



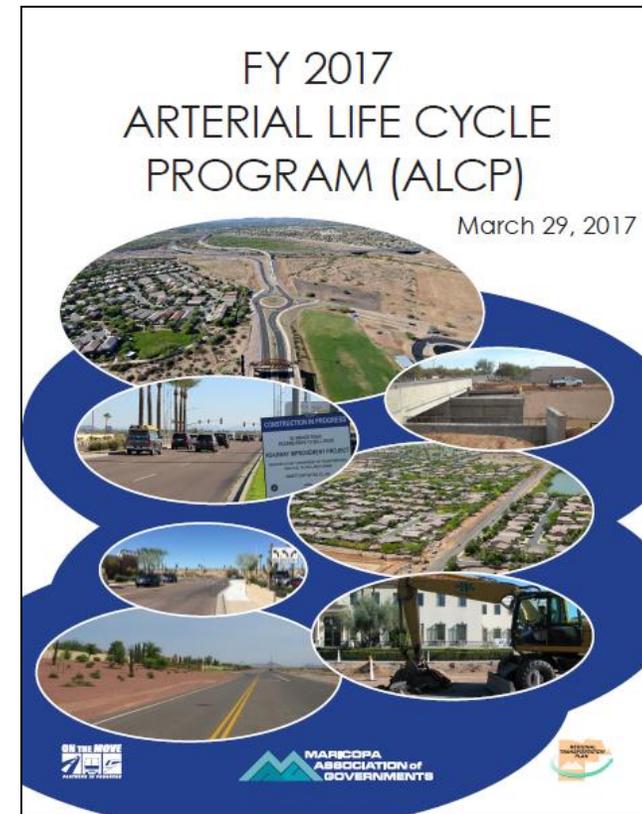
Arterial Life Cycle Program

Project Removal and Gilbert Road Light Rail Extension Funding Reallocation Request

Street Committee
May 9, 2017

ALCP Overview

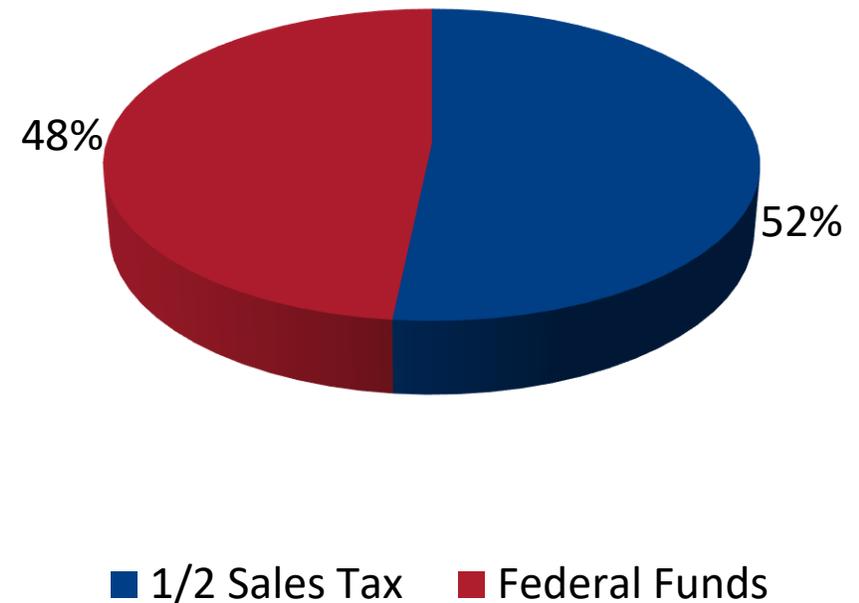
- The Arterial Life Cycle Program (ALCP) is the financial management tool for the arterial component of the Regional Transportation Plan
- In October 2012, funding for the Gilbert Road light rail extension was added to the ALCP
 - Sixteen City of Mesa arterial projects were removed
 - Federal funding was reallocated to design and construct a light rail extension in Mesa to Gilbert Road (1.9 miles)
- This agenda item represents a request to remove five additional projects and reallocate their funding to the Gilbert Road light rail extension



ALCP Funding Overview

- The ALCP is funded with three sources:
 - The ½ cent sales tax (Regional Area Road Fund or RARF)
 - Federal Surface Transportation Program (STP) funds
 - Federal Congestion Mitigation and Air Quality Improvement (CMAQ) funds
- Arizona Revised Statutes firewall sales tax funds from being transferred to another mode
 - There is no such restriction on federal funds
 - Federal funds are guided by the ALCP Policies and Procedures

ALCP Funding Sources



Gilbert Road Extension – Cost History



- \$162.3 m was made available with the original reallocation
 - \$153.0 federal
 - \$9.3 local
- Original cost estimate: \$133 m
- 60% cost estimate: \$162.6 m
- 90% cost estimate: \$184.0 m

Gilbert Road Extension – Cost Detail

- The \$21,392,907 increase in project cost can largely be attributed to schedule delay and increase in project scope
 - Project was delayed for two years due to a lawsuit
 - Stakeholder engagement resulted in additional roadway and pedestrian needs
 - Project duration was extended by six months

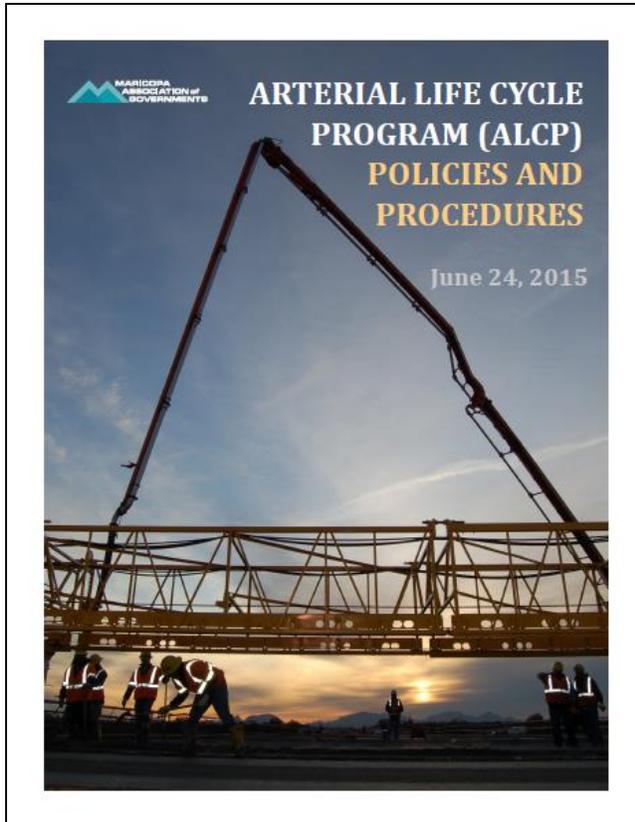
| Element | Cost Increase |
|-------------------------------------|---------------------|
| New retention basins and bio-swales | \$2,500,000 |
| Urban design developments | \$2,040,537 |
| Utility work | \$3,816,064 |
| Curb, gutter, and sidewalk | \$1,004,503 |
| General conditions | \$9,481,517 |
| Professional services costs | \$2,550,286 |
| Total | \$21,392,907 |

Arterial Analysis and Project Removal

- To fund the Gilbert Road light rail cost increase, the City of Mesa has requested that additional arterial projects be removed from the ALCP
- Mesa conducted a review of their remaining ALCP projects through the end of the funding horizon
- It was determined that there were five intersection projects that were not needed because traffic volumes and crash data did not warrant any improvements before 2025

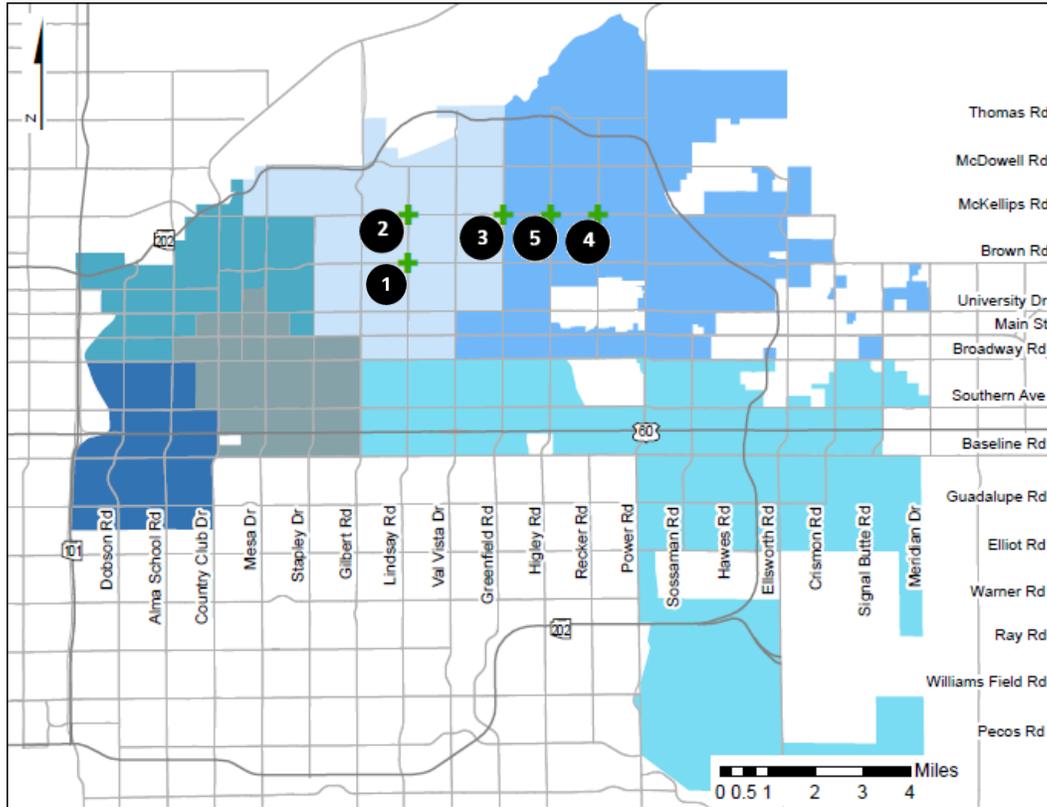
| Project | Federal Funding (2016\$) |
|-------------------------------|--------------------------|
| Lindsay Rd at Brown Rd | \$3,918,744 |
| McKellips Rd at Lindsay Rd | \$6,137,127 |
| McKellips Rd at Greenfield Rd | \$2,630,034 |
| McKellips Rd at Higley Rd | \$6,310,059 |
| McKellips Rd at Recker Rd | \$3,393,429 |
| Total | \$22,389,393 |

