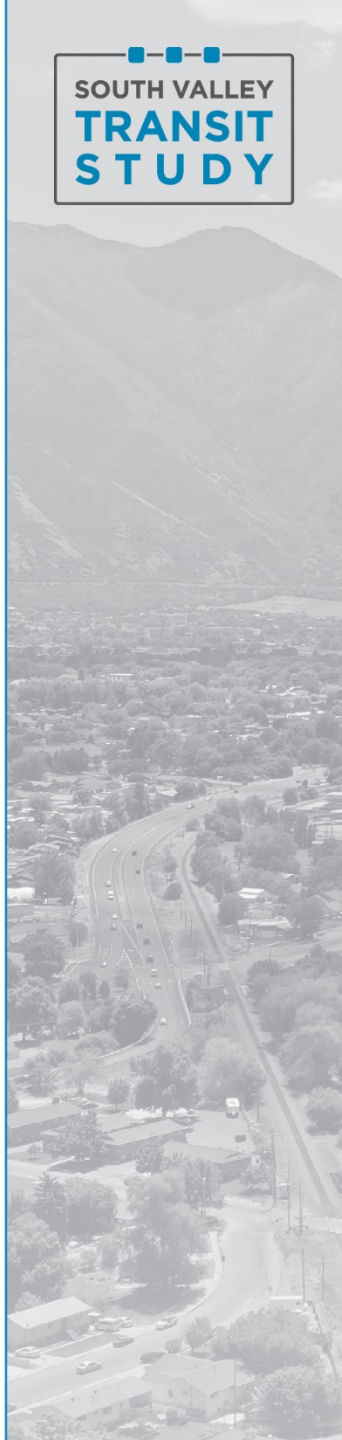
South Valley Transit Study

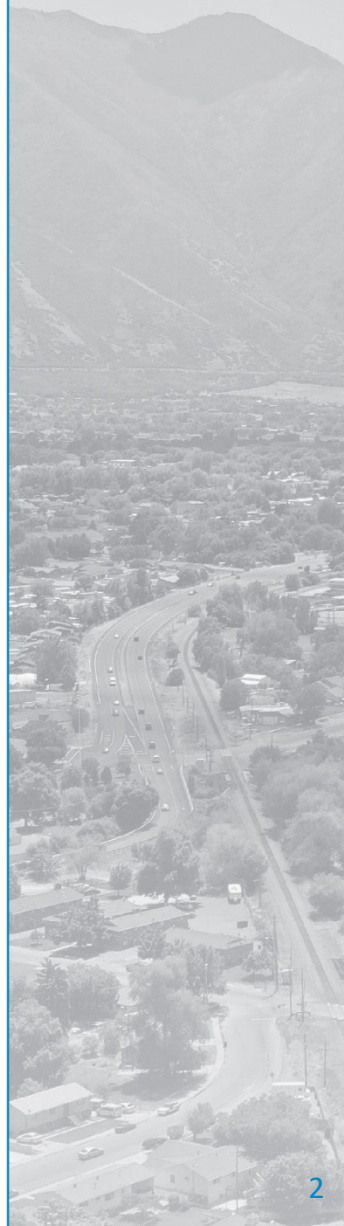
Executive Committee Workshop #3

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



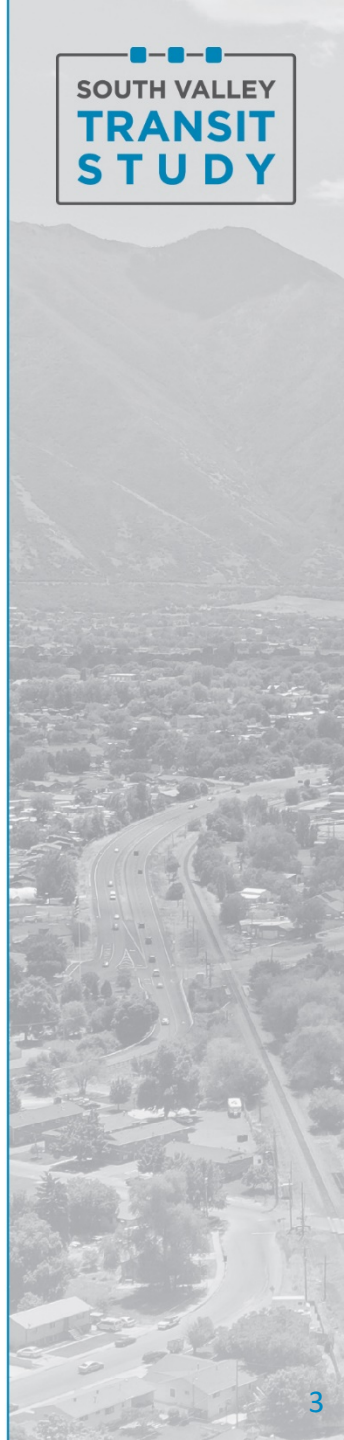
Welcome and Introductions

- **Welcome**
- **Introductions**
- **Meeting Agenda**
  - Recap and Transit Study Refresh
  - Initial Evaluation Workshop
  - Stakeholder Engagement Update
  - Next Steps and Wrap-Up

