

## Technical Memorandum

To: Wasatch Front Central Corridor Study Management Team

From: Wasatch Front Central Corridor Study (WFCCS) Technical Team

Date: October 2016

Subject: Task 5 Deliverable – Development and Refinement of Long-Term Scenarios

---

### Purpose of this Memorandum

This memorandum describes the process of generating ideas for long-term transportation scenarios, and of refining and clarifying those scenarios for evaluation. For the purposes of this memorandum, “project team” is used to describe the Management Team and the consultant technical and communication teams combined.

### Preliminary Definition of Initial Scenarios

#### Generation of Ideas

A basic premise of WFCCS was that no solutions were off the table in considering how best to accommodate and manage future travel demand. As such, a full spectrum of ideas were developed that represent investment strategies and programs that address projected 2050 transportation needs. Ideas for inclusion in the initial scenarios came from many different sources. These included outreach sessions with agency staff and stakeholders, brainstorming sessions with the internal Management Team, and industry knowledge, research, and expertise. Starting early in the study process, the project team began capturing ideas heard through these different avenues for later evaluation and inclusion in the long-term scenarios for 2050.

Certain elements were heard frequently in outreach sessions. For instance, Key Person Interviews conducted by the communications team provided opportunities for city officials to share their thoughts on current and future needs, and potential ways to solve them. Ideas that arose from these sessions included (but were not limited to) more frequent access across I-15; BRT systems; tolled facilities; trail connections; local circulators; regional dispersion of employment centers; active transportation networks; various transportation demand management strategies; a “super bypass” to downtown Salt Lake City; dedicated freight lanes; and double tracking FrontRunner.

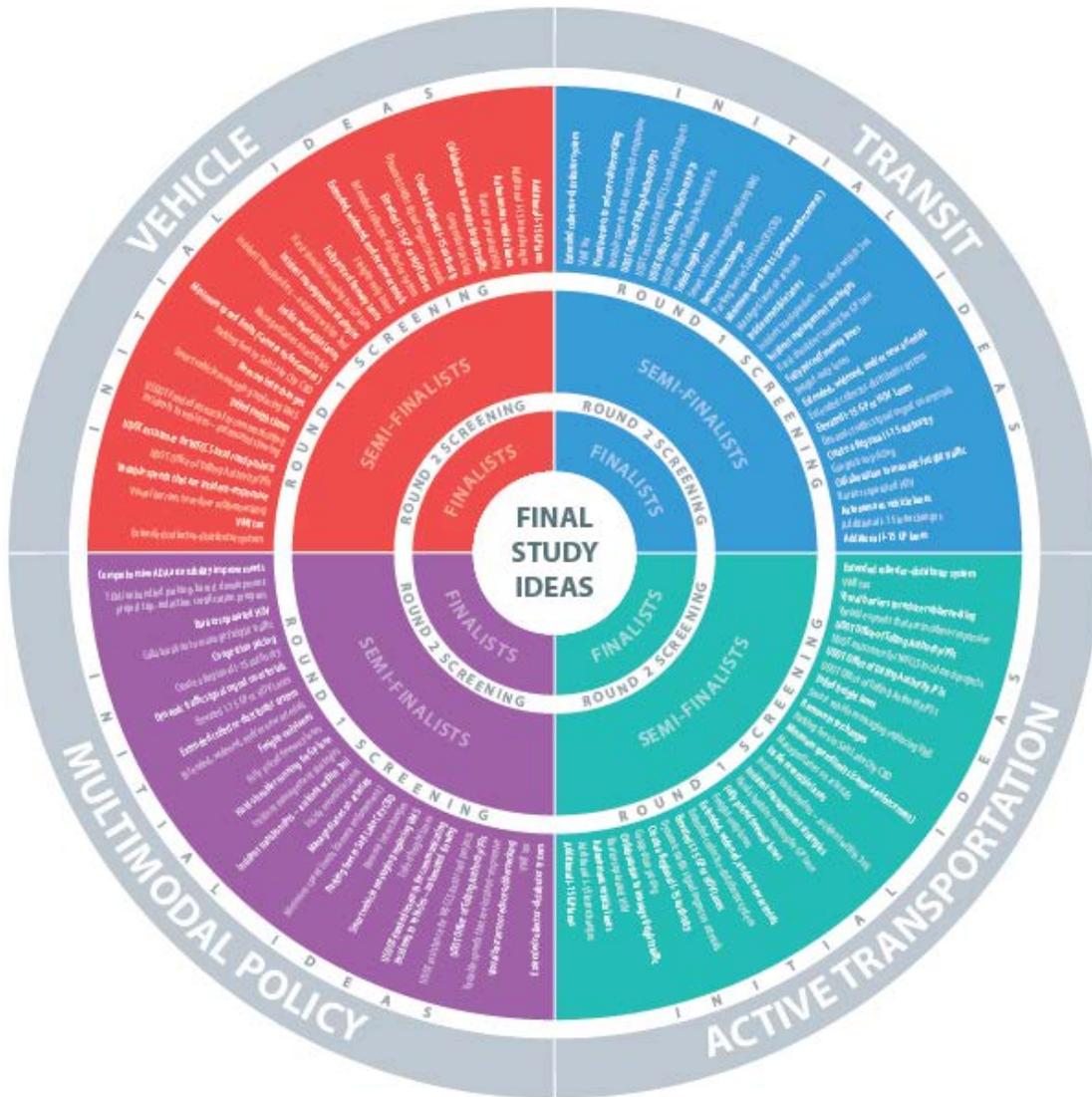
The TrendLab workshop, held in May 2015, invited agency staff and stakeholders to share their ideas about what should be avoided, protected, and created in the study corridor. Many of the comments provided by TrendLab attendees echoed those heard from City officials. Additional ideas shared in TrendLab included (but were not limited to) the following.

- New or modified I-15 interchanges

- New lanes on I-15 including the potential for new lanes to be elevated to minimize right-of-way impacts
- Improved first/last mile connections to transit
- A light rail extension to Lehi
- Grade separating FrontRunner
- Transit centers and separated bike corridors along I-15
- Walkable urban design in the “Silicon Slopes” area of Lehi
- Increased transit frequency and coverage
- A regional bike share program.

The original list of ideas, culled from the sessions described above and also from other project team and industry discussions, is shown in Figure 1 on the following page.

Figure 1: WFCCS Initial Ideas



### Transportation Demand Spectrum

The project team worked together in late 2015 to arrange and create three specific long-term scenarios. As part of this process, the group met over the course of two days in mid-November 2015 to discuss future needs and challenges in the corridor, and to establish agreement on the scale of the problem and the types of solutions the group was willing to consider. Notes from the two-day workshop are attached as Exhibit A to this memorandum.

The question of transportation supply vs transportation demand is central to this corridor. Analysis of current seat utilization rates in the corridor indicate that there are opportunities to manage the travel demand to make more efficient use of the current network, which could be achieved by many means – shifting trips out of peak travel periods, increasing private vehicle occupancies, reducing overall travel demand through TDM or development patterns, or shifting more people onto the transit network (and adding transit capacity). Scenarios were developed to represent various locations on the transportation demand spectrum: one end of the spectrum would represent a tightly managed and constrained network with very little new capacity added (if any), whereas the other end of the spectrum would represent adding significant new capacity for all modes. In the November 2015 workshop, the Management Team indicated where the three scenarios should generally be placed on the spectrum, as shown in the blue circles marked in Figure 2 below (which shows a photo taken of the whiteboard used during the workshop).

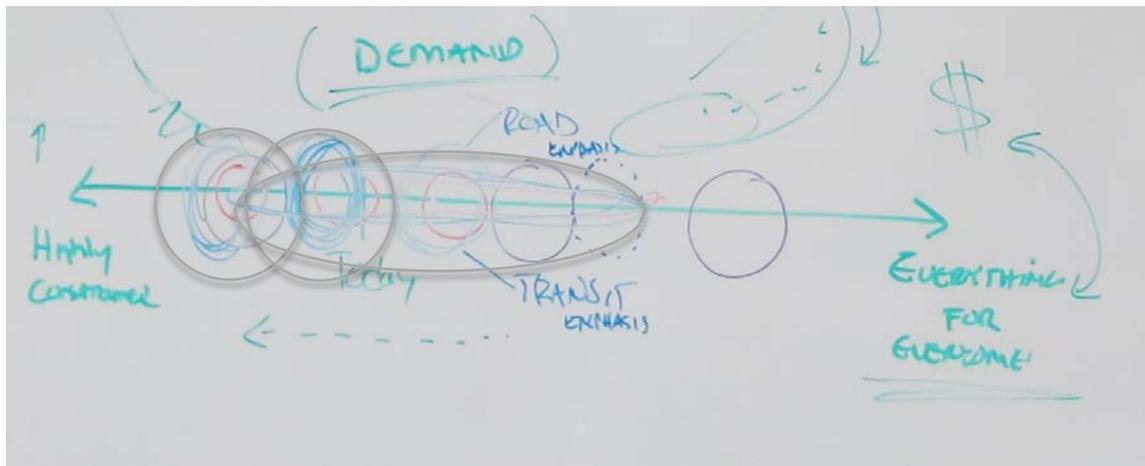


Figure 2: Brainstorming Workshop Whiteboard Transportation Demand Spectrum

As shown in the photo, two of the circles are located left of center, while the third encompasses a range from left of center to slightly right of center. Defining the location of the three scenarios along this spectrum was an important step in the overall study because it was one of the decision points where the full range of solution options started to narrow based on feedback and input collected during the study. The group did not wish to see scenarios representing either polar end of the spectrum, but rather varying degrees of a blend of supply and demand strategies. Following the workshop, the consultant team began drafting scenarios to reflect the general locations on the spectrum as identified by the Management Team.

## Structure of Scenarios

The scenarios began to take shape by arranging the different ideas shown in Figure 1 into sets that would achieve a balance between supply and demand, to various degrees. The group also agreed on a set of vocabulary and terms to describe the scenarios. This terminology was agreed upon in the 12/21/15 Management Team meeting, and is provided below.

**Scenario:** a collection of long-term strategies for 2050. The project team prepared three WFCCS scenarios to evaluate for 2050, to compare to a “base case” scenario.

**Approach:** This describes broad categories in which strategies and elements are arranged. The approach categories for the 2050 scenarios are transportation demand management (encouraging people to change their travel behaviors to make more efficient use of the system), facility management (managing the operation of facilities and how they are used, by whom, at what time of day), or network modifications (changes or additions to the existing multimodal network).

**Strategy:** The strategy provides a more detailed description of the intent of the approach. Each strategy is associated with a set of key and secondary elements, which are intended to meet the stated strategy. For example, if the approach is “network modification”, a strategy could be “refine the street grid for better multi-modal access”.

**Key and Secondary Elements:** Key and secondary elements are associated with strategies and represent ideas that could be implemented in each of the 2050 WFCCS scenarios. Key and secondary elements could include managed lanes, regional bike share programs, infill FrontRunner stations, and many other ideas.

**Projects, Programs, and Policies:** Projects, programs, and policies represent the implementation of the strategy, with more detailed information on what the key and secondary elements would include. Projects have established extents, definition, and can be analyzed as applicable using the modeling tools available. Examples of projects include increasing bus frequencies on State Street; building a buffered bike lane on Redwood Road; or adding a new I-15 interchange. A program example would be prioritizing transportation funding to projects that implement WC2040 Vision principles; a policy could mean charging a set amount (for example, \$10) per vehicle to use a toll lane on I-15 in the peak period and peak direction.

## Initial Scenarios Screening

Once the initial three long-term scenarios for 2050 were developed, the project team began screening and refining the elements within the scenarios. This included separating key elements from secondary elements, gathering additional information on unfamiliar concepts, and seeking agency executive buy-in on the spectrum and scenarios. Scenarios were developed along the transportation demand spectrum shown in Figure 3, reflecting the discussion by the

Management Team documented in Figure 2. Each scenario contained a range of ideas that generally fell into one of three approaches (as described previously): changing behaviors through transportation demand management strategies, increased management of existing facilities, or construction of additional capacity.

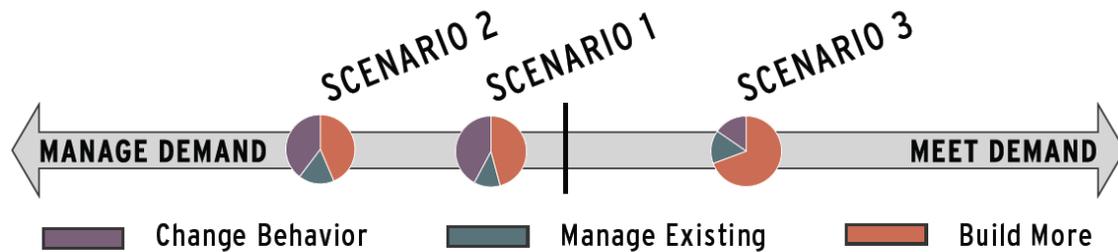


Figure 3: Transportation Demand Spectrum

### Key and Secondary Elements

The initial list of key and secondary elements contained a wide range of possibilities, representing an equally wide range of potential benefit, level of effort, and investment required. The project team identified the elements within each scenario as either “key” or “secondary”. Key elements were those ideas that had universal support from the WFCCS Management Team, offered a more significant benefit, came with a potentially larger impact, and could typically be modeled and analyzed in some way. Secondary elements were ideas which had some level of support but not necessarily unanimous Management Team support, and were more likely to need further research and development before their impacts and benefits could be readily understood or modeled. The distinction between key and secondary elements is important because of the time period for this study and the uncertainty of future travel demand due to developing disruptive forces such as transportation network companies (TNCs), autonomous vehicles, an aging population, and other factors. Some secondary elements could prove successful in improving future travel but today’s data or modeling limitations do not allow a reliable forecast to be made about future conditions.

Key and secondary elements were arranged in three scenarios at different points along the transportation demand spectrum, as dictated by the WFCCS Management Team (shown in Figure 2). The three scenarios could generally be described as follows:

- **Scenario One:** This scenario provides financial incentives to change travel behavior and patterns, while providing new infrastructure to add capacity. It has the smallest physical footprint of the three scenarios, and is slightly shifted towards the “manage demand” end of the transportation demand spectrum.
- **Scenario Two:** This scenario focuses on adding transit capacity, pricing and managing roadway capacity to maximize efficiency, and creating an aggressive transportation demand management strategy.
- **Scenario Three:** This scenario comes with the largest physical footprint. Its focus is on providing new capacity for all modes, with an emphasis on developing centers.

### Gathering Additional Information

In many cases, additional information was needed to make better decisions about where ideas should go or whether they were appropriate solutions. The consultant team conducted further research into concepts and conditions such as (but not limited to):

- Examples of freight-only lanes and rule-of-thumb criteria for successful implementation
- Examples of gaming apps providing incentives for individuals to change travel behavior
- Examples of strong transportation demand management packages put in place elsewhere in the nation
- Directional splits on peak period volumes from the travel demand model
- Travel market analysis to determine optimal access points to express lanes
- Examples of regional authorities or programs with influence over land use decisions and planning practices
- Examples of pricing assumptions made for other managed lanes systems nationwide
- Examples of density and intensity of population and employment at mobility hubs at other locations in the United States

### Executive Leadership and Stakeholder Feedback

The project team worked from December 2015 through February 2016 on developing the initial scenarios, and presented the key elements of the scenarios to the executive leaders of the four partner agencies on February 16<sup>th</sup>, 2016. This meeting included Carlos Braceras and Shane Marshall of UDOT, Jerry Benson of UTA, Andrew Jackson of MAG, and Andrew Gruber of WFRC. The executives generally approved of the scenarios and their overall placement on the transportation supply - transportation demand spectrum, and gave some feedback on additional key elements to include. Minutes from the February 16<sup>th</sup> meeting are provided as Exhibit B to this memorandum.

