Kick-Off Meeting
June 12, 2019
1:30 pm – 5:30 pm

Meeting Summary

Attendees

Jared Smith
Bob Bonds, FHWA
Hank Rettinger, FHWA
Jack Koehler, Friends of Pathways
Allie Gross, Jackson Hole News and Guide
Darren Brugmann, START
Susan Mick, START
Melissa Turley, Teton Village
Amy Ramage, Teton County
Heather Overholser, Teton County
Jeff Deal, Town of Jackson
Tyler Sinclair, Town of Jackson
Bob Hammond, WYDOT
Darin Kaufman, WYDOT
Hank Doering, WYDOT
Jeffery Mellor, WYDOT
Joel Meena, WYDOT
Keith Compton, WYDOT
Marshall Newlin, WYDOT
Meg Mordahl, WYDOT
Nick Hines, WYDOT
Stephanie Harsha, WYDOT
Ted Wells, WYDOT
Brian Smalkoski, Kimley-Horn
Brent Crowther, Kimley-Horn

Summary

1. *Opening Remarks*

   Keith opened the meeting with a description of the scope of the work. Jeff welcomed the group and circulated a sign-in sheet.

2. *Introductions*

   Everyone took turns introducing themselves.

3. *Study Expectations*

   Brent passed around agendas, copies of the PPT, and comment forms to use throughout the meeting.

   Brent provided an overview of the project purpose and objectives. The project purpose is to identify, evaluate, and select transit improvements that: connect Jackson to Teton Village; reduce transit travel times; and improve transit operations, transit ridership, and traffic operations on the WY 22 and WY 390 corridor.

   The project objectives are review corridor recommendations from WY 22 and 390 PELS, and Jackson Integrated Transportation Plan (ITP); develop corridor transit alternatives; determine

impact of transit alternatives at intersection of WY 22 / WY 390 and Snake River Bridge; obtain stakeholder and public input on the alternatives.

Keith clarified that WYDOTs intent is not to design the system as that will be up to the owner and operator.

Brent reviewed an overview of the project scope:

- Project Need Overview
  - Review Existing Documentation and Planning Efforts
  - Transportation Network Review
    - Existing transit metrics
    - Vehicular conditions
    - Evaluate "no-build" impacts
  - Best Practice Targets
    - Projects in similar contexts for ITS and BRT operations
- Strategy Concepts
  - Establish Concepts Performance Criteria
    - Framework to evaluate improvements
  - Preliminary Strategy Concepts and Screening
    - Operational viability
    - Fatal flaws
    - Lane configuration
    - Operational requirements
- Project Public Meeting
  - Present concepts for public feedback
  - Presentation materials
  - Document public feedback
- Draft / Final Report
  - Summarize study technical memoranda
  - Narrative of project process and outcomes
  - Impacts of improvements on WY 22 and 390 corridors, focus on the 22/390 intersection

Brent reviewed the key agency contacts and noted that he will confirm them with Jeff Mellor.

Brent summarized the role of the transit subcommittee. The committee with assist with technical review, reviewing and weighing in on study findings and recommendations; values/trade-off analysis, providing community context and technical support in values/trade-off decision-making; decision support, providing decision-making support and recommendations on key decision points; and community context, representing the community context in study decisions to affect positive near- and long-term community impacts.

4. *Previous Plans and Studies*

Brent provided a summary of the previous plans and studies: Wyoming Highways 22 and 390 Planning and Environmental Linkages Study, Jackson/Teton Integrated Transportation Plan, and Jackson Travel Demand Study.

The key transit recommendations out of the Wyoming Highways 22 and 390 Planning and Environmental Linkages Study include:

- High Priority Locations
    - Queue jump lanes and signal prioritization at:
        - WY 22/Broadway
        - WY 22/WY 390
        - WY 22/Spring Gulch Rd
- Medium Priority Locations
    - Bus lanes/pullouts and queue jumps on WY 390 between WY 22 and Lake Creek
- Consider Park and Ride where appropriate

The key transit recommendations for this corridor out of the Jackson/Teton Integrated Transportation Plan include:

- Use excess fleet capacity to increase service in the summer
- Implement BRT between Jackson and Teton Village
    - Addition of a bus / HOV lane along WY 22
    - Redesign the WY 22 / WY 390 intersection
    - Streamline route alignment
    - Increase service levels
    - Implement branding and off-board fare collection
- Implement employer TDM principles to improve commuter ridership

Darrin noted that START hired LSC, Colorado Springs, to do a route study for the system and will wrap up that project by the end of the year.

Bob noted that there have been some near-term improvements implemented at the "Y." The intersection at Spring Gulch has been improved.

The key transit recommendations out of the Jackson Travel Demand Management Program include:

- Expanded transit service
- Stilson Park and Ride
- Paid parking at Teton Village
- Expansion of on-site restaurant and retail options in Teton Village

Darrin and Melissa noted that we should review the Stilson Park and Ride Master Plan and incorporate that information into the study.

5. *Available Corridor Data*

Brent shared available travel time corridor from Kimley-Horn's Traction software. He noted that there is some observed variability with up to 12 minutes of delay during congested periods.

Susan noted that it will only increase in July and August. Heather noted that the directionality for the corridor is opposite in winter versus summer. Brent asked if there is any travel time data from other time periods—there is not.

