



LONG RANGE TRANSPORTATION PLAN UPDATE: 2040 PLAN
TECHNICAL ADVISORY COMMITTEE (TAC) MEETING #4

FEBRUARY 7, 2017

Agenda

- WMYA 2040 Status Update
- Updated Needs, Revenues & Gap
- MetroQuest Survey Results
- Alternative Investment Choices (AICs)
- Next Steps

Plan Development Status

Task 1: Preparations & Research

Task 2: Goals & Objectives

Task 3: Needs & Revenues Forecast

Task 4: Scenario Analysis

Final Plan & Implementation – Targeting
May Transportation Board Study Session

May 2017

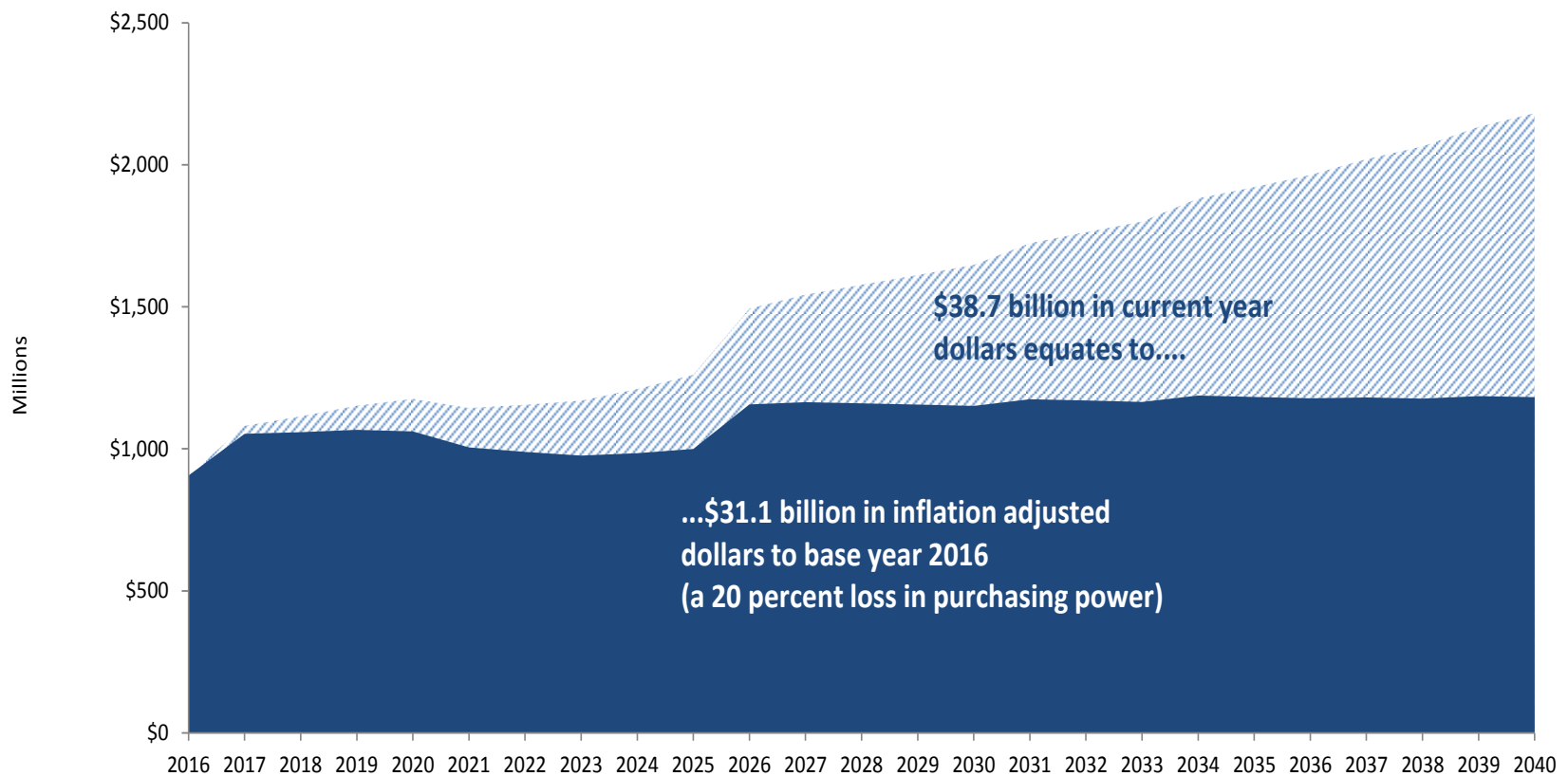
Highway Needs by Investment Type: \$53 B

Category / Mode	Estimated 25 Year Need	Annual Need
Preservation		
▪ Pavement	\$7.9 B	\$316 M
▪ Bridge	\$1.3 B	\$54 M
Subtotal	\$9.2 B	\$370 M
Modernization		
▪ Highways	\$4.3 B	\$172 M
▪ Bridge	\$0.4 B	\$16 M
▪ Safety	\$1.9 B	\$76 M
▪ ITS/Technology	\$3.3 B	\$132 M
Subtotal	\$9.9 B	\$396 M
Expansion		
▪ Expansion (HERS-ST)	\$12.6 B	\$504 M
▪ New Roads	\$8.7 B	\$351 M
▪ Bridges	\$0.4 B	\$17 M
▪ Interchanges	\$2.3 B	\$92 M
▪ Key Commerce Corridors	\$10 B	\$400 M
Subtotal	\$34 B	\$1,360 M
TOTAL	\$53 Billion	\$2.1 Billion

