

## Technical Advisory Committee

### Workshop #3

March 3, 2021 | 9:00 – 11:00 am



## MEETING NOTES

### 1. Welcome and Introductions – Laura Hanson (UTA Project Manager)

- Laura kicked off the meeting, which is technically the first TAC-only meeting, and conducted introductions. The TAC and the Executive Committee will be meeting separately from this point forward.

### 2. Recap from Last Meeting – Laura Hanson

- Laura provided a brief recap from last meeting where the group discussed the Purpose and Need, an overview of the evaluation process, and the initial range of alternatives (rail corridor, I-15, State/Main) and modes (commuter rail to local bus). We concluded the meeting with a pre-screening, which eliminated local bus, which doesn't meet the Purpose and Need to serve regional travel. The alternatives development will include a mix and match of corridors and modes.

### 3. Transit Study Process Overview and Refresher – Claire Woodman (Parametrix)

- Claire provided an overview of the transit project development process. We are currently in the first step (Planning and Alternatives Analysis), which is a critical step to understand the project need, investigate alternatives, and identify a preferred transit alignment and mode. After this step, it will move into environmental review and preliminary engineering.
- We recognize the tremendous population and job growth expected in south Utah County and want to ensure we are serving this growth with the right transportation solutions.

### 4. Initial Evaluation Workshop – Project Team

- Alternatives Overview:
  - Claire Woodman presented a high-level overview of the evaluation process (see funnel graphic). We have already completed the pre-screening/fatal flaw review, which screened out local bus as a mode. We have just completed the initial evaluation and today, will focus on the results and propose recommendations for alternatives to move into the more detailed and quantitative screening.
  - The initial evaluation includes logical combinations of three alignments and four modes, which have resulted in nine alternatives (corridor + mode). All alternatives would primarily operate in an exclusive transit alignment, except express bus (operates in mixed flow). Each would offer regional service, which includes longer stop spacing (approximately four stations through the study area).
    - Jason Bond asked the difference between commuter rail and light rail in this context with such limited stop spacing. Some differences may include vehicle technology, vehicle capacity, top speeds, alignment options, ability to interline into existing transit line service, etc.
  - The alternatives represent the ultimate solution that we want to see by 2050; the opportunity to phase modes exist, but that will be explored during the implementation planning phase, not the alternatives analysis phase.

- Initial Results – General Observations:
  - Rail Corridor tends to be the best performing overall. I-15 has the most variability of performance by mode, and most complex to serve with fully exclusive transit. State/Main is the most difficult to serve the regional need.
  
- Initial Results – Corridor-Specific Observations:
  - Rail Corridor
    - Includes commuter rail, light rail, and bus rapid transit.
    - Commuter rail has the greatest ability to serve regional connections. Light rail has several operational challenges and would include lower speeds. Bus rapid transit is similar to commuter rail, with reduced performance in transit connections.
    - Darren Bunker asked to clarify costs: the team is reviewing capital expenditure costs only (not operations).
    - Bruce Cardon and Jason Bond asked how much of the rail corridor bus rapid transit could utilize vs need to implement an adjacent corridor outside of UPRR operations: still to be determined. Need to understand willingness of buying out the freight corridor, removing track, and running bus rapid transit. OR – maintain freight operations, and potentially construct adjacent corridor.
      - Actually, all modes in the rail corridor could anticipate operating in an adjacent corridor, so reliability will not be hindered by UPRR operations.
    - Jordan Swain asked about the economic development rating. Claire clarified that this is more qualitative at this phase and reviewed available land for station development and feeling of permanence/certainty of infrastructure/stations.
  
  - I-15
    - Includes light rail, bus rapid transit, and express bus.
    - Light rail has high transit reliability, but most costly with constructability concerns. Bus rapid transit has high transportation system impacts and constructability considerations. Express bus generally has the least impacts, but low transit reliability and potential for transit connections.
    - Jason Bond asked how an alternative on I-15 may impact any UDOT long-range plans for the interstate. Darren Bunker noted that there are many challenges for operating transit on I-15, specifically regarding traversing on/off ramps. These are not fatal flaws, but will likely add cost. UDOT is committed to seeing the alternatives analysis through.
    - Jordan Swain asked if any of these alternatives could be an interim solution. Claire responded that yes, potentially – but that is not what we are trying to solve with the alternatives analysis. We want to keep in mind what our long-term solution is, and then during implementation planning, explore what/if an interim solution could be.
    - Rob Hunter asked if we might explore going off the interstate corridor, such as a potential future I-15 frontage road. Claire responded that this was not considered during this phase, as we typically use existing corridors, and the rail corridor is so close to the right-of-way.
    - Laura asked about the transportation system rating for express bus, probably should be medium instead of low. Claire agreed and the team will update that to medium.

- State/Main
  - Includes light rail, bus rapid transit, and express bus.
  - Light rail has higher transit reliability, but most costly. Bus rapid transit is a mid-range alternative, with moderate reliability and impacts. Express bus has the least overall impacts, least costs, and least economic development potential, but the greatest reduced speeds and reliability due to operating in mixed flow traffic.

- Initial Results – Draft Recommendations:

- Recommend moving commuter rail and bus rapid transit, both along the rail corridor, into more detailed evaluation. For both scenarios, explore two operational scenarios: (1) all day service and (2) AM/PM peak service.
- Supportive of recommendation: Santaquin, Payson, and Provo. Spanish Fork and Springville no longer on call. Laura will follow up with Spanish Fork and Springville.

- Other Key Takeaways:

- Transit alternatives along State/Main should continue to be explored for more localized transit service.
- Express bus on I-15 could still be considered as a possible phasing element while the long-term project is being developed, funded, and constructed.
  - The current UTA 805 route runs along the I-15 corridor. The more stops you put on the express bus service, the less reliable it is and lower ridership. However, it offers the opportunity to start building ridership through the park-and-ride facilities/dedicated stops.

- Future Steps:

- Reviewing recommendation with the Executive Committee next week.
- Will advance recommended alternatives into the Detailed Evaluation, which will review similar factors in greater detail with more quantitative data.
- With a Preferred Alternative in mind, the team will strategize implementation options.

## 5. Stakeholder Engagement Update – Megan Waters (UTA) and Beau Hunter (Horrocks)

- Megan Waters thanked the group for comments on community-specific engagement approaches.
- Promotional content is under development and will be shared with all partnering organizations.
- UTA is obtaining a community partner to support engagement with Spanish-speaking and Latino/Hispanic community.
- Coming up next: will be seeking public feedback on the Purpose and Need and initial range of alternatives.

## 6. Next Steps and Workshop Wrap-up – Laura Hanson (UTA)

- Laura described next steps.
  - Executive Committee meeting on March 11th
  - Begin detailed evaluation of alternatives
  - Kick off land use planning task

**Meeting Attendees:**

*Payson:* Jill Spencer

*Provo:* Dixon Holmes, Rob Hunter

*Santaquin:* Jason Bond

*Spanish Fork:* Dave Anderson

*Springville:* Josh Yost

*UTA:* Laura Hanson, Ken Anson, Bruce Cardon, Mary De La Mare-Schaefer, Kerry Doane, Jordan Swain, Megan Waters

*UDOT:* Darren Bunker

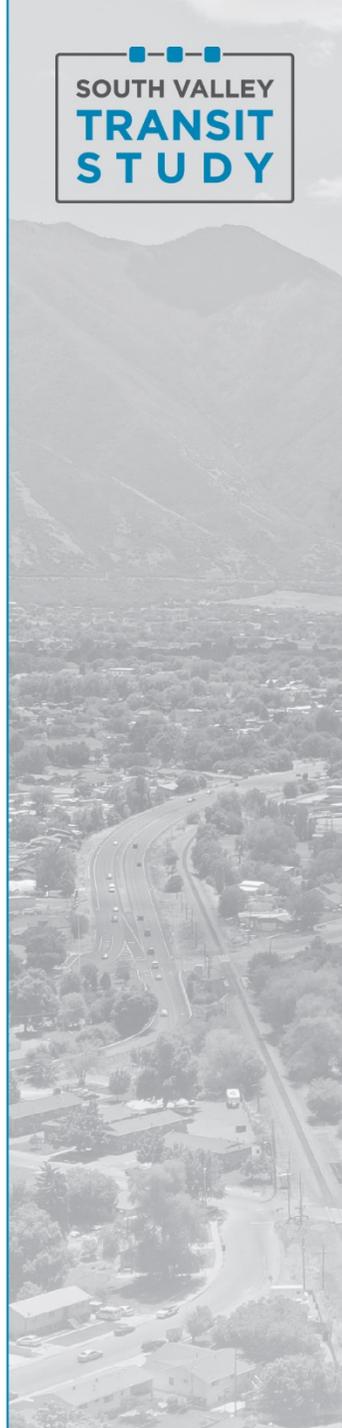
*MAG:* Shawn Seager, Chad Eccles

*Project Team:* Claire Woodman, Ian Kilpatrick, Jackie Kuechenmeister, Morgan Stumpf (Parametrix); Shane Marshall, Beau Hunter, Alexis Verson (Horrocks)

# South Valley Transit Study

TAC Workshop #3

March 3, 2021 | 9-11 a.m.



