



SUSTAINABILITY & TRANSPORTATION COMMITTEE

September 23, 2019

The Sustainability & Transportation Committee of the City of Mesa met in the lower level meeting room of the Council Chambers, 57 East 1st Street, on September 23, 2019 at 4:01 p.m.

COMMITTEE PRESENT

Kevin Thompson, Chairman
Francisco Heredia

COMMITTEE ABSENT

Jeremy Whittaker

STAFF PRESENT

Christopher Brady
Dee Ann Mickelsen
Jim Smith

Chairman Thompson excused Committeemember Whittaker from the entire meeting.

1. Items from citizens present.

There were no items from citizens present.

2-a. Hear a presentation, discuss and provide a recommendation on the Electric Energy Integrated Resource Plan and Action Plan:

Energy Resources Department Director Frank McRae introduced Energy Resources Program Manager Anthony Cadorin who displayed a PowerPoint presentation. **(See Attachment 1)** He commented the purpose of the presentation today was to seek input from the Sustainability and Transportation Committee and gather a recommendation to forward the Integrated Resource Plan (IRP) and Action Plan to the City Council for adoption.

Mr. McRae explained the IRP is a process that started 30 years ago that provides discipline for utilities to meet customers resource needs. He stated there are options that are important to gain customer input in order to analyze and propose a plan to determine the best options: (See Page 3 of Attachment 1)

1. Determine resource needs.
2. Identify available options to meet needs.
3. Account for customer and community input.

He specified an IRP is an energy utility best practice, and City Council approval is required to keep the federal hydro supply contracts.

Mr. Cadorin pointed out two key Western Area Power Association (WAPA) requirements in order to keep the hydro power contracts: identify and compare practicable energy efficiency and energy supply resource options, and provide ample opportunity for full public participation. (See Page 4 of Attachment 1)

Mr. Cadorin stated it has been difficult to get customers to come to the public informational meetings, so it was decided to try a different approach by holding an online survey first which asked customers if they are willing to pay more for renewable resources. He reported 50% of customers were not willing to pay more and the other half were willing to pay more. He stated 10% of the customers who were willing to pay more, would pay whatever it takes to get as many renewable resources as possible. (See Page 5 of Attachment 1)

Mr. Cadorin pointed out a couple of changes since 2012 starting with the implemented Photovoltaic Net Metering Program where customers can add solar to rooftops of commercial buildings and homes. He noted there is 800 kilowatts of rooftop solar within the service territory. (See Page 6 of Attachment 1)

Mr. Cadorin indicated in FY 2009/10 the power bill for all customers combined was just over \$16,500,000 and by increasing competition and reducing costs with innovative ideas, the cost was \$12,500,000 for FY 2018/19. (See Page 7 of Attachment 1)

Mr. McRae listed different resource options for generation and transmission for industries the City contracts. He stated there is a contract with WAPA for hydro resources and transmission services. He outlined competitive proposals with companies such as Citi, Shell, Salt River Project (SRP), and Constellation to provide power for City of Mesa residents. He pointed out the services the Energy Resources Department can control such as solar projects, installation of natural gas generators for emergency services and avoidance of high cost energy/peak hours, and energy storage within the City's service area. He looked at what would influence customers to reduce or shape the way in which energy is consumed such as solar generation, customer-owned storage such as batteries, and energy efficiency and conservation programs. (See Page 8 of Attachment 1)

In response to a question from Chairman Thompson, Mr. McRae explained the City buys very little power from SRP and receives most of it from Constellation and Shell.

Mr. Cadorin reported the most important part of the IRP is the Action Plan. He stated a Request for Proposal (RFP) has been issued and three bids were received. He mentioned the bids were not limited to solar and that will make up about six percent of the City's energy mix. (See Page 9 of Attachment 1)

Mr. Cadorin indicated WAPA requires a specific time frame for the action plan, so staff decided on a five-year time frame. He pointed out in a five-year period, Mesa will: (See Page 10 of Attachment 1)

- Continue seeking competitive counterparties.
- Evaluate alternative transmission paths.
- Evaluate the addition of internal generation (solar and/or natural gas) subject to the conditions established in the IRP.

Mr. Cadarin stated a voluntary residential pre-pay rates program has been very successful for those who have lower incomes in Mesa's Electric Service Area (ESA). He noted the City has been actively evaluating City parking lots to install solar. (See Page 11 of Attachment 1)

Mr. Cadarin explained when Mesa's Advanced Metering Infrastructure (AMI) project launches it will enable the City to implement programs to help reduce customer demands such as: (See Page 13 of Attachment 1)

- Residential Time of Use rates
- Commercial Time of Use rates
- Electric Vehicle Charging rates

In response to a series of questions from Committeemember Heredia, Mr. McRae explained the solar project and contract was for City of Mesa facilities serviced by SRP outside of the ESA and the 35% also includes the existing 20% from hydro supply.

City Manager Christopher Brady advised not to add the two percentages together because the specific services are not where the City has to purchase power.

Mr. McRae explained the prior contract with SRP was as a retail customer where SRP would send a bill for each meter. He noted if the City becomes a customer of SRP it would be billed out as a wholesale customer. He stated the prior contract was offered to the City as a customer not an electric utility.

In response to a question from Chairman Thompson, Mr. Brady explained the City would have to talk with SRP about purchasing electric utilities as a wholesaler.

Mr. McRae stated WAPA does not require the City to set aside a certain amount of solar for renewables, they just require the City to have comparisons in order to make the right choice for customers.

In response to multiple questions from Committeemember Heredia, Mr. McRae stated the department is evaluating options for the AMI to offer plans and rates for customers in 2020. He noted it is tough to find incentives for low-income customers in the ESA and the prepay program has many benefits for these types of customers. He mentioned low-income customers are typically not the owners of the property which adds to the difficulty in making investments for energy consumption since they do not pay the electric bill. He added there is not an option to use smart grid features in downtown because there is a different type of metering and billing system than is already developed.

It was moved by Chairman Thompson, seconded by Committeemember Heredia, to forward the Electric Integrated Recourse Plan and Action Plan to Council for review.

Upon tabulation of votes, it showed:

AYES – Thompson-Heredia

NAYS – None

ABSENT – Whittaker

Chairman Thompson declared the motion carried unanimously by those present.

2-b. Hear a presentation, discuss and provide a recommendation on the proposed Streetlight Master Plan.

Transportation Department Director RJ Zeder introduced Streetlight Systems Supervisor Nathan Curtis who displayed a PowerPoint presentation. **(See Attachment 2)** He commented the objectives of the Streetlight Master Plan is to ensure Mesa continues the path of being a “Smart City”, looking at lighting regulations to transition into Light-Emitting Diode (LED) lighting, developing lighting zones, financial analysis for LED conversions and City Code changes to address the lighting and dimming changes.

Mr. Zeder indicated the department has completed research and studies as well as reviewing City requirements to transition into the use of LED lighting and dimming changes around the City.

Mr. Zeder stated two studies were done: one at University Drive and Main Street and the other in the Desert Uplands area along Ellsworth Road. He mentioned Mr. Curtis worked with the consulting team, as well as Mesa Fire and Medical and the Mesa Police Department to look at different opportunities to change the lighting and dimming standards. He noted there was a Public Meeting held in November 2018 and a concern noted by residents is the streetlights within the median along Ellsworth Road are pointed outwards towards the homes versus away. He added because of the lighting problem a wraparound light shield was fabricated to shield the light from expanding into the housing along the road and redirecting it down onto the street. (See Page 4 and 5 of Attachment 2)

Mr. Zeder explained staff used traffic count data to develop a recommendation for potential dimming of lights. He stated staff feels comfortable that they can correlate lower traffic volumes, and to maintain a safe roadway which is the main goal. (See Page 6 of Attachment 2)

Mr. Zeder presented the Lighting Zone Map which represents four lighting zones; Zone One is in the Lehi and Desert Uplands area; Zone Two is located in southeast Mesa where the City has development agreements and the lighting requirements are built into those agreements; Zone Three includes the bulk of the City; and Zone Four includes higher traffic areas. (See Page 7 of Attachment 2)

Mr. Zeder proposed lowering power consumption to 45% on collector streets and 25% on arterial streets in Zone One. He mentioned Council passed an Ordinance authorizing the pilot study and that only allowed the department to test as low as 50% but found that the power consumption could be taken as low as 25%. (See Page 8 of Attachment 2)

In response to a question from Chairman Thompson, Mr. Zeder commented staff will have to come back to Council to lower the lighting to 25%.

Mr. Zeder continued with the Zone Two recommendation which includes Eastmark, Cadence and the Morrison Ranch area to have the power consumption levels brought down to 45%. He added Zone Three would also be dimmed to 45% but at a later time and Zone Four power levels be brought down to 45% but starting an hour later on the arterial streets. He understands there are residents that want the lighting levels even lower, however staff is uncomfortable with that level because the roadways still need to be safe for those travelling at night. (See Pages 9 through 11 of Attachment 2)

Mr. Zeder discussed current streetlight inventory and that metal halide lights are currently used in the Downtown area, LED lights are being installed in the newer construction areas, and any maintenance that involves more than a bulb replacement will be getting a new LED fixture. He highlighted Mr. Curtis' rusted pole replacement program and explained that when the old poles get replaced it is with new LED fixtures. (See Page 12 of Attachment 2)

Mr. Zeder presented information on a new product called Smart Nodes which will allow staff to monitor energy usage, remotely dim and set schedules, and receive outage reports instead of waiting for a resident to report the problem. (See Page 13 of Attachment 2)

Mr. Zeder stated there are two options with the LED conversion: mass conversion with debt financing costing between \$14,600,000 to \$17,500,000 not including the Smart Nodes which will cost \$250 per pole; or a seven-year in-house conversion which would be added into employees' daily tasks without creating an extra labor expense. He estimated the cost as \$6,800,000 without adding in the Smart Nodes. He stated the additional cost of adding the Smart Nodes would run about \$10,000,000. (See Page 14 and 15 of Attachment 2)

Mr. Zeder recommended option two with a seven-year conversion and to amend the City Code to allow for reduced lighting levels. (See Page 16 of Attachment 2)

Mr. Brady commented that based on experience, the cost of technology continues to advance, and the cost of the residential fixtures decrease. He stated phasing the fixtures in over time will allow the City to take advantage of reduced costs or advancements in technology.

In response to a question from Chairman Thompson, Mr. Curtis explained there is a separate facility charge from SRP for light poles and cabinets which are two separate costs.

In response to a question from Chairman Thompson, Mr. Curtis explained the oldest LED fixtures in the City are 10 years old and they are at 96% of the original light output. He stated the lights have 100,000 hours of life which is roughly 20 years.