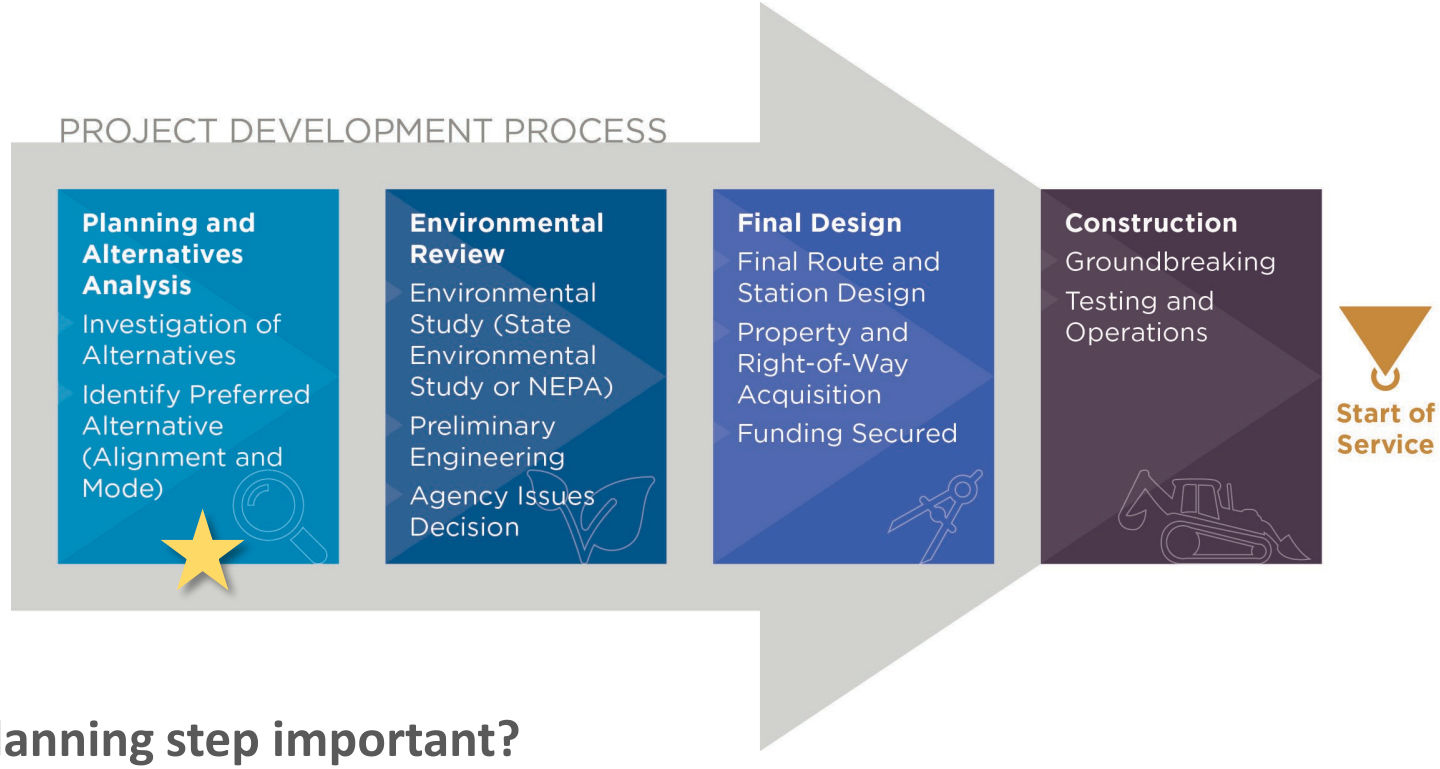


Recap From Last Meeting

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



Transit Project Development Roadmap



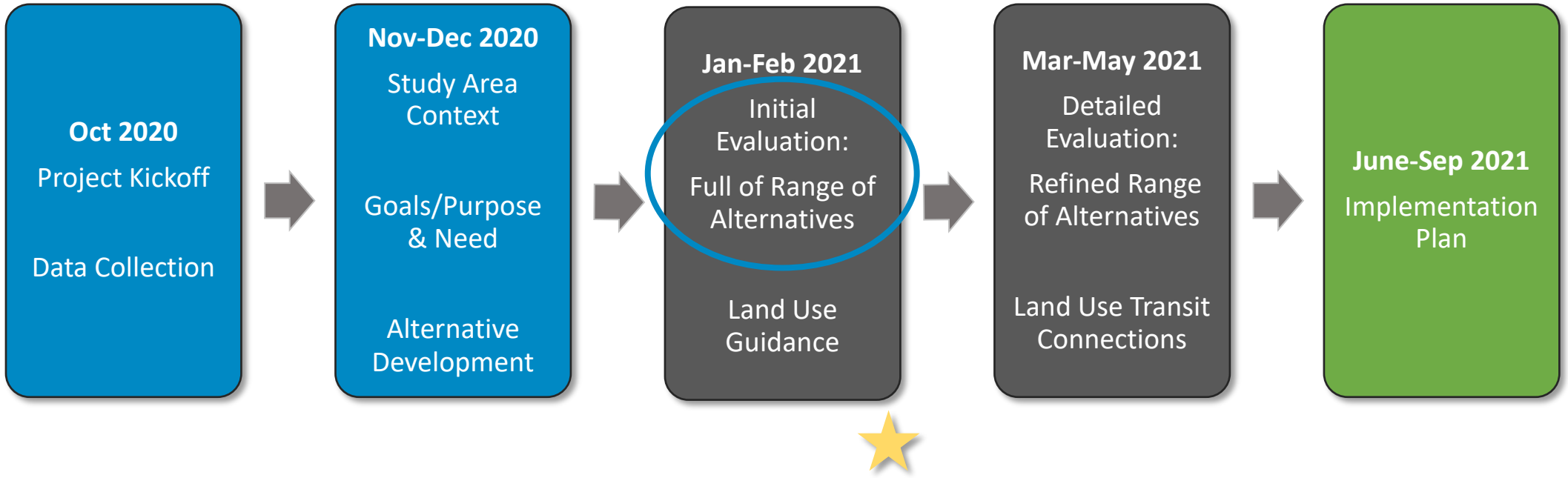
