



CITY OF MESA 2050 TRANSPORTATION MASTER PLAN

Transportation Advisory
Board
May 21, 2024

Agenda

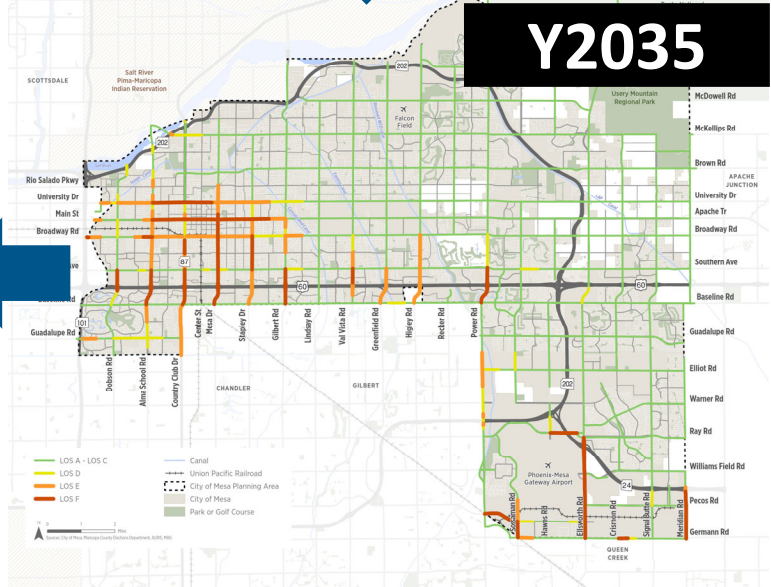
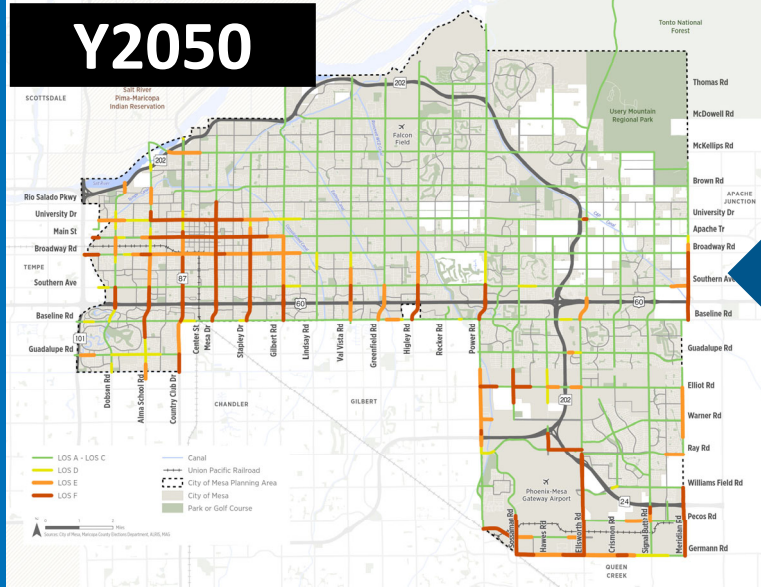
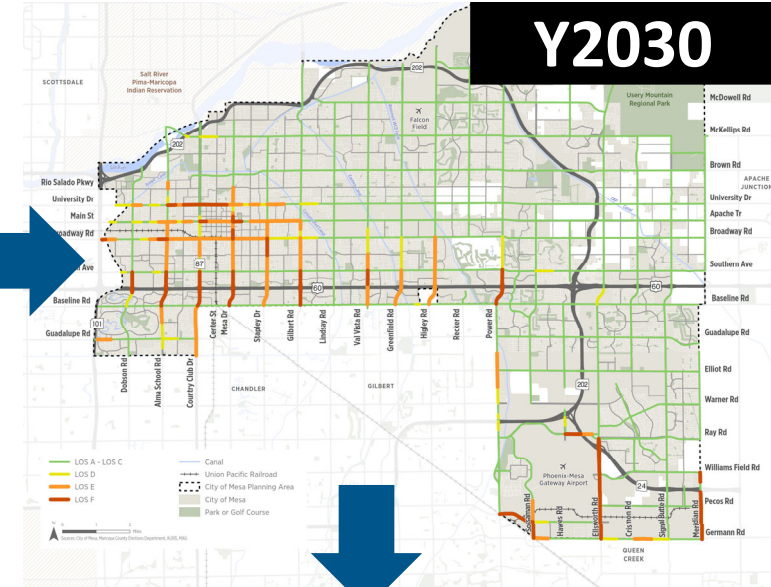
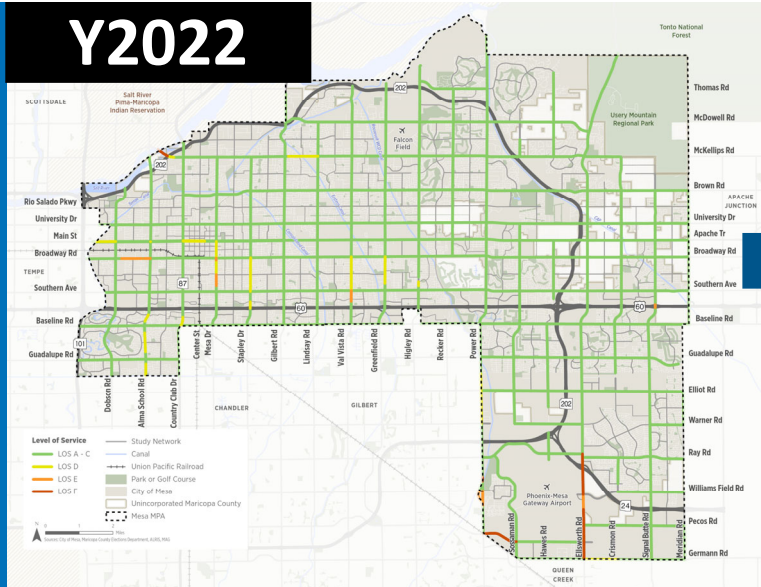
- *Future Conditions*
- *Future Needs*
- *Street Typologies*
- *Final Schedule*

What is a Transportation Master Plan?

