City Council Work Session Handouts

July 8, 2013

I. Review and Discuss the North Texas Municipal Water District Water Supply Plan

II. Review and Discuss Maintenance Management Strategies: Screening Walls, Bridge Railings and Traffic Signs/Markings

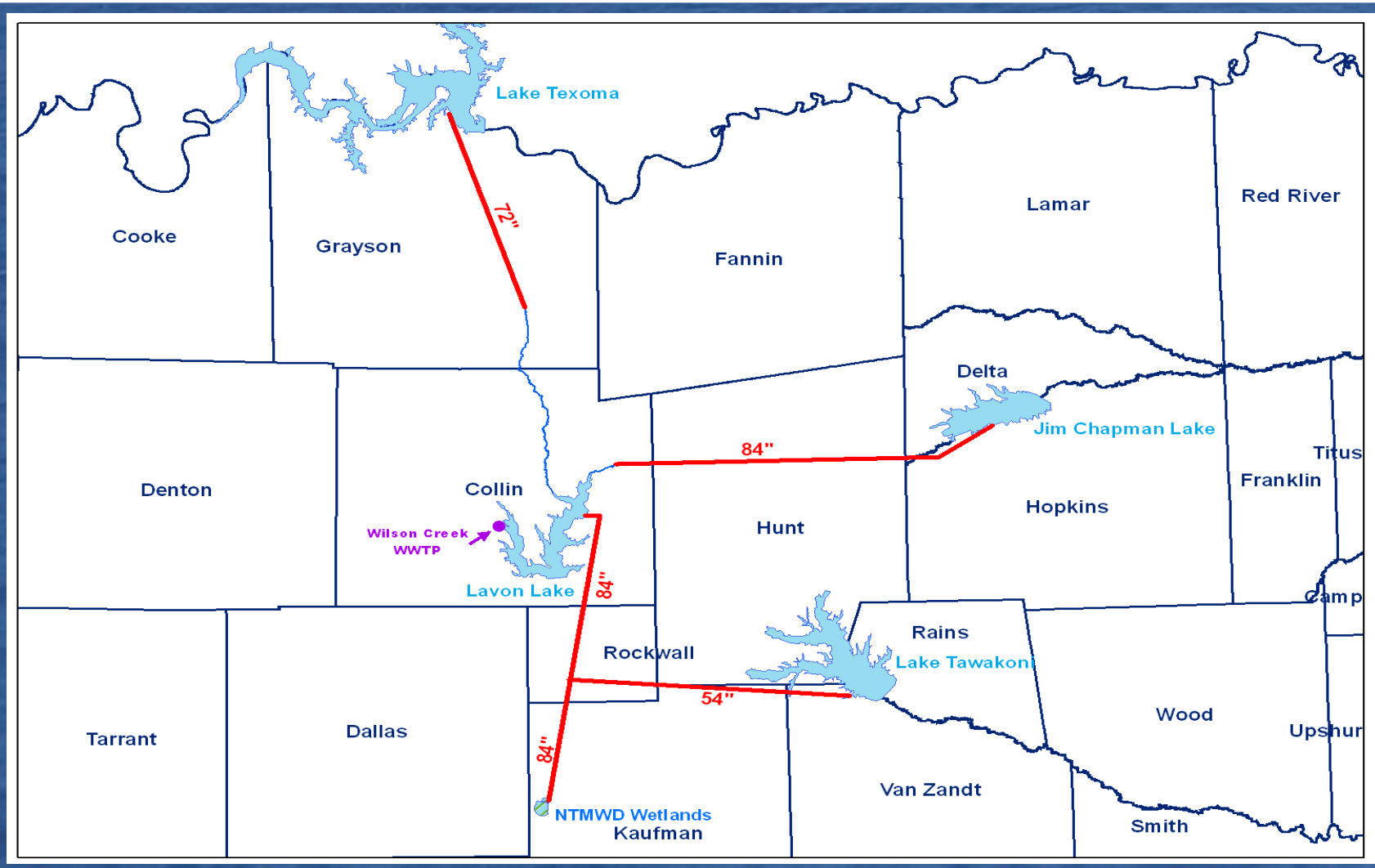
CITY OF RICHARDSON

WATER SUPPLY OVERVIEW

Jim Parks
NTMWD Executive Director
July 8, 2013

North Texas
Municipal Water
District

NTMWD Raw Water Supply Sources



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District

Factors Contributing to Stage 3

- Current Reservoir Levels
- Loss of Texoma Supply
- Extended Weather Forecast

Water Supply Status as of July 3,2013

Reservoir	Conservation Pool Elevation	Current Elevation	Up/Down
Lavon 30%	492.0’	484.26’	-7.74’
Chapman 15%	440.0’	431.09’	-8.91’
Tawakoni 8%	437.5’	431.53’	-5.97’
*Texoma 28%	617.0’	617.54’	+0.54’

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Texoma Supply Update

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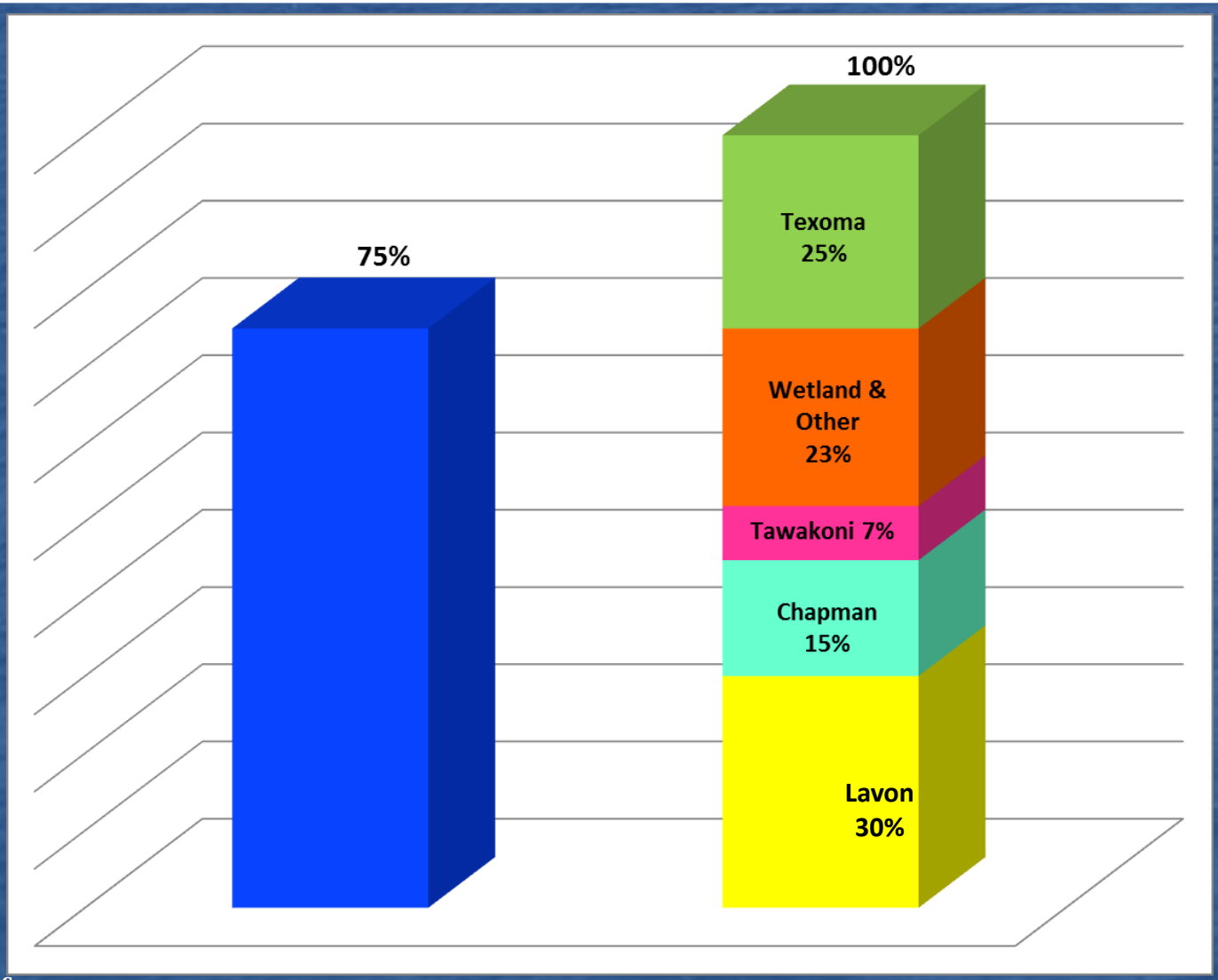
Supply Capacity Without Texoma



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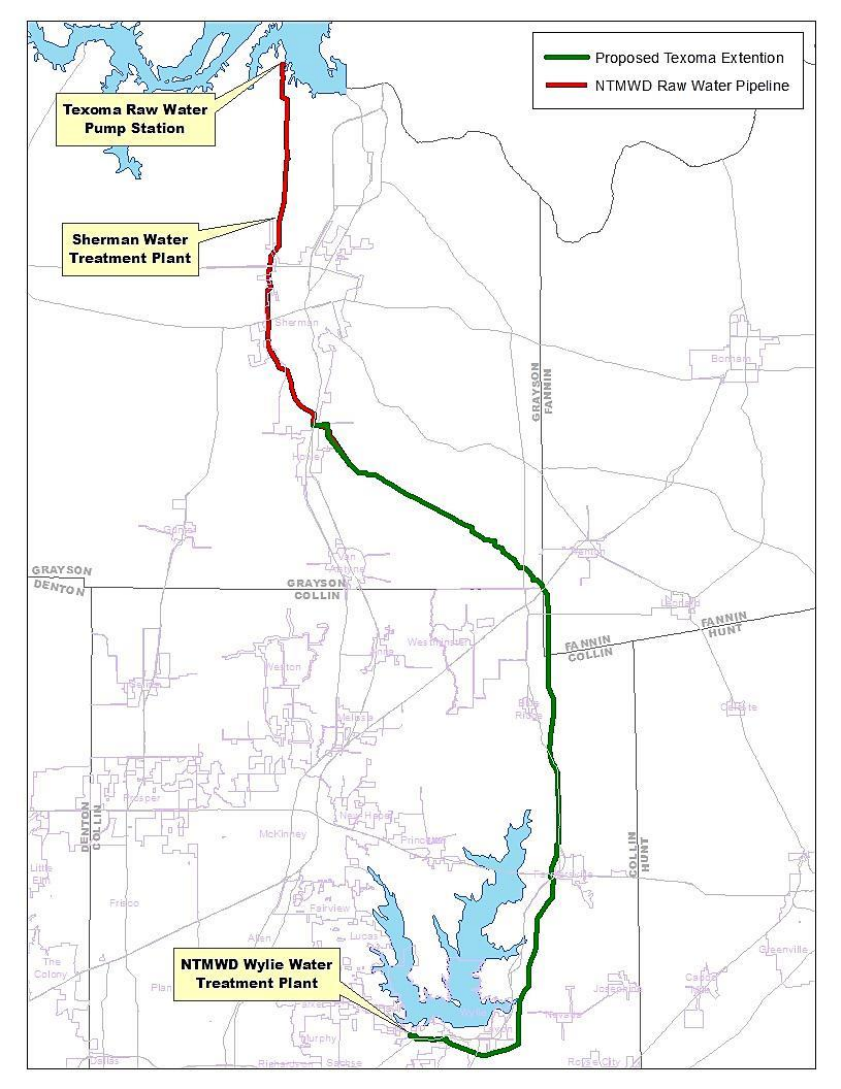
Texoma Pipeline Extension



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NTMWD Wylie Water Treatment Plant

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District

Schedule Update

- Anticipated Pipeline In-Service Dates
  - Water Treatment Plant III & IV – January 2014
  - Water Treatment Plant I & II – March 2014

Additional Raw Water Supply

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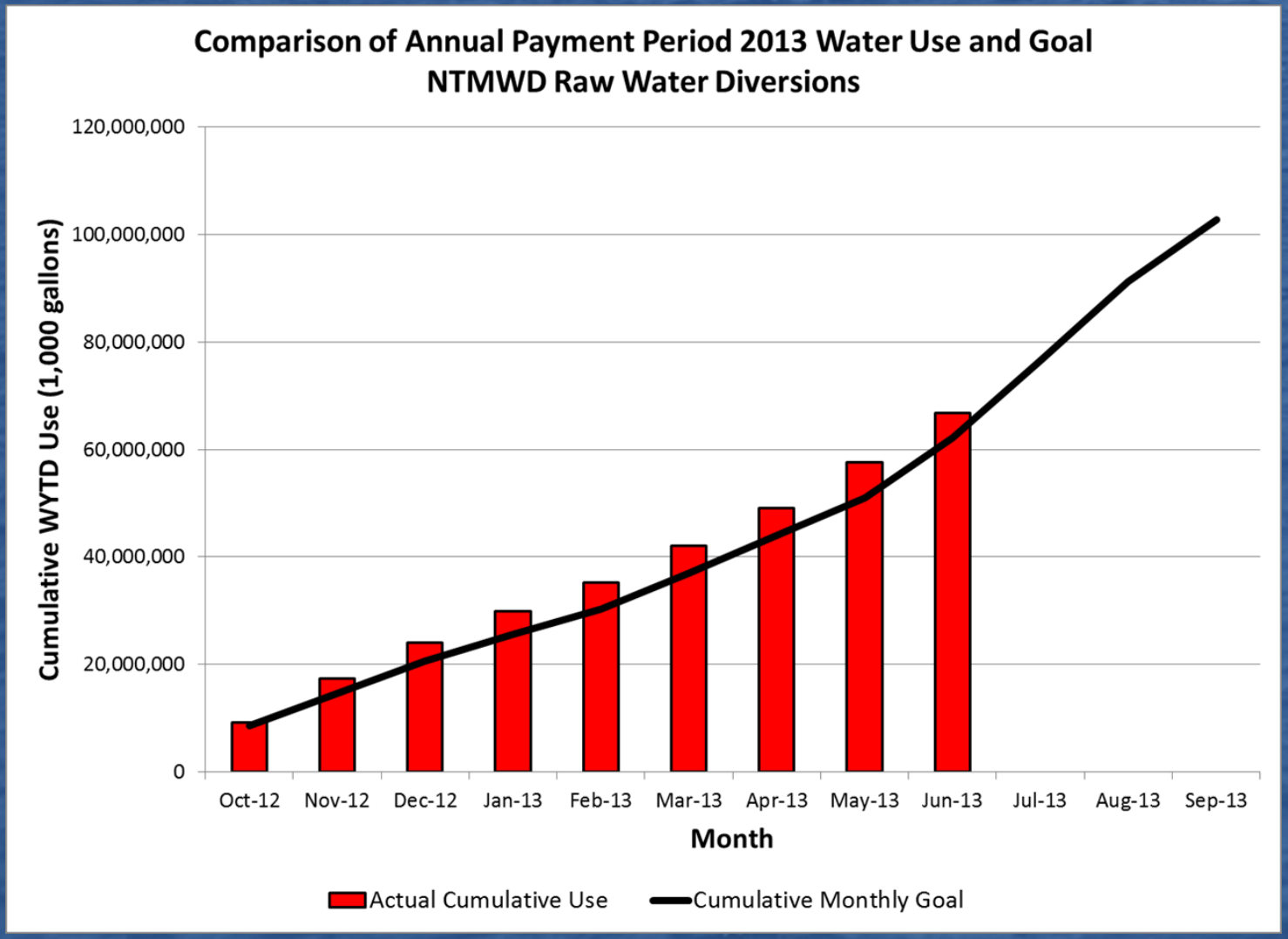
Dallas Raw Water Contract