Jared asked if there is any occupancy data available for the corridor—none that is known of.

Brent shared the measured traffic volumes showing a peak in July and low point in November.

Brent also shared some summary data regarding the transit routes operating in the corridor.

6. *Group Discussion of Corridor Needs and Sources of Travel Time Delay*

- Route 20 (Green Line) –this summer made it to the 30-minute headway
- Improvements to Route 20 will also benefit Route 30.
- Summer – coming into Jackson in the morning, employees, those going to National Parks, etc.
- Transit has minimal stops
- Buses have the same issue as the traveling public. They are sitting in traffic.
- No particular bottlenecks. Last night, stop and go traffic / over-saturated, vehicles moving very slowly. Highway 390 to the Y.
- Evening and summer days, back up at 390 and 22.
- The Y is also problematic. However, if you got 22/390 working better, you improve the whole corridor.
- Intersection of Broadway is problematic.
- The Y intersection is where traffic starts backing up, then all the way to 390/22 interchange after the 390/22
- End of ski day in the winter is peak condition.
- Huge opportunity for folks to get in and out of Stilson, so that they can get on their way.
- Queue extends past up to the Village about 5 days per year – great powder day. Frequently backs up past Stilson

7. *Source of Transit Delay*

- Winter – to the village
- Summer – are we trying to transition to more runs during the summer? Seasonal variability will lead to different types of improvements – need to consider the seasonality.
- Important to have the buses have better performance/ridership than transit.
- Can the TDM plan be expanded to in town? Price parking, disincentives, etc.
- When you ride from Stilson to the Tramdock, you get there quicker on a bus. There is the incentive and the disincentive.

- If there is someone coming from town, and they go to Stilson, they are not relieving congestion on 322.
- Can we improve / provide park and ride in Town? Can we provide a convenient place to park in Town?
- Stilson is under-utilized during the summer.
- Stilson lot – 300 to 350 vehicles in the parking lot.
- Winter ridership is 3500 per day from Stilson to the Village.
- During the summer, we are only at 1700.
- When we say seasonality, how do we get people out of their summer cars.
- Our focus in the summer needs to be on the commuter.
- Our own worst enemy is ourselves. During the eclipse, all local cars stayed parked and traffic was great.
- Spring Gulch is not a big problem.
- Pulling in and out of the Village can be a problem.
- Aspens/Westbank is a very important stop for STARTS.

8. *Discussion of BRT Elements – what are the right menu elements?*

- START implemented electronic fare payment this summer. Employees use it, but not a lot of the public is using it yet.
- Brian Smalkoski noted that we don't often go to a dedicated lane.
- Transit-only signals are another improvement that we might want to consider.
- Station placement – most BRT in urban setting we bring the station to the roadway, everyone behind the bus must stop.
- Off-board fare collection enables loading from multiple doors, reducing dwell time, etc.
- In urban settings, we see an increase of 2 to 3 times with station enhancements.
- Current bus system is configured that it is trying to go everywhere…. weaves in and out.
- There are not signals at Stilson lot.
- Stilson master plan – bus pullouts could be used during the summer. Master plan pulls the bus stops out. Look at the run time from Stilson to the next stop.
- North left-out – transit signal only or transit-activated signal. What would a transit-only signal look like? Could either be a separate driveway or could be a hybrid beacon configuration. Never have had a crash, but it feels like it is a crash waiting to happen.
- Can we shorten the circuit at Stilson? Might want to make a left in only in the future if we had a transit signal. Close the Beckley Parkway to personal vehicles, making it transit only?
- Queue jump or transit priority from south to east, or shoulder-running transit, get a green with transit priority.
- No need for queue jump eastbound
- New configuration will have a double left southbound. Shoulder-running transit just in the 22/390. Shoulders in current design are 8' shoulders – and across the bridge. Buses are 10' itself. Mirror to mirror width are 11.5'. Have done as narrow as 10' so that mirrors overhang and follow the shoulder stripe.

- It will be very hard to justify a BRT dedicated lane. Couldn't have enough HOV vehicles and have an empty lane with a bunch of frustrated vehicles.
- Shoulder running with professional drivers, never more than 15 mph difference - are there examples that have implemented this elsewhere? Where have we done it safely? If vehicle breaks down, bus would have to go around the bus.
- Aspen – Glenwood Springs to Aspen – have stations on BRT. Enforcement was their big issue. Had their own lane that so many vehicles were using it, and folks created an uproar when it was enforced.
- Temporary shoulder use as a BRT feature can be considered. Let all cars use it during 3 pm to 6 pm. Shoulder running transit can be a near term solution.
- Focus – get the buses running while other vehicles are sitting there.
- Having stops on one side of the road is problematic. Creates a pedestrian crossing problem at the same location (Calico, little bit north of Calico). Aspen is the same problem.
- Aspens, Calico, and Westbank Center are the only stops on the 390 corridors. There are not park and ride facilities at Aspens and Westbank. Need a park and ride facility at the Aspens during the winter months.
- Queue jump idea – Every minute helps us. Make the travel time on the bus more competitive than the other vehicles.
- Baseline condition is 4-lanes within our project limits.