In March 2016, the project team took the initial scenarios to internal agency technical staff and local community stakeholders for their review and feedback. Three workshops were held for this purpose:

- An internal agency technical staff workshop on March 17<sup>th</sup>, held at UTA;
- A local government workshop on March 29<sup>th</sup>, held at Draper City Hall; and
- Another local government workshop on March 29<sup>th</sup>, held at the South Salt Lake City Columbus Center.

Comments received by participants at these meetings were used to further refine the scenarios and better understand communication needs for future outreach. The comments received by these meeting participants are provided in Exhibit C. Communication messages were identified as an essential component of the study going forward at this stage to explain how expectations about traditional transportation planning will need to evolve in response to this study. Elected officials and the public have generally expected the transportation agencies in Utah to plan, design, and build new infrastructure and services to accommodate population and employment growth. That expectation has largely been met for the past few decades but this strategy is now

running into a variety of constraints such as available land area, environmental impacts, new expectations for more travel choices and reliability to ensure the transportation network is resilient and effective in connecting people to their destinations regardless of future changes or disruptions.

### Removal of Elements from Consideration

As the process of developing the initial scenarios unfolded, several key elements under consideration were removed from the list. These items are listed below, along with the reasons for removing them from the key elements.

- **“Land-use-only” scenario:** early in the study process, the project team discussed whether to create a long-term scenario that addressed future transportation needs by reconfiguring land use to eliminate the need for additional transportation investments beyond those built today. The partner agencies determined that this was not an appropriate strategy for the group to analyze because none of the partner agencies have direct control over how land use decisions are made.
- **Dynamic pricing of arterial lanes:** the partner agencies preferred to remove this from the key elements due to concerns that the impacts would override potential benefits, and that it would be perceived as harmful to business interests along arterial corridors. Analysis and testing of these issues were not conducted to measure actual costs or benefits, so this idea may be desirable to evaluate in more detail in the future.
- **Reversible lanes on I-15 in Salt Lake County:** review of peak hour and daily traffic volumes on I-15 from 2040 travel demand model indicated that the directional splits on I-15 in Salt Lake County become more balanced as time progresses. This means that reversible lanes are less feasible (and also that off-peak capacity will be better utilized than it is today). This review also indicated that reversible lanes may be feasible in Davis County in 2050, so that idea was retained as a key element. While the future horizon year for WFCCS is 2050, the 2050 travel demand model volumes were not available at the point in this effort when the initial scenarios were being refined. The technical team assumed that, since 2050 land uses were an extrapolation of patterns seen in the 2040 model, 2040 volumes and directional splits were informative enough to support this decision.
- **Explore public/private partnerships to construct and operate managed lanes capacity:** partner agencies viewed this as a financing strategy, rather than a strategy to manage travel needs.
- **Tolled freight lanes on I-15:** partner agencies were concerned about the economic impact of tolling freight.
- **Mileage-based user fees:** partner agencies view this as an alternative revenue generation strategy and requested that it be removed from the list of key and secondary elements.
- **Freight-only lanes on I-15:** partner agencies expressed concern that freight-only lanes would hinder access to local communities for freight traffic on I-15, and also that dedicating a full lane only for freight would impact congestion for vehicles in the remaining lanes.

- **Dedicate a funding source for active transportation:** partner agencies believed that identifying a specific funding source for active transportation could potentially reduce the overall amount of funding for active transportation, because it may discourage use of funds from other sources for active transportation projects.
- **Remove seats on TRAX vehicles to accommodate more riders:** the technical team suggested removal of this item because it is counter to the goal of making transit more comfortable and attractive.

### Final Initial Scenarios

The process of refining and finalizing the initial scenarios was complete in May 2016. A table showing the key elements of the initial scenarios is provided in Exhibit D. The key elements are also summarized in Figures 3, 4, and 5 below. Elements in purple boxes identify behavior-changing strategies, elements in blue boxes are facility management strategies, and elements in red boxes represent changes or additions to the transportation network.

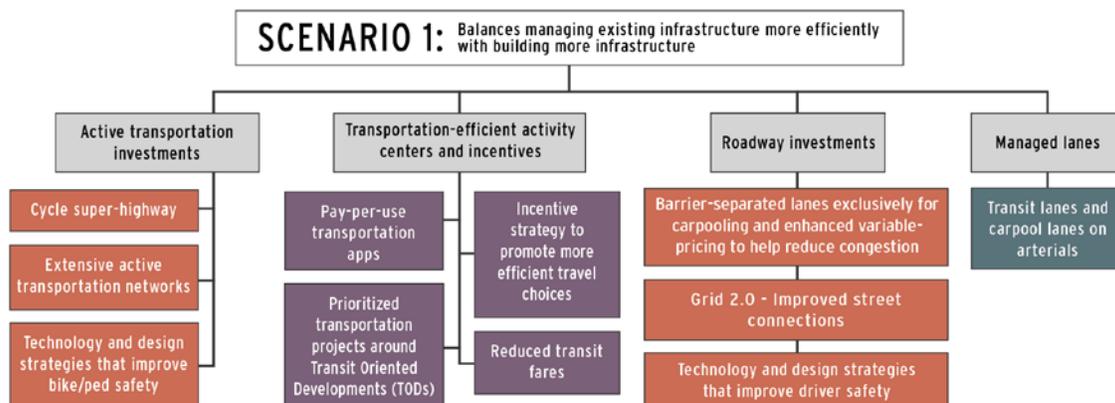


Figure 4: Scenario One Key Elements

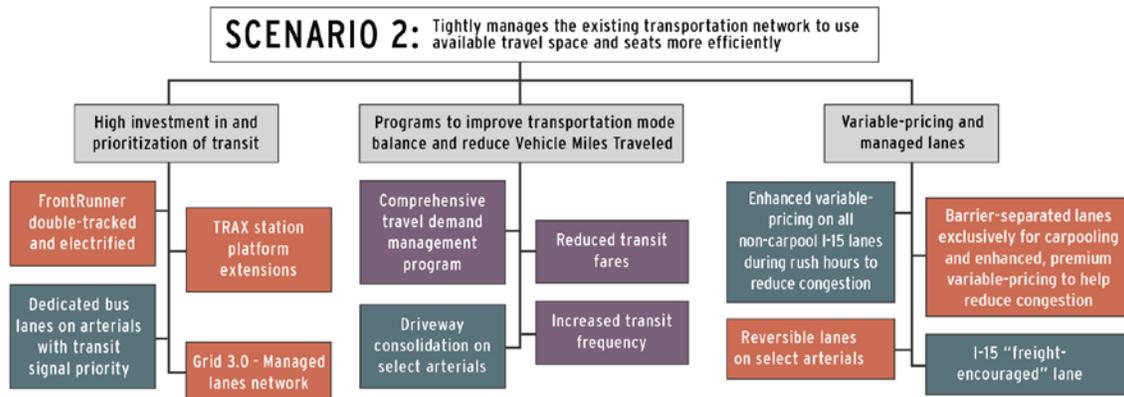


Figure 5: Scenario Two Key Elements

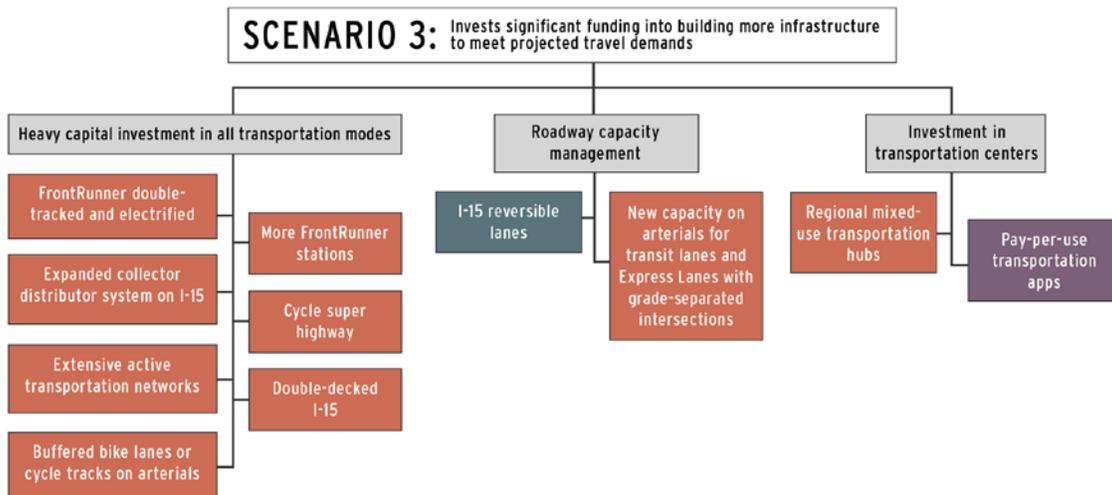


Figure 6: Scenario Three Key Elements

### Glossary of Terms for Selected Key Elements

Some of the key elements shown in the initial scenarios required more explanation. A glossary of terms for selected key elements is provided below.

#### *Buffered bike lanes or cycle tracks on arterials*

Buffered bike lanes and cycle tracks are two kinds of facilities that make space for cyclists on roadways. Buffered bike lanes provide a 5' bike lane in each direction for cyclists, with a 2-3' painted space between the bike lane and the adjacent lane for cars. Cycle tracks provide some kind of physical barrier between the cyclists and cars, such as a curb, bollards or soft posts, or sometimes even parked cars. The benefits of buffered bike lanes and cycle tracks are that they

add more protection or provide more space to cyclists riding on the roadway, and they may encourage more people to take up cycling as a regular mode of transportation. Both Salt Lake City and Ogden have built cycle tracks in their downtown areas (on 300 South and 300 East in Salt Lake City, and on Grant Avenue in Ogden). Buffered bike lanes can be found near downtown Salt Lake City on 500 South and 900 South.

### *Cycle Superhighway*

A cycle superhighway provides a separate space for cyclists to commute longer distances through a region, or between communities. It can be parallel to an existing roadway, or in a separate corridor (for instance, in abandoned rail rights-of-way or river or canal corridors). Cycle superhighways should provide a high degree of protection from motor vehicles, and can include signals at cross streets which could be timed to reduce delay for cyclists. Cycle superhighways have been constructed in Germany and Denmark, and are under construction near London. Cycle superhighways benefit the traveling public by creating a safe, comfortable cycling environment away from cars, and making cycling a more attractive option for commuting, recreation, and school trips.

### *Double-decked I-15*

This element involves building two new freeway lanes in each direction, on an elevated structure above the existing freeway. The structure would extend from I-80 Eastbound to Bangerter Highway, with access points at Vine Street and 10000 South, and would include two general purpose lanes in each direction. The benefit of double-decking I-15 is added freeway capacity.

### *Expanded collector-distributor system on I-15*

Collector-distributor systems increase freeway capacity by adding lanes that parallel the freeway and connect to it periodically. It also increases the distance between access points on the freeway's mainline, which reduces congestion caused by vehicles entering and existing the freeway. I-15 currently has a collector-distributor system between 900 South and 2100 South in Salt Lake City, where frontage freeway lanes parallel the main freeway and provide options for drivers to get on and off I-15 at multiple locations (900 South, 1300 South, 2100 South, and SR-201, for example) without necessarily having to use the main freeway. Drivers can still access the freeway from the collector-distributor system, but merge with the mainline at a more compatible speed than vehicles entering the freeway from standard interchange ramps. A new collector-distributor system is proposed between Sandy and Lehi.

### *Extensive Active Transportation Network*

In WFCCS, the term “extensive active transportation network” refers to a collection of regional active transportation programs and projects, which are not fully represented in the current regional transportation plans. This includes construction of a wide range of first-and-last mile active transportation improvements proposed within a 3-mile radius of all TRAX and FrontRunner stations; trail links proposed in the Salt Lake County East-West Master Trails Plan; and the WFRC/MAG Bicycle Priority Routes, which are currently in an unfunded phase of the RTP.

### **Grid 2.0**

Grid 2.0 proposes multiple new connections across I-15, designed to accommodate bicyclists, vehicles, cars, and transit as needed. They do not include new interchanges on I-15. They are small-scale connections that link to frontage roads or other parallel routes, and ensure that travelers can get across I-15 at least once every mile in the primary WFCCS study area. New connections are proposed in Centerville, Midvale, Sandy, Draper, Bluffdale, and Lehi. The benefit of Grid 2.0 is to increase accessibility across the freeway, and provide more choices for people walking or on bikes to cross I-15 without going through an interchange.

### **Grid 3.0**

Grid 3.0 is a system of improvements, primarily on existing roadways, intended to create exclusive lanes for reliable travel by transit vehicles, carpools, and tolled vehicles, without losing capacity for people who choose to drive by themselves. Grid 3.0 includes these “reliability” lanes on multiple north/south and east/west routes, and preserves the existing number of unrestricted lanes by implementing reversible lanes to accommodate peak flow traffic. Grid 3.0 also includes barrier-separated lanes on I-15, which will only be accessible at a few points throughout the study area, and which will be limited for transit vehicles, carpools, or people who want to pay a premium fee for this service. Grid 3.0 also includes the new connections across I-15 proposed in Grid 2.0, as well as new parallel routes to I-15 that would be designed to prioritize long-distance cycling travel but would also accommodate cars.

### ***Incentives to Promote Individual Travel Choices that Benefit Everyone***

This strategy would provide incentives to encourage people to make different choices in how they travel: for example, it might encourage them to take transit, drive on a less congested road, carpool, or make their trips at a less congested time of day. These strategies could be implemented by transportation agencies, local governments, community groups, or the private sector. One example is the Metropia smartphone app, which has been used by a private-public partnership in Austin to reduce congestion on a particular freeway. These apps can be promoted by transportation agencies but are completely voluntary in their use. The app encourages people to make transportation choices that reduce congestion, and gives them positive feedback in the form of “points” earned when they make those choices. Positive feedback comes in the forms of incentives – discounts for purchases at local merchants, or the ability to donate points to non-profit organizations such as Meals on Wheels or the American Forestry Association.

### ***Pay-per-Use Transportation App***

Imagine a future where you didn’t have to buy objects that provide transportation, but where you subscribe to a range of transportation services, and can make customized transportation solutions to meet your family’s needs. This concept, often referred to as “Mobility as a Service”, is gaining traction as bike share, car share, casual carpooling, and companies like Uber and Lyft become more familiar as transportation options. Individuals could subscribe to a monthly package of transportation services that provides them with a set number of bike share, car share, electric bike rentals, Uber or Lyft rides, transit trips, and grocery deliveries to their home every month for a set fee. These services could be ordered through a smartphone app, similar to how ride sharing platforms operate today. While the mobility-as-a-service concept is still

relatively new, some providers are taking shape in Europe (see [www.maas.fi](http://www.maas.fi) as an example). A pay-per-use approach to transportation could potentially allow families to reduce their household transportation costs by purchasing fewer vehicles or making fewer trips in the vehicles they own; it could also widen the range of transportation choices that are available to all residents of the urban area and make those choices more customizable and accessible. This concept may not require action by public agencies as it has been touted by some TNCs and car manufacturers as a possible method for implementation of autonomous vehicles (AVs).

### **Regional Mixed-Use Transportation Hub?**

A regional mixed-use transportation hub, or “mobility hub”, is a place where multiple modes of transportation come together and where passengers are transferring. This could include connections between FrontRunner, TRAX, future BRT lines, local buses, and bicycling and walking paths. Mobility hubs offer seamless transitions between different types of transit, and can have many opportunities for people to live, work and play at the hub or in the adjacent area; they could be considered a destination all by themselves, and offer a higher level of comfort and convenience for transit riders waiting to make a transfer. On a large scale, places like Union Station in Washington D.C., or Grand Central Station in New York City could be considered mobility hubs. In our region, mobility hubs could mean combining high-density residential living and a high concentration of jobs in a few select locations throughout the WFCCS study area. In general, these hubs reduce the need to own and park a private vehicle.