- Up to 67,200 acre-feet per year (about ½ Lavon Yield)
  - Lake Tawakoni
  - Lake Fork
  - Lake Ray Hubbard
- Term – 3 years
- Contract has been executed
- Currently transporting water to Lavon

Water Use & Goal for Stage 3

North Texas Municipal Water District

NTMWD Raw Water Diversions versus Goal



North Texas Municipal Water District

NTMWD Raw Water Diversions versus Goal
APP 2013

North Texas Municipal Water District Raw Water Diversions
Annual Payment Period 2013 Water Use Goal and Actual Use

Month	Use in 1000 Gallons										
	Actual Use in APP* 2010-11	Reduction for Goal	Reduced Use	Estimated Growth	Goal for Month	APP 2013 Use	Month Percent Over (Under) Goal	APP 2013 Year to Date Use	APP 2013 Year to Date Use Goal	Year to Date Amount Over (Under) Goal	Year to Date Percent Over (Under) Goal
Oct	9,339,931	10%	8,405,938	102.5%	8,614,478	9,240,335	7.3%	9,240,335	8,614,478	625,857	7.3%
Nov	6,556,172	10%	5,900,555	102.5%	6,046,940	8,100,395	34.0%	17,340,730	14,661,418	2,679,312	18.3%
Dec	6,526,956	10%	5,874,260	102.5%	6,019,993	6,761,687	12.3%	24,102,417	20,681,411	3,421,006	16.5%
Jan	5,281,846	10%	4,753,661	102.5%	4,871,593	5,795,216	19.0%	29,897,633	25,553,004	4,344,629	17.0%
Feb	5,154,984	10%	4,639,486	102.5%	4,754,586	5,344,766	12.4%	35,242,399	30,307,590	4,934,809	16.3%
Mar	7,297,127	10%	6,567,414	102.5%	6,730,343	6,781,145	0.8%	42,023,544	37,037,933	4,985,611	13.5%
Apr	7,506,420	10%	6,755,778	102.5%	6,923,380	7,068,455	2.1%	49,091,999	43,961,313	5,130,686	11.7%
May	7,622,692	10%	6,860,423	102.5%	7,030,621	8,443,732	20.1%	57,535,731	50,991,934	6,543,797	12.8%
Jun	12,147,259	10%	10,932,533	102.5%	11,203,755	9,205,189	(17.8%)	66,740,920	62,195,689	4,545,231	7.3%
Jul	15,652,404	10%	14,087,164	102.5%	14,436,648				76,632,337		
Aug	15,948,537	10%	14,353,683	102.5%	14,709,779				91,342,116		
Sep	12,417,265	10%	11,175,539	102.5%	11,452,789				102,794,905		

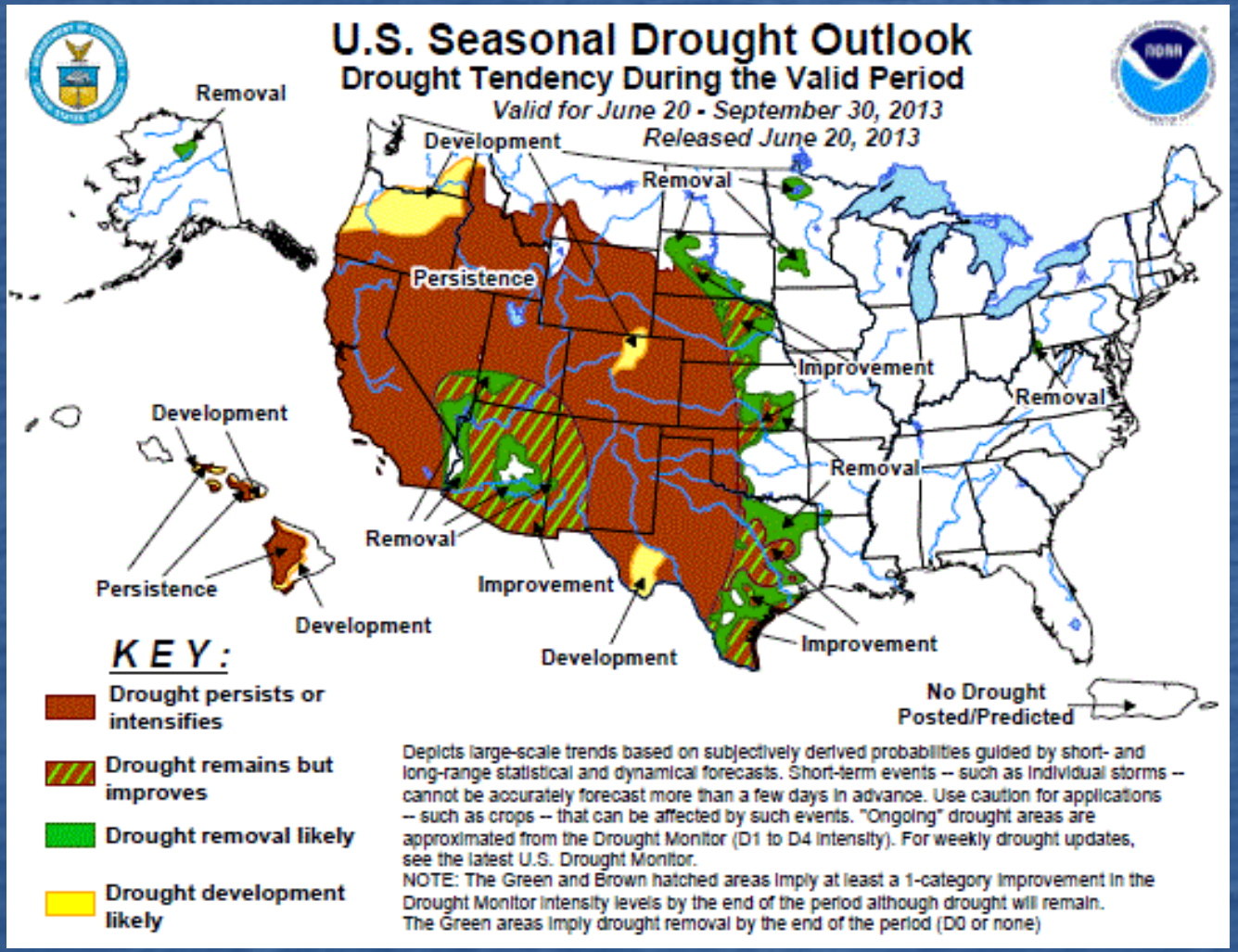
*APP = Annual Payment Period from October 1 to September 30

North Texas Municipal Water District

Weather Outlook

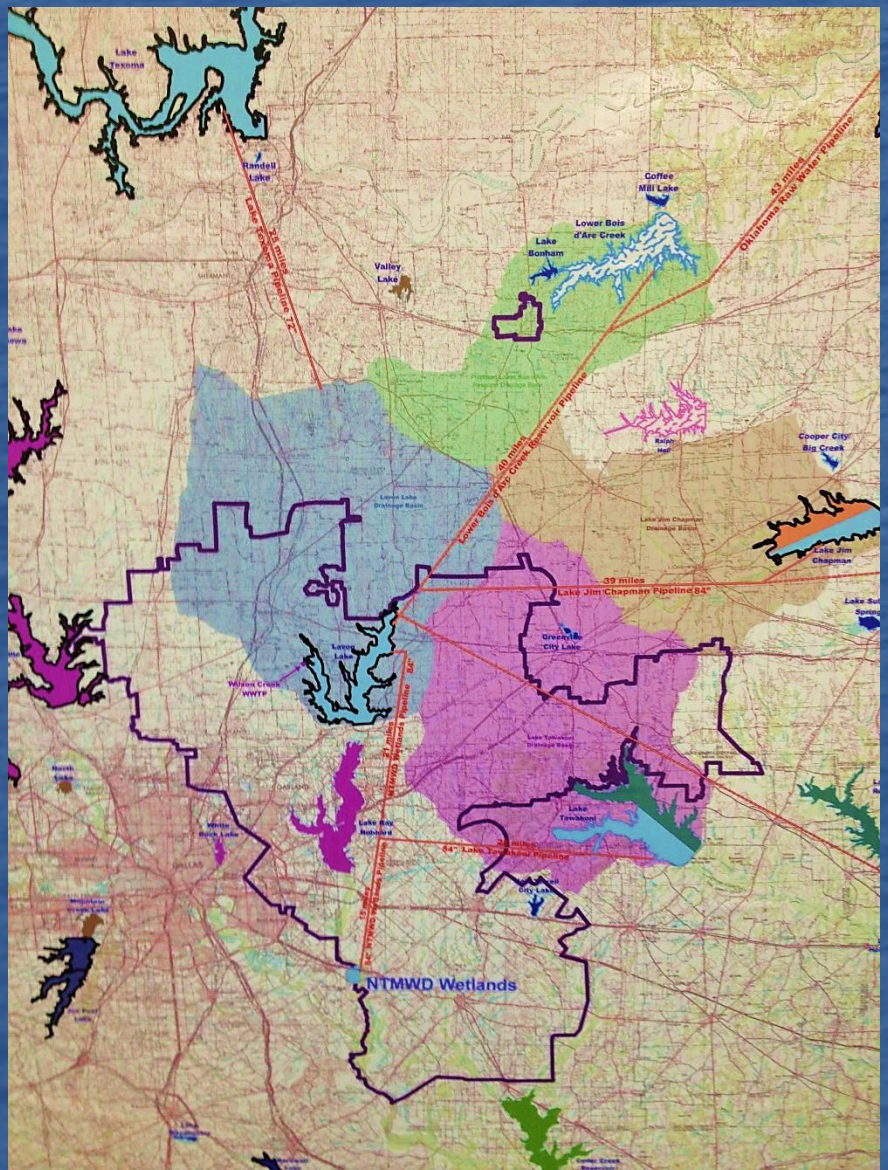
North Texas
Municipal Water
District

U.S. Seasonal Drought Outlook



North Texas Municipal Water District

Lake Lavon Watershed



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3-Year Comparison
Lake Lavon's
Elevation Response

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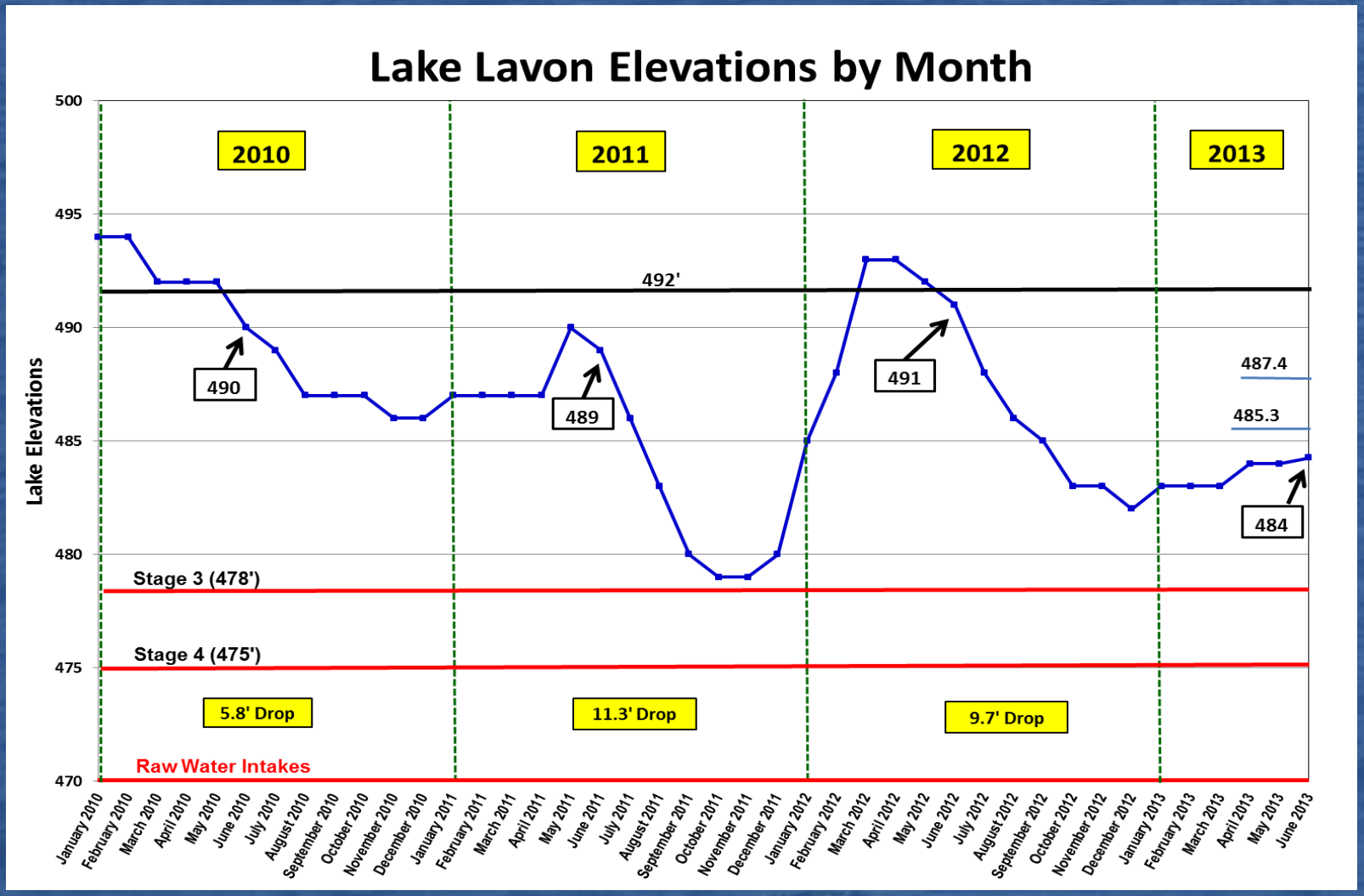
District

