

Draft Pima County Roadway Pavement Repair and Preservation 10-Year Plan for Unincorporated Pima County

(Based on April 23, 2018 Draft Road List Plan and April 25 Draft Sales Tax Implementation Plan Ordinance)

I. Purpose

The purpose of the Pima County Roadway Pavement Repair and Preservation Plan (“Plan”) is to fully repair and preserve all paved Pima County maintained roadways in unincorporated Pima County within 10 years. To illustrate the scale of the problem, approximately 70 percent of the 1,891 miles of unincorporated Pima County maintained roadways are in poor or failed condition.

It should be noted that asphaltic roadways require extensive preventative maintenance (“pavement preservation”) due to degradation by multiple factors including solar radiation, wheel loading, drainage and subbase erosion, such that a treatment is required every four to five years. Reconstructing roadways without subsequent application of regularly scheduled maintenance results in rapid loss of the asset investment as regularly scheduled pavement preservation costs approximately 28 percent of reconstruction costs. In order to maximize return on investment and save taxpayer costs, this plan includes the necessary annual pavement preservation budget.

II. Roadway Pavement Repair and Preservation Definition

The Plan constitutes activities solely related to the repair and maintenance of public flexible and rigid paved roadways to maximize Pavement Surface Evaluation and Rating (PASER) during the plan period. The PASER scale runs from 1 to 10, with 1 being a road in failed condition and 10 being a road in very good condition. Qualifying repair and preservation treatment activities include fog sealing, chip sealing, micro-surfacing, mill and overlay, and reconstruction. Under this definition, reconstruction of roadways is only applicable to the pavement section and associated edge protection on uncurbed roadways to include shoulders or headers, with the exception of Americans with Disabilities Act (ADA) infrastructure improvements required by the application of a particular repair or preservation treatment.

III. Road Selection Treatments and Schedule

Attachment A provides a repair and preservation treatment schedule for all unincorporated Pima County maintained roadways by PASER level, over the 10 years starting July 1, 2019. The following criteria were used in developing this schedule:

Roadway Repair and Preservation Selection Criteria

- Determine PASER for all paved public roadway segments
- Aggregate segments requiring similar treatment grouped by Township, Section & Range, subdivision, street name and address range to create grouped work zones
- Enable logic based on functional class, zoning and construction year to determine the number and location of ADA curb ramps to be constructed
- Rank roads based on PASER level
- Create routine roadway pavement preservation schedule
- Allocate treatment types based on available annual repair and preservation budgets (Table 3), adjusted to maximize cost/benefit

- PASER 1-4 roadways are scheduled for repair with priority from 1-4 (i.e., repair worst first)
- PASER 5-10 roadways are scheduled for preservation with priority from 10-5 (i.e., preserve best first)
- Work is scheduled based on PASER degradation curve (gaps indicate no treatments were scheduled for that year or no budget was available for that treatment)
- Initial PASER of roadways is adjusted as anticipated for FY2019/20

**Table 1
Roadway Miles Treated per PASER per Year**

| Original PASER | Treatment | Y1 | Y2 | Y3 | Y4 | Y5 | Y6 | Y7 | Y8 | Y9 | Y10 |
|----------------|-----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| 10 | Fog Seal | | | | 37.92 | | | | | | |
| | Minor SC | | | | | | | | 37.92 | | |
| 9 | Fog Seal | 10.82 | | | | | | | | | |
| | Minor SC | | | | 10.82 | | | | | | |
| 8 | Fog Seal | 50.39 | | | | | | | | | |
| | Minor SC | | | 50.39 | | | | | | | |
| 7 | Minor SC | | 93.27 | 11.00 | | | | | | | |
| | Major SC | | | | | | | | | | 93.27 |
| 6 | Major SC | | | 37.49 | 31.45 | | | | | | |
| | Mill/Fill | | | | | | | | 51.51 | 100.30 | 44.50 |
| 5 | Mill/Fill | | | | | | | | 82.18 | 54.90 | 29.03 |
| 4 | Mill/Fill | | | | | | | 108.33 | 57.98 | | |
| 3 | Fog Seal | | | | | | | | | | 148.68 |
| | Mill/Fill | | | | | | 148.68 | 103.73 | | | |
| 2 | Fog Seal | | | | | | | | 136.13 | 186.02 | 62.80 |
| | Mill/Fill | | | | 136.13 | 186.02 | 62.80 | | | | |
| 1 | Fog Seal | | | | 22.05 | 169.73 | 116.40 | 122.29 | 6.98 | | |
| | Minor SC | | | | | | | | 22.05 | 169.73 | 116.40 |
| | Mill/Fill | 191.78 | 116.40 | 122.29 | 6.98 | | | | | | |
| TOTAL | - | 252.99 | 209.67 | 221.17 | 245.35 | 355.75 | 327.88 | 334.35 | 394.75 | 510.95 | 494.68 |