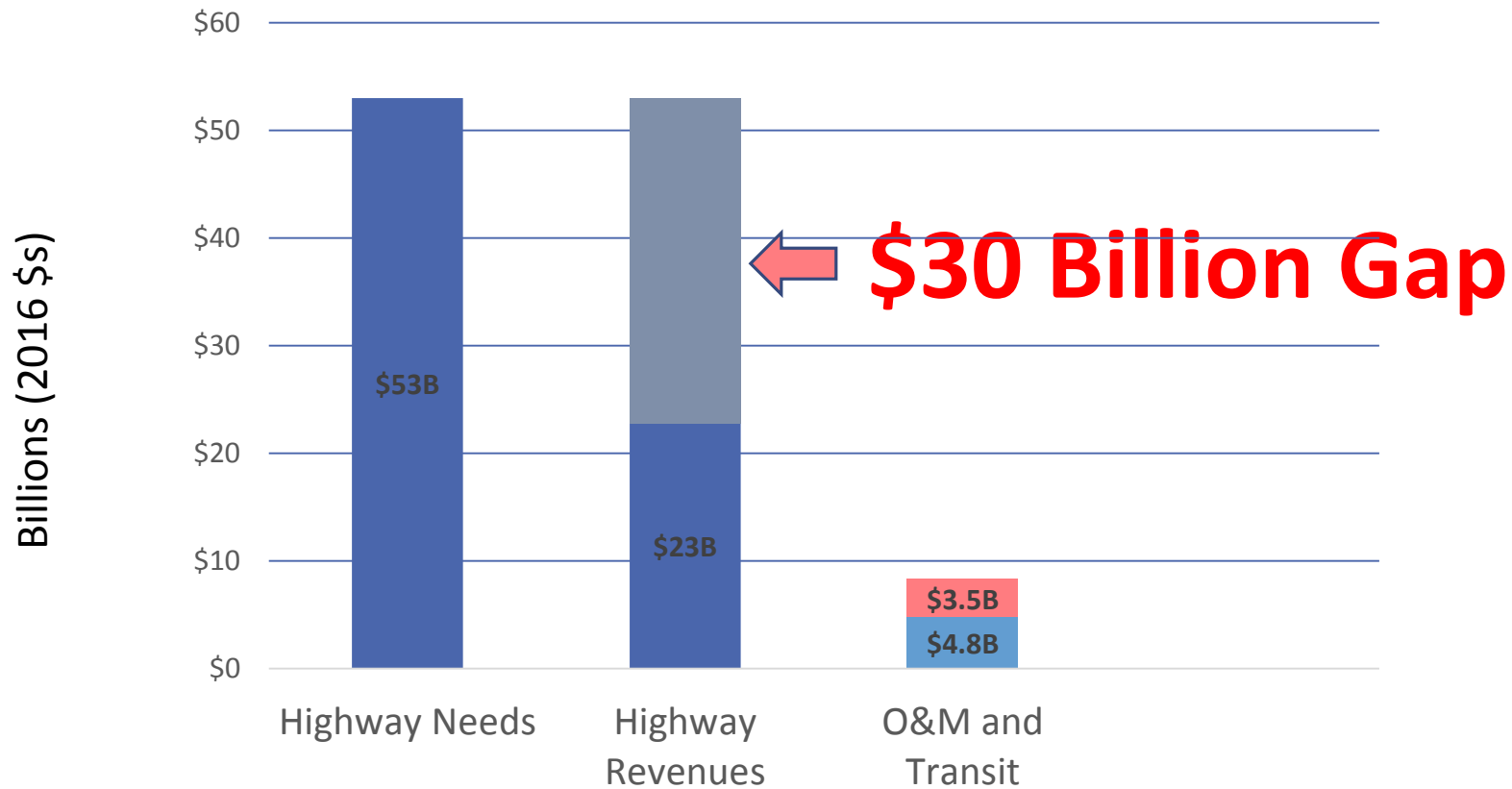
Non-Highway Needs: \$36 B

- **Public Transit (\$14.8 Billion)**
 - Rural transit (\$1.7B) extrapolated from 2008 ADOT study
 - Urban transit (\$13.1B) from ADOT staff and MPO plans
- **Non-Motorized (\$913 Million)**
 - Derived from MPO plans
 - Rural SHS needs (e.g., shoulders) in highway modernization needs
 - Does not include data from all jurisdictions
- **Passenger Rail (\$6.2B Million)**
 - Derived from State Rail Plan/ ADOT & MPO staff
 - Rural SHS needs (e.g., shoulders) in highway modernization needs
- **Aviation (\$14.4 Billion)**
 - Extrapolated from 2008 State Airport System Plan

Revenue Forecast: \$31.1B (2016 \$)



State Highway Funding Gap



Operations & Maintenances

- Activities: routine pavement maintenance, guardrail replacement, barriers, etc.
- Funded by annual State Budget Appropriation
- Current funding level is \$138M/year
- ADOT estimates current level is \$50M/year too low
- New facilities in MAG & PAG plans, and increased ITS deployment, will increase needs

Allocation by Investment Area

Annualized Allocation Based on Current Plans*								
	MAG		PAG		ADOT - Greater AZ		Total	
Expansion	\$343	32%	\$93	9%	\$45	4%	\$482	52%
Modernization	\$43	4%	\$27	2%	\$107	10%	\$176	19%
Preservation	\$6	1%	\$0	0%	\$258	24%	\$264	29%
TOTAL	\$393	38%	\$120	11%	\$410	51%	\$922	100%

*MAG 2035 Regional Transportation Plan

*PAG 2045 Regional Transportation Plan

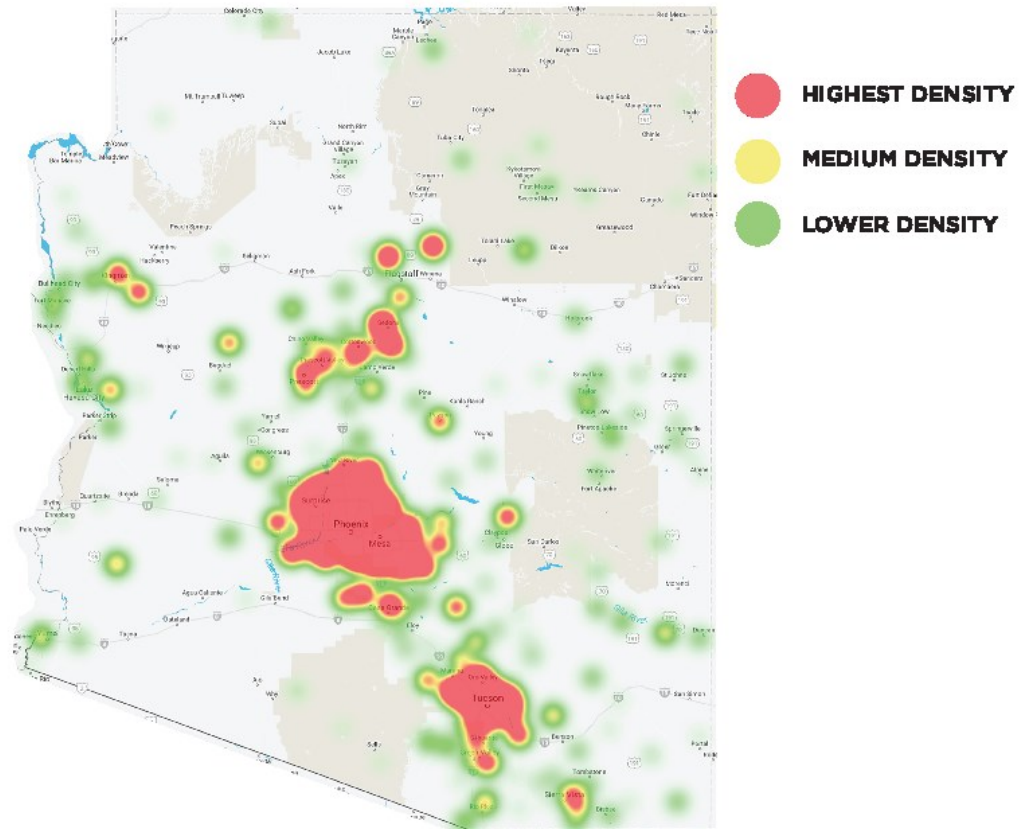
*ADOT Five Year Construction Program FY 14-21