Lake Lavon Elevations

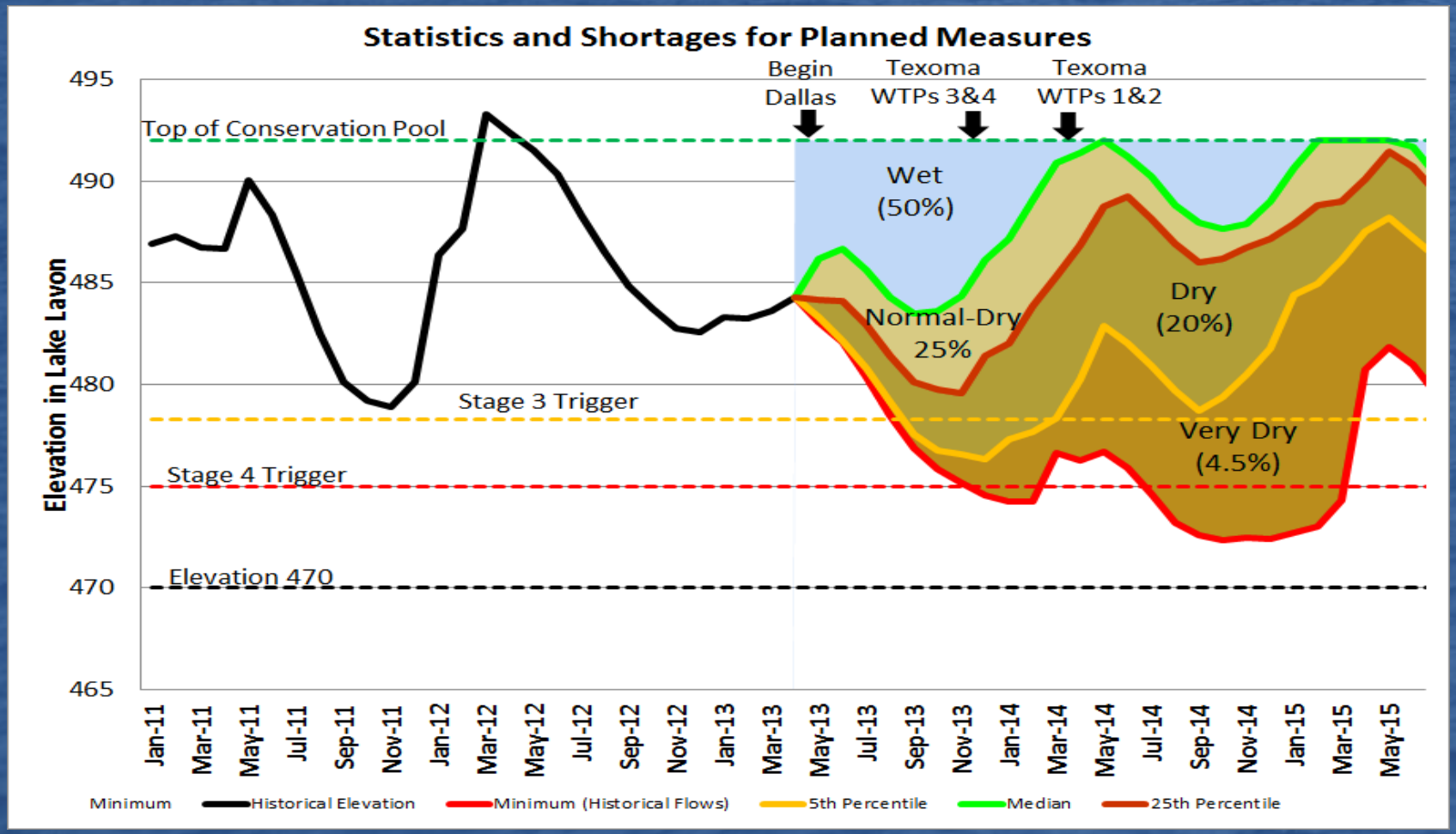


North Texas Municipal Water District

Lake Level Modeling

North Texas Municipal Water District

Lake Level Modeling with Planned Measures – Near-Term Summary



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Long-Range Planning

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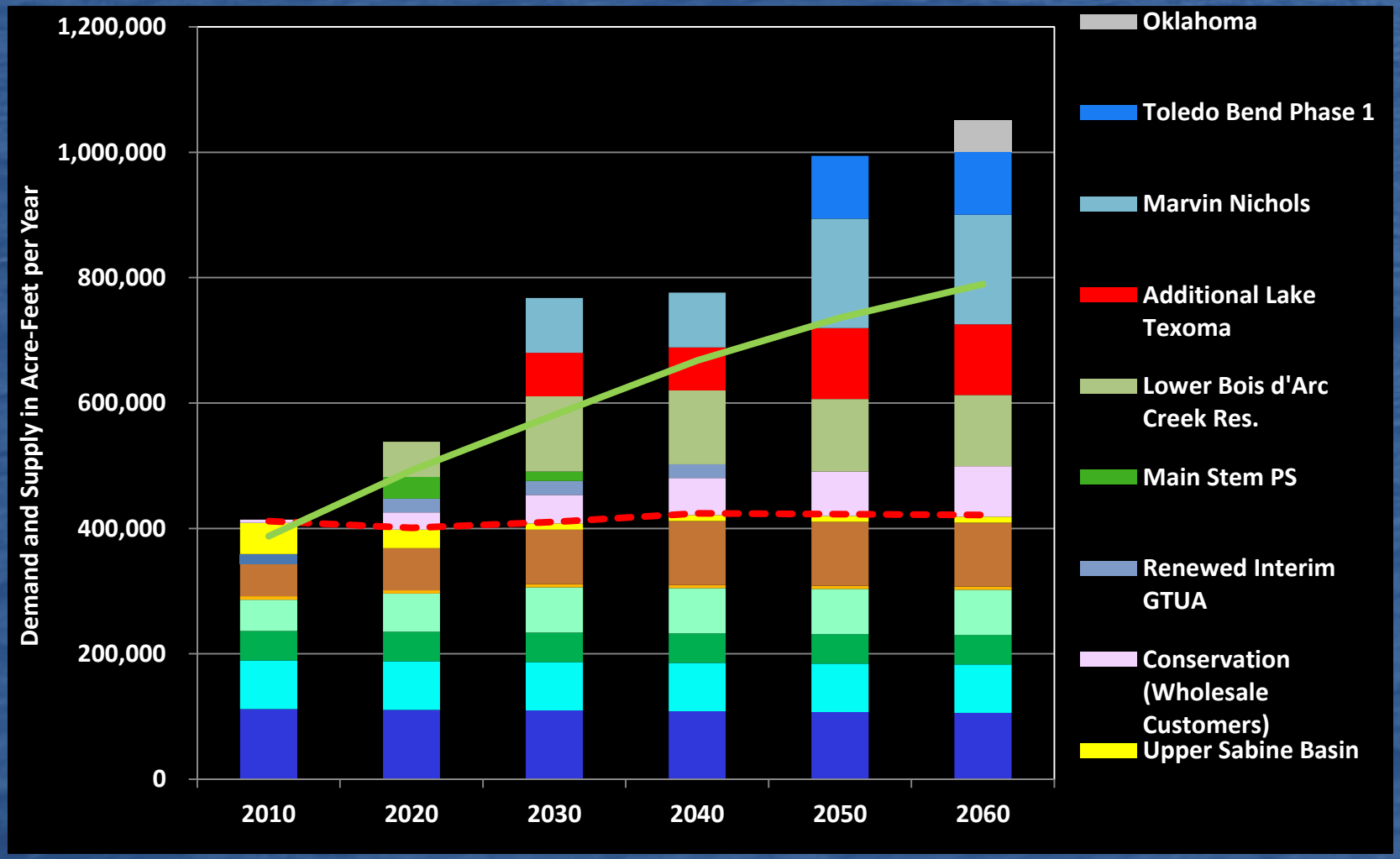
District

Unit Costs of Potentially Feasible Strategies for NTMWD

North Texas Municipal Water District

Recommended Strategies for NTMWD



North Texas Municipal Water District

2012 State Water Plan for NTMWD

Water Management Strategy	Supply (Ac Ft/Yr)	Online (Year)	NTMWD Share of Capital Costs
Lower Bois d'Arc Creek Reservoir	123,000	2020	$615,498,000
Additional Lake Texoma	113,000	2025	$152,900,000
Marvin Nichols Reservoir	174,840	2030	$830,894,000
Toledo Bend Reservoir	200,000	2060	$1,239,763,000

Lower Bois d'Arc Creek Reservoir

Area:	16,526 acres
Storage:	367,609 ac-ft
Supply:	113 MGD
Average Depth:	22 ft
Maximum Depth:	70 ft
Lake Elevation:	534 ft msl
Owner & operator:	NTMWD

Not a USACE reservoir

North Texas Municipal Water District

Lower Bois d'Arc Creek Reservoir Schedule

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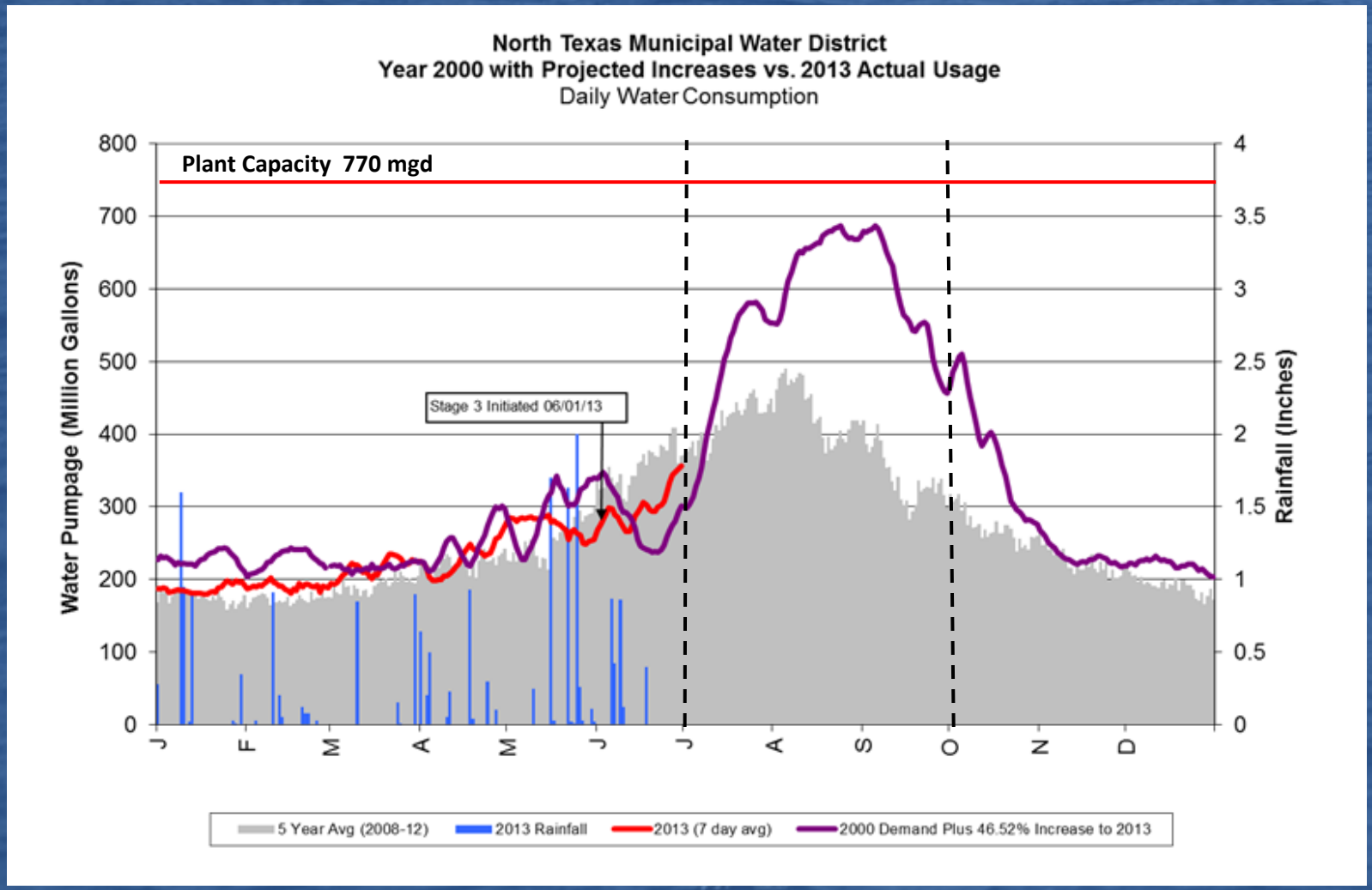
Summer Water Use Impact on Capital Improvement Plan

North Texas Municipal Water District

Daily Water Consumption



North Texas Municipal Water District

20-Year Water Rate Projection

North Texas
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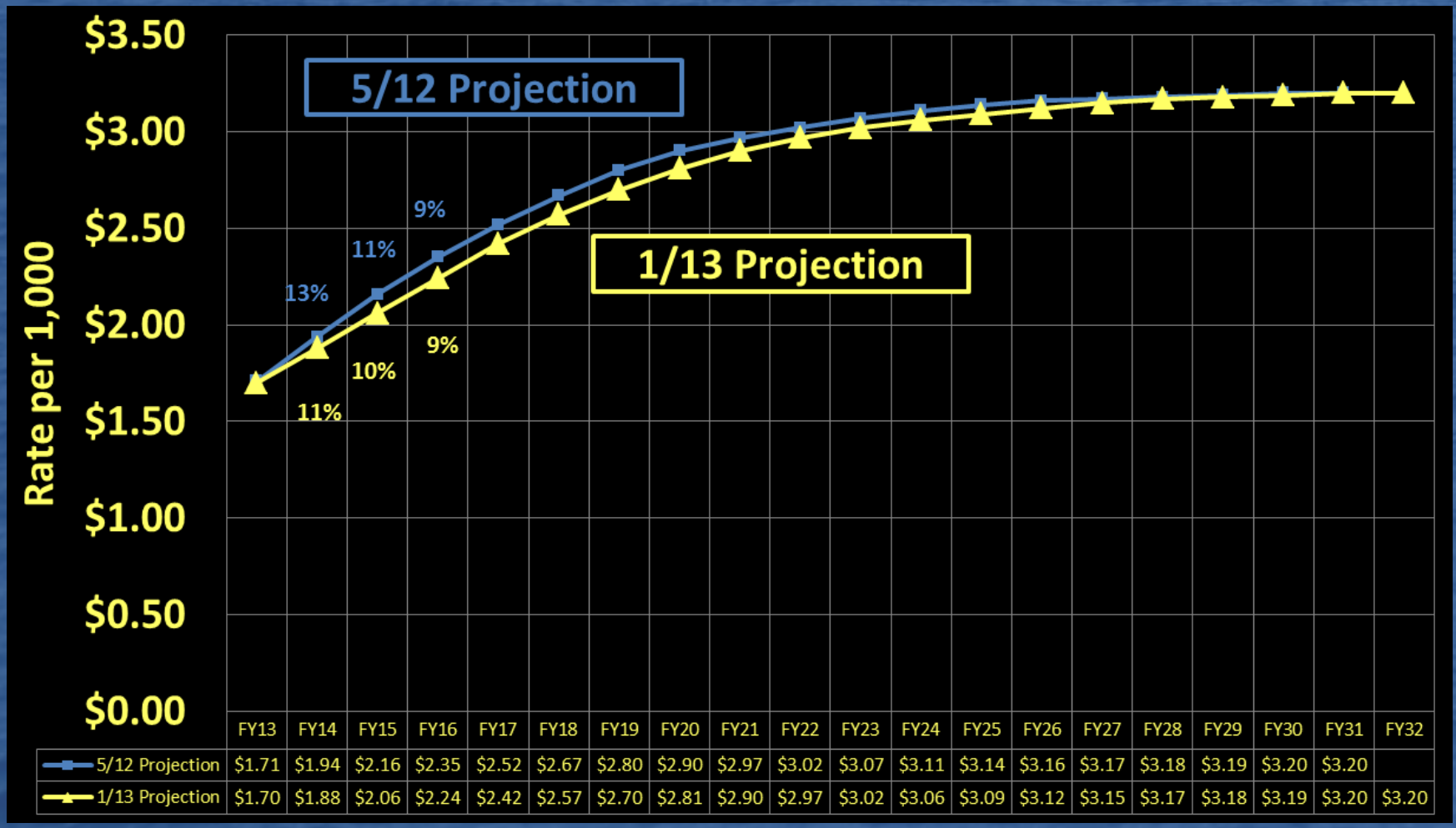
District

