CITY COUNCIL REPORT

Meeting Date: April 21, 2015
General Plan Element: ***Public Services and Facilities***
General Plan Goal: ***Provide city service facilities to meet the needs of the community***

ACTION

Potential General Obligation Bond Program. Discussion and possible direction to staff on establishing a General Obligation Bond Program for the City of Scottsdale.

BACKGROUND

The purpose of this Work Study Session is to continue discussion from the March 2, 2015 meeting on the subject of evaluating a potential General Obligation bond program to be held in 2015 or some future year.

At the March 2, 2015 Work Study session, a majority of Council members recommended that the city consider preparing for a bond election. During the discussion, however, no consensus on the proposed date of the election or the composition of the bond program was reached. Council directed staff to schedule an additional Work Study session and to provide more detailed information concerning the 34 potential bond projects presented at the meeting. In addition, Council requested a better understanding of staff prioritization of the projects. Since that discussion in March, staff has compiled more detailed descriptions of each project, prioritized the 34 projects in order and prepared supplemental information to assist in the Council deliberation process.

ANALYSIS & ASSESSMENT

Recent Staff Action

To respond to the requests made by Council at the March Work Study session, staff has prepared the following additional information in the categories noted below:

Additional Project Detail

To prepare for the Work Study Session, Capital Project Management staff reached out to city departments represented in the bond program to prepare additional information for each of the projects and to provide supporting data such as pictures or other evidence of need for the project. This data was compiled into a master project book and formatted for legibility and usefulness for Council. In the process of

evaluating each project in detail, staff also modified the descriptions and titles of the projects to provide a better understanding of the project's purpose to those not familiar with the technical terminology used to describe the projects originally.

Project Prioritization

Capital Project staff evaluated each of the 34 projects based on criteria identified in the city's Capital Improvement Program and as recommended by ICMA. That criteria is used each year to evaluate new capital project requests for the Capital Improvement Plan and represents a consistent methodology for ranking the proposed bond projects. The criteria includes:

1. Annual Recurring Costs
2. Health and Safety Effects
3. Community Benefits
4. Distributional Effects
5. Project Feasibility
6. Implication of Deferring the Project
7. Mayor and City Council's Broad Goals

A more detailed description of each of the criteria is provided in the supplemental materials.

Additional Projects

During the Work Study session in March, Council suggested that some categories of projects might not be properly represented in the list of 34 projects prepared by staff. As a result, staff has provided summary information on an additional 31 projects that are considered important but not a current priority. These projects have not been analyzed at the detail level of the original 34 projects but could be considered for acceleration in the city's infrastructure plan if Council deems it appropriate. Those additional 31 projects with brief descriptions have been provided as supplemental information to this report. If Council deems any of these additional projects to be potential bond program candidates, staff would provide an additional detailed analysis, including updated project budgets, by the time of the next action of Council on a potential bond program.

Community Involvement

During its deliberations in 2012 and 2013, the Bond Task Force sought public input on the proposed program through multiple methods including rotating locations for public meetings, website detailing the projects, press releases, social media and presentations to community groups. The extensive body of work the Bond Task Force captured is in a report dated February 12, 2013 and is available for review at the following web address: http://www.scottsdaleaz.gov/Assets/Public+Website/Capital+Projects+(Construction)/2013+Bond+Task+Force/2013Recommendations.pdf.

Should Council choose to call an election for a bond program, City staff will be limited to only disseminating factual information concerning the program and will be prohibited from taking a

position either supporting or opposing the bond program.

Council Direction

Council should consider the following questions during the Work Study session to provide direction to staff to continue progress on a potential bond program:

- When should the election be held (November of 2015, 2016, later)?
- What projects should be included in the program?
- How should those projects be grouped for the purposes of election questions?
- How should those projects be presented to the electorate in ballot questions?

Should Council provide direction to staff to continue work on a bond program election to be held in 2015, the next step will be for the Council to consider an action to call the election. The action would be brought back to Council in late May or early June. As part of that action, draft ballot language and a proposed breakdown of the projects by question would be prepared by staff consistent with Council direction.

If Council chooses to delay a bond election until a future year, staff will suggest alternatives to continue work to develop the program.

Significant Issues to be Addressed

In determining the composition of a bond program, Council may consider issues such as the need for reinvestment in the City's infrastructure, the availability of reinvestment capital funds from other sources, the amount of bond debt both currently and resulting from a new issuance, the impact on the City's bond rating, the impact on residents' and businesses' property tax levy and the potential success of the ballot questions.

In terms of what year to hold the election, Council may consider issues such as:

- Number of other election issues held concurrent with the bond program (federal, state, county, city, school district) and the potential length of the ballot.
- Voter turnout.
- Cost of the election in either a standalone year or concurrent with other elections.
- Expectations of the residents and whether the election might be successful in any given year.
- Urgency for the bond program and immediacy of the infrastructure funding needed from the program.

RESOURCE IMPACTS

Available funding

The estimated cost for the election is $500,000 if Council decides to hold it in 2015.

Staffing, Workload Impact

Implementation of the bond program will utilize existing city staff for management of the projects and issuance/monitoring of new bond issuances.

OPTIONS & STAFF RECOMMENDATION

Proposed Next Steps:

Dependent on the direction provided by Council, staff will continue work on the required steps to implement the program and return at a later date with the appropriate actions required.

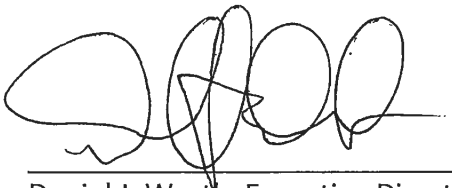
RESPONSIBLE DEPARTMENT(S)

Public Works Division, Capital Project Management

STAFF CONTACTS (S)

Derek Earle, City Engineer, dearle@scottsdaleaz.gov

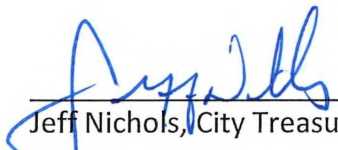
APPROVED BY



4-7-15

Daniel J. Worth, Executive Director, Public Works — Date

(480) 312-5555, dworth@scottsdaleaz.gov



4/7/15

Jeff Nichols, City Treasurer — Date

(480) 312-2364, jenichols@scottsdaleaz.gov

4/7/15

Fritz Behring, City Manager — Date

(480) 312-2364, fbehring@scottsdaleaz.gov

ATTACHMENTS

1. Detailed analysis of projects

Jagger, Carolyn

From: Earle, Derek
Sent: Monday, April 20, 2015 6:17 PM
To: City Council
Cc: Behring, Fritz; Jagger, Carolyn; Washburn, Bruce; Nichols, Jeff; Worth, Daniel; Lipinski, Dave; Walsh, Erin; Murphy, Bill; Basha, Paul; Rodbell, Alan - 855; Shannon, Thomas - FD263; Hartig, Brad
Subject: Results from Council review of Bond Program projects ***CORRECTED RESULTS***
Attachments: Corrected City Council Ranking of Proposed Bond Projects.pdf; Corrected City Council Ranking of Additional Bond Projects.pdf

Mayor Lane and Members of Council:

Upon close examination of the transcription of the survey results to spreadsheet format, several errors were noted in the data that was transmitted to you in my email earlier in the day. I apologize for any confusion this may have caused in your review of the results. Please use these updated reports and discard the previous sheets that were sent earlier. I have repeated the original email transmittal below for your information.

Again, please accept my apologies and appreciation through this somewhat complex process.

Derek

Mayor Lane and Members of Council:

Thank you for taking time to fill out the surveys concerning the proposed bond program projects. I am pleased to report that staff received 100% participation from Council members. I realize this took a lot of your time to review and rank the projects as well as to review the extensive detailed backup that staff prepared. Our hope is that this advance preparation will facilitate the discussion on Tuesday evening and allow Council to focus the conversation around the most important issues to be resolved concerning the bond program.

As promised, I have attached the "raw" results of the surveys that were completed. A few thoughts that might be helpful concerning the information in the attachments:

- Note that the projects are still listed in the order that they were originally presented to Council on March 2nd (#1 through #34) which is also the same order as listed in the project detail book.
- A numerical value has been attached to your response as follows:
  - ***SHOULD*** be part of the bond program = 2
  - ***COULD*** be part of the bond program = 1
  - ***SHOULD NOT*** be part of the bond program = 0
- The "mean" is the mathematical average of the rankings calculated by totaling the numerical responses and dividing by 7.
- The "mode" is the numerical ranking that received the most responses; for example, if 4 council members ranked a project as "Could be a Bond Project" (or 1), the mode would be equal to 1.
- IN ORDER TO AVOID VIOLATING THE OPEN MEETING LAW PLEASE DO NOT DISCUSS YOUR RANKINGS WITH OTHER COUNCIL MEMBERS PRIOR TO THE WORK-STUDY SESSION.

Staff will prepare some additional analysis of the results and present that at the Work-Study session Tuesday evening.

Thank you again for your assistance.

Derek Earle
City Engineer
City of Scottsdale
(480) 312-2776

#	City Council Ranking of **Proposed Bond Projects**	Project Cost	Mean	Mode	Klapp	Korte	Lane	Littlefield	Milhaven	Phillips	Smith	Sum
1	Renovate the Vista del Camino Park/Indian Bend Wash area from McKellips Rd. to Thomas Rd.	$ 18,500,000	1.857	2	2	2	2	2	2	1	2	13
2	Upgrade chemical treatment systems in four city aquatic facilities	$ 3,500,000	2.000	2	2	2	2	2	2	2	2	14
3	Install energy-efficient sports field lighting at four facilities	$ 4,600,000	1.429	1	1	2	1	1	2	1	2	10
4	Replace aging restrooms, maintenance and storage buildings at four city parks	$ 3,400,000	1.714	2	2	2	2	2	2	0	2	12
5	Replace outdated irrigation systems	$ 1,900,000	1.571	2	1	2	2	2	2	0	2	11
6	Build a new off-leash area at Thompson Peak Park	$ 4,800,000	0.571	0	0	0	1	0	1	0	2	4
7	Replace 140 miles of deteriorated pavement on city streets	$ 12,500,000	1.714	2	2	2	2	2	2	0	2	12
8	Renovate Fire Station 60S (75th Street & Shea Boulevard)	$ 800,000	1.286	1	1	1	1	2	2	0	2	9
9	Design and Build Fire Station 613 (Desert Foothills)	$ 5,100,000	2.000	2	2	2	2	2	2	2	2	14
10	Design and build Fire Station 616 (Desert Mountain)	$ 3,700,000	1.429	2	1	2	1	2	2	0	2	10
11	Relocate Fire Station 603	$ 6,750,000	1.143	2	1	0	1	2	2	0	2	8
12	Expand and renovate the Civic Center Jail and police station	$ 10,100,000	1.571	2	1	2	1	2	2	1	2	11
13	Modify the Police District 4 Station	$ 510,000	1.000	1	1	1	1	1	1	0	2	7
14	Rebuild the public safety vehicle training track	$ 1,700,000	1.286	1	1	1	1	2	2	0	2	9
15	Build a new parking structure in the northeast part of Downtown Scottsdale	$ 13,800,000	0.714	0	0	2	0	0	1	0	2	5
16	Improve and expand regional drainage in the Crossroads East area	$ 13,500,000	1.286	2	2	1	2	0	2	0	2	9
17	Improve flood protection near Indian Bend Road and Lincoln Drive	$ 2,700,000	1.571	2	1	2	2	2	2	0	2	11
18	Improve the intersection of Hayden and Chaparral roads	$ 2,510,000	1.571	2	1	2	2	2	1	1	2	11
19	Leverage matching funds to improve roadways in the Scottsdale Airpark	$ 12,900,000	1.286	2	2	2	2	0	1	0	2	9
20	Build a bridge on Thompson Peak Parkway at Reata Wash	$ 5,200,000	1.143	1	0	1	1	1	1	2	2	8
21	Widen Happy Valley Road from Pima Road to Alma School Road	$ 4,830,000	1.571	2	2	2	2	2	1	0	2	11
22	Improve Miller Road from Pinnacle Peak Road to Happy Valley Road	$ 8,900,000	1.143	1	1	1	2	0	1	1	2	8
23	Widen Alma School Parkway from Jomax Rd to Pinnacle Vista	$ 5,900,000	1.143	1	1	1	1	2	1	0	2	8
24	Improve 98th Street north of McDowell Mountain Ranch Road	$ 1,700,000	1.000	0	0	2	2	0	1	0	2	7
25	Improve the intersection of 56th Street and Pinnacle Vista Drive	$ 700,000	0.857	0	0	1	2	0	1	0	2	6
26	Improve Highland Avenue intersections at Scottsdale Road and Goldwater Boulevard	$ 2,100,000	1.429	2	1	2	2	2	1	0	2	10
27	Improve and Repair Sidewalks in Downtown Scottsdale	$ 4,000,000	1.857	2	2	2	2	2	1	2	2	13
28	Leverage grant money to add paths and trail connections	$ 2,630,000	1.143	2	0	2	2	1	1	0	2	8
29	Add bike lanes on McDowell Road	$ 3,100,000	1.286	2	2	2	2	0	1	0	2	9
30	Build a new multiuse path under Shea Boulevard at 124th Street	$ 600,000	1.143	2	0	1	2	2	1	0	2	8
31	Build a new mutliuse path between Horizon Park and Stonegate Equestrian Park	$ 3,100,000	0.714	0	0	1	1	0	1	0	2	5
32	Replace energy control systems at five city buildings	$ 1,500,000	1.571	2	1	2	2	2	2	0	2	11
33	Improve WiFi in public buildings	$ 470,000	1.429	1	1	2	2	1	1	1	2	10
34	Purchase disaster recovery technology infrastructure	$ 4,900,000	1.286	1	1	2	1	1	1	1	2	9

Key: Should Be a Bond Project = 2, Could be a Bond Project = 1, Should NOT be a Bond Project = 0

#	City Council Ranking of **Additional Projects**	Project Cost	Mean	Mode	Klapp	Korte	Lane	Littlefield	Milhaven	Phillips	Smith	Sum
A1	Civic Center Mall (West Entry Improvements and Master Plan)	$ 4,600,000	0.714	0	0	1	0	0	1	1	2	5
A2	Civic Center Library Phase II	$ 4,700,000	1.000	1	1	1	1	0	1	1	2	7
A3	Scottsdale Center for the Performing Arts	$ 4,300,000	1.000	1	1	2	1	0	1	0	2	7
A4	Scottsdale Stadium Infrastructure Improvements	$ 1,400,000	0.571	0	0	2	0	0	1	0	1	4
A5	Community Services Tech. Imp. - Library Update	$ 540,000	0.857	1	1	2	1	0	1	0	1	6
A6	George "Doc" Cavalliere Park Phase II	$ 10,247,000	0.429	0	0	0	1	0	1	0	1	3
A7	Replacement of Cactus Aquatic and Fitness	$ 20,963,000	0.143	0	0	0	0	0	0	0	1	1
A8	Replace FS604	$ 5,750,000	0.429	0	1	0	0	0	1	0	1	3
A9	OSHA Compliance	$ 4,640,000	0.571	1	1	0	1	0	1	0	1	4
A10	Training Yard Expansion	$ 120,000	0.429	0	1	0	0	0	1	0	1	3
A11	District 3 Remodel	$ 9,736,000	0.429	0	1	0	0	0	1	0	1	3
A12	Rawhide Wash	$ 16,000,000	0.571	1	1	0	1	0	1	0	1	4
A13	73rd Place and Northern Storm Drain:	$ 1,400,000	0.571	1	1	0	0	0	1	1	1	4
A14	Neighborhood Stormwater Management Improvements (3 projects)	$ 1,750,000	0.286	0	0	0	0	0	1	0	1	2
A15	McDowell Rd. & IBW Pedestrian Overlooks	$ 996,000	0.571	0	0	2	0	0	1	0	1	4
A16	Downtown Wayfinding and Pedestrian	$ 4,440,000	0.857	1	0	2	1	0	1	1	1	6
A17	Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak Rd Phase II	$ 2,630,000	1.000	1	1	1	2	0	1	1	1	7
A18	Pima Rd: Pinnacle Peak Rd to Happy Valley Rd	$ 6,850,000	0.714	0	0	1	2	0	1	0	1	5
A19	Carefree Highway: 60th Street to Scottsdale Road	$ 3,430,000	0.857	1	1	1	2	0	1	0	1	6
A20	Legacy Dr: Hayden Rd to 88th St, between water campus	$ 5,190,000	0.571	0	0	0	2	0	1	0	1	4
A21	Miller Rd/SR-101L Underpass	$ 6,000,000	1.143	1	1	2	2	0	1	1	1	8
A22	Frank Lloyd Wright Blvd – Loop 101 Traffic Interchange	$ 2,560,000	1.286	1	1	2	2	1	1	1	1	9
A23	Pima Road: Dynamite Boulevard to Stagecoach Pass	$ 16,240,000	0.286	0	0	0	0	0	1	0	1	2
A24	Scottsdale Road: Pinnacle Peak to Jomax	$ 4,070,000	0.714	1	1	0	2	0	1	0	1	5
A25	Shea Auxiliary Lane From 90th St to Loop 101	$ 2,740,000	1.143	1	1	2	2	0	1	1	1	8
A26	Pima Road: Happy Valley Road to Dynamite Boulevard.	$ 10,180,000	0.571	0	0	0	2	0	1	0	1	4
A27	Scottsdale Road: Jomax to Dixileta Dr	$ 4,070,000	0.571	1	1	0	1	0	1	0	1	4
A28	Scottsdale Road: Dixileta Dr to Ashler Hills Dr	$ 4,070,000	0.571	1	1	0	1	0	1	0	1	4
A29	Scottsdale Road: Ashler Hills to Carefree Highway	$ 4,070,000	0.429	0	1	0	0	0	1	0	1	3
A30	Hayden Road Loop 101 Interchange Improvements	$ 5,000,000	0.714	1	1	0	2	0	1	0	1	5
A31	Loop 101 Frontage Rd: Pima Rd/Princess Dr to Hayden Rd	$ 12,000,000	0.429	0	0	0	1	0	1	0	1	3

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Jagger, Carolyn

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To:	City Council
Cc:	Behring, Fritz; Jagger, Carolyn; Washburn, Bruce; Nichols, Jeff; Worth, Daniel; Lipinski, Dave; Walsh, Erin; Murphy, Bill; Basha, Paul; Rodbell, Alan - 855; Shannon, Thomas - FD263; Hartig, Brad
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A7	Replacement of Cactus Aquatic and Fitness	$ 20,963,000	0.143	0	0	0	0	0	0	0	1	1
A8	Replace FS604	$ 5,750,000	0.429	0	1	0	0	0	1	0	1	3
A9	OSHA Compliance	$ 4,640,000	0.571	1	1	0	1	0	1	0	1	4
A10	Training Yard Expansion	$ 120,000	0.429	0	1	0	0	0	1	0	1	3
A11	District 3 Remodel	$ 9,736,000	0.429	0	1	0	0	0	1	0	1	3
A12	Rawhide Wash	$ 16,000,000	0.571	1	1	0	1	0	1	0	1	4
A13	73rd Place and Northern Storm Drain:	$ 1,400,000	0.571	1	1	0	0	0	1	1	1	4
A14	Neighborhood Stormwater Management Improvements (3 projects)	$ 1,750,000	0.286	0	0	0	0	0	1	0	1	2
A15	McDowell Rd. & IBW Pedestrian Overlooks	$ 996,000	0.571	0	0	2	0	0	1	0	1	4
A16	Downtown Wayfinding and Pedestrian	$ 4,440,000	0.857	1	0	2	1	0	1	1	1	6
A17	Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak Rd Phase II	$ 2,630,000	1.000	1	1	1	2	0	1	1	1	7
A18	Pima Rd: Pinnacle Peak Rd to Happy Valley Rd	$ 6,850,000	0.714	0	0	1	2	0	1	0	1	5
A19	Carefree Highway: 60th Street to Scottsdale Road	$ 3,430,000	0.857	1	1	1	2	0	1	0	1	6
A20	Legacy Dr: Hayden Rd to 88th St, between water campus	$ 5,190,000	0.571	0	0	0	2	0	1	0	1	4
A21	Miller Rd/SR-101L Underpass	$ 6,000,000	1.143	1	1	2	2	0	1	1	1	8
A22	Frank Lloyd Wright Blvd – Loop 101 Traffic Interchange	$ 2,560,000	1.286	1	1	2	2	1	1	1	1	9
A23	Pima Road: Dynamite Boulevard to Stagecoach Pass	$ 16,240,000	0.286	0	0	0	0	0	1	0	1	2
A24	Scottsdale Road: Pinnacle Peak to Jomax	$ 4,070,000	0.714	1	1	0	2	0	1	0	1	5
A25	Shea Auxiliary Lane From 90th St to Loop 101	$ 2,740,000	1.000	1	1	1	2	0	1	1	1	7
A26	Pima Road: Happy Valley Road to Dynamite Boulevard.	$ 10,180,000	0.571	0	0	0	2	0	1	0	1	4
A27	Scottsdale Road: Jomax to Dixileta Dr	$ 4,070,000	0.571	1	1	0	1	0	1	0	1	4
A28	Scottsdale Road: Dixileta Dr to Ashler Hills Dr	$ 4,070,000	0.571	1	1	0	1	0	1	0	1	4
A29	Scottsdale Road: Ashler Hills to Carefree Highway	$ 4,070,000	0.429	0	1	0	0	0	1	0	1	3
A30	Hayden Road Loop 101 Interchange Improvements	$ 5,000,000	0.714	1	1	0	2	0	1	0	1	5
A31	Loop 101 Frontage Rd: Pima Rd/Princess Dr to Hayden Rd	$ 12,000,000	0.429	0	0	0	1	0	1	0	1	3

Key: Should Be a Bond Project = 2, Could be a Bond Project = 1, Should NOT be a Bond Project = 0

Proposed Bond Projects

Prepared April 2015

Capital Project Management

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Table of Contents

Project Ranking Criteria

The following ranking criteria are used by city staff on an annual basis for the prioritization of capital improvement projects. The same criteria were used to evaluate the following 34 bond projects.

The seven prioritization criteria are:

1. Annual Recurring Costs - The expected change in operation and maintenance costs. Divisions provide annual estimates of the additional costs or reductions in the operating budget resulting from the new project. Also to be considered are changes in revenues that may be affected by a project. For example, the loss in property taxes incurred when private land is used for a capital project.

2. Health and Safety Effects - This criterion includes health-related environmental impacts like reductions/increases in traffic accidents, injuries, deaths, sickness due to poor water quality, health hazards due to sewer problems, etc.

3. Community Benefits - Economic impacts such as property values, the future tax base, added jobs, income to citizens, changes in business income and the stabilization (or revitalization) of neighborhoods. Such impacts may apply more to capital projects related to growth and expansion than to infrastructure maintenance, although deteriorating structures can adversely affect business. This is also a catch-all criterion for other significant quality-of-life-related impacts such as community appearance, noise, air and water pollution effects, households displaced, damage to homes, effect on commuters, changes in recreational opportunities, etc. This criterion is also an assessment of the extent of public support and interest group advocacy and/or opposition.

4. Distributional Effects - Estimates of the number and type of persons likely to be affected by the project and nature of the impact; for instance, explicit examination of project impact on various geographical areas; on low-moderate income areas; and on specific target groups. Equity issues are central here - who pays, who benefits, and the social goals of the jurisdiction.

5. Project Feasibility - This element is a measure of special implementation problems (i.e., physical or engineering restraints) and compatibility with the General Plan. Project feasibility also includes the amount of uncertainty and risk. For each proposal, each of the criteria will have associated with it some degree of uncertainty as to cost estimates, effect on service quality or impact of new procedures. When substantial uncertainties exist regarding any of the evaluation criteria for any proposal, the city should consider estimating, at least in broad terms, the amount of uncertainty, probability of occurrence and the magnitude of the likely negative consequences. Few cities generate such information but even "educated guesses" are useful here. Another component of this criterion is the possible beneficial/adverse effects on relationships with other jurisdictions or quasi-governmental agencies in the area. Such effects, i.e., waste disposal via landfills in other jurisdictions, are likely to require special regional coordination and could impair the proposal's attractiveness.

6. Implication of Deferring the Project - Deferring capital projects is tempting for hard-pressed governments but an estimate of the possible effects, such as higher future costs and inconvenience to the public, provides valuable guidance in a proposal assessment.

7. Mayor and City Council's Broad Goals - If a capital project directly addresses the Mayor and City Council's broad goals, the relative attractiveness of that project increase.

Staff Ranking of Proposed Bond Projects

1	Renovate the Vista del Camino Park/Indian Bend Wash area from McKellips Road to Thomas Road	$18,500,000
2	Replace 140 miles of deteriorated pavement on city streets	$12,500,000
3	Improve and repair sidewalks in Downtown Scottsdale	$4,000,000
4	Upgrade chemical treatment systems in four city aquatic facilities	$3,500,000
5	Replace aging restrooms, maintenance and storage buildings at four city parks	$3,400,000
6	Design and build Fire Station 613 (Desert Foothills)	$5,100,000
7	Install energy-efficient sports field lighting at four facilities	$4,600,000
8	Improve and expand regional drainage in the Crossroads East area	$13,500,000
9	Leverage matching funds to improve roadways in the Scottsdale Airpark	$12,900,000
10	Replace outdated irrigation systems	$1,900,000
11	Design and build Fire Station 616 (Desert Mountain)	$3,700,000
12	Widen Happy Valley Road from Pima Road to Alma School Road	$4,830,000
13	Add bike lanes on McDowell Road	$3,100,000
14	Build a bridge on Thompson Peak Parkway at Reata Wash	$5,200,000
15	Improve Highland Avenue intersections at Scottsdale Road and Goldwater Boulevard	$2,100,000
16	Improve the intersection of Hayden and Chaparral roads	$2,510,000
17	Replace energy control systems at five city buildings	$1,500,000
18	Purchase disaster recovery technology infrastructure	$4,900,000
19	Expand and renovate Civic Center Jail and police station	$10,100,000
20	Improve WiFi in public buildings	$470,000
21	Relocate Fire Station 603	$6,750,000
22	Widen Alma School Road from Jomax Road to Pinnacle Vista	$5,900,000
23	Build a new multiuse path under Shea Boulevard at 124th Street	$600,000
24	Rebuild public safety vehicle training track	$1,700,000
25	Renovate Fire Station 605 (75th. Street and Shea Boulevard)	$800,000
26	Improve flood protection near Indian Bend Road and Lincoln Drive	$2,700,000
27	Modify Police District 4 Station	$510,000
28	Improve Miller Road from Pinnacle Peak Road to Happy Valley Road	$8,900,000
29	Build a new parking structure in the northeast part of Downtown Scottsdale	$13,800,000
30	Leverage grant money to add paths and trail connections	$2,630,000
31	Build a new multiuse path between Horizon Park and Stonegate Equestrian Park	$3,100,000
32	Improve the intersection of 56th Street and Pinnacle Vista Drive	$700,000
33	Build a new off-leash area at Thompson Peak Park	$4,800,000
34	Improve 98th Street north of McDowell Mountain Ranch Road	$1,700,000

Renovate Vista Del Camino Park/Indian Bend Wash Area from McKellips Road to Thomas Road

Estimated Project Cost: $18,500,000

Staff Priority: 1 of 34

PROJECT DETAILS

Project Summary

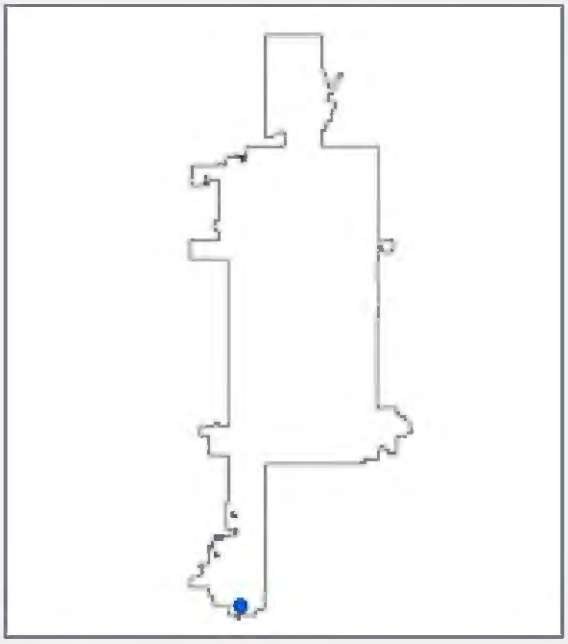
The park was completed in 1975 and much of the 40-year-old infrastructure needs to be improved and upgraded including the turf irrigation system, lakes, multi-use paths, park buildings, ramadas and playgrounds. Updating materials and technologies will lower annual operating cost, enhance water conservation and quality, resolve lake edge erosion and allow more effective use of park open space areas.

Project Cost

Design	$1,480,000
Bond Issuance Cost	$60,000
Construction	$12,400,000
Administration	$2,080,000
Contingency	$2,480,000
Total Cost	$18,500,000

Project Location

This project is located within the Indian Bend Wash between Thomas Road and McKellips Road



ANALYSIS & ASSESSMENT

Background

The Indian Bend Wash Park and Lake system is multi-purpose drainage facility designed to convey flow from the 100-year storm event and provide numerous recreational amenities including parks, golf courses, lakes, ramadas, tennis and basketball courts, baseball fields and playgrounds. The system runs through the heart of Scottsdale from Indian Bend Road to the Salt River, over 11 miles in length. Many of the parks and lakes within the system were constructed in the middle 1970's or early 1980's and thus elements within the parks are in need of upgrades and improvements.
The lake system is showing signs of aging and failure due to the following:

- Existing vegetation has rooted into the lake puncturing the exiting clay liners causing larger than normal water loss from the system.
- The lake edges are eroding causing dangerous conditions adjacent to the multi-use paths.
- The irrigation systems are outdated, undersized and perform inadequately.
- The exiting connector channel system between

park lakes is open and contains eroded banks, sedimentation, high plant growth and decaying pedestrian bridges.

- The spillway structure located just north of McKellips is leaking increasing the water loss from the lake system.

North Lakes (between McDowell and Roosevelt):

The north lakes area currently contains four separate lakes connected by an open drainage swale. The proposed improvements would reshape and expand the most northern lake, fill in the middle lake and combine the southern most two lakes into one large lake. Filling in the middle lake would create a larger turf area in the center of the park. The exiting drainage swale would be replaced by an underground conveyance system increasing the usable space within the parks. The multi-use pathways would be adjusted to accommodate the new lake designs.

South Lakes (between Roosevelt and McKellips):

The proposed improvements will reshape and expand both lakes in the southern area. The exiting drainage swale would be replaced by an underground conveyance system increasing the usable space within the parks. Also included in the south lake is the reconstruction of the exiting spillway north of McKellips Road.

Park Amenities:

This project includes the reconstruction of the park irrigation system, playground equipment, off-leash area, basketball courts, spray pad, 18-hole Frisbee golf course, 9 ramadas, a restroom building, maintenance compound, and a sand volleyball court.

The project will provide additional turf for recreational activity and possibly an area for sports fields which would ease some of the demand that is currently unmet and adjust the current layout of the disc golf course to improve playability and level of challenge. The renovation project will also replace the aging basketball courts and ramadas which receive daily use by park visitors.

Safety

The renovation will address the following safety issues:

- Relocate the multi-use path, which during flood events is not usable, eliminating transportation to work and/or school for some citizens. The multi-use path will be located to higher ground where possible to help ensure uninterrupted transportation for those that depend on it.
- Eliminate the pedestrian bridges that are deteriorating and having soil erode from the footers of these bridges exposing the footers causing a safety issues.
- Stop erosion along the entire channel, erosion increases each year widening the channels more and more making it harder to enjoy the entire park often times keeping people on one side or the other.
- Replace the existing turf irrigation system, which currently must cross the multi-use path creating a hazard due to wet concrete and address issues bikers currently experience dangerous conditions with water on the path with the leaking dam.

What is the customer experience?

The off leash area and disc golf course are two of the most utilized features at the park and customers request upgrades on a regular basis. Currently the limited flexibility in the irrigation system results in watering schedules that impact volleyball court use, sports field use, and multi-use path users. There are limitations on staking/anchoring which is challenging with large events at the park.

Recent Staff Action

The Parks & Recreation Commission has reviewed this proposed project and is in support of this project at their March 5, 2014 and October 15, 2014 meetings.

Council Goals

The implementation of this project supports the Council Goals: Enhance Neighborhoods and Preserve Meaningful Open Space.

RESOURCE IMPACTS

Operating Cost

There are no ongoing operating costs not currently identified in the budget.

Staffing, Workload Impact

There will be no impact on staffing or workload due to the rehab project.

Maintenance Requirements

There will be no additional maintenance requirements due to the rehab project.

Impact if this project is not implemented

Maintenance of the aging system will continue to increase and the existing safety hazards will not be remedied.

Supplemental Information:

1. Facility Location map
2. Pictures of existing conditions
3. Indian Bend Wash Lakes Study Update: Final Engineering Report

Vista del Camino Park North/Indian Bend Wash Renovations

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Vista del Camino Park South/Indian Bend Wash Renovations

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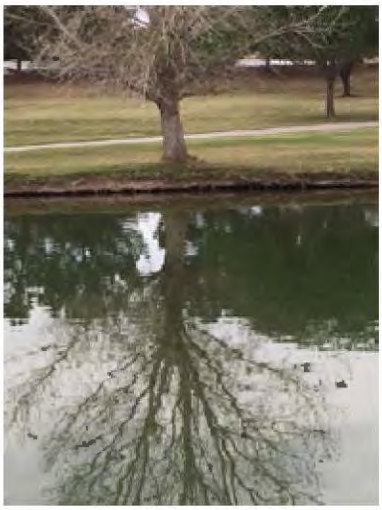
Vista del Camino Park & Lake Pictures



Upgrade Chemical Treatment Systems in Four City Aquatic Facilities

Estimated Project Cost: $3,510,000

Staff Priority: 4 of 34

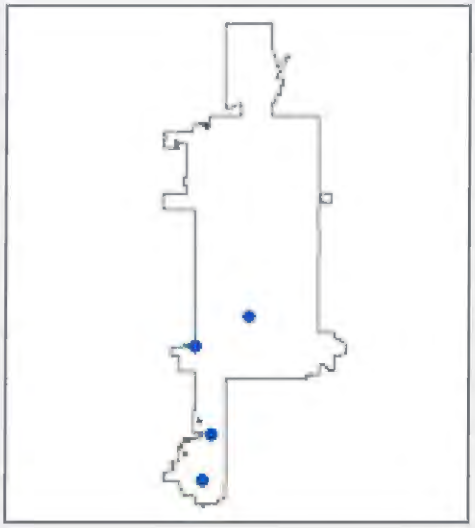
PROJECT DETAILS

Project Summary

Providing on-site chlorine generation systems and ultraviolet treatment will improve safety at these public facilities by eliminating the need for bulk chemical storage and handling hazardous chemicals. The new systems also will provide a safe and consistent disinfectant solution for the public pools. The proposed system is similar in design to those used at city water treatment facilities.

Project Location

McDowell Mountain Ranch Aquatic Center, Cactus Pool, Chaparral Pool & El Dorado Pool



Project Cost

Design	$400,000
Bond Issuance Cost	$60,000
Construction	$2,230,000
Administration	$370,000
Contingency	$440,000
Total Cost	$3,510,000

ANALYSIS & ASSESSMENT

New Technology Available

This project will replace existing chemical treatment systems in the four city Aquatic Facilities with on-site chlorine generation systems and ultraviolet treatment. Ultra-Violet Disinfection neutralizes chlorine-resistant microorganisms, which are common causes of pool closures and would reduce pool users exposure to recreation water illnesses. The system produces UV radiation inside light chambers that disrupt the DNA of microorganisms including viruses and bacterial that are then unable to replicate and remain inert.

On-Site chlorine generation systems will replace the use of hazardous chemicals with rock salt and electricity. This process will have the effect of softening the pool water with the use of traditional water softeners units and then converting the salt through electrolysis to chlorine. These technologies are in use in a variety of installations ranging from residential pools to the City of Scottsdale Water Treatment Facilities.

ANALYSIS & ASSESSMENT

Safety

With on-site chlorine generation, there is no need to transport, store, or handle large volumes of classified hazardous chemicals. This will reduce the risk of staff, guests, and surrounding neighborhoods to possible exposure due to mishandling of chemicals, intentional misuse, or system failures. It would also eliminate the requirement of City reporting and a complicated written program process to three Federal Agencies: the Environmental Protection Agency, Department of Labor - OSHA, and the US Department of Homeland Security.

What is the customer experience?

Pool users will benefit by a reduce risk of recreational water illness along with salt water conversion will reduced eye irritation, no harsh chemical odors and less skin drying and irritation. Citizens will know that the City is choosing a superior chemical treatment system while improving safety and water quality.

Recent Staff Action

Comprehensive Community Services Division Master Plan is underway with completion in May 2015. The Parks & Recreation Commission has reviewed this proposed project and is in support of this project at their October 15, 2014 and February 18, 2015 meetings.

Community Involvement

The system was on display and discussed at the 2/21/2015 City of Scottsdale Science and Technology Fair.

Council Goals

The implementation of this project supports the Council Goals: Enhance Neighborhoods, Preserve Meaningful Open Space and Value Scottsdale's Unique Lifestyle and Character

RESOURCE IMPACTS

Operating Cost

The new technology will greatly reduce the ongoing annual maintenance cost of the pool facilities by a total of $116,500 per year.

Staffing, Workload Impact

There will be no impact on staffing or workload due to the renovations. Current staff will be maintaining the latest in water treatment systems in place of the existing chlorine gas feed and scrubber mitigation systems.

Maintenance Requirements

Currently two FTE maintain the Aquatic Facilities. We do not anticipate a need for additional staff to accommodate the maintenance needs of the new chemical treatment system.

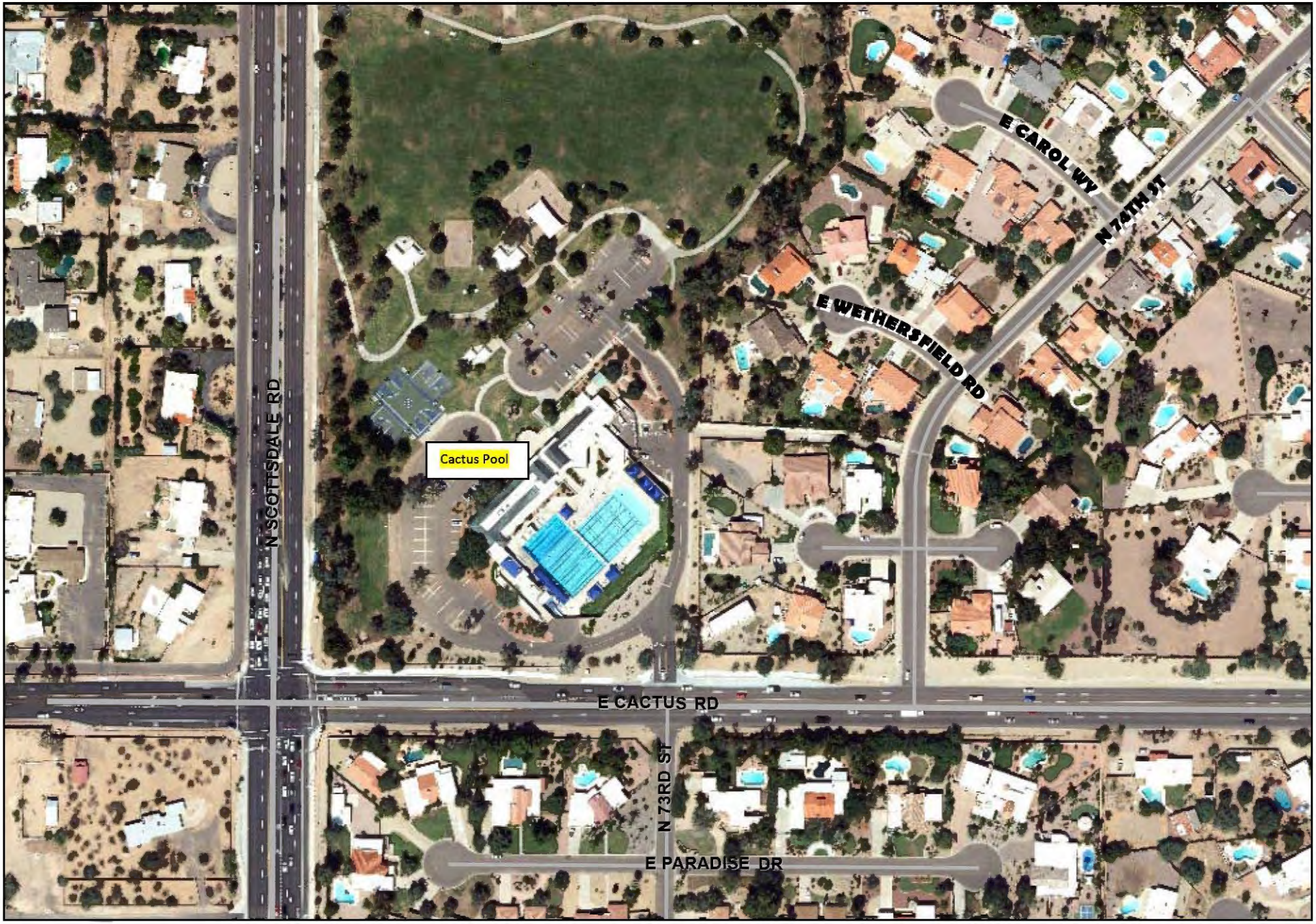
Impact if this project is not implemented

The existing system will continue to be in place and involve transporting, storing, and handling large volumes of classified hazardous chemicals. We will continue to assume the risk of staff, guests, and surrounding neighborhoods to possible exposure due to mishandling of chemicals, intentional misuse, or system failures. It will continue to require the reporting and compliance with three Federal Agencies: the Environmental Protection Agency, Department of Labor - OSHA, and the US Department of Homeland Security.

Supplemental Information:

1. Facility location maps
2. Pictures of existing equipment

Aquatic Chemical System Replacement - Cactus Pool



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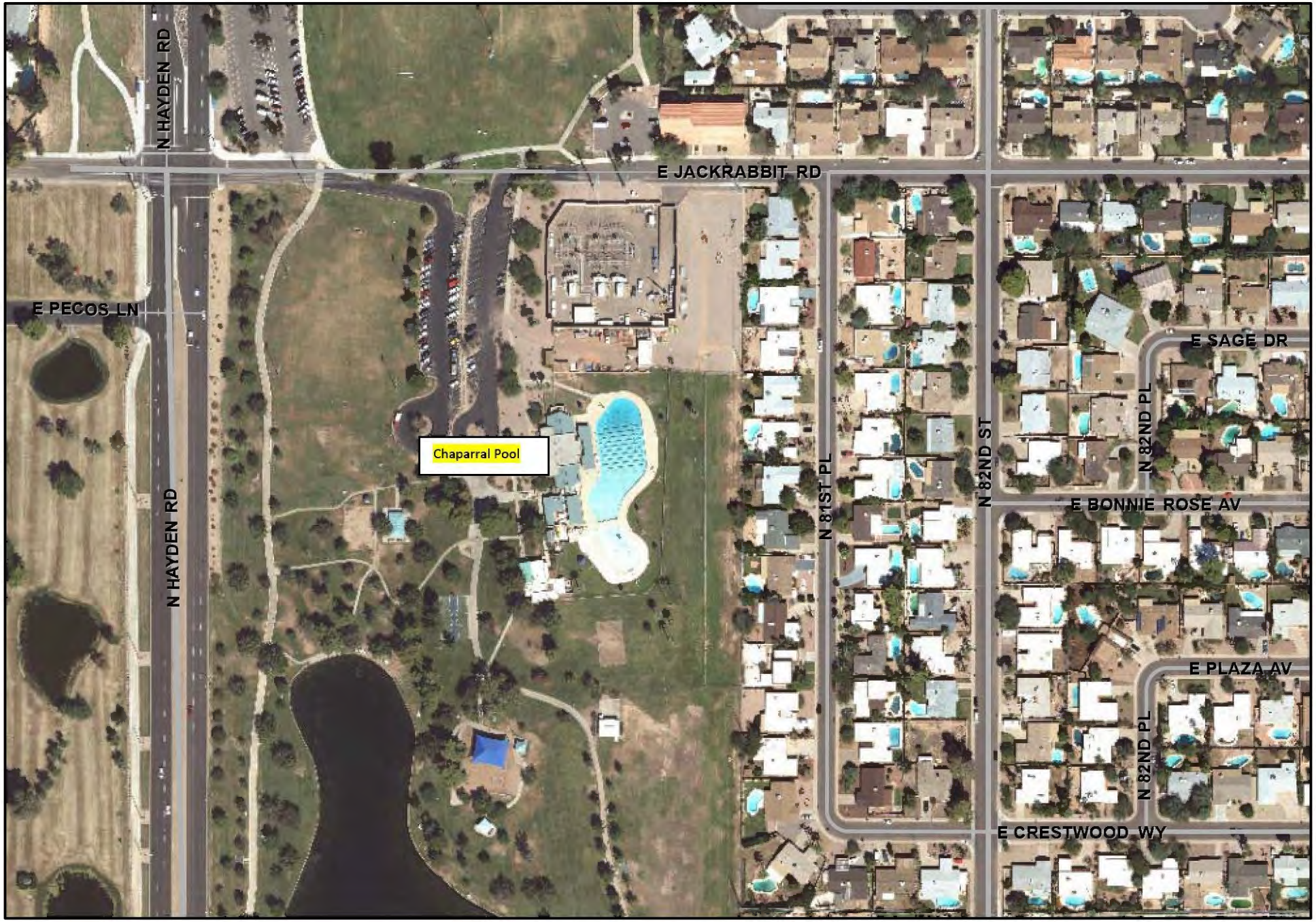
Aquatic Chemical System Replacement - Chaparral Pool



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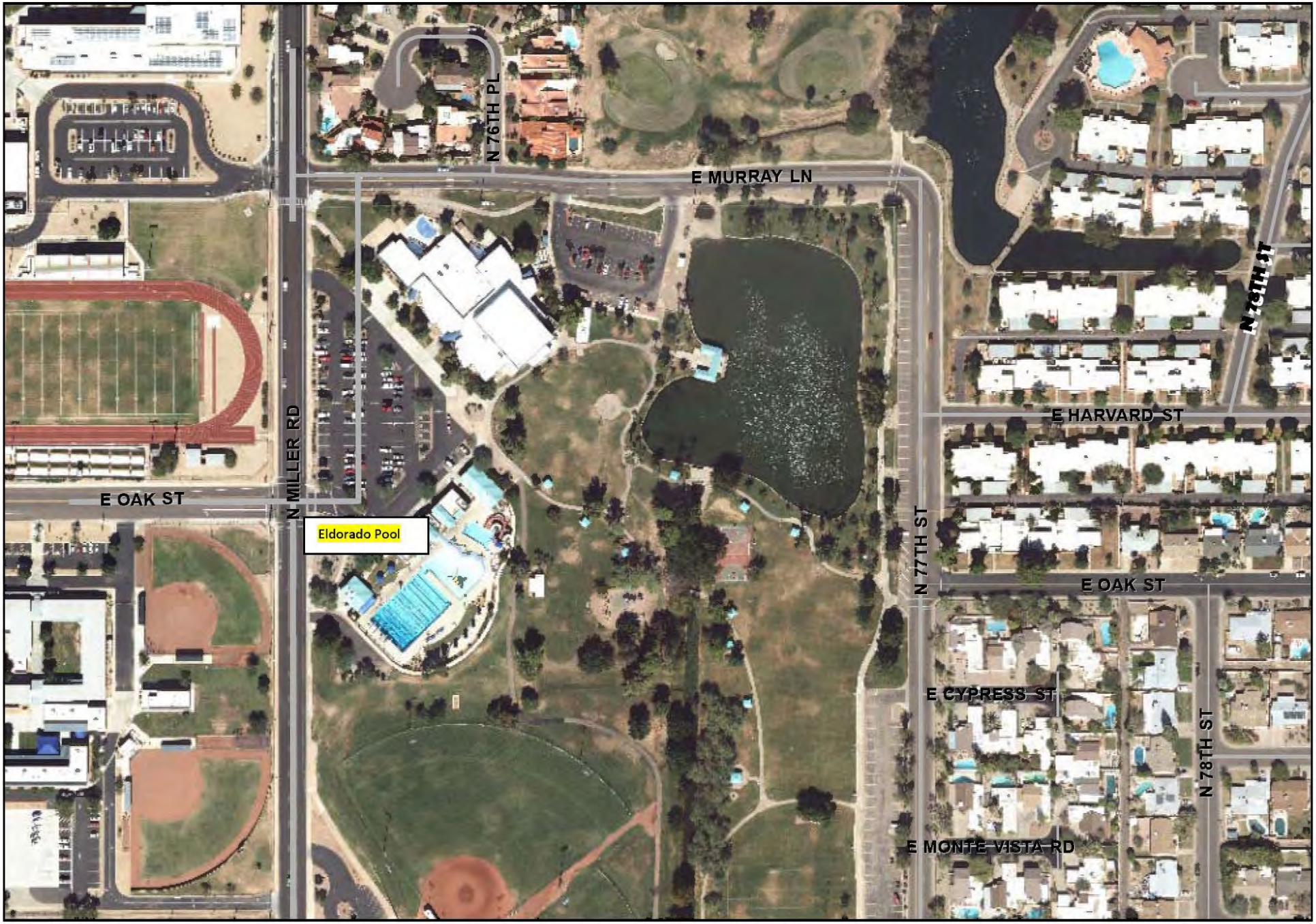
Aquatic Chemical System Replacement - Eldorado Pool



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Aquatic Chemical System Replacement - McDowell Mountain Ranch Pool

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Install Energy Efficient Sports Field Lighting at Four Facilities

Estimated Project Cost: $4,600,000

Staff Priority: 7 of 34

PROJECT DETAILS

Project Summary

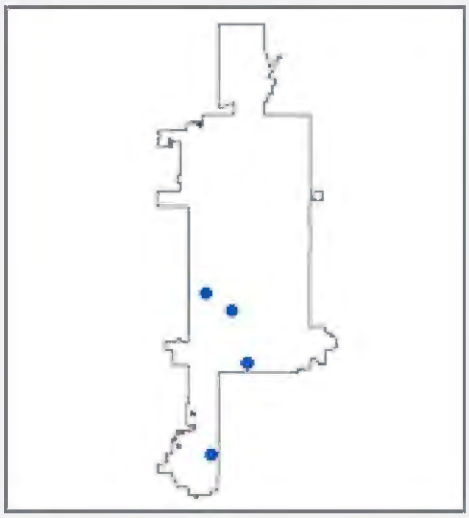
Replace outdated and inefficient ballfield lighting at Horizon Park, Pima School, Laguna School and Scottsdale Sports Complex. The new technology will increase lighting efficient and reduce operating costs while providing the required amount of lighting for community use. The project will also add new lighting to ballfields that are currently unlit, helping meet the continued increase in demand from youth and adult community user groups.

Project Cost

Design	515,400
Bond Issuance Cost	$60,000
Construction	$3,066,600
Administration	$496,000
Contingency	$462,000
Total Cost	$4,600,00

Project Location

Horizon Park, Pima School, Laguna School and the Scottsdale Sports Complex



ANALYSIS & ASSESSMENT

More Efficient Technology Available

Lighting replacement would upgrade outdated and inefficient technology. The new lighting systems will be Musco, Light Structure Green systems. Musco has been providing the City with lighting systems under a sole source contract since 2012 and was most recently installed at the Copper Ridge School.

Revenues

The fields being relit have seen significant increase in use over the past five years. Use has increased 88% at Laguna School and 21% at Pima School. It has been estimated that lighting two additional fields at the Scottsdale Sports complex will add up to 1,000 hours of use per year generating $10,000 in additional revenue.

ANALYSIS & ASSESSMENT

What is the customer experience?

An updated lighting system will enhance the user's experience as well as minimize light spill to neighboring homes or facilities.

Recent Staff Action

The City of Scottsdale has recently completed the first phase of the ballfield lighting efficiency upgrades project. The lighting system on six fields has been replaced at Copper Ridge School.

The Parks & Recreation Commission has reviewed this proposed project on the following dates and is in support of this project : August 6, 2014, August 20, 2014, October 15, 2014 and February 18, 2015.

Council Goals

The implementation of this project supports the Council Goals: Enhance Neighborhoods and Preserve Meaningful Open Space.

RESOURCE IMPACTS

Operating Cost

The new lighting systems are more efficient thus decreasing electrical costs.

Staffing, Workload Impact

There will be no impact on staffing or workload.

Maintenance Requirements

There will be no additional maintenance requirements, 25 year warranty covers the majority of required maintenance.

Impact if this project is not implemented

Due to the failing lighting systems that the City is no longer able to get replacement bulbs for, the fields will be shut down due to a lack of lighting, reducing availability for users and decreasing revenues. Failure to replace these outdated lighting systems will impact the safety and experience of our users and neighboring citizens.

Supplemental Information:

1. Facility location maps

Ballfield Lighting Replacement - Horizon Park

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Replace Aging Restrooms, Maintenance and Storage Buildings at Four City Parks

Estimated Project Cost: $3,400,000

Staff Priority: 5 of 34

PROJECT DETAILS

Project Summary

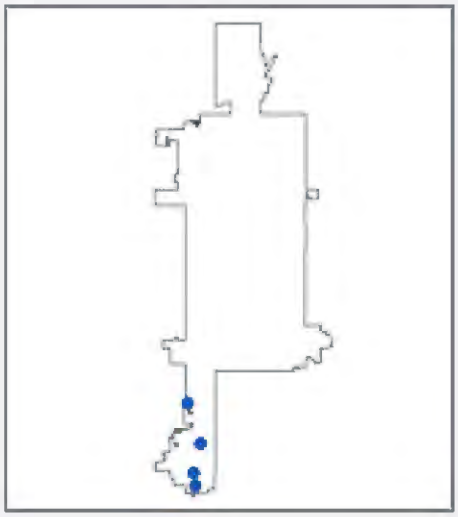
Buildings at Indian School Park, ElDorado Park, Vista del Camino South and McCormick –Stillman Railroad Park are more than 20 years old, past traditional life cycle replacement and do not meet current ADA requirements. The new buildings will house park restrooms, provide storage, and use updated materials and technologies that will help reduce costs, lower water use and save energy.

Project Cost

Design	$390,000
Bond Issuance Cost	$60,000
Construction	$2,157,000
Administration	$362,000
Contingency	$431,000
Total Cost	$3,400,00

Project Location

McCormick Stillman Rail Road Park, Vista del Camino Park, Eldorado Park and Indian School Park



ANALYSIS & ASSESSMENT

New Technology Available

Lighting has become more efficient with LED technology, and the conversion will save energy and reduce heat in buildings. Installation of high efficiency plumbing fixtures and low flow toilets will save water. Compliance with ADA standards will allow us to meet this law.

What is the customer experience?

Input from park patrons highlights regular concerns with ventilation, inefficient facilities, lack of light, clogged toilets and lack of adherence to ADA standards. Customers regularly request more privacy and family restrooms.

Parks and Recreation staff checks restrooms and unclog toilets, calling out maintenance staff to address issues regularly during high use times at the parks.

Compliance with ADA standards and updated, efficient facilities will increase positive perceptions from residents and visitors to our city.

ANALYSIS & ASSESSMENT

Recent Staff Action
This project was reviewed by the Parks and Recreation Commission on October 15, 2014 and February 18, 2015.

Council Goals
The implementation of this project supports the Council Goals: Enhance Neighborhoods, Preserve Meaningful Open Space and Seek Sustainability.

RESOURCE IMPACTS

Operating Cost
The existing facilities are in constant need of repair. New facilities would alleviate the need for constant maintenance, and installation of more energy efficient fixtures will reduce both water and electrical use.

Maintenance Requirements
Installation of energy efficient, updated facilities and fixtures will reduce maintenance time and cost.

Impact if this project is not implemented
Buildings in these parks will continue to deteriorate, resulting in complaints and safety issues.

Supplemental Information:

1. Facility location maps
2. Pictures of existing conditions

McCormick RR Park South Restroom

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City of Scottsdale GIS

Park Building Replacement - Vista del Camino Park South Restroom

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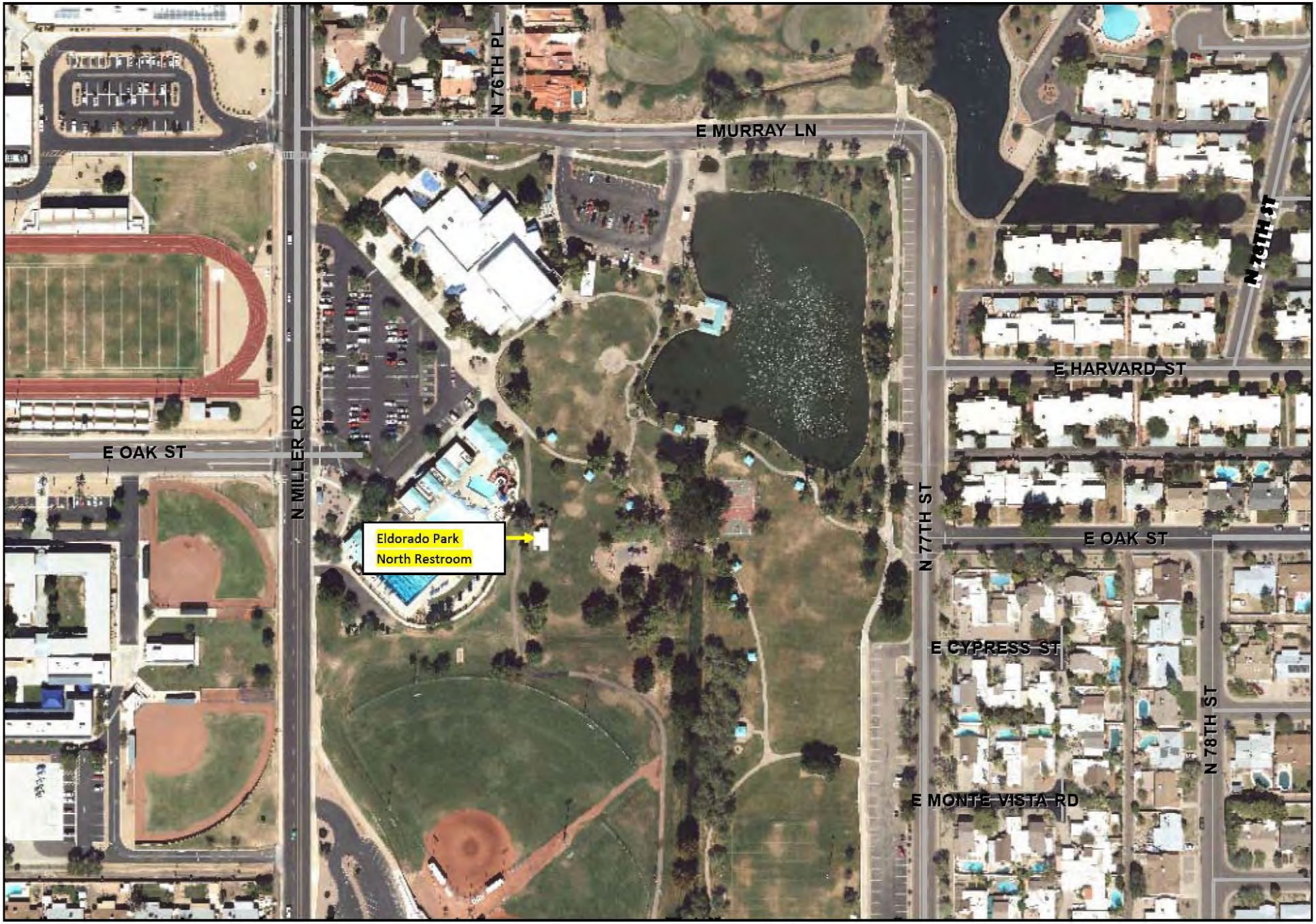
Eldorado Park North Restroom



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Indian School Park South Restroom

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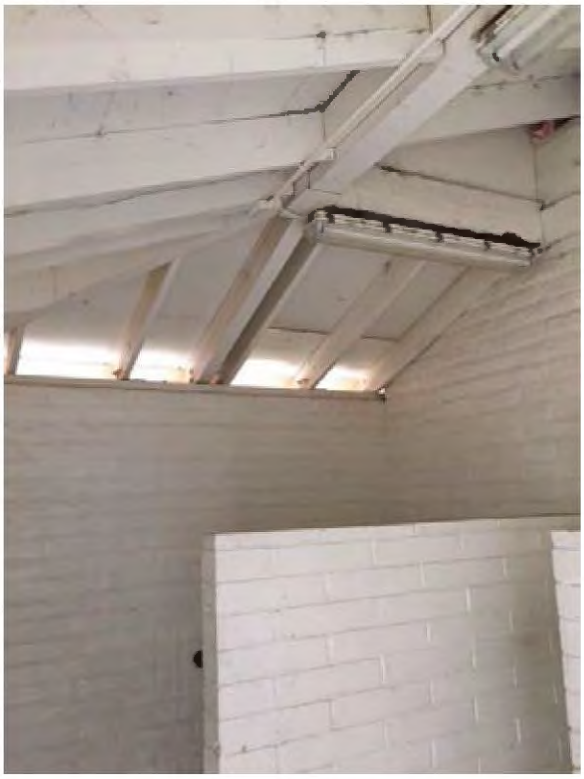
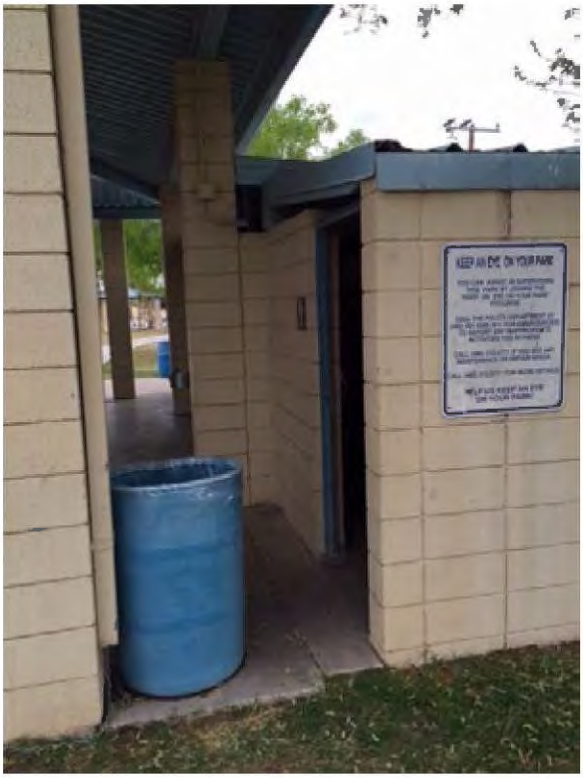


Vista South Restroom Building

Paiute Park Restroom Building



Indian School Park Restroom Building

Replace Outdated Irrigation Systems

Estimated Project Cost: $1,900,000

Staff Priority: 10 of 34

PROJECT DETAILS

Project Summary

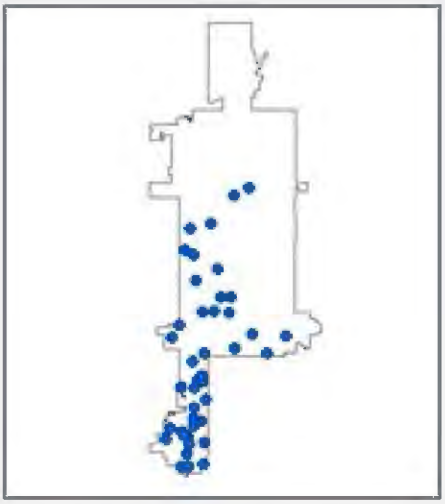
Replacing outdated irrigation systems and control technology used in city parks, medians and rights of way will help reduce costs by lowering water usage and increasing energy efficiency.

Project Cost

Design	$210,000
Bond Issuance Cost	$60,000
Construction	$1,201,000
Administration	$196,000
Contingency	$233,000
Total Cost	$1,900,000

Project Location

Parks and right of way areas throughout the City of Scottsdale.



ANALYSIS & ASSESSMENT

New Technology Available

The current citywide park turf irrigation system runs on its original database technology which is significantly outdated and will no longer be supported by Motorola. The current supporting server is also outdated (running Windows 2003) and will not be supported by Motorola after July 14, 2015. The new technology would allow staff to continue to remotely monitor all watering activities maintaining healthy parks while avoiding over watering.

Safety

This project includes the replacement of all hydrometers, a necessary component of the managing system. The old hydrometers have been experiencing failures during the night which allows water to continue to run even with the system calling for the irrigation line to shut down. This could impact water savings and potentially lead to severe property damage resulting in patron safety hazards.

What is the customer experience?

This project will create less ponding and flooding and help meet the expectation that Scottsdale residents have for well maintained parks that reflects our status as a wold class community.

Recent Staff Action

This project was approved by the Parks and Recreation Commission at the October 15, 2014 meeting.

ANALYSIS & ASSESSMENT

Community Involvement

The Parks & Recreation Commission are given annual updates on the parks water usage, savings and in-house irrigation renovation projects. The current Motorola system with water savings charts was on display at the March 21, 2015 City of Scottsdale Science and Technology Fair.

Council Goals

The implementation of this project supports the Council Goals: Enhance Neighborhoods and Preserve Meaningful Open Space.

RESOURCE IMPACTS

Operating Cost

Due to the age and the condition of the database technology, which is significantly outdated and will no longer be supported, we will no longer have the ability to remotely monitor irrigation programs for the entire park system or have the ability to catch and track failures, which could cause property damage from over watering.

Without the ability to do this remotely, it will require an additional 244 ($6,324) hours per week or 12,688 ($328,872) hours annually to maintain turf quality and will necessitate staff program systems at each site. Irrigation staff is not able to devote man hours to this cause and local park staff will need to complete these tasks taking away from their other responsibilities in our parks including playground safety inspections, sport field preparations, maintenance of ramadas for reservations and trash and litter disposal to name a few.

For 2014 Scottsdale Parks used around 618,241,615 gallons of water at an approximated cost of $1,167,386. Without the remote monitoring, we will not be able to track usage and work towards a goal of saving from the year prior.

Staffing, Workload Impact

There will be no impact on staffing or workload due to the renovations.

Maintenance Requirements

As this is a replacement system, funds have already been allocated for maintenance.

Impact if this project is not implemented

The original Motorola Computerized Control System was fully in place by the end of 2000. Year to date the system has been the backbone for a cumulative water savings of 6,135.22 acre feet of water. This number is relative to the ADWR water allotment assigned to our City Parks.

Without updating the system the City's managing capabilities will no longer exist. Not having a system will create water waste, potential park property damage, reduced turf and plant material quality.

The City will no longer be able to use Central Control System as one of their water management strategies as outlined in the ADWR Turf-Related Facility Conservation Plans.

Build a New Off Leash Area at Thompson Peak Park

Estimated Project Cost: $4,800,000

Staff Priority: 33 of 34

PROJECT DETAILS

Project Summary

This new dog park will include 3.5 acres of developed turf area, three separately fenced and gated areas, parking, restroom and bridge access to the existing park ballfields and amenities.

Project Location

Grayhawk Park on the southwest corner of Thompson Peak Parkway and Hayden Road.