- *A Transportation Master Plan describes the existing transportation system and the **projects, programs, and policies** that will allow a community to meet its transportation needs and aspirations now and into the future.*
- *A Transportation Plan is Visionary, Comprehensive and Community Responsive.*
- *A Transportation Plan is not Legal Code, Standard Specifications or Compliant Actions.*
- *Mostly, a Transportation Plan is a tool to help City staff, management, elected officials and residents determine future transportation needs.*

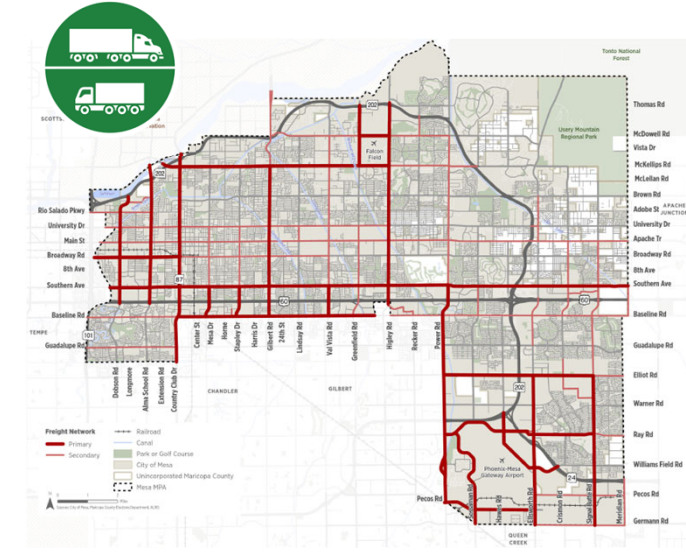
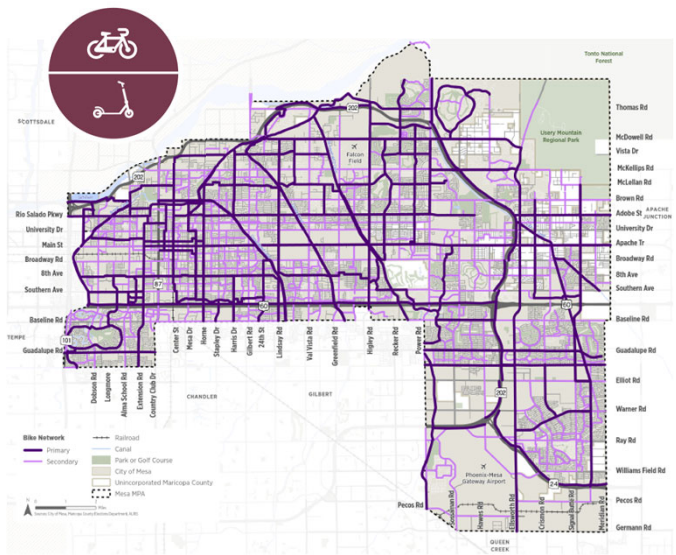
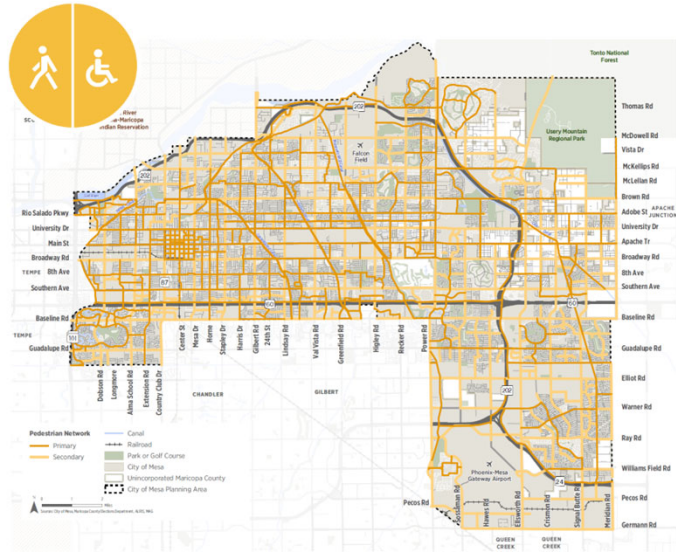
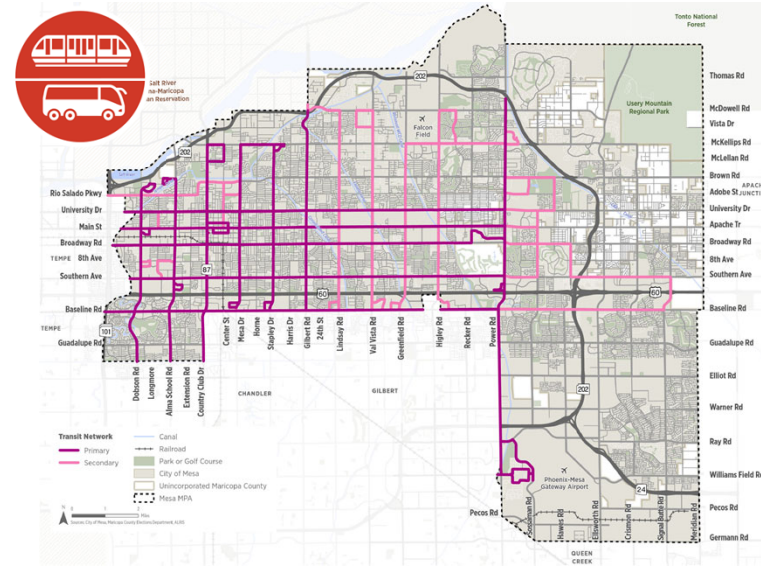
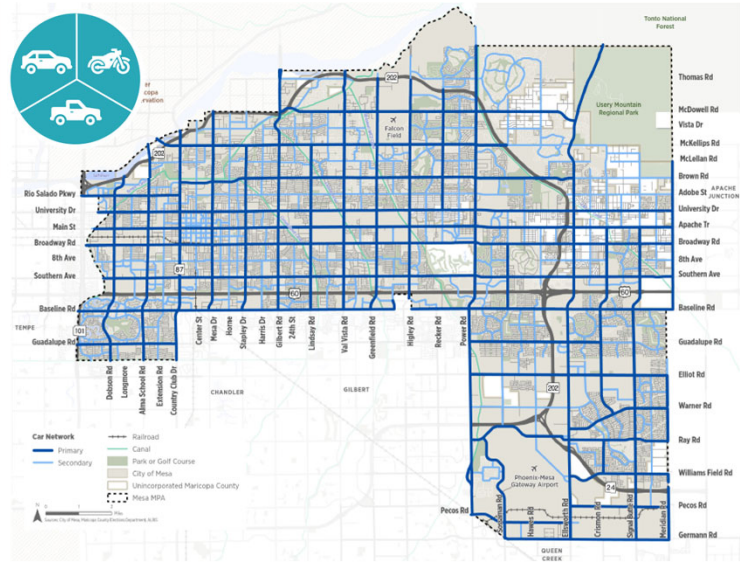
FUTURE CONDITIONS