## **Assigning Geographic and Other Details to Scenarios**

Once the key elements of the three long-term transportation scenarios were finalized, the project team assigned geographic details to key elements as needed to evaluate their effectiveness. These details defined the physical extents of potential improvement projects so that they could be coded into the 2050 travel demand model and other analysis tools. The assumptions associated with elements that were coded into the travel demand model and other modeling tools are provided in this section and organized by scenario.

### **Scenario Zero: the “Business-as-Usual” Scenario**

Scenario Zero represents a “Business as Usual” Scenario for the Wasatch Front, identifying projects that would likely be constructed if the region continues to address transportation problems in the same way it does today, which is to expand the network to accommodate population and employment growth. Scenario Zero builds on the transportation network that is assumed in the 2040 Regional Transportation Plan, and adds several projects to that network that were considered “unfunded” or “vision” projects in the WFRC and MAG 2040 RTP’s. “Unfunded” or “vision” projects that were deemed acceptable for inclusion in Scenario Zero include those that are within the WFCCS primary study area, or those projects on north-south freeway corridors outside the primary study area that could potentially influence travel on I-15.

### **Scenario One: the “Smallest Footprint” Scenario**

Scenario One is closest to the mid-point of the transportation demand spectrum of the three scenarios. Scenario One includes several “unfunded” or “vision” projects from the 2040 RTP as well as multiple key elements that required geographic descriptions. These are provided below.

**Unfunded/Vision Projects in Scenario One**

Projects selected from the MPO’s 2040 RTP Unfunded or Vision phases for Scenario One represent those projects most consistent with the philosophy of Scenario One, and were approved by the WFCCS Management Team. These projects add some capacity and tend to increase access to existing facilities, while catering to HOV/HOT markets. These are listed below along with the rationale for their inclusion.

- **WFRC RTP Project S-72, Mountain View Corridor, SR-201 to Utah County Line – Widen from 6 to 6+ HOT lanes:** This project adds new capacity for HOT travelers.
- **WFRC RTP Projects S-132, S-134, S-135, S-136, S-137, and S-138, Bangerter Interchanges at California, Lake Park Boulevard, 3100 South, 3500 South, 4100 South, 4700 South:** These interchange projects increase capacity along Bangerter Highway.
- **WFRC RTP Project S-152, Bangerter Interchange upgrade at I-15:** This project adds capacity to the Bangerter Highway/I-15 interchange.
- **WFRC RTP Project S-156, I-15 HOT Ramps at 100 South:** This project increases access to HOT vehicles and is consistent with proposed managed lanes concepts in Scenario 1.
- **WFRC RTP Project D-42, Legacy Parkway Interchange at Center Street:** This project increases access.
- **WFRC RTP Project 53, First/Last Mile & Bike System:** First/last mile concepts increase access and are consistent with all scenarios.
- **MAG Project 78, Redwood Road – south of Saratoga:** This project adds capacity and increases access to the west side of Utah Lake.

**Details for WFCCS Key Elements in Scenario One**

Multiple key elements in Scenario One required geographic or other details in order to be analyzed. These are listed below and shown as applicable in Figure 6.

- **Grid 2.0:** This concept refines the surface street grid network by creating new crossings over I-15 or I-215 in the primary WFCCS study area. Some crossings are for cyclists and pedestrians only due to feasibility or other constraints, but most others are proposed to accommodate cyclists and pedestrians in addition to one vehicle travel lane per direction. Proposed locations and crossing types are identified in Table 1. Proposed crossing locations were based on desired spacing of no greater than one mile for bicycle-and-pedestrian-friendly crossings over I-15, and to provide options for bicycle and pedestrian travel away from I-15 interchanges. Additional crossings were included to improve connectivity in low-income neighborhoods (specifically in Midvale, which has been identified through research by the University of Utah’s Bureau of Economic and Business Research as approaching “racially/ethnically concentrated area of poverty”).

Table 1: Grid 2.0 Proposed Freeway Crossing Locations

City	Location	Crossing Type
Centerville	1250 North	Vehicle, Bicycle and Pedestrian
Taylorsville	Approximately 5700 South	Bicycle and Pedestrian

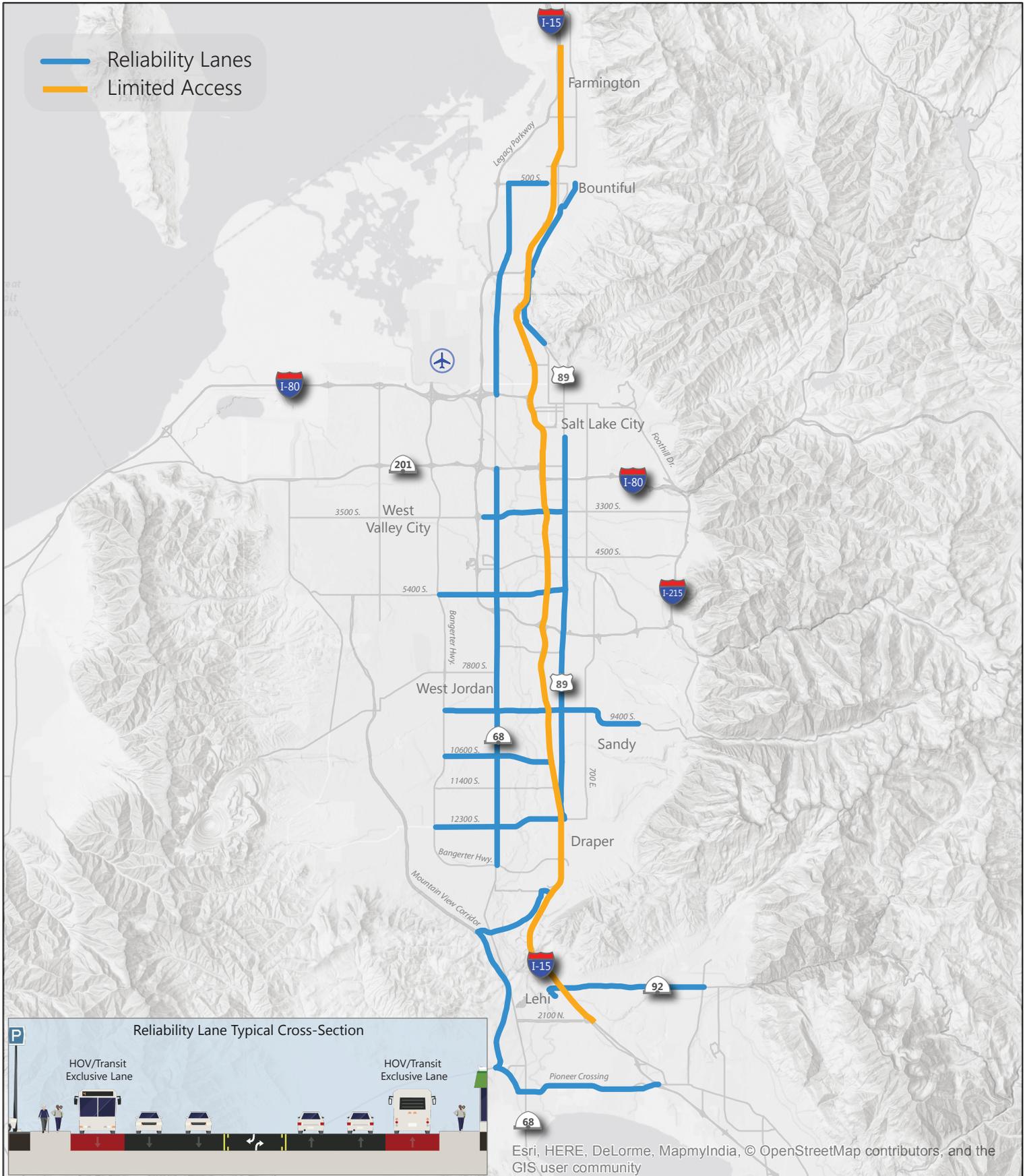
(I-215 crossing)		
Midvale	6 <sup>th</sup> Avenue (7500 South)	Vehicle, Bicycle and Pedestrian
Midvale	8360 South	Bicycle and Pedestrian
Sandy	9400 South	Vehicle, Bicycle and Pedestrian
Sandy	11000 South	Vehicle, Bicycle and Pedestrian
Draper	11800 South	Vehicle, Bicycle and Pedestrian
Draper	13180 South	Vehicle, Bicycle and Pedestrian
Draper	Southfork Drive (~14200 South)	Vehicle, Bicycle and Pedestrian

- Barrier separated HOV, toll, and express bus lanes on I-15:** This concept converts existing I-15 lanes to barrier-separated special use lanes for tolled users, HOV, and transit. There will be limited access to barrier separated portions, to reduce friction associated with merge and diverge points and thereby maximize mobility. Access points were selected based on the desired degree of travel between various areas of the valley; spacing of limited access points; and dispersion of the impact of freeway traffic on the surface roadway network. Proposed access points to the barrier separated lanes, from north to south, include: US-89/Legacy Parkway interchange, I-215 North interchange, I-80 West interchange, 400 South HOT ramps, the 900 South-2100 South Collector/Distributor system, I-80 East interchange, Vine Street, I-215 South interchange, 10000 South, Bangerter Highway interchange, SR-92 interchange, and the future 2100 North freeway. Barrier separated portions would be priced based on utilization rates; pricing levels would escalate as needed to maintain desired travel speeds and utilization rates.
- Implement planned active transportation networks:** This concept assumes buildout of the Priority Bicycle Routes (currently assumed as unfunded in the 2040 RTP's), the active transportation improvements in UTA's First/Last Mile schematic plans, and the trail alignments in the Salt Lake County East/West Trails plan.
- Cycle super highway:** A cycle super highway is a separated at-grade pathway designed for cyclist travel. It should be wide enough for cyclists to pass each other, with signalized intersection crossings at cross streets. Scenario 1 assumes cycle super highways on 500 East and 700 West, creating new paths where those roadways currently do not connect. These routes were selected to represent potential long-distance regional corridors for cyclists parallel to I-15, avoiding heavy traffic volumes present on existing north-south routes such as Redwood Road and State Street. The cycle super highway would connect to Salt Lake County east-west trail alignments to create an off-street network of pathways through the valley.
- HOV/HOT lane conversions on major arterials:** This concept, referred to as "reliability lanes", converts existing traffic lanes for exclusive use by tolled vehicles, HOV, and transit on major corridors. These include US-89 in Davis County, Redwood Road, State Street, 3500 South, 5300 South, 9000 South, 10600 South, 12300 South, Porter Rockwell

Boulevard, Mountain View Corridor (south end), SR-92, and 2100 North Freeway. The extent of these corridors is shown in Figure 6. The purpose of selecting these corridors is to create a network of routes, both east/west and north/south, in the study area where pavement use is prioritized for vehicles that are carrying more passengers or are paying fees in exchange for more reliable travel.

- **Transit pricing:** This concept is analyzed as free fares.

# Scenario One



### Scenario Two: the “Manage Demand” Scenario

Of the three proposed long-term scenarios, Scenario Two focuses the most on managing transportation demand to maximize the effectiveness of the network. Scenario Two also includes several “unfunded” or “vision” projects from the 2040 RTP as well as multiple key elements that required geographic descriptions. These are provided below.

#### *Unfunded/Vision Projects in Scenario Two*

Projects selected from the MPO’s 2040 RTP Unfunded or Vision phases for Scenario Two represent those projects most consistent with the philosophy of Scenario Two, and were approved by the WFCCS Management Team. These projects generally do not add road capacity except for HOV/HOT, but they increase road access (e.g. by adding new interchanges), and add transit capacity to provide an alternative to vehicle travel. These are listed below along with the rationale for their inclusion.

- **WFRC RTP Project S-72, Mountain View Corridor, SR-201 to Utah County Line – Widen from 6 to 6+ HOT lanes:** This project adds new capacity for HOT travelers.
- **WFRC RTP Projects S-132, S-134, S-135, S-136, S-137, and S-138, Bangerter Interchanges at California, Lake Park Boulevard, 3100 South, 3500 South, 4100 South, 4700 South:** These interchange projects do not add new lanes, but make Bangerter Highway and connecting arterials more efficient.
- **WFRC RTP Project S-152, Bangerter Interchange upgrade at I-15:** This project adds capacity at the Bangerter Highway/I-15 interchange.
- **WFRC RTP Project S-156, I-15 HOT Ramps at 100 South:** This project increases access for HOT vehicles and is consistent with proposed managed lanes concepts in Scenario 2.
- **WFRC RTP Project D-42, Legacy Parkway Interchange at Center Street:** This project increases access.
- **WFRC RTP Project 32B, State Street Corridor, Salt Lake Central to Draper Frontrunner Station, BRT/Enhanced Bus:** These corridor projects add transit capacity.
- **WFRC RTP Project 45B, Cottonwood/Kearns Corridor, Little Cottonwood Canyon to Big Cottonwood Canyon and Bingham Junction TRAX to 5600 West:** These corridor projects on east/west routes add transit capacity.
- **WFRC RTP Project 46, East Sandy Daybreak Corridor, Little Cottonwood Canyon to UT-111:** These corridor projects on east/west routes add transit capacity.
- **WFRC RTP Project 47B, Draper Town Center / Riverton Corridor, Draper Town Center to PRI Property:** These corridor projects on east/west routes add transit capacity.
- **WFRC RTP Project 53, First/Last Mile & Bike System:** First/last mile concepts increase access and are consistent with all scenarios.
- **MAG Project 78, Redwood Road – south of Saratoga:** This project increases access to the west side of Utah Lake.
- **MAG Project T4, TRAX from Lehi to Orem:** This project adds transit capacity.
- **MAG Project T8, BRT from American Fork to Eagle Mountain:** This project is consistent with Scenario Two because it adds capacity but potentially with a smaller footprint than

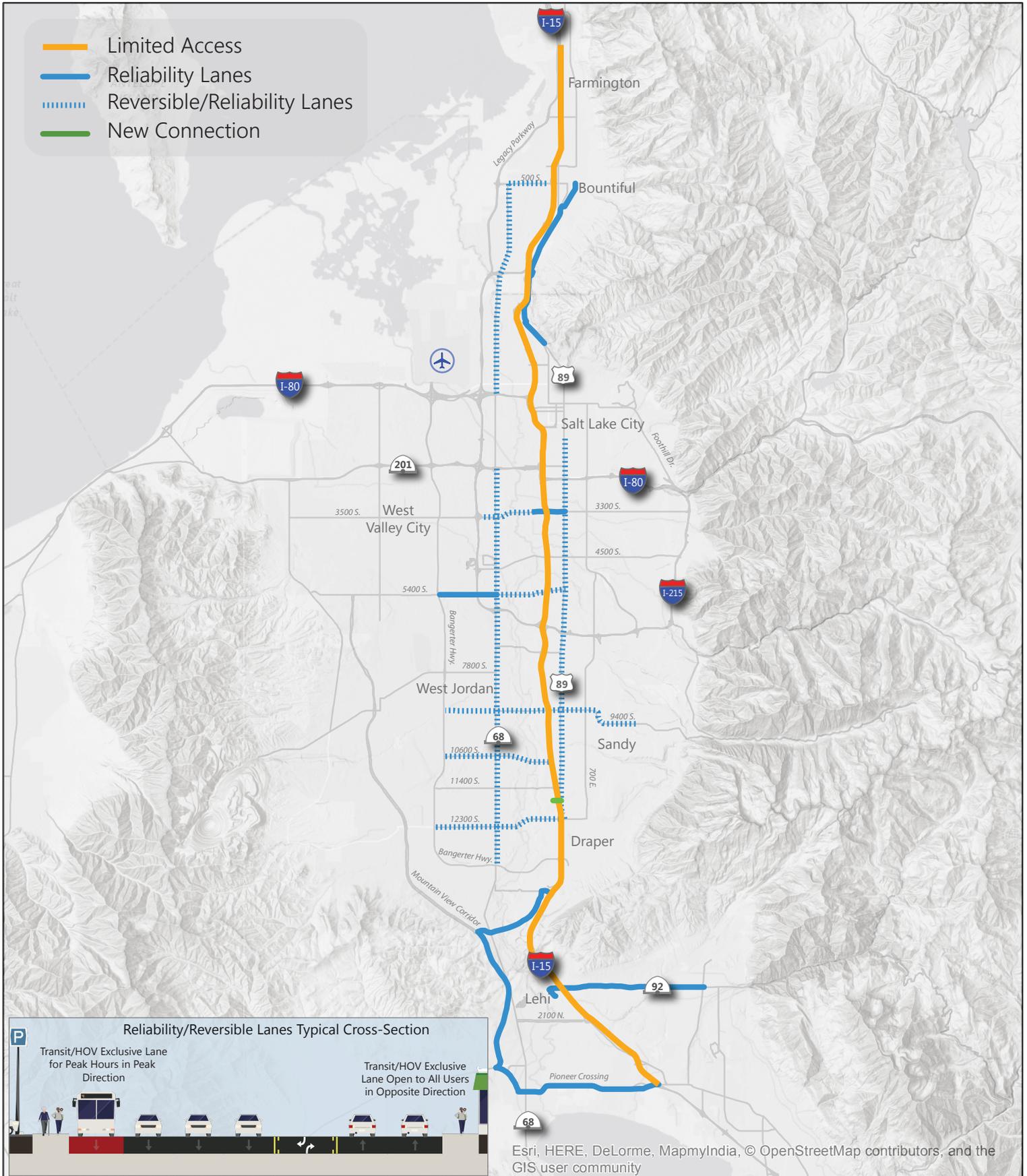
MAG's other RTP project from American Fork to Eagle Mountain (an LRT alternative for the same corridor, which is accounted for in this project in Scenario Three).

