




# MEMORANDUM

## Public Works Administration

**DATE:** September 13, 2019

**TO:** C.H. Huckelberry  
County Administrator

**FROM:** Yves Khawam   
Assistant County Administrator for  
Public Works

**RE: Road Repair Program**

As you are acutely aware, the unincorporated Pima County surface transportation principal priorities have shifted in the last twenty years from needed capacity enhancement to maintenance of pavements and other roadway infrastructure. To accommodate the effective and efficient implementation of this change, a complete restructuring of the Pima County Department of Transportation (DOT) budget, organizational units, processes and technology support occurred in Fiscal Year 2018/2019 (FY19). The department activities for this transition year have been captured in an annual report, soon to be distributed you.

The DOT restructuring effort has resulted in significant operational savings, which coupled with 1997 Highway User Revenue Fund (HURF) Bond debt service reductions and increased State-shared revenues provide a reliable revenue stream to fund routine County roadway pavement preservation. However, this amount is not sufficient to mitigate the backlog of repair work needed to significantly raise the overall network pavement condition. The DOT FY20 operational budget contribution to road repair totals \$15 million, with an additional \$6 million allocation derived from repurposed 1997 HURF Bonds and \$5 million contributed from the General Fund for a total of \$26 million.

The FY20 \$26 million amount of road repair funding will result in an overall network Pavement Condition Index (PCI) improvement of 10 percent over that of FY19. PCI is a numerical index ranging between 0 and 100 which is used to indicate the general condition of a pavement with a rating of 100 being best. Table 1 indicates the overall status of road conditions following completion of the construction work programed for FY20. Seventy percent of roads were in poor and failed condition at end of FY19 and with the work programed for FY20, that number will be reduced to 63 percent. These improvements elevate 7 percent of roads out of poor/failed condition and provide a 10 percent overall network PCI enhancement. This level of progress in a single year demonstrates the County's ability to mitigate all failed and poor pavements with an allocation of additional funding.

**Table 1**  
**Road Conditions Following Programed FY 2019/2020 Work**

| Condition        | PCI    | Arterial/Collector |             | Local        |             | Total        |             |
|------------------|--------|--------------------|-------------|--------------|-------------|--------------|-------------|
|                  |        | Miles              | %           | Miles        | %           | Miles        | %           |
| <b>Very Good</b> | 70-100 | 300                | 44%         | 111          | 9%          | 411          | 22%         |
| <b>Good</b>      | 50-69  | 106                | 17%         | 188          | 15%         | 294          | 15%         |
| <b>Poor</b>      | 25-49  | 107                | 17%         | 439          | 36%         | 546          | 29%         |
| <b>Failed</b>    | 0-24   | 155                | 21%         | 498          | 40%         | 653          | 34%         |
| <b>Total</b>     |        | <b>668</b>         | <b>100%</b> | <b>1,236</b> | <b>100%</b> | <b>1,904</b> | <b>100%</b> |

C.H. Huckelberry, County Administrator

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The DOT operational pavement repair and maintenance funding stream will in the future be sufficient to maintain all unincorporated County paved public roads in good condition. However, a significant injection of funding is still required to clear the backlog of disrepair. Despite previous County efforts to secure additional funding sources, it appears there are no other options at this point than to allocate General Fund monies to fill this gap. To this end, \$5 million was allocated from the General Fund for FY20 and there is discussion regarding allocating additional pay-as-you-go (PAYGO) funding to road repair annually in \$5 million increments, up to a maximum of \$25 million per year until such time that this funding is no longer needed.

The DOT has run analyses within the StreetSaver pavement preservation model based on projected DOT operational funds allocated for road repair and the potential General Fund PAYGO allocations. The model considers pavement construction section, construction date, past treatment dates and last condition rating to optimize a recommendation of pavement sections to be treated based on allocated budget amounts and road selection prioritization criteria. For arterial/collector functional class roadways, the sole criterion used is to optimize the pavement condition rating based on available funding. This approach is used to preserve the investment made in the arterial/collector network which serves as the backbone of regional mobility and operates with higher speeds, volume, risk, and community-wide value than local roads.

The local street network, however, operates at lower levels in each of these categories. As such and due to the large number of failed roadways, additional criteria for local road repair selection is warranted. The Pima County Transportation Advisory Committee (PTAC) approved criteria for the selection of FY20 local road repairs and is actively soliciting public input via meetings and survey regarding criteria for selection and repair of local paved roads for FY21. It is expected that when the PCI of local roads is raised to an acceptable threshold, these roads too will be selected for preservation treatment solely using StreetSaver return on investment criterion.

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**Table 2  
Road Repair Funding and Road Conditions**

| Year         | Transportation Department Funding | Potential PAYGO Allocation | Total Funding      | Network Pavement Condition Index | Network Pavement Condition Index Improvement From FY18/19 |
|--------------|-----------------------------------|----------------------------|--------------------|----------------------------------|---|
| FY19/20      | 21,000,000                        | 5,000,000                  | 26,000,000         | 42                               | 10%   |
| FY20/21      | 16,000,000                        | 10,000,000                 | 26,000,000         | 43                               | 12%   |
| FY21/22      | 16,000,000                        | 15,000,000                 | 31,000,000         | 45                               | 16%   |
| FY22/23      | 21,000,000                        | 20,000,000                 | 41,000,000         | 48                               | 24%   |
| FY23/24      | 23,000,000                        | 25,000,000                 | 48,000,000         | 52                               | 33%   |
| FY24/25      | 29,000,000                        | 25,000,000                 | 54,000,000         | 57                               | 44%   |
| FY25/26      | 30,000,000                        | 25,000,000                 | 55,000,000         | 62                               | 56%   |
| FY26/27      | 31,000,000                        | 25,000,000                 | 56,000,000         | 67                               | 68%   |
| FY27/28      | 35,000,000                        | 25,000,000                 | 60,000,000         | 71                               | 79%   |
| FY28/29      | 38,000,000                        | 25,000,000                 | 63,000,000         | 77                               | 94%   |
| FY29/30      | 41,000,000                        | 25,000,000                 | 66,000,000         | 80                               | 99%   |
| <b>TOTAL</b> | <b>301,000,000</b>                | <b>225,000,000</b>         | <b>526,000,000</b> |                                  |   |

