

Memorandum



CITY OF DALLAS

DATE May 6, 2016

TO Honorable Members of the Transportation and Trinity River Project Committee: Lee M. Kleinman, (Chair), Erik Wilson (Vice Chair), Monica R. Alonzo, Sandy Greyson, Adam Medrano, Casey Thomas, II

SUBJECT Street Rating Privatization Alternatives

On Monday, May 9, 2016, the Transportation and Trinity River Project Committee will be briefed on Street Rating Privatization Alternatives. The briefing materials are attached for your review.

Please feel free to contact me if you have questions or need additional information.

A handwritten signature in black ink, appearing to read 'Jill Jordan'.

Jill A. Jordan P.E.
Assistant City Manager

Attachment

c: Honorable Mayor and Members of the City Council
A.C. Gonzalez, City Manager
Christopher D. Bowers, Interim City Attorney
Craig D. Kinton, City Auditor
Rosa A. Rios, City Secretary
Daniel F. Solis, Administrative Judge
Ryan S. Evans, First Assistant City Manager

Eric D. Campbell, Assistant City Manager
Mark McDaniel, Assistant City Manager
Joey Zapata, Assistant City Manager
Jeanne Chipperfield, Chief Financial Officer
Sana Syed, Public Information Officer
Elsa Cantu, Assistant to the City Manager – Mayor & Council



Street Rating Privatization Alternatives

Transportation & Trinity River Project Committee
May 9, 2016



Purpose

- **Describe the City's current pavement assessment program, equipment, staff**
- **Options for the future of pavement assessment**
- **Ranking of options and recommended action**

Background

- **The City has a robust program to assess 11,700 miles of streets and 1,400 miles of alleys as a system**
- **The City utilizes the “Dallas Data for Better Roadways Van” with its software and equipment to collect information**
 - Purchased in 2007; ~80,000 miles
- **It takes 18-24 months to collect information on the entire City**
- **Data collected is analyzed and used for**
 - Annual Street Services Department paving programs
 - Major Maintenance
 - Capital Reconstruction inventory