### *Details for WFCCS Key Elements in Scenario Two*

Multiple key elements in Scenario Two required geographic or other details to be analyzed using the travel demand model or other geospatial tools. These are listed below and shown as applicable in Figure 7.

- **Doubletrack/electrify FrontRunner commuter rail:** Doubletracking and electrification increases FrontRunner capacity by increasing speeds and eliminating delay at siding locations. This was analyzed by changing frequencies to 15 minutes in the peak period in the travel demand model.
- **Barrier separated HOV, toll, and express bus lanes on I-15:** This is the same concept as is described for Scenario One. It was included in Scenario Two to test its efficacy with a different set of accompanying projects. This concept is consistent with the philosophies of both Scenarios One and Two.
- **Grid 3.0:** This concept further refines the surface street grid network, including the changes proposed in Grid 2.0. Grid 3.0 includes accommodating a “reliability lane” for HOV/transit/tolled users on the corridors identified in Grid 2.0. It retains the same number of peak direction through lanes identified in the 2040 RTP on some of these corridors by applying a reversible center lane where applicable, based on directional splits from the travel demand model. It also includes several new two-lane roads filling in gaps in the existing street network. Figure 7 identifies the geographic extent of Grid 3.0.
- **Fully priced freeway lanes:** In this concept, all general purpose lanes are priced during the peak period. The barrier-separated lanes are managed at a higher level based on lane utilization rates: pricing levels escalate as needed to maintain 50 mph, and HOV 2+ can go to 3+ based on lane utilization rates. For this key element, the following pricing rates were assumed in the travel demand model:
  - Tolled users in the barrier separated lanes pay 48 cents per mile during the peak period and in the peak direction
  - Tolled users in the barrier separated lanes pay 5 cents per mile during off-peak periods and directions
  - All users of the general purpose lanes pay 24 cents per mile during the peak period and in the peak direction
  - Use of the general purpose lanes is free during off-peak periods and directions
- **Increased transit frequency during peak period:** This concept doubles the frequency of all transit in the study area, analyzed in the travel demand model. This includes TRAX, FrontRunner, and buses.
- **Transit pricing:** This concept is analyzed as free fares.

# Scenario Two



### Scenario Three: the “Meet Demand” Scenario

Scenario Three meets transportation needs by adding new capacity for all modes: bicycle, pedestrian, transit, and private vehicles. As with Scenarios One and Two, Scenario Three also includes several “unfunded” or “vision” projects from the 2040 RTP as well as multiple key elements that required geographic descriptions. These are provided below.

#### *Unfunded/Vision Projects in Scenario Three*

Projects selected from the MPO’s 2040 RTP Unfunded or Vision phases for Scenario Three essentially represent all unfunded or vision projects that are within the WFCCS primary study area, and mirror the projects included in Scenario Zero. The primary rationale for including any of these projects is that they are all consistent with a “build to meet demand” philosophy and are designed to add capacity. The projects are listed below.

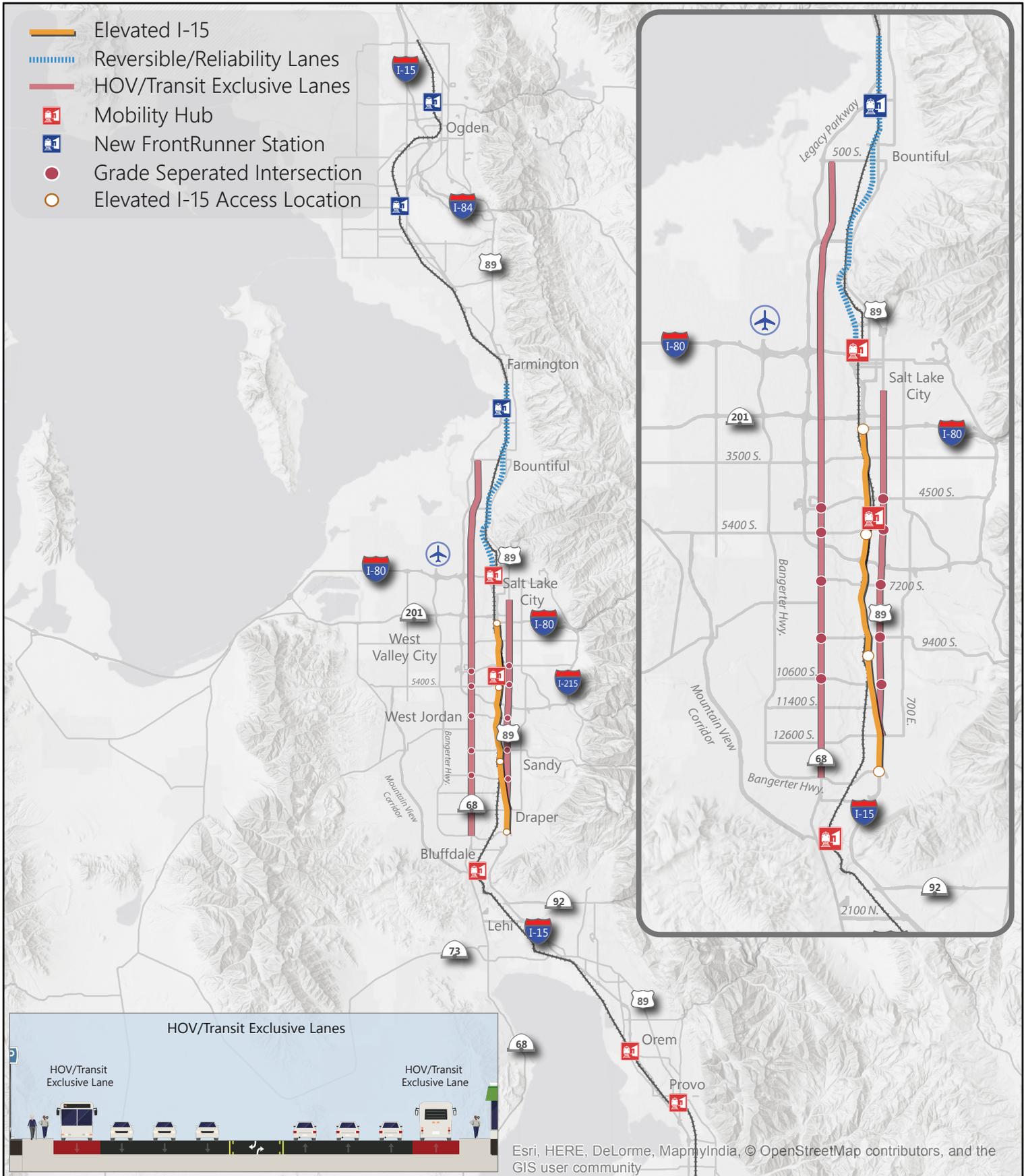
- **WFRC RTP Project S-177, 14600 South from 1000 West to Porter Rockwell Boulevard, Widen from 2-4 lanes**
- **Redwood Road, Bangerter Highway to Porter Rockwell Road, Widen from 4-6 lanes**
- **WFRC RTP Project S-72, Mountain View Corridor, SR-201 to Utah County Line – Widen from 6 to 6+ HOT lanes**
- **Mountain View Corridor, I-80 to SR-201, Widen from 4 to 6 lanes**
- **WFRC RTP Projects S-132, S-134, S-135, S-136, S-137, and S-138, Bangerter Interchanges at California, Lake Park Boulevard, 3100 South, 3500 South, 4100 South, 4700 South**
- **WFRC RTP Project S-152, Bangerter Interchange upgrade at I-15**
- **WFRC RTP Project S-156, I-15 HOT Ramps at 100 South**
- **WFRC RTP Project D-42, Legacy Parkway Interchange at Center Street**
- **WFRC RTP Project 32B, State Street Corridor, Salt Lake Central to Draper Frontrunner Station, BRT/Enhanced Bus**
- **WFRC RTP Project 45B, Cottonwood/Kearns Corridor, Little Cottonwood Canyon to Big Cottonwood Canyon and Bingham Junction TRAX to 5600 West**
- **WFRC RTP Project 46, East Sandy Daybreak Corridor, Little Cottonwood Canyon to UT-111**
- **WFRC RTP Project 47B, Draper Town Center / Riverton Corridor, Draper Town Center to PRI Property**
- **WFRC RTP Project 53, First/Last Mile & Bike System**
- **MAG Project 78, Redwood Road – south of Saratoga**
- **MAG Project T4, TRAX from Lehi to Orem**
- **MAG Project T6, LRT from American Fork to Eagle Mountain (mutually exclusive with the parallel BRT project, which is represented in Scenario 2)**

#### *Details for WFCCS Key Elements in Scenario Three*

Multiple key elements in Scenario Three required geographic or other details to be analyzed using the travel demand model or other geospatial tools. These are listed below and shown as applicable in Figure 8.

- **Doubletrack/electrify FrontRunner commuter rail:** Doubletracking and electrification increases FrontRunner capacity by increasing speeds and eliminating delay at siding locations. This was analyzed by changing frequencies to 15 minutes in the peak period in the travel demand model.
- **Add infill rail transit stations:** Doubletracking and electrification allows for the possibility of more FrontRunner stations along the line. New stations within the primary study area were assumed in Bluffdale and Centerville, based on feedback received by UTA staff.
- **New arterial HOV and BRT lanes with grade-separated intersections:** This element expands existing roadway footprints to add an HOV/transit lane on two major transit corridors: Redwood Road from 500 South in Bountiful to Bangerter Highway, and State Street from 1300 South to 12300 South. This concept includes grade-separated intersections for all lanes at 4500 South, 5400 South, 7000 South, 9000 South, and 10600 South. These intersections were chosen because the sections of Redwood Road and State Street between 4500 South and 10600 South generally have the highest levels of cross-street volumes contributing to delay for vehicles on Redwood Road and State Street.
- **Cycle super highway:** This is similar to the cycle super highway described in Scenario 1.
- **I-15 Elevated:** I-15 Elevated contains freeway general purpose lanes elevated above the current I-15 freeway, as consistent with a 2012 feasibility study completed by UDOT Region Two. I-15 Elevated extends from I-80 Eastbound to Bangerter Highway, with intermediate access points at Vine Street and 10000 South. I-15 Elevated will contain two general purpose lanes per direction.
- **Mobility Hubs:** These include major transit stations where multiple transportation modes (including walking, biking, and transit) are integrated, and with an intensive concentration of employment, living areas, shopping, and/or recreation. Proposed mobility hub locations for WFCCS are Salt Lake City's Central Station, Murray Central FrontRunner/TRAX station, the proposed infill station in Bluffdale, Orem FrontRunner station, and Provo FrontRunner station.
- **Implement planned active transportation networks:** Scenario 3 uses the same assumptions as shown in Scenario 1 for this key element.
- **Expanded collector/distributor system along I-15:** This element represents a proposed collector/distributor system along I-15 from Sandy to Lehi, which was currently under study by UDOT at the writing of this study. The collector/distributor study team provided CAD linework for the WFCCS technical team to integrate into travel demand model networks.
- **Reversible lanes on I-15:** This element includes reversible lanes on I-15 in Davis County, where review of future travel demand model volumes showed the most appropriate directional splits. Reversible lanes on I-15 are proposed between the US-89/Legacy Parkway interchange and I-80 Westbound interchange. Termini locations were selected based on the ability of connecting freeway systems to absorb the additional traffic coming from the reversible lanes.

# Scenario Three



## Next Steps

The next step in the evaluation process is to determine how well each of the three long-term scenarios meet the goals and metrics identified by the Management Team for WFCCS. These goals and metrics are provided below.

**Goal: Improve Safety**

*Metric: Number of serious injuries and fatalities*

*Metric: Percent of trips walking and bicycling in the peak period*

**Goal: Increase Person Throughput**

*Metric: Person throughput in peak period*

*Metric: Seat utilization in peak period*

**Goal: Improve Travel Time Reliability**

*Metric: Peak and off-peak travel times*

*Metric: Buffer index*

**Goal: Increase Regional Accessibility to Jobs and Education**

*Metric: Number of jobs accessible within a 45 minute driving trip*

*Metric: Number of jobs accessible within a 45 minute transit trip*

**Goal: Improve Air Quality**

*Metric: VMT and air pollutant emissions*

*Metric: Cold starts*

**Goal: Improve Economic Outcomes**

*Metric: Employment*

*Metric: Gross Regional Product*

*Metric: Personal Income*

*Metric: Cost/Benefit Analysis*

**Goal: Reduce Direct Household Transportation Costs**

*Metric: Direct household transportation costs*

**Goal: Improve Mode Balance**

*Metric: Share of households within ½-mile walkshed or 3-mile bikeshed of transit*

*Metric: Non-SOV access mode split to high-capacity transit in peak period*

*Metric: Peak and daily mode split*

A variety of tools will be used to assess the scenarios' effectiveness in meeting these goals. Tools include the WFRC/MAG travel demand model, GIS network analysis, and off-model tools to assess various safety and transportation demand management strategies.



EXHIBIT A: LONG TERM STRATEGIES BRAINSTORMING WORKSHOP NOTES  
NOVEMBER 16-17 2015

# Wasatch Front Central Corridor Study

## Long Term Strategies

## Brainstorming Workshop

The Long Term Strategies Brainstorming Workshop workshop for the Wasatch Front Central Corridor Study was held on November 16<sup>th</sup> and 17<sup>th</sup>, 2015. The primary goals were to discuss current and forecasted challenges in the corridor (day 1) and what range of options we should consider as solutions (day 2). Recognizing that neither of these primary goals can be resolved in a single workshop, the secondary goal was to establish the process we will use in this project to refine both the problem definition and policy options.

