This Report was prepared towards the development of a Drainage and Storm Water Quality Master Plan for the South Broadway Area in general accordance with the requirements in the Scope of Work provided in the contract agreement between URS and the City of Albuquerque dated November 14, 2011. The information contained in this Report was developed using existing drawings, reports, photographs, survey, and background information furnished by the City of Albuquerque and third parties. URS is neither responsible for, nor has confirmed the accuracy of this information. URS has relied on this information, as well as professional engineering judgment based on experience with similar projects, to develop this report. Additional investigations and analyses will be required for the future design phases of any drainage infrastructure within the limits of this study.

SOUTH BROADWAY DRAINAGE AND STORM WATER QUALITY MANAGEMENT PLAN

PROJECT OVERVIEW

April 2013

Prepared for:
City of Albuquerque
P.O. Box 1293
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URS Project Number: 24343243

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1. OBJECTIVE

The South Broadway Drainage and Storm Water Quality Management Plan (SBDMP) was initiated by the City of Albuquerque (COA) to continue storm water master planning efforts for the South Broadway neighborhoods south of Lomas Blvd. This plan revises the 1990 South Broadway Sector Drainage Management Plan [1] by updating the hydrology, adding storm drain system detail and storm system revisions. Conceptual design options for drainage improvements have been developed.

2. PROJECT AREA LIMITS

The South Broadway project area is bounded by Roma Avenue to the north, the city limit to the south (south of Woodward Road), Interstate 25 to the east, and the Burlington Northern & Santa Fe (BN & SF) Railroad to the west. Storm water from the South Broadway storm drain system ultimately discharges into the San Jose Drain. Figure A shows the study area limits.

3. PROBLEM DESCRIPTION

3.1. GENERAL DESCRIPTION

The South Broadway area is nearly completely developed with a mixture of residential, industrial and commercial properties. The area generally slopes mildly from north to south (0.3%) and more steeply form east to west (2%). The large percentage of impervious area results in high runoff potential. In addition, there is potential for offsite storm water to enter the area from the east. The flat north-south slope results in low conveyance for the large storm drain trunk lines in the drainage basin.

The interconnected nature of the storm drain system components combined with the flat topography can result in backwater effects and even reverse flow in the storm drain system. There is potential for flood damage from street flooding caused by surcharging manholes and street flow accumulating downslope.

In addition, overflow from detention ponds could occur during the 100-year storm. Impacted locations could include the residential areas adjacent to the Bell Avenue and Commercial Street Pump Station, the Kathryn Detention Pond, Mechem Detention Pond, Old Albuquerque High School, and Edith Blvd between Lomas and Martin Luther King Avenue.

3.2. EXISTING STORM DRAINAGE SYSTEM

Storm Drains:

Storm drains exist through much of the area. Generally smaller lines convey discharge in an easterly direction to trunk lines located in Broadway Blvd SE and William Street SE, which flow south to the San Jose Drain. Although, the storm trunk lines can be quite large, (72-inch), due to the flat slope, the storm drains can become surcharged during the 100-year storm as runoff rates exceed the trunk line drain capacities. Although the trunk line in South Broadway slopes south, topography north of Central Avenue slopes north. As a result, storm water can leave the system to the north when the capacities of the storm drains are exceeded. Figure B shows the storm drain layout.

Pump Station:

The South Broadway storm drain system includes a single pump station located at the intersection of Bell Avenue SE and Commercial Street SE. The pump station acts to lift storm water from the low Bell and Commercial location into the gravity trunk line on at the intersection of Broadway and Bell. Figure B shows the approximate location of the Bell and Commercial Pump Station.

The original pump station construction included three variable speed vertical turbine pumps with rated at 10,000 gpm, 25,000 gpm and 40,000 gpm. The pump station was retrofitted by replacing the 25,000 gpm and 40,000 gpm vertical turbine pumps with two 134 hp (12,000 gpm) submersible pumps. The pump retrofit was required to correct wet well and force main hydraulic issues that caused cycling and pump failures. In addition, the pump station operational programming was modified to reduce pump cycling caused by the undersized pump station sump.

Detention Basins:

The South Broadway system contains three COA owned detention basins:

1. South Broadway Detention Pond (storage volume at overflow elevation = 26.9 acre feet) located at the westerly terminus of Santa Fe Avenue. This pond was constructed in the 1995.
2. Kathryn Detention Pond (storage volume at overflow elevation = 6.6 acre feet) located at the west of the intersection of Kathryn Avenue SE and William Street SE. This pond was constructed in 2003.
3. Mechem Detention Pond (storage volume at overflow elevation = 5.6 acre feet) located north of the intersection of Mechem Street SE and Wheeler Ave SE. This pond was constructed in 2011.

These pond are retrofits of the existing storm drain system meant to attenuate the peak discharge to the system and improve water quality.

In addition, there are detention basins for on-site storm water capture located in the industrial park area south of Gibson and east of Broadway.

Figure B shows the location of the COA owned detention basins.

3.3. KNOWN AND CALCULATED DRAINAGE PROBLEMS

Flooding has been observed in the residential areas north of the Bell Avenue and Commercial Street Pump Station, south of Kathryn Detention Pond and at the Old Albuquerque High School. The modeling confirms these flooding locations and indicates where other flooding problems will occur.

The South Broadway storm drainage system is an interconnected system with flat slopes that result in improvements in one area causing flooding in another. To address the flooding three detention ponds were constructed in a manner to route discharge from the north and east of the ponds into the corresponding pond. The existing storm trunk lines south of the pond inlets were then restricted, forcing the majority of the runoff through pond. This coupled with small pond outlets, (designed for detention), result in the high possibility of that capacity of the ponds will

be exceeded during the 100-year, 24 hour flood event. SWMM modeling confirms all three ponds would overflow during such an event.

Based on the topography, overflow from the South Broadway pond would likely flood the residential area immediately down south of the pond. The surface discharge would likely then be conveyed in the streets and eventually be captured by the storm drain system and discharged to the by the Bell and Commercial pump station. In addition, the elevation of the top of these manholes is approximately 6 feet lower than the South Broadway Pond overflow, surcharging of manholes is likely between the pond and the Bell and Commercial Pump station, the flood elevation within the South Broadway Pond that downstream manholes begin surcharging allows for only 12 acre feet of storm water storage. In addition, due to the flat grade of the South Broadway storm drain trunk line, this trunk line could be affected by the tail water effects of the pond at the overflow elevation.

Overflow from Kathryn Pond will discharge to Smith Avenue and then find its way through the lower elevation neighborhood to the south. This area is lower than both William Street SE and the railroad property to the west. The discharge would eventually be captured in the storm drain system but could cause shallow flooding as far south as Thaxton Avenue SE.

Overflow from Mechem Pond will discharge south on Mechem Street SE to San Jose Avenue SE. Since there are no catch basins to capture this discharge along Mechem Street, all such overflow will arrive at San Jose Avenue. It would then flow through the park and eventually be caught in the San Jose Drain. Such an overflow discharge may effect not only the residences along Mechem Street SE, but also the San Jose Community Center and residences directly south of the San Jose Park along Bethel Drive SE.

The modeling also indicates the storm drain capacity is exceeded along Copper Avenue. It is not clear from the modeling if the street flow caused by this surcharging would be diverted to other locations or captured by the storm sewer system before it reaches the Old Albuquerque High School complex.

The South Broadway trunk line north of Central Avenue is quite flat and undersized. In addition Broadway Blvd generally slopes north from Central Avenue. This trunk line would likely become surcharged during a 100-year storm event. Storm water not captured in the storm drain system would likely flow north to the Broadway – Lomas intersection, exacerbating the known flooding problems at that location.

Other areas where the model indicates surcharged manholes and possible flooding problems are Kathryn Avenue between Broadway Blvd and William Street and at the intersection of Silver Avenue and Broadway Blvd SE.

Figure C shows areas of potential flooding.

4. RECOMMENDATIONS FOR DRAINAGE IMPROVEMENTS

Multiple storm drain system improvements were evaluated individually and in concert. Each improvement option was modeled using the SWMM model. Six improvement options were evaluated using the Triple Bottom Line methodology, which evaluates the capital, social and environmental costs and benefits. The Recommended Improvement Option results in the lowest annualized costs when evaluated by this method while addressing all of the identified flooding problems. As shown in Figure D, the Recommended Improvement Option involves expansion of

the existing detention facilities, restriction of flow to overtaxed facilities, as well as installation of improved detention pond outlets. Improvement Option 5 has been divided into four projects that could be constructed at any time and in any order without any negative impacts. The four projects have been prioritized based on flood damage reduction and public safety considerations. It is recommended that the projects detention pond expansion and modification described as Priorities 1, 2 and 3 be constructed. The Edith Blvd Trunk line need only be constructed if necessary to divert discharge contributing to the Broadway Blvd-Lomas intersection flooding.

Three projects, Mechem Pond modifications, Kathryn Pond expansion, and South Broadway Pond expansion (Priorities 1, 2, and 3) could be constructed at any time without any negative consequences. The full benefit would not be realized, however, until all the projects have been completed. The Edith Street storm drain should not be constructed, until all three pond improvements have been completed.

The total cost of all improvements is $8,494,000.

4.1. PRIORITY 1.

Mechem Pond Inlet / Outlet Modifications.

The property damage estimate for the overflow of Mechem Pond during the 100-year flood event is approximately $1.4 M and the mitigation measures are a relatively small. Due to the high peak overflow discharge during such an event may present a hazard to the public.

The Mechem Pond Inlet/Outlet Modifications will include:

1. Reconnect storm drain at Thaxton Ave SE and Broadway Blvd. Currently the 66-inch Thaxton Avenue storm drain is not connected to the 72-inch Broadway Blvd. This connection would allow for peak flows to bypass Mechem Pond. The connection should be offset by at least one foot to allow first flush discharges to continue to Mechem Pond.
2. Water quality outlet at Mechem Pond. The outlet should be designed to have a minimum overflow weir length of 19 feet at elevation 4943 and a minimum of 6 square feet of orifice or screen openings uniformly spaced below that elevation.
3. Additional catch basins installation at Mechem St SE and Alamo Ave SE. These catch basins would capture any Mechem Pond overflow and discharge it into the 72-inch storm drain at this intersection.
4. Installation of inline centrifugal storm treatment unit in San Jose Park.