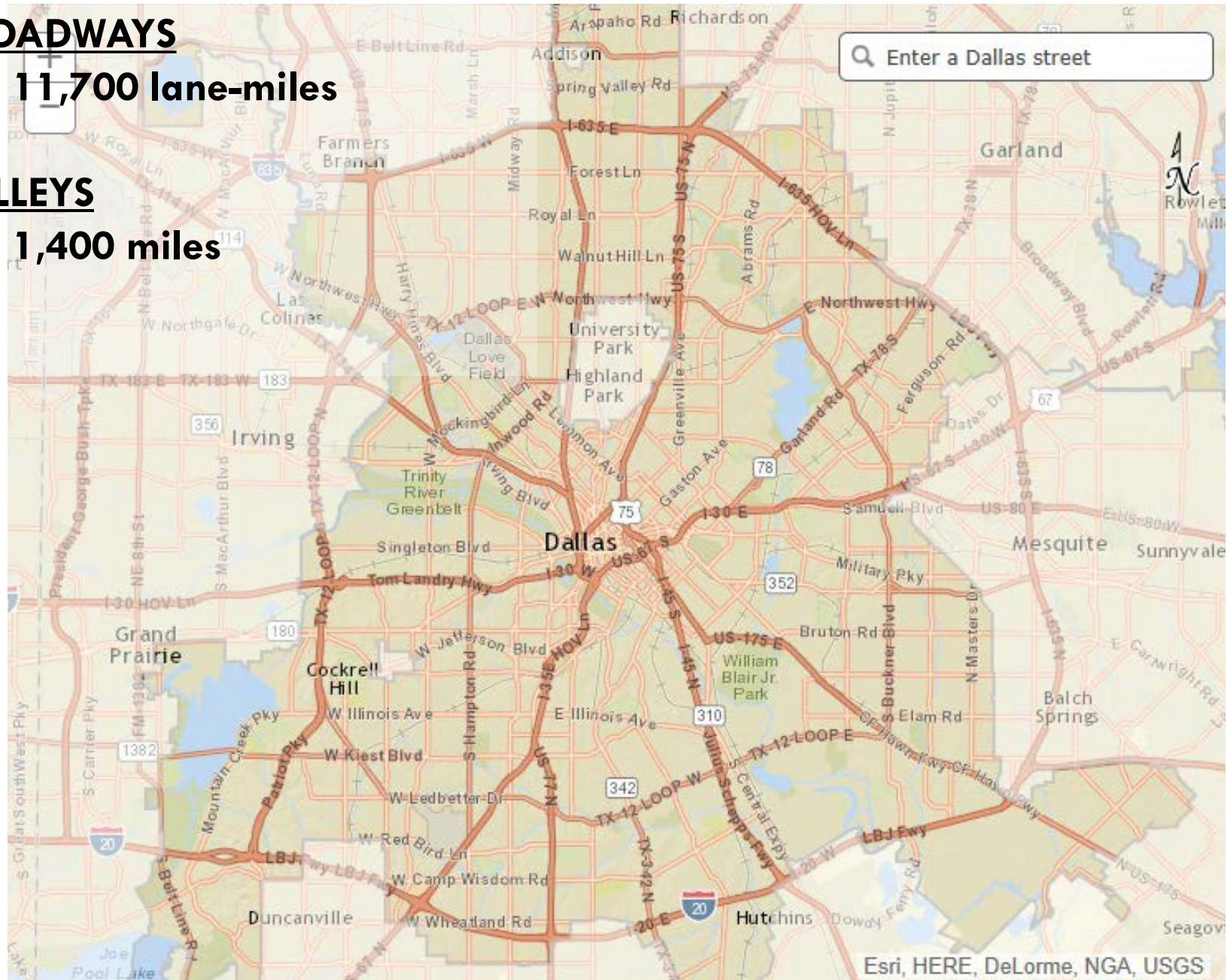
Dallas Streets and Alleys

ROADWAYS

11,700 lane-miles

ALLEYS

1,400 miles



Why Measure Pavement Conditions?

- **City's roadways are a high-value asset**
 - Replacement value of over \$14 Billion
 - Measuring pavement conditions provides a disciplined, consistent approach to assessing the value of this asset and its degradation/depreciation
 - Assists in prioritization of work for Street Services Department and Public Works Department
 - Across US, infrastructure maintenance has been underfunded for years

- **Road transportation provides**
 - Quality of Life
 - Day-to-day commuting and travel
 - Support for mass transit
 - Critical for emergency services
 - Economic Development
 - Commercial usage