- Congestion Levels, if NO Road Improvements Made

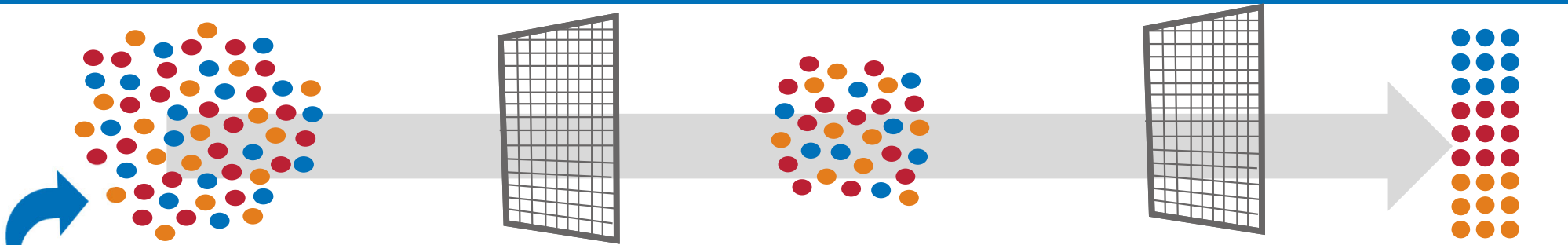


Future Needs

Complete Networks



Future Needs



Step 1. Collect a Universe of Ideas

- Staff, community and stakeholder feedback
- Transportation Advisory Board input
- General Plan growth strategies
- Comprehensive data analysis

Step 2. Evaluate Needs

Needs were grouped into categories and evaluated to confirm that they:

- Address specific issue/gap
- Achieve the TMP vision and goals
- Support General Plan's growth strategies

Step 3. Determine Priority/Phasing

Based on the evaluation results, needs were further screened to confirm implementation feasibility and then categorized by priority/phasing tiers for implementation.