Public Outreach Results

Public Engagement: RIC Development

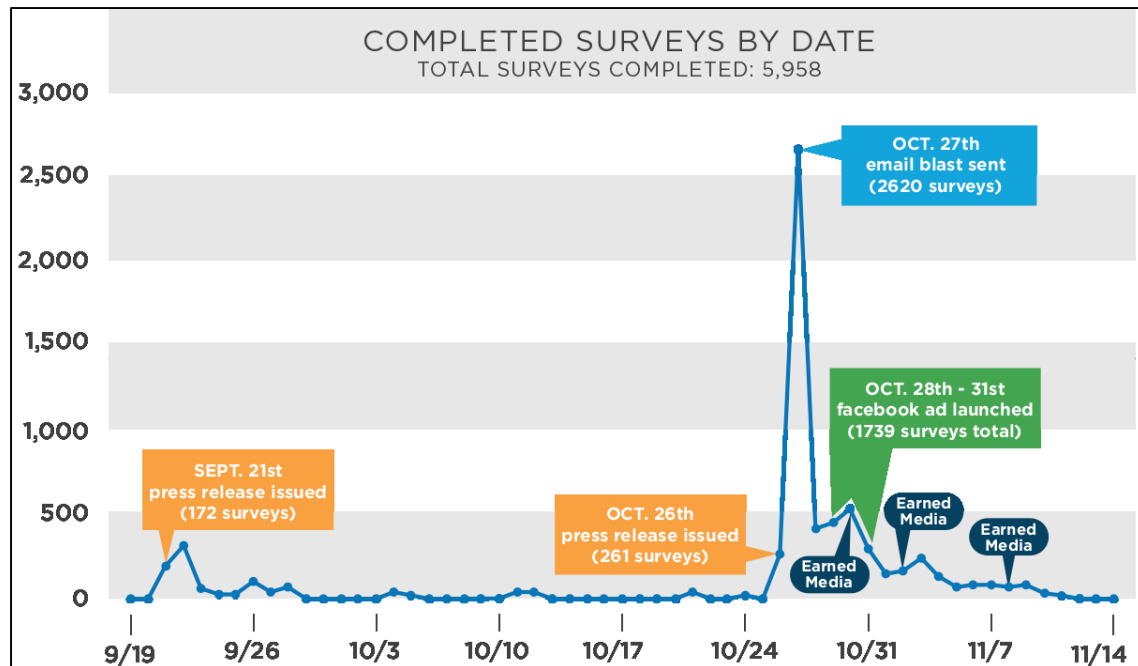
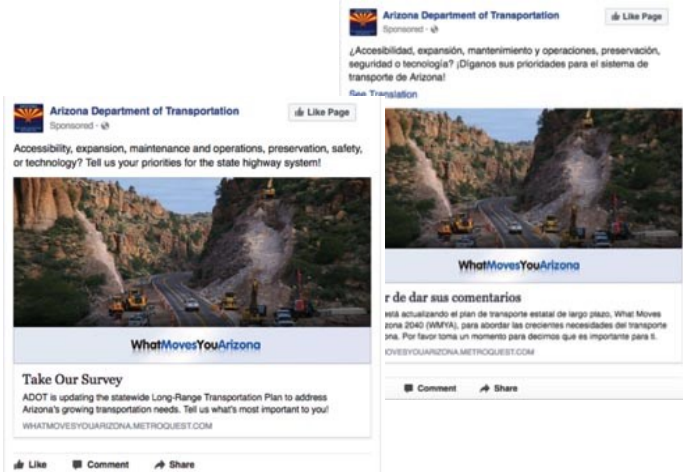
SURVEY PARTICIPANT HEAT MAP

- Use of Metroquest online tool
- Content – Five screens
 - Welcome – provides basic facts and info on WMYA 2040 initiative
 - Priority Ranking – asked respondents to rank investment areas
 - Budget Allocation – respondents said how they would spend \$100
 - Trade-offs – five pairwise comparisons
 - Wrap-up – participant info and link to Project Website



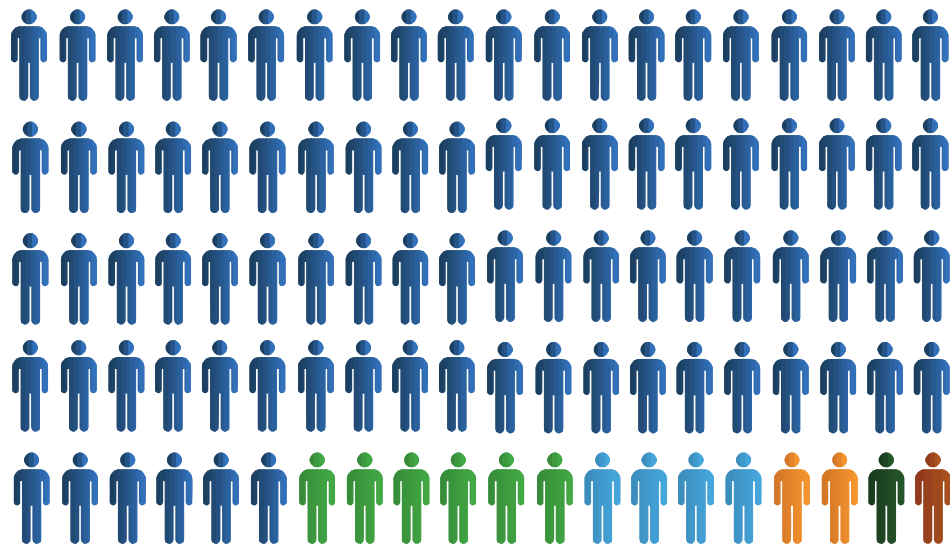
Participation and Publicity

- Strong e-mail and media campaign
- 14,000+ visited survey website, nearly 6,000 completed survey