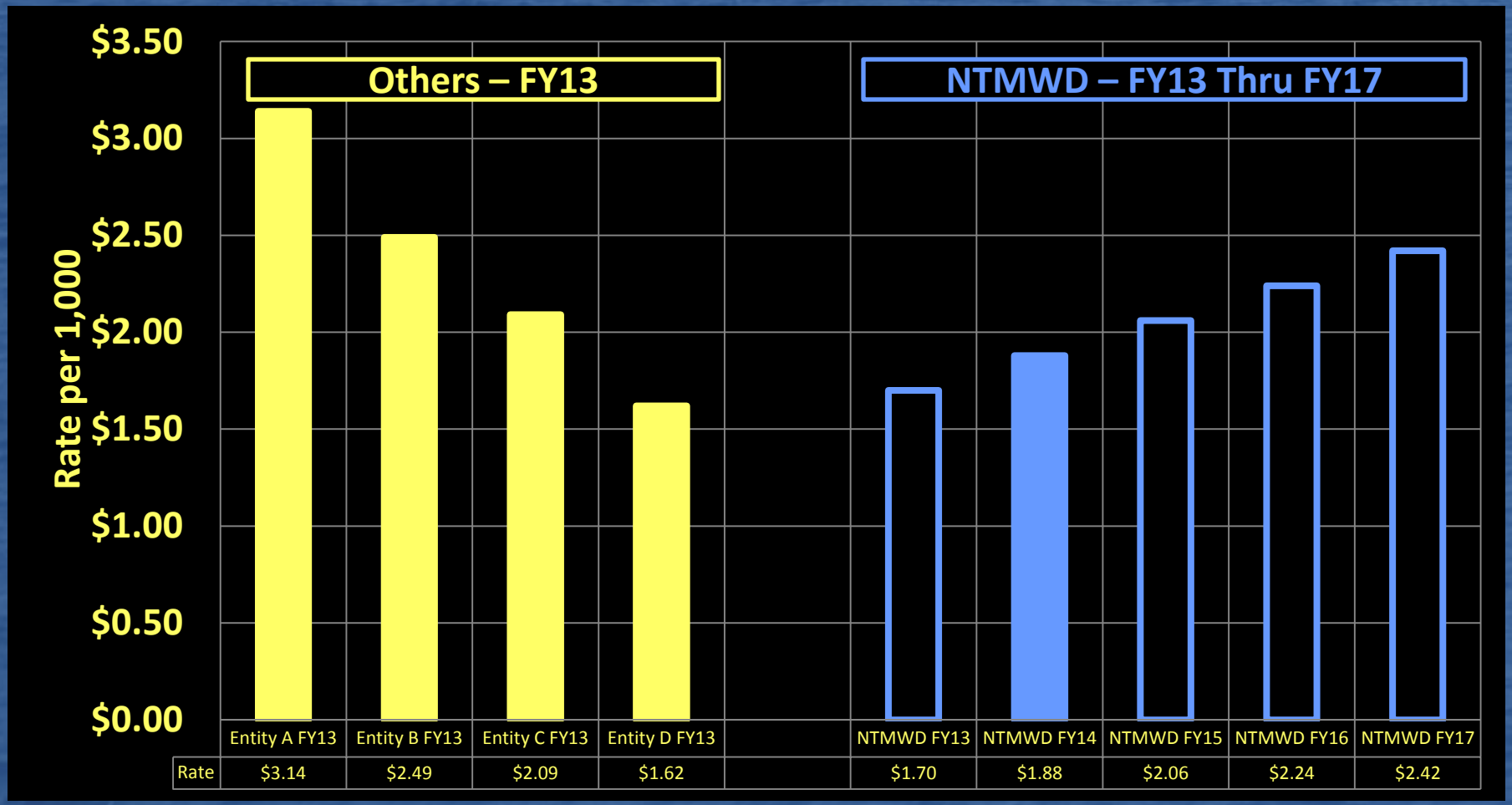
Member Water Rate Projection



	FY13	FY14	FY15	FY16	FY17	FY18	FY19	FY20	FY21	FY22	FY23	FY24	FY25	FY26	FY27	FY28	FY29	FY30	FY31	FY32
5/12 Projection	$1.71	$1.94	$2.16	$2.35	$2.52	$2.67	$2.80	$2.90	$2.97	$3.02	$3.07	$3.11	$3.14	$3.16	$3.17	$3.18	$3.19	$3.20	$3.20	
1/13 Projection	$1.70	$1.88	$2.06	$2.24	$2.42	$2.57	$2.70	$2.81	$2.90	$2.97	$3.02	$3.06	$3.09	$3.12	$3.15	$3.17	$3.18	$3.19	$3.20	$3.20

North Texas Municipal Water District

Rate Comparison



Note: Assumes a 2.25 Peaking Factor.

North Texas Municipal Water District

Questions/Comments

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District

MAINTENANCE MANAGEMENT STRATEGIES

SCREENING WALLS, BRIDGE RAILINGS & TRAFFIC SIGNS/MARKINGS

City Council Briefing: July 8, 2013

Introduction

- Purpose of tonight's briefing:
  - Provide background regarding and a conditions assessment of city maintained screening walls, bridge railings and traffic signs/markings
  - Review current management strategies for each
  - Evaluate options and budget implications for enhancing the various strategies in the future

SCREENING WALL MANAGEMENT STRATEGY

Introduction

- Screening Walls Management Strategy
  - Construction of new walls as required by the City's current development standards
  - Construction of end cap enhancements on existing walls at neighborhood entry points
  - Washing and painting concrete and stucco walls
  - Reconstruction and repair of damaged brick and stone walls

Screening Wall Inventory

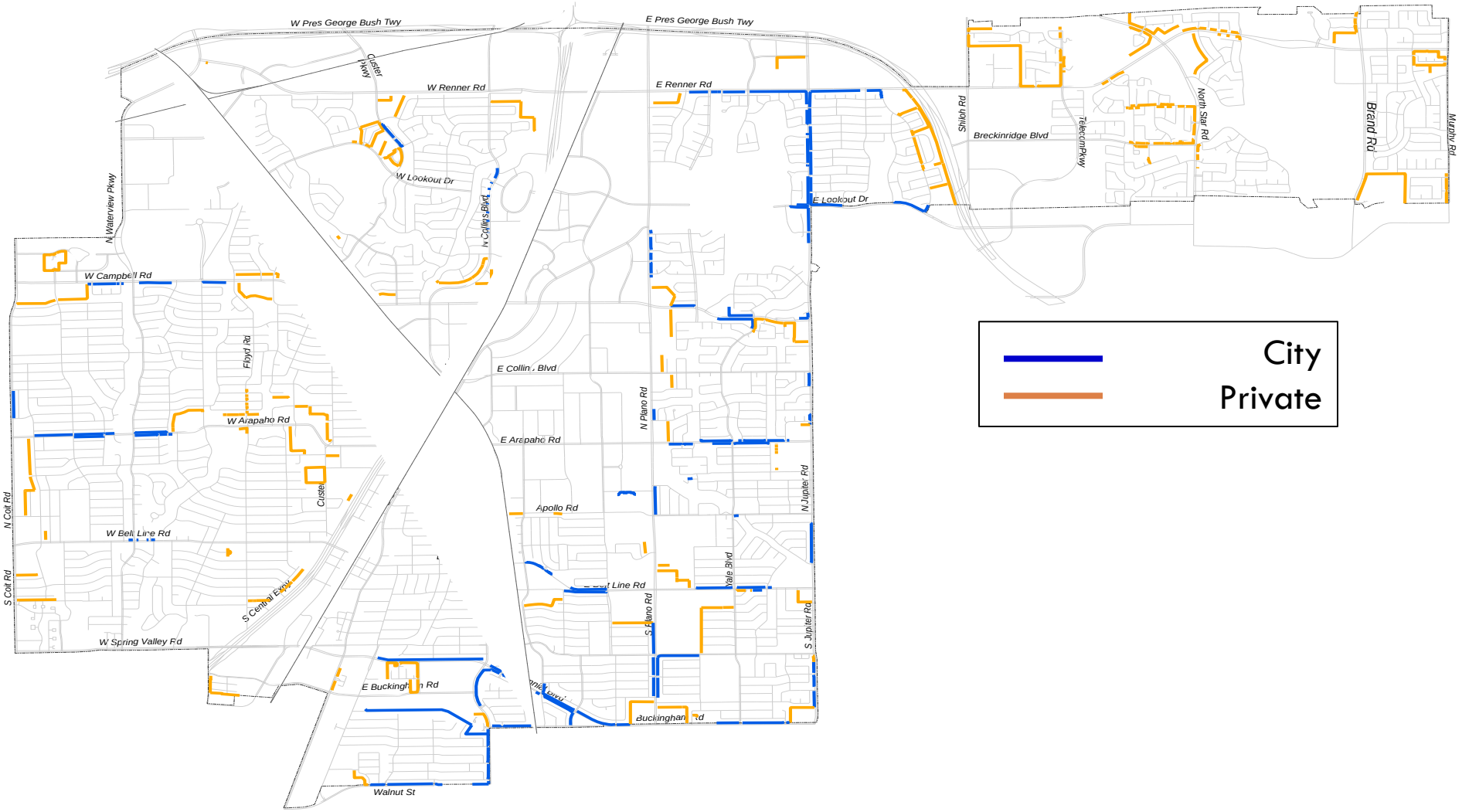
- Inventory was initially shared with City Council during February 18, 2013 briefing.
  - Over 340 screening walls inventoried
    - Approximately 41 miles
  - Catalogued location, dimensions, material, finish, etc.
    - Visually assessed physical condition of panels, columns and foundations
    - Visually assessed appearance of surface and finish
      - Assessment included the severity and extent of each deficiency

Wall Inventory

- Wall types
  - The most common wall materials are concrete and brick
    - Concrete - cast in place, concrete block, or precast panels
  - Additional types include stone, stucco, and vinyl panels

- Maintenance
  - City Maintained
    - 129 walls totaling 16.6 miles
  - Privately Maintained
    - 214 walls totaling 24.4 miles
      - Commercial and Multi-Family
      - Homeowner Associations
      - Private individuals

Wall Locations - All Walls



Condition Assessment Overview

1. **Routine Maintenance** – Washing, priming, and painting walls; caulking and sealing as needed

2. **Repair** – Repair of localized damage (missing brick, caps, etc.) or partial replacement (small sections of wall); collision repair

3. **Reconstruction** – Demolition and construction of 6' tall brick and/or stone walls

Condition Assessment Summary

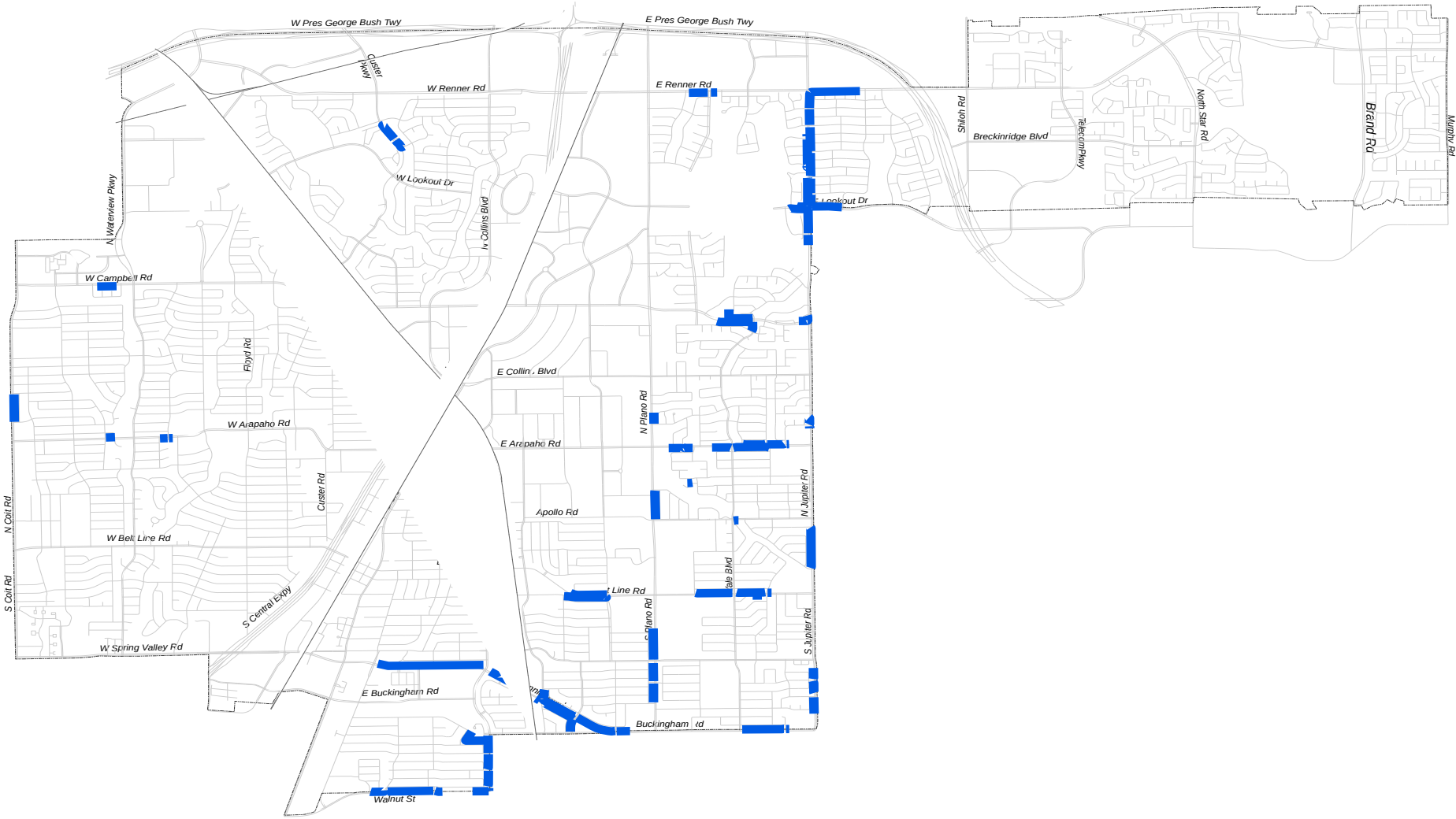
- **Routine Maintenance**
  - Discoloration
  - Dirty
  - Lime run
  - Minor spalling

Condition Assessment Summary

- **Routine Maintenance**
  - Minor cracks
  - Minor joint damage
  - Exposed rebar
  - Leaning slightly

City Maintained Walls

City Maintained Walls - Paintable



Maintenance Program Priorities

1. Wash and paint walls that currently have peeling or chipping paint
2. Wash and paint walls that have been painted different colors
3. Wash and paint walls that will compliment Neighborhood Vitality Program projects
4. Establish a regular rotation to wash all walls within the City