**Table 2
Summary Data of Roadways Repaired and Preserved During the 10-Year Plan Period**

| Year | Miles of Local Roads Repaired | Miles of Local Roads Preserved | Miles of Collector & Arterial Roads Repaired | Miles of Collector & Arterial Roads Preserved |
|--------------|--------------------------------------|---------------------------------------|---|--|
| 1 | 128.33 | 21.56 | 63.45 | 39.65 |
| 2 | 112.51 | 37.10 | 3.89 | 56.17 |
| 3 | 102.17 | 44.01 | 20.12 | 54.78 |
| 4 | 43.26 | 18.92 | 99.85 | 83.31 |
| 5 | 139.95 | 127.98 | 46.07 | 41.75 |
| 6 | 163.09 | 112.51 | 48.40 | 3.89 |
| 7 | 164.74 | 102.17 | 47.33 | 20.12 |
| 8 | 136.55 | 50.66 | 55.11 | 152.42 |
| 9 | 71.95 | 267.93 | 83.26 | 87.82 |
| 10 | 51.44 | 312.70 | 22.10 | 108.45 |
| TOTAL | 1113.99 | 1095.54 | 489.58 | 648.36 |

IV. Cost Estimates

The total cost over 10 years to bring the unincorporated Pima County roadways that are in poor and failing condition into good condition is estimated at \$454 million, including inflation and financing costs¹. The total cost to preserve roads that are in fair and good condition over this 10 year time period, is estimated at \$170 million, also including inflation and financing costs. Table 3 shows these cost estimates on an annual basis over the 10 year plan.

**Table 3
Cost Estimates**

| Year | Road Repair Cost Estimates For Road in Poor & Failing Condition | Pavement Preservation Cost Estimates for Roads in Fair & Good Condition | Total |
|-------------|--|--|---------------|
| 1 | \$ 43,845,146 | \$ 8,903,118 | \$ 52,748,264 |
| 2 | \$ 31,964,957 | \$ 10,866,996 | \$ 41,062,915 |
| 3 | \$ 34,207,799 | \$ 12,933,488 | \$ 45,330,579 |

¹ Road repair and pavement preservation costs indexed for inflation by Chained Price Index for State & Local Investment in Highways and Streets” reported by the U.S. Bureau of Economic Analysis.

| | | | |
|--------------|-----------------------|-----------------------|-----------------------|
| 4 | \$ 42,239,423 | \$ 15,040,530 | \$ 55,432,881 |
| 5 | \$ 44,397,989 | \$ 17,216,445 | \$ 59,731,395 |
| 6 | \$ 50,565,634 | \$ 19,496,660 | \$ 68,140,067 |
| 7 | \$ 52,636,104 | \$ 21,863,501 | \$ 72,537,507 |
| 8 | \$ 54,629,953 | \$ 24,304,990 | \$ 76,933,366 |
| 9 | \$ 57,241,643 | \$ 26,828,200 | \$ 82,028,545 |
| 10 | \$ 42,523,748 | \$ 27,349,799 | \$ 69,873,548 |
| Total | \$ 454,252,396 | \$ 169,566,671 | \$ 623,819,067 |

Table 3 assumes that the present annual cost to preserve all Pima County maintained roadways, if all roads were in fair to good condition, is estimated at \$28,963,268 a year. Currently only 30 percent of the roads are in fair or good condition, and therefore the cost estimate assumes 30 percent of \$28,963,268 for year 1. Table 4 shows the percent that was used for each year to arrive at the pavement preservation cost.