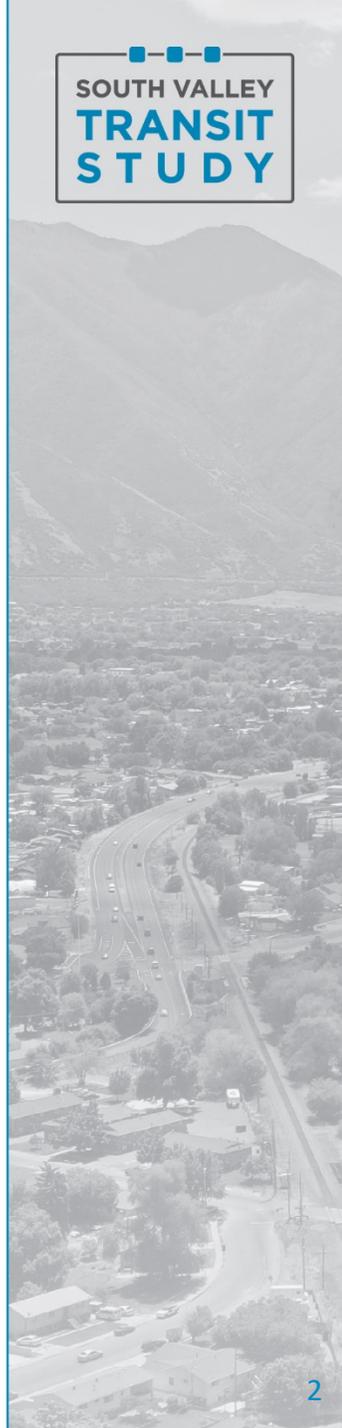
# Welcome and Introductions

## ➤ Welcome

## ➤ Introductions

## ➤ Meeting Agenda

- Recap and Transit Study Refresh
- Initial Evaluation Workshop
- Stakeholder Engagement Update
- Next Steps and Wrap-Up

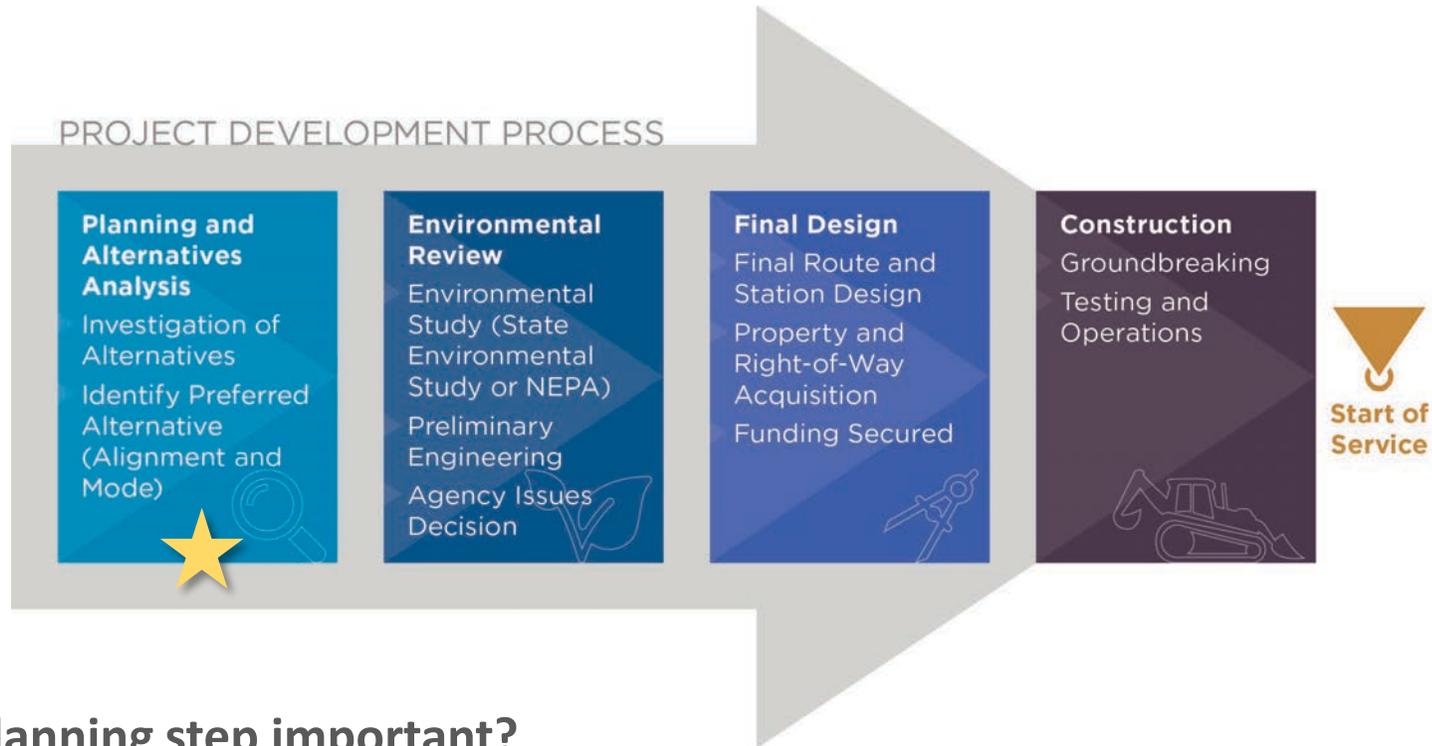


# Recap From Last Meeting

- Purpose and Need
- Evaluation Process Overview
- Initial Range of Alternatives and Modes