In response to multiple questions from Committeemember Heredia, Mr. Zeder stated the Smart Nodes could be included in the cost of transitioning all of the lights to LED so there is the ability to diagnose problems and dim the lights efficiently. He confirmed that the City is testing the Smart Nodes in the Desert Uplands and Fiesta District areas.

It was moved by Chairman Thompson, seconded by Committeemember Heredia, to forward the Streetlight Master Plan Option Two and Ordinance change to full Council for review.

Upon tabulation of votes, it showed:

AYES – Thompson-Heredia

NAYS – None

ABSENT – Whittaker

Chairman Thompson declared the motion carried unanimously by those present.

2-c. Hear a presentation, discuss and provide a recommendation on the proposed Southeast Mesa Land Use and Transportation Plan.

Transportation Department Director RJ Zeder introduced Deputy Transportation Director Erik Guderian who displayed a PowerPoint presentation. **(See Attachment 3)** He recognized Kimberly Horn and Michael Grandy, the Project Manager from the consultant's side, and thanked Matrix Design and Rounds Consulting for working on economic forecasts over the past year. He also thanked staff from Economic Development and Development Services for being at each project meeting and contributing input. He commented the purpose of the presentation is to prioritize Transportation project funding for the fast-growing area of Southeast Mesa.

Mr. Guderian stated the last study for this area was in 2007 and since then a large amount of development has occurred such as State Route 24. He noted that land development documentation will be updated to current numbers and all City of Mesa projects will be prioritized. (See Page 4 of Attachment 3)

Mr. Guderian pointed out that each of the two public meetings had 120 plus attendees. (See Page 7 of Attachment 3)

Mr. Guderian stated the input for the first meeting held in the Fall of 2018 was interactive with a series of multiple-choice questions to help the department understand the needs for the area. He pointed out some of the key points: (See Page 8 of Attachment 3)

- Transportation facilities are what need to be improved the most in the study area.
- Narrow roads, bicycle/pedestrian facilities, and public transit should be improved.
- High-priority north-south roads to improve are Signal Butte Road, Ellsworth Road, and Crismon Road.
- High-priority east-west roads to improve are Warner Road, Elliott Road, and Ray Road.

Mr. Guderian presented positive attributes and areas that need improvement results from the mapping exercise at the first the public meeting. (See Page 9 of Attachment 3)

Mr. Zeder explained there was a mixed set of opinions on whether Meridian Road should go through or stay discontinued at the US 60.

Mr. Guderian highlighted the comments provided at the second public meeting held in April 2019: (See Page 10 of Attachment 3)

- Widening of Ellsworth Road
- Extend Signal Butte Road
- Extend State Route 24 farther east
- Extend Hawes Road north of the Loop 202
- Make Meridian Road continuous

Mr. Guderian explained the City's 2040 buildout land use plan for Southeast Mesa. (See Page 12 of Attachment 3)

Mr. Guderian presented baseline traffic conditions for 2018 and what they are expected to look like in 2030 and 2040 with the buildout plan in progress. He noted in 2030 the roadways in Southeast Mesa will be reaching capacity and a four-lane cross section at Ellsworth Road would help ease congestion. He reported by 2040, with an added 72,000 residents and residential and commercial builds, all roadways will be at maximum capacity. He stated there would have to be roadway development along the Elliot, Ellsworth and Signal Butte Roads to support the amount of traffic anticipated. (See Page 14 through 16 of Attachment 3)

Mr. Guderian explained prioritization of projects to improve the congestion on the roadways. (See Page 18 of Attachment 3)

Mr. Guderian listed the goals for the near, mid and long-term future for the roadway improvements: (See Page 19 of Attachment 3)

- Near-term: Widen Ellsworth Road and extend Sossaman Road across the Loop 202 to Ray Road.
- Mid-term: Widen and extend roads near airport and freeways.
- Long-term: Grid network of four-lane and six-lane arterial roads.

In response to a question from Chairman Thompson, Mr. Guderian reported traffic counts are being conducted and compared annually.

Chairman Thompson commented he would like to see Warner Road as a continuous road in the future.

Mr. Brady stated that Warner Road extends to areas outside the City, and there are increased costs for passing over the Roosevelt Water Conservation District Canal, and the floodway. He stated it is a funding issue.

In response to a question from Chairman Thompson, Mr. Zeder confirmed the State Route 24 expansion will begin in 2022 and the Signal Butte Road south improvement will be a two-lane road with a completion date of this Fall.

In response to a question from Committeemember Heredia, Mr. Zeder stated the State Route 24 project is federally funded.

Mr. Guderian explained an extension of Prop 400 would build State Route 24 to a full freeway.

Chairman Thompson thanked staff for the presentation.

3. Adjournment.

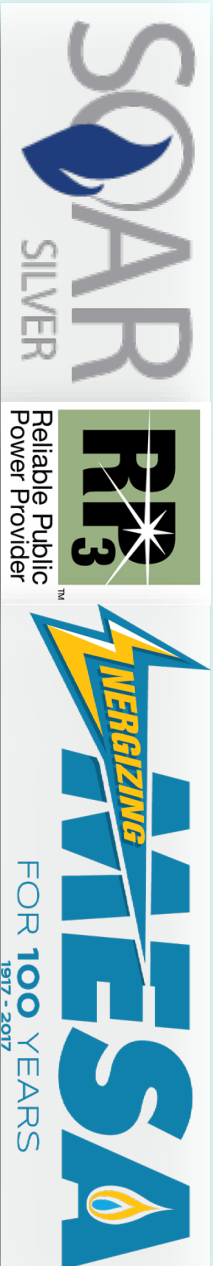
Without objection, the Sustainability and Transportation Committee Meeting adjourned at 4:57 p.m.

I hereby certify that the foregoing minutes are a true and correct copy of the minutes of the Sustainability & Transportation Committee meeting of the City of Mesa, Arizona, held on the 23rd day of September 2019. I further certify that the meeting was duly called and held and that a quorum was present.

DEE ANN MICKELSEN, CITY CLERK

jg
(Attachments – 3)

CITY OF MESA ELECTRIC UTILITY INTEGRATED RESOURCE PLAN (IRP)

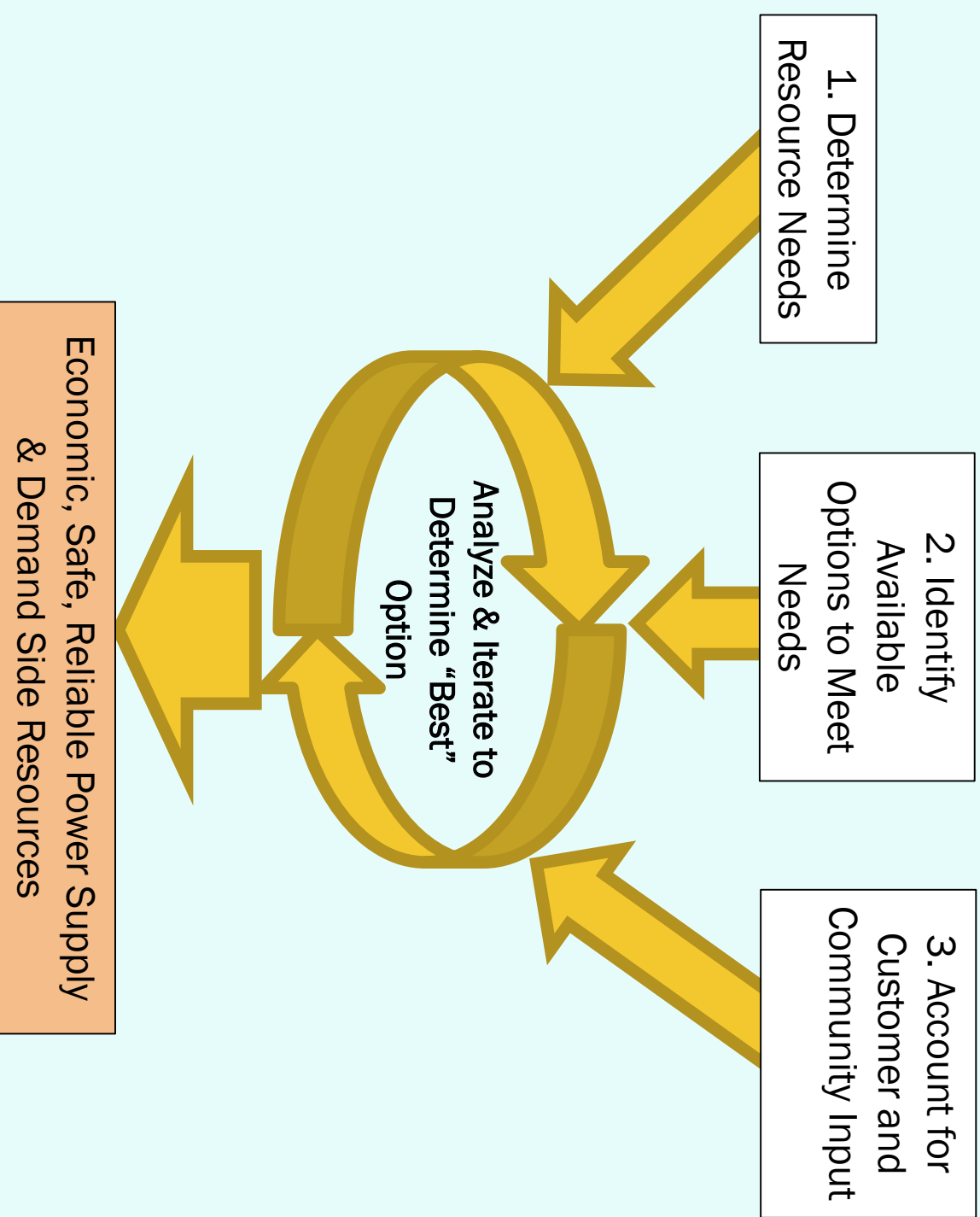


Purpose

Seek input from the Sustainability and Transportation Committee and a recommendation to forward the Integrated Resource Plan (IRP) and Action Plan to the City Council for adoption

RP PROCESS

An IRP is an energy utility best practice, and a City Council approved IRP is contractual requirement for federal hydro supply contracts.