**Table 4
Pavement Preservation Cost Estimates for Roads in Fair and Good Condition**

| Year | Annual Cost Estimate for Full Pavement Preservation if All Roads in Fair to Good Condition | % Preservation allocation | Inflation rate | Pavement Preservation Cost Estimates for Roads in Fair & Good Condition |
|--------------|---|----------------------------------|-----------------------|--|
| 1 | \$ 28,963,268 | 30% | 2.46% | \$ 8,903,118 |
| 2 | \$ 28,963,268 | 30% | 4.71% | \$ 10,866,996 |
| 3 | \$ 28,963,268 | 36% | 7.17% | \$ 12,933,488 |
| 4 | \$ 28,963,268 | 42% | 9.33% | \$ 15,040,530 |
| 5 | \$ 28,963,268 | 48% | 11.45% | \$ 17,216,445 |
| 6 | \$ 28,963,268 | 53% | 13.77% | \$ 19,496,660 |
| 7 | \$ 28,963,268 | 59% | 16.13% | \$ 21,863,501 |
| 8 | \$ 28,963,268 | 65% | 18.47% | \$ 24,304,990 |
| 9 | \$ 28,963,268 | 71% | 20.82% | \$ 26,828,200 |
| 10 | \$ 28,963,268 | 77% | 23.16% | \$ 27,349,799 |
| TOTAL | | | | \$ 169,566,671 |

V. Funding Sources

Funding sources for this 10-year plan include:

1. Revenue from a possible County Sales Tax, to be allocated per the Pima County General Sales Tax Implementation Plan Ordinance (Table 5).

2. HURF and Transportation VLT revenues, including additional Transportation HURF revenues that become available as HURF bond debt decreases (Table 6, column 3), additional growth in HURF and Transportation VLT revenues based on three percent annual rate (Table 6, column 4), and \$6 million surplus revenue from the 1997 HURF bond program (Board approved on April 17, 2018, Table 6, column 5).
3. Department of Transportation operational savings, based on a December 28, 2017 improvement plan developed by the Department, which include HURF and Transportation VLT revenues (Table 6, column 6).

Table 5 shows the allocation of revenue from a possible County Sales Tax for unincorporated Pima County Roads, according to the draft Pima County Sales Tax Implementation Plan Ordinance. The draft ordinance includes allocations for road repair for 10 years (120 months). The draft ordinance also specifies how the County Sales Tax road repair allocations will be distributed to unincorporated Pima County versus municipalities.

Table 5
County Sales Tax Revenue Allocated to Unincorporated Pima County Roads Per
Draft Pima County Sales Tax Implementation Plan Ordinance

| Year | Estimated Sales Tax Revenue Collections | % Sales Tax Revenue Allocated to Unincorporated Pima Co Roads Based on Draft Ordinance | Estimated Sales Tax Revenue Allocated to Unincorporated Pima Co Roads Based on Draft Ordinance |
|--------------|--|---|---|
| 1 | \$ 107,969,161 | 38.8% | \$ 41,892,034 |
| 2 | \$ 81,837,067 | 38.8% | \$ 31,752,782 |
| 3 | \$ 85,031,426 | 38.8% | \$ 32,992,193 |
| 4 | \$ 88,077,130 | 38.8% | \$ 34,173,926 |
| 5 | \$ 91,189,922 | 38.8% | \$ 35,381,690 |
| 6 | \$ 94,290,379 | 38.8% | \$ 36,584,667 |
| 7 | \$ 97,307,671 | 38.8% | \$ 37,755,376 |
| 8 | \$ 100,129,593 | 38.8% | \$ 38,850,282 |
| 9 | \$ 103,033,351 | 38.8% | \$ 39,976,940 |
| 10 | \$ 61,544,315 | 38.8% | \$ 23,879,194 |
| TOTAL | \$ 910,410,015 | | \$ 353,239,086 |

Table 6 includes estimates for each of funding sources for the 10-year Plan.