# Transit Project Development Roadmap



## Why is this planning step important?

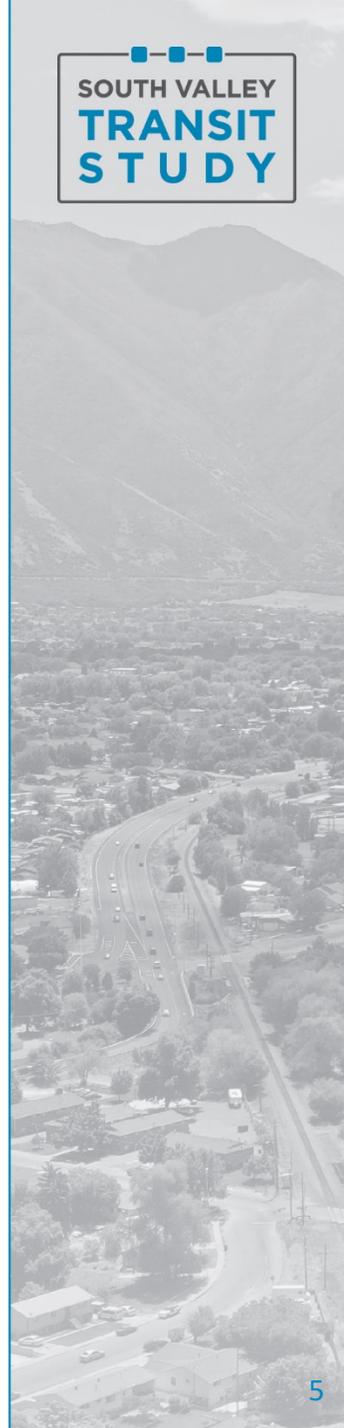
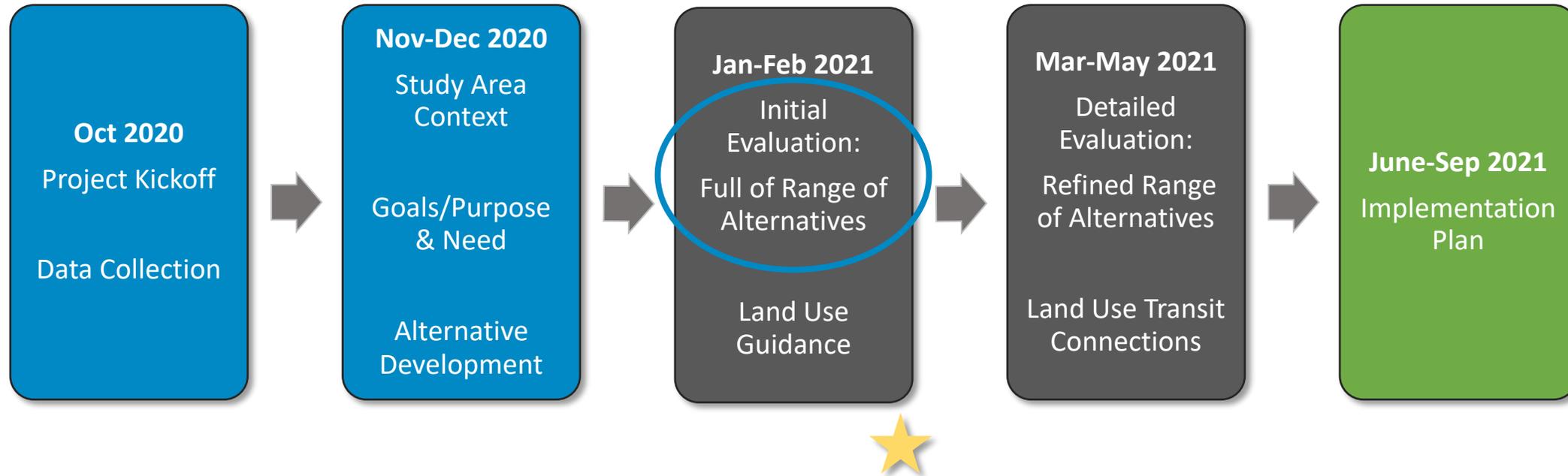
- Define the project need
- Develop alignment and transit mode decision for major capital investment
- Future phases build on this step

## How is this step different than environmental review and other future steps?

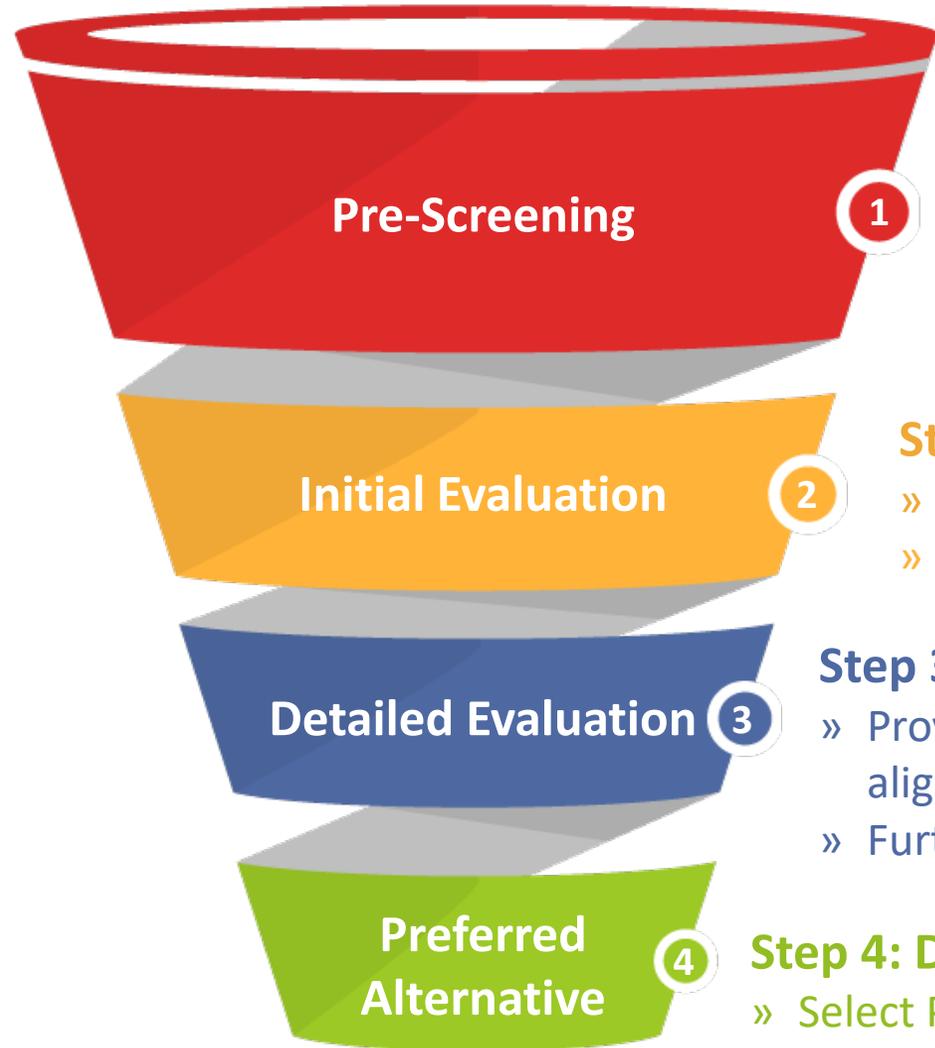
- Increasing level of detail about engineering, cost, and environmental effects with each step



# Transit Study Roadmap



# Alternatives Evaluation Roadmap



## Step 1: Fatal flaw review

- » Review full range of corridors and modes
  - Does the corridor or mode meet the Purpose & Need?
  - Is there an obvious fatal flaw?
  - Reduce corridors and modes based on pre-screening

## Step 2: Evaluate alternatives at a high-level

- » Combine remaining corridors/modes into logical alternatives
- » Reduce alternatives based on initial evaluation

## Step 3: Evaluate alternatives in more detail

- » Provide greater definition (identify service assumptions, stations, alignment details)
- » Further narrowing of alternatives