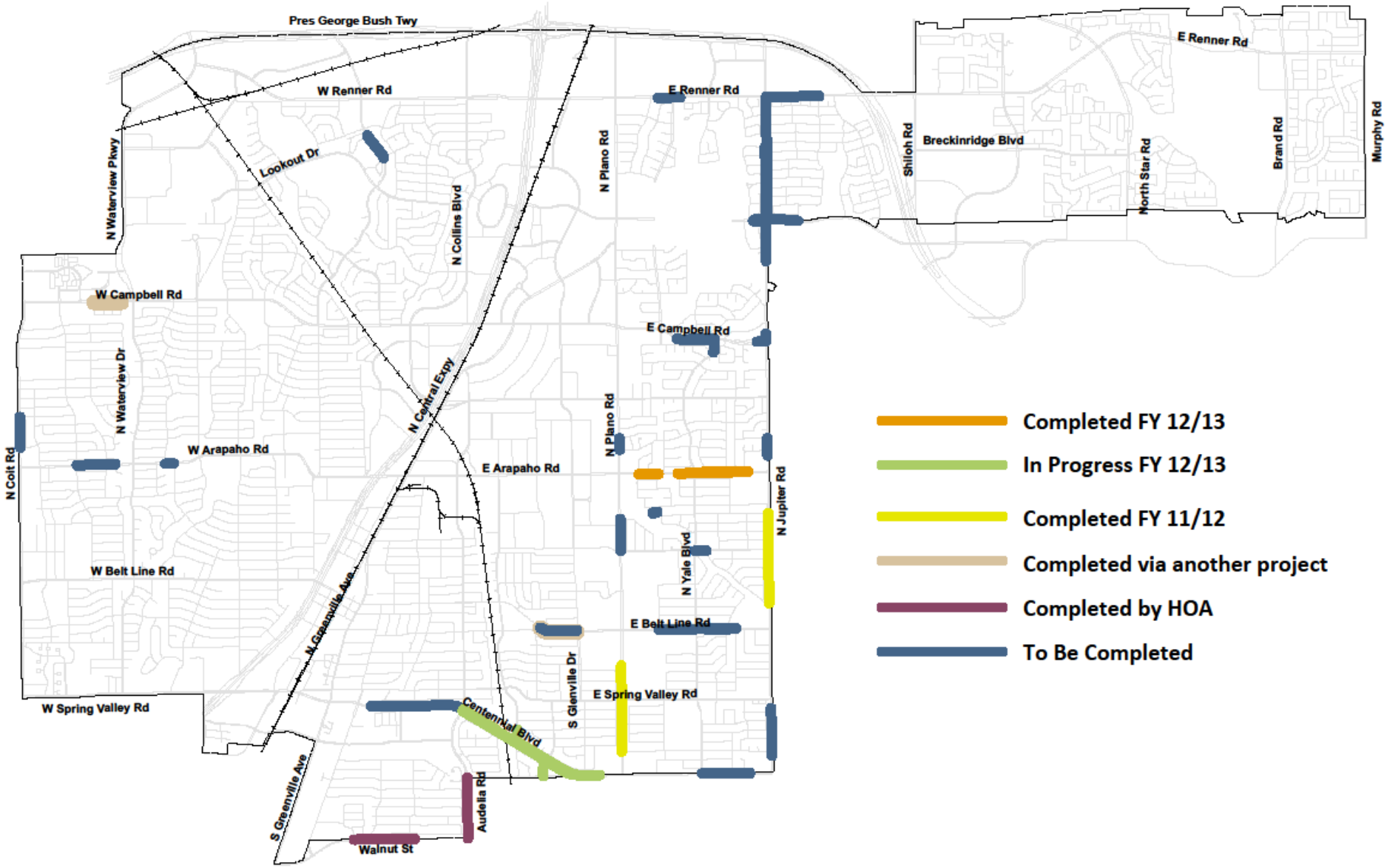
eCoat Paint Option

- eCoat recycled paint preserves the environment by collecting and remanufacturing paint to exact specifications.
- eCoat paint is made with a minimum of 50% post-consumer waste paints.
- eCoat paints are sorted by type and color, tested and filtered, then mixed and adjusted for quality.
- New ingredients are added to batches of eCoat to assure consistent performance features and color.

eCoat Paint Option

- Cost to power wash, prime and paint screening wall
  - $.95 square foot
- Completed in FY 11/12
  - 4,375 linear feet (6' high wall)
  - $20,000 operating budget
- Completed in FY 12/13
  - 10,150 linear feet (6' high wall)
  - $40,000 operating budget

City Maintained Walls Enhanced



FY 11/12 Plan

FY 11/12 Plan

FY 12/13 Plan

3 Year Screening Wall Management Strategy

Wall Management 3 Year Strategy

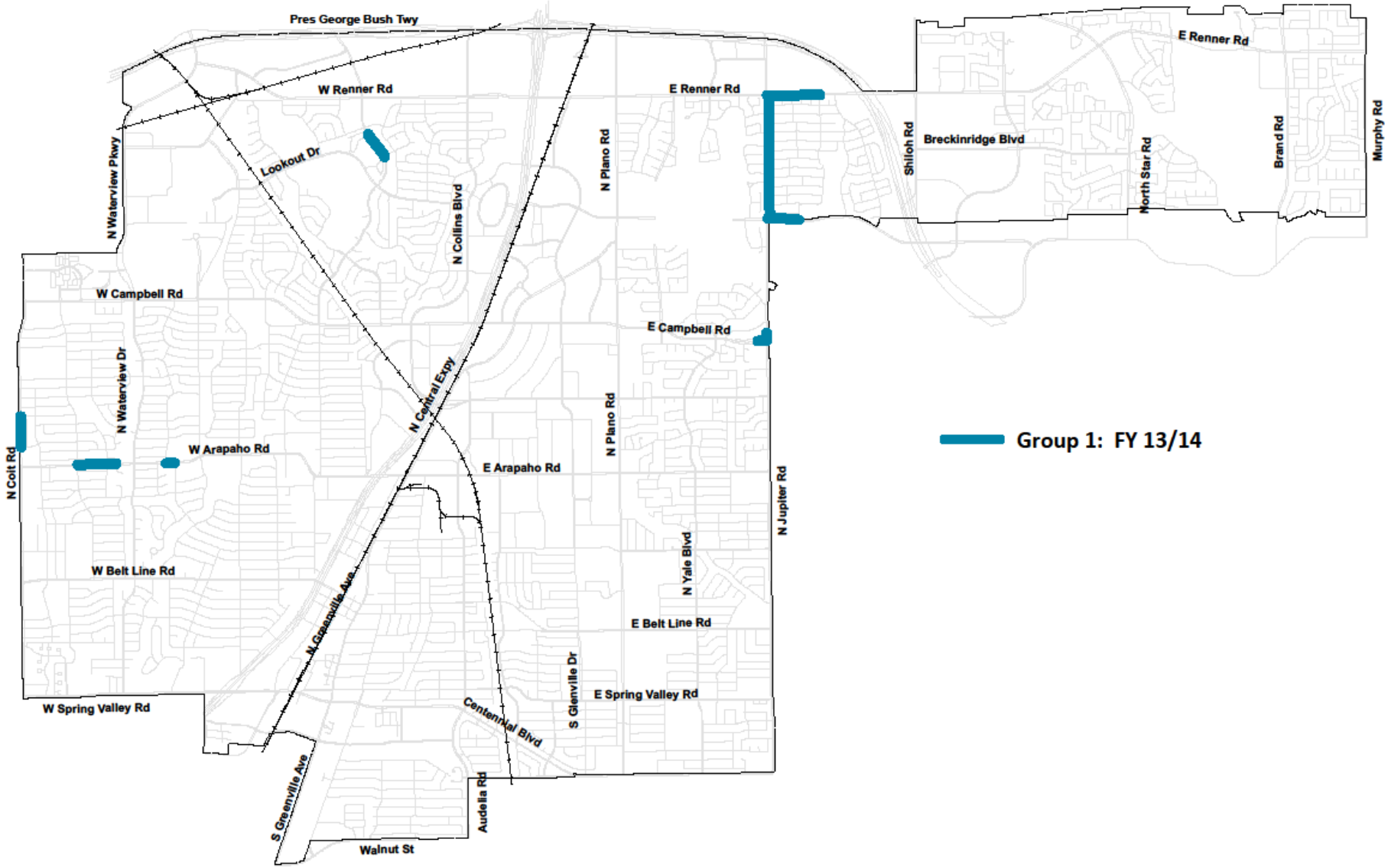
	FY 12/13 Actual			
Wall Washing / Painting	$40,000			

Wall Management 3 Year Strategy

	FY 12/13 Actual	FY 13/14 Goal		
Wall Washing / Painting	$40,000	$70,000		

- Renner Rd (south side) – Foxboro bridge east to Owens Dr
- Jupiter Rd (east side) – Lookout Dr north to Renner Rd
- Lookout Dr (north side) – Jupiter Rd east to N. Spring Dr
- Campbell Rd & Jupiter Rd – northwest corner
- Arapaho Rd (south side) – Crestview Circle east to Newberry
- Arapaho Rd (north side) – Coit Rd east to West Fork Cottonwood Creek Bridge
- Coit Rd (east side) – Chippewa Dr north to Apache Dr
- Custer Rd (east side) – Valley Cove north to Pleasant Valley

FY 13/14 Goal


Pres George Bush Twy
W Renner Rd
E Renner Rd
E Renner Rd
Lookout Dr
N Waterview Pkwy
N Collins Blvd
N Plano Rd
Shiloh Rd
Breckinridge Blvd
North Star Rd
Brand Rd
Murphy Rd
W Campbell Rd
E Campbell Rd
N Waterview Dr
N Central Expy
N Plano Rd
N Colt Rd
W Arapaho Rd
E Arapaho Rd
N Jupiter Rd
N Yale Blvd
W Belt Line Rd
N Greenville Ave
E Belt Line Rd
S Glenville Dr
E Spring Valley Rd
W Spring Valley Rd
Centennial Blvd
S Greenville Ave
Audelia Rd
Walnut St
Group 1: FY 13/14

FY 13/14 Plan

Lookout Dr (north side)
Jupiter Rd east to N. Spring Dr

Custer Rd (east side)
Valley Cove north to Pleasant Valley

Arapaho Rd (north side)
Coit Rd east to West Fork Cottonwood Creek Bridge

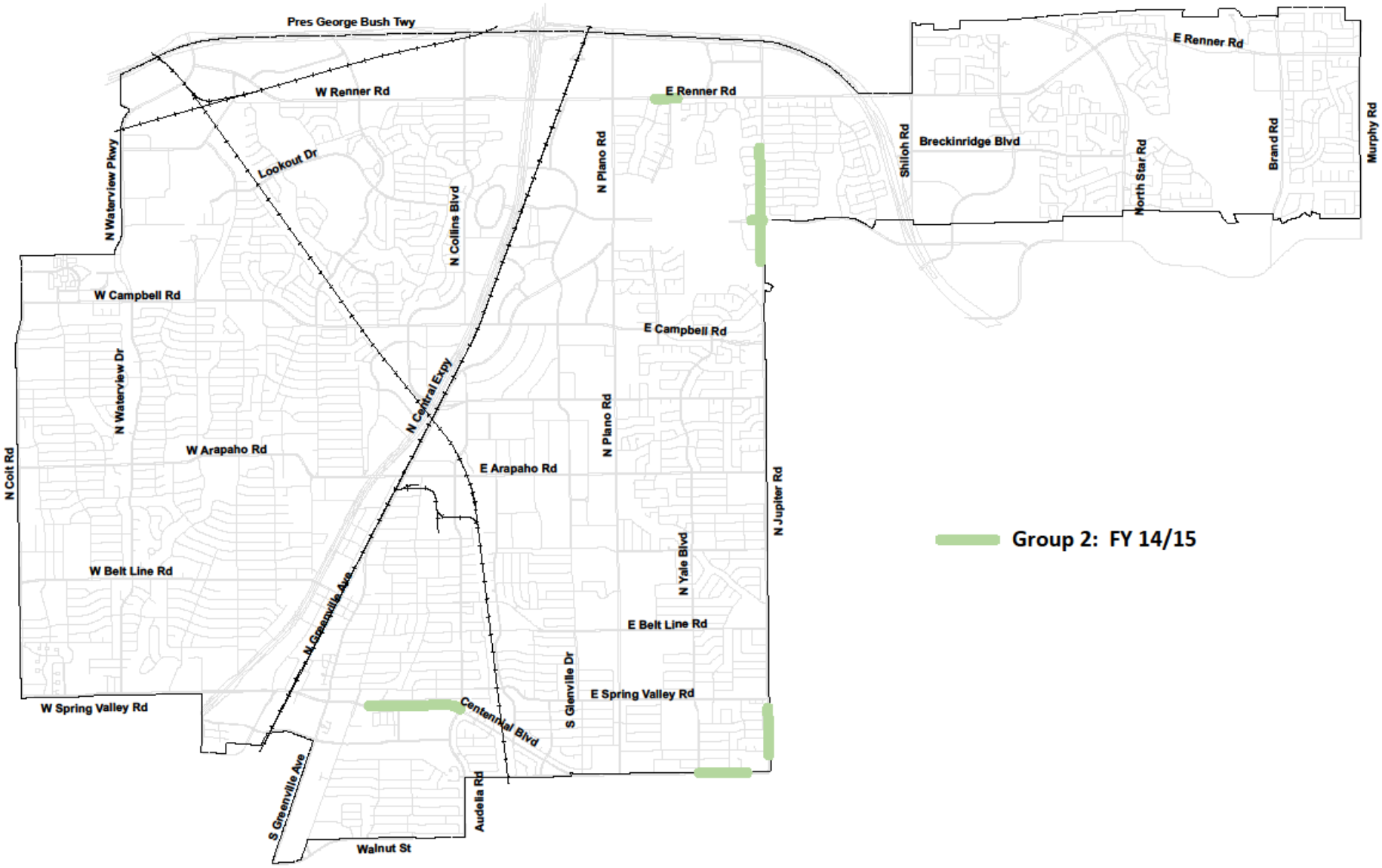
Campbell Rd & Jupiter Rd
Northwest corner

Wall Management 3 Year Strategy

	FY 12/13 Actual	FY 13/14 Goal	FY 14/15 Goal	
Wall Washing / Painting	$40,000	$70,000	$70,000	

- Renner Rd (south side) – Foxboro bridge east to Wessex Dr
- Jupiter Rd (east side) – Equestrian Center north to North St. Andrews
- Lookout Drive (north and south side) – Sherrill Park Dr east to Jupiter Rd
- Jupiter Rd (west side) – Berkner Dr. south to Richwood Shopping Center
- Buckingham Rd (north side) – Yale Blvd east to Richwood Shopping Center
- Centennial Blvd (north side) – Region 10 east to Grove Rd

FY 14/15 Goal


Pres George Bush Twy
W Renner Rd
E Renner Rd
E Renner Rd
Lookout Dr
N Waterview Pkwy
N Collins Blvd
N Plano Rd
Shiloh Rd
Breckinridge Blvd
North Star Rd
Brand Rd
Murphy Rd
W Campbell Rd
E Campbell Rd
N Waterview Dr
N Central Expy
N Colt Rd
W Arapaho Rd
E Arapaho Rd
N Plano Rd
N Jupiter Rd
N Yale Blvd
W Belt Line Rd
N Greenville Ave
E Belt Line Rd
S Glenville Dr
W Spring Valley Rd
Centennial Blvd
E Spring Valley Rd
S Greenville Ave
Audelia Rd
Walnut St
Group 2: FY 14/15

