Memorandum

CITY OF DALLAS

DATE November 26, 2014

TO Honorable Mayor and Members of the City Council

SUBJECT **Current Year Street Maintenance Plan**

On Wednesday, December 3, 2014, the City Council will be briefed on the 2015 Annual Maintenance Plan for the Department of Street Services. The briefing materials are attached for your review.

Please let me know if you have any questions or need additional information

for Mark McDaniel
Assistant City Manager

c: A.C. Gonzalez, City Manager
Warren M.S. Ernst, 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
Jill A. Jordan, P.E., 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

CURRENT YEAR STREET MAINTENANCE PLAN

Dallas City Council

December 3, 2014

Current Year Funding

- Council approved $36M for street maintenance in FY 2015
- Routine Maintenance – Keep safe
  - Pothole repair
  - Level ups
- Preventive Maintenance – Strategic and Proactive
  - Slurry Seal
  - Micro Surfacing
  - Full-Depth Asphalt Repairs
- Major Maintenance – Targeted and Proactive
  - Asphalt Rehabilitation
  - Asphalt Restoration
  - Concrete Partial Reconstruction

Current cost per treatment

- Slurry Seal
  - $13,000/lane mile
- Micro Surfacing
  - $19,000/lane mile
- Full-Depth Asphalt
  - $35,000/lane mile
- Concrete Partial Reconstruction
  - $102,800/lane mile
- Asphalt Rehabilitation
  - $167,000/lane mile
- Asphalt Restoration
  - $186,000/lane mile

Slurry Seal/Micro Surfacing

for "B" and "C" rated streets

Full-Depth Asphalt Repair

for "C" rated streets

Asphalt Restoration

for "E" rated streets

Asphalt Rehabilitation

for "D" rated streets

Current Year Funding

- Included an increase of $4M for major maintenance to high traffic streets
  - Targeted additional lane miles for Concrete Partial Reconstruction
    - Largest maintenance category
    - Extends the service life
    - Most cost effective – defers significant capital costs

Concrete Partial Reconstruction

for "C" rated (and some "D" rated) **streets**

Annual Selection Process for Candidate Streets

- STEP 1: Public Works pavement evaluation
  - Pavement Condition Index (PCI)
    - Surface type
    - Street class
    - Length of time in current state
    - Effects of traffic use (**additional focus on high traffic streets**)
    - Effects of weather/climate
    - Effects of various soil compositions
  - Develop preliminary candidate list
    - Determine project limits

- STEP 2: Street Services (STS) candidate evaluation
  - Coordination with utilities and other City departments
  - Consideration of upcoming capital projects
  - Review project commitments
  - Consideration for project extensions

Annual Selection Process for Candidate Streets

- STEP 3: Field evaluations to verify
  - Acceptable candidates
  - Recommended treatment
  - Final project limits

- STEP 4: Select projects
  - Get Council Districts (CD) not yet at 80% up to or very near 80%
  - Address CDs in most jeopardy of sliding below 80%
  - Position the City to reach 87% citywide
  - Final list is sorted by CD and treatment