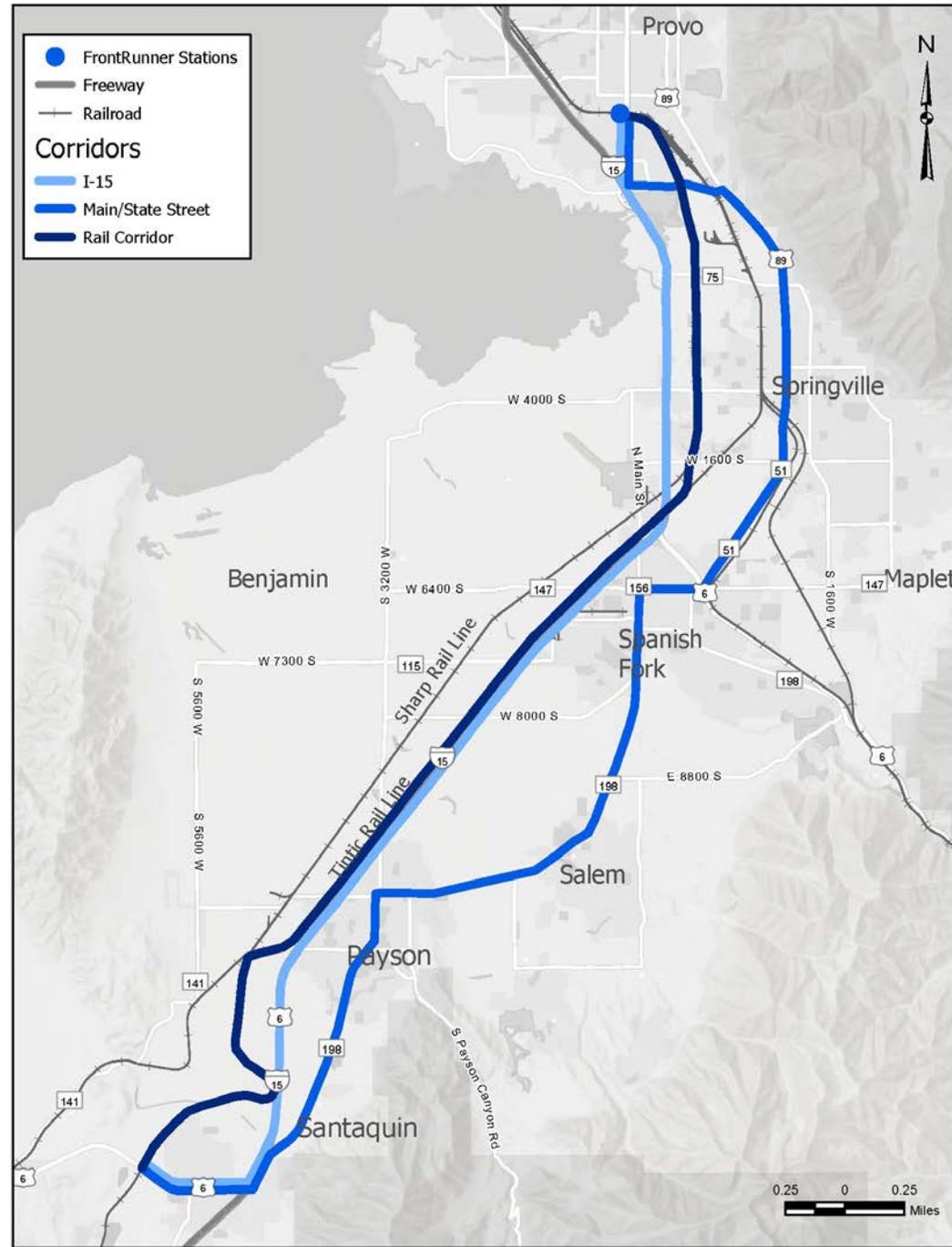
## Step 4: Develop Implementation Plan

- » Select Preferred Alternative
- » Consider potential phasing options



# 2

## Initial Evaluation — Transit Corridors



2

# Initial Evaluation

## Transit Modes



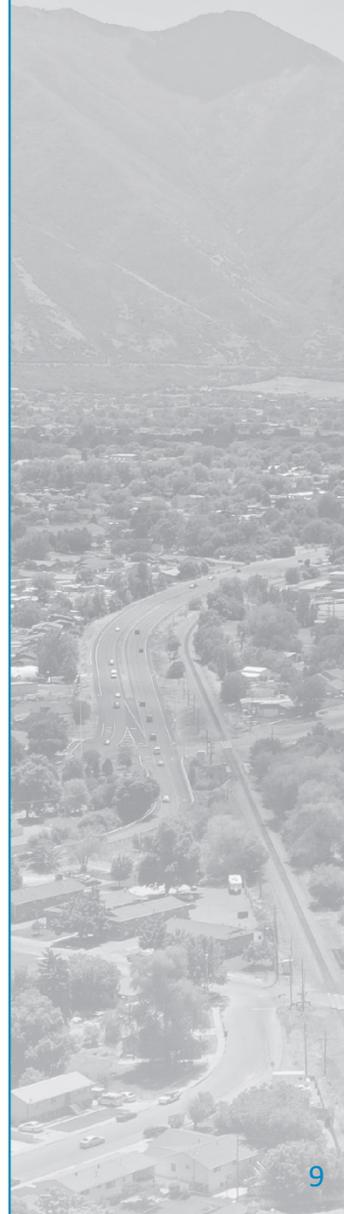
# 2 Initial Evaluation Alternatives



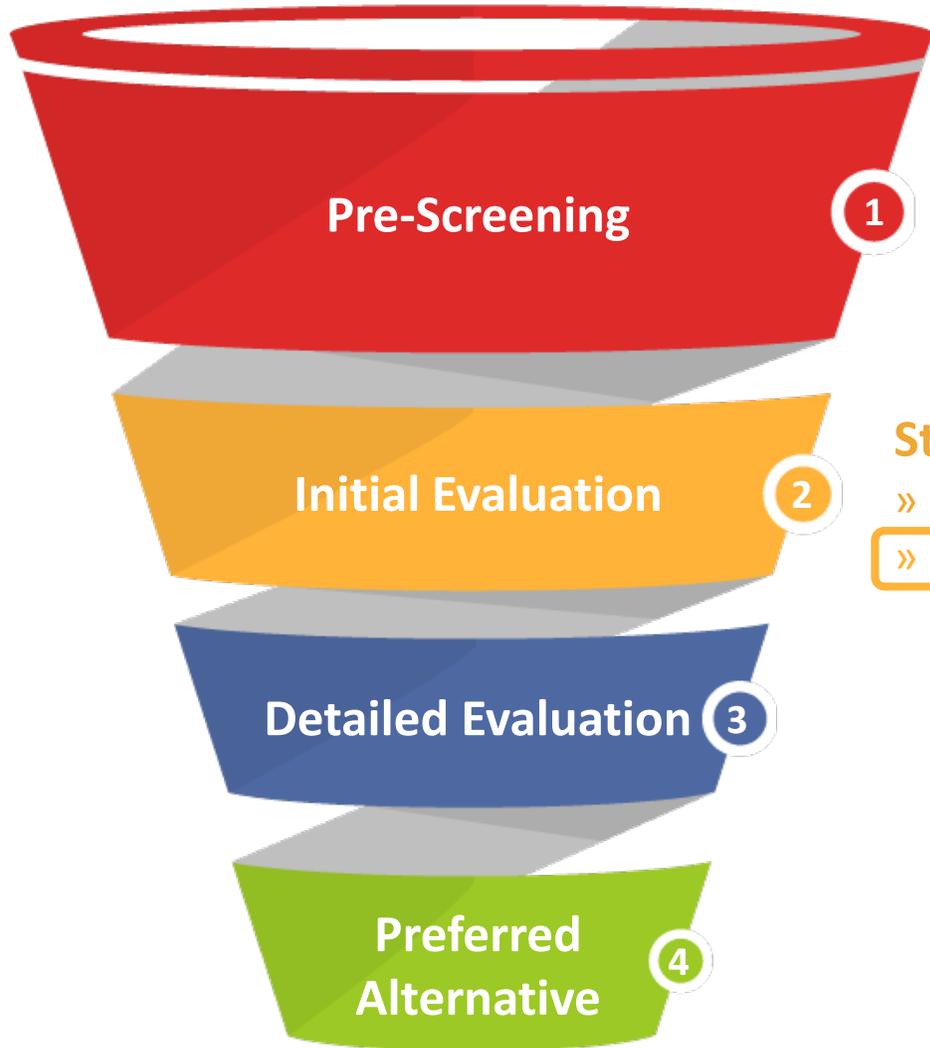
Mode	Definition	State/ Main	Rail Corridor	I-15
<b>Commuter Rail</b>	<ul style="list-style-type: none"> <li>Operates in <u>exclusive</u> transit alignment</li> <li>Regional service with longer stop spacing (4 stations)</li> </ul>	No	Yes	No
<b>Light Rail</b>	<ul style="list-style-type: none"> <li>Operates in <u>exclusive</u> transit alignment (shoulder-running/median on I-15 or State/Main; rail corridor ROW)</li> <li>Regional service with longer stop spacing (4 stations)</li> </ul>	Yes	Yes	Yes
<b>Bus Rapid Transit</b>	<ul style="list-style-type: none"> <li>Operates in <u>exclusive</u> transit alignment on Rail Corridor</li> <li>Operations in ~50% exclusive alignment on I-15 and State/Main</li> <li>Regional service with longer stop spacing (4 stations)</li> </ul>	Yes	Yes	Yes
<b>Express Bus</b>	<ul style="list-style-type: none"> <li>Operates in mixed flow traffic</li> <li>Regional service with longer stop spacing (4 stations)</li> </ul>	Yes	No	Yes

Notes:

- **Alternatives represent full buildout (2050) and service from Provo to Santaquin**
- Frequency of service would be the same for all alternatives
- Regional stop spacing ~5 miles between stations