Estimated Construction Cost = $567,000.

The Mechem Pond Inlet/Outlet Modifications are shown in Figure E.

4.2. PRIORITY 2

Kathryn Pond Expansion

The property damage estimated for the overflow of Kathryn Pond during a 100-year flood event is approximately $3.4 M. The flooding caused by such an event would likely be shallow and slow moving and represent inconvenience but not likely represent physical danger to the public.

1. Purchase the Lot A and Lots 1 through 6 of the Parker Addition (AKA Lot A-1, 1701 Williams Street SE) properties or an equivalent property to the north of Kathryn Pond. If this property is not available, similar properties north of Kathryn Pond could be utilized to increase storm water detention.
2. Construct pond expansion to expand Kathryn Pond to approximately 11.1 acre-feet of storage capacity.
3. Construct water quality outlet. The outlet would require a minimum of 16 square feet of orifice or screen openings uniformly spaced below elevation 4944.5.
4. Splitter weir construction in the junction vault at the intersection of Kathryn Avenue SE and William Street SE. The weir should be a minimum of 15 feet long with a crest elevation of 4944. This would allow the storm water first flush to be diverted to Kathryn Pond, but also allow peak discharges to flow south in the William Street storm drain. Weep holes could be added to the weir to drain standing water in the manhole.

Estimated Construction and Property Acquisition Cost = $639,000.

The Kathryn Pond Expansion is shown in Figure F.

4.3. PRIORITY 3

South Broadway Pond Expansion

The property damage estimates for the overflow of Broadway Pond and surcharging of manholes south of Broadway pond is approximately $1.1M.

1. Purchase the Track 1 Iron (100 Iron Avenue SE) property or an equivalent property north of Broadway Pond.
2. Construct of pond expansion so that the combined storage South Broadway Pond and expansion is approximately 45.3 acre feet.
3. Construct culvert crossing under Commercial Avenue to connect South Broadway Pond with the expansion.
4. Construct 72-inch storm drain connection on Hazeldine Avenue SE between the Broadway Blvd SE trunk line and the South Broadway Pond expansion.
5. Construction of water quality outlet.

Estimated Construction and Property Acquisition Cost = $2,936,000

Since the Track 1 Iron parcel extends from Commercial Avenue to Coal Avenue SE the two alternate South Broadway Pond expansion concepts shown in Figure G-1 and G-2 were considered. The South Broadway Pond Expansion is shown in Figure G-1 consolidates the excavation in the southern portion of the parcel, leaving remaining portion of the parcel would be available for redevelopment. Alternatively, the linear pond configuration shown in Figure G-2 could be constructed. This configuration would allow for a more northerly connection to the Edith Blvd SE Storm Drain Trunk Line (alternate Priority 4 configuration).

4.4. PRIORITY 4

Edith Blvd SE Storm Drain Trunk

This includes storm drain construction from the intersection of Edith and Copper Avenue to the South Broadway Pond Expansion. The estimated property damage avoided by implementing this option is $1.3 M. In addition, this priority would virtually eliminate the discharge to the north from the study area to the intersection of South Broadway and Lomas, saving an additional estimated construction cost of $2 M to the Mid-Valley drainage improvements. Due to the interconnectedness of the storm drain system, **the Edith Blvd Storm Drain Trunk must not be constructed until both the South Broadway Pond expansion and Kathryn Pond Expansion have been completed and are operational.** Additionally, it should be noted that Priority 4, the Edith Blvd Storm Sewer Trunk Line, may not be necessary if the Mid-Valley Drainage Management Plan adequately addresses the overflow discharge that leaves the South Broadway area and flows overland north into the Mid-Valley Area.

Estimated Construction Cost = $4,352,000

If the alternative linear South Broadway Pond expansion has been constructed, an alternative Edith Blvd Storm Drain Trunk could be considered. This alternative has potential construction cost savings.

Estimate Construction Cost = $3,583,000

The Edith Blvd Storm Drain Trunk line is shown in Figure H-1. The alternate alignment is shown in Figure H-2.

5. RECOMMENDED WATER QUALITY IMPROVEMENTS

In addition to the usage and enhancement of the existing detention ponds as water quality features, the COA could implement water quality initiatives based on EPA's six minimum measures for MS4 permit compliance. These measures include:

- Public education and outreach
- Public participation/involvement
- Illicit discharge detection and elimination
- Construction site runoff control
- Post-construction and re-development site runoff control
- Pollution prevention / good housekeeping of municipal operations

5.1. PUBLIC EDUCATION AND OUTREACH

The COA could aggressively implement a catch basin stenciling program placing the motto "Only Rain Down the drain" on each catch basin within the watershed.

There are three community centers located within the South Broadway neighborhoods. The COA could participate in events at these community centers to implement a program of education and outreach participation. Education could include the following:

1. Costs of the COA's good housekeeping and maintenance operations related to water quality and pollution prevention.
2. The meaning of stencils on catch basins.
3. The benefit of litter reduction.
4. The benefits of proper disposal/composting of yard waste.
5. The benefit of collection of pet waste.
6. The benefit of commercial car washing.
7. The benefit of sweeping rather than hosing down driveways.
8. Reporting of illicit discharge.

Educational materials and ideas have been published on the "keeptheriogrand.org" website and could be modified for face-to-face community outreach activities.

5.2. PUBLIC PARTICIPATION / INVOLVEMENT

The effectiveness and success of any public education and outreach program depends on public participation and involvement. The support of community leaders would be useful in securing public participation and involvement.

Storm water quality education events could be executed in conjunction with community participation/involvement events at community centers or stand-alone events. Such events could include a trash clean-up day.

5.3. ILLICIT DISCHARGE DETECTION AND ELIMINATION

Illicit discharge elimination could be addressed both on the residential and industrial/commercial level. Public education, involvement and reporting is key in reducing illicit discharges from individual residents and commercial/industrial areas within the South Broadway system.

Industrial / Commercial Storm Water Pollution Prevention Plan

The conditions of commercial and industrial lots in the neighborhood vary substantially depending on the business. Some commercial properties are primarily bare earth, while others consist of paved and landscaped surfaces. The COA already requires compliance with EPA's Multi-Sector General Permit (MSGP) requirements including SWPPP preparation.

The COA could consider fee reductions for businesses that have SWPPPs that include limited exposure or no exposure of pollutants to storm water or have best management practices (BMPs) in place that will mitigate storm water discharge and capture sediment and other pollutants.

5.4. CONSTRUCTION, POST CONSTRUCTION AND RE-DEVELOPMENT SITE RUNOFF CONTROLS

The objectives of the construction, post construction and re-development site controls are:

- Elimination of non-point source pollution released to the storm drain system from the site runoff

- Develop and implement best management practices to minimize land disturbance, preserve vegetation and improve housekeeping.

- Keep soil on site.

Review, Site Inspection and Enforcement of Construction SWPPPs

The development of construction SWPPPs and inclusion of the SWPPPs in construction plan packages has become a common practice. The COA is in the process of drafting a water quality ordinance. Potential future non-point source releases from construction sites will be reduced by increased enforcement capability promulgated by the ordinance.

New Impervious Areas

The COA is also drafting a drainage ordinance which will require capture and treatment of the "first flush" or the first 0.44 inches of runoff. This runoff volume corresponds to the 90th percentile storm event.

5.5. POLLUTION PREVENTION / GOOD HOUSEKEEPING OF MUNICIPAL OPERATIONS

Street Sweeping

Most of the residential lots in the South Broadway neighborhoods are primarily impervious and bare dirt, due to the cost of turf maintenance and construction of proper xeroscape landscaping. As a result, sediment can be mobilized by wind, tracking and water from the lots out onto the streets. Once in the street, the sediments are washed into the storm drain system during rainfall events. Street sweeping is an effective method to collect sediment and trash before it is mobilized into the storm drain system and would be an effective BMP to minimize sediment and trash loading of the SJD, existing detention ponds and storm drain catch basins and piping. It is recommended that the COA continue to conduct street sweeping on regular schedule.

City Maintenance of Existing Catch Basins and Piping

Many of the COA's manholes and catch basins are clogged with debris and sediment. Regular maintenance and cleaning of these structures as well as pipe cleaning will reduce the sediment and organic load on the San Jose Drain. It is recommended that the COA continue and increase such cleaning activities as schedule and funding permits.

Pond Maintenance / Sediment Removal

The South Broadway Pond, Kathryn Pond, and Mechem Pond have primarily been constructed as flood attenuation and protection measures. These ponds are also used as BMPs to collect trash and sediment. It is recommended that regular maintenance of these ponds to remove trash and sediment continue to be performed as staffing levels permit.

