

2026 Sustainable Communities Strategy (SCS) Subcommittee

Meeting #1: November 18, 2024



Presented by:
Santosh Bhattarai, Principal Modeler
Paul Herman, Deputy Director



Agenda

- 1) Roll Call
- 2) Recap of previous SCS Subcommittee
- 3) SCS and Goals of SCS Subcommittee
- 4) Fresno County: VMT and GHG Trend
- 5) Introduction to Activity Based Model (ABM)
- 6) Introduction to 2026 Preliminary SCS Scenarios
- 7) Comments/Questions
- 8) Next Steps



Roll Call

S.No.	Staff	Agency	Area Representation
1	Ashley Atkinson	Fresno	Metro/Urban
2	Mohammad Khorsand	County of Fresno	Rural/Unincorporated Communities
3	Marilu Morales	Reedley	Eastside Cities/Sub-urban
4	Soo Ho Park	Fowler	Southside Cities/Sub-urban
5	Kelsey George	Firebaugh	Westside Cities/Sub-urban
6	Bethany Berube	Clovis Transit	Transit
7	Christopher Xiong	Caltrans	State DOT
8	Kevin Hamilton	CentralCal Asthma	Health/Environment
9	Adam Livingston	Sequoia Riverlands	Nature/Agriculture
10	Andy Cook	SJRRRC	Railroad/SJV Amtrak
11	Keith Bergthold	Regenerate California Innovation	Clean Energy/Environmental Justice
12	Tina Sumner	Fresno Cycling Club	Active Transportation
13	Shannon Avila	First Steps Recovery	Measure C Oversight
14	Paul Marquez	Public At Large	Community Forum
15	Steve Haze	Public At Large	Community Forum

Recap of 2022 SCS Subcommittee

SCS subcommittee met nine times in total

Between August 2020 and February 2021

Fresno COG's third SCS after 2014 and 2018

Analyzed Futures, Scenarios, and Strategies (land use and transportation)

Three scenarios (A, B, and C) were formalized by the subcommittee

Modeling process determined Scenario B as a preferred scenario

Performance indicators were finalized

SCS Process

Integrated element of regional transportation plan (RTP), established by SB 375

Lower per capita GHG emissions from cars and light duty trucks

Encourages coordinated transportation and land-use planning to reduce greenhouse gas (GHG) emissions

Foster communities that are more equitable, healthy, and sustainable.