ALCP Project Change Process



- Changes to projects must be evaluated by the committees and use the ALCP Project Change Tool
- The tool was designed to compare one street project to another
 - The tool is not able to compare street projects to a light rail project
 - A separate analysis was developed

Arterial Projects proposed to be removed from the ALCP



Background

The City of Mesa has identified five arterial intersection projects that they indicate are not needed within the planning horizon of the ALCP (2025). The city has requested that the projects be removed from the program and the funding be reallocated to the Gilbert Road light rail extension. The proceeding slides represent an overview and technical analysis of the five projects.

- 1 Brown Road at Lindsay Road
- 2 McKellips Road at Lindsay Road
- 3 McKellips Road at Greenfield Road
- 4 McKellips Road at Recker Road
- 5 McKellips Road at Higley Road

Performance Analysis

- Travel Time Index '10-'15
- Speed '10 – '15
- Delay '10-'15

Safety Analysis

Incidents

- Fatal
- Serious
- All

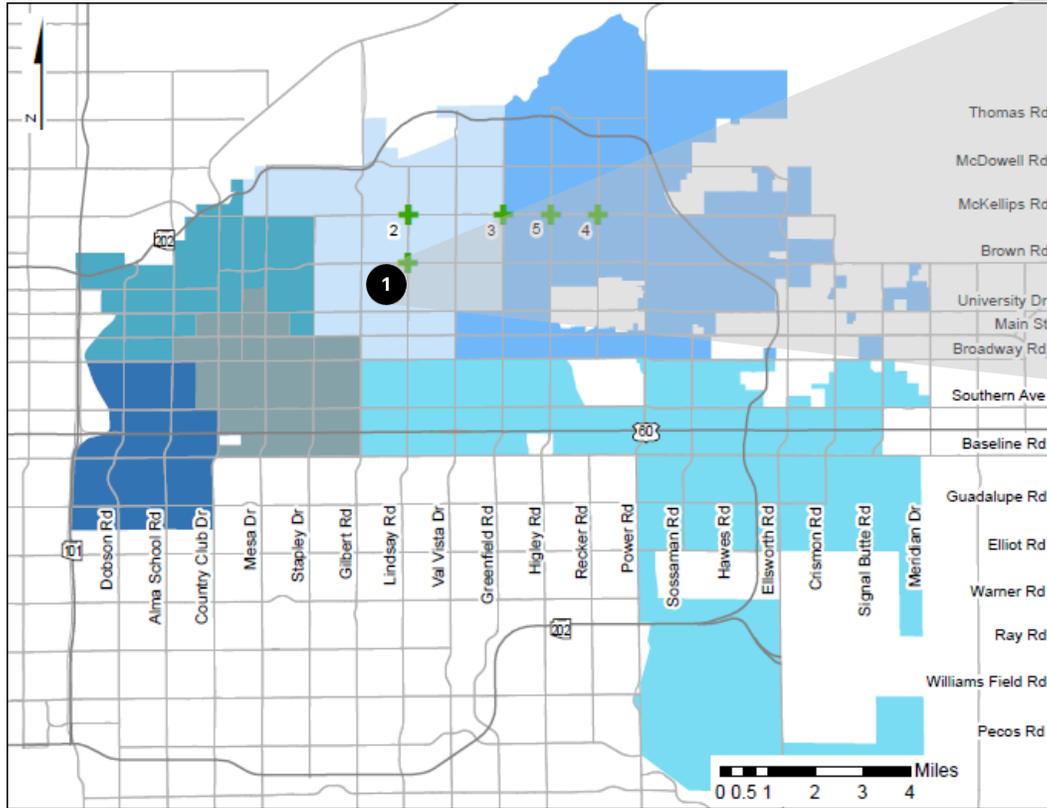
Land Use

- Existing Land Use
- Future Land Use
 - Major Employment Centers

Intersection Amenities

- Left turn Lane Y/N
- Pedestrian Detection Y/N
- Bus Route? Frequency

1 Brown Road at Lindsay Road



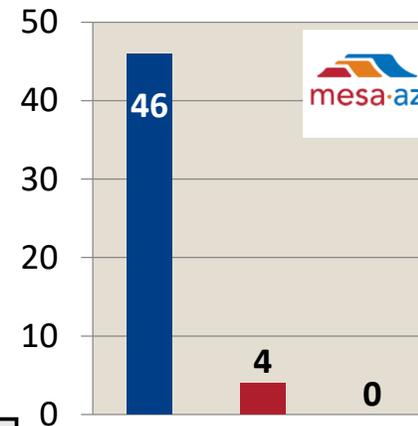
Description

This project represents an intersection improvement at Brown Road and Lindsay Road. Mesa has indicated that data does not show high-crash issues at this intersection and traffic volumes do not justify any widening.

Performance Data

| Measure | AM Peak | | | Mid Day | | | PM Peak | | |
|------------------------------------|---------|-------|----------|---------|-------|----------|---------|-------|----------|
| | 2010 | 2015 | % Change | 2010 | 2015 | % Change | 2010 | 2015 | % Change |
| Speed (mph) | 39.18 | 33.95 | -13.35% | 37.18 | 33.68 | -9.42% | 38.06 | 34.42 | -9.56% |
| Travel Time Index | 1.15 | 1.20 | 4.37% | 1.22 | 1.21 | -0.40% | 1.19 | 1.18 | -0.11% |
| Free Flow Delay (seconds per mile) | 12.05 | 17.85 | 48.08% | 17.20 | 18.64 | 8.34% | 14.87 | 16.35 | 9.92% |

Safety # Incidents



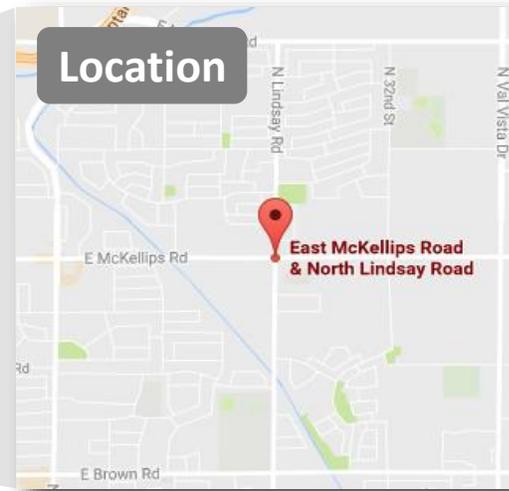
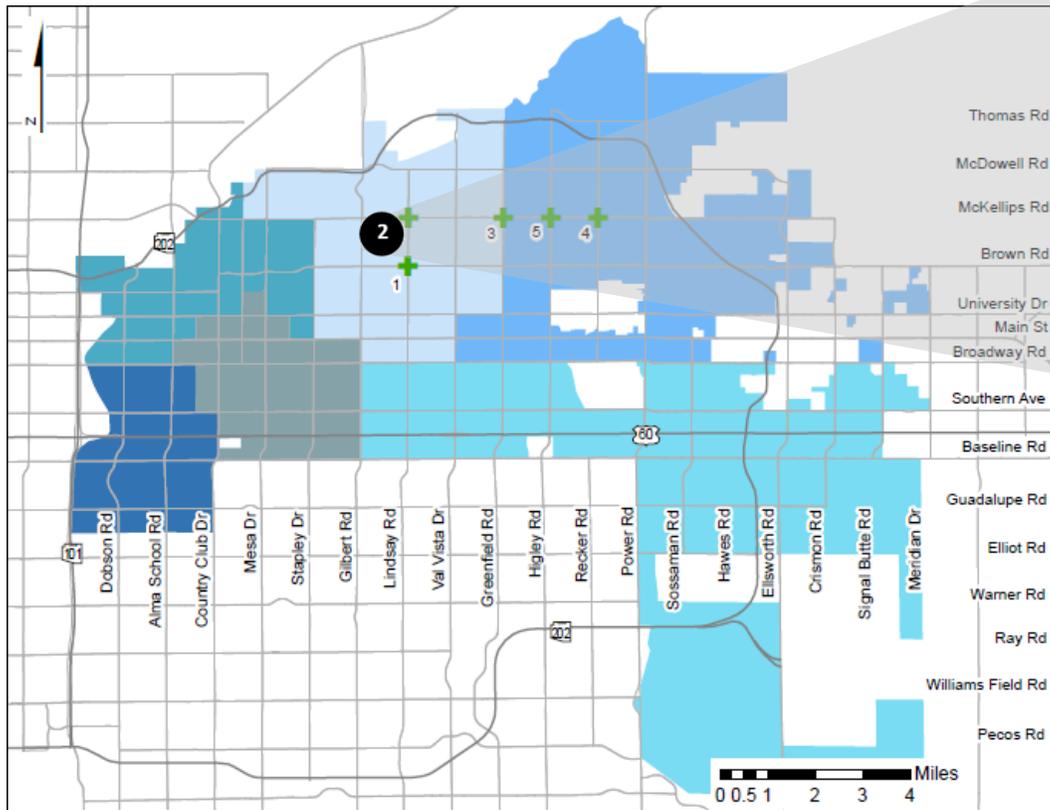
- All Incidents
 - Serious
 - Fatal
 - Fatal/Serious Rank: 81
 - All Incidents Rank: 93
- Ranking Based on Relative Disutility Factors by Injury Severity Level (MAIS)



