State of Transportation
November 20, 2019

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Assistant Director
Infrastructure Development and Operations (IDO) Division

Arizona Department of Transportation
Presented to

2019 16th Arizona Pavements/Materials Conference
Thank You

All Sponsors and Exhibitors

2019 16th Arizona Pavements/Materials Conference
What does ADOT do?

• 28,000 Maintenance Lane Miles
• 6,800 Centerline Miles
• 4,800 Bridges
Topics for Today:

- Current Infrastructure Condition
- Age of Infrastructure
- Construction Cost Index
- Current Construction Program
- Revenue Needs
- User Fee Challenges
- Good Good Program
Snow Blaster
Current Infrastructure Condition (Pavement & Bridge)
Pavement Condition: Interstates

53% Good

International Roughness Index (2017)
- National Highway System
- State Highway System

ARIZONA DEPARTMENT OF TRANSPORTATION
Pavement Condition: NHS

<table>
<thead>
<tr>
<th>Year</th>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>68%</td>
<td>67%</td>
<td>6%</td>
</tr>
<tr>
<td>2011</td>
<td>68%</td>
<td>67%</td>
<td>6%</td>
</tr>
<tr>
<td>2012</td>
<td>68%</td>
<td>67%</td>
<td>6%</td>
</tr>
<tr>
<td>2013</td>
<td>63%</td>
<td>56%</td>
<td>4%</td>
</tr>
<tr>
<td>2014</td>
<td>54%</td>
<td>53%</td>
<td>4%</td>
</tr>
<tr>
<td>2015</td>
<td>53%</td>
<td>53%</td>
<td>4%</td>
</tr>
<tr>
<td>2016</td>
<td>41%</td>
<td>53%</td>
<td>4%</td>
</tr>
<tr>
<td>2017</td>
<td>35%</td>
<td>53%</td>
<td>4%</td>
</tr>
<tr>
<td>2018</td>
<td>35%</td>
<td>53%</td>
<td>4%</td>
</tr>
</tbody>
</table>

35% Good
Pavement Condition: Non-NHS

- 2010: 44% Good, 43% Fair, 33% Poor
- 2011: 43% Good, 43% Fair, 34% Poor
- 2012: 43% Good, 43% Fair, 34% Poor
- 2013: 41% Good, 36% Fair, 23% Poor
- 2014: 36% Good, 36% Fair, 23% Poor
- 2015: 35% Good, 27% Fair, 23% Poor
- 2016: 27% Good, 23% Fair, 23% Poor
- 2017: 23% Good, 10% Fair, 23% Poor
- 2018: 23% Good, 10% Fair, 23% Poor

International Roughness Index (2017)

- National Highway System
- State Highway System

ADOT

23% Good
Bridge Condition

2010: 78% Good, 1% Fair, 21% Poor
2011: 75% Good, 1% Fair, 24% Poor
2012: 75% Good, 1% Fair, 24% Poor
2013: 69% Good, 1% Fair, 20% Poor
2014: 64% Good, 1% Fair, 35% Poor
2015: 63% Good, 1% Fair, 36% Poor
2016: 65% Good, 1% Fair, 34% Poor
2017: 65% Good, 1% Fair, 34% Poor
2018: 59% Good, 1% Fair, 39% Poor

59% Good
Much of system built in 1960s or prior – **System is getting Old**
Many of bridges built in 1960s or prior – **System is getting Old**
National Construction Cost Index

National Highway Construction Cost Index (NHCCI)

Recession
### ADOT Construction Cost Index

<table>
<thead>
<tr>
<th>Year</th>
<th>Index</th>
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<tbody>
<tr>
<td>2016</td>
<td>1.00</td>
</tr>
<tr>
<td>2017</td>
<td>1.08</td>
</tr>
<tr>
<td>2018</td>
<td>1.24</td>
</tr>
<tr>
<td>2019</td>
<td>1.47</td>
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</tbody>
</table>

**TOTAL INDEX**

- 47% Increase in AZ Market
Preservation & Rehabilitation
Focus – What does that mean?
### 2020-2024
Five-Year Transportation Facilities Construction Program