Project Cost

Design	$545,000
Bond Issuance Cost	$60,000
Construction	$3,086,000
Administration	$509,000
Contingency	$600,000
Total Cost	$4,800,000

ANALYSIS & ASSESSMENT

Background

The proposed off-leash area will be modeled after the Chaparral Dog Park and will be divided into three separate sections:

- Sections will be rotated to allow for maintenance and turf repair.
- One section will always be closed for maintenance and turf restoration.
- Two sections will be open the majority of the time with one area designated for Active dogs and another for Passive dogs.

The Off-Leash Area will include turf areas, seating, play features and water fountains. An electronic controlled entry system, like the one used at Chaparral Park, with card reader, could be installed at a cost of approximately $70,000.

The improvements will also include roadway access off of Hayden Road, a parking area, restroom facility and a pedestrian connection over the existing drainage channel to the existing Thompson Peak Park.

Safety

The electronic pass system would control access, ID users, provide info about users, and help identify dogs that are vaccinated.

ANALYSIS & ASSESSMENT

What is the customer experience?

Currently we do not have an off leash area in North Scottsdale designed for use as an off leash area. The facility at Horizon is a storm water retention basin that has been converted to an off leash area.

Recent Staff Action

This project has been reviewed by the Parks and Recreation Commission Meetings in November and December 2006 and October 2008. The Development Review Board approved the park master plan on August 23, 2007.

Community Involvement

Public meetings were held in March, September and October 2006. The project was also reviewed by the Grayhawk Community HOA Board on September 8, 2008. During public meetings for the master plan and first phase of the park the off leash area was the most requested amenity.

Council Goals

The implementation of this project supports the Council Goals: Enhance Neighborhoods and Preserve Meaningful Open Space.

RESOURCE IMPACTS

Operating Cost

The addition of this facility would result in an annual cost of $81,013 and a onetime expenditure of $27,000 for equipment.

The breakdown is as follows:
Staff – $44,183 (Inc. Benefits)
Mowing – $10,135
Fertilizer - $1100
Pre/Post Emergents - $2000
Small Tools - $1695
Contractual Work - $2000
Sod – $4800
Irrigation Heads - $600
Mutt Mitt - $13,500
Trash Liners - $1000
Equipment – JD Pro Gator $27,000 (one time)

Staffing, Workload Impact

The construction of this park would result in one full time employee of a Maintenance Worker 1 $44,183 (inc. benefits) This position would be an addition to the North Area Parks group that is based at Thompson Peak Park.

Maintenance Requirements

The area would be maintained as we would a Service Level Two facility. Staff will be on site each day.

Impact if this project is not implemented

The residents in the area have been very vocal and adamant that this facility should be built. It could also help with the off leash violations we now see in our parks. This is a continual challenge for our field and facility staff.

Supplemental Information:

1. Facility location maps
2. Design Plans

Thompson Peak Park Phase II

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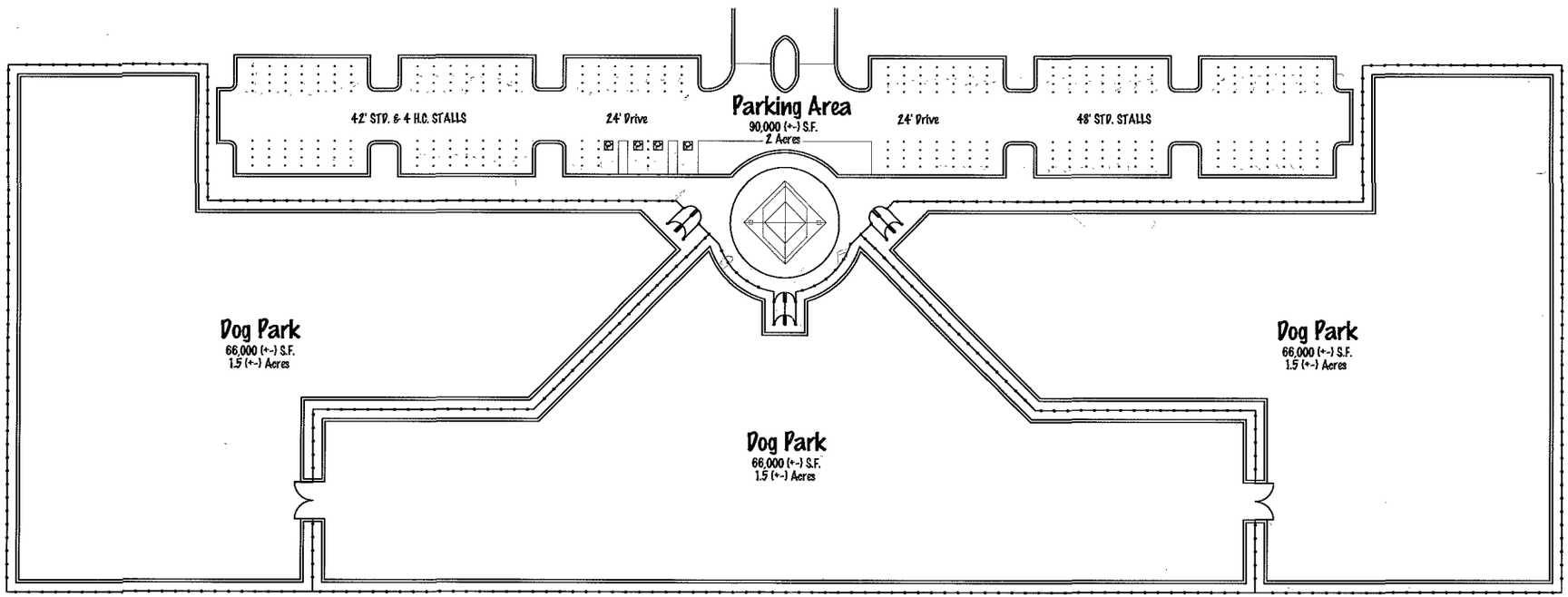
CITY OF SCOTTSDALE
City of Scottsdale GIS


42' STD. & 4 H.C. STALLS
24' Drive
Parking Area
90,000 (+-) S.F.
2 Acres
24' Drive
48' STD. STALLS
Dog Park
66,000 (+-) S.F.
1.5 (+-) Acres
Dog Park
66,000 (+-) S.F.
1.5 (+-) Acres
Dog Park
66,000 (+-) S.F.
1.5 (+-) Acres

1" = 60'

Replace 140 Miles of Deteriorated Pavement on City Streets

Estimated Project Cost: $12,500,000

Staff Priority: 2 of 34

PROJECT DETAILS

Project Summary

This project will repair and repave approximately 140 miles of various local, collector and major streets around Scottsdale that have exceeded their life cycle.

Project Cost

Bond Issuance Cost	$60,000
Construction	$12,440,000
Total Cost	$12,500,000

Project Location

Citywide

ANALYSIS & ASSESSMENT

Background

Annually the City of Scottsdale completes roadway preservation projects to rehabilitate and extend the useful life of the facilities. As a result of the recession, there has been a lack of general fund funding available for roadway rehabilitation. The lack of funding has put the city behind in its ability to keep roadways within their usable life-cycle.

Safety

As roadways deteriorate there is a greater possibility for the creation of potholes and imperfections in the roadway surface that affect driving.

What is the customer experience?

As existing pavements fail, the surface course deteriorates forming cracks and potholes. The new surface will mill off and replace the existing surface creating a quiter, smoother ride.

Recent Staff Action

City staff continue to request and spend money annually to keep up with roadway maintenance.

Council Goals

The implementation of this project supports the Council Goals: Enhance Neighborhoods and Advance Transportation.

RESOURCE IMPACTS

Operating Cost

The roadways included as a part of the pavement replacement program are currently maintained by City staff. The repair of the roadways will decrease the amount of time spent by staff on the repaired sections.

Impact if this project is not implemented

If already failing pavements are not replaced, there is an increase in ongoing maintenance and the roadway will degrade exponentially creating for an uncomfortable, noisy ride.

Renovate Fire Station 605 (75th Street & Shea Boulevard)

Estimated Project Cost: $800,000

Staff Priority: 25 of 34

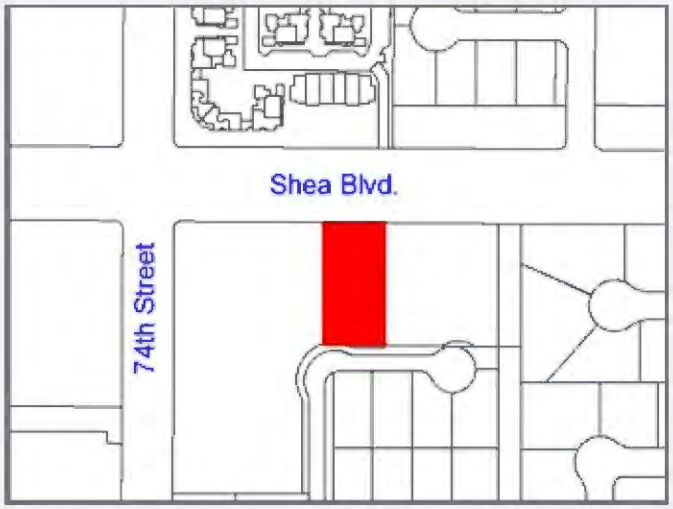
PROJECT DETAILS

Project Summary

Fire Station 605 was built in 1983 and needs extensive remodeling to allow for more efficient use of limited space and improve the bathrooms, locker rooms, bunk rooms, and kitchen. The renovated apparatus bay area also will include an OSHA compliant decontamination room and personal protective equipment storage.

Project Location

75th Street and Shea Boulevard



Project Cost

Design	$87,000
Bond Issuance Cost	$60,000
Construction	$483,000
Administration	$80,000
Contingency	$95,000
Total Cost	$805,000

ANALYSIS & ASSESSMENT

Background

Fire Station 605 was constructed in 1983 and is need of extensive interior remodeling to allow for more efficient use of the limited usable space within the structure.

Safety

The current facility does not have OSHA-certified decontamination area or a storage area for personal protective equipment that meets industry standards as outlined in National Fire Protection Association 1500 and 1851 recommendations.

What is the customer experience?

The current facility is not commensurate with contemporary industry standards or City of Scottsdale employee expectations.

Recent Staff Action

The Scottsdale Fire Department, following the recommendations of COS Audit Report No. 1413, updated their Standard of Coverage and Deployment Plan document by contracting with Emergency Services Consulting International to provide a third-party perspective. The contractual scope of work identified three components to

ANALYSIS & ASSESSMENT

be completed; Standard of Coverage, Facilities Assessment, and Fleet Assessment.

The consultant also hired a third-party architect to work with COS Facility personnel to complete the comprehensive fire facilities assessment. In the executive summary of the 'Fire Station Assessment' specific to FS605, "Scottsdale Fire Station No. 5 was constructed in the 1990's although the exact construction date could not be verified. The fire station floor plan is similar to several other fire stations constructed in Scottsdale between 1990 and 2002. Due to the heavy vehicle volume on Shea Blvd. ingress/egress can be difficult at certain times of the day although emergency apparatus egress was not mentioned as a concern. The facility has undergone minor renovation to include enclosing a Captain Dorm and the addition of a fairly large emergency generator that was relocated from another facility. The facility is functional but does not meet the current standards established by the City of Scottsdale Fire Dept. as is evident in their current fire station designs. Portions of facility meet previous ADA standards but the entire facility is not ADA accessible. Issues of the facility include the lack of private dormitories which compromises the ability for male/female fire personnel; however male/female restrooms are available. The location of the physical fitness equipment, turn-out, laundry and ice storage bin in the apparatus bays does not meet current NFPA 1500 recommendations. Interior finishes are somewhat dated in appearance but in generally good condition. Mechanical systems, (2) 5-ton split systems were functional requiring general maintenance, but the evaporator cooler relief system was not adequate allowing humidified air to enter the living side of the facility through the man-doors. The overall assessment of the facility is fair and replacement/relocation due to facility condition is not presently warranted provided the facility is maintained"

Council Goals

The implementation of this project supports the Council Goal: Enhance Neighborhoods.

RESOURCE IMPACTS

Operating Cost

This is a facility asset staffed 24 hours per day 365 days per year and would be similar in ongoing operation costs of like sized fire stations housing four employees.

Staffing, Workload Impact

There will be no impact on staffing or workload due to the new station.

Maintenance Requirements

This is a facility asset that would fall into their normal and routine periodic maintenance schedule similar to other fire stations of like size.

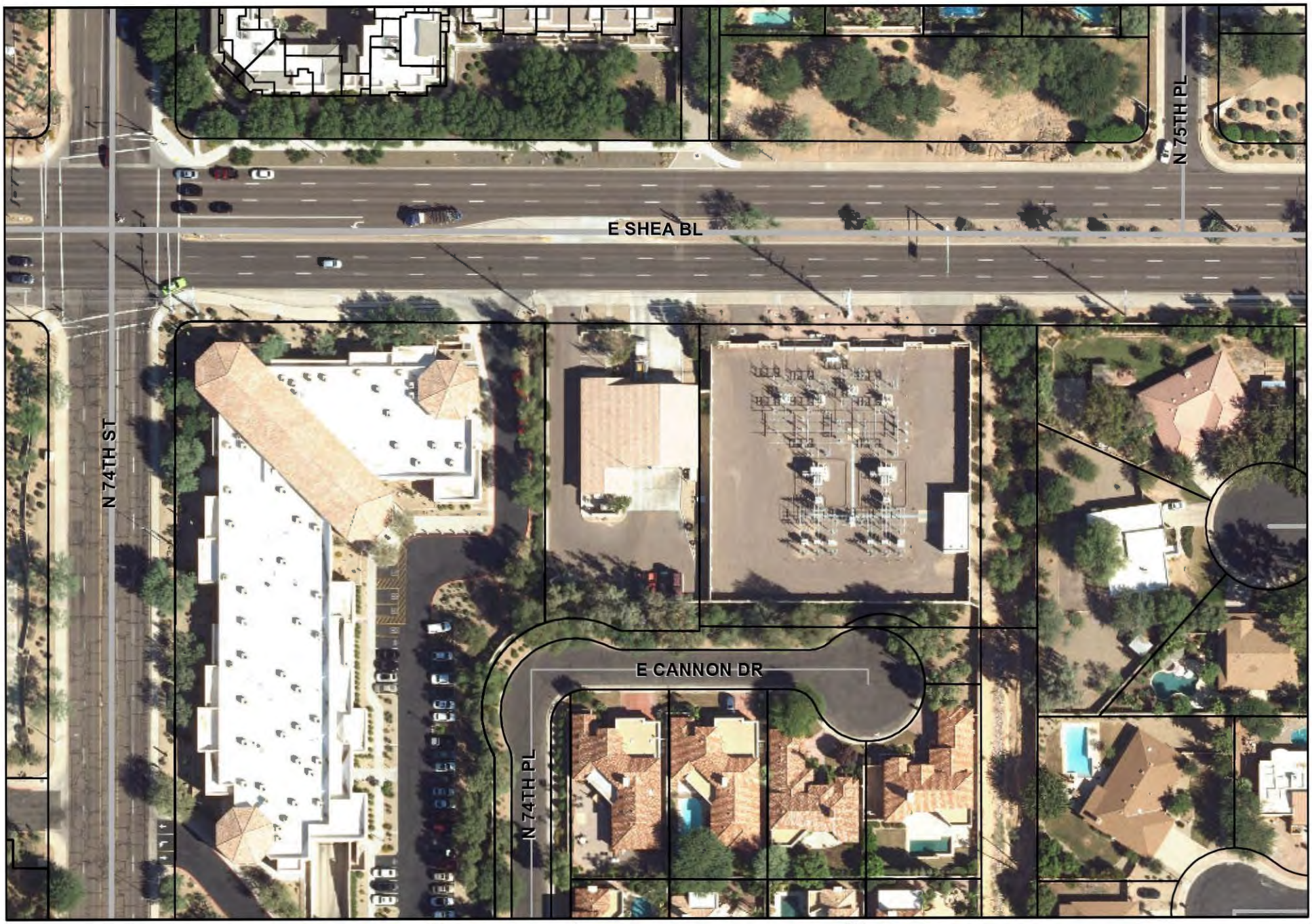
Impact if this project is not implemented

The fire department would continue to house employees and respond to customer needs from the current location; however the station would not meet OSHA and NFPA Standards.

Supplemental Information:

1. Picture of existing facility
2. Facility location maps
3. Design plans


FIRE STATION
Google



dlipinski
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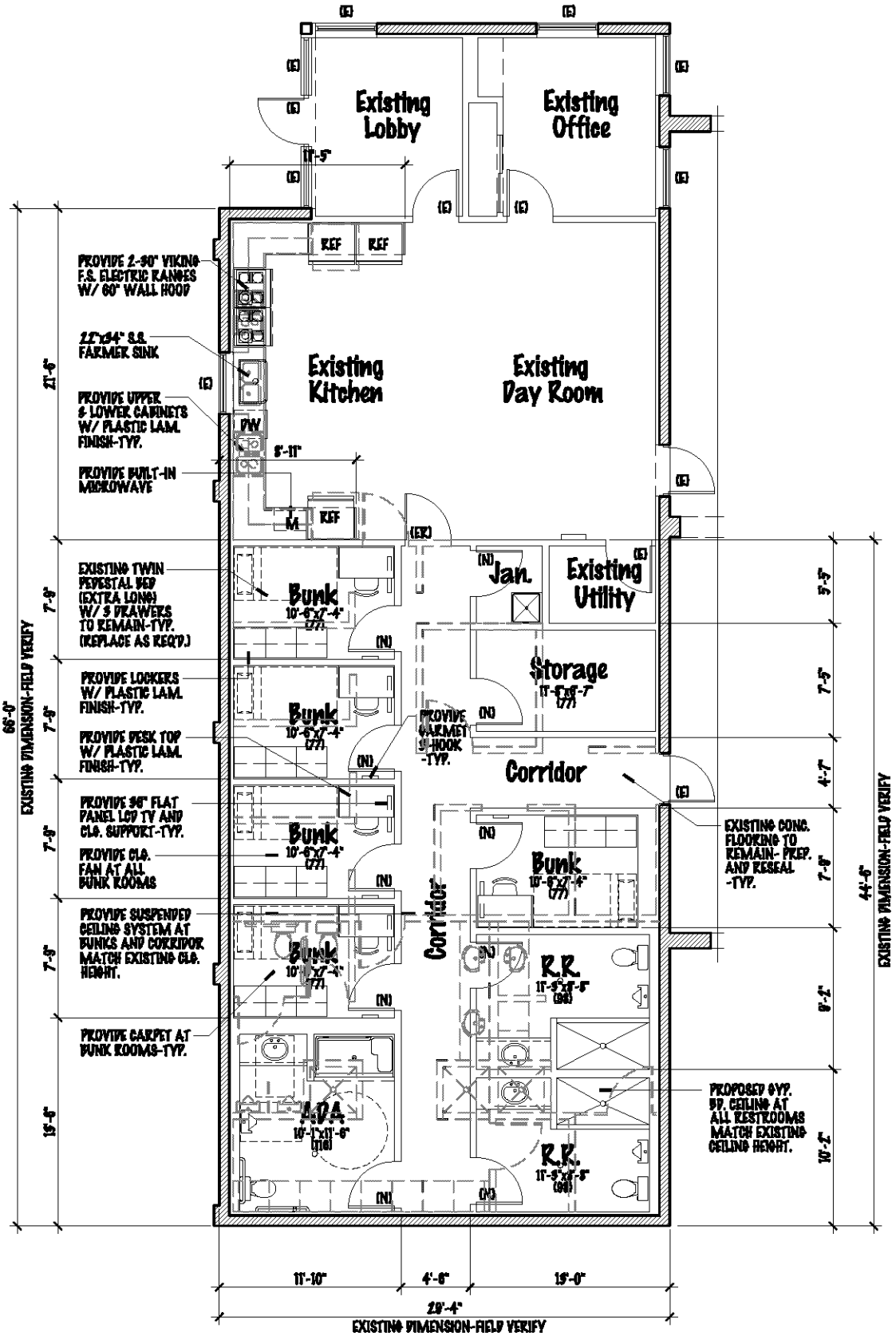
CITY OF SCOTTSDALE
City of Scottsdale GIS



NORTH

City of Scottsdale / Renovation with Demolition

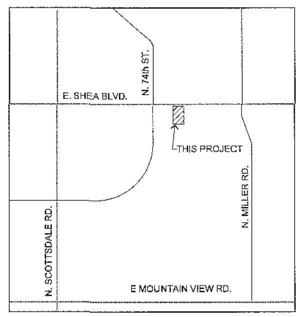
FIRE STATION 605

CONCEPTUAL PLAN

Sheet Number 1

SCALE: N.T.S.

11/14/12



2 VICINITY MAP:
NOT TO SCALE:

PROJECT NAME:
CITY OF SCOTTSDALE - FIRE STATION #605 DISINFECTING FACILITY

PROJECT ADDRESS:
7455 EAST SHEA BLVD. SCOTTSDALE, ARIZONA 85260

PARCEL NUMBER
175-48-001-H

QUARTER SECTION:
28 - 45

SUBDIVISION:
SHEA - SCOTTSDALE

LOT NUMBER:
N/A

ZONING DISTRICT:
S-R SERVICE-RESIDENTIAL

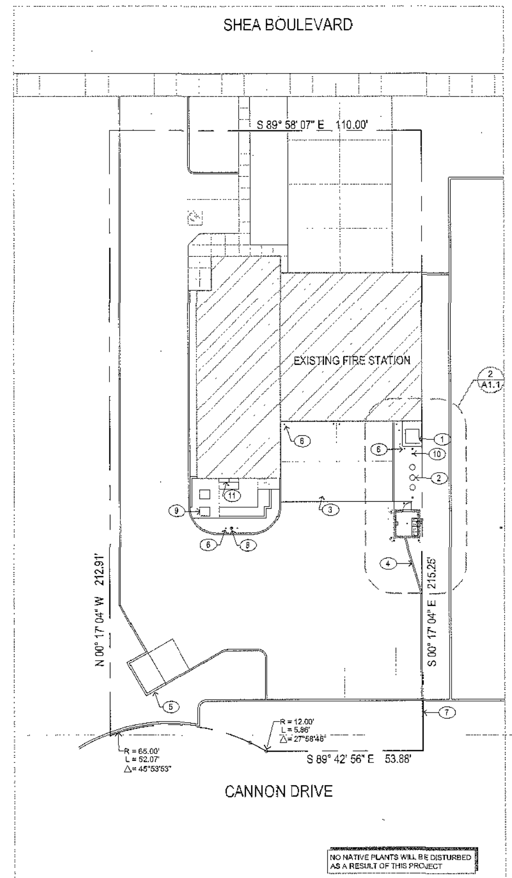
FEMA ZONE:
FLOOD ZONE 'X'

3 PROJECT DATA:

THIS PROJECT CONSISTS OF CONSTRUCTING A 90 SF EXTERIOR WASHING AREA OUTSIDE OF AN EXISTING CITY OF SCOTTSDALE FIRE STATION.

THE CONSTRUCTION WILL CONSIST OF PLACING A CONCRETE PAD WITH FLOOR DRAIN TO THE SANITARY SEWER, 8'-0" HIGH CMU WALLS OPEN TO ABOVE. THE SPACE WILL CONTAIN A SINK, HOSE BIBB AND AND DRYING RACK FOR EQUIPMENT.

4 PROJECT DESCRIPTION:



1. EXISTING EVAPORATIVE COOLER
2. EXISTING SAND/OIL INTERCEPTOR
3. EXISTING 4" CONCRETE PAD ON 4" ABC
4. EXISTING 6" CONCRETE CURB
5. EXISTING REFUSE LOCATION
6. EXISTING BOLLARD
7. PROPERTY LINE
8. EXISTING FIRE HYDRANT
9. EXISTING A/C UNIT
10. EXISTING CLEAN OUT
11. EXISTING SES

1 SITE PLAN:
SCALE: 1" = 20'-0"

0 10 20

PROJECT DIRECTORY:

OWNER:
CITY OF SCOTTSDALE
3839 N. DRINKWATER BLVD.
SCOTTSDALE, AZ 85251
CONTACT: CHUCK SKIDMORE
P. 480.312.7606
F. 480.312.2161

ARCHITECTURAL:
DURKIN + DURKIN LLC
130 NORTH CENTRAL AVE., STE. 203
PHOENIX, AZ 85004
CONTACT. ANDREA LUCARELLI
P. 602.254.8644
F. 602.253.5760

STRUCTURAL ENGINEER:
MOREA-HALL ENGINEERING, INC.
1820 W. MARICOPA FREEWAY
PHOENIX, AZ 85007
CONTACT: HAROLD HALL
P. 602.258.4428
F. 602.340.9053

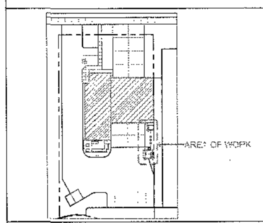
MECHANICAL ENGINEER:
SAGUARO ENGINEERS
12020 N. 35TH AVE, SUITE 111A
PHOENIX, AZ 85029
CONTACT: STANLEY V. FOX
P. 602.870.2018
F. 602.870.5930

ELECTRICAL ENGINEER:
SW ENGINEERING, INC.
426 E. SOUTHERN AVE., STE 102
TEMPE, AZ 85282
CONTACT: RANDY GROTHAUS
P. 480.731.5050
F. 480.731.5353

PROJECT ADDRESS:

FIRE STATION #605
7455 EAST SHEA BLVD.
SCOTTSDALE, ARIZONA 85260

KEY PLAN: NOT TO SCALE



SHEET INDEX:

GOVERNING CODES:

2006 INTERNATIONAL BUILDING CODE (IBC)
2006 INTERNATIONAL MECHANICAL CODE (IMC)
2006 INTERNATIONAL FIRE CODE (IFC)
2006 INTERNATIONAL ENERGY CODE
2005 NATIONAL ELECTRICAL CODE (NEC)
1994 UNIFORM PLUMBING CODE (UPC)

NO	REVISION/ SUBMISSION	DATE

durkin + durkin ARCHITECTS, LLC
130 north central avenue, suite 203
phoenix, arizona 85004
p.602.254.8644
f.602.253.5760

CITY OF SCOTTSDALE FIRE STATION #605 DISINFECTING FACILITY

SITE PLAN / PROJECT DATA

REGISTERED ARCHITECT 35854 THOMAS M. DURKIN Date Signed 05.27.08 ARIZONA U.S.A. Expires 03/31/2010

designed: tmd	project number: 20307
drawn: amf	scale: AS NOTED
checked: alc	drawing number: A1.0
reviewed: ald	
date: 05.21.08	

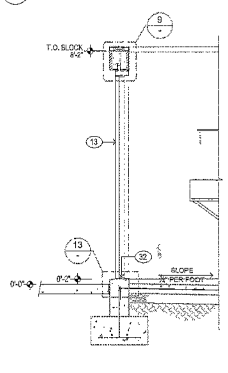
DOOR SCHEDULE

NUMBER	DOOR SIZE	THICKNESS/ MATERIALS	FRAME	HARDWARE SET	REMARKS
D01	3'-0" x 7'-0"	1 ¾" PAINTED H.M. DOOR W/TEMPERED LITE PER ELEVATION (STANDARD SIZE)	PAINTED H.M. MATCH EXIST.	- PASSAGE SET - THRESHOLD - WALL STOP - CLOSURE - WEATHSTRIPPING	- PER CITY OF SCOTTSDALE STANDARDS - *GENERAL NOTE: T = TEMPERED GLASS

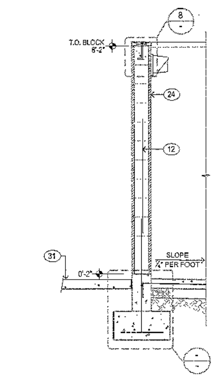
FINISH SCHEDULE

FINISH AREA	MATERIAL	MFG.	REMARKS
FLOOR	POLYAMIDE EPOXY PAINT PER MFG. SPECS.	SHERWIN WILLIAMS (OR APPROVED EQ.)	- PER MFGS. SPECS.
BASE	POLYAMIDE EPOXY PAINT PER MFG. SPECS.	SHERWIN WILLIAMS (OR APPROVED EQ.)	- PER MFGS. SPECS. - EPOXY PAINT EXPOSED STEM
INTERIOR WALLS	POLYAMIDE EPOXY PAINT PER MFG. SPECS.	SHERWIN WILLIAMS (OR APPROVED EQ.)	- PER MFGS. SPECS.
INTERIOR WALL @ SINK	16 GA. S.S. PANELS, FULL HEIGHT OVER ½" PLYWOOD	–	- AT SINK WALL ONLY - SILICONE AT BASE & ALL SEAMS
EXTERIOR WALLS	PAINT OVER CONCRETE BLOCK	SHERWIN WILLIAMS (OR APPROVED EQ.)	- COLOR TO MACH EXISTING FIRE STATION BUILDING

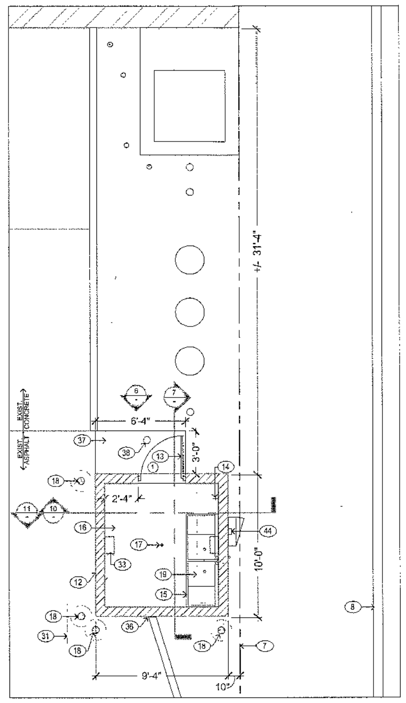
3 DOOR / FINISH SCHEDULE



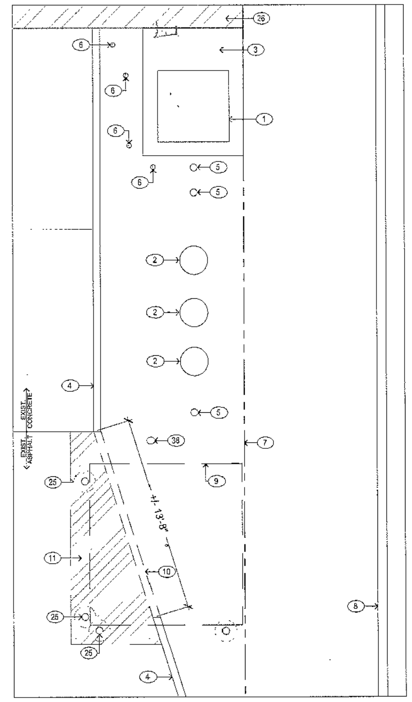
5 SECTION
SCALE: 1/2" = 1'-0"



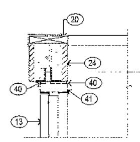
4 SECTION
SCALE: 1/2" = 1'-0"



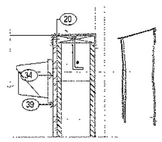
2 PLAN
SCALE: 1/4" = 1'-0"



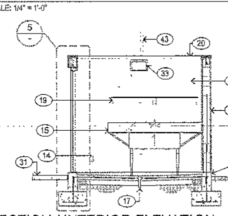
1 EXISTING / DEMO PLAN
SCALE: 1/4" = 1'-0"



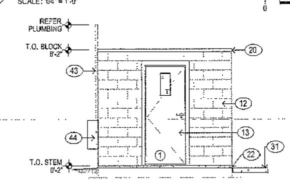
9 DETAIL
SCALE: 1/2" = 1'-0"



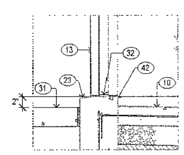
8 DETAIL
SCALE: 1/2" = 1'-0"



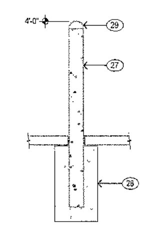
7 SECTION / INTERIOR ELEVATION
SCALE: 1/4" = 1'-0"



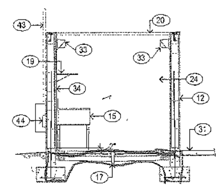
6 FRONT ELEVATION
SCALE: 1/4" = 1'-0"



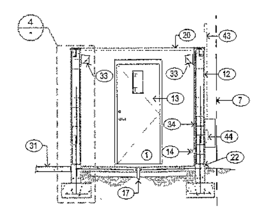
13 DETAIL
SCALE: 1/2" = 1'-0"



12 BOLLARD DETAIL
SCALE: 1/2" = 1'-0"



11 SECTION / INTERIOR ELEVATION
SCALE: 1/4" = 1'-0"



10 SECTION / INTERIOR ELEVATION
SCALE: 1/4" = 1'-0"

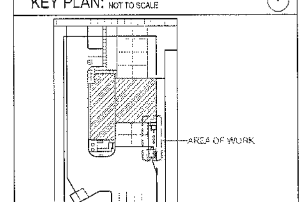
KEY NOTES:

1. EXISTING EVAPORATIVE COOLER TO REMAIN
2. EXISTING SAND/OIL INTERCEPTORS TO REMAIN
3. EXISTING CONCRETE PAD
4. EXISTING 6" CONCRETE CURB
5. EXISTING CLEAN OUT TO REMAIN
6. EXISTING BOLLARDS TO REMAIN
7. PROPERTY LINE
8. EXISTING SITE WALL TO REMAIN
9. LINE OF NEW CONSTRUCTION
10. REMOVE PORTION OF CONC. CURB AS REQ. FOR NEW CONSTR.
11. SAW CUT OUT EXISTING ASPHALT AS REQ. FOR NEW CONSTRUCTION
12. NEW 8" MASONRY WALL W/ PAINTED EXTERIOR PER FINISH SCHEDULE, COLOR TO MATCH EXIST. STATION
13. PAINTED H.M. DOOR (3'-0" x 7'-0"), COLOR TO MATCH EXIST. DOORS
14. HOSE BIBB, REFER PLUMBING
15. NEW S.S. DOUBLE COMPARTMENT SINK (2'-3" x 6'-6"), REFER PLUMBING
16. NEW 4" CONCRETE OVER 4" ABC W/ REINF. PER STRUCTURAL, SLOPE ¼" :12 TO DRAIN, PAINT W/2-PART EPOXY PAINT PER FINISH SCHEDULE
17. NEW 2" FLOOR DRAIN, REFER PLUMBING
18. NEW 6" BOLLARDS (TYP. 4), REFER DETAIL 12/-
19. S.S. WIRE DRYING SHELF (2 - 18" x 36")
20. PAINTED GALVANIZED COPING
21. EPOXY PAINT OVER CONCRETE SLAB, PER FINISH SCHEDULE
22. CONCRETE STEM WITH 2" THRESHOLD
23. SLOPE EXPOSED STEM
24. EPOXY PAINT OVER CONCRETE BLOCK, PER FINISH SCHEDULE
25. SAW CUT OUT EXISTING ASPHALT AS REQ. FOR NEW BOLLARD FOOTINGS/CONSTRUCTION
26. EXISTING FIRE STATION BUILDING
27. 6"Ø STL. PIPE CONCRETE FILLED, PAINT SAFETY YELLOW
28. CONCRETE FOOTING 24" x 36"
29. DOME SHAPED CONCRETE CAP - PAINT
30. NOTE NOT USED
31. PATCH BACK WITH NEW ASPHALT
32. 6" ALUMINUM THRESHOLD
33. WATERPROOF WALL PACK, REFER ELECTRICAL
34. 16 GA. S.S. PANELS, FULL HEIGHT (WALL @ SINK ONLY)
35. LINTEL PER STRUCTURAL
36. PROVIDE ½" EXPANSION BOARD AND CAULK AT JOINT
37. 4" CONCRETE LANDING W/ HEAVY BROOM FINISH
38. EXIST. CLEAN OUT TO BE RECONFIG. AS REQ. FOR NEW CONSTRUC.
39. ½" PLYWOOD
40. CONT. W/ BACKER SILICONE SEALANT
41. PAINTED HM FRAME, SET FLUSH WITH INTERIOR, GROUT SOLID
42. EPOXY PAINTED EXPOSED STEM, PER FINISH SCHEDULE
43. 2" VENT, REFER PLUMBING
44. TANKLESS ELECTRIC WATER HEATER, REFER PLUMBING

PROJECT ADDRESS:

FIRE STATION #605
7455 EAST SHEA BLVD.
SCOTTSDALE, ARIZONA 85260

KEY PLAN: NOT TO SCALE



NO	REVISION/ SUBMISSION	DATE

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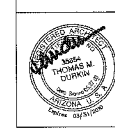
CITY OF SCOTTSDALE FIRE STATION #605 DISINFECTING FACILITY

PLANS / SECTIONS



designed:	bm	project number:	20307
drawn:	ard	scale:	AS NOTED
checked:	ald	drawing number:	A1.1
reviewed:	sd		
date:	05.21.09		

GENERAL STRUCTURAL NOTES

GENERAL STRUCTURAL NOTES AND SPECIFICATIONS
Apply Unless Otherwise Noted on Drawings

DESIGN CODE

2006 International Building Code (I.B.C.)
with City of Scottsdale Amendments

DESIGN LOADS

Wind Load ..... 90 MPH (3 second gust) Exposure C,

Seismic Load ..... Site Class C
Seismic Design Category B

SOIL BEARING

FOOTINGS .....1500 psf at 1'-6" below exist. grade in lieu of Soil Report

1. Finished grade is defined as lowest adjacent grade for exterior ftgs.
2. All footings shall bear on in situ soil.

CONCRETE

CAST-IN-PLACE

1. Mechanically vibrate all concrete.
2. Maximum slump shall be 4 1/2".
3. Minimum specified compressive strength at 28 days shall be 3000 psi (U.N.O.) (Foundation Designed for f'c = 2500 psi).
4. Fly ash ASTM C618 Class F, or Class C. Max. 25% of total cementitious materials by weight.

REINFORCING

1. Deformed bars ASTM A615/A615M (Fy=60 ksi/420 MPa), Grade 60/420, Welded wire fabric ASTM A185.
2. All reinforcing that is welded shall be ASTM A706/A706M.
3. Detailing of all reinforcing and concrete cover shall comply to A.C.I. requirements.
4. Reinforcing lap splices shall be:
   #6 and Smaller ..... 48 x Bar Diameter (U.N.O.)
5. Stagger splices a minimum of 60 bar dia.
6. Provide bent bars at corners and intersections such that they match and lap horizontal reinforcement 2'-0" in each direction (U.N.O.).
7. Lap splices for welded wire fabric shall be wire spacing plus 2".
8. Maintain 3" clear cover below reinforcing in foundations and at unformed sides (U.N.O.).

MASONRY

SPECIFICATION

1. Special inspection required for all masonry specified on the Structural Drawings unless specifically noted otherwise.
2. Hollow concrete units ASTM C90, Type I with a net area compressive strength of 1900 psi.
3. Mortar ASTM C270, cement-lime, Type S, F'c = 1800 psi @ 28 days.
4. Grout ASTM C476, with slump 8" to 11", with corresponding cement to provide a minimum 28 day compressive strength of 2000 psi.
5. Deformed bars ASTM A615/A615M (Fy = 60 ksi/420 MPa) Grade 60/420.
6. Joint reinforcing ASTM A951 galvanized.
   All smooth bars shall conform to ASTM A82.
7. All reinforcing that is welded shall be ASTM A706/A706M.
8. Concrete Masonry Units must be produced by a manufacturer that is in current compliance with the MASONRY INSTITUTE OF ARIZONA Certified Block Program.

VERTICAL REINFORCING

1. All vertical reinforcing shall be continuous thru floor or roof bond beam above.
2. Typical vertical reinforcing shall be #5 bars at 32" O.C. in the center of the wall in solid grouted cells (U.N.O.).
3. In addition to typical reinforcing, and unless noted otherwise on drawings, place 1-#5 vertical at all wall intersections, corners and each side of openings.
4. All vertical jamb reinforcing shall be continuous.
5. Foundation shall have dowels to match and lap ALL vertical wall reinforcing.
6. All walls, in contact with soil, shall be grouted solid.
7. All anchor bolts and anchors shall be installed in solid grouted cells.

HORIZONTAL REINFORCEMENT

1. Minimum 8" deep grouted bond beam with 1-#5 continuous at the top of wall.
2. Stagger splices a minimum of 60 bar diameters.
3. Provide bent bars at corners to match and lap horizontal reinforcement a minimum of 2'-0".
4. Provide galvanized standard truss type, or ladder type with cross rods @ 16"o/c, horizontal joint reinforcement at 16"o/c vertically with 9 ga. rods with 6" minimum laps. Use hot dip galvanized for all exterior masonry walls.

GENERAL MASONRY CONDITIONS

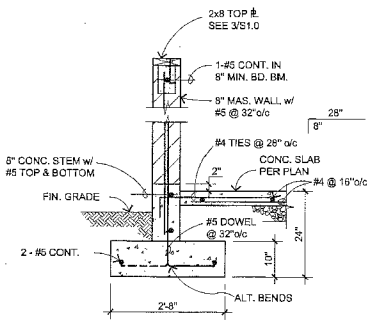
1. Head joints shall be mortared a minimum distance from each face equal to the thickness of the face shell.
2. Prior to grouting, the grout space shall be clean so that all spaces to be filled with grout do not contain mortar projections greater than 1/2 inch.
3. Grout shall be placed so that all spaces to be grouted shall be filled with grout and the grout shall be confined to those specific spaces.
4. The grouting of any section of wall shall be completed in one day with no interruptions greater than one hour.
5. Between grout pours, stop the grout 1 1/2 inches below a mortar joint.
6. Bolts, embeds and reinforcing shall be accurately set prior to grouting and held in place to prevent movement.
7. Maximum vertical grout pour 5'-0" without clean outs, 12'-0" with clean outs (U.N.O.).
8. Grout shall be consolidated full height of pour by mechanical vibration during placing, and re-consolidated before loss of plasticity, in a manner to fill the grout space. The grout pour height shall be limited to the length of the vibrator.
9. All grouted cells (reinforced & not reinforced) shall be mechanically vibrated.
10. Strength and construction of masonry shall be verified per the "UNIT STRENGTH METHOD" of the Building Code.

STRUCTURAL STEEL

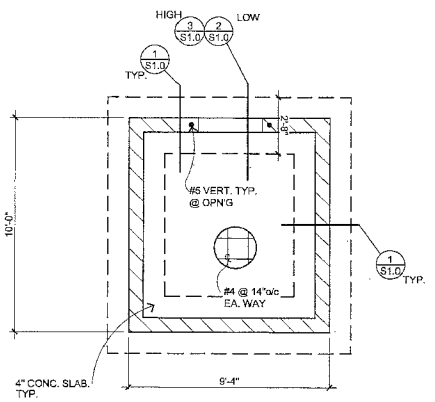
1. All structural steel shapes shall be ASTM A36 Fy = 36000 psi (U.N.O.).
2. All machine bolts (M.B.) shall be ASTM A307 (U.N.O.).
3. All anchor rod and anchor bolts shall be ASTM F1554 Grade 36 (U.N.O.).
4. All construction per latest AISC Steel Construction Manual.
5. All bolts shall be installed with washers. All nuts shall be ASTM A563.
6. All welding per: AWS requirements.
7. All welding electrodes shall be Low-Hydrogen Type.

GENERAL NOTES

1. No Structural Construction REQUIRING Shop Drawings or deferred submittals shall commence prior to review by the Engineer of Record for compliance with design intent. Only Engineer of Record approved shop drawings shall be used during construction in conjunction with approved plans and specifications.
2. The Project Construction Documents consisting of the Structural Drawings and Specifications, represent the finished structure. They do not indicate the method of construction. The Contractor shall provide all measures necessary to protect the structure during construction. Such measures shall include, but not be limited to, bracing sharing for loads due to construction equipment, etc. Observation visits to the site by the Structural Engineer shall not include inspection of the above items.
3. Where reference is made to various test standards for materials, such standards shall be the latest edition and/or addendum.
4. Prior to construction, the Contractor shall verify dimensions and notify Architect/Engineer of any discrepancies in plans.
5. Establish and verify all openings and inserts for Architectural, Mechanical, Electrical and Plumbing with appropriate trades, drawings and subcontractors prior to construction.
6. Radius all exposed corners of concrete slabs, curbs, etc. as directed by the Architect.
7. See Architectural & Civil Plans for location of all depressions, curbs and sidewalks.

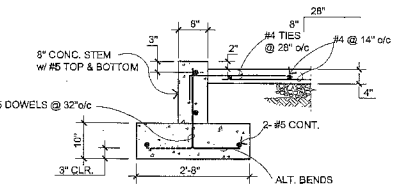


1 S1.0 CONC. STEM @ MAS. WALL
3/4" = 1'-0"



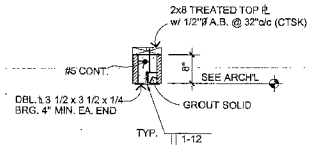
FOUNDATION PLAN

3/8" = 1'-0"



NOTE: SKEW HOOKS FOR 3" CLEAR
FROM SIDES OF FTG. - TYPICAL

2 S1.0 CONC. STEM@ DOOR OPN'G
3/4" = 1'-0"



3 S1.0 STEEL LINTEL @ OPN'G
3/4" = 1'-0"

4272.240

MOREA-HAL
engineering inc
1820 W. Maricopa Freeway
Phoenix, Arizona 85007
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CIVIL • SANITARY • STRUCTURAL • SURVEY

PROJECT ADDRESS:

FIRE STATION #616
9320 EAST CAVE CREEK BOULEVARD
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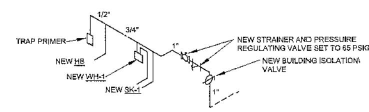
CITY OF SCOTTSDALE FIRE STATION #605 DISINFECTING FACILITY

FOUNDATION PLAN / DETAILS

designed: HEH	project number: 2238
drawn: WRM/E	SCALE: AS NOTED
checked: HEH	
reviewed: HEH	drawing number: S1.0
date: 05.17.06	

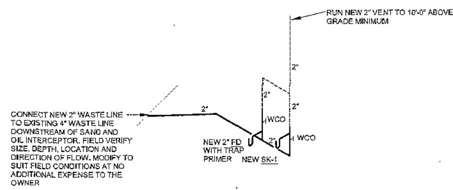
PLUMBING SYMBOL LIST

SYMBOL	ABBREV.	DESCRIPTION
	W	WASTE PIPING
	V	VENT PIPING
	CW	COLD WATER PIPING
	HW	HOT WATER PIPING
	HWR	HOT WATER RETURN PIPING
—F—	F	FIRE SPRINKLER PIPE
		EXISTING TO BE REMOVED
	GPM	GALLONS PER MINUTE
	GPF	GALLONS PER FLUSH
	FS	FLOOR SINK
	FCO	FLOOR CLEANOUT
	SCO	SURFACE CLEANOUT
	WCO	WALL CLEANOUT
SA	SA	SHOCK ABSORBER
	BV	BALL VALVE
	GV	GATE VALVE
	CV	CHECK VALVE
		UNION OR DIELECTRIC UNION
	PG	PRESSURE GAUGE
	P.O.C.	POINT OF CONNECTION
	F.S.R.	FIRE SPRINKLER RISER
	V.B.	VACUUM BREAKER
	A.F.F.	ABOVE FINISH FLOOR
	A.F.G.	ABOVE FINISH GRADE
	B.F.G.	BELOW FINISH GRADE
	"W.C.	INCHES WATER COLUMN



WATER SCHEMATIC

NO SCALE



WASTE AND VENT SCHEMATIC

NO SCALE

POTABLE WATER CALCULATION SITE TO BUILDING

VERTICAL PIPE LENGTH 3 FT.
HORZ. TAP TO METER 8 FT.
HORZ. PIPE METER TO BUILDING 137 FT.
TOTAL PIPE LENGTH. 148 FT.

FITTING 148' AT 30 PERCENT OF TOTAL RUN 44 FT. EQUIVALENT LENGTH

TOTAL DEVELOPED LENGTH 192 FT.

FIXTURE UNITS = 56
PLUMBING FIXTURES 31 GPM

VERTICAL HEAD = 4
(4 FT STATIC LOSS) X 0.43 = 1.7

DEVICE	PSI LOSS
STATIC HEAD	1.7
WATER METER 1-1/2"	2.1
TAP AT MAIN	2.0
MINIMUM REQUIRED RESIDUAL AT BUILDING	8.0
BACKFLOW PREVENTER	N/A PSI
TOTAL LOSS	13.8

90 PSI AT EXISTING HOSE BIBB ON BUILDING

OVER 80 PSI AT BUILDING PRESSURE REGULATOR REQUIRED AT BUILDING

PRESSURE 90
SITE AND BUILDING LOSS 13.8 PSI
DIFFERENCE 76.2 PSI

1-1/4"ø SERVICE REQUIRED TO BOTH BUILDINGS AND IS ACCEPTABLE
1"ø SERVICE REQUIRED TO NEW BUILDING

POTABLE WATER CALCULATION DECONTAMINATION BUILDING

VERTICAL PIPE LENGTH 3 FT.

HORZ. PIPE PRESS. REGULATOR TO LAST FIXTURE 4 FT.
TOTAL PIPE LENGTH. 7 FT.

FITTING 7' AT 30 PERCENT OF TOTAL RUN 2 FT. EQUIVALENT LENGTH

TOTAL DEVELOPED LENGTH 9 FT.

FIXTURE UNITS = 8
PLUMBING FIXTURES 12.8GPM

VERTICAL HEAD = 3
(3 FT STATIC LOSS) X 0.43 = 1.3

DEVICE	PSI LOSS
STATIC HEAD	1.3
FIXTURE	8
TOTAL LOSS	9.3 PSI

REGULATOR PRESSURE 65.0 PSI
BUILDING LOSS 9.3 PSI
DIFFERENCE 55.7 PSI

55.7 PSI / 9 FT. X 100 = 618 MAXIMUM PSI DROP ALLOWABLE PER 100 FT. PIPE LENGTH

PIPE SIZES

SIZE	MAX GPM	NON FLUSH VALVE MAX FU	FLUSH VALVE MAX FU
1/2"ø	5.4	2	–
3/4"ø	12	6.5	–
1"ø	19	32	5

TYPE L COPPER, 8FPS & 64.7 PSI/100' MAX

OVER 80PSI PRESSURE REGULATOR REQUIRED AT BUILDING SET AT 65 PSI

FIXTURE UNIT CALCULATIONS METER TO BUILDING (90 PSIG)

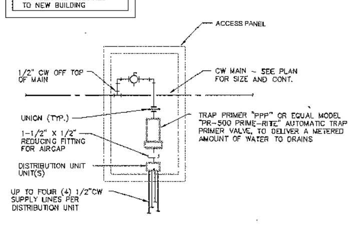
MARK	DESCRIPTION	QTY	FU EACH		SUBTOTAL FU	
			WATER	WASTE	WATER	WASTE
	EXISTING WATER CLOSET - RES.	3	2.2	3	6.6	9
	EXISTING LAVATORY - RES.	3	2	1	6	3
	EXISTING KITCHEN SINK - RES.	1	1.4	2	1.4	2
	EXISTING SHOWER - RES.	3	1.4	2	4.2	6
	EXISTING HOSE BIBB	3	4.0		12	
	EXISTING CLOTHES WASHER - RES.	1	1.4	2	1.4	2
	EXISTING PRIVATE DISHWASHER	1	1.4		1.4	
	EXISTING SERVICE SINK	1	4	2	4	2
	EXISTING EVAP. COOLER	1	1		1	
	EXISTING URINAL	2	5	2	10	4
				TOTAL EXISTING	48	28
SK-1	SINK - PUBLIC	1	4	2	4	2
FD	FLOOR DRAIN	1	–	2	–	2
HB	HOSE BIBB	1	4		4	
	TANK TYPE TOILETS - BASED ON 2006 IPC			TOTAL NEW	8	4
				TOTAL	56	32

FIXTURE CONNECTION SCHEDULE

	DESCRIPTION	TRAP	W	V	CW	HW	MAX FLOW	REMARKS
SK	SINK	2"	2"	2"	1/2"	1/2"	–	
FD	FLOOR DRAIN	2"	2"	2"	1/2"			
HB	HOSE BIBB				3/4"			VACUUM BREAKER

TANKLESS ELECTRIC WATER HEATER SCHEDULE

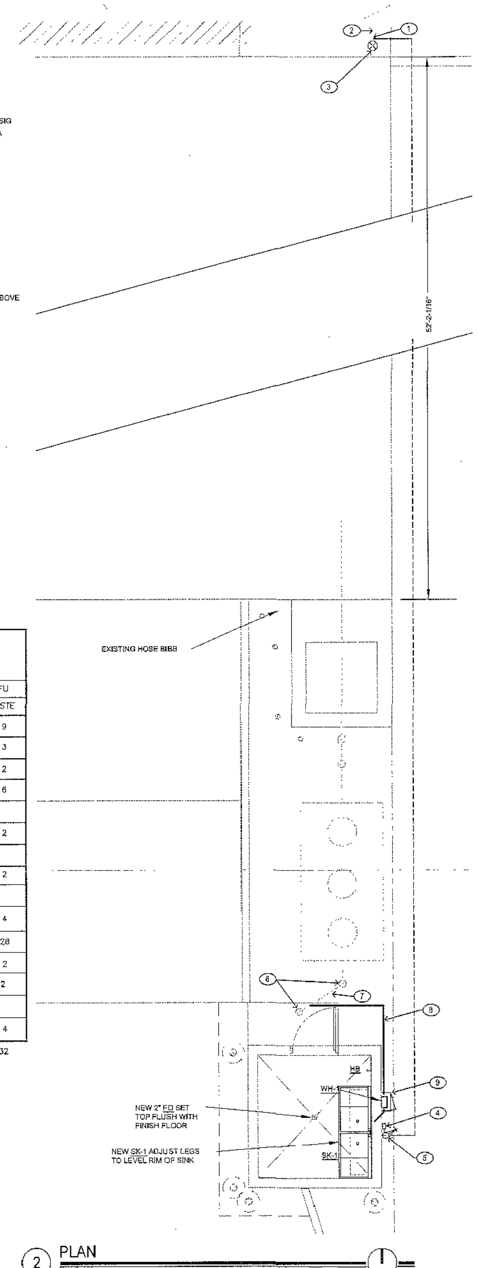
MARK	MANUF.	MODEL	STORAGE CAP.(GAL)	OUTPUT TEMP. F°	KW INPUT	ELECTRICAL	AMPS	TEMP. RISE AT 0.5 GPM	REMARKS
WH-1	EEMAX	SP3208	N/A	110	3.0	208/230-1ø-60Hz	14.4	41 °F	LISTED



NOTE.
PROVIDE W/12"X12" FRAMED PRIMED STEEL ACCESS PANEL. (CENTER TRAP PRIMER IN ACCESS PANEL) ALL TRAP PRIMERS SHALL BE CONCEALED WITHIN THE WALL

TRAP PRIMER DETAIL

NO SCALE



(2) PLAN
SCALE: 1/4" = 1'-0"

KEY NOTES:

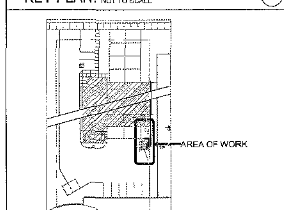
1. CONNECT NEW 1" WATER LINE TO EXISTING 2" BELOW GRADE. FIELD VERIFY AND MATCH DEPTH AND LOCATION AND SIZE
2. EXISTING 2" BELOW GRADE. FIELD VERIFY SIZE
3. EXISTING BUILDING ISOLATION VALVE AND PRESSURE REGULATOR ASSEMBLY
4. STRAINER AND PRESSURE REGULATOR WITH UNION ON EACH SIDE
5. BUILDING ISOLATION VALVE
6. REPLACE OR RELOCATE CLEANOUTS TO BE FLUSH W/GRADE OR CONCRETE WALK. WHERE SET IN CONCRETE REPLACE W/ NEW PER SPEC WITH COVER
7. VERIFY DEPTH LOCATION, DIRECTION OF FLOW AND SIZE OF EXISTING WASTE LINE AND CONNECT NEW 2" WASTE LINE TO EXISTING MODIFY. MODIFY LOCATION TO SUIT FIELD CONDITIONS AT NO ADDITIONAL COST TO THE OWNER.
8. NEW 2" WASTE LINE
9. INSTALL NEW WATER HEATER IN MINIMUM 24"x24"x12" NEMA 4R RATED ENCLOSURE ON EXTERIOR WALL. SEAL PIPE PENETRATIONS WEATHER TIGHT. PIPES AND CONDUIT SHALL PENETRATE BOTTOM OF BOX ONLY.

NOTE: 1. SLOPE WASTE LINE AT 1/4" PER FOOT MINIMUM.
2. INSULATE ALL WATER LINES ABOVE GRADE W/ 3/4" THICK ARMAFLEX INSULATION OR EQUAL, PAINT WITH U.V. RESISTANT PAINT.
3. DOUBLE WRAP OF 10 MIL POLYKIN TAPE FOR A MINIMUM THICKNESS OF 20 MIL.
4. EXCAVATE AS REQUIRED TO INSTALL WATER & WASTE LINES. RESTOR LANDSCAPE TO ORIGINAL CONDITIONS.

PROJECT ADDRESS:

FIRE STATION #605
7455 EAST SHEA BLVD.
SCOTTSDALE, ARIZONA 85260

KEY PLAN: NOT TO SCALE



NO	REVISION/ SUBMISSION	DATE

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CITY OF SCOTTSDALE FIRE STATION #605 DISINFECTING FACILITY

PLANS / CALCULATIONS

designed: svf	project number: 20307
drawn: brf	scale: AS NOTED
checked: svf	drawing number:
reviewed: svf	P1.1
date: 05.21.08	

SECTION 15400 SUMMARY OF WORK FOR PLUMBING

SCOPE: *THE WORK UNDER THESE SECTIONS INCLUDE FURNISHING AND INSTALLING PLUMBING* SYSTEMS AS SHOWN ON THE DRAWINGS AND REQUIRED BY CODE.

SECTION 15401 DOMESTIC WATER SYSTEM

INSTALL ALL PIPING ABOVE FLOOR UNLESS NOTED OTHERWISE ON THE DRAWINGS.

USE WROUGHT COPPER SOLDER TYPE FITTINGS AT ALL COPPER PIPE CONNECTIONS. TUBE DRAWING IS NOT APPROVED.

PIPING:

TYPE "L" HARD DRAWN COPPER, CONFORMING TO ASTM B88, FOR ALL WATER PIPE NOT SET IN OR UNDER CONCRETE OR IN THE GROUND.

TYPE "K" HARD DRAWN COPPER, CONFORMING TO ASTM B88, FOR WATER PIPE SET IN THE GROUND BUT NOT UNDER CONCRETE FLOOR SLABS.

TYPE "K" SOFT DRAWN COPPER, CONFORMING TO ASTM B88, FOR ALL WATER PIPE SET BELOW CONCRETE FLOOR SLAB. INSTALL NO JOINTS BELOW FLOOR SLAB.

FITTINGS: PROVIDE WROUGHT COPPER SOLDER TYPE FITTINGS CONFORMING TO ANSI B16.22 (1963) FOR ALL CONNECTIONS TO COPPER PIPING. PROVIDE PVC SCHEDULE 40, TYPE 1, GRADE 1, SOCKET TYPE FITTING CONFORMING TO ASTM D-1784-75.

BALL VALVES: APOLLO FOR VALVES UP TO 2" IN DIAMETER SOLDER END JOINTS WITH EXTENDED SOLDER CUPS SHALL BE 600 PSI CWP, CAST BRASS BODY, REPLACEABLE REINFORCED TEFLON SEATS, FULL PORT, BLOWOUT-PROOF STEMS, AND CHROME-PLATED BRASS BALL.

SOLDER LINES 1/2" THROUGH 2": USE LEAD FREE SOLDER WITH SUITABLE FLUX. CONFORM TO COPPER DEVELOPMENT INSTITUTE RECOMMENDATIONS AND CODE REQUIREMENTS. BRAZE LINES 2-1/2" AND LARGER.

EXTEND WATER PIPING TO ALL FIXTURES, OUTLETS AND EQUIPMENT. PROVIDE SHUTOFF VALVES OR FIXTURE STOPS AS REQUIRED FOR PROPER SERVICE. PITCH WATER PIPING TO DRAIN AND INSTALL ALL NECESSARY DRAIN VALVES. BURY ALL COPPER UNDERGROUND WATER PIPING A MINIMUM OF 24" BELOW FINISH GRADE. COORDINATE OVERHEAD PIPING WITH MECHANICAL DUCTWORK AND ELECTRICAL CONDUIT.

PROVIDE NECESSARY ALLOWANCE IN PIPING SYSTEMS TO HANDLE EXPANSION AND CONTRACTION. INSTALL AMPLE SWINGS OR OFFSETS IN BRANCH CONNECTIONS TO AVOID UNDUE STRAINS ON FITTINGS OR SHORT PIPE SUPPLIES. WHERE SHOWN ON THE DRAWINGS OR REQUIRED BY LOCAL PLUMBING CODE, INSTALL AUTOMATIC TRAP PRIMERS ON COLD WATER SUPPLY AT NEAREST FIXTURE AND RUN DRAIN TO TRAP SEAL BEING PROTECTED. PROVIDE WALL ACCESS PANELS WHEN PRIMERS ARE INSTALLED IN WALLS.

STERILIZATION: STERILIZE THE ENTIRE WATER DISTRIBUTION SYSTEM THOROUGHLY WITH A SOLUTION CONTAINING NOT LESS THAN 50 PARTS PER MILLION OF AVAILABLE CHLORINE. FOR THE CHLORINATING MATERIAL USE SODIUM HYPOCHLORITE SOLUTION, CONFORMING TO FEDERAL SPECIFICATION O-8-441, GRADE D, AND INTRODUCE INTO THE SYSTEM IN A MANNER APPROVED BY THE ARCHITECT. ALLOW THE STERILIZING SOLUTION TO REMAIN IN THE SYSTEM FOR A PERIOD OF 8 HOURS, DURING WHICH TIME ALL VALVES AND FAUCETS SHALL BE OPENED AND CLOSED SEVERAL TIMES. AFTER STERILIZATION, FLUSH THE SOLUTION FROM THE SYSTEM WITH CLEAN WATER UNTIL THE RESIDUAL CHLORINE CONTENT IS NOT GREATER THAN 0.2 PARTS PER MILLION, UNLESS OTHERWISE DIRECTED. *** NOTE: CONTRACTOR SHALL PROVIDE OWNER WITH CERTIFICATION OF TEST RESULTS ***

TEST: FILL SYSTEM WITH WATER AND PRESSURIZE TO 125 PSI AND HOLD FOR FOUR (4) HOURS WITH NO PRESSURE DROP. TEST AND OBTAIN APPROVAL ON ALL UNDERGROUND PIPING BEFORE COVERING WORK.

SECTION 15405 SANITARY WASTE AND VENT SYSTEM

SCOPE: ALL WASTE AND VENT PIPE SHALL BE OF MATERIALS COMPLYING WITH THE 2006 IPC. CAST IRON SOIL PIPE CONFORMING WITH CISPI 301 WASTE 6. VENT LINES SHALL BE GALVANIZED IRON PIPE, SCHEDULE 40, CONFORMING TO ASTM A120.

NO-HUB COUPLINGS FOR PIPE ABOVE GRADE: DOUBLE BAND, STAINLESS STEEL SHIELD-CLAMP ASSEMBLY WITH NEOPRENE GASKET CONFORMING TO CISPI 301-67T.

INSTALLATION: PITCH WASTE AND DRAIN LINE 3" AND SMALLER AT A UNIFORM SLOPE OF 1/4" PER FOOT MINIMUM. PITCH WASTE AND DRAIN LINES 4" AND LARGER AT A UNIFORM SLOPE OF 1/8" PER FOOT MINIMUM, 1/4" PER FOOT WHEREVER POSSIBLE, UNLESS NOTED OTHERWISE ON THE DRAWINGS.

INSTALL WALL CLEANOUTS ON ALL SINKS AND URINALS. CLEANOUTS TO BE THE SAME SIZE AS WASTE LINES ON WHICH THEY ARE INSTALLED. MAKE ALL CLEANOUTS ACCESSIBLE BY EITHER BEING ACCESSIBLE WITHIN 6" OF CEILING ACCESS PANEL, EXTENDED TO FLOOR OR GRADE, OR LOCATED IN WALL WITH REMOVABLE PLATE. WHERE SURFACING MATERIALS SUCH AS RESILIENT FLOOR COVERING OR CERAMIC TILE IS USED, INSTALL THE CLEANOUT WITH TOP SO THAT FINISHED SURFACE IS SMOOTH AND FLUSH. WHERE INSTALLED IN WATERPROOF SLABS, PROVIDE CLEANOUTS WITH A NONPUNCTURING FLASHING CLAMP DEVICE AND ANCHORING FLANGE.

TEST: FILL SYSTEM TO HIGHEST POINT OF SYSTEM. ALLOW SYSTEM TO STAND FOR FOUR (4) HOURS. IF WATER LEVEL DROPS, CHECK FOR LEAKS, REPAIR AS DIRECTED, AND RETEST UNTIL SYSTEM IS APPROVED. TEST AND OBTAIN APPROVAL ON ALL UNDERGROUND PIPING BEFORE COVERING WORK.

SECTION 15420 PLUMBING EQUIPMENT

SCOPE: ALL ELECTRICAL EQUIPMENT AND CONTROLS SHALL BE UL LISTED. PROVIDE ASME APPROVED TEMPERATURE AND PRESSURE RELIEF VALVES ON ALL DOMESTIC HEATING EQUIPMENT.

SECTION 15421 PLUMBING SPECIALTIES

PROVIDE ALL CLEANOUTS WITH THREADED BRONZE PLUGS. INTERIOR FINISHED WALLS: J. R. SMITH 4472 WALL ACCESS COVER WITH BRONZE THREADED PLUG

ALL WORK SHALL BE DONE IN ACCORDANCE WITH THESE PLANS, SPECIFICATIONS, AND ADOPTED CITY CODES.

PLUMBING CONTRACTOR SHALL FURNISH ALL EQUIPMENT, MATERIAL, LABOR, ETC., WHETHER WHETHER SHOWN ON THESE PLANS OR NOT, NECESSARY TO PROVIDE A COMPLETE, WORKABLE, CODE-APPROVED PLUMBING SYSTEM.

ALL LAVATORIES AND SINKS SHALL COME COMPLETE WITH NECESSARY TRIM, 'P' TRAPS, TAILPIECE CONNECTIONS, SHUTOFF VALVES, AND REQUIRED CARRIERS.

ALL HOT AND COLD WATER LINES SHALL BE INSULATED WITH 3/4" THICK: ARMAFLEX OR EQUAL.

PLUMBING CONTRACTOR TO COORDINATE ALL LINES AND VENTS WITH RELIEF VENTS AND MECHANICAL EQUIPMENT. ALL VENTS THRU ROOF *SHALL BE MINIMUM 10'-0" FROM ALL FRESH AIR INTAKES.*

PLUMBING CONTRACTOR SHALL VERIFY, PRIOR TO TRENCHING, THAT THE DESIGNED SLOPE OF THE SEWER SHALL WORK UNDER ACTUAL FIELD CONDITIONS. IF THE DESIGNED SLOPE WILL NOT WORK, THE PLUMBING CONTRACTOR SHALL CONTACT THE ENGINEER

PROVIDE ACCESS PANELS FOR ALL WATER HAMMER ARRESTORS AND/OR TRAP PRIMERS.