# Alternatives Evaluation Roadmap



## Step 2: Evaluate alternatives at a high-level

- » Combine remaining corridors/modes into logical alternatives
- » Reduce alternatives based on initial evaluation – *this step*



# 2

## Initial Evaluation – How to Decide?



### ➤ Evaluation criteria:

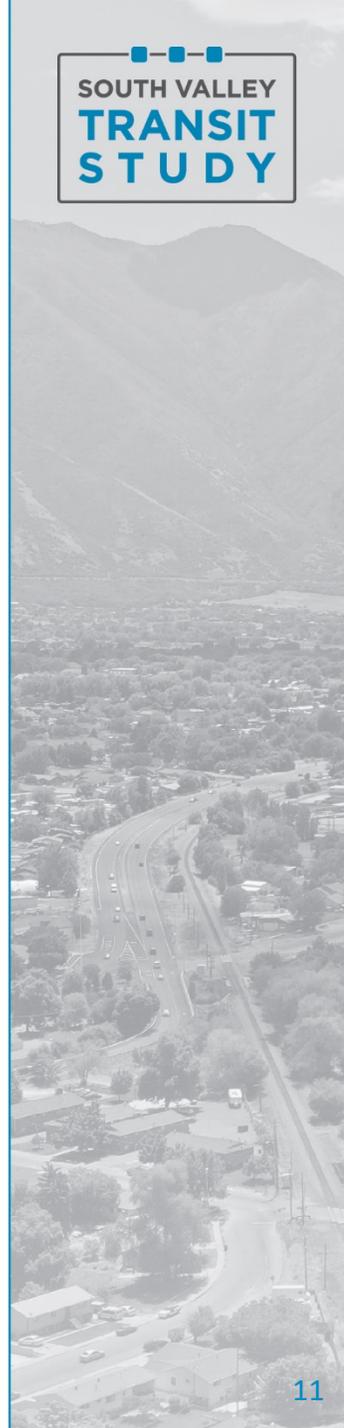
- Transit speed
- Transit reliability
- Transit connections
- Ridership potential
- Transportation system impacts
- Community compatibility
- Economic development potential
- Cost considerations
- Constructability and operational considerations
- Built and natural environmental considerations

### Initial evaluation:

- ❖ Planning level analysis
- ❖ Minimal engineering

### Initial evaluation criteria are:

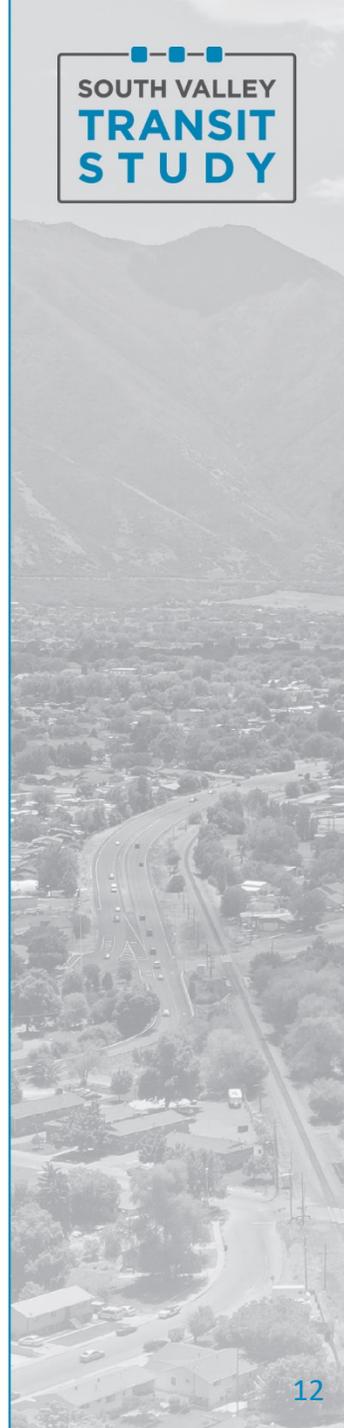
- ❖ High-level
- ❖ Largely qualitative
- ❖ Help illustrate key differences



## 2 Initial Evaluation – Workshop Overview



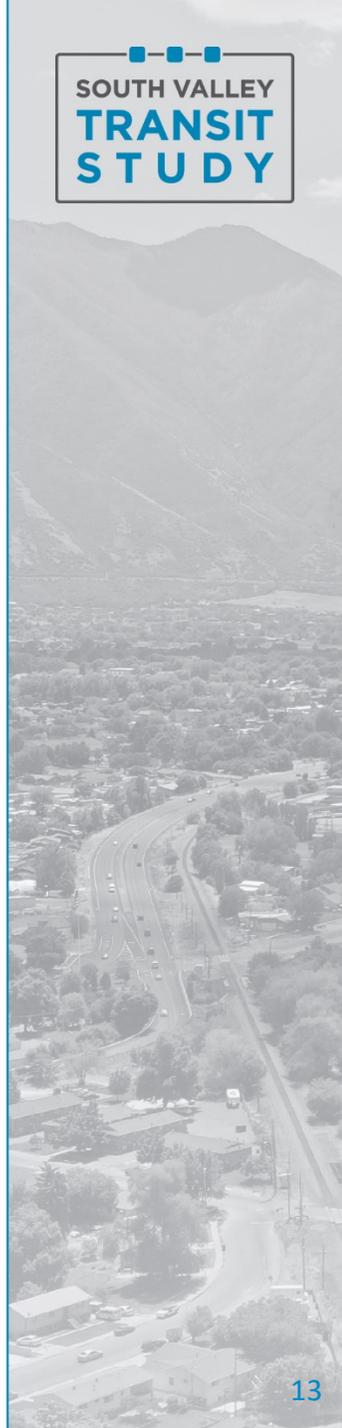
- General observations
- Corridor specific observations
  - Rail Corridor observations
  - I-15 observations
  - State/Main Street observations
- Questions on detailed ratings?
- **Draft recommendation for alternatives to evaluate in detail**
- Other key takeaways



## 2 Initial Evaluation – What did we learn?

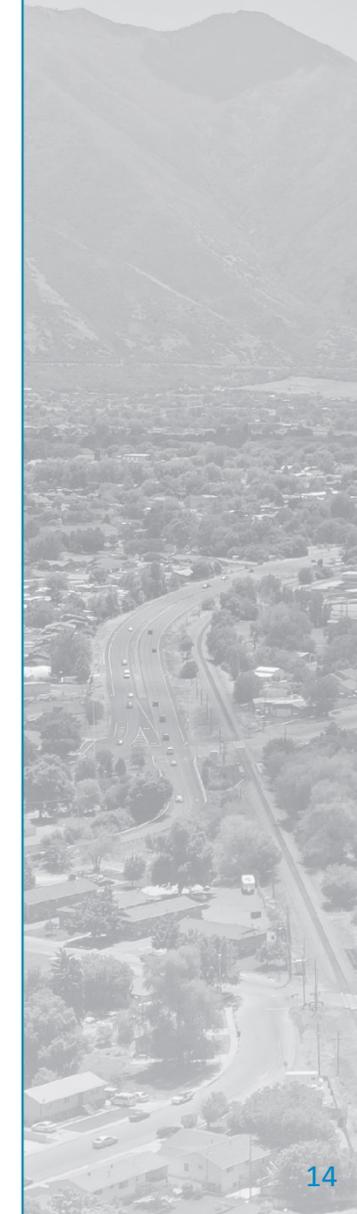
### ➤ General Observations:

- **Rail Corridor** – Tends to be the best performing overall for most modes
- **I-15** – Has most variability of performance by mode and most challenging/complex to serve with fully exclusive transit
- **State/Main** – Overall corridor length and number of signalized intersections reduces transit performance, more challenging to serve regional need



# 2

## Initial Evaluation – What did we learn?



### ➤ Key Findings – Rail Corridor Alternatives:

- **Similarities for all alternatives:**
  - High performing for transit reliability, ridership, community compatibility, and economic development potential
  - Moderate performance for cost, transportation impacts, natural/built enviro considerations
- **Commuter Rail**
  - PROS: Better performing due to higher transit speed, transit reliability, **potential for regional connections**
  - CONS: Moderate construction complexity and transportation system impacts, more costly
- **Light Rail**
  - PROS: High transit reliability
  - CONS: Moderate construction complexity and system impacts, **operational challenges, lower speeds**, more costly
- **Bus Rapid Transit**
  - Similar to Commuter Rail except for reduced performance in transit connections