Updated every four years



SCS Subcommittee Goals



ASSIST RTP
ROUNDTABLE IN
DEVELOPMENT OF
SCS SCENARIOS



ESTABLISHING
TRANSPORTATION
AND LAND-USE
STRATEGIES FOR
EACH SCENARIO



DETERMINE
TRANSPORTATION
PRIORITIES AND CO-
BENEFITS

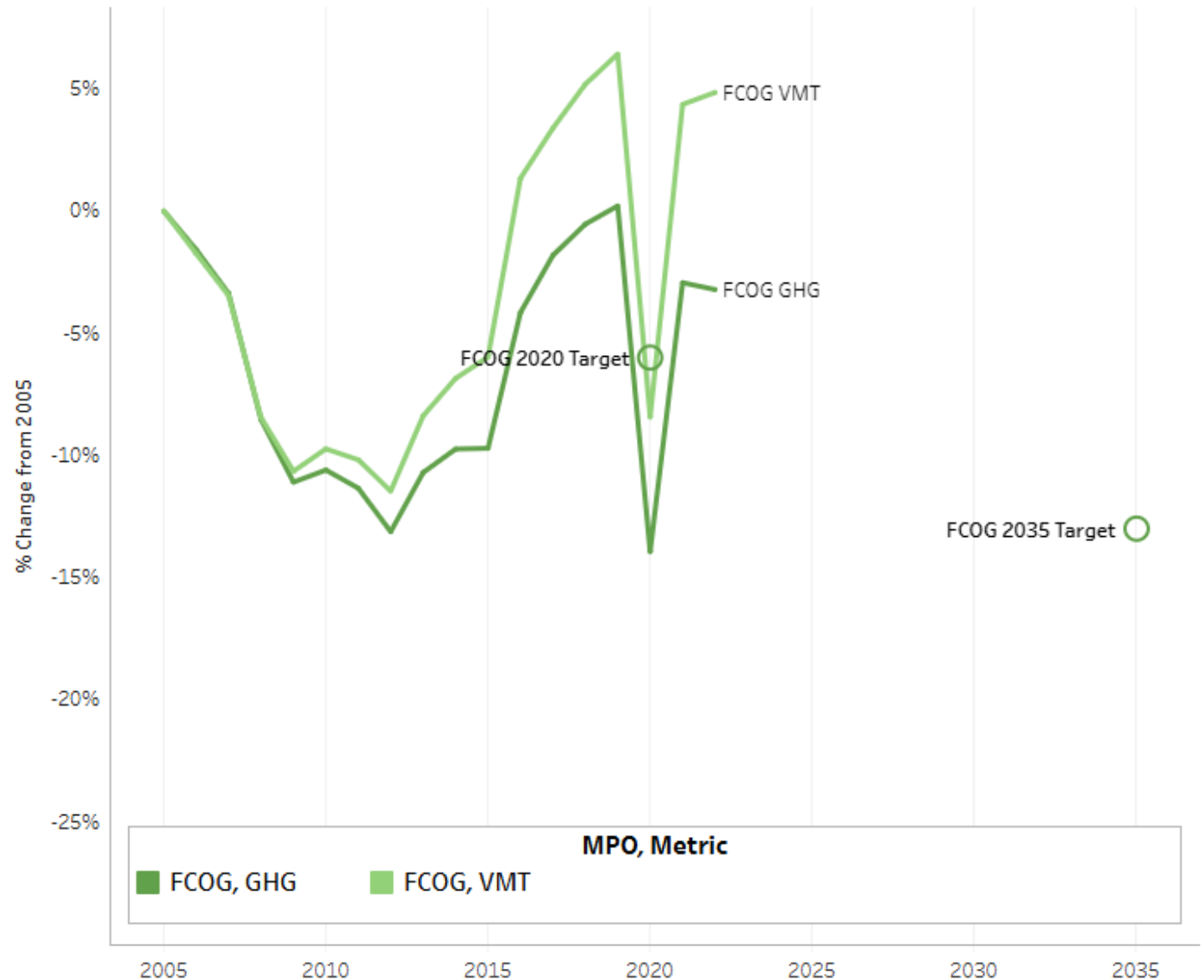


DEVELOPMENT OF
PERFORMANCE
INDICATORS TO
MEASURE THE
EFFECTIVENESS OF
THE SCENARIOS

Source – CARB SB 150
Dashboard

Fresno County VMT and GHG Changes

GHG and VMT Compared to SB 375 Targets

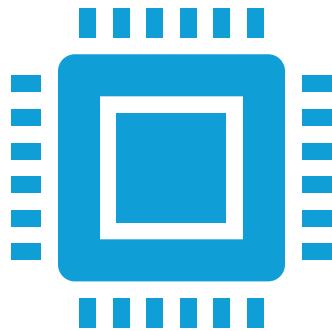


Introduction and
Overview

Fresno COG Activity- Based Model (ABM)



Travel Demand Modeling (TDM)



Represents a computer-simulated “day in the life”,
given land-use and transportation system
characteristics



Allows modelers to test land-use and transportation
policies against future growth

Framework of Travel Demand Modeling (TDM)



TDMS ARE CALIBRATED TO A BASE YEAR, WHERE THE MODEL'S PERFORMANCE IS VALIDATED AGAINST SURVEY DATA AND OBSERVED CHARACTERISTICS (E.G. TRAFFIC COUNTS, HOUSEHOLD SURVEYS)



FUTURE YEAR RUNS ACCOUNT FOR PLANNED TRANSPORTATION IMPROVEMENT PROJECTS AS WELL AS PROJECTED DEMOGRAPHIC GROWTH

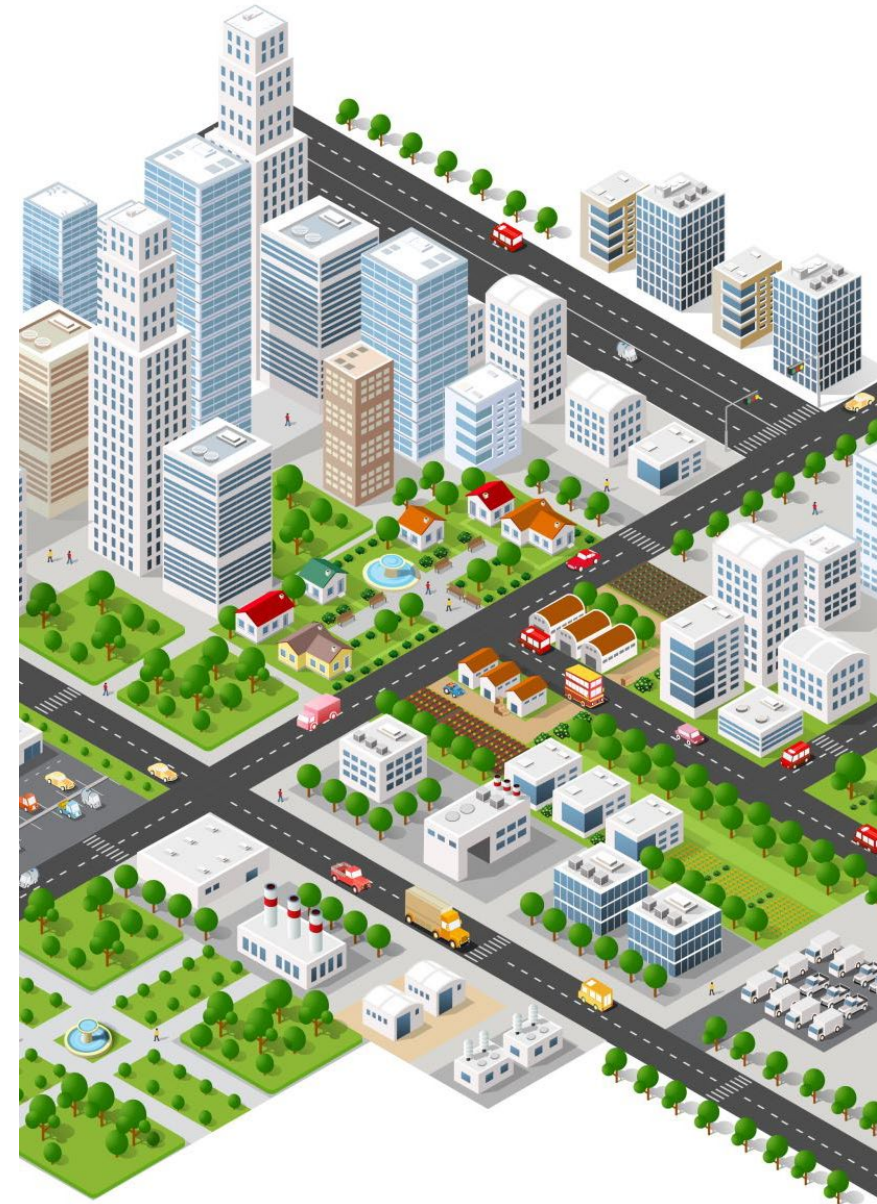


MULTIPLE SCENARIOS CAN BE MODELED TO TEST POSSIBLE FUTURES (SUSTAINABLE COMMUNITIES STRATEGY, OR SCS)

How Traffic Modeling Is Used

- ❑ Regional Transportation Plans (RTPs)
 - Involves long-range planning (25 years) for transportation-related activities (freeways, roadways, transit, rail, biking, walking, etc.)