ALL FLOOR DRAINS, FLOOR SINKS AND OTHER FIXTURES SUBJECT TO NON-USE SHALL BE EQUIPPED WITH A TRAP PRIMER.

ALL WATER CLOSETS SHALL BE ELONGATED BOWLS WITH OPEN FRONT SEAT PER IPC.

ALL NEW PLUMBING FIXTURES SHALL MEET THE LOCAL MUNICIPALITIES LOW WATER CONSUMPTION AND HANDICAP REQUIREMENTS.

FLASH ALL PIPE PENETRATIONS THROUGH THE ROOF IN A WATER TIGHT MANNER.

THE CONTRACTOR SHALL VERIFY ALL UTILITIES LOCATION, SIZES AND CONNECTION REQUIREMENTS PRIOR TO BID AND COMMENCEMENT OF ANY WORK.

S-1 TWO COMPARTMENT SINK:

FIXTURE: ELKAY WNSF-8230 LR, FREE STANDANG, 14 GAUGE TYPE 304 STAINLESS STEEL WITHLEFT AND RIGHT DRAIN BOARDS, WELDED 1/4" RADIUS COVED CORNERS. WLEDS ARE TO BE GROUND TO A SMOOTH AND CLEANABLE FINISH, 8" HIGH BACKSPLASH WITH 45° SLOPED TOP, HOLES PUNCHED TO MATCH THE FAUCET, 1-1/2" WIDE INWARD SLOPING TOP CHANNEL RIMS, INTEGRAL DRAINBOARDS, SINK COMPARTMENTS PITCHED TO DRAIN, EXPOSED SURFACES POLISHED TO A SATIN FINISH, NSF INTERNATIONAL CERTIFICATION.

SINKS ARE TO BE SUPPORTED ON 4 ELKAY MODEL LK251 STAINLESS STEEL, 1-5/8" O.D. TUBULAR LEGS, #16 GAUGE, ADJUSTABLE BULLET SHAPED FEET.

ADA SUPPLY FITTING: CHICAGO FAUCET, 886-CP, L5VB 5-5/8" VACUUM BREAKER CAST SWING SPOUT, 3/4" HOSE THREAD WITH POLISHED CHROME FINISH, COLOR CODED INDEXED HANDLES, 4" WRIST BLADE HANDLES, 2 GPM FLOW CONTROL AERATOR

SUPPLIES: EASTMAN C5CR-20-LK, 1/2" x 3/8" ANGLE STOPS WITH FLEXIBLE TUBE RISERS.

STRAINER: ELKAY 1367-NF STRAINER WITH 2" TAILPIECE, ROTARY DRAIN, INTERNAL PLUG VALVE.

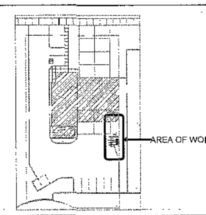
TRAP: MCGUIRE, 2" ADJUSTABLE CAST BRASS BODY P-TRAP WITH CLEANOUT PLUG, CHROME PLATED.

KEY NOTES:

PROJECT ADDRESS:

FIRE STATION #605
7455 EAST SHEA BLVD.
SCOTTSDALE, ARIZONA 85260

KEY PLAN: NOT TO SCALE



NO	REVISION/ SUBMISSION	DATE

durkin + durkin ARCHITECTS, LLC
130 north central avenue, suite 203
phoenix, arizona 85004
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f.602.253.5760

CITY OF SCOTTSDALE FIRE STATION #605 DISINFECTING FACILITY

PLUMBING SPECIFICATIONS

designed: svf	project number: 30307
drawn: brl	scale: AS NOTED
checked: svf	drawing number: P2.1
reviewed: svf	
date: 05.21.08	

ELECTRICAL SYMBOLS (NOTE: ALL SYMBOLS MAY NOT APPLY TO THIS PROJECT)

- CEILING MOUNTED LIGHT FIXTURE
- WALL MOUNTED LIGHT FIXTURE
- FLUORESCENT FIXTURE
- EXIT SIGN – SEE LIGHT FIXTURE SCHEDULE
- JUNCTION BOX IN ACCESSIBLE LOCATION ABOVE REMOVABLE CEILING W/ FLEXIBLE CONDUIT CONNECTION TO LIGHT FIXTURE
- FLEXIBLE CONDUIT CONNECTION TO EQUIPMENT
- JUNCTION BOX IN ACCESSIBLE LOCATION
- DUPLEX CONVENIENCE RECEPTACLE AT +15" A.F.F. TO BOTTOM OR AS NOTED
- FOUR-PLEX CONVENIENCE RECEPTACLE AT +15" A.F.F. TO BOTTOM OR AS NOTED
- IG ISOLATED GROUND RECEPTACLE AT + 15" A.F.F. TO BOTTOM OR AS NOTED
- RECEPTACLE (TYPE AS SHOWN) AT + 42" A.F.F.
- SPECIAL USE RECEPTACLE. VERIFY NEMA NUMBER AND MOUNTING HEIGHT WITH EQUIPMENT
- S S_3 S_4 TOGGLE SWITCH – SINGLE POLE, 3-WAY, 4-WAY AT +42" OR AS NOTED ON PLANS.
- S_P SINGLE-POLE, ILLUMINATED HANDEL OR PILOT LIGHT TOGGLE SWITCH AT +42" OR AS NOTED ON PLANS
- S_M MOTOR RATED SWITCH WITH THERMAL PROTECTION
- S_V MOTOR SPEED CONTROL SWITCH. FURNISHED BY ELECTRICAL CONTRACTOR.
- PHOTOCELL – TORK #2100 – MOUNT ON ROOF AND AIM NORTH
- TS TIMESWITCH: TORK 'W' SERIES OR EQUAL
- CIRCUIT IN CONDUIT, CONCEALED. HASH MARKS INDICATE QUANTITY OF CONDUCTORS NO HASH MARKS INDICATE TWO CONDUCTORS, PLUS GROUND(S). (NOTE: WIRE AND OR CONDUIT SIZE SHOWN AT HOMERUN IS THE MINIMUM SIZE FOR THE ENTIRE CIRCUIT: #12 A.W.G. CU, 1/2"C. MINIMUM). LONG STROKE(S) INDICATE NEUTRAL CONDUCTOR(S), SHORT STROKES INDICATE PHASE OR SWITCHED CONDUCTORS AND LONG STROKES WITH DOT INDICATE GREEN INSULATED GROUNDING CONDUCTOR(S) TYPICAL. EACH ISOLATED GROUND CIRCUIT SHALL HAVE A SEPARATE NEUTRAL AND GROUND WIRE. BOND WIRES ARE NOT SHOWN ON DRAWINGS. BOND WIRES SHALL BE INSULATED CU. SIZED IN ACCORDANCE WITH N.E.C. #250.
- CIRCUIT IN CONDUIT CONCEALED IN FLOOR
- CIRCUIT IN CONDUIT CONCEALED IN WALLS OR ABOVE CEILING
- HOMERUN TO PANELBOARD OR AS NOTED
- PANELBOARD, MOUNT TOP OF PANEL AT + 6'-8". STUB (2) 3/4" E.C. INTO ACCESSIBLE CEILING SPACE ON FLUSH MOUNTED PANELS.
- MOTOR: SIZE AND RATING AS SHOWN. EF INDICATES 55-WATT, 120V. EXHAUST FAN
- A.C. MAGNETIC STARTER BY ELECTRICAL CONTRACTOR. HORSEPOWER, VOLTAGE AND PHASE RATED, NUMBER OF POLES REQUIRED. FURNISH WITH (1) N.O. AUXILLIARY CONTACT (120 V. CONTROL) SINGLE SPEED NON-REVERSING UNLESS OTHERWISE SHOWN ON PLAN
- DISCONNECT SWITCH – HORSEPOWER RATED, FUSED, NEMA 3R WHERE OUTSIDE. N.F. INDICATES NON-FUSED. (FUSE PER EQUIPMENT MANUFACTURERS' SPECIFICATIONS.)
- *MOTOR CONTROLLER – FURNISHED WITH EQUIPMENT*
- TELEPHONE OUTLET AT +15" TO BOTTOM OR AS NOTED WITH 3/4"C. UP INTO ACCESSIBLE CEILING SPACE UNLESS SHOWN OTHERWISE
- DATA OUTLET AT + 15" A.F.F. TO BOTTOM OR AS NOTED. STUB 3/4"C. INTO ACCESSIBLE CEILING SPACE
- DATA/TELEPHONE OUTLET AT + 15" A.F.F. TO BOTTOM OR AS NOTED. STUB 3/4"C. INTO ACCESSIBLE CEILING SPACE
- APPROVED TEMPERATURE SEAL-OFF AND EXPANSION JOINTS AS REQ'D BY N.E.C. ART. #300-7
- WP WEATHER PROOF
- EDF ELECTRIC DRINKING FOUNTAIN
- S.E.S. SERVICE ENTRANCE SECTION
- T.M.B. TELEPHONE MOUNTING BOARD: 4' X 8' X 3/4" PLYWOOD WITH #6 CU. BOND WIRE TO GROUNDING ELECTRODE SYSTEM
- T.T.C. TELEPHONE TERMINAL CABINET: 36" W. X 36" H X 6" D 16 GA. WEATHERPROOF HINGED LOCKABLE COVER, 5/8" PLYWOOD BACKBOARD. PROVIDE A #6 CU BOND TO GROUNDING ELECTRODE SYSTEM

PANEL LEGEND:

- ○ INDICATES EXISTING CIRCUIT BREAKER & LOAD.
- ● INDICATES NEW CIRCUIT BREAKER & LOAD.
- □ INDICATES CIRCUIT BREAKER WITH 'LOCK-OFF' DEVICE.
- ■ INDICATES EXISTING CIRCUIT BREAKER W/CHANGED LOAD.
- △ INDICATES CIRCUIT THRU PHOTOCELL
- ▲ MISCELLANEOUS.
- ✱ INDICATES CONTINUOUS LOAD TAKEN @ 125% PER N.E.C.

LOAD CALCULATION: EXIST. S.E.S.

EXISTING LOADS:

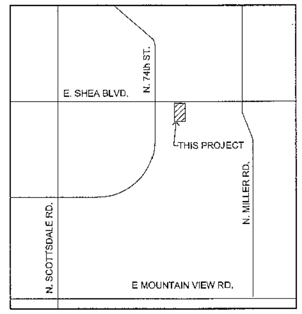
EXISTING HIGH DEMAND = 27.6 (TAKEN MAY 2007)

$\frac{27.6}{.8pf}$ X 125% ÷ 240 $\sqrt{3}$ = 179.7 AMPS

NEW LOADS:

NEW LOAD ADDED TO EXIST. PANEL 'B' = 14.3 AMPS

TOTAL LOAD ON S.E.S. = 194.0 AMPS



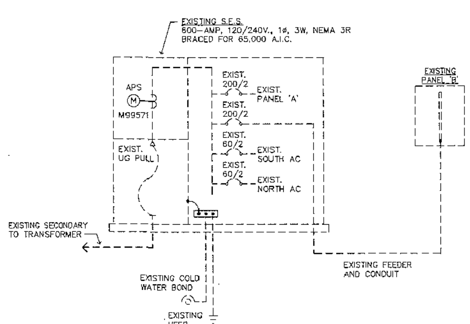
(2) VICINITY MAP:

NOT TO SCALE:

(EXISTING)

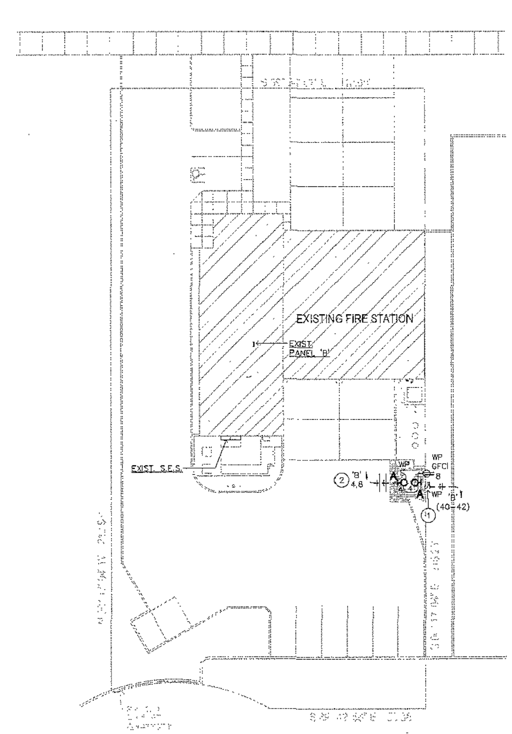
PANEL B	200 AMP	120/240V., 1ø, 3W	MAIN L.O.	NEMA 1	SURF MTG
LOCATION STORAGE ROOM		TYPE B.O.	BREAKER RATING 10,000 AIC		

	USE/AREA SERVED	CB	No	LOAD L1	LOAD L2	No	CB	USE/AREA SERVED	
○	SPARE	20	1	– 864		2	20/1	EXIST. GARAGE DOOR	○
		2	3		– 100	4		NEW LTS – DISINFECTING	● ✱
		20	5	– 864		6		EXIST. GARAGE DOOR	○
		2	7		– 180	8		NEW REC – DISINFECTING	●
		20	9	– 864		10		EXIST. GARAGE DOOR	○
		2	11		– –	12		SPARE	
	EXIST. DRYER	30	13	2500 864		14		EXIST. GARAGE DOOR	
		2	15		2500 –	16		SPARE	
	EXIST. WATER HEATER	30	17	2250 –		18	30/1		
		2	19		2250 –	20			
	EXIST. EQUIPMENT	20/1	21	540 4000		22	40	EXIST. RANGE	
	SPACE		23		– 4000	24	2		
			25	– 4000		26	40		
			27		– 4000	28	2		
○	EXIST. EQUIPMENT	20/1	29	540 540		30	20/1	EQUIPMENT	
	SPACE	30	31		2000 540	32			
		2	33	2000 –		34		SPACE	
	EXIST. FAN COIL	20	35		750 –	36			
		2	37	750 –		38			
	EXIST. FAN COIL	30	39		750 1500	40	20	NEW WATER HEATER	● □
		2	41	750 1500		42	2		
	TOTAL (CONNECTED)			22826	18570				
	25 % CONTINUOUS			–	25				
				–	–				
	TOTAL (CODE)			22826	18595	22826 VA / 120V. = 190.2 A			



ONE-LINE DIAGRAM EXISTING S.E.S.

N.T.S.



(1) ELECTRICAL SITE PLAN

SCALE: 1" = 20'-0"

0 10 20

LIGHT FIXTURE SCHEDULE

MARK	DESCRIPTION	MFR.	CATALOG #	VOLT.	LAMPS #	LAMPS TYPE	REMARKS
A	FLUORESCENT WALL PACK WITH SENSOR	RAB LIGHTING	WP2F84MSW –	120	2	42W GX 24Q-4 TRIPLE	MOUNT TOP OF FIXTURE AT +8'-0" A.F.F.

Designer: Randy Grothaus Job #: 08157

SW engineering, inc.

426 east southern avenue, suite 102 • tempe, arizona 85282
t • 480.731.5050 f • 480.731.5353 • randyg@sweng.net
electrical consultants

GENERAL NOTES:

1. ALL WORK IS TO BE PERFORMED IN ACCORDANCE WITH 2005 (OR LATEST ADOPTED) NATIONAL ELECTRICAL CODES AND ALL APPLICABLE LOCAL CODES, ORDINANCES AND MAG AMENDMENTS TO N.E.C.
2. ALL WIRING SHALL BE COPPER UNLESS OTHERWISE NOTED. INSULATION SHALL BE TYPE XHHW OR THHN/THWN. WIRING FOR OUTSIDE LIGHTING SHALL BE A MINIMUM OF #10AWG COPPER. FOR UNDERGROUND CIRCUITS RUN IN PVC CONDUIT, CONTRACTOR IS TO PROVIDE A COPPER BOND WIRE SIZED PER N.E.C. 250-95.
3. CONTRACTOR IS TO VERIFY EXACT LOCATION, MOUNTING HEIGHTS AND ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT PROVIDED BY OTHERS PRIOR TO ROUGH-IN. CONTRACTOR IS TO PROVIDE DISCONNECT SWITCHES AND TRANSFORMERS AS REQUIRED, AND FINAL CONNECTIONS TO EQUIPMENT PER OWNER.
4. CONTRACTOR IS TO COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATIONS AND REQUIREMENTS OF ALL MECHANICAL EQUIPMENT PRIOR TO BID.
5. ALL GENERAL USE RECEPTACLES MOUNTED WITHIN 6' OF A BASIN OR SINK SHALL BE G.F.C.I.
6. CONTRACTOR IS TO PROVIDE BOND WIRE IN ALL RACEWAYS, SIZED PER N.E.C. ART. #250.
7. ELECTRICAL CONTRACTOR SHALL PROPERLY SUPPORT ALL EXISTING AND NEW CONDUIT FROM NEW SUPPORTS PER NEC ART. 300-11.
8. ON THE COMPLETION OF THE PROJECT, THE REGISTERED ARCHITECT/ENGINEER SHALL CERTIFY IN WRITING THAT TO THE BEST OF HIS KNOWLEDGE THE BUILDING OR STRUCTURE HAS BEEN COMPLETED IN ACCORDANCE WITH THE DESIGN.

(#) KEYED NOTES:

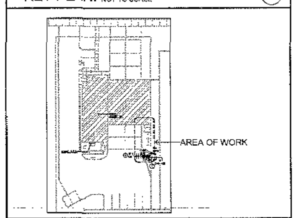
(1) NEW WATER HEATER: 240V., 1ø, 3.0 KW (2) #10 CU. (1) #10 CU GRD, 3/4"C.

(2) #10's, 3/4"C. THRU-OUT.

PROJECT ADDRESS:

FIRE STATION #605
7455 EAST SHEA BLVD.
SCOTTSDALE, ARIZONA 85260

KEY PLAN: NOT TO SCALE



NO	REVISION/SUBMISSION	DATE

durkin + durkin ARCHITECTS, LLC
130 north central avenue, suite 203
phoenix, arizona 85004
p.602.254.8644
f.602.253.5760

CITY OF SCOTTSDALE FIRE STATION #605 DISINFECTING FACILITY

SITE PLAN / PROJECT DATA

Registered Professional Engineer (Electrical) CERTIFICATE NO. 31172 DAVID G. WATSON Date Signed ARIZONA, U.S.A. Expires 3/31/09

[illegible]

designed: rg	project number: 20307
drawn: rg	scale: AS NOTED
checked: dw	drawing number:
reviewed: dw	E1.0
date: 05.23.08	

ELECTRICAL SYSTEM SPECIFICATIONS - DIVISION 16000

(SOME SECTIONS MAY NOT APPLY)

1. GENERAL CONDITIONS

The General Provisions of the Contract, including the Conditions of the Contract (General, Supplementary and other Conditions) and Division 1 - General Requirements as appropriate, apply to the work specified in this Section.

2. SCOPE OF WORK

The work included under this section consists of furnishing all materials, equipment, and labor and the performing of all functions, except as otherwise specified herein or shown on the drawings to be performed by others, for the installation and placing into operation of a complete electrical system as specified and shown on the drawings.

3. GENERAL DESCRIPTION

3.1 The work in general shall consist of, but is not necessarily limited to the following.

3.1.1 Furnishing and installing all fixtures with lamps as indicated on the drawings and as specified herein unless noted.

3.1.2 Furnishing and installing all electrical work, panels, service, conduit, wiring, etc., for all outlets and equipment.

3.1.3 Furnishing and installing all telephone outlets, conduits with pull strings and telephone mounting boards including conduit from telephone mounting board to the building entrance as indicated on the plan.

3.1.4 Furnishing and installing a complete Fire Alarm system as indicated on plans.

3.1.5 Include $ hundred dollars) allowance for power and telephone company utility service charges. Difference between actual cost and allowance to be credited or billed to the Owner.

3.1.6 Furnishing and installing all motor starters and control components, not specifically specified to be furnished in accordance with other sections of the specifications.

3.1.7 Furnishing and installing all power and wiring except that which is pre-wired in factory assembled equipment.

3.1.8 Installing all LINE VOLTAGE mechanical control wiring and associated controls which are furnished by the Mechanical Contractor (low voltage control wiring and controls shall be furnished and installed by the Mechanical Contractor).

3.1.9 Painting work as described under other sections of these specifications. Clean and prepare all surfaces ready for painting.

3.1.10 Provide temporary construction power as outlined below. This service shall be maintained throughout the entire job as the work progresses. Provide outlets at convenient points and in sufficient numbers so that no extension cord over 50 feet in length is required to reach any work point. Maintain general lighting in corridors, stairs, basement and other areas not receiving sufficient daylight required for safety. Remove temporary work as rapidly as required for or allowed by installation of permanent work.

3.1.11 Certain items of work by other trades will be necessary for the completion of work under this division. Cooperate with other trades and arrange for these items to be performed in orderly course.

3.1.12 This Contractor shall review the mechanical control requirements as specified and shown on the drawings and shall furnish and install all necessary conduit, wiring, boxes, protective devices, switches, etc., for the completion and proper operation of the system.

3.1.13 Review all drawings and all specifications for each section of work. Unless specifically noted otherwise, herein or elsewhere, furnish and install items of any electrical nature required for completion of work for other trades, whether or not same is shown or noted in this or other sections.

4. REGULATIONS AND CODES

The Contractor must comply with all state, municipal and federal safety laws, construction codes, ordinances and regulations relating to building and public health and safety. In addition, comply with rules and regulations of the State Fire Protection Code. Fire protection material must bear the Fire Underwriters Laboratories label.

5. GENERAL REQUIREMENTS

5.1 The Contractor shall examine the premises and satisfy himself of existing conditions under which he will be obligated to operate in performing his part of the work or that will in any manner affect the work under the contract. The Contractor shall cooperate with other trades so that the installations of all equipment may be properly coordinated.

5.2 All equipment furnished shall fit the space available, with connection, etc., in the required locations and with adequate space for operating and servicing. The drawings are generally diagrammatic and indicate the manner and method of the installation, while the specifications and fixture list denote the type and quality of material and workmanship to be used. Where a conflict exists between the drawings and the specifications, the Contractor shall promptly notify the Architect/Engineer whose decision shall be final. No allowance will be made subsequently in this connection in behalf of the Contractor after award of the contract.

6. EQUIPMENT AND MATERIAL

6.1 All materials furnished under this contract shall be new (except as noted), free from defects of any character, shall conform with the standards of the Underwriters Laboratories, Inc. (U.L.) (or other nationally recognized Laboratory), in every case where such a standard has been established and shall be so labeled. It is the intention of these specifications to indicate a standard of quality for all materials incorporated in this work, and where materials are not specified herein and are required to complete the electrical installation, these materials shall be of first quality for use intended. Manufacturers of similar quality products will be considered unless the specifications or drawings indicate otherwise.

6.2 Materials shall be suitable for intended use and location. Unless otherwise shown use NEMA-1 for interior areas and NEMA-3R for exterior areas.

6.3 The Architect/Engineer decision as to equal in grade and quality shall rule and be final for all electrical materials incorporated in this work. Where two or more similar type items are furnished, all shall be of the same manufacturer (e.g., all disconnect switches shall be of the same manufacturer) unless otherwise noted herein or shown on the drawings. All material and installation methods used shall be in accordance with the latest and approved electrical and mechanical engineering practices.

7. SERVICE ENTRANCE EQUIPMENT

7.1 Service entrance equipment shall be in accordance with the requirements of the municipal governing body and serving utility. Shop drawings shall be submitted to the serving utility for written approval before ordering equipment.

7.2 Label equipment and each individual overcurrent device per Section 16000.22.

7.3 Approved manufacturers are: Sun Valley, Square D, Cutler-Hammer, Siemens/ITE, General Electric

8. PANELBOARDS

8.1 Each panel shall be provided with door lock and two keys, all keyed alike. Each panel shall be provided with typewritten sheet installed on door identifying the use of each branch circuit. Panels shall have bussing as indicated on the drawings.

8.2 Label equipment per Section 16000.22

8.3 Approved manufacturers are: Square D, Cutler-Hammer, Siemens/ITE, General Electric

9. STARTERS

9.1 All motor starters shall be furnished under this section of the specifications unless an integral part of equipment or noted as furnished with equipment specified under other sections of these specifications.

9.2 Separately mounted motor starters shall be across-the-line combination magnetic with 120V coils, fused disconnect contactors, additional auxiliary contact for interlocking of controls. Provide pushbutton or selector switch in cover. Switchboard mounted starters shall be magnetic with 120V coils and additional auxiliary contacts as required for interlocking of controls. Starters shall have an integral control circuit transformer or separate 120V control with control circuit disconnect switch in cover.

9.3 Manual starters shall be horsepower, voltage and phase rated with overload protection and green "on" pilot light. Surface mounted unless noted otherwise.

9.4 All starters shall have overload protection in all phase lines. Furnish and install the proper size overload heater elements determined from full load nameplate readings on motors and compensation for ambient temperature in all starters whether they be furnished under this Section or other Sections.

9.5 Label per Section 16000.22

9.6 Approved manufacturers are: Square D

10. TRANSFORMERS

10.1 Transformers shall be dry type, with voltage ratings as indicated on plans. Transformers shall be rated for for full load operation at a maximum 150 degree centigrade rise above a 40 degree centigrade ambient or as otherwise noted on drawings. Provide at least (4) 2 1/2 percent taps, two above normal and two below normal and have a sound rating not to exceed NEMA standards. Special "K" factor ratings as noted.

10.2 Submit complete transformer data with shop drawings for approval. The data shall include efficiencies, core and copper losses, impedance, regulation and sound level.

10.3 Installation of transformers shall be on vibration isolators and all wiring connections with flexible conduit.

10.4 Label per Section 16000.22

10.5 Approved manufacturers are: ACME, Square D, Jefferson, Cutler-Hammer, Westinghouse, General Electric, or same manufacturer as distribution equipment.

11. CONDUIT

11.1 Metallic conduits shall be hot dipped galvanized equal to LTV Steel.

11.2 Electric metallic tubing (EMT) is permitted for exposed work above 8'-0" A.F.F. or concealed work only. EMT is NOT permitted in the following: (1) in or under concrete, (2) in earth, (3) in grouted walls, (4) exterior of building, (5) with dissimilar metals, (6) where it will be subject to severe physical damage (either during or after installation), (7) in any hazardous (classified location) except as permitted by 502.10, 503.10 and 504.20, (8) without an equipment grounding conductor. Size and provide equipment grounding conductor per Article 250 and increase conduit size if required.

11.3 Rigid PVC conduit is permitted only underground or as noted on drawings. Provide rigid steel elbows and risers (NO MINIMUM SIZE). Size and provide equipment grounding conductor per Article 250 and increase conduit size if required.

11.4 Rigid galvanized or sheradized steel shall be used for all exposed conduit below 8'-0" A.F.F. or as noted on drawings. Where used in or under concrete or in earth, shall be code approved PVC coated or half lap wrapped with Polken #900 tape or equal.

11.5 Install exposed raceways parallel and perpendicular to nearby surfaces or structural members and follow the surface contours as much as practical.

11.6 Run exposed, parallel, or banked raceways together. Make bends in parallel or banked runs from the same center line so that the bends are parallel. Factory elbows may be used in banked runs only where they can be installed parallel. This requires that there be a change in the plane of the run such as from wall to ceiling and that the raceways be of the same size. In other cases provide field bends for parallel raceways.

12. WIRE

12.1 Soft drawn annealed copper (unless otherwise noted on plans) having conductivity of not less than 98% of that of pure copper, uniform in cross section, free from flaws, scales, and other imperfections. All wire larger than #10 shall be stranded.

12.2 Insulation: Type THHN/THWN, or XHHW for all branch circuit and feeder wiring.

12.3 Sizes: No wire smaller than #12 unless otherwise noted on drawings.

12.4 Feeder conductors #2 awg and larger may be copper or AA-8000 series aluminum alloy. Aluminum conductors shall be equal or larger ampacity to copper. Conduit fill shall not exceed 40% factor as described in 2005 NEC, annex C, table C1 (copper) or C1A (aluminum).

13. MISCELLANEOUS MATERIALS:

13.1 Safety switches: Heavy duty, fused rejection type, minimum 200,000 A.I.C. rated. "NF" indicates not fused.

13.1.1 Label per Section 16000.22

13.1.2 Approved manufacturers are: Square D, Cutler-Hammer, Westinghouse, General Electric or same manufacturers as distribution equipment.

13.2 Fuses: "Bussmann" or "Gould Shawmut" mfg. No substitutions unless by prior written approval from Engineer, or as noted on drawings.

13.3 Conduit strap: Heavy gauge steel snap-on type.

13.4 Electrical metallic tubing fittings: Equal to T&B compression type. Connectors shall have insulated bushings.

13.5 Rigid conduit locknuts and bushings: Equal to T&B.

13.6 Flexible conduit and fittings: Equal to California Conduit and Cable Company, Inc.

13.7 Liquid tight conduit and fittings for all exterior and equipment connections.

13.8 Outlet boxes, plaster rings, pull, and junction boxes, etc: Equal to RACO. Zinc coated or Cadmium plated sheet steel for indoor locations, cast aluminum for outdoor locations.

13.8.1 For all light fixtures: Octagon or 4" square boxes.

13.8.2 For switches and receptacles: 4" or 4-11/16" square boxes.

13.8.3 Junction and pull boxes: 4" square minimum size. Provide with screwfastened covers located in accessible locations.

13.9 Conduiets: Equal to Crouse-Hinds.

13.10 Wire and Cable: Equal to General Cable and/or Simplex.

13.11 Devices: "Hubbell", "Leviton", or approved equal. Receptacles: Duplex-20 amp #5362, isolated ground - 20 amp #IG-5362, GFCI- 20 amp #GF-5362. Switches: 20 amp #1221 single pole, 1222 double pole, 1223 three way, 1224 four way. Colors to be specified by Architect/Owner/Tenant.

13.12 Device plates: "Hubbell", "Leviton", or equal. Ivory nylon in interior areas or as noted on drawings. Zinc die cast flip lid mounted horizontally for exterior or weatherproof locations.

13.13 Lighting fixtures: Equal to as shown on fixture schedule or described on drawings, complete with lamps in original cartons and all canopies, stems, hangers and accessories including all structural members required for proper mounting. All fluorescent fixture ballasts shall be energy saving type. Submit shop drawings to Architect/Engineer for approval by the same. Must be C.E.C. approved in Calif.

13.14 Lamps: G.E. or equal and shall be for the maximum rated wattage of fixture unless otherwise shown on drawings.

14. SLEEVES, INSERTS, OPENINGS

14.1 Contractor shall layout and install his work in advance of pouring concrete floors or walls. Provide all sleeves and/or openings through floors or walls required for electrical conduits or ducts.

14.2 Sleeves shall be of rigid conduit or galvanized sheet steel rigidly supported and suitably packed to prevent entrance of wet concrete.

15. EXCAVATION/CUTTING/FITTING/REPAIRING/FINISHING

15.1 The Contractor shall include in his bid all excavation, compaction, fill, backfill, cutting, fitting, repairing and finishing of all work necessary for the installation of all equipment under this specification but no cutting of the work of other Contractors shall be done without the consent of the General Contractor.

15.2 Earthwork shall be done in accordance with latest industry standards.

16. CLEANUP OF PREMISES

Contractor shall at all times keep the premises clear of waste materials and debris caused by his employees and operation. Equipment not required in the work shall be removed prior to the termination of the contract.

17. TESTS AND INSPECTIONS

17.1 Contractor shall test wiring and devices as sections are completed and shall correct all defects immediately at his own expense, including any damage to walls, ceilings, floor or other portions of the building which may result from replacing defective equipment.

17.2 Furnish all meters, cable, connections and apparatus necessary for making tests.

17.3 Test system for shorts and grounds. Faulty wiring shall be removed and replaced. Any device, apparatus or fixture installed showing substandard performance shall be removed and replaced as directed by the Architect/Engineer.

17.4 Megger all systems neutrals to insure the neutral is not grounded within the system.

17.5 All equipment rated at 1,000 amps or more , or 480 volts shall be tested for insulation breakdown prior to its being energized. Such equipment shall withstand for a period of one minute without breakdown, the application of a 60H2 alternating potential of 1,000V plus twice the rated voltage of the device.

17.6 After the electrical wiring system installation is completed and at such time as the Architect/Engineer or his authorized representative may direct, the Contractor shall conduct an operating test for approval. Equipment shall be demonstrated to operate in accordance with requirements of specifications. Test shall be performed in presence of Architect/Engineer or his representative.

18. SHOP DRAWINGS

18.1 All data shall be submitted at one time, bound and indexed in an orderly manner. Prior to starting the work, submit to the Architect/Engineer for approval, six (6) sets of shop drawings of service (S.E.S.), panels, distribution sections, light fixtures, motor control centers, fire alarm system, dimmers, sound system, emergency generator, devices, transformers, labels as required by 16000.22, and all other equipment to be fabricated.

18.2 Procure shop drawings, wiring diagrams, etc., from other trades involved where such drawings may facilitate and expedite the work. Air conditioning and mechanical equipment shall be wired complete as per manufacturer's wiring diagrams furnished by the air conditioning and mechanical contractors.

19. DRAWINGS OF RECORD (AS-BUILT)

As-built drawings shall be submitted in accordance with and if required by Division 1 - General Requirements.

20. GUARANTEE

The Contractor shall guarantee all material and equipment to be free from defect of material and workmanship and shall replace or repair without cost to the owner all defective material and workmanship for a period of one year after final acceptance.

21. INSTRUCTIONS

21.1 Contractor shall instruct the Owner in the proper operating and maintenance of the equipment.

21.2 Contractor shall provide two (2) sets of operating and maintenance manuals for each piece of equipment provided by this discipline, only when such manuals are available from the manufacturer.

21.2.1 All manuals to be bound in a 3-ring binder and tabulated in an orderly manner.

22. LABELING

22.1 Labels shall be engraved, black on white melamine plastic laminate, 1/16" minimum thickness for signs up to 20 square inches or 8 inches long; 1/8" thick for larger sizes. Engraved legend shall be in white letters on black face with minimum 3/16" high letters. Labels shall be punched and fastened to equipment with aluminum rivets or self tapping stainless steel screws or number 10/32 stainless steel machine screws with nuts, flat and lock washers.

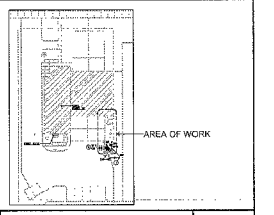
22.2 Label equipment with name, amperage, voltage, phase, and wires (i.e. Panel "A", 400A., 120/208V.3Ø.4W). Submit list of all labels with wording for review as per 16000.18.

22.3 Equipment to be labeled shall include service (S.E.S.) and all overcurrent devices, distribution sections and all overcurrent devices, motor control centers (M.C.C.) and all overcurrent devices, fusible panelboards and all overcurrent devices, panels, starters and transformers. Label other equipment as noted on plans.

PROJECT ADDRESS:

FIRE STATION #605
7465 EAST SHEA BLVD.
SCOTTSDALE, ARIZONA 85260

KEY PLAN: NOT TO SCALE



NO	REVISION/SUBMISSION	DATE

durkin + durkin ARCHITECTS, LLC
130 north central avenue, suite 203
phoenix, arizona 85004
t.602.254.8644
f.602.253.5760

CITY OF SCOTTSDALE
FIRE STATION #605
DISINFECTING
FACILITY

ELECTRICAL SPECIFICATIONS

Designer: Randy Giolthaus Job #: 08157
engineering, inc
436 east southern avenue, suite 102 • tempe, arizona 85282
t • 480.731.5900 • f 480.731.5883 • randyg@qwest.net
electrical consultants

designed: rg	project number: 20397
drawn: rg	scale: AS NOTED
checked: dw	drawing number: E2.0
reviewed: dw	
date: 05.23.08	

Registered Professional Engineer CERTIFICATE NO. 21172 DAVID W. WATSON Expires 3/31/09

Design and Build Fire Station 613 (Desert Foothills)

Estimated Project Cost: $5,100,000

Staff Priority: 6 of 34

PROJECT DETAILS

Project Summary

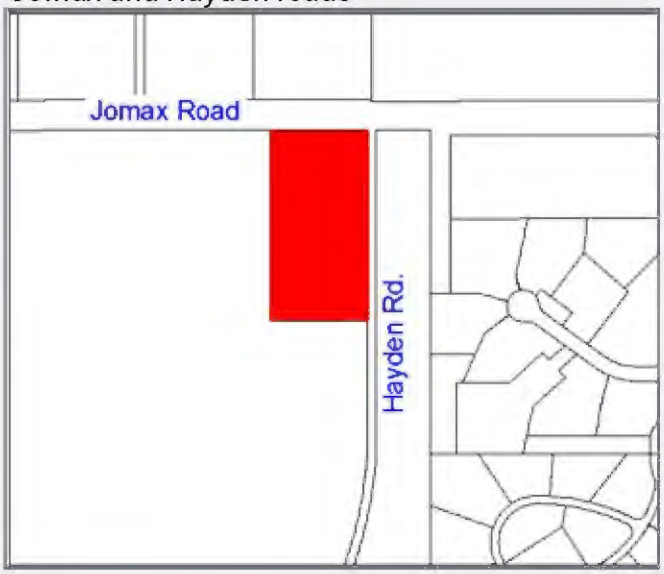
Replace a temporary modular facility in the Desert Foothills area at Jomax and Hayden roads. The new station will include crew quarters and facilities, office space, OSHA-certified decontamination area, safety gear storage and an apparatus bay.

Project Cost

Design	$608,000
Bond Issuance Cost	$60,000
Construction	$3,216,000
Administration	$540,000
Contingency	$676,000
Total Cost	$5,100,000

Project Location

Jomax and Hayden roads



ANALYSIS & ASSESSMENT

Background

Currently the City of Scottsdale Fire Department has operated out of a 'temporary' single-wide trailer for over twenty years that does not meet industry and safety standards for a fire station. The fire station is a modular trailer housing fire station living areas, a covered canopy for the fire apparatus and two con-ex boxes for storage and turn-out gear.

The temporary station is currently located at water booster pump station 42-B just north of the intersection of Pima Road and Jomax Road making access and visibility limited. The ingress/egress drive is an approximately a quarter mile access road that leads to Pima Road which adds to response times in the area.

Land was purchased in 2015 at Hayden Road and Jomax Road with the intent to build a permanent fire station to improve response times in that service delivery area. The new construction would improve response times to customers, be more accessible to the community, and provide a permanent home for the firefighters stationed here that meets industry safety standards.

ANALYSIS & ASSESSMENT

Safety

The current facility does not have OSHA-certified decontamination area or a storage area for personal protective equipment that meets industry standards as outlined in National Fire Protection Association 1500 and 1851 recommendations.

Additionally, this location has had two incidents within the last two years of the 'chlorine' alarm system activating due to operational problems of the water booster pump station that have impacted operations by forcing fire department units to go out of service and be displaced from their primary location.

What is the customer experience?

EXTERNAL: The current location and distance from a primary thoroughfare continues to have a negative impact response times for the customers in the service delivery area.

INTERNAL: The current facility is not commensurate with contemporary industry standards or City of Scottsdale employee expectations.

Recent Staff Action

The City Council recently approved and the City of Scottsdale was the successful bidder on a parcel of land located on the southwest corner of Hayden Road and Jomax Road with the intended use as the site for Station 613.

The Scottsdale Fire Department, following the recommendations of COS Audit Report No. 1413, updated their Standard of Coverage and Deployment Plan document by contracting with Emergency Services Consulting International to provide a third-party perspective. The contractual scope of work identified three components to be completed; Standard of Coverage, Facilities Assessment, and Fleet Assessment.

The land purchased at Hayden Road and Jomax Road was confirmed in the Standard of Coverage report as the appropriate location to improve response times in that service delivery area.

The consultant also hired a third-party architect to work with COS Facility personnel to complete the comprehensive fire facilities assessment. In the executive summary of the 'Fire Station Assessment' specific to FS613, "Scottsdale Fire Station No. 13 is a temporary facility co-located with a Scottsdale Well site so public access/visibility is limited. The fire station is a modular trailer housing fire station living areas, a covered canopy for the fire apparatus and (2) con-ex boxes for storage and turn-out gear. The facility is not very functional and does not meet the current standards established by the City of Scottsdale Fire Dept. The facility does not meet current ADA standards. The electrical power to the facility is fed from the well site and the facility does have emergency power. The facility has a single package A/C unit and sewage ejector/force main pumps to the well site sewer system. Interior finishes are all very dated and due to age the facility may contain hazardous materials that have not been remediated.

The overall assessment of the facility is very poor and has reached the limits of its functional life. It is our understanding that the replacement/relocation of the facility has been authorized by City of Scottsdale City Council."

Community Involvement

There will be multiple opportunities for community involvement through the design and construction of the new station.

Council Goals

The implementation of this project supports the Council Goal: Enhance Neighborhoods.

RESOURCE IMPACTS

Operating Cost

There will be an increase to operating costs as we transition from a 800 sq/ft single wide trailer to a 10,000 sq/ft contemporary fire station. This is a Facility asset staffed 24 hours per day 365 days per year and would be similar in ongoing operation costs of like sized fire stations housing four employees.

Staffing, Workload Impact

There will be no impact on staffing or workload due to the new station. Existing employees will be relocated into this facility.

Maintenance Requirements

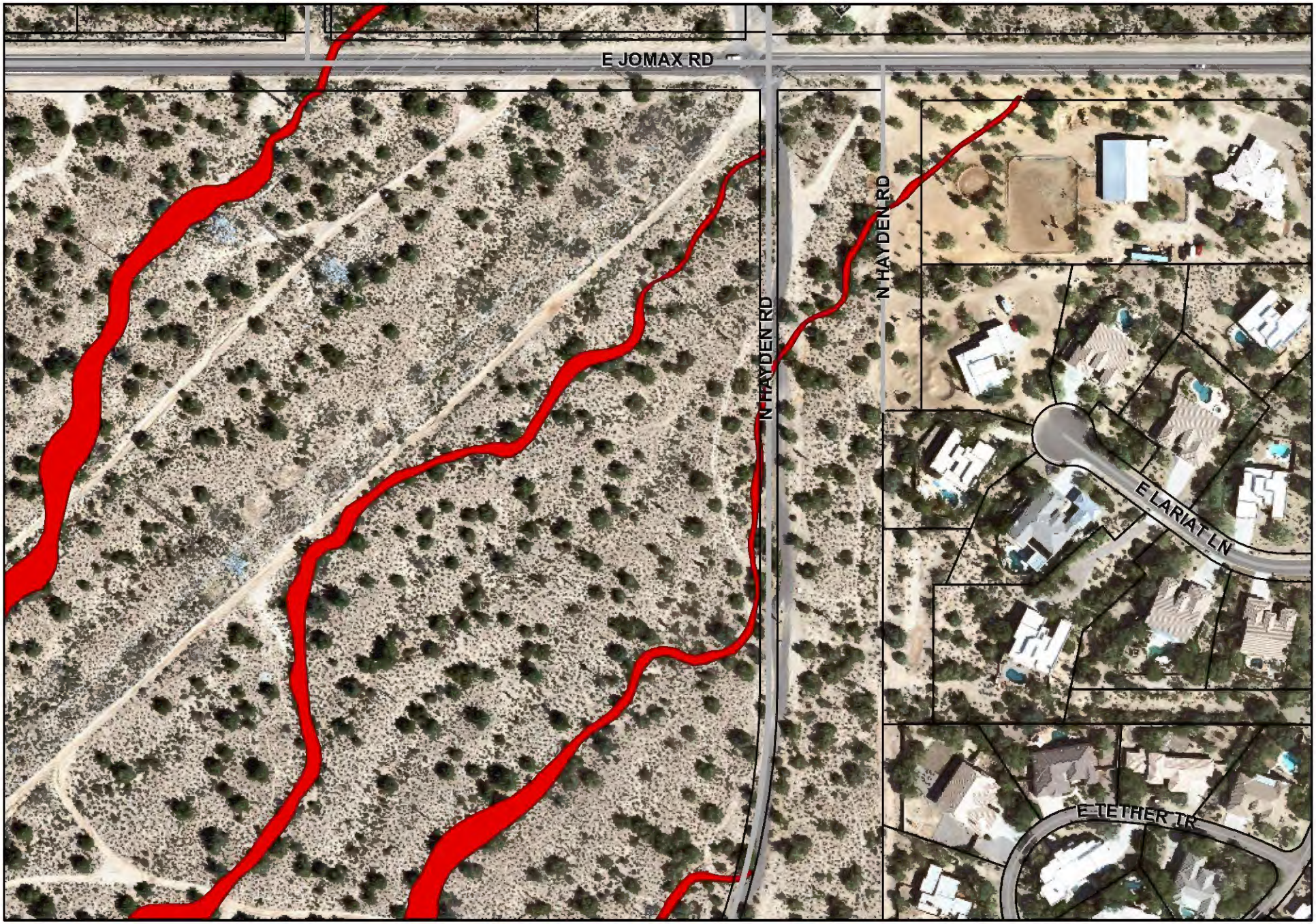
This is a Facility asset that would fall into their normal and routine periodic maintenance schedule similar to other fire stations of like size.

Impact if this project is not implemented

The fire department would continue to house employees and respond to customer needs from the current location.

Supplemental Information:

1. Facility location map
2. Design plans



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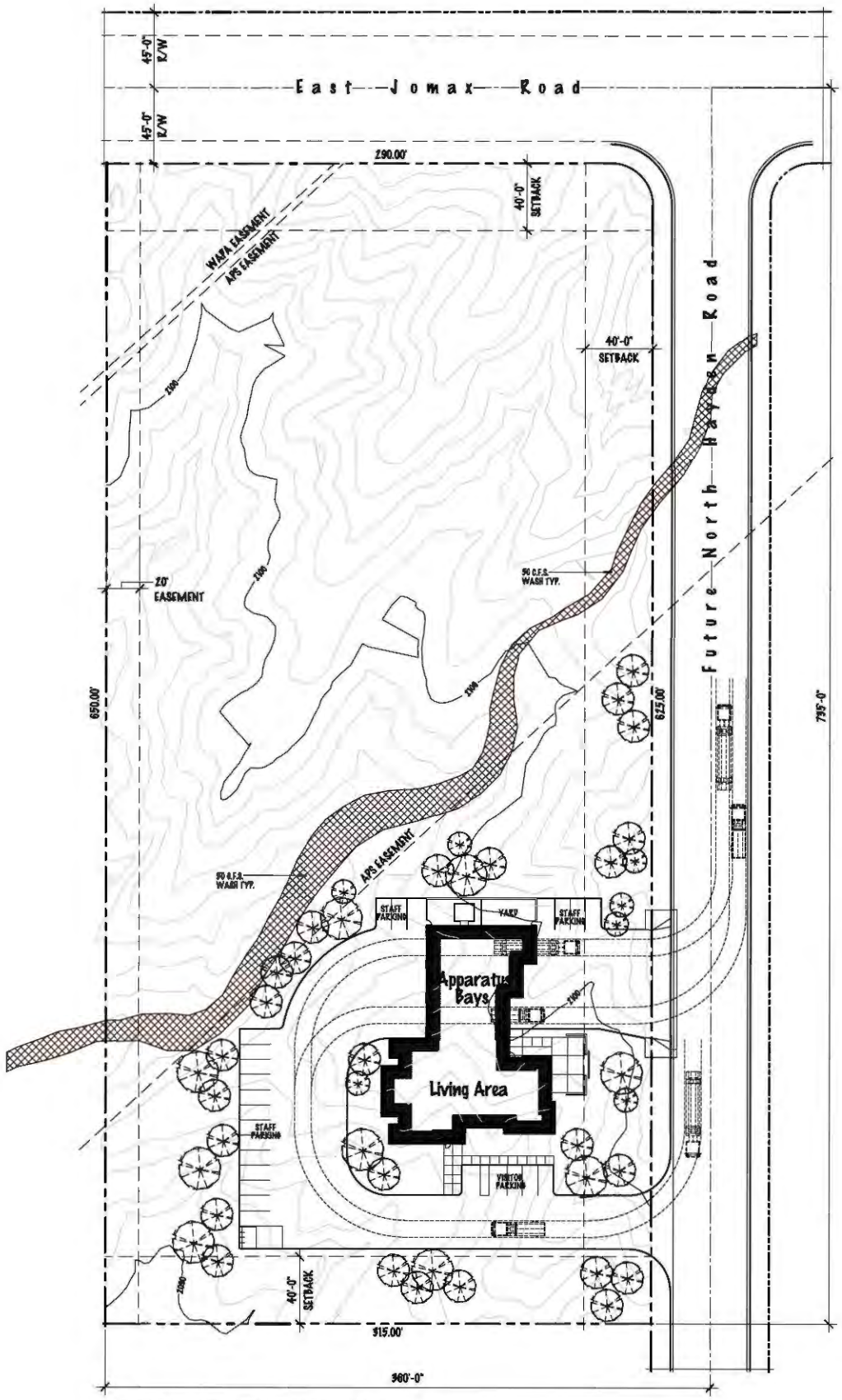
CITY OF SCOTTSDALE
City of Scottsdale GIS



9,487 S.F. (GROSS)
8,894 S.F. (USEABLE)

CITY OF SCOTTSDALE

City of Scottsdale/ Fire Station 613

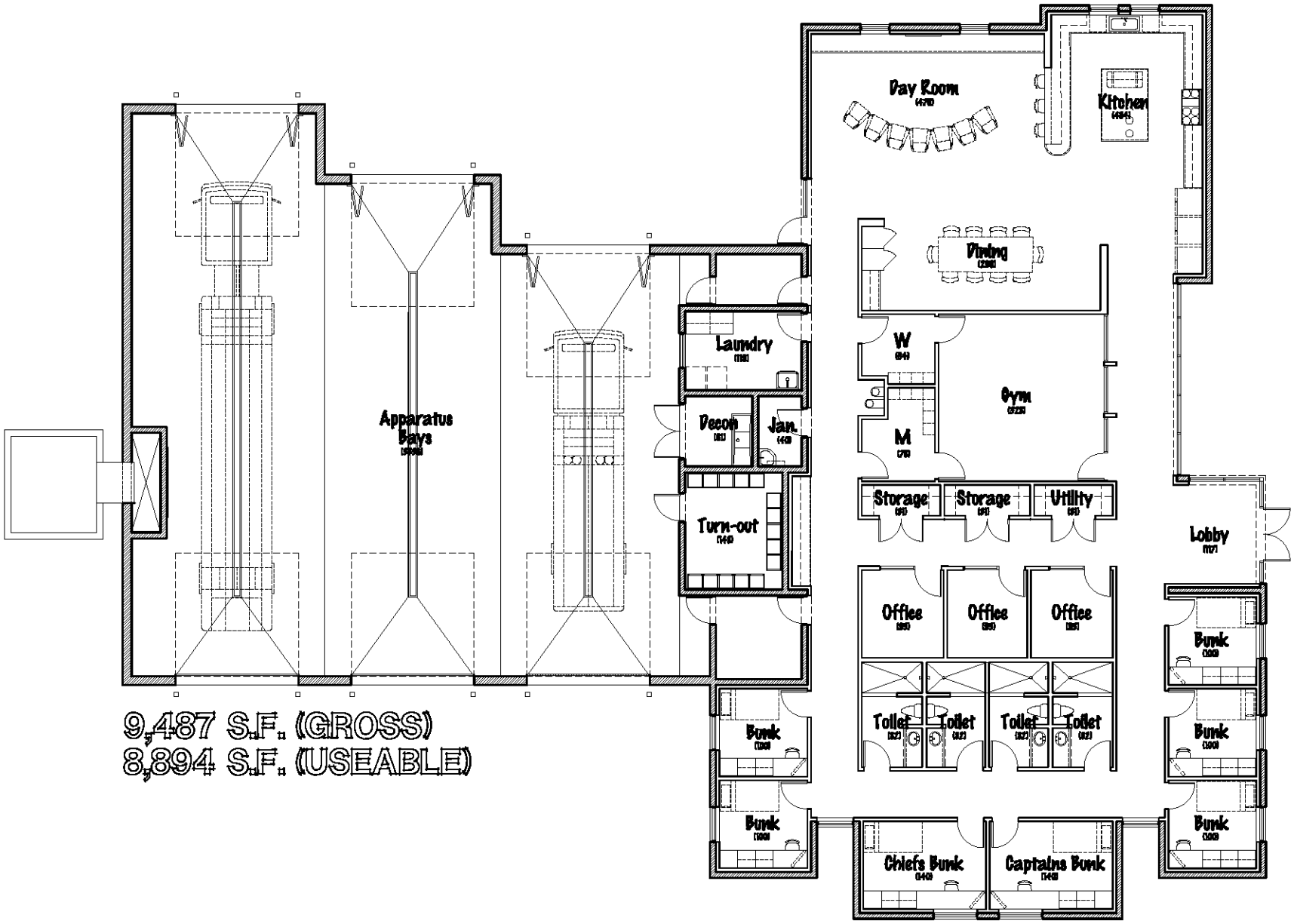
JOMAX ROAD / FUTURE HAYDEN ROAD

CONCEPTUAL SITE PLAN

NORTH

SCALE: N.T.S.

10/01/14



CITY OF SCOTTSDALE

City of Scottsdale/ Fire Station 613

JOMAX ROAD / FUTURE HAYDEN ROAD

CONCEPTUAL FLOOR PLAN

NORTH

SCALE: N.T.S.

10/01/14

Design and Build Fire Station 616 (Desert Mountain)

Estimated Project Cost: $3,700,000

Staff Priority: 11 of 34

PROJECT DETAILS

Project Summary

Replace a temporary facility with a permanent fire station at 110th Street and Cave Creek Road. The new station will include crew quarters and facilities, office space, OSHA-certified decontamination area, safety gear storage and an apparatus bay.

Project Location

110th Street and Cave Creek Road

Project Cost

Design	$380,000
Bond Issuance Cost	$60,000
Construction	$2,510,000
Administration	$330,000
Contingency	$420,000
Total Cost	$3,700,000

ANALYSIS & ASSESSMENT

Background

Currently the City of Scottsdale Fire Department operates out of a temporary double-wide trailer located at 110th Street and Cave Creek Road. The fire station is a double wide modular trailer housing fire station living areas, a covered canopy for the fire apparatus and approximately 500 square-foot structure, which was the previous fire station, but is now being utilized for physical fitness, restroom and laundry.

The facility is co-located at a Scottsdale Well site making access and visibility limited. The ingress/egress drive is an approximately ¼ mile gravel road that passes through washes.

Land was purchased in 2009 at 10905 E Loving Tree Lane with the intent to build a permanent fire station to improve response times in that service delivery area. The new construction would improve response times to more customers, be more accessible to the community, and provide a permanent home for the firefighters stationed here.

Safety

The current facility does not have OSHA-certified decontamination area or a storage area for personal protective equipment that meets industry standards as outlined in National Fire Protection Association 1500 and 1851 recommendations.

ANALYSIS & ASSESSMENT

What is the customer experience?

EXTERNAL: The current location and distance from a primary thoroughfare continues to have a negative impact response times for the customers in the service delivery area due to its current location.

INTERNAL: The current facility is not commensurate with contemporary industry standards or City of Scottsdale employee expectations.

Recent Staff Action

The Scottsdale Fire Department, following the recommendations of COS Audit Report No. 1413, updated their Standard of Coverage and Deployment Plan document by contracting with Emergency Services Consulting International to provide a third-party perspective. The contractual scope of work identified three components to be completed; Standard of Coverage, Facilities Assessment, and Fleet Assessment.

The 10905 E Loving Tree Lane address purchased in 2009 was confirmed in the Standard of Coverage report as the appropriate location to improve response times in that service delivery area.

The consultant also hired a third-party architect to work with COS Facility personnel to complete the comprehensive fire facilities assessment. In the executive summary of the 'Fire Station Assessment' specific to FS616, "Scottsdale Fire Station No. 16 is a temporary facility co-located with a Scottsdale Well site so public access/visibility is limited. The ingress/egress drive is an approximately. ¼" gravel road that passes through wash(es) which could be compromised during sudden weather. There is a manual vehicle gate that would delay response time, but is our understanding that it remains open when fire personnel are in the facility. The fire station is a double wide modular trailer housing fire station living areas, a covered canopy for the fire apparatus and approximately. 500 sf. structure, which was the previous fire station, but is now being utilized for physical fitness, restroom and laundry. The modular facility is relatively new and restrooms are ADA accessible and two (2) of the dorms private and the other two are shared. The electrical power to the facility is fed from the well site/existing 500 sf structure with no emergency power. The modular facility has two split system A/C units with no reported issues. Scottsdale staff stated that there was a roof leak above one of the offices and was due to improper seam in the single-ply roof but could not verify if it had been repaired. Additional asphalt was added around the modular fire station to direct storm water to the west into the surrounding desert. Interior finishes are functional and in good condition based on the age of the facility. Although considered a temporary facility the new modular fire station is in very good condition so replacement/relocation is not critical, although it was stated that the land has been purchased for a new facility in the future".

Community Involvement

There will be multiple opportunities for community involvement through the design and construction of the new station.

Council Goals

The implementation of this project supports the Council Goal: Enhance Neighborhoods

RESOURCE IMPACTS

Operating Cost

There will be an increase to operating costs as we transition from a 1500 sq/ft double wide trailer to a 10,000 sq/ft contemporary fire station. This is a facility asset staffed 24 hours per day, 365 days per year and would be similar in ongoing operation costs of like sized fire stations housing four employees.

Staffing, Workload Impact

There will be no impact on staffing or workload due to the new station. Existing employees will be relocated into this facility.

Maintenance Requirements

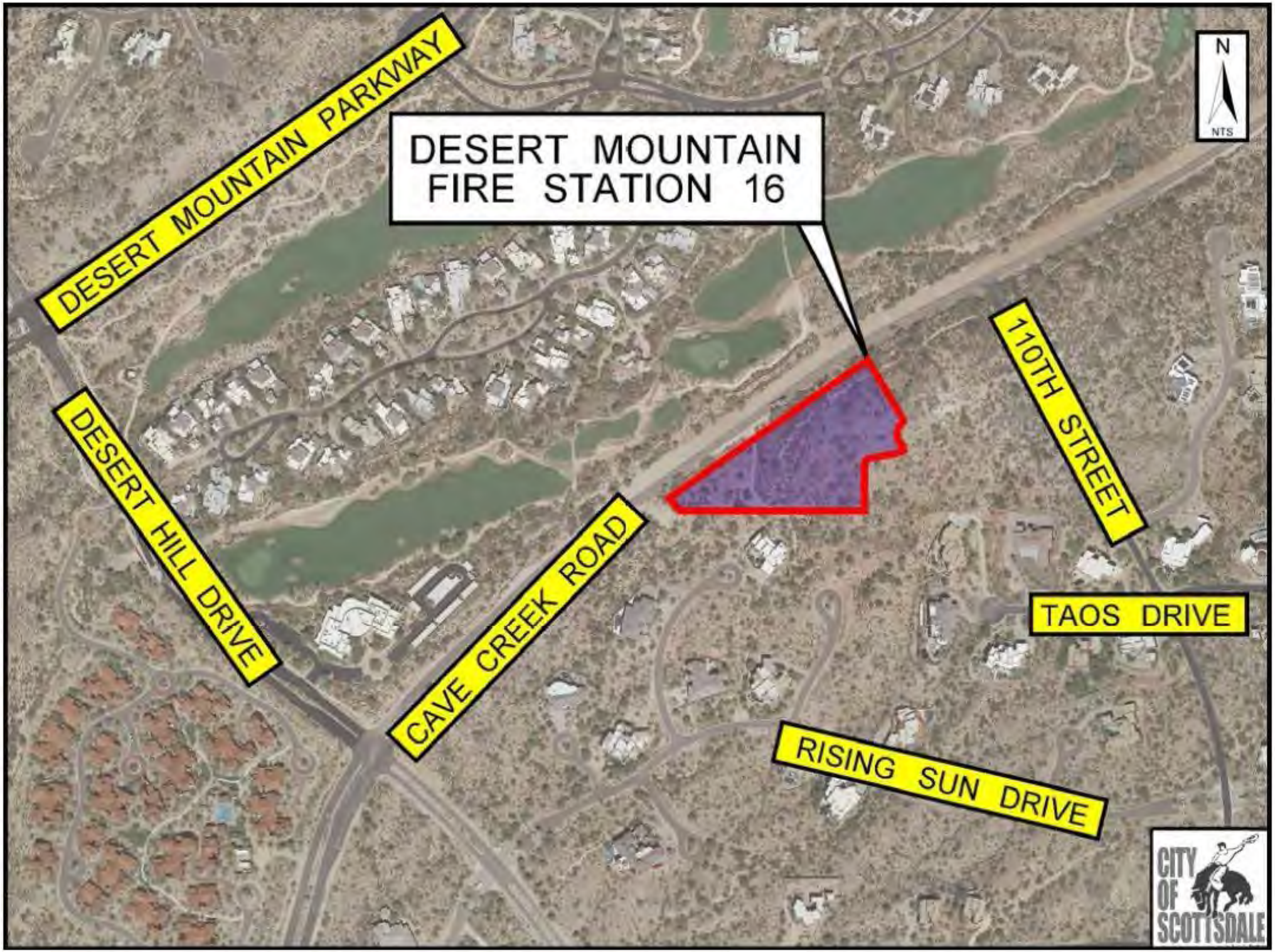
This is a facility asset that would fall into their normal and routine periodic maintenance schedule similar to other fire stations of like size.

Impact if this project is not implemented

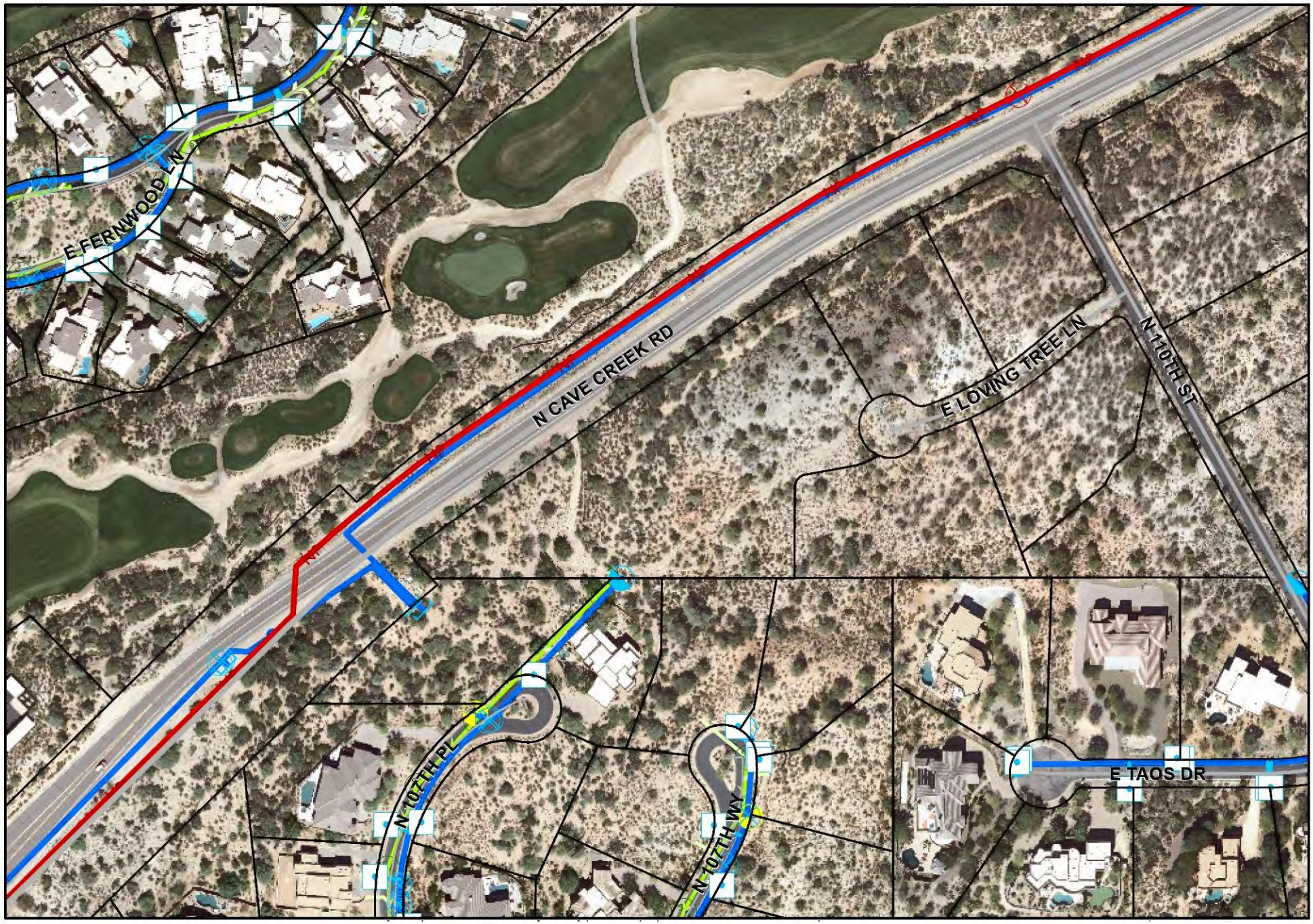
The fire department would continue to house employees and respond to customer needs from the current location.

Supplemental Information:

1. Facility location maps
2. Design concept


DESERT MOUNTAIN PARKWAY
DESERT MOUNTAIN
FIRE STATION 16
N
NTS
110TH STREET
DESERT HILL DRIVE
CAVE CREEK ROAD
TAOS DRIVE
RISING SUN DRIVE
CITY OF SCOTTSDALE

FS 616



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CITY OF SCOTTSDALE
City of Scottsdale GIS


CAVE CREEK ROAD
Response Driveway
50' Easement
40' Setback
Entry
Single Story Fire Station No. 16
Evap Cooler
Gen
Visitor Parking
Patio
Staff
Trash
Return Driveway
Project Information
1. Site (gross)
2. Site (net)
3. Building Footprint
4. Paved Area - 26,500 SF
5. Total Site Development - 37,500 SF
Required - 25%
Scale
N
0 10' 20' 40' 80'
STATION 16
June 30, 2008
SITE CONCEPT E

Relocate Fire Station 603

Estimated Project Cost: $6,750,000

Staff Priority: 21 of 34

PROJECT DETAILS

Project Summary

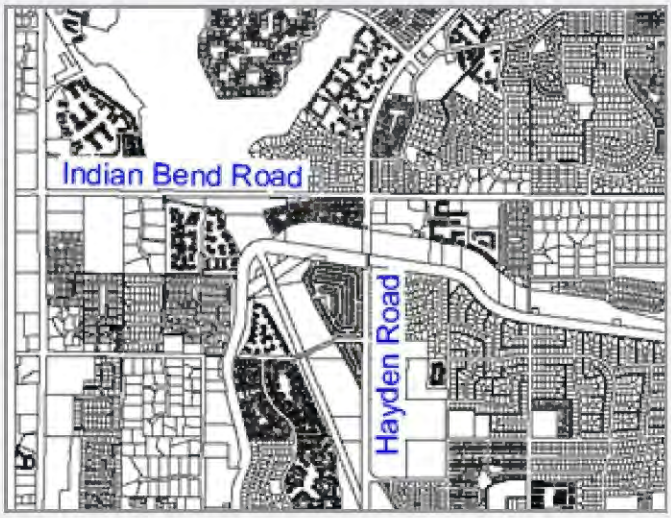
Buy land, design and build a new site for Fire Station 603 in the McCormick Ranch area to improve response times to that portion of the city. The new station will include crew quarters and facilities, office space, OSHA-certified decontamination area, safety gear storage and two apparatus bays.

