RFTA ITSP Stage III - “Analyze Options”

RFTA Board Meeting

May 11, 2017

Past Updates to You

- ITSP Stage I – performed stakeholder outreach and developed project goals (Mar - Jul 2016)
- ITSP Stage II – analyzed future land use and ridership needs using Air Sage data (Aug 2016 - Feb 2017)
- UVMS (Upper Valley Mobility Study) – developed LRT and BRT alternatives along modified direct alignment (Sept 2016 - ongoing)
- January/February Board meetings – sneak peek at ITSP alternatives

Today's Update to You

- May 2017:
  - review of ITSP Vision and Goals
  - update on the UVMS study
  - wrap up ITSP Stage II – Determine Need
  - kick-off/discussion on ITSP Stage III – Analyze Options

RFTA's Integrated Transportation System Plan - Vision & Goals

RFTA/ITSP VISION:

RFTA pursues excellence and innovation in providing preferred transportation choices that connect and support vibrant communities.

ITSP GOALS:

- Enhance transportation systems to achieve and sustain a high level of service, standards, consistency and reliability.

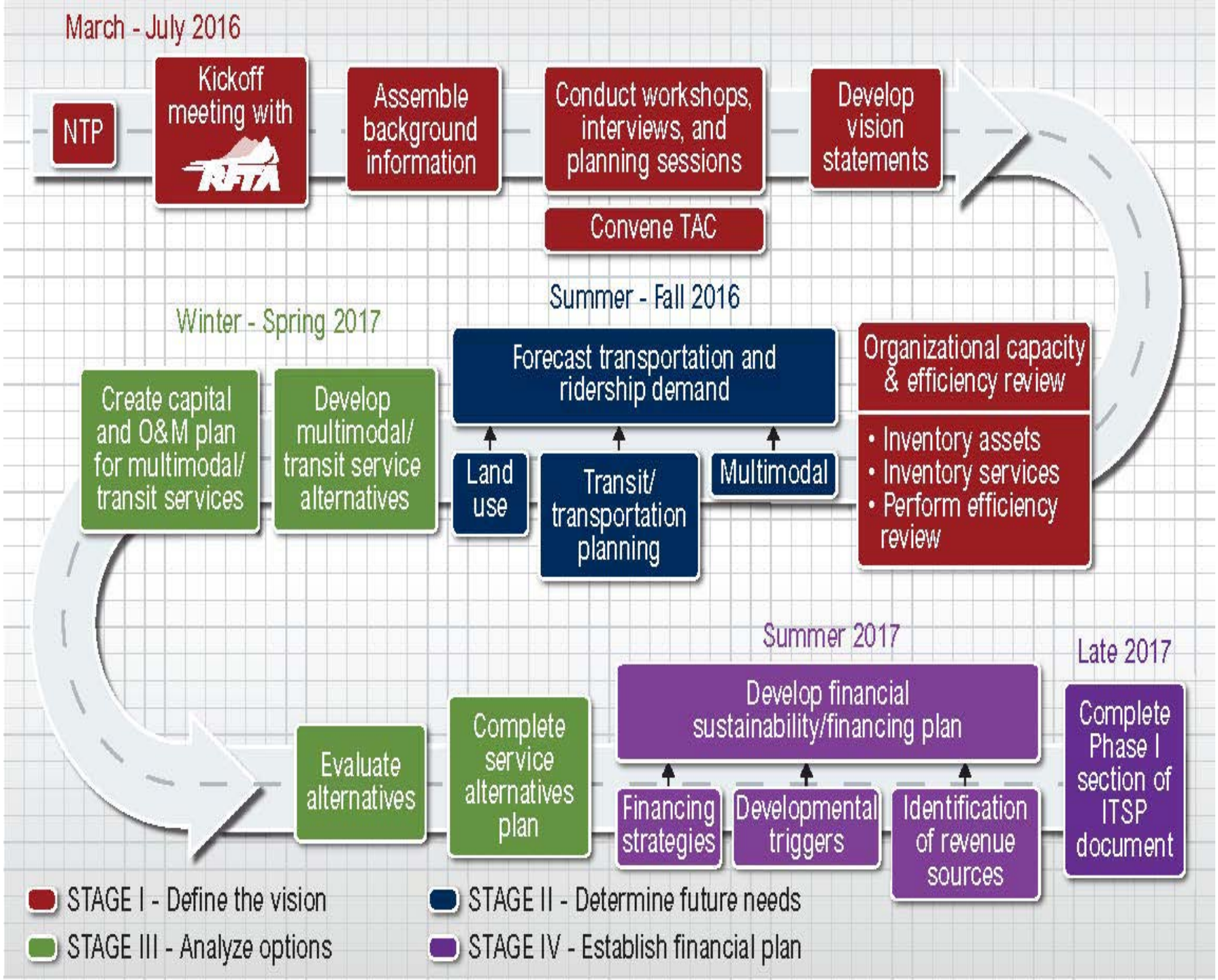
- Enhance multi-modal transportation options to ensure mobility. By doing so, RFTA will partner with communities to address the growth of traffic.