**Statewide program**

$492M in FY 2020

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**Summary of Dollars ($000) by Long Range Plan**

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>Total</th>
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<tr>
<td><strong>Statewide</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Expansion</td>
<td>$142,875</td>
<td>$141,127</td>
<td>$110,907</td>
<td>$50,000</td>
<td>$56,200</td>
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<tr>
<td>Modernization</td>
<td>$58,739</td>
<td>$47,994</td>
<td>$16,760</td>
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<tr>
<td>Preservation</td>
<td>$210,832</td>
<td>$240,146</td>
<td>$214,639</td>
<td>$60,363</td>
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<td>$758,880</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$412,446</strong></td>
<td><strong>$429,267</strong></td>
<td><strong>$342,306</strong></td>
<td><strong>$114,870</strong></td>
<td><strong>$89,100</strong></td>
<td><strong>$1,387,989</strong></td>
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<tr>
<td><strong>Subprograms</strong></td>
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<td></td>
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<tr>
<td>Modernization</td>
<td>$21,263</td>
<td>$18,560</td>
<td>$66,007</td>
<td>$81,349</td>
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<tr>
<td>Planning</td>
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<td>$21,500</td>
<td>$21,500</td>
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<td>Preservation</td>
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<td>$23,052</td>
<td>$23,422</td>
<td>$23,422</td>
<td>$22,822</td>
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<td><strong>Total</strong></td>
<td><strong>$79,286</strong></td>
<td><strong>$105,945</strong></td>
<td><strong>$158,612</strong></td>
<td><strong>$375,044</strong></td>
<td><strong>$367,471</strong></td>
<td><strong>$1,086,358</strong></td>
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<td><strong>Total</strong></td>
<td><strong>$491,732</strong></td>
<td><strong>$535,212</strong></td>
<td><strong>$500,918</strong></td>
<td><strong>$489,914</strong></td>
<td><strong>$456,571</strong></td>
<td><strong>$2,474,347</strong></td>
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</table>
FY21 Bridge Rehab includes:
- US 60 Queen Creek - $30M
- I-15 VRB #1 - $50M
## FY 20 Program for Pavement Rehab

<table>
<thead>
<tr>
<th>USI</th>
<th>RT</th>
<th>TRACS</th>
<th>LOCATION</th>
<th>LENGTH</th>
<th>TypeOfWork</th>
<th>COST($000)</th>
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</thead>
<tbody>
<tr>
<td>I</td>
<td>8</td>
<td>F009401C</td>
<td>E of Yuma / Maricopa County Line</td>
<td>14</td>
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<tr>
<td>I</td>
<td>10</td>
<td>F011301C</td>
<td>SR 587 - SR 387</td>
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<td>I</td>
<td>19</td>
<td>F017401C</td>
<td>Duval Mine Rd TI - Pima Mine Rd TI</td>
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<td>8</td>
<td>F009201C</td>
<td>Avenue 36E - MP 46</td>
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<td>SR</td>
<td>77</td>
<td>H891901C</td>
<td>River Rd - Calle Concordia</td>
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<td>11,446</td>
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<tr>
<td>SR</td>
<td>77</td>
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<td>Jct I-10 - River</td>
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<td>64</td>
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<td>Pipeline Rd - Air Park</td>
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<td>SR</td>
<td>73</td>
<td>F011701C</td>
<td>W of Rim Tank - W of Canyon Day</td>
<td>6</td>
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<td>3,661</td>
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<td>SR</td>
<td>77</td>
<td>F024801C</td>
<td>Jct I-10 - River</td>
<td>4.15</td>
<td>Pavement Rehabilitation</td>
<td>1,870</td>
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</table>
## FY 21 Program for Pavement Rehab