Project Cost

Design	$540,000
Bond Issuance Cost	$60,000
Construction	$3,150,000
Administration	$460,000
Contingency	$540,000
Land	$2,000,000
Total Cost	$6,750,000

Project Location

The ideal location for the new station is the McCormick Ranch area, but a specific location has not been identified.



ANALYSIS & ASSESSMENT

Background

Fire Station 603 is located just east of Scottsdale Rd. and McDonald Rd. intersection and is on the most western edge of the City of Scottsdale. This site was originally chosen to be advantageous for Rural/Metro to provide services to both the City of Scottsdale and the Town of Paradise Valley when Rural/Metro provided services to both entities.

After a third-party updating of the Fire Department's Standard of Coverage and Deployment plan, it was confirmed that the city and its residents would be better served if FS603 were relocated to the northeast in the McCormick Ranch Area. This relocation would provide for a better level of service and decrease response times.

Safety

The current facility does not have OSHA-certified decontamination area or a storage area for personal protective equipment that meets industry standards as outlined in National Fire Protection Association 1500 and 1851 recommendations.

ANALYSIS & ASSESSMENT

What is the customer experience?

EXTERNAL: The current location is in the wrong location to best serve the customers/citizens of the City of Scottsdale. This inappropriate location results in longer response times to the majority of its designated service area and specifically to the McCormick Ranch and Gainey Ranch neighborhoods.

INTERNAL: The current facility is not commensurate with contemporary industry standards or City of Scottsdale employee expectations.

Recent Staff Action

The Scottsdale Fire Department, following the recommendations of COS Audit Report No. 1413, updated their Standard of Coverage and Deployment Plan document by contracting with Emergency Services Consulting International to provide a third-party perspective. The contractual scope of work identified three components to be completed; Standard of Coverage, Facilities Assessment, and Fleet Assessment.

The consultant also hired a third-party architect to work with COS Facility personnel to complete the comprehensive fire facilities assessment. In the executive summary of the 'Fire Station Assessment' specific to FS603, "Scottsdale Fire Station No. 3 was constructed in 1971 and is the oldest fire station still in operation within the city. The facility has undergone numerous renovations including a dormitory addition, lengthening of the apparatus bays, addition of a fire sprinkler system and various interior finish revisions. The facility is not very functional and does not meet the current standards established by the City of Scottsdale Fire Dept. as is evident in their current fire station designs. The facility does not meet current ADA standards, is not on emergency power and has severe site drainage issues and structurally failing drives and apparatus bay concrete. Interior finishes are all very dated and the facility still contains hazardous materials that have not been remediated. The overall assessment of the facility is very poor and would indicate that the facility has reached the limits of its functional life. Its replacement/relocation should be considered in the near future"

Community Involvement

There will be multiple opportunities for community involvement through the design and construction of the new station.

Council Goals

The implementation of this project supports the Council Goal: Enhance Neighborhoods

RESOURCE IMPACTS

Operating Cost

This is a facility asset staffed 24 hours per day, 365 days per year and would be similar in ongoing operation costs of like sized fire stations housing four employees. The operating cost for this facility would be offset by the closure of the old FS603.

Staffing, Workload Impact

There will be no impact on staffing or workload due to the new station. Existing employees will be relocated into this facility.

Maintenance Requirements

This is a facility asset that would fall into their normal and routine periodic maintenance schedule similar to other fire stations of like size.

Impact if this project is not implemented

The fire department would continue to house employees and respond to customer needs from the current location.

Expand and Renovate the Civic Center Jail and Police Station

Estimated Project Cost: $10,100,000

Staff Priority: 19 of 34

PROJECT DETAILS

Project Summary

The Civic Center Jail will be expanded and renovated so that all city jail operations can be centralized at this location. In addition, the Civic Center Police facility will be expanded to support the needs of the High Enforcement Arrest Team, K9 unit, Bike Support Unit and Downtown Patrol Services.

Project Cost

Design	$773,000
Bond Issuance Cost	$60,000
Construction	$6,935,000
Administration	$1,045,000
Contingency	$1,287,000
Total Cost	$10,100,000

Project Location

The Civic Center Station is located on the southwest corner of 75th Street and 2nd Street.

ANALYSIS & ASSESSMENT

Background

The Civic Center Jail was originally constructed in 1971. As the city has grown, the need for jail services has also risen. Over the years the design of jail facilities has evolved, this is in an effort to reduce liability and increase prisoner and detention officer safety. In order to complete the jail expansion, it will necessitate the relocation of several police specialty units. Currently, relocation of these police units to other existing police facilities is not feasible, due city wide facility consolidation. Additionally, court expansion in recent years has resulted in the reduction of space to less than 6000 square feet for District 2 patrol units.

Safety

Many safety concerns exist, as jail overcrowding is a daily problem. Due to a lack of space, prisoners are consolidated into smaller cells resulting in prisoners being required to stand. Overcrowding causes a detention officer safety issue, due to the inability to get into tight jail spaces by more than one officer at a time. The majority of the jail is non-ADA compliant, resulting in issue for fire personnel responding to treat medical emergencies. The existing control room is located in the middle of the jail facility and is unsecured. When a fight breaks out, there are no barriers to prevent it from entering the control room. The cell door design allows for

ANALYSIS & ASSESSMENT

prisoners to climb up cell walls, creating a safety issue. The lack of an adequate pre-booking area is also a concern, as there is no place to properly process prisoners.

What is the customer experience?

Due to a lack of sufficient kitchen facilities, prisoners are being fed at different times. This causes issues as prisoners become upset and begin to act out. Lack of jail cells has resulted in prisoners sleeping on floors. Over-crowding causes a back log of prisoner bookings, resulting in the delay of officers returning to service.

Recent Staff Action

In 2002, a police department space study was completed by McClaren, Wilson, & Lawrie, Inc. Included in the recommendations was an 8000 square foot expansion of the jail. The expansion was recommended due to the need to centralize jail operations, improve over-crowding conditions, and to meet our future needs for a 20 year build out.

Council Goals

The implementation of this project supports the Council Goals: Enhance Neighborhoods and Seek Sustainability.

RESOURCE IMPACTS

Operating Cost

Due to the jail assuming the work area of current police specialty units no increase in operating costs will occur. The increase in cost will come with the 9000 square foot addition for the police specialty units.

Staffing, Workload Impact

Antiquated door locking mechanisms of the jail can no longer be replaced. This will eventually result in a workload impact to detention staff as security of prisoners will become an issue.

Maintenance Requirements

Normal maintenance would be required for the additional square footage.

Impact if this project is not implemented

If this measure is not approved, over-crowding and safety issues will continue. The facility will continue to degrade, and eventually become unusable.

Supplemental Information:

1. Facility location maps

150 0 300

Feet

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CITY OF SCOTTSDALE
City of Scottsdale GIS


B
NEW D2 PATROL STATION
OFFICES ABOVE SALLY PORT
= 9,000 FT²
D
12 YEAR JAIL CONSOLIDATION
(DESIGN JUST COMPLETED
= 10,795 FT²

Modify the District 4 Police Station

Estimated Project Cost: $510,000

Staff Priority: 27 of 34

PROJECT DETAILS

Project Summary

The original design of the Foothills District Police Station (20363 N. Pima Road) was based on 60 percent of current staffing levels. Modifications are required to handle the increased occupancy and operations at this location.

Project Cost

Design	$53,000
Bond Issuance Cost	$60,000
Construction	$292,000
Administration	$47,000
Contingency	$58,000
Total Cost	$510,000

Project Location

The District 4 Police Station is located at 20363 N. Pima Road.

ANALYSIS & ASSESSMENT

Background

The Foothills District Police Station was constructed in 2000. Due to an increase in personnel assigned to this station, the facility layout is no longer functional and is in need of redesign. The renovations are not to increase the square footage of the building, but to reconfigure the current space allocated. These renovations would help accommodate the increase in staffing and provide for more efficient use of the space.

What is the customer experience?

The current design provides for no inside storage, necessitating that equipment be stored outside.

The report writing, computer, and briefing room areas are inadequate for the number of personnel. The lack of computer space causes a backup of officers at the end of shift causing a delay in timely report writing. Lockers for personnel are spread throughout the building due to an inadequately sized locker room. Due to limited office space, Police Supervisors are finding it a challenge to meet with, mentor, or discipline employees.

Council Goals

The implementation of this project supports the Council Goals: Enhance Neighborhoods and Seek Sustainability.

RESOURCE IMPACTS

Operating Cost

If the building footprint is increased the increase in operating costs will be negligible.

Staffing, Workload Impact

These changes would result in a more efficient working environment and allow for personnel to complete their work in a timely manner.

Maintenance Requirements

There will be no additional maintenance requirements.

Impact if this project is not implemented

As District 4 continues to grow, more personnel will be assigned. Until these issues are addressed, the problems will continue to compound.

Supplemental Information:

1. Facility location maps
2. Facility photo
3. Design plans

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Feet

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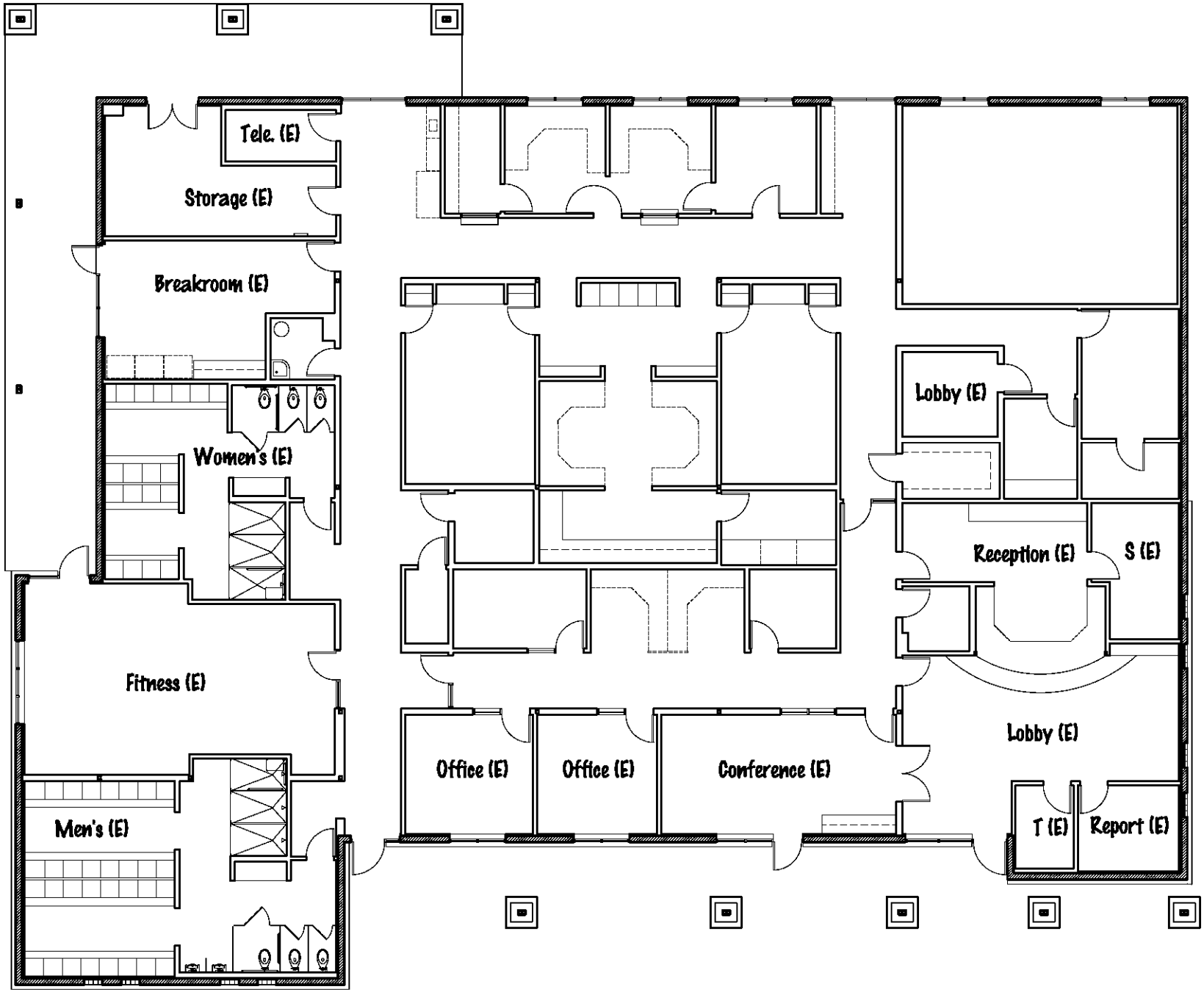
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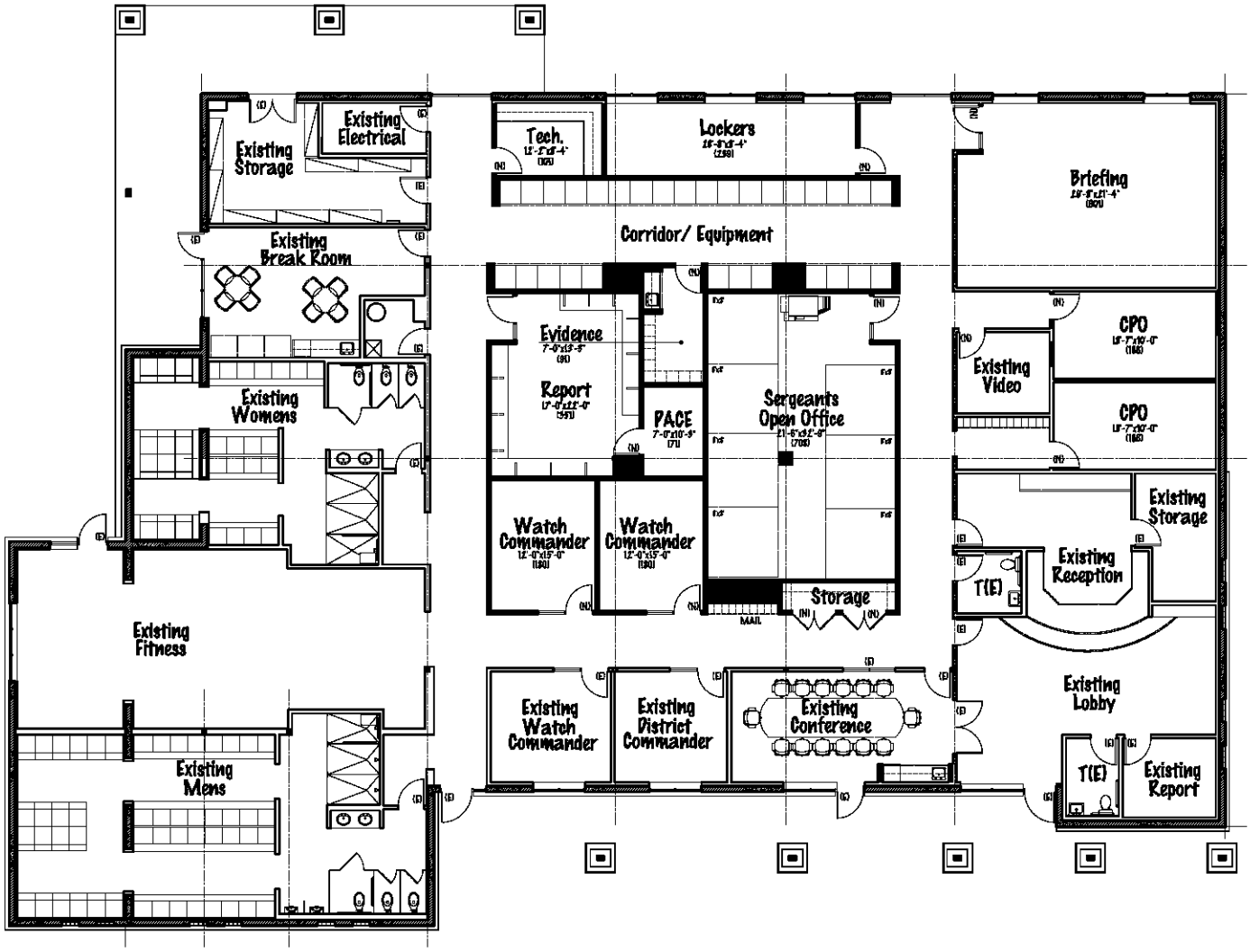


NORTH

City of Scottsdale / Police Department / District 4

DISTRICT FLOOR PLAN
CONCEPTUAL PLAN

Sheet Number 1

SCALE: 1/8"-1'-0" REVISED 02/29/12 02/29/12

Rebuild Public Safety Vehicle Training Track

Estimated Project Cost: $1,700,000

Staff Priority: 24 of 34

PROJECT DETAILS

Project Summary

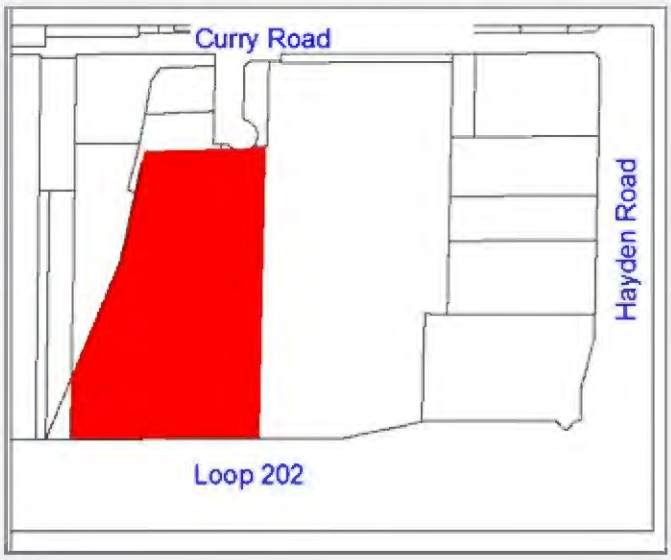
The track at the Thomas A. Hontz Training Facility has reached the end of its life cycle and needs to be replaced to safely accommodate public safety training needs. The track supports a variety of driver and safety training for Scottsdale's Police and Fire departments.

Project Cost

Design	$74,000
Bond Issuance Cost	$60,000
Construction	$1,285,000
Administration	$88,000
Contingency	$193,000
Total Cost	$1,700,000

Project Location

The training track is located at the Thomas A. Hontz facility at 911 Stadem Drive, Tempe, AZ.



ANALYSIS & ASSESSMENT

Background

The training track at the Hontz facility was originally designed for light duty police vehicles. Over the last several years, the track's usage has changed and it is now utilized by both police and fire departments. Due to the extreme weight of fire vehicles, excessive damage has resulted. The damage being caused to the track will continue, until it is reconstructed to accommodate the heavier vehicles.

What is the customer experience?

Due to constant repairs, training days are being lost for police, fire, and municipal departments. As the track continues to deteriorate, it becomes more difficult to train personnel in a safe environment.

Council Goals

The implementation of this project supports the Council Goal: Seek Sustainability

RESOURCE IMPACTS

Operating Cost

A track that is properly designed would result in a decrease in repair costs.

Impact if this project is not implemented

If the project is not completed the track will continue to deteriorate and become unrepairable and unusable.

Supplemental Information:

1. Facility location maps
2. Pictures of existing conditions

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Training Track Damage

Build a New Parking Structure in the Northeast Part of Downtown Scottsdale

Estimated Project Cost: $13,800,000

Staff Priority: 29 of 34

PROJECT DETAILS

Project Summary

A new 400-space above ground parking structure would accommodate increased demand in an area where several large employers have located and expanded. The structure will be located at a city-owned property located at 6th Avenue between Wells Fargo Avenue and Civic Center Plaza.

Project Cost

Design	$1,148,000
Bond Issuance Cost	$60,000
Construction	$9,985,000
Administration	$1,109,000
Contingency	$1,498,000
Total Cost	$13,800,000

Project Location

The proposed garage is located on City owned property at 6th Avenue between Wells Fargo Avenue and Civic Center Plaza.

ANALYSIS & ASSESSMENT

Background

Parking in the area of downtown Scottsdale has been studied since 1988. The studies have resulted in identifying the area of this proposed project as a sector of downtown that is short of available parking.

Recently business have moved into or expressed interest in moving into this area, increasing the need for additional parking. The increased parking would give employees a place to park while leaving the prime parking spaces open for customers. The City currently owns land in this area that would lend itself to the development of a garage facility for public use.

What is the customer experience?

Currently it may be difficult for people to park in the downtown area causing them to not stop and visit the amenities offered by the city and private retailers.

Recent Staff Action

The parking garage location was identified by the IBI Group as a part of a 1988 Downtown Parking Study and agreed to by Walker Parking Consultants as a part of their restudy of the area in 2003.

The 2009 Downtown Task Force recommended that "any future public bond proposal should include additional downtown area parking facilities."

ANALYSIS & ASSESSMENT

Council Goals

The implementation of this project supports the Council Goals: Support Economic Vitality and Advance Transportation.

RESOURCE IMPACTS

Operating Cost

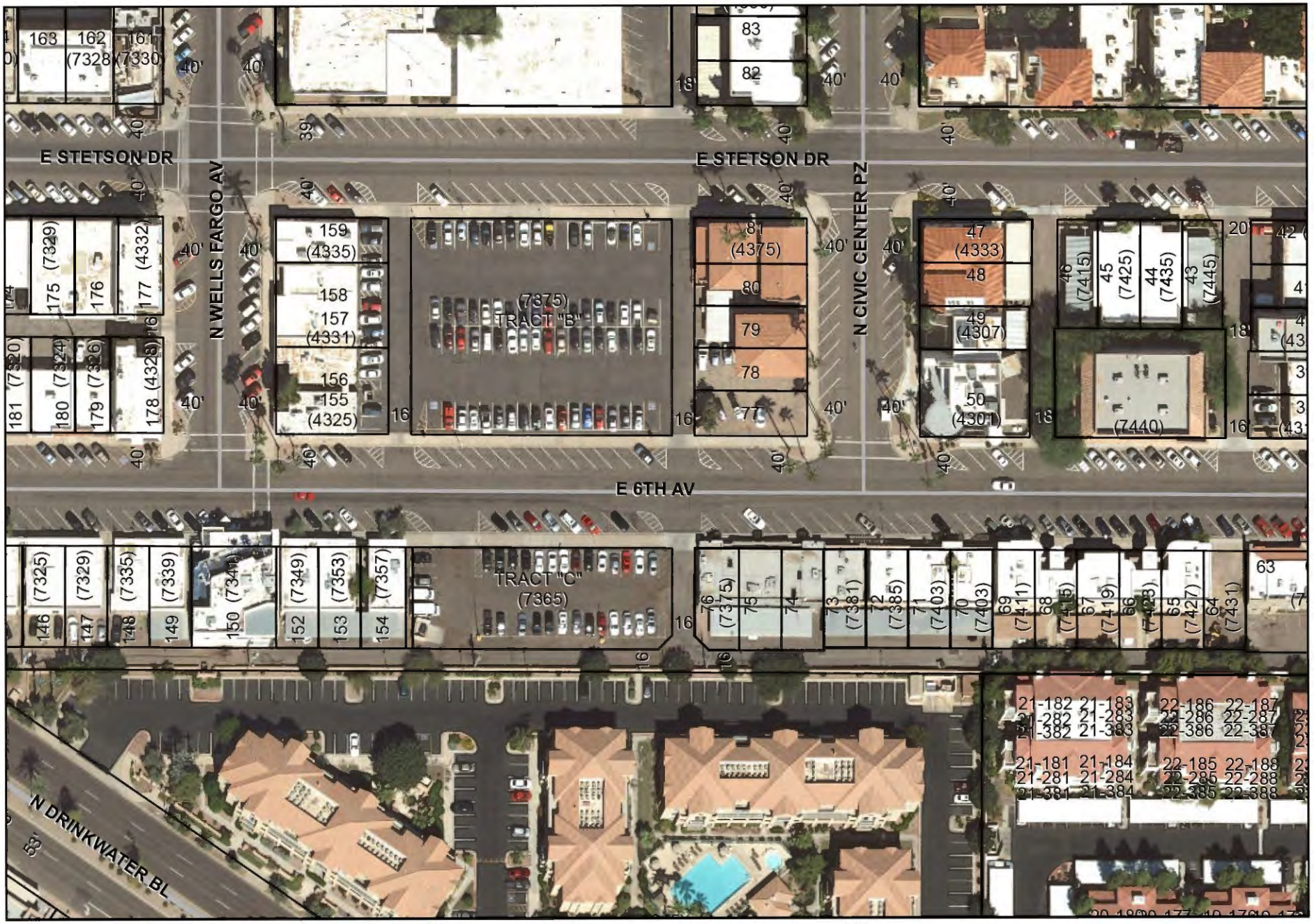
The structure would add operating costs equal to those of the existing parking structures owned and operated by the City of Scottsdale.

Impact if this project is not implemented

Parking will continue to be an issue in the downtown area hurting local businesses.

Supplemental Information:

1. Facility location map



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Improve and Expand Regional Drainage in the Crossroads East Area

Estimated Project Cost: $13,500,000

Staff Priority: 8 of 34

PROJECT DETAILS

Project Summary

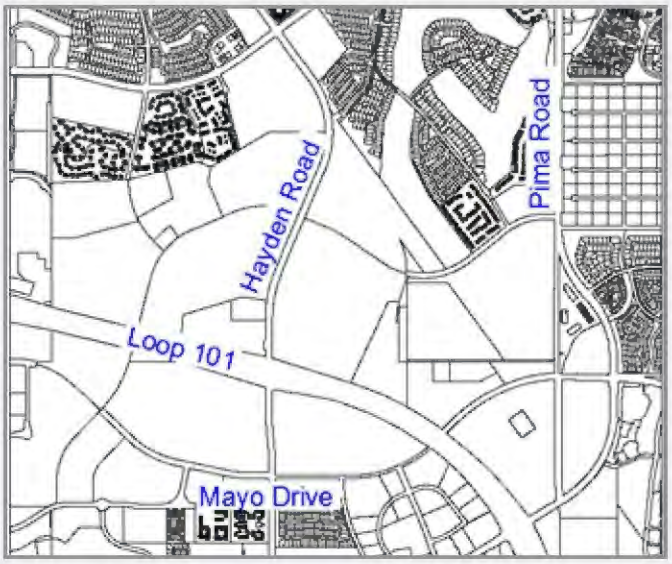
Drainage improvements for the area south of Grayhawk Drive, west of Pima Road, north of the Mayo Boulevard (alignment) and Princess Boulevard and east of Scottsdale Road will convey regional flows, reduce the potential for local flooding south of the area and facilitate development of the Crossroads East parcels owned by the Arizona State Land Department. This is a joint-funded project: the future developer of the property will pay $12.5 M (48 percent) and the city will pay the remaining $13.5 M (52 percent).

Project Cost

Design	$1,558,000
Bond Issuance Cost	$60,000
Construction	$8,656,000
Administration	$1,495,000
Contingency	$1,731,000
Total Cost	$13,500,000

Project Location

The drainage system is located in the general area of the Loop 101 and Hayden Road.



ANALYSIS & ASSESSMENT

Background

The areas addressed by this project are located in a special flood hazard area identified by FEMA as an "AO" zone. Many of the roadways and properties may be subject to shallow flooding under certain storm conditions. In addition, the undeveloped areas north and south of the Loop 101 Freeway (owned by the Arizona State Land Department) are also subject to the shallow flooding that could occur under certain types of storms. Finally, the city's water campus is in the area of this project and could be impacted if flooding occurs.

Safety

This project will provide improved flood protection to property owners and motorists in the area north of the CAP canal and also to the city's water campus ensuring against a disruption of water delivery under flooding conditions. An additional benefit will be a more detailed and predictable plan for drainage improvements in undeveloped properties in the Crossroads East area.

ANALYSIS & ASSESSMENT

What is the customer experience?

Flooding in this area could impact residences and businesses south of the Loop 101 including the Perimeter Center, Princess Resort, TPC golf course and residential areas north of the CAP canal. The city's main water campus will also be benefitted by this project ensuring more reliable delivery of water to customers.

Recent Staff Action

Working with outside consultants, staff has completed a master drainage plan for the area of the city north of the CAP canal, east of Scottsdale Road and west of Pima Road up through the Grayhawk area. Staff has been negotiating with the Arizona State Land Department to determine the cost sharing ratio between the city and the department with those negotiations ongoing. Cost sharing is being analyzed based on the areas benefited by the improvements. It is anticipated that the conclusion of the negotiations will lead to a future amendment to the development agreement governing the Crossroads East area. Staff has estimated that the final agreement will apportion the improvement costs at a 48%/52% split between the state and the city.

Community Involvement

No significant community involvement has occurred at this stage of the project. Should the project move forward, it will be necessary to conduct public meetings with residential and commercial property owners both in the southern part of the Grayhawk area and in the developed area north of the CAP canal. Other stakeholders would include the TPC, the Princess Resort and most importantly, the city's water campus.

Council Goals

The implementation of this project supports the Council Goals: Support Economic Vitality, Enhance Neighborhoods, Seek Sustainability and Advance Transportation

RESOURCE IMPACTS

Operating Cost

No additional operating costs are forecasted as a result of this project. Minor increases in maintenance costs may occur as noted below.

Maintenance Requirements

Overall, minimal increase in maintenance costs are anticipated for the city. Implementation of this project will lead to the development of various culverts, channels and other structures that will require periodic maintenance. In the developed portions of the project area, existing drainage structures will mostly be upgraded leading to little increased maintenance costs. In some areas, existing maintenance is conducted by the city and in others, maintenance is provided by commercial or homeowner associations. In undeveloped areas of the project, future developers will be stipulated to the maintenance of drainage structures on their property. Overall, minimal increase in maintenance costs are anticipated for the city.

Leveraged Funds

Staff's current estimate is that 48% of the project costs will be paid by a future developer of the Arizona State Land Department properties with the remaining 52% to be paid by the city. Where appropriate, the city will apply to the Flood Control District of Maricopa County for additional funds although staff believes there is a low likelihood of contributions from the District.

Impact if this project is not implemented

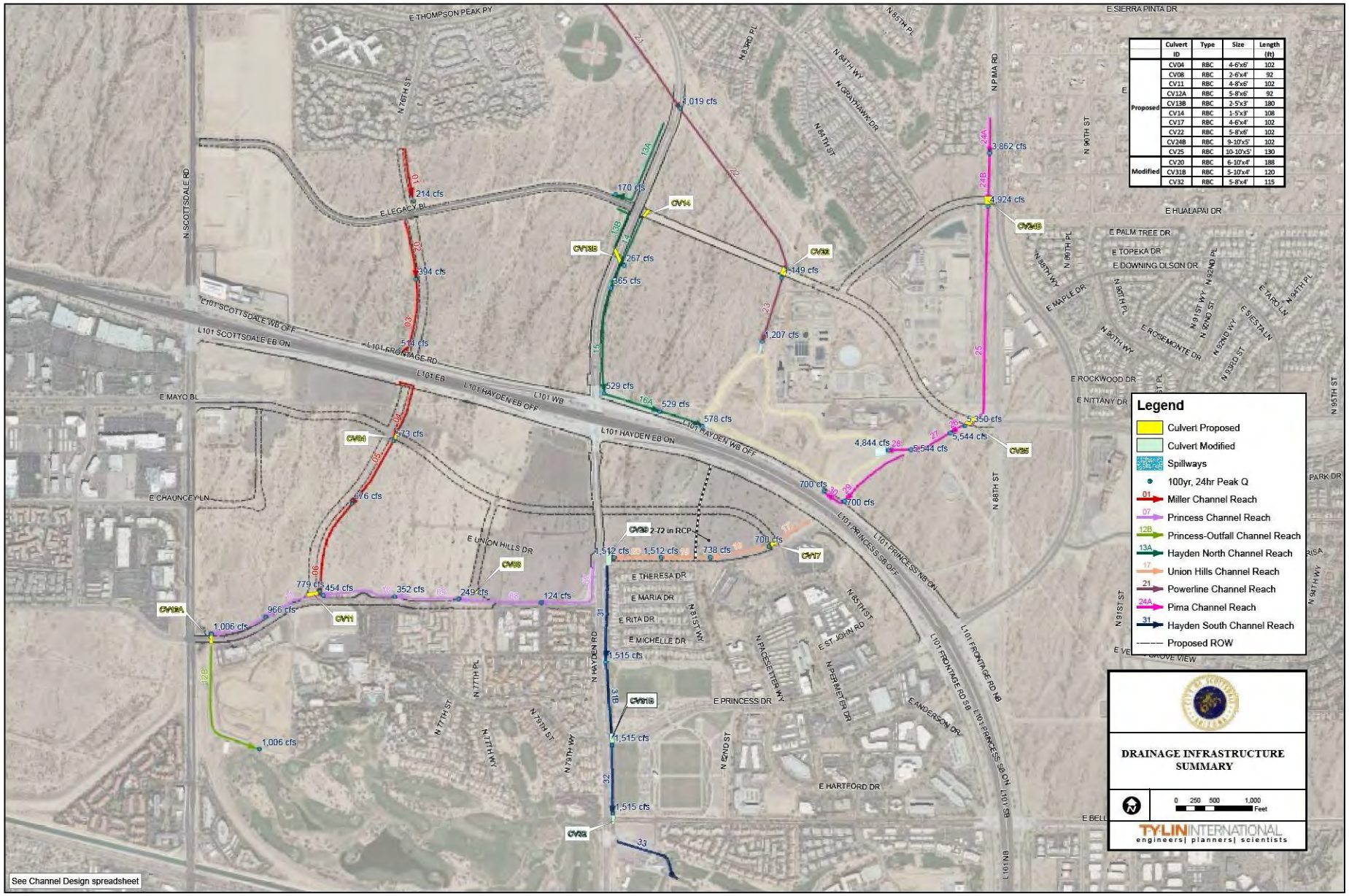
Flood hazards will continue to exist for existing developed properties south of the Arizona State Land Department properties and north of the

RESOURCE IMPACTS

CAP canal. The city's water campus could also be subject to flooding which could disrupt the operations of the facility. The undeveloped portions of State Land will also incur significantly higher development costs than what might be otherwise needed if the project were not to be constructed.

Supplemental Information:

1. Drainage Infrastructure Summary
2. Design concept report



	Culvert ID	Type	Size	Length (ft)
Proposed	CV04	RBC	4-6'x6'	102
	CV08	RBC	2-6'x4'	92
	CV11	RBC	4-8'x6'	102
	CV12A	RBC	5-8'x6'	92
	CV13B	RBC	2-5'x3'	180
	CV14	RBC	1-5'x3'	108
	CV17	RBC	4-6'x4'	102
	CV22	RBC	5-8'x6'	102
	CV24B	RBC	9-10'x5'	102
	CV25	RBC	10-10'x5'	130
Modified	CV20	RBC	6-10'x4'	188
	CV31B	RBC	5-10'x4'	120
	CV32	RBC	5-8'x4'	115

Crossroads East

Drainage Infrastructure

design concept report

COS number F0701 | january 2015

Prepared For

City of Scottsdale
Capital Project Management

Prepared By

TY·LIN INTERNATIONAL

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EXECUTIVE SUMMARY

This Design Concept Report (DCR) describes the development and evaluation process for selecting drainage infrastructure necessary to ensure an economically feasible means to capture and convey flows generated by the offsite watershed. This DCR describes the development, evaluation, and recommendation for the alternatives studied, and provides a conceptual recommendation for development of onsite storm water collection and conveyance facilities.

Historical Context of the Project

The Crossroads East parcels are currently undeveloped lands located on either side of the SR 101L Freeway, between Scottsdale Road and Pima Road, within the City of Scottsdale (City). Owned by the Arizona State Land Department (ASLD), this land is considered prime for development and are high-value due to its location and proximity to the SR 101L Freeway. Future land use indicates these parcels may develop as a mixture of commercial and high-density residential.

Previous studies of the offsite watershed have identified a potential flood hazard, which is the breakout from the Reata Pass Wash alluvial fan located at the base of the McDowell Mountains several miles to the northeast of the Crossroads East area. Previous studies have documented the effects of the Reata Pass Wash alluvial fan resulting in an effective Zone AO Federal Emergency Management Agency (FEMA) flood hazard; the boundaries of this flood hazard cover a large portion of the Crossroads East parcels which discourages wholesale development of the parcels.

During construction of the SR 101L Freeway, a borrow pit was excavated north of the freeway resulting in the creation of drainage Basin 53R (see Figure 1.1). This retention basin is located on State Land between the SR101L Freeway and the City's Water Campus and has significant storage capacity in excess of 300 acre-feet. Currently, the majority of storm water runoff in the Pima Road corridor bypasses Basin 53R flowing due south to cross culverts which convey runoff under the SR101L Freeway discharging into the Perimeter Center. Similarly, storm water runoff developed within or passing through the Grayhawk community impacts the Crossroads East parcels west of Basin 53R and thus effectively bypassing the storage basin.

Need and Purpose of the Project

This project is based upon a desire for a collaborative effort between the City and ASLD to develop a mutually beneficial regional drainage system. The main purpose of this project is to improve public safety, provide for commercial and residential growth, employment opportunities, and provide protection for existing infrastructure.

Working together, the City and ASLD are involved in a process which will enable both of these goals to occur. The initial step in the process was the Pinnacle Peak South Area Drainage Master Study (draft) which quantified the storm water runoff discharges impacting the Crossroads East parcels. With the hydrology defined, the need for this study became apparent as significant regional flows, originating in the McDowell Mountains, concentrates in two primary drainage corridors which reach the SR 101L Freeway (Pima Road and Powerline corridors). This DCR evaluates alternatives for the collection and conveyance of storm water runoff with the specific goal of selecting a recommended/preferred alternative to capture and convey regional flows and facilitate the sale and development of the Crossroads East parcels.

Alternatives Studied in Detail

Initial investigation into alternatives eliminated underground improvements as being too costly due to the size and length of infrastructure necessary to covey the offsite flows, therefore, channelization was chosen to collect and convey storm flows. The primary alignments of these channels, those being the Pima Road frontage, the Powerline corridor and the Hayden Road corridor are all well established leaving only the Union Hills Drive alignment in question which has its own alignment constraints to consider including being the receptor for the Basin 53R outflow.

With the type of conveyance and alignment questions already answered, the alternative analysis focused on methods for minimizing the footprint and thereby the right-of-way or easement necessary for construction and maintenance of the drainage channels. The alternatives analysis considered a variety of different channel linings identifying advantages and disadvantages of each. A decision matrix was developed based upon weighted criteria agreed upon by the City and ASLD with input from the Consultant.

Identification of a Preferred Alternative

The preferred alternative was chosen by the City and agreed upon by ASLD; this alternative being the construction of channels with grouted rock lining. This alternative scored the highest in construction costs and aesthetics, as well as minimizing utility conflicts. With steeper allowable side slopes, grouted rock also offers a smaller footprint comparable with that of concrete. In addition, the preferred alternative can be constructed in phases. This option allows for the construction of a portion of the improvements without encumbering the entire project cost.

Design Elements of the Crossroads East Drainage Conveyance

Conceptual design elements include conveyance channels with drop structures located as necessary to maintain slope, depth, flow capacity and freeboard, fencing to restrict access to channels having significantly high discharges and velocities, cross culverts at roadway crossings, grading improvements to Basin 53R, spillways into Basin 53R for both the Pima Road and Powerline corridors, and extension of the dual 60-inch outlet pipes.

Agency Coordination

The City has coordinated with ASLD throughout this study. Other public and private entities with interest in this project include the Flood Control District of Maricopa County (District), Arizona Department of Transportation (ADOT), Arizona Public Service (APS), and the Bureau of Reclamation (BOR).

Public Involvement

Public involvement was not conducted at the DCR stage. Much of the project is located on undeveloped State owned property. However, there are residential subdivisions and commercial business complexes which will be impacted and should be involved during the final design process. The subdivisions along the northern boundary of Crossroads East include several condominium complexes such as Edge at Grayhawk, Venu at Grayhawk, and Villages at Grayhawk. South of the SR 101L Freeway, the Stonebrook Phase 2 subdivision will be impacted by improvements along both Union Hills Drive (aka Mayo Boulevard) and Hayden Road.

1.0 INTRODUCTION

The Crossroads East parcels are currently undeveloped lands located on either side of the SR 101L Freeway within the City of Scottsdale (City). The parcels are currently owned by the Arizona State Land Department (ASLD) and are considered to be high-value due to location in north Scottsdale and proximity to the SR 101L Freeway. Future land use includes a mixture of commercial and high-density residential. The Crossroads East parcels are roughly bounded by Scottsdale Road to the west, the Grayhawk development to the north, Pima Road to the east and Princess Boulevard/Union Hills Drive to the south (see Figure 1.1).

This Design Concept Report (DCR) is provided in three sections. The frist two sections are the body of the report followed by the conceptual design plans in Appendix A. The third section is a digital submittal of the detailed hydrologic calculations, explanation of modeling techiniques and assumptions, alternative analysis, exhibits, and cost estimates. The digital files can be found on the accompanying digital disk.

FIGURE 1.1 – Location Map

1.1 Purpose for the Study

The purpose of this DCR is to develop, analyze and compare stormwater conveyance alternatives with the goal of selecting and further developing a preferred alternative. This draft report documents the analyses, results, cost estimates and weighted-qualitative comparisons of these alternatives. The alternatives contained herein are intended to demonstrate/allow for:

1. Connectivity to the CITY Master Trail Plan (*Scottsdale Trails Master Plan: On The Right Trail*, April 2003)
2. Mitigation of and/or minimum impact to USACE 404 Washes
3. Alternative land use/aesthetics
4. Maximimum parcel size
5. Compatibility with existing CITY infrastructure corridors
6. Collection and conveyance of offsite (100-yr, 24-hr), and onsite stormwater
7. Phasibility
8. Minimizing utility conflicts, and
9. Minimizing cost

The conceptual level of design considers the City's major utilities which potentially impact the alignment and/or depth of developed alternatives. In this case existing water, sewer, and storm drain are reviewed. However due to the close proximity of the Scottsdale Water Campus, reclaimed water lines and recharge well locations were also reviewed. Utility conflicts are shown in the conceptual design plans in Appendix A.

1.2 Background

Previous Studies

Several studies have been performed in the area which encompasses the Crossroads East parcels. These studies include:

- ***Core North-Core South Land Use and Infrastructure Disposition Study*** (June 2005) – The study evaluated the most current land use plan, at the time of the study, and proposed a new land use plan based on density requirements included as part of the development agreement between ASLD and the City. It assessed major infrastructure elements for the Crossroads East parcels such as streets, water, wastewater and drainage. The study proposed the extension of the channel in the Powerline easement down to Basin 53R to handle offsite flows. Existing natural washes act as conveyance corridors through the parcels utilizing the culverts crossing the SR 101L Freeway (Pima Freeway).
- ***Core North Detention Basin Concept Design Report*** (May 2002) – This report documents the design criteria and analyses for the design of the Core North Detention Basin (also known as Basin 53R) and the interceptor channels from the northwest and the east. The proposed northwest channel is an extension of the current Powerline Corridor Channel that exists within the Grayhawk development. The report indicates there are two 60-inch corrugated metal pipes that extend from the bottom of Basin 53R to the south right-of-way of the SR 101 (Pima Freeway). No outfall design is currently proposed by this report.
- ***Drainage Report for Center Drive – 74th Street to Hayden Road*** (January 2007) – This report documents the drainage design for the construction of Center Drive which passes through the Crossroads East parcels north of the Freeway.
- ***Pinnacle Peak South Area Drainage Master Study*** (DRAFT, July 2013) – This was a forty-three square mile regional drainage study focusing on the area bounded by Scottsdale Road on the west, Dynamite Boulevard to the north, the McDowell Mountains to the east and the Central Arizona Project canal to the south. The modeling was a combination of one-dimensional (HEC-1) and two-dimensional (FLO-2D) models. HEC-1 was performed in the area of the McDowell Mountains and provided input for the FLO-2D model which covered the flatter, lower reaches of the watershed. The purpose of the study was to identify regional flood hazards. As of the final submittal of this report, the Pinnacle Peak South Area Drainage Master Study remains at the draft level and can only be used as a basis of hydrology with written permission from the City of Scottsdale. The hydrology, from the Pinnacle Peak South report, was used for analysis of concepts for this study.
- ***Scottsdale Road – Frank Lloyd Wright Boulevard to Thompson Peak Parkway – Drainage Report*** (February 2004) – This report documents the drainage design for roadway improvements of Scottsdale Road along the

western edge of the project area. It shows the offsite contributing area for the roadway project which includes a portion of the Crossroads East parcels.

- ***SR 101L North Freeway Frontage Road – Hayden Road to Pima Road – Draft Feasibility Study*** (December 2004) – This study evaluates the feasibility of a one-way westbound frontage road adjacent to the Freeway which would be a continuation of the existing frontage road west of Hayden Road. The study includes an assessment of offsite and onsite drainage for the new frontage road.
- ***SR 101L North Freeway Frontage Road – Scottsdale Road to Hayden Road – Final Drainage Report*** (July 2006) – This report documents the drainage design of a new one-way westbound frontage road for the adjacent Freeway.
- ***TPC Golf Course Drainage – Impact Study*** (January 1998) – This study was an assessment of the impact of the proposed drainage improvements for the Stadium Course of the TPC Golf Course. Due to significant development and changes to the drainage pattern in the upstream watershed since 1998, this study may not be valid as it stands and may require an update.
- ***Refinement of Methodology: Alluvial Fan Flood Hazard Identification & Mitigation Methods – PFHAM*** (August 2010) – This report develops guidelines and recommendations for regulations that will be used to identify, classify and address flood hazards on alluvial fan landforms in Maricopa County, including the Reata Wash alluvial fan.

Existing Conditions

The contributing offsite watershed for the Crossroads East parcels begins in the McDowell Mountains. The mountainous runoff splits at the Reata Pass Wash alluvial fan apex sending storm water runoff to the southwest through residential and commercial property. With the addition of local runoff, storm flows increases before ultimately reaching the Crossroads East Study Area/Parcels at the boundary with the Pima Road and Powerline corridors. Storm water flows southwest through the undeveloped Crossroads East parcels before reaching the freeway.

The SR 101L Freeway (constructed in 2002) was designed to convey, unabated, the 100-year flows through thirteen culverts located between Scottsdale Road and Pima Road. South of the freeway, storm flows pass through the southern ASLD Crossroads East parcels as well as privately owned commercial and residential property. Storm water excess ultimately flows into the impoundment area of the Bureau of Reclamation Reach 11 dikes which protect the Central Arizona Project canal and central Scottsdale. This impoundment area is occupied by the Scottsdale TPC Golf Course.

FEMA Special Flood Hazard Areas

The Pinnacle Peak South Area Drainage Master Study (PPS) identifies watersheds upstream of the SR101 Freeway. Two of which are bounded by FEMA Special Flood Hazard Areas (SFHA) AO Zone floodplains. The eastern flood hazard area fans out from the apex of an active alluvial fan at Reata Wash (see reference in Section 5.0). The middle sub-watershed (not an SFHA) includes flows from both sides of Pinnacle Peak and the residential areas to the southwest extending to the Deer Valley Channel. The western flood hazard area originates in Rawhide Wash north of Happy Valley Road and is delineated fanning out to the south and crossing Scottsdale Road (see Figure 1.2). The active alluvial fan on Reata Wash distributes a highly variable and potentially large flow which ultimately reaches the Crossroads East parcels, therefore, removal of the SFHA cannot be contemplated until control measures, on the fan apex, regulate the flow reaching the Crossroads East parcels.

FIGURE 1.2 – Special Flood Hazard Areas

FEMA Flood Zones

- The Zone AO floodplain is defined as areas subject to inundation by 1-percent-annual-chance shallow flooding where averaged depths are between one and three feet.
- The Zone A floodplain is defined as areas subject to inundation by 1-percent-annual-chance flood events generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFE's) or flood depths are shown.

- The Zone X (shaded) is defined as areas of moderated flood hazard, usually the area between the limits of the 100-year and 500-year floods. Areas protected by levees from the 100-year flood, or areas of shallow flooding with average depths of less than one foot or drainage areas less than 1 square mile.

1.3 Stakeholders

The City desires to provide storm water capture and conveyance for its current and future residents in north Scottsdale and provide safe, developable land in the downstream watershed as identified under the Crossroads East Development Agreement. ASLD, under the Urban Lands Act of 1981, is concerned with ensuring that the Crossroads East parcels are protected from flooding in order to ensure maximum land value and maximum benefit to the School Trust and other beneficiaries of the Trust, and thus, ASLD is the primary stakholder on this project.

The District is required to identify flood control problems and plan for the construction of facilities, which will eliminate or mitigate flooding problems for the protection of life and property within Maricopa County.

ADOT owns and maintains the SR 101L Freeway. The Freeway was designed with significant drainage culvert crossings to allow pass through of historical wash flows. The Crossroads East drainge improvements will provide benefits to the drainage conditions upstream and downstream of the SR 101L Freeway. The benefit of improved conditions, access and maintenance of ADOT facilities was communicated with ADOT early on in the design concept process. The conceptual plans presented in this report impact ADOT right-of-way, therefore, ADOT should be included in future coordination activities to garner support and to resolve potential issues.

The Bureau of Reclamation (BOR) and Central Arizona Project (CAP) will also be interested in the effects this project will have on the impoundment area of the Reach 11 dikes.

Arizona Public Service holds easements for the Powerline corridor in which a quintet of powerline towers are located. It is envisioned that channel improvements located within the Powerline corridor will only slightly impact maintenace access to the transmission towers.

The City's Water Resources department operates the Water Campus located southwest of the interseciton of Pima Road and Hualapai Drive. Channel improvements will impact a number of waterlines along the east side of the Water Campus. Coordination with the City's water department is important for the identification of critical facilities and design of relocations.

3.4.2 Powerline Channel

Description

The Powerline corridor is located within a utility easement held by Arizona Public Service (APS). Within the corridor, APS power line towers suspend overhead electric lines. North of Thompson Peak Parkway the Powerline corridor is privately owned by the Grayhawk Community Association. Between Thompson Peak Parkway and Hayden Road, the corridor is owned by the City. Southeast of Hayden Road, the corridor crosses State owned land with a small exception being a sliver of City-owned land located adjacent and just north of Hualapai Drive.

North of Thompson Peak Parkway, offsite flows pass through the Grayhawk master planned community flowing southwest, crossing Hayden Road, and accumulating within the existing privately-owned, grass lined drainage channel. The existing channel, which includes three inline retention basins, collects and conveys storm flows southeast to Thompson Peak Parkway. This segment of infrastructure is adequately sized, however, in some locations storm water runoff breaks out southwest into the adjacent subdivisions rather than follow the existing channel to the southeast. The conceptual design includes the addition of short floodwalls at specific locations to prevent the breakout of flow. The Grayhawk-owned segments of the Powerline channel have existing culvert/bridge crossings at Grayhawk Drive and Thompson Peak Parkway which are adequately sized to convey storm flows.

Downstream of Thompson Peak Parkway, the existing channel is earthen and abruptly ends near the southeast end of Thompson Peak Park. Channel improvements will begin just south of Thompson Peak Parkway and continue southeast to Hayden Road.

At Hayden Road, an existing, but buried, five barrel box culvert is located at the crossing of Hayden Road. This structure has ample capacity to handle the design storm flows and therefore was key in determining the proposed channel alignment. Southeast of Hayden Road, the Powerline channel continues southeast to Legacy Boulevard. After crossing this roadway via new culverts, the extension of the Powerline channel will continue due south and discharge into Basin 53R (see Figure 3.4.2).

Constraints and Impacts

The area adjacent to the Powerline channel includes unpaved maintenance access for the APS transmission towers, water and sewer lines, and other utility lines. It is important to identify and determine the impact of each utility and mitigate the disruption to the utilities in conflict with the conceptual alignment of the Powerline channel.

Design Concept

Similar to the Pima Road Channel, alternatives for storm water conveyance along the Powerline Corridor consist of various channel lining configurations for the interception and conveyance of storm water.

Proposed improvements to the Powerline channel include a new wider channel to intercept offsite flows from the Grayhawk master planned community and convey these flows to Basin 53R. The existing culverts at Grayhawk Drive, Thompson Peak Parkway, and Hayden Road are adequately sized to convey the Powerline corridor flows, thus the only new culvert improvement is at Legacy Boulevard. A new spillway discharges flow into Basin 53R.

Right of Way

The Powerline channel corridor north of Thompson Parkway lies mostly within privately owned land requiring coordination with the Grayhawk Community Association, however, certain tracts have existing drainage easements dedicated to the City. Between Thompson Peak Parkway and Hayden Road lies City-owned property. The land south of Hayden Road down to Legacy Boulevard is State-owned thus coordination with ASLD is imperative.

FIGURE 3.4.2 – Powerline Corridor

		Grouted Rock			Concrete (Subcritical)			Concrete (Supercritical)			Grass		
Reach[1]	Flow (cfs)	Top Width (ft)	Depth (ft)	Velocity (ft/sec)	Top Width (ft)	Depth (ft)	Velocity (ft/sec)	Top Width (ft)	Depth (ft)	Velocity (ft/sec)	Top Width (ft)	Depth (ft)	Velocity (ft/sec)
1	990	77	5.2	7.3	76	5.3	8.8	70	6.0	12.3	91	5.1	5.9
2	1,020	77	4.8	8.0	78	5.3	8.6	70	5.7	12.3	94	4.8	5.8
3	1,210	80	5.3	8.5	81	5.6	8.9	74	6.3	12.8	103	5.1	6.0

Notes:

1) Reaches are shown in Figure 3.4.2

2) Side slopes are the following: Grouted Rock (3:1), Concrete (2:1), Grass (4:1)

TABLE 3.4.2 – Powerline Channel Alternatives Evaluation

3.4.3 Basin 53R

Description

Basin 53R was excavated during the construction of the SR 101L Freeway by the ADOT. Generally, the basin was a borrow-pit which provided earth for construction of the Freeway embankment. Initially, soil was removed from areas between natural washes, leaving those washes perched between excavations. As additional soil was removed, portions of the washes were obliterated and/or cutoff. What remains today is a large, uneven excavation pit with a footprint that fits roughly within adjacent land uses. Without interception and conveyance systems to bring storm water to the basin, much of the offsite storm water currently bypasses this existing basin. The basin does capture and retain some flows, as evidenced by the erosion occurring at the northwest corner and per the hydrologic model.

The existing basin has side slopes which are roughly 5H:1V and the basin varies in depth, with the deepest point being near the eastern end at an elevation of approximately 1582. Other existing features of Basin 53R include a perched natural wash which is cutoff from upstream flow and intrudes into the excavated area from the south side of the basin. An outlet structure, consisting of dual 60-inch corrugated metal pipes, is located in the southwestern half of the basin (Elev. 1594). The outlet pipes extend under the SR 101L Freeway and are plugged on the upstream end.

Constraints and Impacts

Basin 53R is located on ASLD land, therefore, improvements to the basin should be coordinated with ASLD to meet the storage volume associated with the design stage-discharge relationship. Capture and detention of storm water by Basin 53R is a key element in reducing the size of the downstream conveyance facilities proposed in this study. Without Basin 53R, the downstream facilities would have to be sized to convey the entire flow which would greatly impact adjacent parcels especially between Union Hills Drive and Bell Road.

Design Concept

Basin improvements include increasing the storage volume by widening the basin in some locations, steepening the basin to a 3:1 side slope, excavation of the remaining perched natural wash, and filling in of the deepest holes to provide positive drainage from all parts of the basin to the outfall structure located at headwall of the dual 60-inch CMPs. Additionally, Basin 53R will be converted from retention to detention by extending the dual 60-inch pipes to Union Hills Drive to outlet basin flows into the downstream conveyance channel. The final design will need to take into account potential erosion of the inlets and side slopes and provide a means for stabilization.

Right of Way

The existing basin is solely located on State land. Any improvements to the basin would likewise occur on State land, therefore, coordination and acceptance of the design by ASLD is imperative for improvements to occur.

FIGURE 3.4.3 – Detention Basin 53R

3.4.4 Union Hills Drive Channel

Description

The majority of ASLD property between the SR 101L Freeway and Union Hills Drive (east of Hayden Road) has been smooth graded and coated with stabilized gravel to facilitate parking for large events at the Scottsdale TPC. Although an attempt was made to preserve the natural washes crossing the parcels, many of these washes have been impacted to some degree. Storm water, which may pass through existing ADOT culverts (SR 101L), would flow southwest towards Union Hills Drive or along the east side of Hayden Road following roadside swales and remnant washes.

Constraints and Impacts

The design accounts for future improvements of Union Hills Drive including a roundabout intersection at Union Hills Drive and Perimeter Drive.

The addition of two 10'x4' culverts near the intersection of Hayden Road and Union Hills Drive would be in conflict with an existing 66-inch waterline and an existing 12-inch waterline. Approximately 64 feet of both the waterlines would need to be relocated to accommodate the widened drainage crossing of Union Hills Drive.

Design Concept

The proposed Union Hills Drive channel will convey bypass storm water from the outfall of ADOT culverts located just north of the Union Hills Drive alignment extension through the SR 101L Freeway. The new channel follows the north side of Union Hills Drive westerly to Hayden Road. The Union Hills Channel improvements include a new culvert under the proposed Perimeter Drive north roadway extension. At 82nd Street, the channel transitions into a larger cross section to accommodate the added discharge from the Basin 53R outfall pipes.

Design widths of the new channel are based upon the flows received from the Pima Road bypass and those discharging via ADOT's existing culvert coming from Basin 53R. Drop structures and roughened channel lining are considered as additional channel features to reduce channel velocities.

Right of Way

The Union Hills Drive channel would be located on State land, therefore, coordination and acceptance of the design by ASLD is imperative for improvements to occur.

FIGURE 3.4.4 – Union Hills Drive Corridor

		Grouted Rock			Concrete			Grass			Earthen		
Reach[1]	Flow (cfs)	Top Width (ft)	Depth (ft)	Velocity (ft/sec)	Top Width (ft)	Depth (ft)	Velocity (ft/sec)	Top Width (ft)	Depth (ft)	Velocity (ft/sec)	Top Width (ft)	Depth (ft)	Velocity (ft/sec)
1	1,000	58	4.0	7.8	54	4.9	8.6	80	3.7	6.0	166	3.2	3.0
2	1,000	62	4.0	7.2	48	4.0	7.5	80	3.7	6.0	166	3.2	3.0
3	1,450	92	4.0	6.2	80	4.0	7.8	99	4.1	6.0	245	3.1	3.0

Notes:
1) Reaches are shown in Figure 3.4.4
2) Side slopes are the following: Grouted Rock (3:1), Concrete (2:1), Grass & Earthen (4:1)

TABLE 3.4.4 – Union Hills Drive Channel Alternatives Evaluation

4.0 RECOMMENDED ALTERNATIVE

The progression of land development has dictated the drainage corridors and subsequently the channel alignments by developing in such a way as to only leave certain corridors large enough for construction of drainage improvements without greatly impacting existing facilities and/or structures. North of the SR 101L Freeway, these corridors include the Pima Road frontage and the APS powerline corridor. South of the SR 101L Freeway, the corridor includes reconstruction of the existing Hayden Road channel between Union Hills Drive and Bell Road. The proposed Union Hills Drive channel alignment has some potential for variation, however, the most efficient option is the proposed channelization on ASLD land along the Union Hills Drive frontage so as to refrain from bisecting ASLD parcels and also provide a means to connect the Basin 53R outlet pipes.

Of great concern to the project stakeholders was the issue of limiting the impact of right-of-way acquisition with a goal of maintaining as much developable land as possible. With this goal in mind, the Pima Road and Powerline corridors are well suited for each minimizes impact of developable land by placing the corridors within or adjacent to City right-of-way or within parcels such as beneath the power lines that have limited options for development.

With channel alignments presumed, alternatives were developed which compare the advantages and disadvantages of different channel lining treatments. These treatments included concrete, grouted rock, grass lined and earthen. A second concrete lining was considered separating subcritical and supercritical flow regimes into their own alternatives. The comparison of alternative design results considered feasibility, public safety, right-of-way acquisition, impacts to utilities, aesthetics, constructability, and project costs.

4.1 Selection of Recommended Alternative

The City, in association with input from ASLD as a project stakeholder, has selected the grouted rock channel lining as the recommended alternative. This recommendation is based upon criteria selected by the City, stakeholders, with input from the designer during preparation of design concepts throughout the course of this study. Selection criteria and weight for the recommended alternative were: aesthetics (10%), right-of-way requirements (35%), and cost (55%). A decision matrix was developed to distinguish the advantages and disadvantages for each alternative. The following table provides a summary of results in the Decision Matrix.

	Weighted Score				
	Concrete (Subcritical)	Concrete (Supercritical)	Grouted Rock	Grass-Lined	Earthen
Powerline Corridor	2.25	2.05	3.10	2.40	N/A
Pima Road Corridor	2.45	2.60	3.45	N/A	N/A

TABLE 4.1 – Decision Matrix Summary

The maximum obtainable score is 4.0, thus it is easily shown that, based upon these selection criteria, the Grouted Rock channel is decisively the recommended alternative. The detailed decision matrix can be found in the digital appendices on the accompanying CD.

4.2 Design Features

The grouted rock alternative incorporates a rigid and durable channel bottom. One of the advantages of grouted rock is that the side slopes can be increased to narrow the channel footprint. The maximum side slope for grouted rock is 2H:1V, however, for this design concept, the side slopes have been set at 3H:1V. The grouted rock thickness is assumed based upon discharge and estimated flow velocities.

Aesthetically more pleasing than concrete lined channels, grouted rock also offers a rougher surface, especially if constructed with angular rock. This designed surface roughness will help reduce flow velocities especially when the channels are running shallow.

In addition to the typical channel sections, other design features include a number of transitions in and out of box culvert crossings, inline drop structures used to maintain depth and freeboard while reducing channel slope, Basin 53R spillways with splash pads and energy dissipaters, Basin 53R grading and connection of the dual 60-inch outlet pipes to the Union Hills Drive channel. The Hayden Road channel will be reconstructed to grouted rock between Union Hills Drive and the south end of the Stonebrook subdivision. Along the frontage of the CAP Basin Sports Park, the City desires to maintain the current aesthetic character, therefore, the existing grass lined channel will be widened and reconstructed with a stabilizing mattress in the bed and banks before overseeding to facilitate growth and of new grass and stability of the channel.

This study considered culvert crossings of roadways, however, during final design the City and/or the engineer should consider the possibility of alternate structure types at Hualapai Drive and Legacy Drive along the Pima Road channel corridor. Each of these two structures is intended to convey approximately 5,500 cfs. From a constructability and cost standpoint it may be more effective to construct bridges, super boxes, or structural plate arches in place of the culverts.

4.3 Cost Estimate

A summary of costs is included in the following table. This summary includes all anticipated construction items, engineering, survey, and a contingency for unexpected expenses. The cost estimate does not include acquisition of new right-of-way or easements. The detailed cost estimates can be found in the digital appendices on the accompanying CD.

	Concrete – Subcritical ($)	Concrete - Supercritical ($)	Grouted Rock ($)	Grass-Lined ($)	Earthen ($)
Powerline Corridor	$12,134,000	$13,636,000	$8,529,000	$11,041,000	N/A
Pima Road Corridor	$27,803,000	$28,496,000	$13,574,000	N/A	N/A
DCR Total	**$39,937,000**	**$42,132,000**	**$22,103,000**	**$11,041,000**	**N/A**

Notes:
1) Overall costs include Materials & Construction, 404 in-lieu fees, Surveying and Engineering Design fee, Capital Project Administration Fee, and a 30% construction contingency.

TABLE 4.2 – Project Cost Summary

Ultimately, earthen was excluded as an alternative channel lining due to the large discharges and resultant erosive velocities. Likewise, grass-linings were eliminated except in areas such as the north reach of Hayden Road (Grayhawk) and the area adjacent to CAP Basin Sports Park, where the existing character is grass lined channels. In these locations a protective mattress is recommended which will protect the channel from erosion while allowing grass to grow.

4.4 Project Phasing

During the course of the project it became evident that this project could be phased to provide storm water mitigation to the majority of ASLD Crossroads East parcels without having to immediately incur the entire project cost. Project Phasing is broken down into two parts; Phase 1 – The Powerline Channel, and Phase 2 – The Pima Road Channel. Costs of the individual phases can be obtained from the individual line items for Powerline and Pima Road from Table 4.2.

Phase 1 – Powerline Channel

This phase includes the construction of all components necessary to facilitate the management of offsite flows which impact the Powerline corridor. Based upon a hydrologic analysis, the improvements to Basin 53R must occur in Phase 1 due to an existing flow diversion which takes place at Pima Road and Legacy Boulevard.

- Powerline channel components down to and including the drop structure into Basin 53R.
- New box culvert crossing of the Powerline channel at Hualapai Drive.
- Improvements to Basin 53R – these improvements are necessary due to the large flow diversion which takes place at Hualapai Drive sending in excess of 2,600 cfs to the west. This diverted flow currently enters Basin 53R by either passing through the Water Campus or following the western boundary of the water campus. The diversion will be eliminated when the Pima Road channel is constructed.
- Extension of Basin 53R outlet pipes to Union Hills Drive at 82nd Street.
- Union Hills Drive channel between 82nd Street and Hayden Road
- Make use of the existing channels in the Hayden Road corridor (no new improvements).

FIGURE 4.4.1 – Phase 1 Channel Concept

Phase 2 – Pima Road Channel

This phase includes the construction of all components necessary to facilitate the management of offsite flows which impact the Pima Road corridor.

- Pima Road channel components down to and including the drop structure into Basin 53R.
- Pima bypass channel including the split control structure from the Pima Road Channel.
- Modify box culvert crossing of the Pima Road channel at Hualapai Drive.
- New box culvert crossing of the Pima Road channel at Legacy Drive.
- Union Hills Drive channel between the ADOT SR 101L Freeway and 82nd Street.
- Improve the Union Hills Drive channel, from Phase 1, between 82nd Street and Hayden Road.
- Modify box culvert crossing of Union Hills Drive at Hayden Road channel.
- Modify Hayden Road channel corridor.
- Modify box culvert crossing of Princess Drive at Hayden Road channel.
- Modify box culvert crossing of Bell Road at Hayden Road channel.
- Modify concrete spillway south of Bell Road at Hayden Road channel.
- New box culvert crossing of parking lot at TPC Scottsdale golf course.

FIGURE 4.4.2 – Phase 2 Channel Concept

5.0 REFERENCES

- BRW Inc. and Robert Ward, PE, *Core North Detention Basin Concept Design Report*, FNF, Inc. May 2002.
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- URS, *Core North-Core South Land Use and Disposition Evaluation Study*, Arizona State Land Department, June 2005.
- TY Lin International, *Pinnacle Peak South Area Drainage Master Study (DRAFT)*, City of Scottsdale and Flood Control District of Maricopa County, July 2013.
- Wood, Patel & Associates, Inc., *Drainage Report for Center Drive – 74th Street to Hayden Road*, City of Scottsdale, January 2007.
- Wood, Patel & Associates, Inc., *SR 101L North Freeway Frontage Road – Scottsdale Road to Hayden Road – Final Drainage Report*, City of Scottsdale and Arizona Department of Transportation, July 2006.
- JE Fuller/Hydrology & Geomorphology, Inc. *Refinement of Methodology: Alluvial Fan Flood Hazard Identificaion & Mitigation Methods (PFHAM)*, Flood Control District of Maricopa County, August 25, 2010.
- City of Scottsdale. *Design Standards and Policies Manual*. January 2010.
- Flood Control District of Maricopa County. *Drainage Design Manual – Hydrology*. August 2013.
- Flood Control District of Maricopa County. *Drainage Design Manual – Hydraulics*. August 2013.