Attendees included Lisa Zundel, Jeff Harris, GJ LaBonty, Levi Roberts, Shawn Seager, Tim Hereth, Ted Knowlton, Jon Larsen, Steve Call, Bryan Dillon, Ron Milam, Maria Vyas, Lynn Jacobs, Kyle Cook, Stephen Lawe, Chad Worthen, Kordel Braley, Dave Smith, Dan Adams, Siobhan Locke, and Justin Smart.

### Day 1: Challenges

The group discussed multiple challenges observed in the corridor:

- Unstable flow, which leads to unreliability on I-15. What level of unreliability is tolerable? Customers of the transportation system don't understand the "tragedy of the commons" that occurs when a public resource is not managed efficiently because it's not priced. The group discussed that, while the current paradigm is to attempt to build our way out of congestion, the demand for driving will increase to fill whatever capacity we build – but the public doesn't understand this phenomenon.
- The primary problem is really in the peak periods. Some team members assert that a supply-side approach is preferable, and that it is problematic to impose solutions that infringe on aspects of people's lives. The group discussed that solution sets might need to be incremental, where solutions become more palatable over time as congestion levels and tolerances change.
- The group discussed capacity issues and the possibility of establishing policies regulating vehicle size (this may be too big a cultural change, although it could be achieved through policies such as registration costs for larger vehicles) and time-based tolls.

Vehicle headways, densities, speeds, and autonomous/automated vehicles were also discussed. If headways can be shortened, the freeway can accommodate higher vehicle densities. Autonomous and connected vehicles may initially be programmed to have very conservative headways (e.g. 3 seconds). Vehicle size also plays into this density calculations – the larger the

vehicles, the fewer of them can fit on the roadway. In addition, drivers behave differently in different places. More aggressive driving in places like LA results in shorter headways, and slightly higher throughputs. As our region continues urbanizing, we may see these driving patterns here as well.

The group discussed the modeling tools available to analyze the long-term scenarios, and various behavioral, physical, and policy factors that should be addressed or may need to be tweaked. These included:

- Internet shopping?
- Demographic shifts based on minority, multi-generational housing.
- Shared economy (ie Peer to peer car sharing. Currently emerging in other cities; not currently allowed in Utah)
- Travel needs for sub-market segments (population and employment groups) such as downtown urban living, rural living, industrial, or tech office; super commuters vs urbanites
- Grid 2.0 – All or nothing run using planned network but making capacity equal on all roadways.
- Productivity during travel (currently manifest in transit, could occur in driverless vehicles)
- Longer Baby Boomer participation in the work force
- Millennial behaviors – group believes that polarity of millennials may not be as distinct as they age, and not all millennials are making choices consistent with stereotypical patterns.
- Social stigmas – how will certain groups view what’s good, bad, cool in terms of sustainability, environmental consciousness, etc.
- Will workers per household be different? How to deal with changing household makeups, minority ethnic makeups may have different size, workers, age distributions, etc
- Effects of autonomous vehicles in terms of demand? (Probably higher VMT, but less likely to have a lot of increase in new trips)

The group agreed on an initial approach to address these factors. The consultant team will develop a set of model assumptions, based on model inputs, and outlined below:

- Demographics
- Behavior (should trip rates and trip lengths change in the future [shorter trip lengths due to congestion])
- Policy (take RTP model as a starting point)
- Physical (take RTP networks as a starting point [consider the TIP and STIP as “existing plus committed”, but Phases 2 and 3 of the RTP can be up for discussion])

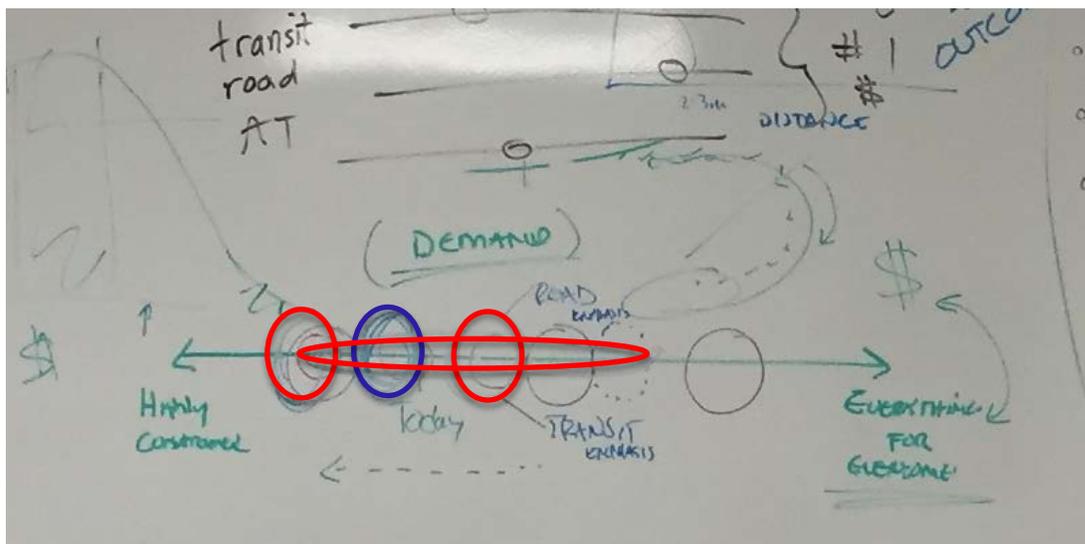
but recommend whether capacity increases due to autonomous vehicles or other technology)

These will be presented to the Management Team in a format that includes rationale for modifying given assumptions, level of effort needed for modifications, the level of certainty for each assumption, and potential influence on decisions. The consultants will identify which assumptions have the greatest potential for changing outputs. The group will seek the advice of regional experts on these topics (Pam Perlich, Dan Kuhn, Natalie Gochnour, Val Hale, Blaine Leonard, Steve Price) to vet and refine assumptions.

## Day 2: Framework for Scenarios

The group discussed the various approaches to developing scenarios, and the desire to use a systems approach vs a corridor or modal approach. The consultant team suggested a spectrum of scenarios based on philosophy – high freedom (any, any, any model – any time of day, any mode, any destination) or high management. The Management Team’s Decision Lens exercise suggests the solution sets would be more managed and would provide high degrees of accessibility across all modes. The group determined that the three scenarios should be spread across the high freedom/high management spectrum, and that each scenario should be feasible on its own – we don’t want to develop a “straw man” scenario.

The photograph below represents the demand (“highly constrained”) vs supply (“everything for everyone”) spectrum of scenarios; the ovals indicate where the Management Team currently believes their philosophy is (in blue) and where the three long term scenarios should be represented on the spectrum (in red). This photo was taken at the completion of the November 16-17 workshop sessions, and was used to instruct the consultant team on where to start in developing long-term scenarios.



The group also acknowledged some constraints that should be considered when developing the long-term scenarios:

- Financial (life-cycle) – Shawn suggested use of life-cycle cost model to budget improvement sets
- Land use (the urban footprint is set by the transportation network)
- Local land use and network decisions
- Travel should be low cost if not free

The consultant team was directed to prepare a matrix/infographic of solution concepts along with a narrative. Concepts should address:

- Freight
  - Local market
  - Regional market
  - State market
- Passenger
  - Mobility hub – internal
  - Mobility hub to mobility hub
- Emphasis on serving demand in a smart and economically efficient way
- Need to describe the demand challenge (including accessibility to destinations) and then explain how public agencies can influence demand and provide supply.

The team also needs to identify which concepts cannot be easily modeled using the tools we have available, and how those concepts might be evaluated instead. Communications Team members recommended transparency in developing the scenarios – it needs to be clear how each scenario addresses community interests, and how each scenario was derived.

EXHIBIT B: MINUTES FROM EXECUTIVE BRIEFING, FEBRUARY 16 2016

MINUTES  
Wasatch Front Central Corridor Study  
Executive Briefing  
02/16/16

Attendees: Carlos Braceras, Shane Marshall, Andrew Gruber, Andrew Jackson, Jerry Benson, Lisa Zundel, Jeff Harris, GJ LaBonty, Shawn Seager, Ted Knowlton, Eileen Barron, Maria Vyas, Dave Smith

1. Initial Scenarios Presentation Discussion
  - a. The project team introduced the study's initial scenarios and a draft of the local government workshop presentation to the executive committee. Several questions/comments arose from the Executive Group.
    - i. Andrew G: what does the final investment package look like? Will it contain price tag, primary and secondary elements, business case outline and tradeoffs, management required?
    - ii. The group discussed the seat utilization graphic of the Millcreek area, as they have never seen a chart like that before. The team clarified that each car was assumed to have four seats total, 1.2 vehicle occupancy and that the local bus routes utilized for the chart were primarily north south. San Francisco slug lanes were referenced. The question was asked if there was an average seat utilization amount for an urban area and the team responded that Utah is lower than the average.
    - iii. The group also discussed the transportation demand spectrum graphic, and wanted to clarify that Meet Demand means build new capacity and Manage Demand means utilize existing capacity.
    - iv. As the team discussed the initial scenarios set (1, 2 and 3), the following comments or questions were made or asked:
      1. Atlanta has prioritized funding. See NY Times article on Ford research.
      2. Andrew J.: Subsidies for transit fares are key.
      3. Carlos: We must compensate for the time differential, if it takes an extra 10 minutes to get somewhere on transit, that gets subsidized in real time. No subsidy would occur if there is no time differential. Half of riders are currently subsidized.
      4. Andrew J.: this probably isn't possible, but do we need to consider capping businesses in cities or student enrollment at the colleges?
      5. Carlos: We need to look at all ideas right now, including variable pricing on all lanes of I-15. Don't constrain yourself. We have to show the effectiveness of I-15 elevated and new capacity on arterials. The last time we looked at 700 East was in 1995.

- v. Education and communication about the study was discussed as well. The following comments were made:
  - 1. We need to educate to the reality of growth and challenges that it brings.
  - 2. How do we communicate this information outside of the study team?
  - 3. Have we evaluated the different audiences or groups with the scenarios?
  - 4. Do we want to look at the extremes ends of the transportation spectrum to explain why we are taking a balanced approach? For instance, show an all-transit or an all-road alternative to demonstrate why neither extreme will work?
  - 5. We have an obligation to look at the elements in the scenarios that may not be politically reality today, and give the information to the policy makers.
  - 6. We need to demonstrate performance of the system now and in the future and what trends we see in transportation.
  - 7. With the variety of things we care about as a community, this is what a scenario will look like.
- vi. In terms of evaluating the scenarios, the following question was asked:
  - 1. When evaluating the scenarios against the goals, is an unacceptable grade a possibility?
- vii. The study team recapped the Key Person Interviews and Focus Groups for the executive team. The executives asked if the scenarios accomplish the four areas of focus mentioned in the KPIs, and requested that the scenarios match up with them. The four areas of focus from the KPIs are as follows:
  - 1. Improve East-West Connectivity
  - 2. Don't Just Focus on Cars
  - 3. Shift to Transit
  - 4. Be Realistic
- viii. The study process, timeline and outreach calendar were reviewed at the end of the meeting. The following requests were made by the executive team:
  - 1. Present a high level, five-minute update to the MPO and UTA boards, as well as to the UDOT Transportation Commission.
  - 2. Provide an update to the planning community first.
  - 3. Prepare an updated fact sheet of the three scenarios.
  - 4. Revisit a legislative update.



EXHIBIT C: COMMENTS RECEIVED AT LOCAL GOVERNMENT AND TECHNICAL STAFF  
WORKSHOPS, MARCH 2016

Local Government and Technical Staff Initial Scenario Workshop Comments - March 2016

Scenario 1  
Reactions

Theme	Scenario	Comment	Attached to...	Name	Organization
Active Transportation	1, Draper	More opportunities for walker - walker/bike; trails protected from vehicular traffic	Prioritized transportation projects in Wasatch Choice Vision	none provided	
Active Transportation	1, SLCC	Make sure you study and differentiate between urban and suburban cycling options and solutions. Don't forget east/west routes	Extensive active transportation networks	Grant Cromwell	Bluffdale
Active Transportation	1, Tech	More emphasis on local bike connectivity before cycle super highway		Jory Johner	WFRC
Active Transportation	1, Draper	Start with elementary kids (and parents) teaching the benefits of walking, biking, etc.			
Active Transportation	1, SLCC	Like tech and design strategies to improve bike/ped safety		Brad McIlrath	Murray City
Active Transportation	1, Tech	Keep the progressive A.T. concepts; lower transit prices; higher transit frequency			
Active Transportation	1, SLCC	Suggest adding this column to scenario 2 - I like this	Active transportation investments	Robin Hutcheson	Salt Lake City
Active Transportation	1, SLCC	This will be more effective than cycle super highway - allows us old people to bike locally	Technology and design strategies that improve bike/ped safety	Jim Smith	Davis County Commission
Active Transportation	1, SLCC	Safety #1 for all modes. #1 drives strategy, drives design	Technology and design strategies that improve bike/ped safety	Robin Hutcheson	Salt Lake City
Choice Architecture	1, Tech	Unless transit network is extended or has higher frequency, choice architecture strategy may not be effective because viable choices are still limited.		Julie Bjornstad	WFRC
Choice Architecture	1, Tech	Interested in what the choice architecture would actually lead to		Levi Roberts	UTA
Cycle Super Hwy.	1, Draper	Lehi supports buffered bike lanes/cycle tracks vs super highways due to limited winter/weather usage	Cycle super highway		Lehi
Cycle Super Hwy.	1, SLCC	I like the idea of more bike access - but it will never carry enough traffic to justify cost. Bikers will continue to be a minority	Cycle super highway	Jim Smith	Davis County Commission
Cycle Super Hwy.	1, SLCC	Cycle superhighway and active transportation networks are key. Many would use these today	Cycle super highway & Extensive active transportation networks		
Cycle Super Hwy.	1, Tech	I like the concept; how would the cycle super highway function from late November to late February? (weather)		Brian Phillips	UDOT R-3
Cycle Super Hwy.	1, Tech	Cycle super highway sounds like a good idea, but cost per benefit might be excessive?		Grey Turner	UTA
Cycle Super Hwy.	1, Draper	Cycle transportation super highway very important		John Park	Cottonwood Heights
Cycle Super Hwy.	1, Tech	Visual examples or more detail is needed on cycle super highway		Jory Johner	WFRC
Express/Transit Lanes	1, SLCC	Things I don't like: express lanes on arterials, only have transit lanes		Brad McIlrath	Murray City
Express/Transit Lanes	1, Draper	I like barrier separated express lanes. They especially work well if they can be adjusted to assist with different traffic at different times of day - Bay Area does this.		Shellie Baertsch	Saratoga Springs Council
Express/Transit Lanes	1, SLCC	Yes, the double white lines do not work. Barriers needed asap.	Barrier-separated Express Lanes on I-15		
Express/Transit Lanes	1, SLCC	Barrier separated bypass lanes on I-15 NOW! Current "pay to drive" system is lame	Barrier-separated Express Lanes on I-15		
Express/Transit Lanes	1, SLCC	Good idea	Transit lanes and Express Lanes on arterials		South Salt Lake
Express/Transit Lanes	1, SLCC	Express lane barrier seperator - remove the option to pay for express	All I-15 lanes tolled during peak travel times	Brad McIlrath	Murray City
Grid 2.0	1, Draper	We also need to be looking at east/west connections to get from MVC and I-15 to SLC (illegible) MVC to I-15 in Utah County		Shellie Baertsch	Saratoga Springs
Grid 2.0	1, Draper	Better east/west transit TRAX or subway			
Grid 2.0	1, Draper	Provide public transportation that is reliable; how to create a balance between commuter traffic and public transportation? We need more east/west traffic in Salt Lake Valley			
Grid 2.0	1, Draper	Improved east/west and I-15 connections very important to West Jordan City	Grid 2.0 - Improved street connections	Bill Baranowski	West Jordan
Grid 2.0	1, SLCC	Very important to breaking down the dominance of cars; Grid 2.0	Grid 2.0 - Improved street connections	Sharen Hauri	South Salt Lake
Grid 2.0	1, SLCC	Need east/west solutions (not through neighborhoods, though)	Grid 2.0 - Improved street connections	Grant Cromwell	Bluffdale
I-15 Toll	1, Draper	The tolling hurts low-income people and has a negligible effect on higher income (behaviorally)	All I-15 lanes tolled during peak travel times		
I-15 Toll	1, Draper	Tolling all I-15 lanes will kill tourism and will discourage companies from moving to our area. In addition, I-15 is our only option for north/south travel until county and once MVC is in place - will just shift burden to MVC	All I-15 lanes tolled during peak travel times	Shellie Baertsch	Saratoga Springs Council
I-15 Toll	1, SLCC	I don't think you can realistically make an I-15 toll - people will roll on not knowing; need to have some free lanes	All I-15 lanes tolled during peak travel times		
I-15 Toll	1, SLCC	This works other places - but very unpopular politically. More express lanes will accomplish same thing without pain.	All I-15 lanes tolled during peak travel times	Jim Smith	Davis County Commission
I-15 Toll	1, Draper	Lehi supports peak lane shifts on I-15 vs making users pay tolls	All I-15 lanes tolled during peak travel times		Lehi
I-15 Toll	1, SLCC	Yes, driving not free...	All I-15 lanes tolled during peak travel times	Robin Hutcheson	Salt Lake City
I-15 Toll	1, SLCC	I like the idea if toll (a few dollars per month) is small and tech can be developed to track users correctly	All I-15 lanes tolled during peak travel times		
I-15 Toll	1, SLCC	Like tolled I-15 lanes during peak hours	All I-15 lanes tolled during peak travel times	Brad McIlrath	Murray City
I-15 Toll	1, Draper	Tolled I-15 travel lanes - effects the poor much more than rich		John Park	Cottonwood Heights
Other	1, Tech	50 mph guarantee is going to be difficult to keep. Accidents, weather, other.		Chad Eccles	MAG
Other	1, Tech	Charge to "start" car - think about it		Christopher Chesnut	UTA
Other	1, Tech	Does this scenario include the idea of "managed motorways?"		Val Halford	WFRC
Other	1, Draper	Scenario 3: be careful with frontage roads that kill businesses			
Other	1, Tech	How will costs and performance measures be completed for scenarios and pieces within scenarios and preferred scenario		Jory Johner	WFRC
Other	1, Tech	Why isn't vision zero part of every scenario?		Kerry Doane	UTA
Other	1, SLCC	See my note about Hive in Salt Lake County in Scenario 2	Technology and design strategies that improve bike/ped safety	Robin Hutcheson	Salt Lake City
Transit	1, Draper	Gas prices have been as low as \$1.50 at Costco this year. UTA needs a mechanism in place whereby fares decrease with gas prices decreasing. Because of the lower gas prices, the airline industry is reaping record profits (in the billions). What is UTA doing with their windfall because fares remain at \$2.50 as before			
Transit	1, SLCC	Transit already is over-subsidized	Reduced transit fares		South Salt Lake
Transit	1, Tech	Train electric tracks should be seriously considered		Chad Eccles	MAG
Transit Fare	1, Tech	Transit fare management gives us the best tool to manage demand. This has to be a key element.		Chad Eccles	MAG
Transit Fare	1, Draper	Incentives for reduced fares during non-peak or group/family discounts. Fill the train during non-peak hours! Get people on it!	Reduced transit fares		
Transportation Centers	1, Tech	Integrate A/T networks with transit into a local and long range system with transit as the intermediate node		Jim Price	MAG