- Enhance the safety and connectivity of all transportation systems including but not limited to local and regional transit, feeder system, rail, fixed guideway, pedestrian, bicycle, highway, and airport to provide seamless, efficient transition between modes.

ITSP GOALS: (Continued)

- Continue regional transportation planning as a collaborative effort and participate in decision making together with community leaders and users to achieve mutual goals for the benefits of all citizens and visitors in the Region.

- Partner with communities on land use implications to allow convenient transit and mobility applications.


March - July 2016
NTP
Kickoff meeting with RFTA
Assemble background information
Conduct workshops, interviews, and planning sessions
Convene TAC
Develop vision statements
Summer - Fall 2016
Forecast transportation and ridership demand
Land use
Transit/ transportation planning
Multimodal
Organizational capacity & efficiency review
• Inventory assets
• Inventory services
• Perform efficiency review
Winter - Spring 2017
Create capital and O&M plan for multimodal/ transit services
Develop multimodal/ transit service alternatives
Evaluate alternatives
Complete service alternatives plan
Summer 2017
Develop financial sustainability/financing plan
Financing strategies
Developmental triggers
Identification of revenue sources
Late 2017
Complete Phase I section of ITSP document
STAGE I - Define the vision
STAGE II - Determine future needs
STAGE III - Analyze options
STAGE IV - Establish financial plan