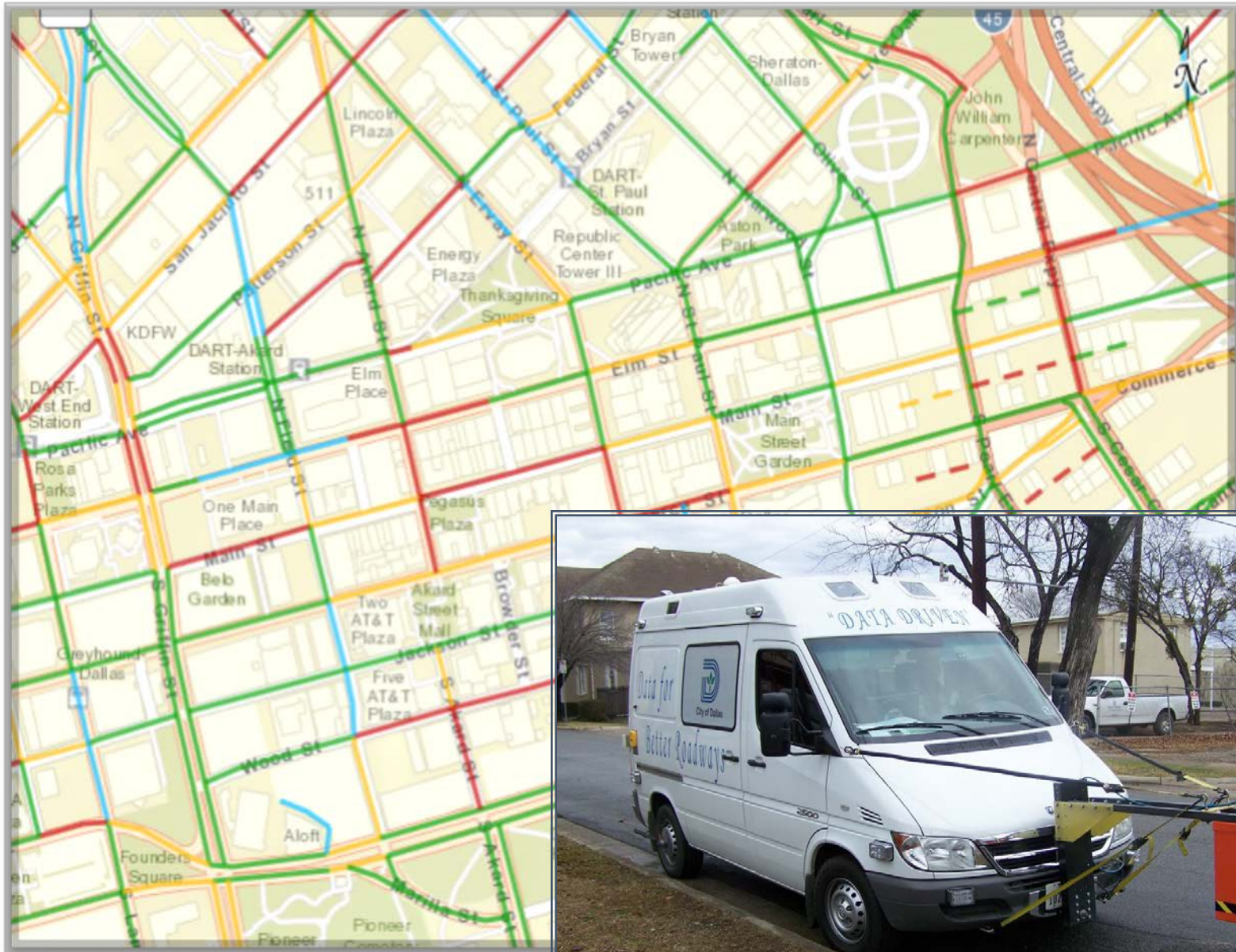
How Dallas Measures Pavement Condition

- **1995 – 2008**
 - Visual examinations by several trained staff
 - Created first database – included “roughness” and “cracking” factors

- **2008 – Present**
 - ASTM D6433 -11 “Standard Practice for Roads and Parking Lots Condition index survey
 - Dallas purchased \$0.65 m (FY 2008 dollars & technology) in equipment, trained staff, used 2 shifts of crews
 - City transitioned to “machine” measurements in place of visual assessments
 - Researched state-of-the-practice techniques across country
 - Designed a hardware/software/staffing system

- **Today**
 - Five staff members dedicated to this service
 - Equipment due for partial replacement and/or upgrades in 2016 due to increasing down time, need to acquire advancing technology (\$0.35 M)

Mapped Street Conditions



Technology Advancements

- Technology Advancement in:

- Equipment to make measurements
- Analysis techniques and reporting
- Integration with GIS databases and satellite information
- Streamlining of practices to capture essential data
 - Pavement condition – roughness, cracking, ruts, dimensions
 - Ability to capture data on curbs, sidewalks, striping

