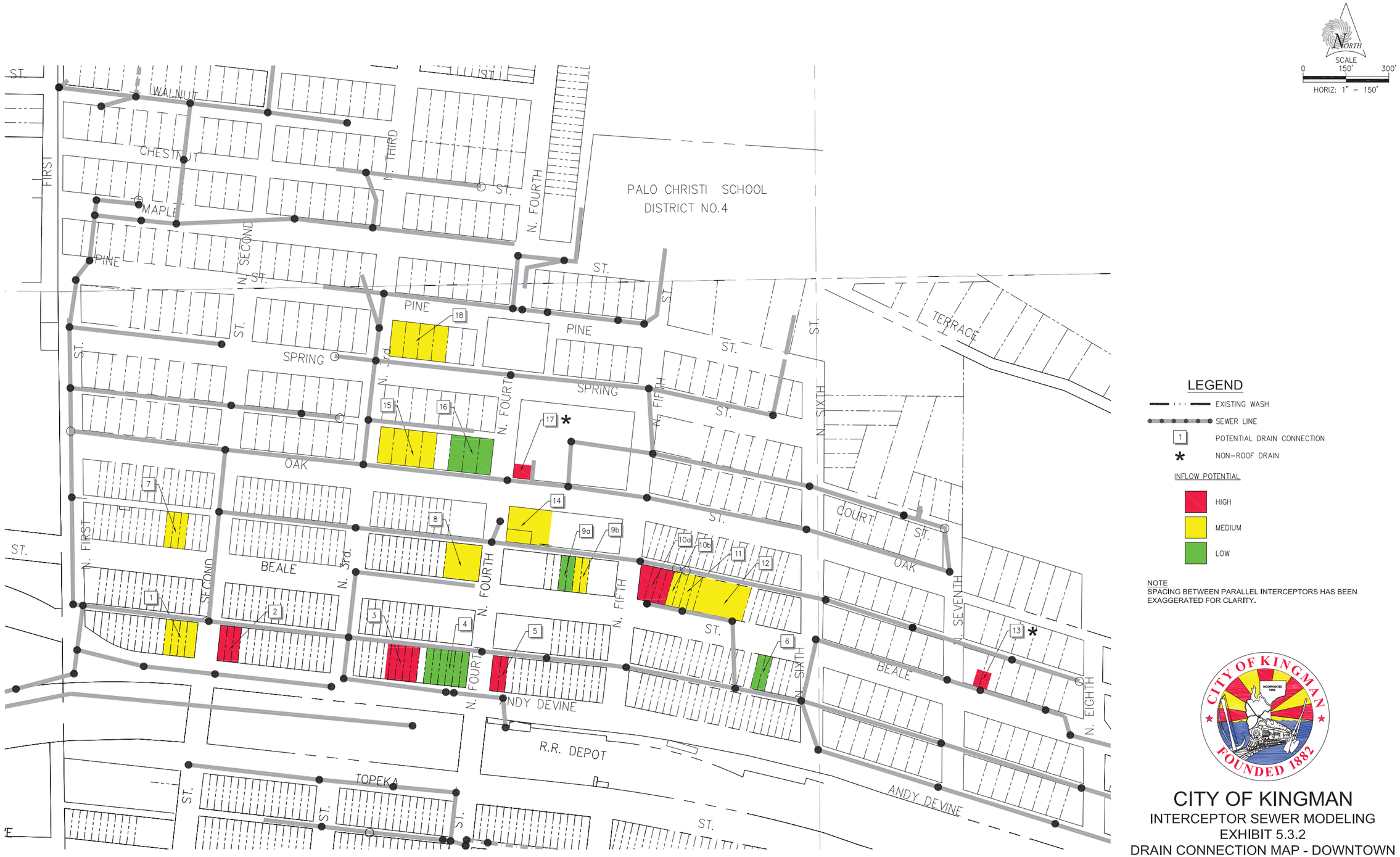

CITY OF KINGMAN

INTERCEPTOR SEWER MODELING

EXHIBIT 5.3.2

DRAIN CONNECTION MAP - DOWNTOWN

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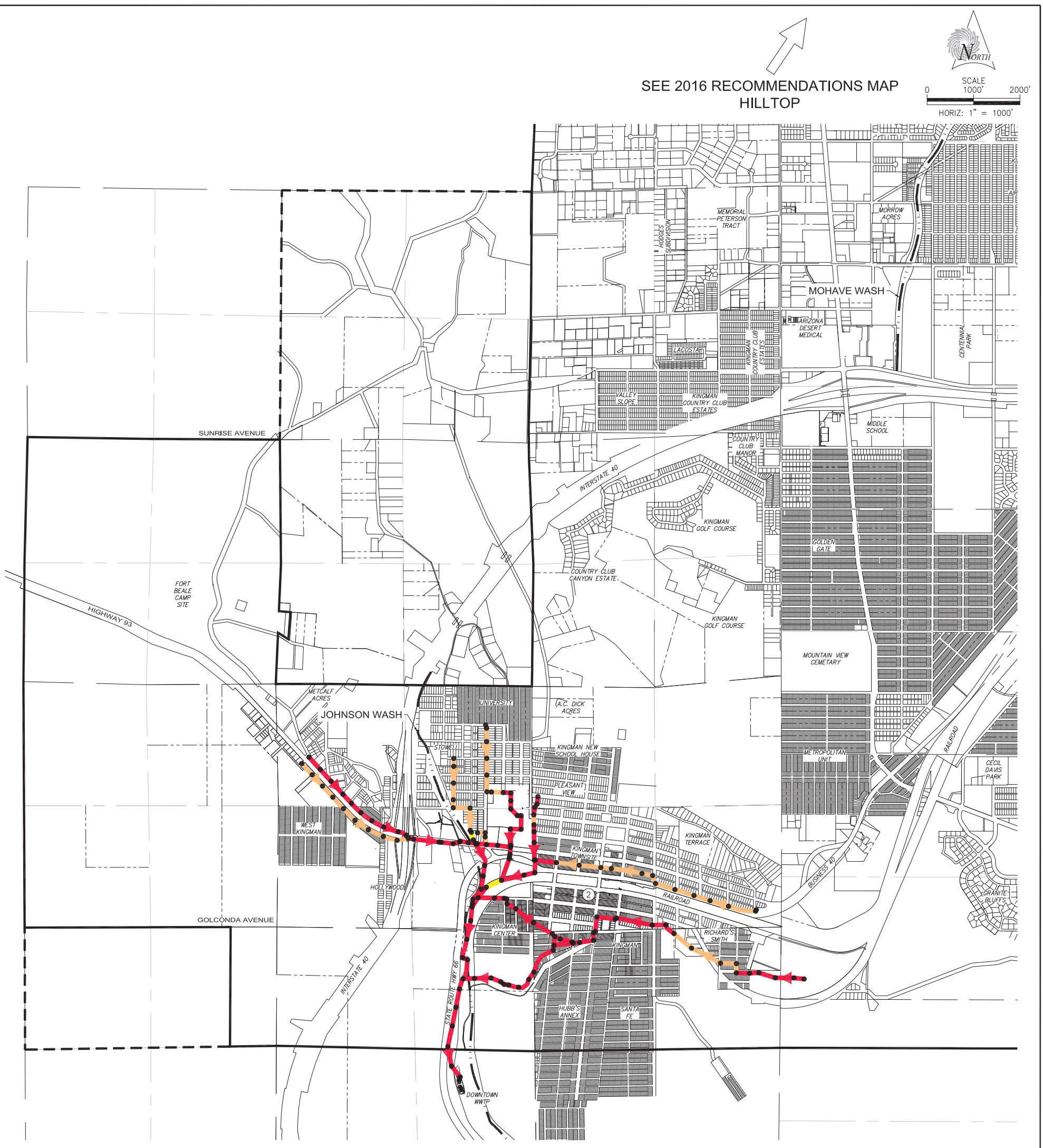

LEGEND

- CITY LIMITS
- STUDY LIMITS (WATER BOUNDARY)
- EXISTING WASH
- FM — FORCE MAIN
- 6" SEWER
- 8" SEWER
- 10" SEWER
- 12" SEWER
- MANHOLE
- (X) PROJECT NUMBER

NOTE
1. SEE APPENDIX G FOR INDIVIDUAL PROJECT COST ESTIMATES.
2. SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.

CITY OF KINGMAN
INTERCEPTOR SEWER MODELING
EXHIBIT 5.4.1
2016 RECOMMENDATIONS MAP
DOWNTOWN

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Project 2A

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Figure 5.4.1 - I&I (2016) Recommendations Cost Estimate *

Project: Sewer Master Plan Update and Inflow/Infiltration Study 1/22/16
Owner: City of Kingman
Prepared By: RP

No.	Item Description - Construction	Quantity	Unit	Unit Price	Total
1	Manhole Inserts	46	EA	$80.00	$3,680
2	Manhole Cover	0	EA	$460.00	$0
3	Replace Manhole Frame and Cover	0	EA	$1,838.00	$0
4	Curtain or Probe Grouting	0	EA	$1,200.00	$0
5	Manhole Lining	0	EA	$8,000.00	$0
6	Manhole Removal and Replacement	0	EA	$14,500.00	$0
7	CIPP 8"	0	LF	$35.00	$0
8	CIPP 10"	0	LF	$50.00	$0
9	CIPP 12"	0	LF	$65.00	$0
10	CIPP 15"	0	LF	$80.00	$0
				Sub-Total	**$3,680**
				20% Contingency	$736
				PROJECT TOTAL	**$4,400**

*In providing opinions of probable construction cost the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as the accuracy if such opinions compared to bid or actual costs.

Project 2B

SUNRISE ENGINEERING
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Mesa, Arizona 85210
Tel: (480) 768-8600 Fax: (480) 768-8609

Figure 5.4.1 - I&I (2016) Recommendations Cost Estimate *

Project: Sewer Master Plan Update and Inflow/Infiltration Study 1/22/16
Owner: City of Kingman
Prepared By: RP

No.	Item Description - Construction	Quantity	Unit	Unit Price	Total
1	Manhole Inserts	0	EA	$80.00	$0
2	Manhole Cover	46	EA	$460.00	$21,160
3	Replace Manhole Frame and Cover	0	EA	$1,838.00	$0
4	Curtain or Probe Grouting	0	EA	$1,200.00	$0
5	Manhole Lining	0	EA	$8,000.00	$0
6	Manhole Removal and Replacement	0	EA	$14,500.00	$0
7	CIPP 8"	0	LF	$35.00	$0
8	CIPP 10"	0	LF	$50.00	$0
9	CIPP 12"	0	LF	$65.00	$0
10	CIPP 15"	0	LF	$80.00	$0
				Sub-Total	**$21,160**
				20% Contingency	$4,232
				PROJECT TOTAL	**$25,400**

*In providing opinions of probable construction cost the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as the accuracy if such opinions compared to bid or actual costs.

Project 2C

SUNRISE ENGINEERING
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Mesa, Arizona 85210
Tel: (480) 768-8600 Fax: (480) 768-8609

Figure 5.4.1 - I&I (2016) Recommendations Cost Estimate *

Project: Sewer Master Plan Update and Inflow/Infiltration Study 1/22/16
Owner: City of Kingman
Prepared By: RP

No.	Item Description - Construction	Quantity	Unit	Unit Price	Total
1	Manhole Inserts	0	EA	$80.00	$0
2	Manhole Cover	0	EA	$460.00	$0
3	Replace Manhole Frame and Cover	46	EA	$1,838.00	$84,548
4	Curtain or Probe Grouting	0	EA	$1,200.00	$0
5	Manhole Lining	0	EA	$8,000.00	$0
6	Manhole Removal and Replacement	0	EA	$14,500.00	$0
7	CIPP 8"	0	LF	$35.00	$0
8	CIPP 10"	0	LF	$50.00	$0
9	CIPP 12"	0	LF	$65.00	$0
10	CIPP 15"	0	LF	$80.00	$0
				Sub-Total	**$84,548**
				20% Contingency	$16,910
				PROJECT TOTAL	**$101,500**

*In providing opinions of probable construction cost the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as the accuracy if such opinions compared to bid or actual costs.

Project 2D

SUNRISE ENGINEERING
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Figure 5.4.1 - I&I (2016) Recommendations Cost Estimate *

Project: Sewer Master Plan Update and Inflow/Infiltration Study 1/22/16
Owner: City of Kingman
Prepared By: RP

No.	Item Description - Construction	Quantity	Unit	Unit Price	Total
1	Manhole Inserts	0	EA	$80.00	$0
2	Manhole Cover	0	EA	$460.00	$0
3	Replace Manhole Frame and Cover	0	EA	$1,838.00	$0
4	Curtain or Probe Grouting	46	EA	$1,200.00	$55,200
5	Manhole Lining	0	EA	$8,000.00	$0
6	Manhole Removal and Replacement	0	EA	$14,500.00	$0
7	CIPP 8"	0	LF	$35.00	$0
8	CIPP 10"	0	LF	$50.00	$0
9	CIPP 12"	0	LF	$65.00	$0
10	CIPP 15"	0	LF	$80.00	$0
				Sub-Total	**$55,200**
				20% Contingency	$11,040
				PROJECT TOTAL	**$66,200**

*In providing opinions of probable construction cost the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as the accuracy if such opinions compared to bid or actual costs.

Project 2E

SUNRISE ENGINEERING
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Mesa, Arizona 85210
Tel: (480) 768-8600 Fax: (480) 768-8609

Figure 5.4.1 - I&I (2016) Recommendations Cost Estimate *

Project: Sewer Master Plan Update and Inflow/Infiltration Study 1/22/16
Owner: City of Kingman
Prepared By: RP

No.	Item Description - Construction	Quantity	Unit	Unit Price	Total
1	Manhole Inserts	0	EA	$80.00	$0
2	Manhole Cover	0	EA	$460.00	$0
3	Replace Manhole Frame and Cover	0	EA	$1,838.00	$0
4	Curtain or Probe Grouting	0	EA	$1,200.00	$0
5	Manhole Lining	46	EA	$8,000.00	$368,000
6	Manhole Removal and Replacement	0	EA	$14,500.00	$0
7	CIPP 8"	0	LF	$35.00	$0
8	CIPP 10"	0	LF	$50.00	$0
9	CIPP 12"	0	LF	$65.00	$0
10	CIPP 15"	0	LF	$80.00	$0
				Sub-Total	**$368,000**
				20% Contingency	$73,600
				PROJECT TOTAL	**$441,600**

*In providing opinions of probable construction cost the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as the accuracy if such opinions compared to bid or actual costs.

Project 2F

SUNRISE ENGINEERING
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Mesa, Arizona 85210
Tel: (480) 768-8600 Fax: (480) 768-8609

Figure 5.4.1 - I&I (2016) Recommendations Cost Estimate *

Project: Sewer Master Plan Update and Inflow/Infiltration Study 1/22/16
Owner: City of Kingman
Prepared By: RP

No.	Item Description - Construction	Quantity	Unit	Unit Price	Total
1	Manhole Inserts	0	EA	$80.00	$0
2	Manhole Cover	0	EA	$460.00	$0
3	Replace Manhole Frame and Cover	0	EA	$1,838.00	$0
4	Curtain or Probe Grouting	0	EA	$1,200.00	$0
5	Manhole Lining	0	EA	$8,000.00	$0
6	Manhole Removal and Replacement	46	EA	$14,500.00	$667,000
7	CIPP 8"	0	LF	$35.00	$0
8	CIPP 10"	0	LF	$50.00	$0
9	CIPP 12"	0	LF	$65.00	$0
10	CIPP 15"	0	LF	$80.00	$0
				Sub-Total	**$667,000**
				20% Contingency	$133,400
				PROJECT TOTAL	**$800,400**

*In providing opinions of probable construction cost the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as the accuracy if such opinions compared to bid or actual costs.

6.0 FUTURE SERVICE AREA MODELING

The goal of the interceptor modeling for the Future Scenario – Hilltop is to create a hydraulic simulation of the City's wastewater collection system assuming all development within the study area is completed. The results of the modeling are intended to show how the City's interceptor system (current and projected) performs and provide a planning tool for future loading conditions. This model was created using information from the previous model scenarios, plus available topography in future development areas.