Roadway and Safety Needs



Pedestrian Needs



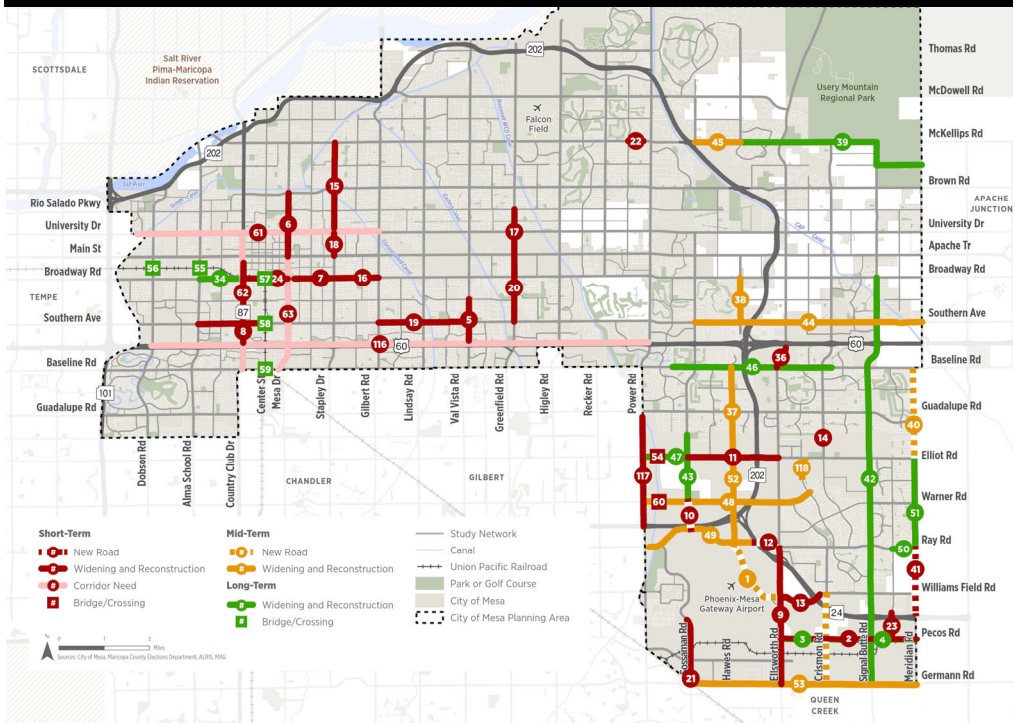
Bicycle Needs



Transit Needs

Future Needs

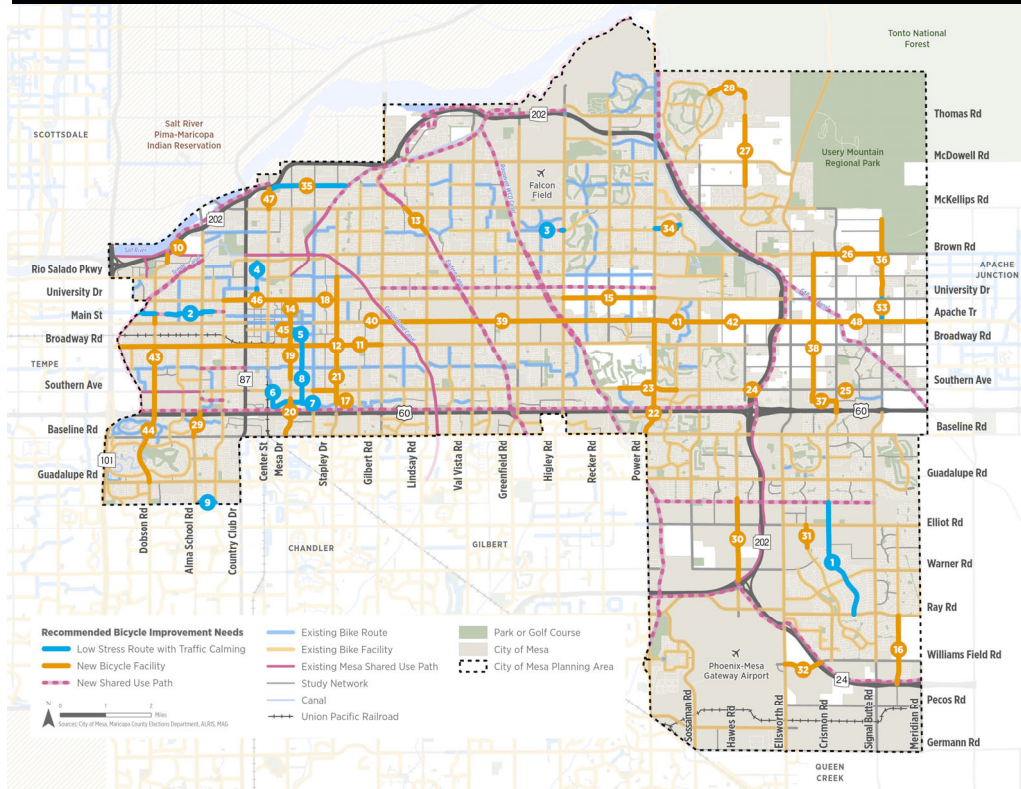
Widening and Reconstruction Needs



- *Widening and Reconstruction*
- *New Roads*
- *Bridge and Crossing Needs*
- *Intersection Improvements*
- *Safety Improvement Needs*
- *Corridor Studies*

