

## City Council Work Session Handouts

July 1, 2013

- I. Review and Discuss the City Council Goals Development Process
- II. Review and Discuss the Drainage Utility Fund Summary and Work Plan
- III. Review and Discuss the Streets Management Strategy



City of Richardson  
Council Vision and Strategy Process  
July 1, 2013

**clarity** < from < complexity

*Driving Business Growth Through Adaptive Solutions.*



# Agenda

- Introductions
- Philosophy
- Process
- Scheduling





Rick and SDI, Philosophy

# INTRODUCTION



# PROCESS



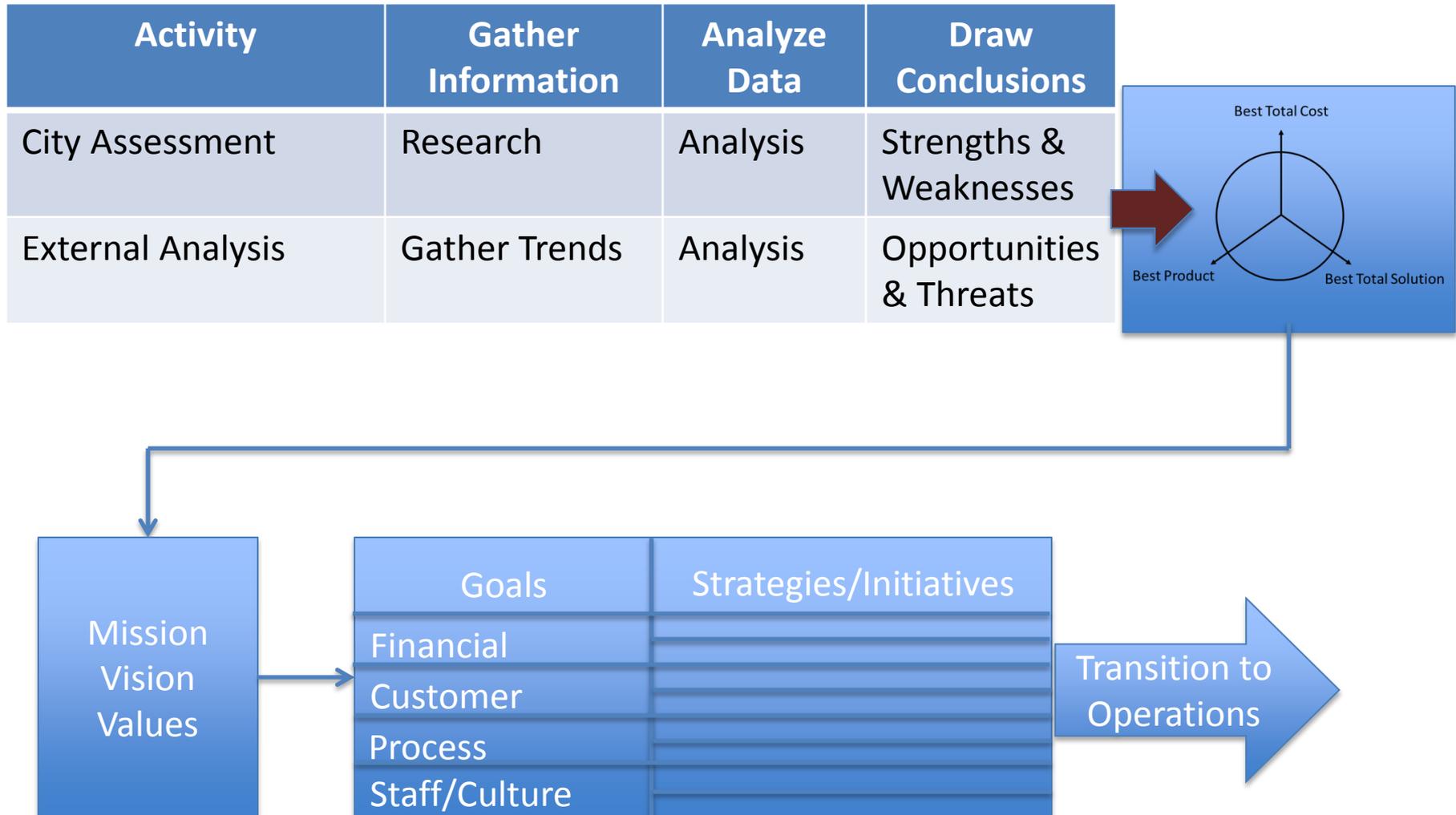
# Process and Deliverables

Phase	Activity	Deliverable
Research	One-on-One interviews	<ul style="list-style-type: none"><li>• Final process design and initial schedule</li></ul>
Process Facilitation	Facilitation of a series of meetings and activities	<ul style="list-style-type: none"><li>• A Strategic Plan that includes<ul style="list-style-type: none"><li>• Definition of the role of council</li><li>• Mission</li><li>• Vision</li><li>• Goals</li><li>• Prioritized (Importance, Near-term, Long-term) Strategies/Initiatives</li></ul></li></ul>
Report Generation	Development of final report	<ul style="list-style-type: none"><li>• Approved final Strategic Plan report</li></ul>





# Vision, Goals, and Strategy Development Process





# Proposed Next Steps

- One-on-one sessions with councilmembers
  - July 9-12<sup>th</sup>
  - Will schedule meeting with each councilmember
- Group Facilitation
  - Held at the Eisemann Center
  - Thursday, July 25<sup>th</sup>, 6-9pm
  - Saturday, August 17<sup>th</sup>, 8am-3pm



# QUESTIONS

# Drainage Utility: Fund Summary



City of Richardson, Texas  
City Council Work Session  
July 1, 2013



# Presentation Overview

- Background
- Work Plans and Fund Summaries
  - FY 2011-2012 Partial Year
  - FY 2012-2013
  - FY 2013-2014
  - Future Years

# Drainage Utility Development

- Prior to summer 2011 - periodic work sessions, news articles, web information concerning the development of a drainage utility for Richardson.
- During the 2011-2012 budget process, Council received briefings and had numerous discussions concerning inclusion of a mid-year implementation of a drainage utility system.
- The 2011-2012 budget adopted by City Council anticipated drainage utility funding (by interfund G&A transfer) for a portion of the drainage services traditionally hosted in the general fund. Budgeting for capital improvements and additional contract services was deferred pending adoption of the utility.

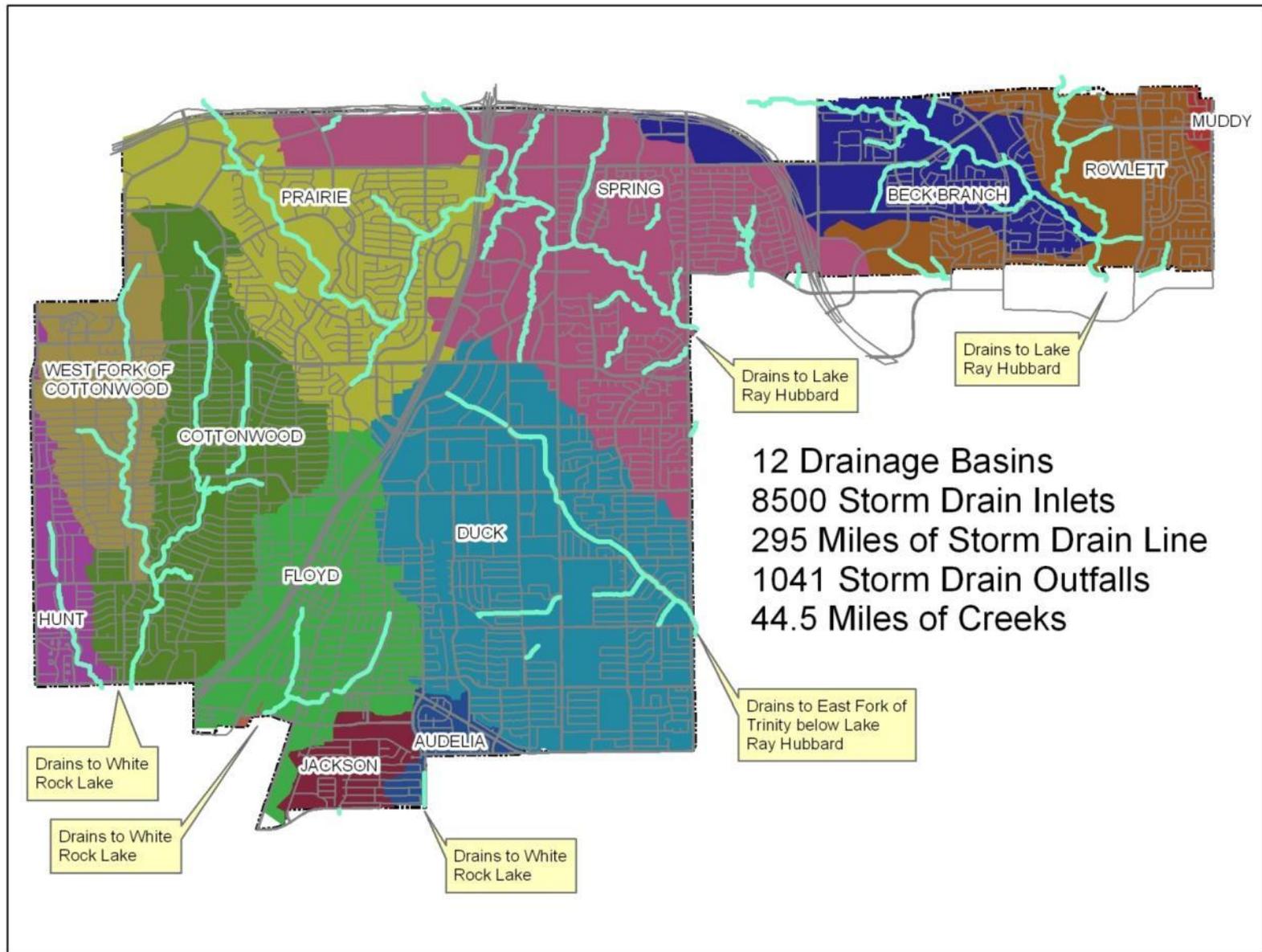
# Drainage Utility Adoption

- Staff briefed the council on the proposed ordinance to establish a drainage utility system and a resolution to establish a schedule of charges on October 17, 2011.
- The proposed ordinance and resolution were publicized with news articles, web information and notice of public hearing.
- The public hearing was held November 28, 2011 with comment from residents and businesses. Council adopted the ordinance and resolution the same evening.
- Council ratified a single residential monthly rate of \$3.75 per household and a commercial monthly rate of \$0.105 per 100 square feet of impervious area which is equivalent to the charge for the average residential property.
- Public outreach has continued including notices sent to utility customers prior to the first billing in February 2012

# 12-City Review

City	Drainage Utility?	Avg. Res.
Allen	Yes	\$3.00
Arlington	Yes	\$4.25
Carrollton	-	-
Dallas	Yes	\$7.77
Ft. Worth	Yes	\$5.40
Frisco	Yes	\$2.00
Garland	Yes	\$2.88
Grand Prairie	Yes	\$4.35
Irving	Yes	\$4.00
McKinney	Yes	\$2.75
Mesquite	Yes	\$3.00
Plano	Yes	\$3.30
		<b>Survey Avg: \$3.88</b>
<i>Richardson</i>	Yes	\$3.75

# Richardson's Drainage Infrastructure



# Texas Pollution Discharge Elimination System (TPDES)

- State of Texas (TCEQ) component of National EPA Mandate
- Phased Permitting by Population Size (Phase 2 Cities <100,000 as of 1990 )
- **Initial Richardson Compliance Period: Aug 2007- August 2012**
  - 5 Year Phased Program (Aug. 13, 2007)
  - Storm Water Management Plan with 7 minimum control measures.
- **Re-permitting/Renewal**
  - *TCEQ developing new permit regulations.*
  - *Stronger/added requirements and cost likely.*
  - *Cities will operate under previous permit requirements until new permit is finalized.*



TEXAS COMMISSION  
ON ENVIRONMENTAL QUALITY

## Seven Minimum Control Measures

1. Public Education and Outreach
2. Public Involvement and Participation
3. Illicit Discharge Detection and Elimination
4. Pollution Prevention/Good Housekeeping
5. Construction Site Storm Water Run Off
6. Post Construction Storm Water –New Development/Re-development
7. Authorization for Municipal Construction Activities (1 acre or more)

# Storm Water Management

- The **Storm Water Management Plan** has impacted the City's operating budgets over the last several years as monitoring, maintenance and enforcement practices were put in place:
  - Expansion of existing services and best management practices.
  - Additional storm water design and review requirements for development and redevelopment.
  - Increased construction storm water runoff permitting, inspection and record keeping procedures.
  - Sustain maintenance levels for street sweeping & culvert and drainage way maintenance.
  - Inspection, maintenance and or enforcement of storm water pollution prevention measures for construction sites and city facilities.