6.1 PHYSICAL MODEL

The Future Scenario model expands upon the Existing (2016) Scenario physical model, extending the City's interceptor sewers, adding new interceptors to areas not currently serviced by the system, and adding parallel facilities along overtaxed existing interceptors. These new pipes and manholes were schematically located (horizontally and vertically) using existing mapping and topographic information. Model input included the proposed pipe sizes, manhole rim elevations, pipe lengths, and inverts. Pipe slopes are based on invert input information and ADEQ minimum slopes required to maintain a cleaning velocity of two feet per second. Initial input data was modified, as necessary, during the iterative modeling process to determine appropriate sizing and slopes of proposed interceptors.

Additional flow splits that were created in the Future Scenario from adding parallel facilities are automatically calculated based on the pipe invert elevations whenever possible. New manual flow splits become necessary in some locations to maximize the capacity of the system. Some examples of this were the manual flow splits created along the Mohave Wash Outfall interceptors. Multiple flow splits were created along the existing Mohave Wash Outfall interceptors to push flow north into the new proposed parallel interceptor (Project 5).

It should also be noted that the original outfall for the Eagle View Subdivision and Prairie Heights Subdivision was the Jagerson Avenue interceptor. In this scenario flows that were originally heading south from these developments were intercepted and redirected west into the new proposed 15" and 12" interceptor in Grace Neal Boulevard (Project 6).

See **Exhibit 6.1.1 - Future System Map** for the Future Scenario proposed pipe extensions and additions.

6.2 SEWERSHED DEFINITIONS

Sewershed areas were expanded to include all land within the project planning boundary. The contributing areas for the interceptor extensions discussed in **Section 6.1** were defined using the latest available topography, aerial photography, as-builts, and other available data. **Exhibit 6.2.1 – Future Sewershed Map** shows a map of the defined sewer sheds within the Future Scenario system.

6.3 SEWER CONNECTIONS & FLOW CALCULATIONS

The number of sewer connections in each sewer shed was calculated using the parcel shapefiles and City's land use data. The designated land use for each parcel was defined by the General Plan 2030 Map for all undeveloped land within the project planning boundary. The land use was then used to estimate the number of connections. **Exhibit 6.2.1 - Future Sewershed Map** shows the future areas contributing flow to the system. Total acreage per sewershed is found in **Appendix H- Sewershed Legends – Hilltop**.

The sewer flow calculations are the portion of the modeling that simulates the projected flows that are anticipated within the interceptor system once the future land is fully developed according to the designated land use. In addition to the loadings for the existing scenario, each manhole in the system was allocated specific parcels, not yet represented in previous scenarios, associated with a land use defined by the General Plan 2030. Flows were simulated in a manner similar to the previous scenarios; each manhole was allocated future parcels and "loaded" with a flow rate using the Load Allocator. This simulated the average daily flow (ADF) from existing, committed, and future parcels within the system. Later, peaking factors were applied in accordance with **Section 3.6**, to obtain the ultimate peak flow (design flow). As in the 2016 Scenario, the outfall manhole data associated with each parcel was stored within a separate future parcel shapefile.

Known Loads from future developments are typically entered into the model manually for individual developments projected to contribute significant flows to the system. The flows are then stored separately from the Allocated Loads in the model database. For this project, however, all of the future loading was done with the Load Allocator and no future Known Loads were added to the model.

The respective flow loads within the Manhole Hydraulic Model Data Table (within the model database) are as follows:

- LOAD 1 – Allocated Loads based on the existing (2016) connections
- LOAD 2 – Known Loads based on given flow rates from SIUs (2016)
- LOAD 3 – Allocated Loads based on the committed connections
- LOAD 4 – Known Loads based on given flow rates for committed connections
- LOAD 5 – Allocated Loads based on the future connections
- LOAD 6 – Known Loads based on given flow rates for future connections

Table 6.3.1 – Future Load Data

Model Load Data	ADF (MGD)
LOAD 1	2.17
LOAD 2	0.10
LOAD 3	0.00
LOAD 4	0.50
LOAD 5	19.22
LOAD 6	0.00

The Future Scenario includes all land within the project boundary designated as Existing, Existing Committed, Septic and Vacant (Future Connections). The assumption is that septic areas will ultimately connect to the centralized sewer network once individual septic systems near the end of their design life. Vacant (Restrictive Slope) parcel areas are not considered to be contributing to the system within the Future Scenario model.

The total flow output per land use type (Allocated Loads) and given flow data from Future Developments (Known Loads) applied to the model is shown in **Appendix F - Future Flow Data**. The flows entered in the 2016 modeling for the Future Service Area remains unchanged, the future flows were added as additional flow to the model. The generated flows were added throughout the model based on anticipated location of connection to the future interceptor system.

6.4 INTERCEPTOR MODELING RESULTS

Once the physical model described in **Section 6.1** was loaded with the sewer flows described in **Section 6.3** to create a completed interceptor sewer model, simulations were run with peaking factors (**Section 3.5)** for this Future Scenario.

The future interceptor modeling showed that the existing interceptor system is not adequate to convey the future Average Daily Flow, nor Dry Weather Peaked Flow. Multiple locations in the interceptor system are under capacity and therefore unable to handle the projected flows The model revealed sections of pipe that exceed 0.75 d/D and sections with minor surcharging under peaked conditions, i.e. the hydraulic grade lines of the pipes flowing full are right at the top of pipe or just above it (less than 2'). It also revealed sections of pipe experiencing significant surcharging (2' or greater).

The Dry Weather Peaked Flows caused significant surcharging over full flow capacity for the following:

- 10-inch Jagerson Avenue interceptor west of the Mohave Wash (MH 321 to MH 263)
- 14 and 15-inch Shangrila Drive, Kino Ave and Arizona Street interceptor south of the Mohave Wash (MH 521 to MH 525 and MH 530 to MH 228)
- 15 and 18-inch Mohave Wash Outfall interceptor from the Hilltop WWTP south to Bank Street and Gordon Drive (MH 154 to 217)
- 6-inch Fairgrounds Avenue interceptor north of AZ Highway 66 (MH 657 to MH 661)
- 8-inch Marlene Avenue and Van Buren Street interceptor north of Hualapai Mountain Road (MH 73 to MH 83)
- 8, 10 and 15-inch Stockton Hill Road, Hillcrest Drive, Glen Road, Kino Avenue and Willow Road interceptor south and west of the Walleck Ranch Subdivision (MH 418 to MH 429 and MH 433 to MH 444)
- 12-inch Washington Street and Eastern Street interceptor south of AZ Highway 66 and across Interstate 40 to Kenwood Avenue (MH 492 to MH 504 and MH 507 to MH 517)

Wherever significant surcharging was observed a parallel interceptor was added to the system to provide relieve to that section of pipe. This was part of the iterative process to build the Future system model. All new interceptors added to the model were appropriately sized to carry Average Daily Flow and Dry Weather Peaked Flow. After adding the parallel facilities to relieve significant surcharging, problem areas on Future Scenario model consist only of minor surcharging issues on existing lines.

The total flow at the Hilltop WWTP outfall from the Future Scenario model is shown in **Table 6.4.1 – Future Outfall Flows**, which includes flow contributions from the Future Scenario (Known and Allocated), as well as, flows from the Existing (2016) Scenario

Table 6.4.1 – Future Outfall Flows

Location/Source	Scenario	ADF, MGD	ADF, Cumulative	Peak, MGD	Peak, Cumulative
Hilltop WWTP/Sewer Model	2016	2.77	2.77	4.68	4.68
Hilltop WWTP/Sewer Model	Future	19.22	21.99	29.33	34.01

The total outfall flows from the interceptor modeling for the Future Scenario are higher than outfall flows projected in previous sewer master plan reports. This was expected due to changed conditions since the last model update. The first reason for the difference in flow is related to the completion of a new General Plan and the resulting changes in land use. And the second reason is an expanded service area boundary.

6.5 FUTURE RECOMMENDATIONS

The modeling results were used to determine the master-planned pipe sizes and locations for future flow conditions within the existing system and expanded Future Service Area. Multiple expansions to the interceptor system have been proposed to serve future development in these areas. All interceptors were sized to accommodate future peaked dry weather flow at 0.75 d/D. The expansions include extensions to existing interceptors, as well as, construction of new major interceptors. The new lines include the following:

- 8, 12, 15 and 18-inch interceptor along Grace Neal Boulevard between Stockton Hill Road and the Mohave Wash (Project 6)
- 12, 15 and 18-inch interceptor running along the north half of Sec 36 T22N-R16W (south of the airport), across AZ Highway 66 and along Thompson Avenue and Rose Drive to the Mohave Wash (Project 7)
- 8, 12, 21 and 24-inch interceptor along Amigo Road/Gordon Drive, across AZ Highway 66 and along Diagonal Way and Castle Rock Road (Project 8)
- 8 and 12-inch interceptor along Seneca Street, across Interstate 40 and Castle Rock Road, and north along AZ Highway 66 to Diagonal Way (Project 9)
- 12 and 15-inch interceptor along Mohave Drive (aka Rancho Santa Fe Parkway), across Interstate 40 to Gordon Drive (Project 10)
- 8 and 12-inch interceptor along Stockton Hill Road, College Drive, Sierra Road and Devlin Avenue to Powell Avenue (Project 11)

- 8-inch interceptor east of Stockton Hill Road, along John L Avenue to Powell Avenue to the Mohave Wash (Project 12)
- 8-inch interceptor southwest of Sec 24 T22N-R17W, west to Stockton Hill Road (Project 13)
- 8-inch interceptor along Stockton Hill Road, northwest of Sec 24 T22N-R17W to Grace Neal Boulevard (Project 14)
- 8-inch interceptor along Cherum Road from Fountain Hills Road to Grace Neal Boulevard (Project 15)
- 8-inch interceptor along Illinois, east of Sec 18 T22N-R16W, from Grace Neal Boulevard to south of Calle Allende (Project 16)
- 8-inch interceptor along Bank Street, west of Sec 17 T22N-R16W, from Grace Neal Boulevard to south of Calle Allende (Project 17)
- 8-inch interceptor between Sec 17 and Sec 16 T22N-R16W, from Grace Neal Boulevard to south of Calle Allende (Project 18)
- 10-inch interceptor along north Avenida Verde, east of Sec 16 T22N-R16W, from Grace Neal Boulevard to south of Calle Allende (Project 19)
- 12 and 15-inch interceptor east and south of the Hilltop WWTP, across AZ Highway 66 and Grossman Road to Charles Drive, south to Grounds Ranch Road (Project 20)
- 8 and 12-inch interceptor along Northern Avenue and Norrie Drive to Thompson Avenue (Project 21)
- 12-inch interceptor along the east side of AZ Highway 66 to Thompson Avenue (Project 22)
- 12-inch interceptor along Castle Rock Road between Gordon Drive and Northern Avenue (Project 23)
- 8-inch interceptor along Prospector Street, south of Gordon Drive and north of Airway Avenue (Project 24)
- 8-inch extension along Airway Avenue from Prospector Street to north of Mohave Drive (Project 25)
- 8-inch extension along Santa Rosa Drive and Diamond Joe Road from the Hualapai Mountain Campus to the east of Wagon Wheel Drive (Project 26)
- 8-inch interceptor along Santa Rosa Drive across Interstate 40 from the Hualapai Mountain Campus to south of Interstate 40 (Project 27)
- 8-inch extension along Interstate 40 between Prospector Street and Mohave Drive (Project 28)*
- 8-inch interceptor along Southern Avenue between Cherokee Street and Seneca Street (Project 29)
- 8 and 12-inch interceptor along El Paso Road between Mohave Drive and east of Durango Drive (Project 30)
- 8-inch interceptor along Siesta between Mohave Drive and east of Durango Drive (Project 31)
- 12-inch interceptor along Interstate 40 between Mohave Drive and Durango Drive (Project 32)*
- 8-inch extension along Northern Avenue between Sierra Road and the Mohave Wash (Project 35)

- 8-inch extension along Sierra Vista Avenue between Sierra Road and the Mohave Wash (Project 36)
- 8-inch interceptor along Gordon Drive between Sierra Road and the Mohave Wash (Project 37)
- 8 and 12-inch interceptor along Riata Valley Road between 4th Street and north along Western Avenue to Kino Avenue (Project 39)

*See Alternative Alignments discussion in **Section 7.0**

As expected, future interceptor modeling showed that portions of the existing interceptor system were inadequate to convey the future Average Daily Flow and Dry Weather Peaked Flow. There are seven critical improvements recommended where existing pipes may be undersized for the future conditions.

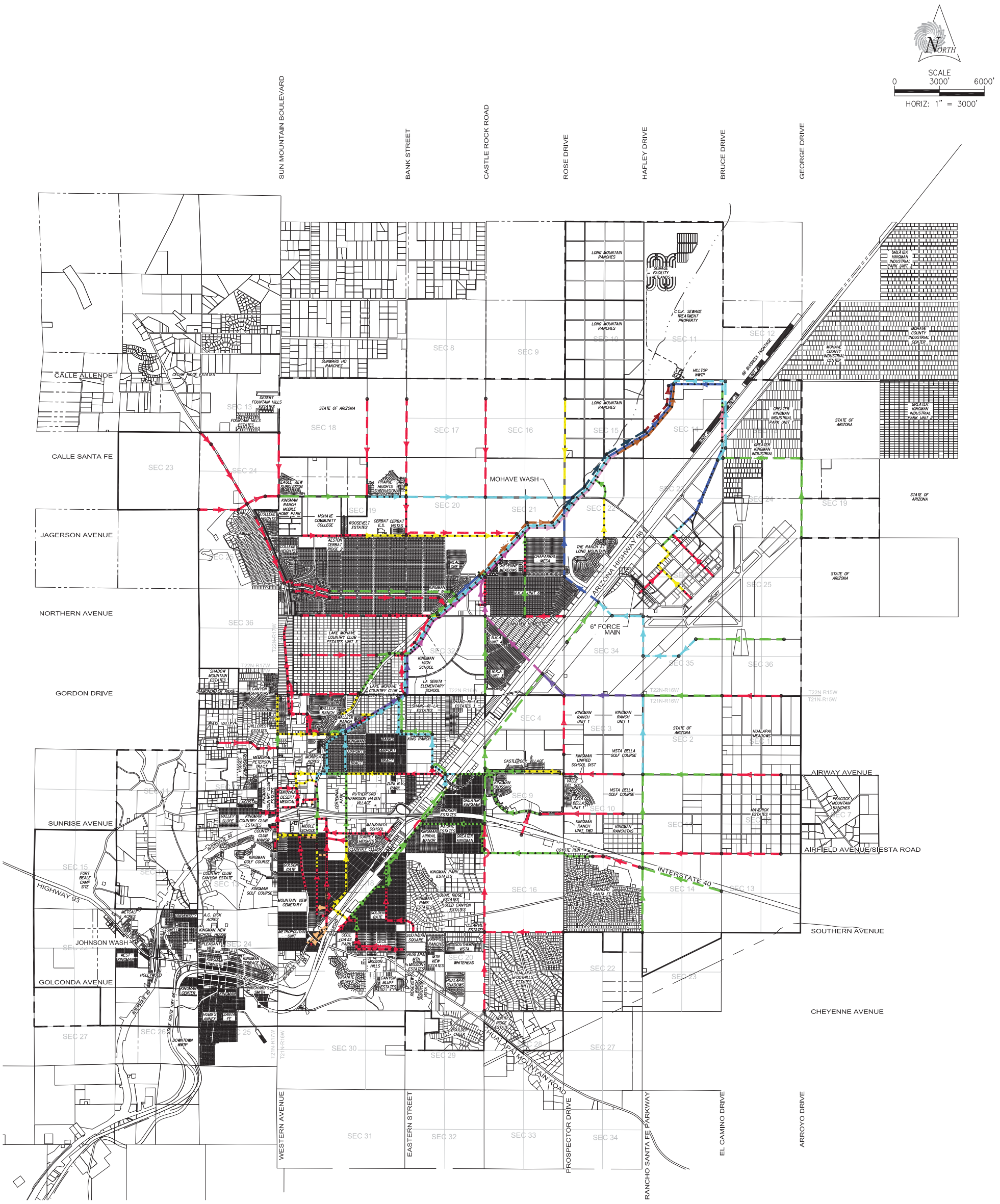
- To relieve the surcharging on the 10-inch Jagerson Avenue interceptor west of the Mohave Wash, will require the construction of an 8-inch parallel line (Project 3).
- The 14 and 15-inch Shangrila Drive, Kino Ave and Arizona Street interceptor south of the Mohave Wash will require the construction of a 12-inch parallel line (Project 4).
- 15 and 18-inch Mohave Wash Outfall interceptor from the Hilltop WWTP south to Bank Street and Gordon Drive will require the construction of a 42, 36, 30, 18, 12 and 8-inch parallel line (Project 5).
- The 6-inch Fairgrounds Avenue interceptor north of AZ Highway 66 will require the construction of an 8-inch parallel line (Project 33).
- The 8-inch Marlene Avenue and Van Buren Street interceptor north of Hualapai Mountain Road will require the construction of an 8-inch parallel line (Project 34).
- 8, 10 and 15-inch Stockton Hill Road, Hillcrest Drive, Glen Road, Kino Avenue and Willow Road interceptor south and west of the Walleck Ranch Subdivision will require the construction of an 8, 12 and 15-inch parallel line (Project 38).
- The 12-inch Washington Street and Eastern Street interceptor south of AZ Highway 66 and across Interstate 40 to Kenwood Avenue will require the construction of an 8 and 12-inch parallel line (Project 40).