Transportation Centers	1, Draper	Provide commuter/bus stops in Bluffdale; connect communities with reliable public transportation; provide amenities on public transportation that would be incentives to travelers - i.e. wifi, bikeracks, etc.			
Transportation Centers	1, SLCC	This concept is coming worldwide; we ought to think about it at our hubs/center (major) - make it easy/attractive to like Red Box	Pay-per-use transportation kiosks	Paul Allred	Holladay
Transportation Centers	1, SLCC	Like pay-per-use kiosks and additional education about it		Brad McIlrath	Murray City
Travel Choice/Convenience	1, Draper	Design improvements in such a way to incentivize people to work closer to where they live (i.e. no WDC)	All I-15 lanes tolled during peak travel times		
Travel Choice/Convenience	1, Draper	Education on the real cost of transportation an important element		John Park	Cottonwood Heights
Travel Choice/Convenience	1, SLCC	How make travel time with transit comparable to driving private vehicle - especially for short commute times		Andrea Pullos	Salt Lake County
Travel Choice/Convenience	1, Tech	A small percentage of people live in nodes. Even smaller percentage of those work in that same node. Nodes are good for transit, but won't eliminate the need for roads		Tim Hereth	MAG
Travel Choice/Convenience	1, Tech	Based on feedback that cost and access are biggest barriers to transit ridership, pair reduced fare with increased frequency, etc. One might not work without the other.		Callie New	WRFC
Travel Choice/Convenience	1, Tech	For vision nodes, prioritize: urban design (walking); bike; transit; local street connectivity		John Larsen	WFRC
Travel Choice/Convenience	1, SLCC	This is a key to helping re-educate drivers without being too austere	Education strategy to promote individual travel choices that benefit everyone	Jim Smith	Davis County Commission
Travel Choice/Convenience	1, Draper	Convenience of our transportation system is key to our economy	Transit lanes and express lanes on arterials		
Wasatch Choice	1, SLCC	Wasatch choice vision seems to have either missed or discourages places like Herriman, where growth is <u>really</u> happening. Growth is what it is; suburbs shouldn't be penalized.	Prioritized transportation projects in Wasatch Choice Vision	Grant Cromwell	Bluffdale
Wasatch Choice	1, SLCC	This should be a priority. We need good "bang for the buck" projects built - i.e. capacity and convenience	Prioritized transportation projects in Wasatch Choice Vision	Paul Allread	Holladay

*Additional Ideas*

Theme	Scenario	Comment	Attached to...	Name	Organization
Active Transportation	1, Draper	Active transportation in the southwest part of SLC is critical in Riverton		Bill Applegarth	Riverton
Cycle Super Hwy.	1, Tech	Make some nodes of cycle super highway resistant to weather concerns		Brian Phillips	UDOT R-3
Grid 2.0	1, Tech	We need grid 4.0 which could be freeway connection from I-15 to Bangerter to Mountainview.		Tim Hereth	MAG
I-15 Toll	1, Draper	Tolls at peak times will have negative impacts to other revenue sources - i.e. tourism.			
I-15 Toll	1, Tech	Tolling or fees isn't realistic on a I-15 main line			
Other	1, SLCC	New scenario that combines heavy investments in active transportation and transit; seem disconnected		Matt Sibul	
Other	1, SLCC	Commissioner Smith with Davis County would like the seat utilization info for Davis County		Lisa Zundel	
Other	1, SLCC	What does scenario 1 + 2 look like?		Andrea Pullos	Salt Lake County
Transportation Centers	1, Draper	2015 Sandy/South Jordan UTA Circulator study recommends a transit/active transportation bridge over I-15 at 102nd. This connects Front Runner to light rail, Sandy Civic Center and River Park		Ryan Kump	Sandy City
Transportation Centers	1, Tech	Target work areas (local) for improved transit reliability (ie: Lehi to Provo)		Brian Phillips	UDOT R-3
Travel Choice/Convenience	1, Tech	Transportation Management Associations (TMA). Incentivize developers with transportation "packages" to offer new residents/employees		Grey Turner	UTA
Travel Choice/Convenience	1, Tech	Worker modifications need to be incentivized; tele commute; flex schedules		Chad Eccles	MAG
Travel Choice/Convenience	1, Tech	Apps to combine like trips check vehicles out to improve seat occupancy			
Travel Choice/Convenience	1, Tech	Will transit embrace autonomous in the future to help with convenience of travel; I can drive to my destination in half the time as current transit			

Local Government and Technical Staff Initial Scenario Workshop Comments - March 2016

Scenario 2  
Reactions

Theme	Scenario	Comment	Attached to...	Name	Organization
Active Transportation	2, Tech	Probably my favorite scenario if active transportation were added		Levi Roberts	UTA
Active Transportation	2, SLCC	Add active transportation elements to Scenario 2		Grant Cromwell	Bluffdale
Active Transportation	2, SLCC	Active transportation replaces car trips for short trips and active transportation as connection to transit	Increased transit service	Robin Hutcheson	Salt Lake City
Arterials	2, Draper	1300 E. Corridor study showed 40% accident reduction before/after raised median project. This needs to be done on other corridors	Driveway consolidation on select arterials		
Arterials	2, Draper	Driveway consolidation arterials? Limits business access	Driveway consolidation on select arterials	Shellie Baertsch	Saratoga Springs Council
Arterials	2, SLCC	This is a good idea for efficiency but not necessarily for safety, because speed increases. Need to balance the two.	Driveway consolidation on select arterials		
Arterials	2, SLCC	Consider design options - example: multi-way boulevard good for moving people and good for local business and streetscape	Driveway consolidation on select arterials	Robin Hutcheson	Salt Lake City
Arterials	2, SLCC	Too much traffic on arterials is big burden to cities	All I-15 lanes tolled during peak travel times	Len Arave	North Salt Lake
Arterials	2, Tech	Move e/w traffic away from interchange		Walt Steinvorth	UDOT
Arterials	2, Tech	Need to include arterials capacity		Walt Steinvorth	UDOT
Bus Lanes	2, SLCC	This is a good/great idea if BRT gets you preferably where you want to go - will cities sign off on lane reduction for transit? Bus - no; rail - yes	Dedicated bus lanes on arterials with transit signal priority		
Bus Lanes	2, SLCC	BRT with separate lanes <u>only</u> makes sense if you have long sections of road without intersections (3500 S is a mess)	Dedicated bus lanes on arterials with transit signal priority		
Express/Transit Lanes	2, Tech	Include policing options on HOV, less police blocking lanes for a traffic stop - more photo regulation where you get mailed your infraction with photo; there's not enough consequence to adhere to HOV and like options		Aaron Cloward	MAG
Express/Transit Lanes	2, SLCC	Yes. Now.	Barrier-seperated Express Lanes on I-15		
Express/Transit Lanes	2, SLCC	Disagree, toll HOV the barrier separated lanes	Barrier-seperated Express Lanes on I-15		
Freight Lanes	2, Draper	Very supportive of "freight encouraged" lanes	I-15 "freight encouraged" lane		Lehi
Freight Lanes	2, Draper	We like "freight encouraged" lanes in West Jordan City (example 7800 South, near Mountainview)	Driveway consolidation on select arterials	Bill Baranowski	West Jordan
Freight Lanes	2, Tech	How does this scenario handle increased freight traffic? (projected to be up 30% over the next 20 years)		Val Halford	WFRC
Grid 3.0	2, SLCC	We definitely need to message the efficiency of our arterials and intersections (right turns)	Grid 3.0 - Managed lanes network	Paul Allred	Holladay
Grid 3.0	2, Tech	Grid 3.0 is needed!		Jory Johner	WFRC
Grid 3.0	2, Tech	Grid 3, more flyovers across I-15 is great idea.		Walt Steinvorth	UDOT
Grid 3.0	2, Tech	For Grid 3.0, focus on making corridors truly multi-modal and built at a human scale - good urban design		John Larsen	WFRC
Grid 3.0	2, Tech	Grid 3.0 will be most effective if implemented outside study area well. (Capture N/S trip outside corridor)		Kerry Doane	UTA
Grid 3.0	2, Tech	Grid in corridor will help "The Corridor" accessibility, but not the I-15 so much.		Tim Hereth	MAG
I-15 Toll	2, Draper	Prefer reversible I-15 lanes vs tolled	All I-15 lanes tolled during peak travel times & Reversible Lanes on I-15		Lehi
I-15 Toll	2, SLCC	Adversely impacts low-income population	All I-15 lanes tolled during peak travel times		South Salt Lake
I-15 Toll	2, SLCC	No toll though	All I-15 lanes tolled during peak travel times		
I-15 Toll	2, Tech	I think it's highly unlikely politicians and people will toll the backbone of our transportation system. It doesn't seem real even by 2050.		Tim Hereth	MAG
I-15 Toll	2, Draper	Tolling all I-15 lanes is not practical and might have the wrong effect. Users have already paid for the road.			
Other	2, Draper	Of the 3 scenarios, #2 I think is the best for Riverton area		Bill Applegarth	Riverton
Other	2, Draper	This is the best scenario			
Other	2, SLCC	Kids need to stay home for school; internet connections			
Other	2, SLCC	You need a very intensive education component to this approach - the environmental community was effective in promoting recycling by going into the schools and getting children to help drive parents' behaviors. We could do the same regarding transportation choices.		Mary Ureak	Woods Cross City
Other	2, Tech	How do education components play into the options/investments?		Patrick Cowley	UDOT
Other	2, Tech	I like this scenario (#2)		Christopher Chesnut	UTA
Other	2, Tech	We need to pursue high management options gradually		Chad Eccles	MAG
Other	2, Tech	Great data on seat availability. I don't see much incentive to address auto seat availability in scenarios.		Kerry Doane	UTA
Other	2, Tech	Make sure highway and AT investment make sense as coordinated system -		John Larsen	WFRC
Other	2, Tech	Don't add grade-separation in places where you want walkability and transit stations		John Larsen	WFRC
Other	2, Tech	Specify how this scenario can incentivize different off-peak travel		Kerry Doane	UTA
Other	2, Tech	We just need to complete the major freeway system and connectivity of freeway facilities.		Tim Hereth	MAG
Other	2, Tech	What specific TDM strategies would be incorporated into his scenario? (provide a comprehensive list)		Val Halford	WFRC
Reversible Lanes	2, Tech	Reversible lanes on arterials doesn't seem that good.		Tim Hereth	MAG
Reversible Lanes	2, Tech	Reversible lanes will also induce additional demand		Kerry Doane	UTA