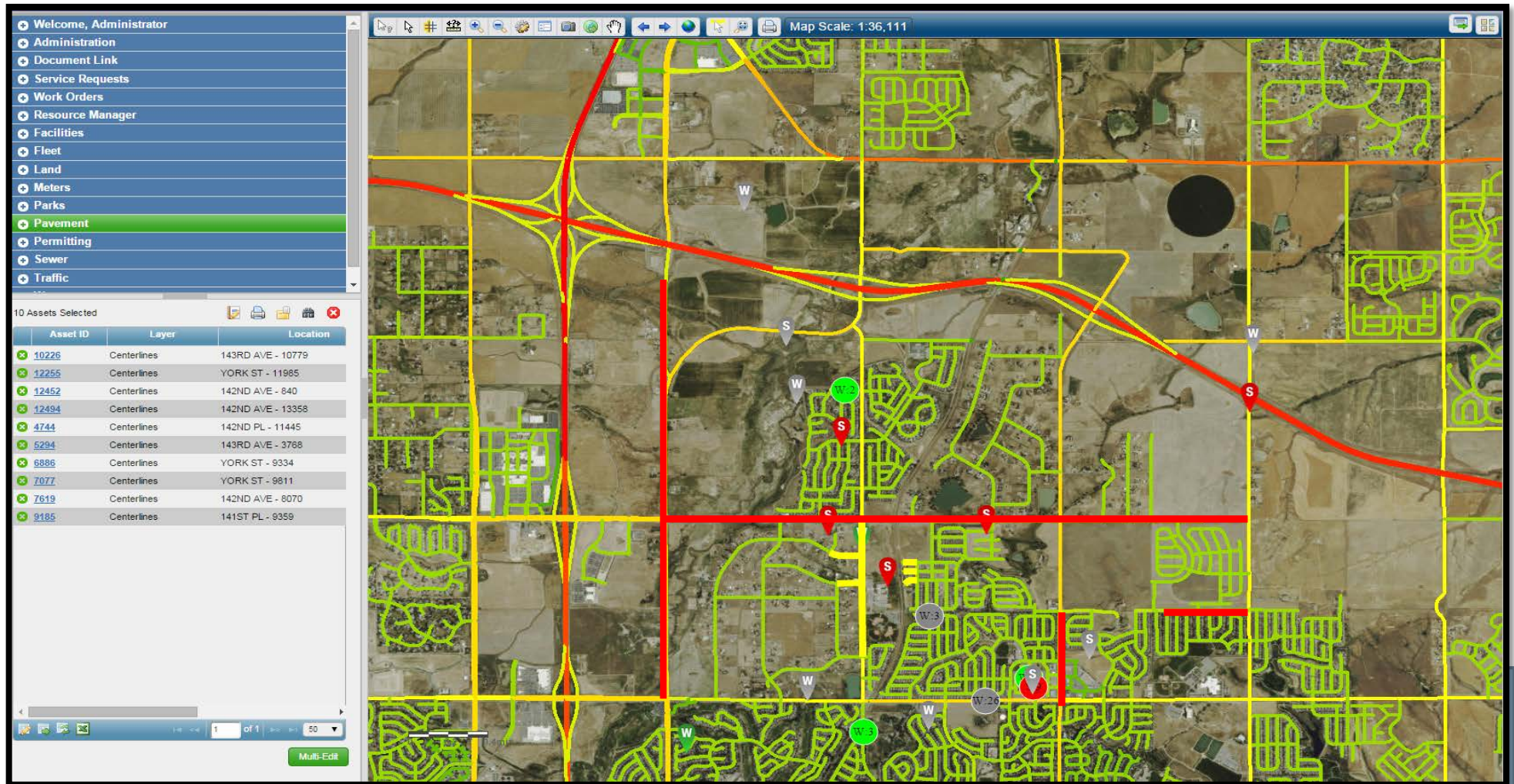
- Benefits of Technology Advancements:

- Shift From: “data acquisition and maintenance of database” to: “data analysis and forecasting”
- Allows enhanced field data acquisition
- Provide opportunities for “what-if” scenarios, and enhanced recommendations based on a range of scenarios

Is private industry better equipped to provide this service?

- Specialized niche-market service that has expanded since 2008
- ~6 capable service firms across the U.S. provide service
- Can they integrate Dallas' historical data?
 - Yes, in most cases they can
- All state they can utilize Dallas' parameters for analyzing and grading pavements