FY 14/15 Plan

Centennial Blvd (north side)
Region 10 east to Grove Rd

Jupiter Rd (east side)
Equestrian Center north to North St. Andrews

Jupiter Rd (west side)
Berkner Dr. south to Richwood Shopping Center

Buckingham Rd (north side)
Yale Blvd east to Richwood Shopping Center

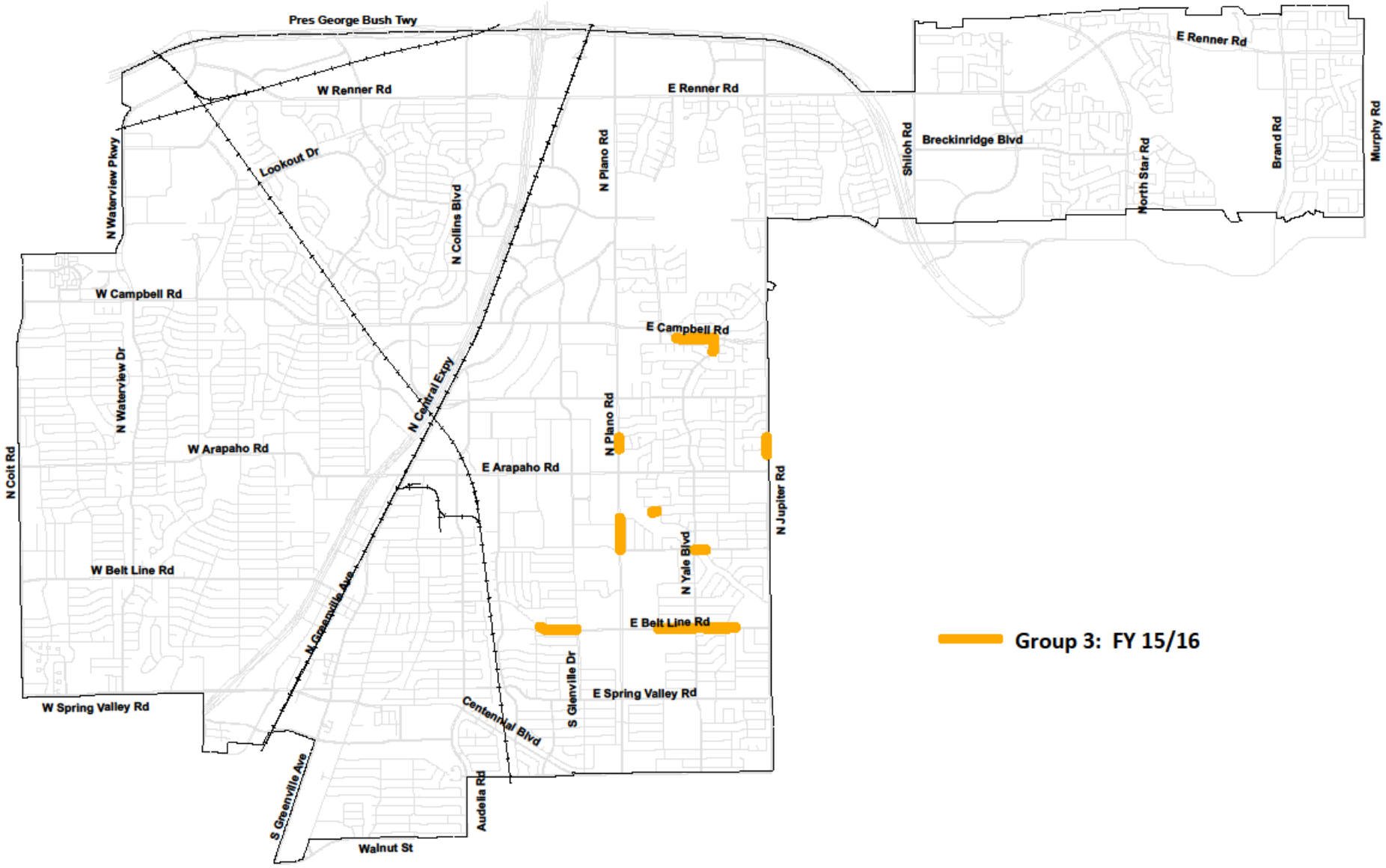
Wall Management 3 Year Strategy

	FY 12/13 Actual	FY 13/14 Goal	FY 14/15 Goal	FY 15/16 Goal*
Wall Washing / Painting	$40,000	$70,000	$70,000	$70,000

- Campbell Rd (north and south side) – Central Christian Church east to Yale Blvd
- Yale Blvd (west side) – Barclay north to Campbell Rd
- Plano Rd (east side) – Blake Dr north and Atmos Sub Station
- Plano Rd (east side) – Apollo Dr north to Creekside Dr
- Jupiter Rd (west side) –Brush Creek north to Oak Brook
- Belt Line Rd (north side) – St. John's east to S. Spring Creek
- Belt Line Rd (south side) – Dawn Circle east to S. Spring Creek
- Belt Line Rd (north side) – SDA Richardson Church to Glenville

***Completes the painting of all City maintained screening walls.**

FY 15/16 Goal


Pres George Bush Twy
W Renner Rd
E Renner Rd
E Renner Rd
Lookout Dr
N Waterview Pkwy
N Collins Blvd
N Plano Rd
Shiloh Rd
Breckinridge Blvd
North Star Rd
Brand Rd
Murphy Rd
W Campbell Rd
E Campbell Rd
N Waterview Dr
N Central Expy
N Plano Rd
N Coit Rd
W Arapaho Rd
E Arapaho Rd
N Jupiter Rd
N Yale Blvd
W Belt Line Rd
N Greenville Ave
E Belt Line Rd
S Glenville Dr
E Spring Valley Rd
W Spring Valley Rd
Centennial Blvd
S Greenville Ave
Audelia Rd
Walnut St
Group 3: FY 15/16

FY 15/16 Plan

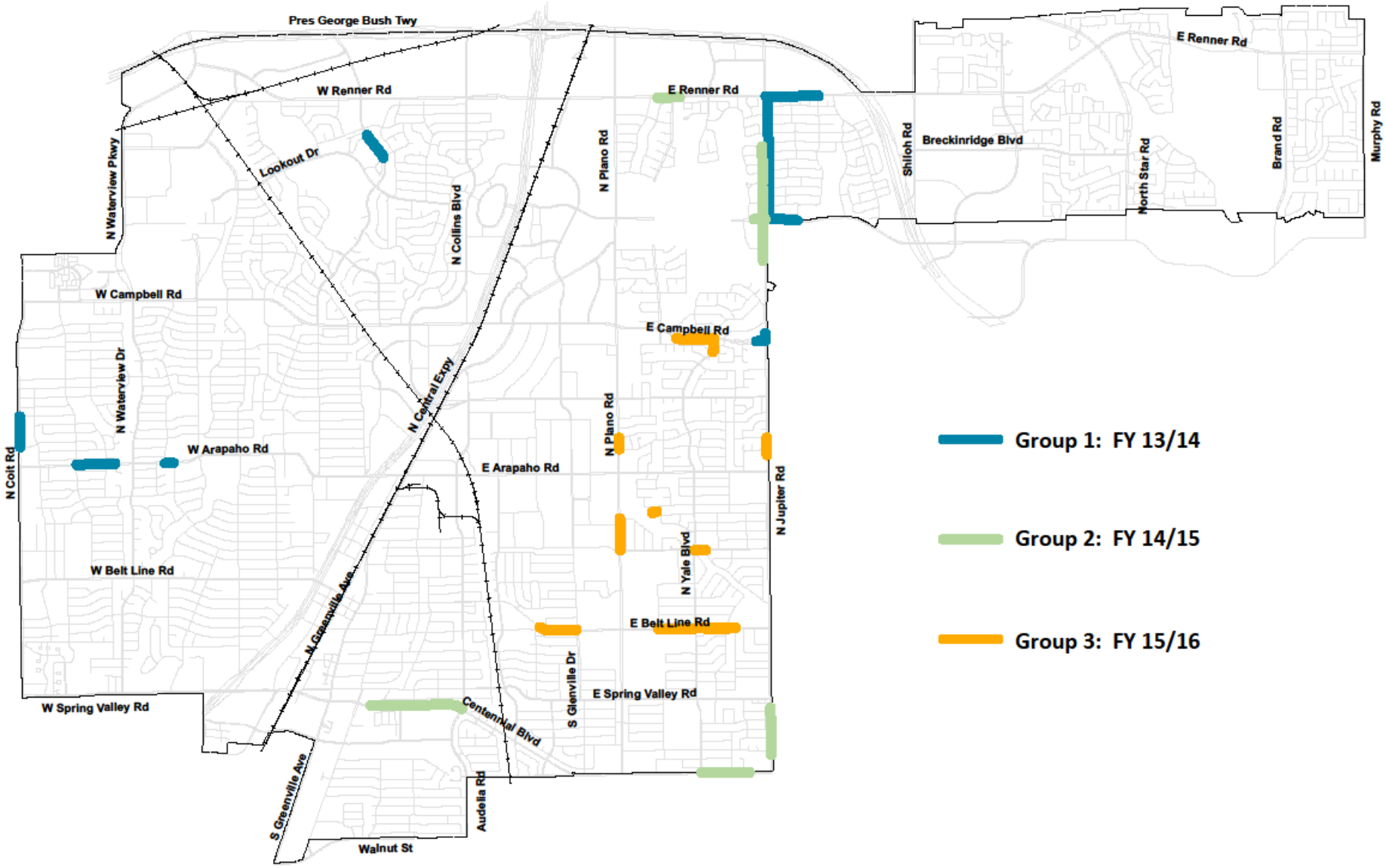
Belt Line Rd (north side)
St. John's east to S. Spring Creek

Belt Line Rd (south side)
Dawn Circle east to S. Spring Creek

Belt Line Rd (north side)
St. John's east to S. Spring Creek

Plano Rd (east side)
Apollo Dr north to Creekside Dr

Wall Management 3 Year Strategy



Next Steps

1. Assess funding goals during upcoming budget considerations.
2. Implement FY 13/14 Routine Maintenance plan in the Spring of 2014.
3. Complete painting of all City maintained screening walls by the end of FY 15/16.
4. Begin development of ongoing routine maintenance plan to be implemented in FY 16/17.
5. Continue to monitor Reconstruction Level walls and update Capital Projects Database for future funding consideration.

BRIDGE RAILINGS MANAGEMENT STRATEGY

Introduction

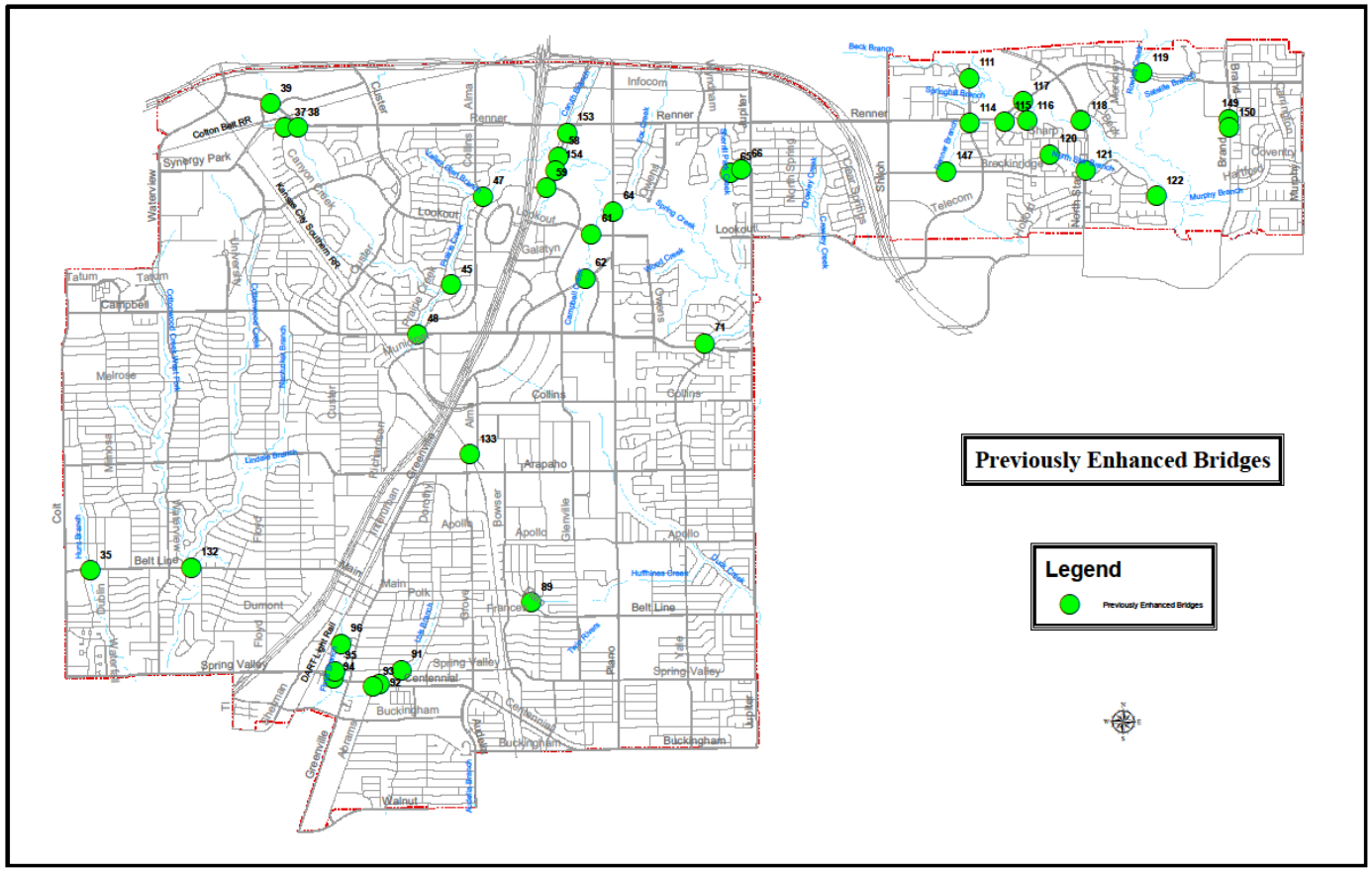
- Bridge Rail Maintenance Consideration
  - Richardson maintains 144 bridges
  - Aesthetic enhancement of bridge rails and guard walls beginning with capital improvement projects in the 1980's
  - Aesthetic elements expanded to development projects and bridge renovation projects.

Introduction

- Bridge Rail Maintenance Consideration
  - The GO Bond programs of 1997 and 2006 enhanced 19 bridge locations
  - The 2010 GO program includes aesthetic enhancement projects for 21 bridges locations.
  - 39 Bridges have been enhanced prior to the Neighborhood Vitality Programs or as part of other projects

Introduction

- Previously Enhanced Bridges



Introduction

- Bridge Rail Maintenance Consideration
  - Condition assessment in 2012 of the 39 bridges enhanced prior to the Neighborhood Vitality Programs or as part of other projects.
  - Cataloged location, dimensions, materials of rails, columns, parapets and guard walls.
  - Visually assessed physical condition and appearance of each bridge rail element (rails, concrete, stone, brick, finishes, etc.).

Introduction

- Bridge Rail Maintenance Consideration
  - Rated overall condition for each location.
  - Estimated repair cost for 25 of 39 locations. The remaining 14 were in good condition.