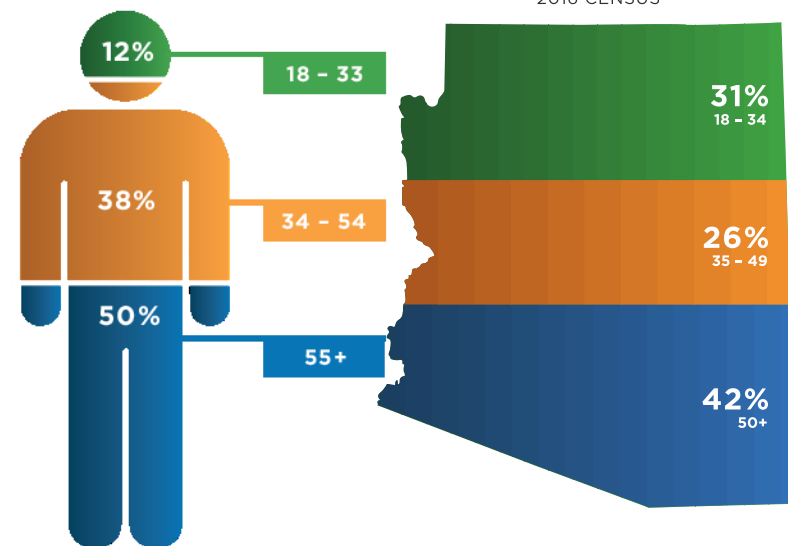


Who Participated

PARTICIPANT ETHNICITY

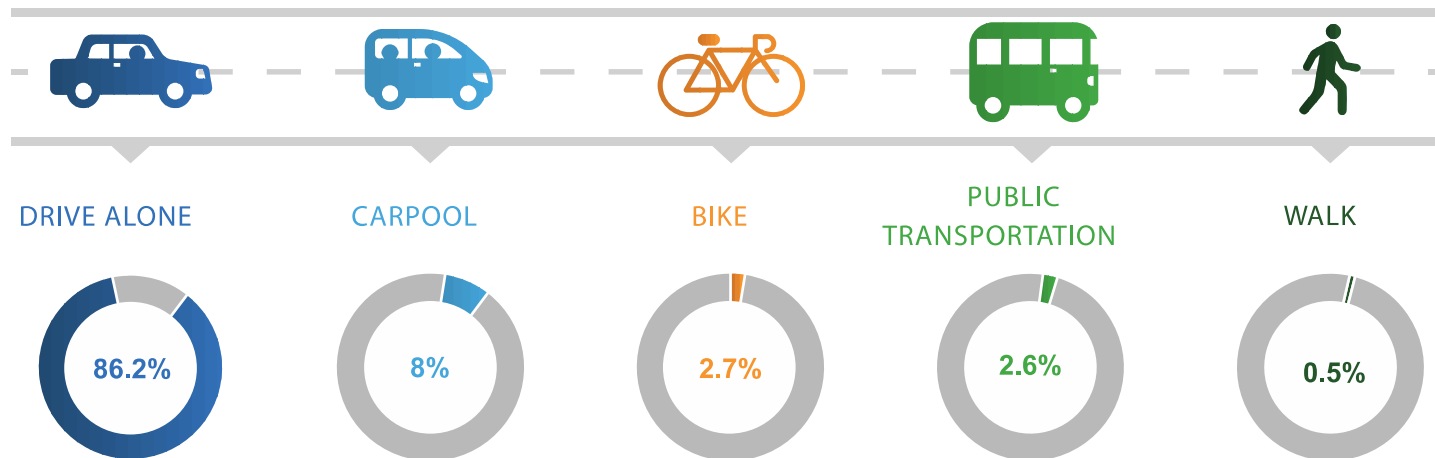


PARTICIPANT AGE

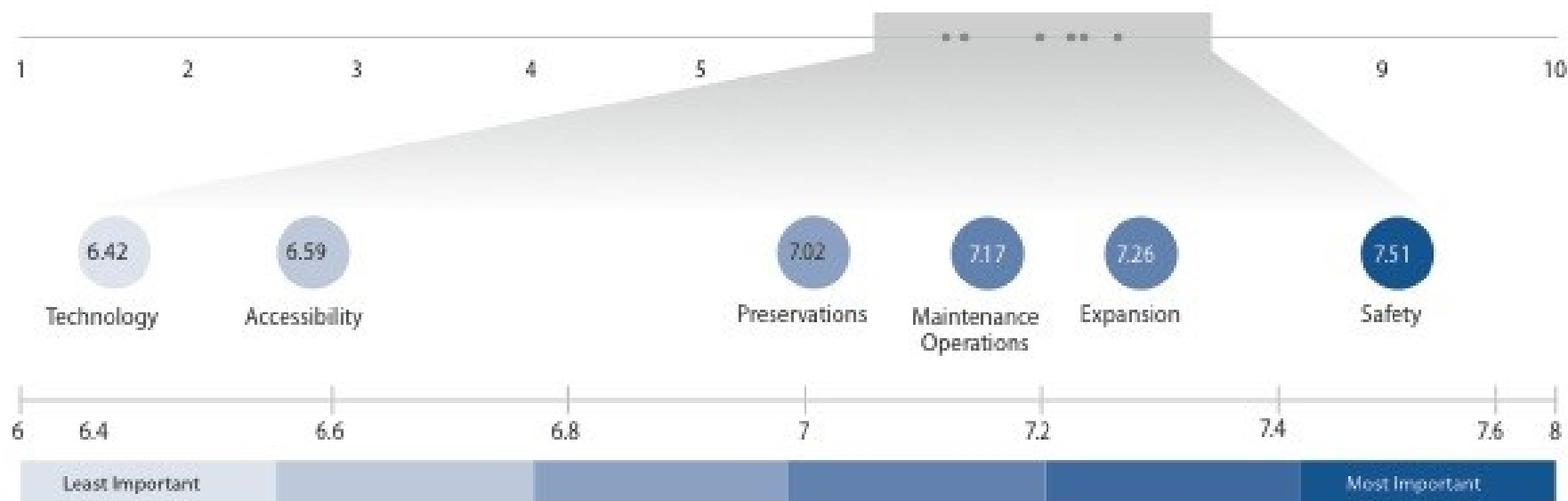


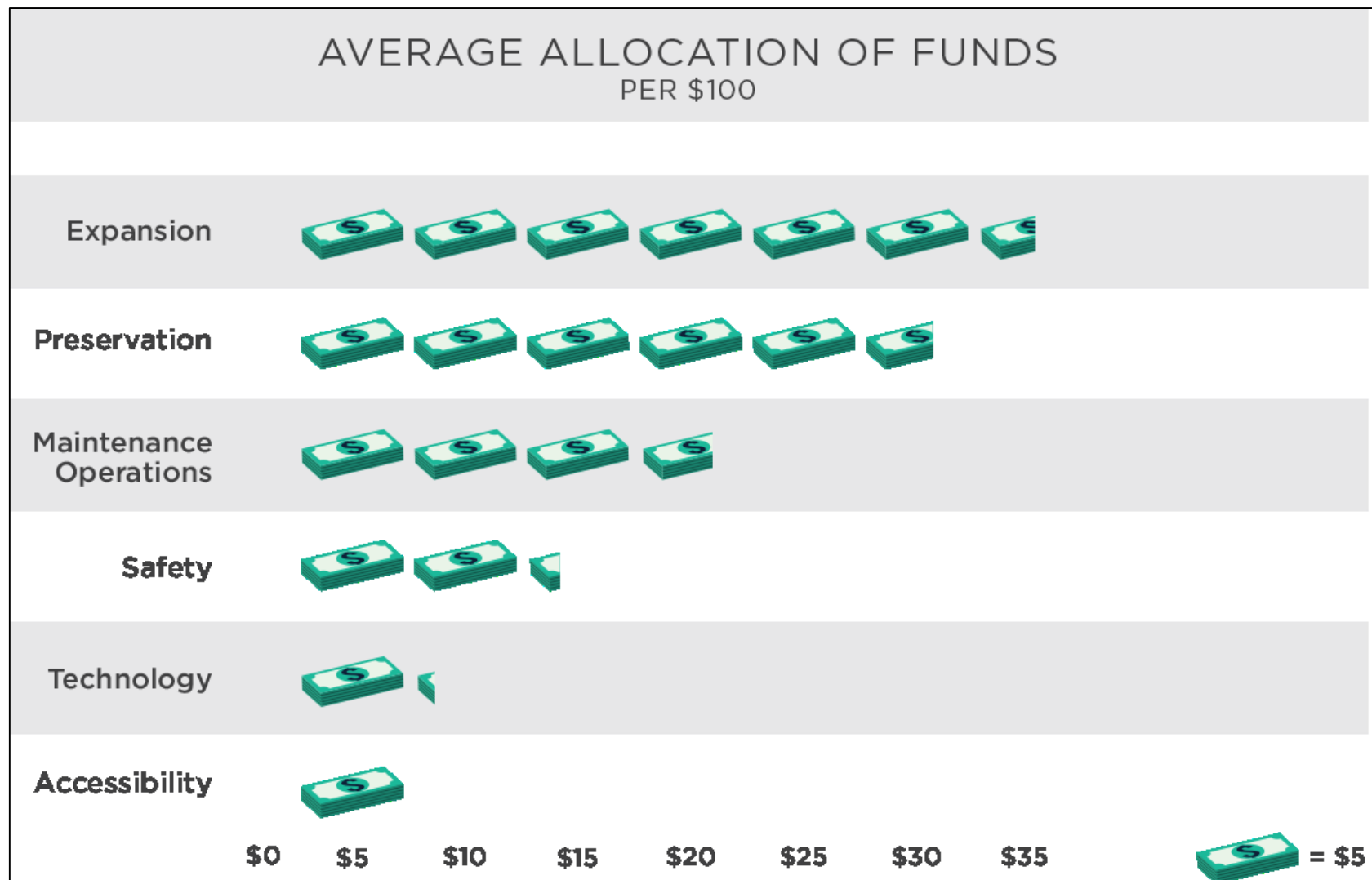
Who Participated

PARTICIPANT PRIMARY MODE OF TRANSPORTATION



PARTICIPANTS' AVERAGE PRIORITY RANKINGS WHERE ONE IS LEAST IMPORTANT AND 10 IS MOST IMPORTANT



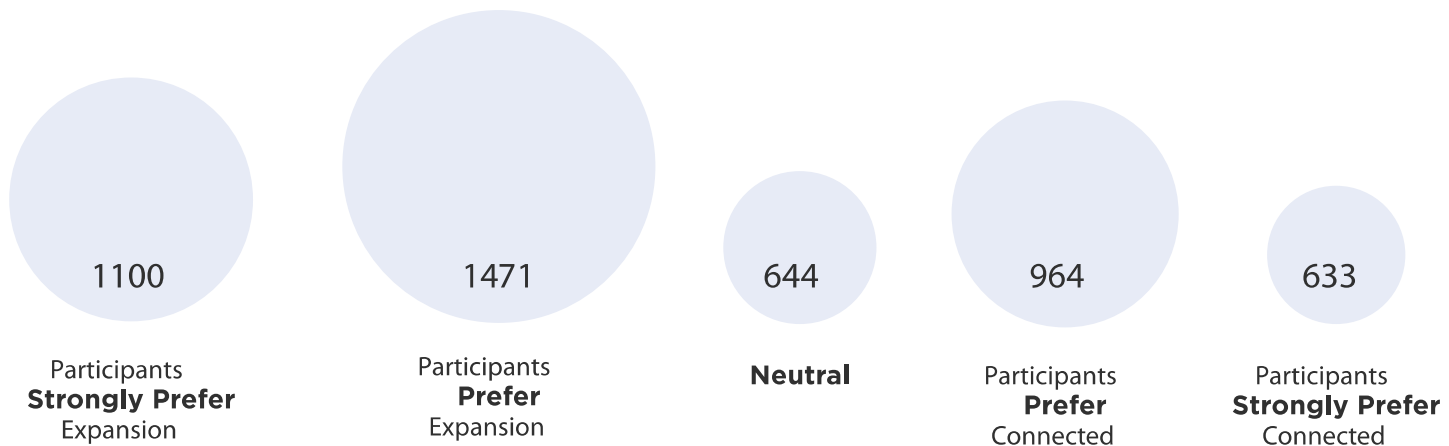


Investment Trade-Offs: Categories

- **Smooth Roads:** Preserve and maintain the existing pavement and bridges
- **New Smart Roads:** Expand the system with new roads, interchanges, and technology
- **Smart Roads:** Enhance system with advanced technology and support connected vehicles
- **More Roads:** Expand the system constructing new roads and widening existing roads
- **Connected Roads:** Improve access to the system by constructing new interchanges