9. *Other comments/discussion*

- At 390/22, signalization improvements, transit improvements really helped the flow. Allocated more time to 390 and took from 22 and added a left turn phase. It's operating at fixed time that is adjustable.
- Time points have not been set and have not been updated for a long time. LSC is going to do that in their study. Route Match system? Data may be available.
- Snow is cleared to the delineator. To the pavement edge is snow storage.
- Traffic volume problem is the summer. It is the summer more than the winter.
- Summer VMT reduction is the big community goal. We need to focus on the summer, hitting our VMT target modes. Summer is really when we have the pinch points.
- During the summer time, the congestion is over the entire corridor.
- Every day, 5 pm to 6:30 pm, the intersection is overloaded. Goes to a full minute in each direction, to the point that it backs up to the Y - this is the source of congestion.
- Mornings, we have commuter traffic from the west, in the evening we have commuter traffic going back to the west, as well as traffic coming down from 390. Way to increase winter transit usage is to improve the summer transit.
- AVL data might be available.
- Bus dimensions. Gillicks
- Getting Electric buses in the spring.

Attachments

- PowerPoint Presentation

Agenda

- Opening Remarks/Introductions
- Study Expectations
- Previous Plans & Studies
- Available Corridor Data
- Sources of transit delay
- Corridor needs and deficiencies
- Breakout Groups
  - Goals and objectives/improvement alternatives

Introductions

Project Team

- Jeff Mellor, WYDOT, Project Manager
- Brent Crowther, Kimley-Horn, Consultant Project Manager
- Brian Smalkoski, Kimley-Horn, Sr. Consultant

Stakeholders

- Agency
- Title/Role
- Interest in this project

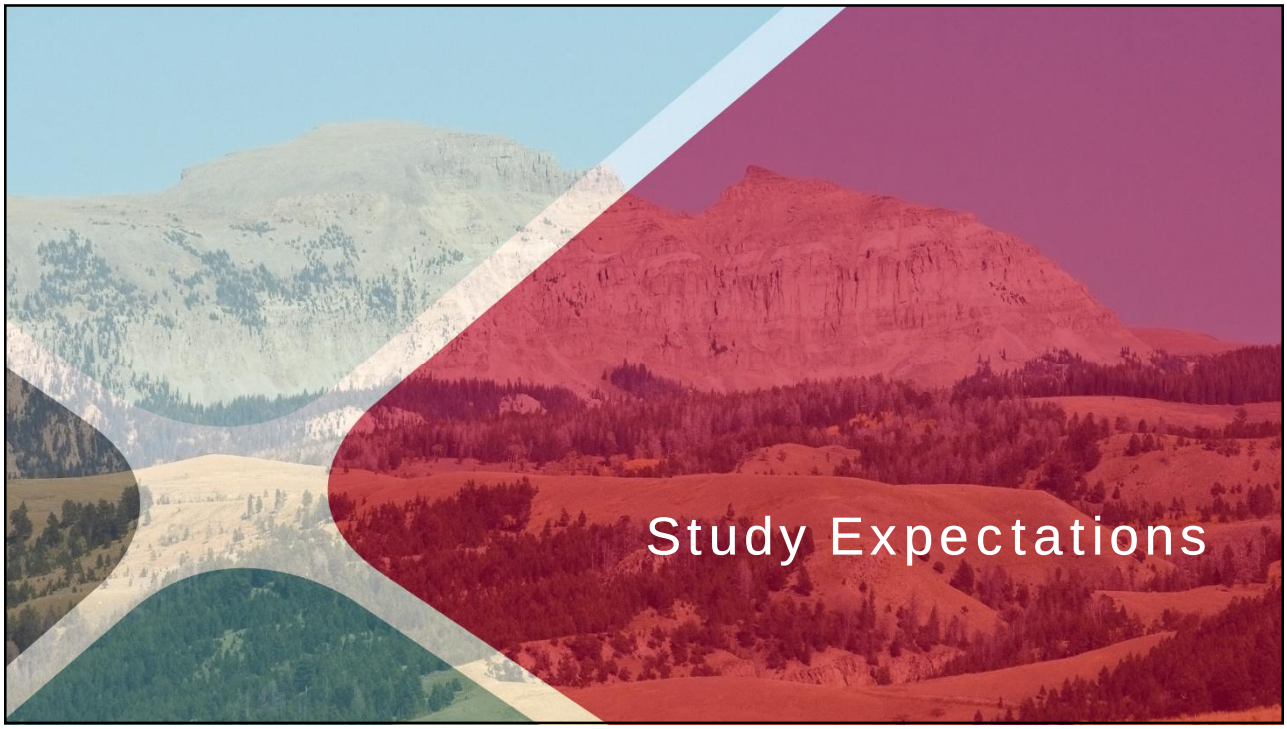
Project Need Overview

Project Purpose

Identify, evaluate, and select transit improvements that: connect Jackson to Teton Village, reduce transit travel times, and improve transit operations, transit ridership, and traffic operations on the WY 22 and WY 390 corridor.