Why is this planning step important?

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

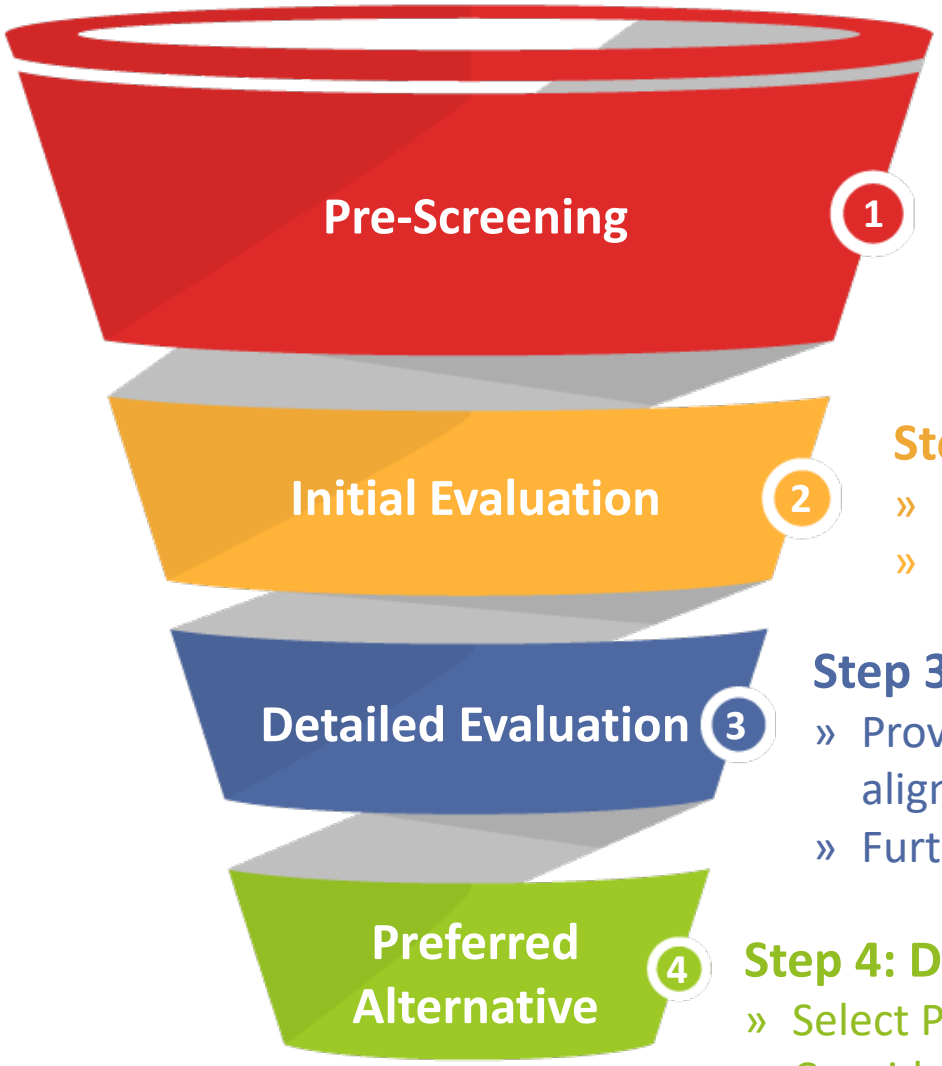
How is this step different than environmental review and other future steps?