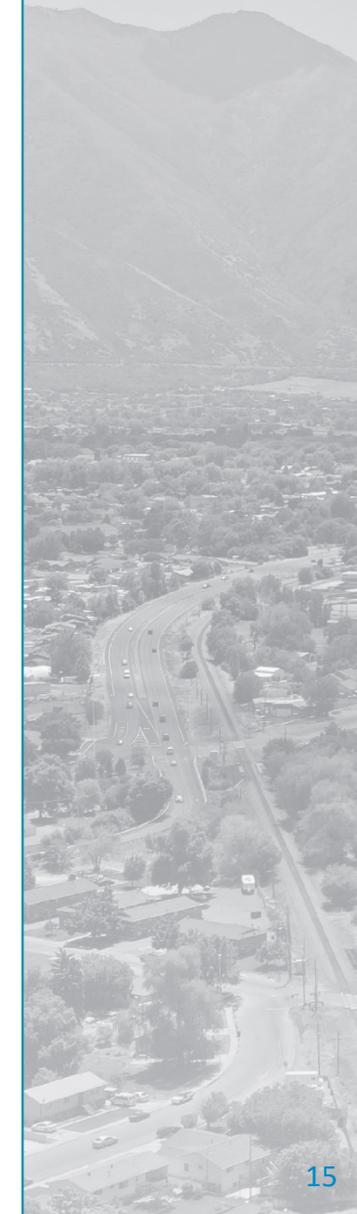
Initial Screening Criteria	Rail Corridor Commuter Rail	Rail Corridor Light Rail	Rail Corridor Bus Rapid Transit
➤ Transit speed	●	●	●
➤ Transit reliability	●	●	●
➤ Transit connections	●	●	●
➤ Transit ridership potential	●	●	●
➤ Transportation system impacts	●	●	●
➤ Community compatibility	●	●	●
➤ Economic development potential	●	●	●
➤ Capital cost considerations	●	●	●
➤ Constructability or operational considerations	●	●	●
➤ Natural and built environment considerations	●	●	●
➤ Project stakeholder input			
➤ Public input			

Key:

- High performance and/or low impact
- Moderate performance and/or moderate impact
- Low performance and/or high impact

# 2

## Initial Evaluation – What did we learn?



### ➤ Key Findings – I-15 Corridor Alternatives:

- **Similarities for all alternatives:**
  - High ridership, low community compatibility, high transportation system impacts
- **Light Rail**
  - PROS: **High transit reliability**; moderate transit connection potential
  - CONS: Moderate speeds; **most costly** and challenging construction and operation elements, and high transportation system impacts
- **Bus Rapid Transit**
  - PROS: High transit speed, low natural/built impacts
  - CONS: In general, moderate performance for several measures; high transportation system impacts and challenging construction elements
  - Note rating change from materials sent
- **Express Bus**
  - PROS: High transit speeds, low cost, **low construction/operational impacts, lower overall impacts**
  - CONS: **Low transit reliability, low potential for transit connections**

Initial Screening Criteria	I-15 Light Rail	I-15 Bus Rapid Transit	I-15 Express Bus
➤ Transit speed	●	●	●
➤ Transit reliability	●	●	●
➤ Transit connections	●	●	●
➤ Transit ridership potential	●	●	●
➤ Transportation system impacts	●	●	●
➤ Community compatibility	●	●	●
➤ Economic development potential	●	●	●
➤ Capital cost considerations	●	●	●
➤ Constructability or operational considerations	●	●	●
➤ Natural and built environment considerations	●	●	●
➤ Project stakeholder input			
➤ Public input			

Key:

- High performance and/or low impact
- Moderate performance and/or moderate impact
- Low performance and/or high impact

# 2

## Initial Evaluation – What did we learn?



### ➤ Key Findings – Main/State Street Corridor Alternatives:

- **Similarities for all alternatives**
  - Low transit speed, high ridership potential, high transportation impacts, and low community compatibility
- **Light Rail**
  - PROS: **High transit reliability, potential for regional connections**, moderate economic development potential
  - CONS: Construction complexity and transportation system impacts, **most costly**
- **Bus Rapid Transit**
  - PROS: Moderate reliability, economic development potential, and moderate impacts to natural/built environment
  - CONS: Construction complexity and transportation system impacts, more costly
- **Express Bus**
  - PROS: **Reduced overall impacts and no construction/operational challenges, less costly**
  - CONS: **Reduced transit speed and reliability, transit connections potential, economic development potential**

Initial Screening Criteria	State/Main Light Rail	State/Main Bus Rapid Transit	State/Main Express Bus
➤ Transit speed	●	●	●
➤ Transit reliability	●	●	●
➤ Transit connections	●	●	●
➤ Transit ridership potential	●	●	●
➤ Transportation system impacts	●	●	●
➤ Community compatibility	●	●	●
➤ Economic development potential	●	●	●
➤ Capital cost considerations	●	●	●
➤ Constructability or operational considerations	●	●	●
➤ Natural and built environment considerations	●	●	●
➤ Project stakeholder input			
➤ Public input			

Key:  
 ● High performance and/or low impact  
 ● Moderate performance and/or moderate impact  
 ● Low performance and/or high impact



# 2

## Initial Evaluation – What did we learn?



### Summary

- **Rail Corridor – Commuter Rail**
  - Higher performing
- **Rail Corridor – Light Rail**
  - Moderate performing
- **Rail Corridor – BRT**
  - Higher performing
- **I-15 – Light Rail**
  - Lower performing
- **I-15 – BRT**
  - Moderate/lower performing
- **I-15 – Express Bus**
  - Mixed performance (tradeoffs)
- **State/Main – Light Rail**
  - Lower performing
- **State/Main – BRT**
  - Lower performing
- **State/Main – Express Bus**
  - Mixed performance (tradeoffs)

Initial Screening Criteria	Rail Corridor Commuter Rail	Rail Corridor Light Rail	Rail Corridor Bus Rapid Transit	I-15 Light Rail	I-15 Bus Rapid Transit	I-15 Express Bus	State/Main Light Rail	State/Main Bus Rapid Transit	State/Main Express Bus
➤ Transit speed	●	●	●	●	●	●	●	●	●
➤ Transit reliability	●	●	●	●	●	●	●	●	●
➤ Transit connections	●	●	●	●	●	●	●	●	●
➤ Transit ridership potential	●	●	●	●	●	●	●	●	●
➤ Transportation system impacts	●	●	●	●	●	●	●	●	●
➤ Community compatibility	●	●	●	●	●	●	●	●	●
➤ Economic development potential	●	●	●	●	●	●	●	●	●
➤ Capital cost considerations	●	●	●	●	●	●	●	●	●
➤ Constructability or operational considerations	●	●	●	●	●	●	●	●	●
➤ Natural and built environment considerations	●	●	●	●	●	●	●	●	●
➤ Project stakeholder input									
➤ Public input									

Key:

- High performance and/or low impact
- Moderate performance and/or moderate impact
- Low performance and/or high impact