# Key Service & Project Elements

## Operations and Contract Services

- Daily service administration
- Plan reviews
- Inspections and compliance
- Inlet and conveyance debris removal/clean out
- Vegetation management
- Hazardous spill management
- Road surface debris removal
- Public awareness and outreach
- Engineering assessments and modeling
- Storm preparation and post-event response
- Pipe and channel repair

## Capital Projects

- Flood prevention projects
- Erosion protection projects
- Bridge and culvert construction
- Spillways/dam structures
- Detention basin structures
- Storm water treatment structures
- Aeration & aquatic vegetation management
- Silt management & safe removal and disposal

# Drainage Revenue Calculation

- *Residential Fees*
  - *Residential properties are billed a flat rate of \$3.75 per month.*
  - *Approximately 27,040 active residential accounts. This equates to about \$101,500 per month or \$1.22 million dollars per year in residential drainage fee revenue.*
- *Commercial Fees*
  - *Commercial properties are billed at a monthly rate of \$0.105 per 100 square feet of impervious area.*
  - *Currently 1,149 commercial properties with approximately 117 million square feet of impervious area. This equates into \$123,000 per month or \$1.48 million per year in commercial drainage fees.*
  - *Church, school districts and State properties (including UTD) are exempt from this fee.*
  - *New commercial growth and changes to existing commercial site plans are examples of conditions that will affect commercial fee revenue.*

# Expense Elements

- City of Richardson Expense Elements:
  - Key Departments:
    - Public Services Department
    - Capital Projects Department
    - Development Services Department
    - Health Department
    - Parks Department
    - Fire Department Hazmat
  - Services/Contracts:
    - Street sweeping contract
    - Creek vegetation and debris removal
    - Needs assessments and drainage studies
  - Capital Projects Program:
    - Flood Prevention, Erosion Control, etc.
    - CIP Database and needs assessment



# Storm Water/Drainage Utility: Work Plans and Fund Summary

- FY 2011-2012 Partial Year
- FY 2012-2013
- FY 2013-2014
- Future Years



# 2011-2012 Start-up Year Work Plan

*Mid-year start-up, initiated billing in February 2012.*

*Revenue from fees was estimated to total \$1,676,000*

*Funded a portion of drainage services traditionally hosted in the general fund through interfund G&A transfer of \$1,150,000*

- *Departmental Services*
- *Street Sweeping operations and contract*

*Budgeted contract services totaling \$160,000*

- *Engineering services to Implement program*
- *West Fork Vegetation Management contract*

*Budgeted initial capital improvements with \$350,000*

- *Dumont Culvert construction at Hunt Branch*
- *First of two year funding allocation*

# 2011-2012 Start-up Year Work Plan

## *Contract Services*

- *Drainage System Implementation Professional Services*

*\$60,000*

- *Engineering Services to determine the impervious area and fee for each commercial customer.*
- *Assist with development of ordinance and fee schedule.*
- *Assist with linking parcel data and water account data for billing system.*

# 2011-2012 Start-up Year Work Plan

## *Contract Services*

- *West Fork Debris Removal & Vegetation Management*

*\$100,000*

- *The 2011 Cottonwood Creek Headwater Study evaluated several alternatives to reduce flood risk along the Creek from Campbell to Arapaho.*
- *This channel maintenance option was identified as an effective means of reducing flood risk for properties along the creek.*
- *Plan preparation, neighborhood meeting, coordination with property owners, contractor selection: Spring 2011 – November 2012*
- *Contractor began work in January 2013 and completed work in April 2013.*
- *Communication to property owners regarding project completion and channel maintenance information will arrive in July*

## West Fork Debris Removal and Vegetation Management



**Debris Clearing**

## West Fork Debris Removal and Vegetation Management

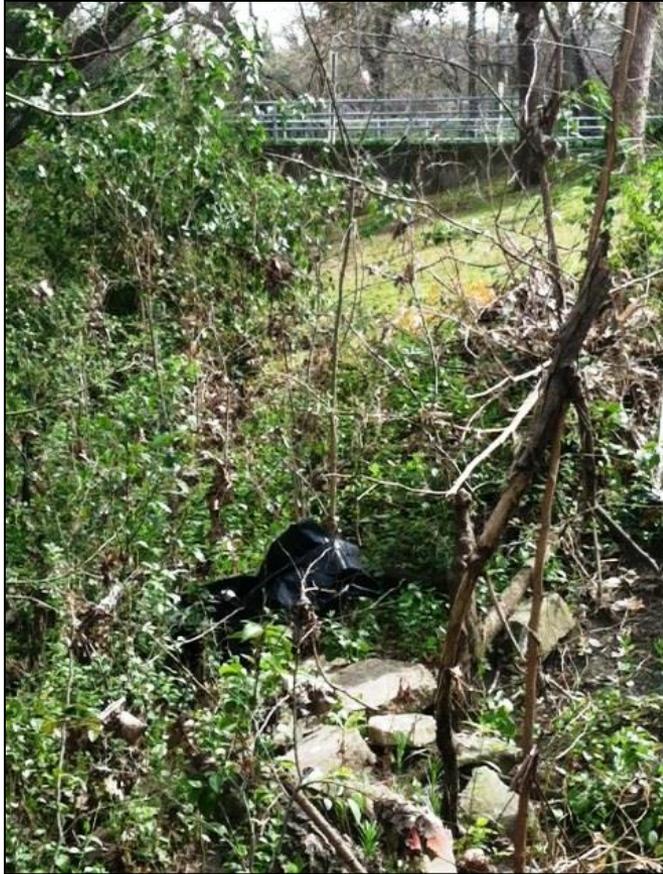


**Remove Debris Catchers**

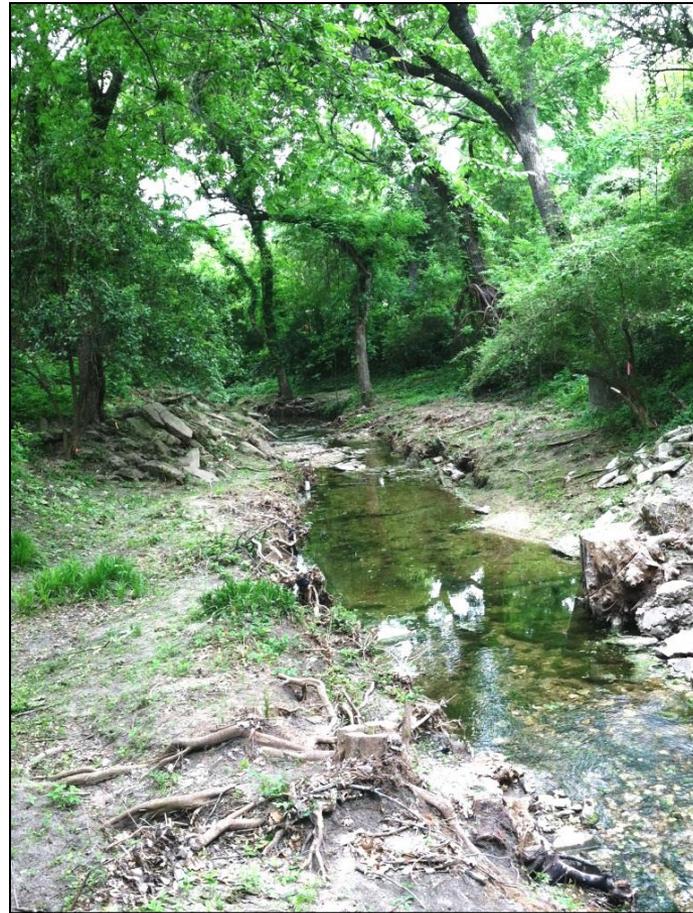
# West Fork Debris Removal and Vegetation Management



## West Fork Debris Removal and Vegetation Management



## West Fork Debris Removal and Vegetation Management



# 2011-2012 Start-up Year Work Plan

## *PayGo Capital*

- *Dumont Culvert Construction at Hunt Branch*

*\$350,000 FY 2011-2012, \$50,000 FY2012-2013*

- *Flood protection – roadway overtopped more than 2 feet by the one percent annual chance storm event.*
- *Identified as capital need prior to 1997 Bond Program*
- *The culvert will be replaced.*
- *This is also a 2010 bond program Neighborhood Vitality bridge aesthetic location. The enhancements will be funded from 2010 GO Bonds program.*
- *Construction started June 10, 2013 with the Dublin and Dover Street Project. The new culvert is scheduled to be completed by the end of the year.*



# 2012-2013 1<sup>st</sup> Full Year Work Plan

Element	Budget FY 2012-2013	
<b>Annual Rate Revenue</b>	<b>\$2,688,899</b>	<i>a</i>
Department Expenses	\$845,000	<i>b</i>
City Sweeping Operations	\$65,000	<i>b</i>
<i>Sub-total</i>	\$910,000	
Street Sweeping Contract	\$240,000	<i>c</i>
System Maintenance and Service Contracts	\$150,000	<i>d</i>
PayGo capital	\$1,385,000	<i>e</i>
<b>Total Annual Program</b>	<b>\$2,685,000</b>	

## Notes

- *a. Collection estimated for full year*
  
- *b. G&A elements in General Fund related to drainage services:
 
  - *Public Works, Parks, Engineering, Health, Communications, Fire**
  
- *c. sweeping contracts now hosted in the Drainage Fund*
- *d. inspection and maintenance of public infrastructure including pipes, culverts and open channels; needs assessments, floodplain mapping*
- *e. Annual PayGo allocation programming includes culvert reconstruction.*

# FY 2012 – 2013 Work Plan

- *G&A Drainage Services Elements in General Fund - \$910,000*
  - *Continue departmental services*
  - *Including storm water management plan, operation and maintenance of drainage network, street sweeping operations and floodplain management*
- *Contract services budgeted in the Drainage Fund - \$390,000*
  - *Continue street sweeping contract services*
  - *City maintained drainage way vegetation management*
    - *Collins Channel, Upper Duck Creek, Texas Channel, Floyd Branch at Phillips*
  - *Flood plain mapping updates: Cottonwood Creek, Floyd Branch, Duck Creek*
- *PayGo Capital Budget - \$1,385,000*
  - *Dumont Culvert at Hunt Branch*
  - *Cottonwood Creek Culverts*

# 2012-2013 Work Plan

## 1300 Collins Channel Debris Removal



# 2012-2013 Work Plan

## Texas Channel Debris Removal



# 2012-2013 Work Plan

## Upper Duck Creek Debris Removal



# 2012-2013 Work Plan

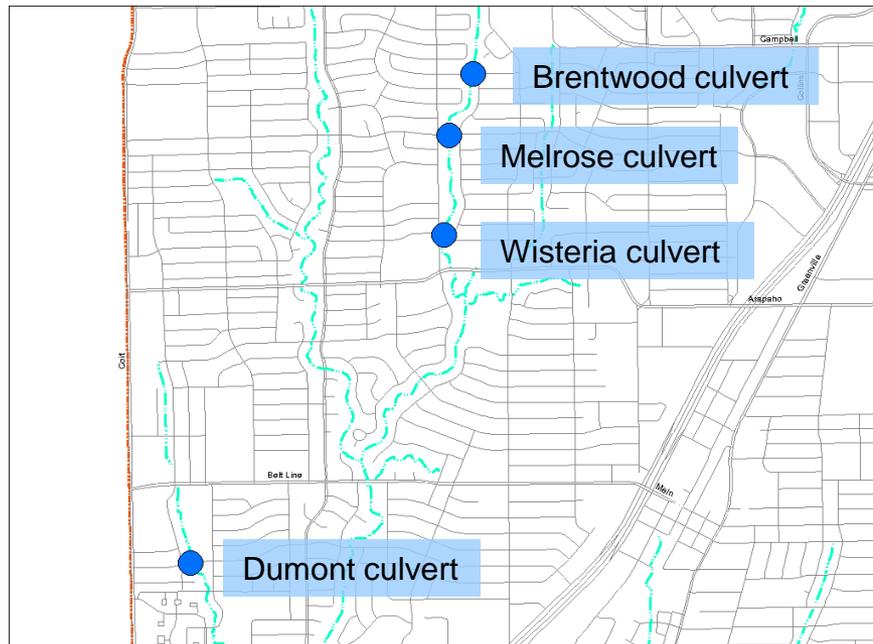
## *PayGo Capital*

- *Dumont Culvert Construction at Hunt Branch - \$50,000*
  - *Second allocation of \$400,000 total*
  - *Construction started June 10, 2013 and culvert is scheduled to be completed by the end of the year.*
- *Three culverts at Cottonwood Creek - \$1,335,000*
  - *The 3 culverts will be enlarged with funding allocated over two years. Engineering design is underway.*
  - *Identified as capital need prior to 1997 Bond Program*
  - *Flood protection – roadways overtopped by 1.7 to 2.1 feet in the one percent annual chance storm event*
  - *2011 Cottonwood Creek Headwater study reviewed alternatives to reduce flood risk.*
  - *Culverts are also sites of 2010 bond program bridge enhancements. Enhancements will be funded from the 2010 Neighborhood Vitality program.*

# 2012-2013 Work Plan

## *PayGo Capital*

- *Three culverts at Cottonwood Creek*
- *Dumont Culvert at Hunt Branch*



# Summary of Revenues and Expenditures FY2011-12 and FY2012-13

Drainage Fund	Budget FY 2011-12	Actual FY 2011-12	Budget FY 2012-13	Estimate FY 2012-13
<b>Beginning Fund Balance</b>	\$0	\$0	\$15,895	\$570,231
<b>Revenues</b>				
Residential Fees	\$759,158	\$809,599	\$1,216,789	\$1,217,256
Commercial Fees	\$916,564	\$971,156	\$1,471,860	\$1,474,987
Interest Earnings	\$173	\$634	\$250	\$900
<b>Total Revenues</b>	<b>\$1,675,895</b>	<b>\$1,781,389</b>	<b>\$2,688,899</b>	<b>\$2,697,143</b>
<b>Total Available Funds</b>	<b>\$1,675,895</b>	<b>\$1,781,389</b>	<b>\$2,704,794</b>	<b>\$3,267,374</b>
<b>Expenditures</b>				
Contract services	\$160,000	\$61,158	\$390,000	\$600,000
Projects	\$350,000	*	\$1,385,000	\$1,735,000
G&A Transfer	\$1,150,000	\$1,150,000	\$910,000	\$910,000
<b>Total Expenses and Transfers</b>	<b>\$1,660,000</b>	<b>\$1,211,158</b>	<b>\$2,685,000</b>	<b>\$3,245,000</b>
<b>Ending Fund Balance</b>	<b>\$15,895</b>	<b>\$570,231 *</b>	<b>\$19,794</b>	<b>\$22,374</b>