Project Objectives –

- Review corridor recommendations from WY 22 and 390 PELS, and Jackson Integrated Transportation Plan (ITP)
- Develop corridor transit alternatives
- Determine impact of transit alternatives at intersection of WY 22 / WY 390 and Snake River Bridge
- Obtain stakeholder and public input on the alternatives



Project Scope of Work

- Project Need Overview
  - Review Existing Documentation and Planning Efforts
  - Transportation Network Review
    - Existing transit metrics
    - Vehicular conditions
    - Evaluate “no-build” impacts
  - Best Practice Targets
    - Projects in similar contexts for ITS and BRT operations

Recent Planning Efforts:
- WY 22 and 390 Planning and Environmental Linkages (PEL) Study
- Jackson/Teton Integrated Transportation Plan
- Teton Village/Jackson Hole Mountain Resort Transportation Demand Management Plan

Deliverables:
✓ Technical Memo 1: Project Needs and Objectives

Project Scope of Work

- Strategy Concepts
  - Establish Concepts Performance Criteria
    - Framework to evaluate improvements
  - Preliminary Strategy Concepts and Screening
    - Operational viability
    - Fatal flaws
    - Lane configuration
    - Operational requirements

Deliverables:
✓ Technical Memo 2: Preliminary Screening
✓ Technical Memo 3: Refined Strategy Concepts
✓ Technical Memo 4: Design Concepts and Prioritization

Project Scope of Work

- Project Public Meeting
  - Present concepts for public feedback
  - Presentation materials
  - Document public feedback

Project Scope of Work

- Draft / Final Report
  - Summarize study technical memoranda
  - Narrative of project process and outcomes
  - Impacts of improvements on WY 22 and 390 corridors, focus on the Y intersection

Deliverables:
✓ Draft Report
✓ Final Report

Key Agency Contacts

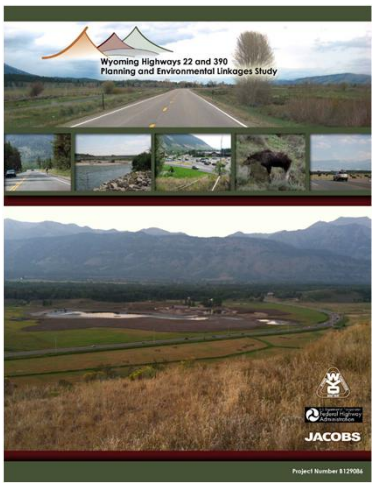
- Jack Koehler – Friends of Pathways
- Heather Overhosler – Teton County
- Amy Ramage – Teton County
- Bill Schreiber – Jackson Hole Mountain Resort
- Melissa Turley – Teton Village Association ISD
- Darrin Brugmann – START Transit Director
- Bob Hammond – WYDOT
- Tyler Sinclair – Town of Jackson

Role of the Transit Subcommittee

- **Technical Review** – Review and weigh in on study findings and recommendations
- **Values/Trade-off Analysis** – Provide community context and technical support in values/trade-off decision-making
- **Decision Support** – Provide decision-making support and recommendations on key decision points
- **Community Context** – Represent the community context in study decisions to affect positive near & long term community impacts

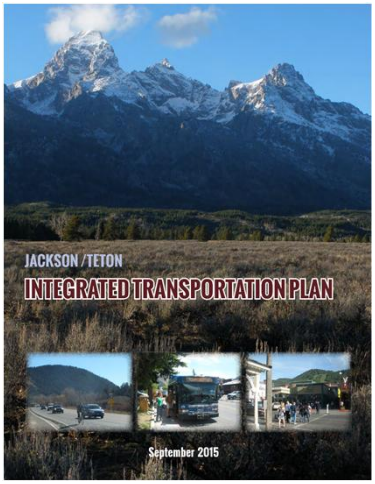
Wyoming Highway 22 and 390 Planning and Environmental Linkages (PEL) Study

- Key Transit Recommendations:
  - High Priority Locations
    - Queue jump lanes and signal prioritization at:
      - WY 22/Broadway
      - WY 22/WY 390
      - WY 22/Spring Gulch Rd
  - Medium Priority Locations
    - Bus lanes/pullouts and queue jumps on WY 390 between WY 22 and Lake Creek
  - Consider Park and Ride where appropriate



Jackson/Teton Integrated Transportation Plan

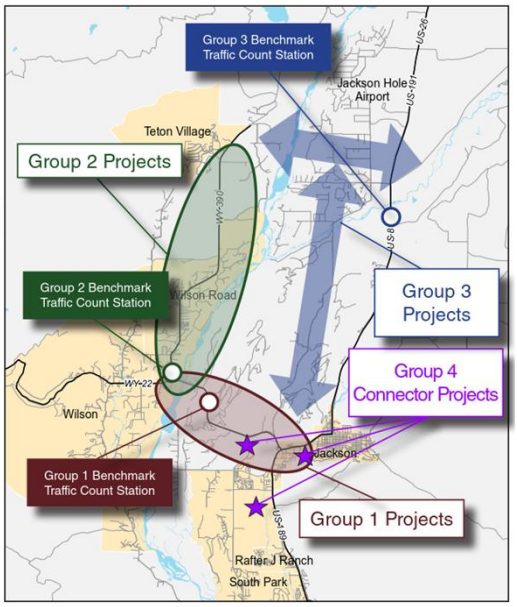
- Key Transit Recommendations Related to Teton Village Route:
  - Use excess fleet capacity to increase service in the summer
  - Implement BRT between Jackson and Teton Village
    - Addition of a bus / HOV lane along WY 22
    - Redesign the WY 22 / WY 390 intersection
    - Streamline route alignment
    - Increase service levels
    - Implement branding and off-board fare collection
  - Implement employer TDM principles to improve commuter ridership