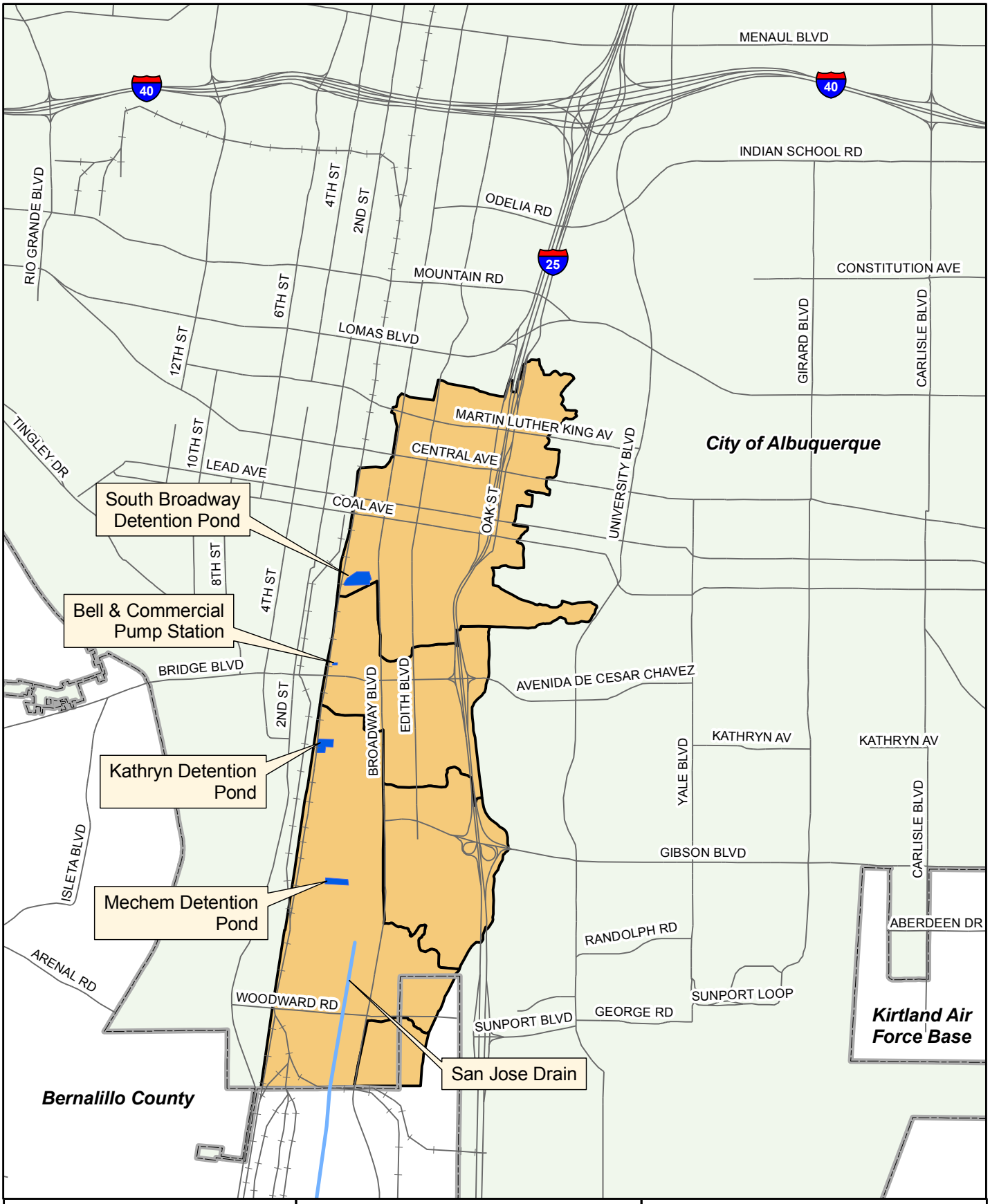
Structural Controls

It is recommended that as part of pond expansion and improvements, the outlets of each pond be improved. Outlet structures similar to that recently installed at the Piedra Lisa Dam are recommended.

6. REFERENCES

1. Bohannan-Huston, Inc. September, 1990. S*outh Broadway Sector Drainage Management Plan*; Developed Conditions Report. Albuquerque, NM.
2. United States Environmental Protection Agency. 2011. *EPA Storm Water Management Model 5.0 (SWMM).*
3. City of Albuquerque, New Mexico. 1994. *City of Albuquerque Development Process Manual*; Albuquerque, NM.
4. City of Albuquerque, New Mexico. Date Received 2011. *Geographic Information System Database;* Shapefiles of existing hydraulic features. Albuquerque, NM.
5. Bernalillo County, New Mexico. Data obtained 2012. *Property Notice of Values*; http://www.bernco.gov/property-tax-search/

Figures



N

0 1,500 3,000 Feet

1 : 36,000 or 1 inch = 3,000 Feet

URS

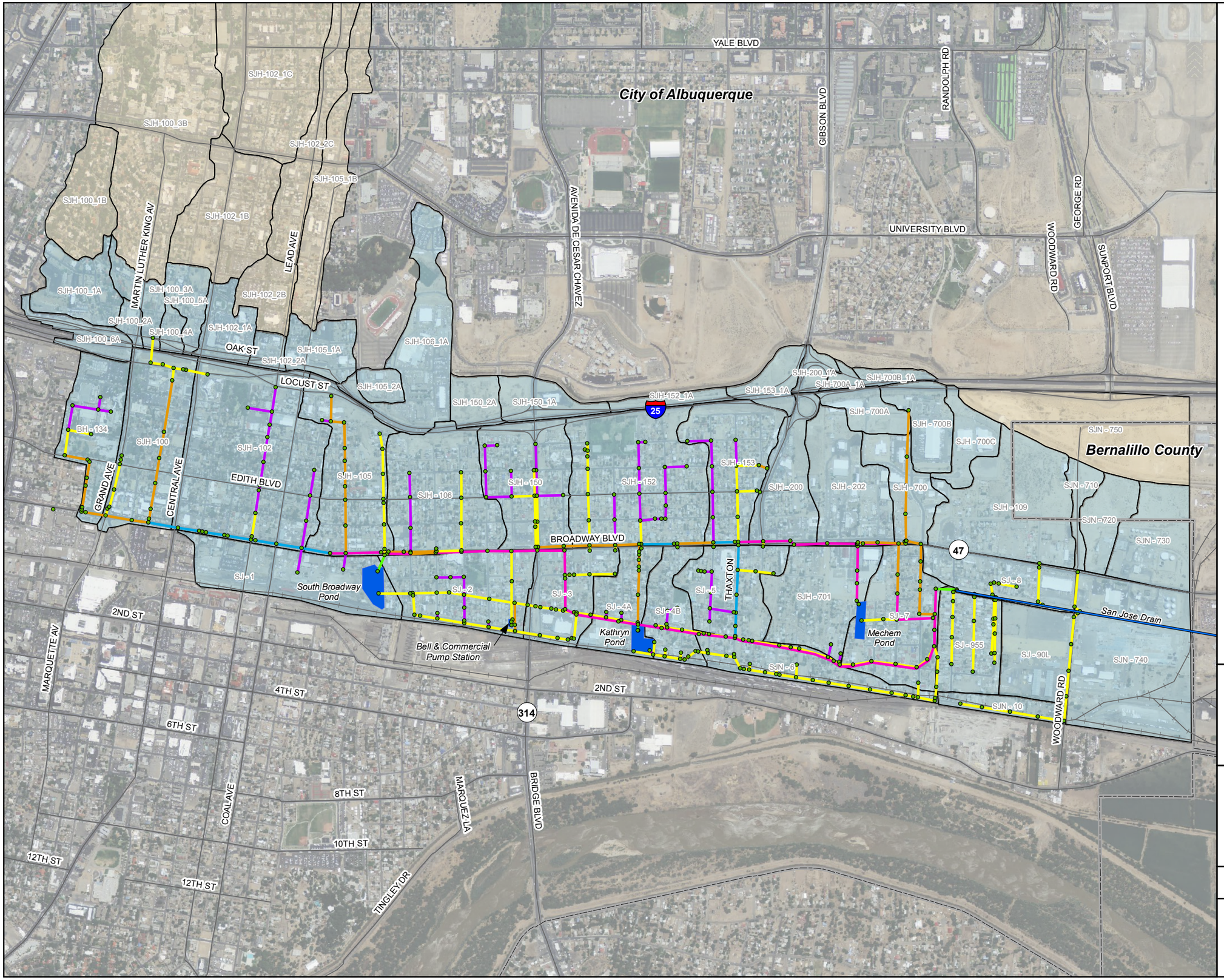
Legend

- Study Area
- Major Road
- Railroad
- City Boundary
- Pond

Study Area Limits

South Broadway Drainage and Storm Water Quality Management Plan

Figure A



Legend

- System Manhole

Storm Drain

- Pipe Size 12-inch to 21-inch
- Pipe Size 24-inch to 42-inch
- Pipe Size 48-inch to 54-inch
- Pipe Size 60-inch to 66-inch
- Pipe Size 72-inch to 84-inch
- Pipe Size 90-inch to 144-inch
- Project Watersheds
- SJN-730 Watershed Delineation
- Watersheds Possibly Affecting Project
- Pond
- Major Road
- Railroad
- City Boundary