# FY 2012 – 2013 Revised Work Plan

- *G&A Drainage Services Elements in General Fund - \$910,000*
  - *Continue departmental services*
  - *Including storm water management plan, operation and maintenance of drainage network, street sweeping operations and floodplain management*
- *Contract services budgeted in the Drainage Fund - \$600,000*
  - *Continue street sweeping contract services*
  - *Completed West Fork Vegetation Management*
  - *City maintained drainage way vegetation management*
    - *Collins Channel, Upper Duck Creek, Texas Channel, Floyd Branch at Phillips*
    - *Floyd Branch –Centennial to Spring Valley (bidding)*
  - *Flood plain mapping updates: Cottonwood Creek, Floyd Branch, Duck Creek*
  - *Inspection and cleaning of underground pipes (Jupiter at Primrose, Arapaho/Greenville)*
- *PayGo Capital Budget - \$1,385,000*
  - *Dumont Culvert at Hunt Branch*
  - *Cottonwood Creek Culverts*

# 2013-2014 2nd Full Year Work Plan

Element	Proposed FY 2013-2014	
<b>Annual Rate Revenue</b>	<b>\$2,720,925</b>	<i>a</i>
Department Expenses	\$845,000	<i>b</i>
City Sweeping Operations	\$65,000	<i>b</i>
<i>Sub-total</i>	\$ 910,000	
Street Sweeping Contract	\$240,000	<i>c</i>
System Maintenance and Service Contracts	\$160,000	<i>c</i>
PayGo capital	\$1,410,000	<i>d</i>
<b>Total Annual Program</b>	<b>\$2,720,000</b>	

## Notes

- *a. Collection estimated for full year*
- *b. G&A elements in General Fund related to drainage services:
 
  - *Public Services, Parks, Engineering, Health, Communications, Fire**
- *c. Street sweeping and inspection and maintenance of public infrastructure including pipes, culverts and open channels*
- *d. Annual PayGo allocation programming includes funding for culvert reconstruction projects on Cottonwood Creek.*

# FY 2013 – 2014 Work Plan

- *G&A Drainage Services Elements in General Fund - \$910,000*
  - *Continue departmental services*
  - *Including storm water permit activities, operation and maintenance of drainage network, street sweeping operations and floodplain management*
- *Contract services hosted in the Drainage Fund - \$400,000*
  - *Continue street sweeping contract services*
  - *Continue debris removal of City maintained drainage way*
  - *Watershed Sub-basin needs assessments (2 ~ 500 acre sub-basins)*
  - *Inspection and cleaning of underground pipes*
  - *Pilot program for litter abatement with inlet control measures for water quality protection.*
- *PayGo Capital - \$1,410,000*
  - *Three Culverts at Cottonwood Creek.*
  - *Second allocation for \$2,745,000 total*

# 2013-2014 Work Plan

## *PayGo Capital*

- *Three culverts at Cottonwood Creek –*

*FY 2012-13 \$1,335,000, FY2013-14 \$1,410,000*

- *The 3 culverts will be enlarged with funding allocated over two years.*
- *Identified as capital need prior to 1997 Bond Program*
- *Flood protection – roadways overtopped by 1.7 to 2.1 feet in the one percent annual chance storm event*
- *2011 Cottonwood Creek Headwater study reviewed alternatives to reduce flood risk.*
- *Culverts are also sites of 2010 bond program bridge enhancements. Enhancements will be funded from the 2010 Neighborhood Vitality program.*

# Summary of Revenues and Expenditures

## FY2011-12 to FY2013-14

Drainage Fund	Estimated FY 2011-12	Actual FY 2011-12	Budget FY 2012-13	Estimate FY 2012-13	Proposed FY 2013-14
<b>Beginning Fund Balance</b>	\$0	\$0	\$15,895	\$570,231	\$22,374
<b>Revenues</b>					
Residential Fees	\$759,158	\$809,599	\$1,216,789	\$1,217,256	\$1,224,000
Commercial Fees	\$916,564	\$971,156	\$1,471,860	\$1,474,987	\$1,496,000
Interest Earnings	\$173	\$634	\$250	\$900	\$925
<b>Total Revenues</b>	<b>\$1,675,895</b>	<b>\$1,781,389</b>	<b>\$2,688,899</b>	<b>\$2,697,143</b>	<b>\$2,720,925</b>
<b>Total Available Funds</b>	<b>\$1,675,895</b>	<b>\$1,781,389</b>	<b>\$2,704,794</b>	<b>\$3,267,374</b>	<b>\$2,743,299</b>
<b>Expenditures</b>					
Contract services	\$160,000	\$61,158	\$390,000	\$600,000	\$400,000
Projects	\$350,000	*	\$1,385,000	\$1,735,000	\$1,410,000
G&A Transfer	\$1,150,000	\$1,150,000	\$910,000	\$910,000	\$910,000
<b>Total Expenses and Transfers</b>	<b>\$1,660,000</b>	<b>\$1,211,158</b>	<b>\$2,685,000</b>	<b>\$3,245,000</b>	<b>\$2,720,000</b>
<b>Ending Fund Balance</b>	<b>\$15,895</b>	<b>\$570,231*</b>	<b>\$19,794</b>	<b>\$22,374</b>	<b>\$ 23,299</b>

# Future Yearly Work Plans

- *G&A Elements in General Fund related to drainage services*
  - *Continue current departmental service*
  - *Enhanced services to improve storm water management practices and address storm water permit modifications.*
  - *Add Project Engineer to manage the design and construction of capital improvements, contract services and engineering studies.*
- *Contract services hosted in the Drainage Fund*
  - *Continue drainage system needs assessments: watershed sub-basin studies, creek erosion and lake assessment updates*
  - *System inspection and maintenance*
    - *Drainageway vegetation management*
    - *Pipe cleaning and repair*
  - *Future additional TCEQ compliance measures (to be determined)*
  - *Water Quality assessment and management initiatives*

# Future Yearly Work Plans

- *PayGo Capital*

- *Program will target projects from needs assessments and capital projects database that are generally less than \$0.5M.*
- *Some larger project may be funded or constructed in phases.*
- *Bond Program will be needed for larger projects*
- *Types of projects may include:*
  - *Flood prevention projects*
  - *Erosion repair projects*
  - *Small bridge and culvert projects*
  - *Lake spillway projects*
  - *Pollution prevention/abatement projects*
- *Work plans will be reviewed and updated annually.*



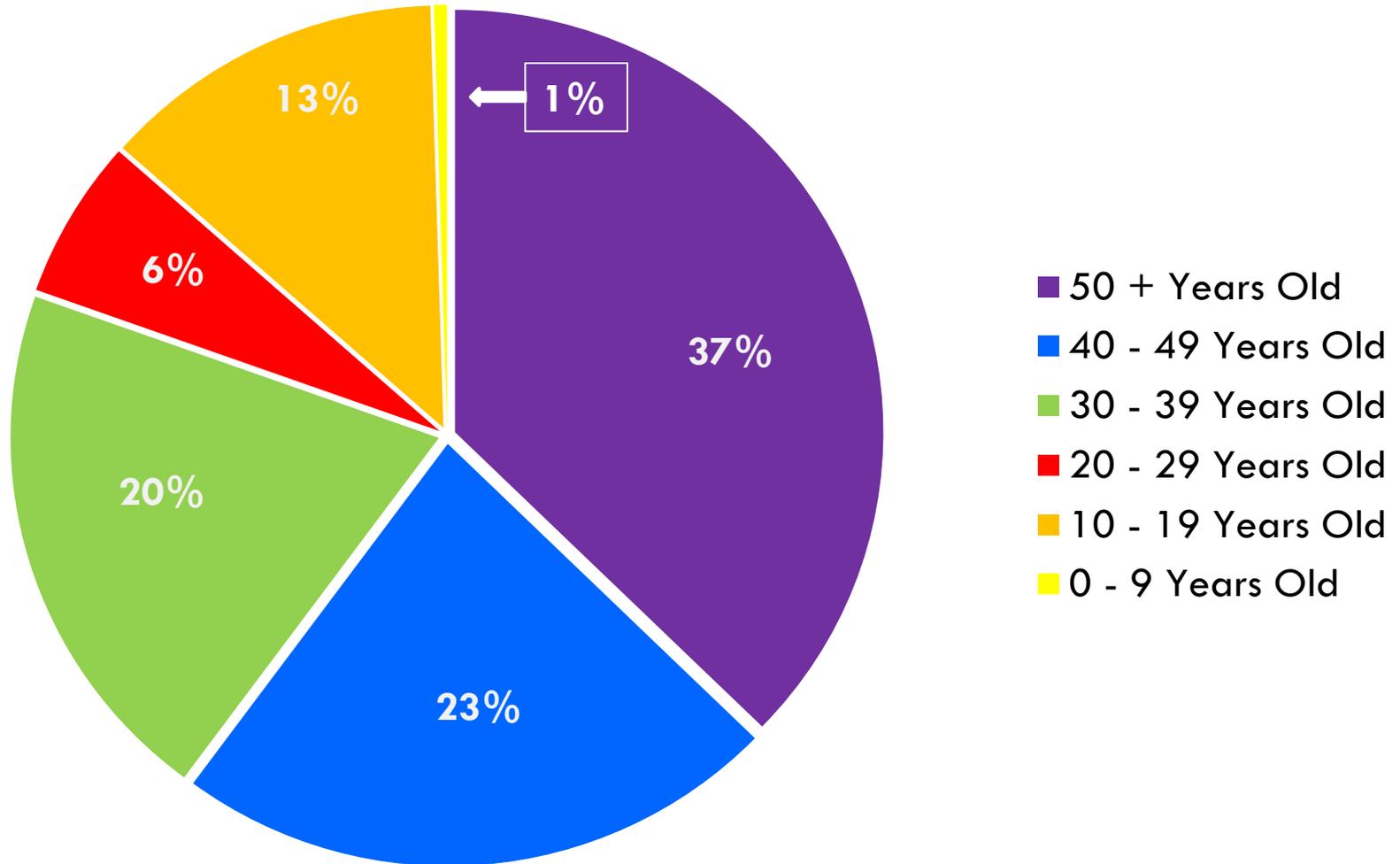
# **STREETS MANAGEMENT STRATEGY**

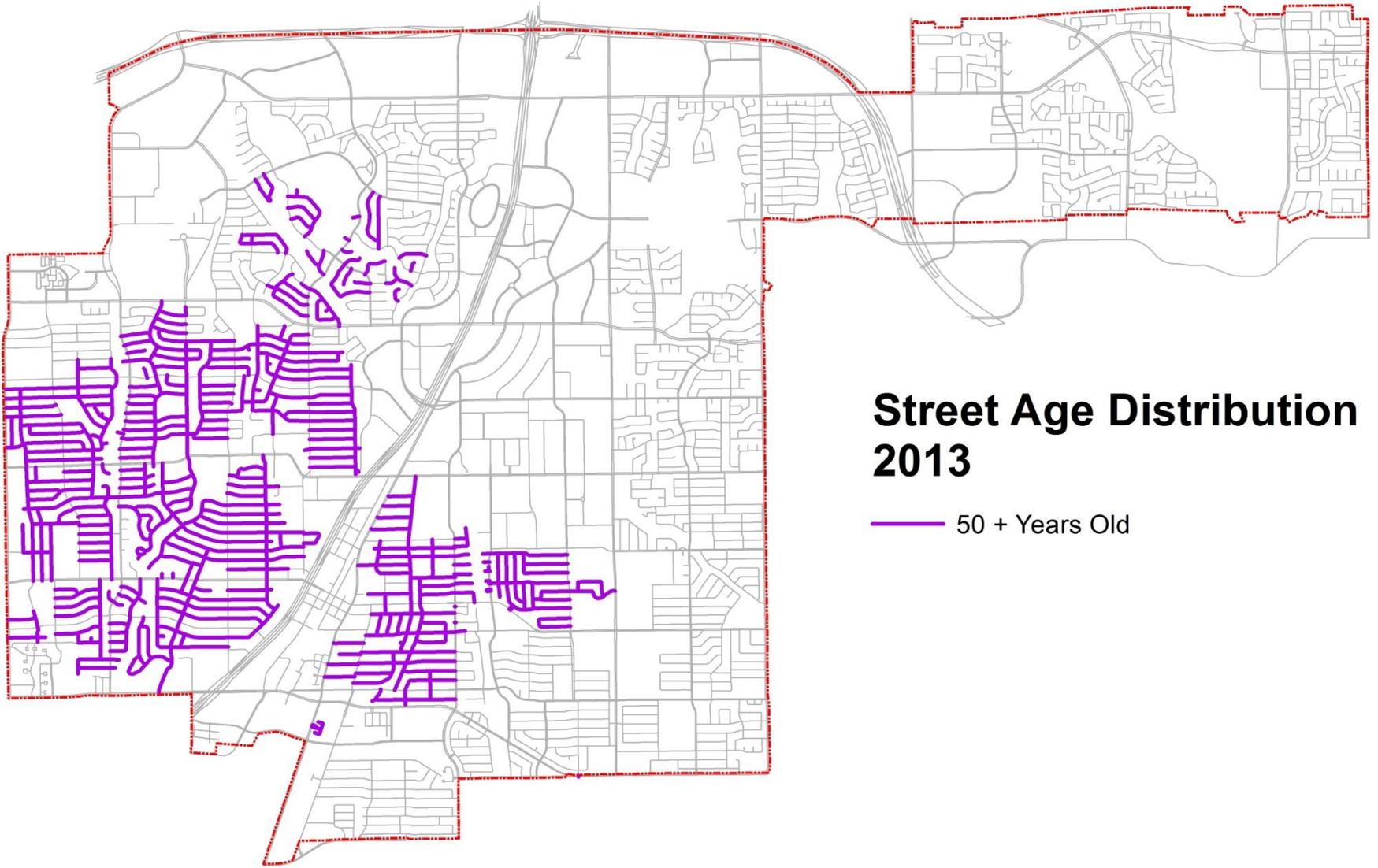
City Council Briefing: July 1, 2013

# Introduction

- The purpose of tonight's briefing is to:
  1. Provide contextual background and a conditions assessment of our streets
  2. Review our current Streets Management Strategy
  3. Evaluate options and budget implications for enhancing the Strategy in the future