- 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

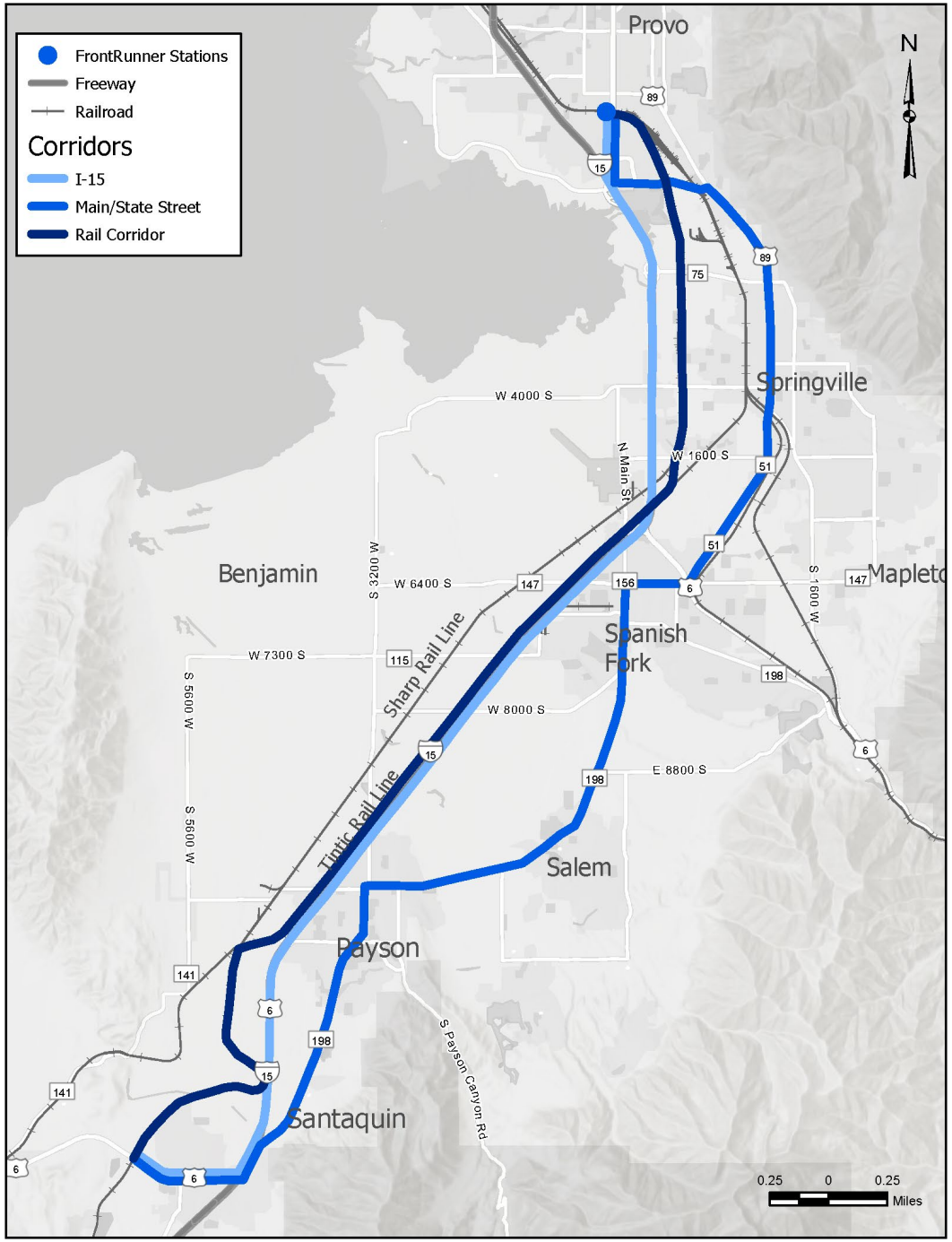
Step 4: Develop Implementation Plan

» Select Preferred Alternative

» Consider potential phasing options

2

Initial Evaluation – Transit Corridors

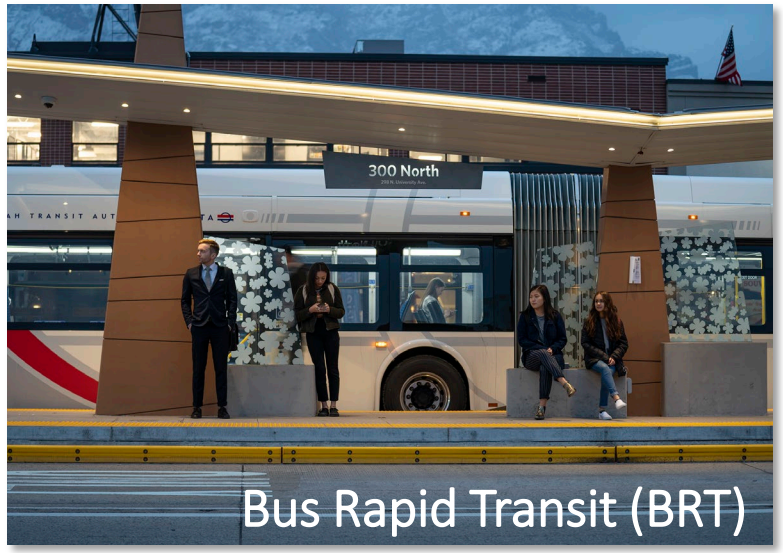


SOUTH VALLEY TRANSIT STUDY

2

Initial Evaluation – Transit Modes


Commuter Rail (CRT)



Bus Rapid Transit (BRT)


Light Rail (LRT)

Express Bus

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2 Initial Evaluation Alternatives

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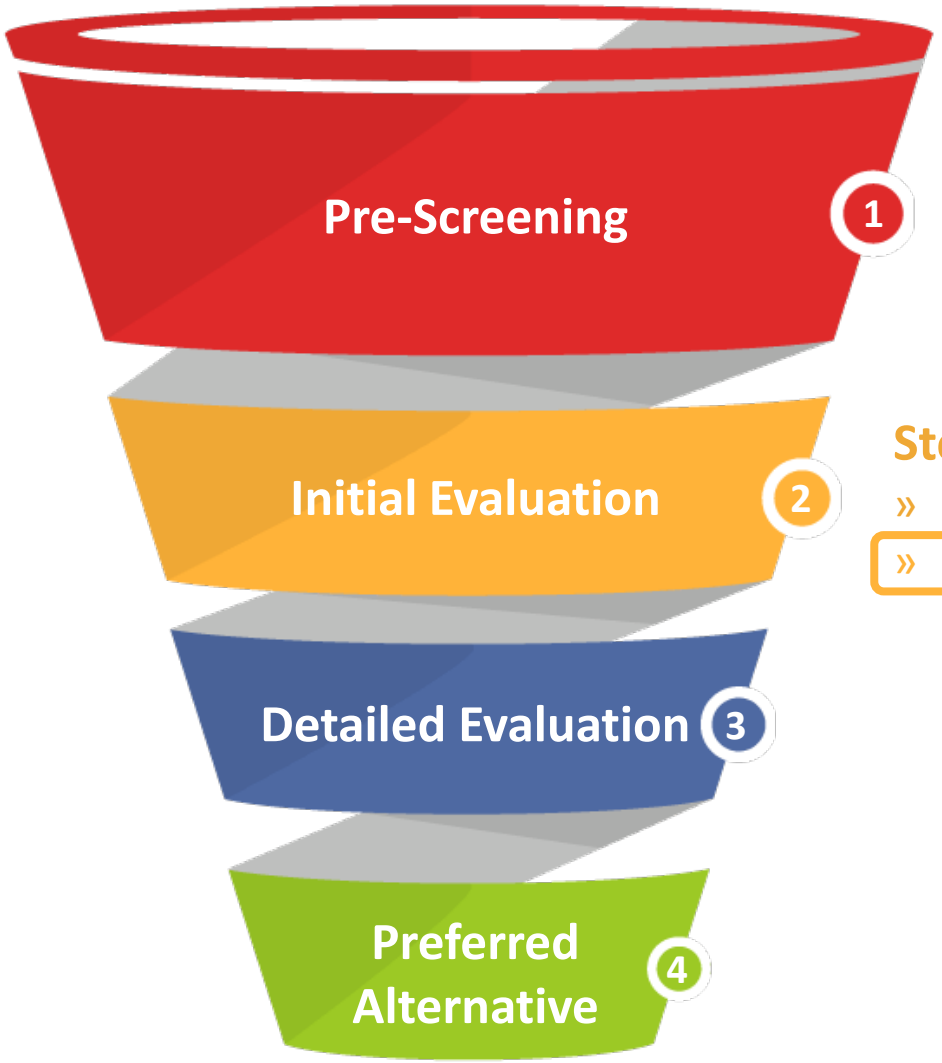
Mode	Definition	State/ Main	Rail Corridor	I-15
Commuter Rail	• Operates in exclusive transit alignment • Regional service with longer stop spacing (4 stations)	No	Yes	No
Light Rail	• Operates in exclusive transit alignment (shoulder-running/median on I-15 or State/Main; rail corridor ROW) • Regional service with longer stop spacing (4 stations)	Yes	Yes	Yes
Bus Rapid Transit	• Operates in exclusive transit alignment on Rail Corridor • Operations in ~50% exclusive alignment on I-15 and State/Main • Regional service with longer stop spacing (4 stations)	Yes	Yes	Yes
Express Bus	• Operates in mixed flow traffic • Regional service with longer stop spacing (4 stations)	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?