Bridge Rail Condition Assessment Summary

Condition Assessment Summary

- Three condition levels
  - Condition 1: Currently needing repair or maintenance
    - Element missing or damaged
    - Cracks are severe or extensive
    - Paint is pealing or badly faded
    - Masonry is discolored

Condition Assessment Summary

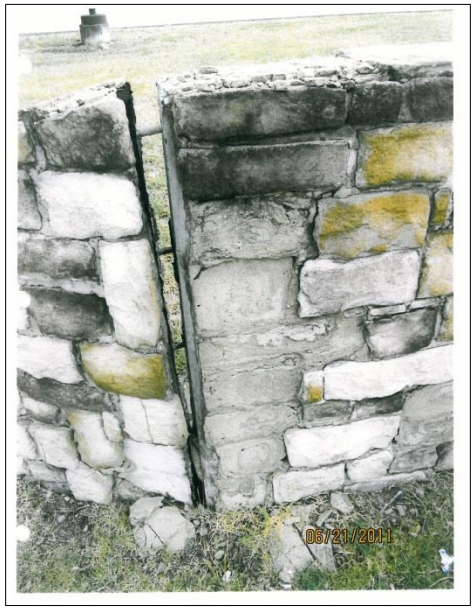
- Three condition levels
  - Condition 2 : Maintenance or repair needed in near future
    - Some cracking evident but not severe
    - Paint is somewhat faded
    - Masonry is dirty

Condition Assessment Summary

- Three condition levels
  - Condition 3 : Repair is not required at this time
    - Minor or no cracking
    - Paint in good condition

Condition Assessment Summary

- Condition 1: Currently needing repair or Maintenance



Condition Assessment Summary

- Condition 2 – Maintenance or repair needed in near future

Condition Assessment Summary

- Condition 3 – Repair is not required at this time

Condition Assessment Summary

- Condition 1: Currently needing repair or maintenance
- 3 of 12 condition 1 locations currently being repaired
  - Centennial at Lois Branch
  - Abram at Lois Branch
  - Collins at Prairie Creek
- 9 of 12 condition 1 locations
  - Campbell at South Trib.
  - Lookout at Campbell Creek
  - Centennial at Floyd Branch
  - Telecom at Renner Branch
  - Point North at Prairie Creek
  - Renner at Beck Branch
  - Renner at Rowlett Creek
  - Belt Line East of Waterview
  - North Star at North Star Branch
- Estimated Repair Cost - $150,000

Condition Assessment Summary

- Condition 2: Needing repair or maintenance in the near future
- 13 Condition 2 Bridge Locations
  - Belt Line at Hunt Branch
  - Renner at Prairie Creek
  - Fall Creek Dr. at Prairie Creek
  - Greenville at Campbell Creek
  - Plano Rd. at Spring Creek
  - Belt Line at Huffhines Trib.
  - Point North at Tam O'Shanter Culvert
  - Spring Valley at Lois channel
  - Meadow Wood at Renner Branch
  - Sharps Lane at Renner Branch
  - North Star at Beck Branch
  - Breckinridge near Breckinridge Ct.
  - Alma at Kansas City Southern Rail Road
- Estimated Repair Cost - $300,000

Condition Assessment Summary

- Condition 3: Repair is not needed at this time
- 17 Bridge locations enhanced prior to Neighborhood Vitality Programs
  - Routh Creek Dr. at Spring Creek
  - Glenville at South Pacific Rail Road
  - Lookout at Campbell Creek
  - Yale at Chestnut Creek
  - Spring Valley at Floyd Branch
  - Brick Row at Floyd Branch
  - Telecom at Beck Branch
  - North St. Andrews at Spring Creek Trib.
  - North St. Andrews at Spring Creek Trib.
  - Renner at Rowlett Creek
  - Summerfield at North Star Branch
  - Belt Line east of Waterview
  - Breckinridge at Renner Branch
  - West of Brand South of Park Vista
  - West of Brand at Keating
  - Caruth Branch at 3300 Routh Creek
  - Southern Pacific Rail Road at 2700 Routh Creek
- The 40 neighborhood vitality enhanced bridges will also be monitored and added to next assessment

Bridge Rail Maintenance Three Year Strategy

Bridge Rail Maintenance Three Year Strategy

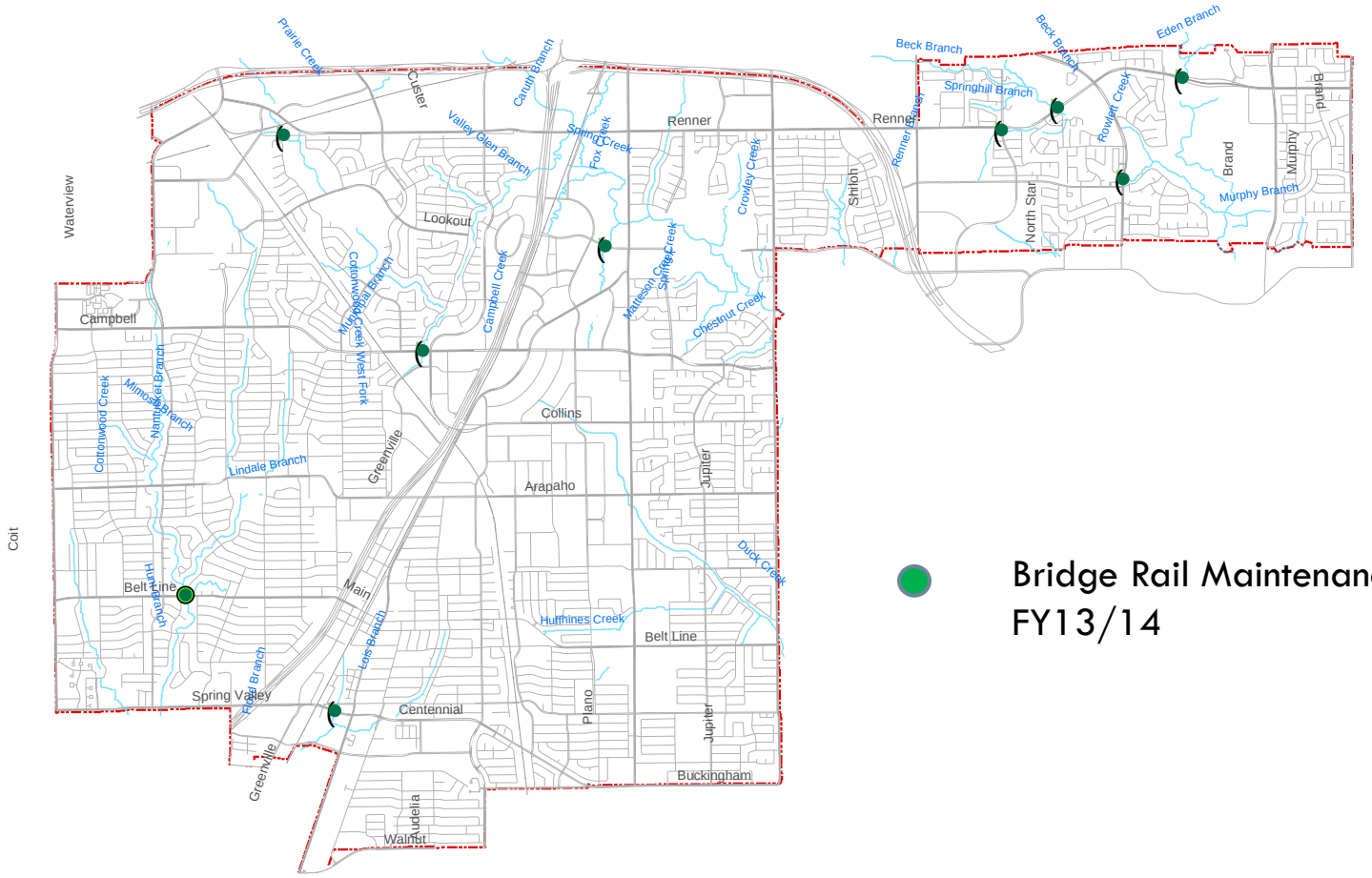
- FY 2013-2014
  - $150,000
  - 9 Condition 1 Bridges
- FY 2014-2015
  - $150,000
  - 7 - Condition 2 Bridges
- FY 2015-2016
  - $150,000
  - 6 - Condition 2 Bridges

Three Year Strategy FY 2013-14

	FY 12/13 Actual	FY 13/14 Goal	FY 14/15 Goal	FY 15/16 Goal
Bridge Rail Maintenance	$115,000	$150,000		

- Campbell at South Trib.
- Lookout at Campbell Creek
- Centennial at Floyd Branch
- Telecom at Renner Branch
- Point North at Prairie Creek
- Renner at Beck Branch
- Renner at Rowlett Creek
- Belt Line East of Waterview
- North Star at North Star Branch

FY 13/14 Goal



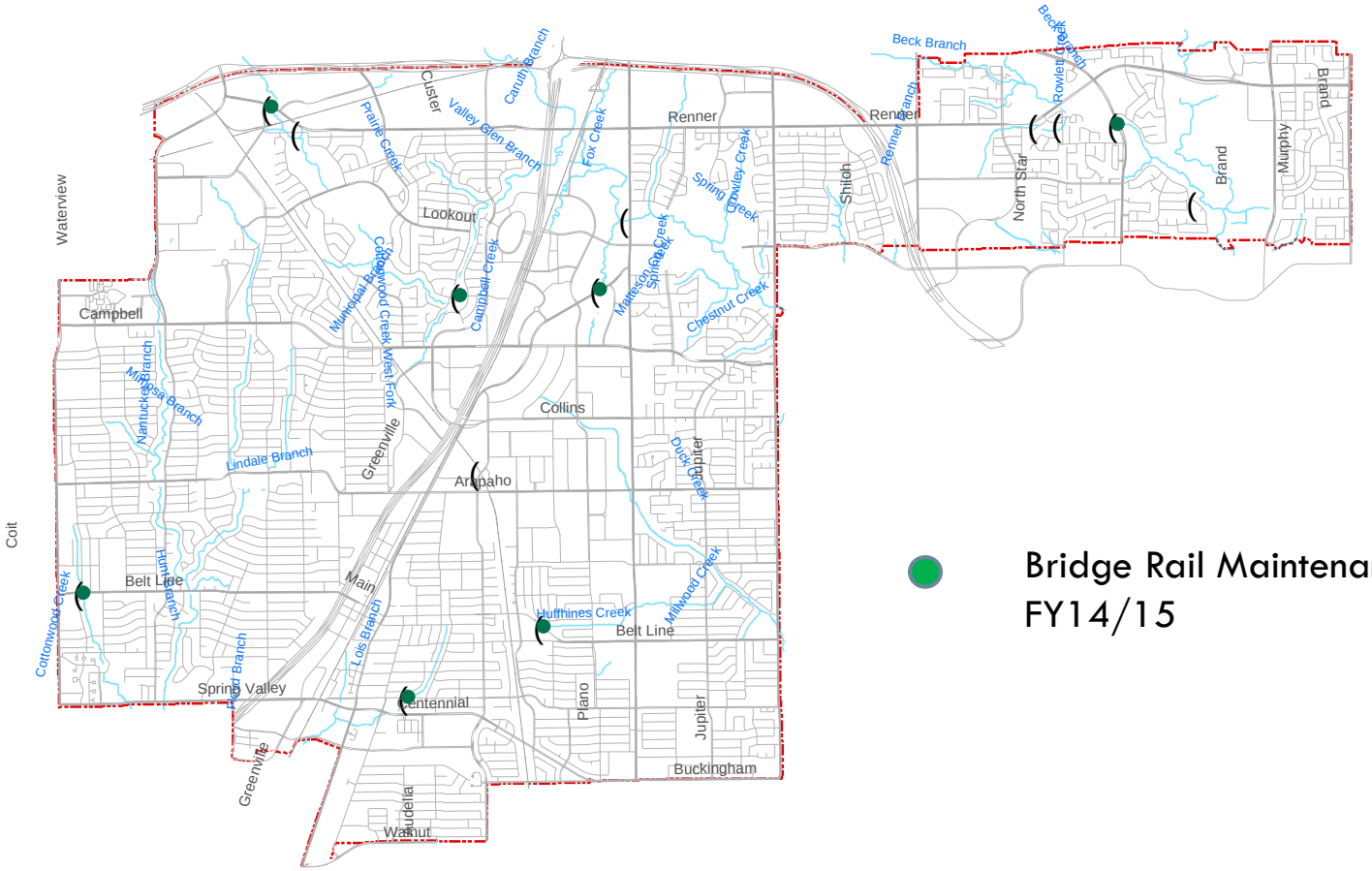
Bridge Rail Maintenance
FY13/14

Three Year Strategy FY 2014-15

	FY 12/13 Actual	FY 13/14 Goal	FY 14/15 Goal	FY 15/16 Goal
Bridge Rail Maintenance	$115,000	$150,000	$150,000	

- Belt Line at Hunt Branch
- Renner at Prairie Creek
- Greenville at Campbell Creek
- Fall Creek Dr. at Prairie Creek
- Belt Line at Huffhines Trib.
- North Star at Beck Branch
- Spring Valley at Lois Channel

FY 14/15 Goal



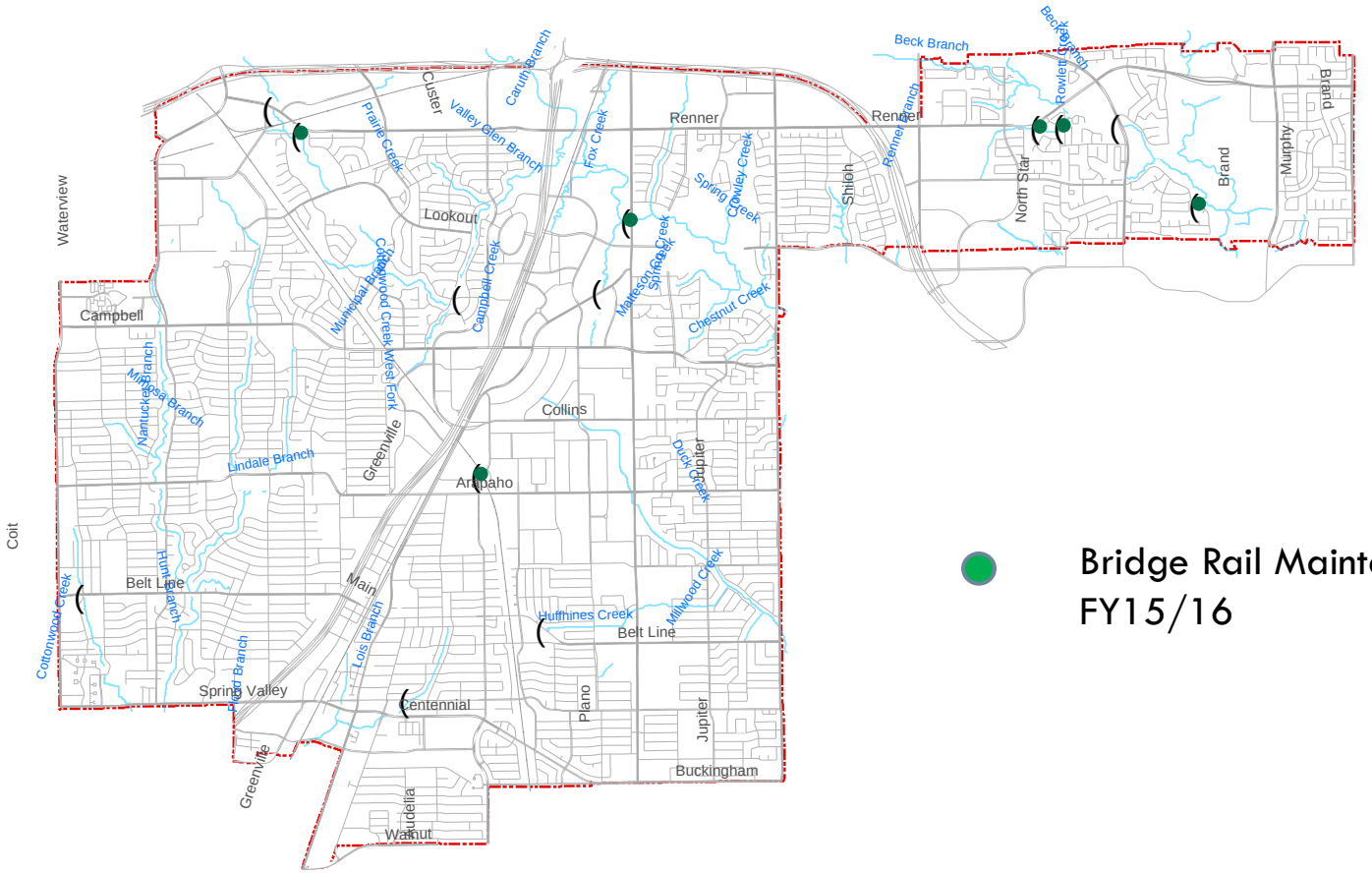
Bridge Rail Maintenance
FY14/15

Three Year Strategy FY2015-16

	FY 12/13 Actual	FY 13/14 Goal	FY 14/15 Goal	FY 15/16 Goal
Bridge Rail Maintenance	$115,000	$150,000	$150,000	$150,000