RP REQUIREMENTS/KEY STEPS

- Identify and compare of all practicable energy efficiency and energy supply resource options
- Include action plan with timing set by utility
- Describe efforts to minimize adverse environmental effects of new resource acquisitions
- Provide ample opportunity for full public participation.
- Conduct load forecasting
- Include brief description of measurement strategies for options identified in IRP to determine whether objectives are being met

PUBLIC INPUT

First Online Survey

- 10/2016 - 9/2018
- 59 responses

- Two Public Information Meetings

- Advertised via City Social Media, Nextdoor, emails

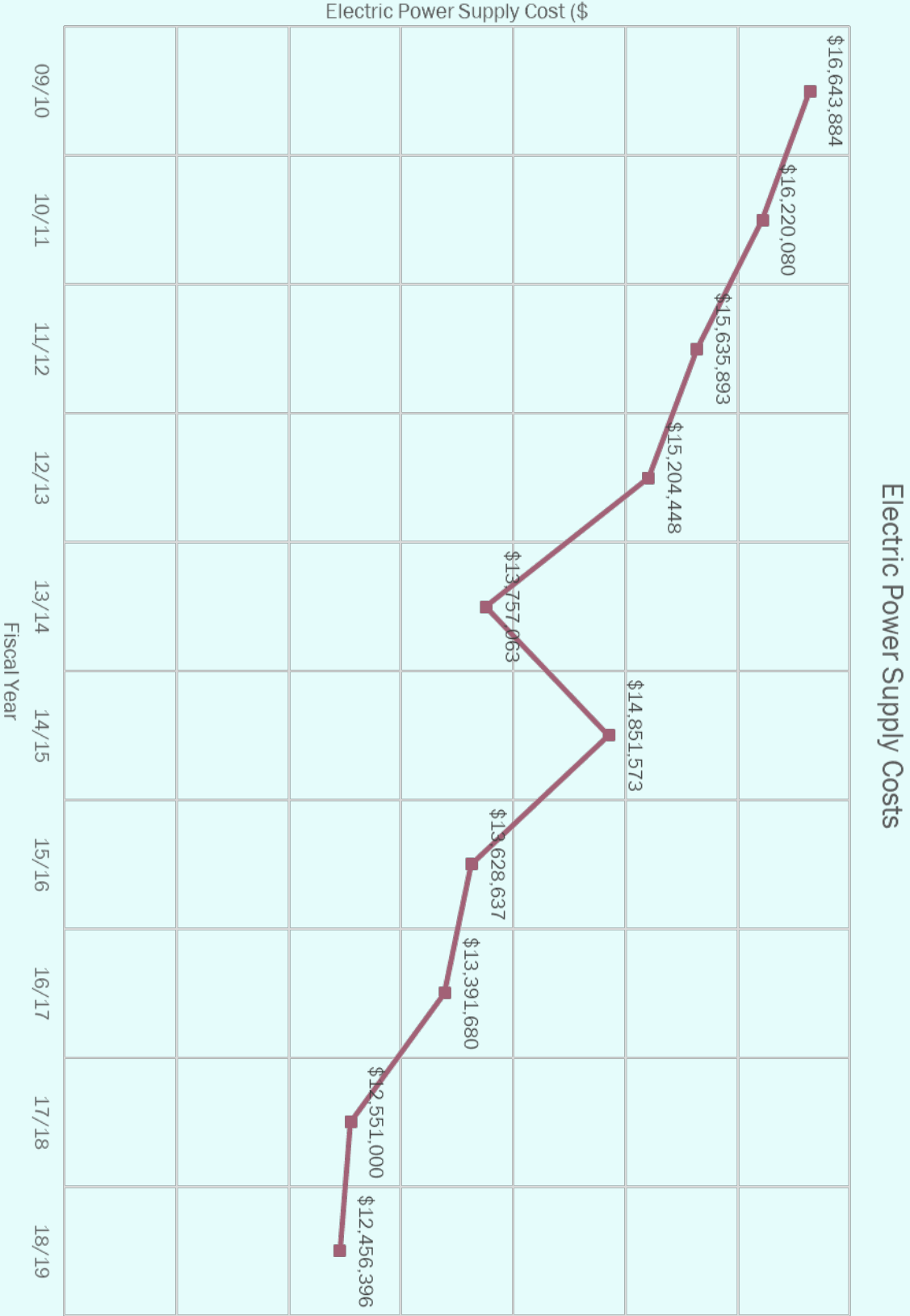
- Second Online Survey:

- 10/2018 - present
- 75 responses
- DMA gift cards incentive offered

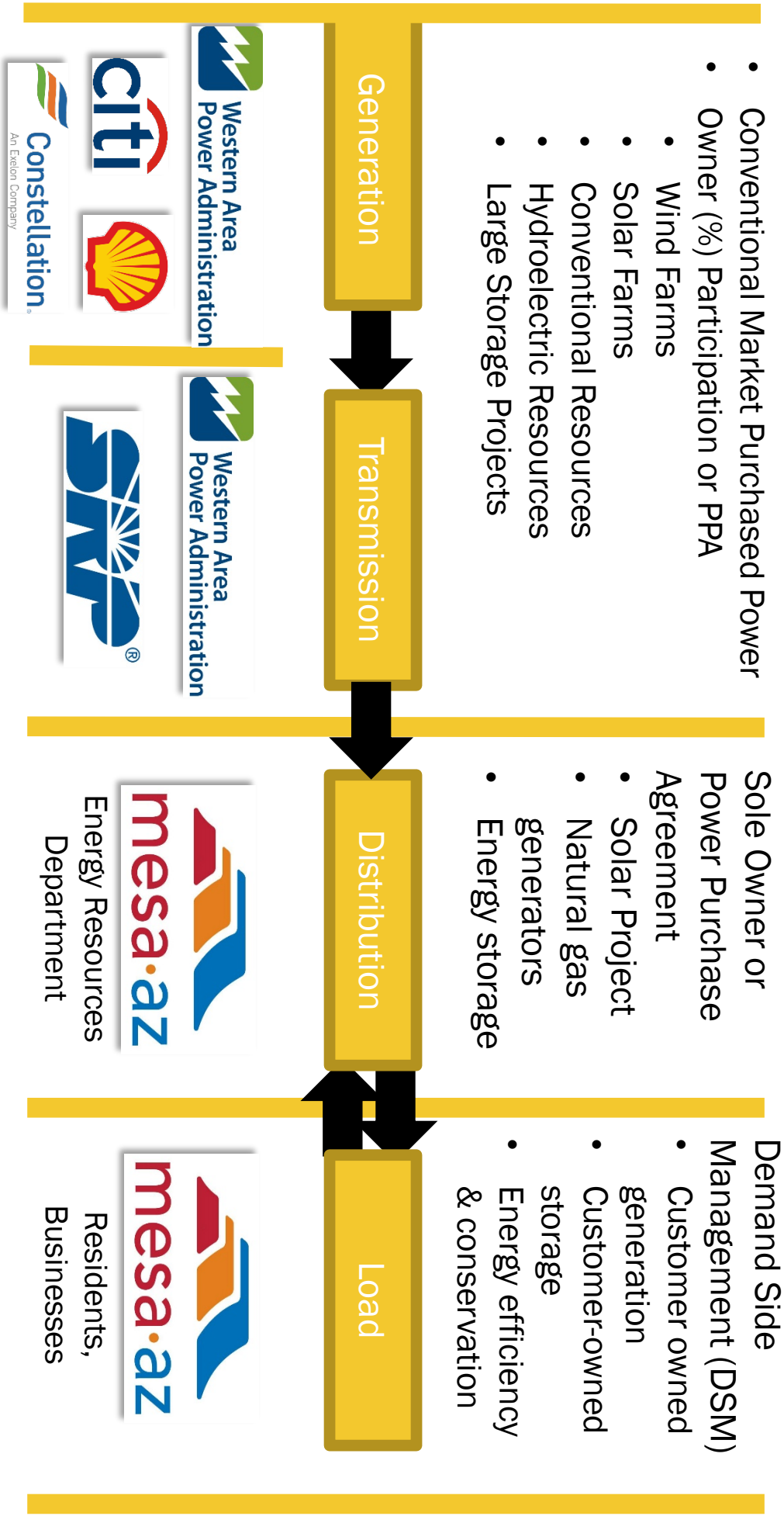
IMPORTANT CHANGES SINCE 2012

- Mesa implemented Customer Photovoltaic Net Metering Program
- Mesa applied for, but ultimately declined Hoover
- Conventional (natural gas) energy prices very inexpensive
 - Renewable energy prices can be competitive with conventional resources
- Expanded the number of counter-parties – enhanced competition
- Continue to look for opportunities to save and acquire renewable resources
- Saved \$865,000 per year by changing the type transmission service provided by the Western Area Power Association (WAPA)

RESULTS OF OUR RESOURCE PLANNING & ACQUISITION EFFORTS



RESOURCE OPTIONS



PROPOSED PLAN – SOLAR/RENEWABLES

Continue customer owned solar program

- Caps on participation
- Net metering
- \$/kW incentives

- 2019 Competitive RFP: 10-15 MW Solar in ~2021 (+6% of kWh mix)

- Joint Action: 10 MW Solar in ~2022 (+6% of kWh mix)

- Potential for more renewables in 2023

- ~34.9% renewable by 2023

- Economic analyses will focus on:

- Minimizing near term rate impacts (if costs of renewable are substantively higher than solar/renewables
- Ensuring that renewables result in long-term benefits

ACTION PLAN – 2019 AND BEYOND

Throughout the 5-year period, Mesa will:

- Continue seeking competitive counterparties
- Evaluate alternative transmission paths
- Evaluate the addition of internal generation (solar and/or natural gas) subject to the conditions established in the IRP
 - Part of plan to remedy outages such as 7.27.19 outage due to failure at Rogers Substation
- In the instance that peak demand unexpectedly grows towards 100 MW, evaluate methods to address Rogers' capacity

ACTION PLAN – 2019

- Evaluate the replacement of the expired SENA Sculpted Base and Constellation Dispatchable resources
- Implement the following Demand Side Management Programs:
 - Municipal Energy Efficiency Program
 - Multi-family Energy Efficiency Program
 - Shade Tree Partnership
 - Municipal Electric Vehicle Program
 - Investigate the potential to implement Voluntary Residential Pre-Pay rates
- Implement a Green Tariff program for launch in the 2019/2020 fiscal year

ACTION PLAN – 2019

- Expand evaluation of thermal energy storage and/or battery storage opportunities within Mesa's Electric Service Area
- Investigate utility scale solar opportunities for implementation by 2021
- Evaluate City parking lots, roofs and other properties for the potential of up to ~3 MW of distributed solar by 2023
- Begin evaluating Mesa's distribution system for the optimal placement of internal natural gas generation with the intent of installing ~4 MW of internal natural gas generation by 2023
- Initiate conversations with SRP regarding the potential for expanding capacity at Rogers in the event of the addition of a large customer to Mesa's Electric Service Area

ACTION PLAN – 2020 & 2021

2020

Evaluate the replacement of the Citi Base resource with a competitive request for proposal Mid 2020