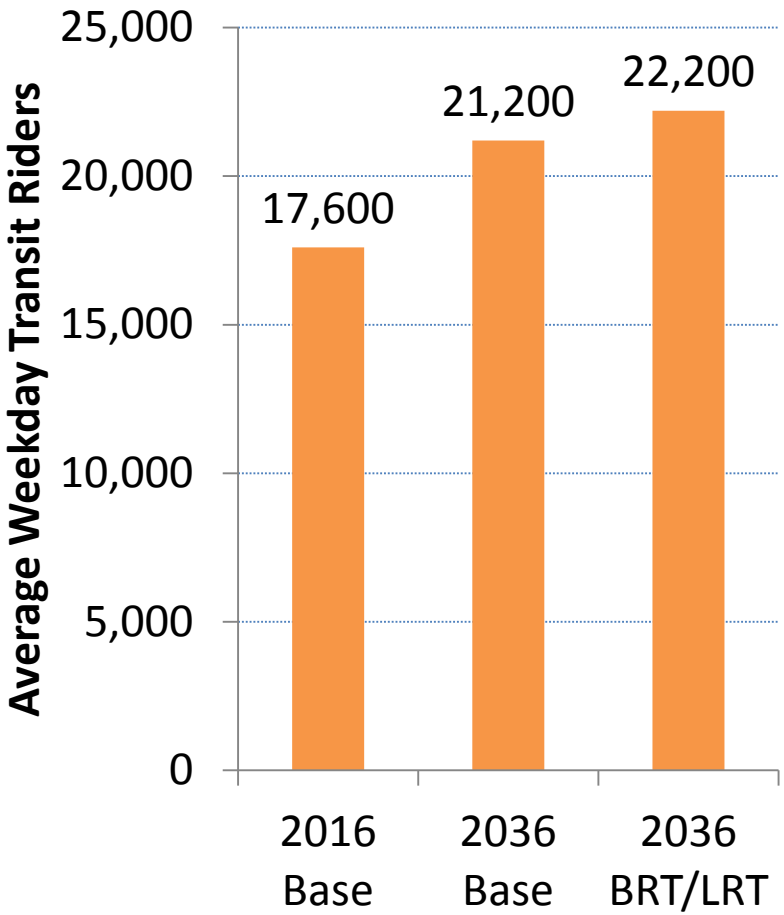
UVMS Update

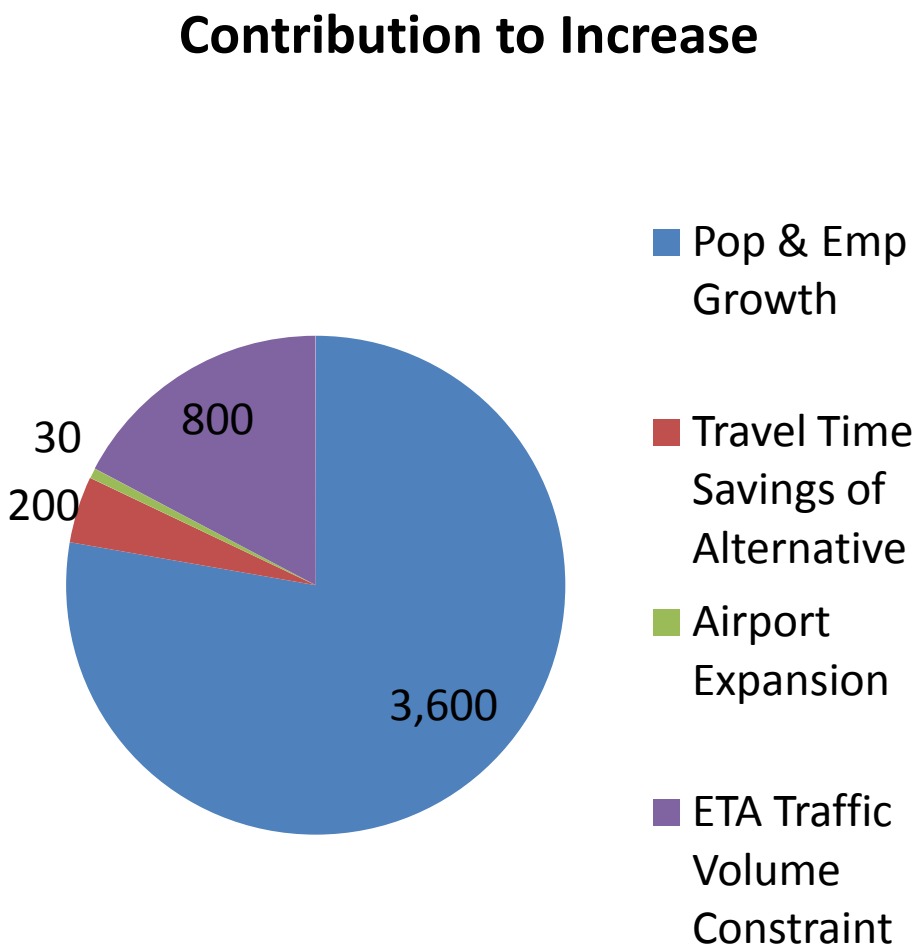
UVMS

EOTC meeting on March 23

- Presented service plans and ridership
  - Two modes: BRT or LRT
  - Two end of line stations: Rubey or Galena

Forecast System-wide Ridership (Winter)