<table>
<thead>
<tr>
<th>USI</th>
<th>RT</th>
<th>TRACS</th>
<th>LOCATION</th>
<th>LENG</th>
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<tbody>
<tr>
<td>I</td>
<td>10</td>
<td>F020501C</td>
<td>Benson Bypass</td>
<td>4.66</td>
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<tr>
<td>I</td>
<td>10</td>
<td>F020501C</td>
<td>BENSON BYPASS</td>
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<td>F023301C</td>
<td>Avondale Blvd - I-17</td>
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<td>I</td>
<td>17</td>
<td>F020701C</td>
<td>SB County Line - McConnel Bridge</td>
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<td>I</td>
<td>40</td>
<td>F018501C</td>
<td>I-17 - Walnut Canyon Rd</td>
<td>10.2</td>
<td>Spot Pavement Rehabilitation</td>
<td>21,453</td>
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<tr>
<td>US</td>
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<td>Fxxxx01C</td>
<td>FH 300 Apache - Sitgreaves - 40th St.</td>
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<td>13,000</td>
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<td>US</td>
<td>160</td>
<td>F014401C</td>
<td>LONG HOUSE VALLEY - KAYENTA</td>
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<td>15,000</td>
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<td>SR</td>
<td>260</td>
<td>F020101C</td>
<td>Church Street - Knottingham Ln</td>
<td>5</td>
<td>Pavement Rehabilitation</td>
<td>6,768</td>
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<tr>
<td>Year</td>
<td>Type</td>
<td># of Projects</td>
<td>Cost (M)</td>
<td>Miles</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>---------------------</td>
<td>---------------</td>
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<td></td>
<td></td>
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<tr>
<td>2020</td>
<td>Bridge Rehab</td>
<td>16</td>
<td>$56.9</td>
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<tr>
<td>2021</td>
<td>Bridge Rehab</td>
<td>8</td>
<td>$102.6</td>
<td>NA</td>
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<tr>
<td>2020</td>
<td>Pavement Rehab</td>
<td>9</td>
<td>$119.6</td>
<td>65</td>
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<tr>
<td>2021</td>
<td>Pavement Rehab</td>
<td>8</td>
<td>$116.5</td>
<td>87</td>
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<td></td>
</tr>
</tbody>
</table>

* 80M is on I-15 VRB #1 and US 60 Queen Creek
2020 Program w/o MAG & PAG

$492M

- $57M
- $119M
- $52M
- $80M
- $143M
- $41M

- $228M
- $223M
- $41M

Bridge & Pavement Rehab & Pavement Pres & Other
Modernization & Expansion
System Management

- Bridge Rehab
- Pavement Rehab
- Pavement Pres
- Modernization
- Expansion
- System Management
2020 Program w/o MAG & PAG

$492M

- Pavement Pres & Other: 10.6%
- Bridge Rehab: 11.6%
- System Management: 8.3%
- Pavement Rehab: 24.2%
- Expansion: 29.1%
- Modernization: 16.3%

Arizona Department of Transportation
2020 Program with MAG/PAG

$1,171M

- $822M
  - $57M
  - $119M
  - $52M
  - $80M

- $902M
  - $228M

- $41M
  - $41M

Bridge & Pavement Rehab & Pavement Pres & Other
Modernization & Expansion
System Management
2020 Program with MAG/PAG

$1,171M

- Expansion: 70.2%
- Modernization: 6.8%
- Pavement Pres & Other: 4.4%
- Pavement Rehab: 10.2%
- Bridge Rehab: 4.9%
- System Management: 3.5%
Pavement Rehabilitation for FY 18 - FY 21

<table>
<thead>
<tr>
<th>Year</th>
<th># of Projects</th>
<th>Centerline Miles</th>
<th>Dollars</th>
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<tbody>
<tr>
<td>2018</td>
<td>17</td>
<td>132</td>
<td>$108M</td>
</tr>
<tr>
<td>2019</td>
<td>12</td>
<td>93</td>
<td>$62M</td>
</tr>
<tr>
<td>2020</td>
<td>8</td>
<td>65</td>
<td>$118M</td>
</tr>
<tr>
<td>2021</td>
<td>7</td>
<td>87</td>
<td>$116M</td>
</tr>
</tbody>
</table>

% of Centerline Miles (6,780) Rehabbed

1% is not moving needle
Pavement & Bridge Rehabilitation Conclusions:

1% of centerline miles rehabilitated per year is not moving needle on pavement condition.