Sizing has been made to accommodate flows from the Future Scenario, along with flows from the Existing (2016) Scenario. A map showing the proposed pipes and future system deficiencies with recommended solutions is shown in **Exhibit 6.5.1 – Future Recommendations Map**.

Other improvements are not recommended for minor surcharging, i.e. when the hydraulic grade line is less than 2 feet above the top of pipe and the interceptors are sufficiently deep. Instead, these locations should be monitored during wet weather conditions, to determine the magnitude of the storm surge on the interceptor, on a case by case basis.

Figure 6.5.1 – Future Recommendations Cost Estimate shows the cost of the proposed master planned improvements. Pipe lengths shown on the estimate are approximate, true lengths will be determined in final design. Individual cost estimates for each project may be found in **Appendix G**.

SECTION 6
FIGURES & EXHIBITS



NOTE
SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.

CITY OF KINGMAN
INTERCEPTOR SEWER MODELING
EXHIBIT 6.1.1
FUTURE SYSTEM MAP - HILLTOP

SUNRISE ENGINEERING
2152 SOUTH VINEYARD, SUITE 123
MESA, ARIZONA 85210
TEL 480.768.8600 · FAX 480.768.8609
www.sunrise-eng.com

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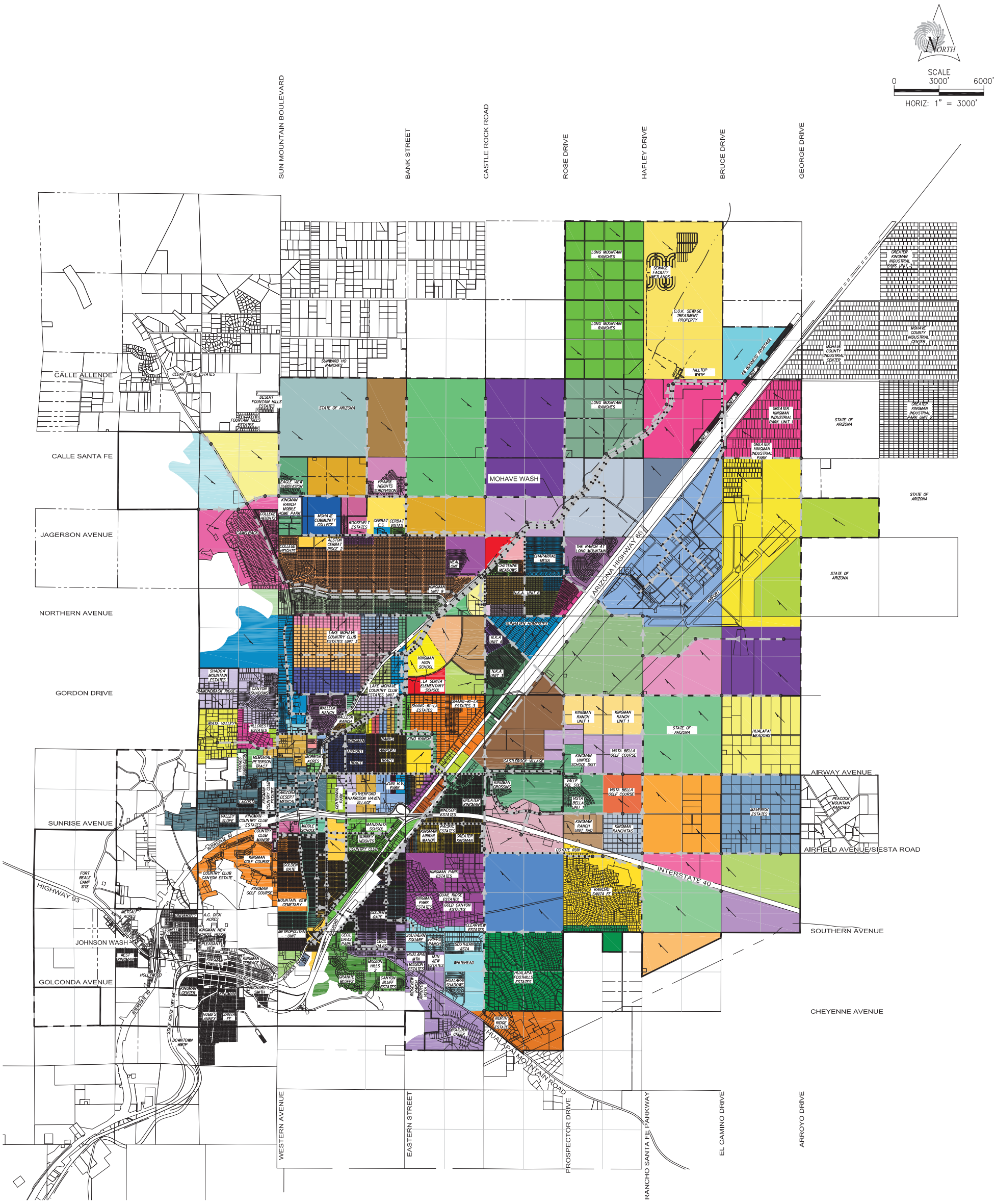

LEGEND

- CITY LIMITS
- STUDY LIMITS (WATER BOUNDARY)
- EXISTING WASH
- EXISTING SEWER 2016
- PROPOSED SEWER
- MANHOLE

NOTE
1. SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.
2. SEE APPENDIX H FOR SEWER SHED LEGEND.

CITY OF KINGMAN
FOUNDED 1882

CITY OF KINGMAN
INTERCEPTOR SEWER MODELING
EXHIBIT 6.2.1
FUTURE SEWER SHED MAP - HILLTOP

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TEL 480.768.8600 · FAX 480.768.8609
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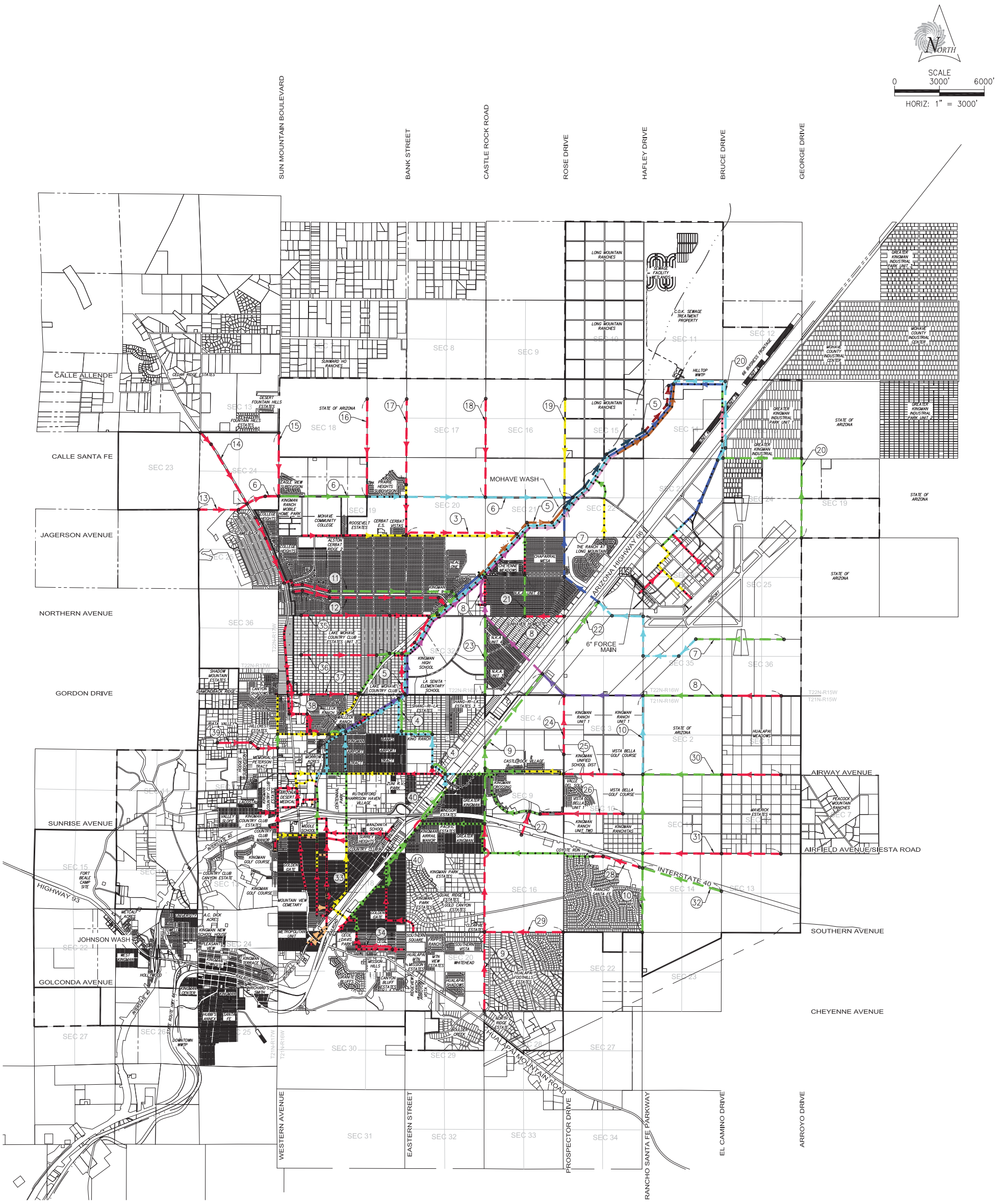

LEGEND

- CITY LIMITS
- STUDY LIMITS (WATER BOUNDARY)
- EXISTING WASH
- FM — FORCE MAIN
- MANHOLE
- LS — LIFT STATION
- (X) — PROJECT NUMBER

EXISTING SYSTEM		PROPOSED SYSTEM	
6" SEWER	18" SEWER	6" SEWER	18" SEWER
8" SEWER	21" SEWER	8" SEWER	21" SEWER
10" SEWER	24" SEWER	10" SEWER	24" SEWER
12" SEWER	27" SEWER	12" SEWER	27" SEWER
14" SEWER	30" SEWER	14" SEWER	30" SEWER
15" SEWER	36" SEWER	15" SEWER	36" SEWER
16" SEWER	42" SEWER	16" SEWER	42" SEWER

NOTE
SPACING BETWEEN PARALLEL INTERCEPTORS HAS BEEN EXAGGERATED FOR CLARITY.

CITY OF KINGMAN
FOUNDED 1882

CITY OF KINGMAN

INTERCEPTOR SEWER MODELING
EXHIBIT 6.5.1
FUTURE RECOMMENDATIONS MAP
HILLTOP

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P:\Kingman\05060WWMP Update\Dwg\Exhibits\Hillside\Proposed\Future Recommendations Map – Hilltop.dwg Jan 21, 2016 3:43pm sfuller

Total Future Projects

SUNRISE ENGINEERING
2152 S. Vineyard, Suite 123
Mesa, Arizona 85210
Tel: (480) 768-8600 Fax: (480) 768-8609

Figure 6.5.1 - Future Recommendations Cost Estimate *

Project: Wastewater Master Plan Update & Interceptor Sewer Modeling
Owner: City of Kingman
Prepared By: RP/JT

1/22/16

No.	Item Description - Construction	Quantity	Unit	Unit Price	Total
1	8" Gravity Sewer Pipe (PVC SDR 35 ASTM)	150,489	LF	$140.00	$21,068,397
2	10" Gravity Sewer Pipe (PVC SDR 35 ASTM)	6,609	LF	$145.00	$958,266
3	12" Gravity Sewer Pipe (PVC SDR 35 ASTM)	96,375	LF	$150.00	$14,456,225
4	15" Gravity Sewer Pipe (PVC SDR 35 ASTM)	35,226	LF	$160.00	$5,636,216
5	18" Gravity Sewer Pipe (PVC SDR 35 ASTM)	10,171	LF	$180.00	$1,830,771
6	21" Gravity Sewer Pipe (PVC SDR 35 ASTM)	7,304	LF	$190.00	$1,387,760
7	24" Gravity Sewer Pipe (PVC SDR 35 ASTM)	8,198	LF	$200.00	$1,639,600
8	27" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$225.00	$0
9	30" Gravity Sewer Pipe (PVC SDR 35 ASTM)	7,208	LF	$250.00	$1,802,000
10	36" Gravity Sewer Pipe (PVC SDR 35 ASTM)	7,866	LF	$270.00	$2,123,820
11	42" Gravity Sewer Pipe (PVC SDR 35 ASTM)	3,933	LF	$325.00	$1,278,225
12	48" Gravity Sewer Pipe (PVC SDR 35 ASTM)	24	LF	$380.00	$8,987
13	54" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$435.00	$0
14	60" Gravity Sewer Pipe (PVC SDR 35 ASTM)	0	LF	$490.00	$0
15	60" Manhole (Precast Concrete)	705	EA	$12,000.00	$8,457,649
16	Jack & Bore Major Highway Crossing	1,370	LF	$2,500.00	$3,425,000
17	Jack & Bore Major Canal Crossing	0	LF	$2,500.00	$0
18	Jack & Bore Railroad Crossing	400	LF	$2,500.00	$1,000,000
19	Mohave Wash Crossing	520	LF	$3,000.00	$1,560,000
20	Lift Station	0	EA	$300,000.00	$0
21	Force Main	0	LF	$20.00	$0
22	Remove or Abandon Existing 60" Manhole	0	EA	$2,500.00	$0
23	Sawcut, Remove & Replace A.C. Pavement (Included w/Pipe Cost)	0	SY	$70.00	$0
33	Mobilization	5%	LS	$3,331,645.77	$3,331,646
34	Traffic Control	10%	LS	$6,663,291.54	$6,663,292
35	Engineering & Administration	10%	LS	$6,663,291.54	$6,663,292
36	Staking and Construction Management	10%	LS	$6,663,291.54	$6,663,292
				Sub-Total	**$89,954,436**

20% Contingency	$17,990,887
PROJECT TOTAL	**$107,945,000**

*In providing opinions of probable construction cost the Client understands that the Engineer has no control over costs or the price of labor, equipment or materials, or over the Contractor's method of pricing, and that the opinion of probable construction cost provided herein is made on the basis of the Engineer's qualifications and experience. The Engineer makes no warranty, expressed or implied, as the accuracy if such opinions compared to bid or actual costs.

7.0 SUMMARY & CONCLUSIONS

In summary, the interceptor system model and master planning provide the City of Kingman with a tool to better manage their wastewater system and prepare for future development. The model also provides the City with additional collection system analysis and management capabilities. A summary of some relevant capabilities are as follows:

- Future Pipe Sizing
- Flow Depths
- Travel Time Analysis
- Flow Capacity Evaluations
- Alternative Pipe Routings
- CMOM Program Planning
- Dynamic Profiling
- Real Time Simulations
- Odor Control Analysis
- Source Tracing

For a full listing of modeling capabilities now available to the City please visit http://www.innovyze.com/products/infosewer/.