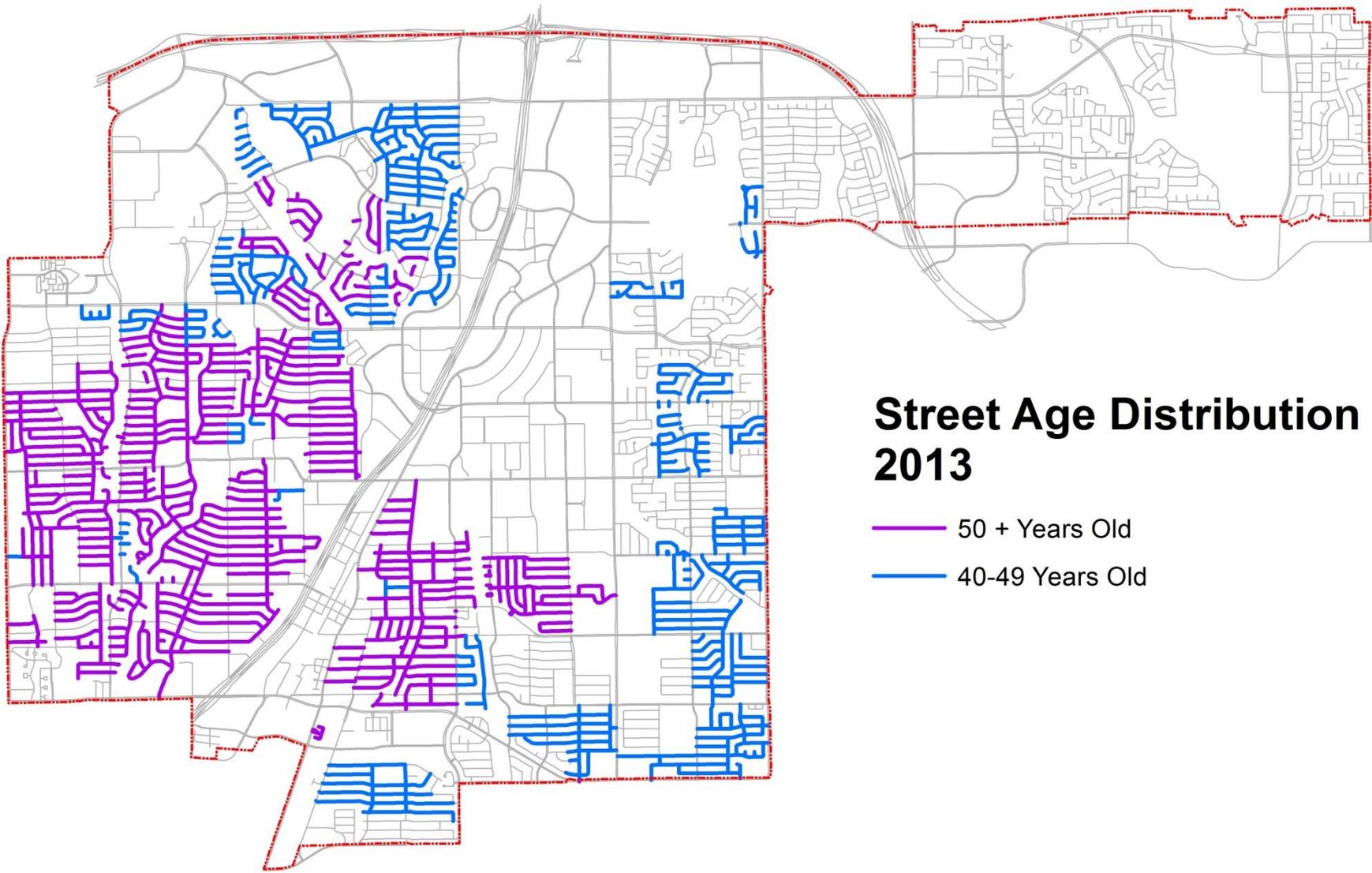
# Street Age Distribution 2013





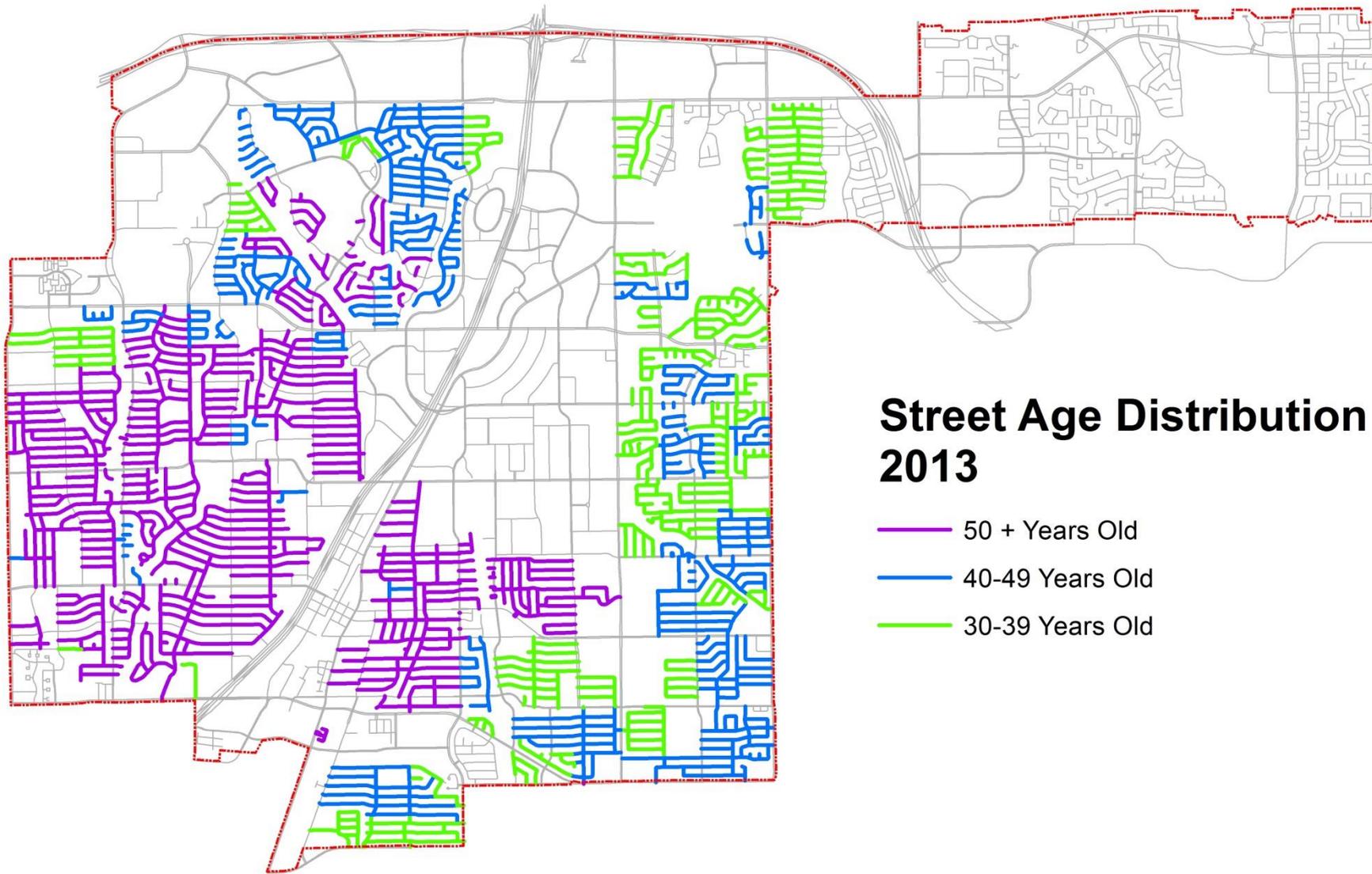
# Street Age Distribution 2013

— 50 + Years Old



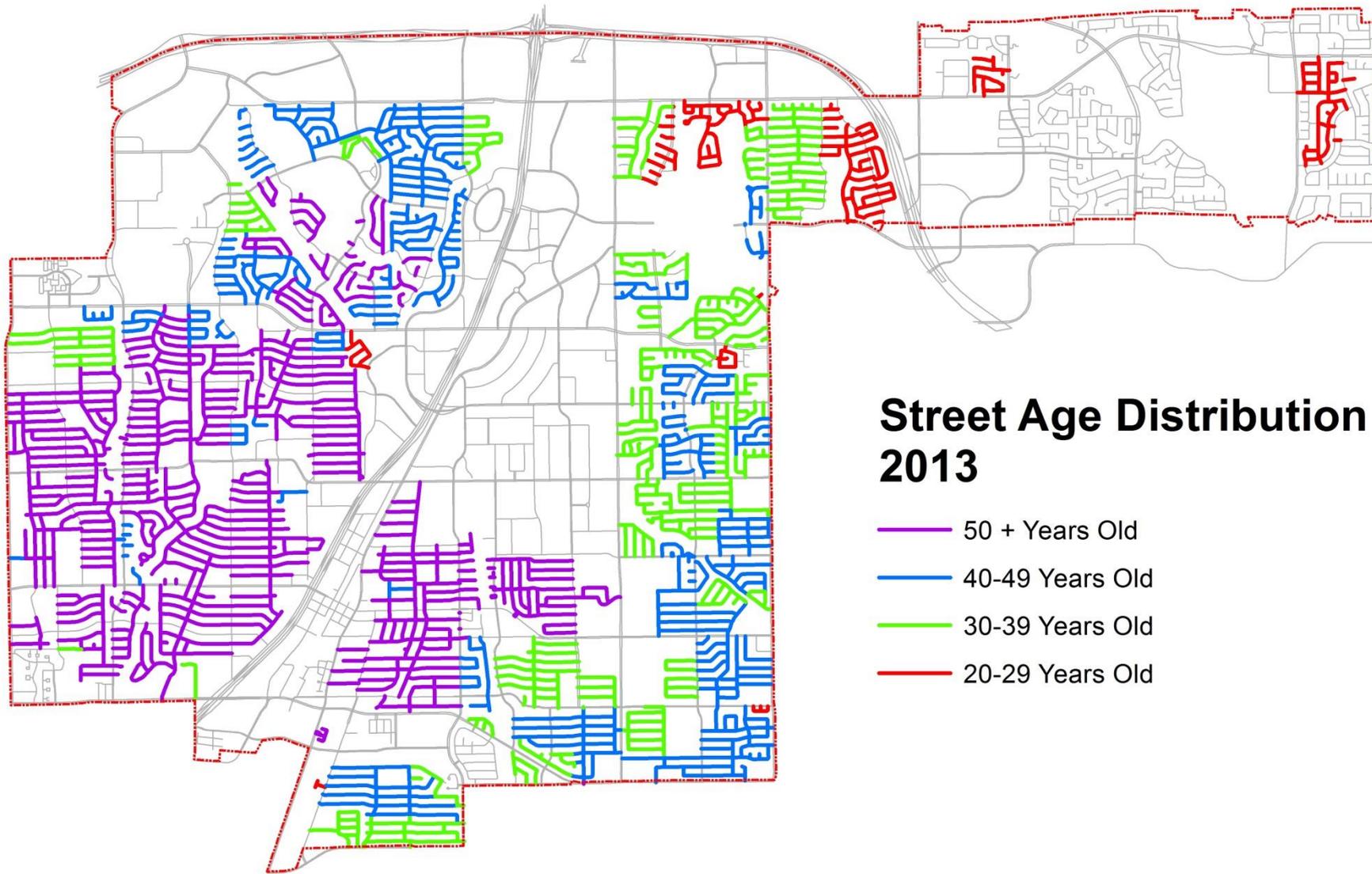
## Street Age Distribution 2013

- 50 + Years Old
- 40-49 Years Old



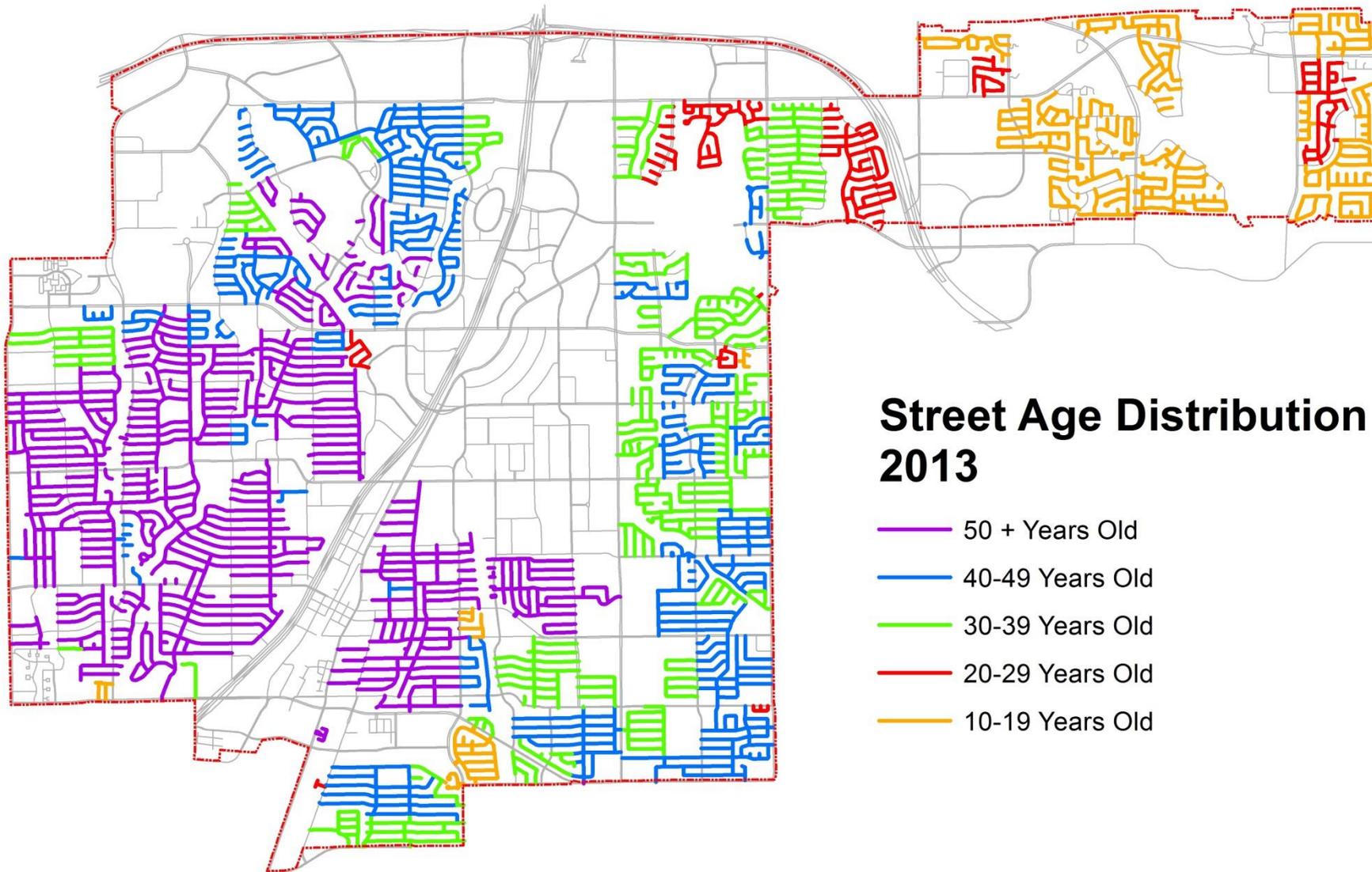
## Street Age Distribution 2013

- 50 + Years Old
- 40-49 Years Old
- 30-39 Years Old



## Street Age Distribution 2013

- 50 + Years Old
- 40-49 Years Old
- 30-39 Years Old
- 20-29 Years Old

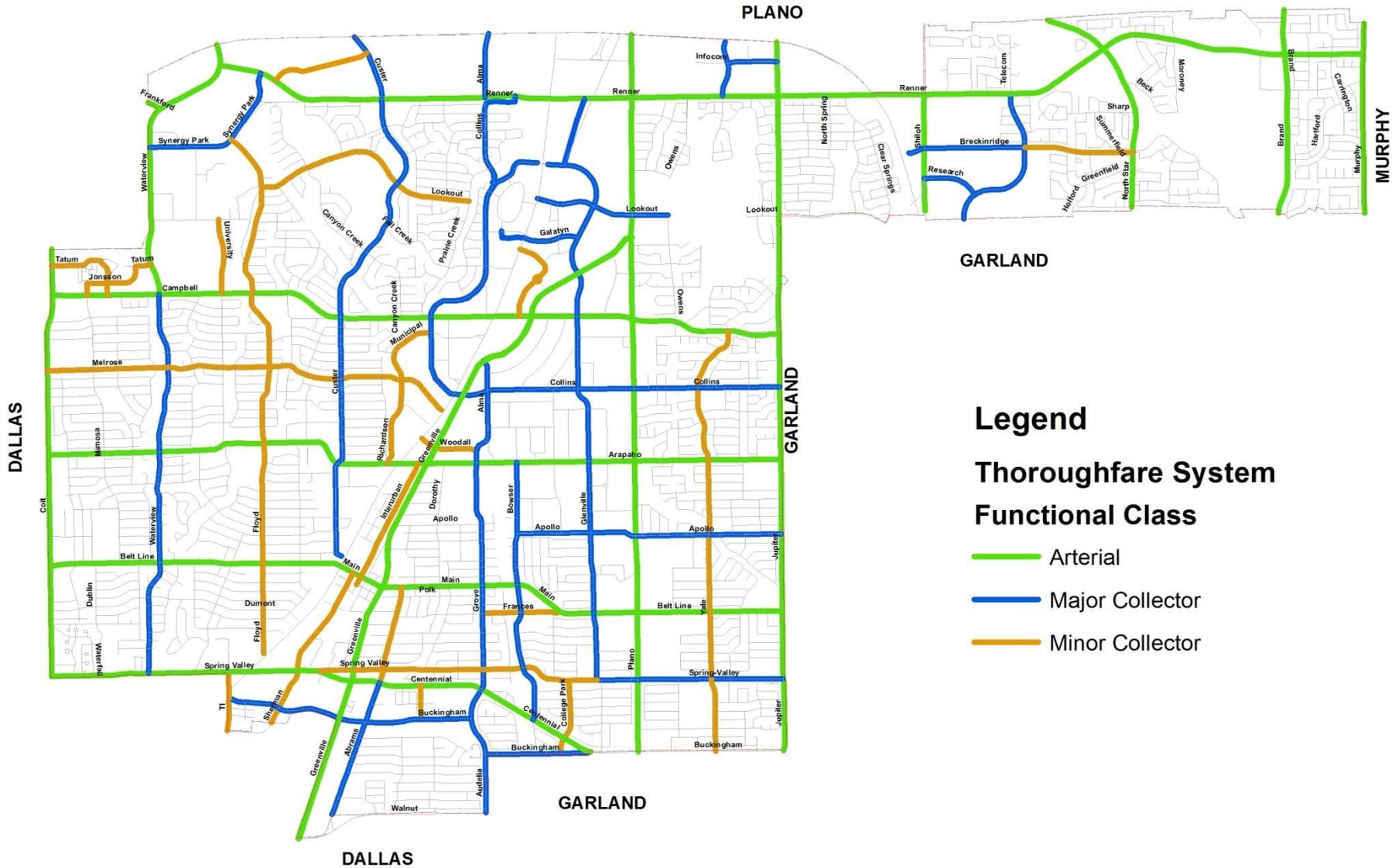


## Street Age Distribution 2013

- 50 + Years Old
- 40-49 Years Old
- 30-39 Years Old
- 20-29 Years Old
- 10-19 Years Old

# Streets Classification

- Arterials - 57 Miles
- Major Collectors - 35 Miles
- Minor Collectors - 24 Miles
- Neighborhood Collectors - 27 Miles
- Residential – 228 Miles
- Alleys - 223 miles
- **Total – 594 miles**



### Legend

**Thoroughfare System Functional Class**

- Arterial
- Major Collector
- Minor Collector

# Street Types

- Concrete
  - ▣ 301 miles



La Salle Drive

# Street Types

- Concrete
  - ▣ 301 miles
- Asphalt Overlay
  - ▣ 60 miles



Bowser Road

# Street Types

- Concrete
  - ▣ 301 miles
  