- ❑ Sustainable Communities Strategy (SCS)
 - Requires traffic forecasting to model future population, land use, and transportation infrastructure



Fresno ABM: A Big Improvement

Activity-based model

Tour-based

Trips are generated by individuals
in a synthetic population

Allows for much more robust
analysis

Model is much more sensitive to
inputs

Fresno ABM: New Capabilities

More realistic and accurate forecasting

Better sensitivity

More robust socioeconomic and demographic analysis

Improved transportation analysis

Base year updated to 2019

Telecommuting, Managed Lanes, TNC, Truck Restrictions

CONTINUOUS
IMPROVEMENT

Fresno ABM: Structure

Resident
Travel
(Daysim)

Truck Travel

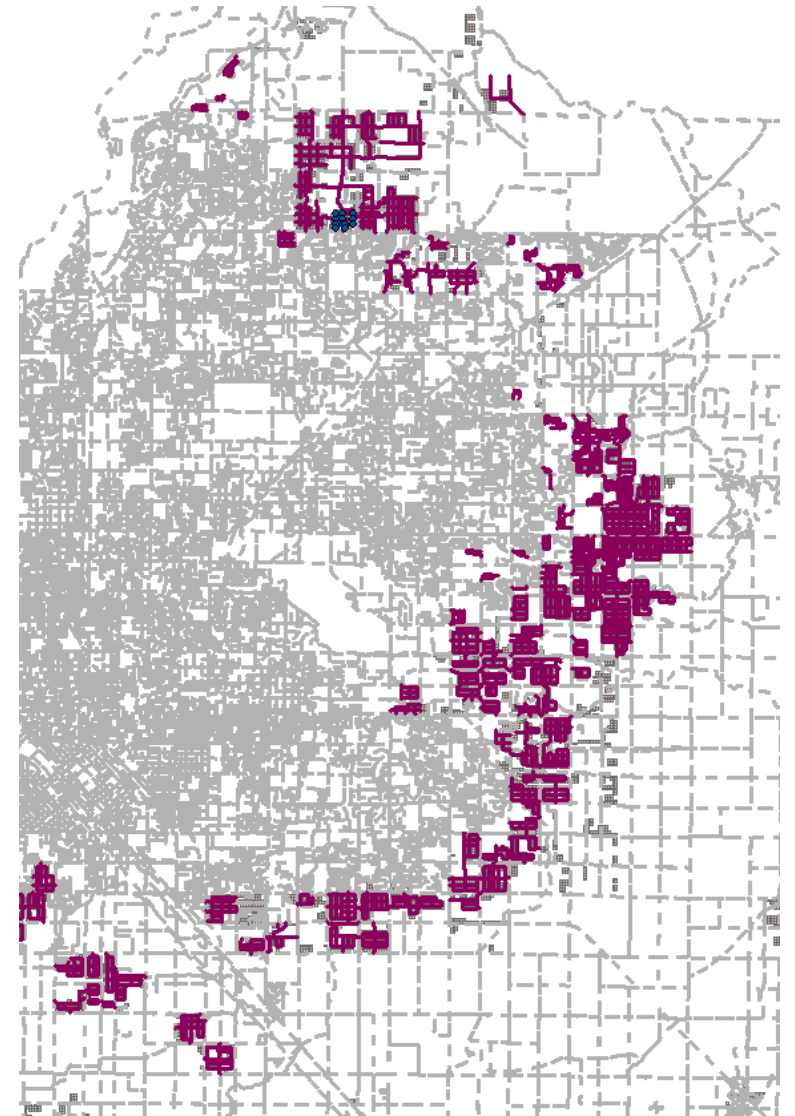
Auxiliary
Travel
(Interregional)



Modeling Future Growth

Future growth areas are assigned a “pseudo-network” of local roads to model expected neighborhood connectivity

Mode choices and network assignment happens at the microzone level, which takes better advantage of changes in connectivity



Fresno ABM: Validation

- Validated against the observed datasets

DATASET	YEAR	SOURCE	PURPOSE
Traffic Counts	2019	<u>CalTrans</u> and FresnoCOG	Highway Validation
Vehicle Miles Travelled (VMT)	2019	Highway Performance Management System (HPMS)	Highway Validation
Transit Ridership	2019	FAX, Clovis, and FCRTA	Transit Validation

- Sensitivity tests
 - Assesses the model's sensitivity to changing inputs like fuel prices, transit fares, new land uses, and projects
 - Twelve sets of tests are conducted

RTP/SCS Analysis



On-Model

Strategies/projects that is computed within the model

(Land-use, transportation, pricing, remote work, etc.)



Off-Model

Strategies/projects that is computed outside the model

(Intelligent transportation systems (ITS), carpool/vanpool, electric vehicle (EV) infrastructure, autonomous vehicles, telecommute, etc.)

Introduction and
Overview

2026 SCS Preliminary Scenarios



SCS Strategies

- The SCS will include the implementation of land-use and transportation strategies that aim primarily to reduce greenhouse gas emissions and encourage other benefits that advance equity and sustainability throughout the Fresno County region.
- These strategies will help form the basis of how the SCS scenarios will be developed.

SCS
Strategies:
Land-Use

Limit growth footprint

Support efficient land uses and livable communities

Encourage equitable redevelopment

Provide a range of housing options across different income levels

Conserve resource land

SCS Strategies: Transportation

Maintain existing streets and roads

Improve bike and pedestrian infrastructure

Improve roadway safety for all users

Improve transit and shared mobility

Innovate and modernize travel and infrastructure

Improve traffic safety

Improve intermodal mobility, accessibility, and connectivity

Improve transportation equity

Decrease congestion

Enhance operational efficiency and Transportation Demand Management (TDM) strategies