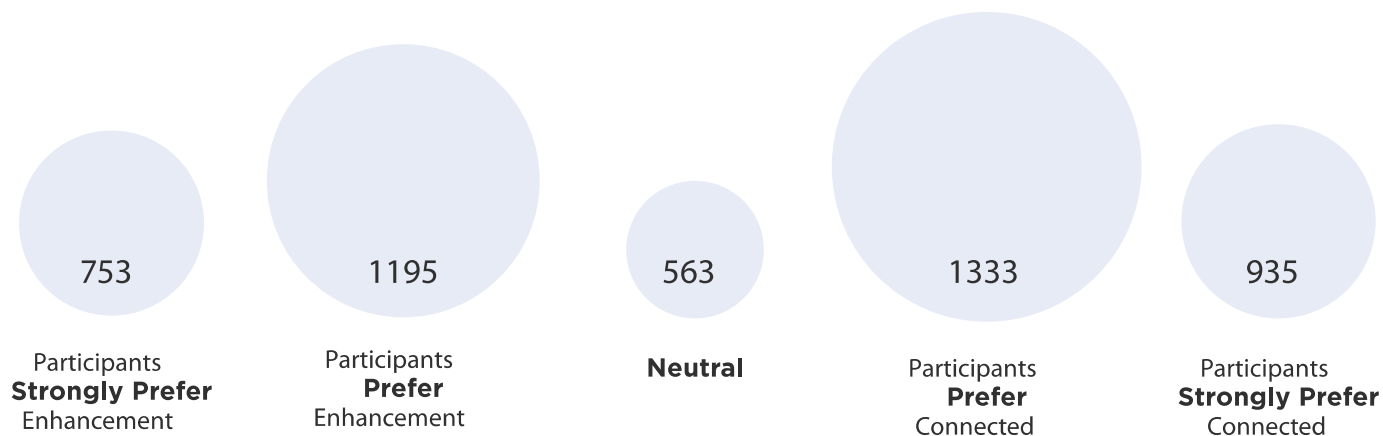
Trade-off #1

MORE ROADS VS. CONNECTED ROADS



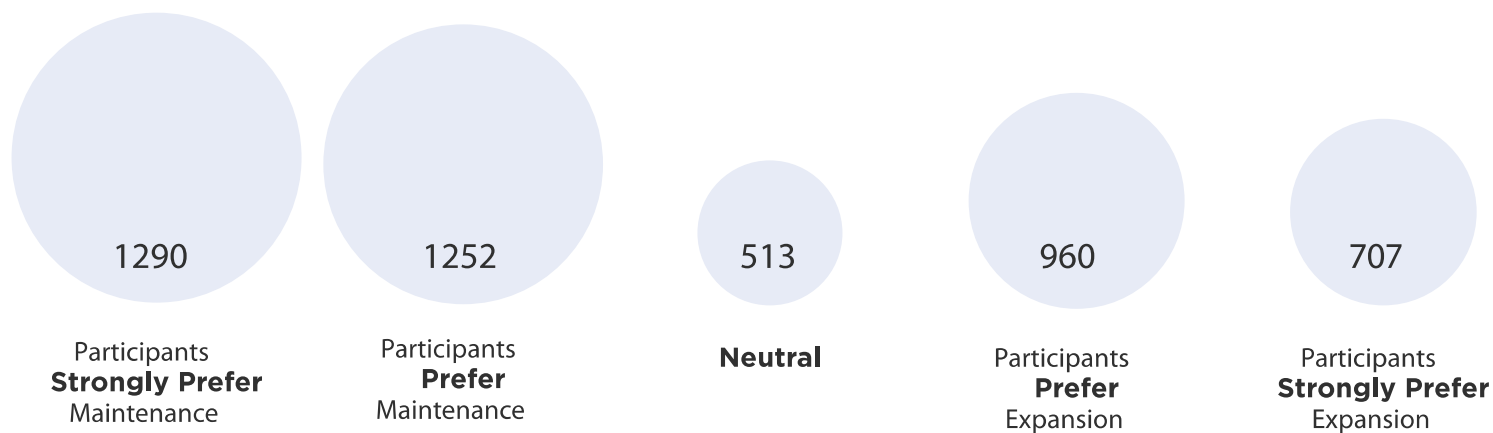
Trade-off #2

SMART ROADS VS. CONNECTED ROADS



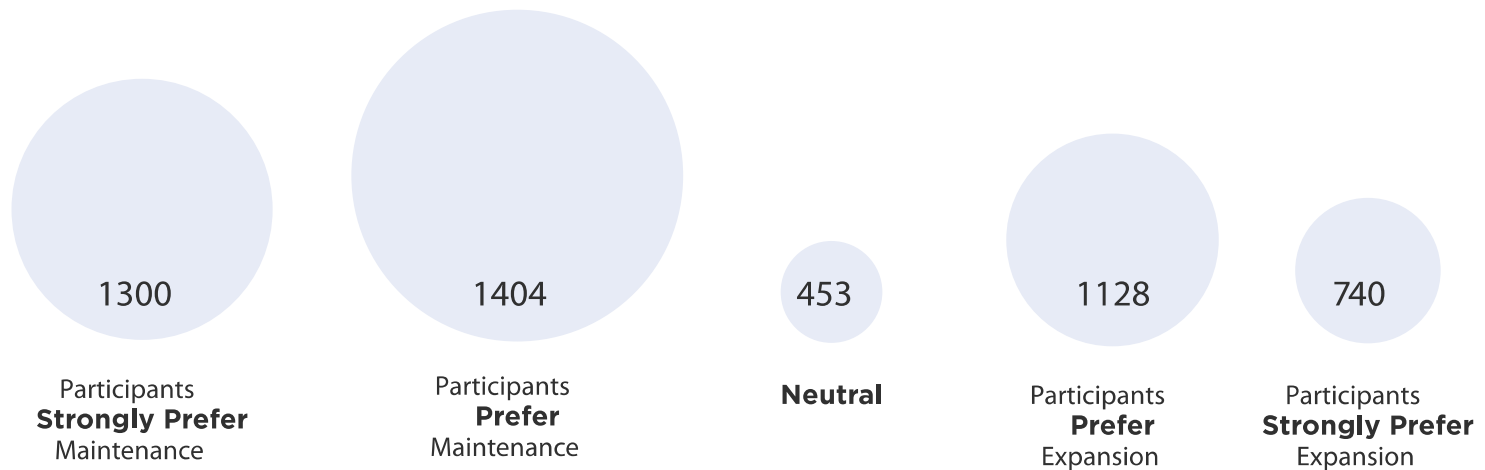
Trade-off #3

SMOOTH ROADS VS. MORE ROADS



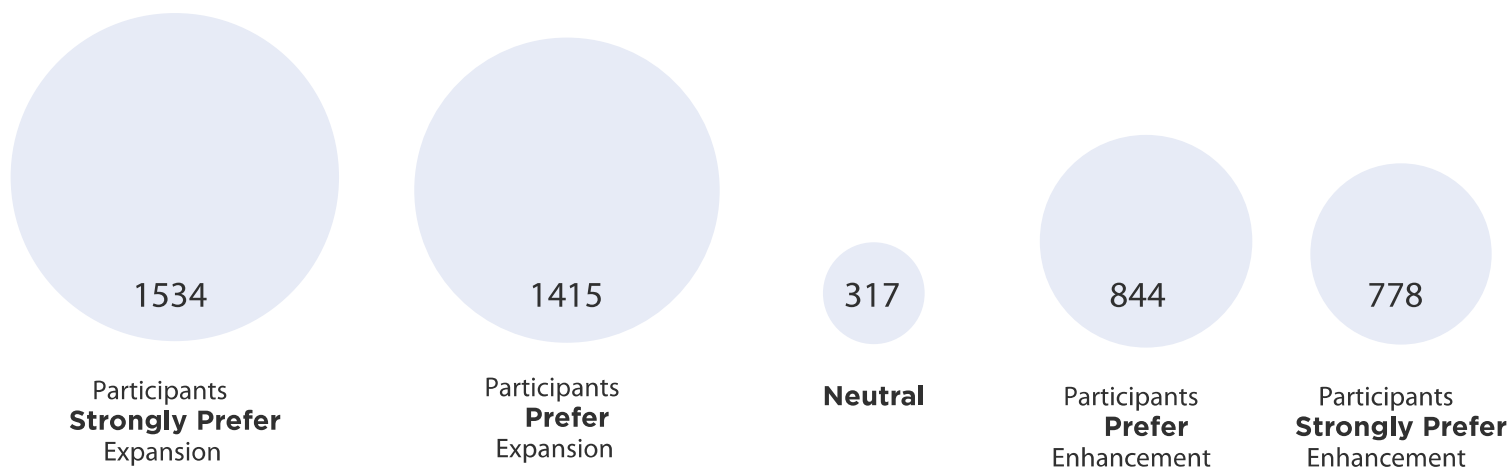
Trade-off #4

SMOOTH ROADS VS. NEW SMART ROADS



Trade-off #5

MORE ROADS VS. SMART ROADS



Alternative Investment Choices (AICs)

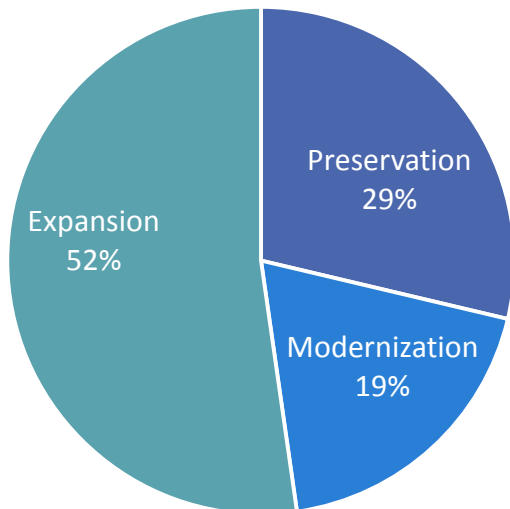
AIC Side-by Side Comparison (Dollars in Millions 2016 \$s)

AIC Side-by Side Comparison

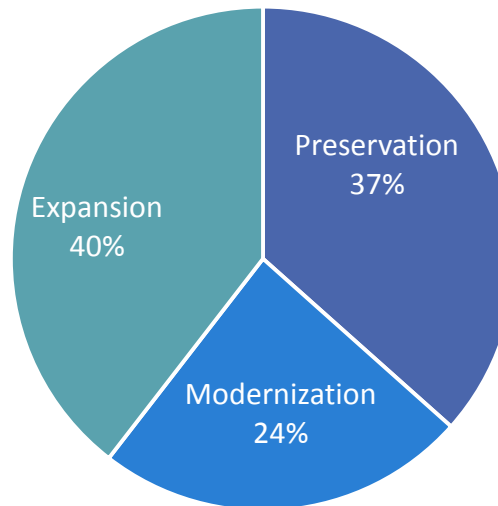
	25-year Needs		Current Plans AIC			Agency AIC			Public AIC			Blended AIC		