Land Use

- Educational
- Religious
- Commercial
- Medical

2 McKellips Road at Lindsay Road



Description

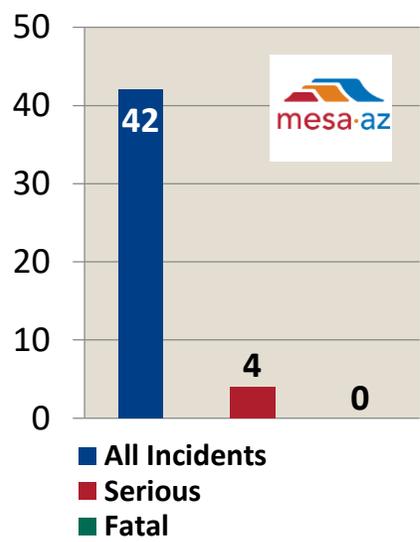
This project represents an intersection improvement at McKellips Road and Lindsay Road. Mesa has indicated that data does not show high-crash issues at this intersection and traffic volumes do not justify any widening.

Performance Data

| | AM Peak | | | Mid Day | | | PM Peak | | |
|------------------------------------|---------|-------|----------|---------|-------|----------|---------|-------|----------|
| | 2010 | 2015 | % Change | 2010 | 2015 | % Change | 2010 | 2015 | % Change |
| Speed (mph) | 38.72 | 34.51 | -10.87% | 36.33 | 34.24 | -5.76% | 37.16 | 34.31 | -7.67% |
| Travel Time Index | 1.16 | 1.21 | 3.92% | 1.24 | 1.22 | -1.62% | 1.21 | 1.22 | 0.34% |
| Free Flow Delay (seconds per mile) | 13.11 | 18.12 | 38.28% | 19.16 | 19.01 | -0.79% | 16.93 | 18.69 | 10.36% |

Speed (mph)
Travel Time Index
Free Flow Delay (seconds per mile)

Safety # Incidents



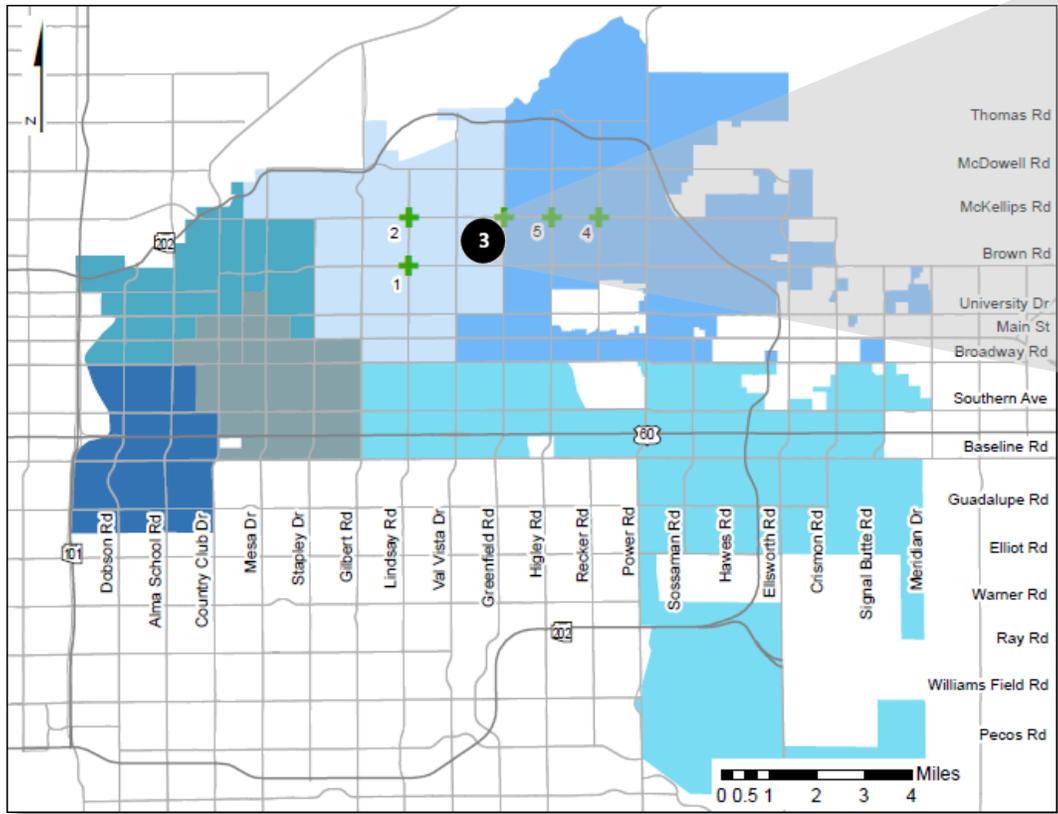
● Fatal/Serious Rank: 84
● All Incidents Rank: 106
Ranking Based on Relative Disutility Factors by Injury Severity Level (MAIS)



Land Use

- Educational
- Religious
- Commercial
- Industrial
- Recreational

3 McKellips Road at Greenfield Road



Description

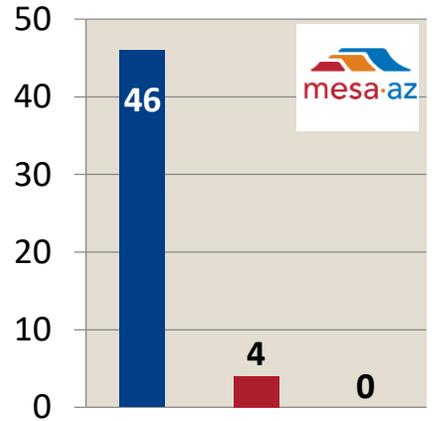
This project represents an intersection improvement at McKellips Road and Greenfield Road. Mesa has indicated that data does not show high-crash issues at this intersection and traffic volumes do not justify any widening.

Performance Data

Speed (mph)
Travel Time Index
Free Flow Delay (seconds per mile)

| AM Peak | | | Mid Day | | | PM Peak | | |
|---------|-------|----------|---------|-------|----------|---------|-------|----------|
| 2010 | 2015 | % Change | 2010 | 2015 | % Change | 2010 | 2015 | % Change |
| 40.20 | 37.44 | -6.85% | 37.82 | 36.64 | -3.12% | 38.97 | 37.19 | -4.56% |
| 1.12 | 1.11 | -0.95% | 1.19 | 1.14 | -4.75% | 1.16 | 1.12 | -3.20% |
| 9.66 | 9.59 | -0.66% | 15.39 | 11.85 | -23.01% | 12.52 | 10.42 | -16.71% |