Future Needs

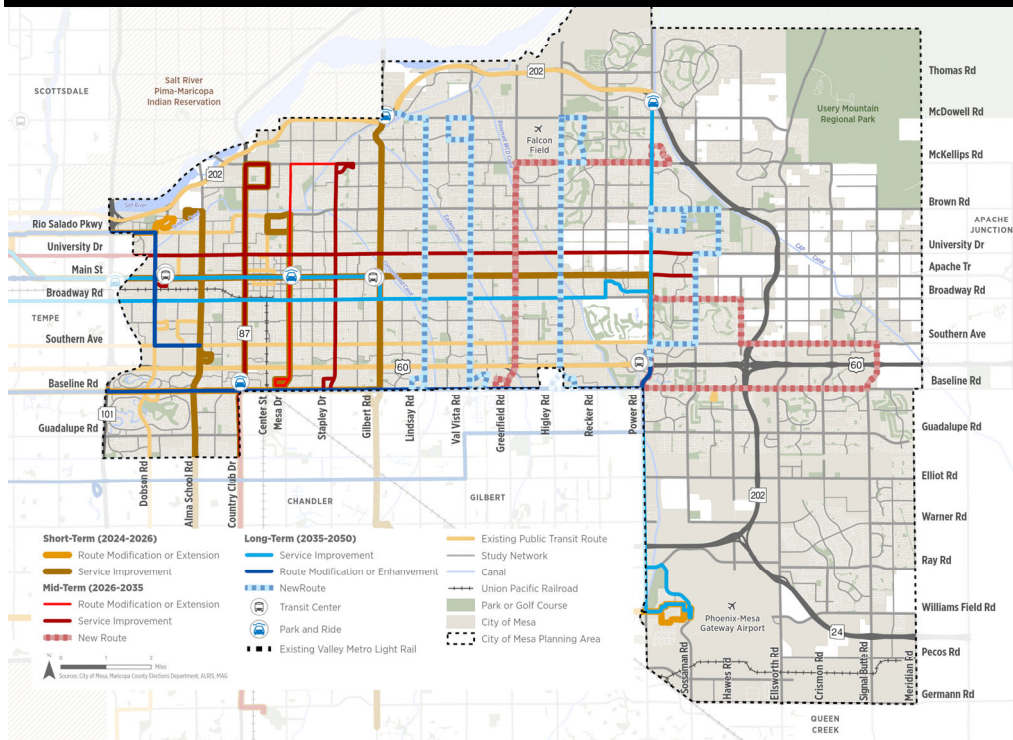
New Bicycle Facility Needs



- **Shared Use Path Network Needs**
- **Sidewalk Gaps on Collectors and Arterials**
- **Bicycle Gaps and Extensions**
- **Upgrades to Existing Bicycle Facilities**
- **Crossing Improvement Needs**

Future Needs

Public Transit Needs



- *Transit Service Needs – from the Mesa Transit Master Plan*
- *Transit Crossing Needs*

DOWNTOWN MESA

Travel Shed # 1

Incorporating Mesa's vibrant downtown, the Downtown Mesa Travel Shed is the heart of the City. Home to a dense mix of dining, retail, nightlife, arts and culture, residential and employment centers, the Downtown Mesa Travel Shed is a hot bed of activity.

TRAVEL SHED CHARACTERISTICS AND NEEDS

Anticipated Boom in Population and Employment Growth

Both population and employment density are expected to increase by over 20% by 2050.

Heavy Pedestrian and Bicycling Demand

The Travel Shed has one of the highest percentages of people walking and biking. The current bike network, however, is largely un-separated facilities that may not be comfortable for most. In addition, there are numerous gaps in the pedestrian and bicycle network that cause barriers to access.

A Hub for Public Transit

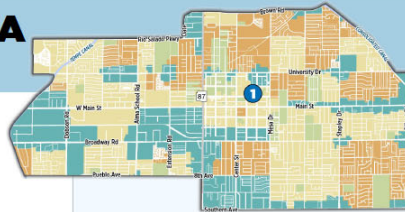
With the regional light rail system, numerous bus routes, and a potential new streetcar, Downtown Mesa is the City's hub to local and regional transit services.

Dense, Urban Form Anticipated to Grow and Transform

Adding to the complexity of the travel shed is the fact that most of the land in the Downtown Travel Shed was largely designated as an area of growth and transformation by the 2050 Mesa General Plan.

Safety Concerns

The Travel Shed includes 1/3 of Mesa's high injury network segments and 13 of the 30 high injury intersections. Four of the segments and three of the intersections are in the top ten worst segments and intersections.



WHO LIVES AND WORKS HERE?



HOW ARE PEOPLE TRAVELING



All Trips Work Trips



THE CURRENT SYSTEM AT A GLANCE*



DOWNTOWN MESA

Travel Shed # 1

WHAT HAVE WE HEARD?

- Safety concerns, caused by speeding vehicles or unsafe connections to transit, is a concern for residents.
- Desire to develop Main Street and Downtown Mesa into a vibrant space that integrates placemaking, additional pedestrian and bicycle facilities and amenities; supports high frequency transit; and increases green spaces.
- Enhance public transit access to major regional centers and increase connectivity between the light rail and major bus routes.
- Increase comfort and connectivity of the bike network, including connecting paths to Riverview Park, along Main Street, and along the Tempe Canal.
- Add bike lanes and shared-use paths along Main Street and the Tempe Canal. Prioritize protected bike lanes on arterials and on wide roads with high vehicle speeds.
- Increase comfortability by providing shade, adding amenities, and increasing crossing times at signals in areas with heavy pedestrian and bicycle traffic.

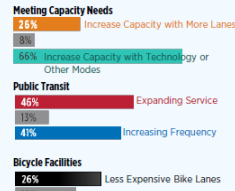
What Investments Do Residents Want to See?

- Improvements to reduce vehicle congestion
- Pedestrian and bicycle safety improvements
- More sidewalks and bike lanes

What Goals Are Most Important?

- Manage and Maintain

What Trade-Offs Do Residents Prefer?



WHAT DOES THE TRAVEL SHED NEED TO ADDRESS CURRENT AND FUTURE MOBILITY NEEDS?

To address current and future mobility needs, it is imperative that the Downtown Mesa Travel Shed focus on:

Addressing safety and congestion concerns in a developing area

Creating ways for people to get to and through the Travel Shed efficiently and safely