Improve Flood Protection near Indian Bend Road and Lincoln Drive

Estimated Project Cost: $2,700,000

Staff Priority: 26 of 34

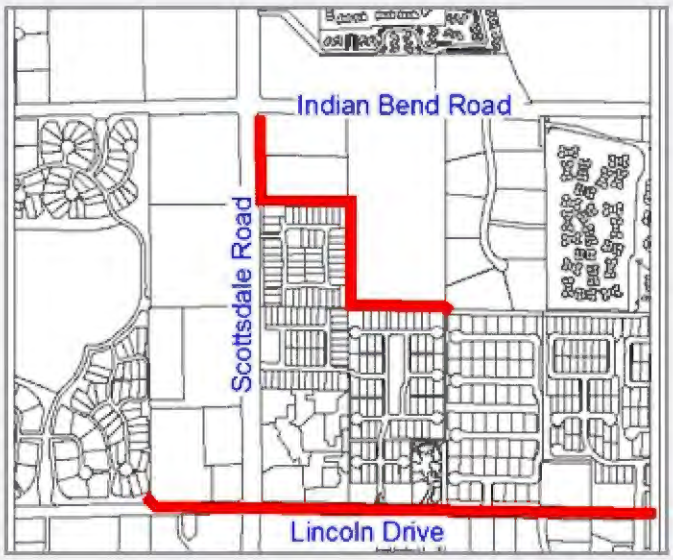
PROJECT DETAILS

Project Summary

Improve flood protection for McCormick-Stillman Railroad Park, the Sands North community, commercial development at the northwest corner of Scottsdale Road and Lincoln Drive, Scottsdale Road, Lincoln Drive and Indian Bend Road. This project has the potential to leverage $4 million in matching money from the Flood Control District of Maricopa County. The City portion of the cost is $2.7 M and the overal project cost is $6.7 M.

Project Location

The project is located at the intersection of Hayden Road and McCormick Parkway.



Project Cost

Design	$774,000
Bond Issuance Cost	$60,000
Construction	$4,300,000
Administration	$722,400
Contingency	$680,000
Total City Cost	$6,700,000

ANALYSIS & ASSESSMENT

Background

The project includes construction of storm drain improvements on Lincoln Drive from Scottsdale Road to the interceptor channel upstream of the Arizona Canal and channel improvements from the intersection of Scottsdale Road and Indian Bend Road to Indian Bend Wash. Significant flooding has occurred on multiple occasions in the vicinity of the project.

Safety

This project would provide far greater flood protection to property owners and motorists in this area.

What is the customer experience?

During storm events create flooding impacts at the McCormick-Stillman Railroad Park and in the Sands North community.

Recent Staff Action

A few years ago, city staff submitted a CIP prioritization request with the Flood Control District of Maricopa County (FCDMC). FCDMC's Board of Directors has authorized including this project in the District's 5-year CIP, pending project validation under the Lower Indian Bend Wash Area Drainage Master Study, which is nearing completion.

ANALYSIS & ASSESSMENT

Community Involvement

In 2013, staff met with the Mechanical Society to discuss how the proposed project would potentially impact McCormick-Stillman Railroad Park.

Council Goals

The implementation of this project supports the Council Goals: Enhance Neighborhoods, Seek Stainability and Advance Transportation.

RESOURCE IMPACTS

Staffing, Workload Impact

There would be negligible impact on staffing or workload due to the project.

Maintenance Requirements

Sediment, debris, and vegetation may need to be removed periodically from the proposed channel and storm drain.

Leveraged Funds

$4.0 million from the Flood Control District of Maricopa County, pending project validation by the nearly completed Lower Indian Bend Wash Area Drainage Master Study, and funding availability in the District's 5-year CIP. Project validation is highly likely based on near-final model results.

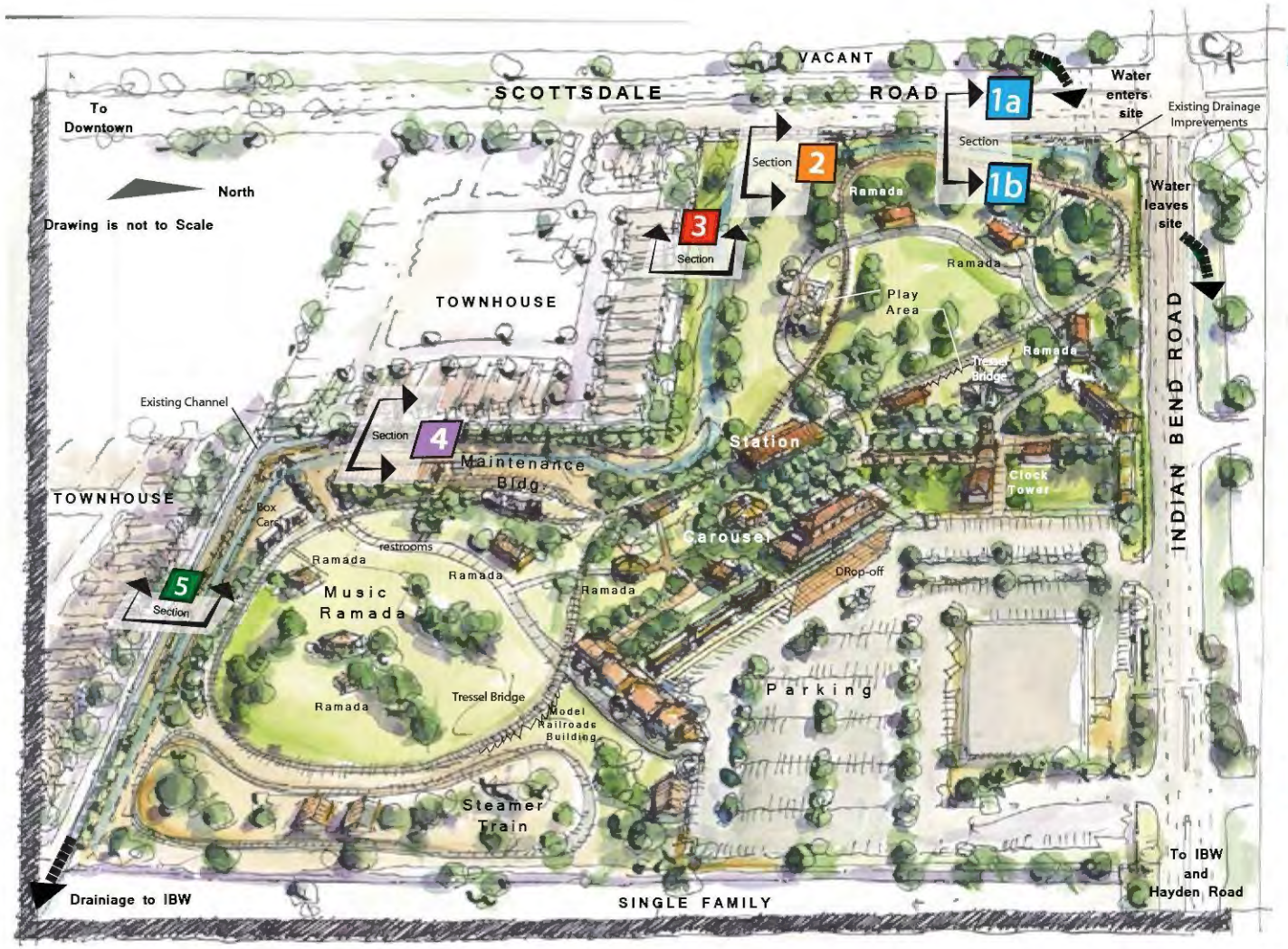
Impact if this project is not implemented

Flood hazards would continue to exist in the vicinity of the project, including McCormick-Stillman Railroad Park, residential and commercial development, and Scottsdale Road, Indian Bend Road, and Lincoln Drive.

Supplemental Information:

1. Facility location maps
2. Drainage concept alternatives


Project Location Map
N
E INDIAN BEND RD
Existing 3-4'x10' RCBs
North Channel
Existing 3-6'x10' RCBs
Repeated flooding reported in this area.
Proposed Channel
N ROCKING RD
Ride N Rock Ranchos
N 77TH ST
Indian Bend Wash
N QUAIL RUN DR
E JOSHUA TREE LN
Proposed developer funded channel
(Not included in scope but consistent with master plan)
Sands North
N 72ND PL
McCormick Stillman Railroad Park
N SCOTTSDALE RD
Repeated flooding reported in this area.
Existing Channel
Q100=1964-cfs
Existing Casa Bella Channel
E KRALL ST
E CACTUS WREN RD
N 73RD ST
N 73RD WY
N 75TH WY
N 76TH WY
Paradise Valley
City of Scottsdale
E TUCKEY LN
N 73RD PL
E UNKNOWN ST
N 75TH PL
N 76TH PL
E MCLELLAN BL
N 74TH WY
N 70TH PL
E MCLELLAN LN
Repeated flooding reported in this area.
Q100=570-cfs
Proposed Box Culvert, Drop Structure & Inlets
E SIERRA VISTA DR
Exitsing 72" RCP
N 74TH PL
N 76TH ST
Existing USACOE Channel
E LINCOLN DR
Proposed 72" RCP
Q100=990-cfs
N 70TH ST
N 74TH ST
N 75TH ST
N CATTLETRACK RD
E STELLA LN
N 77TH PL
N 77TH WY
N 78TH ST



McCormick - Stillman Railroad Park

Scottsdale, Arizona

Drainage Concept Alternatives

Key to Segment Alternative

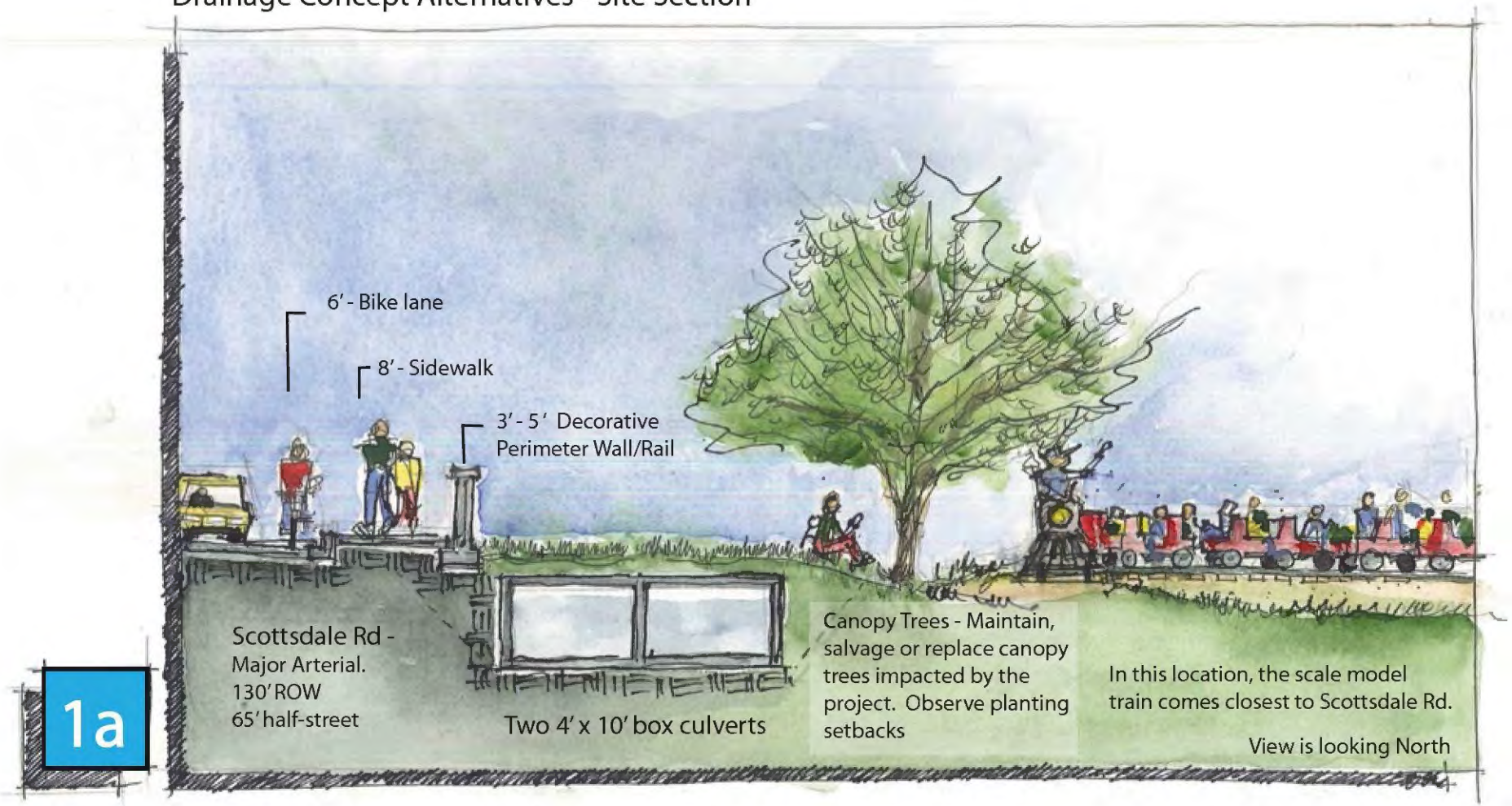
- 1a — Segment 1 - Alternative a - Box Culvert
- 1b — Segment 1 - Alternative b - Open Channel
- 2 — Segment 2 - Turf Lined Channel
- 3 — Segment 3 - Turf Lined Channel
- 4 — Segment 4 - Maintenance Area Open Channel
- 5 — Segment 5 - Southern Edge Open Channel

Date - March 2013

Prepared by PNT Design Services . This drawing is conceptual and preliminary and solely for the purpose of discussion.

McCormick-Stillman Railroad Park - Scottsdale, Arizona

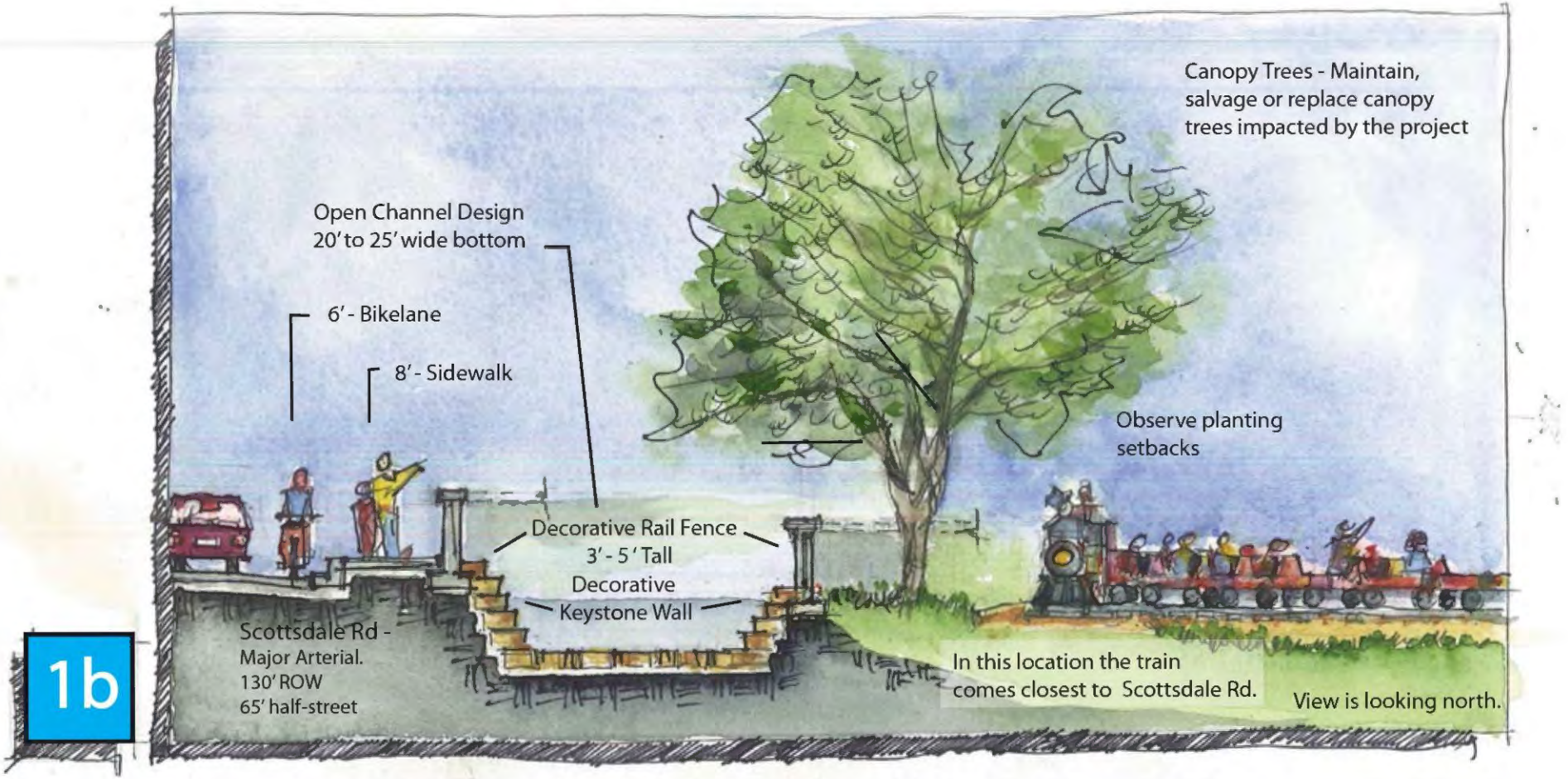
Drainage Concept Alternatives - Site Section



Segment 1 - Alternative a - Box Culvert

McCormick-Stillman Railroad Park - Scottsdale, Arizona

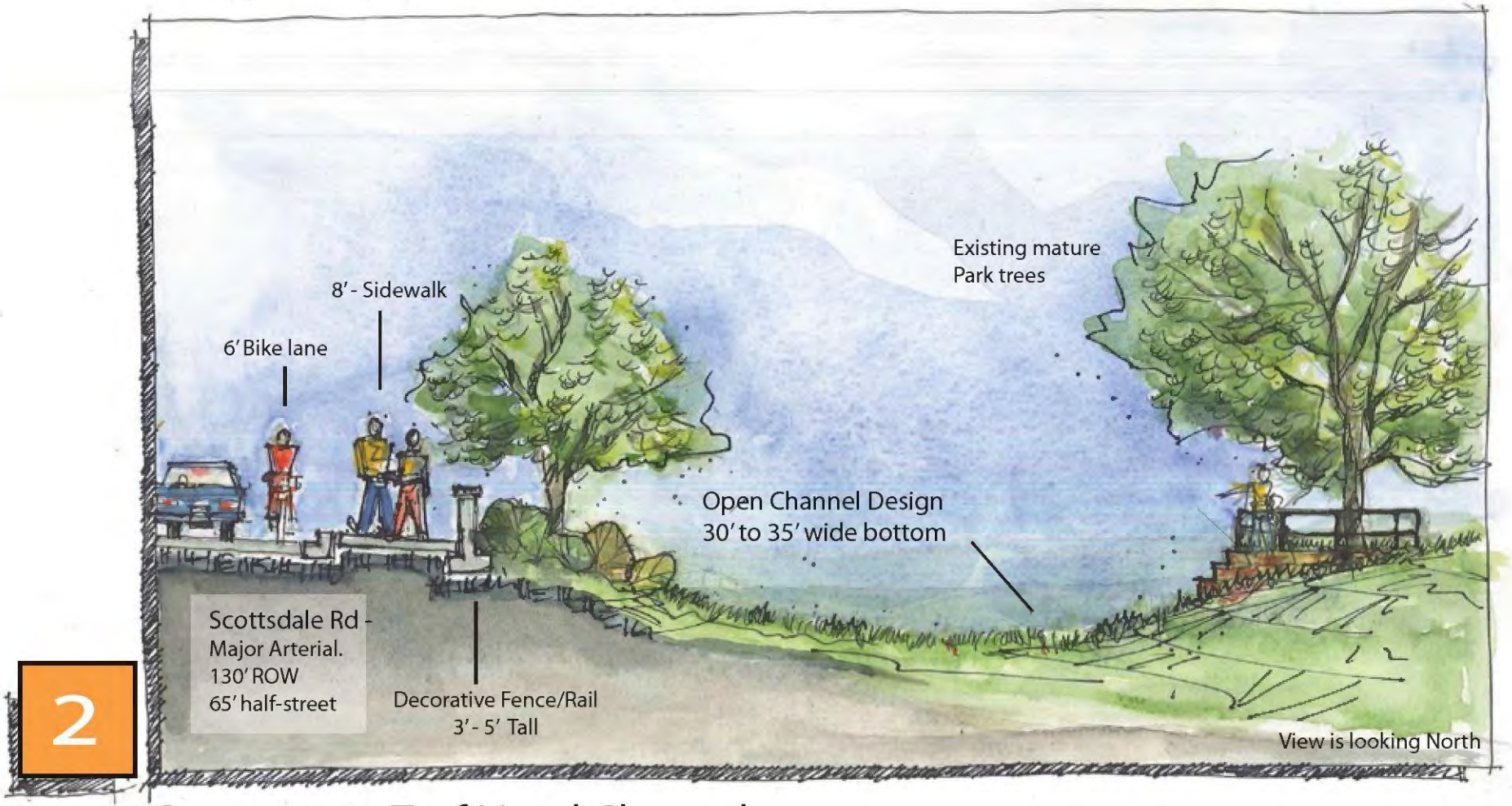
Drainage Concept Alternatives - Site Section



Segment 1 - Alternative b - Open Channel

McCormick-Stillman Railroad Park - Scottsdale, Arizona

Drainage Concept Alternatives - Site Section



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Segment 2 - Turf Lined Channel

McCormick-Stillman Railroad Park - Scottsdale, Arizona

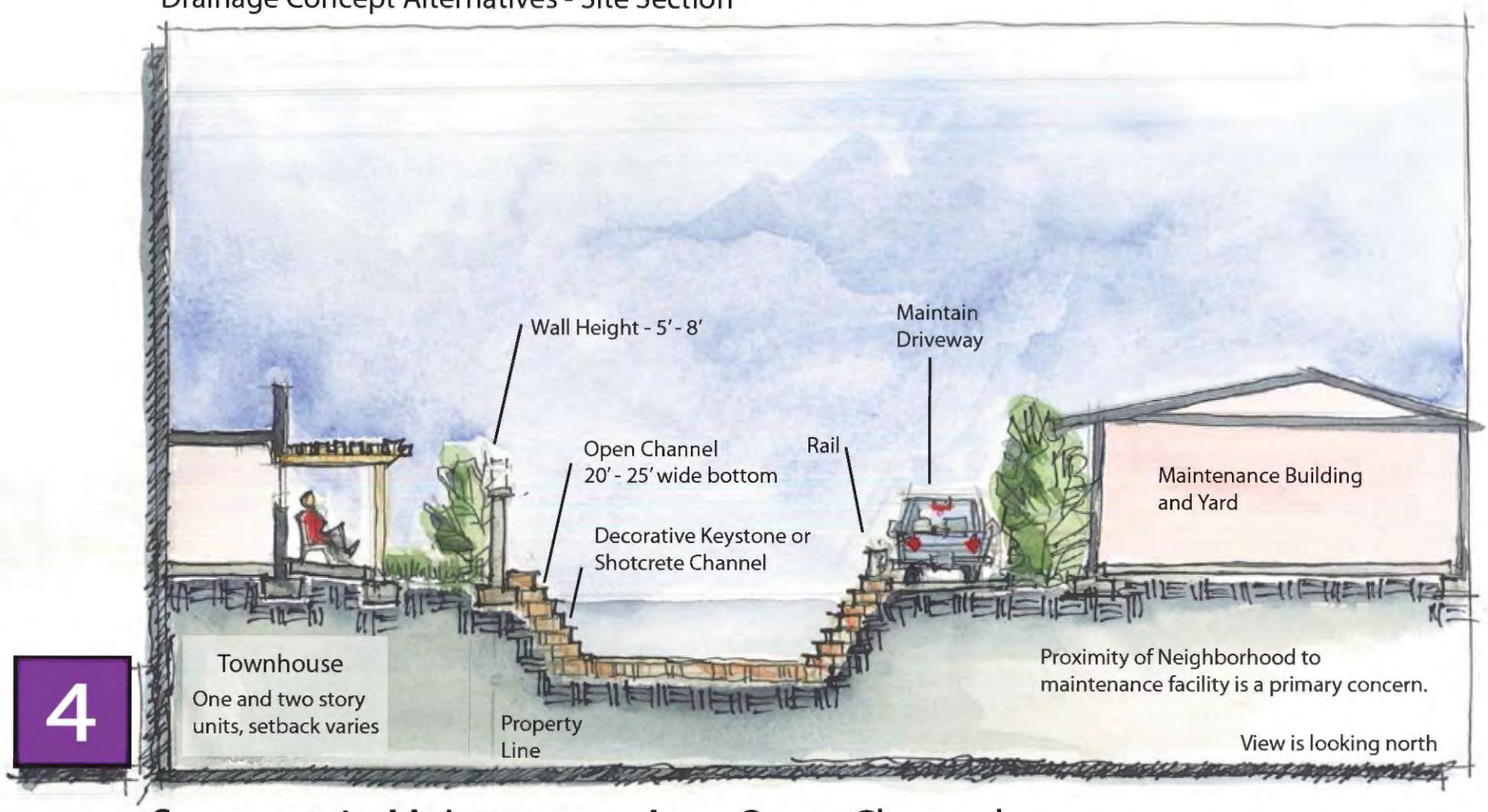
Drainage Concept Alternatives - Site Section

3

Segment 3 - Turf Lined Channel

McCormick-Stillman Railroad Park - Scottsdale, Arizona

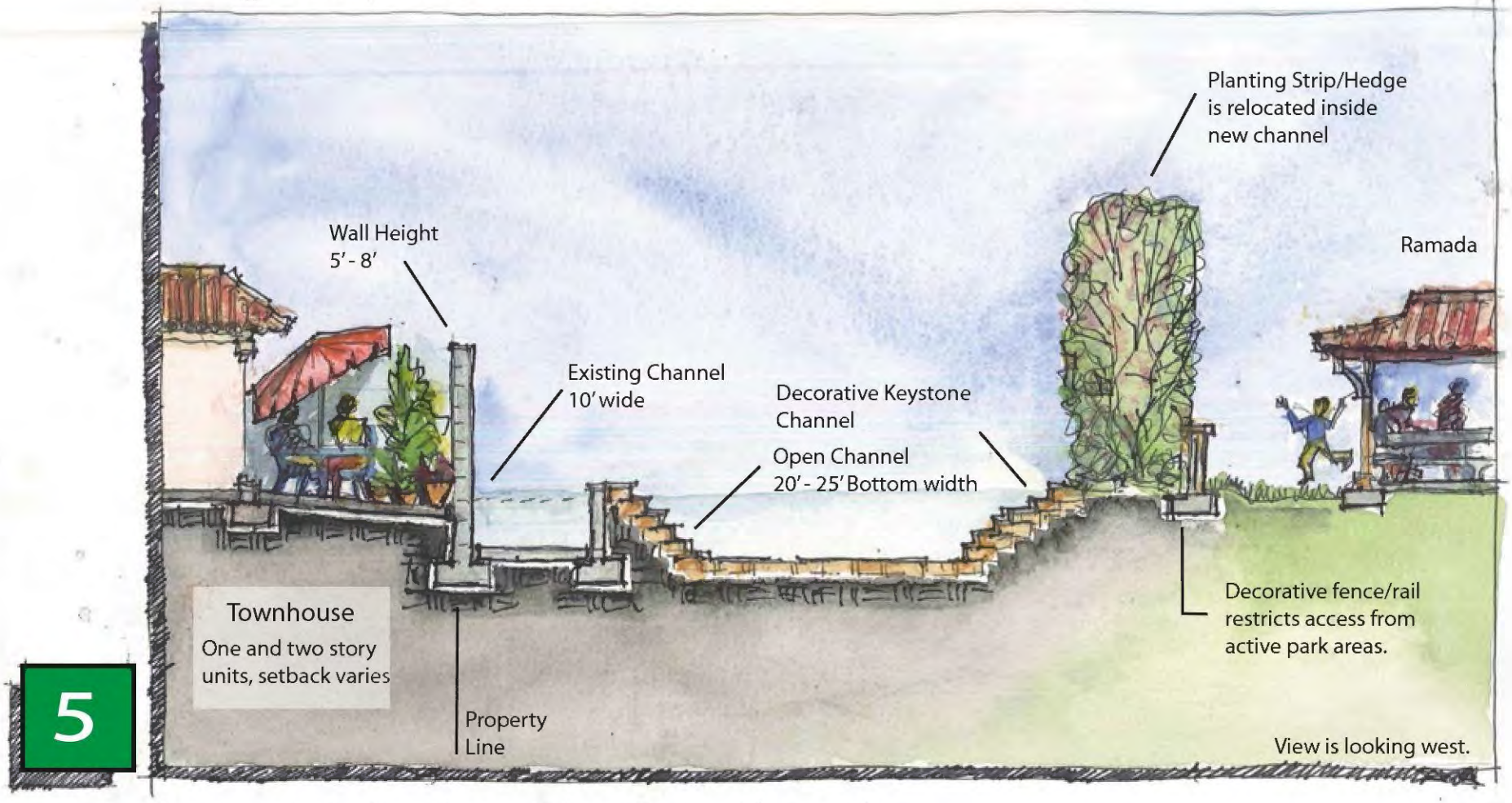
Drainage Concept Alternatives - Site Section



Segment 4 - Maintenance Area Open Channel

McCormick-Stillman Railroad Park - Scottsdale, Arizona

Drainage Concept Alternatives - Site Section



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Segment 5 - Southern Edge/Open Channel

Improve the Intersection of Hayden and Chaparral Roads

Estimated Project Cost: $2,510,000

Staff Priority: 16 of 34

PROJECT DETAILS

Project Summary

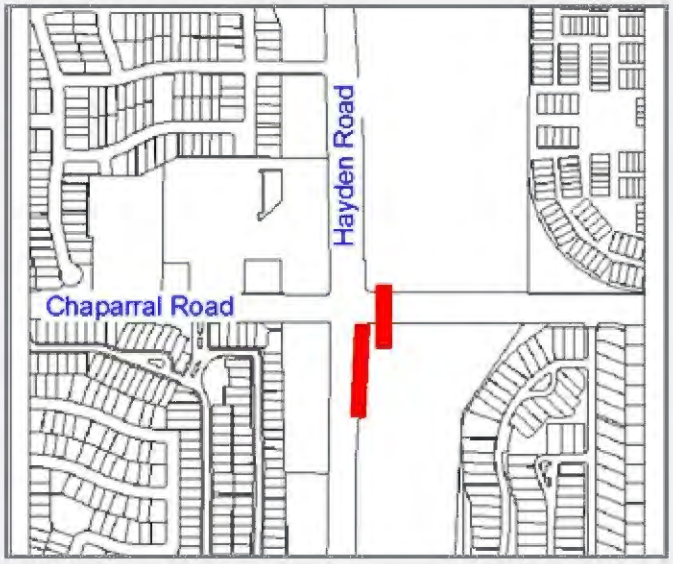
Lengthening the northbound right-turn lane will improve safety, increase this intersection's capacity and enhance access between Downtown Scottsdale and Loop 101. Building a pedestrian underpass beneath Chaparral Road on the east side of Hayden Road will proved a safe crossing of the roadway and seamless connectivity between parks on each side of Chaparral Road.

Project Cost

Design	$284,000
Bond Issuance Cost	$60,000
Construction	$1,577,000
Administration	$274,000
Contingency	$315,000
Total Cost	$2,510,000

Project Location

The project is located at the intersection of Hayden Road and Chaparral Road.



ANALYSIS & ASSESSMENT

Background

The Indian Bend Greenbelt is a significant transportation facility and recreation corridor. The Indian Bend Wash path is the back bone of Scottsdale's award winning path system and runs along the west side of Hayden Road. The east side of Hayden Road has Camelback Park to the south and Chaparral Park to the north of Chaparral Road. Chaparral Park is a significant community level park in the City of Scottsdale with a full array of recreational amenities. Currently to get from the main path or from Camelback Park to Chaparral Park a path user would need to cross either Hayden Road or Chaparral Road at grade potentially conflicting with high speed, high volume traffic.

The current northbound right turn bay on Hayden Road at Chaparral Road handles a significant volume of vehicular traffic. However, the current bay was constructed at a shorter than desirable length due the cost of project. The extension of the right turn bay would take advantage of the bulk of economy of the concurrent underpass project to improve the existing right turn bay.

ANALYSIS & ASSESSMENT

Safety

Separating high volume pedestrian and bicycle traffic from high speed, high volume vehicular can significantly improve access and safety for all users. Increasing the right turn bay storage length will reduce the likelihood of rear end and sideswipe collisions due to the stacking at the intersection.

What is the customer experience?

The traveling public currently experiences some delay for the northbound right turns and the pedestrian and bicyclists cross at grade to access Chaparral Park with potential significant conflicts with the high speed, high volume traffic on Chaparral Road. Drivers, bicyclists and pedestrians would all have fewer delays and a more convenient experience at this intersection with the improvements.

Recent Staff Action

This project is included in the Transportation Master Plan approved by City Council in 2008. City staff hired a consultant to review the intersection of Hayden Road and Chaparral Road to determine options for increasing capacity and improving access to downtown. The options were limited due to the Indian Bend Wash and existing bridge structures. Options to modify the existing bridge structures were rejected due to cost with the exception of the underpass and the right turn bay, which were significantly lower than options that widened the bridges.

Community Involvement

Over the years there has been a significant amount of public involvement regarding access to Downtown Scottsdale and Chaparral Road.

Council Goals

The implementation of this project supports the Council Goals: Advancing Transportation and Enhancing Neighborhoods.

RESOURCE IMPACTS

Operating Cost

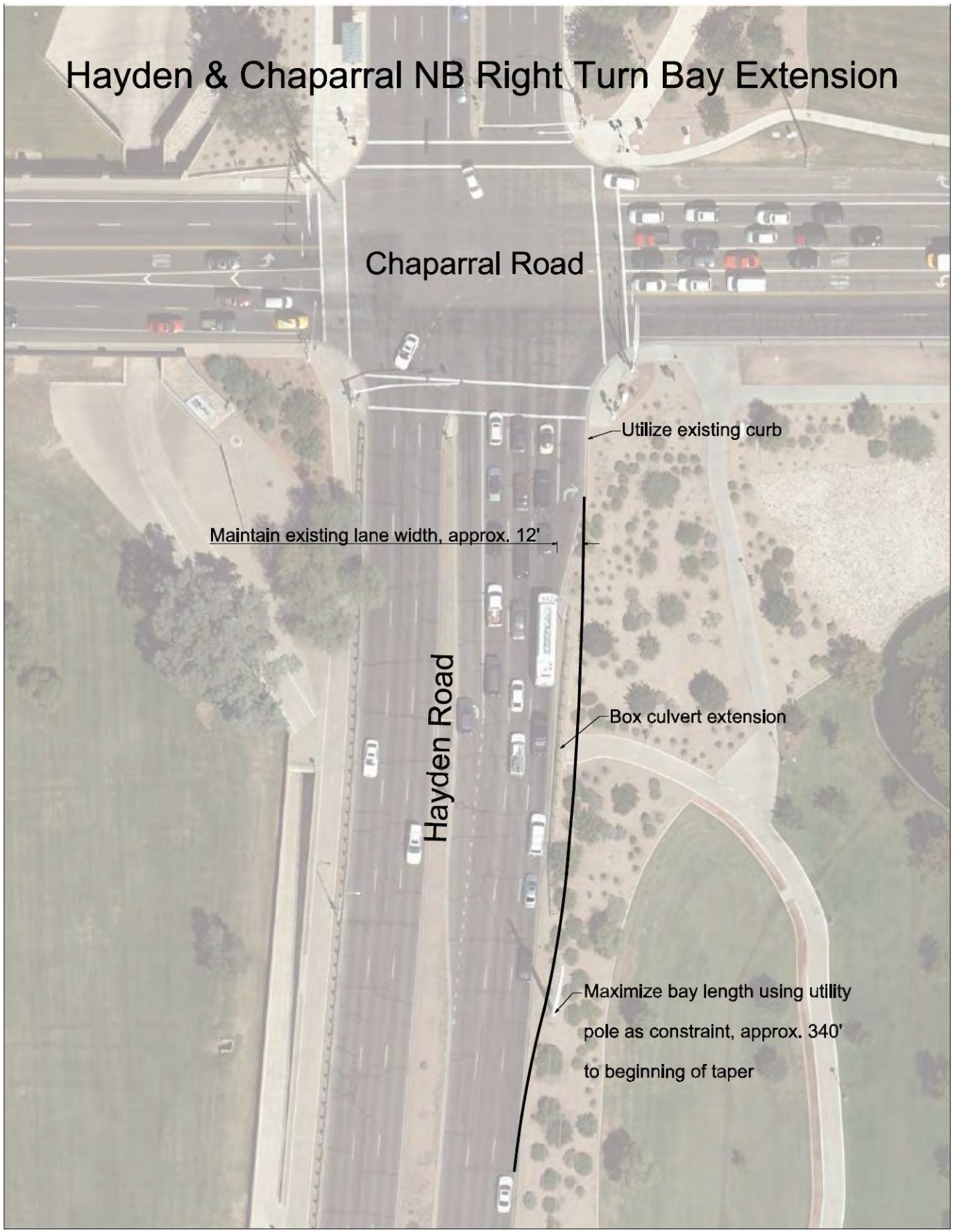
The City of Scottsdale estimates maintenance impacts at $0.85/SY/year for roadway maintenance and $0.13/SF/year for landscape maintenance.

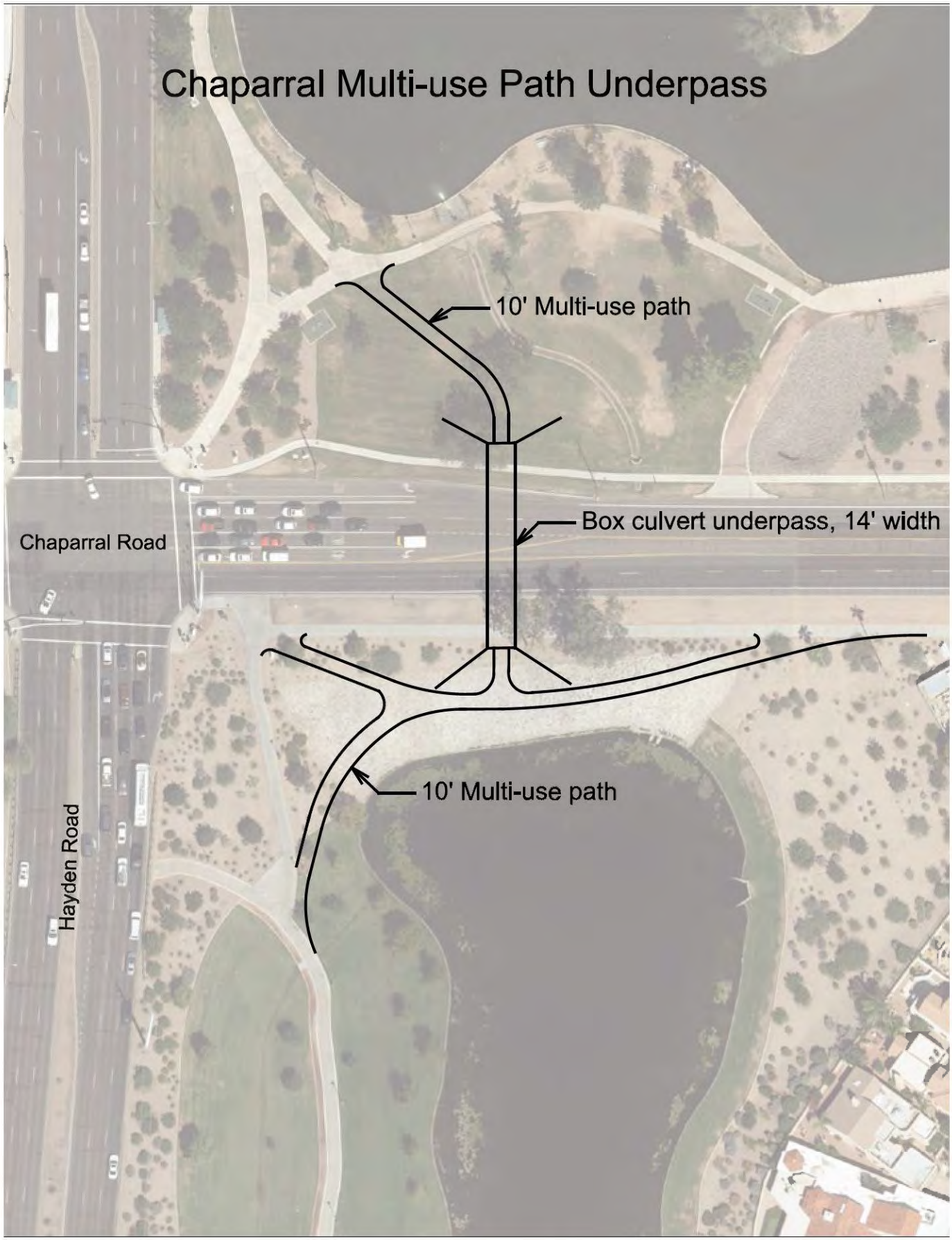
Impact if this project is not implemented

The traveling public will continue to experience some delay for the northbound right turns and the pedestrian and bicyclists will continue to cross at grade to access Chaparral Park with potential significant conflicts with the high speed, high volume traffic on Chaparral Road.

Supplemental Information:

1. Facility location maps


Hayden & Chaparral NB Right Turn Bay Extension
Chaparral Road
Utilize existing curb
Maintain existing lane width, approx. 12'
Hayden Road
Box culvert extension
Maximize bay length using utility pole as constraint, approx. 340' to beginning of taper


Chaparral Multi-use Path Underpass
10' Multi-use path
Box culvert underpass, 14' width
Chaparral Road
10' Multi-use path
Hayden Road

Leverage Matching Funds to Improve Roadways in the Scottsdale Airpark

Estimated Project Cost: $12,900,000

Staff Priority: 9 of 34

PROJECT DETAILS

Project Summary

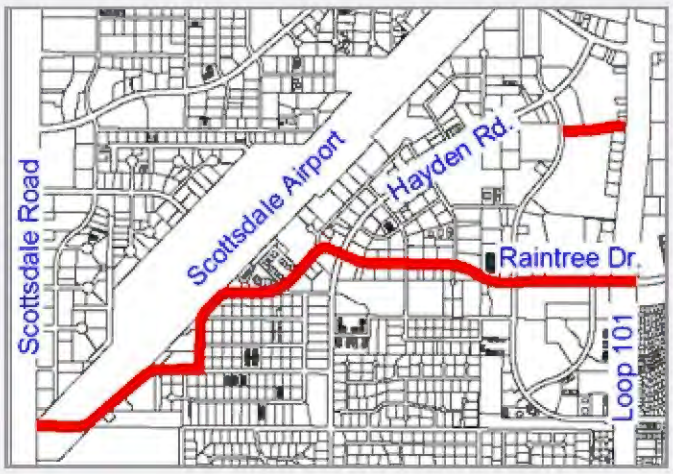
Improve access to and through the airpark area by building a continuous Raintree Drive from the Loop 101 to Scottsdale Road, an improved Redfield Road from 76th Street to Hayden Road, and connector streets from Northsight Boulevard to the southbound frontage road. Improvements include roundabouts, bike lanes, sidewalks, buys bays, way finding, landscaping, geometric signing and marking improvements. This project is eligible for up to $20.5 million in matching money through the Regional Transportation Plan (Proposition 400).

Project Cost

City of Scottsdale	$12,900,000
MAG ALCP Funding	$30,000,000
Total Cost	$42,900,000

Project Location

This project consists of several projects in the Scottsdale Airpark Area.



ANALYSIS & ASSESSMENT

Background

The Scottsdale Airpark is the number one employment area in the City and one of the top employment areas in the state of Arizona. The Airpark area also has a number of roadways that are discontinuous due to the runway, the Central Arizona Project and the Loop 101 Freeway which creates some access challenges. To improve access to and around the airpark area the City has requested and is eligible for regional proposition 400 funds. This funding would provide the City with the required matching funds to be able to accept the proposition 400 funds.

Safety

The proposed Airpark projects will improve safety by increasing capacity, reducing delay which improves driver compliance. The projects will add and improve sidewalks, bike lanes, and sight distance in many locations, as well as incorporate proven safety countermeasures such as roundabouts.

What is the customer experience?

The traveling public in the airpark will experience less delay, have more travel options, and be exposed to less risk of traffic delay or collision if these projects are constructed.

ANALYSIS & ASSESSMENT

Recent Staff Action

The Airpark projects are based on the Transportation Master Plan approved by City Council in 2008. The projects have also been reviewed by the Transportation Commission, the Planning Commission and the Airport Advisory Commission on many occasions over the last few years.

Community Involvement

Several open houses have been held in conjunction with the Transportation Master Plan process and on individual projects. While the community has had some specific project by project concerns, initially including roundabouts, the meetings have indicated overall support for improving the transportation facilities around the airpark area.

Council Goals

The implementation of this project supports the Council Goal: Advancing Transportation

RESOURCE IMPACTS

Operating Cost

The City of Scottsdale estimates maintenance impacts at $0.85/SY/year for roadway maintenance and $0.13/SF/year for landscape maintenance.

Leveraged Funds

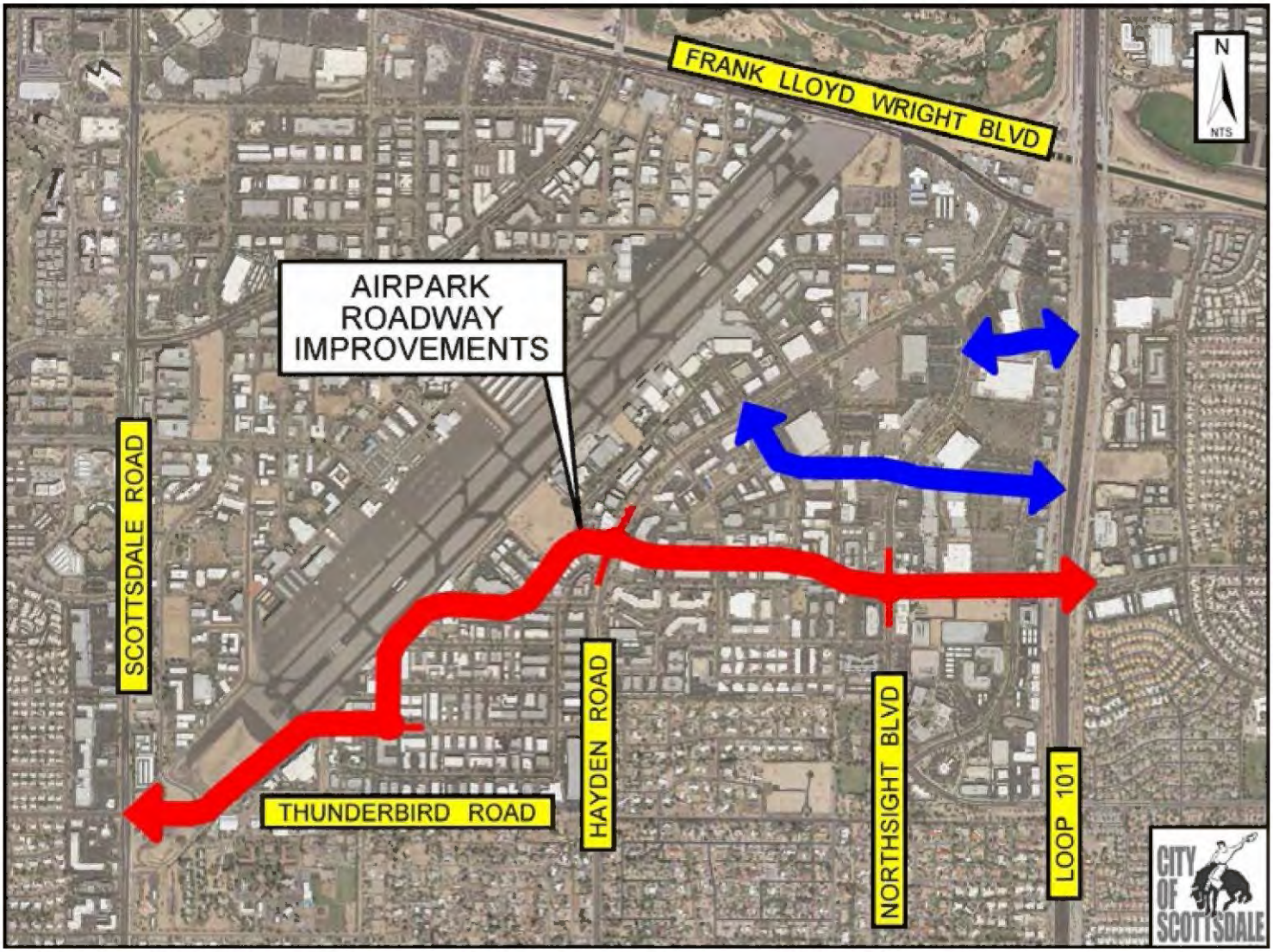
The City has requested, and is eligible for, regional proposition 400 funds for this project. Bond funding would provide the City with the required matching funds to be able to accept up to $30M in proposition 400 funds.

Impact if this project is not implemented

There will continue to be access constraints to and through the airpark area if these projects are not completed due primarily to the lack of continuous east west travel options.

Supplemental Information:

1. Facility Location maps


FRANK LLOYD WRIGHT BLVD
N
NTS
AIRPARK
ROADWAY
IMPROVEMENTS
SCOTTSDALE ROAD
HAYDEN ROAD
NORTHSIGHT BLVD
LOOP 101
THUNDERBIRD ROAD
CITY OF SCOTTSDALE

Build a Bridge on Thompson Peak Parkway at Reata Wash

Estimated Project Cost: $5,200,000

Staff Priority: 14 of 34

PROJECT DETAILS

Project Summary

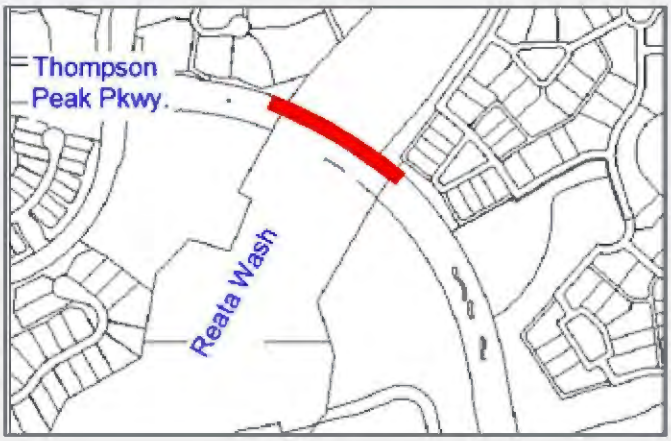
Building a second Thompson Peak Parkway bridge over the Reata Wash within DC Ranch will create a safer road for drivers and include a bike lane and sidewalk.

Project Cost

Design	$601,000
Bond Issuance Cost	$60,000
Construction	$3,342,000
Administration	$529,000
Contingency	$668,000
Total Cost	$5,200,000

Project Location

The project is located on Thompson Peak Parkway east of Pima Road within the DC Ranch Community.



ANALYSIS & ASSESSMENT

Background

DC Ranch completed most of Thompson Peak Parkway but the second bridge over the Rawhide Wash needs to be constructed by the City of Scottsdale. Thompson Peak Parkway is currently a four lane roadway divided by a median in this section of the city. When vehicles, pedestrians and bicyclists reach the Reata Wash they must merge on to a two lane bridge intended to carry vehicles in only one direction. This project would construct the second bridge.

Safety

The second bridge would improve safety for the vehicles, pedestrians and bicyclists that use Thompson Peak Parkway and eliminate the need for traffic merge due to reduced travel lanes and to travel in two directions on the bridge.

What is the customer experience?

The vehicles, pedestrians and bicyclists that use Thompson Peak Parkway will experience a simpler, safer route that does not require two transitions with significant capacity improvements.

Recent Staff Action

This project is included in the Transportation Master Plan approved by City Council in 2008.

Council Goals

The implementation of this project supports the Council Goal: Advance Transportation.

RESOURCE IMPACTS

Operating Cost

The City of Scottsdale estimates maintenance impacts at $0.85/SY/year for roadway maintenance and $0.13/SF/year for landscape maintenance.

Impact if this project is not implemented

If the project is not constructed drivers will continue to transition to a single bridge with minimal bike facilities. Pedestrians will be required to cross Thompson Peak Parkway twice to access the sidewalk on the north side of the road.

Supplemental Information:

1. Facility location maps
2. Design plans

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DC RANCH
THOMPSON PEAK PARKWAY BRIDGE EB–(PHASE 1)
THOMPSON PEAK PARKWAY BRIDGE WB–(PHASE 2)
OVER REATA WASH

INDEX OF DRAWINGS

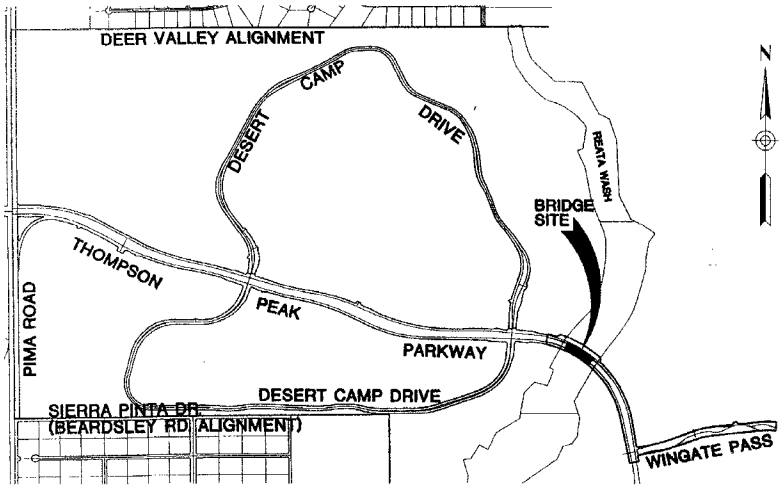
A-1 Architectural Plan & Elevation

PHASE 1

S-1.1 Through S-1.26
L-1.1 , L-1.2

PHASE 2

S-2.1 Through S-2.26
L-2.1 , L-2.2



SITE LOCATION MAP

OWNER/DEVELOPER

DC RANCH, L. L. C.
c/o DMB Associates, Inc.
4201 N. 24th Street, Suite 120
Phoenix, Az. 85016
(602) 956-7877, (602) 508-0650, fax
Contact: K. C. Brandon
(602) 502-2620

ENGINEER

T.Y. LIN INTERNATIONAL
1270 E. Broadway Rd, Suite 122
Tempe, Az. 85282
(602) 968-8814
Contact: Dan Heller

BUILDING REVIEW	
ELECTRICAL	N/A
MECHANICAL	N/A
BUILDING	4-30-99
PLUMBING	N/A

For Bridge Only

CITY OF SCOTTSDALE
REVIEW & RECOMMENDED APPROVAL BY:

FIRE DEPT	N/A	GRADING & DRAINAGE	4/30/99
PLANNING		WATER & SEWER	N/A
TRAFFIC	N/A	PAVING	N/A

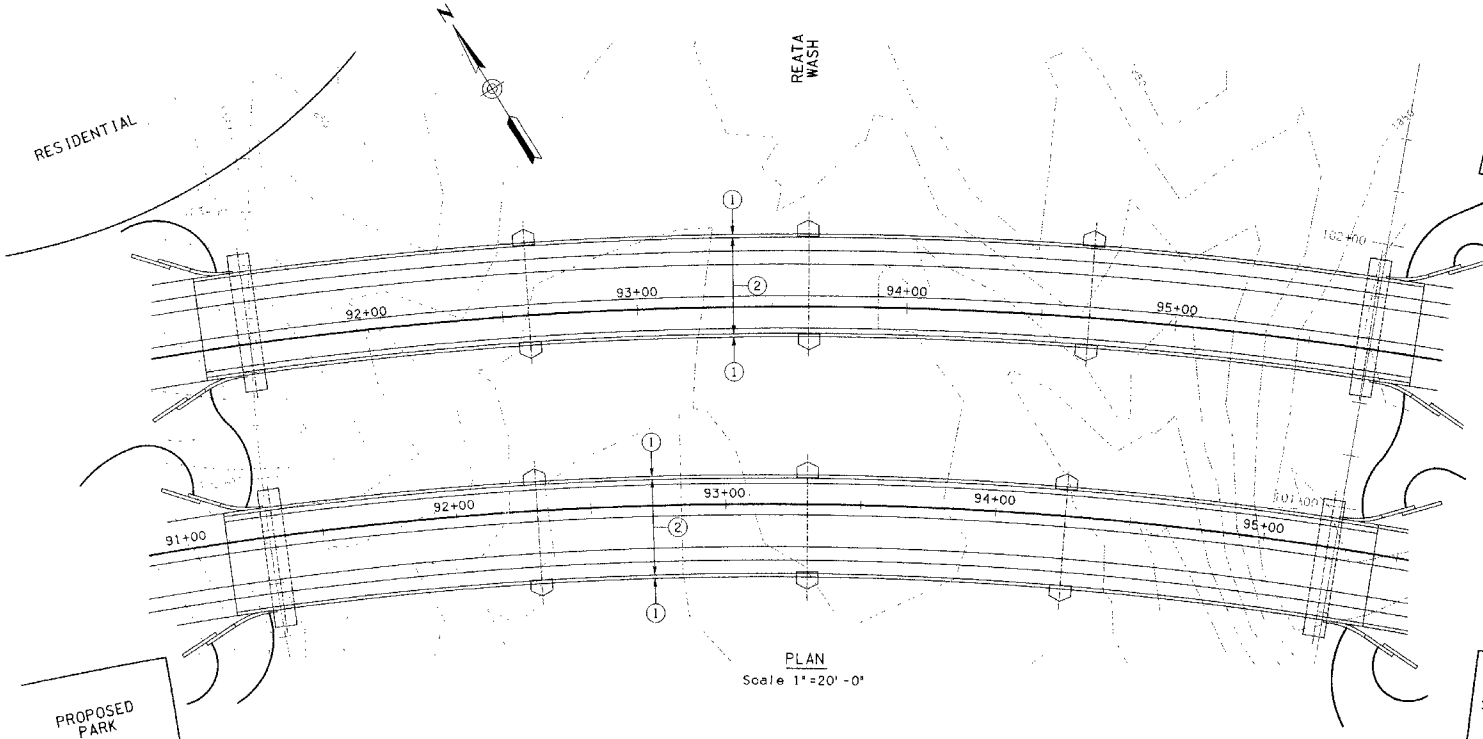
APPROVED BY:

PROJECT REVIEW SR. ENGINEER — 4-30-99 DATE

Two working days before you dig, CALL FOR THE BLUE STAKES 263-1100 Blue Stake Center CALL COLLECT

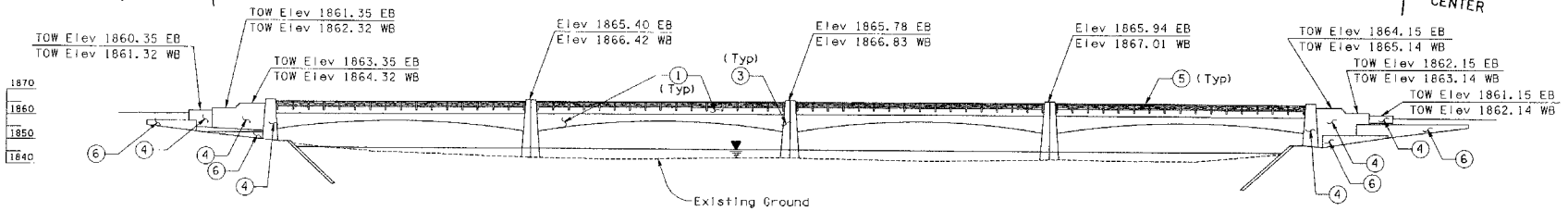
CASE NO. 84-DR-98

84-DR-98 337-99



PLAN
Scale 1"=20'-0"

Color Palette	
1	Paint DC Ranch Brown
2	Integral color concrete, Salomon Copper 242
3	Integral color concrete, Salomon Copper 242 w/textured form liners
4	Decorative Rock
5	Timber Rail
6	Shotcrete, Stain to match color at Piers



ELEVATION
Scale 1"=20'-0"

		DATE
DESIGN	JTG	9/98
DRAWN	RPC	9/98
CHECKED	CGP	9/98

TY LIN INTERNATIONAL
Civil and Structural Engineers

DC RANCH
DMB/CITY OF SCOTTSDALE
THOMPSON PEAK PKWY
BRIDGE OVER REATA WASH
ARCHITECTURAL PLAN & ELEVATION
PHASE 1 & 2

DWG. NO. A-1

84-DR-98 337-99

P:\1214 dc ranch (dmb)\T.P.P. westbound\100%\1214wbarch.dgn VIEW NAME:
04/28/99

Widen Happy Valley Road from Pima Road to Alma School Road

Estimated Project Cost: $4,830,000

Staff Priority: 12 of 34

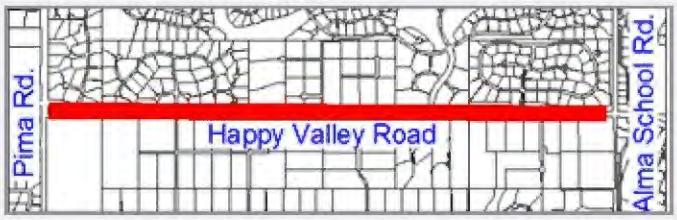
PROJECT DETAILS

Project Summary

Widen Happy Valley Road to 5-lanes including a potential multi-lane roundabout at the intersection with Alma School Road. This project will "close the gap" as Happy Valley Road is five lanes to the east and to the west of this project's boundaries. The total cost for this project is $16.1 M; this project is eligible for regional funding of $11.3 M, this would fund the remaining $4.8 M.

Project Location

The project is located on Happy Valley Road from Pima Road to Alma School Road.



Project Cost

Design	$1,853,000
Bond Issuance Cost	$60,000
Construction	$10,294,000
Administration	$1,872,000
Contingency	$2,059,000
Total Cost	$16,138,000

ANALYSIS & ASSESSMENT

Background

This section of Happy Valley Road is designated as a minor arterial in the Transportation Master Plan approved by City Council in 2008. The section to the east and west are both built to this approved 5 lane cross section.

This project will improve the existing 2 and 3 lane section to the full 5 lane cross section in compliance with the approved master plan. As development continues to occur to the east and north, this segment of roadway continues to increase in traffic volume and is currently at or near capacity during peak travel periods.

Safety

The project would improve safety for drivers and a more significant safety benefit to the bicyclists and pedestrians along the corridor.

What is the customer experience?

Travelers on Happy Valley Road will experience less delay and improved safety along the corridor,

ANALYSIS & ASSESSMENT

bicyclists will have their own dedicated lane and pedestrians will have a sidewalk rather than the existing dirt shoulder.

Recent Staff Action

This project is included in the Transportation Master Plan approved by City Council in 2008. Staff has recently worked with a developer to try to make improvements to the corridor and in particular has required a stipulation that the developer complete the construction of the full intersection at Happy Valley and Alma School Road.

Community Involvement

City staff has received several calls and emails over the last several years requesting roadway improvements including bike lanes, sidewalks and vehicle travel lanes.

Council Goals

The implementation of this project supports the Council Goal: Advancing Transportation.

RESOURCE IMPACTS

Operating Cost

The City of Scottsdale estimates maintenance impacts at $0.85/SY/year for roadway maintenance and $0.13/SF/year for landscape maintenance.

Leveraged Funds

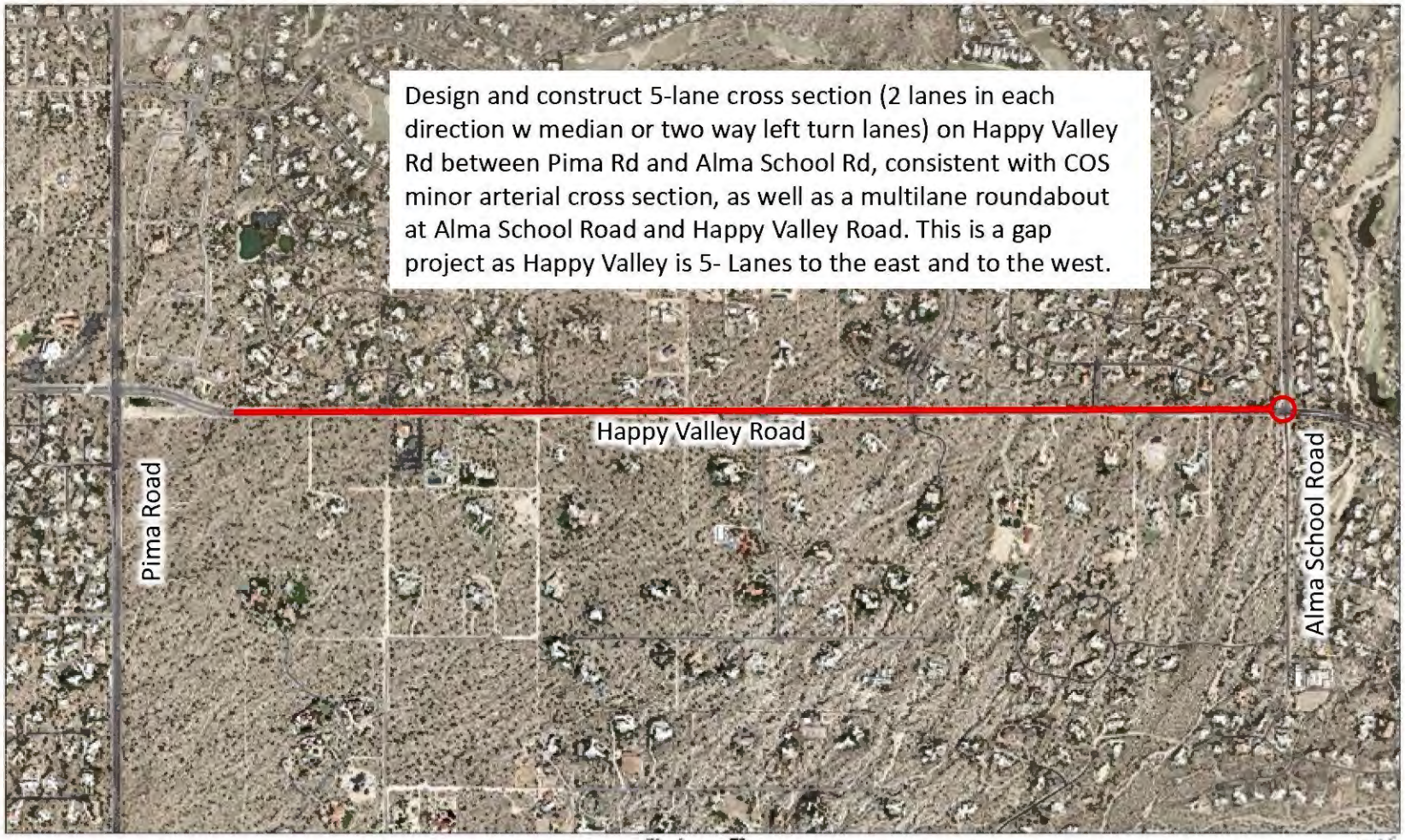
This project is part of the MAG Arterial Life Cycle Program (ALCP) and is eligible for regional funding of approximately $11.3 million.