Safety # Incidents



- Fatal/Serious Rank: 82
- All Incidents Rank: 95

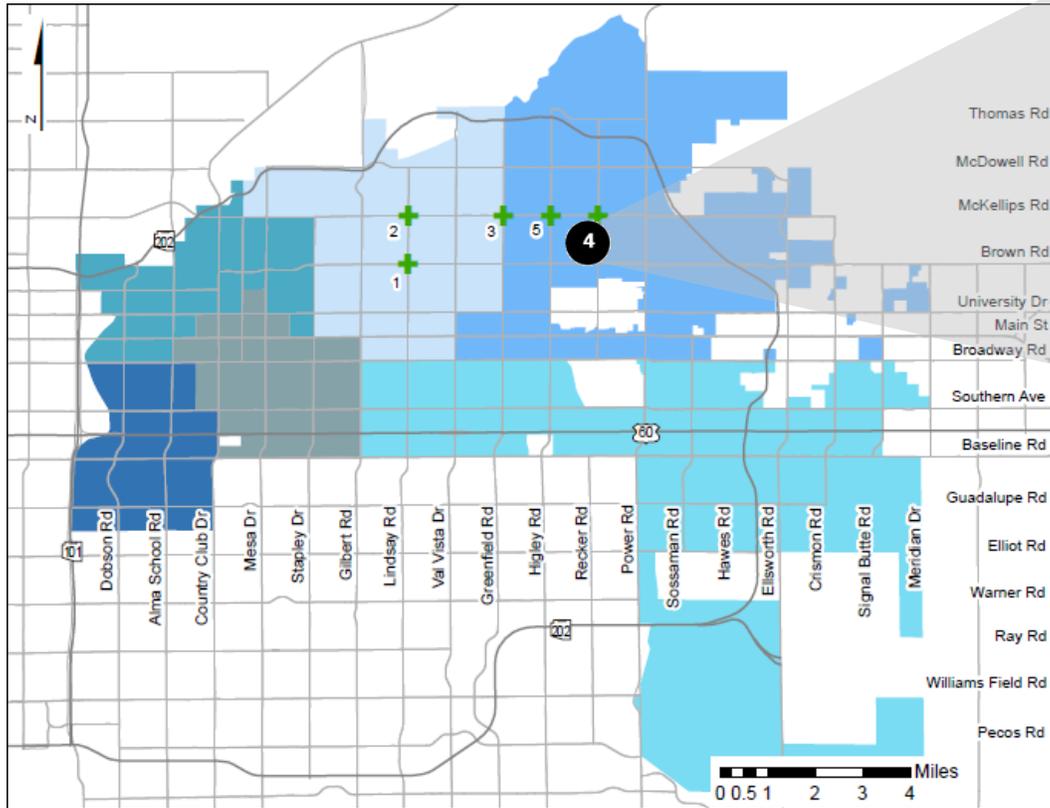
Ranking Based on Relative Disutility Factors by Injury Severity Level (MAIS)



Land Use

- Agriculture
- Military
- Commercial
- Airport
- Recreational

4 McKellips Road at Recker Road



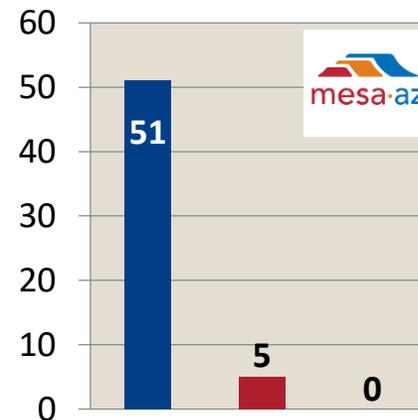
Description

This project represents an intersection improvement at McKellips Road and Recker Road. Mesa has indicated that data does not show high-crash issues at this intersection and traffic volumes do not justify any widening.

Performance Data

| | AM Peak | | | Mid Day | | | PM Peak | | |
|------------------------------------|---------|-------|----------|---------|-------|----------|---------|-------|----------|
| | 2010 | 2015 | % Change | 2010 | 2015 | % Change | 2010 | 2015 | % Change |
| Speed (mph) | 37.64 | 34.99 | -7.05% | 35.12 | 33.60 | -4.35% | 36.58 | 34.85 | -4.74% |
| Travel Time Index | 1.20 | 1.16 | -3.20% | 1.28 | 1.21 | -5.84% | 1.23 | 1.16 | -5.46% |
| Free Flow Delay (seconds per mile) | 15.73 | 14.06 | -10.61% | 22.54 | 18.40 | -18.39% | 18.47 | 14.56 | -21.17% |

Safety # Incidents



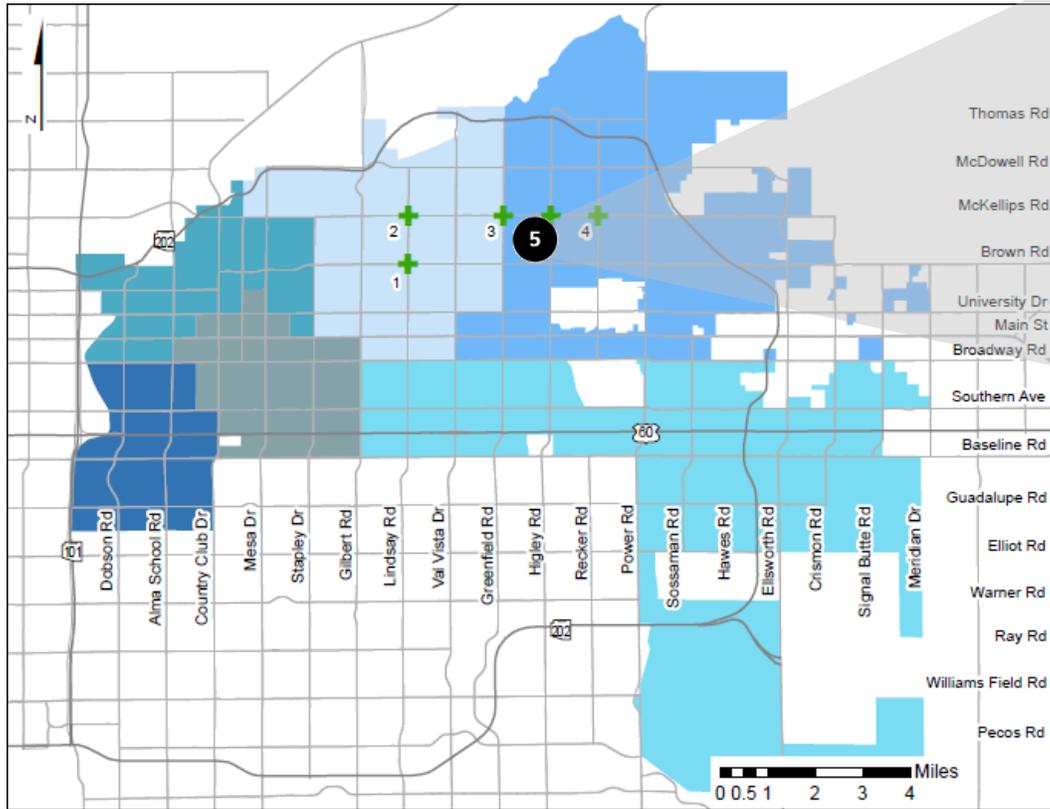
- Fatal/Serious Rank: 55
 - All Incidents Rank: 71
- Ranking Based on Relative Disutility Factors by Injury Severity Level (MAIS)



Land Use

- Industrial
- Medical
- Commercial
- Religious
- Recreational

5 McKellips Road at Higley Road



Description

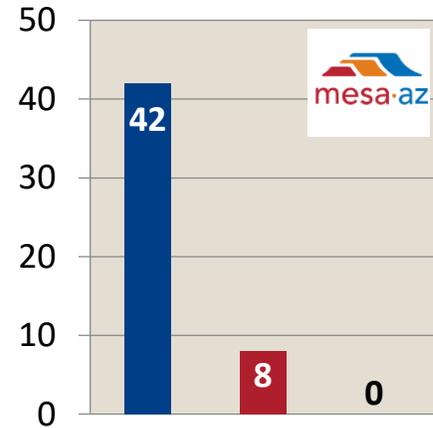
This project represents an intersection improvement at McKellips Road and Higley Road. Mesa has indicated that data does not show high-crash issues at this intersection and traffic volumes do not justify any widening.

Performance Data

| | AM Peak | | | Mid Day | | | PM Peak | | |
|------------------------------------|---------|-------|----------|---------|-------|----------|---------|-------|----------|
| | 2010 | 2015 | % Change | 2010 | 2015 | % Change | 2010 | 2015 | % Change |
| Speed (mph) | 40.20 | 37.44 | -6.85% | 37.82 | 36.64 | -3.12% | 38.97 | 37.19 | -4.56% |
| Travel Time Index | 1.12 | 1.11 | -0.95% | 1.19 | 1.14 | -4.75% | 1.16 | 1.12 | -3.20% |
| Free Flow Delay (seconds per mile) | 9.66 | 9.59 | -0.66% | 15.39 | 11.85 | -23.01% | 12.52 | 10.42 | -16.71% |

Speed (mph)
Travel Time Index
Free Flow Delay (seconds per mile)

Safety # Incidents



■ All Incidents
■ Serious
■ Fatal
● Fatal/Serious Rank: 19
● All Incidents Rank: 107
 Ranking Based on Relative Disutility Factors by Injury Severity Level (MAIS)