SOUTH VALLEY TRANSIT STUDY

➢ 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

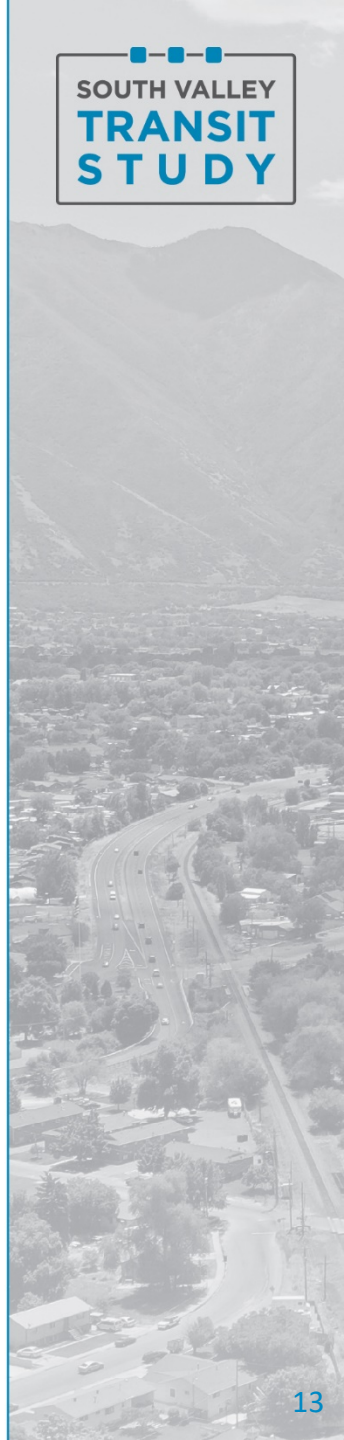
2 Initial Evaluation – Workshop Overview

- 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?

SOUTH VALLEY TRANSIT STUDY

➢ 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?

SOUTH VALLEY TRANSIT STUDY

➢ 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?