Incorporating transit supportive street design and first-last mile connections

Increasing the comfort and connectivity of walking and biking facilities

DOWNTOWN MESA

Roadway Improvement Needs



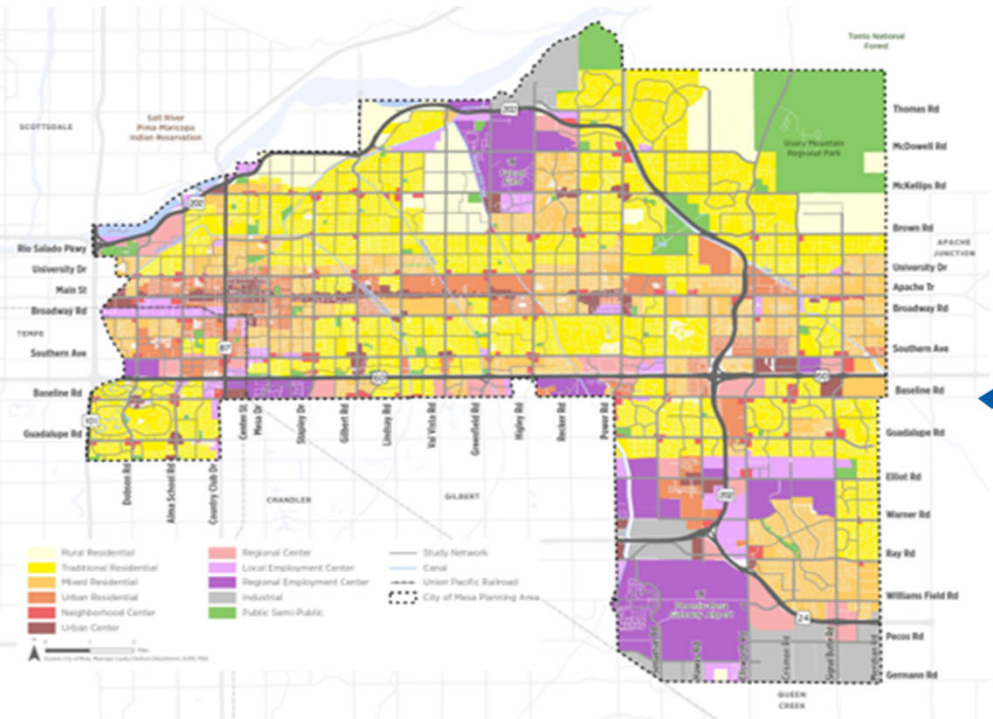
DOWNTOWN MESA

Roadway Improvement Needs

ID	Project Location	Road Type	Description
Short-Term Improvement Needs			
6	Mesa Drive: Main Street to McKellips Road	Widening	Complete improvements along the Mesa Drive Corridor tying into the newly improved Mesa Drive to the south. Add additional lanes at intersections to increase capacity and enhance safety. Improve the modalization characteristics for pedestrians, bicyclists, transit and vehicular traffic along Mesa Drive. Identified in MGA's RSTIP. Main Street to Brown Road segment is CIP # CPO64.
7	Broadway Road: Lesueur to Spar	Widening	Add additional lanes at the intersection of Broadway/Slapley to increase capacity and enhance safety; replace pavement; accommodate bike lanes and pedestrian sidewalks. CIP # CPO66, construction anticipated to commence in 2024.
8	Southern Avenue & Country Club Drive Roadways	Reconstruction	Reconstruct two major arterials where pavement is failing. The two segments are Southern Avenue, Alma School Road to Center Street and Country Club Drive US 80 to 1st Avenue. CIP # CPO84.
15	Slapley Drive: University Drive to McKellips Road	Reconstruction	Reconstruct arterial street segments that are at the end of their life cycle and can no longer be maintained by conventional means. Concurrent work will include upgrades to any concrete ramps, driveways and sidewalks to current ADA standards. Utilize street topology guidelines to reconfigure roadway to possibly accommodate appropriate biking and walking facilities. CIP # CPO89.
16	Slapley Drive: Slapley Drive to Gilbert Road	Reconstruction	Reconstruct arterial street segments that are at the end of their life cycle and can no longer be maintained by conventional means. Concurrent work will include upgrades to any concrete ramps, driveways and sidewalks to current ADA standards. Utilize street topology guidelines to reconfigure roadway to possibly accommodate appropriate biking and walking facilities. CIP # CPO90.
18	Slapley Drive: Main Street to University Drive	Reconstruction	Reconstruct arterial street segments that are at the end of their life cycle and can no longer be maintained by conventional means. Concurrent work will include upgrades to any concrete ramps, driveways and sidewalks to current ADA standards. CIP # CPO92.
24	Broadway Road: Country Club to Mesa Drive	Widening	Construct lane extensions around the intersections and various roadway improvements from Country Club to Mesa Drive.
26	Mesa Drive: Brown Road to McKellips Road	Safety	Identified as a high-injury segment. Evaluate in the City of Mesa Safety Action Plan to determine appropriate safety improvements.
27	Dobson Road: Broadway Road to Main Street	Safety	Identified as a high-injury segment. Evaluate in the City of Mesa Safety Action Plan to determine appropriate safety improvements.
64	Slapley Drive and University Drive	Intersection	Construct an additional left turn lane and right turn lane in all directions to reduce traffic congestion at this intersection. This project has been identified as a Regional Transportation Plan project. CIP # CPO64M.
65	Country Club Drive and University Drive	Intersection	Construct intersection improvements to reduce traffic congestion and improve safety. CIP # CPO65M.
71	University Drive and Mesa Drive	Safety	Conduct project assessment to identify and implement intersection safety improvements.
74	Rio Salado Parkway and Dobson Road	Safety	Conduct project assessment to identify and implement intersection safety improvements.
79	Brown Road and Mesa Drive Intersection	Safety	Conduct project assessment to identify and implement intersection safety improvements.
Mid-Term Improvement Needs			
31	Broadway Road: Dobson Road to Rosemont Road	Safety	Identified as a high-injury segment. Evaluate in the City of Mesa Safety Action Plan to determine appropriate safety improvements.
32	Southern Avenue: Home Street to Slapley Drive	Safety	Identified as a high-injury segment. Evaluate in the City of Mesa Safety Action Plan to determine appropriate safety improvements.
86	Rio Salado Parkway and Alma School Road	Safety	Conduct project assessment to identify and implement intersection safety improvements.
90	Southern Avenue and Gilbert Road	Intersection	Conduct project assessment to identify and implement intersection safety improvements.
92	Brown Road and Center Street Intersection	Safety	Conduct project assessment to identify and implement intersection safety improvements.
100	Broadway Road and Mesa Drive	Safety	Identified as a high-injury segment. Evaluate in the City of Mesa Safety Action Plan to determine appropriate safety improvements.
103	Alma School Road and Main Street	Safety	Identified as a high-injury segment. Evaluate in the City of Mesa Safety Action Plan to determine appropriate safety improvements.
105	Broadway Road and Dobson Road	Safety	Identified as a high-injury segment. Evaluate in the City of Mesa Safety Action Plan to determine appropriate safety improvements.
Long-Term Improvement Needs			
14	Broadway Road: Country Club Drive to Alma School Road	Reconstruction	Reconstruct roadway.
15	Alma School Road and UPRR Railroad	Crossing	Grade-separated crossing over UPRR railroad.
16	Dobson Road and UPRR Railroad	Crossing	Grade-separated crossing over UPRR railroad.
57	Broadway Road and UPRR Railroad at Center Street	Crossing	Grade-separated crossing over UPRR railroad.
58	Southern Avenue and UPRR Railroad	Crossing	Grade-separated crossing over UPRR railroad.