	Total	Annual	Budget	% Share	% Needs Met	Budget	% Share	% Needs Met	Budget	% Share	% Needs Met	Budget	% Share	% Needs Met
Preservation	\$9,236	\$369	\$264	29%	72%	\$337	37%	91%	\$313	34%	85%	\$305	33%	82%
Modernization	\$9,962	\$398	\$175	19%	44%	\$220	24%	55%	\$248	27%	62%	\$214	23%	54%
Expansion	\$34,050	\$1,362	\$482	52%	35%	\$364	40%	27%	\$360	39%	26%	\$402	44%	30%
TOTAL	\$53,248	\$2,130	\$921	100%	43%	\$921	100%	43%	\$921	100%	43%	\$921	100%	43%

Alternative Investment Choices (AICs)

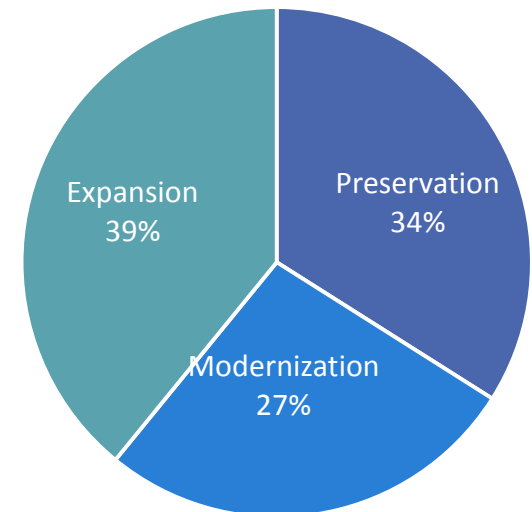
Current Plans AIC



Agency AIC



Public AIC



RIC Discussion: Preservation Focus

Description: Builds from ADOT STIPs and budgets and MPO plans to estimated AIC based on Current Plans