UVMS

EOTC meeting on March 23

- Presented cost estimates
  - Base cases with optional add-ins

LRT Capital Cost Range

Feature	Base Case $ 428.0 M	Prime Case $ 527.8 M
Power	Diesel-Electric	Electric OBS ($ 30.5 M)
SH-82 Crossing	At-Grade	Grade Separated ($ 17.0 M)
Shale Bluffs	At-Grade on SH-82	On Viaduct ($ 20.6 M)
Stations	All at Existing Bus Stops; New Station at 7th & Main.	All at Existing Bus Stops except Airport Station; New Station at 7th & Main
Airport Station	At Existing Bus Stop; Moving Walkway connects Airport/AABC Station to Airport Terminal	Underground Station at Airport Terminal ($ 21.6 M)
End-of-Line	Rubey Park	Main & Galena w/ Galena Shuttle to Rubey Park ($ 10.1 M)
Roundabout to 7th & Main	Under Roundabout onto Preferred Alternative on Marolt Easement	Under Roundabout onto Preferred Alternative on Marolt Easement
Existing Maroon Creek Bridge Existing Castle Creek Bridge	Rehabilitation	Rehabilitation

LRT O&M Costs

Los Angeles	$ 385.59
San Diego	$ 151.05
Sacramento	$ 278.21
San Francisco	$ 375.39
Portland	$ 219.60
Denver	$ 190.15
Charlotte	$ 212.00
Salt Lake City	$ 160.00
St. Louis	$ 294.46
Dallas	$ 372.47
Houston	$ 277.54
Minneapolis	$ 155.00
Cleveland	$ 248.36
Baltimore	$ 329.32
Boston	$ 295.62
Seattle Sound Transit	$ 449.85
Average	$ 274.66

LRT O&M cost per hour varies widely across the U.S. but the average cost = $274.66/hour in 2016

Total Annual LRT O&M cost for UVMS service = $6.0M, but some cost savings from bus service reductions

BRT Cost Range

Feature	Base Case $ 159.1 M	Prime Case $ 200.5 M
Power	CNG	Electric ($ 16.3 M)
Control	Operator	Autonomous ($ 11.1 M)
Alignment	At-Grade on SH-82 to Roundabout	Dedicated Bus Lanes ($ 3.4 M plus cost of widening)
Roundabout to 7th & Main	Preferred Alternative on Marolt Easement	Preferred Alternative on Marolt Easement
Stations	All at Existing Bus Stops (Upgraded); New Stop at 7th & Main	All at Existing Bus Stops (Upgraded); New Stop at 7th & Main; End-of-Line Station at Main & Galena
End-of-Line	Rubey Park	Main & Galena w/ Galena Shuttle to Rubey Park ($ 11.1 M)
Existing Castle Creek Bridge	Rehabilitation	Rehabilitation

Bus O&M Costs

Los Angeles	$ 145.71
San Diego	$ 91.11
Sacramento	$ 144.61
San Francisco	$ 200.99
Portland	$ 139.19
Denver	$ 117.24
Charlotte	$ 101.32
Salt Lake City	$ 109.05
St. Louis	$ 115.66
Dallas	$ 111.98
Houston	$ 122.87
Minneapolis	$ 151.14
Cleveland	$ 135.48
Baltimore	$ 162.72
Philadelphia	$ 162.42
Boston	$ 188.54
Seattle King County	$ 166.74
Las Vegas	$ 100.24
Average	$ 137.06

Bus O&M cost per hour varies widely across the U.S. but the average cost = $137.06/hour in 2016

RFTA Bus O&M cost per hour = $120.06 in 2016

Total Annual BRT O&M cost for UVMS service = $3.2M, but some cost savings from bus service reductions

UVMS

EOTC meeting on March 23

- Compared alternatives
- Recommendation – phasing alternatives

Summary Comparison of LRT / BRT

- LRT and BRT ridership is virtually the same
- LRT would reduce number of buses at Rubey Park and improve air/noise quality more than current BRT
- LRT capital cost is more than 2X BRT capital cost
- LRT O&M cost is nearly 2X BRT O&M cost
- Bus service plan refinements would help reduce number of buses and improve efficiency (higher passenger loads)
- Electric buses would improve air/noise quality at Rubey Park
- Phased BRT improvements set the stage for future LRT if desired