SCS
Strategies:
Other /
Co-Benefits

Encourage mode-shift away from single occupancy vehicles

Increase climate resiliency

Improve air quality

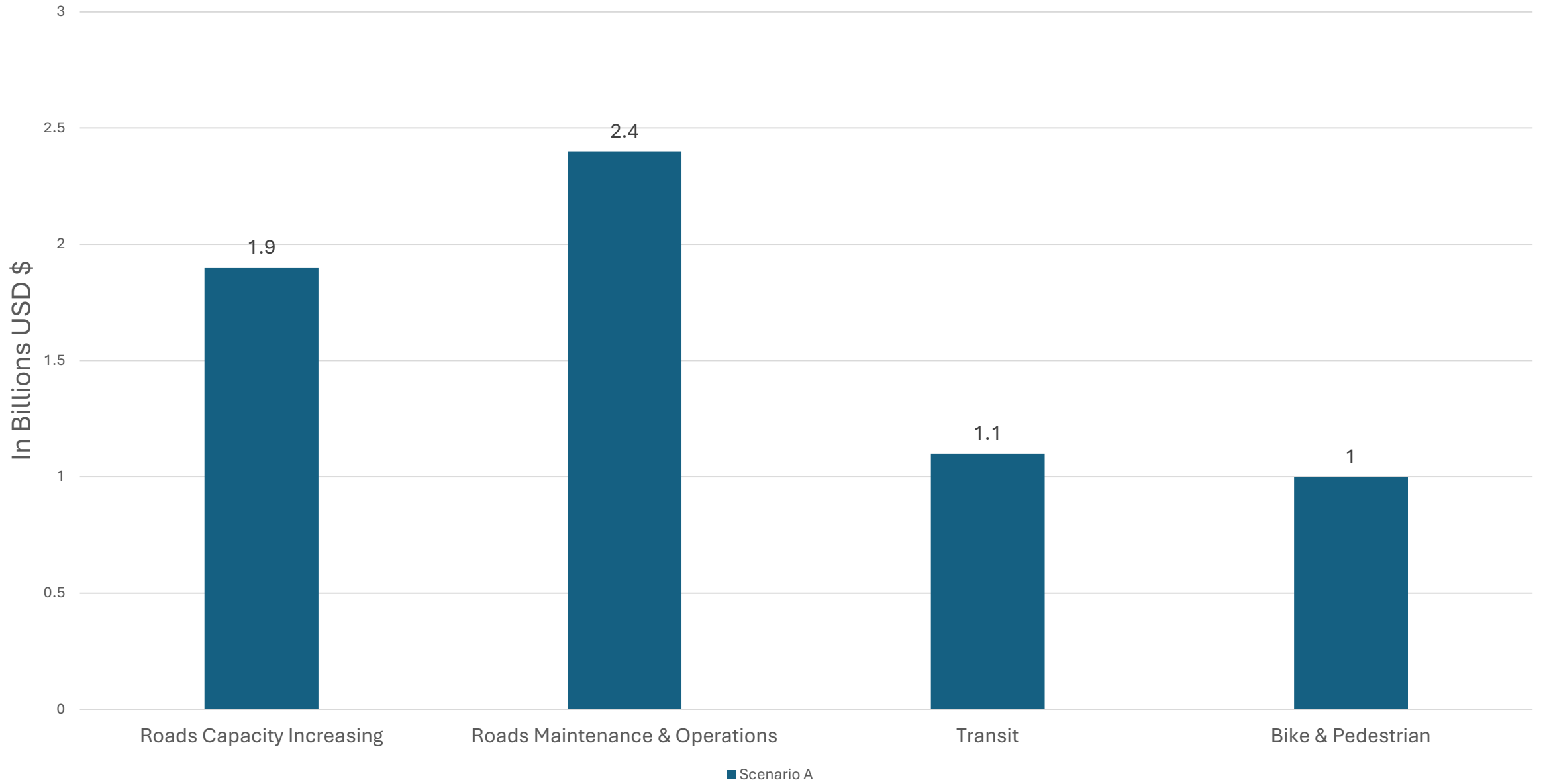
Support work-from-home and telecommute initiatives

Improve economic, environmental, and public health outcomes for disadvantaged communities

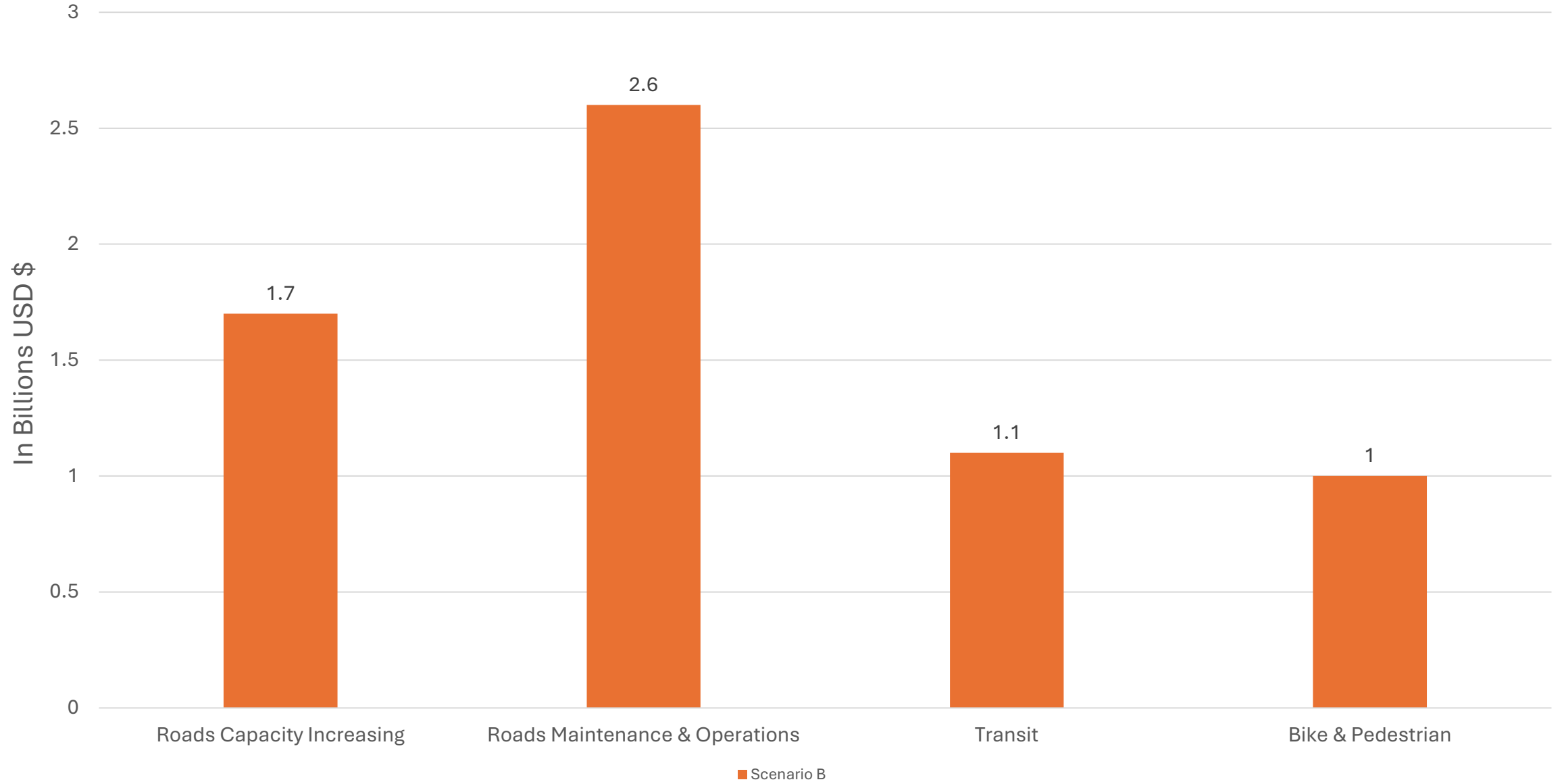
**2022 Regional Transportation Plan (RTP)
Revenue Projection to 2046**