- Asphalt Overlay
  - ▣ 60 miles
  
- Full Depth Asphalt
  - ▣ 10 miles



Edgehill Drive

# Factors that Impact Street Condition

- Weather
  - ▣ Excessive temperatures
    - Heat Heaves
    - Freezing-thawing cycle
  - ▣ Rain / Drought
- Underground utilities
  - ▣ Breaks
  - ▣ Movement
- Traffic loading; Excessive vehicle weight
- Invasive tree roots
- Quality of soil beneath the streets

# Types of Distress

- Potholes



# Types of Distress

- Potholes
- Heaving / Settling



# Types of Distress

- Potholes
- Heaving / Settling
- Rutting



# Types of Distress

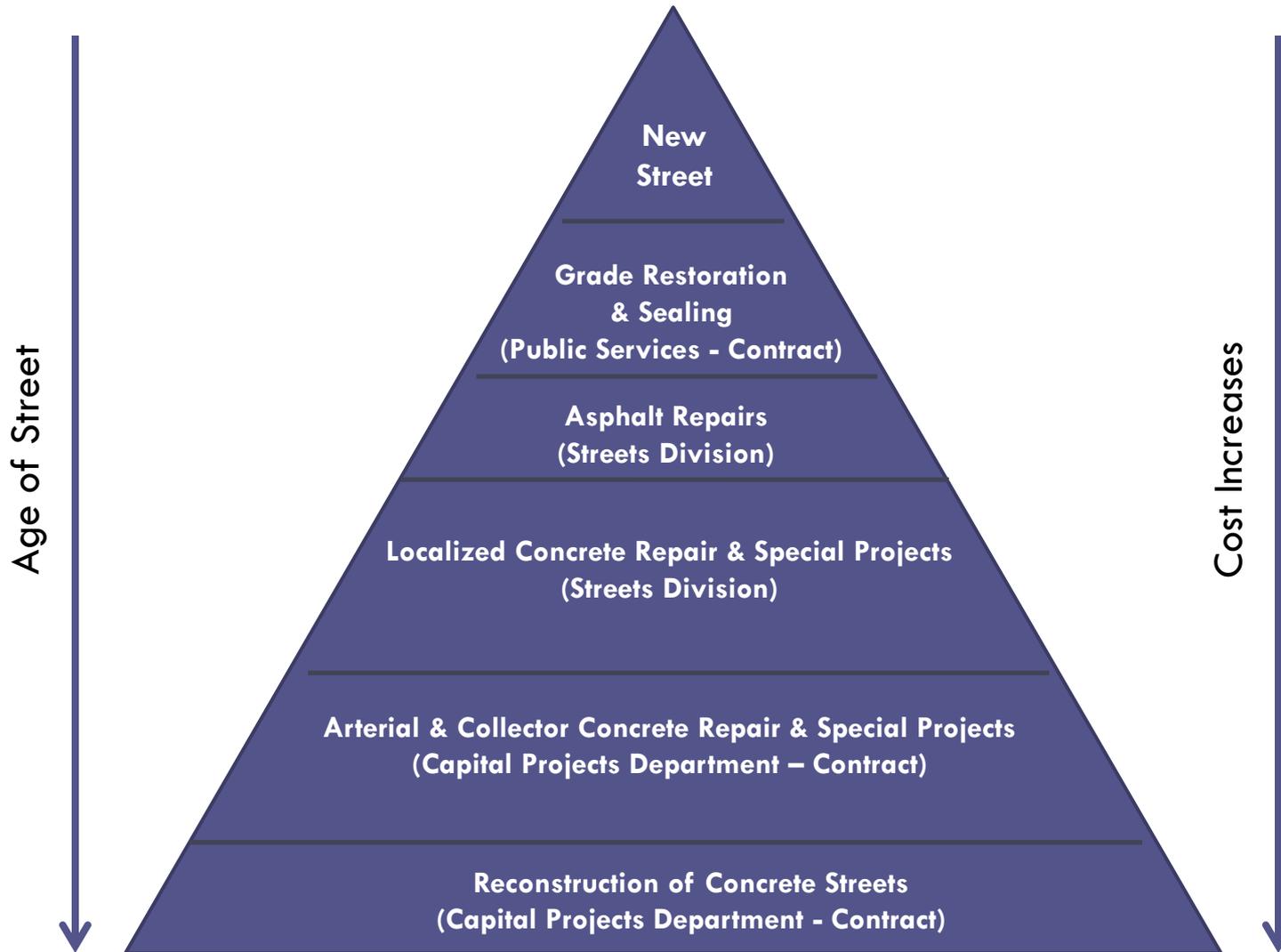
- Potholes
- Heaving / Settling
- Rutting
- Cracking

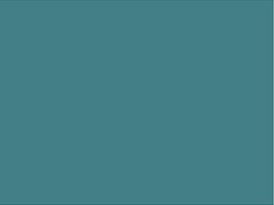


# Streets Conditions

- Good – A minimal number of failures overall. Cost of improvements is very reasonable. A good candidate for preventative maintenance to extend life.
- Fair – A variety of failures, yet still cost effective to repair. In conjunction with improvements, preventative maintenance can extend life.
- Poor – A significant number of failures that necessitate reconstruction or replacement. Not cost effective to repair. Will be maintained until permanent strategy is developed.