Mesa’s Advanced Metering Infrastructure (AMI) project will enable us to evaluate providing the following services:

- Voluntary residential Time of Use rates
- Voluntary commercial Time of Use rates
- Voluntary Electric Vehicle Charging rates

2021

- Evaluate the replacement of the Constellation July-August Peak resource and Shell Summer Peak resource

- Investigate utility scale solar opportunities for implementation by 2022

Questions/Discussion

Streetsight Masterplan Update

SAT Committee Meeting

9/23/2019

RJ Zeder, Transportation Director

Nathan Curtis, Streetsight Systems Supervisor



Master Plan Objectives

insure Mesa continues our path of being a “Smart City” - using latest technology to enhance service delivery and customer satisfaction

- Research lighting regulations and other communities’ LED transitions
- Develop lighting zones for different areas of the city and test dimming/lighting levels
- Perform financial analysis for LED conversion
- Review City Code, details, and design standards to address LED lighting/dimming

Research

Evaluated Dimming Studies

City of Seattle

Evaluated Engineering Reports

*US/European
Government reports
on adaptive lighting*

Evaluated benchmarks from other Agencies

*City of San Jose
City of Durango*

City Document Review and Update

- **Section 4:** *Chapter 4 Mesa Lighting and Electrical Code*
- **Section 9** *Chapter 6 Subdivision Regulations*
- **Section 9:** *Chapter 8 Off-Site Improvement Regulations*
- **Engineering & Design Standards Chapter 9**
- **2019 Street Light Technical Manual**

Pilot Study Achievements

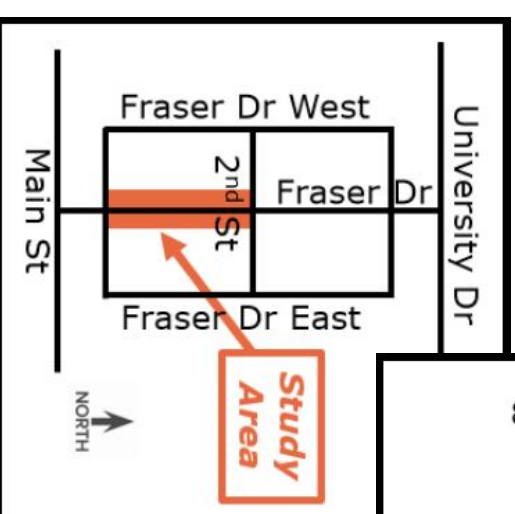
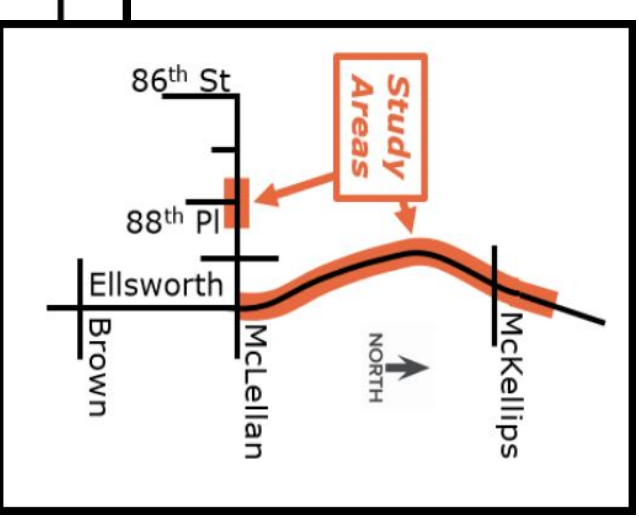
Metlight Pilot Dimming

Tested various levels over 4-week period in three areas
Current Pilot expires on 12/31/2019

Extended Dimming Evaluation on Ellsworth Rd

Public Survey

Collected feedback via survey over 4-week period



Pilot Study Achievements

e/Fire Feedback

Public Safety personnel had no concerns with dimming

Public Meeting

Held on November 15, 2018

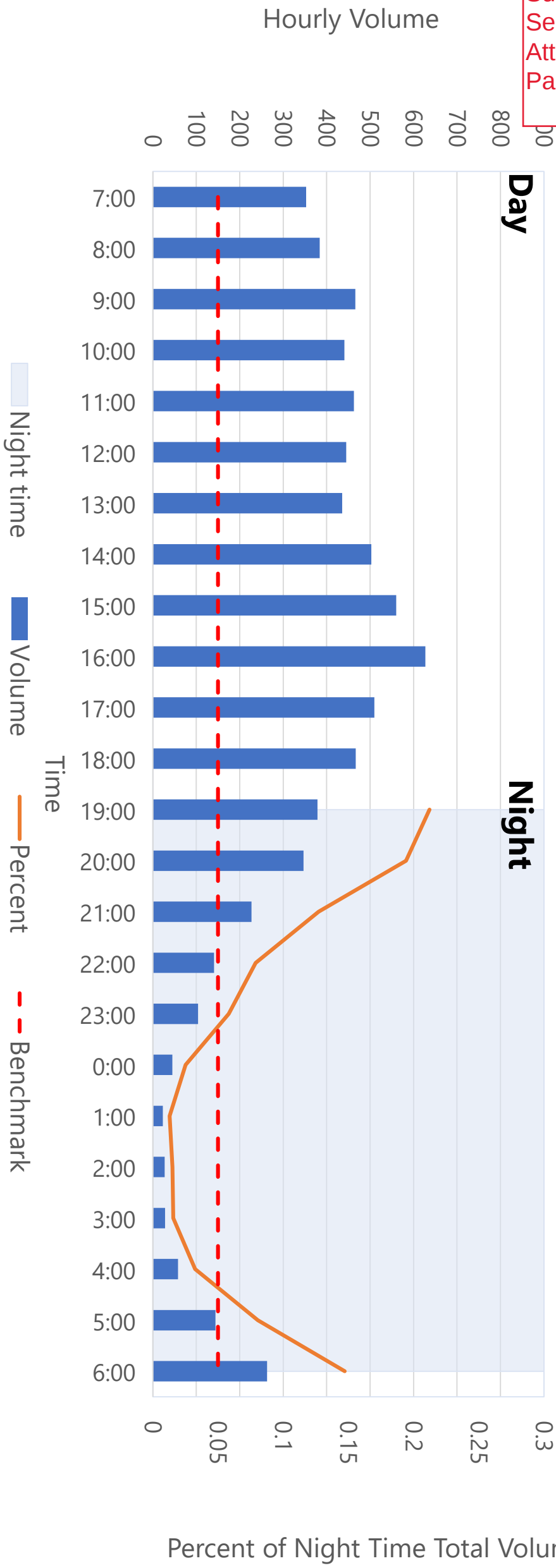
Light Shields

Fabricated light shields for Ellsworth Rd



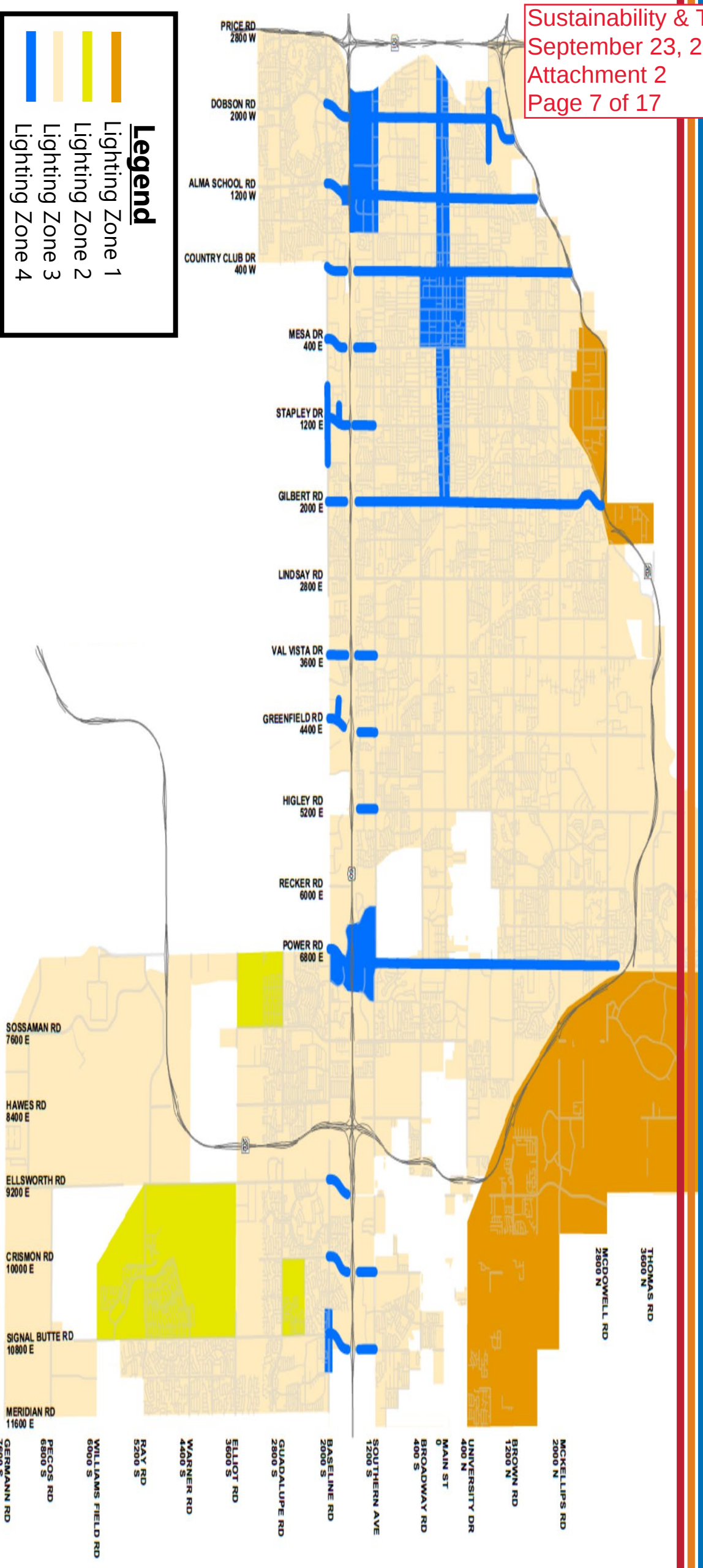
Dimming Study

Ellsworth Rd, N of McKellips Rd: July 2018





City of Mesa Lighting Zone Map





Lighting Zone 1

Description: Rural Residential and Low Density
Examples: *Desert Uplands, Lehi*

Dimming (% Power Consumption)	
Roadway Class	Designed Level
Local	Desert Uplands Standards
Collector	Desert Uplands Standards
Arterial	IES RP-8* Recommendations
Time of Day	
No Dimming	N/A
10pm - 5am	45%
10pm - 5am	25%