Impact if this project is not implemented

The traveling public will continue to experience delay along the corridor and pedestrian and bicycle travelers will have to share the space with high speed high volume traffic on Happy Valley Road.

Supplemental Information:

1. Location map
2. Picture of existing conditions



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Improve Miller Road from Pinnacle Peak Road to Happy Valley Road

Estimated Project Cost: $8,900,000

Staff Priority: 28 of 34

PROJECT DETAILS

Project Summary

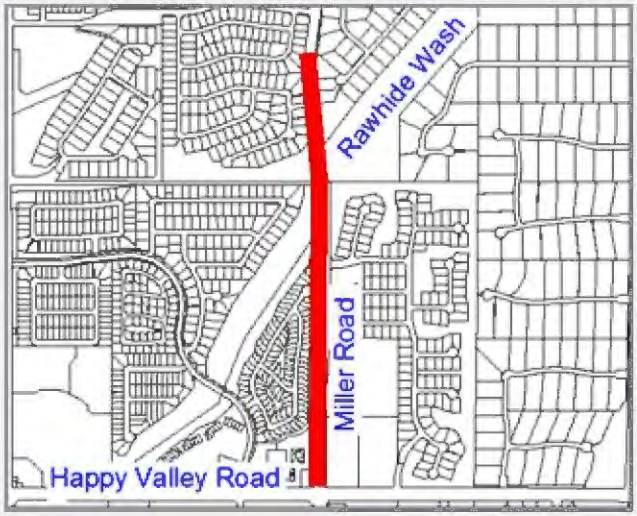
Widen Miller Road to 3-lanes and a build a bridge over the Rawhide Wash, extending Miller Road to Happy Valley Road.

Project Cost

Design	$1,016,000
Bond Issuance Cost	$60,000
Construction	$5,645,000
Administration	$1,050,000
Contingency	$1,129,000
Total Cost	$8,900,000

Project Location

The project is located on Miller Road from Pinnacle Peak Road to Happy Valley Road.



ANALYSIS & ASSESSMENT

Background

In general, the City of Scottsdale is a long narrow City. For most of its length it has three main north-south roadways (Scottsdale Road, Hayden Road and Pima Road). In this area there are just two main routes as Hayden-Miller terminates at Pinnacle Peak Road. This termination results in a significant volume of traffic making higher than typical turning movements at the intersections of Pima Road, Scottsdale Road and Miller Road reducing capacity and increasing the likelihood of crashes.

This is a "close the gap" project to complete Miller Road over the Rawhide Wash, extending its overall length up to Happy Valley Road. To the south, Miller Road curves to the east and becomes Hayden Road and connects to the 101 Freeway. To the north, Miller Road exists as a short 5 lane section up to Happy Valley Road.

As the City continues to work on completing Scottsdale Road and Pima Road in the northern area of the city, having the alternative route of Miller-Hayden to Happy Valley Road will significantly reduce the delay and improve the safety of residents both along Pinnacle Peak Road and those living or traveling north of Pinnacle Peak Road.

ANALYSIS & ASSESSMENT

Safety

Some drivers would be able to avoid the higher speed and higher volume streets resulting in a reduced likelihood of crashes. The expanded roadway would also provide sidewalks and bike lanes allowing these users an alternative to sharing the roadway with the high speed, high volume traffic on Pima Road and Scottsdale Road.

What is the customer experience?

Drivers would experience a direct connection north of Pinnacle Peak Road resulting in fewer delays and less exposure to higher speed, higher volume traffic on Scottsdale Road or Pima Road.

Recent Staff Action

This project is included in the Transportation Master Plan approved by City Council in 2008.

Community Involvement

There has been no recent activity on this project due to a lack of funds to move the project forward.

Council Goals

The implementation of this project supports the Council Goal: Advancing Transportation.

RESOURCE IMPACTS

Operating Cost

The City of Scottsdale estimates maintenance impacts at $0.85/SY/year for roadway maintenance and $0.13/SF/year for landscape maintenance.

Impact if this project is not implemented

Drivers, bicyclists and pedestrians will continue to use Scottsdale Road, Hayden Road and Pima Road and experience delays and congestion especially as Scottsdale Road and Pima Road undergo construction in the next several years. Hayden Road in this area is a local collector roadway with just one narrow lane in each direction with residential homes adjacent to it and lacks sidewalk and bike lanes for most of its length.

Supplemental Information:

1. Location maps
2. Pictures of existing conditions

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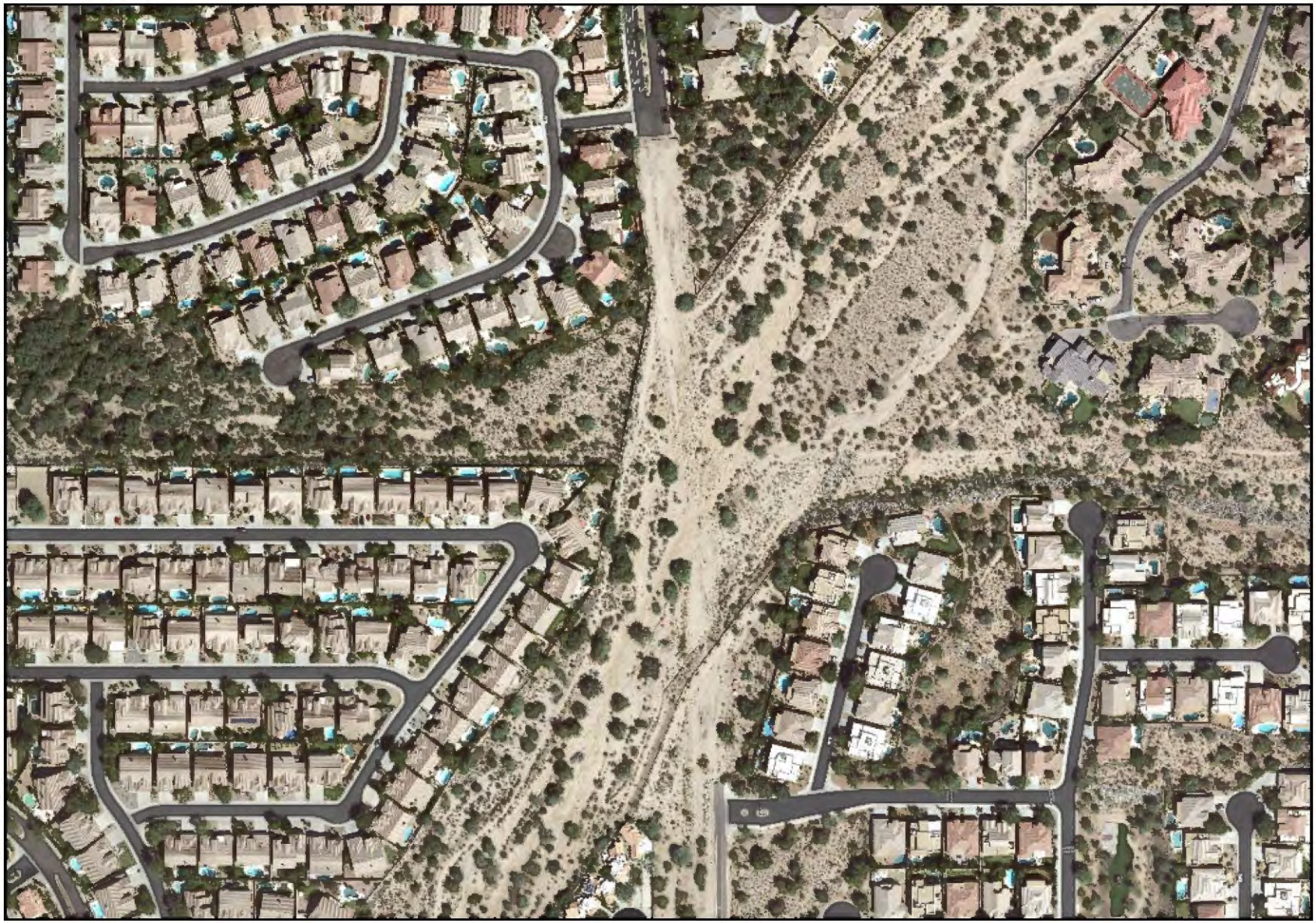

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CITY OF SCOTTSDALE
City of Scottsdale GIS

Widen Alma School Parkway from Jomax Road to Pinnacle Vista Drive

Estimated Project Cost: $5,900,000

Staff Priority: 22 of 34

PROJECT DETAILS

Project Summary

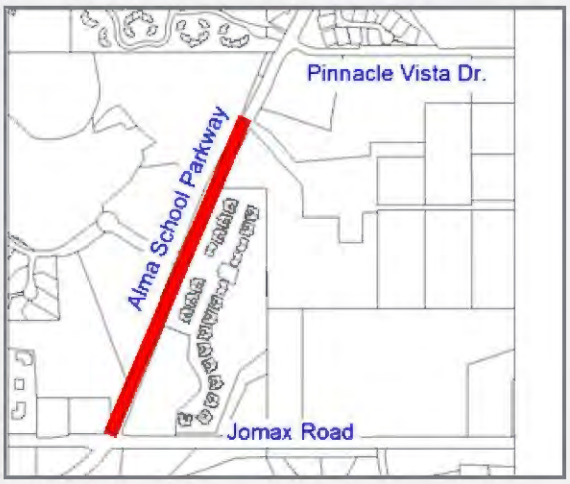
Widen Alma School Parkway to 5-lanes including a potential roundabout at the intersection with Jomax Road. This project will "close the gap" as Alma School Parkway is five lanes to the north and south of this project's boundaries.

Project Cost

Design	$665,000
Bond Issuance Cost	$60,000
Construction	$3,773,000
Administration	$663,000
Contingency	$739,000
Total Cost	$5,900,000

Project Location

The project is located on Miller Road from Pinnacle Peak Road to Happy Valley Road.



ANALYSIS & ASSESSMENT

Background

This project will improve Alma School Parkway from Happy Valley Road to Dynamite Road. Alma School Parkway has been completed to the full major collector cross section with the exception of this small segment. Completing this segment of roadway will improve safety and the overall capacity of this roadway.

Safety

The project will remove the need for traffic to merge at the constrained location and will improve the safety of the intersection of Alma School Parkway and Jomax Road.

What is the customer experience?

Drivers will experience a completed road with greater capacity and safety from Happy Valley Road to Dynamite Road.

Recent Staff Action

Alma School Parkway is designated as a major collector in the City of Scottsdale Transportation Master Plan approved by City Council in 2008. A recent development has been stipulated to improve part of this unfinished section to help offset the cost of the project.

ANALYSIS & ASSESSMENT

Community Involvement

There has been no recent community involvement due to lack of funds to move the project forward.

Council Goals

The implementation of this project supports the Council Goal: Advance Transportation.

RESOURCE IMPACTS

Operating Cost

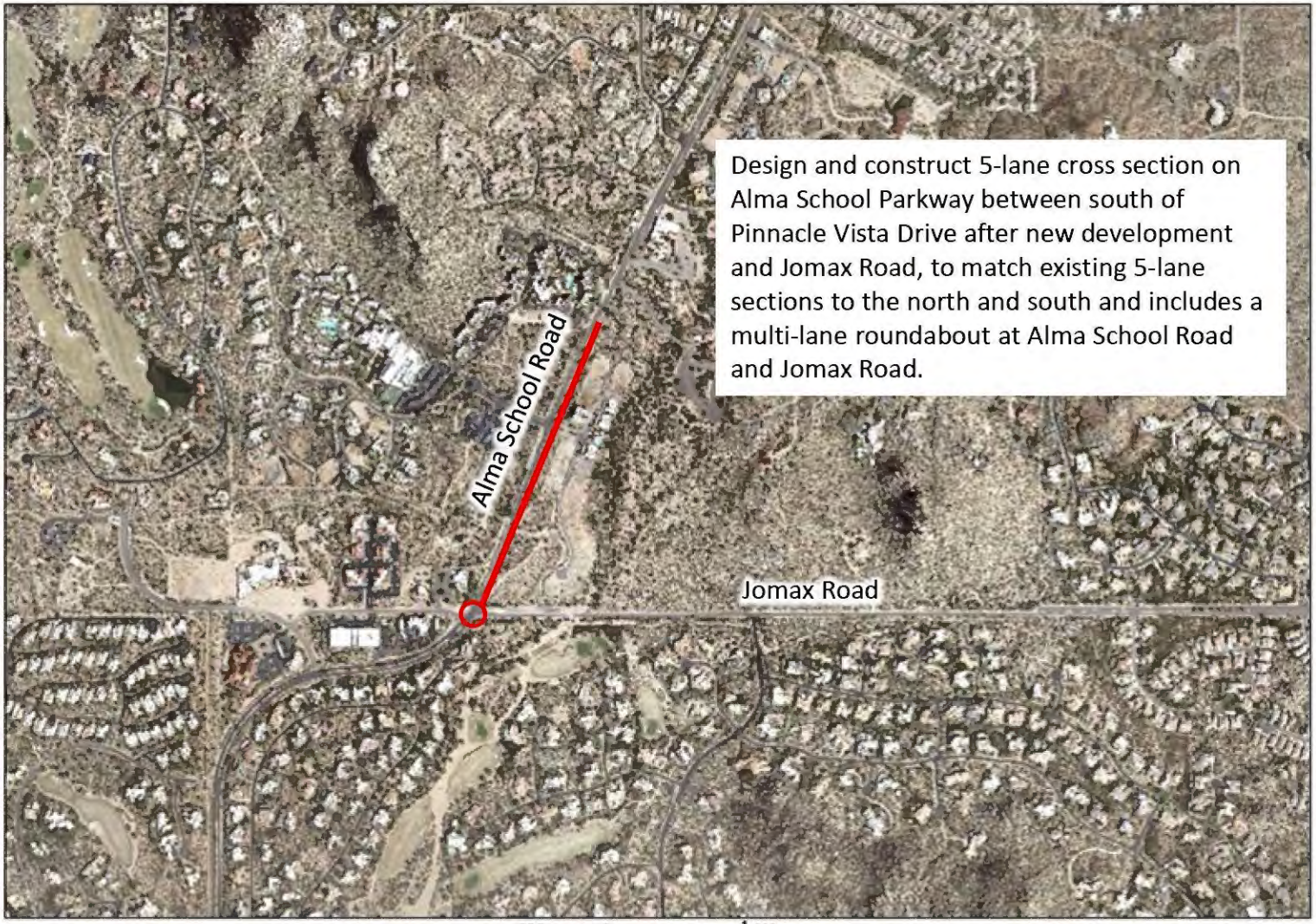
The City of Scottsdale estimates maintenance impacts at $0.85/SY/year for roadway maintenance and $0.13/SF/year for landscape maintenance.

Impact if this project is not implemented

The traveling public will experience continued minor delay and continue to have less than desirable access and safety at the intersection with Jomax Road and along this section of Alma School Parkway.

Supplemental Information:

1. Location map
2. Pictures of existing conditions



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Improve 98th Street north of McDowell Mountain Ranch Road

Estimated Project Cost: $1,700,000

Staff Priority: 34 of 34

PROJECT DETAILS

Project Summary

Improve 98th Street to match the existing 5-lane roadway to the north (adjacent to Notre Dame High School) and build intersection improvements at McDowell Mountain Ranch Road and Paradise Lane.

Project Cost

Design	$185,000
Bond Issuance Cost	$60,000
Construction	$1,037,000
Administration	$213,000
Contingency	$205,000
Total Cost	$1,700,000

Project Location

The project is located on 98th Street north of McDowell Mountain Ranch Road.

ANALYSIS & ASSESSMENT

Background

Most of 98th Street was completed as a 5-lane roadway as development occurred; however there is an uncompleted 3-lane portion of the roadway adjacent to the city owned property at WestWorld. The incomplete constrained section has created many challenges. Notre Dame High School to the north generates a significant amount of traffic during their drop off, dismissal and events. The intersections of 98th St. and Paradise Ln. and 98th St. and McDowell Mountain Ranch Rd. both have capacity issues that would be addressed by this project.

Safety

Speeding, sight distance, accessibility and pedestrian crossings have been identified as some of the potential safety challenges that would be addressed by this project.

What is the customer experience?

Residents, students, and WestWorld visitors will all experience improved access, capacity and safety upon the completion of this project.

ANALYSIS & ASSESSMENT

Recent Staff Action

The City has met with Notre Dame HS administration on several occasions to discuss potential transportation safety concerns along 98th Street.

Community Involvement

There has been no recent community involvement regarding this project due to current lack of funding to move the project forward.

Council Goals

The implementation of this project supports the Council Goal: Advance Transportation.

RESOURCE IMPACTS

Operating Costs

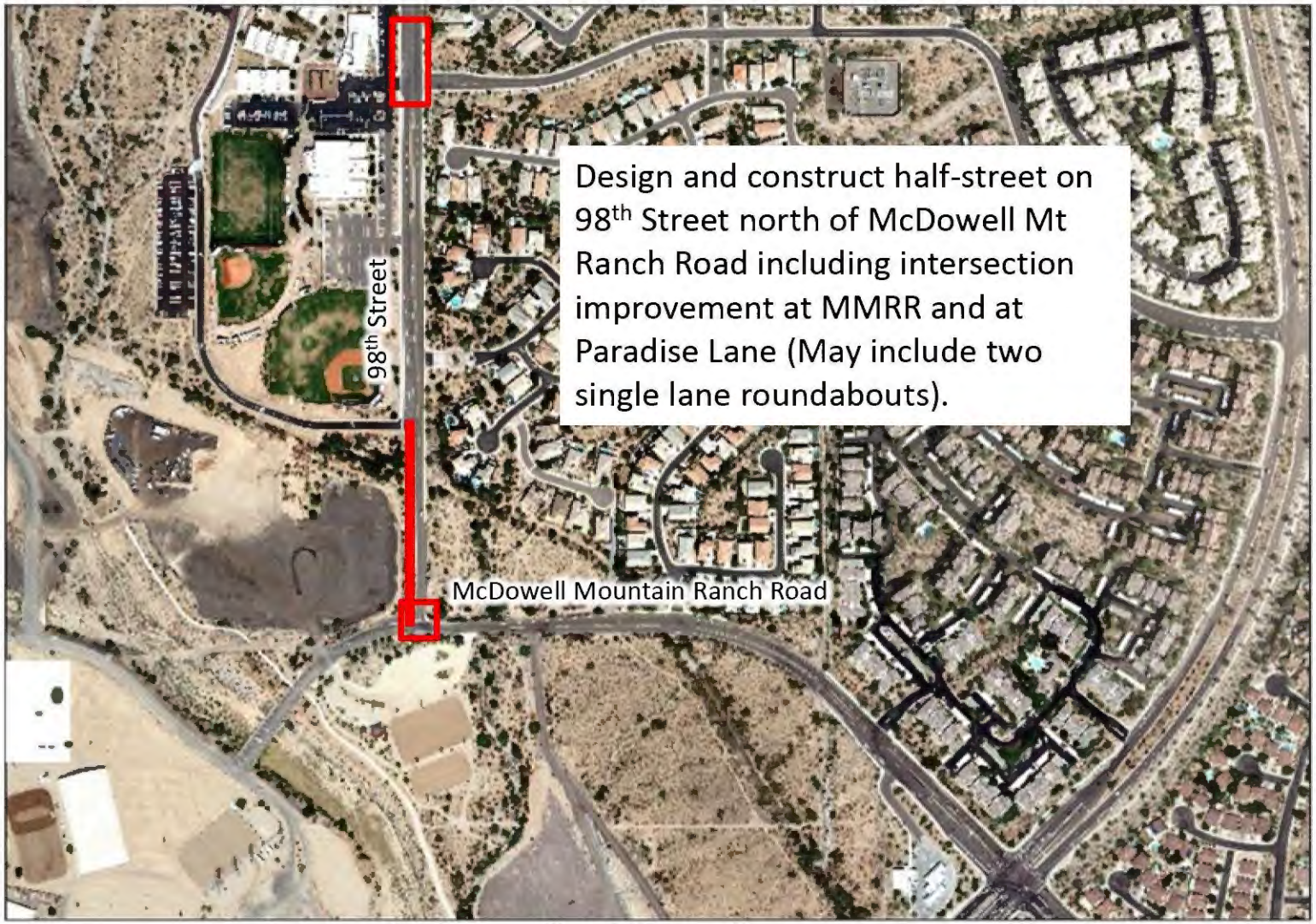
The City of Scottsdale estimates maintenance impacts at $0.85/SY/year for roadway maintenance and $0.13/SF/year for landscape maintenance.

Impact if this project is not implemented

There will continue to be capacity, access and potential safety impacts to the traveling public on 98th Street and McDowell Mountain Ranch Road. Pedestrians and bicyclists will continue to have to share the road with vehicular traffic.

Supplemental Information:

1. Location map
2. Pictures of exiting conditions



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CITY OF SCOTTSDALE
City of Scottsdale GIS

Improve the Intersection of 56th Street and Pinnacle Vista Drive

Estimated Project Cost: $700,000

Staff Priority: 32 of 34

PROJECT DETAILS

Project Summary

Design and build a roundabout at the intersection of 56th Street and Pinnacle Vista Drive including sidewalk and pedestrian improvements connecting to the adjacent school.

Project Cost

Design	$75,000
Bond Issuance Cost	$60,000
Construction	$418,000
Administration	$64,000
Contingency	$83,000
Total Cost	$700,000

Project Location

The project is located at the intersection of Pinnacle Vista Drive and 56th Street.

ANALYSIS & ASSESSMENT

Background

The intersection of Pinnacle Vista Drive and 56th Street is incomplete as three of the four legs lack full travel lanes, curb, gutter and sidewalk. Temporary asphalt has been installed to provide some improved temporary accessibility. To improve the safety, capacity, accessibility and control speeds, a roundabout with pedestrian refuge islands and sidewalks is planned.

Safety

The intersection currently lacks full improvements. The full construction of this intersection will improve safety for vehicles, bikes and pedestrians. This intersection is adjacent to two existing schools.

What is the customer experience?

Scottsdale residents currently experience a less than desirable surface consistency, delay, and congestion during peak periods. Drivers, bicyclists and pedestrians will experience a safer, more accessible completed intersection once the improvements are made.

Recent Staff Action

The City added some asphalt, signs and marking intended as a short term improvement due to concerns over the opening of the adjacent schools and in particular the access to those schools for Scottsdale residents.

ANALYSIS & ASSESSMENT

Community Involvement

The City completed a traffic calming project for Pinnacle Vista Drive from 56th Street to 64th Street due to resident concerns over speeding and pedestrians walking along this corridor to get to school.

Council Goals

The implementation of this project supports the Council Goal: Advancing Transportation.

RESOURCE IMPACTS

Operating Cost

The City of Scottsdale estimates maintenance impacts at $0.85/SY/year for roadway maintenance and $0.13/SF/year for landscape maintenance.

Leveraged Funds

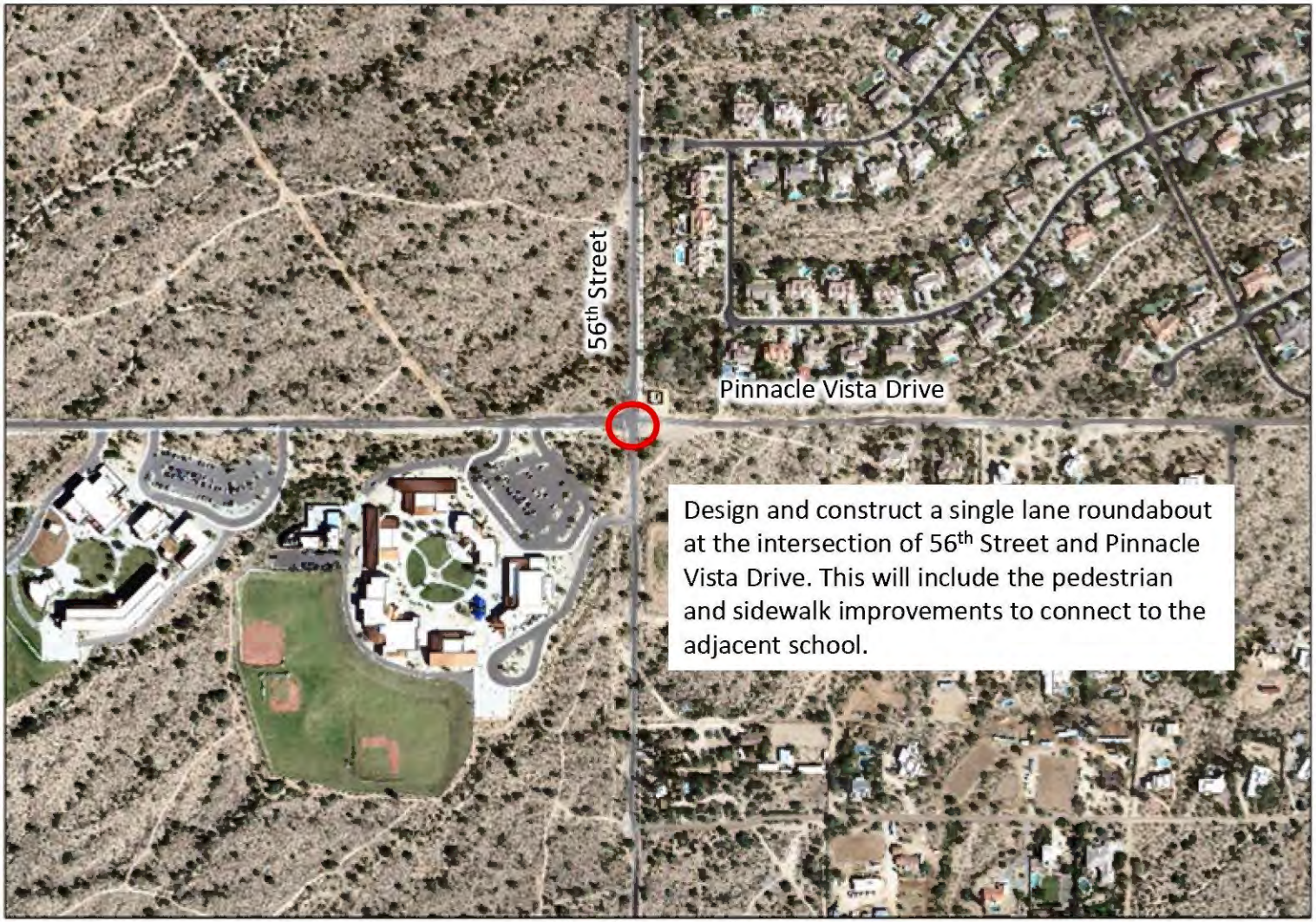
The City is exploring opportunities to partner with the City of Phoenix and the Cave Creek Unified School District to reduce the cost and increase the accessibility to adjacent neighborhoods.

Impact if this project is not implemented

The City will have to look at alternative temporary treatments to maintain the temporary asphalt and users of the intersection will continue to experience less than desirable surface consistency, delay, and congestion during peak periods.

Supplemental Information:

1. Location map
2. Pictures of exiting conditions



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STOP

Highland Avenue intersections at Scottsdale Road and Goldwater Boulevard

Estimated Project Cost: $2,100,000

Staff Priority: 15 of 34

PROJECT DETAILS

Project Summary

Design and build intersection improvements on Highland Avenue at Scottsdale Road and Goldwater Boulevard and improve the sidewalk along Highland Avenue between Scottsdale Road and Goldwater Boulevard.

Project Cost

Design	$224,000
Bond Issuance Cost	$60,000
Construction	$1,322,000
Administration	$245,000
Contingency	$249,000
Total Cost	$2,100,000

Project Location

The project is located on Highland Avenue between Scottsdale Road and Goldwater Boulevard.

ANALYSIS & ASSESSMENT

Background

Currently there is no simple, convenient, accessible route for pedestrians and vehicles at the intersections of Highland Avenue and Goldwater Boulevard and the intersection of Highland Avenue and Scottsdale Road. There have been a number of requests to improve pedestrian access from the north side of Highland Avenue into the downtown area.

This project will provide pedestrian access where there currently is none at the west end of Highland Avenue where it ends at Goldwater Boulevard as well as improve vehicular access which is not ideal due to the geometrics of the intersection. This project could potentially leverage developer funds to make some of the improvements.

Safety

This project would provide a simpler, safer option for both pedestrians and vehicles at both intersections.

What is the customer experience?

Residents and visitors will be provided a safer, more accessible vehicular and pedestrian experience.

Recent Staff Action

This project is included in the Transportation Master Plan approved by City Council in 2008. The City has met with developer representative to discuss planned projects and discussed the potential to partner on these improvements.

ANALYSIS & ASSESSMENT

Community Involvement

The City has received several calls and emails over the last several years requesting pedestrian improvements in this area. The City Council also discussed the desire to improve this area. City staff made some small improvements for pedestrians by installing a pedestrian crossing of Highland Avenue, and has met with some neighbors on site to discuss other improvements.

Council Goals

The implementation of this project supports the Council Goal: Advancing Transportation

RESOURCE IMPACTS

Operating Cost

The City of Scottsdale estimates maintenance impacts at $0.85/SY/year for roadway maintenance and $0.13/SF/year for landscape maintenance.

Leveraged Funds

There are currently no leveraged funds for this project, but redevelopment in the area is happening and the City is working to partner with the developers to improve the project and reduce the cost to the public.

Impact if this project is not implemented

Residents and visitors in the downtown area will continue to be challenged by the complexity and lack of control for both vehicles and pedestrians along Highland Avenue and specifically at the Highland Avenue and Goldwater Boulevard intersection.

Supplemental Information:

1. Location maps

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CITY OF SCOTTSDALE
City of Scottsdale GIS

Improve and Repair Sidewalks in Downtown Scottsdale

Estimated Project Cost: $4,000,000

Staff Priority: 3 of 34

PROJECT DETAILS

Project Summary

Build missing sidewalk segments and improve sidewalks in the downtown area generally bounded by Goldwater Boulevard, Camelback Road, Drinkwater Boulevard, and Earll Drive to increase character, way finding and pedestrian mobility.

Project Cost

Design	$455,000
Bond Issuance Cost	$60,000
Construction	$2,555,000
Administration	$424,000
Contingency	$506,000
Total Cost	$4,000,000

Project Location

The project is located in Downtown Scottsdale in the area generally bounded by Goldwater Boulevard, Camelback Road, Drinkwater Boulevard, and Earll Drive.

ANALYSIS & ASSESSMENT

Background

Downtown Scottsdale is an important part of the city for business, character and tourism. However there are many sidewalks and pedestrian facilities that are deteriorated, missing, not in compliance with current standards or do not provide for the increasing demand. A downtown pedestrian study was completed in 2007 that resulted in a number of recommendations that will be incorporated into this project.

Safety

This project will construct facilities to allow pedestrians to walk outside of the roadway area traveled with vehicles, will add pedestrian ramps, add lighting to improve visibility, and improve the safety of pedestrian street crossings.

What is the customer experience?

Pedestrians will have a safer, convenient and comfortable pedestrian experience when walking in the downtown area.

Community Involvement

There has been no recent public involvement for this project due to a lack of funding to move the project forward.

Council Goals

The implementation of this project supports the Council Goals: Advance Transportation and Support Economic Vitality.

RESOURCE IMPACTS

Operating Cost

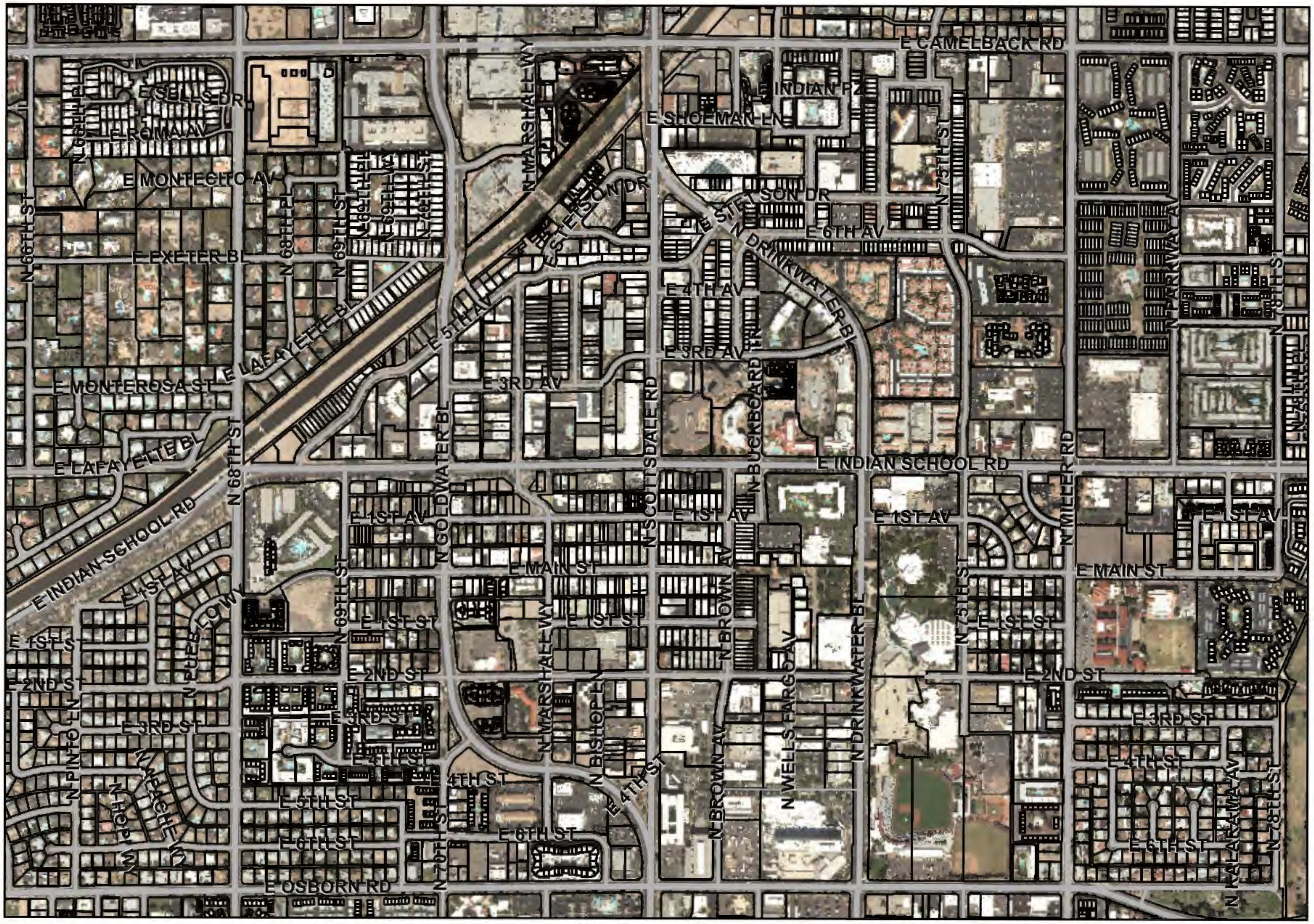
This project will have minimal impact on operating costs.

Impact if this project is not implemented

If the project is not completed, pedestrians will continue to have deteriorating sidewalks in the downtown area, will have to share the space with vehicular traffic, will have pinch points in the sidewalk system, pedestrian routes that do not meet current standards and have crossings that are more challenging than desirable.

Supplemental Information:

1. Location map
2. Downtown Scottsdale Pedestrian Mobility Study



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Feet

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Notice: This document is provided for general information purposes only. The City of Scottsdale does not warrant its accuracy, completeness, or suitability for any particular purpose. It should not be relied upon without field verification.

City of Scottsdale GIS

Old Town – obstructions

Old Town – walkway width and clearance

Old Town – clearance and obstructions

6. RECOMMENDATIONS & PRIORITIES

After discussion of all the individual District deficiencies, a set of the top 3 prioritized improvements was formulated based on discussions with city staff. See **Figure 11**.

OLD TOWN DISTRICT – STAFF PRIORITIES

#1 Priority

- Create an accessible entrance to Brown/Main into Civic Center Mall
- Sidewalk reconstruction*
- Sidewalk surface renovation
- Expand western themed improvements
- Make all trolley stops accessible and comfortable

#2 Priority

- Fix clearance issue on all streets, minimum 3 foot clearance.
- Streetscape installation – landscaping, pedestrian facilities
- Adjust covered walkway supports (for clearance) or modify design standards
- Replace thorny plants with friendlier vegetation

#3 Priority

- Brown Avenue – fix slopes, update ramps, add landscaping and shade
- Add lighting and street amenities
- Upgrade lighting in pedestrian areas
- Improve sidewalk surfaces, ramps, and alleys

Other Suggestions

- Main Street: fix surfaces, update ramps
- Buckboard Trail: widen sidewalk, add shade, seating, and landscaping, add additional amenities north of Indian School to connect to hotels
- Downtown (overall): Create/adopt guidelines for outdoor dining, sidewalk cafes, and other uses in R/W

* sidewalk reconstruction = increases sidewalk width, improve surface/texture by smoothing surfaces, adding clearance and ramps, modifying curb heights.

Figure 11 Overall Recommendations for District Improvements – Staff Rankings

CITY OF SCOTTSDALE PEDESTRIAN MOBILITY STUDY - RECOMMENDATIONS FOR DISTRICT IMPROVEMENTS

		OVERALL					
			Old Town	Main	NE Quadrant	Marshall/ 5th	AVERAGE	RANKING
HORIZONTAL	1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2
	2	Sidewalk Surface & Texture	[illegible]	[illegible]	9.5	[illegible]	[illegible]	4
	3	Driveways & Crossings	11.2	11.8	11.4	9.4	10.65	10
	4	Alley	17.4	19.6	13.2	17.2	16.6	
	5	Parking Lots & On Street Parking	14.6	15.4	13.4	18	15.4	
VERTICAL	6	Crosswalks at Intersections	13.2	13.2	11	12.6	12.5	
	7	Sidewalk Clearance & Obstructions	[illegible]	[illegible]	9.4	[illegible]	[illegible]	1
	8	Curbs	11.2	[illegible]	18	[illegible]	13.8	
	9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3
NAVIGATION	10	Lighting	[illegible]	9.6	8.4	[illegible]	[illegible]	7
	11	Signals	17.2	16.6	13.2	16.2	15.8	
	12	Transit Stations/ Trolley Stops	15.4	15.8	16	16.6	15.95	
	13	Wayfinding Signs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	9
COMFORT	14	Traffic Calming	18.4	17.6	19	16.8	17.9	
	15	Physical Separation from Traffic	15.2	17.2	18.6	16.2	16.6	
	16	Seating	[illegible]	[illegible]	7.6	[illegible]	[illegible]	6
	17	Shade	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	5
THEME	18	Courtyards & Passages	10.4	10.6	12.2	11.2	11.1	
	19	Public Art	17.6	14.2	14.2	19.4	15.35	
	20	Landscape Character	12.6	10.4	12.6	10	11.4	
	21	Amenities	[illegible]	[illegible]	11	[illegible]	[illegible]	8
	22	Uses in Segment	17.4	[illegible]	14.6	18	17.3	

LEGEND

- Top 1-5 recommendations
- Top 6-10 recommendations

Main Street Arts – multiple curbs

Main Street Arts– offset path of travel

MAIN STREET ARTS DISTRICT – STAFF PRIORITIES

#1 Priority

- Main Street: widen sidewalk, fix slopes, curb height and surfaces, minimum 3 foot clearance, continuous path of travel, update ramps, enhance lighting
- Sidewalk reconstruction*
- Pedestrian/courtyard area improvements on Main
- Fix curbs to be consistent

#2 Priority

- Marshall Way: widen sidewalk, fix irregular surfaces, consolidate materials, minimum 3 foot clearance, continuous path of travel, update ramps, add lighting and seating, enhance theme and add trees or structured shade
- Landscaping
- Add public seating, improve streetscape (public/private)

#3 Priority

- First Avenue: widen sidewalks, fix irregular surfaces, more seating west of Scottsdale Road, and add theme and landscaping.
- Amenities
- Upgrade lighting

*sidewalk reconstruction = increases sidewalk width, improve surface/texture by smoothing surfaces, adding clearance and ramps; modifying curb heights.

Craftsman Court & 5th Avenue – vertical obstructions

Marshall Way / 5th Avenue Arts– obstructions

MARSHALL WAY /5TH AVENUE ARTS DISTRICT – STAFF PRIORITIES

#1 Priority

- Marshall Way: widen sidewalks, smooth irregular surfaces, lower curb height, update ramps, enhance signals beyond safety, consolidate driveway where possible
- Sidewalk reconstruction*
- Redesign BadaBoom restaurant corner to make it easier to get through for patrons and pedestrians. This corner should have a higher standard of accessibility.

#2 Priority

- Fifth/Stetson: widen sidewalks, smooth irregular surfaces, update ramps, improve clearance and doors, enhance lighting
- Add seating
- Improve lighting, add special lighting for art areas

#3 Priority

- Third Avenue: enhance as pedestrian corridor (widen sidewalk, update ramps, enhance lighting, add landscape character)
- Landscape and amenities
- Repair/replace curbs and building entries where steps intrude

Other suggestions

- Sixth Avenue: upgrade comparable to other streets (widen sidewalk, update ramps, enhance lighting, add landscape character); consider partial or full closure
- Craftsmen Court: consider partial or full closure to vehicles part or all day
- Arts District: enhance all features associated with ART
- 6th Avenue/Scottsdale Road: evaluate need for traffic signal

*sidewalk reconstruction = increases sidewalk width, improve surface/texture by smoothing surfaces, adding clearance and ramps; modifying curb heights.

Northeast Quadrant – unsafe pavement joint

Northeast Quadrant – lack of ramps

Northeast Quadrant – sidewalk continuity

NORTHEAST QUADRANT – STAFF PRIORITIES

#1 Priority

- Create urban design guidelines for entire district; add open space areas
- Sidewalk reconstruction*
- Complete a plan for the area
- Improve lighting

#2 Priority

- Needs character defining elements (art, landscape, furnishings, seating, etc.) widen sidewalks, fix diverse sidewalk textures, update ramps
- Shade (trees and structures)
- Improve lighting with standard and special fixtures
- Design a streetscape theme for district

#3 Priority

- Enhance lighting
- Amenities (bathrooms!)
- Improved, more visible street crossings for nighttime safety of pedestrians and drivers
- Add walk/don't walk to signals

*sidewalk reconstruction = increases sidewalk width, improve surface/texture by smoothing surfaces, adding clearance and ramps; modifying curb heights

Marshall Way / 5th Avenue Arts

Old Town

Main Street Arts

Northeast Quadrant

7. IMPLEMENTATION

A consolidation of staff rankings and suggested improvements has helped to formulate the outline of potential projects. These projects can then be prioritized, whether for capital improvement budgeting or further consultant study.

It is important to note that this list of projects is not comprehensive and all inclusive of all identified project needs, but instead focuses on the top 10 needs identified in Downtown. A range of projects are listed, including capital projects as well as programs and policies.

The projects described below include provisions for improving safety and accessibility, strengthening urban design themes, and enhancing connectivity within and between Districts, and to adjacent major destinations. The accompanying budget estimates are general estimates to be used for broad budgeting purposes.

Civic Center Mall Entrance at Brown Ave & Main St

Looking west from Civic Center Mall

Proposed project area

A. DEVELOP BETTER PEDESTRIAN ACCESS FROM BROWN AVENUE / MAIN STREET TO CIVIC CENTER MALL

Currently, no accessible entrance exists into the Civic Center Mall from Brown Avenue/Main Street.

Project Description:

This project would reconstruct the entry to Civic Center Mall to create an accessible link with the rest of the Old Town District. This work would generally include constructing an accessible entry, enhancing the visual link into the mall from Old Town west to the Main Street Arts District, and renovating walkways and parking to promote free flow of pedestrians crossing Main Street and moving along Brown Avenue.

Estimated budget:

$2 million to $4 million for planning, design and construction

Old Town – streets with major pedestrian obstructions

Old Town - boardwalk with obstructions

Old Town – boardwalk clearance issues

B. ENHANCE WALKWAY CLEARANCE ALONG OLD TOWN DISTRICT BOARDWALKS

In Old Town along Main Street, Brown Avenue and First Street, insufficient horizontal clearance exists along walkways. Sidewalk width does not meet the minimum safety guideline of 6' in width. Indents of greater than ¼" along Main Street and Brown Avenue and slope along Brown Avenue exceeding 1:12 (safety guideline) are common throughout this district.

Individual segments do not meet the minimum safety standard of 3' of clearance (note that 4' of clearance is preferred under ADA Best Practice Guidance). These segments also do not meet the mounted object criteria (wall mounted objects that protrude more than 4" between a height of 27" and 7' do not meet the safety standard).

Project Description:
The scope of this project is to study and design ways to increase walkway width along boardwalk sections. Walkway widths might be increased by modifying doorways, thinning structural supports where compatible with the architecture, determining the appropriate locations/boundaries of sidewalk merchandising displays, rearranging or removing site furnishings, reconfiguring curbs and standardizing curb heights (existing curbs range from 4" to 8" in height), or reconfiguring/ removing parking.

Additional study as to the appropriate design option is needed, and to determine the cost of these improvements. For example, moving structural supports might have impacts to the structural integrity of buildings and modifying curb heights could have impacts to drainage. The scope of this project is to study and design the improvements, and to determine the cost of constructing improvements. **The actual construction of improvements is not included in the project scope.**

Estimated Budget for study and design:

Up to $100,000 to hire an architectural consultant.

Marshall Way Arts – outdoor dining

5th Avenue Arts – outdoor dining

Old Town – outdoor dining

Old Town – outdoor dining

Northeast Quadrant – outdoor dining

C. ADOPT DOWNTOWN OUTDOOR DINING GUIDELINES FOR RETROFIT AND NEW CONSTRUCTION

As part of an update to the Downtown Urban Design and Architectural Guidelines or the Downtown Plan, a comprehensive guideline for outdoor dining needs to be written and adopted. While outdoor dining can help contribute to an active and vibrant street life that enhances the pedestrian experience, current walkway additions are hampering pedestrian movement in some locations. Because most downtown sidewalks were designed many years ago, their width is insufficient for the active use of the sidewalk by outdoor dining.

Project Description:

The guidelines for outdoor dining should include other solutions to expanding space in downtown areas, such as reclamation of parking spaces in some locations. The guidelines should provide clear guidance to property owners where outdoor dining is appropriate.

City of Scottsdale staff has created a set of draft guidelines for outdoor cafes in the public right of way. This draft could be used as a starting point for new guidelines.

Estimated Budget:

$60,000 for consultant led effort; lower if integrated into other efforts mentioned above.

Proposed project area

D. DEVELOP A CONTINUOUS PATH OF TRAVEL ON MAIN STREET

Main Street has long been envisioned as a major east/west pedestrian corridor traversing downtown from 69th Street to the Civic Center Mall at Brown Avenue. Main Street connects to Southwest Village west of downtown, to the Valley Ho at 69th Street, and intersects the Civic Center Mall at Brown Avenue.

Currently, between Goldwater and Scottsdale Road, sidewalk width varies from less than 4' to more than 8'; the path of travel is inconsistent. The sidewalk surfaces include heaved and separated pavement, resulting in indents greater than ¼" and slopes greater than 1:12. Portions of Main Street have double and triple curbs. In addition, a stronger visual connection is needed from the Valley Ho to Main Street which could be achieved by extending landscaping and street furnishings.

Project Description:
This project will design and construct an improved walkway surface along both sides of Main Street from 69th Street to Brown Avenue that eliminates heaved or separated pavement, discontinuous walkway widths, and consolidates street furnishings. (Note that the crossing of Scottsdale Road will be enhanced as part of the Scottsdale Road Streetscape project.)

Estimated budget for design and construction:

$1 million to $2 million for planning, design and construction.


Proposed project area

E. LINK AND ENHANCE THE MARSHALL WAY PEDESTRIAN CORRIDOR FROM MAIN STREET ARTS TO THE WATERFRONT

Marshall Way is a key north/south link through downtown from Main Street north to 5th Avenue, connecting the Arts District, 5th Avenue District, and the emerging Waterfront and pedestrian-oriented development along the Arizona Canal. Unfortunately, poor lighting, variable widths in walkways and crossing challenges at intersections make Marshal Way difficult for pedestrians to traverse.

Project Description:

The scope of this project is to enhance the Marshall Way corridor from Main Street to 5th Avenue, including adding additional sidewalk width, fixing irregular sidewalk surfaces and consolidating sidewalk materials, lowering curb heights, enhancing intersections to make pedestrian crossing more comfortable, ensuring appropriate clearances for pedestrian circulation, adding lighting and seating, enhancing theme, and adding trees or structured shade. The project also includes exploration of opportunities to consolidate driveways along Marshall Way to increase its attractiveness as a pedestrian corridor.

Estimated budget:

$1 million for planning, design and construction.

Leverage Grant Money to Add Paths and Trail Connections

Estimated Project Cost: $2,630,000

Staff Priority: 30 of 34

PROJECT DETAILS

Project Summary

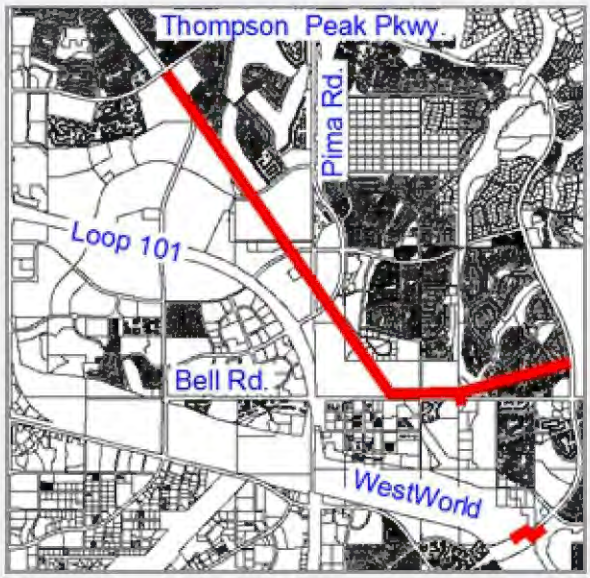
Build new shared-use paths and unpaved trail connections from WestWorld north to major destinations and existing paths and trails, including the McDowell Sonoran Preserve, Gateway Access Area, McDowell Mountain Ranch Park and Aquatic Center, Grayhawk Park, Pima Park and the Power Line Path. The total cost for this project is $6.8 M; $4.2 M in federal grant funding has been received, this would fund the remaining $2.6 M.

Project Cost

Design	$784,000
Bond Issuance Cost	$60,000
Construction	$4,356,000
Administration	$776,000
Contingency	$871,000
Total Cost	$6,847,000

Project Location

The project is located north of the Central Arizona Project Canal, near WestWorld, McDowell Mountain Ranch, DC Ranch, Grayhawk, and the McDowell Sonoran Preserve Gateway.



ANALYSIS & ASSESSMENT

Background

The City of Scottsdale's main shared use path, that connects to Tempe Town Lake and travels through the Indian Bend Wash Greenbelt, currently, ends just north of the Central Arizona Project Canal at WestWorld. This project will serve as a major non-motorized hub closing significant gaps in the network and provide continuous local and regional connectivity for many community users.

Safety

This project will provide grade separation and direct path and trail access to allow many users to avoid potential conflicts with high speed, high volume vehicular roadways such as Hayden Road, Pima Road, Bell Road, and Thompson Peak Parkway.

What is the customer experience?

These connections will provide residents from Grayhawk, DC Ranch, and McDowell Mountain Ranch direct path and trail access to major destinations throughout the city by connecting existing paths and trails to the north end of the main City Path at WestWorld.

ANALYSIS & ASSESSMENT

Council Goals

The implementation of this project supports the Council Goal: Advance Transportation.

RESOURCE IMPACTS

Operating Cost

Path maintenance on an annual basis for this project is $2,750. Trail maintenance will be $14,073 annually.

Staffing, Workload Impact

There will be minimal impact on staffing or workload due to the path and underpass.

Maintenance Requirements

The path will require monthly sweeping. This will be added to the existing path maintenance program through Public Works. Trail maintenance will include vegetation trimming and trail tread repair through the Community Services program.

Leveraged Funds

The city has received $4.2 M in federal funds for this project. The bond funds will fulfill the local match requirement.

Impact if this project is not implemented

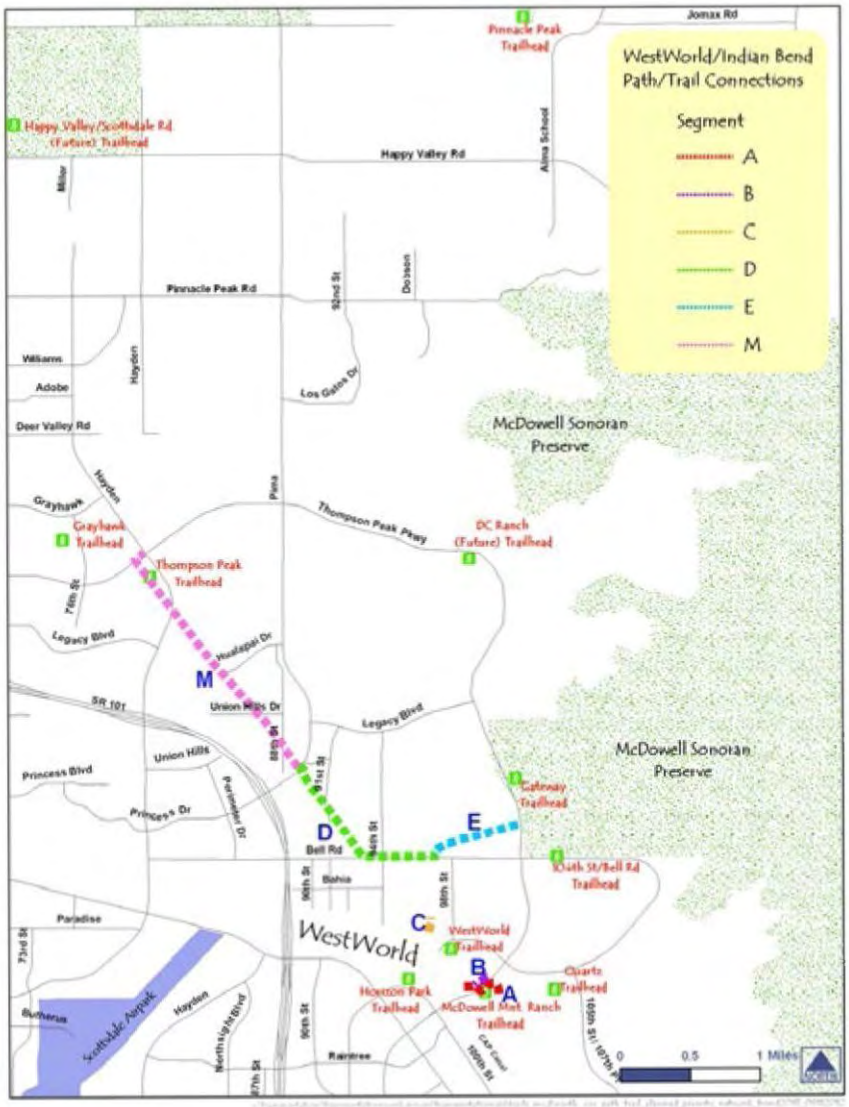
Path and trail users would continue to have potential conflicts with high speed, high volume vehicular roadways if this project is not constructed. The City will lose $4.2 M in federal funds if the match requirement is not met.

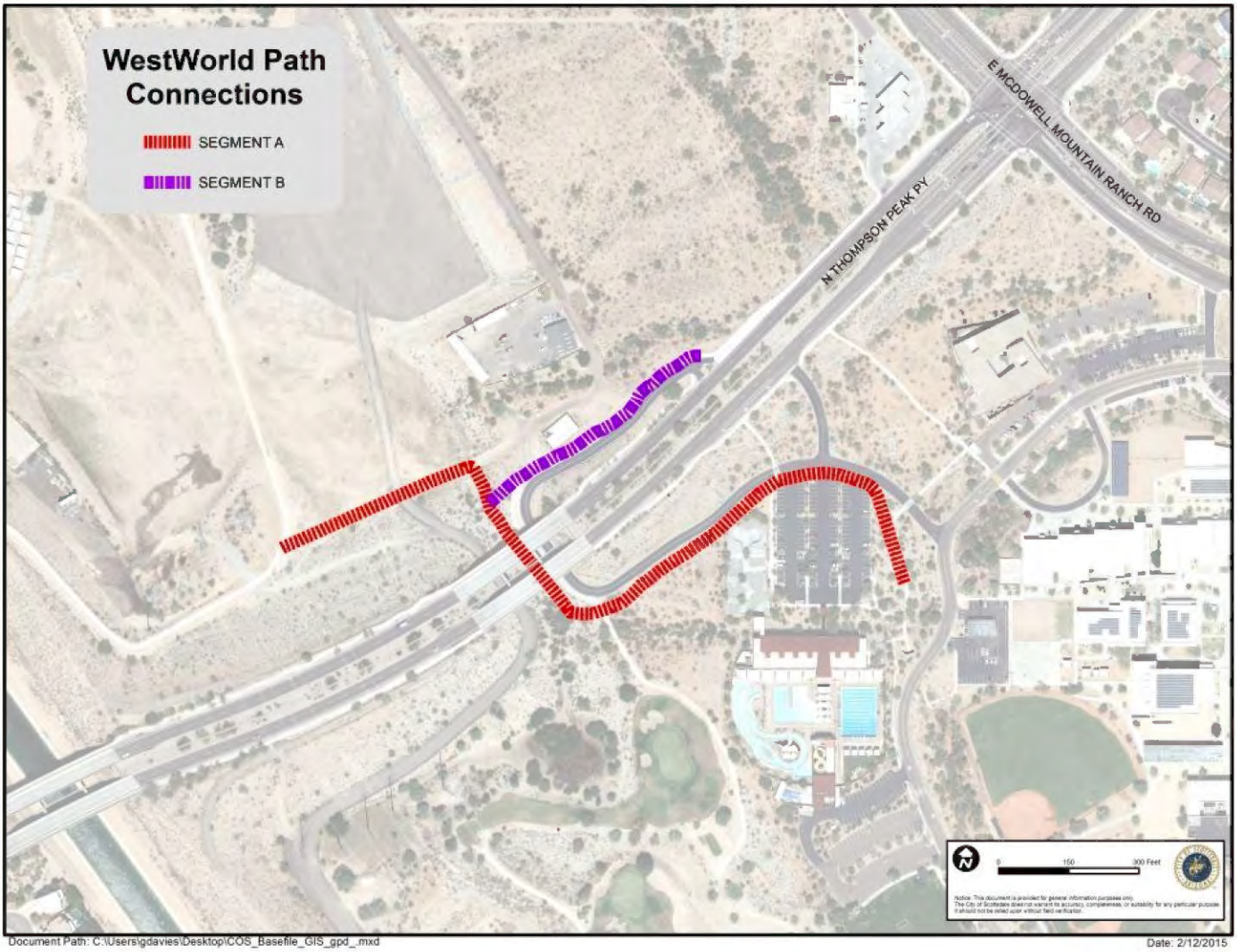
Supplemental Information:

1. Trail location maps

WestWorld Path Connections
CIP# TEMP1193

City of Scottsdale Transportation


WestWorld/Indian Bend
Path/Trail Connections
Segment
A
B
C
D
E
M
Pinnacle Peak Trailhead
Jomax Rd
Happy Valley/Scottsdale Rd (Future) Trailhead
Happy Valley Rd
Alma School
Miller
Pinnacle Peak Rd
92nd St
Dobson
Williams
Adobe
Haydon
Los Gatos Dr
Deer Valley Rd
McDowell Sonoran Preserve
Grayhawk
Grayhawk Trailhead
Thompson Peak Pkwy
DC Ranch (Future) Trailhead
Thompson Peak Trailhead
74th St
Legacy Blvd
Hualapai Dr
M
SR 101
Union Hills Dr
Legacy Blvd
McDowell Sonoran Preserve
Union Hills
Princess Blvd
Princess Dr
Pima Rd
Gateway Trailhead
D
E
Bell Rd
104th St/Bell Rd Trailhead
Bahia
90th St
98th St
Paradise
C
WestWorld
WestWorld Trailhead
B
A
Horizon Park Trailhead
McDowell Mtn. Ranch Trailhead
Quartz Trailhead
73rd St
Butherus
Scottsdale Airpark
Hayden
Northsight Blvd
96th St
Raintree
Cactus Road
0
0.5
1 Miles



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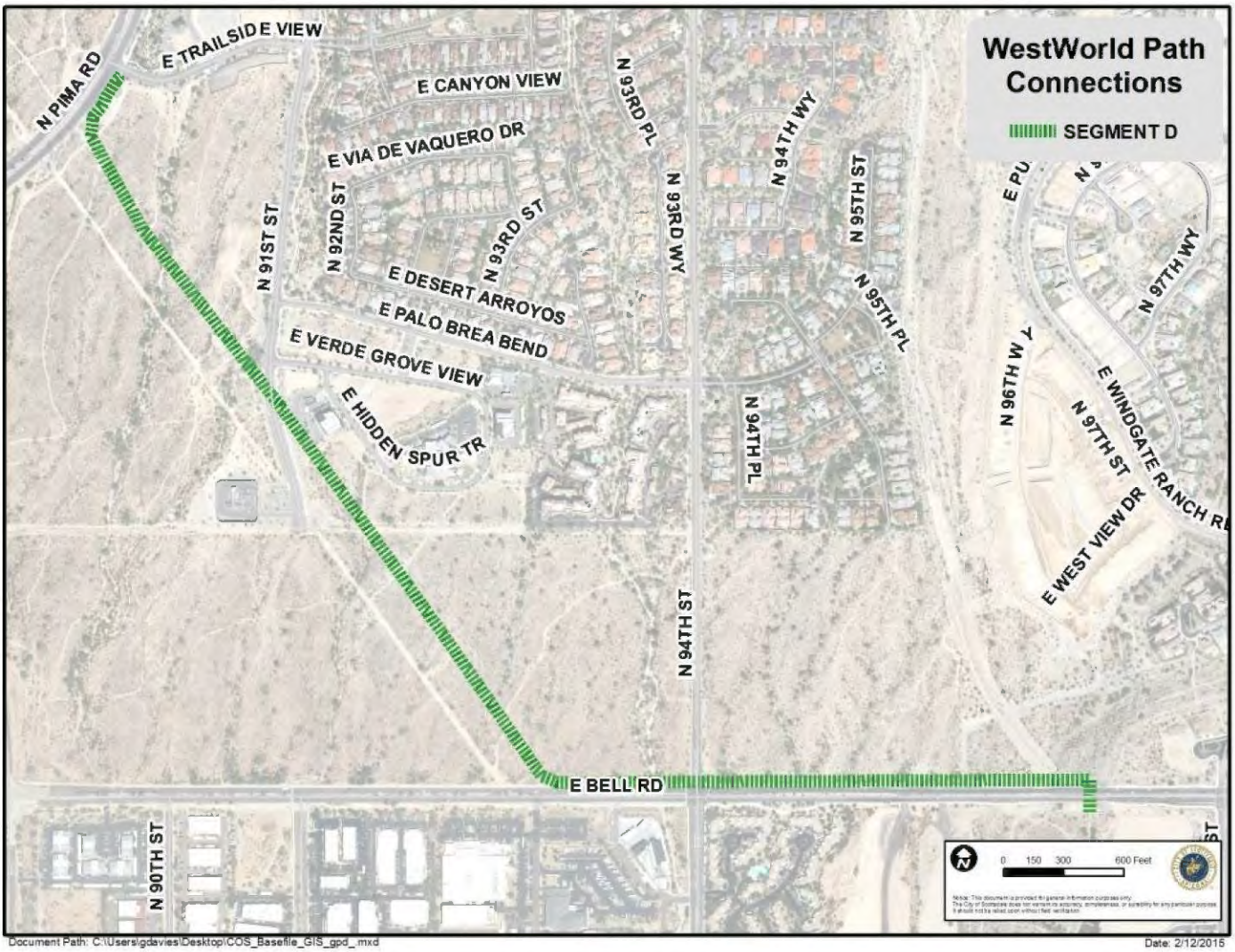

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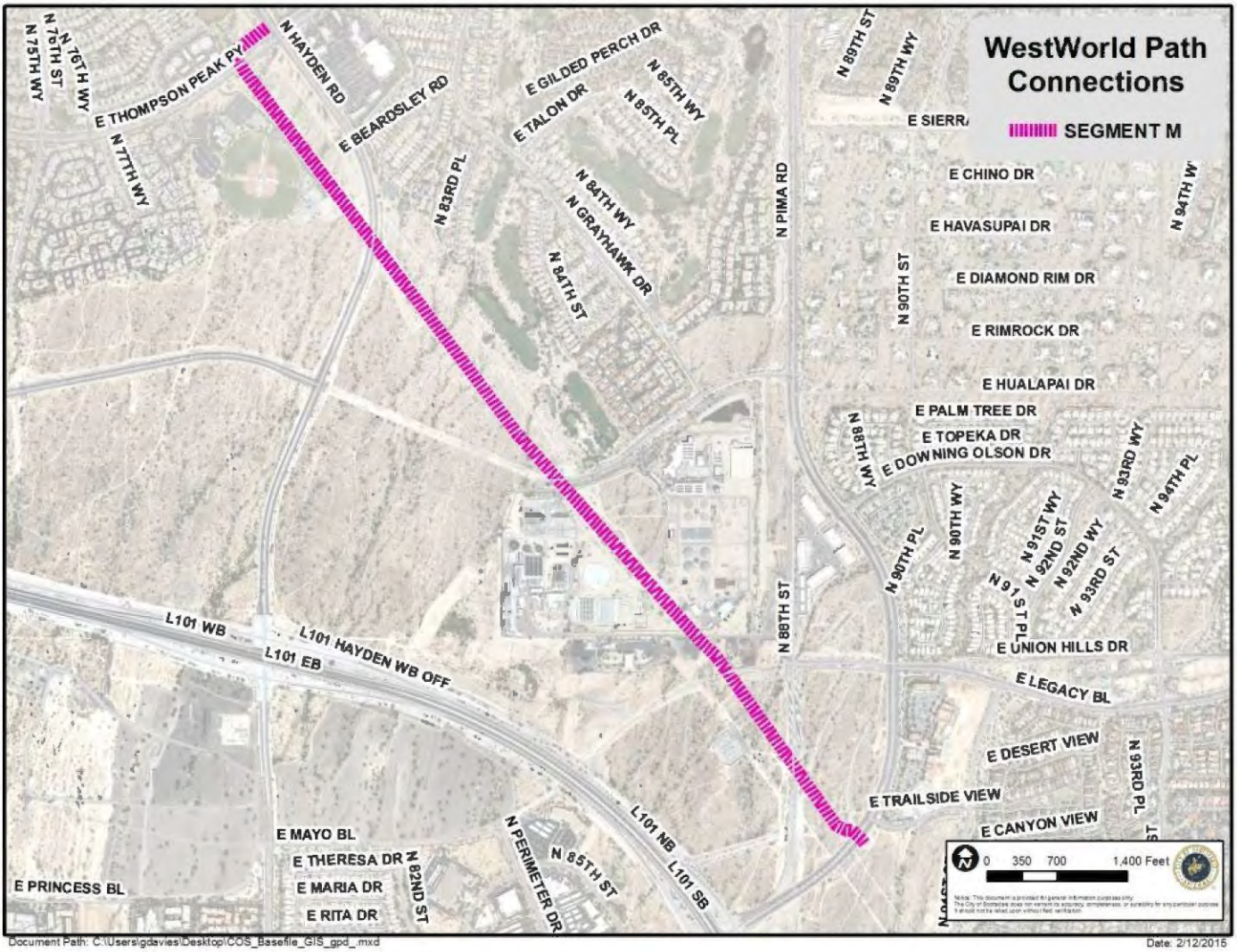

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Add Bike Lanes on McDowell Road

Estimated Project Cost: $3,100,000

Staff Priority: 13 of 34

PROJECT DETAILS

Project Summary

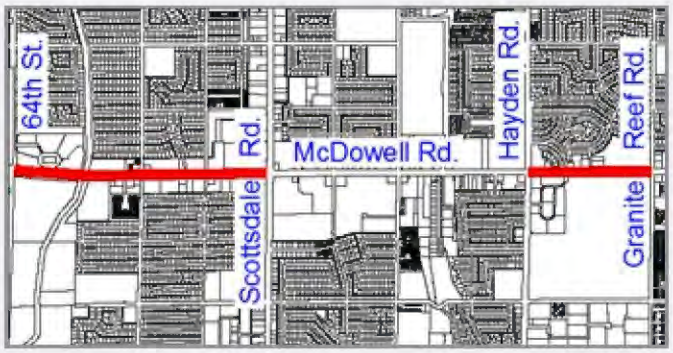
Adding bike lanes on McDowell Road from 64th Street to Scottsdale Road and from Hayden Road to Granite Reef Road will provide a continuous bike lane from 64th Street to Pima Road. The new bike lanes will be created by reducing the width of the median and travel lanes.