Jackson/Teton Integrated Transportation Plan

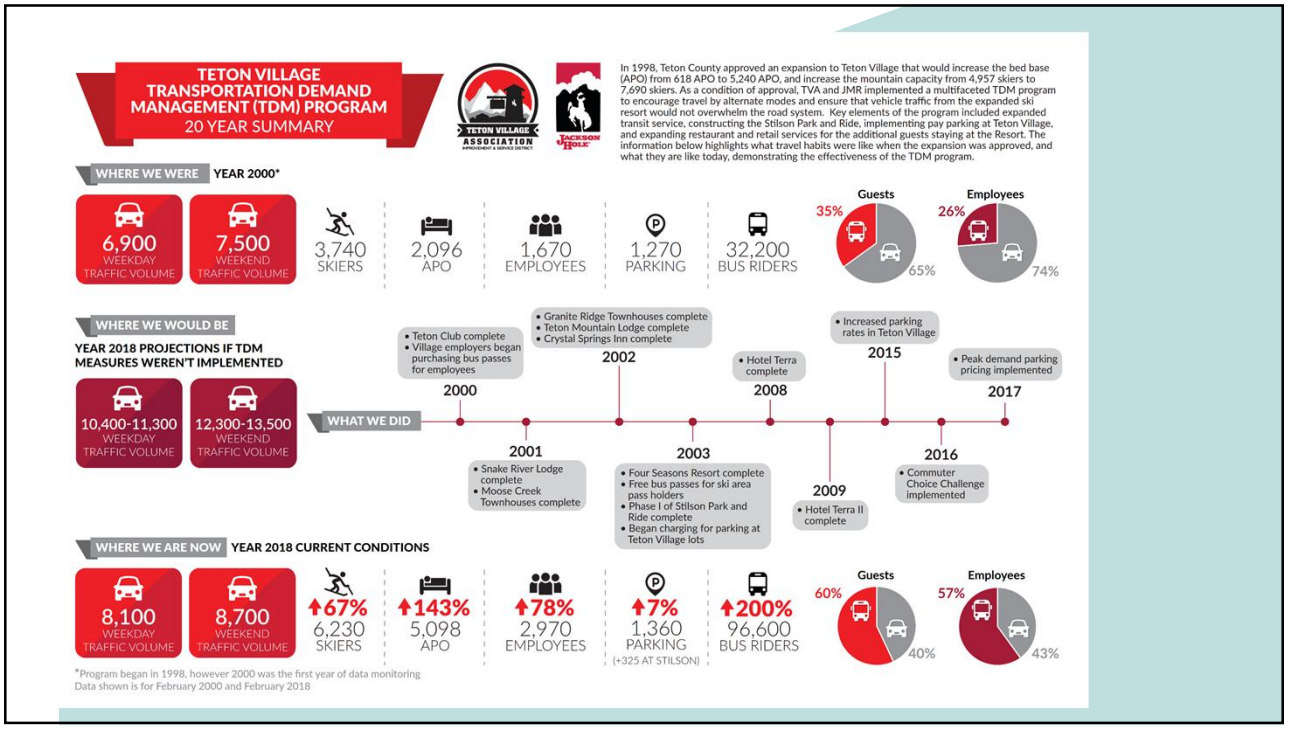
Table 5-1. Major Capital Project Groups

Group 1 WY-22 (Jackson – WY-390)	Group 2 WY-390	Group 3 Regional Connections	Group 4 Key Local Connections
• Multimodal Reconstruction of the "Y" Intersection • Tribal Trails Connector • WY-22 Multi-Lane & Multimodal Improvements • WY-22 Pathway (Wilson – Jackson) • Multimodal Reconstruction of the Intersection of Spring Gulch and WY-22 • Wildlife Permeability (from PEL Study)	• WY-390 Multimodal Improvements (WY-22 – Teton Village) • Multimodal Reconstruction of the Intersection of WY-390 and WY-22 • Wildlife Permeability (from PEL Study) • Bus Rapid Transit (Jackson - Teton Village)	• Pave and Upgrade Spring Gulch Road • Fixed-Guideway Transit • New North Network Connector	• Tribal Trails Connector (also in Group 1) • East-West Connector • Maple Way - Snow King Corridor