N

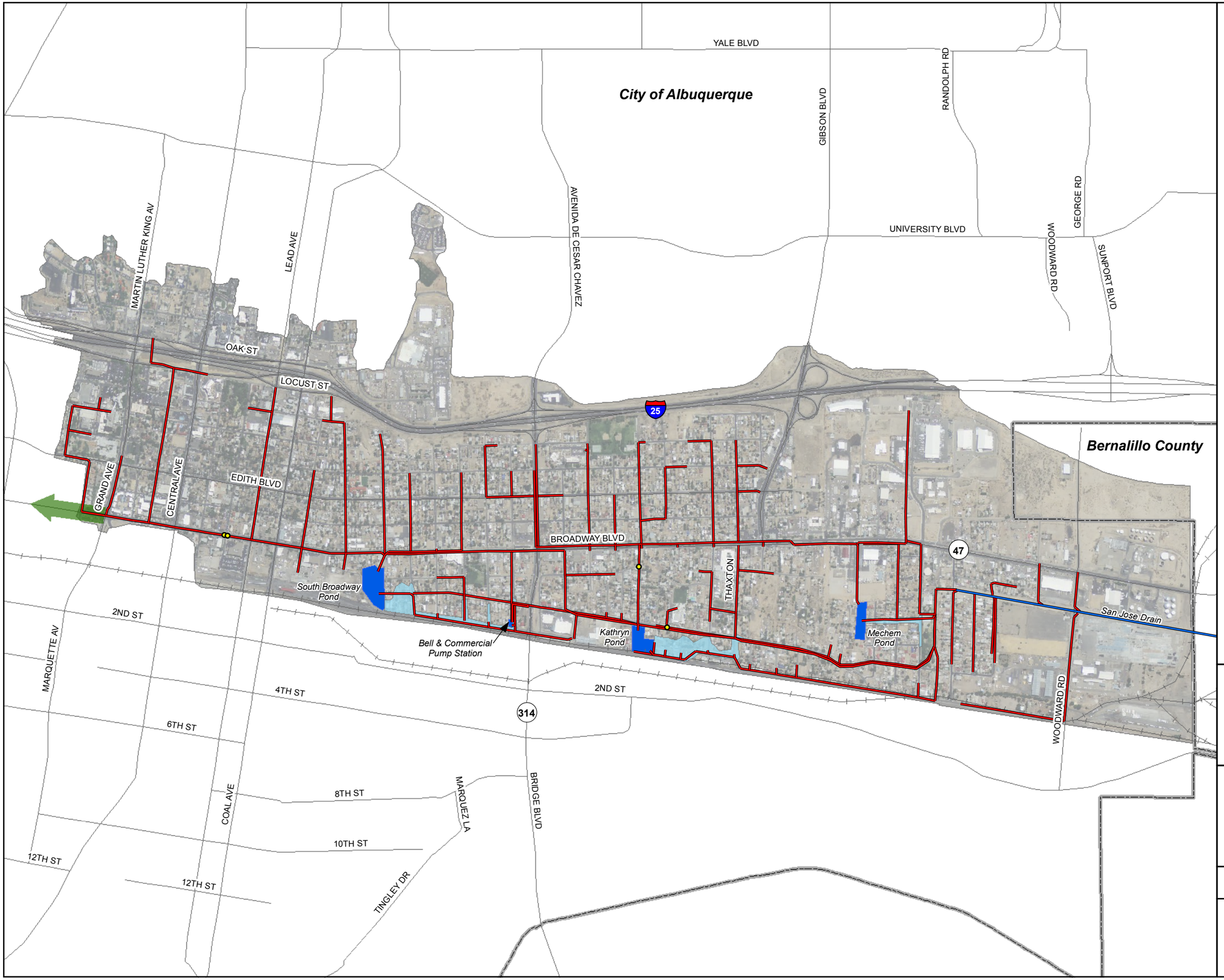
NOT TO SCALE

System Map

South Broadway Drainage and Storm Water Quality Management Plan

Figure B

URS



Legend

- Flooded Manholes
- San Jose Drain
- Storm Drain
- Flooding
- Floodwater Leaving South Broadway System
- Major Road
- Railroad
- City Boundary
- Pond

N

NOT TO SCALE

Potential Flooding

South Broadway Drainage and Storm Water Quality Management Plan

Figure C

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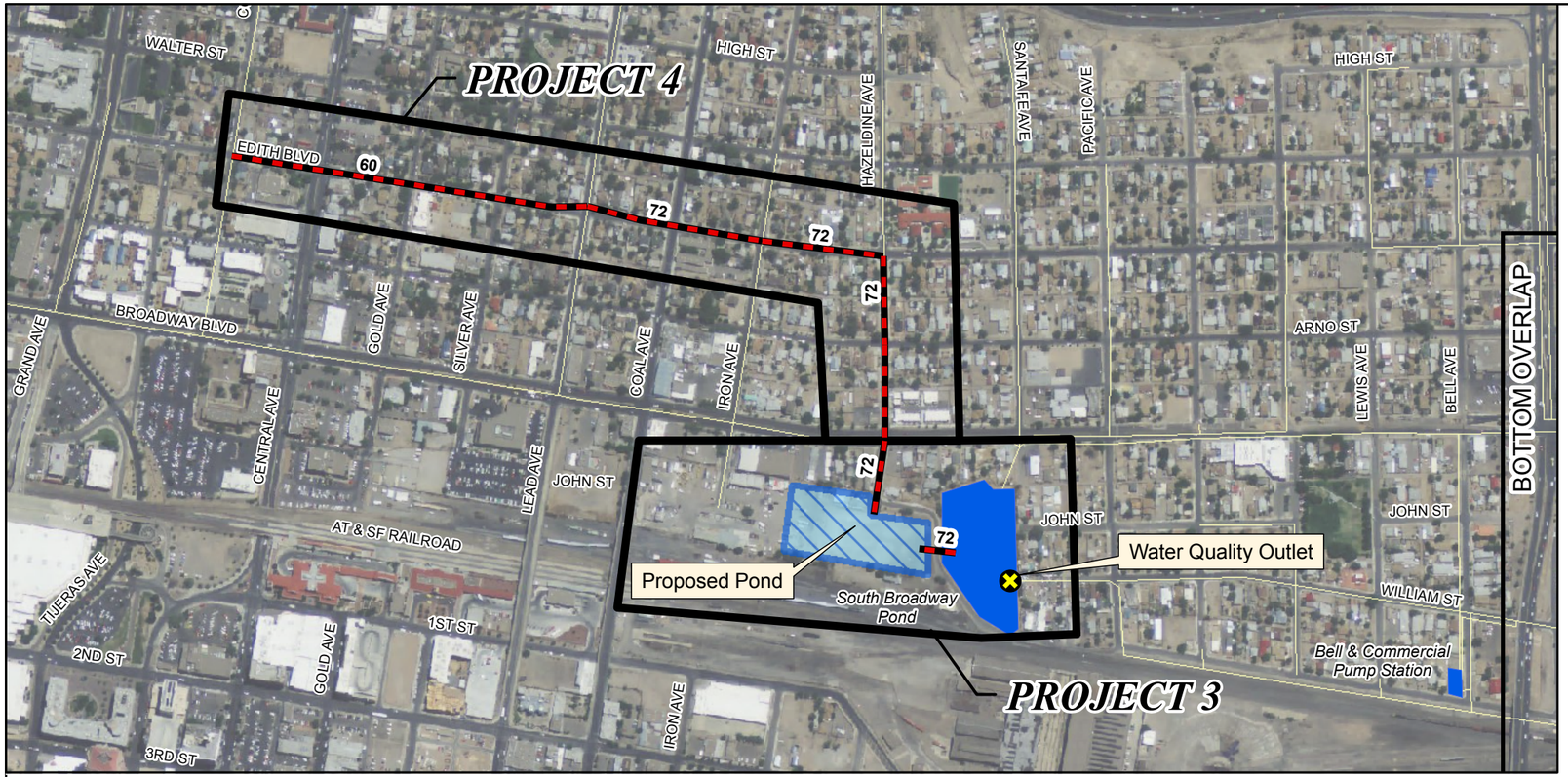
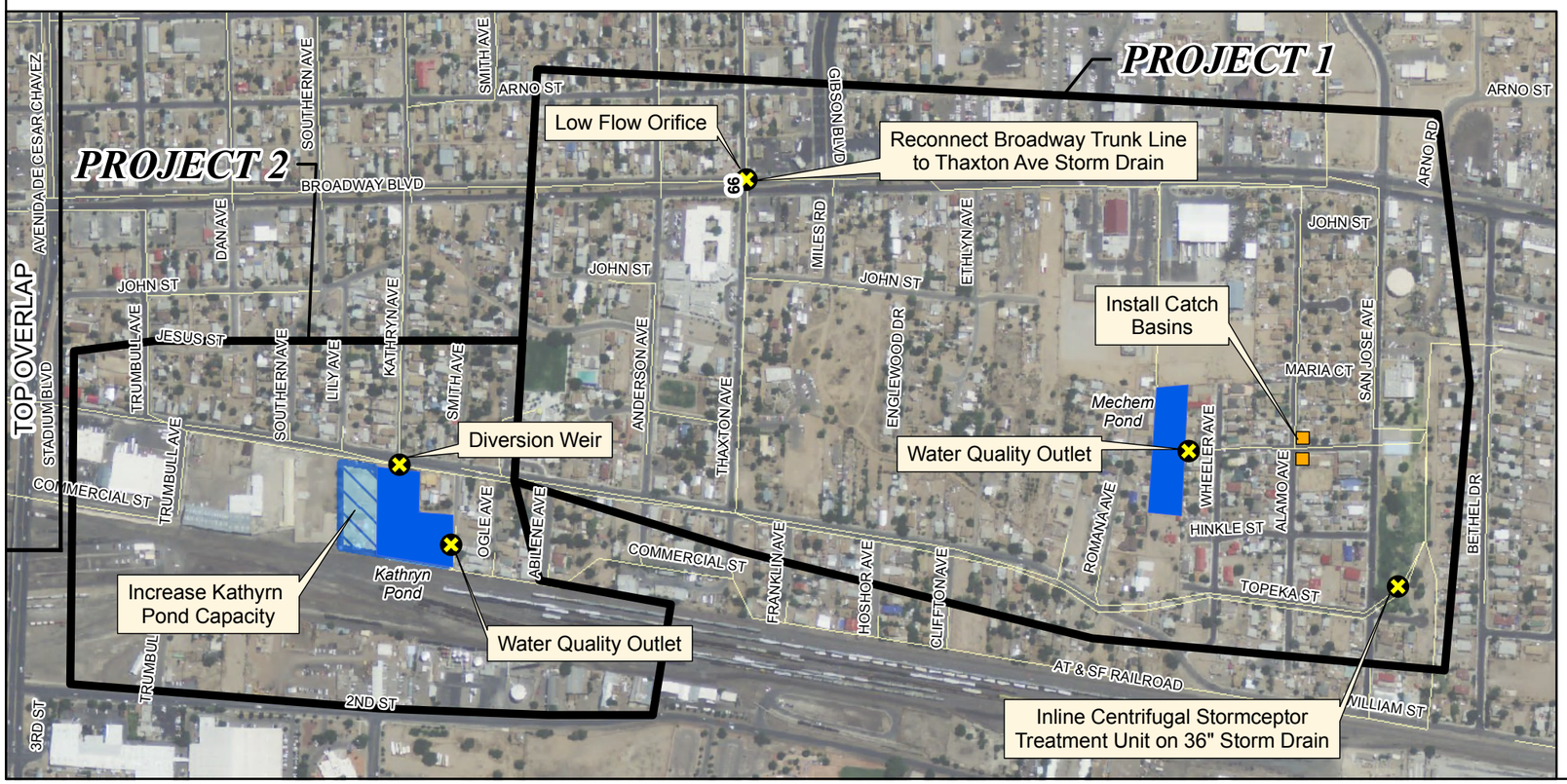