Recommendations: The following is a summary of all master plan recommendations with their associated cost:

- Project 1 – $106,000 – Remove and Replace – Jagerson Ave. (10-inch with 12-inch)
- Project 2 – $4,400 to $800,400 – I&I Remediation (46 Critical Manholes)
- Project 3 – $2,059,000 – Parallel Line – Jagerson Ave. (8-inch)
- Project 4 – $1,625,000 – Parallel Line – Shangrila Dr. and Kino Ave. (12-inch)
- Project 5 – $12,122,000 – Parallel Line – Mohave Wash Outfall interceptor (8 to 42-inch)
- Project 6 – $6,000,000 – New Interceptor – Grace Neal Blvd. (8 to 18-inch)
- Project 7 – $8,891,000 – New Interceptor – Sec 36 T22N-R16W (12 to 18-inch)
- Project 8 – $9,971,000 – New Interceptor – Amigo Rd./Gordon Dr. (8 to 24-inch)
- Project 9 – $7,685,000 – New Interceptor – Seneca St. to Diagonal Way (8 to 12-inch)
- Project 10 – $5,707,000 – New Interceptor – Mohave Dr. to Gordon Dr. (12 to 15-inch)
- Project 11 – $5,653,000 – New Interceptor – Stockton Hill Rd. (8 to 12-inch)
- Project 12 – $3,848,000 – New Interceptor – John L Ave. to Powell Ave. (8-inch)
- Project 13 – $911,000 – New Interceptor – Sec 24 T22N-R17W (8-inch)
- Project 14 – $1,540,000 – New Interceptor – Stockton Hill Rd. (8- inch)
- Project 15 – $1,148,000 – New Interceptor – Cherum Rd. (8- inch)
- Project 16 – $1,757,000 – New Interceptor – East of Sec 18 T22N-R16W (8-inch)
- Project 17 – $1,759,000 – New Interceptor – West of Sec 17 T22N-R16W (8-inch)
- Project 18 – $1,772,000 – New Interceptor – Sec 17 and Sec 16 T22N-R16W (8-inch)
- Project 19 – $1,829,000 – New Interceptor – North Avenida Verde (10-inch)
- Project 20 – $5,679,000 – New Interceptor – East of the Hilltop WWTP (12 to 15-inch)
- Project 21 – $1,504,000 – New Interceptor – Northern Ave. (8 to 12-inch)
- Project 22 – $980,000 – New Interceptor – AZ Hwy. 66 to Thompson Ave. (12-inch)
- Project 23 – $1,509,000 – New Interceptor – Castle Rock Rd. (12-inch)
- Project 24 – $1,070,000 – New Interceptor – Prospector St. (8-inch)

- Project 25 – $1,076,000 – Extension – Airway Ave. (8-inch)
- Project 26 – $1,492,000 – Extension – Santa Rosa Dr. and Diamond Joe Rd. (8-inch)
- Project 27 – $1,556,000 – New Interceptor – Santa Rosa Dr. across Interstate 40 (8-inch)
- Project 28 – $879,000 – Extension – Interstate 40 (8-inch)
- Project 29 – $1,420,000 – New Interceptor – Southern Ave. (8-inch)
- Project 30 – $2,561,000 – New Interceptor – El Paso Rd. (8 to 12-inch)
- Project 31 – $2,476,000 – New Interceptor – Siesta (8-inch)
- Project 32 – $1,570,000 – New Interceptor – Interstate 40 (12-inch)
- Project 33 – $168,000 – Parallel Line – Fairgrounds Ave. (8-inch)
- Project 34 – $856,000 – Parallel Line – Marlene Ave. and Van Buren St. (8-inch)
- Project 35 – $1,594,000 – Extension – Northern Ave. (8-inch)
- Project 36 – $1,571,000 – Extension – Sierra Vista Ave. (8-inch)
- Project 37 – $1,040,000 – New Interceptor – Gordon Dr. (8-inch)
- Project 38 – $1,348,000 – Parallel Line – Stockton Hill Rd. (8 to 15-inch)
- Project 39 – $1,391,000 – New Interceptor – Riata Valley Rd. (8 to 12-inch)
- Project 40 – $1,925,000 – Parallel Line – Washington St. and Eastern St. (8 to 12-inch)

In addition to the recommendations already covered, the following should be taken into consideration by the City:

Modeling Updates: This report recommends that the City perform regular updates to the model as development occurs and the collection/interceptor system is expanded. An up-to-date model of the system will provide the City with the best analysis and management tool. As the model changes the Master Plan can easily be updated to reflect those changes. The goal is that the Master Plan, and more so the models developed, will function as a living document that is updated or modified as conditions change.

Interim Sizing: Interim sizing for interceptors should be avoided wherever possible. However, due to budgetary constraints the City may choose to install a smaller diameter pipe than what is recommended in this report. The City should understand that any interim sized interceptor will likely be replaced in the future conditions or necessitate an additional parallel line along that corridor. It is highly recommended that any such alterations to the proposed pipe network be input under a new scenario, and such modifications be thoroughly analyzed and evaluated to determine the ramifications prior to implementation.

Plan for Projects in the City's CIP: The City should use the information shown in each of the scenarios and evaluate those projects identified which should be included in the City's Capital Improvement Program, and when they should be programmed for design and construction. Many of the projects for the Future service areas will be dependent on the pace at which development occurs in the un-serviced areas of the City. All proposed developments will impact the downstream capacity in the City's network to varying extents.

Plan for Flows to the WWTP: Currently, the City uses only a portion of their capacity in the Hilltop WWTP. However, this report demonstrates that as the City grows and develops, in the future, additional capacity will be required. Planning for this will be necessary to accommodate

the future service areas. It is recommended that the City begin the process of expanding the current treatment capacity, in accordance with AAC R18-9-A305, as increased flows from these future service areas begin to utilize the remaining capacity.

Scour Depth Analysis: While this report attempted to establish depths of proposed interceptors sufficiently below washes and other drainage or irrigation facilities, consideration of requirements to prevent or mitigate scour were not considered.

Aerial Topography: New aerial topography that becomes available, either through the City or Mohave County, should be utilized to update rim elevations for the proposed interceptors in the model. Aerial topographic data provided for this study did not encompass the entire planning boundary and was fairly outdated in some areas of the City.

Manhole Survey: A majority of the interceptor model was created using record as-built drawings of the sewer interceptors. As additional surveyed manhole data becomes available it should be used to verify the as-built information entered into the model.

General Plan Amendments: If changes are contemplated for the City's General Plan (i.e. higher density housing, higher wastewater industries, larger planning area etc.) the proposed change should be input into the model for two reasons. The first is to verify if the proposed change impacts the existing downstream interceptor system. The second is to verify the master planned sizing of proposed facilities shown in this report.

Additional Crossings: Multiple interceptors recommended for the Future Scenario involve crossing the highways, railroad tracks, or the Mohave Wash. Special design considerations will have to be considered for these locations, as well as, planning for the significant costs associated with these crossings. Although not shown in the model there are two additional sewer crossings/extensions that are recommended for the system. These sewer lines are non-interceptors but are necessary for providing adequate sewer service to part of the Hilltop Service Area. One of these is an 8-inch interceptor that crosses the Interstate 40 at Fairground Boulevard. The second is an 8-inch interceptor that crosses the Interstate 40 at Rutherford Street and is needed to serve parcels developing around Manzanita School. Both projects should be included in the City's CIP.

Alternative Alignments: The routing of new interceptors proposed in this report represents the best overall layout for serving all areas within the Study Boundary, while not overtaxing existing facilities, and adhering to the design criteria and feedback provided by the City. However, there are several locations were alternative routings were considered. The interceptor sewer model developed for this project allows the City to create additional scenarios in the model with alternative interceptor alignments as various needs arise in the system. One such area where alternative routing should be analyzed is Section 14, T21N-R16W, south of Interstate 40. The current projects recommended for serving this area (Project 10 and Project 32) route flows north across the Interstate towards the airport. An alternative to this alignment is routing flows to the west and connecting with the sewer proposed for Project 28. The interceptor sizing would need to be modified for Project 28 and the downstream capacity of the rest of the interceptor network would also have to be analyzed.

The City of Kingman Wastewater Master Plan Update and Inflow/Infiltration Study gives the City an unlimited planning tool for their wastewater collection system going forward. In the future, as more historic data becomes available, there will be opportunity to review this plan to ensure the assumptions made are still valid; thus insuring the City can continue to operate its collection system in the most efficient way possible.

8.0 REFERENCES

Arizona Administrative Code (AAC) Title 18, Chapter 9, Article 3, Part E. Type 4 General Permits

City of Kingman General Plan Update 2030, March 2014, *City of Kingman*

Downtown Wastewater Treatment Plant Upgrade and Expansion Preliminary Design Report (PDR), November 2009, *Brown and Caldwell*

Hilltop Wastewater Treatment Plant Aquifer Protection Program (APP) Permit Amendment Application (and supporting documentation), August 2007, *Brown and Caldwell*

Request for Amendment to 208 Area-Wide Water Quality Management Plan, August 2007, *Brown and Caldwell*

Sewer Master Plan for Kingman Commercial Center (and surrounding areas), January 2011, *Shephard – Wesnitzer*

Trunk Sewer Master Plan, May 2003, *Burgess & Niple*

9.0 ACKNOWLEDGMENTS

The City of Kingman Engineering and Public Works Department made significant contributions to the completion of the Wastewater Master Plan Update. Individuals who provided feedback, assisted in data collection, and spent many hours attending project meetings, reviewing submittals and coordinating with the project team, include: Greg Henry, Phil Allred, Mike Prior, Frank Marbury and Keelan Yarbrough. Their efforts were invaluable during the course of the project.

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Rich Ruggles, Development Services

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Consideration of Resolution 5005: approval to vacate (abandon) the subdivision plat for Granite Bluffs III, Tract 1996-A

SUMMARY:
A request from Kingman Associates 3, LLC, applicant and property owner, for the vacation (abandonment) of the subdivision plat of Granite Bluffs III, Tract 1996-A. This undeveloped subdivision consists of 27 lots and several unimproved public streets located on 8.83 acres. The property is located along the west side of Mission Boulevard, northwest of Granite Bluffs Drive.

The applicant is requesting the abandonment of the subdivision to allow the release of a $407,933.00 performance bond. The bond was accepted by the city when the subdivision was approved in 2007 to assure the completion of the required subdivision improvements based on an engineer's cost estimate at that time. If the subdivision is vacated it will revert the property to a single 8.83 acre parcel. There will be no effect on the zoning which will remain R-1-10: Residential, Single Family, 10,000 square foot lot minimum. The vacation of the subdivision will also relieve the City of any liability for the completion of the improvements should the developer fail to perform.

An existing public utility easement along Mission Boulevard was recorded prior to the subdivision and will remain in place. An easement located along Granite Bluffs Drive that was dedicated with the subdivision plat will need to be replaced with a new easement as there are electric, phone and cable utilities currently in this easement. Also an extension of the right-of-way for Granite Bluffs Drive is recommended to provide proper access to this easement.

The Planning and Zoning Commission met on March 8, 2016 to consider this request. There were public comments from property owners in the adjoining Granite Bluffs subdivision who were generally opposed to the proposed abandonment. The commission voted 3-2 to recommend the approval of the request to vacate Granite Bluffs III, Tract 1996-A.

FISCAL IMPACT:
None expected

STAFF RECOMMENDATION:
Approve Resolution No. 5005

ATTACHMENTS:

Description

Resolution No. 5005

P&Z Commission Report

REVIEWERS:

Department	Reviewer	Action	Date
Development Services	Jeppson, Gary	Approved	3/24/2016 - 6:35 PM
City Attorney	Cooper, Carl	Approved	3/28/2016 - 10:54 AM
City Manager	Dougherty, John	Approved	3/28/2016 - 1:22 PM

WHEN RECORDED HOLD FOR
KINGMAN CITY CLERK
310 N. 4th Street
Kingman, Arizona 86401

CITY OF KINGMAN
RESOLUTION NO. 5005

A RESOLUTION BY THE MAYOR AND COMMON COUNCIL OF THE CITY OF KINGMAN, ARIZONA: APPROVING THE VACATION OF GRANITE BLUFFS III, TRACT 1996-A.

WHEREAS, Kingman Associates III, LLC, applicant and property owner, has requested the vacation of the subdivision plat for Granite Bluffs III, Tract 1996-A, recorded on March 2, 2007, located in a Portion of Government Lot 7, Section 19, T.21N., R.16W., of the G&SRM, Mohave County, Arizona, and shown in Exhibit "A" attached, and

WHEREAS, the vacation of Granite Bluffs III, Tract 1996-A will revert the subject property back to acreage, and

WHEREAS, the vacation of Granite Bluffs III, Tract 1996-A is requested to allow the release of a $407,933.00 performance bond intended to assure the completion of the required subdivision improvements including utilities and interior streets, and

WHEREAS, certain utilities have been constructed within a five-foot wide public utility easement located along the northwest side of Granite Bluffs Drive that was granted with Granite Bluffs III, Tract 1996-A, and that an new public utility easement will need to be granted for the existing utilities, and

WHEREAS, proper access being necessary to a new public utility easement, a 60-foot wide right-of-way for Granite Bluffs Drive will need to be dedicated from the intersection of Caprock Avenue to the western boundary of the subdivision property, and

WHEREAS, the requested vacation of Granite Bluffs III, Tract 1996-A was referred to the City of Kingman Planning and Zoning Commission for an evaluation as required under Section 1.13(4) of the Subdivision Ordinance of the City of Kingman, and

WHEREAS, the Kingman Common Council has the authority to approve the vacation of Granite Bluffs III, Tract 1996-A pursuant to Section 1.13(5) of the Subdivision Ordinance of the City of Kingman.

NOW, THEREFORE, BE IT RESOLVED by the Mayor and Common Council of the City of Kingman, Arizona:

1. That a 60-foot wide right-of-way for Granite Bluffs Drive extending from the intersection of Caprock Avenue to the western boundary of the subject property shall be dedicated by the property owner.

2. That a public utility easement along the northwest side of Granite Bluffs Drive from Mission Boulevard to the western boundary of the subject property shall be dedicated by the property owner. The public utility easement shall be wide enough to accommodate any existing facilities.

3. That upon the recordation of this resolution, the subdivision plat known as Granite Bluffs III, Tract 1996-A, shown in Exhibit "A", shall be vacated and this resolution shall operate to destroy the force and effect of the recording of the plat so vacated, and to divest all public rights in the streets, alleys, and public grounds, and all dedications or easements laid out or described in said plat.

4. That upon the recordation of this resolution that the performance bond from the Bond Safeguard Insurance Company in the amount of $407,933.00 and referenced in Resolution No. 4381 recorded in Book 6692, Page 963 at Fee No. 2007020175 is hereby released.

PASSED AND ADOPTED by the Mayor and Common Council of the City of Kingman, Arizona this 5th day of April, 2016.

ATTEST:

_____
Sydney Muhle, City Clerk

APPROVED:

_____
Richard Anderson, Mayor

APPROVED AS TO FORM:

_____
Carl Cooper, City Attorney

EXHIBIT "A"

FINAL SUBDIVISION PLAT OF
GRANITE BLUFFS III, TRACT 1996-A
SITUATED IN A PORTION OF SECTION 19, TOWNSHIP 21 NORTH, RANGE 16 WEST
OF THE GILA AND SALT RIVER MERIDIAN, MOHAVE COUNTY, ARIZONA.

CURVE	DELTA ANGLE	RADIUS	ARC	TANGENT	CHORD	CHORD BEARING
C 1	25°38'34"	192.00'	85.03'	43.70'	85.21'	S 48°53'35"E
C 2	17°17'19"	108.00'	32.58'	16.42'	32.46'	S 51°04'13"E
C 3	87°40'49"	30.00'	45.95'	28.85'	41.38'	S 01°22'31"W
C 4	10°35'26"	970.00'	179.29'	89.93'	179.04'	S 58°37'59"W
C 5	10°35'26"	1000.00'	184.84'	92.68'	184.58'	S 58°37'59"W
C 6	48°25'38"	108.00'	91.64'	48.79'	88.83'	S 65°11'19"W
C 7	90°05'52"	40.00'	62.90'	40.07'	56.62'	S 45°02'58"W
C 8	10°35'26"	850.00'	157.11'	78.76'	156.89'	S 58°37'59"E
C 9	40°34'22"	220.00'	155.79'	81.32'	152.55'	S 39°11'19"E
C 10	08°34'12"	1338.38'	140.68'	70.40'	140.38'	S 37°18'34"E
C 11	33°58'34"	230.00'	136.39'	70.27'	134.43'	S 18°59'17"W
C 12	21°57'08"	211.97'	119.53'	60.51'	118.80'	S 45°02'52"E
C 13	90°00'00"	40.00'	62.83'	40.00'	56.57'	S 79°04'18"E
C 14	10°35'26"	1030.00'	190.39'	95.46'	190.11'	S 58°37'59"W

LINE	BEARING	DISTANCE
L 1	N 00°13'34"E	4.73'
L 2	S 89°53'54"E	30.85'
L 3	S 54°04'16"E	63.22'
L 4	S 44°38'44"E	60.00'
L 5	S 45°20'16"W	28.58'
L 6	N 00°00'00"E	5.19'
L 7	S 45°20'16"W	28.58'
L 8	S 54°04'16"E	20.00'

NOTE:
ALL LOTS LIST LINES ARE PERPENDICULAR OR RADIAL TO THE STREET EXCEPT AS NOTED.