* Illuminating Engineering Society Roadway Practice

Examples: Eastmark, Cadence, Morrison Ranch

Dimming (% Power Consumption)	
Time of Day	Dimmed Level
10pm - 5am	45%
10pm - 5am	45%
11pm - 5am	45%

* Illuminating Engineering Society Practice



Lighting Zone 3

Description: Standard Roadways - Majority of Public streets

Examples: *All other streets not included in other zones*

Dimming (% Power Consumption)	
Roadway Class	Designed Level
Local	IES RP-8* Recommendations
Collector	IES RP-8* Recommendations
Arterial	IES RP-8* Recommendations
Time of Day	
11pm - 5am	45%
11pm - 5am	45%
11pm - 5am	45%

* Illuminating Engineering Society Roadway Practice



Lighting Zone 4

Description: High Pedestrian Activity and Regional Commercial

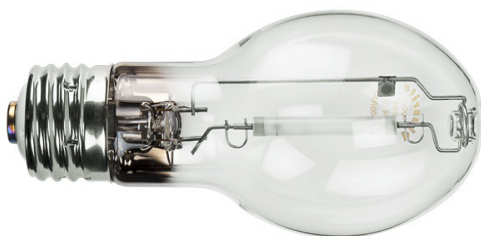
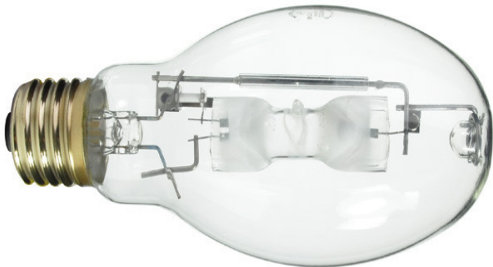
Examples: *Downtown, Fiesta/Superstition Springs Malls, Stapley & US60*

Dimming (% Power Consumption)	
Roadway Class	Designed Level
Local	IES RP-8* Recommendations
Collector	IES RP-8* Recommendations
Arterial	IES RP-8* Recommendations
Time of Day	
11pm - 5am	45%
11pm - 5am	45%
12am - 4am	45%

* Illuminating Engineering Society Roadway Practice



Current Conditions



MH
Metal Halide

404

LED
Light-Emitting Diode

8,384

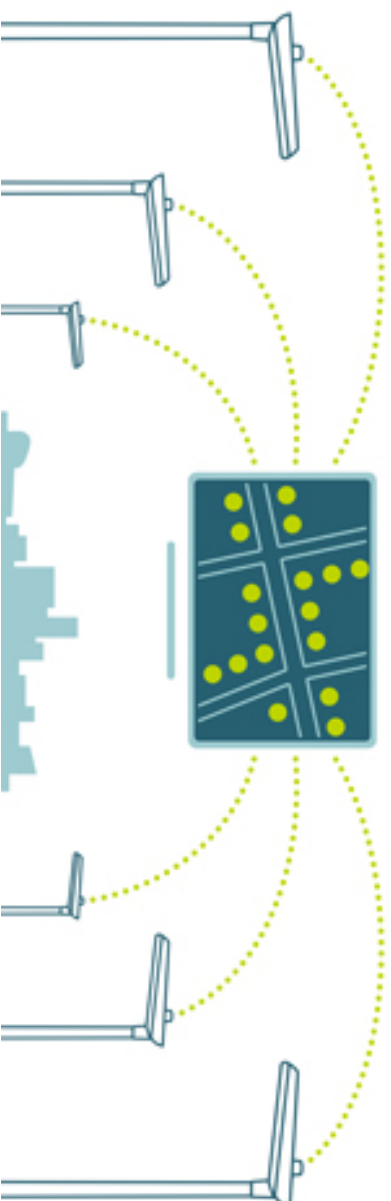
HPS
High Pressure Sodium

33,916

LED Smart Nodes

Smart Nodes allow staff to:

- Monitor energy usage
- Remotely dim and set schedules
- Receive outage reports





Going Forward: LED Conversion

Option 1: Mass Conversion with Debt Financing

- Replace all HPS and Metal Halide as one project
- **Cost Estimate:** \$13M+ (installed by outside contractor)
- **Interest Costs:** \$1.6M - \$4.5M
- **Total Cost:** \$14.6M - \$17.5M (Does not include any Smart Nodes which are approx. \$250 per node per pole)
- Consultant found it would take approximately **16 years** for Salt River Project payback with energy savings

Note: City of Mesa Energy Resources staff evaluating current streetlight rates



Going Forward: LED Conversion

Option 2: 7-Year In-House Conversion

utilize internal staff and utilize Transportation funding

- Phased approach will provide flexibility to adapt the latest technology
- **Cost Estimate:** \$6.8M (only includes Smart Nodes for Desert Uplands and Lehi)
- **Interest Costs:** \$0
- Assumes replacing approximately 4,850 fixtures per year for 7 years
- Smart Nodes for Lighting Zones 2/3/4 would add \$10M to Cost Estimate

Note: No labor costs are included in the “Cost Estimate” as this option would utilize existing in-house staff



Staff Recommendation

Staff recommends that the SAT Committee move forward with:

- Option 2 (7-Year In-House Conversion)
- Amending Mesa City Code Section 9-6-1(C) to allow for reduced roadway lighting to accommodate Lighting Zones

Questions/Discussion

Southeast Mesa Land Use and Transportation Plan

City of Mesa



September 23, 2019

Sustainability and Transportation Committee

Kimley»Horn



Agenda

1. Project Need/Scope/Schedule
2. Community Meeting Input Received
3. Future Land Use Plan
4. Future Transportation Plan
5. Prioritization of Improvements

Purpose

The purpose of this study was to prioritize Transportation project funding for the fast-growing area of South East Mesa.



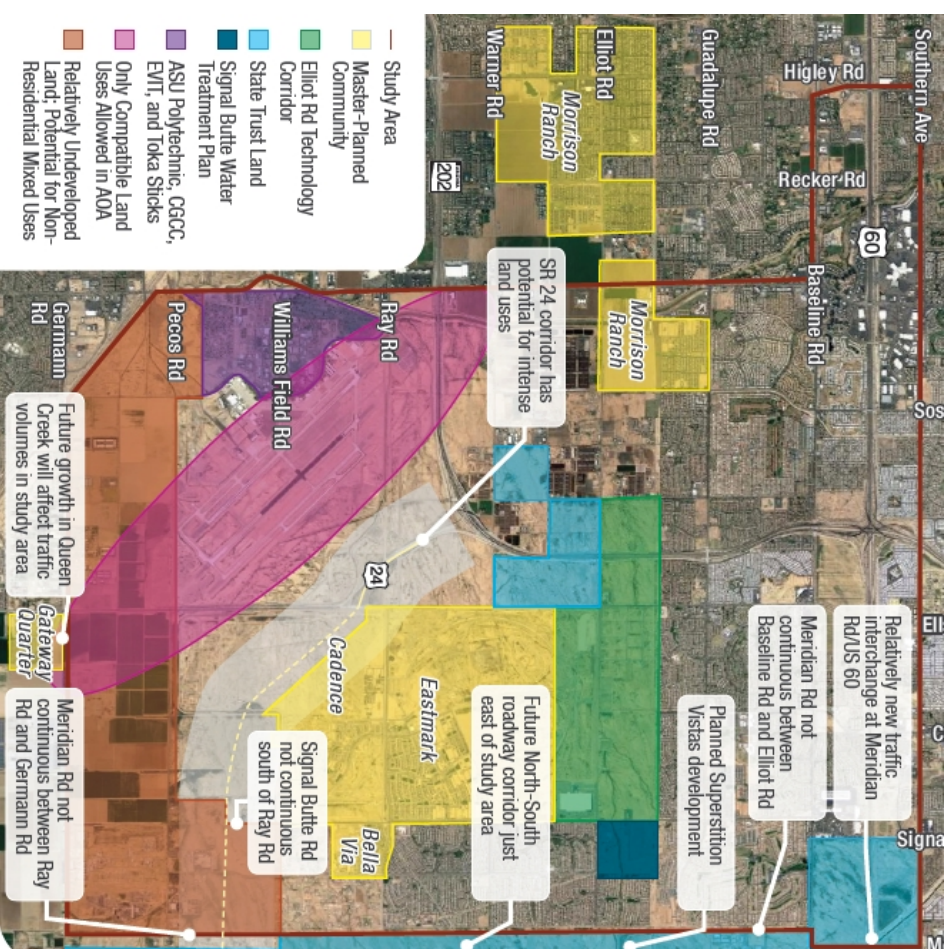
eed for Southeast Mesa LUTP

-and Development

- Few Remaining Large Undeveloped Parcels
- Changing Markets & Trends
- Updated Land Use Assumptions

■ Road Project Prioritization

- SR 24 Extension
- Which Roads to Build First?
- How Many Lanes are Needed?



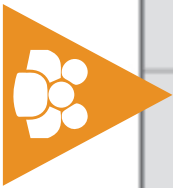
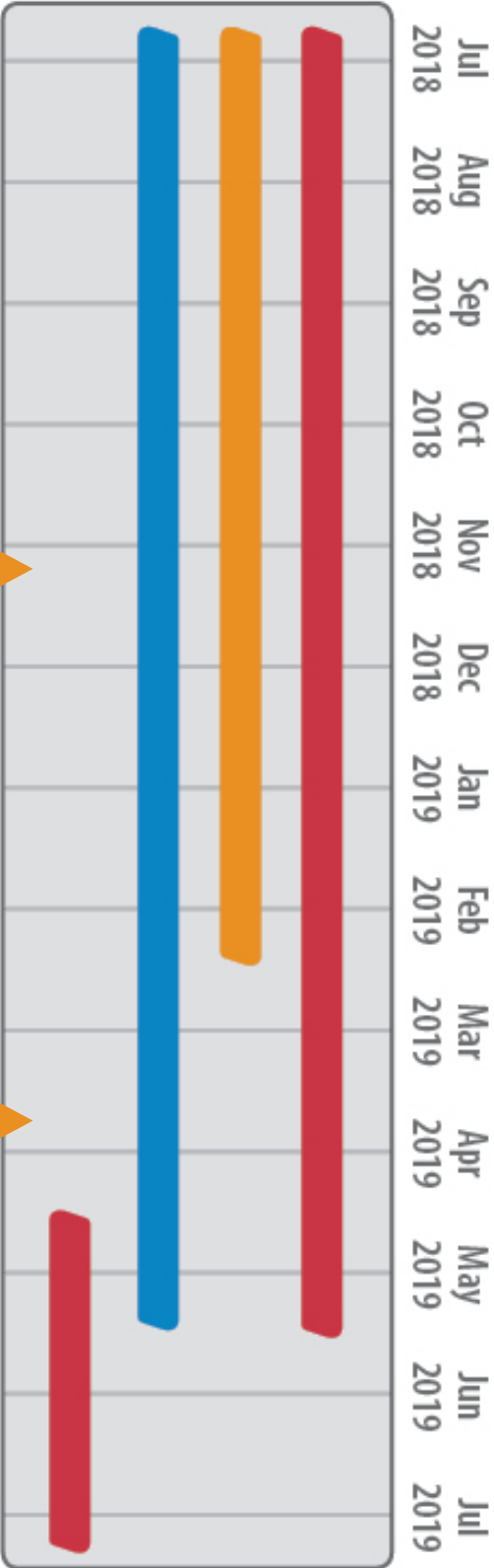
Project Scope

- Existing Conditions Update
- Public Engagement
- Plan Updates

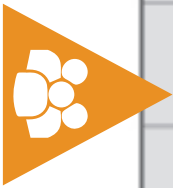


mesaaz.gov/SEMesaPlan

Project Schedule



Community Meeting #1



Community Meeting #2



Community Input Received

120+ attendees

at each of the two meetings!