# 2

## Initial Evaluation – Recommendation



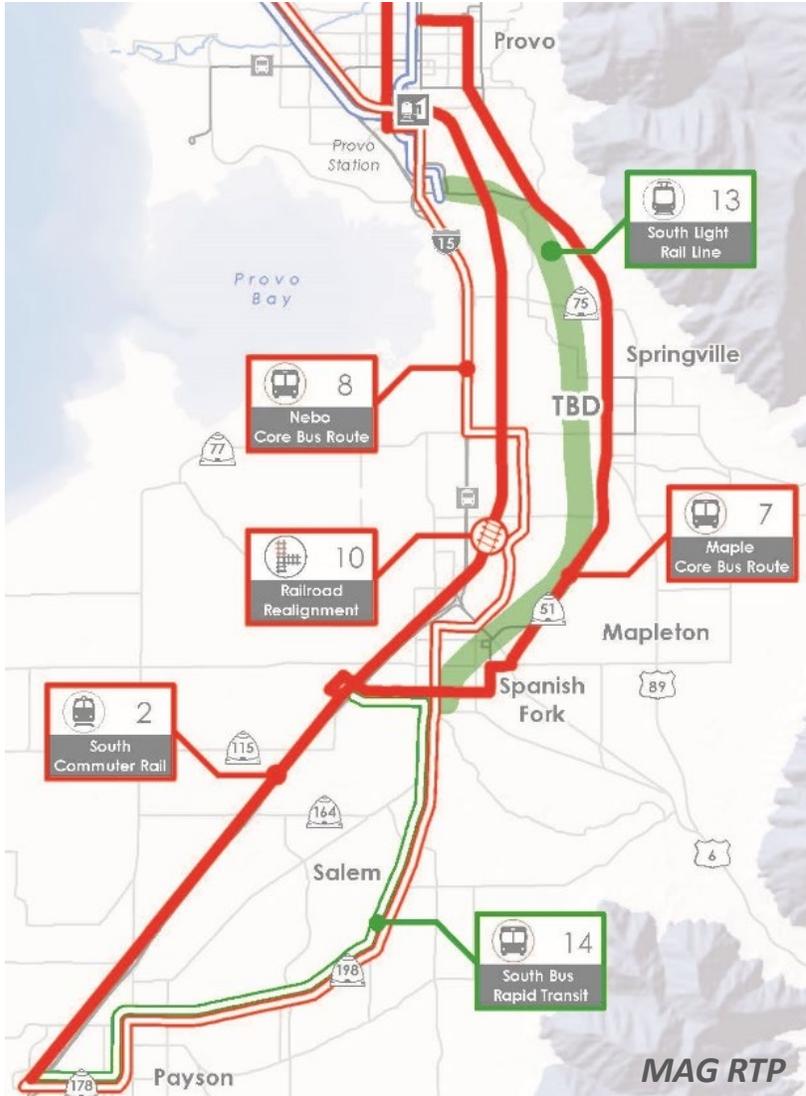
Initial Screening Criteria	Rail Corridor Commuter Rail	Rail Corridor Light Rail	Rail Corridor Bus Rapid Transit	I-15 Light Rail	I-15 Bus Rapid Transit	I-15 Express Bus	State/Main Light Rail	State/Main Bus Rapid Transit	State/Main Express Bus
➤ Transit speed	●	●	●	●	●	●	●	●	●
➤ Transit reliability	●	●	●	●	●	●	●	●	●
➤ Transit connections	●	●	●	●	●	●	●	●	●
➤ Transit ridership potential	●	●	●	●	●	●	●	●	●
➤ Transportation system impacts	●	●	●	●	●	●	●	●	●
➤ Community compatibility	●	●	●	●	●	●	●	●	●
➤ Economic development potential	●	●	●	●	●	●	●	●	●
➤ Capital cost considerations	●	●	●	●	●	●	●	●	●
➤ Constructability or operational considerations	●	●	●	●	●	●	●	●	●
➤ Natural and built environment considerations	●	●	●	●	●	●	●	●	●
➤ Project stakeholder input									
➤ Public input									

### Recommendation: Move the following alternatives into detailed evaluation

- ❖ Rail Corridor – Commuter Rail
- ❖ Rail Corridor – BRT
- ❖ For both alternatives, consider two operational scenarios, example: 1) all day service 2) AM/PM peak service

# 2

## Initial Evaluation – Other Findings

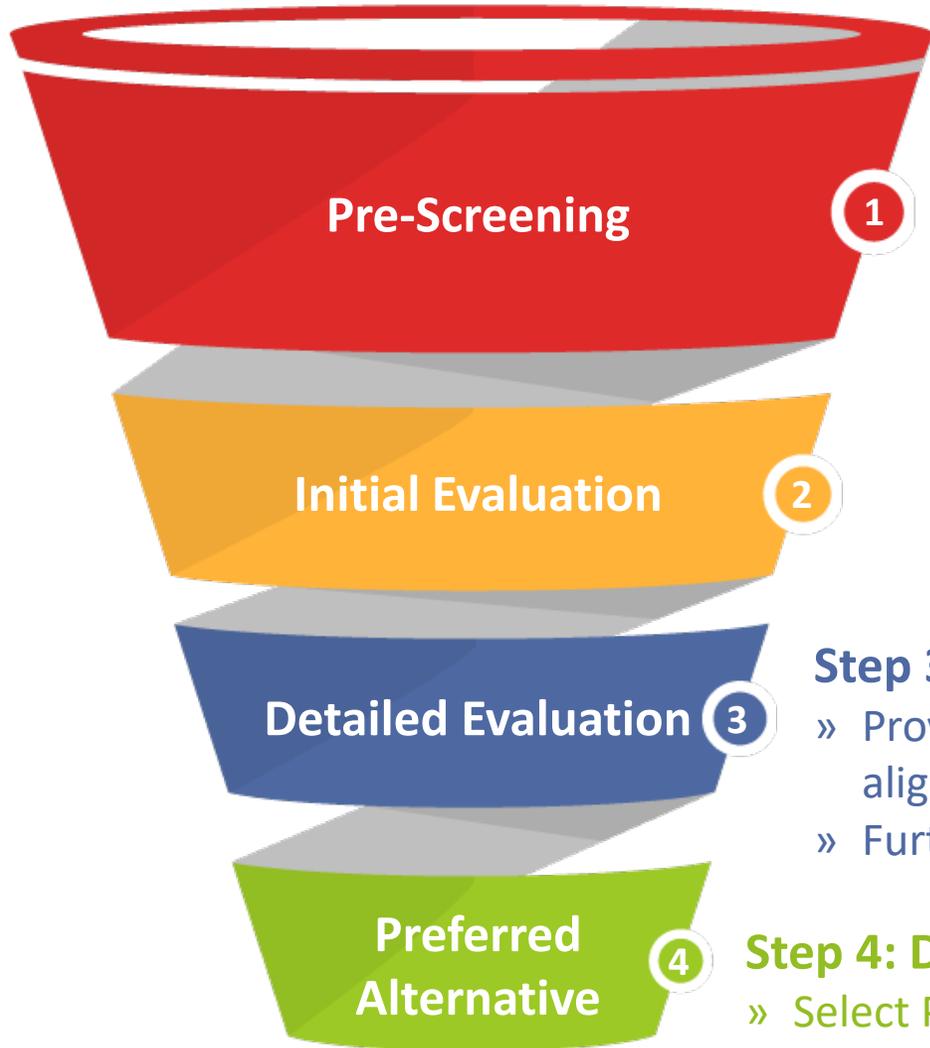


### ➤ Other key takeaways

- Transit Alternatives along the State/Main corridor should continue to be explored for more localized service, just doesn't meet this project's Purpose and Need
- Express Bus on I-15 could still be considered as a possible phasing element while the long-term project is being developed, funded, and constructed



# Alternatives Evaluation Roadmap – Future Steps

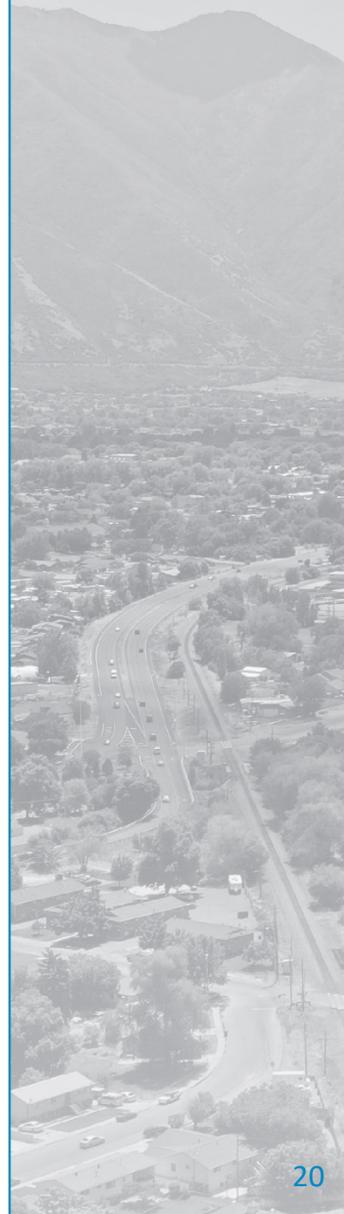


## Step 3: Evaluate alternatives in more detail

- » Provide greater definition (identify service assumptions, stations, alignment details)
- » Further narrowing of alternatives