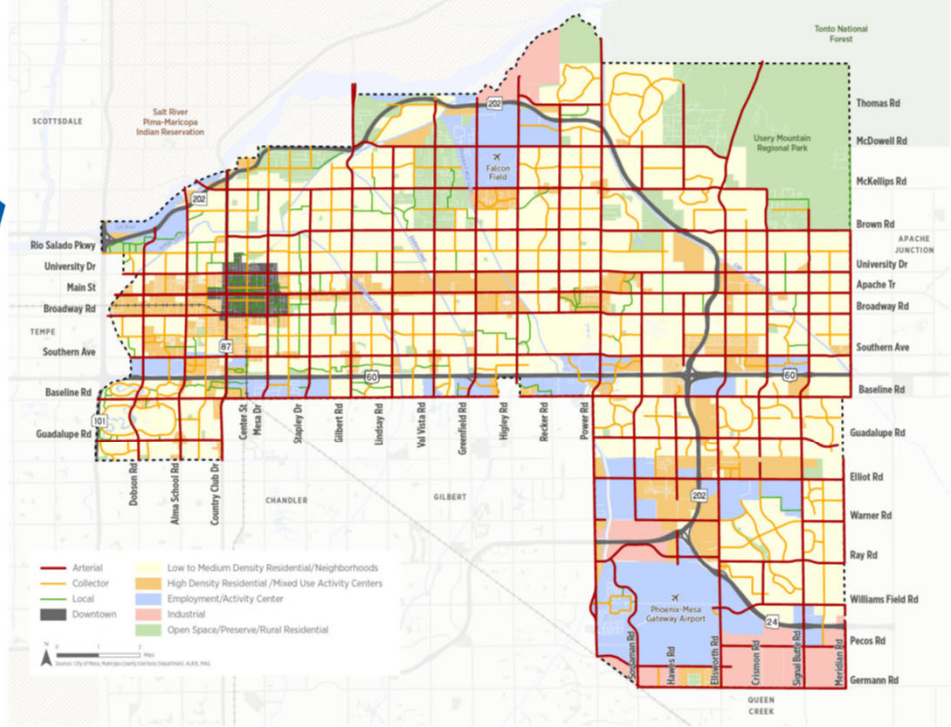
Mesa Transportation Master Plan

Integration with the General Plan

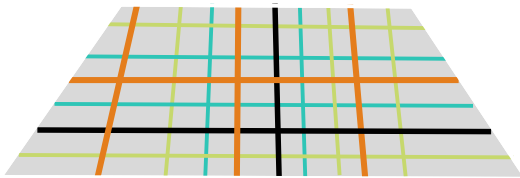


General Plan Placetypes

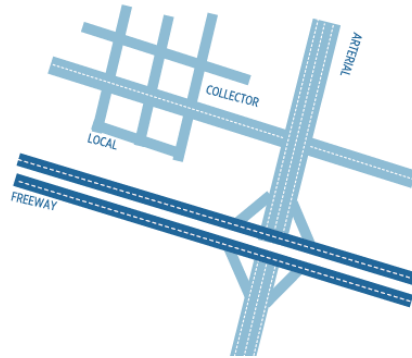
TMP Street Contexts



STREET TYPOLOGIES PROCESS



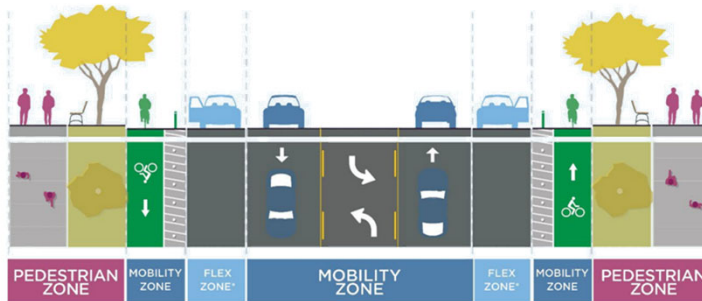
Complete Networks



Functional Classification



Street Context



Street Typologies

Defines Street Elements
(Travel lanes, transit infrastructure, sidewalks, bike lanes, etc.)

STREET TYPOLOGIES PROCESS



City of Mesa Street Typologies

A context-sensitive approach for designing Mesa's streets

Customizing Streets with Typologies

- 1 Determine functional classification and street context of corridor

$$\text{Car} + \text{Bike} = \text{Bike}$$

Locate typology guidance:
Arterials: Page 11
Collectors: Page 23
Locals: Page 35

- 2 Determine modal priorities

Reference complete modal networks from the Mesa TMP and identify overlap/connections.

- 3 For existing corridors, gather existing ROW width, traffic volumes, and safety data

Total Available Corridor Right-of-Way (ROW)



Current and Projected Traffic Volumes



Specific Safety Issues: Speeding, high pedestrian crash rates, nearby schools, frequent driveways, etc.