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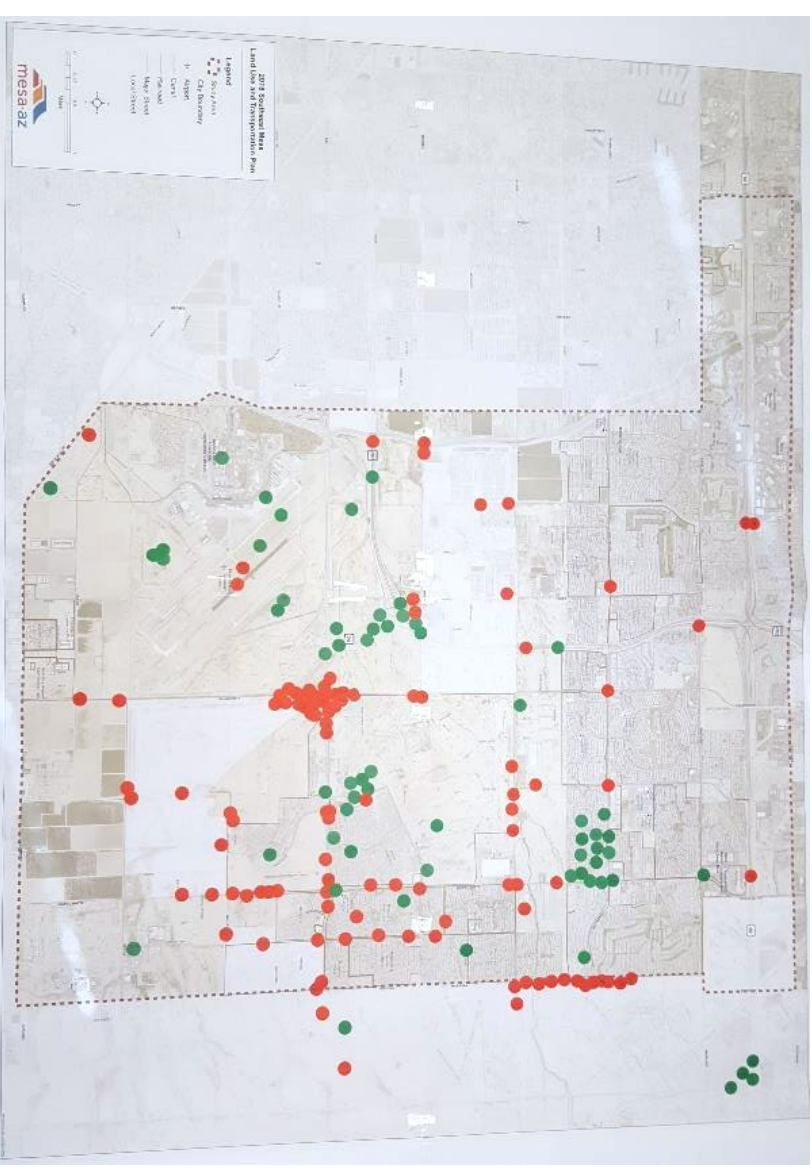
Meeting #1 Mapping Exercise Results

Positive Attributes

- View of the mountains to the east
- Good neighborhoods, schools, and parks
- SR 24
- Airport and higher education

Areas Needing Improvement

- Heavy congestion on Ellsworth Rd
- Discontinuous roads:
 - Signal Butte Rd
 - Meridian Rd
 - Warner Rd
- Traffic/speeding on Mountain Rd



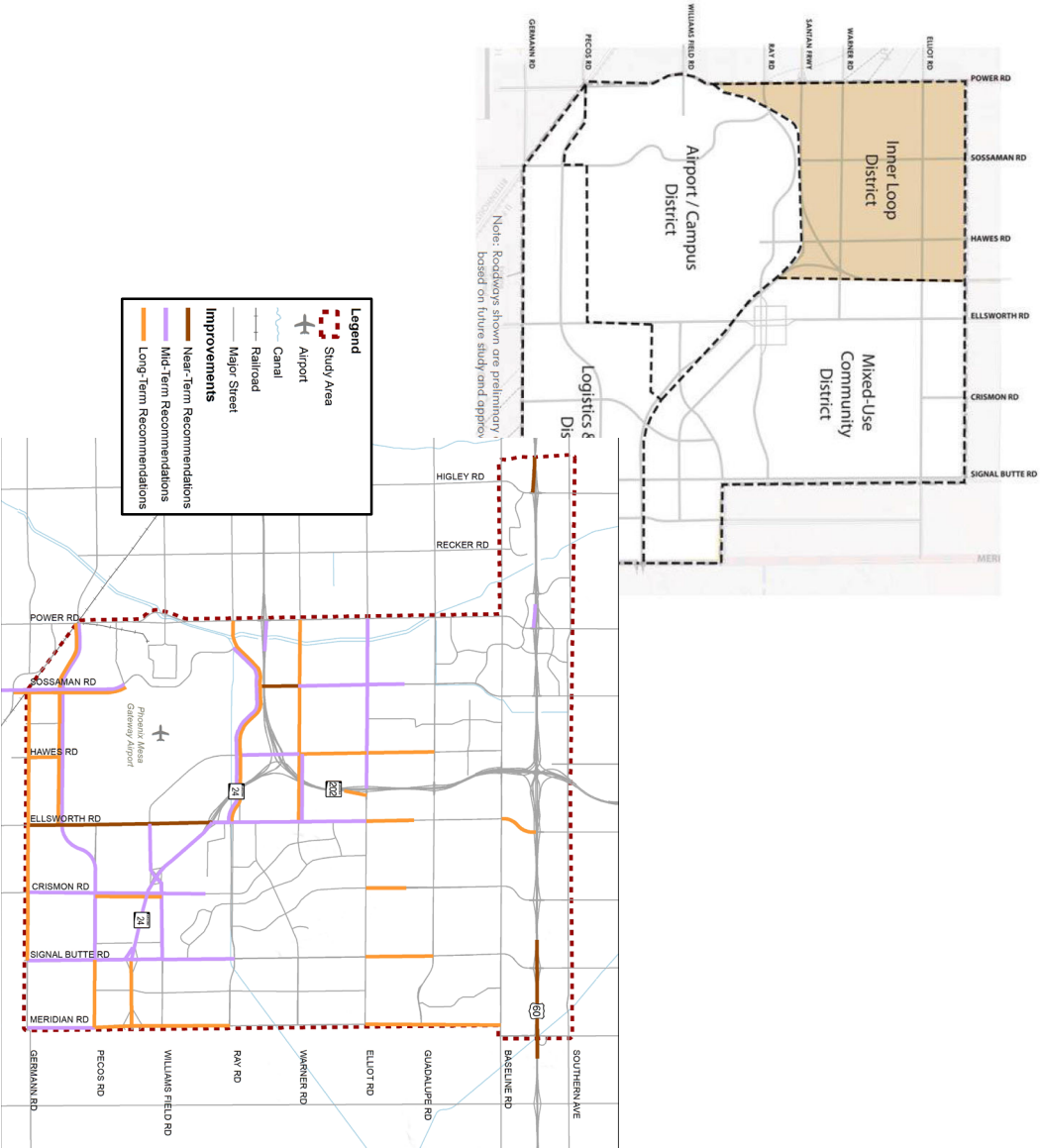
Meeting #2 Comments Provided

Agree with Proposed Recommendations

- Widen Ellsworth Rd
- Extend Signal Butte Rd
- Extend SR 24 farther east
- Extend Hawes Rd north of Loop 202
- Make Meridian Rd continuous

Disagree with Proposed Recommendations

- Make Signal Butte Rd improvements higher priority
- Don't make Meridian Rd continuous