Priority	Item #	Improvement	Estimated Cost
1		**Modify inlet/Outlet of Mechem Pond**	
	1	Redirect flow from Broadway Blvd to William St using conduit along Thaxton Ave	$43,000
	2	Install water quality outlet	$250,000
	3	Install catch basins at Mechem St and Alamo Ave	$57,000
	4	Install stormceptor manhole in San Jose Park	$219,000
		Priority 1 Total	**$569,000**
2		**Expand Kathryn Pond**	
	1	Purchase Lot A-1 property at 1701 Williams Street SE	$256,000*
	2	Construct pond expansion	$127,000
	3	Install water quality outlet	$250,000
	4	Change 18-inch orifice plate to weir within junction box located near Kathryn Ave and William St	$6,000
		Priority 2 Total	**$639,000**
3		**Expand South Broadway Pond**	
	1	Purchase Track 1 Iron property at 100 Iron Ave SE	$1,160,000*
	2	Construct pond expansion	$1,049,000
	3	Construct culvert crossing under Commercial Ave	$84,000
	4	Construct 72" storm drain connection from Broadway Blvd trunk line to pond, including outlet structure	$395,000
	5	Install a water quality outlet	$250,000
		Priority 3 Total	**$2,938,000**
4		**Construct storm sewer trunk line on Edith Blvd**	
	1	Construct Edith Blvd storm drain trunk to South Broadway pond expansion via Hazeldine Ave	$4,352,000
	1 -ALT	*Alternative to Item 1:* Construct the Edith Blvd storm drain trunk line to South Broadway pond expansion via Coal Ave. (Assumes the alternative linear South Broadway Pond expansion costs the same as the non-linear choice)	$3,583,000
		Priority 4 Total	**$4,352,000**

Total Cost of All Improvement	***$8,498,000***
Total Cost of All Improvement with Priority 4 Alternative	***$7,729,000***

Costs include 30% Contingency, 10% Engineering and Design, 7% NMGRT

* *Property acquisition costs are based on the "Total Full Value" of the entire parcel listed in the Bernalillo County website: http://www.bernco.gov/property-tax-search/ for the 2012 tax year plus 30% contingency.*

Legend

- Existing Storm Drain
- Existing Pond
- Proposed Alternative
- Proposed Water Quality Improvement
- Proposed Catch Basin

N

0 300 600 1,200 Feet

1 inch = 600 feet

Recommended Improvement Option

South Broadway Drainage and Storm Water Quality Management Plan

Figure D

URS

Priority 1: Modify Inlet/Outlet of Mechem Pond

Item #	Improvement	Cost
1	Redirect flow from Broadway Blvd to William St using conduit along Thaxton Ave	$43,000
2	Install water quality outlet at Mechem Pond	$250,000
3	Install catch basins at Mechem St and Alamo Ave	$57,000
4	Install stormceptor manhole in San Jose Park	$219,000
	Priority Total	**$569,000**

Costs include 30% Contingency, 10% Engineering and Design, 7% NMGRT

N

Not to Scale

URS

Legend

- Existing Storm Drain
- Existing Pond
- Proposed Alternative
- Proposed Water Quality Improvement
- Proposed Catch Basin

Priority 1

Project 1 Mechem Inlet / Outlet Modifications

South Broadway Drainage and Storm Water Quality Management Plan

Figure E

Parcel ID	Location Address	Owner	Owner Address
1 014 056 221 277 20419	1701 Williams St SE, 87102	Pinon Cristobal & Pinon Lorenzo	1701 Williams St SE Albuquerque, NM 87102

Priority 2: Expand Kathryn Pond

Item #	Improvement	Cost
1	Purchase Lot A-1 property at 1701 Williams Street SE	$256,000*
2	Construct pond expansion	$127,000
3	Install water quality outlet	$250,000
4	Change 18-inch orifice plate to weir within junction box located near Kathryn Ave and William St	$6,000
	Priority Total	**$639,000**

Costs include 30% Contingency, 10% Engineering and Design, 7% NMGRT

* *Property acquisition costs are based on the "Total Full Value" of the entire parcel listed in the Bernalillo County website: http://www.bernco.gov/property-tax-search/ for the 2012 tax year plus 30% contingency.*

N

Not to Scale

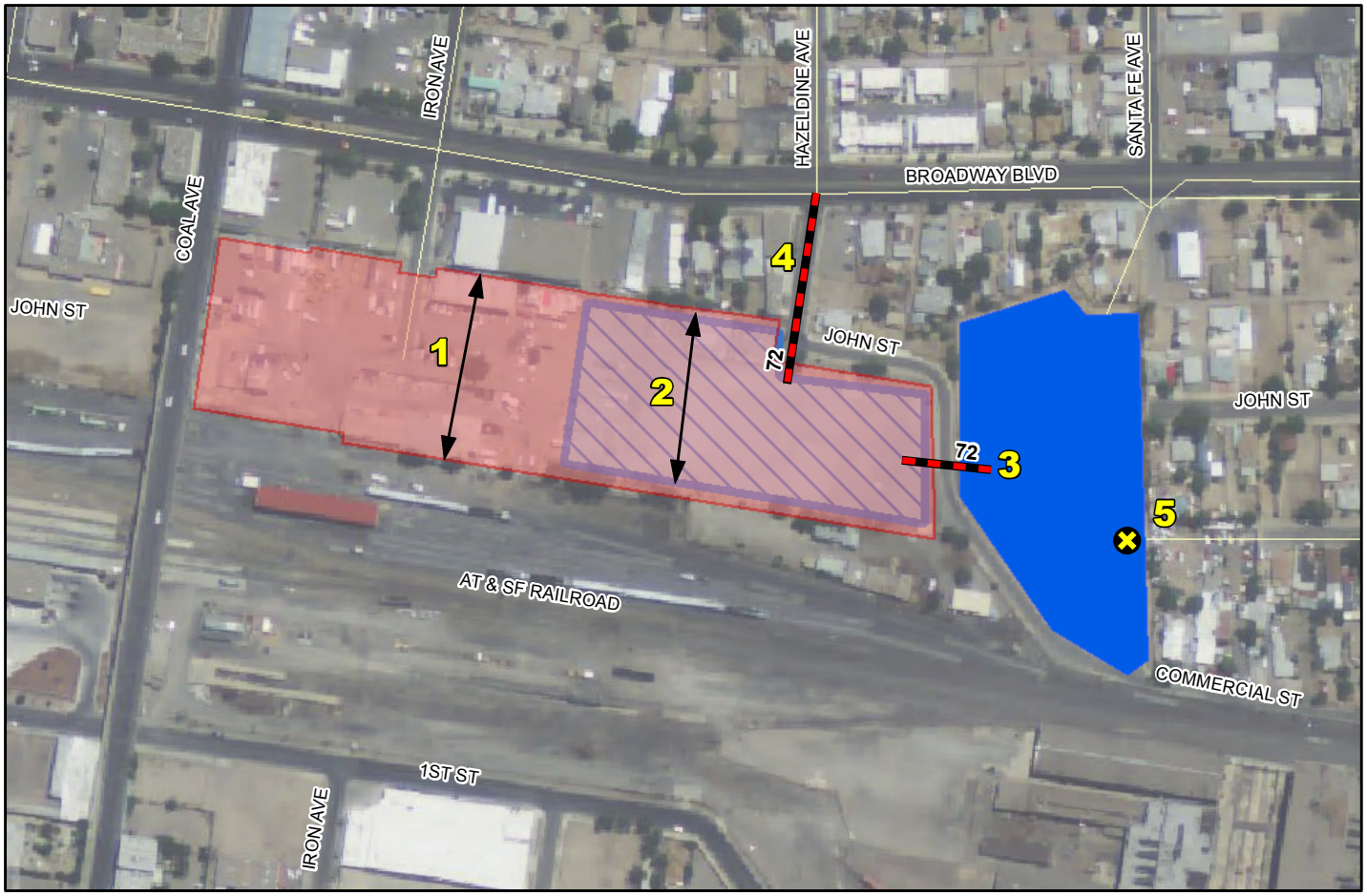
URS

Legend

- Existing Storm Drain
- Existing Pond
- Proposed Alternative
- Proposed Water Quality Improvement
- Proposed Catch Basin

Priority 2
Kathryn Pond Expansion
South Broadway Drainage and Storm Water Quality Management Plan

Figure F



Parcel ID	Location Address	Owner	Owner Address
1 014 057 295 195 31723	100 Iron Ave SE, 87102	Espanoles LLC & Isaacson Kale R & Mary B Co-Trustees Isaacson Trustees & etal	1569 Summit Hill Dr NE Albuquerque, NM 87112
1 014 057 310 190 31724	100 Iron Ave SE, 87102	Espanoles LLC & Isaacson Kale R & Mary B Co-Trustees Isaacson Trustees & etal	1569 Summit Hill Dr NE Albuquerque, NM 87112

Priority 3: South Broadway Pond Expansion

Item #	Improvement	Cost
1	Purchase Track 1 Iron property at 100 Iron Ave SE	$1,160,000*
2	Construct pond expansion	$1,049,000
3	Construct culvert crossing under Commercial Ave	$84,000
4	Construct 72" storm drain connection on Hazeldine Ave, including storm drain outlet protection	$395,000
5	Install water quality outlet	$250,000
	Priority Total	**$2,938,000**

Costs include 30% Contingency, 10% Engineering and Design, 7% NMGRT

* *Property acquisition costs are based on the "Total Full Value" of the entire parcel listed in the Bernalillo County website: http://www.bernco.gov/property-tax-search/ for the 2012 tax year plus 30% contingency.*