Reversible Lanes	2, SLCC	Please no reversible lanes on arterials on I-15; not good for local folks who need access across - may induce more traffic, too		Robin Hutcheson	Salt Lake City
Reversible Lanes	2, SLCC	Seems to work well where used	Reversible lanes on select arterials		
Reversible Lanes	2, SLCC	Yes, must carefully select which ones - 7th E./State Redwood in peak travel periods	Reversible lanes on select arterials		
Reversible Lanes	2, Tech	I feel like this one is the best but doesn't offer enough penalties for driving - reversible lanes increase capacity, and while lane pricing for those who can afford it might increase congestion, there's really no overall "stick"		Julie Bjornstad	WFRC
Reversible Lanes	2, Tech	Reversible lanes is an idea and probably overdue. How do you engineer such with wide medians?		Val Halford	WFRC
Transit	2, Draper	There is a socioeconomic stigma to buses that will have to be addressed. More buses won't yield more ridership			
Transit	2, SLCC	More transit connections			
Transit	2, SLCC	Increase service now. We <u>already</u> subsidize it, why not <u>super subsidize</u> it to make it work	Increased transit service		
Transit	2, SLCC	This can be done for Frontrunner with double rail	Increased transit service	Brad McIlrath	Murray City
Transit	2, Tech	Add Front Runner capacity (5+ cars) in addition to TRAX		Levi Roberts	UTA
Transit	2, Tech	Instead of extending TRAX platforms, consider increasing TRAX frequency		Kerry Doane	UTA
Transit	2, Tech	TRAX platform extensions: It will take a lot more than that. Vehicles components, substations, communications, places where train will block intersections.		Kerry Doane	UTA
Transit	2, Draper	Light rail is more convenient - warrants more investment; user fees make sense in resolving use and transit needs			
Transit	2, SLCC	Absolutely - but not if you can't connect east/west	FrontRunner double-tracked and electrified		
Transit	2, SLCC	Add more east/west	Dedicated bus lanes on arterials with transit signal priority	Grant Cromwell	Bluffdale
Transit	2, SLCC	Yes! But must include increased efficiency to secondary locations from main hubs	FrontRunner double-tracked and electrified		
Transit	2, SLCC	Need S/W Valley transit options		Grant Cromwell	Bluffdale
Transit	2, SLCC	Why not more Front Runner stations?	TRAX station platform extensions	Len Arave	North Salt Lake
Transit	2, Draper	Prefer more investment in interconnections vs double track Front Runner			Lehi
Transit	2, SLCC	Local circulators please (rail and bus)		Robin Hutcheson	Salt Lake City
Transit	2, Tech	Mileage based user fees will be very hard to get		Chad Eccles	MAG
Transit	2, Tech	Increase transit coverage and reduced fare is good.		Tim Hereth	MAG
Transit	2, Tech	Focus high-frequency transit on key areas - don't spread it too thin.		John Larsen	WFRC
Transit Fare	2, Draper	I support the reduced fares and increased transit frequency for better demand		Shane Greenwood	South Jordan City
Transit Fare	2, SLCC	Hive pass expands to Salt Lake County - this is "low hanging fruit"	Reduced transit fares	Robin Hutcheson	Salt Lake City
Transit Fare	2, SLCC	Reduced transit fares now. Price/distance based, but not any more expensive for South Jordan/farthest reaches. Less for short distance	Reduced transit fares		
Transit Fare	2, SLCC	Distance-based transit fare		Tosh Kano	Holladay
Transit Fare	2, Tech	Keep with the low or free fare options. Transit fare prohibit use. Too high		Chad Eccles	MAG
Transit Fare	2, Draper	I think the mileage based fees will not be practice.			
Transit Fare	2, SLCC	Good idea for fair funding - but use GPS system, not odometer, 50 miles driven in another state don't penalize me	Mileage-based user fees	Jim Smith	Davis County Commission
Travel Choice/Convenience	2, Draper	Stronger emphasis on changed behavior			
Travel Choice/Convenience	2, SLCC	Our current transportation system and network provides an induced demand for cars. In order to strike a better balance transit needs to have an induced demand. It needs to become more attractive, with travel times, locations etc., than car travel, if we are to fill those seats		Brad McIlrath	Murray City
Travel Choice/Convenience	2, SLCC	Shorter travel times on transit vs. car; alternatives need to become more attractive			
Travel Choice/Convenience	2, SLCC	This is <u>central</u> to the acceptance and survival of transit!!! Many won't use due to long waits for service and circuit our route to desired destination	Increased transit service		
Travel Choice/Convenience	2, Tech	Focus on making key areas so good that car-shedding is possible.		John Larsen	WFRC
Travel Choice/Convenience	2, Tech	Scenario 2 focuses on infrastructure to change behavior. How do you ensure the investment will indeed change beliefs and behavior?		Patrick Cowley	UDOT
Travel Choice/Convenience	2, Draper	Provide incentives at City Hall for carpool users - close in parking and bike lockers (example Ventura City in 1991 incentives)	Comprehensive travel demand management program	Bill Baranowski	West Jordan
Travel Choice/Convenience	2, Draper	Reduce transit fares will only work after the convenience issue is resolved	Reduced transit fares	John Park	Cottonwood Heights
Travel Choice/Convenience	2, SLCC	Community centers that minimize trips when you get home from work - 9th and 9th; 21st and 21st			
Travel Choice/Convenience	2, Tech	Like the TDM ideas - include requirement for employees and new development		Julie Bjornstad	WFRC

Additional Ideas

Theme	Scenario	Comment	Attached to...	Name	Organization
Active Transportation	2, Tech	This scenario doesn't have any active transportation, but I think it would be key to better connect to transit.		Levi Roberts	UTA
Active Transportation	2, Tech	Where is the A.T. stuff?			
Active Transportation	2, SLCC	Increased pedestrian access under/over I-15 multiple locations not just to meet transit		Andrea Pullos	Salt Lake County
Bus Lanes	2, Draper	BRT from State to LCC up 9400 S. Part of Mountain Accord study efforts as well			
Freight Lanes	2, Tech	Understand freight movement; engage Utah and national trucking associations to understand their needs and get the trucks out of the freeway lanes (i.e. freight, truck only facilities)		Brian Phillips	UDOT R-3
Freight Lanes	2, Tech	Alternative ways of managing trucking/freight. As population increases, trucking increases even more to supply the increased demand (shopping, gas, etc) find a way to reduce/redistribute trucking to mitigate congestion. Examples: fleet trucking, staggering delivery, incentivizing group convos, more trains, etc.		Aaron Cloward	MAG
Other	2, Draper	Disruptive trends - economic downturn			
Other	2, Draper	Geographic variation appropriations for different strategies			
Other	2, Draper	Need to look at Full Wasatch Front - Nephi to Brigham City; different treatments/scenarios for different regions			
Other	2, Draper	How can vehicle/infrastructure connectivity change the way we design and utilize our current and future infrastructure?			
Other	2, Tech	For 2050, the study corridor is too narrow. This corridor is part of the solution. Other transportation corridors need future planning to support expected growth. Available land for development is west what corridors will keep up with that growth. If possible, local governments need to partner with neighbors to help find regional solutions. How can this study inform locals of the impact associated with land use?		Eri Rasband	UDOT
Other	2, Tech	I agree with Eric R's comments. Utah county is growing south and west. Preservation of ROW is needed and regional considerations for Provo to Santaquin area is needed.		Brian Phillips	UDOT R-3
Reversible Lanes	2, Tech	It seems like reversible lanes on I-15 would be far in the direction of meeting demand. With a huge shift to transit, they may be unnecessary.		Levi Roberts	UTA
Transit	2, Draper	Don't change for parking at transit stops			
Transit	2, Tech	Need to invest in understanding work O and D and tailor transit resources to supply those needs (i.e. south Utah County to Provo/Orem or Lehi Loop.) Buses could not just feed the Front Runner at sometimes during the AM and PM hours		Brian Phillips	UDOT R-3
Transit Fare	2, Draper	Change transit fare structure		Mike Wilcox	Sandy City
Transit Fare	2, Draper	Reduce fare for people who ride without bringing their car			
Travel Choice/Convenience	2, Draper	Give state tax incentives for people who live closer to their employment to reduce trips			
Travel Choice/Convenience	2, Draper	Riverton: high value for medians; consolidated access shared access for commercial nodes; more compatible with transit; balancing livability with mobility			
Travel Choice/Convenience	2, Tech	Using the example of what occurred during the 2002 Olympics, with employers encouraging their employees come in early and leave early to avoid the crowds...would it be possible to incentivize companies to have "different" or "off-peak" work hours? Could we shift the travel demand to even out more in the afternoon, or at night? An employee gets paid higher by working "off-peak" because the company receives an incentive from the state.		Grey Turner	UTA

Local Government and Technical Staff Initial Scenario Workshop Comments - March 2016

Scenario 3  
Reactions

Theme	Scenario	Comment	Attached to...	Name	Organization
Active Transportation	3, Draper	(smiley face)	Buffered bike lanes or cycle tracks on arterials		
Active Transportation	3, Draper	If bike community is to become a significant portion of commuter traffic, this will be necessary	Buffered bike lanes or cycle tracks on arterials	Barry Burton	Davis County Commission
Active Transportation	3, Draper	Bicycle improvements are nice, but limited to use for part of the year because of inclimate weather			Lehi City
Active Transportation	3, Draper	Changing behavior for more cycle use will only occur with a short-term "build more" aproach to cycle base transportation infrastructure		John Park	Cottonwood Heights
Active Transportation	3, SLCC	This will reduce VMT and inevitably health	Extensive active transportation networks	Paul Allred	Holladay
Active Transportation	3, SLCC	Physical barriers	Buffered bike lanes or cycle tracks on arterials		South Salt Lake
Active Transportation	3, SLCC	Making this a more comfortable option	Buffered bike lanes or cycle tracks on arterials	Brad McIlrath	Murray City
Active Transportation	3, SLCC	Focus active transportation near transit lines	Extensive active transportation networks	Mark McGrath	Taylorville
Active Transportation	3, Tech	AT improvements in this scenario should be carried through to next phase.		Jory Johner	WFRC
Arterials	3, Tech	Arterial capacity good idea		Walt Steinvorth	UDOT
Arterials	3, Tech	Concerned about bike infrastructure and grade separated interchanges on arterials being in conflict with each other outside of SLC, where through connections may be more limited to arterials.		Julie Bjornstad	WFRC
Arterials	3, Tech	How realistic are grade separated arterials? State St., Redwood Rd.?		Val Halford	WFRC
Arterials	3, Tech	Expansion of I-15 will only further impact access to/from I-15. Wait times will increase. Alternative corridors.			
Arterials	3, Tech	Why are the investments emphasized on arterials. The investment should be a grade separated facilities to comple the region network. By putting HOT/HOV on arterials, we are suggesting that it should be a major regional facility and movement if grade separation on a facility, then it should be separated the length of its corridor.		Tim Hereth	MAG
Cycle Super Hwy.	3, SLCC	Another great idea! Agreed - plan them to employment hubs.	Cycle super highway	Paul	
Cycle Super Hwy.	3, Tech	Love the cycle super highway!		John Larsen	WFRC
Express/Transit Lanes	3, SLCC	This is a huge problem in the "build out" cities. More R.D.U. needed for BRT/Rail, active transportation	New capacity on arterials for transit lanes and Express Lanes with grade-separated intersections	Paul Allred	Holladay
Freight Lanes	3, Tech	Good ideas; freight lane		Walt Steinvorth	UDOT
FrontRunner	3, Draper	Very much in favor of double tracking with more stops, especially in Davis County	FrontRunner double-tracked and electrified	Barry Edwards	North Salt Lake
FrontRunner	3, Draper	Front Runner should be double tracked to eliminate constant delays;	FrontRunner double-tracked and electrified	Shellie Baertsch	Saratoga Springs
FrontRunner	3, Draper	Front Runner could have various lines - A, B, C - that might stop at different stations; on a double tracked system, you could have various options or routes		Ken Leetham	North Salt Lake
FrontRunner	3, SLCC	Agreed!	FrontRunner double-tracked and electrified	Brad McIlrath	Murray City
FrontRunner	3, SLCC	This is needed (Front Runner expansion). Additional stations	FrontRunner double-tracked and electrified	Sharen Hauri	South Salt Lake
FrontRunner	3, SLCC	Doube track Front Runner is a <u>big</u> deal - it ought to be on all scenarios	FrontRunner double-tracked and electrified	Jim Smith	Davis County Commission
FrontRunner	3, SLCC	Front Runner needs to be expanded; need double tracks	Expanded collector distributor system on I-15	Gary Uresk	Woods Cross
FrontRunner	3, Tech	If you increase Front Runner stations, consider a third track (at least at meet points) to add express trains.		Kerry Doane	UTA
FrontRunner	3, Tech	More Front Runner stations counteract the benefit of double-track/electric		Kerry Doane	UTA
FrontRunner	3, Tech	Does more Front Runner stations cause the service to degrade to the point it is no longer viable?		Val Halford	WFRC
FrontRunner	3, Tech	Good job on double track!		Tim Hereth	MAG
Grid 2.0	3, SLCC	More focus on east/west connectivity in all modes is needed (but not through neighborhoods)	Heavy capital investment in all transportation modes	Grant Cromwell	Bluffdale
I-15	3, SLCC	Very cool. Expensive	Double-decked I-15 with managed lanes		
I-15	3, SLCC	Bad idea - too expensive, compounds the problem	Double-decked I-15 with managed lanes	Jim Smith	Davis County Commission
I-15	3, SLCC	Ruin my view - and cost?	Double-decked I-15 with managed lanes	Sharen Hauri	South Salt Lake
I-15	3, SLCC	No double deck; we don't need capacity - we need to use what we have more efficiently	Double-decked I-15 with managed lanes	Robin Hutcheson	Salt Lake City
I-15	3, SLCC	Don't like this idea - would detract from the aesthetics of the valley	Double-decked I-15 with managed lanes	Gary Uresk	Woods Cross
I-15	3, Tech	I-15 elevated not good idea		Walt Steinvorth	UDOT
I-15	3, Tech	View shed if I-15 elevated will kill the idea. Sound walls, height, blocking mountains, etc. Do not move on		Jory Johner	WFRC
Other	3, Draper	4th scenario - take all of the trends and disruptive technologies and see what might be possible		Robert Grow	
Other	3, Draper	(Scenario 3) It will not work			
Other	3, Draper	90th I-15 SB exit - develop additional exit lane that goes over 90th and SB on-ramp and drops directly to 300 W. - alleviates 90th congestion			

Other	3, Draper	More grade-separated intersections is a good thing - need more		Shane Greenwood	South Jordan City
Other	3, Draper	We need to develop a process to create a better job/housing balance. People wouldn't have to use major transportation routes		Barry Edwards	North Salt Lake
Other	3, Draper	(smiley face)			
Other	3, Draper	9400 S. Interchange with c/d system connected to 9000 S. Will provide better connectivity and efficiency to Sandy, South Jordan, West Jordan and alleviate pressure on 90th			
Other	3, SLCC	Consistent with WC 2040		Robin Hutcheson	Salt Lake City
Other	3, SLCC	No new capacity; your presentation demonstrated we don't have a problem with capacity. We have a problem with how it is utilized. Let's solve that		Robin Hutcheson	Salt Lake City
Other	3, SLCC	Even more unused capacity in Legacy Highway in a.m. peak	I-15 reversible lanes	Paul Allred	Holladay
Other	3, SLCC	Cost of parking cars		Sharen Hauri	South Salt Lake
Other	3, SLCC	Where is I-80 study?			
Other	3, SLCC	Truth in spending? We care about transparency			South Salt Lake
Other	3, SLCC	Truth in air quality? Public health?			
Other	3, Tech	Scenario 3 is on manage demand and all about meet demand; show it		Angelo Papastamos	UDOT
Other	3, Tech	Poor use of our resources that we have already invested in our networks		Chad Eccles	MAG
Other	3, Tech	NO! :(			
Other	3, Tech	This is expensive = more taxes = I don't like it.		Christopher Chesnut	UTA
Other	3, Tech	Excess freight capacity on rail lines. Need to use more effectively.		Chad Eccles	MAG
Other	3, Tech	Think about increased capacity related to urban design/community		Julie Bjornstad	WFRC
Other	3, Tech	This would be the most <u>wasteful</u> scenario. Until people feel a pinch, they will not switch to transit. It's great to have so much investment across the board, but will it be effectively used?		Levi Roberts	UTA
Reversible Lanes	3, Draper	Reversible lanes should be separated by a barrier or high speed roads		Blake Thomas	Herriman
Reversible Lanes	3, Draper	Like reversible lanes; prefer reversible I-15 lanes vs tolling			Lehi City
Reversible Lanes	3, SLCC	Love idea of reversible lanes! Much unused capacity SB from Davis in a.m. in NB Lanes	I-15 reversible lanes	Paul Allred	Holladay
Reversible Lanes	3, Tech	Are I-15 reversible lanes realistic from safety standpoint? Earthquake		Chad Eccles	MAG
Transit	3, Draper	Bring back express busses - they were more heavily used in our area than FrontRunner because too much time is added to commute	FrontRunner double-tracked and electrified	Shellie Baertsch	Saratoga Springs
Transit	3, Draper	Some of the build scenario needs to include transit to further extents. Users need to have options before they get in the car. Not likely to drive 1/2 of route then switch to transit			
Transit	3, Draper	Prefer more in investment in light rail and interconnections vs double track/electrifying Front Runner			Lehi City
Transit	3, SLCC	Central heavy rail investment, yes. But where's <u>TRAX</u> in this? You only say Front Runner	Heavy capital investment in all transportation modes	Lee Logston	West Valley City
Transit	3, SLCC	We need subway under SLC		Paul Allred	Holladay
Transit	3, Tech	Shoulder running transit, like Minneapolis			
Transit	3, Tech	10 minute headway rail plan: Blue line - Draper to Airport; Red Line - Daybreak to University of Utah; Green Line - West Valley to Sugarhouse; Black Line - Airport to University of Utah			
Transportation Centers	3, Draper	Support regional transportation mixed use hubs - we have some areas already planned for T.O.D			Lehi City
Transportation Centers	3, Draper	We are working on a couple T.O.D.s in our area for future growth	Regional mixed-use transportation hubs	Shellie Baertsch	Saratoga Springs
Transportation Centers	3, Draper	I like pay-per-use transportation kiosks		Bill Applegarth	Riverton
Transportation Centers	3, Draper	Pay-per-use is important technique to reduce travel demand			
Transportation Centers	3, SLCC	Heavy capital in active transportation, transit, and hub facilities - good. Your focus groups support this strategy. Let's rebalance investment to meet opportunities.	Heavy capital investment in all transportation modes	Robin Hutcheson	Salt Lake City
Transportation Centers	3, SLCC	RMU hubs would be great - but where, how? What we need are more RMU areas throughout the Front Runner	Regional mixed-use transportation hubs	Paul Allred	Holladay
Transportation Centers	3, SLCC	We are trying to do this at Murray Central	Regional mixed-use transportation hubs	Brad McIlrath	Murray City
Transportation Centers	3, SLCC	Why not investing in actual development? Urban cores?	Investment in centers	Sharen Hauri	South Salt Lake
Transportation Centers	3, SLCC	Acknowledge the realistic development in non-"centers" which actually are centers, and plan for it there, i.e. Herriman, Bluffdale, Lehi, Highland, Riverton	Investment in centers	Grant Cromwell	Bluffdale
Transportation Centers	3, SLCC	Centers are great. I live in Sugar House and love it	Investment in centers		
Transportation Centers	3, Tech	Mobility service center in the right location should be further explored		Jory Johner	WFA
Transportation Centers	3, Tech	Collector and distributor facilities are a great idea that needs to be implemented.		Val Halford	WFRC
Transportation Centers	3, Tech	Mobility hubs will change the way the public sees transit. It's like a buffet: enough options to be viable and appealing.		Aaron Cloward	MAG
Transportation Centers	3, Tech	Mobility hubs! Good!		Tim Hereth	MAG