CITY OF KINGMAN
Development Services Department
Subdivision Case: SB16-0001
Planning and Zoning Commission Report
March 8, 2016

Summary of Request: A request for approval of the vacation (abandonment) of the subdivision plat of **Granite Bluffs III, Tract 1996-A.** The proposal would abandon to acreage an undeveloped subdivision consisting of 27 lots and several unimproved public streets located on 8.83 acres. The property is located along the west side of Mission Boulevard, northwest of Granite Bluffs Drive.

Applicant: Kingman Associates 3, LLC
1930 Village Center Circle #3-221
Las Vegas, NV 89134
(702) 682-5362
Attn: Frank Carbone
Frank.carbone0417@gmail.com

Property Owner: Same as Above.

RECOMMENDATION

Based on the Standards for Review, Findings of Fact, and Conclusions contained in this report, the **Planning and Zoning Commission voted 3-2 to recommend Approval of the vacation (abandonment) of Granite Bluffs III, Tract 1996-A as requested with certain conditions as stated in this report.**

STANDARDS FOR REVIEW

APPLICABLE GOALS, OBJECTIVES AND POLICIES OF THE KINGMAN GENERAL PLAN 2030:

- Chapter 4: Land Use Element, Kingman General Plan 2030 Projected Land Use Map

APPLICABLE SECTIONS OF THE CITY OF KINGMAN ZONING ORDINANCE:

- Section 3.000: Residential, Single Family

APPLICABLE GOALS, OBJECTIVES AND POLICIES OF THE KINGMAN SUBDIVISION ORDINANCE:

1.13 VACATION OF PLATS

(1) Any plat or any part of any plat may be vacated by the owner of the premises, at any time before the sale of any lot therein, by a Common Council Resolution, to which a copy of such plat shall be attached, declaring the same to be vacated.

(2) If no lots in a subdivision, for which a final plat has been approved and recorded, have been sold within five (5) years from the date of recordation, or if none of the improvements have been made in accordance with the assurance for completion of improvements, the Common Council may on its own motion hold a public hearing after notice to determine whether the approval of such Final Plat should be revoked. Such revocation shall be effective upon recordation of a certified copy of such resolutions; and thereupon, all streets, rights-of-way and easements dedicated or offer for dedication by such plat shall be of no further force or effect.

(3) When lots have been sold, the plat may be vacated in the manner herein provided by all the owners of lots in such plat, by petitioning the Common Council for consideration of the revocation of all or portions of the plat.

(4) Any action considered by the Common Council relating to the revocation of all or part of a subdivision plat, whether lots or lots and rights-of-way, shall be referred to the City Planning and Zoning Commission for evaluation of at least the following:

a. Correlation of the City General Plan.
b. Correlation with proposed development in adjacent areas.
c. Recommendation as to whether or not zoning changes should accompany such action.
d. Effect of such action on existing development in areas affected by the proposed reversion or abandonment.
e. Effect of such action on existing or proposed public utilities.

(5) Any action taken by the Common Council on the revocation of a plat or any part thereof shall be documented by Resolution, and said Resolution shall be recorded in the Office of the Mohave County Recorder. The recordation of this Resolution shall operate to destroy the force and effect of the recording of the plat so vacated, and to divest all public rights in the streets, alleys, and public grounds, and all dedications or easements laid out or described in such plat except as specifically identified in the Resolution.

FINDINGS OF FACT

Location and Size: Granite Bluffs III, Tract 1996-A is located at the along the west side of Mission Boulevard, northwest of Granite Bluffs Drive. This undeveloped subdivision consists of 27 single family residential lots and several platted but undeveloped streets located on approximately 8.83 acres.

Legal Description: The subject property is described as Granite Bluffs III, Tract 1996-A, Block 1, Lots 1-10, inclusive and 21-24 inclusive, Block 2, Lots 1-7 inclusive, and Block 3, Lots 1-5 inclusive.

Existing Zoning and Land Use: The property is currently zoned R-1-10: Residential, Single Family, 10,000 square foot lot minimum and is undeveloped.

General Plan 2030 Land Use Designation: The subject property includes a Community Commercial designation along Mission Boulevard with remainder of the property designated as Medium Density Residential 3-8 dwelling units per acre.

Surrounding Land Use and Zoning:

- North: Vacant land zoned C-2-HMR Overlay District.
- East of Mission Boulevard: Vacant land zoned C-2-HMR Overlay District.
- South of Granite Bluffs Drive: Single family residences located in the Granite Bluffs, Tract 1979 subdivision.
- West: Vacant land zoned R-1-10-PDD: Residential, Single Family, 10,000 square foot lot minimum for the Granite Bluffs IV development. The preliminary plat for this development has since lapsed.

Zoning and Development History:

- This property is located within the original incorporation of the City of Kingman in 1952. It appears that when the current city zoning districts were established in 1971, the subject property was zoned R-1-10.

- On August 1, 2005 a preliminary plat for an 83 lot, 34.54 acre subdivision with two phases known as Granite Bluffs III, Tract 1996 was approved by the City Council.

- On February 5, 2007 the final plat for the first phase of Granite Bluffs III, Tract 1996-A consisting of 27 lots was approved by the City Council. The plat was subsequently recorded on March 2, 2007. Improvements have yet to be made to this subdivision. A $407,933 performance bond was accepted as an assurance for the completion of the subdivision improvements.

- The remainder of the preliminary plat for Granite Bluffs III, Tract 1996 lapsed after 24-months on August 1, 2007.

- On February 2, 2009 the Kingman Common Council denied a request to rezone a portion of the subject property along Mission Boulevard to C-2-HMR Overlay District for commercial development.

- A request to abandon the subdivision was denied by the Kingman Common Council on November 2, 2009. The abandonment was proposed to facilitate a proposed rezone of part of the subdivision area to R-2-PDD: Residential Multiple Family Low Density, Planned Development District. This zoning was proposed to allow the development of 155 attached homes with a buffer of single family lots along Granite Bluffs Drive. The rezoning request was also denied by the City Council.

Physical Characteristics:

- The subject property experiences slopes between 4% and 10%. The elevation generally falls from the southwest down to the northeast. There is significant rock particularly on the western side of the property.

- According to FIRM Map Number 04015C4600G dated 11-18-09 the subject property lies within Zone "X." This is an area determined to be outside the 0.2% annual chance floodplain.

Public Utilities:

- There is an existing 8-inch water line and an 8-inch sewer line in the portion of Granite Bluffs Avenue immediately to the east of the subject site and in Mission Boulevard to the north.

- There are no utilities constructed within the subdivision. However, Suddenlink and Frontier Communications have stated that they have facilities in easements located along the subdivision boundaries on Granite Bluffs Drive and Mission Boulevard.

Transportation:

- The area is accessible from Mission Boulevard and Granite Bluffs Drive. Mission Boulevard has an 84-foot wide right-of-way to the west with a 40-foot wide paved section with curb and gutter. Granite Bluffs has a 60-foot wide right-of-way with a 40-foot wide paved section with curbs and gutter for a distance of approximately 200 feet west of Mission Boulevard.

- Five foot wide sidewalks on both streets were identified on the improvement plans for Granite Bluffs, Tract 1979, but were not installed. There is a cash assurance for the completion of the required sidewalks for these streets.

- Several internal streets with 40-foot wide rights-of-way are located within Granite Bluffs III, Tract 1996-A; however they have not been improved.

Public Notification and Expected Comment:

- The site was posted with a zoning notice on February 19, 2016.

- A public notice ran in the Kingman Daily Miner on February 21, 2016.

- Surrounding property owners within 300 feet of the subject property were sent a notice of the public hearing via first class mail on February 19, 2016.

- Four letters from nearby property owners and a petition in opposition to the abandonment were received by the Planning and Zoning Commission by the time of the meeting on March 8, 2016. All letters and the petition are attached to this report. It should be noted that the petition does not trigger the requirement for a supermajority vote by the City Council for approval. This requirement only pertains to rezoning actions that are opposed in writing by at least 20% of the property owners on any side of the property being considered for a zoning change. No zoning changes are proposed in association with the subdivision abandonment.

- There was extensive public comment received at the Planning and Zoning Commission meeting as well. Some nearby property owners indicated concerns at the meeting that the abandonment of the subdivision will also dissolve the CC&Rs for the area. This sentiment is also expressed in the protest petition. However, only those CC&Rs that were recorded with Granite Bluffs III would be dissolved and not those recorded separately for Granite Bluffs I, which is the developed subdivision that the property owners reside within.

Department and Agency Comments:

- City Engineer has no objections to this request.

- City Fire Department has no objections to this review.

- UniSource Gas has no issues, no conflict.

- UNS Electric has facilities in Mission Boulevard and Granite Bluffs Drive [or parallel to] that currently serve customers in the original phase of Granite Bluffs. It appears the facilities paralleling Mission Boulevard are in an easement granted in Book 5132, Official Records, Page 140 which is separate from the plat of 1996-A. We are presuming this easement grant is not part of the abandonment request. We need this easement to remain in full effect. The underground electric facilities paralleling Granite Bluffs Drive are in a PUE on Lot 1, Block 1, Granite Bluffs III, Tract 1996-A. We need this PUE to remain in place or be replaced by a separate easement grant. Since these facilities are in a trench dug in rock there are other dry utilities [telephone] in that same trench, we presume the other utilities will want the same PUE's to remain in effect or be granted to cover their facilities as well. It may be prudent to have an as-built survey performed to tie down the exact trench location when preparing the replacement PUE. If these items are properly addressed then we have no objections to the abandonment of Granite Bluffs III, Tract 1996-A.

- Suddenlink Communications would have a conflict in completely abandoning the Granite Bluffs III, Tract 1996-A without a more clear definition. Suddenlink Communications has services on the border of this tract. They are located in the 10 ft PUE on Mission Blvd. and Granite Bluffs Dr. Any cost associated in relocation of these facilities would be required by requestor along with any cost to obtain new easement.

- Frontier Communications has cable and cable structurers within the subdivision PUE & DE along Mission BLVD, Block 1, Lots 1-5 and along Granite Bluffs Dr., Block 1, Lots 1 & 21. Frontier needs those PUEs remain in effect or the full cost to relocate Frontier's facilities.

ANALYSIS

This is a request for approval of the vacation (abandonment) of the subdivision plat of **Granite Bluffs III, Tract 1996-A.** The proposal would abandon to acreage an undeveloped subdivision consisting of 27 lots and several unimproved public streets located on 8.83 acres. The property is located along the west side of Mission Boulevard, northwest of Granite Bluffs Drive. If the subdivision is abandoned, only one single family residence could be constructed on the 8.83 acre property.

The applicant and property owners have submitted the following written statement, as required, as to why the abandonment of the final plat is being sought:

> "We are requesting this parcel abandonment so we can receive a release on the insurance (sic) required to finish the lots. We have no intention at this time of doing this project."

The applicant, in his statement, is referring to a performance bond which was accepted by the City as an assurance for the completion of the required subdivision improvements for Granite Bluffs III, Tract 1996-A. The bond is in the amount of $407,933.00 which was equal to the approved Engineer's Cost Estimate in 2007 for the completion of all associated improvements including utilities and streets. If the subdivision is vacated, the City Council would, by resolution, release the bond since the subdivision improvements would no longer be required. The vacation of the subdivision will relieve the city of any liability for the completion of the subdivision improvements including streets, water and sewer, should the developer fail to perform. It is likely that the bond is insufficient to cover the costs of the completion of these improvements today.

REVIEW OF SUBDIVISION ABANDONMENT REQUEST

Section 1.13(4) of the Kingman Subdivision Ordinance states as follows: Any action considered by the Common Council relating to the revocation of all or part of a subdivision plat, whether lots or lots and rights-of-way, shall be referred to the City Planning and Zoning Commission for evaluation of at least the following:

a. Correlation of the City General Plan.
b. Correlation with proposed development in adjacent areas.
c. Recommendation as to whether or not zoning changes should accompany such action.
d. Effect of such action on existing development in areas affected by the proposed reversion or abandonment.
e. Effect on such action on existing or proposed public utilities.

Correlation of the City General Plan:
The Kingman General Plan 2030 Projected Land Use Map indicates that the subject property is projected for Medium Density Residential 3-8 dwelling units per acre, except

for a portion of the property immediately along Mission Boulevard which is projected for Community Commercial development. The vacation of this subdivision to acreage would mean just one dwelling could be constructed on the entire 8.38 acre property. This will reduce the overall density of the area, although it will remain consistent with the projections of the General Plan.

Correlation with Proposed Development in Adjacent Areas:
The abandonment of Granite Bluffs III, Tract 1996-A would not appear to have an effect on any adjacent or nearby development proposals as none are dependent on the completion of the interior streets or any infrastructure within this subdivision.

Recommendation on Possible Zoning Changes:
No zoning changes are necessary or anticipated to accompany the abandonment of Granite Bluffs III, Tract 1996-A. The R-1-10 zoning will remain in place.

Effect of Abandonment Action on Existing Development:
The abandonment of Granite Bluffs III, Tract 1996-A will not have a direct effect on existing development in the area including Granite Bluffs I, Tract 1979.

Effect of Abandonment on Existing or Proposed Utilities:
UNS Electric, Suddenlink, and Frontier have commented on existing facilities that are in place in public utility easements (PUE) located along Mission Boulevard and Granite Bluffs Drive. In the case of Mission Boulevard, the 10-foot wide PUE located along the southwest side of that street was recorded in 2004 by separate instrument prior to the recording of Granite Bluffs III, Tract 1996-A. Therefore, this easement will be unaffected by the subdivision vacation.

Additionally, there is a 5-foot wide PUE along the northwest side of Granite Bluffs Drive which was dedicated with the subdivision plat for Granite Bluffs III, Tract 1996-A. All three utility companies have said they want this easement to remain in effect or a new easement granted. The other option would be to move the facilities at the expense of the requestor. Planning staff discussed the matter with the applicant and suggested that they grant a new PUE in the same location as the current easement. As was suggested by UniSource Electric, since there are other dry utilities in the same trench location, it is suggested that an as-built survey performed to tie down the exact trench location when preparing a legal description of the replacement PUE.

In addition it was noted by planning staff that a 60-foot wide right-of-way for Granite Bluffs Drive was to be dedicated with the second phase of Granite Bluffs III west of the intersection of Star Canyon Loop and Caprock Avenue. However, the second phase of this subdivision never received final plat approval and therefore, the preliminary plat has lapsed. In order to provide proper access to the 5-foot wide PUE it is staff's suggestion that the applicant dedicate the 60-foot wide right-of-way for Granite Bluffs Drive to the western property line of what is now Lot 24, Block 1, Granite Bluffs III, Tract 1996-A. The dedication of a new PUE and the right-of-way for Granite Bluffs Drive will require the preparation of the legal descriptions by the applicant's engineer/surveyor.

The abandonment of the subdivision will not otherwise have a direct effect on existing development in the area as the streets and utilities serving the surrounding area are not dependent on planned street or utility improvements in Granite Bluffs III, Tract 1996-A.

RECOMMENDATION

1. Based on the standards for review and findings of fact contained in this report, the **Planning and Zoning Commission voted 3-3 to recommend Approval of the vacation (abandonment) of Granite Bluffs III, Tract 1996-A as requested under SB16-0001 with the following conditions:**

   a. A 60-foot wide right-of-way shall be dedicated for Granite Bluffs Drive extending from the intersection of Caprock Avenue to the western boundary of the subdivision property.

   b. A public utility easement (PUE) shall be dedicated along the northwest side of Granite Bluffs Drive from Mission Boulevard to the western boundary of the subject property. The PUE shall be wide enough to accommodate any existing facilities.