Results of Selection Process

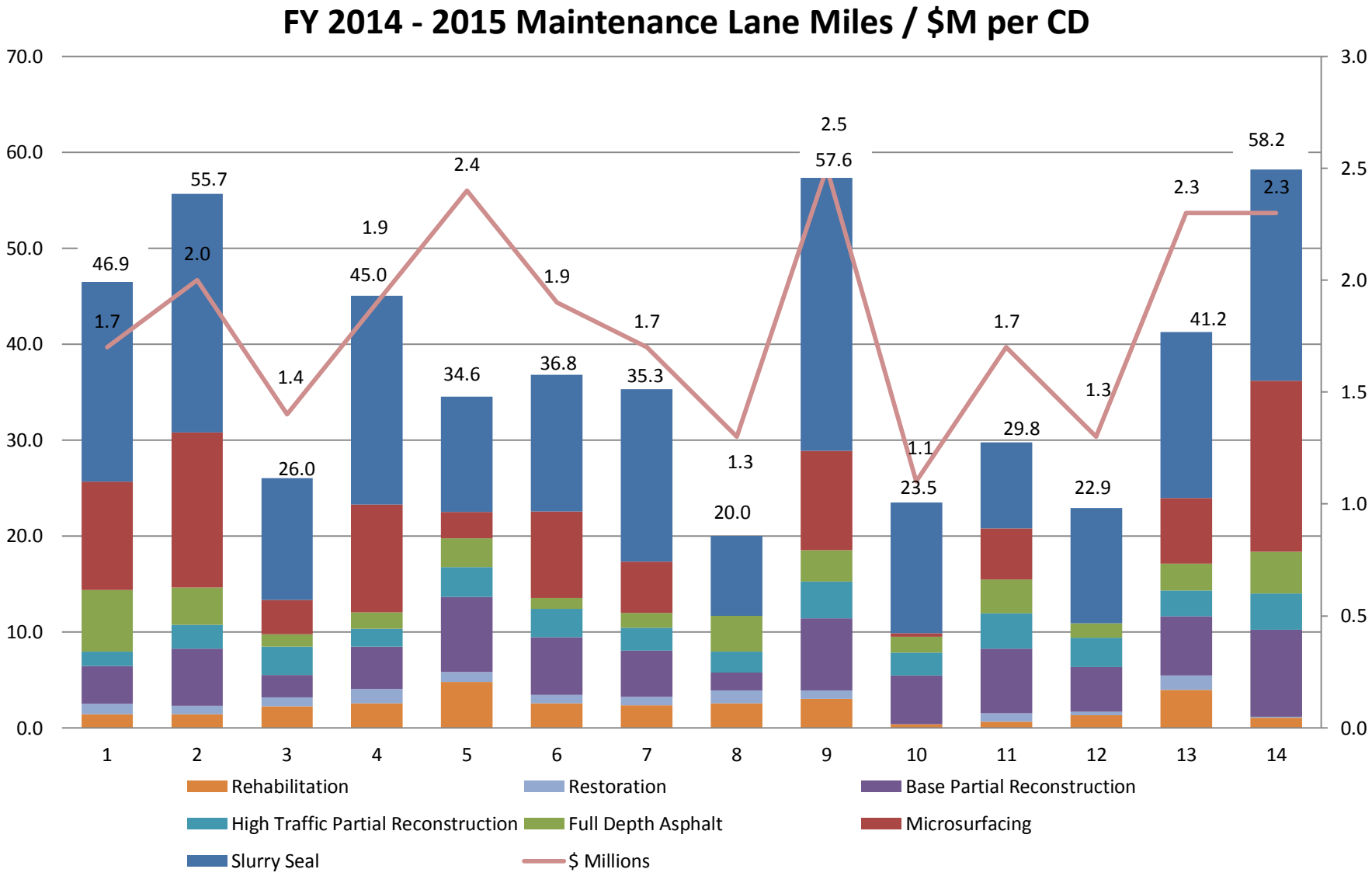


Table 1 – Lane Mile Allocation and Condition Rating Impact

Council District	Total Lane Miles of Street in CD	Lane Miles Maintenance Treatment FY 2015	Estimated Cost Maintenance Treatment FY 2015 ($M)	Projected % Satisfactory Rating Impact After Treatment
1	750	46.9	1.7	0.4
2	926	55.7	2.0	0.3
3	990	26.0	1.4	0.3
4	923	45.0	1.9	0.4
5	693	34.6	2.4	0.6
6	1069	36.8	1.9	0.3
7	860	35.3	1.7	0.4
8	876	20.0	1.3	0.5
9	897	57.6	2.5	0.4
10	729	23.5	1.1	0.1
11	618	29.8	1.7	0.3
12	623	22.9	1.3	0.5
13	1008	41.2	2.3	0.3
14	740	58.2	2.3	0.2
CW	11,702	533.5	25.5	0.4

Next Steps

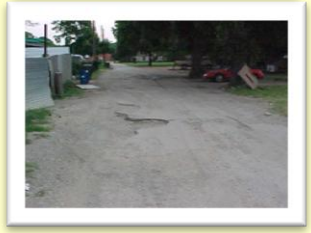
- December 10th City Council Agenda
  - Amend the existing 36-month master paving contract (administered by DWU)
    - Reduce time-frame to complete projects
    - Take advantage of last year's favorable pricing
  - Existing DWU contract = $31.5M
    - $7.9M amendment of which:
    - $5.1M = Street Services Concrete Partial Reconstruction program
      - $4.0M [High Traffic Streets]
      - $1.1M [Standard/Base Streets]

Street and alley repairs by the Dallas Water Utilities are associated with pipeline replacement. For asphalt streets the City policy requires that an entire lane be reconstructed at the location for where the pipeline is replaced. From joint to joint for concrete streets.