## Step 4: Develop Implementation Plan

- » Select Preferred Alternative
- » Consider potential phasing options



# 3

## Detailed Evaluation – how to decide?



### ➤ Potential evaluation criteria:

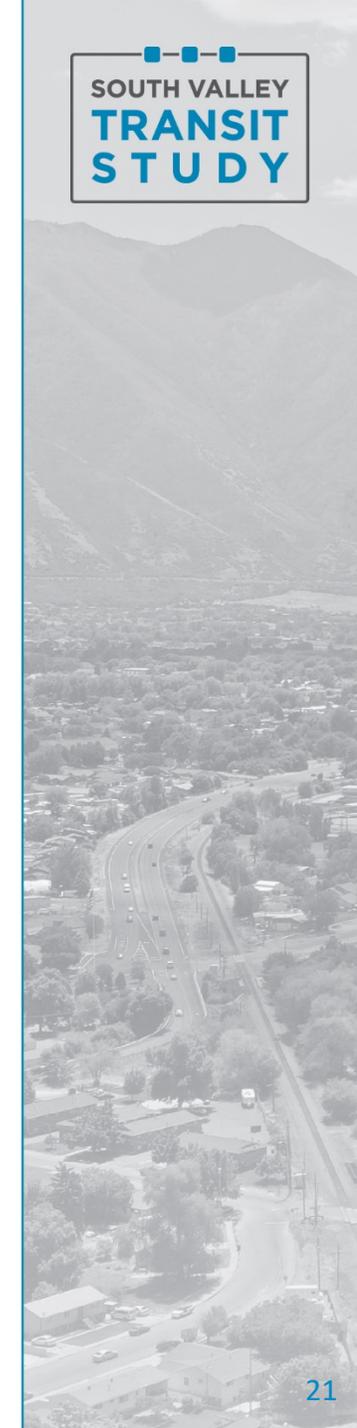
- Transit travel times
- Transit reliability
- Transit connections
- **Transit ridership and transit trips**
- **Station area accessibility**
- Transportation impacts
- **Transit-supportive zoning**
- **Development/redevelopment potential**
- **Equity and access to opportunity**
- **Capital cost estimate**
- **O&M cost estimate**
- Constructability considerations
- Operational considerations
- Environmental considerations
- **Phase and implementation considerations**

### Detailed evaluation:

- ❖ Conceptual engineering and cost estimating
- ❖ Ridership forecasting using model

### Detailed evaluation criteria are:

- ❖ In-depth
- ❖ More quantitative
- ❖ Diving into greater detail



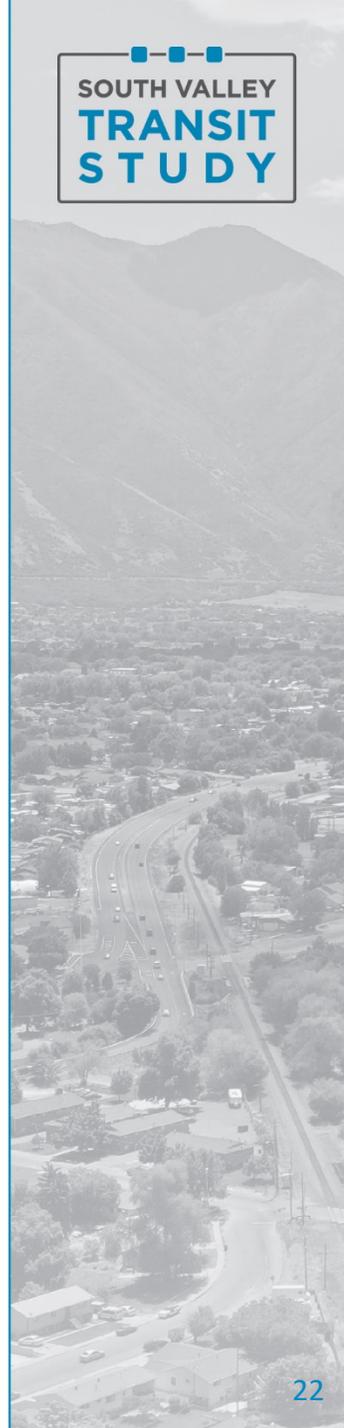
# 4

## Implementation – how do we implement the Preferred Alternative?



### Based on additional analysis of ...

- » Ridership (model runs by 2030, 2040, 2050, and by geographic extent of service)
- » Cost (capital and O&M)
- » Readiness of development/land use and associated infrastructure projects (i.e. future interchanges)
- » Other key differentiating factors from detailed evaluation



# 4

## Implementation Options – *Example*



### Implementation Options for **Example** Preferred Alternative:

#### No phasing

- Full Commuter Rail buildout by 20XX

#### Geographic or Timing Phasing

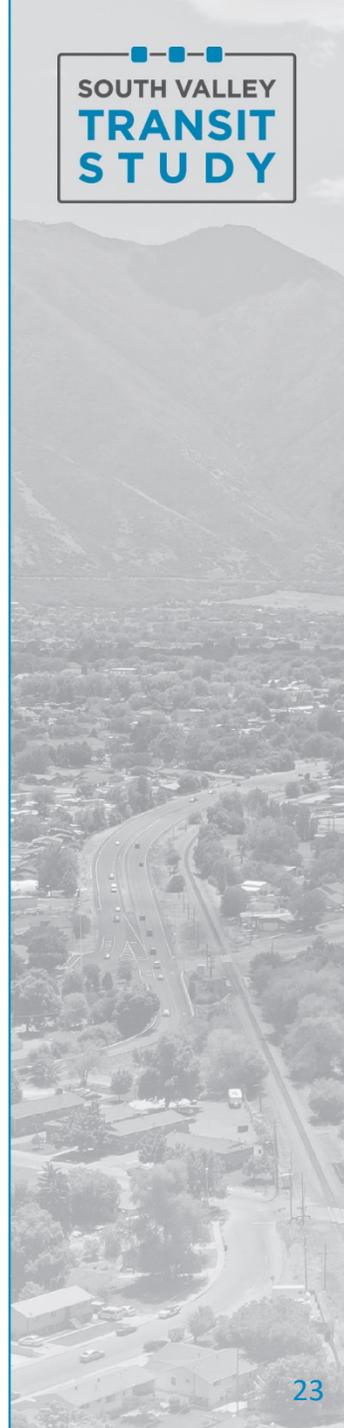
- Extend Commuter Rail to Springville in 20XX
- Extend Commuter Rail to Spanish Fork/Payson in 20YY
- Extend Commuter Rail to Santaquin by 20ZZ

#### Phasing of Modes

- Expand express bus service frequency + create permanence in identified station areas by 20XX
- Provide full dedicated lanes for buses by 20YY
- Full Commuter Rail buildout by 20ZZ

#### Mix and Match of Above

<b>EXAMPLE</b>	Frequency Assumptions	Operational Assumptions	Stations
<b>Alternative Commuter Rail 1</b> <ul style="list-style-type: none"> <li>• Commuter rail operating in exclusive facility</li> </ul>	All day service – 30 min peak, 60 min off peak	One-seat ride	1, 2, 3, 4



# Stakeholder Engagement Update

- Specific engagement: community-specific approaches have been planned
  - Will partner with cities to implement customized approaches (based on feedback)
- Promoting Engagement
  - Promo content to share with each partnering organization and city to post and promote SVTS with community
- Underrepresented communities – community partner to support engagement with Spanish-speaking and Latino/Hispanic community
- Coming up: public feedback on Purpose & Need and Initial Range of Alternatives through website



# Next Steps and Workshop Wrap-up

- Executive Committee meeting – March 11<sup>th</sup>
  - Please brief elected officials or representatives before meeting if possible
  
- Begin Detailed Evaluation of Alternatives
  - March through May
  
- Kicking off land use planning task
  - Mid-late March with combined workshop