Funding Source	Annual Funding Estimate (Base Year)	Annual Funding Estimate (2026)	Midpoint Fund Estimate (2027-2036)	Endpoint Fund Estimate (2037-2046)	Life of RTP Cumulative Funding Estimate	Funding Distribution to Constrained Projects by Mode			
						Bicycle and Pedestrian	Streets & Roads Capacity Increasing	Streets & Roads Maintenance & Operations	Transit
Federal Funds									
Active Transportation Program (ATP) - Regional	\$2,407,500	\$2,554,858	\$31,143,580	\$55,751,117	\$86,894,696	\$86,894,696	\$0	\$0	\$0
ATP - Statewide Awards	\$1,147,875	\$1,218,134	\$14,848,987	\$26,581,646	\$41,430,633	\$41,430,633	\$0	\$0	\$0
Better Utilizing Investments to Leverage Development Transportation Discretionary (BUILD) Grants Program	\$793,000	\$841,538	\$25,009,622	\$0	\$25,009,622	\$0	\$25,009,622	\$0	\$0
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	\$13,106,545	\$13,908,770	\$169,547,135	\$303,511,743	\$473,058,878	\$179,762,374	\$0	\$212,876,495	\$80,420,009
Federal Transit Administration (FTA) Section 5307-Urbanized Area Formula Grants	\$13,462,500	\$14,286,513	\$174,151,793	\$250,428,334	\$424,580,127	\$0	\$0	\$0	\$424,580,127
FTA Section 5310-Enhanced Mobility of Seniors and Individuals with Disabilities	\$630,500	\$669,092	\$8,156,190	\$11,728,510	\$19,884,700	\$0	\$0	\$0	\$19,884,700
Highway Infrastructure Program (HIP)	\$2,290,246	\$2,430,427	\$29,626,774	\$53,035,835	\$82,662,609	\$24,798,783	\$18,185,774	\$39,678,052	\$0
Highway Safety Improvement Program (HSIP)	\$1,193,175	\$1,266,207	\$15,434,991	\$22,195,345	\$37,630,336	\$0	\$13,513,054	\$17,099,977	\$7,017,305
Infrastructure for Rebuilding America (INFRA) Grant	\$700,000	\$742,846	\$9,055,246	\$13,021,343	\$22,076,590	\$0	\$22,076,590	\$0	\$0
Surface Transportation Block Grant Program (STBG)	\$13,334,138	\$14,150,294	\$172,491,293	\$308,782,175	\$481,273,468	\$120,318,367	\$101,067,428	\$192,509,387	\$67,378,286
State Funds									
Interregional Transportation Improvement Program (ITIP)	\$595,000	\$631,419	\$7,696,959	\$11,068,142	\$18,765,101	\$0	\$18,765,101	\$0	\$0
Local Partnership Program (LPP)	\$1,904,000	\$2,020,540	\$24,630,270	\$35,418,054	\$60,048,324	\$0	\$60,048,324	\$0	\$0
Local Partnership Program (LPP) Competitive Program	\$743,495	\$789,003	\$9,617,901	\$13,830,434	\$23,448,334	\$0	\$23,448,334	\$0	\$0
Local Transportation Funds (LTF) Article 3 Bike/Ped Facilities shares	\$790,151	\$838,515	\$10,221,446	\$14,698,325	\$24,919,771	\$24,919,771	\$0	\$0	\$0
Section 190 Grade Separation Program	\$127,500	\$135,304	\$1,649,348	\$2,371,745	\$4,021,093	\$0	\$0	\$4,021,093	\$0
Solutions for Congested Corridors Program (SCCP)	\$175,000	\$185,711	\$2,263,812	\$3,255,336	\$5,519,147	\$0	\$2,749,147	\$2,770,000	\$0
State Highway Operations and Protection Program (SHOPP)	\$51,889,380	\$55,065,425	\$671,244,459	\$965,242,041	\$1,636,486,500	\$0	\$0	\$1,636,486,500	\$0
State Transit Assistance (STA)	\$8,827,044	\$9,367,330	\$114,187,226	\$164,199,957	\$278,387,184	\$0	\$0	\$0	\$278,387,184
State Transportation Improvement Program (STIP) [Regional Choice Funds]	\$13,720,000	\$14,559,774	\$177,482,830	\$255,218,328	\$432,701,158	\$74,554,410	\$358,146,748	\$0	\$0
Trade Corridor Enhancement Program (TCEP) [SB-1 Competitive Funding]	\$480,675	\$510,096	\$6,218,044	\$8,941,477	\$15,159,521	\$0	\$15,159,521	\$0	\$0
Local Funds									
Fresno County Local Sales Tax (2007 Measure C Extension) Regional Shares	\$20,221,916	\$21,459,659	\$145,002,369	\$0	\$145,002,369	\$0	\$145,002,369	\$0	\$0
Fresno County Local Sales Tax - (2027 Measure C Extension) Future Regional Shares	\$25,587,174	\$27,153,314	\$254,515,478	\$443,553,654	\$698,069,132	\$0	\$698,069,132	\$0	\$0
Local Funds (funding derived from Measure C Local Funds, City/County General Funds, Street taxes, developer fees, STBG exchange funds, SB1 Local Streets/Roads funds, Gas Tax Revenue, LTF Transit funds)	\$31,950,750	\$33,906,392	\$413,317,020	\$594,345,263	\$1,007,662,283	\$488,916,316	\$128,406,606	\$242,169,696	\$148,169,189
TOTALS:	\$206,077,564	\$218,691,159	\$2,487,512,774	\$3,557,178,804	\$6,044,691,578	\$1,041,595,350	\$1,629,647,750	\$2,347,611,200	\$1,025,836,800