Refined Bus Service Plan

Route	Existing Bus Trips/Day	Refined Service Plan Bus Trips/Day
BRT	149	112
Valley Express	12	8
Valley/82 corridor	83	72
Snowmass/Aspen	73	54
Snowmass Ski	70	56
Buttermilk	71	54
Total bus trips/day	458	356

- Reduction of 102 bus trips per day (4-6 bus trips per hour)
- Maintains good level of transit service
- Increases average bus load and reduces O&M costs

Potential BRT Phasing Considerations

1. Optimize Service Plan for Buttermilk, Snowmass, BRT and Valley Routes
2. Buy electric buses for Buttermilk & Snowmass Village Routes - *$ 0.9M each*
3. Buy electric buses for BRT and Valley Routes - *$ 1.3M each*
4. Continue Replacing Existing Buses with Electric Buses - *$ 0.9M each*
5. Build Preferred Alignment across Marolt Easement w/ New Castle Creek Bridge - *$102.6M*
6. Build Continuous Dedicated Bus Lanes from Brush Creek to Buttermilk - *$ 3.4M plus cost to widen*
7. Retrofit Buses to Autonomous Control - *$ 4.9 M plus $ .33 M per Bus retrofit*

Phased Improvement Benefits

- Optimize the bus service plan for the six corridor routes
  - Reduce number of buses at Rubey Park
  - Reduce O&M costs
- Buy electric buses for the one Buttermilk and two Snowmass routes
  - Improve air/noise quality at Rubey Park
- Buy electric buses for the BRT and two Down Valley routes
  - Improve air/noise quality at Rubey Park
  - Avoid the transfer penalty for those passengers
- Replace Aspen shuttle route buses with electric buses to improve air/noise quality at Rubey Park
- Marolt easement preferred alignment capital improvements:
  - Cleared by the ROD
  - Improve traffic operations, travel times and safety
  - Improve bus travel times, schedule reliability and safety
  - Preserve the opportunity to convert the dedicated bus lanes to future LRT

UVMS

Next Steps:

- Document analysis results in UVMS Report
- Funding Discussion
- Public open house in Aspen (May)

Carrying both BRT and LRT alternatives into ITSP Stage III

Wrap-up ITSP Stage II

Key Messages from ITSP Stage II Data:

- Submitted Ridership Estimation Tool to RFTA in March
- System wide ridership is forecast to increase by 20%
- Ridership on the I-70 Grand Hogback corridor is forecast to increase 43%, with 37% of that increase involving trips Upvalley of Glenwood Springs

Debrief from Elected Official Meetings:

- General agreement with Stage II data presented (2036 population)
  - Comments supports Stage III alternatives
- Bus pullouts on Grand Ave
- Develop additional revenue sources. “Can we tax the jet owners? “
- We (RFTA and elected officials) needs to sell this to the public
  - Develop Stage IV solutions and processes
- Wants Grand Hogback service to Parachute
- “RFTA is great, a model for the rest of the state. It’s a great system”.

Debrief from Elected Official Meetings:

- Concerns about congestion in the mid-valley
- Better service to Pitkin County Airport
- Need to replace buses
- Likes Carbondale shuttle
- Are we getting to a point where we need to express a bus from Rifle to GWS?
- “You are coming back to meet with us again?”.

Kick-off ITSP Stage III

Scope for ITSP Stage III - Analyze Options

- Assist RFTA to Develop Multi-Modal/Transit Service Alternatives based on:
  - outreach efforts from Stage I
  - based on needs from Stage II
- Create Capital and O&M Costs for each Alternative
- Evaluate and Compare Alternatives
  - utilize ridership estimation tool
  - develop evaluation matrix
- Complete Service Alternatives Plan (20-year vision)
- Draft of ITSP Report & Public Outreach

Schedule for ITSP Stage III - Analyze Options

- Mar-May: alternative development
- Jun-Jul: evaluate alternatives
- Aug: Board retreat
- Sept-Oct: elected official outreach/public workshop
- Nov-Jan: complete 20-year vision recommendations
- Feb 2018: draft of ITSP Report

Questions/Discussion