Detailed AIC

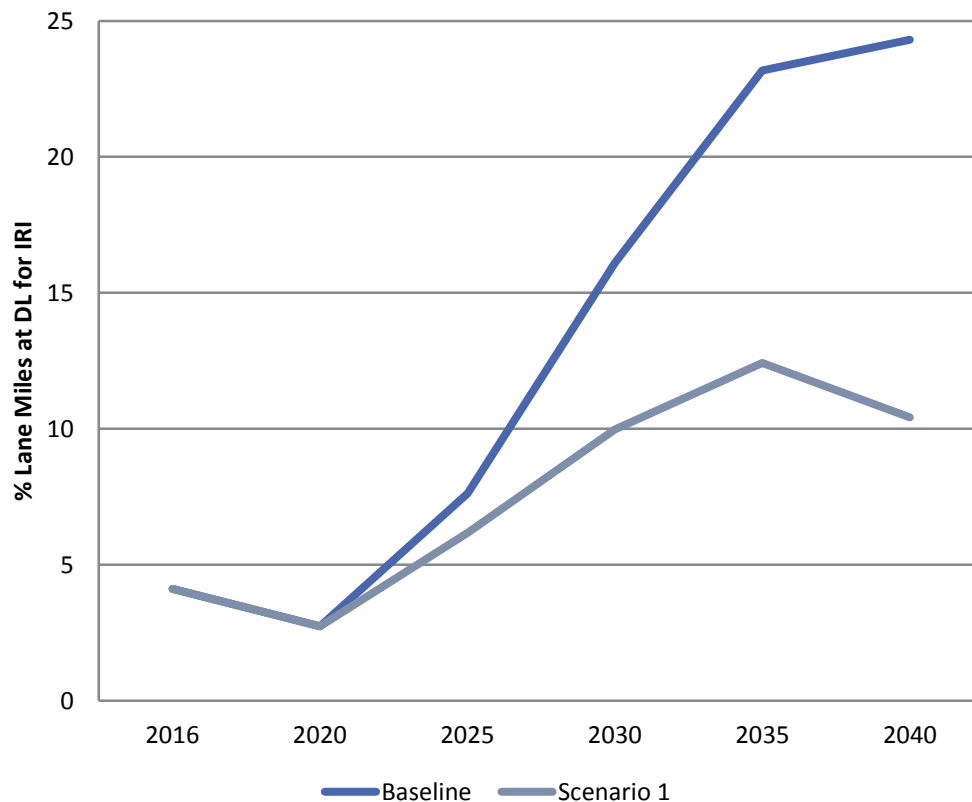
Investment Type	Greater Arizona	MAG	PAG	Annual Total	25-Year Total	% of Need Met	AIC %	Investment Area
Modernization	\$55	\$13	\$2	\$69	\$1,736	28%	8%	Modernization
Bridge	\$50	\$0	\$0	\$50	\$1,250	58%	5%	Preservation
Pavement	\$270	\$6	\$0	\$276	\$6,912	87%	30%	Preservation
Expansion	\$25	\$343	\$93	\$462	\$11,541	37%	50%	Expansion
Technology	\$3	\$7	\$2	\$12	\$299	9%	1%	Modernization
Accessibility	\$8	\$23	\$23	\$54	\$1,350	58%	6%	Modernization
TOTAL	\$411	\$393	\$120	\$923	\$23,087	43%	100%	

AIC Roll-up

Investment Area	25-Yr Needs	25-Year Revenue	% of Needs Met	Annual Spending	% of Total Revenue
Preservation	\$9,236	\$8,162	88%	\$326	35%
Modernization	\$9,962	\$3,385	34%	\$135	15%
Expansion	\$34,050	\$11,541	34%	\$462	50%
TOTAL	\$53,248	\$23,087	43%	\$923	100%

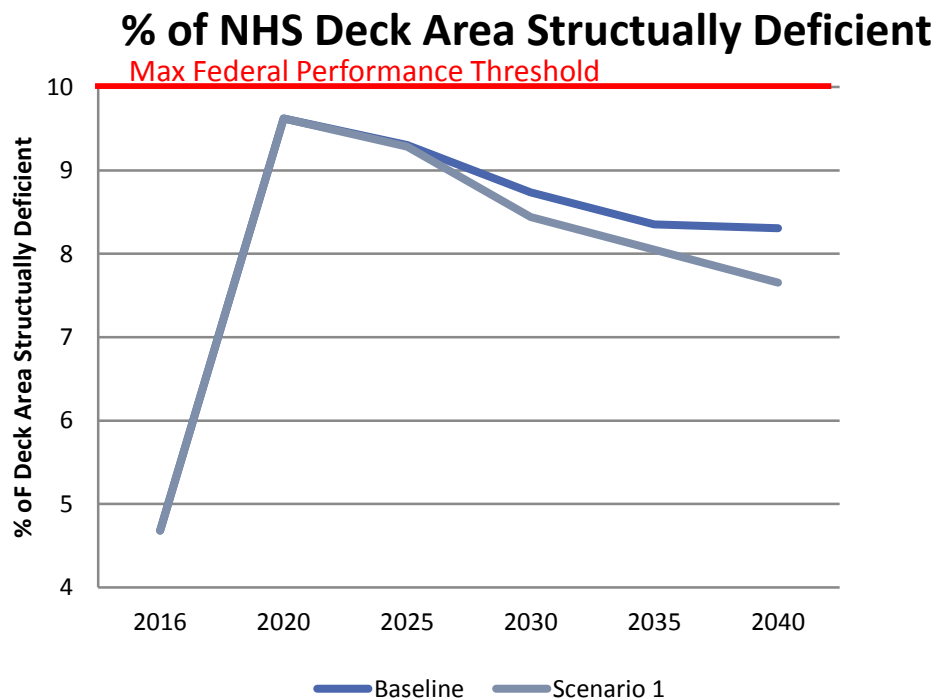
Baseline vs. Enhanced Preservation Spending: SHS Pavement

% Lane Miles at Deficiency Level for IRI



- Assumes annual spending increases from \$218M to \$270M from 2023 to 2028, stays \$270M/year through 2040
- Baseline developed using HERS-ST
- Scenario 1 developed assuming average resurfacing cost of \$300K/lane mile

Baseline vs. Enhanced Preservation Spending: NHS Bridges



- Assumes annual spending increases from \$40M to \$50M from 2023 to 2028, stays \$50M/Year though 2040
- Number of deficient NHS bridges declines from 72 in 2016 to 48 in 2040

Next Steps

- Work with PPAC to finalize RIC
- Stakeholder coordination
- Board approval of Draft Plan
- Public review period
- Final Plan