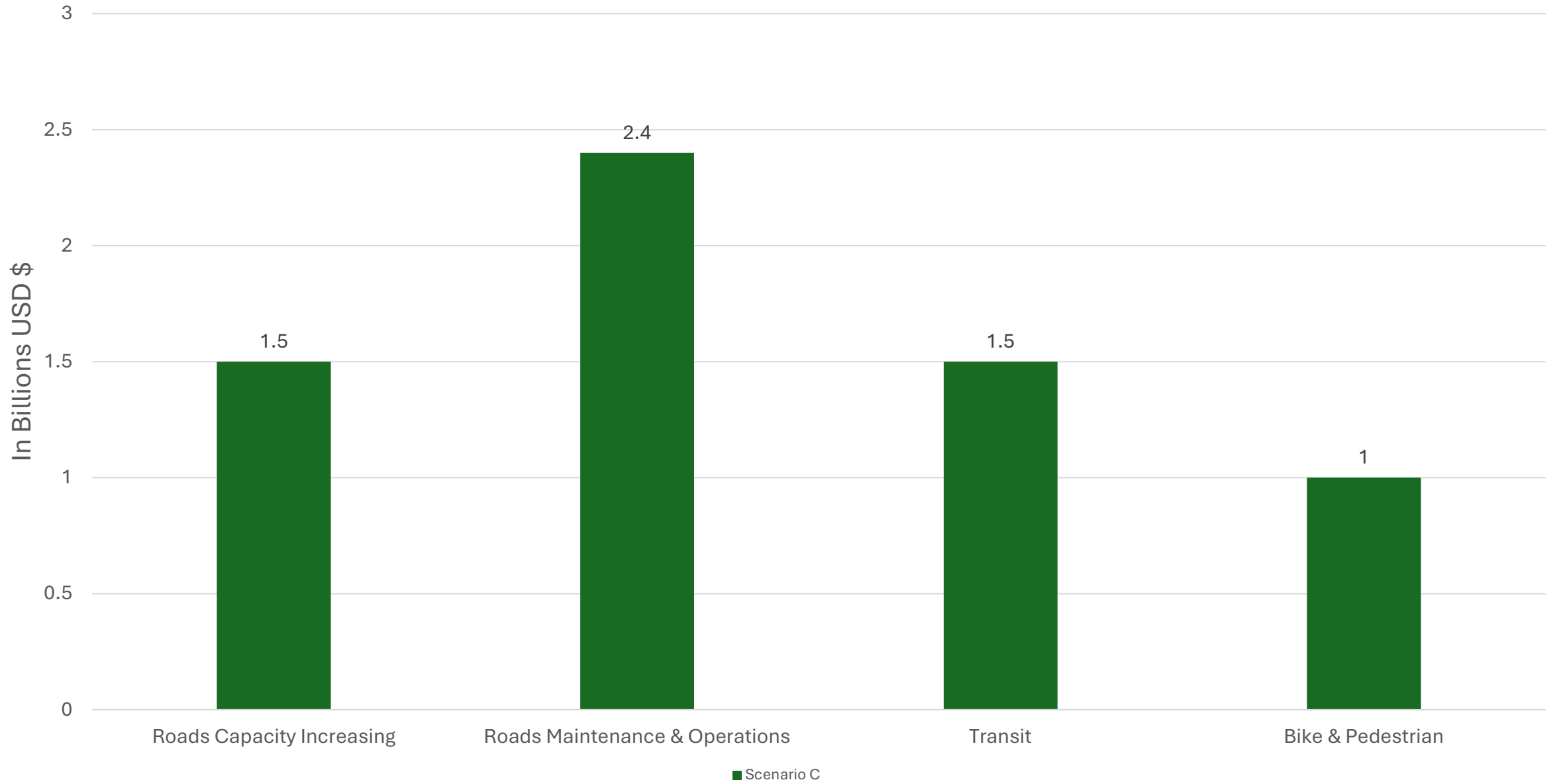
Scenario A



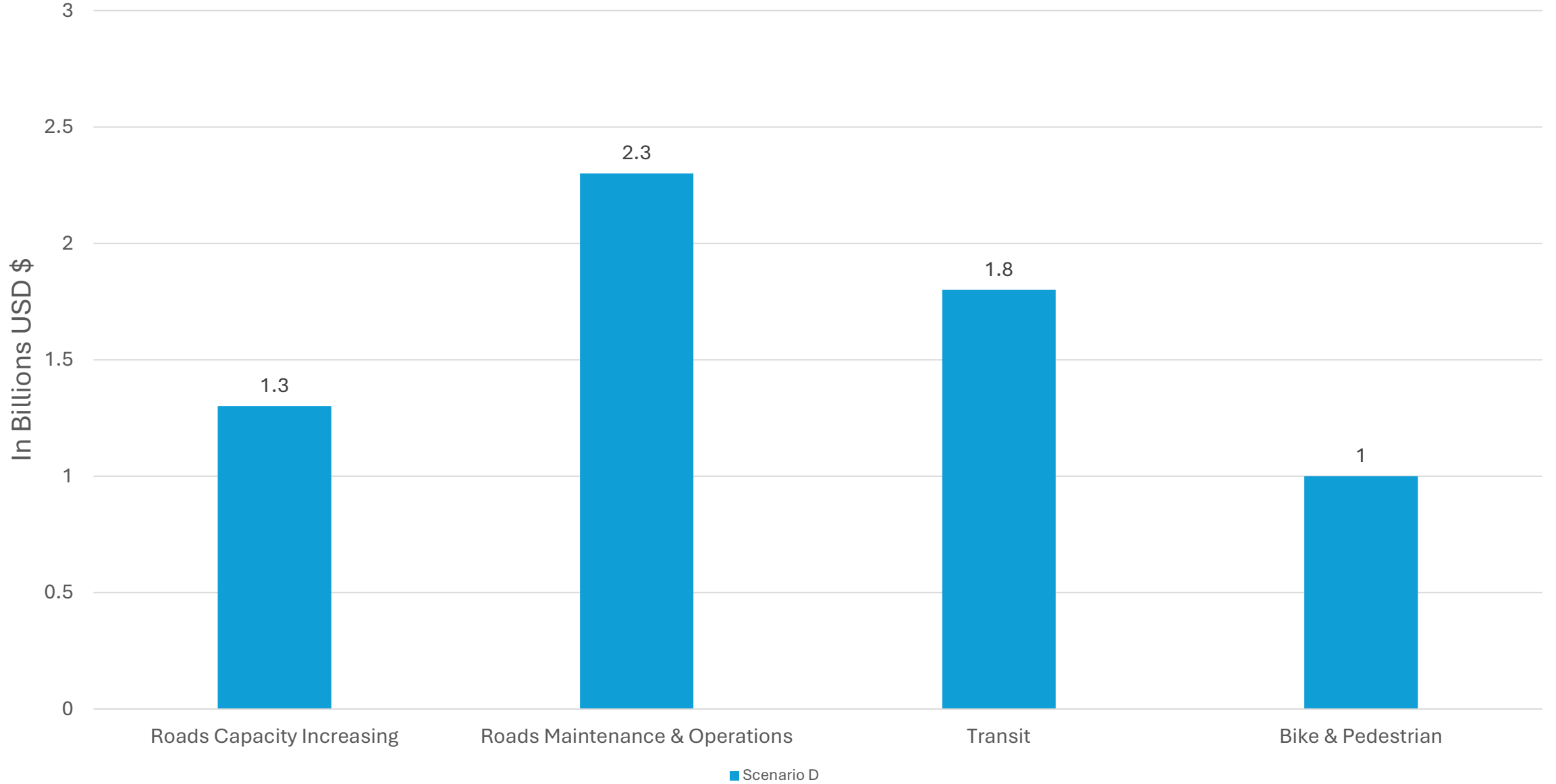
Scenario B



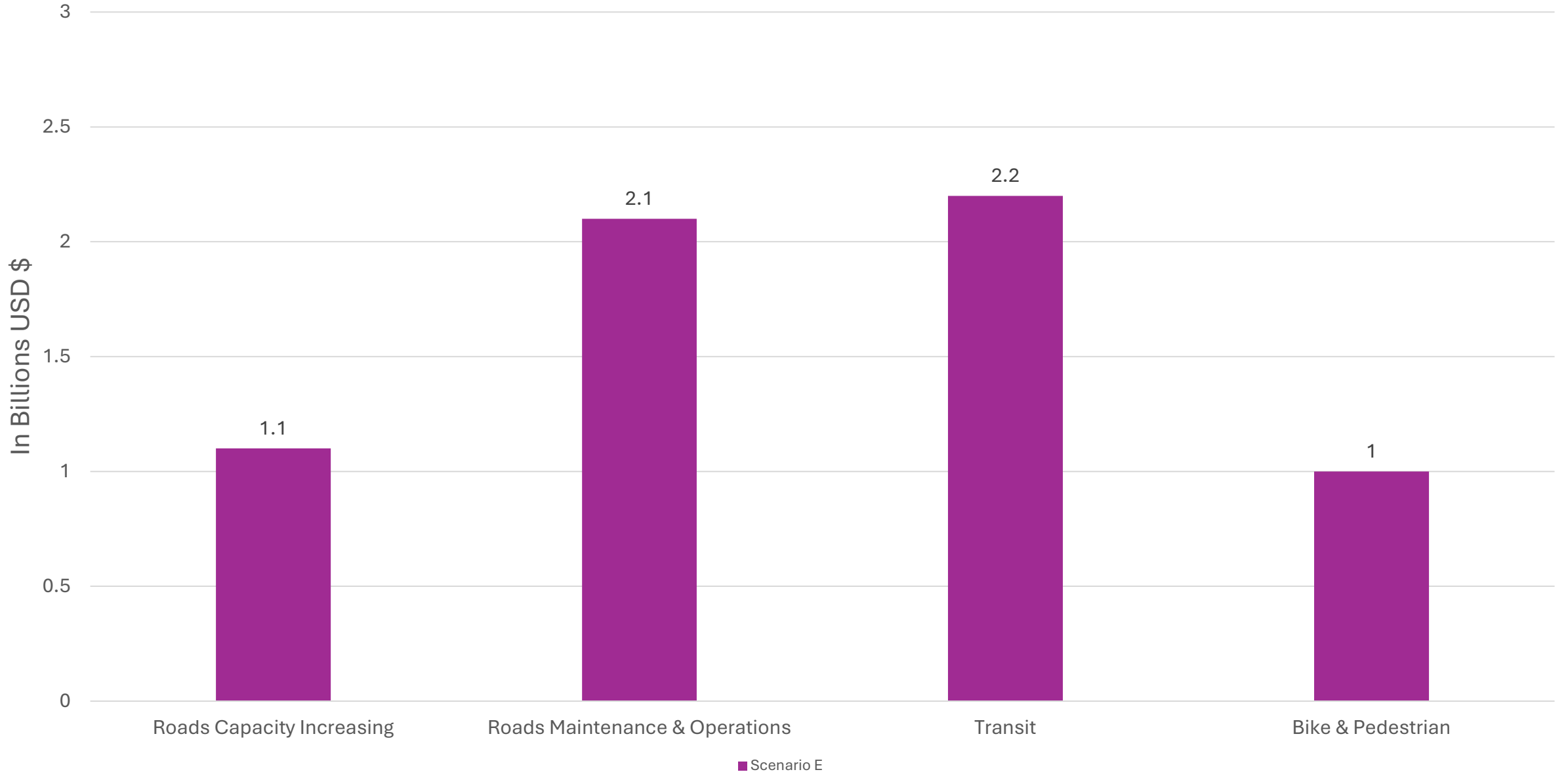
Scenario C



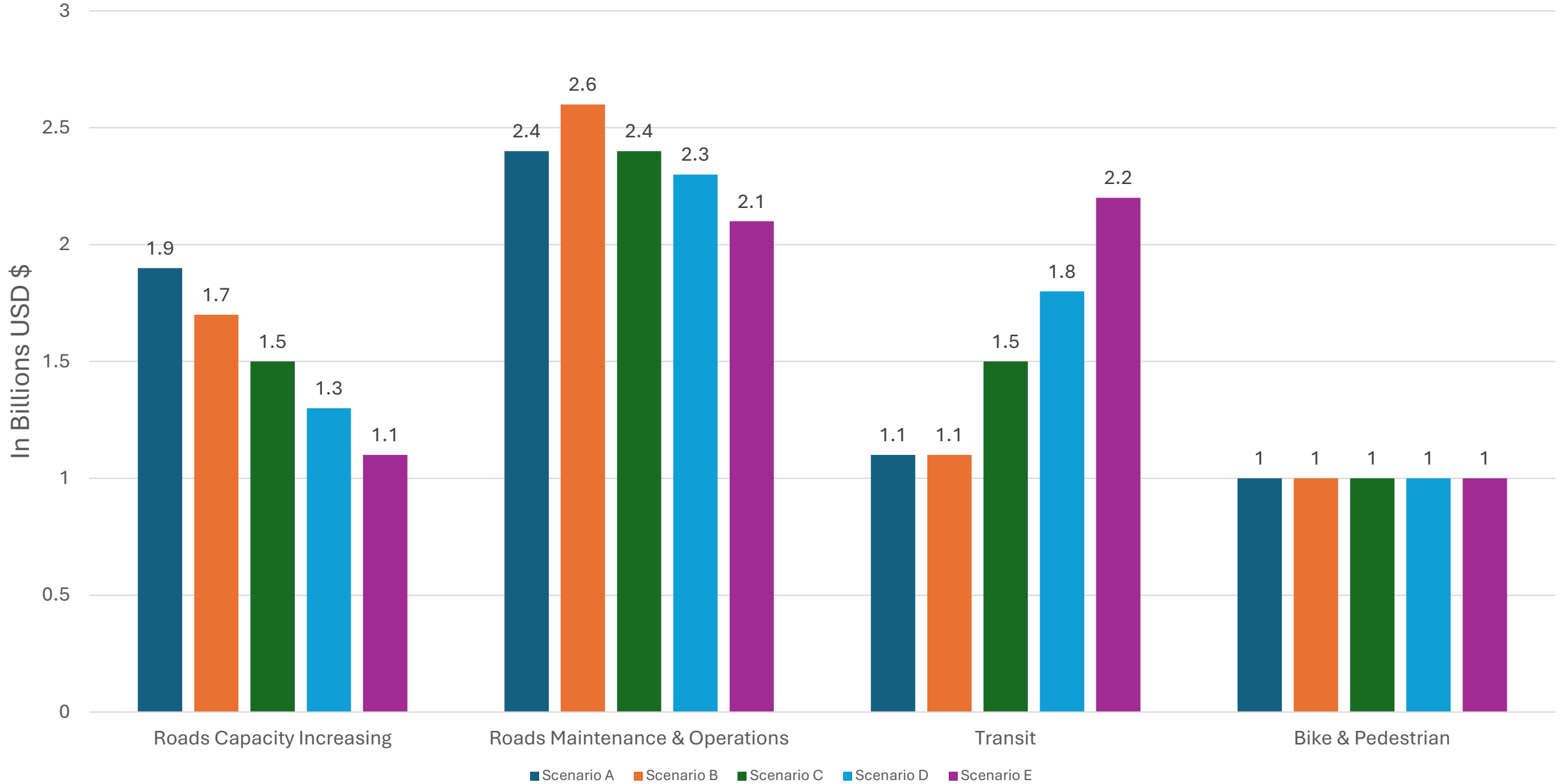
Scenario D



Scenario E



Scenarios Comparison





Questions/ Comments?

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Next Steps:

- Next Meeting:
**Thursday, December 19th,
1:30-3:00 pm**
- Format: Hybrid
**(Zoom/Sequoia Room,
Fresno COG Office)**
- Topics:
 - Continue discussion
on SCS scenarios
planning
 - Introduction to
Performance
Indicators