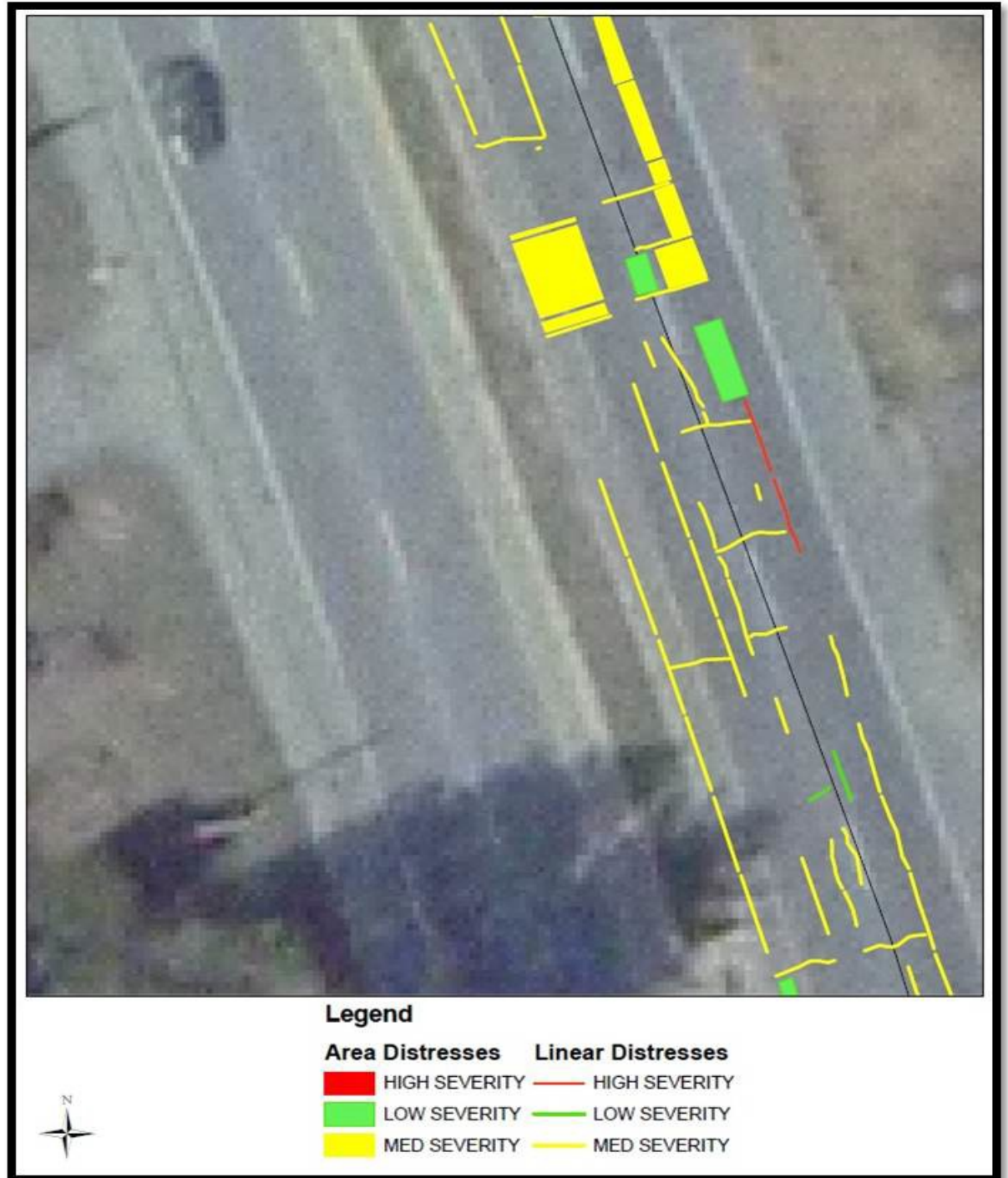
Pavement Condition Example (from Vendor)



- Street rating by color-coding
- Provide mapped depiction of various flaws – cracking, unevenness, raveling
- Integrate aerial images from GIS, Google, any source
- Show other roadway assets – signage, striping, etc.

Vendor Example of Pavement Distress Map

Visibly identifies the type and extent of cracking, raveling, rutting, and other defects



OPTIONS for Pavement Data Management Services

Opt #	DESCRIPTION	ALL Rds? Alleys?		BENEFITS	CHALLENGES	Est. Annual Cost for 2-year cycle*	Est. Annual Cost for 3-year cycle*
1	Keep City equip + staff; contract for occasional usage as QC measure and analysis (90% City/ 10% Contractor)	Y	Y	Consistency in data and reporting; quickly responsive to internal requests; Contractor expertise for QC and analysis;	Analytical techniques need updating ; need new equipment each 7 years; cannot provide ability to inventory signs, sidewalks, curb/gutter; adds some contractor costs ; Risk of Van breaking down	\$ 600,000	\$ 465,000
2	Use Contractor <u>PLUS</u> keep City van to supplement Contractor; City staff for alleys (50% City/50% Contractor)	Y	Y	Increased services ability. Maintains current staff knowledge and experience.	Costs assoc with keeping older equipment past useful life; Contract Management required	\$ 960,175	\$ 743,877
3	Use Contractor; phase out City van in FY17; City staff for alleys (10% City/90% Contractor)	Y	Y	Most rapid way to gain FULL CITY DATA. Decreasing in- house cost in FY17. Increased Services Ability City staff focused on data analytics and forecasting.	Increased reliance on outside services. Contract management required. Alley surveys done in- house.	\$ 611,175	\$ 444,877

NOTES:

1) City currently surveys all roads every TWO years (on average).