N

Not to Scale

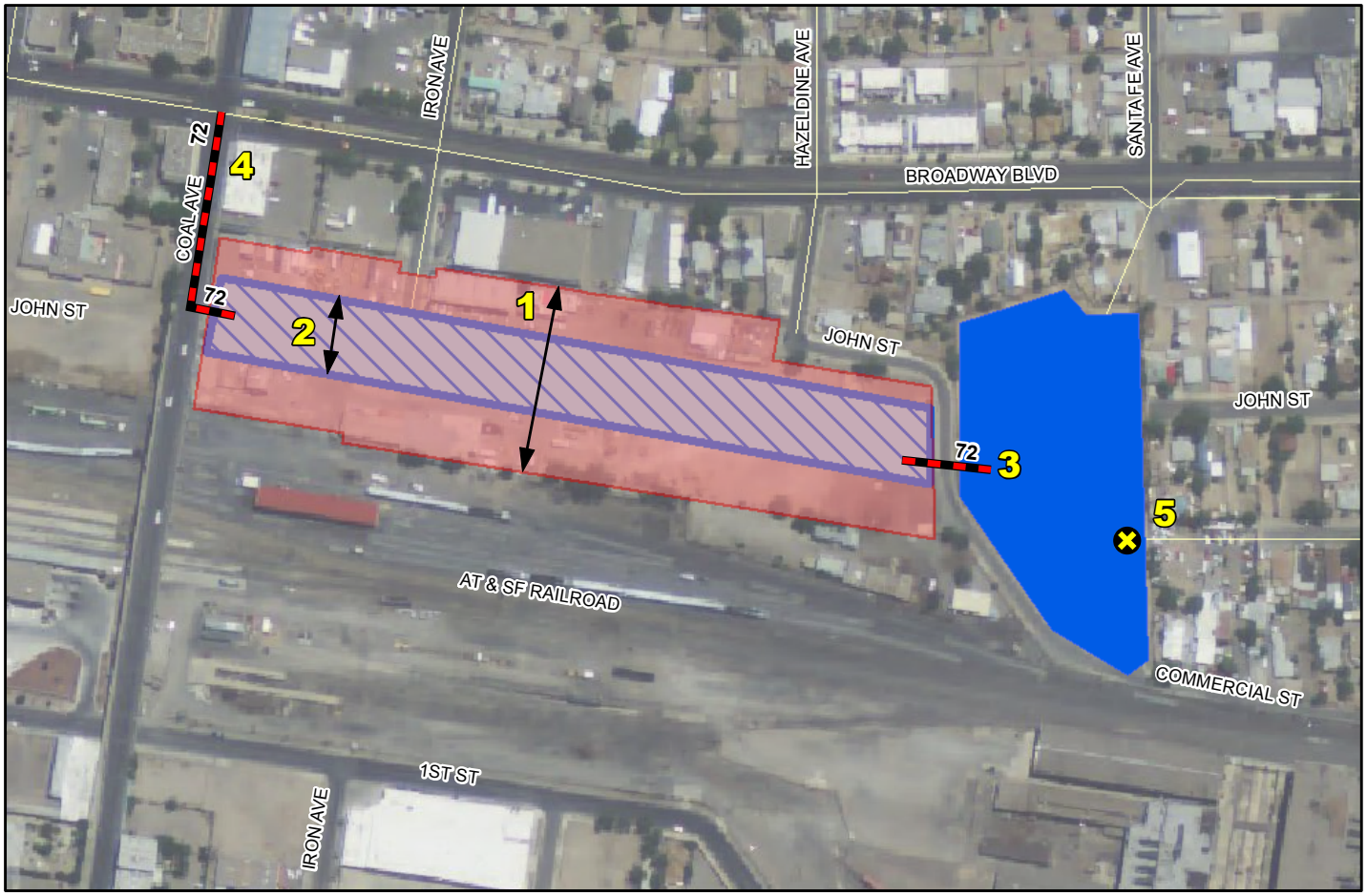
URS

Legend

- Existing Storm Drain
- Existing Pond
- Proposed Alternative
- Proposed Water Quality Improvement
- Proposed Catch Basin

Priority 3
South Broadway Pond Expansion
South Broadway Drainage and Storm Water Quality Management Plan

Figure G-1



Parcel ID	Location Address	Owner	Owner Address
1 014 057 295 195 31723	100 Iron Ave SE, 87102	Espanoles LLC & Isaacson Kale R & Mary B Co-Trustees Isaacson Trustees & etal	1569 Summit Hill Dr NE Albuquerque, NM 87112
1 014 057 310 190 31724	100 Iron Ave SE, 87102	Espanoles LLC & Isaacson Kale R & Mary B Co-Trustees Isaacson Trustees & etal	1569 Summit Hill Dr NE Albuquerque, NM 87112

Priority 3 Alternate: South Broadway Linear Pond Expansion

Item #	Improvement	Cost
1	Purchase Track 1 Iron property at 100 Iron Ave SE	$1,160,000*
2	Construct pond expansion	$1,049,000
3	Construct culvert crossing under Commercial Ave	$84,000
4	Construct 72" storm drain connection on Coal Ave, including storm drain outlet protection	$395,000
5	Install water quality outlet	$250,000
	Priority Total	**$2,938,000**

Costs include 30% Contingency, 10% Engineering and Design, 7% NMGRT

* *Property acquisition costs are based on the "Total Full Value" of the entire parcel listed in the Bernalillo County website: http://www.bernco.gov/property-tax-search/ for the 2012 tax year plus 30% contingency.*

N

Not to Scale

URS

Legend

- Existing Storm Drain
- Existing Pond
- Proposed Alternative
- Proposed Water Quality Improvement
- Proposed Catch Basin

Priority 3 Alternate
South Broadway Linear Pond Expansion
South Broadway Drainage and Storm Water Quality Management Plan

Figure G-2

Priority 4: Construct Storm Drain Trunk Line on Edith Blvd and Hazeldine Ave

Item #	Improvement	Cost
1	Construct Edith Blvd storm drain trunk	$4,352,000

Costs include 30% Contingency, 10% Engineering and Design, 7% NMGRT

N

Not to Scale

URS

Legend

- Existing Storm Drain
- Existing Pond
- Proposed Alternative
- Proposed Water Quality Improvement
- Proposed Catch Basin

Priority 4
Edith Blvd and Hazeldine Ave Storm Drain Trunk
South Broadway Drainage and Storm Water Quality Management Plan

Figure H-1

Priority 4 Alternate: Construct Storm Drain Trunk Line on Edith Blvd and Coal Ave

Item #	Improvement	Cost
1	Construct the Edith storm drain trunk line from Copper Ave to Coal Ave, then from Coal Ave to Broadway Blvd. (Assumes the alternative linear South Broadway Pond expansion costs the same as the non-linear choice)	$3,583,000

Costs include 30% Contingency, 10% Engineering and Design, 7% NMGRT

N

Not to Scale

URS

Legend

- Existing Storm Drain
- Existing Pond
- Proposed Alternative
- Proposed Water Quality Improvement
- Proposed Catch Basin

Priority 4 Alternate
Edith Blvd and Coal Ave Storm Drain Trunk
South Broadway Drainage and Storm Water Quality Management Plan

Figure H-2

Detail Cost Estimates

Recommended Improvement Option

Priority	Item #	Improvement	Estimated Cost
1		**Modify inlet/Outlet of Mechem Pond**	
	1	Redirect flow from Broadway Blvd to William St using conduit along Thaxton Ave	$43,000
	2	Install water quality outlet	$250,000
	3	Install catch basins at Mechem St and Alamo Ave	$57,000
	4	Install stormceptor manhole in San Jose Park	$219,000
		Priority 1 Total	**$569,000**
2		**Expand Kathryn Pond**	
	1	Purchase Lot A-1 property at 1701 Williams Street SE	$256,000
	2	Construct pond expansion	$127,000
	3	Install water quality outlet	$250,000
	4	Change 18-inch orifice plate to weir within junction box located near Kathryn Ave and William St	$6,000
		Priority 2 Total	**$639,000**
3		**Expand South Broadway Pond**	
	1	Purchase Track 1 Iron property at 100 Iron Ave SE	$1,160,000
	2	Construct pond expansion	$1,049,000
	3	Construct culvert crossing under Commercial Ave	$84,000
	4	Construct 72" storm drain connection from Broadway Blvd trunk line to pond, including outlet structure	$395,000
	5	Install a water quality outlet	$250,000
		Priority 3 Total	**$2,938,000**
4		**Construct storm sewer trunk line on Edith Blvd**	
	1	Construct Edith Blvd storm drain trunk to South Broadway pond expansion via Hazeldine Ave	$4,352,000
	1 -ALT	*Alternative to Item 1:* Construct the Edith Blvd storm drain trunk line to South Broadway pond expansion via Coal Ave. (Assumes the alternative linear South Broadway Pond expansion costs the same as the non-linear choice)	$3,583,000
		Priority 4 Total	**$4,352,000**

Total Cost of All Improvement	***$8,498,000***
Total Cost of All Improvement with Priority 4 Alternative	***$7,729,000***

Notes:
Costs include 30% Contingency, 10% Engineering and Design, 7% NMGRT

Property acquisition costs are based on the "Total Full Value" of the entire parcel listed in the Bernalillo County website: http://www.bernco.gov/property-tax-search/ for the 2012 tax year plus 30% contingency.

Improvement 5

Project Element: New detention pond to work in conjunction with the existing South Broadway detention pond - Priority 3 Item 1 &2

Item # (COA, Unit Prices For 2009)	Description, COA 2009	Quantity	Unit	Unit Cost (COA, Unit Prices For 2009)	Average unit cost	Total (COA, Unit Prices for 2009)
202.011, Excav & Disp, Unsut Mat	Excavation and dispose of unsuitable material,	73158	CY	8.55		625,503.45
					Construction Subtotal	625,503.45
4.02 Survey	Construction survey, compl	1	%	1.31		8,194.10
6.05 Mob	Construction Mobilization, compl	1	%	4.77		29,836.51
6.06 Demob	Construction demobilization, compl	1	%	0.3		1,876.51
19.01 Traff control and barricading	Construction traffic control and barricading, compl	N/A	%	2.1		13,135.57
30.01 flood protection	Flood protection, compl	1	%	0.37		2,314.36
NPDES Permit	NPDES permitting	1	%	0.63		3,940.67
6.01 const Sign	Project sign	1	EA	700		700.00
					Subtotal	685,501.18
					Contingency 30%	205,650.35
					Eng & Design 10%	89,115.15
					NMGRT 7%	68,618.67
					Total 1	1,048,885.35

Item	Description	Quantity	Unit	Unit Cost	Average unit cost	Total
XXX, Property Acquisition	Property acquisition	N/A	N/A	N/A	N/A	892,000.00
					Subtotal	892,000.00
					Contingency 30%	267,600.00
					Total 2	1,159,600.00
					Total 1	1,048,885.35
					Total 2	1,159,600.00
					Project Total	**2,208,485.35**

Improvement 5

Project Element: New trunk line along Edith Blvd. from Copper Ave. to Hazeldine Ave. - Priority 4