Future Land Use Plan

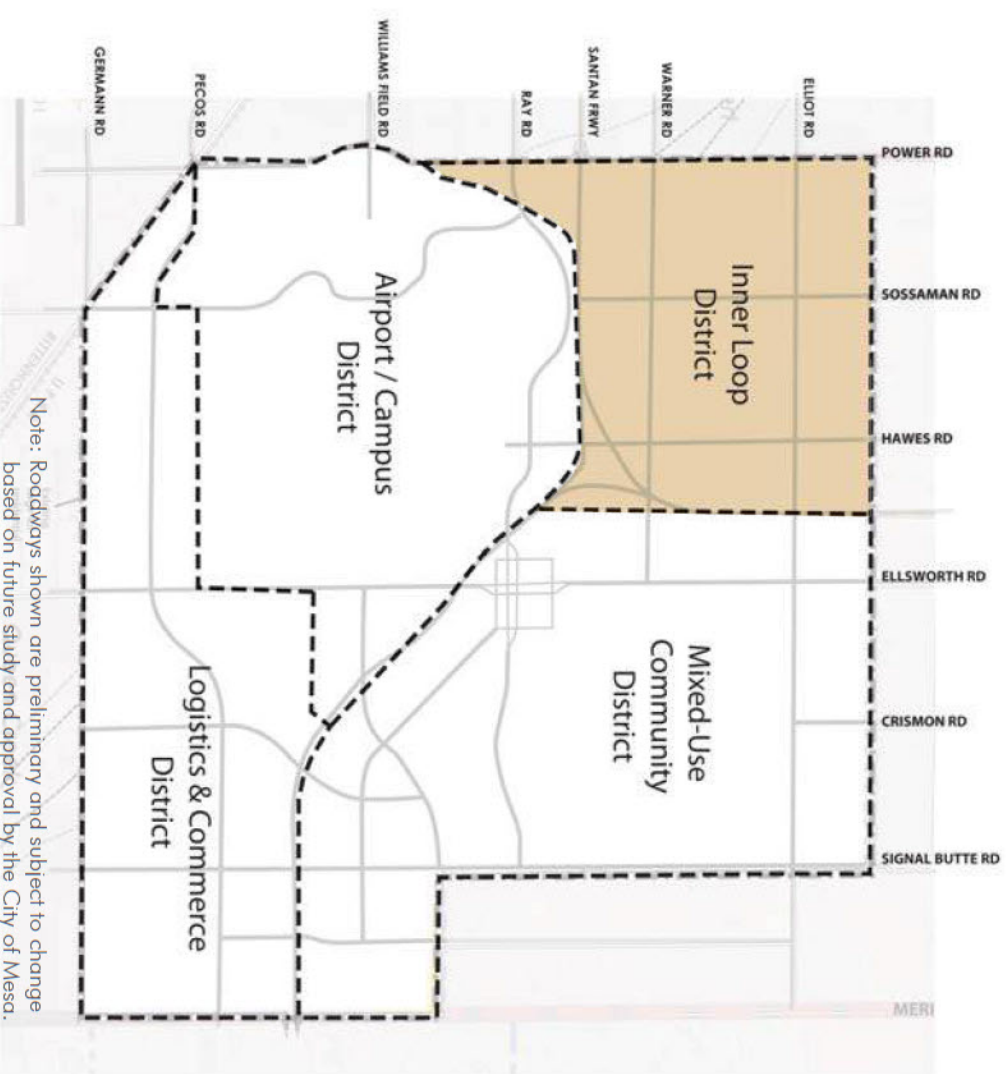


Future Land Use Plan

40 Buildout

y 2040, study area is expected to
e nearly built out

- An additional **72,000 people** expected to move to area
- Development of future available land = **13,622 acres**
- Based on existing zoning assumptions



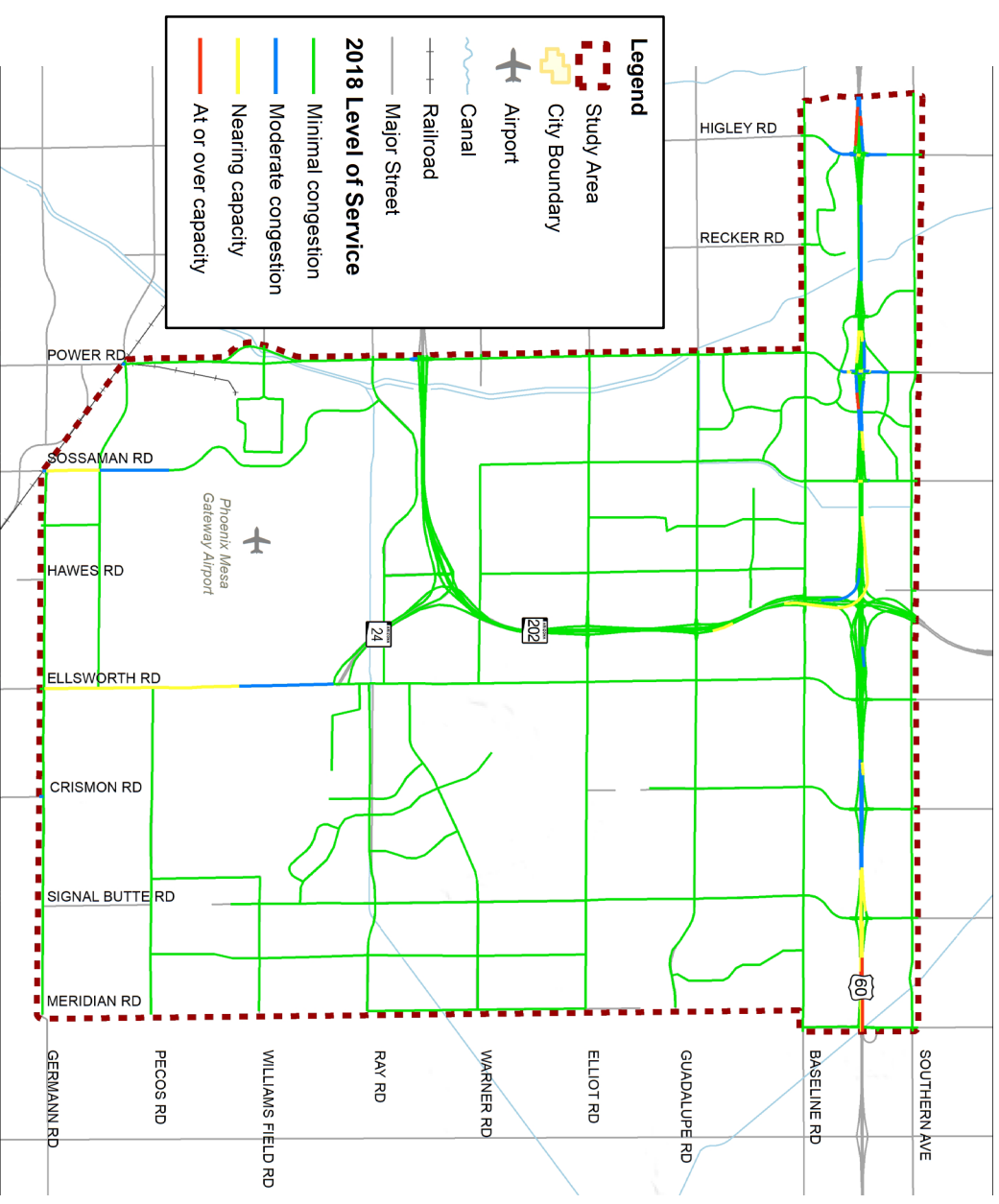
Future Transportation Plan



Traffic Conditions - 2018 Baseline

Findings

- Ellsworth Rd south of SR 24 close to capacity
- Sossaman Rd near Pecos Rd close to capacity
- Much of rest of road network has minimal congestion

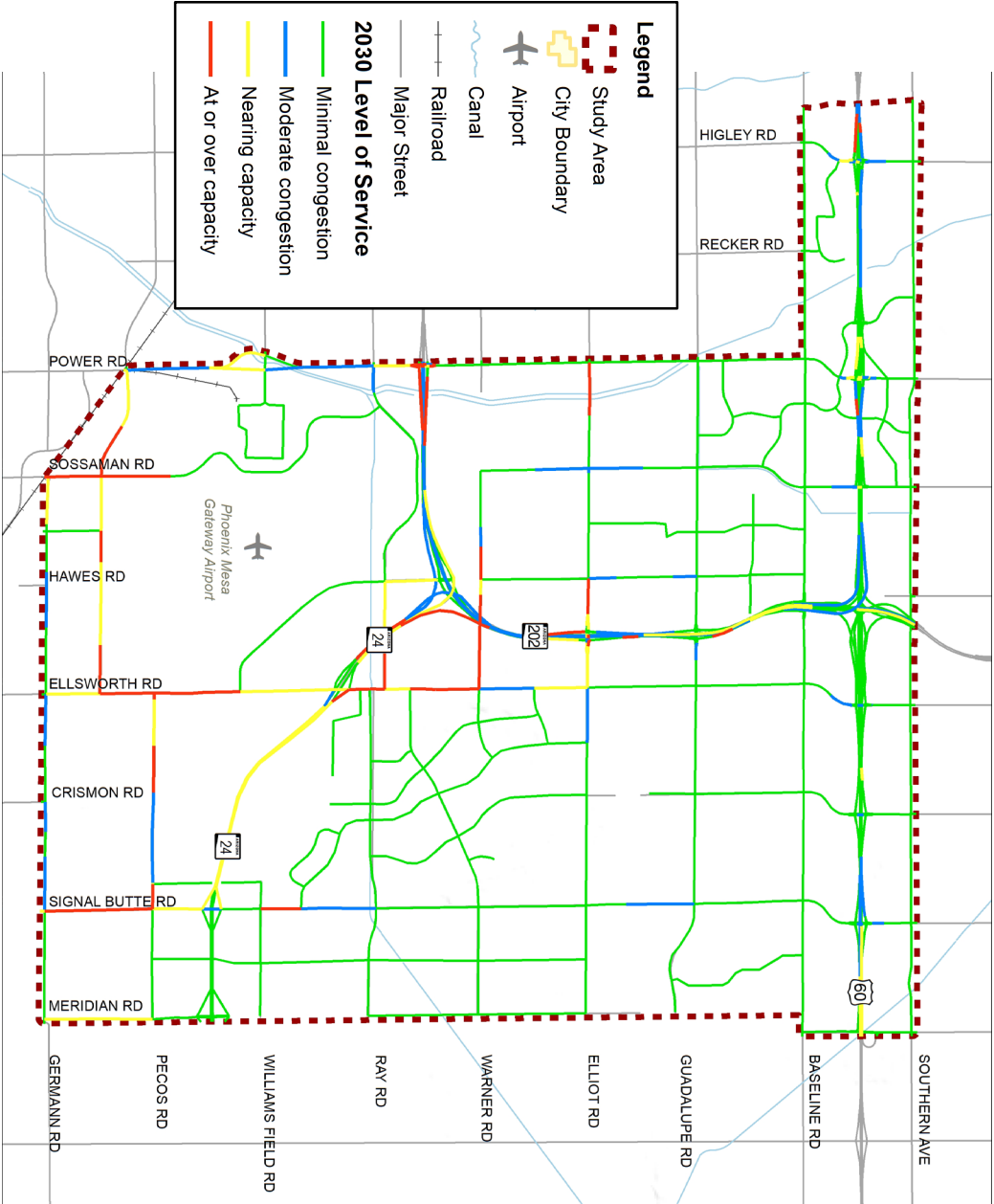


Note: Level of Service determined based on 24-hr period

Traffic Conditions - 2030 Baseline

Findings

- Ellsworth Rd south of Warner Rd at or over capacity
- Signal Butte Rd south of SR 24 at or over capacity
- Parts of Elliot Rd and Warner Rd over capacity
- Parts of Sossaman Rd and Pecos Rd at or over capacity