Project Cost

Design	$363,000
Bond Issuance Cost	$60,000
Construction	$1,981,000
Administration	$304,000
Contingency	$392,000
Total Cost	$3,100,000

Project Location

The project is located on McDowell Road from 64th Street to Granite Reef Road.



ANALYSIS & ASSESSMENT

Background

The McDowell Road corridor has discontinuous bike lanes, high population density, several large activity centers, public and private schools, strong transit ridership, and many miles of intersecting bikeways. Various construction projects have added or contributed to bike lanes along McDowell Road. However, to date, only a portion of the bike lanes are completed in this corridor. This project would complete the gaps in the bike lanes resulting in continuous bike lanes from 64th Street to Pima Road (The entire length of McDowell in Scottsdale).

Safety

Continuous bike lanes would improve the safety and comfort of bicyclists in this corridor. The 2008 Transportation Master Plan assigned a Bicycle Level of Service "E" (the second-lowest performance measure) to McDowell Road due to bicyclists' perceived safety and comfort in relation to vehicular traffic. Adding a continuous bike lane will discourage sidewalk riding where conflicts with pedestrians and turning vehicles are more common. This project will give pedestrians, cyclists, and drivers comfortable space for each mode.

ANALYSIS & ASSESSMENT

What is the customer experience?

Currently bicyclists have to transition in and out of bike lanes as they travel the McDowell Road Corridor through Scottsdale. This project fills the remainder of bike lane sand will provide connectivity to numerous regional bike facilities: Crosscut Canal Path, Indian Bend Wash Path, 68th Street/College Avenue, and Miller Road providing comfortable and well connected facilities will increase ridership for all levels of bicyclists.

Community Involvement

There has not been community involvement for this specific project. However there has been strong support for improvements to this corridor in area meetings. The 2008 Transportation Master Plan had extensive community involvement and the plan identified this location as a Restripe or Detailed Corridor Study for bike lanes.

Council Goals

The implementation of this project supports the Council Goal: Advance Transportation.

RESOURCE IMPACTS

Staffing, Workload Impact

There will be no impact on staffing or workload due to the new bike lanes.

Maintenance Requirements

The bike lanes will be swept during the regular sweeping schedule for the roadway through Public Works. Striping will be maintained during regular surface maintenance.

Leveraged Funds

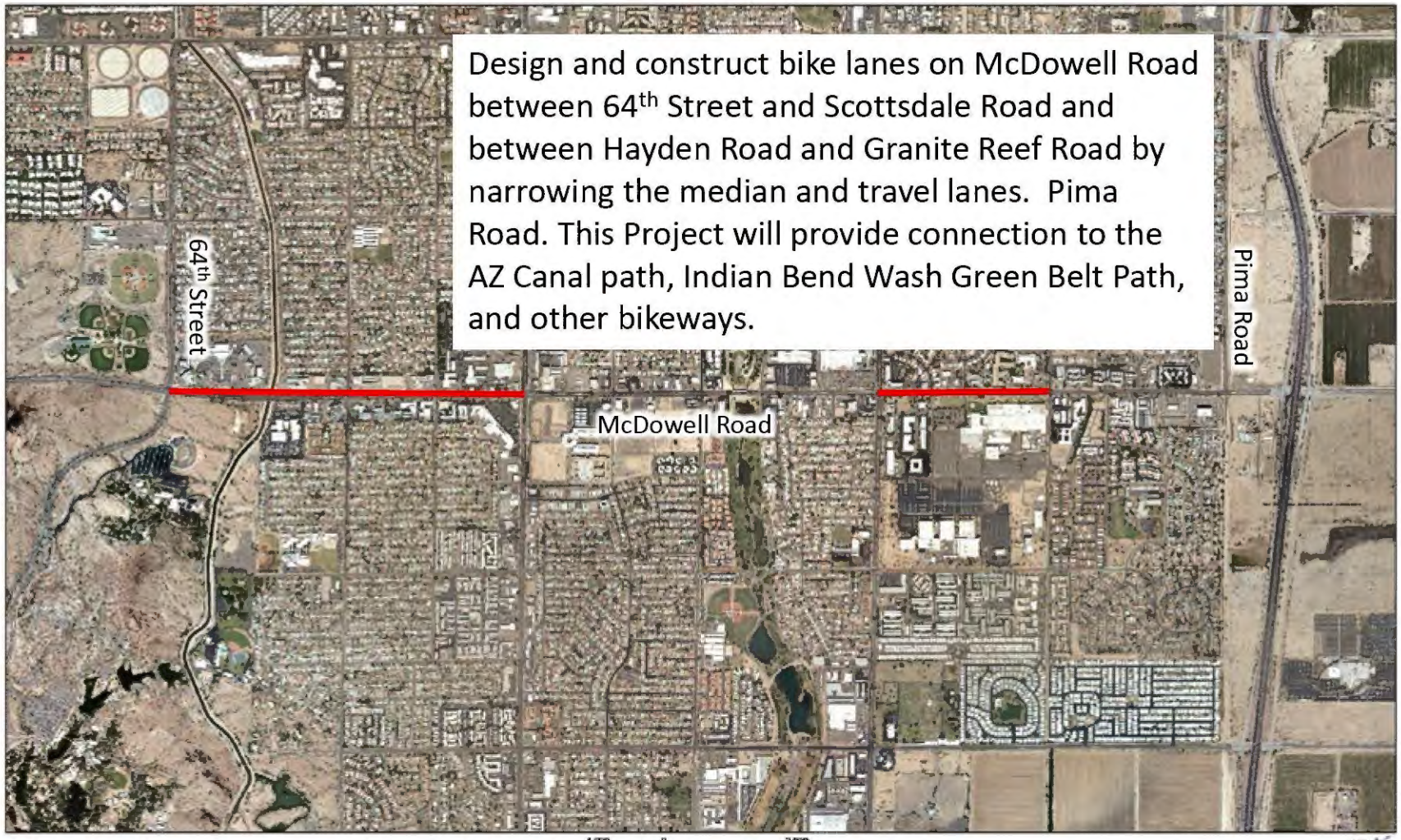
Currently there are not leveraged funds. However the city will apply for federal grant funds for this project in fall 2015.

Impact if this project is not implemented

If this project is not implemented, the city will program local funds through the annual CIP process and continue to apply for federal funding.

Supplemental Information:

1. Location maps



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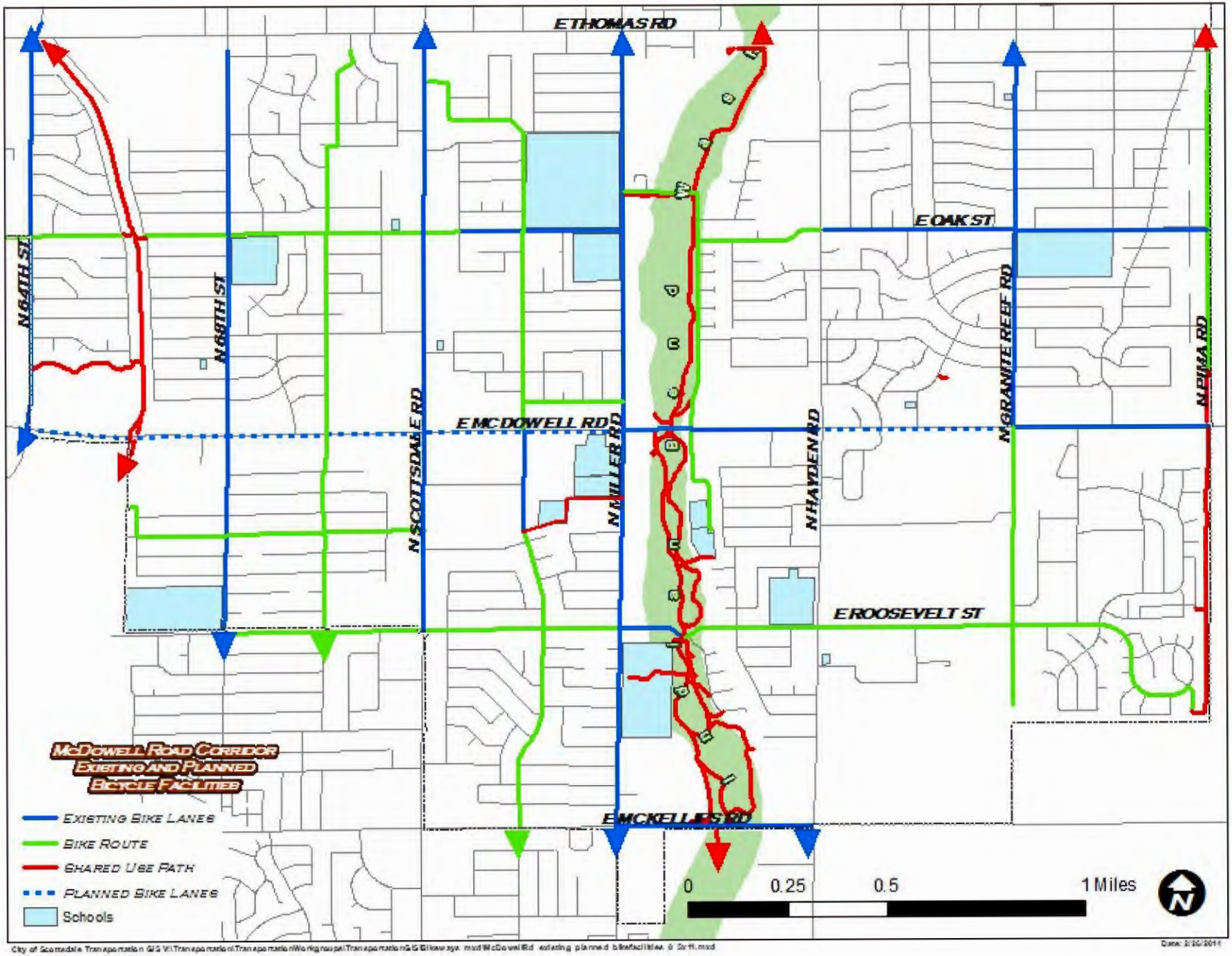
E THOMAS RD
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N HAYDEN RD
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N GRAMITE REEF RD
N PIMA RD
E ROOSEVELT ST
E MCKELLIPS RD
McDowell Road Corridor
Existing and Planned
Bicycle Facilities
Existing Bike Lanes
Bike Route
Shared Use Path
Planned Bike Lanes
Schools
0
0.25
0.5
1 Miles
N

Build a New Multiuse Path under Shea Boulevard at 124th Street

Estimated Project Cost: $600,000

Staff Priority: 23 of 34

PROJECT DETAILS

Project Summary

A new a multiuse concrete path and an unpaved trail under Shea Boulevard east of 124th Street will close a gap in the city's trail system and provide a safer connection to three public schools, Palomino Library, the McDowell Sonoran Preserve and other existing and planned paths and trails. The total cost for this project is $1.8 M; $1.2 M in grant funding has been received, this would fund the remaining $600,000.

Project Cost

Design	380,000
Bond Issuance Cost	60,000
Construction	1,050,000
Administration	154,000
Contingency	156,000
Total Cost	$1,800,000

Project Location

The project is located on Shea Boulevard at 124th Street.

ANALYSIS & ASSESSMENT

Background

The project will improve an existing, inaccessible underpass in order to close a current gap in the City's trail system. This project is listed in the City of Scottsdale 2008 Transportation Master Plan. Improving access to this underpass was the highest ranked project in the 2004 Scottsdale Trails Master Plan (STMP) and the 2009 Ad Hoc Citizen Trails Task Force. This project area was included in the Mountain View Trail project as Segment 2. Construction of segments 1 and 3 was completed in 2012.

Safety

This project will provide a critical non-motorized connection and crossing for pedestrians, bicyclists, and equestrians in the local and regional system. Shea Boulevard is a major arterial road with 39,591 vehicles per day and a 50 MPH speed limit. There are three schools and a library north of Shea. This will support safer access across Shea Boulevard for students living south of Shea. Also, it will route non-motorized users away from most of the traffic south of Shea, where there are currently no sidewalks.

ANALYSIS & ASSESSMENT

The project will provide missing links in a route that meets ADA standards for accessibility. This project will provide safe and comfortable access for all non-motorized users.

What is the customer experience?

The city received consistent feedback during design and construction of the adjacent Mountain View trail from residents. The public gave strong support for the project and neighbors have asked when the city will complete this Shea Tunnel Access. This indicates a high level of customer satisfaction when citizens want more non-motorized improvements. Providing additional connected facilities for these modes will increase the number of people walking, bicycling, and riding horses in the area. These activities improve public health and quality of life.

Recent Staff Action

This project was included in the 2004 Trails Master Plan, 2008 Transportation Master Plan, and 2009 Ad Hoc Citizen Trails Task Force.

Community Involvement

There was also extensive community involvement when the project was part of the Mountain View Trail Segments 1-3 including Transportation Commission, Development Review Board, and neighborhood meetings. The city has begun the typical public notification process for this project.

Council Goals

The implementation of this project supports the Council Goal: Advance Transportation.

RESOURCE IMPACTS

Operating Cost

The concrete surface will cost $100 annually for sweeping and the trail will require in $1,550 annual expenses.

Staffing, Workload Impact

There will be minimal impact on staffing or workload due to the path and underpass.

Maintenance Requirements

The concrete path will require monthly sweeping. This will be added to the existing path maintenance program through Public Works. Trail maintenance will include trimming vegetation and repair to trail surface through the Community Service program.

Leveraged Funds

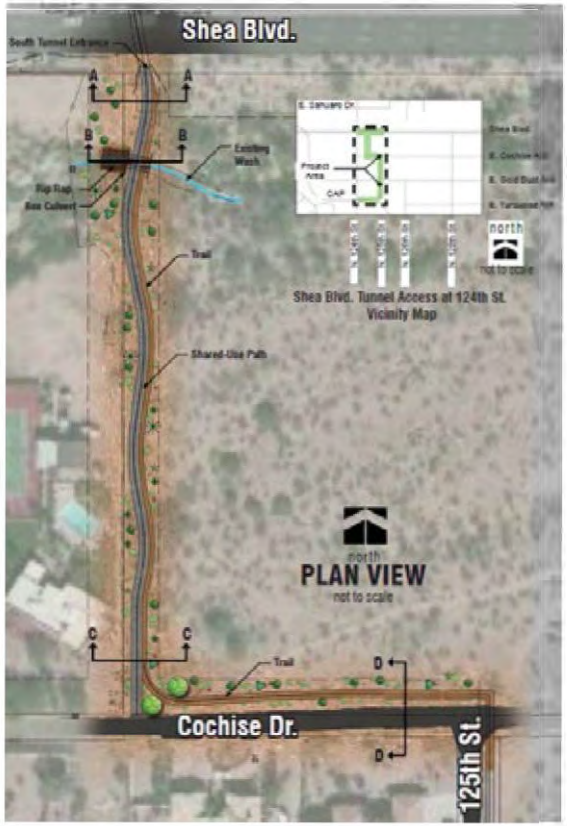
The city has received $1.2 M in federal funding for the project. The $600,000 in bond funds will fulfill the local match requirement.

Impact if this project is not implemented

If this project does not receive bond funding, the local match requirement will be funded by Transportation Sales Tax, taking money away from other transportation projects.

Supplemental Information:

1. Design plans
2. Pictures of existing conditions
3. Design Concept Report



Design and Construct 10 foot multi-use path underneath Shea Boulevard, east of 124th Street. Design and construction of a Shared Use Path and trail to provide access under Shea Boulevard east of 124th Street. The project will utilize an existing inaccessible underpass to close a current gap in our trail system that will complete a trail from the Stonegate Equestrian Park up to the Lost Dog Wash Trailhead in the McDowell Mountain Preserve. The project will also help to connect thousands of residents to three public schools, the Palomino Library, the preserve and other existing and planned paths and trails in the area without having to be exposed to the high speed and high volume traffic of Shea Boulevard. This project has grant funding of $1.253 million to help fund the project.

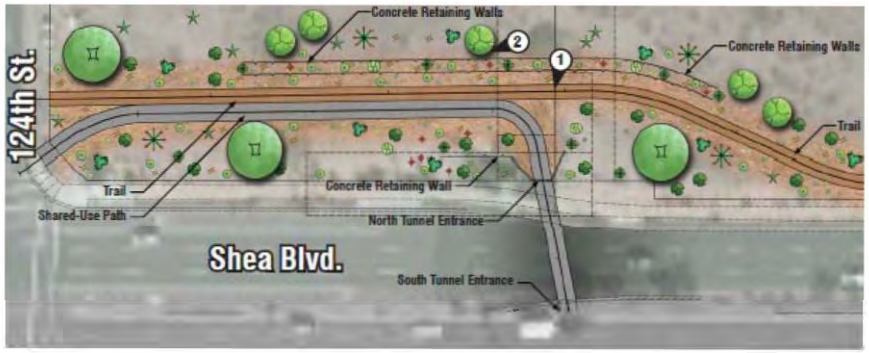


Photo 1: View of existing Shea underpass looking south with existing shared use path adjacent to roadway.

Proposed Project:
Path and approach to/from underpass, retaining walls, gabions, connection to path along Shea

Adjacent Projects:

- Existing path along north side of Shea
- Mountain View trail under construction

Photo 2: View on 124th Street looking north at Shea intersection

Issues: 39,591 vehicles per day on Shea, no sidewalks south of intersection, no sidewalks north of intersection on east side to connect to schools on the east side

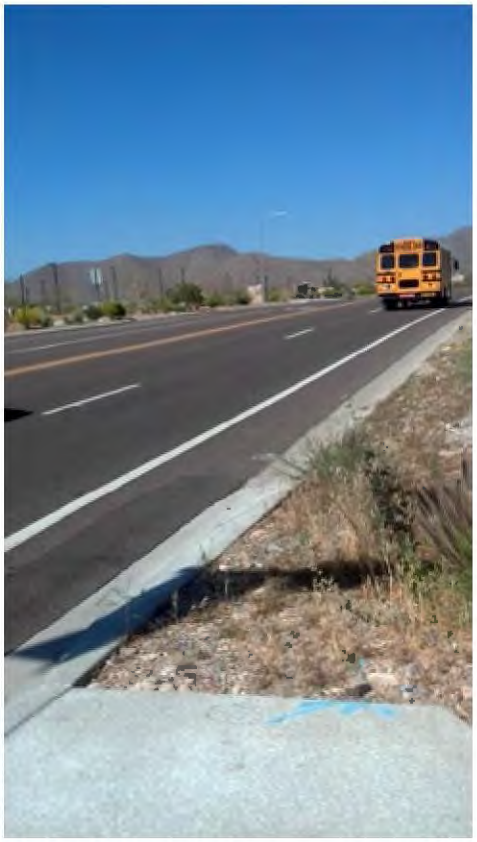


Photo 3: View looking northbound on 124th Street, north of Shea

Issues: No sidewalks on east side to connect to schools on the east side

Photo 4: View looking southbound on 124th Street, south of Shea.

Issues: No sidewalks on east or west side, edge line and shoulder width are inconsistent for bicyclists to use

Photo 5: View of north side of tunnel showing elevation changes and existing path along north side of Shea

Proposed Project will require cut and fill north and south of tunnel. Connection to path along road will be added.

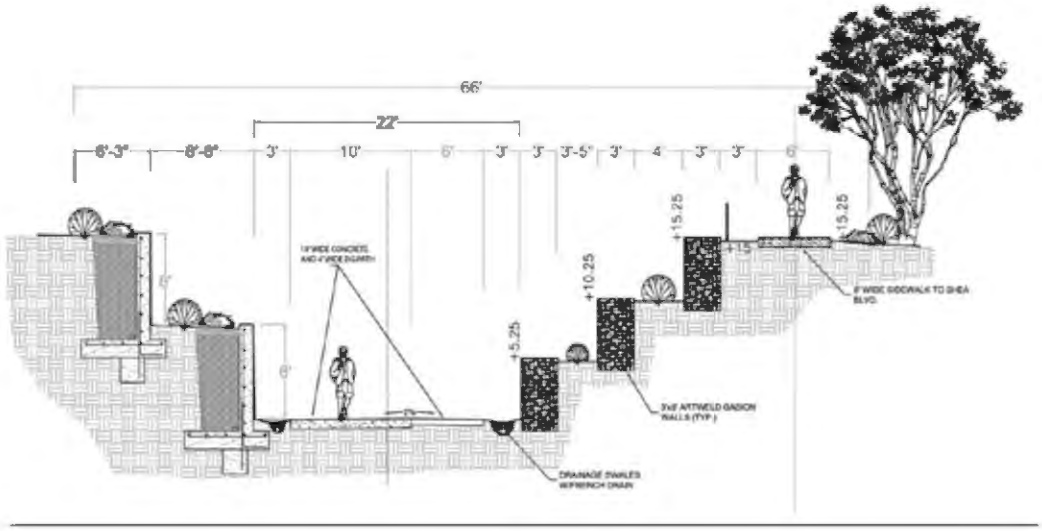


Image 6: Cross section showing the view northbound when exiting the underpass

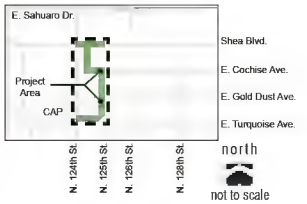
Proposed Project will require cut and fill north and south of underpass, gabions, and retaining walls. Connection to path along road will be added.

Shea Blvd. Tunnel Access at 124th Street - Shared-Use Path and Trail

December 2014

URS

WRIGHT engineering corporation



Shea Blvd. Tunnel Access at 124th St.
Vicinity Map

Legend

Alignment 1
Trail

Alignment 2
Shared-use Path and Trail

Alignment 3
Trail

Shared-use Path: 10' concrete pathway for pedestrians and bicyclists.

Trail: Stabilized decomposed granite pathway that varies in width from 4' to 8' depending on location.

north
SITE MAP
not to scale

URS WRIGHT

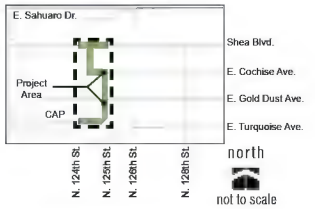
PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT

HARDSCAPE AND LANDSCAPE EXHIBITS
SHEA BLVD. TUNNEL ACCESS AT 124TH ST.
SHARED-USE PATH AND TRAIL

north

PLAN VIEW

not to scale



Shea Blvd. Tunnel Access at 124th St.
Vicinity Map

1. View looking West towards 124th St. along CAP

2. View looking North towards Gold Dust Ave.

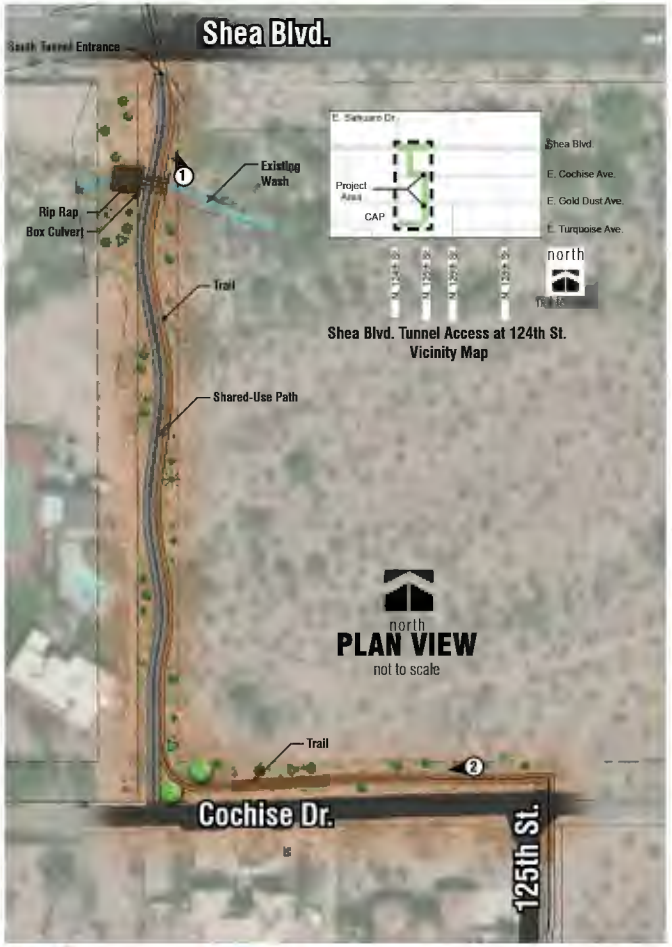
CITY OF SCOTTSDALE URS J2 WRIGHT

PUBLIC WORKS

CAPITAL PROJECT MANAGEMENT

HARDSCAPE AND LANDSCAPE EXHIBITS

SHEA BLVD. TUNNEL ACCESS AT 124TH ST. SHARED-USE PATH AND TRAIL



1. View looking North towards South Tunnel Access under Shea Blvd.

2. View looking West along Cochise Dr.

PUBLIC WORKS

CAPITAL PROJECT MANAGEMENT

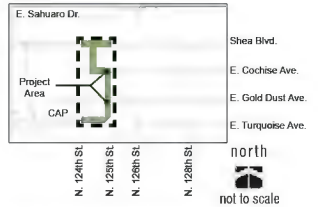
HARDSCAPE AND LANDSCAPE EXHIBITS

SHEA BLVD. TUNNEL ACCESS AT 124TH ST. SHARED-USE PATH AND TRAIL

north

PLAN VIEW

not to scale



Shea Blvd. Tunnel Access at 124th St.
Vicinity Map

1. View looking at the North Tunnel Access under Shea Blvd.

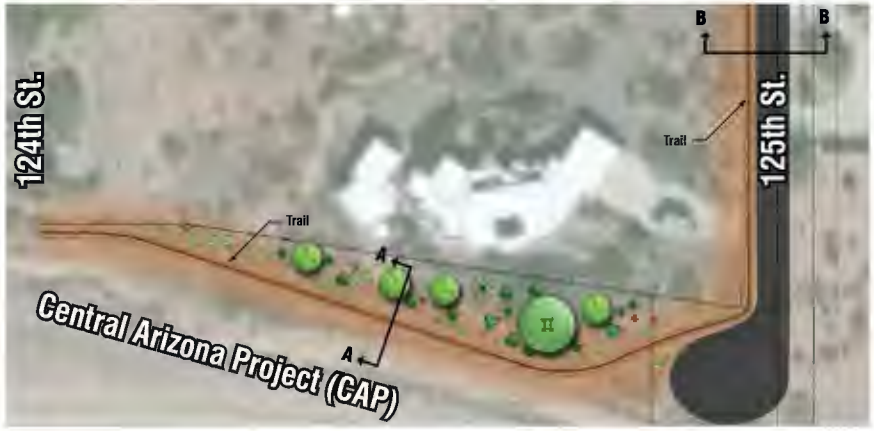
2. View looking West towards 124th St. and Shea Blvd.

CITY OF SCOTTSDALE URS WRIGHT

PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT

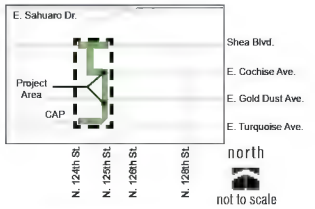
HARDSCAPE AND LANDSCAPE EXHIBITS

SHEA BLVD. TUNNEL ACCESS AT 124TH ST.
SHARED-USE PATH AND TRAIL



north

PLAN VIEW

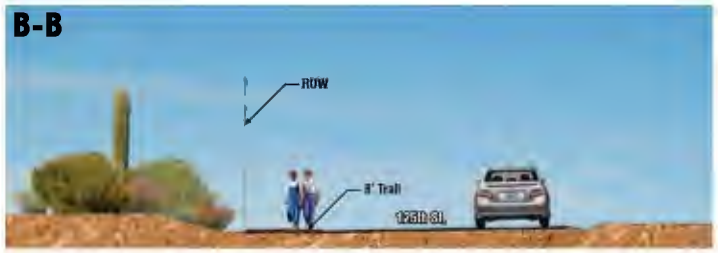


Shea Blvd. Tunnel Access at 124th St.
Vicinity Map

A-A

ALIGNMENT - 1 STA 14+00 scale: 1'=5'

B-B



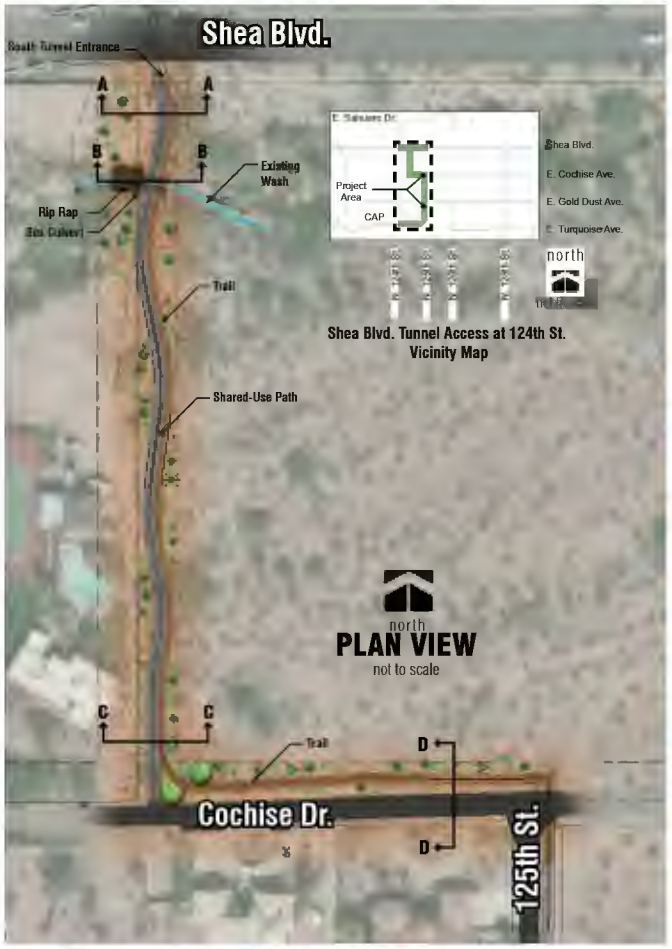
ALIGNMENT 1 - STA 18+00 scale: 1'=5'

CITY OF SCOTTSDALE URS WRIGHT

PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT

HARDSCAPE AND LANDSCAPE EXHIBITS

SHEA BLVD. TUNNEL ACCESS AT 124TH ST.
SHARED-USE PATH AND TRAIL



ALIGNMENT - 2 STA 15+15

scale: 1"=5'

ALIGNMENT - 2 STA 15+50

scale: 1"=5'

ALIGNMENT - 2 STA 10+50

scale: 1"=5'

ALIGNMENT - 1 STA 29+00

scale: 1"=5'

PUBLIC WORKS

CAPITAL PROJECT MANAGEMENT

HARDSCAPE AND LANDSCAPE EXHIBITS

SHEA BLVD. TUNNEL ACCESS AT 124TH ST.
SHARED-USE PATH AND TRAIL

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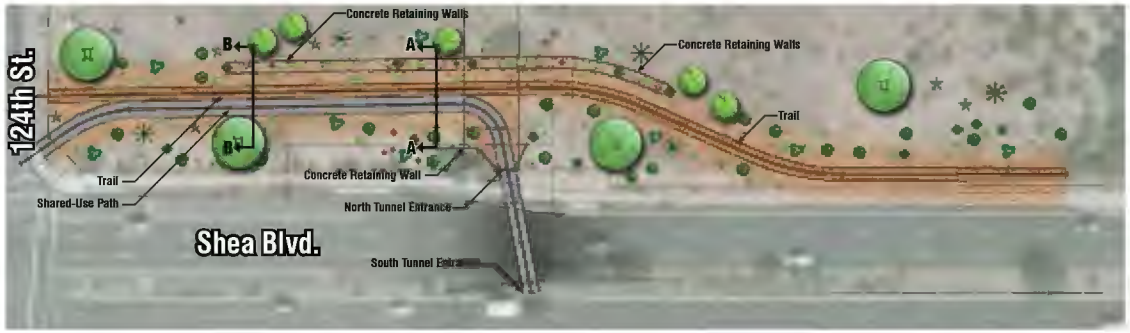
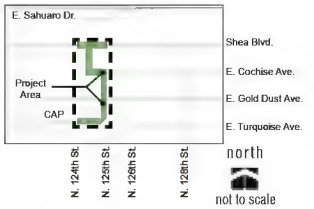


north

PLAN VIEW

not to scale



Shea Blvd. Tunnel Access at 124th St.
Vicinity Map

ALIGNMENT - 2 STA 18+00

scale: 1'=5'

ALIGNMENT - 2 STA 19+15.63

scale: 1'=5'

CITY OF SCOTTSDALE URS J2 WRIGHT

PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT

HARDSCAPE AND LANDSCAPE EXHIBITS

SHEA BLVD. TUNNEL ACCESS AT 124TH ST.
SHARED-USE PATH AND TRAIL

8 8 10

Proposed Plant Material

Olneya tesota
Desert Ironwood

Parkinsonia microphylla
Foothills Palo Verde

Ambrosia deltoidea
Bursage

Baileya multiradiata
Desert Marigold

Encelia farinosa
Brittlebush

Larrea tridentata
Creosote

Sphaeralcea ambigua
Globemallow

Carnegiea gigantea
Saguaro

Echinocereus engelmannii
Hedgehog Cactus

Ferocactus wislizenii
Fishhook Barrel

Fouquieria splendens
Ocotillo

Opuntia acanthocarpa
Buckhorn Cholla

Opuntia bigelovii
Teddy-bear Cholla

Opuntia engelmannii
Engelmann's Prickly Pear

Plant Legend

Trees

Shrubs

Accents

SYMBOL	BOTANICAL NAME	COMMON NAME
	Olneya tesota	Desert Ironwood
	Parkinsonia microphylla	Foothills Palo Verde
	Ambrosia deltoidea	Bursage
	Baileya multiradiata	Desert Marigold
	Encelia farinosa	Brittlebush
	Larrea tridentata	Creosote
	Sphaeralcea ambigua	Globemallow
	Carnegiea gigantea	Saguaro
	Echinocereus engelmannii	Hedgehog Cactus
	Ferocactus wislizenii	Fishhook Barrel
	Fouquieria splendens	Ocotillo
	Opuntia acanthocarpa	Buckhorn Cholla
	Opuntia bigelovii	Teddy-bear Cholla
	Opuntia engelmannii	Engelmann's Prickly Pear

"Southwest Arid" Landscape Theme Narrative

The landscape design character of the proposed Shea Blvd Tunnel Access at 124th St Shared-Use Path and Trail project has a "Southwest Arid" theme emphasizing transparency in the planting design intended to respect and enhance the unique climate, topography, vegetation and historical context of the project's Southwest Sonoran desert environment. The character of the landscape design is influenced by the surrounding native desert plant material and abundance of natural inert materials found on the adjacent slopes of the McDowell Mountains as well as nearby Red Mountain with its array of angular fragments "Desert Pavement" of red and brown sandstone formations of brilliant orange and red illuminated by the rising and setting sun. The project's native desert plant palette exhibits a commitment to water conservation and sustainability. All plant material installed on the project is listed on the Arizona Department of Water Resources low water use drought tolerant plant list and is in compliance with the City of Scottsdale's Design Guidelines with specific attention to the Sensitive Design Principles and Design Standards Policy Manual.

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PUBLIC WORKS
CAPITAL PROJECT MANAGEMENT

HARDSCAPE AND LANDSCAPE EXHIBITS

SHEA BLVD. TUNNEL ACCESS AT 124TH ST.
SHARED-USE PATH AND TRAIL

Proposed Inert Materials

6" Rip Rap

3" Desert Pavement

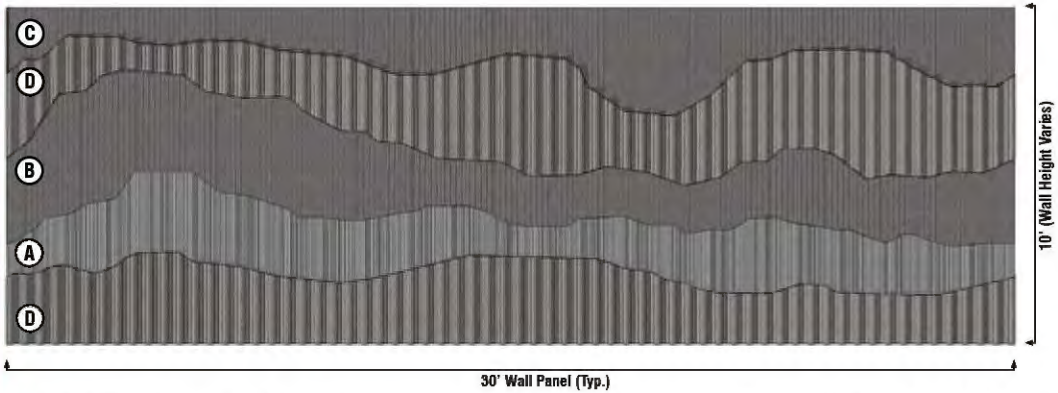
Stabilized Decomposed Granite

Proposed Site Amenities

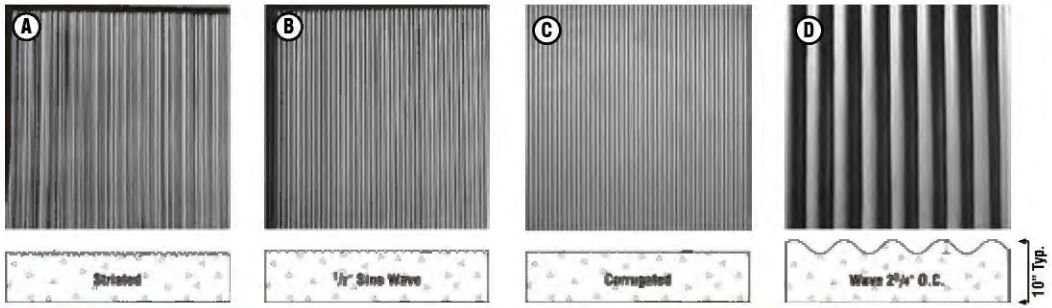
Gabion Aesthetic Seatwall

Trash Receptacle

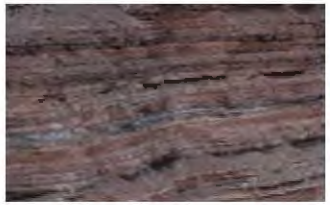
Concrete Retaining Wall Rustication "Striation" Design



Rustication Surface Treatement



Design Inspiration



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PUBLIC WORKS

CAPITAL PROJECT MANAGEMENT

HARDSCAPE AND LANDSCAPE EXHIBITS

SHEA BLVD. TUNNEL ACCESS AT 124TH ST.
SHARED-USE PATH AND TRAIL

10
10 10

Build a New Multiuse Path between Horizon Park and Stonegate Equestrian Park

Estimated Project Cost: $3,100,000

Staff Priority: 31 of 34

PROJECT DETAILS

Project Summary

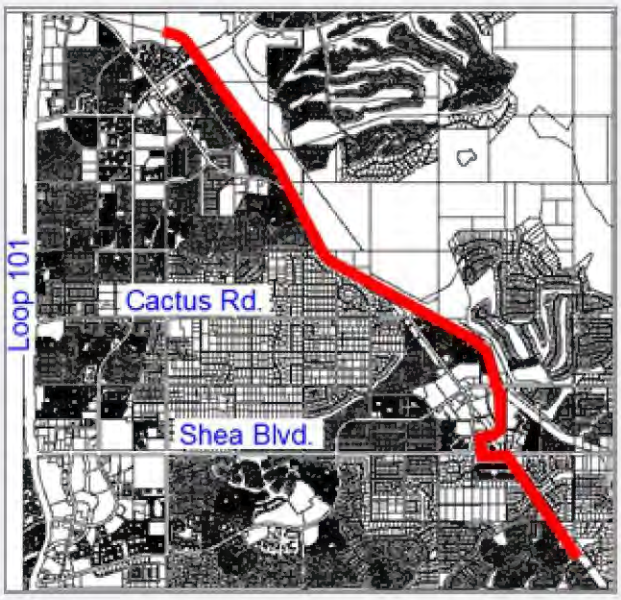
Building a 10-foot multiuse path along the Central Arizona Project Canal (including an underpass beneath Via Linda Road) that would link to planned and existing paths in McDowell Mountain Ranch, Westworld, and connecting to Scottsdale's main path system which goes through the Indian Bend Wash Greenbelt to Tempe Town Lake.

Project Cost

Design	$360,000
Bond Issuance Cost	$60,000
Construction	$2,021,000
Administration	$259,000
Contingency	$400,000
Total Cost	$3,100,000

Project Location

The project is located along the CAP canal from Horizon Park to Stonegate Park.



ANALYSIS & ASSESSMENT

Background

This project is part of a larger regional path plan to create a shared use path along the CAP canal corridor through Maricopa County from Surprise to Apache Junction. This project expands the existing award winning City of Scottsdale path system and provides improved resident access to schools, parks, recreational amenities, and other Scottsdale communities.

Safety

This project provides a shared use path, mostly separated from the roadway serving highly populated areas in the central area of the City. The facility will improve safety by allowing path users to avoid several high speed, high volume roadway crossings including roadways such as Thompson Peak Parkway, Via Linda and Shea Boulevard.

What is the customer experience?

The path users will have expanded access to and around the community with less interaction with high speed, high volume vehicular traffic.

Recent Staff Action

This portion of the path system was approved by City Council as part of the Transportation Master Plan in 2008.

ANALYSIS & ASSESSMENT

Community Involvement

There has not been any recent community involvement due to lack of funding to move the project forward.

Council Goals

The implementation of this project supports the Council Goals: Advance Transportation and Enhance Neighborhoods.

RESOURCE IMPACTS

Staffing, Workload Impact

The path will require monthly sweeping. This will need to be added to the existing path sweeping program through Public Works staff.

Impact if this project is not implemented

There will continue to be a number of significant vehicle/pedestrians and vehicle/bicycle conflict points at crossing locations including high speed, high volume streets like Thompson Peak Parkway, Frank Lloyd Wright Boulevard, Via Linda and Shea Boulevard.

Supplemental Information:

1. Location map

2/5/2015 8:30:32 AM

Replace Energy Control Systems at Five City Buildings

Estimated Project Cost: $1,500,000

Staff Priority: 17 of 34

PROJECT DETAILS

Project Summary

Antiquated systems used to monitor, measure and control electric building loads, heating, air conditioning, ventilation and lighting systems are no longer compatible with current computer standards and are at risk of failure.

Project Cost

Design	100,000
Bond Issuance Cost	60,000
Construction	1,250,000
Administration	27,000
Contingency	63,000
Total Cost	1,500,000

Project Location

Scottsdale Center for the Performing Arts, North Corporation Yard, Scottsdale Museum of Contemporary Arts, Club SAR and the Himovitz Building.

ANALYSIS & ASSESSMENT

Background

The technology that supports control systems for several city buildings is over ten years old, a network security risk, and long past due for replacement. The program was original scheduled for replacement as early as 2004 but was put on hold due to lack of funds.

The original systems were designed using the Seibe Digital Management System (DMS), a programming tool based on MS-DOS and supported by computers the City IT department wants off of the network because of security risks they pose. Microsoft and the City IT department are no longer able to support the antiquated technology needed to run the system and the City only has two computers left that able to run the system.

Current computer operating systems will not support the DMS programming tool and remote access to the buildings will be lost using these legacy systems. Replacement DMS parts are no longer available and the City has used up our spare parts inventory.

ANALYSIS & ASSESSMENT

Safety

New control strategies include Co2 monitoring, smoke detection and relative humidity monitoring and meet ASHRE minimum fresh air requirements, keeping a building from becoming sick. Customers benefit from higher comfort levels because the current standards require greater amounts of air change over. To continue running systems with older, unsupported technology creates IT security risk for the City.

What is the customer experience?

With these older systems upgraded, city staff will have the ability to remotely adjust occupancy schedules, heating and cooling set points, view graphical representations of equipment in real time by means of true equipment status to monitor equipment for proper operation. With these upgrades the City will have a greater ability to generate, monitor, and reset critical equipment alarms to possibly resolve an equipment failure before it affects our customers as well as generate trend logs and charts for, among other things, temperatures, equipment cycling (start/stop), and scheduled starts/stops to enhance troubleshooting abilities. The upgraded systems could help to reduce maintenance costs, service call response and repair time, and allow for reduced operating costs by utilizing economizer modes. With the DMS systems replaced the older laptops can be retired and replaced with ones that meet current standards and eliminate the security risks they have.

Recent Staff Action

The Facilities Department Energy Management business plan initially had the DMS phase out plan identified and implemented in 2004 and it was placed on hold in 2008 due to lack of funds.

Council Goals

The implementation of this project supports the Council Goal: Seek Sustainability.

RESOURCE IMPACTS

Staffing, Workload Impact

Existing Facilities Contract Administrators will manage the project. No additional staffing required.

Maintenance Requirements

The City will see a reduction in maintenance with new control systems. There have been failures using the aging systems that require technician's to respond and "band aid" these systems because there are no available spare parts. These upgrades will allow for city staff to work on preventative maintenance rather than emergency calls.

Impact if this project is not implemented

Complete cooling or heating failures leaving entire facilities without comfort control may occur. With no ability to get replacement parts or support for the current control systems, systems may be down for extended periods as new controls are installed in an emergency situation, and network security risks with the computers that access these systems for programming and repair.

Improve WiFi in Public Buildings

Estimated Project Cost: $470,000

Staff Priority: 20 of 34

PROJECT DETAILS

Project Summary

Installing a centrally managed wireless network would enhance public and staff Internet connectivity in Scottsdale's most heavily used buildings.

Project Location

The project is located at the Civic Center Campus, the Via Linda Campus, the Public Safety Administration Building and each of the Police District locations.

Project Cost

Bond Issuance Cost	60,000
Construction	382,000
Administration	14,000
Contingency	14,000
Total Cost	470,000

ANALYSIS & ASSESSMENT

Background

With the increasing adoption of wireless devices for conducting city business, there is a need for a centrally managed enterprise wireless network.

Several city departments are evaluating and implementing new mobile applications which require wireless access. Without this network, these applications are dependent upon cellular services within city buildings.

The in-building cellular service in the areas proposed for this project is intermittent and spotty at best. As a temporary solution, IT has installed "hot spot" locations in several city buildings. This approach is not cost effective, will not scale and is difficult to support. This project will provide ubiquitous coverage for the major campus buildings.

What is the customer experience?

This project will not only provide wireless network access for city mobile devices, but will also enhance the current public wireless access provided at city campus buildings as an amenity. Wireless services will be available for citizens visiting customer service locations at the One Civic Center building, the City Court, and City Hall.

Recent Staff Action

City IT staff has implemented "hot spots" which provide wireless service in very limited areas for key city business applications. These devices offer limited capacity and require a significant amount of hands on maintenance. City IT staff does not have the capacity to install additional "hot spots" due to the complexity of ongoing maintenance and support. There is great citywide demand to expand the wireless coverage.

ANALYSIS & ASSESSMENT

Council Goals

The implementation of this project supports the Council Goal: Seek Sustainability.

RESOURCE IMPACTS

Operating Cost

The operating cost associated with this project is approximately $20k annually for software licensing.

Staffing, Workload Impact

The staff that is currently maintaining the “hot spots” will be tasked with maintaining the centrally managed wireless network.

Impact if this project is not implemented

Public WiFi access will remain unavailable or extremely limited at these locations. City staff will have limited access to the city network for wireless applications. They will be dependent upon cellular service which is intermittent and spotty in many city buildings.

Purchase Disaster Recovery Technology Infrastructure

Estimated Project Cost: $4,900,000

Staff Priority: 18 of 34

PROJECT DETAILS

Project Summary

Buy software and hardware to prepare for an unexpected loss of the city's primary data center and critical business operation technologies.

Project Location

The project ensures critical city computer services are available for the more than 100 city facilities citywide.

Project Cost

Bond Issuance Cost	60,000
Construction	4,600,000
Administration	100,000
Contingency	140,000
Total Cost	4,900,000

ANALYSIS & ASSESSMENT

Background

Over the past several years, the city has transitioned from manual processes to provide citizen services to automated processes that are technology based. These automated processes are dependent on hardware, software and networks that make up the city's enterprise infrastructure.

To achieve economies of scale for redundant power, security, and cooling, this infrastructure is housed in a centralized location called a data center. The loss of one of the data center locations due to a disaster would have a significant impact on the city's ability to provide critical services, as well as collect revenues.

In order to mitigate this risk and ensure continued service to our citizens, this project will establish a new third party data center. This new data center will be leveraged to provide a resilient diverse back-up location for each of the city's existing data centers. City computer systems deemed critical will be transitioned to the third party data center based on a financial and technical analysis.

Safety

While the data centers themselves are not a safety issue, they do support key systems that are critical to the care and wellbeing of our citizens. The Police and Fire Departments rely on critical public and life safety systems such as 911, Records Management, and Patient Management. The data centers are also key for Water Operations (water and wastewater), Transportation (traffic lights), and Solid Waste services (waste removal).

ANALYSIS & ASSESSMENT

What is the customer experience?

City services are reliant on technology and computer systems. If the systems function properly, the customer experience is repeatable, reliable, and accurate.

Unfortunately, disasters do happen and data centers are not immune. The size and location of the outage will determine the extent of the impact to the customer and city staff.

City staff relies on water systems, financial systems, public safety systems, E-mail, and Internet to provide essential day-to-day services to our citizens. The loss of one of these applications would result in the interruption of key city services.

This project provides for resiliency and redundancy for the continued operation of the city services which support daily city business and Public Safety.

Recent Staff Action

In March of 2014, the city IT Department released an RFP for proposals for services to assist IT in completing a strategy for a disaster recovery infrastructure plan for the city's primary data centers. The contract was awarded in August of 2014. Phase one of the project reviewed the existing disaster recovery infrastructure plan, identified the capital and operating costs, and provided a detailed strategy for implementing this plan. The second phase or implementation phase will provide the services required to complete the implementation of a disaster recovery infrastructure plan for each of the city's data centers.

Council Goals

The implementation of this project supports the Council Goal: Seek Sustainablity.

RESOURCE IMPACTS

Operating Cost

Operating costs will be determined as part of a consultant study that will be completed by June 30, 2015. The largest portion of the operating costs will be the leasing of space in the third party data center.

Staffing, Workload Impact

There will be a requirement of contract labor during the initial set up. After the implementation phase IT staff will attempt to absorb the workload associated with managing the new environment, however, additional personnel resources may be required.

Maintenance Requirements

Operating costs will be determined as part of a consultant study that will be completed by June 30th, 2015. Five years of hardware and software maintenance have been included in the overall project cost.

Impact if this project is not implemented

The city would continue to function with the current data centers. If there were an emergency or disaster affecting one of them, the systems would be off line and city staff would need to use their manual processes until the data center and computers could be brought back on line. This could be several hours to several months depending on which datacenter is impacted and how badly the equipment and infrastructure was damaged.

Additional Projects

The following list of projects was put together per request of the discussion at the March 3, 2015 Study Session. Please note that these projects have not been prioritized by staff and represent future needs of the city. That is also why less detailed information is available. If a majority of Council recommends that one or more of these projects be added to the bond program, staff will conduct further feasibility review of those projects and provide a detailed analysis at a later date.

Community Services

A1) Civic Center Mall (West Entry Improvements and Master Plan): $4,600,000

Improvements to western entry at Brown and creation of a master plan for the Civic Center area.

A2) Civic Center Library Phase II: $4,700,000

This project is to complete the renovation of approximately 16,200 SF at the Civic Center Library, including the Discovery Zone (children's area), the main stairwell from the main floor to the lower level, the lower level Copper Gallery, lower level restroom and meetings rooms and remaining improvements to the lower level auditorium (sound system, acoustics and stage improvements).

A3) Scottsdale Center for the Performing Arts: $4,300,000

The goals of the project are to improve programming by providing more flexible spaces within the facility and reinforce connection to Civic Center Mall area. This project will remodel the Stage 2 Theater and the gift shop area as multipurpose spaces that connect to the Civic Center Mall. Also included in the renovation are Atrium acoustics, new north and south entrance doors and windows, a complete kitchen, and an enhanced speaker system for Piper Theater.

A4) Scottsdale Stadium Infrastructure Improvements: $1,400,000

Improvements to dining, kitchen and coaches areas of stadium

A5) Community Services Tech. Imp. - Library Update: $540,000

The Library system is requesting a move to virtual desktop infrastructure technology to reduce ongoing maintenance costs and provide a low cost desktop environment that a more centralized, efficient client environment that is easier to maintain and able to respond more quickly to the changing user needs.

A6) George "Doc" Cavalliere Park Phase II: $10,247,000

This project will complete the conceptual master plan for George "Doc" Cavalliere Park. The community center will be designed and constructed to allow for more flexible multi-use spaces that can provide services across the Community Services Division spectrum. These services could address a variety of service areas for the community including recreation programs/services/rentals, human services brokerage services and library services.

A7) Replacement of Cactus Aquatic and Fitness: $20,963,000

Replace the Olympic sized 50 meter competitive swimming area, dive area and 9,800 SF control building/ locker rooms/fitness center.

Public Safety - Fire

A8) Replace FS604: $5,750,000

Construct a 8,000 square foot fire station to include crew quarters and facilities, office space, OSHA-certified decontamination area, safety gear storage and dual apparatus bay. This fire station will serve the areas of McCormick Ranch and Scottsdale Ranch.

A9) OSHA Compliance: $4,640,000

This request is intended to be used to renovate existing Fire Stations to align with OSHA and NFPA standards. The existing stations to be renovated also have kitchens and locker rooms that are aging and are prone to mold and related maintenance issues. Renovations of the stations listed below will extend the useful life of the stations and prevent costly repairs and bring the stations to current safety standards.

Public Safety - Police

A10) Training Yard Expansion: $120,000

Add a stand-alone 3500 sq. ft. training structure that will house a Virtra fire arms training simulator and a defensive tactics training area. Attached to this building will be a 1000 sq. ft. secure storage area for high end RICO seized vehicles.

A11) District 3 Remodel: $9,736,000

Construct a building expansion to the west and south of the Via Linda facility adding 12,000 square feet. In addition, construct a second level parking deck on the south parking area.

Planning/Stormwater

A12) Rawhide Wash: $16,000,000

Construct channel improvements, grade control structures, and, likely, floodwall and/or embankment levees from just north of Happy Valley Road to Pinnacle Peak Road.

A13) 73rd Place and Northern Avenue Storm Drain: $1,400,000

Construct a storm drain system in the neighborhood north and east of the intersection of 73rd Place and Northern Avenue, from Butler Drive to Indian Bend Wash.

A14) Neighborhood Stormwater Management Improvements (3 projects) :$1,750,000

$1.75 million for three neighborhood project. These costs are project costs, not construction costs.

A15) McDowell Road & Indian Bend Wash Pedestrian Overlooks: $996,000

Purchase undeveloped vacant parcels at each end of the bridge and create passive pedestrian and bicycle rests including view platform overlooking the Indian Bend Wash to the north.

A16) Downtown Wayfinding and Pedestrian: $4,440,000

Design and construction associated with the development of pedestrian improvement projects in each of the four quadrants in Downtown Scottsdale, and a uniform pedestrian level wayfinding/signage program throughout Downtown in order to facilitate more efficient mobility, enhance character/design aspects and further promote business/tourism in the area.

Transportation

A17) Scottsdale Road: Thompson Peak Parkway to Pinnacle Peak Road Phase II: $2,630,000

Improve Scottsdale Road to add capacity and alleviate flooding.

A18) Pima Road: Pinnacle Peak Road to Happy Valley Road: $6,850,000

Improve existing four-lane cross section to six lanes with bike lanes, landscaped median and sidewalks. Roadway will include drainage structures to eliminate dip crossings.

A19) Carefree Highway: 60th Street to Scottsdale Road: $3,430,000

Improve existing four-lane cross section to six lanes with bike lanes, landscaped median and sidewalks. Roadway will include drainage structures to eliminate dip crossings.

A20) Legacy Drive: Hayden Road to 88th Street, between water campus: $5,190,000

Construct a new four lane roadway that will connect Legacy Drive to Pima Road. The new roadway will be located between sections of the Water Campus.

A21) Miller Rd/SR-101L Underpass: $6,000,000

Construct a new four-lane roadway from Princess Boulevard to Center Drive. This will include an underpass for the Loop 101.

A22) Frank Lloyd Wright Boulevard – Loop 101 Traffic Interchange: $2,560,000

Signal modifications and traffic operations improvements. Add storage turn lane.

A23) Pima Road: Dynamite Boulevard to Stagecoach Pass: $16,240,000

Improve existing four-lane cross section to six lanes with bike lanes, landscaped median and sidewalks. Roadway will include drainage structures to eliminate dip crossings.

A24) Scottsdale Road: Pinnacle Peak Road to Jomax Road: $4,070,000

Improve existing four-lane cross section to six lanes with bike lanes, landscaped median and sidewalks. Roadway will include drainage structures to eliminate dip crossings.

A25) Shea Boulevard Auxiliary Lane From 90th Street to Loop 101: $2,740,000

Improvements along Shea Boulevard from Loop 101 to 90th Street to provide improved access to/from SR 101L.

A26) Pima Road: Happy Valley Road to Dynamite Boulevard: $10,180,000

Improve existing four-lane cross section to six lanes with bike lanes, landscaped median and sidewalks. Roadway will include drainage structures to eliminate dip crossings.

A27) Scottsdale Road: Jomax Road to Dixileta Drive: $4,070,000

Improve existing four-lane cross section to six lanes with bike lanes, landscaped median and sidewalks. Roadway will include drainage structures to eliminate dip crossings.

A28) Scottsdale Road: Dixileta Drive to Ashler Hills Drive: $4,070,000

Improve existing four-lane cross section to six lanes with bike lanes, landscaped median and sidewalks. Roadway will include drainage structures to eliminate dip crossings.

A29) Scottsdale Road: Ashler Hills Drive to Carefree Highway: $4,070,000

Improve existing four-lane cross section to six lanes with bike lanes, landscaped median and sidewalks. Roadway will include drainage structures to eliminate dip crossings.

A30) Hayden Road Loop 101 Interchange Improvements: $5,000,000

Construct ramps to enable westbound and southbound free flow from Loop 101 to Hayden Road.

A31) Loop 101 Frontage Road: Pima Road/Princess Drive to Hayden Road: $12,000,000

Construct a new two-lane, one-way, frontage road on the north side of the Loop 101.

General Obligation Bond Program

City Council Work-Study Session

April 21, 2015

ITEM 1

Tonight's Presentation

- Staff action since March Work-Study
- Project review
- Remaining questions to be answered
- Discussion

Staff Action

Since March Work Study session

- Prepared project by project detailed analysis
  - Improved titles of projects
  - Clarified descriptions
  - Added supporting information and published binder
- Prioritized projects
  - Reviewed by management staff
  - Criteria based on that used for annual CIP update
- Created list of additional projects
  - Reviewed CIP requests and Bond Task Force data
  - Brief review of 31 additional projects
  - Projects are in various levels of study and preparedness
- Prepared survey for Council feedback on projects

Project Detail

Categories of information

- Project Details
  - Project Summary
  - Project Location
  - Project Cost
- Analysis and Assessment
  - Background
  - Safety
  - What is the Customer Experience?
  - Recent Staff Action
  - Community Involvement
  - Council Goals
- Resource Impacts
  - Operating Cost
  - Staff, Workload Impact
  - Maintenance Requirements
  - Impact If project is not implemented
- Supplemental Information

Upgrade Chemical Treatment Systems in Four City Aquatic Facilities

Estimated Project Cost: $3,510,000 Staff Priority: 4 of 34

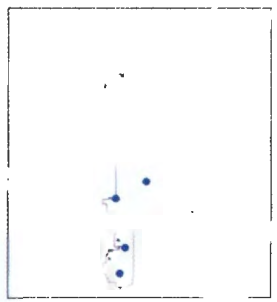
PROJECT DETAILS

Project Summary

Providing on-site chlorine generation systems and ultraviolet treatment will improve safety at these public facilities by eliminating the need for bulk chemical storage and handling hazardous chemicals. The new systems also will provide a safe and consistent disinfectant solution for the public pools. The proposed system is similar in design to those used at city water treatment facilities.

Project Location

McDowell Mountain Ranch Aquatic Center, Cactus Pool, Chaparral Pool & El Dorado Pool



Project Cost

Design	$400,000
Bond Issuance Cost	$60,000
Construction	$2,230,000
Administration	$370,000
Contingency	$440,000
Total Cost	$3,510,000

ANALYSIS & ASSESSMENT

New Technology Available

This project will replace existing chemical treatment systems in the four city Aquatic Facilities with on-site chlorine generation systems and ultraviolet treatment. Ultra-Violet Disinfection neutralizes chlorine-resistant microorganisms, which are common causes of pool closures and would reduce pool users exposure to recreation water illnesses. The system produces UV radiation inside light chambers that disrupt the DNA of microorganisms including viruses and bacterial that are then unable to replicate and remain inert.

On-Site chlorine generation systems will replace the use of hazardous chemicals with rock salt and electricity. This process will have the effect of softening the pool water with the use of traditional water softeners units and then converting the salt through electrolysis to chlorine. These technologies are in use in a variety of installations ranging from residential pools to the City of Scottsdale Water Treatment Facilities.

ANALYSIS & ASSESSMENT

Safety

With on-site chlorine generation, there is no need to transport, store, or handle large volumes of classified hazardous chemicals. This will reduce the risk of staff, guests, and surrounding neighborhoods to possible exposure due to mishandling of chemicals, intentional misuse, or system failures. It would also eliminate the requirement of City reporting and a complicated written program process to three Federal Agencies: the Environmental Protection Agency, Department of Labor - OSHA, and the US Department of Homeland Security.

What is the customer experience?

Pool users will benefit by a reduce risk of recreational water illness along with salt water conversion will reduced eye irritation, no harsh chemical odors and less skin drying and irritation. Citizens will know that the City is choosing a superior chemical treatment system while improving safety and water quality.

Recent Staff Action

Comprehensive Community Services Division Master Plan is underway with completion in May 2015. The Parks & Recreation Commission has reviewed this proposed project and is in support of this project at their October 15, 2014 and February 18, 2015 meetings.

Community Involvement

The system was on display and discussed at the 2/21/2015 City of Scottsdale Science and Technology Fair.

Council Goals

The implementation of this project supports the Council Goals: Enhance Neighborhoods, Preserve Meaningful Open Space and Value Scottsdale's Unique Lifestyle and Character

RESOURCE IMPACTS

Operating Cost

The new technology will greatly reduce the ongoing annual maintenance cost of the pool facilities by a total of $116,500 per year.

Staffing, Workload Impact

There will be no impact on staffing or workload due to the renovations. Current staff will be maintaining the latest in water treatment systems in place of the existing chlorine gas feed and scrubber mitigation systems.

Maintenance Requirements

Currently two FTE maintain the Aquatic Facilities. We do not anticipate a need for additional staff to accommodate the maintenance needs of the new chemical treatment system.

Impact if this project is not implemented

The existing system will continue to be in place and involve transporting, storing, and handling large volumes of classified hazardous chemicals. We will continue to assume the risk of staff, guests, and surrounding neighborhoods to possible exposure due to mishandling of chemicals, intentional misuse, or system failures. It will continue to require the reporting and compliance with three Federal Agencies: the Environmental Protection Agency, Department of Labor - OSHA, and the US Department of Homeland Security.