ATTACHMENTS

1. Subdivision Abandonment Application
2. Written Request to Abandon Subdivision
3. Subdivision Map and Detail
4. Area Zoning Map
5. Aerial Map
6. Department and Agency Comments
7. Letters from nearby property owners
8. Petition Against the Subdivision Abandonment

CITY OF KINGMAN

SUBDIVISON ABANDONMENT APPLICATION FORM

SB-16 - 0001

APPLICATION FEE: $600.00

Application Date: 2/11/2016

I (we) the undersigned property owner(s) request that the subdivision described below abandoned, in whole or in part.

Frank A. Carbone — 2/11/2016

Signature of Owner — **Date**

Attach additional sheets with the above statement if there are more property owners.

Subdivision Name and Tract Number: Granite Bluffs 3 1996A

Attach the following information:

1. Mohave County Tax Parcel Number(s).
2. Title Report showing all property owners, lienholders, easement owners, and rights-of-way owners.
3. A copy of the recorded final plat.
4. An area map showing any property, roadways, utilities, drainage structures, and other improvements depending on the subdivision improvements, easements, and rights-of-way contained in the final plat.
5. A statement why abandonment of the final plat is being sought.
6. A mailing list of owners of property, as shown on the latest Mohave County Assessor rolls, located within 300-feet of the exterior boundaries of the subdivision. The names and addresses shall be placed on mailing labels.

OWNERS' NAME: Kingman Associates 3, LLC

Mailing Address: 1930 Village Center Circle # 3-221

City/State/Zip: Las Vegas, NV 89134

Phone Number: 702-682-5362 **Email:** frank.carbone0417@gmail.com

SUBDIVISION NAME & TRACT #: Granite Bluffs 3 1996A

KINGMAN ASSOCIATES 3 LLC

PARCEL NUMBERS 32146001-32146027

WE ARE REQUESTING THIS PARCEL ABANDONMENT SO WE CAN RECEIVE A RELEASE ON THE INSURANCE REQUIRED TO FINISH THE LOTS. WE HAVE NO INTENTION AT THIS TIME OF DOING THE PROJECT.

IF ANY QUESTIONS OR FURTHER REQUIREMENTS CONTACT MANAGEMENT 702-682-5362

BOOK 321
MAP 46 CODE 0452

04/5/2007 -11 2682-2682A

FINAL SUBDIVISION PLAT OF

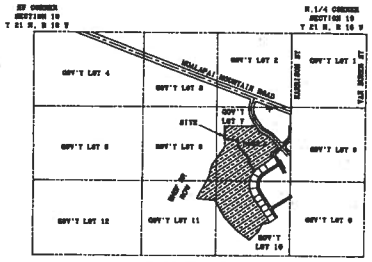
GRANITE BLUFFS III, TRACT 1996-A 1 OF 2

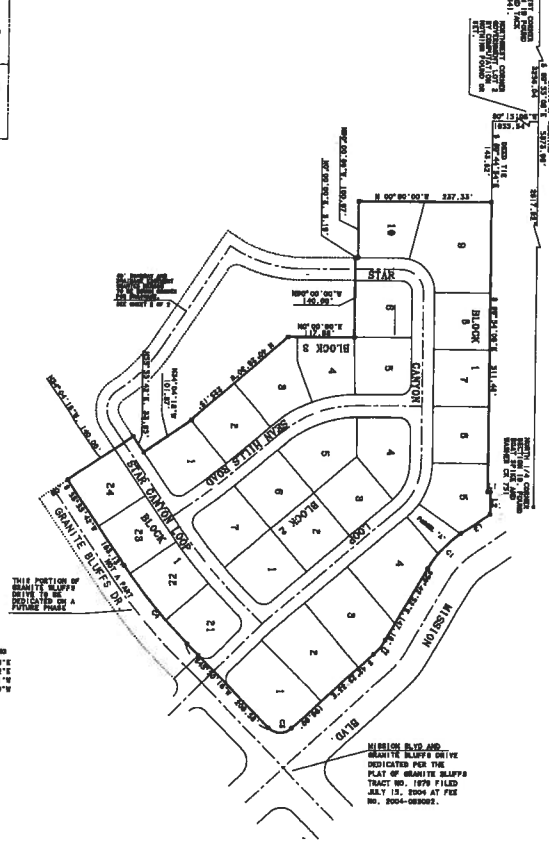
SITUATE IN A PORTION OF SECTION 19, TOWNSHIP 21 NORTH, RANGE 16 WEST OF THE GILA AND SALT RIVER MERIDIAN, MOHAVE COUNTY, ARIZONA.

TOTAL AREA OF SUBDIVISION 8.83 ACRES ±

PARENT: 321-02-010
REM: 321-02-012

NEW: 321-46-001 thru 027





NOTES AND LEGEND:

BASIS OF BEARING: THE WEST HALF OF THE NORTH LINE OF SECTION 19, PER THE CITY OF KINGMAN PROJECT DATUM AS SHOWN ON THAT RECORD OF SURVEY BOOK 10, PAGE 24, BEING S 89°53'06"E.

● INDICATES FOUND SECTION OR 1/4 CORNER AS NOTED.

○ INDICATES FOUND RECORD MONUMENT RLS 24514.

● INDICATES SET 3/8" REBAR AND CAP RLS 16319.

ALL CORNERS MONUMENTED TO BE MONUMENTED WITH A 3" ALUMINUM CAP STAMPED RLS 16319 ON COMPLETION OF CONSTRUCTION. ALL PROPERTY CORNERS TO BE MONUMENTED WITH A 3/8" REBAR B/REC RLS 16319

SQ-FT INDICATES SQUARE FOOTAGE AREA OF LOT.

PARCEL "A" AS SHOWN HEREON IS A DRAINAGE PARCEL DEDICATED TO THE PUBLIC AND THE CITY OF KINGMAN.

FLOOD PLAIN: THE AREA INCLUDED WITHIN THIS SUBDIVISION AS SHOWN ON THE FEMA FLOOD INSURANCE RATE MAP COMMUNITY PANEL 040058-5250 C IS DESIGNATED FLOOD ZONE C: DEFINED AS: AREAS OF MINIMAL FLOODING.

ALL ROADWAYS AS SHOWN WITHIN THE LIMITS OF THIS PLAT ARE TO BE DEDICATED TO THE PUBLIC FOR USE AS SUCH BY THE RECORDING OF THIS PLAT.

A. A 1' VEHICLE NON-ACCESS EASEMENT (VNAE) ADJACENT TO THE NORTH LINE (MISSION BLVD.) OF LOTS 1 THRU 5, AND THE SOUTHEASTERLY LINE (GRANITE BLUFFS DR.) OF LOTS 21 THRU 25, BLOCK 1 IS GRANTED HEREON

B. ALL LOTS HAVE A 5' PUE ALONG THE ADJACENT STREET LINES.

C. ALL LOTS HAVE A 7.50 FOOT DRAINAGE EASEMENT ALONG THE REAR AND SIDE BOUNDARY LINES. THESE EASEMENTS ARE FOR DRAINAGE PURPOSES EXCLUSIVELY AND ARE NOT TO BE USED UTILITY PURPOSES.

ALL CUL-DE SAC RADIUS IS EQUAL TO 55 FEET. TO PROPERTY LINES.

LOT LINE RADIUS AT STREET INTERSECTIONS IS 20 FEET

VERTICAL PROJECT DATUM PER CITY OF KINGMAN TOPOGRAPHIC SET BY THE CLEVA-PERRIN ANDT INC. IN NORTH SIDE OF THE CULVERT 300' WEST OF MADISON ST. ON HUALAPAI MOUNTAIN ROAD.

SUBDIVISION BOUNDARY TABLES

LINE	BEARING	DISTANCE
L 1	N 00°13'24"E	4.72'
L 2	S 89°53'54"E	30.95'
L 3	S 34°04'16"E	63.22'

CURVE	DELTA ANGLE	RADIUS	ARC	TANGENT	CHORD	CHORD BEARING
C 1	23°58'34'	192.00'	85.98'	42.70'	85.21'	S 46°53'23"E
C 2	17°17'19'	100.00'	32.58'	16.42'	32.45'	S 51°04'13"E
C 3	27°43'46'	30.00'	43.53'	22.65'	41.56'	S 01°27'21"W
C 4	10°23'28'	978.00'	179.29'	89.99'	179.04'	S 30°27'38"W

DEDICATION:

KNOW ALL MEN BY THESE PRESENTS:

KINGMAN ASSOCIATES II, L.L.C. AN ARIZONA LIMITED LIABILITY CORPORATION HAS SUBDIVIDED UNDER THE NAME OF GRANITE BLUFFS III, TRACT NO. 1996-A, A PORTION OF GOVERNMENT LOT 7 OF SECTION 19, TOWNSHIP 21 NORTH, RANGE 16 WEST, OF THE GILA AND SALT RIVER MERIDIAN, CITY OF KINGMAN, MOHAVE COUNTY, ARIZONA, AS PLATTED HEREON AND THAT THE SURVEY AND STYKING THEREOF INTO LOTS, STREETS AND EASEMENTS AS APPEARS ON THIS PLAT IS WITH THE FREE CONSENT OF THE OWNERS AND PROPRIETORS.

THAT THE FOLLOWING IS A CORRECT PLAT OF SAID SUBDIVISION AS STAKED INTO LOTS, STREETS AND EASEMENTS. THAT THE BOUNDARIES OF SAME ARE CORRECTLY SHOWN BY FIGURES REPRESENTING FEET AND HUNDREDTHS OF A FOOT AND THAT THE COURSES OF THE LOTS, STREETS AND EASEMENTS ARE CORRECTLY SHOWN HEREON AND THAT THE OWNERS HEREBY DEDICATE THE STREETS AND EASEMENTS SHOWN HEREON FOR PUBLIC ROADWAY USE AND DRAINAGE USE AND THAT THE PARCEL MARKED "A" IS A DRAINAGE PARCEL AND HEREBY DEDICATED TO THE CITY OF KINGMAN AND DULY FRANCHISED UTILITY COMPANIES, USE OF THE EASEMENTS WITHIN THE BOUNDARIES OF SAID SUBDIVISION SHOWN HEREON.

IN WITNESS WHEREOF:

KINGMAN ASSOCIATES II, L.L.C. AN ARIZONA LIMITED LIABILITY CORPORATION HEREBY HAS CAUSED IT'S CORPORATE NAME TO BE SIGNED AND THE SAME ATTESTED TO BY THE SIGNATURE OF:

Zula Cabral Jr. 2/23/07
PRESIDENT DATE
KINGMAN ASSOCIATES II, LLC

MAYOR'S CERTIFICATE:

I, LESTER BYRAM, MAYOR OF THE CITY OF KINGMAN, ARIZONA, HEREBY CERTIFY THAT THE KINGMAN COMMON COUNCIL APPROVED THE WITHIN PLAT ON THE DAY 5TH OF FEBRUARY, 2007 AND ACCEPTED ON BEHALF OF THE PUBLIC ALL PARCELS OF LAND OFFERED FOR THE PURPOSES SHOWN IN CONFORMITY WITH THE TERMS OF THE OFFER OF DEDICATION AND THAT SATISFACTORY ASSURANCE IN THE FORM OF:

SURETY PERFORMANCE BOND

FROM BOND SAFEGUARD INSURANCE COMPANY HAS BEEN APPROVED IN THE FULL AMOUNT NECESSARY TO GUARANTEE COMPLETION OF ALL REQUIRED OFF-SITE AND ON-SITE IMPROVEMENTS NECESSARY FOR THIS SUBDIVISION.

Lester Byram 3-2-07
MAYOR, CITY OF KINGMAN, ARIZONA DATE

ATTESTED: Rhonda K. Fenuna 3-2-07
KINGMAN CITY CLERK DATE

CITY ENGINEER AND PLANNING DIRECTOR CERTIFICATE:

THIS PLAT HAS BEEN CHECKED FOR CONFORMANCE TO THE APPROVED PRELIMINARY PLAT AND ANY SPECIAL CONDITIONS ATTACHED THERETO, TO THE REQUIREMENTS OF THE CITY OF KINGMAN SUBDIVISION REGULATIONS AND TO ANY OTHER APPLICABLE REGULATIONS AND APPEARS TO COMPLY WITH ALL REQUIREMENTS WITHIN MY JURISDICTION TO CHECK AND EVALUATE.

BY: CITY ENGINEER 3-1-07
DATE

BY: CITY PLANNING DIRECTOR 1 March 2007
DATE

CERTIFICATE OF ENGINEER:

THIS IS TO CERTIFY THAT THE DESIGN OF THE ABOVE DESCRIBED SUBDIVISION HAS BEEN UNDER MY DIRECTION AND SUPERVISION AND IS ACCURATELY REPRESENTED ON THIS PLAT.

RAYMOND W. STANLEY, P.E. 11063
ARIZONA REGISTRATION NUMBER

NOTARY ACKNOWLEDGEMENT:

STATE OF ARIZONA: ss
COUNTY OF MOHAVE:

THIS INSTRUMENT WAS ACKNOWLEDGED BEFORE ME THE UNDERSIGNED OFFICER THIS 23RD DAY OF February, 2007

BY FRANK A. CARBONE JR.

AND ACKNOWLEDGED HIMSELF TO BE THE PRESIDENT OF KINGMAN ASSOCIATES II, L.L.C. AN ARIZONA LIMITED LIABILITY CORPORATION AND ACKNOWLEDGED THAT HE BEING SOLY AUTHORIZED TO DO SO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSE THEREIN CONTAINED BY SIGNING THE NAME OF THE CORPORATION BY HIMSELF AS SUCH OFFICER.

IN WITNESS WHEREOF, I HEREUNTO SET MY HAND AND OFFICIAL SEAL.

Dawn Nielson 9/23/2010
NOTARY PUBLIC MY COMMISSION EXPIRES

OFFICIAL SEAL
DAWN NIELSON
NOTARY PUBLIC - State of Arizona
MOHAVE COUNTY
My Comm. Expires Sept 23, 2010

RECORDER'S CERTIFICATE:

FILED AND RECORDED AT THE REQUEST OF THE CITY OF KINGMAN, ARIZONA ON THIS 2nd DAY OF March 2007.

RECORDED IN MOHAVE COUNTY, ARIZONA.

BY: Sheila Chase-Rollins Joan McCall
DEPUTY RECORDER RECORDER

RECEPTION NO: 2007020174 $48.00

FILED

CERTIFICATE OF SURVEYOR:

THIS IS TO CERTIFY THAT THE BOUNDARY SURVEY OF THE ABOVE DESCRIBED SUBDIVISION WAS MADE UNDER MY DIRECTION AND SUPERVISION AND IS ACCURATELY REPRESENTED ON THIS PLAT.

JEFFERY S. CARLTON, RLS 16319
ARIZONA REGISTRATION NUMBER

JOB NO. 2005-1270 SCALE: 1" = 100'

PREPARED FOR: KINGMAN ASSOCIATES III,LLC
1600 VILLAGE CENTER CIR. PS-221
LAS VEGAS, NV 89134
(702) 822-5262

DRAWN BY:	DATE:	
JSC	NOV. 2006	SHEET 1 OF 2

CARLTON·SONS·NIELSON·ASSOCIATES
811 EAST ANDY DEVINE (P.O. BOX 116)
KINGMAN, ARIZONA 86401 (928) 753-4847

Resolution # 4381
Bk 6692 Pg 968

2682A

BOOK 321
MAP 46
2 OF 2

FINAL SUBDIVISION PLAT OF
GRANITE BLUFFS III, TRACT 1996-A
SITUATED IN A PORTION OF SECTION 19, TOWNSHIP 21 NORTH, RANGE 16 WEST OF THE GILA AND SALT RIVER MERIDIAN, MOHAVE COUNTY, ARIZONA.

NOTE:
ALL SIDE LOT LINES ARE PERPENDICULAR OR RADIAL TO THE STREET EXCEPT AS NOTED.