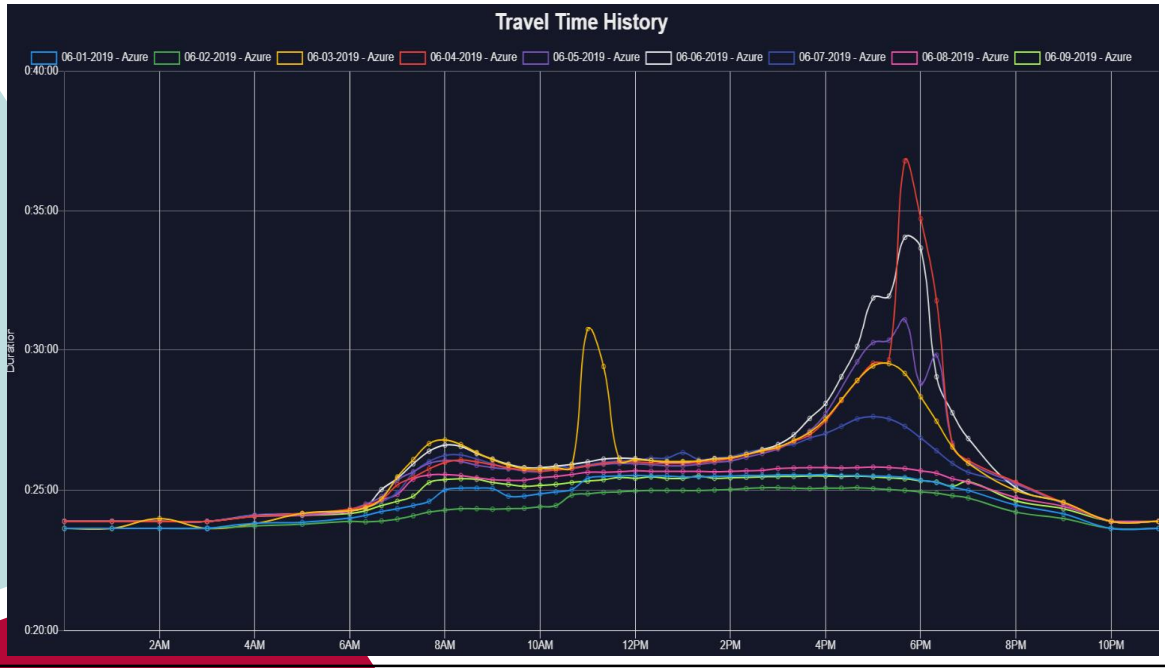


Teton Village Transportation Demand Management Program

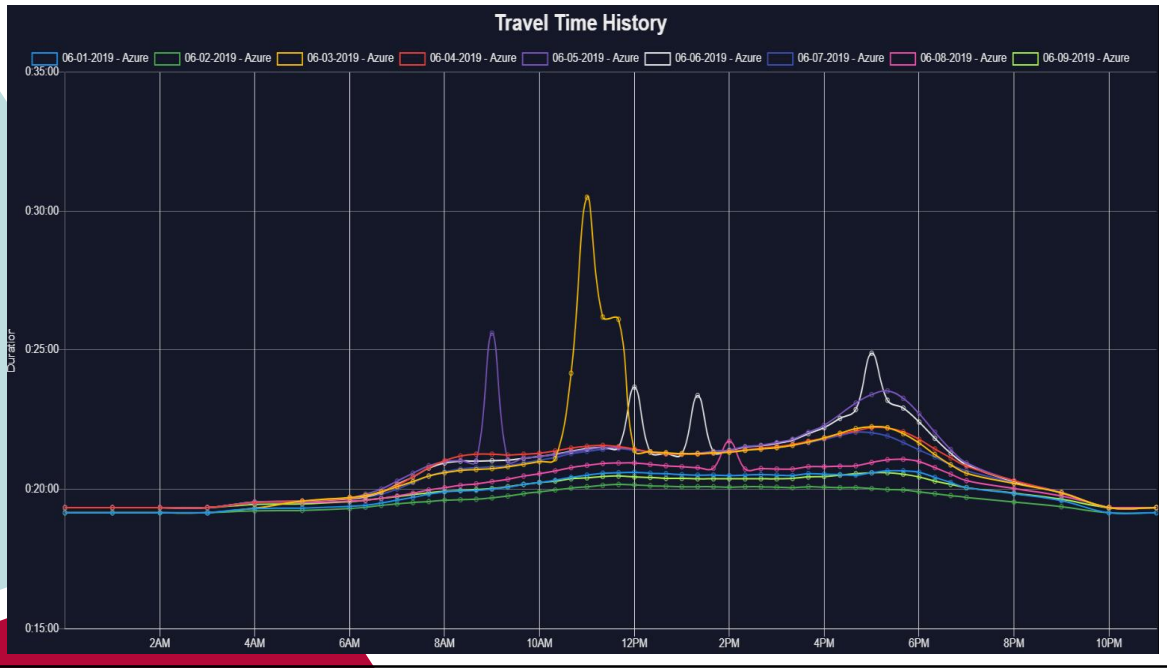
- TDM plan developed in 1998
- TDM strategies include:
  - Expanded transit service
  - Stilson Park and Ride
  - Paid parking at Teton Village
  - Expansion of on-site restaurant and retail options in Teton Village