Supplemental Information:

1. Facility location maps
2. Pictures of existing equipment

Proposed Projects

Listed by Category/Possible Question

#	Description		Budget
	Category 1: Parks and Recreation		
1	Renovate the Vista del Camino Park/Indian Bend Wash area from McKellips Rd. to Thomas Rd.	$	18,500,000
2	Upgrade chemical treatment systems in four city aquatic facilities	$	3,500,000
3	Install energy-efficient sports field lighting at four facilities	$	4,600,000
4	Replace aging restrooms, maintenance and storage buildings at four city parks	$	3,400,000
5	Replace outdated irrigation systems	$	1,900,000
6	Build a new off-leash area at Thompson Peak Park	$	4,800,000
	Category 1 Total	**$**	**36,700,000**
	Category 2: Street Pavement Repair		
7	Replace 140 miles of deteriorated pavement on city streets	$	12,500,000
	Category 2 Total	**$**	**12,500,000**
	Category 3: Public Safety - Fire		
8	Renovate Fire Station 605 (75th Street & Shea Boulevard)	$	800,000
9	Design and Build Fire Station 613 (Desert Foothills)	$	5,100,000
10	Design and build Fire Station 616 (Desert Mountain)	$	3,700,000
11	Relocate Fire Station 603	$	6,750,000
	Category 3 Total	**$**	**16,350,000**

Proposed Projects

Listed by Category/Possible Question

#	Description		Budget
	Category 4: Public Safety - Police		
12	Expand and renovate the Civic Center Jail and police station	$	10,100,000
13	Modify the Police District 4 Station	$	510,000
14	Rebuild the public safety vehicle training track	$	1,700,000
	Category 4 Total	**$**	**12,310,000**
	Category 5: Downtown Parking		
15	Build a new parking structure in the northeast part of Downtown Scottsdale	$	13,800,000
	Category 5 Total	**$**	**13,800,000**
	Category 6: Flood Control		
16	Improve and expand regional drainage in the Crossroads East area	$	13,500,000
17	Improve flood protection near Indian Bend Road and Lincoln Drive	$	2,700,000
	Category 6 Total	**$**	**16,200,000**

Proposed Projects

Listed by Category/Possible Question

#	Description		Budget
	Category 7: Transportation		
18	Improve the intersection of Hayden and Chaparral roads	$	2,510,000
19	Leverage matching funds to improve roadways in the Scottsdale Airpark	$	12,900,000
20	Build a bridge on Thompson Peak Parkway at Reata Wash	$	5,200,000
21	Widen Happy Valley Road from Pima Road to Alma School Road	$	4,830,000
22	Improve Miller Road from Pinnacle Peak Road to Happy Valley Road	$	8,900,000
23	Widen Alma School Road from Jomax Rd to Pinnacle Vista	$	5,900,000
24	Improve 98th Street north of McDowell Mountain Ranch Road	$	1,700,000
25	Improve the intersection of 56th Street and Pinnacle Vista Drive	$	700,000
26	Improve Highland Avenue intersections at Scottsdale Road and Goldwater Boulevard	$	2,100,000
	Category 7 Total	**$**	**44,740,000**

Proposed Projects

Listed by Category/Possible Question

#	Description		Budget
	Category 8: Multiuse Paths and Trails		
27	Improve and Repair Sidewalks in Downtown Scottsdale	$	4,000,000
28	Leverage grant money to add paths and trail connections	$	2,630,000
29	Add bike lanes on McDowell Road	$	3,100,000
30	Build a new multiuse path under Shea Boulevard at 124th Street	$	600,000
31	Build a new multiuse path between Horizon Park and Stonegate Equestrian Park	$	3,100,000
	Category 8 Total	**$**	**13,430,000**
	Category 9: Citywide Technology		
32	Replace energy control systems at five city buildings	$	1,500,000
33	Improve WiFi in public buildings	$	470,000
34	Purchase disaster recovery technology infrastructure	$	4,900,000
	Category 9 Total	**$**	**6,870,000**

Prioritization of Projects

Staff CIP Priority Criteria

1. **Annual Recurring Costs** - The expected change in operation and maintenance costs.

2. **Health and Safety Effects** - This criterion includes health-related environmental impacts like reductions/increases in traffic accidents, injuries, deaths, sickness due to poor water quality, health hazards due to sewer problems, etc.

3. **Community Benefits** - Economic impacts such as property values, the future tax base, added jobs, income to citizens, changes in business income and the stabilization (or revitalization) of neighborhoods.

4. **Distributional Effects** - Estimates of the number and type of persons likely to be affected by the project and nature of the impact.

5. **Project Feasibility** - This element is a measure of special implementation problems (i.e., physical or engineering restraints) and compatibility with the General Plan. Project feasibility also includes the amount of uncertainty and risk.

6. **Implication of Deferring the Project** – Deferring capital projects is tempting for hard-pressed governments but an estimate of the possible effects, such as higher future costs and inconvenience to the public, provides valuable guidance in a proposal assessment.

7. **Mayor and City Council's Broad Goals** - If a capital project directly addresses the Mayor and City Council's broad goals, the relative attractiveness of that project increases.

Proposed Projects

Listed by Staff Ranking

1. Renovate the Vista del Camino Park/Indian Bend Wash area from McKellips Road to Thomas Road
2. Replace 140 miles of deteriorated pavement on city streets
3. Improve and repair sidewalks in Downtown Scottsdale
4. Upgrade chemical treatment systems in four city aquatic facilities
5. Replace aging restrooms, maintenance and storage buildings at four city parks
6. Design and build Fire Station 613 (Desert Foothills)
7. Install energy-efficient sports field lighting at four facilities
8. Improve and expand regional drainage in the Crossroads East area
9. Leverage matching funds to improve roadways in the Scottsdale Airpark
10. Replace outdated irrigation systems
11. Design and build Fire Station 616 (Desert Mountain)
12. Widen Happy Valley Road from Pima Road to Alma School Road
13. Add bike lanes on McDowell Road
14. Build a bridge on Thompson Peak Parkway at Reata Wash
15. Improve Highland Avenue intersections at Scottsdale Road and Goldwater Boulevard
16. Improve the intersection of Hayden and Chaparral roads
17. Replace energy control systems at five city buildings
18. Purchase disaster recovery technology infrastructure
19. Expand and renovate Civic Center Jail and police station
20. Improve WiFi in public buildings
21. Relocate Fire Station 603
22. Widen Alma School Road from Jomax Road to Pinnacle Vista
23. Build a new multiuse path under Shea Boulevard at 124th Street
24. Rebuild public safety vehicle training track
25. Renovate Fire Station 605 (75th. Street and Shea Boulevard)
26. Improve flood protection near Indian Bend Road and Lincoln Drive
27. Modify Police District 4 Station
28. Improve Miller Road from Pinnacle Peak Road to Happy Valley Road
29. Build a new parking structure in the northeast part of Downtown Scottsdale
30. Leverage grant money to add paths and trail connections
31. Build a new multiuse path between Horizon Park and Stonegate Equestrian Park
32. Improve the intersection of 56th Street and Pinnacle Vista Drive
33. Build a new off-leash area at Thompson Peak Park
34. Improve 98th Street north of McDowell Mountain Ranch Road

Additional Projects

Not ranked by staff

Project #	Project		Est. Cost
A1	Civic Center Mall (West Entry Improvements and Master Plan)	$	4,600,000
A2	Civic Center Library Phase II	$	4,700,000
A3	Scottsdale Center for the Performing Arts	$	4,300,000
A4	Scottsdale Stadium Infrastructure Improvements	$	1,400,000
A5	Community Services Tech. Imp. - Library Update	$	540,000
A6	George "Doc" Cavalliere Park Phase II	$	10,247,000
A7	Replacement of Cactus Aquatic and Fitness	$	20,963,000
A8	Replace FS604	$	5,750,000
A9	OSHA Compliance	$	4,640,000
A10	Training Yard Expansion	$	120,000
A11	District 3 Remodel	$	9,736,000
A12	Rawhide Wash	$	16,000,000
A13	73rd Place and Northern Storm Drain:	$	1,400,000
A14	Neighborhood Stormwater Management Improvements (3 projects)	$	1,750,000
A15	McDowell Rd. & IBW Pedestrian Overlooks	$	996,000
A16	Downtown Wayfinding and Pedestrian	$	4,440,000
A17	Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak Rd Phase II	$	2,630,000
A18	Pima Rd: Pinnacle Peak Rd to Happy Valley Rd	$	6,850,000
A19	Carefree Highway: 60th Street to Scottsdale Road	$	3,430,000
A20	Legacy Dr: Hayden Rd to 88th St, between water campus	$	5,190,000
A21	Miller Rd/SR-101L Underpass	$	6,000,000
A22	Frank Lloyd Wright Blvd – Loop 101 Traffic Interchange	$	2,560,000
A23	Pima Road: Dynamite Boulevard to Stagecoach Pass	$	16,240,000
A24	Scottsdale Road: Pinnacle Peak to Jomax	$	4,070,000
A25	Shea Auxiliary Lane From 90th St to Loop 101	$	2,740,000
A26	Pima Road: Happy Valley Road to Dynamite Boulevard.	$	10,180,000
A27	Scottsdale Road: Jomax to Dixileta Dr	$	4,070,000
A28	Scottsdale Road: Dixileta Dr to Ashler Hills Dr	$	4,070,000
A29	Scottsdale Road: Ashler Hills to Carefree Highway	$	4,070,000
A30	Hayden Road Loop 101 Interchange Improvements	$	5,000,000
A31	Loop 101 Frontage Rd: Pima Rd/Princess Dr to Hayden Rd	$	12,000,000
	Total Additional Projects	**$**	**180,682,000**

Election Considerations

When considering year of election

- Number of other items potentially on the ballot (i.e. Federal, State, County, City, School District)
- Cost of election
- Potential for voter turnout
- Potential for success of bond questions
- Overall attitude of the electorate

Next Steps

If Direction is for a 2015 Election:

- **Mid May, 2015:** Council to consider action to call election and approve ballot language
- **November 3, 2015:** Election Day

If Direction is for a 2016 Election:

- Staff to continue public outreach?
- Possible City Council subcommittee?
- Possible series of work-study sessions with Council to further develop program?

Discussion and Direction to Staff

Questions to consider

1. Should the city consider holding a General Obligation Bond Election? *Yes*

2. If so, when should the election be held (November of 2015, 2016, later)? *Either 2015 or 2016*

3. What projects should be included in the program?

4. How should the projects be presented to the voters?

Analysis of Council Response to Project Ranking Exercise

Questions to consider

1. Should the city consider holding a General Obligation Bond Election? *Yes*

2. If so, when should the election be held (November of 2015, 2016, later)? *Either 2015 or 2016*

3. What projects should be included in the program?

4. How should the projects be presented to the voters?

Supplemental Slides

Program Oversight

Likely Future Council Actions

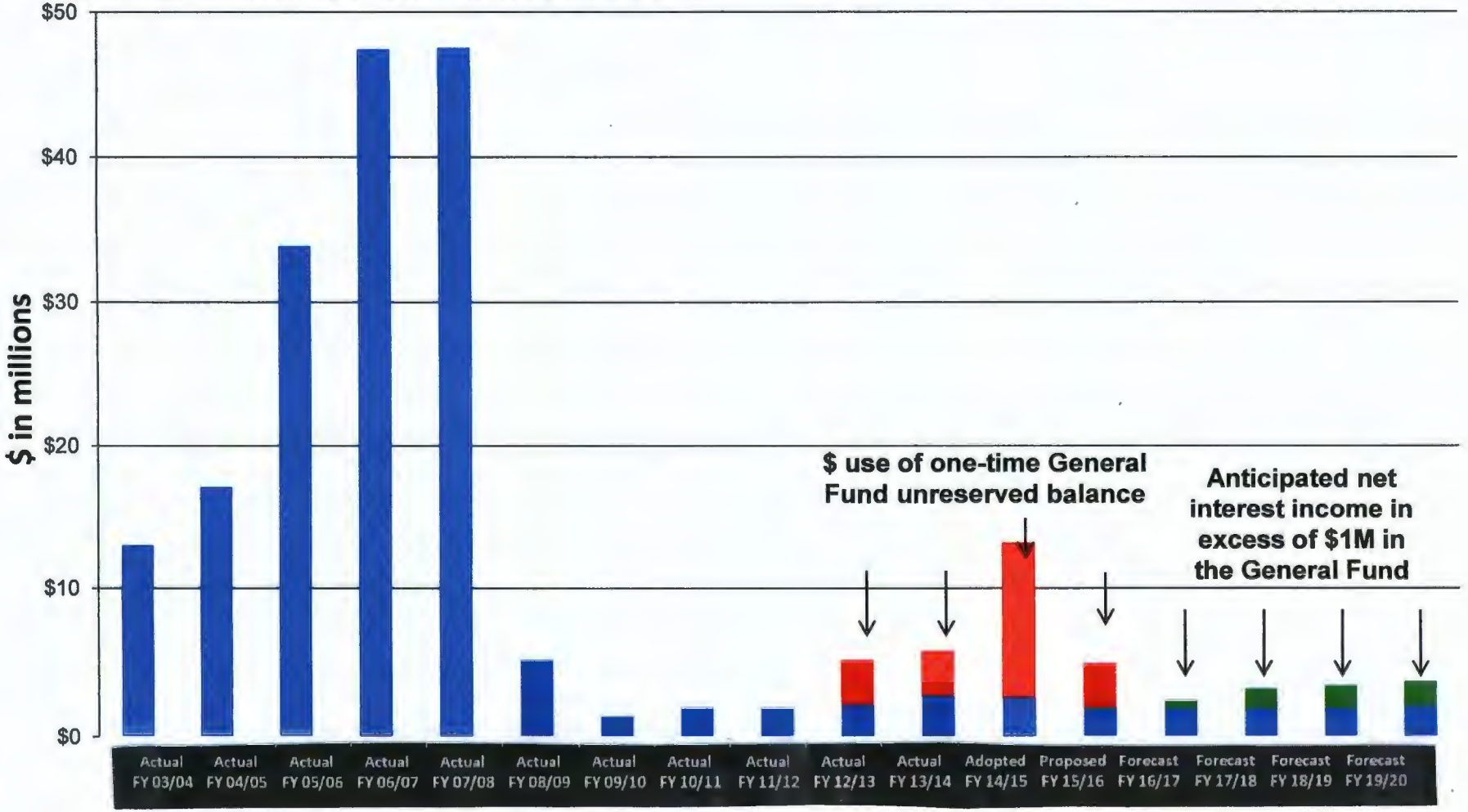
- Annual CIP approval process for new projects

OR

- Special approval of new projects
- Citizen Oversight – staff will recommend creation of a Bond Review Commission
- Issuance of bonds
- Site Plan/Land Use approvals (if required)
- Design contract awards
- Construction contract awards

Contributions to CIP

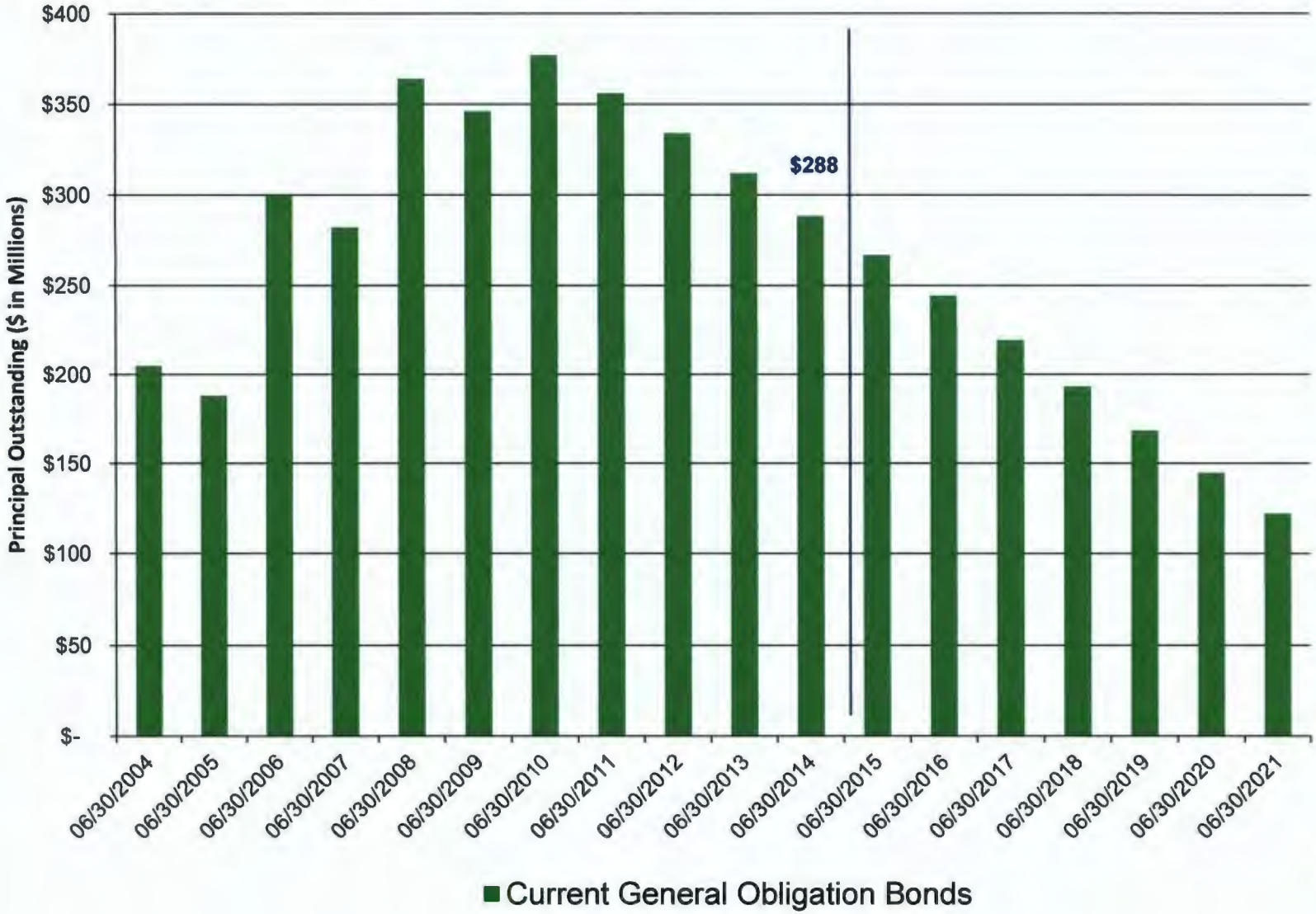
Annual General Fund Contributions



Note: Forecast contributions to CIP may be greater in years when General Fund operating surpluses develop additional transfers to the CIP fund in accordance with adopted Financial Policy #17.

G.O. Bonds Outstanding

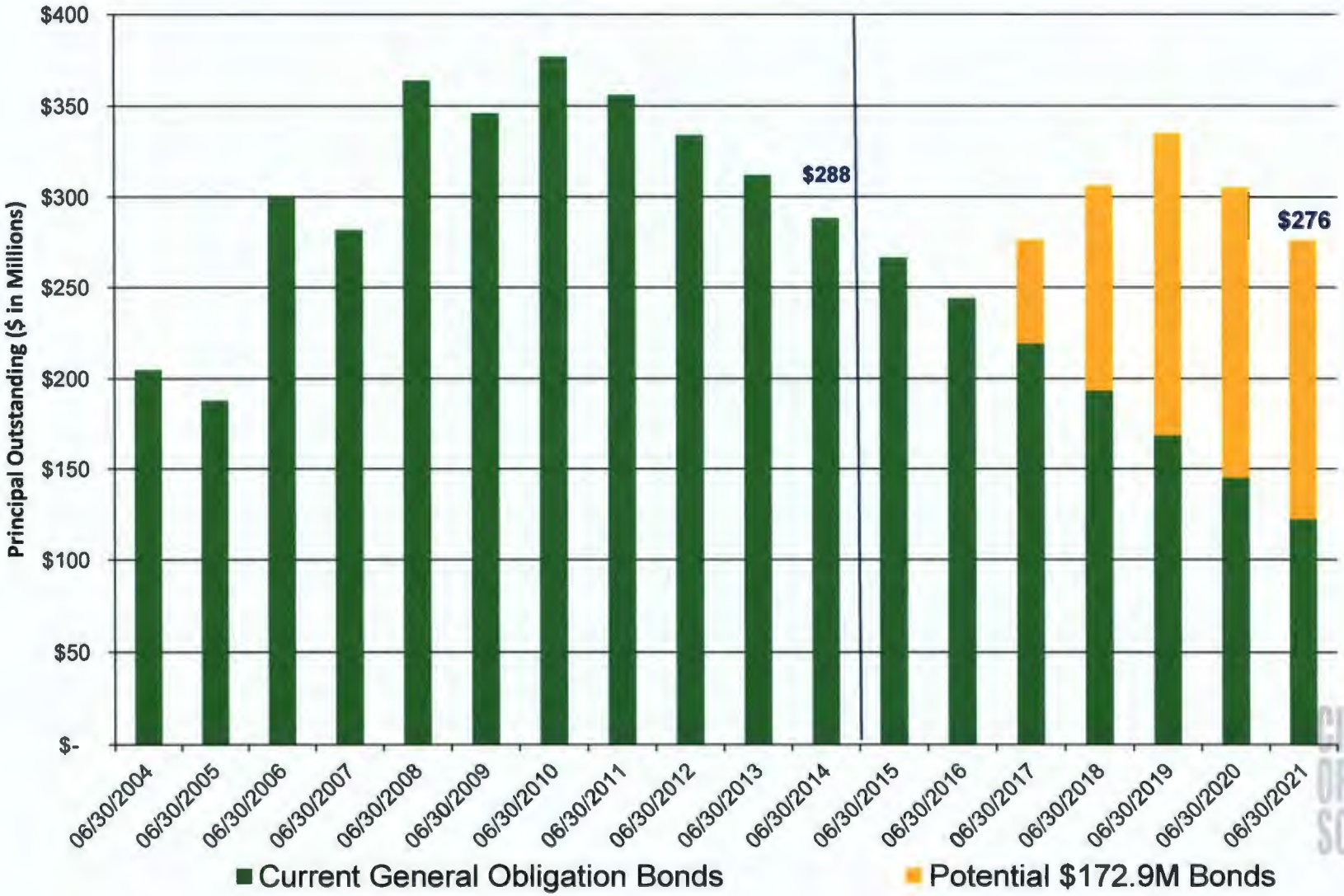
Property Tax Supported Bonds (in millions)



CITY OF SCOTTSDALE ARIZONA

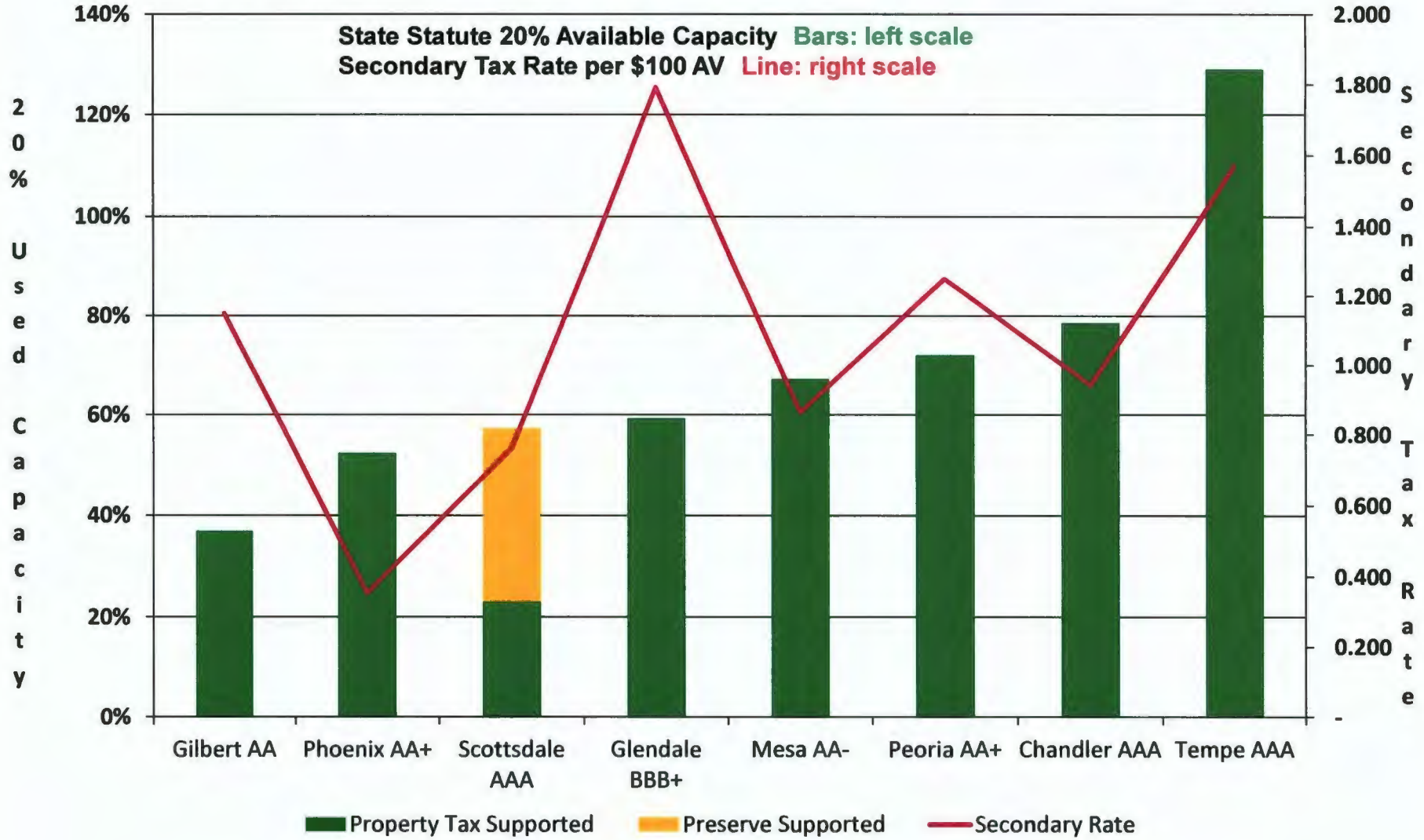
G.O. Bonds Outstanding

Property Tax Supported Bonds (in millions) – with Bond Program



Comparative Tax Burden

FY 2013/14 Property Tax by Valley Community



Impact on Residents

	$172.9M
Incremental annual debt service (after final phased issuance)	$12.53M
Portion paid by residential class	x 68.3%
Debt Service paid by residential class	$8.56M
Estimated residential units	÷ 129,300
Cost Per Residential Unit (Average):	
• Annual	$66.20
• Monthly	$5.52
• Daily	$0.18
Burden Per Residential Unit:	
• Average Residential Value	$337,000
• Annual Debt Service as a % of Residential Value	0.02%
Per $100,000 of Assessor's Market Value	$19.64/year or $1.64/mo

Prioritization of Projects

Bond Task Force Criteria

1. **Mandated:** Is the project mandated by any local, state or federal laws?
2. **Emergency/Negative Impact of NOT Investing:** Determine if the public or the city's financial position is negatively impacted by failure to invest in a particular project.
3. **Asset Management:** Does project create or increase the capacity, efficiency, span of life, or economy of operating a new or existing fixed asset?
4. **Matching Funds:** Do projects have matching funds from other agencies?
5. **Economic Sustainability:** Project meets the goal of, at a minimum, of growing or holding steady the net asset base of the city.
6. **Operating Cost:** Does this project reduce operating costs or minimize cost increases?
7. **Economic Vitality:** Does the project contribute to the improved economic vitality of the city and bring in improved revenue?
8. **Master Plan:** Is the project anticipated in the General Plan character Area Plans or master plan?
9. **Board & Commission Review:** Has this project been recommended by any Boards or Commissions?
10. **3 Year Timeframe:** Can the project be initiated in a 3-year planning horizon?

Item 1

General Obligation Bond Program

City Council Work-Study Session

April 21, 2015

Tonight's Presentation

- Staff action since March Work-Study
- Project review
- Remaining questions to be answered
- Discussion

Staff Action

Since March Work Study session

- Prepared project by project detailed analysis
  - Improved titles of projects
  - Clarified descriptions
  - Added supporting information and published binder
- Prioritized projects
  - Reviewed by management staff
  - Criteria based on that used for annual CIP update
- Created list of additional projects
  - Reviewed CIP requests and Bond Task Force data
  - Brief review of 31 additional projects
  - Projects are in various levels of study and preparedness
- Prepared survey for Council feedback on projects

Additional Project Detail

Categories of information

- Project Details
  - Project Summary
  - Project Location
  - Project Cost
- Analysis and Assessment
  - Background
  - Safety
  - What is the Customer Experience?
  - Recent Staff Action
  - Community Involvement
  - Council Goals
- Resource Impacts
  - Operating Cost
  - Staff, Workload Impact
  - Maintenance Requirements
  - Impact If project is not implemented
- Supplemental Information

Upgrade Chemical Treatment Systems in Four City Aquatic Facilities

Staff Priority: 4 of 34

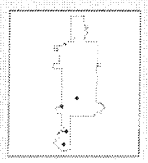
PROJECT DETAILS

Project Summary

Providing on-site chlorine generation systems and ultraviolet treatment will improve safety at these public facilities by eliminating the need for bulk chemical storage and handling hazardous chemicals. The new systems also will provide a safe and consistent disinfectant solution for the public pools. The proposed system is similar in design to those used at city water treatment facilities.

Project Location

McDowell Mountain Ranch Aquatic Center, Cactus Pool, Chaparral Pool & El Dorado Pool



Project Cost

Design	$400,000
Bond Issuance Cost	$60,000
Construction	$2,230,500
Administration	$310,000
Contingency	$440,500
Total Cost	$3,510,500

ANALYSIS & ASSESSMENT

New Technology Available

This project will replace existing chemical treatment systems in the four city aquatic facilities with on-site chlorine generation systems and ultraviolet treatment. Ultra violet disinfection sterilizes chlorine-resistant microorganisms, which are common causes of pool closures and would reduce pool users exposure to recreation water illnesses. The system produces UV radiation inside light chambers that disrupt the DNA of microorganisms including viruses and bacterial that are then unable to replicate and remain inert.

On-Site chlorine generation systems will replace the use of hazardous chemicals with rock salt and electricity. This process will have the effect of softening the pool water with the use of traditional water softeners units, and then converting the salt through electrolysis to chlorine. These technologies are in use in a variety of installations ranging from residential pools to the City of Scottsdale Water Treatment Facilities.

ANALYSIS & ASSESSMENT

Safety

With on-site chlorine generation, there is no need to transport, store, or handle large volumes of classified hazardous chemicals. This will reduce the risk of staff, guests, and surrounding neighborhoods to possible exposure due to mishandling of chemicals, intentional misuse, or system failures. It would also eliminate the requirement of City reporting and a complicated written program process to three Federal Agencies: the Environmental Protection Agency, Department of Labor - OSHA, and the US Department of Homeland Security.

What is the customer experience?

Pool users will benefit by a reduce risk of recreational water illness along with salt water conversion will reduced eye irritation, no harsh chemical odors and less skin drying and irritation. Citizens will know that the City is choosing a superior chemical treatment system while improving safety and water quality.

Recent Staff Action

Comprehensive Community Services Division Master Plan is underway with completion in May 2015. The Parks & Recreation Commission has reviewed this proposed project and is in support of this project at their October 15, 2014 and February 18, 2015 meetings.

Community Involvement

The system was on display and discussed at the 2/21/2015 City of Scottsdale Science and Technology Fair.

Council Goals

The implementation of this project supports the Council Goals: Enhance Neighborhoods, Preserve Meaningful Open Space and Value Scottsdale's Unique Lifestyle and Character

RESOURCE IMPACTS

Operating Cost

The new technology will greatly reduce the ongoing annual maintenance cost of the pool facilities by a total of $116,500 per year.

Staffing, Workload Impact

There will be no impact on staffing or workload due to the renovations. Current staff will be maintaining the latest in water treatment systems in place of the existing chlorine gas feed and scrubber mitigation systems.

Maintenance Requirements

Currently two FTE maintain the Aquatic Facilities. We do not anticipate a need for additional staff to accommodate the maintenance needs of the new chemical treatment system.

Impact if this project is not implemented

The existing system will continue to be in place and involve transporting, storing, and handling large volumes of classified hazardous chemicals. We will continue to assume the risk of staff, guests, and surrounding neighborhoods to possible exposure due to mishandling of chemicals, intentional misuse, or system failures. It will continue to require the reporting and compliance with three Federal Agencies; the Environmental Protection Agency, Department of Labor - OSHA, and the US Department of Homeland Security.

Supplemental Information:

1. Facility location maps
2. Pictures of existing equipment

Proposed Projects

Listed by Category/Possible Question

#	Description		Budget
	Category 1: Parks and Recreation		
1	Renovate the Vista del Camino Park/Indian Bend Wash area from McKellips Rd. to Thomas Rd.	$	18,500,000
2	Upgrade chemical treatment systems in four city aquatic facilities	$	3,500,000
3	Install energy-efficient sports field lighting at four facilities	$	4,600,000
4	Replace aging restrooms, maintenance and storage buildings at four city parks	$	3,400,000
5	Replace outdated irrigation systems	$	1,900,000
6	Build a new off-leash area at Thompson Peak Park	$	4,800,000
	Category 1 Total	**$**	**36,700,000**
	Category 2: Street Pavement Repair		
7	Replace 140 miles of deteriorated pavement on city streets	$	12,500,000
	Category 2 Total	**$**	**12,500,000**
	Category 3: Public Safety - Fire		
8	Renovate Fire Station 605 (75th Street & Shea Boulevard)	$	800,000
9	Design and Build Fire Station 613 (Desert Foothills)	$	5,100,000
10	Design and build Fire Station 616 (Desert Mountain)	$	3,700,000
11	Relocate Fire Station 603	$	6,750,000
	Category 3 Total	**$**	**16,350,000**

Proposed Projects

Listed by Category/Possible Question

#	Description		Budget
	Category 4: Public Safety - Police		
12	Expand and renovate the Civic Center Jail and police station	$	10,100,000
13	Modify the Police District 4 Station	$	510,000
14	Rebuild the public safety vehicle training track	$	1,700,000
	Category 4 Total	**$**	**12,310,000**
	Category 5: Downtown Parking		
15	Build a new parking structure in the northeast part of Downtown Scottsdale	$	13,800,000
	Category 5 Total	**$**	**13,800,000**
	Category 6: Flood Control		
16	Improve and expand regional drainage in the Crossroads East area	$	13,500,000
17	Improve flood protection near Indian Bend Road and Lincoln Drive	$	2,700,000
	Category 6 Total	**$**	**16,200,000**

Proposed Projects

Listed by Category/Possible Question

#	Description		Budget
	Category 7: Transportation		
18	Improve the intersection of Hayden and Chaparral roads	$	2,510,000
19	Leverage matching funds to improve roadways in the Scottsdale Airpark	$	12,900,000
20	Build a bridge on Thompson Peak Parkway at Reata Wash	$	5,200,000
21	Widen Happy Valley Road from Pima Road to Alma School Road	$	4,830,000
22	Improve Miller Road from Pinnacle Peak Road to Happy Valley Road	$	8,900,000
23	Widen Alma School Road from Jomax Rd to Pinnacle Vista	$	5,900,000
24	Improve 98th Street north of McDowell Mountain Ranch Road	$	1,700,000
25	Improve the intersection of 56th Street and Pinnacle Vista Drive	$	700,000
26	Improve Highland Avenue intersections at Scottsdale Road and Goldwater Boulevard	$	2,100,000
	Category 7 Total	**$**	**44,740,000**

Proposed Projects

Listed by Category/Possible Question

#	Description		Budget
	Category 8: Multiuse Paths and Trails		
27	Improve and Repair Sidewalks in Downtown Scottsdale	$	4,000,000
28	Leverage grant money to add paths and trail connections	$	2,630,000
29	Add bike lanes on McDowell Road	$	3,100,000
30	Build a new multiuse path under Shea Boulevard at 124th Street	$	600,000
31	Build a new multiuse path between Horizon Park and Stonegate Equestrian Park	$	3,100,000
	Category 8 Total	**$**	**13,430,000**
	Category 9: Citywide Technology		
32	Replace energy control systems at five city buildings	$	1,500,000
33	Improve WiFi in public buildings	$	470,000
34	Purchase disaster recovery technology infrastructure	$	4,900,000
	Category 9 Total	**$**	**6,870,000**

Prioritization of Projects

Staff CIP Priority Criteria

1. **Annual Recurring Costs** - The expected change in operation and maintenance costs.
2. **Health and Safety Effects** - This criterion includes health-related environmental impacts like reductions/increases in traffic accidents, injuries, deaths, sickness due to poor water quality, health hazards due to sewer problems, etc.
3. **Community Benefits** - Economic impacts such as property values, the future tax base, added jobs, income to citizens, changes in business income and the stabilization (or revitalization) of neighborhoods.
4. **Distributional Effects** - Estimates of the number and type of persons likely to be affected by the project and nature of the impact.
5. **Project Feasibility** - This element is a measure of special implementation problems (i.e., physical or engineering restraints) and compatibility with the General Plan. Project feasibility also includes the amount of uncertainty and risk.
6. **Implication of Deferring the Project** – Deferring capital projects is tempting for hard-pressed governments but an estimate of the possible effects, such as higher future costs and inconvenience to the public, provides valuable guidance in a proposal assessment.
7. **Mayor and City Council's Broad Goals** - If a capital project directly addresses the Mayor and City Council's broad goals, the relative attractiveness of that project increases.

Proposed Projects

Listed by Staff Ranking

1. Renovate the Vista del Camino Park/Indian Bend Wash area from McKellips Road to Thomas Road
2. Replace 140 miles of deteriorated pavement on city streets
3. Improve and repair sidewalks in Downtown Scottsdale
4. Upgrade chemical treatment systems in four city aquatic facilities
5. Replace aging restrooms, maintenance and storage buildings at four city parks
6. Design and build Fire Station 613 (Desert Foothills)
7. Install energy-efficient sports field lighting at four facilities
8. Improve and expand regional drainage in the Crossroads East area
9. Leverage matching funds to improve roadways in the Scottsdale Airpark
10. Replace outdated irrigation systems
11. Design and build Fire Station 616 (Desert Mountain)
12. Widen Happy Valley Road from Pima Road to Alma School Road
13. Add bike lanes on McDowell Road
14. Build a bridge on Thompson Peak Parkway at Reata Wash
15. Improve Highland Avenue intersections at Scottsdale Road and Goldwater Boulevard
16. Improve the intersection of Hayden and Chaparral roads
17. Replace energy control systems at five city buildings
18. Purchase disaster recovery technology infrastructure
19. Expand and renovate Civic Center Jail and police station
20. Improve WiFi in public buildings
21. Relocate Fire Station 603
22. Widen Alma School Road from Jomax Road to Pinnacle Vista
23. Build a new multiuse path under Shea Boulevard at 124th Street
24. Rebuild public safety vehicle training track
25. Renovate Fire Station 605 (75th. Street and Shea Boulevard)
26. Improve flood protection near Indian Bend Road and Lincoln Drive
27. Modify Police District 4 Station
28. Improve Miller Road from Pinnacle Peak Road to Happy Valley Road
29. Build a new parking structure in the northeast part of Downtown Scottsdale
30. Leverage grant money to add paths and trail connections
31. Build a new multiuse path between Horizon Park and Stonegate Equestrian Park
32. Improve the intersection of 56th Street and Pinnacle Vista Drive
33. Build a new off-leash area at Thompson Peak Park
34. Improve 98th Street north of McDowell Mountain Ranch Road

Additional Projects

Not ranked by staff

Project #	Project		Est. Cost
A1	Civic Center Mall (West Entry Improvements and Master Plan)	$	4,600,000
A2	Civic Center Library Phase II	$	4,700,000
A3	Scottsdale Center for the Performing Arts	$	4,300,000
A4	Scottsdale Stadium Infrastructure Improvements	$	1,400,000
A5	Community Services Tech. Imp. - Library Update	$	540,000
A6	George "Doc" Cavalliere Park Phase II	$	10,247,000
A7	Replacement of Cactus Aquatic and Fitness	$	20,963,000
A8	Replace FS604	$	5,750,000
A9	OSHA Compliance	$	4,640,000
A10	Training Yard Expansion	$	120,000
A11	District 3 Remodel	$	9,736,000
A12	Rawhide Wash	$	16,000,000
A13	73rd Place and Northern Storm Drain:	$	1,400,000
A14	Neighborhood Stormwater Management Improvements (3 projects)	$	1,750,000
A15	McDowell Rd. & IBW Pedestrian Overlooks	$	996,000
A16	Downtown Wayfinding and Pedestrian	$	4,440,000
A17	Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak Rd Phase II	$	2,630,000
A18	Pima Rd: Pinnacle Peak Rd to Happy Valley Rd	$	6,850,000
A19	Carefree Highway: 60th Street to Scottsdale Road	$	3,430,000
A20	Legacy Dr: Hayden Rd to 88th St, between water campus	$	5,190,000
A21	Miller Rd/SR-101L Underpass	$	6,000,000
A22	Frank Lloyd Wright Blvd – Loop 101 Traffic Interchange	$	2,560,000
A23	Pima Road: Dynamite Boulevard to Stagecoach Pass	$	16,240,000
A24	Scottsdale Road: Pinnacle Peak to Jomax	$	4,070,000
A25	Shea Auxiliary Lane From 90th St to Loop 101	$	2,740,000
A26	Pima Road: Happy Valley Road to Dynamite Boulevard.	$	10,180,000
A27	Scottsdale Road: Jomax to Dixileta Dr	$	4,070,000
A28	Scottsdale Road: Dixileta Dr to Ashler Hills Dr	$	4,070,000
A29	Scottsdale Road: Ashler Hills to Carefree Highway	$	4,070,000
A30	Hayden Road Loop 101 Interchange Improvements	$	5,000,000
A31	Loop 101 Frontage Rd: Pima Rd/Princess Dr to Hayden Rd	$	12,000,000
	Total Additional Projects	**$**	**180,682,000**

Election Considerations

When considering year of election

- Number of other items potentially on the ballot (i.e. Federal, State, County, City, School District)
- Cost of election
- Potential for voter turnout
- Potential for success of bond questions
- Overall attitude of the electorate

Next Steps

If Direction is for a 2015 Election:

- **Mid May, 2015:** Council to consider action to call election and approve ballot language
- **November 3, 2015:** Election Day

If Direction is for a 2016 Election:

- Staff to continue public outreach?
- Possible City Council subcommittee?
- Possible series of work-study sessions with Council to further develop program?

Discussion and Direction to Staff

Questions to consider

1. Should the city consider holding a General Obligation Bond Election? *Yes*
2. If so, when should the election be held (November of 2015, 2016, later)? *Either 2015 or 2016*
3. What projects should be included in the program?
4. How should the projects be presented to the voters?

Analysis of Council Response to Project Ranking Exercise

#	City Council Ranking of **Proposed Bond Projects**	Project Cost	Mean	Mode	Klapp	Korte	Lane	Littlefield	Milhaven	Phillips	Smith	Sum
1	Renovate the Vista del Camino Park/Indian Bend Wash area from McKellips Rd. to Thomas Rd.	$ 18,500,000	1.857	2	2	2	2	2	2	1	2	13
2	Upgrade chemical treatment systems in four city aquatic facilities	$ 3,500,000	2.000	2	2	2	2	2	2	2	2	14
3	Install energy-efficient sports field lighting at four facilities	$ 4,600,000	1.429	1	1	2	1	1	2	1	2	10
4	Replace aging restrooms, maintenance and storage buildings at four city parks	$ 3,400,000	1.714	2	2	2	2	2	2	0	2	12
5	Replace outdated irrigation systems	$ 1,900,000	1.571	2	1	2	2	2	2	0	2	11
6	Build a new off-leash area at Thompson Peak Park	$ 4,800,000	0.571	0	0	0	1	0	1	0	2	4
7	Replace 140 miles of deteriorated pavement on city streets	$ 12,500,000	1.714	2	2	2	2	2	2	0	2	12
8	Renovate Fire Station 605 (75th Street & Shea Boulevard)	$ 800,000	1.286	1	1	1	1	2	2	0	2	9
9	Design and Build Fire Station 613 (Desert Foothills)	$ 5,100,000	2.000	2	2	2	2	2	2	2	2	14
10	Design and build Fire Station 616 (Desert Mountain)	$ 3,700,000	1.429	2	1	2	1	2	2	0	2	10
11	Relocate Fire Station 603	$ 6,750,000	1.143	2	1	0	1	2	2	0	2	8
12	Expand and renovate the Civic Center Jail and police station	$ 10,100,000	1.571	2	1	2	1	2	2	1	2	11
13	Modify the Police District 4 Station	$ 510,000	1.000	1	1	1	1	1	1	0	2	7
14	Rebuild the public safety vehicle training track	$ 1,700,000	1.286	1	1	1	1	2	2	0	2	9
15	Build a new parking structure in the northeast part of Downtown Scottsdale	$ 13,800,000	0.714	0	0	2	0	0	1	0	2	5
16	Improve and expand regional drainage in the Crossroads East area	$ 13,500,000	1.286	2	2	1	2	0	2	0	2	9
17	Improve flood protection near Indian Bend Road and Lincoln Drive	$ 2,700,000	1.571	2	1	2	2	2	2	0	2	11
18	Improve the intersection of Hayden and Chaparral roads	$ 2,510,000	1.571	2	1	2	2	2	1	1	2	11
19	Leverage matching funds to improve roadways in the Scottsdale Airpark	$ 12,900,000	1.286	2	2	2	2	0	1	0	2	9
20	Build a bridge on Thompson Peak Parkway at Reata Wash	$ 5,200,000	1.143	1	0	1	1	1	1	2	2	8
21	Widen Happy Valley Road from Pima Road to Alma School Road	$ 4,830,000	1.571	2	2	2	2	2	1	0	2	11
22	Improve Miller Road from Pinnacle Peak Road to Happy Valley Road	$ 8,900,000	1.143	1	1	1	2	0	1	1	2	8
23	Widen Alma School Parkway from Jomax Rd to Pinnacle Vista	$ 5,900,000	1.143	1	1	1	1	2	1	0	2	8
24	Improve 98th Street north of McDowell Mountain Ranch Road	$ 1,700,000	1.000	0	0	2	2	0	1	0	2	7
25	Improve the intersection of 56th Street and Pinnacle Vista Drive	$ 700,000	0.857	0	0	1	2	0	1	0	2	6
26	Improve Highland Avenue intersections at Scottsdale Road and Goldwater Boulevard	$ 2,100,000	1.429	2	1	2	2	2	1	0	2	10
27	Improve and Repair Sidewalks in Downtown Scottsdale	$ 4,000,000	1.857	2	2	2	2	2	1	2	2	13
28	Leverage grant money to add paths and trail connections	$ 2,630,000	1.143	2	0	2	2	1	1	0	2	8
29	Add bike lanes on McDowell Road	$ 3,100,000	1.286	2	2	2	2	0	1	0	2	9
30	Build a new multiuse path under Shea Boulevard at 124th Street	$ 600,000	1.143	2	0	1	2	2	1	0	2	8
31	Build a new multiuse path between Horizon Park and Stonegate Equestrian Park	$ 3,100,000	0.714	0	0	1	1	0	1	0	2	5
32	Replace energy control systems at five city buildings	$ 1,500,000	1.571	2	1	2	2	2	2	0	2	11
33	Improve WiFi in public buildings	$ 470,000	1.429	1	1	2	2	1	1	1	2	10
34	Purchase disaster recovery technology infrastructure	$ 4,900,000	1.286	1	1	2	1	1	1	1	2	9

Key: Should Be a Bond Project = 2, Could be a Bond Project = 1, Should NOT be a Bond Project = 0

Council Rank	City Council Ranking of Proposed Bond Projects Sorted by Mode then Mean	Project Number	Project Cost	Cumulative Cost of Program	Mode	Mean	Staff Rank
1	Upgrade chemical treatment systems in four city aquatic facilities	2	$ 3,500,000	$ 3,500,000	2	2.000	4
2	Design and Build Fire Station 613 (Desert Foothills)	9	$ 5,100,000	$ 8,600,000	2	2.000	6
3	Renovate the Vista del Camino Park/Indian Bend Wash area from McKellips Rd. to Thomas Rd.	1	$ 18,500,000	$ 27,100,000	2	1.857	1
4	Improve and Repair Sidewalks in Downtown Scottsdale	27	$ 4,000,000	$ 31,100,000	2	1.857	3
5	Replace aging restrooms, maintenance and storage buildings at four city parks	4	$ 3,400,000	$ 34,500,000	2	1.714	5
6	Replace 140 miles of deteriorated pavement on city streets	7	$ 12,500,000	$ 47,000,000	2	1.714	2
7	Replace outdated irrigation systems	5	$ 1,900,000	$ 48,900,000	2	1.571	10
8	Expand and renovate the Civic Center Jail and police station	12	$ 10,100,000	$ 59,000,000	2	1.571	19
9	Improve flood protection near Indian Bend Road and Lincoln Drive	17	$ 2,700,000	$ 61,700,000	2	1.571	26
10	Improve the intersection of Hayden and Chaparral roads	18	$ 2,510,000	$ 64,210,000	2	1.571	16
11	Widen Happy Valley Road from Pima Road to Alma School Road	21	$ 4,830,000	$ 69,040,000	2	1.571	12
12	Replace energy control systems at five city buildings	32	$ 1,500,000	$ 70,540,000	2	1.571	17
13	Design and build Fire Station 616 (Desert Mountain)	10	$ 3,700,000	$ 74,240,000	2	1.429	11
14	Improve Highland Avenue intersections at Scottsdale Road and Goldwater Boulevard	26	$ 2,100,000	$ 76,340,000	2	1.429	15
15	Improve and expand regional drainage in the Crossroads East area	16	$ 13,500,000	$ 89,840,000	2	1.286	8
16	Leverage matching funds to improve roadways in the Scottsdale Airpark	19	$ 12,900,000	$ 102,740,000	2	1.286	9
17	Add bike lanes on McDowell Road	29	$ 3,100,000	$ 105,840,000	2	1.286	13
18	Relocate Fire Station 603	11	$ 6,750,000	$ 112,590,000	2	1.143	21
19	Leverage grant money to add paths and trail connections	28	$ 2,630,000	$ 115,220,000	2	1.143	30
20	Build a new multiuse path under Shea Boulevard at 124th Street	30	$ 600,000	$ 115,820,000	2	1.143	23
21	Install energy-efficient sports field lighting at four facilities	3	$ 4,600,000	$ 120,420,000	1	1.429	7
22	Improve WiFi in public buildings	33	$ 470,000	$ 120,890,000	1	1.429	20
23	Renovate Fire Station 605 (75th Street & Shea Boulevard)	8	$ 800,000	$ 121,690,000	1	1.286	25
24	Rebuild the public safety vehicle training track	14	$ 1,700,000	$ 123,390,000	1	1.286	24
25	Purchase disaster recovery technology infrastructure	34	$ 4,900,000	$ 128,290,000	1	1.286	18
26	Build a bridge on Thompson Peak Parkway at Reata Wash	20	$ 5,200,000	$ 133,490,000	1	1.143	14
27	Improve Miller Road from Pinnacle Peak Road to Happy Valley Road	22	$ 8,900,000	$ 142,390,000	1	1.143	28
28	Widen Alma School Parkway from Jomax Rd to Pinnacle Vista	23	$ 5,900,000	$ 148,290,000	1	1.143	22
29	Modify the Police District 4 Station	13	$ 510,000	$ 148,800,000	1	1.000	27
30	Improve 98th Street north of McDowell Mountain Ranch Road	24	$ 1,700,000	$ 150,500,000	0	1.000	34
31	Improve the intersection of 56th Street and Pinnacle Vista Drive	25	$ 700,000	$ 151,200,000	0	0.857	32
32	Build a new parking structure in the northeast part of Downtown Scottsdale	15	$ 13,800,000	$ 165,000,000	0	0.714	29
33	Build a new mutliuse path between Horizon Park and Stonegate Equestrian Park	31	$ 3,100,000	$ 168,100,000	0	0.714	31
34	Build a new off-leash area at Thompson Peak Park	6	$ 4,800,000	$ 172,900,000	0	0.571	33

#	City Council Ranking of Additional Projects	Project Cost	Mean	Mode	Klapp	Korte	Lane	Littlefield	Milhaven	Phillips	Smith	Sum
A1	Civic Center Mall (West Entry Improvements and Master Plan)	$ 4,600,000	0.714	0	0	1	0	0	1	1	2	5
A2	Civic Center Library Phase II	$ 4,700,000	1.000	1	1	1	1	0	1	1	2	7
A3	Scottsdale Center for the Performing Arts	$ 4,300,000	1.000	1	1	2	1	0	1	0	2	7
A4	Scottsdale Stadium Infrastructure Improvements	$ 1,400,000	0.571	0	0	2	0	0	1	0	1	4
A5	Community Services Tech. Imp. - Library Update	$ 540,000	0.857	1	1	2	1	0	1	0	1	6
A6	George "Doc Cavalliere Park Phase II	$ 10,247,000	0.429	0	0	0	1	0	1	0	1	3
A7	Replacement of Cactus Aquatic and Fitness	$ 20,963,000	0.143	0	0	0	0	0	0	0	1	1
A8	Replace FS604	$ 5,750,000	0.429	0	1	0	0	0	1	0	1	3
A9	OSHA Compliance	$ 4,640,000	0.571	1	1	0	1	0	1	0	1	4
A10	Training Yard Expansion	$ 120,000	0.429	0	1	0	0	0	1	0	1	3
A11	District 3 Remodel	$ 9,736,000	0.429	0	1	0	0	0	1	0	1	3
A12	Rawhide Wash	$ 16,000,000	0.571	1	1	0	1	0	1	0	1	4
A13	73rd Place and Northern Storm Drain:	$ 1,400,000	0.571	1	1	0	0	0	1	1	1	4
A14	Neighborhood Stormwater Management Improvements (3 projects)	$ 1,750,000	0.286	0	0	0	0	0	1	0	1	2
A15	McDowell Rd. & IBW Pedestrian Overlooks	$ 996,000	0.571	0	0	2	0	0	1	0	1	4
A16	Downtown Wayfinding and Pedestrian	$ 4,440,000	0.857	1	0	2	1	0	1	1	1	6
A17	Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak Rd Phase II	$ 2,630,000	1.000	1	1	1	2	0	1	1	1	7
A18	Pima Rd: Pinnacle Peak Rd to Happy Valley Rd	$ 6,850,000	0.714	0	0	1	2	0	1	0	1	5
A19	Carefree Highway: 60th Street to Scottsdale Road	$ 3,430,000	0.857	1	1	1	2	0	1	0	1	6
A20	Legacy Dr: Hayden Rd to 88th St, between water campus	$ 5,190,000	0.571	0	0	0	2	0	1	0	1	4
A21	Miller Rd/SR-101L Underpass	$ 6,000,000	1.143	1	1	2	2	0	1	1	1	8
A22	Frank Lloyd Wright Blvd – Loop 101 Traffic Interchange	$ 2,560,000	1.286	1	1	2	2	1	1	1	1	9
A23	Pima Road: Dynamite Boulevard to Stagecoach Pass	$ 16,240,000	0.286	0	0	0	0	0	1	0	1	2
A24	Scottsdale Road: Pinnacle Peak to Jomax	$ 4,070,000	0.714	1	1	0	2	0	1	0	1	5
A25	Shea Auxiliary Lane From 90th St to Loop 101	$ 2,740,000	1.143	1	1	2	2	0	1	1	1	8
A26	Pima Road: Happy Valley Road to Dynamite Boulevard.	$ 10,180,000	0.571	0	0	0	2	0	1	0	1	4
A27	Scottsdale Road: Jomax to Dixileta Dr	$ 4,070,000	0.571	1	1	0	1	0	1	0	1	4
A28	Scottsdale Road: Dixileta Dr to Ashler Hills Dr	$ 4,070,000	0.571	1	1	0	1	0	1	0	1	4
A29	Scottsdale Road: Ashler Hills to Carefree Highway	$ 4,070,000	0.429	0	1	0	0	0	1	0	1	3
A30	Hayden Road Loop 101 Interchange Improvements	$ 5,000,000	0.714	1	1	0	2	0	1	0	1	5
A31	Loop 101 Frontage Rd: Pima Rd/Princess Dr to Hayden Rd	$ 12,000,000	0.429	0	0	0	1	0	1	0	1	3

Key: Should Be a Bond Project = 2, Could be a Bond Project = 1, Should NOT be a Bond Project = 0

Council Rank	City Council Ranking of Additional Projects Sorted by Mode then Mean	Project Number	Project Cost	Cumulative Cost of Program	Mode	Mean
A1	Frank Lloyd Wright Blvd – Loop 101 Traffic Interchange	A22	$ 2,560,000	$ 2,560,000	1	1.286
A2	Miller Rd/SR-101L Underpass	A21	$ 6,000,000	$ 8,560,000	1	1.143
A3	Shea Auxiliary Lane From 90th St to Loop 101	A25	$ 2,740,000	$ 11,300,000	1	1.143
A4	Civic Center Library Phase II	A2	$ 4,700,000	$ 16,000,000	1	1.000
A5	Scottsdale Center for the Performing Arts	A3	$ 4,300,000	$ 20,300,000	1	1.000
A6	Scottsdale Rd: Thompson Peak Pkwy to Pinnacle Peak Rd Phase II	A17	$ 2,630,000	$ 22,930,000	1	1.000
A7	Community Services Tech. Imp. - Library Update	A5	$ 540,000	$ 23,470,000	1	0.857
A8	Downtown Wayfinding and Pedestrian	A16	$ 4,440,000	$ 27,910,000	1	0.857
A9	Carefree Highway: 60th Street to Scottsdale Road	A19	$ 3,430,000	$ 31,340,000	1	0.857
A10	Scottsdale Road: Pinnacle Peak to Jomax	A24	$ 4,070,000	$ 35,410,000	1	0.714
A11	Hayden Road Loop 101 Interchange Improvements	A30	$ 5,000,000	$ 40,410,000	1	0.714
A12	OSHA Compliance	A9	$ 4,640,000	$ 45,050,000	1	0.571
A13	Rawhide Wash	A12	$ 16,000,000	$ 61,050,000	1	0.571
A14	73rd Place and Northern Storm Drain:	A13	$ 1,400,000	$ 62,450,000	1	0.571
A15	Scottsdale Road: Jomax to Dixileta Dr	A27	$ 4,070,000	$ 66,520,000	1	0.571
A16	Scottsdale Road: Dixileta Dr to Ashler Hills Dr	A28	$ 4,070,000	$ 70,590,000	1	0.571
A17	Civic Center Mall (West Entry Improvements and Master Plan)	A1	$ 4,600,000	$ 75,190,000	0	0.714
A18	Pima Rd: Pinnacle Peak Rd to Happy Valley Rd	A18	$ 6,850,000	$ 82,040,000	0	0.714
A19	Scottsdale Stadium Infrastructure Improvements	A4	$ 1,400,000	$ 83,440,000	0	0.571
A20	McDowell Rd. & IBW Pedestrian Overlooks	A15	$ 996,000	$ 84,436,000	0	0.571
A21	Legacy Dr: Hayden Rd to 88th St. between water campus	A20	$ 5,190,000	$ 89,626,000	0	0.571
A22	Pima Road: Happy Valley Road to Dynamite Boulevard.	A26	$ 10,180,000	$ 99,806,000	0	0.571
A23	George "Doc" Cavalliere Park Phase II	A6	$ 10,247,000	$ 110,053,000	0	0.429
A24	Replace FS604	A8	$ 5,750,000	$ 115,803,000	0	0.429
A25	Training Yard Expansion	A10	$ 120,000	$ 115,923,000	0	0.429
A26	District 3 Remodel	A11	$ 9,736,000	$ 125,659,000	0	0.429
A27	Scottsdale Road: Ashler Hills to Carefree Highway	A29	$ 4,070,000	$ 129,729,000	0	0.429
A28	Loop 101 Frontage Rd: Pima Rd/Princess Dr to Hayden Rd	A31	$ 12,000,000	$ 141,729,000	0	0.429
A29	Neighborhood Stormwater Management Improvements (3 projects)	A14	$ 1,750,000	$ 143,479,000	0	0.286
A30	Pima Road: Dynamite Boulevard to Stagecoach Pass	A23	$ 16,240,000	$ 159,719,000	0	0.286
A31	Replacement of Cactus Aquatic and Fitness	A7	$ 20,963,000	$ 180,682,000	0	0.143

Supplemental Slides

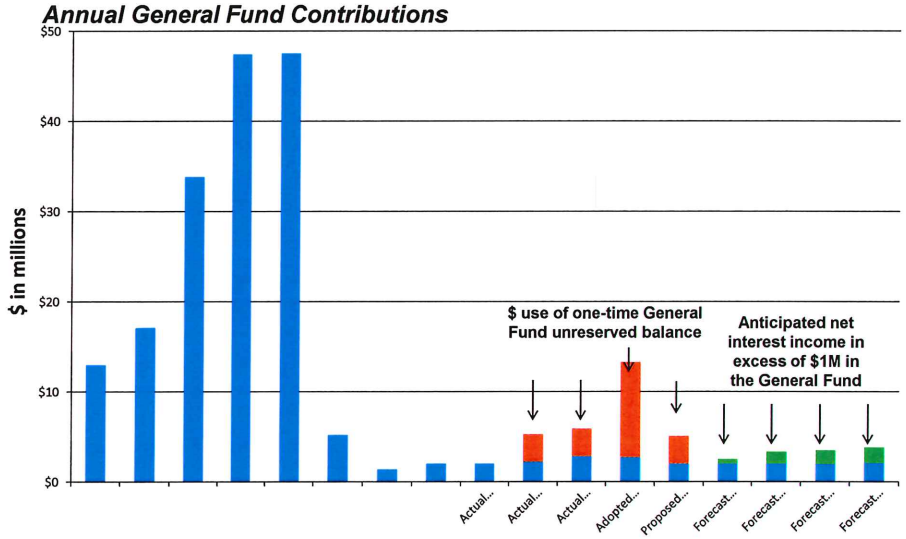
Program Oversight

Likely Future Council Actions

- Annual CIP approval process for new projects
  OR
- Special approval of new projects
- Citizen Oversight – staff will recommend creation of a Bond Review Commission
- Issuance of bonds
- Site Plan/Land Use approvals (if required)
- Design contract awards
- Construction contract awards

Contributions to CIP

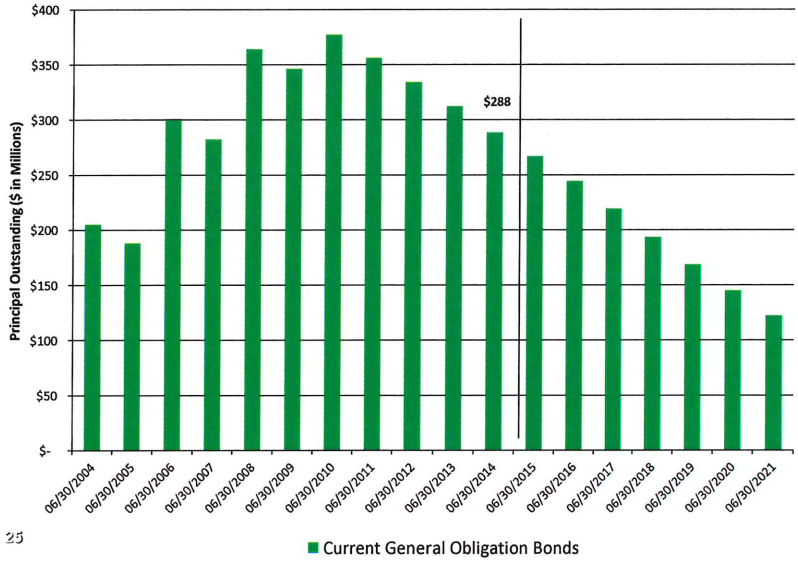
Annual General Fund Contributions



Note: Forecast contributions to CIP may be greater in years when General Fund operating surpluses develop additional transfers to the CIP fund in accordance with adopted Financial Policy #17.

G.O. Bonds Outstanding

Property Tax Supported Bonds (in millions)



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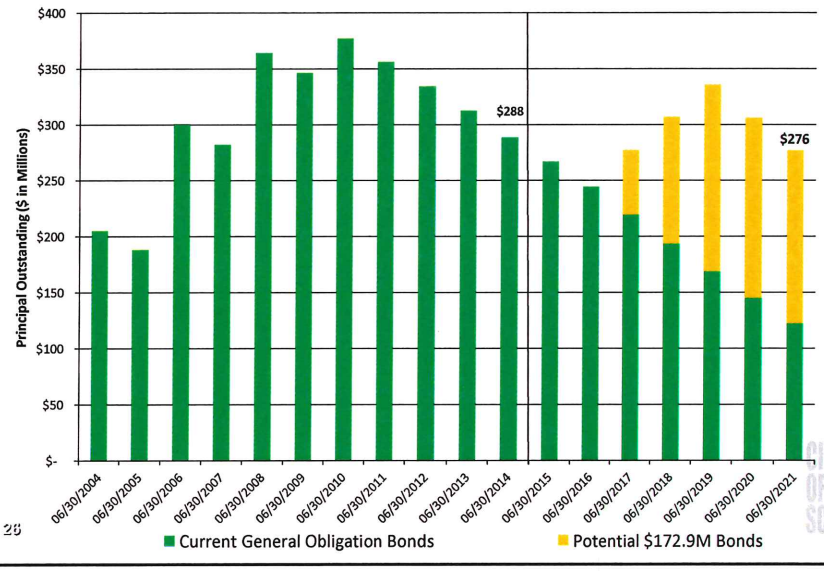
G.O. Bonds Outstanding

Property Tax Supported Bonds (in millions) – with Bond Program



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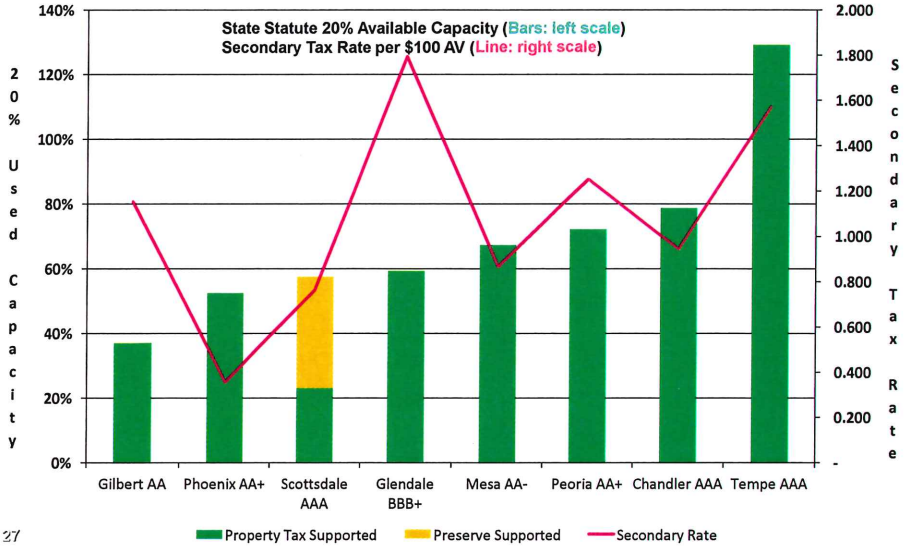
Comparative Tax Burden

FY 2013/14 Property Tax by Valley Community



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Impact on Residents

	$172.9M
Incremental annual debt service (after final phased issuance)	$12.53M
Portion paid by residential class	x 68.3%
Debt Service paid by residential class	$8.56M
Estimated residential units	÷ 129,300
Cost Per Residential Unit (Average):	
• Annual	$66.20
• Monthly	$5.52
• Daily	$0.18
Burden Per Residential Unit:	
• Average Residential Value	$337,000
• Annual Debt Service as a % of Residential Value	0.02%
Per $100,000 of Assessor's Market Value	$19.64/year or $1.64/mo

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Prioritization of Projects

Bond Task Force Criteria

1. **Mandated:** Is the project mandated by any local, state or federal laws?
2. **Emergency/Negative Impact of NOT Investing:** Determine if the public or the city's financial position is negatively impacted by failure to invest in a particular project.
3. **Asset Management:** Does project create or increase the capacity, efficiency, span of life, or economy of operating a new or existing fixed asset?
4. **Matching Funds:** Do projects have matching funds from other agencies?
5. **Economic Sustainability:** Project meets the goal of, at a minimum, of growing or holding steady the net asset base of the city.
6. **Operating Cost:** Does this project reduce operating costs or minimize cost increases?
7. **Economic Vitality:** Does the project contribute to the improved economic vitality of the city and bring in improved revenue?
8. **Master Plan:** Is the project anticipated in the General Plan character Area Plans or master plan?
9. **Board & Commission Review:** Has this project been recommended by any Boards or Commissions?
10. **3 Year Timeframe:** Can the project be initiated in a 3-year planning horizon?