LOT LINE TABLES

LINE	BEARING	DISTANCE
L 1	N 44°39'44"W	19.27'
L 2	S 00°00'00"E	16.85'
L 4	S 87°30'00"E	21.00'

CURVE	DELTA ANGLE	RADIUS	ARC	TANGENT	CHORD	CHORD BEARING
C 1	25°38'34"	192.00'	85.93'	43.79'	85.21'	S 46°33'35"E
C 2	17°17'19"	108.00'	32.59'	16.42'	32.46'	S 51°04'13"E
C 3	67°43'49"	30.00'	49.95'	28.85'	41.89'	S 01°27'21"W
C 4	10°35'26"	979.00'	179.29'	89.90'	179.04'	S 50°37'59"W
C 5	10°35'26"	1000.00'	184.84'	92.66'	184.58'	S 50°37'59"W
C 6	49°23'36"	106.00'	91.44'	48.79'	88.63'	N 65°11'19"W
C 7	90°05'52"	40.00'	62.90'	40.07'	56.62'	S 43°02'56"W
C 8	10°35'26"	830.00'	157.11'	78.78'	156.89'	N 50°37'59"E
C 9	40°34'23"	220.00'	155.79'	81.32'	152.55'	S 20°11'19"E
C 10	98°34'12"	1258.58'	149.86'	70.40'	140.58'	S 37°18'24"E
C 11	33°56'54"	230.00'	136.39'	70.27'	134.40'	S 16°58'17"W
C 12	21°57'08"	311.97'	119.53'	60.51'	118.80'	S 43°02'52"E
C 13	90°00'00"	40.00'	62.83'	40.00'	56.57'	S 79°04'18"E
C 14	10°35'26"	1030.00'	190.39'	95.48'	190.11'	S 50°37'59"W

LINE	BEARING	DISTANCE
L 1	N 00°13'24"E	4.72'
L 2	S 89°53'54"E	39.85'
L 3	S 34°04'18"E	63.22'
L 4	S 44°39'44"E	60.00'
L 5	S 45°20'16"W	28.56'
L 6	N 00°00'00"E	5.19'
L 7	S 45°20'16"W	28.56'
L 8	S 34°04'18"E	20.00'

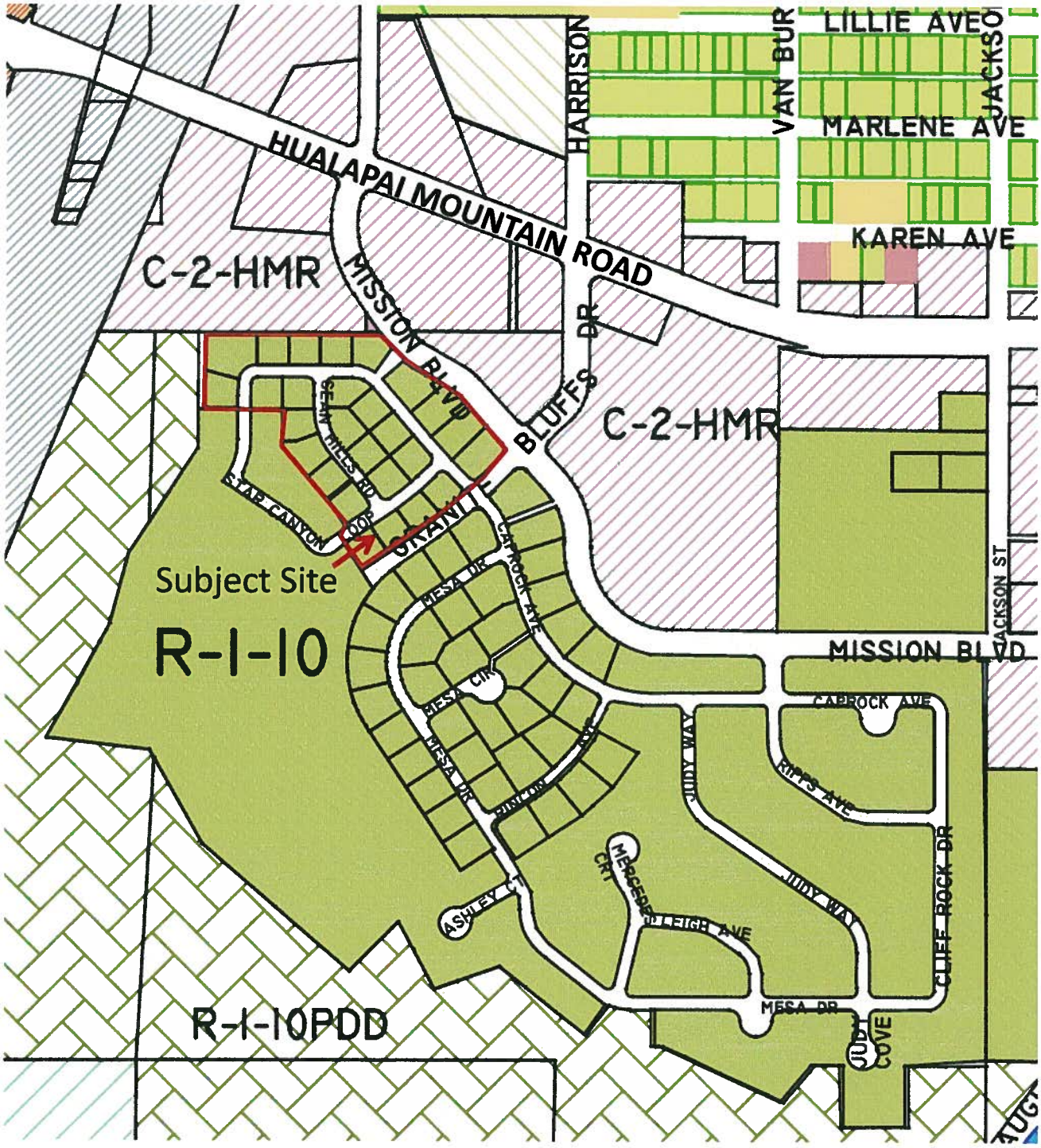
JOB NO. 2270-05 SCALE: 1" = 50'

PREPARED KINGMAN ASSOCIATES III, LLC
FOR: 1930 VILLAGE CENTER CIR. #3-221
LAS VEGAS, NV 89134
(702) 682-5382

DRAWN BY:	DATE:	
JSC	NOV. 2006	SHEET 2 OF 2

CARLTON·SONS·NIELSON·ASSOCIATES
511 EAST ANDY DEVINE (P.O. BOX 110)
KINGMAN, ARIZONA 86401 (520) 753-4647

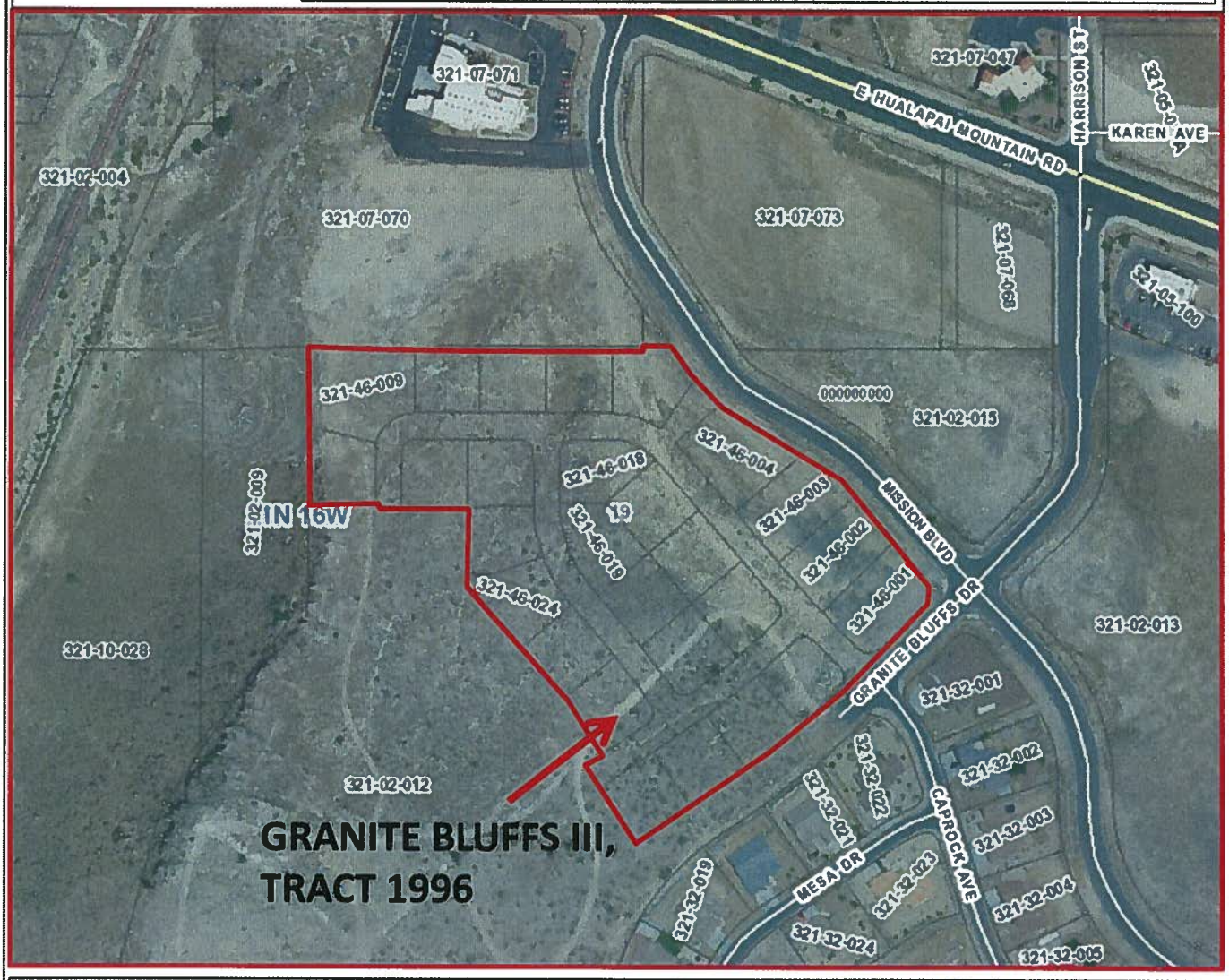
ZONING MAP



LILLIE AVE
HARRISON
VAN BUR
JACKSO
MARLENE AVE
HUALAPAI MOUNTAIN ROAD
KAREN AVE
C-2-HMR
MISSION BLVD
BLUFFS DR
C-2-HMR
SEAN HILLS RD
STAR CANYON LOOP
GRANITE
CAPROCK AVE
Subject Site
MESA DR
R-1-10
MISSION BLVD
JACKSON ST
CAPROCK AVE
MESA CIR
MESA DR
JUDY WAY
RIPPS AVE
MERCEDES CRT
ASHLEY CT
LEIGH AVE
JUDY WAY
CLIFF ROCK DR
MESA DR
JUDY COVE
R-1-10PDD

AERIAL MAP

gis.mohavecounty.us | **Interactive Map Viewer**



0 268.4 536.8 Feet

(approximate scale)

Map Created: 3/2/2016

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This map is a user generated static output from the Mohave County Interactive Map Viewer and is for general reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION, AS A LEGAL DOCUMENT, FOR PROPERTY DESCRIPTIONS, OR DETERMINATION OF LEGAL TITLE, AND SHOULD NEVER BE SUBSTITUTED FOR SURVEY OR DEED INFORMATION. The user agrees to comply with the Limitation of Use, and Assumption of Risk as stated in the full disclaimer at http://gis.mohavecounty.us

Rich Ruggles

From: Rodriguez, Jay <Jay.Rodriguez@Suddenlink.com>
Sent: Friday, February 19, 2016 6:23 AM
To: Rich Ruggles
Cc: Brunk, Jeremy
Subject: RE: SB16-0001: Abandonment of Granite Bluffs III, Tract 1996-A

Rich,

Suddenlink Communications would have a conflict in completely abandoning the Granite Bluffs III, Tract1996-A without a more clear definition. Suddenlink Communications has services on the border of this tract. They are located in the 10 ft. PUE on Mission Blvd. and Granite Bluffs Dr. Any cost associated in relocation of these facilities would be required by requestor along with any cost to obtain new easement.

Thank You

Jeremy J. Rodriguez (Jay)
Construction Coordinator
Bullhead City/Kingman AZ
C 928-201- 7227
O 928-219-4965 Ex 94965
Jay.rodriguez@suddenlink.com

From: Rich Ruggles [mailto:rruggles@cityofkingman.gov]
Sent: Thursday, February 18, 2016 3:56 PM
To: Greg Henry; Rod Ward; Rob Owen; Jim McErlean; Leonard DeJoria; mgibelyou@uesaz.com; jfjeld@uesaz.com; Charles.Kaiser@mohavecounty.us; Pebley, Stephen (Stephen.Pebley@FTR.com); Rodriguez, Jay
Subject: SB16-0001: Abandonment of Granite Bluffs III, Tract 1996-A

Good afternoon:

I have attached a request for the abandonment of Granite Bluffs III, Tract 1996-A. This item will be reviewed by the City of Kingman Planning and Zoning Commission on March 8, 2016. Please review and send any comments to me. Thanks.

Rich Ruggles
Principal Planner
City of Kingman Development Services Dept.
Office: (928) 753-8130 Direct: (928) 753-8160
E-mail: rruggles@cityofkingman.gov

The information transmitted is intended only for the person or entity to which it is addressed and may contain proprietary, confidential and/or legally privileged material. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon, this information by persons

Rich Ruggles

From: Mathiesen, Jeff <Jeff.Mathiesen@FTR.com>
Sent: Wednesday, February 24, 2016 7:56 AM
To: Rich Ruggles
Subject: FW: SB16-0001: Abandonment of Granite Bluffs III, Tract 1996-A

Importance: High

Follow Up Flag: Follow up
Flag Status: Completed

Rich,
Wanted to make sure you got the response. See below. Thanks, Jeff

---

From: Mathiesen, Jeff
Sent: Thursday, February 18, 2016 4:45 PM
To: Pebley, Stephen <Stephen.Pebley@FTR.com>; Miracle, Joann <Joann.Miracle@FTR.com>; Loreque, Marc <Marc.Loreque@ftr.com>
Subject: RE: SB16-0001: Abandonment of Granite Bluffs III, Tract 1996-A
Importance: High

Stephen,
I recommend we respond to Rick advising the following:
Frontier Communications has cable and cable structurers within the subdivision PUE & DE along Mission BLVD, Block 1, Lots 1-5 and along Granite Bluffs Dr., Block 1, Lots 1 & 21. Frontier needs those PUEs remain in effect or the full cost to relocate Frontier's facilities.

From: Pebley, Stephen
Sent: Thursday, February 18, 2016 3:58 PM
To: Miracle, Joann <Joann.Miracle@FTR.com>; Mathiesen, Jeff <Jeff.Mathiesen@FTR.com>; Loreque, Marc <Marc.Loreque@ftr.com>
Subject: FW: SB16-0001: Abandonment of Granite Bluffs III, Tract 1996-A

Do we have any need to comment on this?

From: Rich Ruggles [mailto:rruggles@cityofkingman.gov]
Sent: Thursday, February 18, 2016 3:56 PM
To: Greg Henry <ghenry@cityofkingman.gov>; Rod Ward <rward@cityofkingman.gov>; Rob Owen <rowen@cityofkingman.gov>; Jim McErlean <jmcerlean@cityofkingman.gov>; Leonard DeJoria <ldejoria@cityofkingman.gov>; mgibelyou@uesaz.com; jfjeld@uesaz.com; Charles.Kaiser@mohavecounty.us; Pebley, Stephen <Stephen.Pebley@FTR.com>; Jeremy.rodriguez2@suddenlink.com
Subject: SB16-0001: Abandonment of Granite Bluffs III, Tract 1996-A

Good afternoon:

I have attached a request for the abandonment of Granite Bluffs III, Tract 1996-A. This item will be reviewed by the City of Kingman Planning and Zoning Commission on March 8, 2016. Please review and send any comments to me. Thanks.