Outside of the Urban Areas of Phoenix and Tucson, a large majority of transportation infrastructure was constructed in the 60’s or prior-meaning it is reaching past service life.
Revenue Sources

Sources and Distributions of Transportation Funds

Transportation Dollars Available to Arizona

- Federal
- State

Department of Public Safety Highway Patrol
Counties, Cities, and Towns
State Highway Fund
COGs and MPOs
$30 B

Gap

Source: ADOT Long Range Transportation Plan (2017)
Projected US Auto Sales 2030

- Electric: 20%
- Hybrid: 29%
- Gasoline: 48%
- Diesel: 3%

Electric Vehicle New Car Market Share

Source: Maricopa Association of Governments

Miles Per Gallon
Best Selling Cars
- 1991 – Ford Taurus
- 2018 – Honda Civic

84% Increase

Source: Maricopa Association of Governments
**User Fee Challenges**

**Revenue Generated**
(10,000) miles driven

1991 – Ford Taurus
2018 – Honda Civic

- 1991 Taurus: $95
- 2018 Honda Civic: $51
- 2018 Honda Civic (Adjusted for Inflation): $28

Source: Maricopa Association of Governments
User Fee Challenges - Disruption

2021 Ford Mustang Mach E GT
User Fee Challenges

How Long Has It Been Since Your State Raised Its Gas Tax?

10 states to have gone two decades or more without a gas tax increase.
36 states have raised or reformed gas taxes since 2010.

Map shows gas tax increases in effect as of Oct. 1, 2019. Hawaii, Illinois, Indiana, and Michigan apply their general sales taxes to gasoline and thus see ongoing changes in their overall gas tax rates based on changes in the price of gas. This chart excludes these price-based fluctuations in the sales tax and instead looks only at these states’ excise taxes on gasoline.

Source: Institute on Taxation and Economic Policy (ITEP), September 2019 • Created with Datawrapper
User Fee Challenges

How High Are Gas Taxes in Your State?
Total State Taxes and Fees on Gasoline, as of July 2019 (cents per gallon)

Note: These rates do not include the 18.40 cent/gallon federal excise tax rate on gas. The American Petroleum Institute has developed a methodology for determining the average tax rate on a gallon of fuel. Rates may include any of the following: excise taxes, environmental fees, storage tank taxes, other fees or taxes, and general sales taxes. In states where gasoline is subject to the general sales tax, or where the fuel tax is based on average sale price, the average rate determined by API is sensitive to changes in the price of gasoline. States that fully or partially apply general sales taxes to gasoline are California, Connecticut, Georgia, Illinois, Indiana, Michigan, and New York. D.C.’s rank does not affect states’ ranks, but the figure in parentheses indicates where it would rank if included.

Source: American Petroleum Institute, “State Motor Fuel Taxes by State (July 2019)”
<table>
<thead>
<tr>
<th>#46</th>
<th>1991</th>
<th>$95</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2018</td>
<td>$28</td>
</tr>
</tbody>
</table>
• Crack Sealing
• Flushes

FY 2020
Goal is 4200 Lane Miles

Good Good Program
Fog (Preservation)
1. Who Travels in this room by flying commercially?

2. Who is aware of deadline to receive travel ID?

3. Were you aware you could schedule an appointment?

*Effective October 1, 2020, only the Arizona Travel ID and Arizona Travel Driver License, a U.S. passport, and other federally approved identification will be accepted at TSA airport security checkpoints for domestic travel.*

https://apps.azdot.gov/mvd/Application/ApplicationForm.aspx
Engagement Questions

1. When was last time State gas user fee (tax) was raised? 1991
2. What percentage of centerline miles are being rehabilitated (Mill and Fill) 1%
3. What may be the new disruption in the EV world? Mustang Mach-E
4. Besides a Snow Plow, how else do ADOT forces remove snow? Snow Blaster
5. What is ADOTs 3-year Construction Cost Index? 47%