2) This cost is for Pavement management services only. Sidewalks, Curbs, Lighting, etc information is not included

*Note: Costs are preliminary based on initial discussions

Future Data Acquisition and Analytics

Future Data

- Sidewalk Condition
- Traffic Signs
- Culvert Locations and Condition

Future Analytics

- How much does a bus lane degrade pavement?
- Which pavement treatment approach works best given traffic volume?
- What treatment approach extends pavement life in which scenarios?
- What condition are which sidewalks in?
- How do substrata soil conditions impact Dallas pavement?

Increased Service Level Costs

- Sidewalk Information ~\$160K
- Curb and Gutter (Location/Condition) ~\$80K
- Traffic Signs Inventory (Location and Condition) ~\$240K

* Prices range from \$20-\$80 a Centerline Mile

Recommendation

Option 3—Utilize Contractor for Primary Data Collection, AND optimize City equipment for maximum benefits:

- Secure the best of technology advances
- Full utilization of Dallas' pavement database
- Acquire fresh set of data with citywide survey in shortest time frame
- Added services: inventory of sidewalks, signs, curb & gutter
- Online public access of street condition maps, videos, reports
- Maintain current staff knowledge and experience, and allow for ample quality control opportunity
- City to phase out use of own field equipment over time, further decreasing operational costs

Next Steps

- Confirm best contracting strategy
 - Houston-Galveston Buy Board
 - NCTCOG
 - Dallas RFCSP
- Review Dallas ROW data needs
 - Multiple departments
- Write scope and negotiate fees
- Take contract to Council in Fall 2016

Questions ?

Appendix

Vendor Selection Options

- **RFCSP-COD**
- **Houston-Galveston Area Council of Governments (HGAC)** has already established a procurement for Pavement Assessment services with set unit costs for a variety of services. Any public entity can utilize this “Buy Board” agreement for the pre-set unit costs.
- **North Central Texas Council of Governments (NCTCOG)** is also establishing a procurement for same menu of services, with vendor(s) in the next few months.
 - **Value of selecting a COG vendor:**
 - Vendor has been pre-qualified by review of government partners
 - Cost for services is established
 - Procurement period for Dallas work decreases from “more than six months” to “60 days.”

Budget Forecasting Scenarios

Budget Scenario Manager

Filter is OFF - Current list contains 3 out of 3 Scenarios

Form View Table View Filter Reports

Scenario Name: Roads Replacement Project
Scenario Type: Automatic
Analysis Period: 10 Years (2024)
Asset Class(es): Roads
Asset Type(s): Centerlines

Created By: Brian Sovik 11/02/2015
Modified By: 12/07/2015

Notes Summary Job Details Audit Budget Documents

Scenario Time Span (years): 2015 - 2024
Current list contains 3 out of 3 Jobs

Filter by: All years All Assets

	Year	Asset Type	Asset ID	Location	Label	Failure Type	Failure Probability	Job	Funding Source	D-Curve Before	D-Curve After	% Life Used Before	% Life Used After
1	2015	Centerlines	10460	152ND AVE - 7075	152ND AVE - 7075	Age	95.00%	Resurface	Capital Improvements	2.30	95.08	100.00%	
2	2015	Centerlines	10642	HOLLY ST - 5122	HOLLY ST - 5122	Age	85.83%	Milling	Capital Improvements	2.30	81.15	100.00%	
3	2015	Centerlines	1490	HURON ST - 7131	HURON ST - 7131	Distresses	57.00%	Resurface	Capital Improvements	2.30	100.00	100.00%	

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Save Wizard Delete New New Copy Print... Close

3 of 3

Create better Annual Work Plans by examining the Cost-Benefit of various “what if” scenarios.