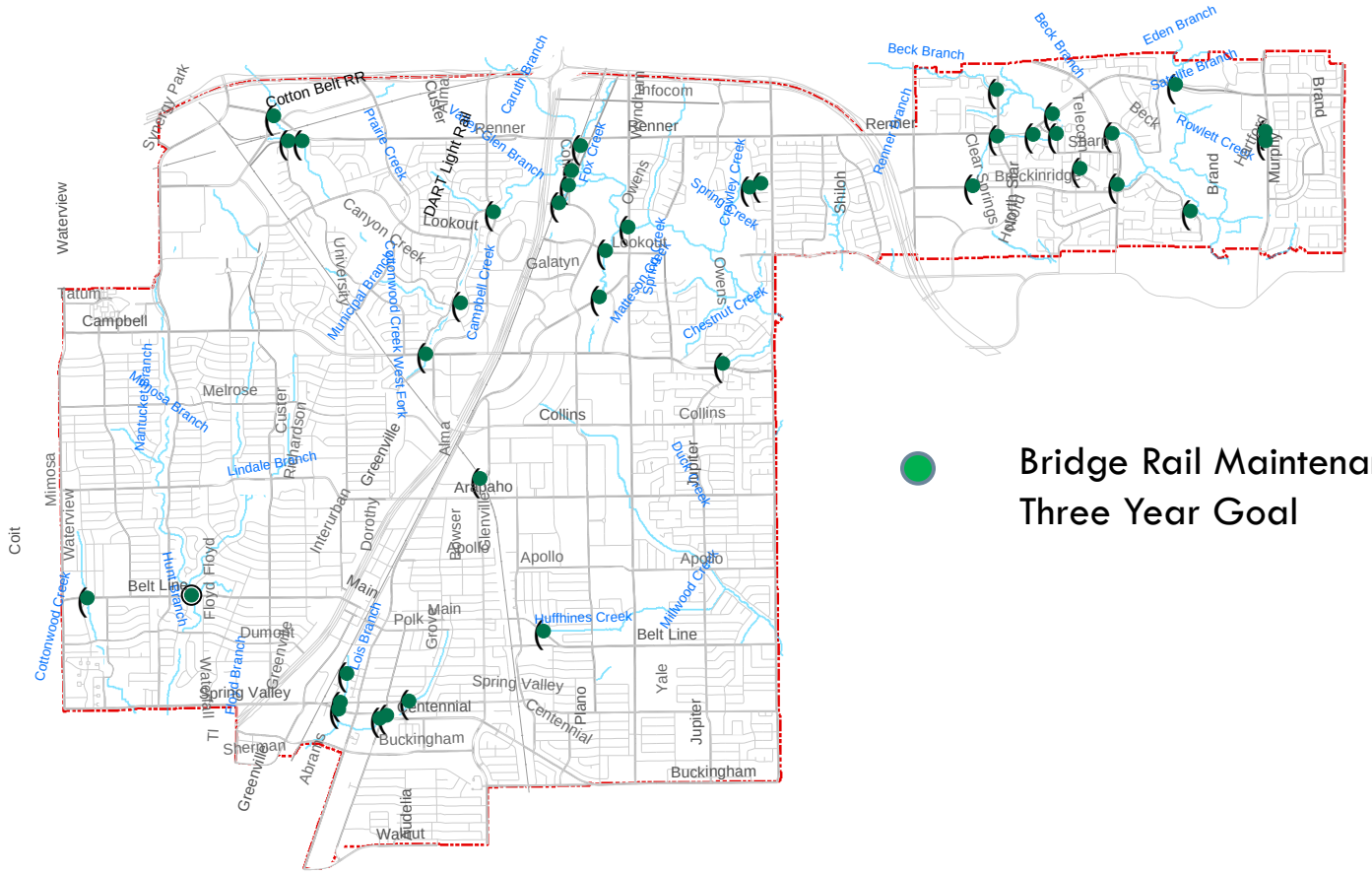
- Point North at Tam O'Shanter Culvert
- Plano Road at Spring Creek
- Meadow Wood at Renner Branch
- Sharps Lane at Renner Branch
- Breckinridge near Breckinridge Ct.
- Alma at Kansas City Southern Rail Road

FY 15/16 Goal



Bridge Rail Maintenance
FY15/16

Three Year Strategy - Goal



Next Steps

1. Include newer enhanced bridges in future inventories
2. Inventory unimproved bridges and assess needs
3. Annually update cost estimates for inventoried bridges
4. Continue to consider materials and contract provisions that improved cost effectiveness

SIGN & PAVEMENT MARKING MAINTENANCE

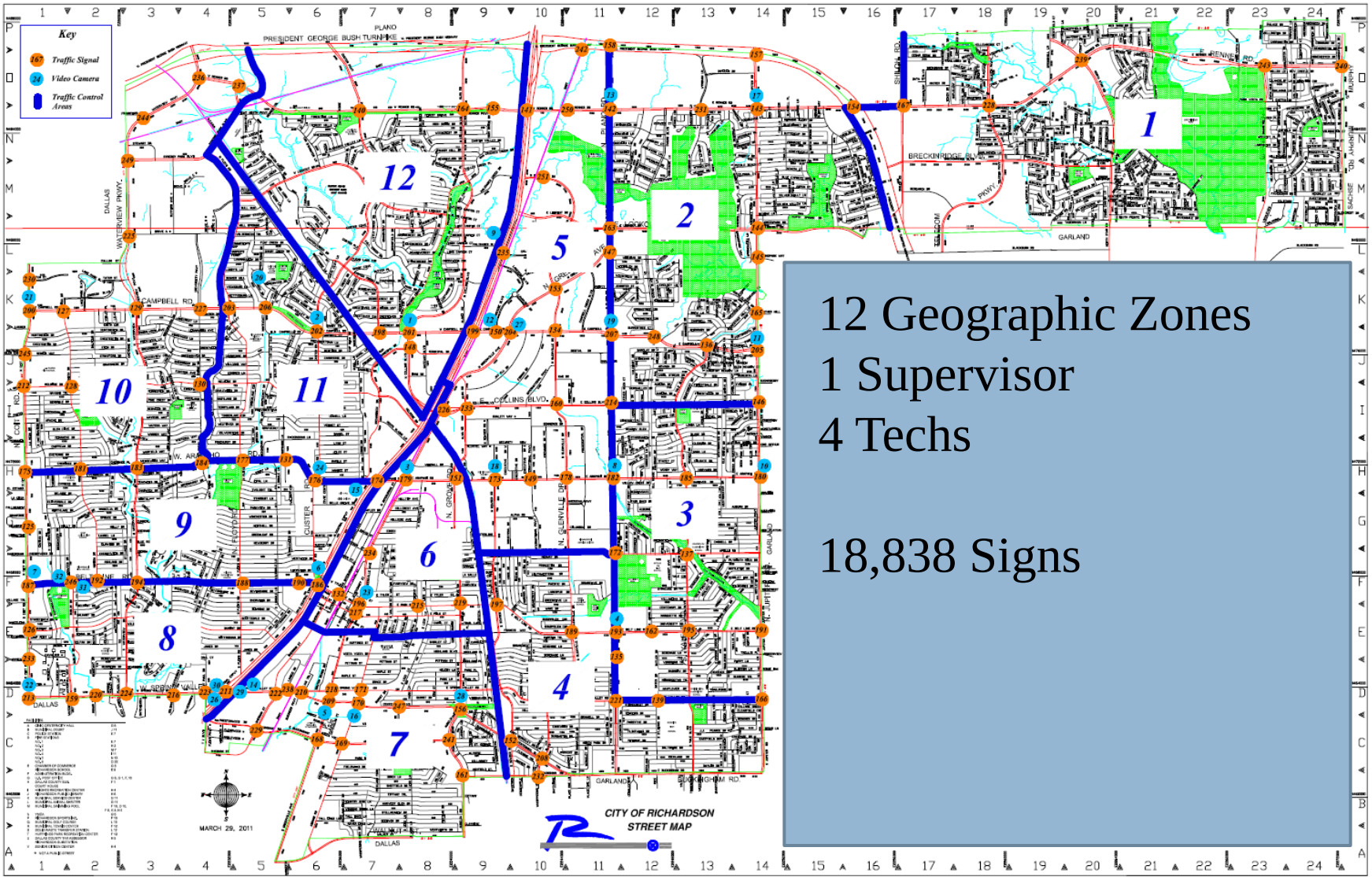
Introduction

- Sign and Pavement Marking Maintenance Plan
  - Inventory database of every sign location and installation date
  - Replace traffic control signs every 12 years to assure reflectivity
  - Replace knocked down and damaged signs as needed
  - Inventory of all pavement markings and buttons
  - Assess and restripe school crossings yearly as needed
  - Restripe signalized intersection markings every 3-5 years
  - Replace missing lane line buttons every 3-5 years

Sign Maintenance

- Signage installation and maintenance
  - 18,838 Total Signs
  - 14,454 Traffic Control Signs
  - 3,936 Small Street Name Signs
  - 448 Large Overhead Street Name Signs
- Replacement every ~12 years with newer High Intensity Sign Sheeting now required by Feds for regulatory signs. In 2008, Richardson started using the high intensity sheeting for all new signs because the life span benefit is longer than standard sign material

Sign Maintenance Zones



12 Geographic Zones
1 Supervisor
4 Techs

18,838 Signs

Traffic Control Signs

TRAFFIC CONTROL SIGNS as of 7/3/2013

		Zone											
Age	Total	1	2	3	4	5	6	7	8	9	10	11	12
< 1	2,203	251	352	314	90	154	232	129	125	167	108	153	128
2	1,674	232	94	244	48	104	71	113	115	222	141	94	196
3	1,433	109	45	95	125	108	93	156	138	84	258	66	156
4	1,514	150	98	105	209	131	63	85	75	104	174	168	152
5	1,024	117	61	49	54	37	44	84	72	213	87	80	126
6	1,578	272	76	77	210	192	76	80	89	83	96	135	192
7	929	100	34	62	87	66	21	102	67	90	132	87	81
8	1,986	205	129	144	209	81	160	168	135	259	150	141	205
9	1,304	113	127	113	84	279	76	125	76	84	83	60	84
10+	809	114	67	44	25	77	77	53	56	61	65	69	101
Total	14,454	1,663	1,083	1,247	1,141	1,229	913	1,095	948	1,367	1,294	1,053	1,421

- Richardson escalated its replacement of older Traffic Control signs starting in 2008 due to Federal requirements for reflectivity. 2012 deadline was met.
- Only 6% of the TC Signs are more than 10 years old

Street Name Signs

- **Overhead Street Name Signs on Signal Mast Arms**
  - 253 of 448 are 12+ Years and need replacement, some are actually 18 years
  - All Overheads along Beltline, Arapaho, and Campbell will be replaced in 2013, first shipment received in June
  - All other Overheads in city will be replaced in 2014
- **Small Street Name Signs**
  - 3062 of 3936 are 12+ Years and need replacement
  - Current schedule is replacing ~400 to 500 SNS per year
  - Status: 2 years into an 8 year effort.

Small Street Name Signs

- These signs were installed back to back at same time 15 years ago and the side facing to the west is very faded. The side facing the east in the shade during morning hours and is only slightly faded.

Overhead Street Name Signs

- The large Overhead Signs on traffic signal mast arms are more exposed to the sun and many are in very faded condition.
- New criteria for these signs include larger Upper/Lower fonts and include the block number just like the small signs.

Sign Management 3 Year Strategy

	FY 12/13 Actual	FY 13/14 Goal	FY 14/15 Goal	FY 15/16 Goal
Traffic Control and Street Name Sign Replacement	$72,500	$100,000	$100,000	$100,000

- All remaining Overhead SNS on Traffic Signals will be replaced in 2014
- Small post mounted SNS replacement will be escalated in 2015 and 2016. Six years remain in current replacement program which could be reduced to 4 years the additional funding
- In the future all street name signs would be replaced every 12-15 years

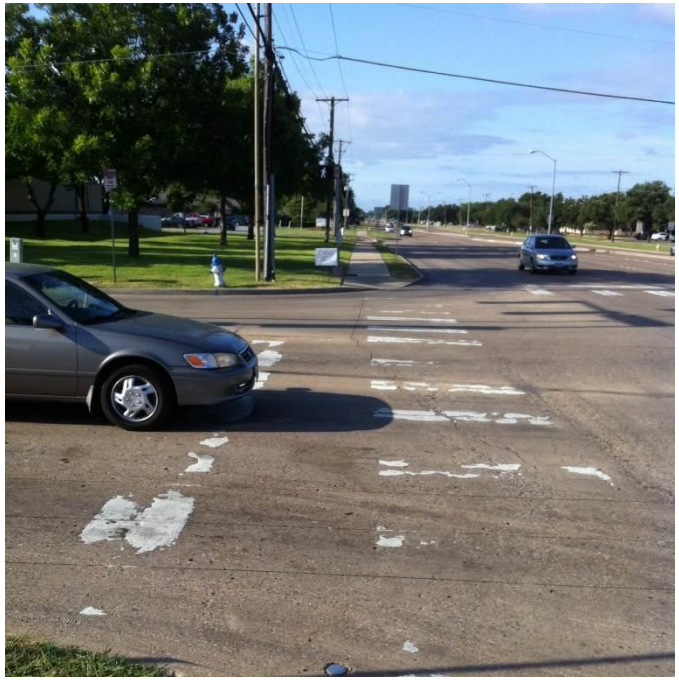
Pavement Marking Maintenance

- **Pavement Marking Inventory**
  - 180 School Zone Crosswalks
  - 125 Intersections - stop bars, crosswalks, lane assignment arrows, puppy tracks
  - 400 miles of lane line buttons
    - ~60,000 reflective & ~190,000 non-reflective buttons
  - 11 miles of Bike Lanes
  - 38 City Facility Parking Lots, 4500+ parking spaces and fire lanes

Pavement Markings – School Areas

- School Zones and other higher pedestrian crossing locations are assessed every year and replaced as needed each summer while school is out of session

Pavement Markings



- Maintenance of crosswalks and stop bars at minor intersections and lane line button on collectors have been deferred for past few years due to budget constraints

Markings Management 3 Year Strategy

	FY 12/13 Actual	FY 13/14 Goal	FY 14/15 Goal	FY 15/16 Goal
Pavement Markings	$165,000	$200,000	$250,000	$300,000

- $350,000 is the annual funding goal to sustain the routine replacement of pavement markings
- School zones and major intersections will remain a priority over minor intersections and lane line buttons until annual funding is enhanced up to the goal
- If additional Traffic Safety Funds become available they will be used to enhance the pavement marking program

Next Steps

- Replace all Overhead Street Name signs by end of 2014.
- Replace all small street name signs by 2019
- Maintain a 12 year routine replacement program for all signs in the future
- Prioritize Pavement Marking maintenance based on safety and roadway volume criteria until funding levels are sustainable for a routine schedule

SUMMARY

Summary

- Recommended maintenance management strategies have been provided for screening walls, bridge railings, and traffic signs and markings.
- City Council will assess funding goals during upcoming budget considerations to determine appropriates levels given the various areas of interest.
- Staff is preparing to implement the plans upon approval.

MAINTENANCE MANAGEMENT STRATEGIES

SCREENING WALLS, BRIDGE RAILINGS & TRAFFIC SIGNS/MARKINGS