# Street Maintenance Cycle





# Grade restoration

# Grade Restoration

- Function of grade restoration
  - ▣ Eliminates standing/pooling water on streets
- How does it work?
  - ▣ High density polyurethane foam is injected under the concrete
  - ▣ The foam hardens and expands restoring the street's positive grade and achieving proper water drainage
- Benefits
  - ▣ Minimally invasive – “open cutting” not required
  - ▣ Traffic can be restored immediately after injection process

# Grade Restoration



# Grade Restoration



# Grade Restoration



# Grade Restoration

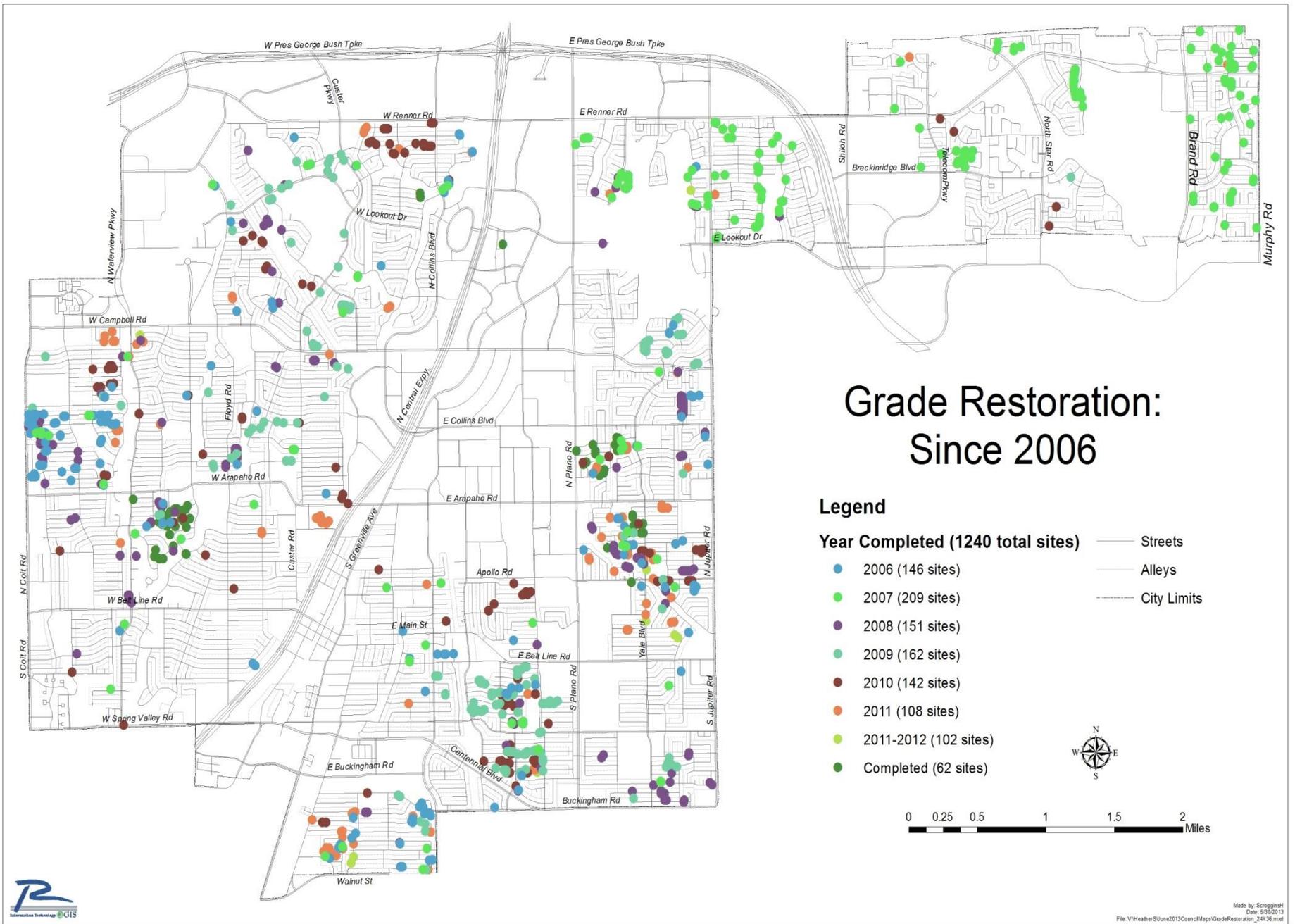


# Grade Restoration



# Grade Restoration

- Work performed by contractor; supervised by Public Services
- Funding source has historically has been the “Penny Tax”
  - ▣ \$200,000-\$250,000 annually
- Approximately 125 locations are repaired annually
  - ▣ Average cost per repair location is \$1,600
  - ▣ There are numerous restoration points that are raised and leveled at each of these locations
- Repairs are lasting; very few locations need to be worked twice



# Joint / Crack Sealing

# Joint / Crack Sealing

- Function of joint / crack sealing
  - ▣ Prevents water from entering into and degrading the subgrade of the street
    - Water degrading the street's subgrade is the primary cause of potholes and pavement failures
- How does it work?
  - ▣ The crack is routed
  - ▣ All loose material is removed from the crack
  - ▣ Sealant is applied

# Un-Routed Seal



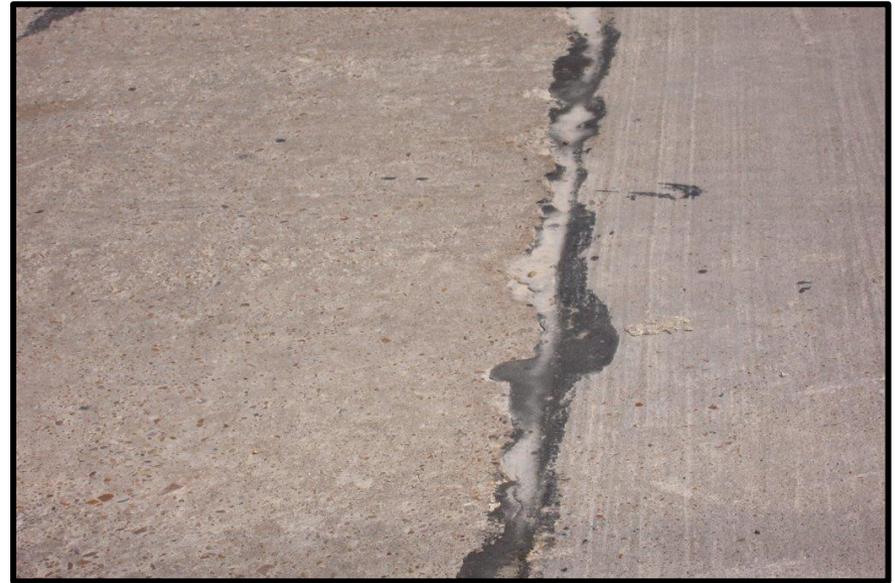
# Routed Seal



# Joint / Crack Sealing

- Black vs. Gray Sealant
  - ▣ Black is the industry standard due to favorable historical performance, cost, availability
  - ▣ Gray is relatively new, is more expensive and less durable
    - Turns from gray to black with time

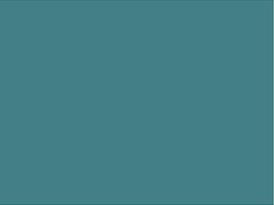
# Gray Sealing Material (City of Waco)



# Joint / Crack Sealing

- Work performed by contractor; supervised by Public Services
- Funding source has historically been the “Penny Tax”
  - ▣ \$200,000-\$250,000 annually
  - ▣ Approximately \$2 per center lane linear feet
- The number of locations completed in any given year is dependent on the condition of the specific streets under repair
- Sealing lasts approximately 8 to 10 years





# Asphalt Repairs

# Asphalt Repairs

- Function of Asphalt Repairs
  - Provides for the immediate and dependable repair of potholes and other concrete failures
    - Quickly improves the safety of the driving surface
      - Takes less time to complete than concrete repair
      - Can be performed in all weather conditions
  - Allows for immediate traffic restoration
  - Expected useful life of repair is 2-3 years





# Asphalt Repairs

- Work performed by Streets Division
- Funding source is the Streets operating budget
  - ▣ Approximately \$950,000 annually
  - ▣ Average Unit Cost for asphalt repair - \$85/SY

# Approach to Asphalt Repairs

- Locations repaired with hot-mix asphalt will be ground down forming a square at least 3' X 3' to provide an edge for the asphalt to meet against
  - ▣ Keeps the asphalt from raveling - coming loose
  - ▣ Is more aesthetically appealing
  
- Locations in need of emergency repair and/or repair under wet conditions will be repaired with cold-mix asphalt initially
  - ▣ Will not be squared - will simply fill failed area
  - ▣ Will be replaced with hot-mix asphalt as soon as possible
    - Cold-mix locations will be tracked via the new database until replaced with hot-mix asphalt, at which time it will be included with other locations in need of permanent repair

# Asphalt Repairs



# Localized Concrete Repair Program

*Residential Streets, Special Projects*

# Localized Concrete Repair

- Generally involves the repair of neighborhood streets and alleys
  - ▣ Focus is on replacing asphalt repairs with concrete
    - The street's condition determines the maintenance approach
      - Asphalt repairs are replaced with concrete on streets in “good” or “fair” condition
      - Asphalt repairs are maintained on streets in “poor” condition until a more extensive repair or reconstruction can be funded

# Localized Concrete Repair

- Work is performed by the Streets Division
- Funding source is the Streets Operating Budget
  - ▣ Approximately \$1,065,000 annually
  - ▣ Average Unit Cost for pavement repair - \$105/SY

# Approach to Concrete Repair

- Saw cuts should be longitudinal (parallel to the road) and transverse (perpendicular to the road) when practical
- Existing joints should be honored when possible
  - ▣ Remove to existing joint when within 3' or otherwise practical
- Street centerline and lane configuration should be respected when possible
  - ▣ Remove to street center line if center line is within 3' of failure limit and lane closures are not significantly effected

# Approach to Concrete Repair

- Provide stable curb section
  - If removal limit would otherwise be within 1.5 feet of the back of curb, the curb should be removed and replaced
  
- Minimize staggering of pavement removal width
  - Where longitudinal saw cut must be staggered or offset, offset at a transverse joint.
    - Offset dimensions should not be less than one foot.
    - Longitudinal spacing of less than 40 feet should be avoided particularly for narrow offsets (less than 5 feet).

# Localized Concrete Repair



# Pavement Repair Contract

*Arterials, Collectors, Special Projects*

# Pavement Repair Contract

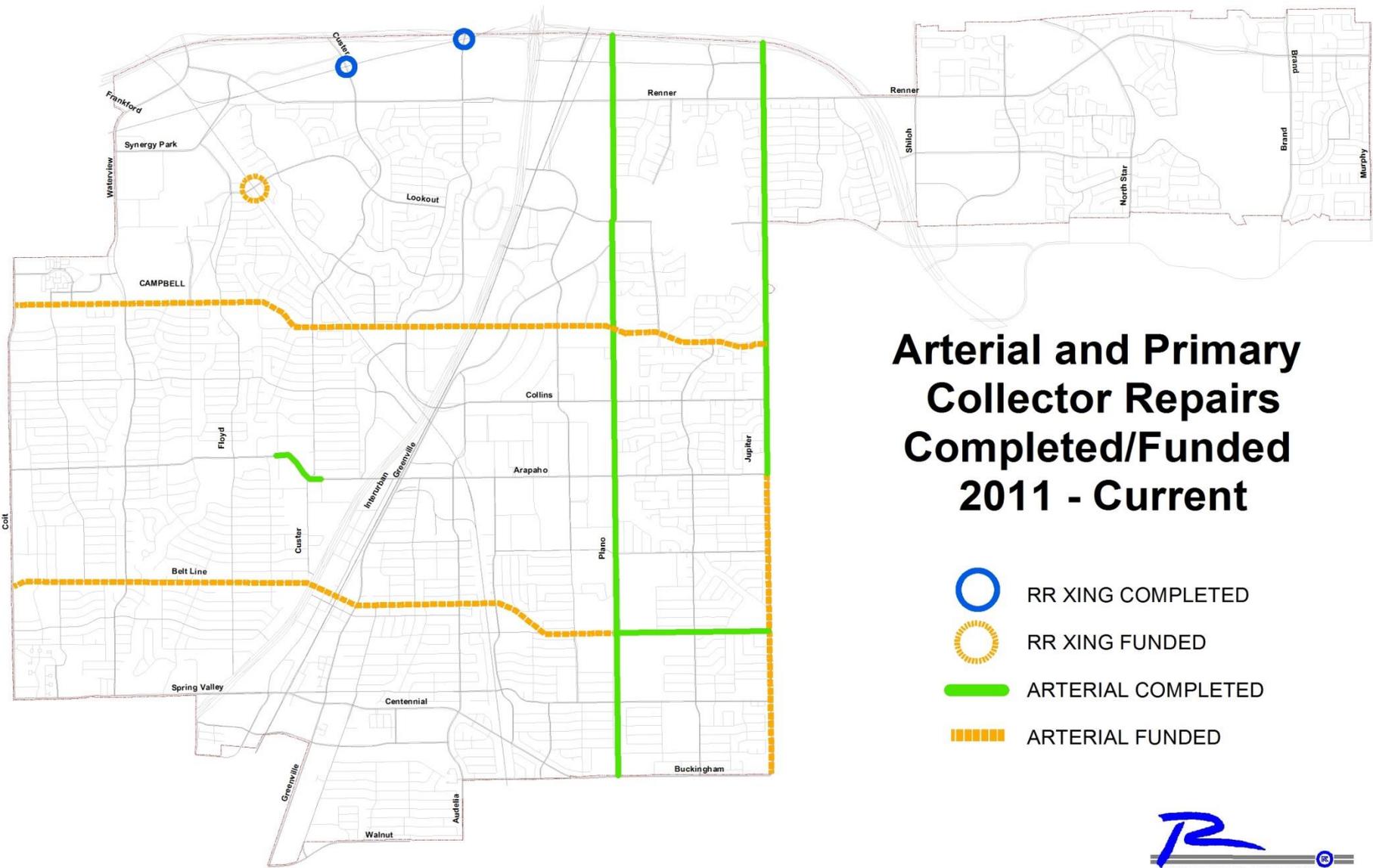
- Scheduled pavement repair for medium and large projects
- Focus has been arterial and primary collector streets since 2011
- Projects generally have durations of two weeks or longer
- Projects may require extensive traffic control or specialized equipment
- Focus is to replace asphalt repairs with concrete
- Focus is on improving fair condition streets to good condition