Land Use

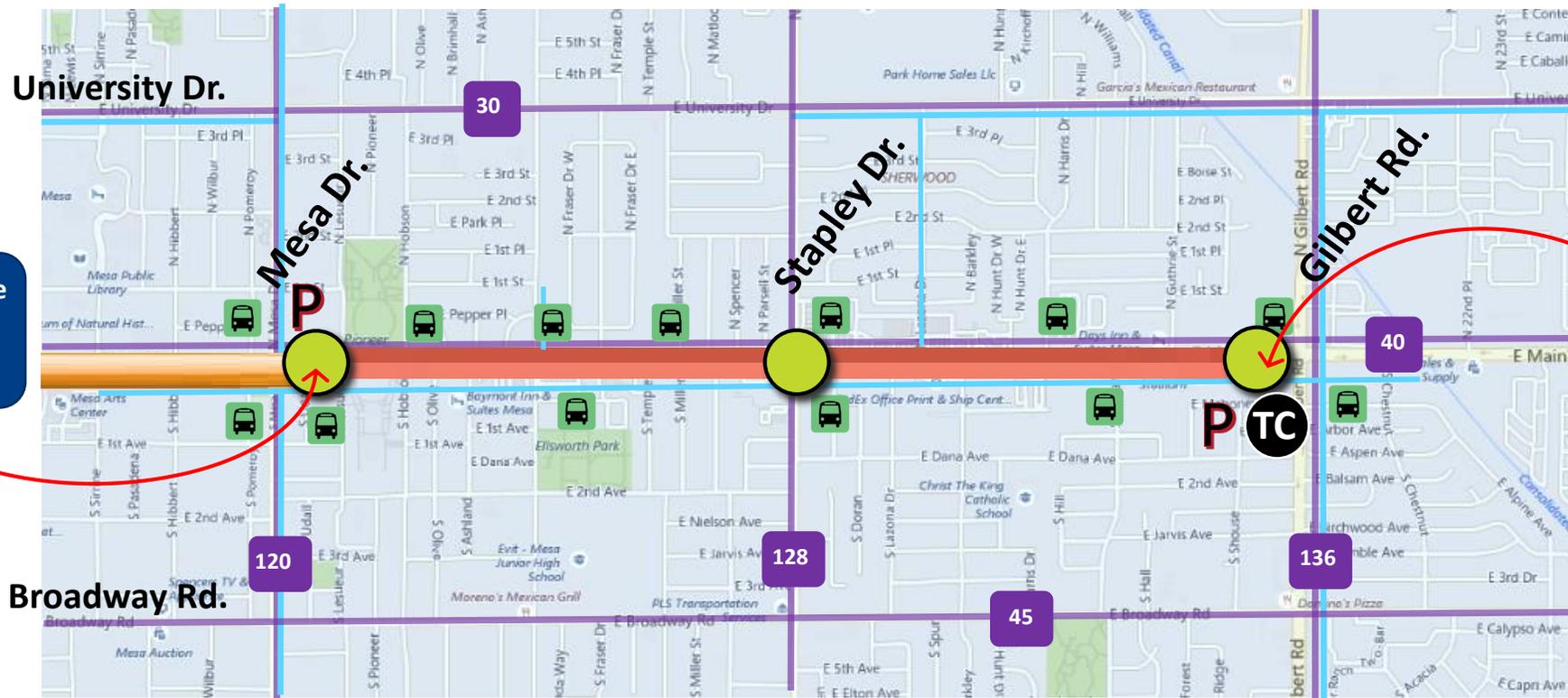
- Industrial
- Recreational
- Agricultural
- Educational
- Commercial
- Medical
- Airport
- Religious

Gilbert Road Light Rail Extension

- The 1.9 mile extension is forecast to increase total light rail ridership by 6% and Mesa boardings by 40%
- Stations will be added at Stapley Drive and Gilbert Road
- The Gilbert Road station will also include a Park-and-Ride and Transit Center

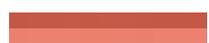


Station / Alignment Area Characteristics



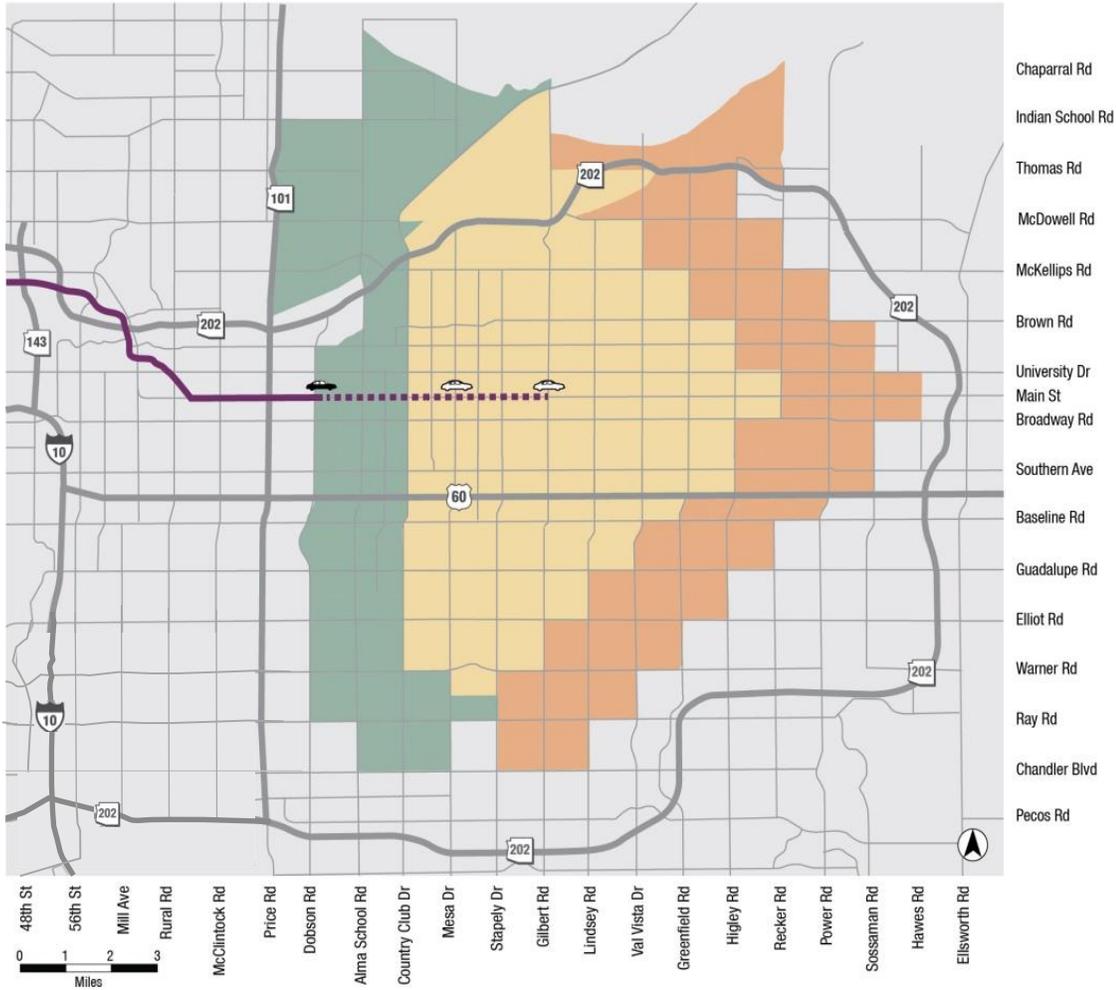
Mesa Dr. Park and Ride
 448 Auto Spaces
 12 Bike Racks

Gilbert Rd. Park and Ride
 500 Auto Spaces
 Transit Center includes
 Bike Racks

-  Existing LRT line
-  Bus Route
-  Proposed LRT line extension
-  Bus Stops along Light Rail alignment
-  LRT Station
-  Bike Lane
-  Park and Ride
-  Transit Station

Park and Ride Analysis / LRT Ridership

Travel Shed for the Sycamore park and Ride



 Expanded coverage area with a Park and Ride site at Gilbert Road Station

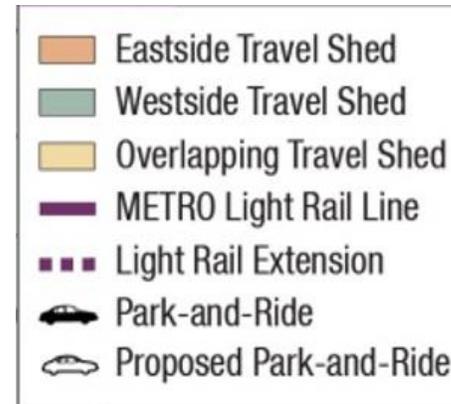
- Average weekday ridership forecast between 19th/Montebello and Gilbert Road:

Total LRT riders: 49,000 - 49,500

- Drive Access to Mesa Stations*:

2,700 – 3,100 person trips

*Sycamore station demand modeled versus actual

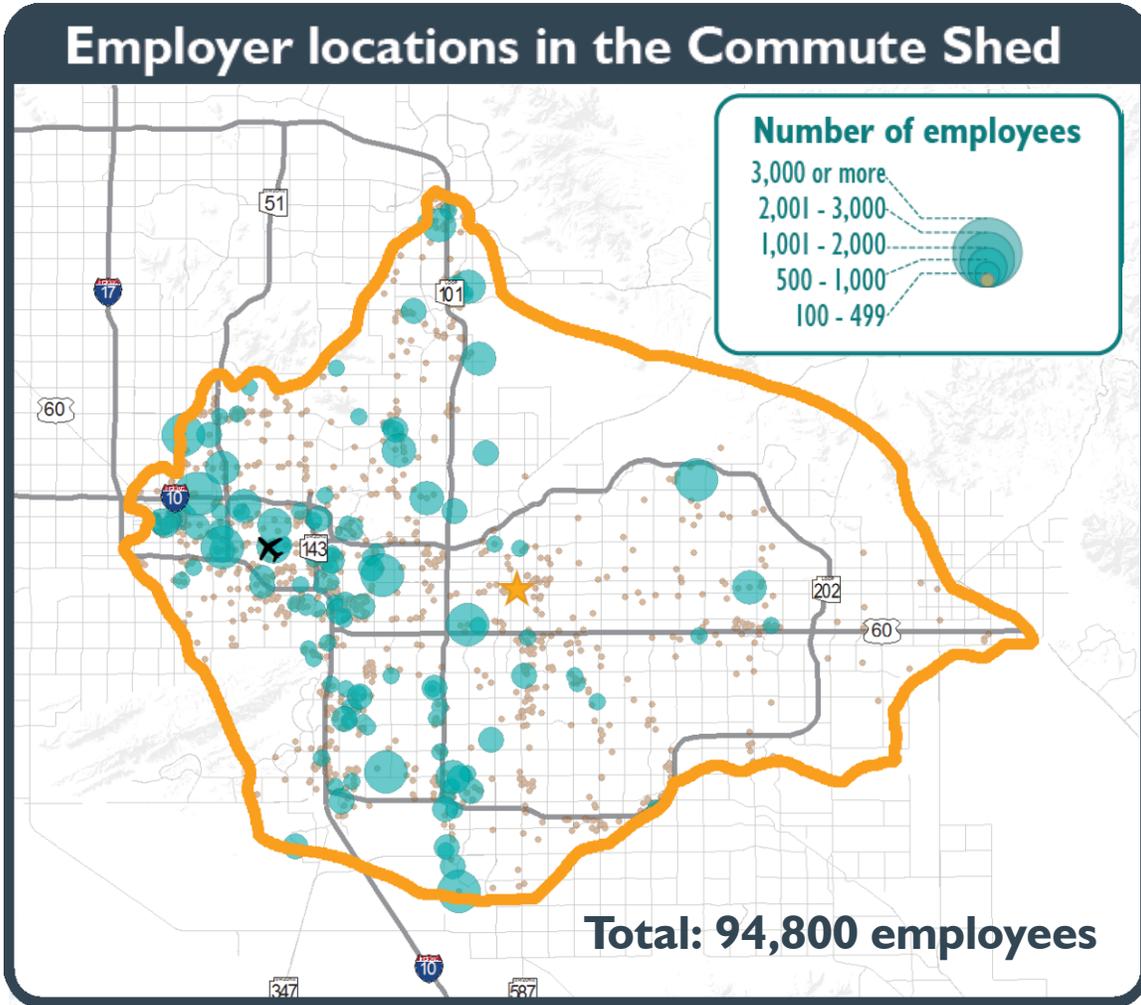


Based on a Mesa license plate survey of the Sycamore Park and Ride



Commute Shed Analytics

30 minute A.M. Inbound Travel Time to Main St. and Country Club Dr, Mesa



| Top 10 Employers | Jobs |
|--|--------|
| Banner Health | 18,500 |
| Intel Corporation | 11,300 |
| Arizona State University | 10,800 |
| Mesa Unified School District 4 | 9,100 |
| Wells Fargo | 8,700 |
| County Of Maricopa | 8,100 |
| Bank Of America | 8,100 |
| City Of Phoenix | 7,600 |
| Jpmorgan Chase Bank National Association | 6,400 |
| State Of Arizona | 6,200 |

Source: 2015 MAG Employer Database, numbers rounded

| Year | Jobs |
|------|-----------|
| 2015 | 1,040,000 |
| 2020 | 1,151,000 |
| 2030 | 1,282,000 |
| 2040 | 1,382,000 |
| 2050 | 1,476,000 |

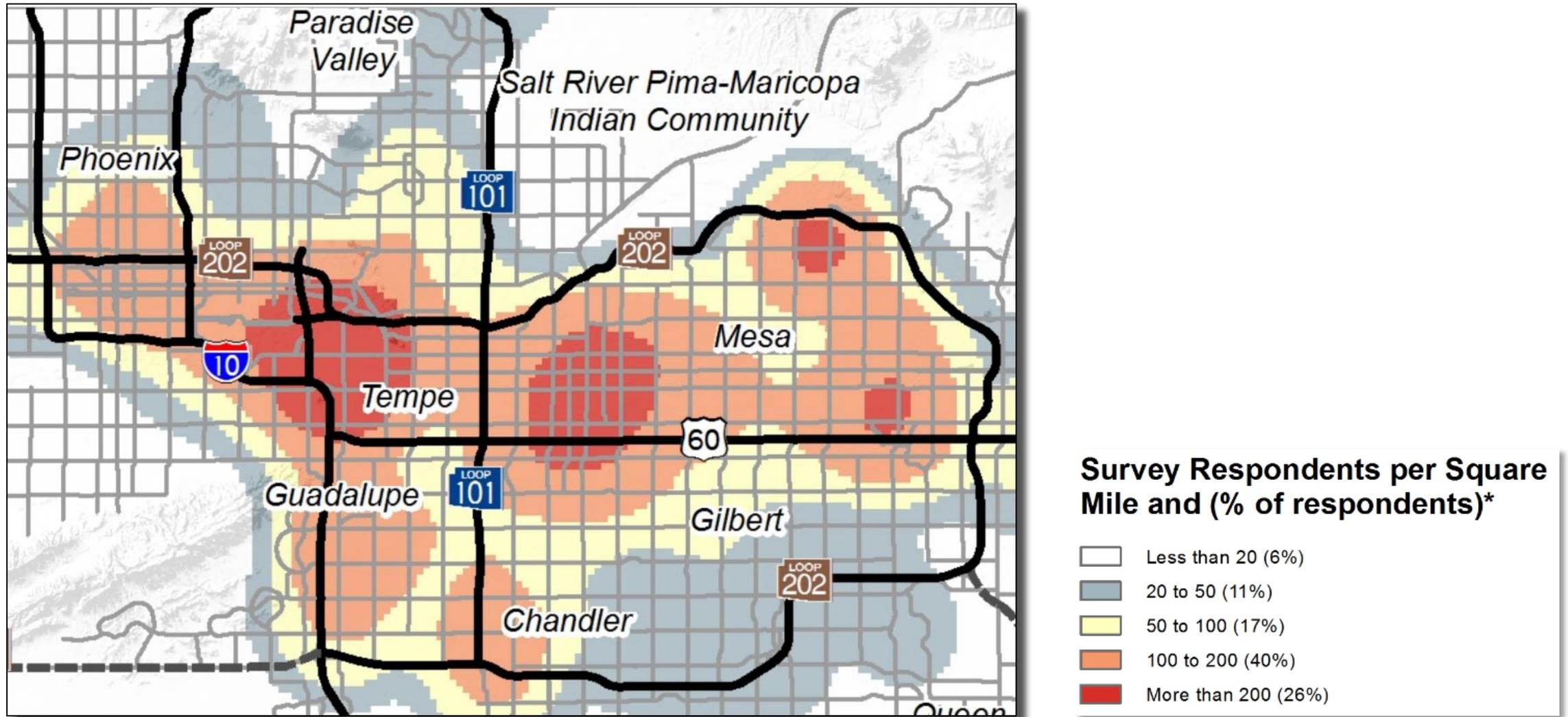
Source: Maricopa Association of Governments