SOUTH VALLEY TRANSIT STUDY

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

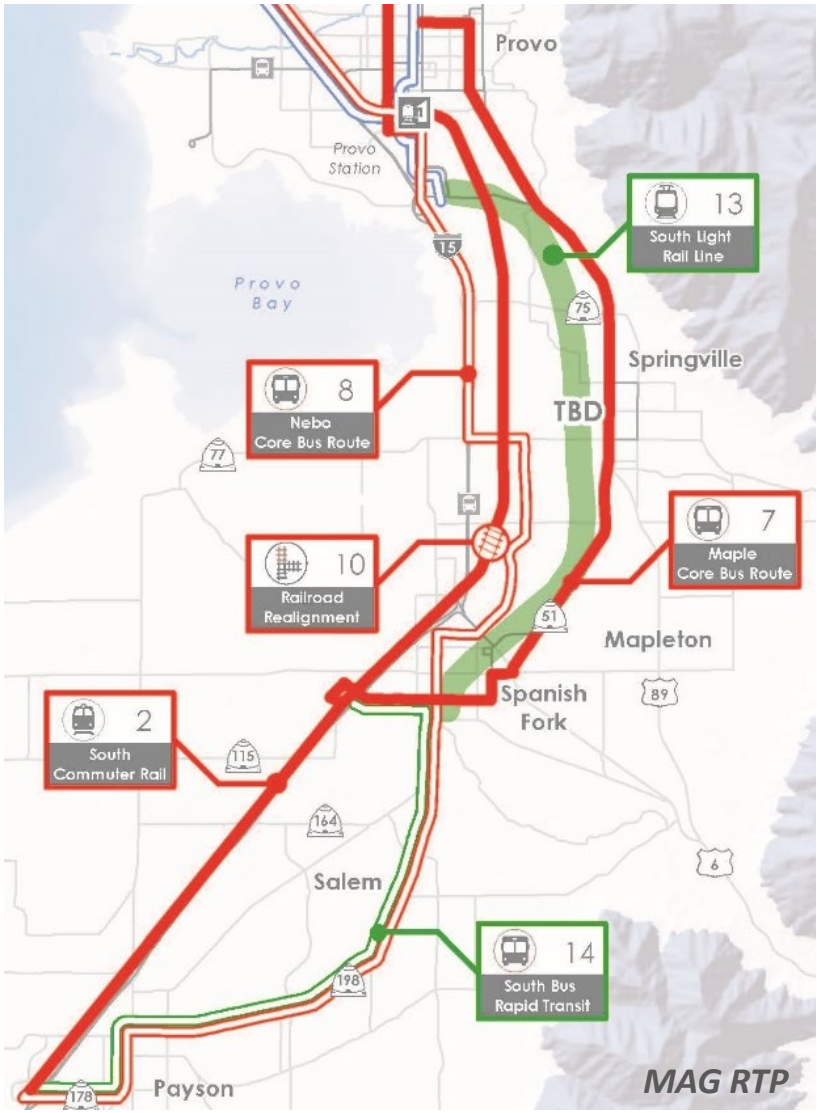
2 Initial Evaluation – Recommendation

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

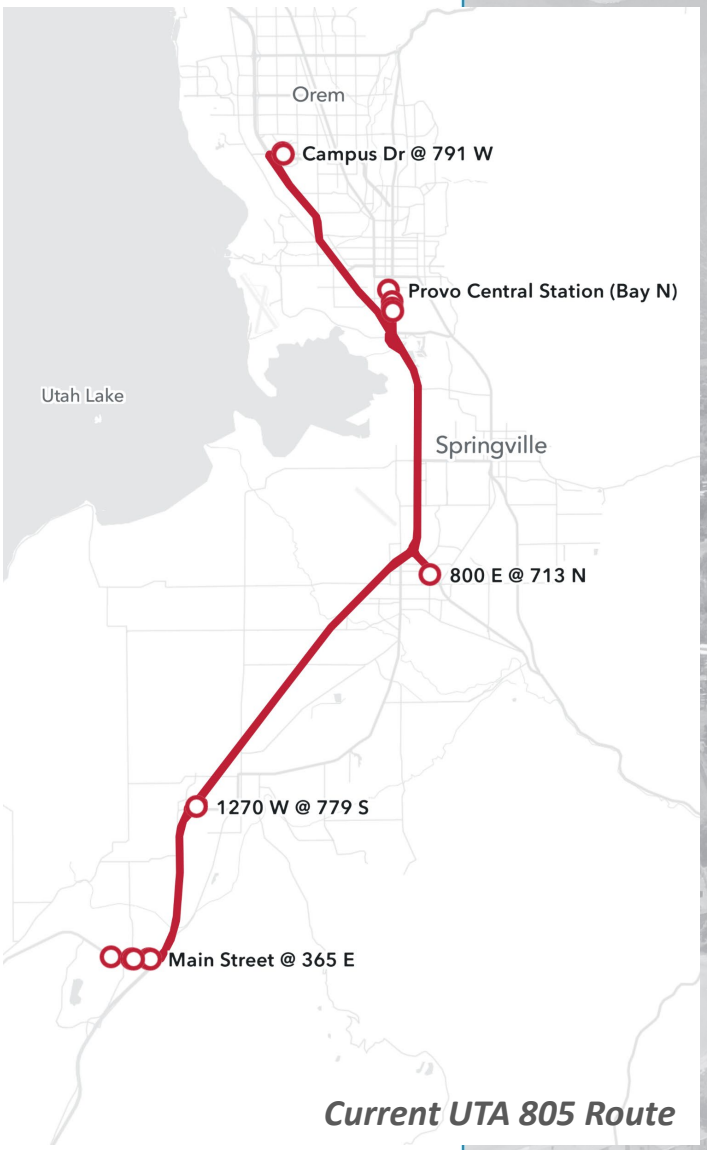
- Rail Corridor – Commuter Rail
- Rail Corridor – BRT
- For both alternatives, consider two operational scenarios, example: 1) all day service 2) AM/PM peak service