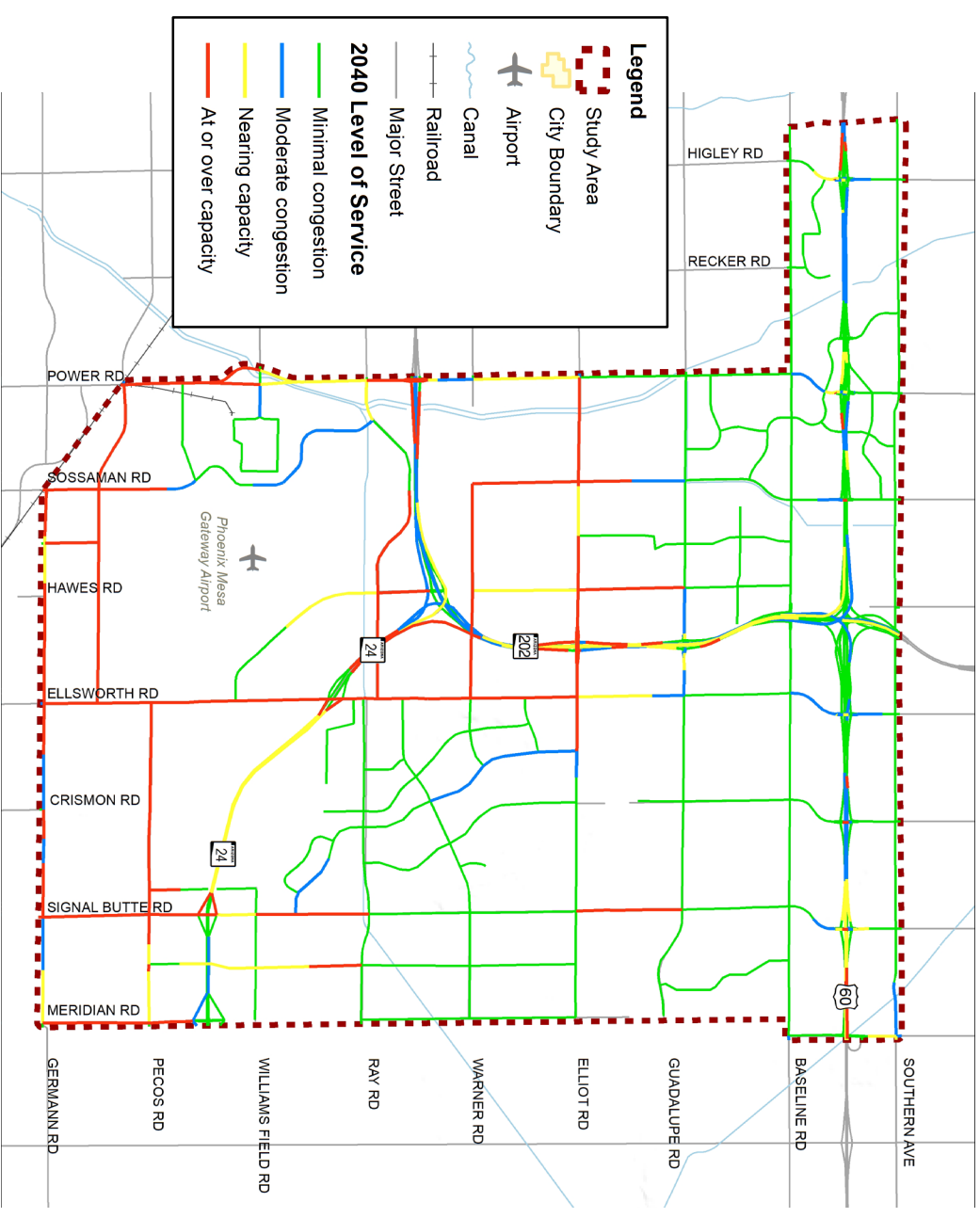


Note: Level of Service determined based on 24-hr period

Traffic Conditions - 2040 Baseline

Findings

- Much of network south of Elliot Rd over capacity
- Demand on Ellsworth Rd is double the available capacity
- Interim SR 24 over capacity
- Elliot Rd west of Ellsworth at or over capacity



Note: Level of Service determined based on 24-hr period

Prioritization of Improvements



Prioritization Criteria and Weighting

- Improves mobility and safety (42%)
- Enhances economic vitality (27%)
- Can feasibly be funded and is cost-effective (18%)
- Is compatible with approved plans and public input (12%)

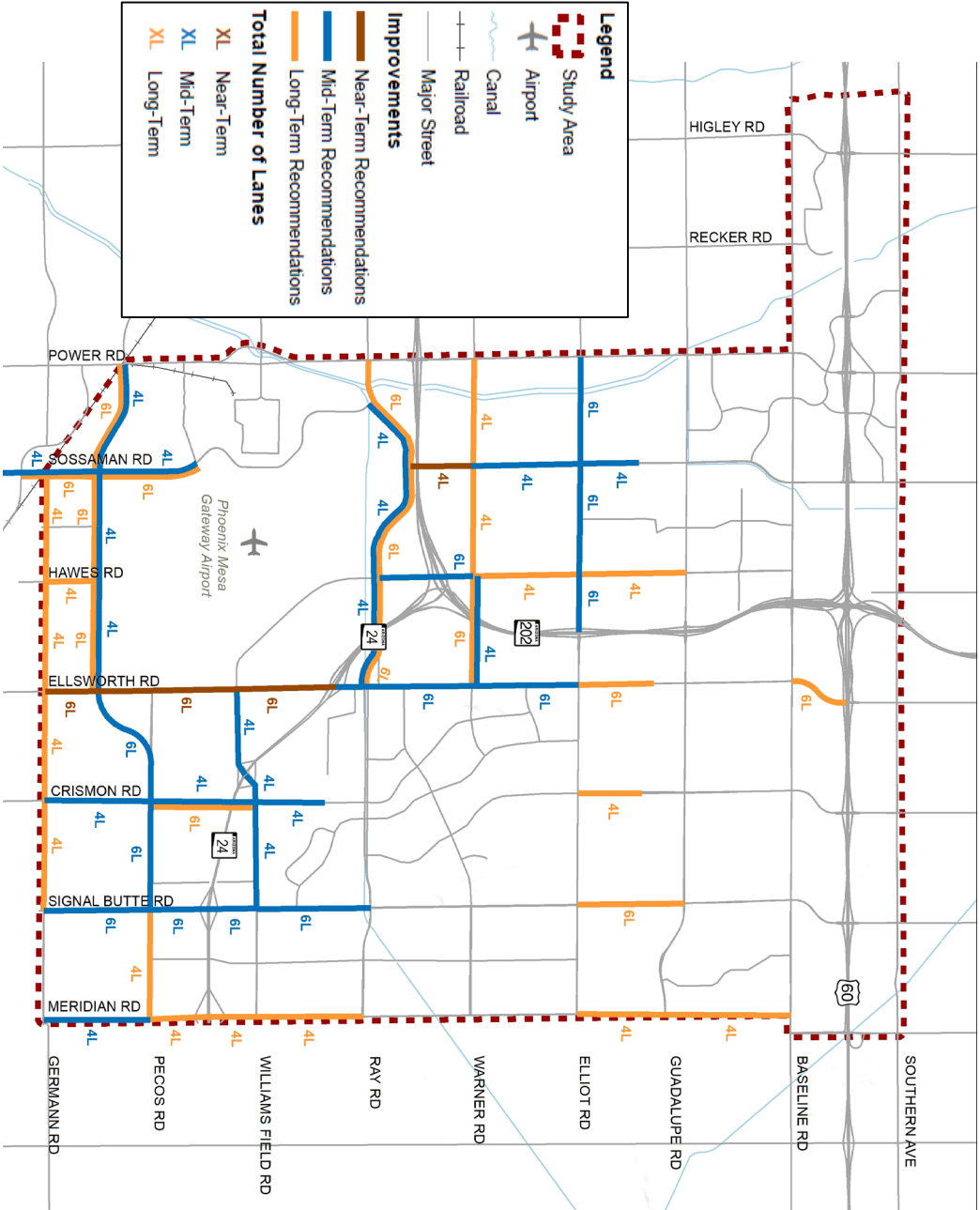
Weighted Score	Prioritization Criteria
	Improves mobility and safety
Project reduces mobility issues (i.e., congestion, delay, unreliability, access concerns) or safety issues, thereby improving the regional and local transportation network	
42	Addresses major mobility issues on the arterial street network, directly improves connectivity to the regional freeway system and regional multimodal facilities, and addresses specific identified severe crash pattern
35	Addresses major mobility issues on the arterial street network, directly improves connectivity to the regional freeway system and regional multimodal facilities, or addresses specific identified severe crash pattern
28	Addresses minor mobility issues on the arterial street network, indirectly improves connectivity to the regional freeway system and regional multimodal facilities, and addresses specific identified frequent (but not severe) crash pattern
21	Addresses minor mobility issues on the arterial street network, indirectly improves connectivity to the regional freeway system and regional multimodal facilities, or addresses specific identified frequent (but not severe) crash pattern
14	Addresses mobility issues on the local or collector street network, indirectly improves connectivity to the arterial street network or local multimodal facilities, or addresses specific identified non-severe and non-frequent crash pattern
0	Does not improve mobility and safety
	Enhances economic vitality
Project has a positive impact on the economy because it improves infrastructure or access within an economically strategic area (i.e., designated growth area, important economic corridor, employment center) or provides new strategic development opportunities, thereby improving general livability	
27	Improves infrastructure or access within an economically strategic area or provides new strategic development opportunities
18	Improves infrastructure or access outside of an economically strategic area but would directly benefit it
9	Improves infrastructure or access outside of an economically strategic area but would indirectly benefit it
0	Does not enhance economic vitality
	Can feasibly be funded and is cost-effective
Project makes timely and efficient use of available funding	
18	Can likely be funded with an existing CIP source or outside entity (e.g., MAG, developer) and is very cost-effective compared to other potential projects
12	Can likely be funded with future bonds or joint funding and is somewhat cost-effective compared to other potential projects
6	Has no identified likely funding source and is not very cost-effective compared to other potential projects
0	Cannot feasibly be funded and is not cost-effective
	Is compatible with approved plans and public input
Project is a recommendation in an approved plan or has public support	
12	Specifically referenced in, or directly supports, objectives and policies in the City of Mesa General Plan or another approved City of Mesa plan or has strong public support
8	Specifically referenced in, or directly supports, another agency's approved plan or has moderate public support
4	Generally compatible with approved plans or has minimal public support
0	Is not compatible with approved plans and does not have public support
99	Total Score Potential

Recommended Improvement Plan

Overall Study Findings

- Near-term: widen Ellsworth Rd and extend Sossaman Rd across Loop 202 to Ray Rd
- Mid-term: widen/extend roads near airport and freeways
- Long-term: grid network of 4-lane and 6-lane arterial roads

Note: Signal Butte Rd (Williams Field Rd to Germann Rd) is the highest priority project and is currently under design



Questions?