Item # (COA, Unit Prices For 2009)	Description, COA 2009	Quantity	Unit	Unit Cost (COA, Unit Prices For 2009)	Average unit cost	Total (COA, Unit Prices for 2009)
343.112,RES PVMT, R&R, W/M	Residential pavement, existing, remove and replace, include 2" extra asphalt thickness, with machine laydown, and with processing existing subbase material, any thickness, cip.	10634	SY	118.15		1,256,380.84
701.10 TRCH, BF,18"-36" SWR, < 8'	Trenching, backfilling, & compaction, 42" to 60" sewer pipe, up to 8' in depth, pipe not incl., compl.	1080	LF	24.02		25,941.60
701.15 TRCH, BF,42- 60" SWR, < 8'	Trenching, backfilling, & compaction, 42" to 60" sewer pipe, up to 8' in depth, pipe not incl., compl.	1465	LF	28.59		41,884.35
701.20 TRCH, BF, > 60" SWR, < 8'	Trenching, backfilling, & compaction, over 60" sewer pipe, up to 8' in depth, pipe not incl., compl.	722	LF	36.39		26,273.58
701.21 TRCH, BF, > 60" SWR, 12'-16'	sewer pipe, 12' to 16' in depth, pipe not incl., compl.	981	LF	53.18		52,169.58
701.22 TRCH, BF, > 60" SWR, 16-20'	Trenching, backfilling, & compaction, over 60"sewer pipe, 16' to 20' in depth, pipe not incl., compl.	250	LF	84.98		21,245.00
910.005 18" RCP, III	18" Reinforce Concrete Pipe, class III, furnish and place in open trench. Cip	1080	LF	38.96		42,076.80
910.025 60" RCP, III	60" Reinforce Concrete Pipe, class III, furnish and place in open trench. Cip	1465	LF	183.48		268,798.20
910.029 72" RCP, III	72" Reinforce Concrete Pipe, class III, furnish and place in open trench. Cip	1953	LF	250.8		489,812.40
910.105 DRNG LN REM, 21" to 48"	Drain line removal, 21" to 48" excl. trenching. Compl	981	LF	17.28		16,951.68
915.05 CTH SN, D, SG	Catch Basin, Type "D", Single Grate, Cip.	36	EA	2475.23		89,108.28
920.21 MH, 8' DIA, C or E 6' to 10'	Manhole, 8' dia Type C or E, 6' to 10' deep	4	EA	8338.77		33,355.08
920.22 MH, 8' DIA, C or E 10'-14'D	Manhole, 8' dia Type C or E, 10' to 14' deep	5	EA	10771.1		53,855.50
920.23 MH, 8' DIA, EXTR D, 14'-18'D	Manhole 8' dia Type C or E added cost for each additional foot over 14'	17	EA	10771.1		177,723.15
920.57, Manhole remove and disposal	Existing manhole remove and dispose all depth, 4' to 6' dia	2	EA	722.69		1,445.38
					Construction Subtotal	2,597,021.42

4.02 Survey	Construction survey, compl	1	%	1.31		34,020.98
6.05 Mob	Construction Mobilization, compl	1	%	4.77		123,877.92
6.06 Demob	Construction demobilization, compl	1	%	0.3		7,791.06
19.01 Traff control and barricading	Construction traffic control and barricading, compl	N/A	%	2.1		54,537.45
30.01 flood protection	Flood protection, compl	1	%	0.37		9,608.98
NPDES Permit	NPDES permitting	1	%	0.63		16,361.23
6.01 const Sign	Project sign	1	EA	700		700.00

Subtotal	2,843,919.06
Contingency 30%	853,175.72
Eng & Design 10%	369,709.48
NMGRT 7%	284,676.30
Project Total	**4,351,480.55**

Improvement 5

Project Element: Increase the size of Kathryn detention pond by acquiring land located directly north - Priority 2 Item 1&2

Item # (COA, Unit Prices For 2009)	Description, COA 2009	Quantity	Unit	Unit Cost (COA, Unit Prices For 2009)	Average unit cost	Total (COA, Unit Prices for 2009)
202.011, Excav & Disp, Unsut Mat	Excavation and dispose of unsuitable material, compl.	8743	CY	8.55		74,754.36
					Construction Subtotal	74,754.36
4.02 Survey	Construction survey, compl	1	%	1.31		979.28
6.05 Mob	Construction Mobilization, compl	1	%	4.77		3,565.78
6.06 Demob	Construction demobilization, compl	1	%	0.3		224.26
19.01 Traff control and barricading	Construction traffic control and barricading, compl	N/A	%	2.1		1,569.84
30.01 flood protection	Flood protection, compl	1	%	0.37		276.59
NPDES Permit	NPDES permitting	1	%	0.63		470.95
6.01 const Sign	Project sign	1	EA	700		700.00

Subtotal 1	82,541.08
Contingency 30%	24,762.32
Eng & Design 10%	10,730.34
NMGRT 7%	8,262.36
Total 1	126,296.10

Item #	Description	Quantity	Unit	Unit Cost	Average unit cost	Total
XXX, Property Acquisition	Property acquisition	1	LS	N/A	N/A	196,300.00

Subtotal 2	196,300.00
Contingency 30%	58,890.00
Total 2	255,190.00

Total 1	126,296.10
Total 2	255,190.00
Project Total	**381,486.10**

Improvement 5

Project Element: Change 18-inch orifice plate to weir within junction box located near Kathryn Avenue and William Street - Priority 2 Item 4

Item # (COA, Unit Prices For 2009)	Description, COA 2009	Quantity	Unit	Unit Cost (COA, Unit Prices For 2009)	Average unit cost	Total (COA, Unit Prices for 2009)
510.1, CUT OFF WALL, PCC	Cut-off wall , PC concrete, incl. formwork, cip.	4	CY	566.12		2,156.92
XXX, Cut and remove	Cut and remove the orifice plate from within junction box	1	EA	N/A	200	200.00
					Construction Subtotal	2,356.92

4.02 Survey	Construction survey, compl	1	%	1.31		30.88
6.05 Mob	Construction Mobilization, compl	1	%	4.77		112.42
6.06 Demob	Construction demobilization, compl	1	%	0.3		7.07
19.01 Traff control and barricading	Construction traffic control and barricading, compl	N/A	%	2.1		49.50
30.01 flood protection	Flood protection, compl	1	%	0.37		8.72
NPDES Permit	NPDES permitting	1	%	0.63		14.85
6.01 const Sign	Project sign	1	EA	700		700.00

Subtotal	3,280.35
Contingency 30%	984.11
Eng & Design 10%	426.45
NMGRT 7%	328.36
Project Total	**5,019.27**

Improvement 5

Project Element: Redirect flow from Broadway Blvd. to William St. using conduit along Thaxton Ave. - Priority 1 Item 1

Item # (COA, Unit Prices For 2009)	Description, COA 2009	Quantity	Unit	Unit Cost (COA, Unit Prices For 2009)	Average unit cost	Total (COA, Unit Prices for 2009)
343.132, ART PVMT, R&R, W/M	Arterial pavement, existing, remove and replace, include 2" extra asphalt thickness, with machine laydown, and with processing existing subbase material, any thickness, cip.	156	SY	61.43		9,583.08
701.22 TRCH, BF, > 60" SWR, 16-20'	Trenching, backfilling, & compaction, over 60"sewer pipe, 16' to 20' in depth, pipe not incl., compl.	50	LF	84.98		4,249.00
801.132 RPCC BLKG/ENCSMT	Pipe blocking or Encasement, Reinforced PC concrete, cip SD 2140	1	CY	120.32		120.32
910.027 66"RCP, III	66" Reinforced concrete pipe, class III furnish and place in open trench	50	LF	221.48		11,074.00
					Construction Subtotal	25,026.40

4.02 Survey	Construction survey, compl	1	%	1.31		327.85
6.05 Mob	Construction Mobilization, compl	1	%	4.77		1,193.76
6.06 Demob	Construction demobilization, compl	1	%	0.3		75.08
19.01 Traff control and barricading	Construction traffic control and barricading, compl	N/A	%	2.1		525.55
30.01 flood protection	Flood protection, compl	1	%	0.37		92.60
NPDES Permit	NPDES permitting	1	%	0.63		157.67
6.01 const Sign	Project sign	1	EA	700		700.00

Subtotal	28,098.90
Contingency 30%	8,429.67
Eng & Design 10%	3,652.86
NMGRT 7%	2,812.70
Project Total	**42,994.13**

Improvement 5

Project Element: Add stormceptor manhole - Priority 1 Item 4

Item # (COA, Unit Prices For 2009)	Description, COA 2009	Quantity	Unit	Unit Cost (COA, Unit Prices For 2009)	Average unit cost	Total (COA, Unit Prices for 2009)
XXX, Stormceptor Manhole	Stormceptor Manhole	1	LS	130000		130,000.00
					Construction Subtotal	130,000.00

4.02 Survey	Construction survey, compl	1	%	1.31		1,703.00
6.05 Mob	Construction Mobilization, compl	1	%	4.77		6,201.00
6.06 Demob	Construction demobilization, compl	1	%	0.3		390.00
19.01 Traff control and barricading	Construction traffic control and barricading, compl	N/A	%	2.1		2,730.00
30.01 flood protection	Flood protection, compl	1	%	0.37		481.00
NPDES Permit	NPDES permitting	1	%	0.63		819.00
6.01 const Sign	Project sign	1	EA	700		700.00

Subtotal	143,024.00
Contingency 30%	42,907.20
Eng & Design 10%	18,593.12
NMGRT 7%	14,316.70
Project Total	**218,841.02**

Improvement 5

Project Element:Add water quality features at Mechem, Kathryn, and S. Broadway Ponds. - Priority 1 Item 2, Priority 2 Item 3, and Priority 3 Item 5

Item # (COA, Unit Prices For 2009)	Description, COA 2009	Quantity	Unit	Unit Cost (COA, Unit Prices For 2009)	Average unit cost	Total (COA, Unit Prices for 2009)
XXX, Standpipe w/Trash rack	standpipe and trash rack	3	EA	250000		750,000.00
					Project Total	**750,000.00**

Improvement 5

Project Element: Install catch basins at Mechem St and Alamo Ave - Priority 1 Item 3