Rich Ruggles

From:	MGibelyou@uesaz.com
Sent:	Monday, February 29, 2016 10:09 AM
To:	Rich Ruggles
Cc:	MYarbrough@uesaz.com; RSatour@uesaz.com; JSampson@uesaz.com
Subject:	RE: SB16-0001: Abandonment of Granite Bluffs III, Tract 1996-A
Attachments:	GRANITE BLUFFS III TR 1996-A_2682A.pdf

Rich,

UNS Electric has reviewed this request and have the following comments:

- We have facilities in Mission Boulevard and Granite Bluffs Drive [or parallel to] that currently serve customers in the original phase of Granite Bluffs Tract 1996.
- It appears the facilities paralleling Mission Boulevard are in an easement granted in Book 5132, Official Records, Page 140 which is separate from the plat of 1996-A. We are presuming this easement grant is not part of the abandonment request. We need this easement to remain in full effect.
- The underground electric facilities paralleling Granite Bluffs Drive are in a PUE on Lot 1, Block 1, Granite Bluffs III, Tract 1996-A. We need this PUE to remain in place or be replaced by a separate easement grant. See attached plat markup.
- Note: since these facilities are in a trench dug in rock there are other dry utilities [telephone] in that same trench and we presume the other utilities will want the same PUE's to remain in effect or be granted to cover their facilities as well.
- It may be prudent to have an as-built survey performed to tie down the exact trench location when preparing the replacement PUE.

If these items are properly addressed then we have no objections to the abandonment of Granite Bluffs III, Tract 1996-A.

Let us know if you have any questions regarding these comments. Thank you for the opportunity to comment.

Michael L. Gibelyou, SR/WA
Senior Right of Way Agent
UNS Electric, Inc.
(928) 681-8923 desk
(928) 681-8920 fax

From: Rich Ruggles [mailto:rruggles@cityofkingman.gov]
Sent: Thursday, February 18, 2016 3:56 PM

Rich Ruggles

From: stew85766@aol.com
Sent: Wednesday, March 02, 2016 4:14 PM
To: Rich Ruggles
Subject: Subdivision Abandonment Case SB16-0001

Please regard this as our protest against the subdivision abandonment case. We are opposed as we feel this action will negatively impact our area, and our residence at 2273 Mesa Dr, which is adjacent to Granite Bluffs III tract 1996-A.

Prior to our property purchase, we made inquiries as to the zoning of adjacent properties as well as if CC&Rs were included. Our findings were influential in our decision to purchase our residence. We object to any decision that would modify or change the existing zoning or delete the CC&Rs as it would allow for future development that would be detrimental to the adjacent property values. In addition, this would abolish the existing CC&Rs that were established to assure both current and prospective home owners in the area protection against property value loss as a result of neighborhood and living standard decline. In conclusion, we request that you deny this change.

Sincerely,
Robert and Ronatta Stewart
(928) 753-6401

Mr. John Marzley
2287 Mesa Drive
Kingman, Arizona, 86401

Mr. Allen Mossberg
2368 Seminole Drive
Kingman, Arizona, 86401

Dear Mr. Allen Mossberg
My wife and I looked for a number of years at homes throughout the greater Kingman area. We liked the Granite Bluff I subdivision because it was centrally located, close to services, yet in a quiet neighborhood. We also took into consideration that Granite Bluffs is a master planned community. The same cc&rs applied to Granite Bluffs I, II, and III. The Hualapai Mountain Road Corridor as described in Kingman's General Plan 2020, " Is considered sensitive to development that *could disrupt view corridors, existing residential areas and traffic patterns*. Development in this corridor would to be of a lower intensity that the North Stockton Hill Corridor."

We were also concerned about the large amounts of underdeveloped lots in the subdivision. When Mr. Bill Nugent conceived and brought to fruition Granite Bluffs master planned community. He advertised this development as:

Kingman's Premier Neighborhood
Custom Homes $300,000 and Up

When Kingman Associates III LLC bought this property, they continued with the marketing that Granite Bluffs was a prestigious subdivision. When my wife and I were considering buying a home in Granite Bluffs, we made numerous trips to the area. We were always greeted by Kingman Associates III sign which stated:

GRANITE BLUFFS
ESTATES
Custom Home Sites
Kingman's Most Prestigious Location
Hillside Elevations Perfect
For Privacy and Custom Homes

Kingman LLC included the dimension of lifestyle by adding the idea of privacy. Taking all of these factors into consideration we opted to purchase our home in Granite Bluffs. We moved on January 1, 2008. Kingman Associates III never built a home in Granite Bluffs III even though they own the subdivision before and during the housing boom. In January 2009 Kingman III requested to change the zoning on 3+ acres to C2-HMR for the development of offices and/or neighborhood shops. In May 2009 the associates requested another zoning change to R-2-PDD to develop Mountain Trails Apartments. In October they request another zoning change to R-2-PDD so they could develop Quail Mountain Estates. They were interest in any other zoning but R-1-10 (Granite Bluffs subdivision zoning), with a general disregard for the effect it would have on the residences of Granite Bluffs I and the Hualapai Mountain Corridor as described in Kingman's General Plan 2020.

If this abandonment is allowed it will dissolve a well thought out subdivision. The land will still be zoned R-1-10, but the abandonment will do away with covenants, conditions and restriction which makes Granite Bluffs a premier subdivision offering a very unique lifestyle. The well thought out covenants were design to protect the value of the homes and the interests of current and future home owners. Abandoning zoning will have a negative impact on home owners who rely on government to protect their investment and lifestyle.

Sincerely,
John Marzley
John Marzley

Karen Marzley 303-4403

CITY OF KINGMAN
BUILDING
MAR 0 3 REC'D
RCV'D_____

Rich Ruggles

From: john marzley <jmarzley@gmail.com>
Sent: Monday, March 07, 2016 1:18 PM
To: Rich Ruggles
Subject: Fwd: Abandonment of Bluffs II

---------- Forwarded message ----------
From: **Dru** <hddru@hotmail.com>
Date: Thu, Mar 3, 2016 at 4:26 PM
Subject: Re: Abandonment of Bluffs II
To: john marzley <jmarzley@gmail.com>

Dear Mr. rich Ruggles

Principal Planner/Planning and Zoning Division

Kingman, Az 86401

Dear Sir,

I, Daniel and Drusilla Bloodworth, chose Granite Bluffs as a retirement home for our future. Our plans were put in jeopardy due to business practices of cooperate America and banking practices which allowed banks and business to make Billions of dollars at the public's expense. None of our homes are worth what we paid for them primarily due to these practices.

Kingman Associates III bought their property the same as we did and simply because they haven't been able to generate the profits they expected they are attempting to denigrate the surrounding properties at our expense in order to cut their losses, flip this property, and run. We will be left holding the bag once more. To leave the public responsible for these business practices once more is simply not only irresponsible but borders on criminal.

The homeowners of this community have been resilient in maintaining our properties as should the businesses of the surrounding properties. If the profits Kingman Associates III

expected to generate have not materialized, then they made a bad investment. This burden should not be shared by the homeowners of Granite Bluffs in any way, whether by rezoning or any other scheme Kingman Associates III may think up in the future.

We do our part as should they.

Daniel and Drusilla Bloodworth

2257 Caprock ave

Rich Ruggles

From: Tinnell, Virlynn <VTinnell@courts.az.gov>
Sent: Monday, March 07, 2016 2:07 PM
To: Rich Ruggles
Subject: Zoning Notice - Granite Bluffs III

Mr. Ruggles,

Although I will be unable to attend the Planning and Zoning Commission meeting scheduled for tomorrow night, I am in hopes that this email will be considered and made a part of the record.

I have been a resident in Kingman for about thirty-eight years. About twelve years ago my husband and I decided to buy a new house. We did EXTENSIVE research on the many areas of Kingman to determine where we wanted to buy our dream home. After carefully considering our many options and doing due diligence in ascertaining CC&Rs and the zoning surrounding the areas we were interested in, we decided on the master planned Granite Bluffs area.

Since our purchase in 2007, numerous proposals have come before the Planning and Zoning Commission and even the City Council to consider rezoning the area known as Granite Bluffs III. Like surrounding home owners, the owners of that property purchased the property as it is currently zoned. We all relied on the recorded plat map when we made our purchase showing that any buildings would be residential, R-1-10, and conform to the neighborhood. Allowing the developer to do anything other than R-1-10 residential housing will devalue our homes and the area in general.

There is much speculations about why this is on the agenda, but it sounds like a performance bond by the developers is at stake. Returning the entire parcel back to open acreage because they did not perform as they had agreed should not be detrimental to surrounding property owners.

Again, I would reiterate my concerns about this proposal as I am vehemently opposed to allowing the property owner to continue to subject others to defend what is right.

Thank you for your consideration and please let me know if you have any questions or concerns.

Sincerely,
Virlynn Tinnell
C - (928) 715-9090
H - (928) 753-4351

PETITION AGAINST THE SUBDIVISION ABANDONMENT CASE SB 16-0001

A request from Kingman Associates Three, LLC, applicant and property owner, for approval of the vacation (abandonment) of **Granite Bluffs III, Tract 1996-A.** The proposal would abandon to acreage an undeveloped residential subdivision consisting of 27 lots and several unimproved public streets located on 8.83 acres. The property is located along the west side of Mission Boulevard, northwest of Granite Bluffs Drive and zoned R-1-10: Residential Single Family, 10,000 square foot lot minimum. The property is further described as Granite Bluffs III, Tract 1996-A, Block1, Lots 1-10, inclusive and 21-24 inclusive, Block2, Lots 1-7 inclusive and Block 3, Lots 1-5 inclusive.

If this abandonment if allowed it will dissolve a well thought out subdivision. The land will be zoned R-1-10, but the abandonment will do away with the covenants, conditions and restrictions which makes Granite Bluffs a premier subdivision offering a unique lifestyle. The well conceived covenants were designed to protect the value of the homes and the interests of current and future owners. Abandoning of the covenants will have a negative impact on homeowners who rely on government to protect their investment and lifestyle

Owners Name Print	Signature	Address	Phone Number	Date
1. ROBERT STEWART		2273 MESA DR		3/2/16
2. RONATTA STEWART	Ronatta Stewart	"		"
3. Terry Lacy		2281 CAPROCK AVE		3/2/16
4. RICHARD L. FUGATE		2284 CAPROCK		3/2/16
5. MIKE LOCKWOOD		2301 CAPROCK		3/2/16
6. Deborah Lockwood		2301 Caprock Ave		3/2/16
7. John Tardiff		2219 Rincon Ave		3/2/16
8. Ellen McDonald	Ellen McDonald	2220 Rincon Ave.		3/2/2016
9. W.D. McDonald		2220 Rincon		3-2-2016

PETITION AGAINST THE SUBDIVISION ABANDONMENT CASE SB 16-0001

A request from Kingman Associates Three, LLC, applicant and property owner, for approval of the vacation (abandonment) of **Granite Bluffs III, Tract 1996-A**. The proposal would abandon to acreage an undeveloped residential subdivision consisting of 27 lots and several unimproved public streets located on 8.83 acres. The property is located along the west side of Mission Boulevard, northwest of Granite Bluffs Drive and zoned R-1-10: Residential Single Family, 10,000 square foot lot minimum. The property is further described as Granite Bluffs III, Tract 1996-A, Block1, Lots 1-10, inclusive and 21-24 inclusive, Block2, Lots 1-7 inclusive and Block 3, Lots 1-5 inclusive.

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Owners Name Print	Signature	Address	Phone Number	Date
10 John Marzley	John Marzley	2287 Mesa Drive		3/2/16
11 Karen Marzley	Karen Marzley	2287 Mesa Dr		3/2/16
12. Carla Trotter	Carla Trotter	2273 Caprock		3/2/16
13 Perry E Trotter	Perry E Trotter	2273 Caprock		3/2/16
14. Thomas Atkins	[illegible]	2238 Mesa Circle		3/2/16
15. CATHLEEN ATKINS	Cathleen Atkins	2215 Mesa Dr.		3/2/16
16. KATHY L. SMITH	Kathy L Smith	2249 MESA CIRCLE		3/2/16
17. KEITH A SMITH	Keith A Smith	2249 MESA CIRCLE		3/2/16
18.				

I PETITION AGAINST THE SUBDIVISION ABANDONMENT CASE SB 16-0001

A r 'equest from Kingman Associates Three, LLC, applicant and property owner, for approval of the vacation (abandonment) of **Granite Blu ıffs III, Tract 1996-A**. The proposal would abandon to acreage an undeveloped residential subdivision consisting of 27 lots and sev 'eral unimproved public streets located on 8.83 acres. The property is located along the west side of Mission Boulevard, northwest of Gra ınite Bluffs Drive and zoned R-1-10: Residential Single Family, 10,000 square foot lot minimum. The property is further described as (Granite Bluffs III, Tract 1996-A, Block1, Lots 1-10, inclusive and 21-24 inclusive, Block2, Lots 1-7 inclusive and Block 3, Lots 1-5 incl lusive.

If t his abandonment if allowed it will dissolve a well thought out subdivision. The land will be zoned R-1-10, but the abandonment will do away with the covenants, conditions and restrictions which makes Granite Bluffs a premier subdivision offering a unique lifestyle. The well conceived covenants were designed to protect the value of the homes and the interests of current and future owners. Ab andoning of the covenants will have a negative impact on homeowners who rely on government to protect their investment and life style

	Owners Name Print	Signature	Address	Phone Number	Date
20.	ROBERT TINNELL		2228 RINCON, KGM		3/3/16
21.	VIRLynn Tinnell		2228 Rincon. Kingman		3/3/16
22.	Paul KIRKWOOD		2210 Rincon-KGM		3/3/16
23.	Eloise Lee	Eloise Lee	2206 Mesa Drive		3/3/16
24.	STEVE LEE		2206 MESA DRIVE		3/3/16
25.	Travin Pennington		2247 Mesa Drive		3/3/16
26.	Julie Pennington		2247 mesa Dr		3/3/16
27.	Alexander Muchow		2242 Mesa Dr		3/3/16
28.	Heidi Lambert		2265 MESA Dr.		3/3/16
29.					

CITY OF KINGMAN
COMMUNICATION TO COUNCIL

TO: Honorable Mayor and Common Council

FROM: Gary Jeppson, Development Services Director

MEETING DATE: April 5, 2016

AGENDA SUBJECT: Consideration of initiating a Zoning Ordinance text amendment to permit storage containers in the C-2 Zoning District

---

SUMMARY:
The staff has received comments concerning the current prohibition of permitting storage containers in the downtown area, as well as in other areas of the City that are zoned "C-2". Other C-2 zoned areas are along Stockton Hill Road, east of Rancho Santa Fe, east of Kingman Crossing, the west side of Bank Street and other areas in the City. Currently, *the Zoning Ordinance of the City of Kingman* permits storage containers in the industrial zoning districts and in the C-3 Zoning District. To ascertain whether the current zoning regulations on this matter is in conformance with Council desires or whether the Council desires to permit storage containers in the downtown area and other C-2 Zoned areas, this item has been placed on the agenda to allow the Council to provide direction to staff on this matter.

If initiated, the Planning and Zoning Commission could hold a public hearing on May 10th and the City Council could hold a public hearing on June 7th and consider an ordinance.

FISCAL IMPACT:
$1300 in publication costs.

STAFF RECOMMENDATION:
Council direction.

ATTACHMENTS:

Description

Drafter Text Amendment

REVIEWERS:

Department	Reviewer	Action	Date
Development Services	Jeppson, Gary	Approved	3/29/2016 - 7:26 PM
City Attorney	Cooper, Carl	Approved	3/31/2016 - 6:23 PM
City Manager	Dougherty, John	Approved	3/29/2016 - 8:01 PM

26.000 GENERAL DEVELOPMENT STANDARDS

26.820 SECURE STORAGE UNITS, CARGO, FREIGHT, OR OVERSEAS CONTAINERS

A. Are permitted in the **C-2, Commercial: Community Business and** C-3: Commercial, Service Business zoning districts under the following conditions:

   1. These units are to be located to the rear of the building on the property and screened from view from any street by an eight-foot high sight-obscuring fence or building.

   2. The maximum size of these units is eight feet by forty feet (8' x 40'). The number of these units shall be limited to one (1) per acre or fraction thereof.

   3. The units shall not be stacked.

B. Are permitted in the I-1: Light Industrial and I-2: Heavy Industrial zoning districts under the following conditions:

   1. These units are to be screened from view of the street by either an eight-foot (8') high sight-obscuring fence or a building that is at least eight-feet high.

   2. The maximum size of these units is eight feet by forty feet (8' x40').

   3. The units shall not be stacked.

   4. The number of these units shall be limited to one (1) per 4,000 (four thousand) square feet.

C. Secure storage cargo, freight, or overseas container units are expressly prohibited in all residential and Recreational Open Space zoning districts.