- 4 Allocate space to accommodate all users

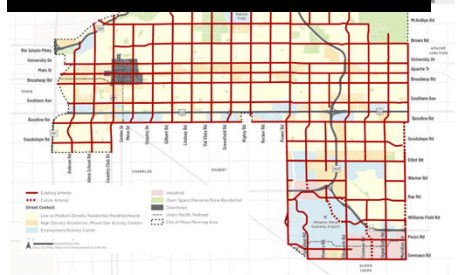
Identify Minimum:

- Travel lanes needed
- Sidewalk width
- Landscape width
- Bicycle facilities

- 5 Allocate remaining street right of way

Allocate space based on modal overlay, safety and land use context.

Functional Classification & Street Context



Arterials

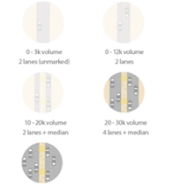
- 1 High Density Residential / Mixed Use Activity Centers

Arterials in High Density Residential / Mixed Use Activity Centers provide access to local destinations and services. Many trips from adjacent neighborhoods to access these destinations can be made by walking or biking, so safety and convenience for these users should be balanced with the street's overall efficiency. Safe crossings for people walking and access to transit are important considerations.

Key Characteristics



How many lanes are needed?



Street Design Elements

Element	Preferred	Allowable Range
Travel Lane Width	11'	10'-12'
Raised Median (Preferred)	14'-20'	11'-24'
Striped Median (Allowable)	12'-14'	11'-16'
Preferred: Protected Bike Lane or Shared Use Path		
Allowable: Buffered Bike Lane		
Protected Bike Lane Width	6'	5'-6'
Protected Bike Lane Buffer**	4'	2'-6'
Shared-Use Path Width**	12'	8'-16'
Buffered Bike Lane Width	6'	5'-8'
Buffered Bike Lane Buffer	4'	2'-6'
Sidewalk Width	8'	5'-10'
Landscape Buffer Width	8'-12'	3'-15'
Posting Frequency	800'	800'-1300'

*From vertical alignment with the bikeway and sidewalk.

Street Typology Details

Arterials

Pedestrian Guidance

Arterials must provide a safe environment for people walking from their homes to transit and other key destinations.

Crosswalk Type: High visibility crosswalks (A) are recommended.

Pedestrian Signals: Leading pedestrian intervals and automatic pedestrian signals are recommended near schools, parks, and areas with significant numbers of people walking.

Mid-Block Crossings: Mid-block crossings can be used to create direct connections between neighborhoods and important destinations for people walking, such as parks, playgrounds, and schools. Because of the speeds and volumes on arterials, signalized or pedestrian hybrid beacon crossings (B) with high visibility signage and a refuge island are needed to create safe mid-block crossings.

Traffic Calming Guidance

Additional design tools may be needed to ensure speeds are safe for all street users on arterials.

Center Medians: Planted center medians (C) narrow the field of vision for drivers and can result in slower vehicle speeds.

Signal Coordination: Signals should be timed to enable the progression of vehicles traveling

Guidance for Pedestrian & Traffic Calming Facilities



Bicycle Guidance

Arterials provide the dual function of enabling access to local destinations and connecting neighborhoods to the wider bike network.

Bikeway Option 1: Off-Street Shared Use Paths (D) should be applied where bike and pedestrian volumes are anticipated to be low and very limited crossings (driveways and intersections) are present.

Bikeway Option 2: Off-Street Cycle Ways (E) are one-way bicycle-only paved paths on each side of street with buffers between them and the street and sidewalks. They should be used in areas of higher bike and pedestrian activity.

Bikeway Option 3: If off-street bikeway is not feasible, an on-street lane with a buffer and concrete curb protection (F) is recommended.

Trail Crossings: Where trails cross arterials, consider a raised center median to slow vehicles and create a two-stage crossing for bicyclists. Trail crossings may also benefit from user-activated Hybrid Beacons or Rectangular Rapid Flashing Beacons (C).

Median Guidance

Arterials often have a raised median with center turn lanes. Design of the raised median should focus on visually narrowing the street, which slows traffic, and also provide pedestrian and bicycle refuge space for two-stage crossings. Green infrastructure and street lighting can also be included in raised medians.

Transit Guidance

Guidance for Bicycle Facilities

Final Stage of TMP Development

- *Currently Finalizing Future Needs and Street Typologies*
- *Draft Final Document In May through June*
- *Phase III Community Engagement In June and July*
- *Final Approved Document Anticipated in July – August*
 - *Executive Summary*
 - *Main Document*
 - *Appendices for Technical Items*
 - *Implementation Strategies*

WHERE WE ARE AT



Data Collection
Existing Conditions
Vision and Goals
Phase I Outreach



Future Conditions

Phase II Community Engagement

Future Needs
Street Typologies
(Under Review)

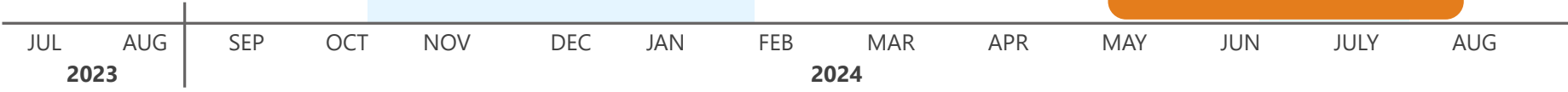


Final TMP Document
(In Progress)

Phase III Community Engagement

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B





QUESTIONS?



CITY OF MESA 2050 TRANSPORTATION MASTER PLAN