The StreetSaver analysis reflected in Table 2 demonstrates that the described level of anticipated funding is sufficient to raise the County network-wide PCI to 80 by FY30. A condition rating of 80 is squarely within the range of “very good” and is the number many jurisdictions target as an ideal level for pavement maintenance. The table breaks out the PCI increase per year over the next 10 years with corresponding pavement condition improvement. The level of improvement by year is not linear in that when a larger number of roads degrade to a threshold needing a costly treatment in a given year, the available budget capacity for that year yields a lower overall PCI increase.

Table 3 reflects projected road conditions in FY30 subject to the above discussed potential budget allocations. The StreetSaver model shows that there would be no failed roads at the end of FY30 and only 8 percent of poor roads. These remaining poor roads would remain in that state for only a short time prior to receiving a treatment and elevating them back to “very good” through the normal maintenance cycle.

**Table 3  
Stabilized Road Conditions Following Projected FY 2029/2030 Work**

| Condition        | PCI    | Arterial/Collector |             | Local        |             | Total        |             |
|------------------|--------|--------------------|-------------|--------------|-------------|--------------|-------------|
|                  |        | Miles              | %           | Miles        | %           | Miles        | %           |
| <b>Very Good</b> | 70-100 | 556                | 83%         | 1,021        | 83%         | 1,577        | 83%         |
| <b>Good</b>      | 50-69  | 77                 | 12%         | 88           | 7%          | 165          | 9%          |
| <b>Poor</b>      | 25-49  | 35                 | 5%          | 128          | 10%         | 163          | 8%          |
| <b>Failed</b>    | 0-24   | 0                  | 0%          | 0            | 0%          | 0            | 0%          |
| <b>Total</b>     |        | <b>668</b>         | <b>100%</b> | <b>1,236</b> | <b>100%</b> | <b>1,904</b> | <b>100%</b> |

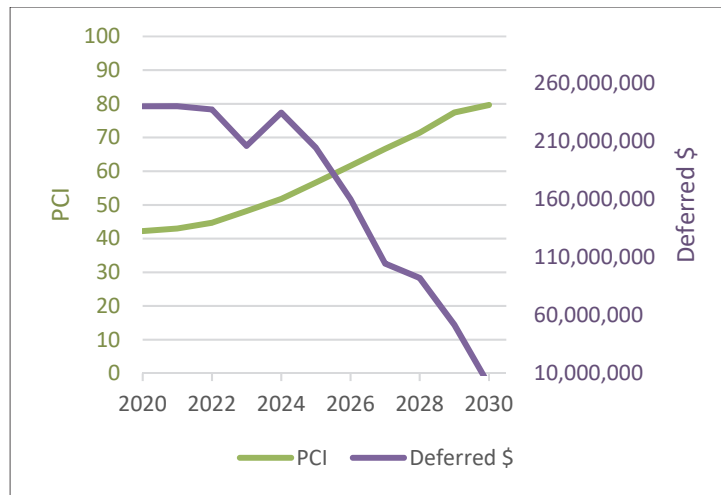
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Figure 1 shows model output that further demonstrates that FY30 is the breakpoint at which the repair backlog is mitigated, showing only a \$10 million remaining deficit of regular cycle maintenance. That would be the point at which PAYGO funding for road repair could be discontinued with subsequent pavement maintenance costs entirely covered through the DOT operations fund.

**Figure 1**  
**PCI vs Deferred Annual Maintenance**



As you are also aware, the Regional Transportation Authority is beginning to discuss funding priorities for the next 20-year regional transportation plan. If road repair funding is included in that plan, and if the plan and funding is approved by voters, the projected PAYGO road repair allocations captured in Table 2 could be adjusted.

In summary, the County is making significant progress in implementing a road repair program through the restructuring of the DOT, implementation of a pavement preservation modelling tool to project condition improvements based on budget allocations, and the timely delivery of programed work. These combined elements demonstrate the County’s ability to raise the average network PCI to “good” by FY24, “very good” by FY28, and attain sustainably-funded maintenance through transportation dedicated State-shared revenues by FY30. However, plan implementation is entirely contingent on a 10-year funding source such as the General Fund PAYGO at the allocation levels described above to temporarily supplement DOT pavement preservation funds.

- c: Carmine DeBonis, Jr., Deputy County Administrator for Public Works
- Ana Olivares, Director, Transportation Department




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# MEMORANDUM

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Date: September 10, 2019

To: Dr. Yves Khawam  
Assistant County Administrator  
for Public Works

From: C.H. Huckelberry  
County Administrator 

Re: **Road Repair Program**

Please prepare an appropriate analysis, including detailed information, to demonstrate the County is making significant progress in implementing a 10-year road repair program. Also, ensure enough information is documented to demonstrate that if the Board of Supervisors continues with the proposed pay-as-you-go program associated with the increasing road repair contributions that the number of roadways requiring repair will dramatically decrease within 10 years.

The analysis on this subject will be transmitted to the Board.

CHH/anc

c: Carmine DeBonis, Jr., Deputy County Administrator for Public Works  
Ana Olivares, Director, Transportation Department