Next Steps (continued)

- Underway Now
  - Develop a multi-year street repair maintenance plan with funding options (FY 2015)
  - Begin the procurement process of the next master paving contract (FY 2015)
  - Further refine the street condition rating and selection process (FY 2015)
  - Update of Needs Inventory for potential bond election (FY 2017)

Appendix

Rating		Description	PCI
A		**Excellent** Pavements that have no distress (mostly new or newly rehabilitated surfaces)	**100-85**
B		**Good** Very good ride quality - Can benefit from preventive maintenance (slurry seal or similar)	**85-70**
C		**Fair** Acceptable ride quality, though road surfaces are becoming worn - Slurry, micro surfacing, concrete partial reconstruction or similar will prevent rapid deterioration	**70-45**
D		**Poor** Marginally acceptable ride quality - Micro surfacing or concrete partial reconstruction, resurfacing or asphalt rehabilitation is needed to slow further deterioration	**45-35**
E		**Very Poor** Pavement has extensive distress and requires partial or full reconstruction or asphalt restoration	**< 35**

Satisfactory

Unsatisfactory

Slurry Seal/Micro Surfacing for "B" and "C" rated streets

(Street Services)

Full-Depth Asphalt Repair for "C" rated streets

(Street Services)

Slurry Seal - This treatment for CONCRETE STREETS WITH ASPHALT SURFACE consists of a ¼-inch layer of sand and fine stone mixed with asphalt emulsion. This seals and smooths the surface and conceals scars from previous repairs. It is used predominately for residential roads with curb and gutter. The work is outsourced to a specialized contractor – after Street Services performs preparation work (such as minor base repair and crack sealing). **Life:** 5-7 years.

Micro Surfacing – A treatment for CONCRETE STREETS WITH ASPHALT SURFACE which places a ¼-inch layer of crushed stone mixed with asphalt emulsion. This seals and smooths the surface and conceals scars from previous repairs. It is used predominately for higher-traffic-volume streets with curb and gutter. It is more expensive than slurry seal, but cures more quickly. This work is outsourced to a specialized contractor – after Streets Services prepares the site (doing minor base repair and crack sealing, curb & gutter repair). **Life:** 5-7 years.

Full-depth Asphalt Repair - A treatment for ASPHALT STREETS to repair the surface and base failures. Repairs are typically larger than a pothole, but smaller than either Street Resurfacing or Street Rehabilitation projects. After the failed area is cut square and removed, a new base is placed and compacted and an asphalt surface is put in place. **Life:** 5-7 years.

Concrete Partial Reconstruction

for "C" rated (and some "D" rated) **streets**

(Street Services)

Concrete Partial Reconstruction - This is a method used on CONCRETE STREETS. It is **removal and replacement of large, failed sections**, including breakout and removal of old pavement, repair of any base failures, and placing new concrete. To be a candidate for this repair, residential and thoroughfare streets must have less than 25% of failed area. **Life:** 10-12 years.

Asphalt Rehabilitation for "D" rated streets

(Street Services)

Asphalt Restoration for "E" rated streets

(Street Services)

Asphalt Rehabilitation - A treatment for ASPHALT STREETS when a large portion of the surface and the base have deteriorated to an unsatisfactory level. It includes the full-depth repair of base failures, followed by a chip seal, and a new two-inch layer of hot mix asphalt placed over the entire treated segment. Candidate streets are predominately residential asphalt surfaced streets without curb and gutter. **Life:** 10-12 years.

Asphalt Restoration - A treatment for ASPHALT STREETS when the entire surface and the base have deteriorated to an unsatisfactory level. It includes rebuilding the entire base by recycling the old base and surface materials into a new base, followed by a chip seal, and new two-inch layer of hot mix asphalt placed over the entire treated segment. Candidate streets are predominately residential asphalt surfaced streets without curb and gutter. **Life:** 18-20 years.

Asphalt Resurfacing of Pavement for "D" rated streets

(Public Works)

Asphalt Re-Surfacing – This treatment removes the entire asphalt surface, and pulverizes and recycles the old material with new asphalt binder. The new asphalt surface is then placed over the entire surface, compacted, and smoothed to a proper finish. Curb and gutter repair, if needed, is accomplished with the re-surfacing efforts. **Life:** 15-20 years (with maintenance).

Concrete Full Reconstruction for "E" rated streets

(Public Works)

Concrete Reconstruction - This process is the removal of an existing street with extensive failures and/or badly deteriorated condition. In the process, the pavement is broken and removed (and often recycled), as is the base. Drainage concerns are addressed with this process. The sub-base may be reconditioned as needed, then a new base is placed and compacted. The new concrete surface pavement is then placed, as shown above. The construction work is outsourced under bond-issued funding. **Life:** 20-50 years (with maintenance).

Maintenance Treatment Types

- Slurry Seal - preventive maintenance for good/fair asphalt residential
- Micro Surfacing - preventive maintenance for good/fair asphalt thoroughfares
- Full-Depth Asphalt Repair - localized repairs of surface and base failures
- Asphalt Rehabilitation - localized repairs of base and full surface replacement
- Asphalt Restoration - full replacement of surface and base
- Concrete Partial Reconstruction - localized repairs of surface and base failures