Item # (COA, Unit Prices For 2009)	Description, COA 2009	Quantity	Unit	Unit Cost (COA, Unit Prices For 2009)	Average unit cost	Total (COA, Unit Prices for 2009)
343.112,RES PVMT, R&R, W/M	Residential pavement, existing, remove and replace, include 2" extra asphalt thickness, with machine laydown, and with processing	156	SY	118.15		18,431.40
701.1 TRCH, BF, 18-36" SWR, <8'	Trenching, backfilling, & compaction, for 18" to 36""sewer pipe, up to 8' in depth, pipe not incl., compl.	60	LF	24.02		1,441.20
915.04 CTH BSIN, C, DG	Catch Basin, Type "C", Double Grate, cip. SD 2205	2	EA	4774.1		9,548.20
910.009 24" RCP III	24" Reinforced Concrete Pipe, Class III, furnish & place in open trench, cip.	60	LF	48.19		2,891.40
					Construction Subtotal	32,312.20

4.02 Survey	Construction survey, compl	1	%	1.31		423.29
6.05 Mob	Construction Mobilization, compl	1	%	4.77		1,541.29
6.06 Demob	Construction demobilization, compl	1	%	0.3		96.94
19.01 Traff control and barricading	Construction traffic control and barricading, compl	N/A	%	2.1		678.56
30.01 flood protection	Flood protection, compl	1	%	0.37		119.56
NPDES Permit	NPDES permitting	1	%	0.63		203.57
6.01 const Sign	Project sign	1	EA	700		700.00

Subtotal	36,075.40
Contingency 30%	10,822.62
Eng & Design 10%	4,689.80
NMGRT 7%	3,611.15
Project Total	**55,198.96**

Improvement 5

Project Element: Construct culvert crossing under Commercial Ave - Priority 3 Item 3

Item # (COA, Unit Prices For 2009)	Description, COA 2009	Quantity	Unit	Unit Cost (COA, Unit Prices For 2009)	Average unit cost	Total (COA, Unit Prices for 2009)
343.112,RES PVMT, R&R, W/M	Residential pavement, existing, remove and replace, include 2" extra asphalt thickness, with machine laydown, and with processing existing subbase material, any thickness, cip.	87	SY	118.15		10,279.05
701.22 TRCH, BF, >60" SWR, 16'-20'	Trenching, backfilling, & compaction, over 60"sewer pipe, 16' to 20' in depth, pipe not incl., compl.	100	LF	84.98		8,498.00
340.05 C&G, STD, PCC	Curb & Gutter, Standard, Portland Cement Concrete, incl. subgrade preparation, cip. SD 2415	56	LF	20.31		1,137.36
910.029 72" RCP III	72" Reinforced Concrete Pipe, Class III, furnish & place in open trench, cip.	100	LF	250.8		25,080.00
XXX. End Sections	Estimated Price	2	EA	2000		4,000.00
					Construction Subtotal	48,994.41

4.02 Survey	Construction survey, compl	1	%	1.31		641.83
6.05 Mob	Construction Mobilization, compl	1	%	4.77		2,337.03
6.06 Demob	Construction demobilization, compl	1	%	0.3		146.98
19.01 Traff control and barricading	Construction traffic control and barricading, compl	N/A	%	2.1		1,028.88
30.01 flood protection	Flood protection, compl	1	%	0.37		181.28
NPDES Permit	NPDES permitting	1	%	0.63		308.66
6.01 const Sign	Project sign	1	EA	700		700.00

Subtotal	54,339.08
Contingency 30%	16,301.72
Eng & Design 10%	7,064.08
NMGRT 7%	5,439.34
Project Total	**83,144.23**

Improvement 5

Project Element: Construct 72" storm sewer connection on Hazeldine Ave - Priority 3 Item 4

Item # (COA, Unit Prices For 2009)	Description, COA 2009	Quantity	Unit	Unit Cost (COA, Unit Prices For 2009)	Average unit cost	Total (COA, Unit Prices for 2009)
343.112,RES PVMT, R&R, W/M	replace, include 2" extra asphalt thickness, with machine laydown, and with processing	778	SY	118.15		91,894.44
510.1 CUT OFF WALL, PCC	Cut-off Wall, PC Concrete, incl. formwork, cip. (Outlet Structure / Protection)	85	CY	566.12		48,120.20
701.22 TRCH, BF, >60" SWR, 16'-20'	Trenching, backfilling, & compaction, over 60" sewer pipe, 16' to 20' in depth, pipe not incl.,	250	LF	84.98		21,245.00
910.029 72" RCP III	72" Reinforced Concrete Pipe, Class III, furnish & place in open trench, cip.	250	LF	250.8		62,700.00
920.22 MH, 8' DIA, C or E 10' - 14' D	Manhole, 8' dia Type C or E, 10' to 14' deep	1	EA	10771.1		10,771.10
					Construction Subtotal	234,730.74

4.02 Survey	Construction survey, compl	1	%	1.31		3,074.97
6.05 Mob	Construction Mobilization, compl	1	%	4.77		11,196.66
6.06 Demob	Construction demobilization, compl	1	%	0.3		704.19
19.01 Traff control and barricading	Construction traffic control and barricading, compl	N/A	%	2.1		4,929.35
30.01 flood protection	Flood protection, compl	1	%	0.37		868.50
NPDES Permit	NPDES permitting	1	%	0.63		1,478.80
6.01 const Sign	Project sign	1	EA	700		700.00

Subtotal	257,683.22
Contingency 30%	77,304.97
Eng & Design 10%	33,498.82
NMGRT 7%	25,794.09
Project Total	**394,281.09**

IMPROVEMENT 5 GRAND TOTALS:

Subtotal without land acquisition & water quality features	4,134,462.26
Subtotal with land acquisition but without water quality features	5,222,762.26
Subtotal with land and three water quality features (3)	5,972,762.26

** Computation excludes cost of water quality features.*

*** Computation excludes cost of water quality features and property acquisition*

Project Element Subtotal	5,972,762.26
Contingency 30%*	1,566,828.68
Eng & Design 10% **	537,480.09
NMGRT 7% **	413,859.67
Project Total	**8,490,930.71**

Improvement 5 - Alternative

Project Element: Construct an alternative Edith Blvd Storm Sewer Trunk from Copper Ave to Coal Ave then to Broadway Blvd (if an alternative linear South Broadway Pond expansion has been constrcuted) - Priority 4 ALT

Item # (COA, Unit Prices For 2009)	Description, COA 2009	Quantity	Unit	Unit Cost (COA, Unit Prices For 2009)	Average unit cost	Total (COA, Unit Prices for 2009)
343.112,RES PVMT, R&R, W/M	replace, include 2" extra asphalt thickness, with machine laydown, and with processing	8705	SY	118.15		1,028,482.62
701.10 TRCH, BF,18"-36" SWR, < 8'	60" sewer pipe, up to 8' in depth, pipe not incl., compl.	840	LF	24.02		20,176.80
701.15 TRCH, BF, 42-60" SWR, < 8'	to 60"sewer pipe, up to 8' in depth, pipe not incl., compl.	1465	LF	28.59		41,884.35
701.20 TRCH, BF, > 60" SWR, < 8'	sewer pipe, up to 8' in depth, pipe not incl., compl.	722	LF	36.39		26,273.58
701.21 TRCH, BF, > 60" SWR, 12'-16'	sewer pipe, 12' to 16' in depth, pipe not incl., compl.	611	LF	53.18		32,492.98
910.005 18" RCP, III	18" Reinforce Concrete Pipe, class III, furnish and place in open trench. Cip	840	LF	38.96		32,726.40
910.025 60" RCP, III	60" Reinforce Concrete Pipe, class III, furnish and place in open trench. Cip	1465	LF	183.48		268,798.20
910.029 72" RCP, III	72" Reinforce Concrete Pipe, class III, furnish and place in open trench. Cip	1333	LF	250.8		334,316.40
910.105 DRNG LN REM, 21" to 48"	Drain line removal, 21" to 48" excl. trenching. Compl	981	LF	17.28		16,951.68
915.05 CTH SN, D, SG	Catch Basin, Type "D", Single Grate, Cip.	28	EA	2475.23		69,306.44
920.21 MH, 8' DIA, C or E 6' to 10'	Manhole, 8' dia Type C or E, 6' to 10' deep	4	EA	8338.77		33,355.08
920.22 MH, 8' DIA, C or E 10'-14'D	Manhole, 8' dia Type C or E, 10' to 14' deep	5	EA	10771.1		53,855.50
920.23 MH, 8' DIA, EXTR D, 14'-18'D	Manhole 8' dia Type C or E added cost for each additional foot over 14'	17	EA	10771.1		177,723.15
920.57, Manhole remove and disposal	Existing manhole remove and dispose all depth, 4' to 6' dia	2	EA	722.69		1,445.38
					Construction Subtotal	2,137,788.56

4.02 Survey	Construction survey, compl	1	%	1.31		28,005.03
6.05 Mob	Construction Mobilization, compl	1	%	4.77		101,972.51
6.06 Demob	Construction demobilization, compl	1	%	0.3		6,413.37
19.01 Traff control and barricading	Construction traffic control and barricading, compl	N/A	%	2.1		44,893.56
30.01 flood protection	Flood protection, compl	1	%	0.37		7,909.82
NPDES Permit	NPDES permitting	1	%	0.63		13,468.07
6.01 const Sign	Project sign	1	EA	700		700.00

Subtotal	2,341,150.92
Contingency 30%	702,345.28
Eng & Design 10%	304,349.62
NMGRT 7%	234,349.21
Project Total	**3,582,195.02**

IMPROVEMENT 5 ALTERNATIVE GRAND TOTALS:

Subtotal without land acquisition& water quality features	3,631,694.12
Subtotal with land acquisition and without water quality features	4,719,994.12
Subtotal with land acquisition and water quality features	5,469,994.12

** Computation excludes cost of water quality features.*

*** Computation excludes cost of water quality features and property acquisition*

Project Element Subtotal	5,469,994.12
Contingency 30%*	1,415,998.24
Eng & Design 10% **	472,120.24
NMGRT 7% **	363,532.58
Project Total	**7,721,645.18**