# Pavement Repair Contract



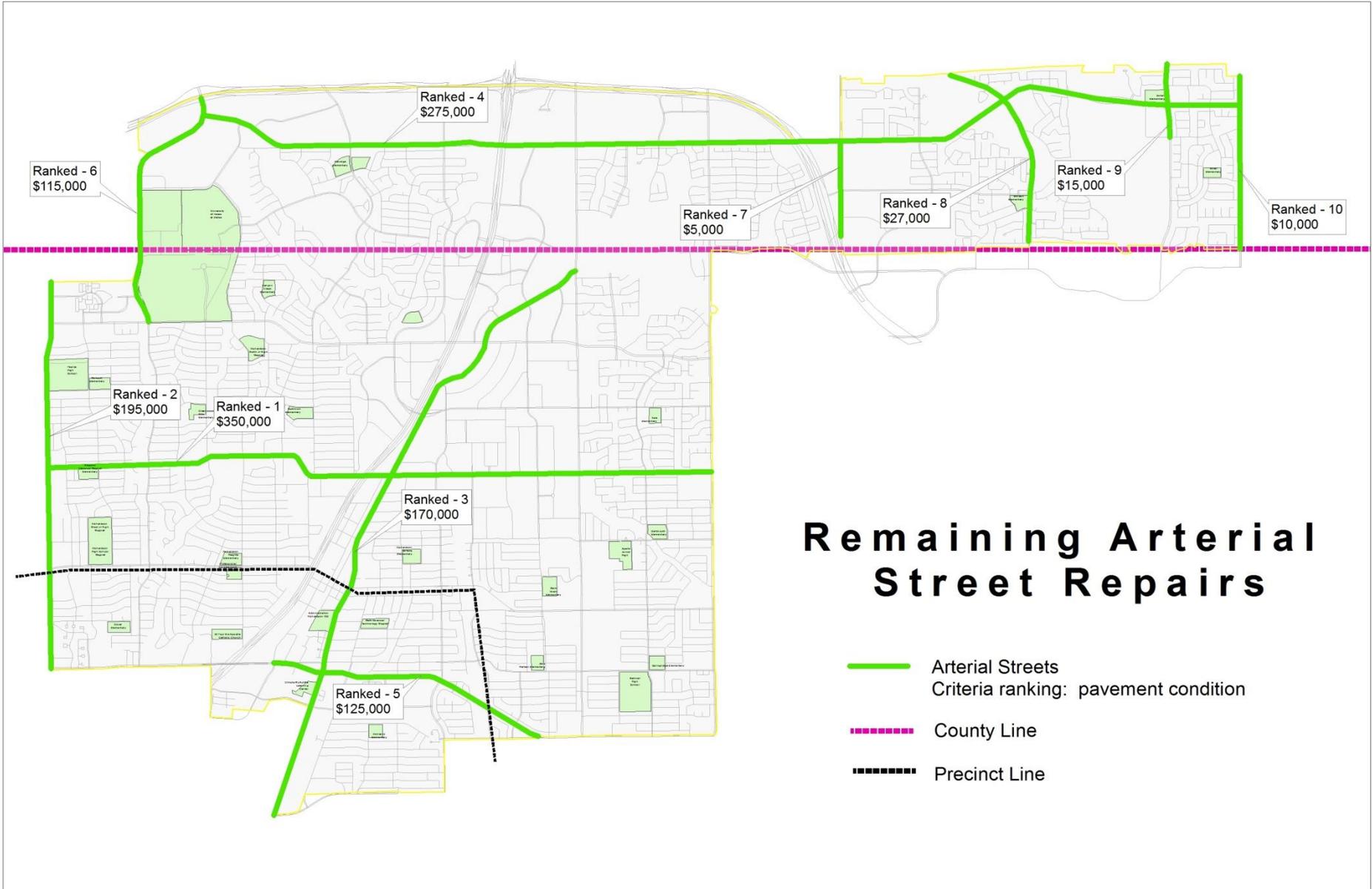
# Pavement Repair Contract

- Work is performed by a contractor; supervised by Capital Projects
- Funding source has historically been the “Penny Tax”
  - Approximately \$500,000 annually
  - Additional funding has been obtained from Dallas County
    - Campbell and Belt Line – City limit to limit
  - Matching funds from Collin County are also being explored
  - Average Unit Cost for pavement repair - \$85/SY



# Arterial and Primary Collector Repairs Completed/Funded 2011 - Current

-  RR XING COMPLETED
-  RR XING FUNDED
-  ARTERIAL COMPLETED
-  ARTERIAL FUNDED



# Remaining Arterial Street Repairs

- Arterial Streets
- Criteria ranking: pavement condition
- - - - - County Line
- - - - - Precinct Line

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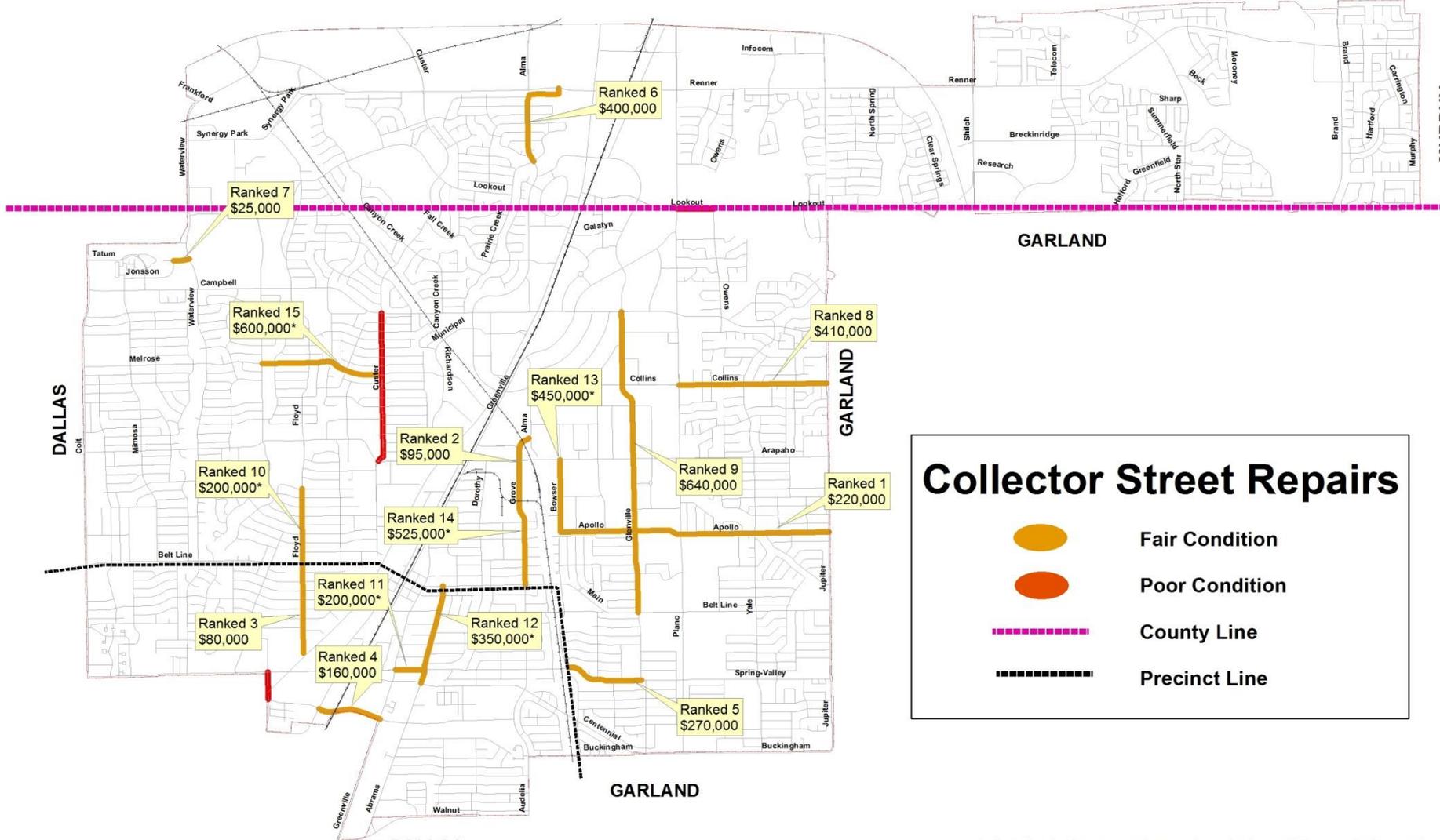
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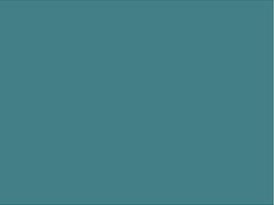
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### Collector Street Repairs

-  Fair Condition
-  Poor Condition
-  County Line
-  Precinct Line



\* Cost includes removing and replacing all the asphalt overlay



# Street Reconstruction – Capital Improvement

# Street Reconstruction – G.O. Bond Programs

- Major reconstruction or complete replacement of pavement asset
  - ▣ Substandard condition or road type
    - Asset has reached end of useful life
    - Replacement is more cost effective than continued extensive maintenance required to meet desired condition threshold
- Project selection based on city wide condition assessment
- Primary funding source is GO Bond Program

# Street Reconstruction – Capital Improvement



Apollo Road - Before



Apollo Road – After

# Street Reconstruction – Utility C.O. Programs

- Reconstruction or complete replacement of pavement in conjunction with a water or sewer line replacement
  - Upgrade or replacement of underlying utilities warrant major pavement replacement
  - On smaller utility projects, Construction & Rehab Division replaces utility lines while Capital Projects manages pavement replacement
  - On larger utility projects, Capital Projects manages replacement of the utility line and pavement
- Project selection based on the number of water / sewer failure in a given area as well as anticipated redevelopment
- Primary funding source is Utility C.O. Programs

# G.O. / Utility C.O. Street Rehab Projects

□ 2006 G.O. Program	\$18,444,000
□ 2010 G.O. Program	\$11,100,000
□ 2006-12 Utility C.O. Programs	\$10,185,000
□ Total	\$39,729,000

# 2006 G.O. Bond Program Street Rehab Projects

- Brand Rd - Exeter to S. City Limit
- Spring Valley - Central to Coit
- Belt Line - Plano to Jupiter
- Hillcrest Ave - Greenville to Dorothy
- Woodland Way - West Shore to Wayside
- Saint Johns Dr - Spring Valley to Richland
- Hillside Ave - Greenville to Dorothy
- Walton St - Polk to LaSalle
- Thompson Dr - Parkview to Cul-de-sac
- La Salle Dr - Apollo to Dorothy + 300 Royal Crest Drive
- 300 Royal Crest Dr
- Devonshire Dr - Floyd to East of Lindale
- Devonshire Dr - Weatherred to Cul-de-sac
- N. Lois Ln - Apollo to LaSalle
- Edgehill Blvd - Greenville to Dorothy
- Tyler St - Cul-de-sac to Dorothy
- Belt Line Plaza / Belt Line Cove - Belt Line to Cul-de-sac
- N. Floyd Rd - Parkview to Arapaho
- Abrams Rd - Centennial to Walnut
- Highland Blvd - Abrams to Grove
- Custer Rd - Arapaho to Tyler
- N. Floyd Road - Arapaho to Melrose
- Apollo Rd - Greenville to Dorothy
- S. Bowser Rd - Belt Line to Centennial