Corridor Travel Time - Town Square to Teton Village, May 31 - June 9, 2019



Corridor Travel Time - Teton Village to Town Square, June 1- June 9, 2019



Traffic Volumes

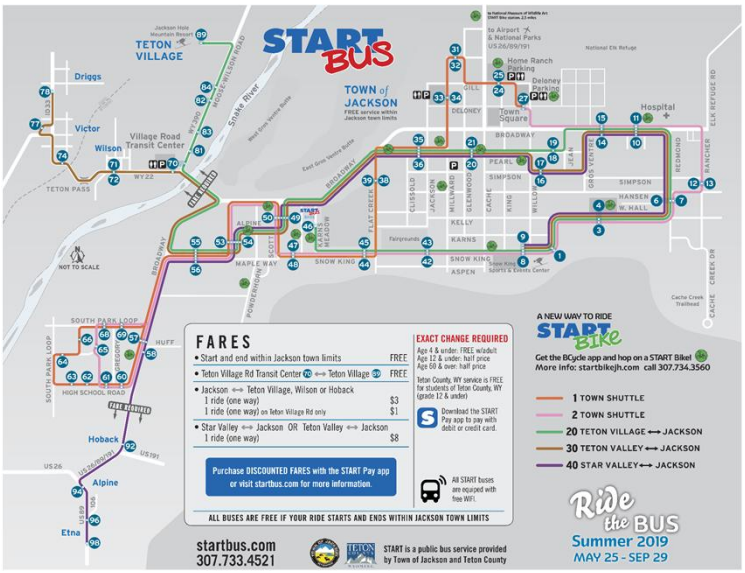
- Two Automatic Vehicle Classifier (AVC) count locations along study roadways
  - WY 22 east of WY 390
  - WY 22 west of WY 390
  - WY 390 north of WY 22
- Highest volumes observed in July
- Lowest volumes observed in November

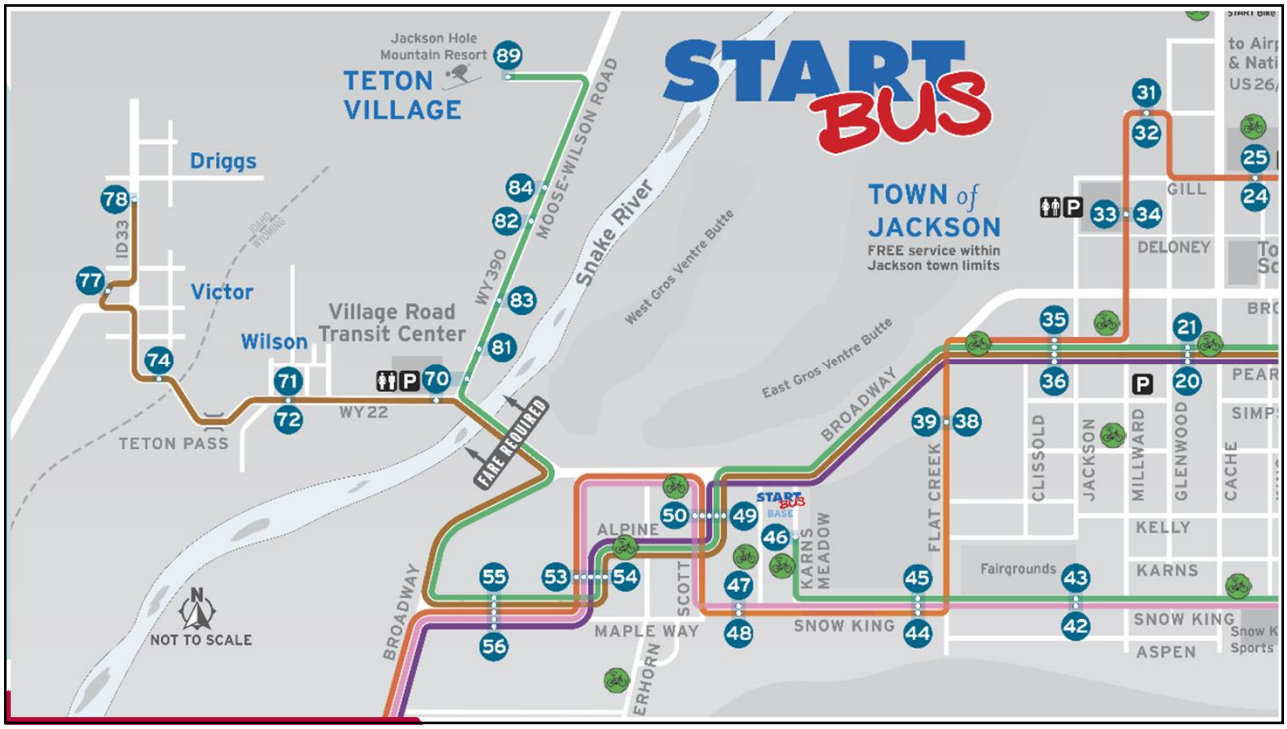
Month	WY 22 (E of WY 390)	WY 22 (W of WY 390)	WY 390
January (19)	17,299	-	11,978
February (19)	16,968	9,421	11,910
March (19)	17,617	10,278	12,044
April (19)	12,896	9,145	7,399
May (18)	15,662	11,104	9,709
June (18)	20,799	14,116	13,848
July (18)	23,106	15,574	15,652
August (18)	22,086	14,698	*
September (18)	19,889	13,371	12,369
October (18)	15,640	10,944	9,509
November (18)	12,630	8,797	7,737
December (18)	16,329	10,222	11,171
Average	**17,577**	**11,606**	**11,211**

- Road Construction *Counter malfunction

Transit Routes

- Two routes on WY 22 (Routes 20 & 30)
- One route on WY 390 (Route 20)





Current Transit Schedule

- Route 20 (Teton Village – Jackson)
  - ≈30 minute headways
  - 35 buses/day
  - Jackson to Teton Village: 5:00 am through 11:30 pm
  - Teton Village to Jackson: 6:00 am through 12:00 am
- Route 30 (Driggs – Wilson – Jackson)
  - 4 buses/day in each direction (weekdays only)
  - AM Service (Driggs to Jackson):
    - ≈ 40 min headway
    - First bus from Driggs: 5:40 am, last bus from Driggs: 7:40 am
  - PM Service (Jackson to Driggs): 4 buses/day, 90 min apart
    - ≈ 90 min headway
    - First bus from Jackson: 3:45 pm, last bus from Jackson: 7:30 pm