2 Initial Evaluation – Other Findings

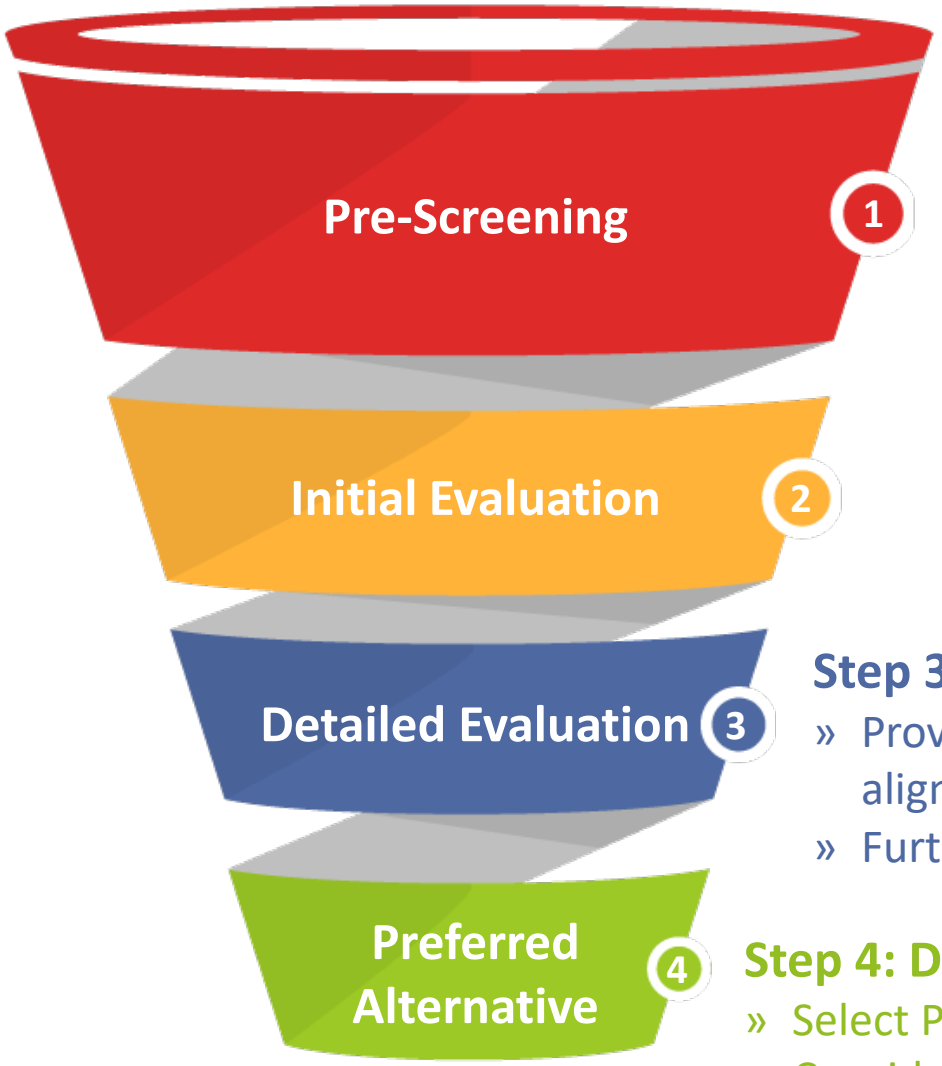


➢Other key takeaways

- **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?

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➢ **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*

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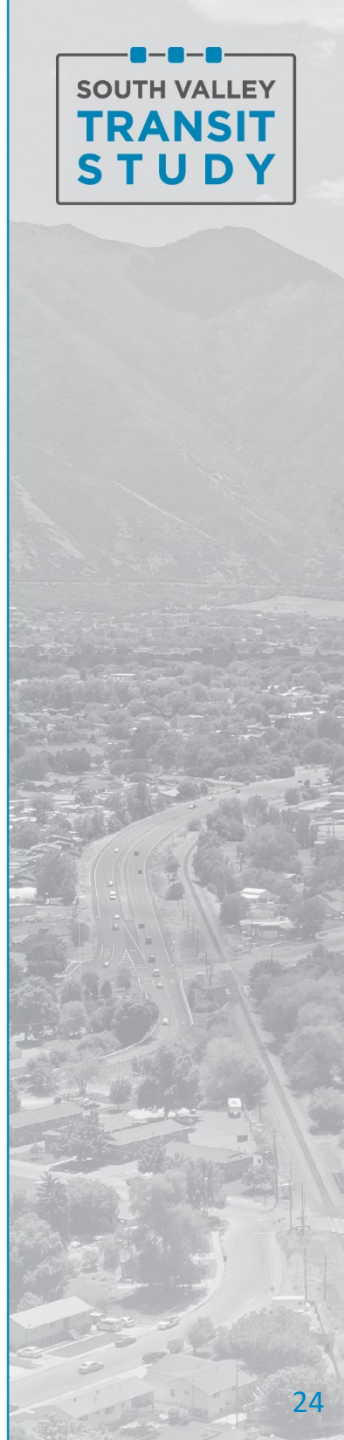
Implementation Options for Example Preferred Alternative:

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	

EXAMPLE	Frequency Assumptions	Operational Assumptions	Stations
Alternative Commuter Rail 1 • Commuter rail operating in exclusive facility	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

- Begin Detailed Evaluation of Alternatives
  - March through May

- Kicking off land use planning task
  - Mid April combined workshop
    - Project team sent out email about general availability