# 2010 G.O. Bond Program Street Rehab Projects

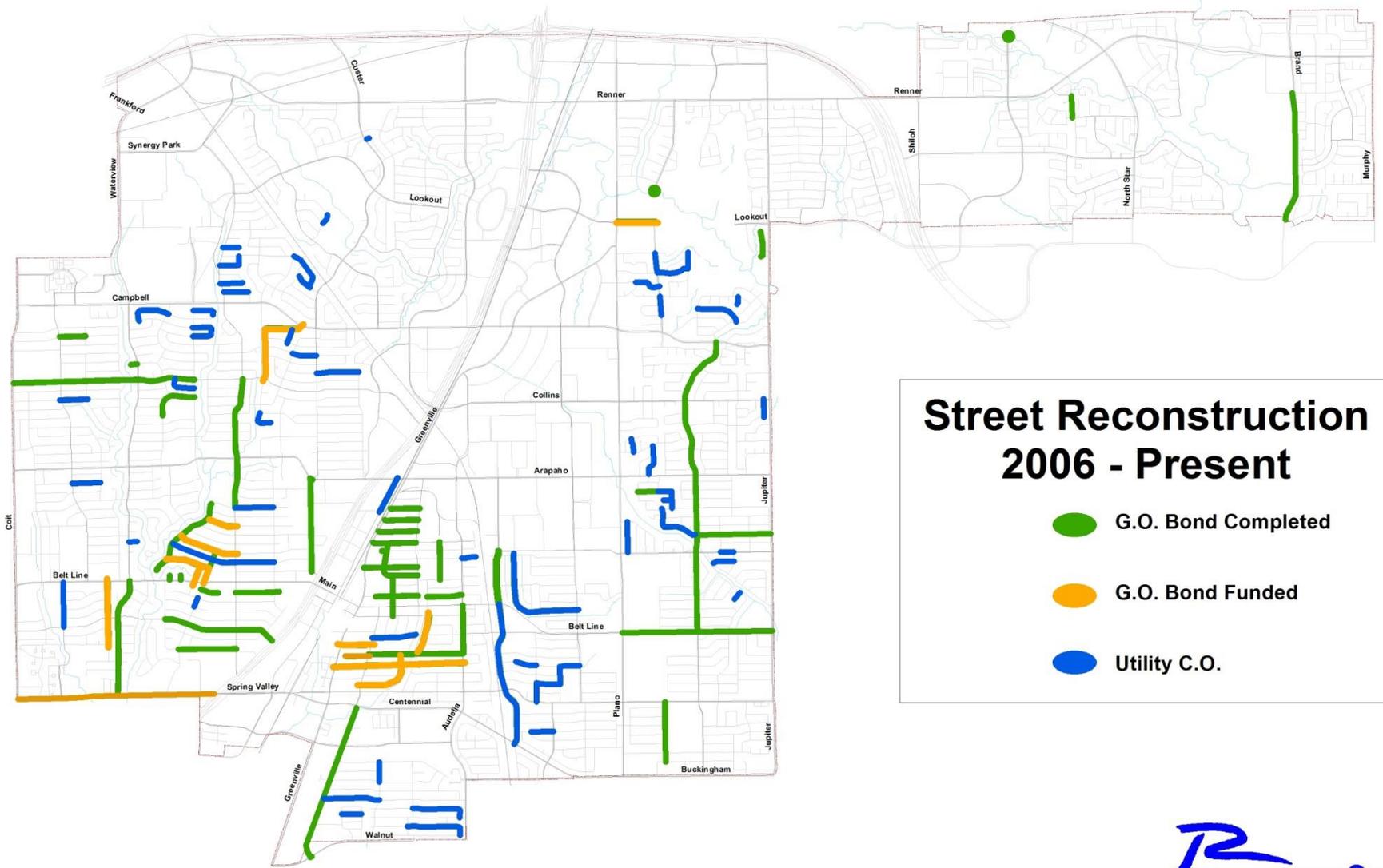
- Terrace - Greenville to Dorothy
- 500 E. Tyler
- Dumont - Hyde Park to U.S. 75
- Melrose - Coit to West Shore
- 1000 Meadowview
- Grove - Belt Line to Highland
- Bowser - Belt line to Apollo
- 100-600 Dover
- 300 Pittman
- 300 Wista Vista
- 300 Huffhines
- 400 Grace
- 400-500 Pittman
- 200-300 Lois
- 100 Gentle
- 800 Lockwood
- 100-300 N. Weatherred
- 700-800 Ridgedale
- 700 Northhill
- 500-600 Old Campbell Road
- Nantucket - Melrose to Campbell
- 1400-1500 Lookout

# 2006-13 Utility C.O. Program Street Rehab Projects

- Frances Way - Abrams to Dorothy
- N. Interurban Arapaho to Rayflex
- Dublin - Belt Line to Dumont
- Wake Drive - Midway to Glenville
- Loganwood Avenue - Kingswood to West Shore
- Westwood Drive - Thompson to Floyd
- 1600-1700 Drake
- 1700 Meadowgate
- 700-800 Allison
- 1700 Piper Court
- 900 Vinecrest Lane
- 1500 Jennifer Street
- 1200 Seminole Drive
- 500 Caprock Drive
- 1900 Somerville Drive
- 1500 Reston Drive
- 1-15 Harper's Ferry
- 1600-1700 Woodcreek Drive
- 100-1000 Bower Road
- 2100 & 2300 Owens Blvd
- 100 Hidden Circle
- 1900-2000 Apollo Road
- 900 Edgewood Drive
- 1-22 Lundy's Lane

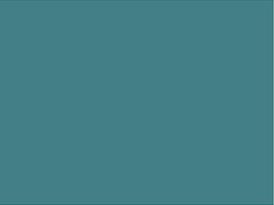
# 2006-13 Utility C.O. Program Street Rehab Projects

- 400 Tiffany Trail
- 2300 Windsor Drive
- 600 Westwood Drive
- 1100-1200 Harness Lane
- 1800-1900 Plymouth Rock Drive
- 600 Parkview Lane
- 500 Lawnmeadow Drive
- 1-15 Vicksbury Lane
- 600 Rorary Drive
- 1200 Cypress Drive
- 600 Briarcrest Drive
- 1-18 Gettybury Lane
- 2700 Pinery Lane
- 1300 Summerwood Lane
- 2100 Sky Ridge Creek
- 400 Lexington Lane
- 1800-1900 Drew Lane
- 300 Weathered Drive
- 400-500 Fireside Drive
- 1100 Morningstar Trail
- 1000 Blue Ridge Place
- 600 Nantucket Circle
- 400 Winding Brook Lane
- 800 Edgefield Drive
- 400-600 Palomar Lane
- 600 Goodwin Drive
- 300 Cambridge Drive
- 2400 Fairway Drive
- 700 Snowden Drive
- 1000, 1200 Windsong Trail
- 600 Harvest Glen Drive
- 1000 Richland Park Drive



## Street Reconstruction 2006 - Present

- G.O. Bond Completed
- G.O. Bond Funded
- Utility C.O.



# **3 Year Streets Management Strategy**

# Guiding Principles

- ❑ Plan should address arterials, collectors and residential streets
  - ❑ Arterials should be completed over multiple years
    - Increases likelihood matching funds can be used
  - ❑ Focus on good and fair condition streets
  
- ❑ Focus on the driving surface – between the curbs
  - ❑ Goal is to replace asphalt repairs with concrete
  
- ❑ Plan should be fluid, adaptable
  - ❑ If external funding opportunities arise, plan should be updated to leverage city funds to maximize repair areas
  
- ❑ Place temporary increased emphasis on repair function verses preventative maintenance

# Streets Management 3 Year Strategy

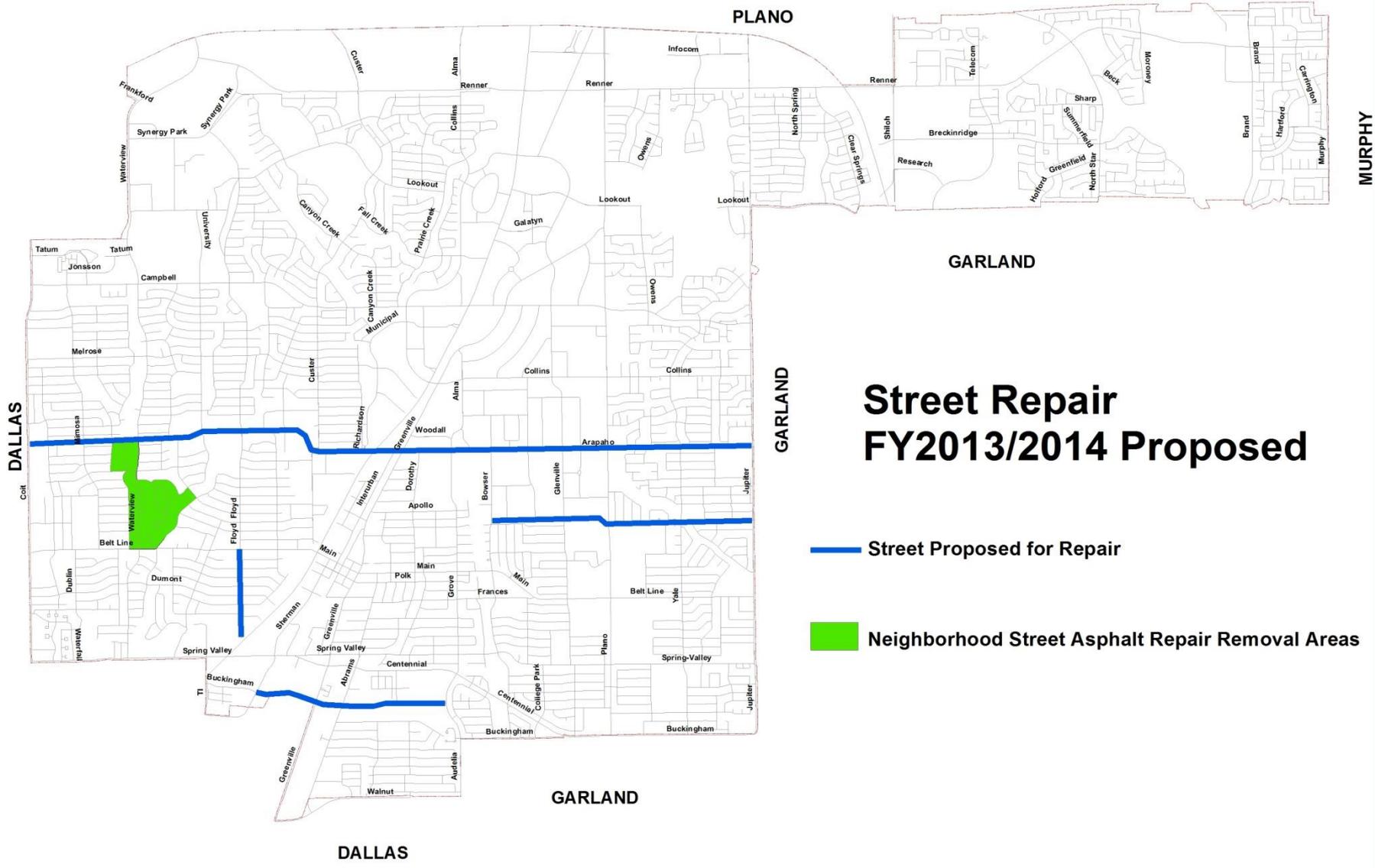
	FY 12/13 Actual			
Preventative Maintenance- Grade Leveling / Sealing*	\$500,000			
Arterial Street Repair Program*	\$500,000			
Collector Street Repair Program*	\$0			
Neighborhood Street Repair Program*	\$0			
Streets Operating Budget- Materials for Concrete Repairs	\$235,000			
Total	\$1,235,000			

\*Penny Tax

# Streets Management 3 Year Strategy

	<b>FY 12/13 Actual</b>	<b>FY 13/14 Goal +250,000</b>		
Preventative Maintenance- Grade Leveling / Sealing*	\$500,000	\$250,000		
Arterial Street Repair Program*	\$500,000	\$350,000		
Collector Street Repair Program*	\$0	\$450,000		
Neighborhood Street Repair Program*	\$0	\$250,000		
Streets Operating Budget- Materials for Concrete Repairs	\$235,000	\$185,000		
<b>Total</b>	<b>\$1,235,000</b>	<b>\$1,485,000</b>		

\*Penny Tax



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# Street Repair FY2013/2014 Proposed

**— Street Proposed for Repair**

**■ Neighborhood Street Asphalt Repair Removal Areas**

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# Streets Management 3 Year Strategy

	<b>FY 12/13 Actual</b>	<b>FY 13/14 Goal +250,000</b>	<b>FY 14/15 Goal +500,000</b>	<b>FY 15/16 Goal +750,000</b>
Preventative Maintenance- Grade Leveling / Sealing*	\$500,000	\$250,000	\$300,000	
Arterial Street Repair Program*	\$500,000	\$350,000	\$365,000	
Collector Street Repair Program*	\$0	\$450,000	\$485,000	
Neighborhood Street Repair Program*	\$0	\$250,000	\$500,000	
Streets Operating Budget- Materials for Concrete Repairs	\$235,000	\$185,000	\$185,000	
<b>Total</b>	<b>\$1,235,000</b>	<b>\$1,485,000</b>	<b>\$1,735,000</b>	

\*Penny Tax



# Streets Management 3 Year Strategy

	<b>FY 12/13 Actual</b>	<b>FY 13/14 Goal +250,000</b>	<b>FY 14/15 Goal +500,000</b>	<b>FY 15/16 Goal +750,000</b>
Preventative Maintenance- Grade Leveling / Sealing*	\$500,000	\$250,000	\$300,000	\$400,000
Arterial Street Repair Program*	\$500,000	\$350,000	\$365,000	\$400,000
Collector Street Repair Program*	\$0	\$450,000	\$485,000	\$500,000
Neighborhood Street Repair Program*	\$0	\$250,000	\$500,000	\$500,000
Streets Operating Budget- Materials for Concrete Repairs	\$235,000	\$185,000	\$185,000	\$185,000
<b>Total</b>	<b>\$1,235,000</b>	<b>\$1,485,000</b>	<b>\$1,735,000</b>	<b>\$1,985,000</b>

\*Penny Tax

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# Street Repair FY2015/2016 Goal

 Street Proposed for Repair

 Neighborhood Street Asphalt Repair Removal Areas

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# Street Repair 2013 - 2016

 Street Proposed for Repair

 Neighborhood Street Asphalt Repair Removal Areas



# Flex Funding Strategy

- Any effort to escalate funding beyond the previously mentioned proposed goals will not change arterial or collector street recommendations.
- Instead, said recommendation would be to enhance the number of neighborhoods included in each year of the multi-year plan.
  - ▣ 1 zone = \$250,000
- Flex Funding opportunities may include:
  - ▣ Penny tax
  - ▣ General fund reserve
  - ▣ County participation

# Next Steps

- Assess funding goals during upcoming budget considerations.
- Seek additional matching funds from Dallas/Collin County to leverage City funds.
- Refine contract specifications to achieve best unit cost available for various project types.
- Evaluate Streets operations to maximize funding for repairs.
- Evaluate asphalt repairs in concrete repair zones not immediately scheduled to make certain they are maintained in an acceptable condition during the interim.
- Update CIP Database to include streets that deteriorate so that they are included in future bond program considerations.

# STREETS MANAGEMENT STRATEGY