Worker Commute Flows



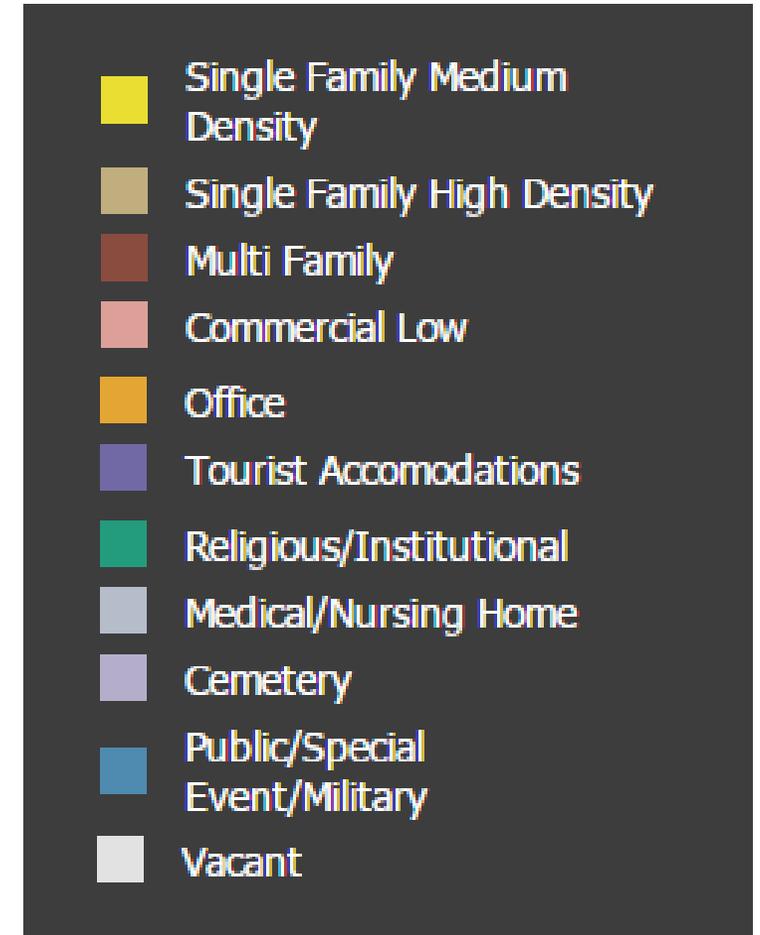
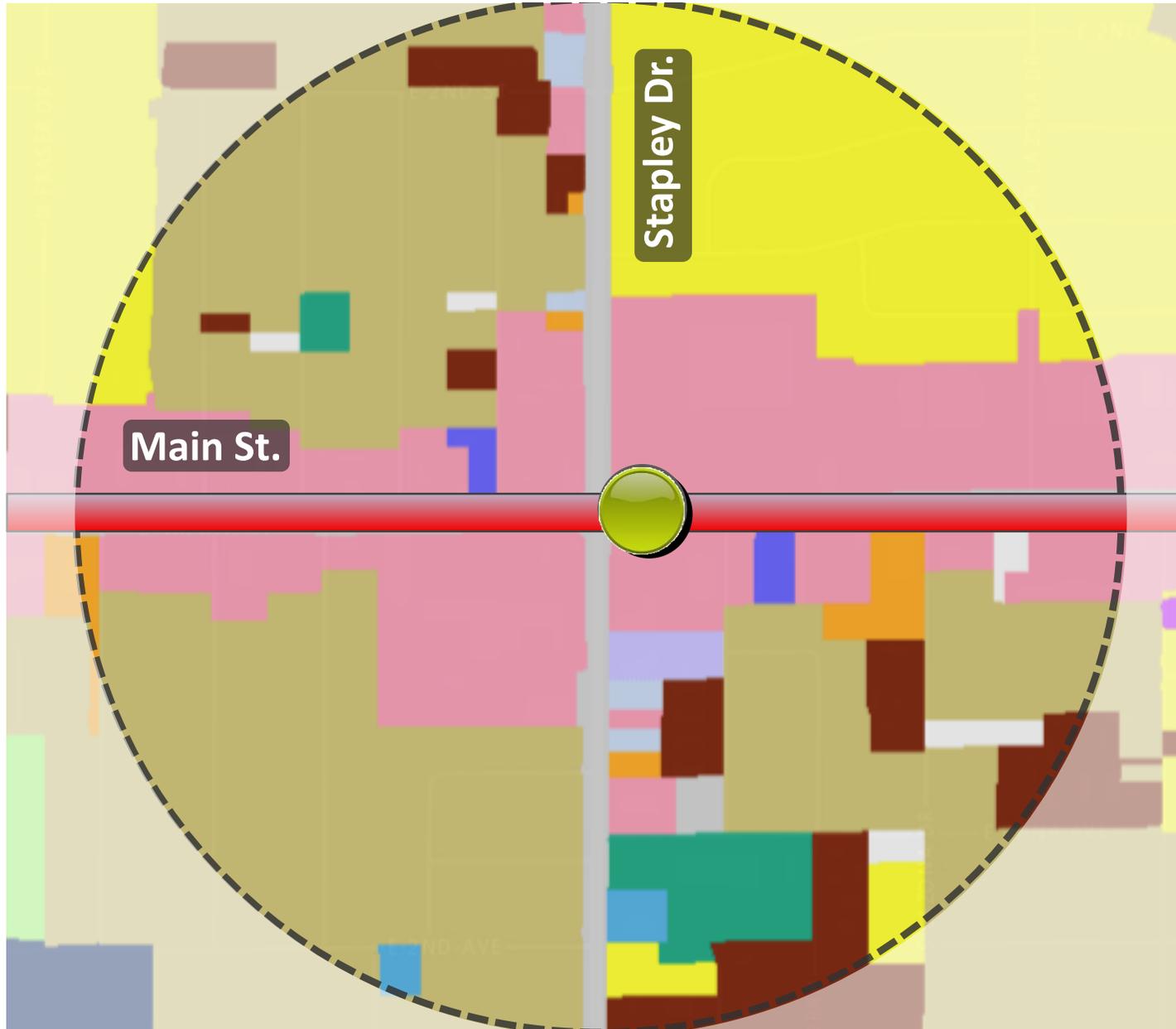
Source: U.S. Census Bureau, Longitudinal-Employer Household Dynamics Program (LEHD) Origin-Destination Employment Statistics (LODES)

Where People Living in Mesa Work

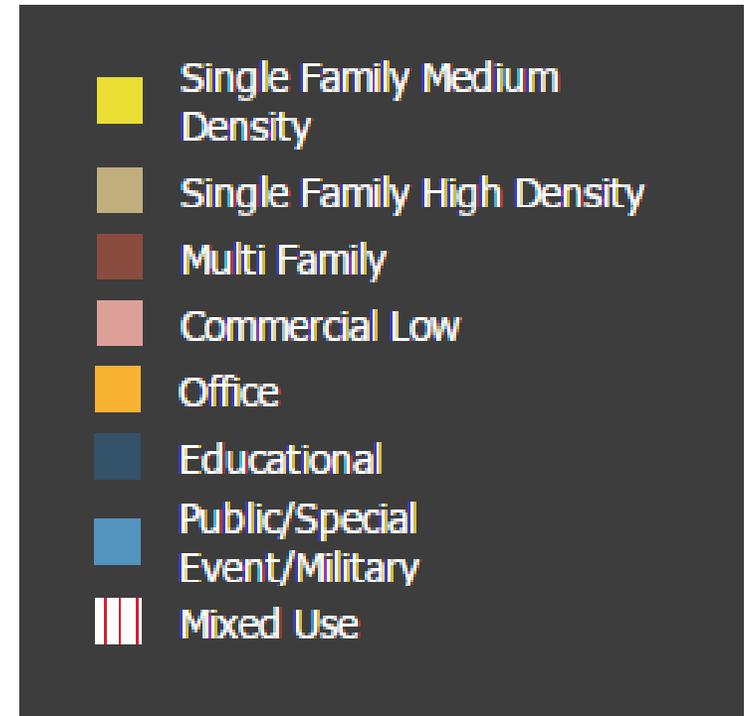
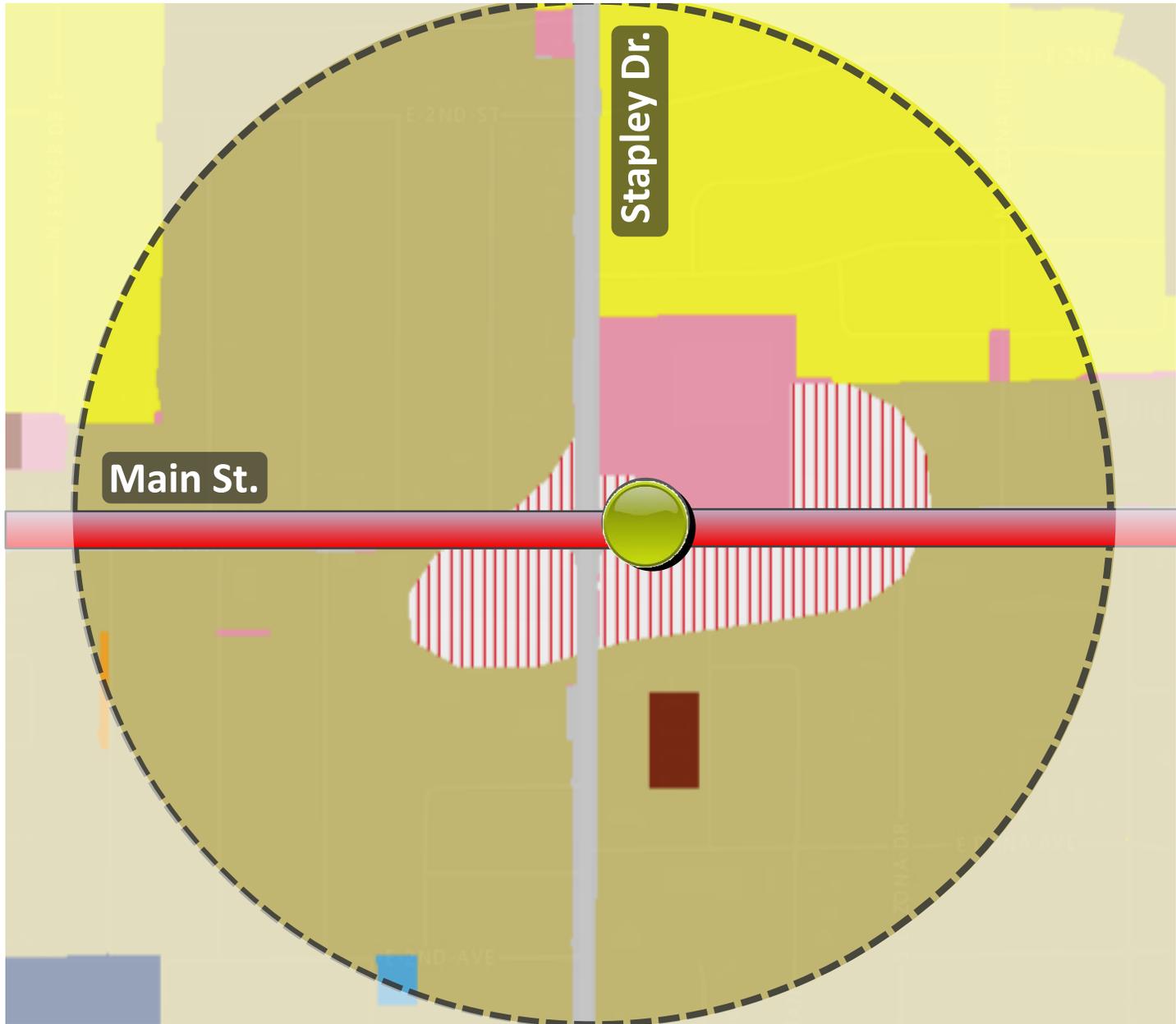