**Table 6
Funding Sources for 10-Year Plan¹**

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|--|---|--|---|-----------------------|
| Year | Estimated Sales Tax Revenue Allocated to Unincorporated Pima Co. Roads | Additional HURF Available from 1997 Bond Debt Decreases | Projected growth in HURF from Additional State-Shared Revenues | Surplus 1997 HURF Bond Allocation | Department of Transportation Operational Savings | Total |
| 1 | \$ 41,892,034 | \$ 174,900 | \$ 3,681,330 | \$ 6,000,000 | \$ 1,000,000 | \$ 52,748,264 |
| 2 | \$ 31,752,782 | \$ 704,900 | \$ 5,605,233 | | \$ 3,000,000 | \$ 41,062,915 |
| 3 | \$ 32,992,193 | \$ 751,533 | \$ 7,586,853 | | \$ 4,000,000 | \$ 45,330,579 |
| 4 | \$ 34,173,926 | \$ 5,631,033 | \$ 9,627,922 | | \$ 6,000,000 | \$ 55,432,881 |
| 5 | \$ 35,381,690 | \$ 5,619,483 | \$ 11,730,222 | | \$ 7,000,000 | \$ 59,731,395 |
| 6 | \$ 36,584,667 | \$ 8,659,808 | \$ 13,895,592 | | \$ 9,000,000 | \$ 68,140,067 |
| 7 | \$ 37,755,376 | \$ 8,656,208 | \$ 16,125,923 | | \$ 10,000,000 | \$ 72,537,507 |
| 8 | \$ 38,850,282 | \$ 8,659,921 | \$ 18,423,163 | | \$ 11,000,000 | \$ 76,933,366 |
| 9 | \$ 39,976,940 | \$ 10,262,283 | \$ 20,789,321 | | \$ 11,000,000 | \$ 82,028,545 |
| 10 | \$ 23,879,194 | \$ 11,767,889 | \$ 23,226,464 | | \$ 11,000,000 | \$ 69,873,548 |
| TOTAL | \$ 353,239,086 | \$ 60,887,958 | \$ 130,692,023 | \$ 6,000,000 | \$ 73,000,000 | \$ 623,819,067 |
| Year 11 Pavement Preservation Budget ² | \$0 | \$ 11,772,139 | \$ 25,736,721 | \$0 | \$ 11,000,000 | \$ 48,508,860 |

¹Column 3 contains HURF currently budgeted in the Transportation Department revenues which will be redirected to road repair/preservation as debt is retired from the 1997 Bond program. Column 4 contains projected growth increases in Transportation VLT/HURF. Column 5 contains reallocation of HURF bond funds approved by the Board on April 17, 2018. Column 6 contains projected Transportation Department efficiency gains allowing for the reassignment of currently allocated Transportation VLT/HURF revenues to road repair/preservation.

² Upon termination of sales tax, projected Transportation Department VLT/HURF revenues dedicated to pavement preservation are sufficient to keep roadways at fair to good condition for subsequent years.

VI. Eligible Expenses

Expenses associated with management, design and delivery of work conforming to the definitions contained in this Plan and costs associated with financing, interest, and securities issuance are eligible expenses under this Plan.

VII. Role of the Pima County Transportation Advisory Committee (TAC)

Review and recommend changes to the annual road repair and pavement preservation schedule and treatments for unincorporated Pima County prior to submitting to the Regional Transportation Authority.

VIII. Role of Regional Transportation Authority (RTA)

1. Provide performance standards and best practices for road repair and pavement preservation in the County plan.
2. Coordinate public unincorporated-County plan input and approval through the County Board of Supervisors.
3. Annually review the performance of the County's road repair plan, recommend alternative project management if necessary, and recommend forfeiture of funding if necessary.
4. Develop and maintain a database of updated road conditions.
5. Conduct or contract for annual audits of the County's deposits into and expenditures from the Road Repair Fund, as required by the resolution levying a Sales Tax subject to this Ordinance.

The RTA, as established by State Statute, ceases to exist after 2026. It is the County's intent to enter into a similar intergovernmental agreement with the Pima Association of Governments if and when RTA ceases to exist.

IX. Communicating Status of the Program to the Public

For unincorporated Pima County roadways, the Department of Transportation will coordinate with the RTA to provide a webpage that shows the schedule and treatment type for repairing and preserving every paved Pima County-maintained roadway in unincorporated Pima County.

X. Annual Reporting and Program Evaluation

It will be the responsibility of the Pima County Department of Transportation to provide documentation detailing work conducted in the prior fiscal year by September 1 of each year. The report will contain sufficient detail to allow for full auditing against plan criteria and eligible costs, compare progress to baseline, and provide updated cost estimates and associated impact to schedule. Reports will be provided to the Transportation Advisory Committee for review and acceptance, and will then be transmitted to the Regional Transportation Authority for auditing purposes.