Travel Choice/Convenience	3, SLCC	How do we realistically compare costs vs public willingness to pay? SSL		Sharen Hauri	South Salt Lake
Travel Choice/Convenience	3, Tech	I was looking to take transit to this meeting and with a free pass from MAG traveling from office to the Orem Central Station up here and back would've required 3 hours of transit travel time. Which isn't better than rush hour travel around the Point of the Mountain. In the south (North Utah County) isn't integrated enough to be an interesting option. Can't wait till transit is more central and less peripheral.		Aaron Cloward	MAG
	3, Draper	High infrastructure costs. Is there a good return on investment? LA model?			

*Additional Ideas*

<u>Theme</u>	<u>Scenario</u>	<u>Comment</u>	<u>Attached to...</u>	<u>Name</u>	<u>Organization</u>
Active Transportation	3, Tech	If bike superhighway served by buffered/protected bike lanes on arterials served by extensive (illegible) A/T networks. Think of A/T similar to vehicular transportation thoroughfares > arterials/collectors > local roads. Works best integrated		Jim Price	MAG
Arterials	3, Tech	For all three scenarios: study area(s) not wide enough. Good N/S but needs to go from Range to Range.		Walt Steinvorth	UDOT
Arterials	3, Tech	Crossing I-15 is good idea with flyovers. It does 2 things connects communities and breaths life into interchange. Arterials needs to couple crossing I-15 with increase capacity and connectivity on arterials.		Walt Steinvorth	UDOT
Arterials	3, Tech	Study should look at quadrants differently. East transportation networks are better integrated and have better spacing than westside. Before we stop adding capacity on the westside especially S/W side, the network needs to better connect. In areas that have good mix of facilities make them work better. Areas lacking facilities and connectivity add more connectivity		Shawn Eliot	MAG
Arterials	3, Tech	East/west grid of major highways (freeways/expressways) in S/W county. A commuter that lives in West Jordan has no options to use a freeway to get to work in Murray. All traffic has to use I-15 leading to over capacity.		Shawn Eliot	MAG
Express/Transit Lanes	3, SLCC	When modeling, play around with adding more HOV lanes - less general utility (current number lanes)		Andrea Pullos	Salt Lake County
FrontRunner	3, Tech	Double track FrontRunner; more service, hour plus service is not enough.		Shawn Eliot	MAG
I-15	3, Tech	Freeway within a freeway for I-15 in highest traffic areas. Similar to I-15 San Diego or the reverse lanes I-5 Seattle. They can have HOV lanes but also through SOV lanes. This could allow longer trips to not mix with local trips.		Shawn Eliot	MAG
Other	3, Draper	Look at a combination of Scenario 1 and 3 and for the mix between them			
Other	3, Tech	I think it's not looking at the larger picture to try and improve/solve the corridors by looking at just the corridor. This is the backbone of the region, it needs real connections for the region to function at its real ability. Once the system works better (or easier) then the corridor will improve. Less money more money on I-15, more money on other corridors (East-West freeway facilities)		Tim Hereth	MAG
Other	3, Tech	This would lead to the most sprawl, auto-oriented development, even with awesome transit and active transportation.		Levi Roberts	UTA
Other	3, Tech	If we reduce congestion, will that not improve all the other goals?!			
Transit	3, Draper	Require tracks to use an assigned lane only - reduce track speeds		Trace Robinson	Riverton
Transit	3, Tech	Full UTA rail grade separation			
Transit	3, Tech	TRAX extensions increased transit frequency		Callie New	WFRC
Transit	3, Tech	TRAX bypass in downtown to avoid slower Main St. similar to San Jose CA		Shawn Eliot	MAG
Transit	3, Tech	Triple track FrontRunner and TRAX for express service - skip stops. Also allows TRAX 10 minutes headways.			
Transportation Centers	3, Tech	I think that investment in centers should apply to scenarios 1 and 2		Brian Phillips	UDOT

EXHIBIT D: INITIAL SCENARIO KEY ELEMENTS

## Scenario 1

This scenario provides financial incentives to change travel behavior and patterns, while providing new infrastructure to add capacity. It has the smallest physical footprint of the three scenarios.

Approach	Strategies	Key Elements	Project Description
Network modifications	Improve network connectivity for all modes, and provide managed lanes on I-15 for selected users	"Grid 2.0" - refine the surface street grid network	Create new crossings over I-15 in the primary WFCCS study area. Some crossings are bike/ped only, others are bike/ped plus 1 travel lane per direction. Crossing locations are based on desired spacing of no greater than 1 mile for bike-ped-friendly crossings over I-15; some proposed crossings are at a greater frequency than 1 mile to improve connectivity in low-income neighborhoods.
		Barrier separated HOV, toll, and express bus lanes on I-15	Convert existing I-15 lanes to barrier-separated special use lanes for HOT, HOV, and transit; limited access to barrier separated portions. Barrier separated portions are priced based on utilization rates; pricing levels escalate as needed to maintain a designated travel speed (for instance, 50 mph).
		Implement planned active transportation networks	Build the Priority Bicycle Routes (assumed as unfunded) in the 2040 RTP's, the active transportation improvements in UTA's First/Last Mile schematic plans, and the trail alignments in the Salt Lake County East/West Trails plan.
		"Cycle super highway" network	Cycle super highway is a separated at-grade pathway designed for cyclist travel - wide enough for cyclists to pass each other, signalized intersection crossings at cross streets. For Scenarios 1 and 3, assume cycle super highways on 500 East and 700 West, creating new paths where those roadways don't go through. Connect to Salt Lake County east-west trail alignments to create an off-street network of pathways through the valley.
Facility management	Manage lanes to encourage more efficient use of the system and provide reliability.	HOV/HOT lane conversions on major arterials	Take existing traffic lane for HOV/HOT on major corridors - use same corridors as in Grid 3.0 but without the reversible component. These would include US-89, Redwood Road, State Street, 3500 South, 5300 South, 9000 South, 10600 South, 12300 South, Porter Rockwell Boulevard, Mountain View Corridor (south end), SR-92, 2100 North Freeway.
Transportation Demand Management	Make switching modes easier and more attractive, and incentivize growth in transit nodes and centers.	Vision Zero	Policy to end traffic fatalities (all modes), with greater focus on the most vulnerable users of the transportation system: cyclists and pedestrians.
		Prioritize transportation projects in WC2040 Vision nodes	Transportation projects in WC2040 nodes or centers are prioritized for transportation funding
		Mobility-as-a-service Centers (aka pay per use transportation app)	Create a mobility-as-a-service app or establish hubs at transit centers (or other strategic locations) that provide first/last mile solutions like bike share, electric bike rentals, skateboard/hoverboard/segway rentals, and other solutions.
		Reduce barriers to carpooling and transit use through choice architecture TDM strategy	Team to identify examples for applying a trip reduction or mode shift.
		Transit pricing	Analyze as free fares.

## Scenario 2

This scenario focuses on adding transit capacity, pricing and managing roadway capacity to maximize efficiency, and creating an aggressive transportation demand management strategy.

Approach	Strategies	Key Elements	Brief Description
Network modifications	Add rail and prioritized bus capacity on I-15 and arterials, refine the grid for better multi-modal access, and add reversible lanes capacity.	Doubletrack/electrify FrontRunner commuter rail	Doubletrack/electrification increases FrontRunner capacity by increasing speeds and eliminating delay at siding locations.
		Extend station platforms to accommodate longer consists	Platform extensions allow TRAX consists to be longer than 4 vehicles.
		Barrier separated HOV, toll, and express bus lanes on I-15	Convert existing I-15 lanes to barrier-separated special use lanes for HOT, HOV, and transit; limited access to barrier separated portions.
		"Grid 3.0" - refine the surface street grid network	Grid 3.0 changes include the following: ~Dedicate existing travel lane for HOV/Transit/Toll ("reliability lanes") on US-89 in Davis County; 3500 South between State Street and 900 West; 5400 South between Redwood Road and Bangerter Highway; Porter Rockwell Boulevard; Mountain View Corridor extension to 2100 North Freeway; 2100 North Freeway; and SR-92 ~Dedicate a reversible lane to accommodate same number of peak direction through lanes plus an exclusive HOV/transit/toll lane ("reversible/reliability lanes") on Redwood Road from SR-201 to Bangerter Highway in Salt Lake County; Redwood Road from I-80WB to 500 South in Salt Lake and Davis Counties; State Street from 1300 South to 12300 South; 3500 South from 900 West to I-215; 5400 South from State Street to Redwood Road; 9400 South from Highland Drive to Bangerter Highway; 10600 South from I15 to Bangerter Highway; and 12300 South from I-15 to Bangerter Highway. ~New two lane roads filling in gaps of 700 West, 500 East, State Street, and 13200 South as indicated in the Grid3_0_1_WFRCcomments shp file ~New connections over I-15 ~BRT routes on arterials using the dedicated lane plus TSP and queue jumps: Redwood, State, 3500 South, 5400 South, 9000 South, 10600 South, 12300 South. Timing to match the universal doubling of transit frequencies in this Scenario.
Facility Management	Increase management of I-15 and arterials for passenger and freight traffic.	Increased access consolidation/management on select arterials	Driveway consolidation on select north-south arterials such as Redwood or State.
		Fully priced freeway lanes	All general purpose lanes are priced during peak period. Barrier separated lanes are tolled based lane utilization rates; pricing levels escalate as needed to maintain 50 mph, and HOV 2+ can go to 3+ based on lane utilization rates.
		"Freight-encouraged lanes" on I-15	Freight is encouraged to use left lane, adjacent to barrier separated lanes, instead of mixing with general traffic. Other users are not prevented from using these lanes. Platooning of connected freight vehicles is allowed.
Transportation Demand Management	Create an aggressive TDM program to increase mode balance and reduce VMT.	Aggressive TDM strategy - individual elements to be determined.	Could include trip caps for new development, free transit passes provided by developers, private shuttles, pilot projects with TNCs and parking pricing. Facebook, Stanford, Google are all good examples of aggressive TDM programs; local example would be Canyons Resort, which has trip caps but without enforcement.
		Increased transit frequency during peak period	Increase frequency of TRAX, FrontRunner, and/or buses in corridor
		Transit pricing	Analyze as free fares.

### Scenario 3

This scenario comes with the largest physical footprint. Its focus is on providing new capacity for all modes, with an emphasis on developing centers.

Approach	Strategies	Key Elements	Brief Description
Network modifications	Add capacity for cars, transit, and cyclists, with some management of capacity.	Doubletrack/electrify FrontRunner commuter rail	Doubletrack/electrification increases FrontRunner capacity by increasing speeds and eliminating delay at siding locations.
		Add infill rail transit stations	Doubletracking and electrification allows for the possibility of more FrontRunner stations along the line. New stations within the primary study area are in Bluffdale and Centerville.
		New arterial HOV and BRT lanes with grade-separated intersections	Expand footprint to add an HOV/transit lane on two major transit corridors: Redwood Road from 500 South (Bountiful) to Bangerter Highway, and State Street from 1300 South to 12300 South. Grade separate transit/HOV lanes at 4500 South, 5400 South, 7000 South, 9000 South, and 10600 South (the section of these roads between 4500 South and 10600 South generally has the highest levels of cross-street volumes which contribute to delay for Redwood/State traffic).
		"Cycle super highway" network	Cycle super highway is a separated at-grade pathway designed for cyclist travel - wide enough for cyclists to pass each other, signalized intersection crossings at cross streets. For Scenarios 1 and 3, assume cycle super highways on 500 East and 700 West, creating new paths where those roadways don't go through. Connect to Salt Lake County east west trail alignments to create an off-street network of pathways through the valley.
		Buffered bike lanes/cycle tracks on selected arterials	Buffered bike lanes/cycle tracks on selected arterials
		I-15 elevated	I-15 Elevated as consistent with the 2012 feasibility study. I-15 Elevated goes from I-80 EB to Bangerter Highway, with intermediate access points at Vine Street and 10000 South. I-15 Elevated will contain two GP lanes per direction.
		Mobility Hubs	Major transit stations where multiple transportation modes (including walking, biking, and transit) are integrated, and with an intensive concentration of employment, living areas, shopping, and/or recreation. Proposed mobility hub locations for WFCCS are downtown intermodal, Murray Central FrontRunner/TRAX station, and proposed infill station in Bluffdale.
		Implement planned active transportation networks	Build the Priority Bicycle Routes (assumed as unfunded) in the 2040 RTP's, the active transportation improvements in UTA's First/Last Mile schematic plans, and the trail alignments in the Salt Lake County East/West Trails plan.
		Expanded C/D system along I-15	Create a collector/distributor system along I-15 from Sandy to Lehi. Use model and linework already developed by UDOT and provided by Horrocks.
Facility Management	Management of existing I-15 capacity	Reversible lanes on I-15	Reversible splits on I-15 are most appropriate in Davis County.
Transportation Demand Management	Focus on funding Vision-supportive development projects and first/last mile improvements.	Mobility-as-a-service Centers	Hubs at transit centers (or other strategic locations) that provide first/last mile solutions like bike share, electric bike rentals, skateboard/hoverboard/segway rentals, and other solutions.