Source: 2015 Maricopa County TRP Survey Data for businesses with 50 or more employees

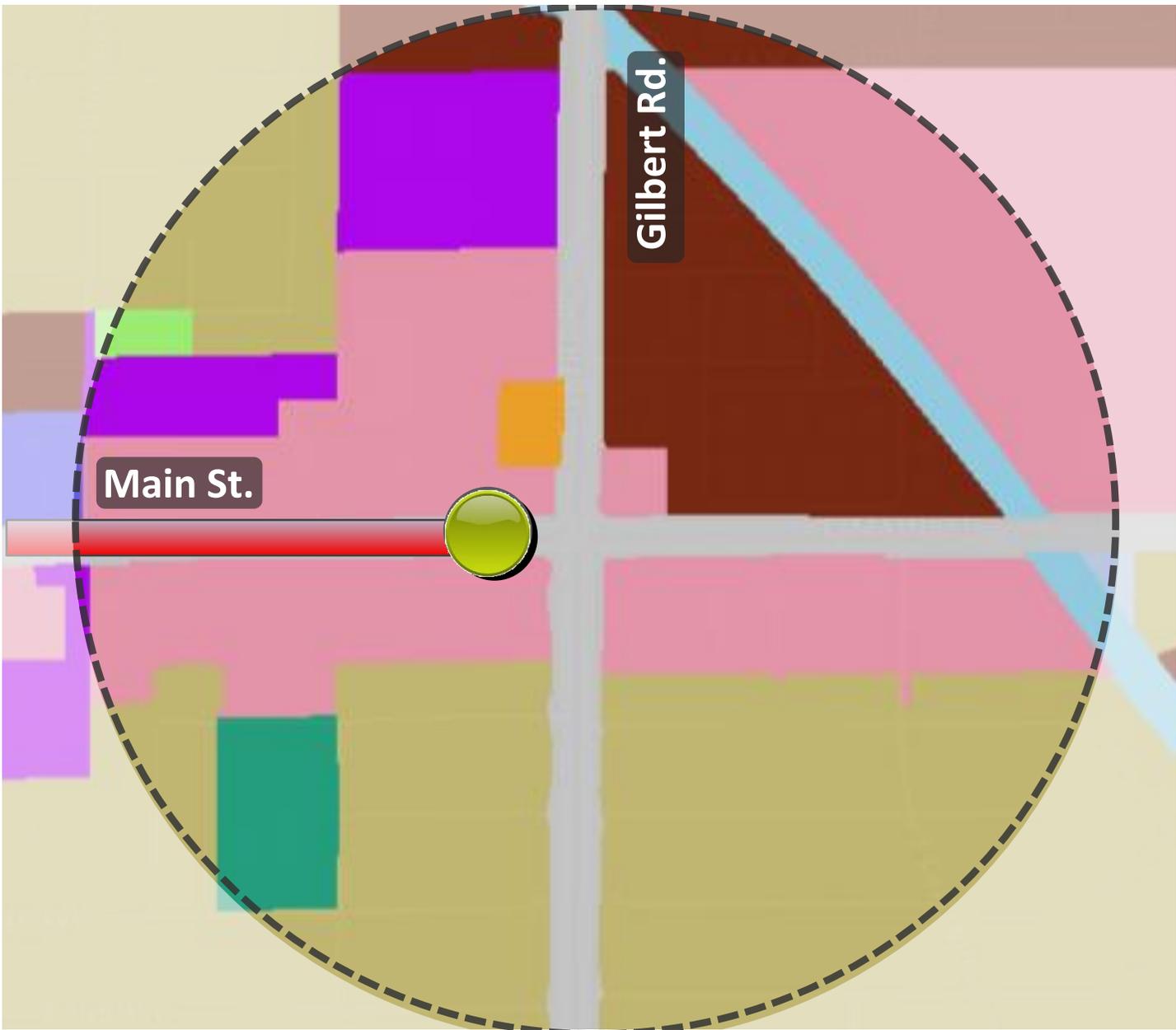
Stapley Dr. Station: Current Land Use



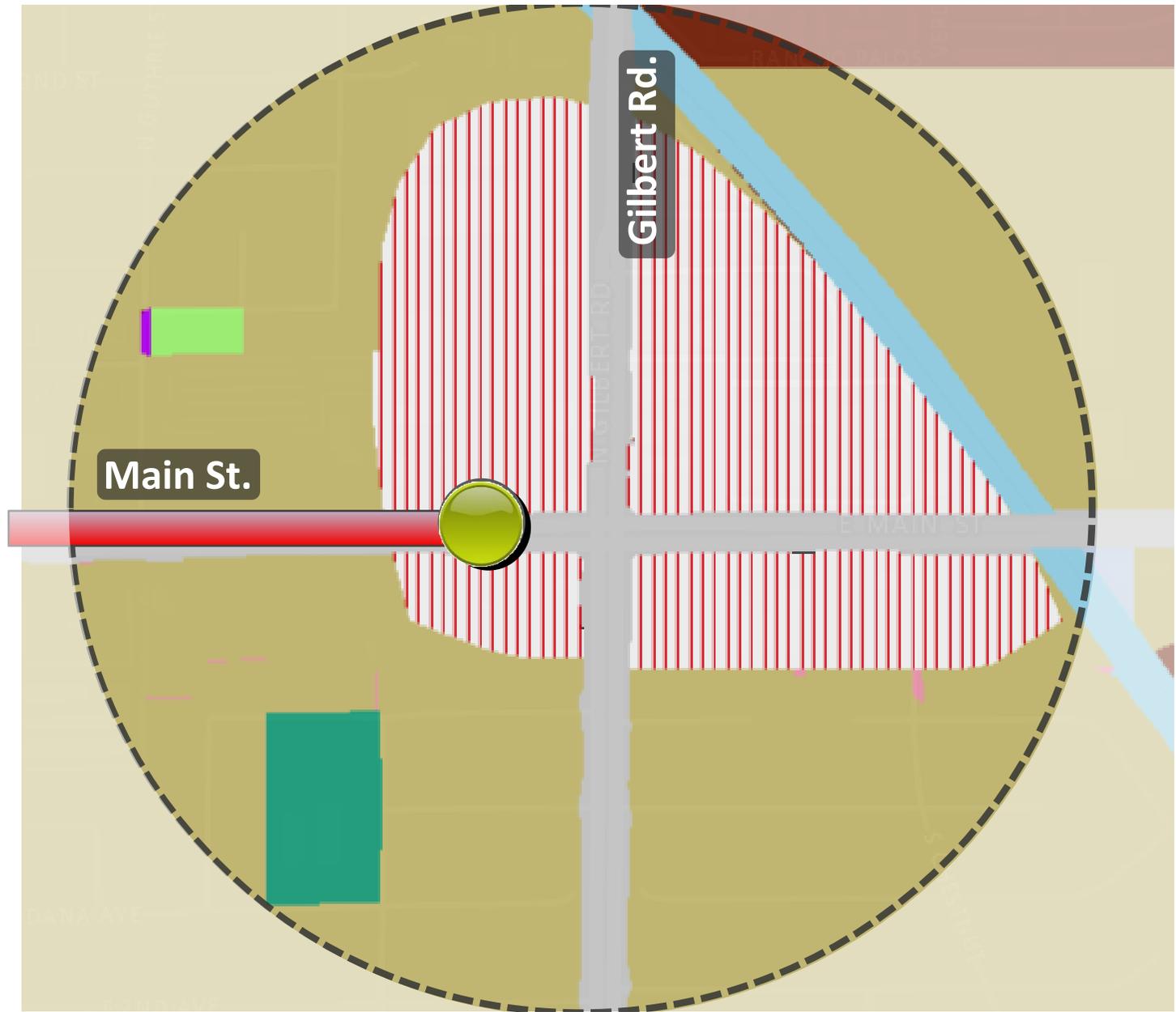
Stapley Dr. Station: Future Land Use



Gilbert Rd. Station: Current Land Use



Gilbert Rd. Station: Future Land Use



- Single Family High Density
- Multi Family
- Industrial
- Religious/Institutional
- Medical/Nursing Home
- Active Open Space
- Mixed Use

Action Needed:

Recommend approval to remove five (5) Arterial Life Cycle Program intersection improvement projects and reallocate the \$22,389,393 (2016\$) in programmed federal Surface Transportation Program (STP) and Congestion Mitigation and Air Quality Improvement Program (CMAQ) funding to the Gilbert Road light rail extension project as part of the fall 2017 amendments to the Fiscal Year (FY) 2018 Arterial Life Cycle Program, FY 2018 - 2022 Transportation Improvement Program and FY 2040 Regional Transportation Plan, presenting in draft form, contingent on a finding of air quality conformity.



Arterial Life Cycle Program Project Removal and Gilbert Road Light Rail Extension Funding Reallocation Request

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