Discussion: Sources of Transit Delay

- Jackson to Teton Village
- Teton Village to Jackson
- Jackson to Driggs
- Driggs to Jackson

Discussion: Corridor Needs and Deficiencies

- WY 22 - between Jackson and WY 390
- WY 390- between WY 22 and Teton Village

Break into 2 groups (15 minutes)

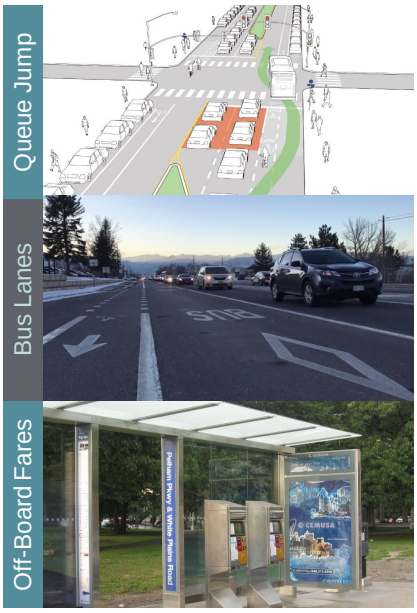
Report out

Discussion: Goals, Objectives, Improvements to Consider

1. Improvements goals and objectives
2. Types of transit improvements that should be evaluated and prioritized

Break into 2 groups (15 minutes)

Report out



Transit Mode Basics

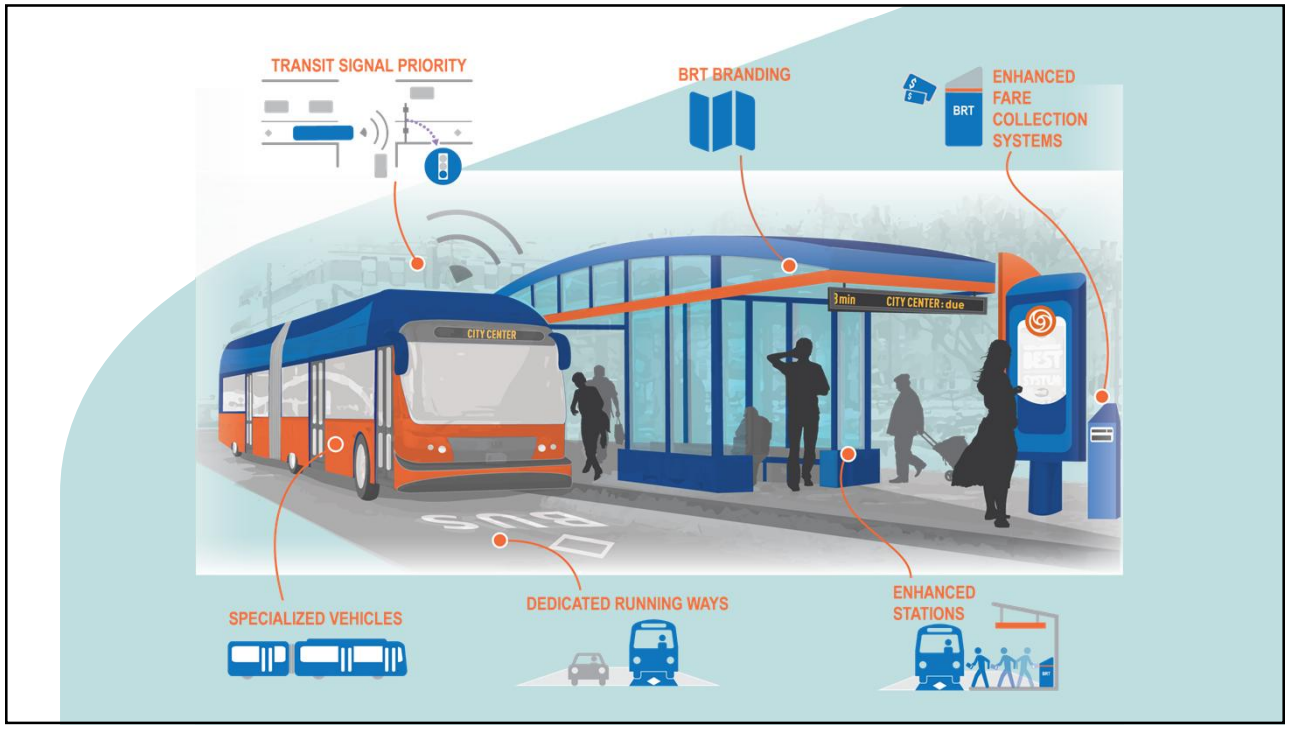
MODE		PEAK FREQUENCY How often does a typical bus, train or streetcar arrive at a stop during the peak period?	RUNNINGWAY Does a typical bus, train or streetcar travel in mixed traffic or its own, dedicated lane?		SYSTEM LENGTH From end-to-end, how far does a typical bus, train, or streetcar travel?	CAPITAL COSTS What is the relative cost to construct this mode?	STATION SPACING What is the average mileage between each station for this mode?	DAILY BOARDINGS How many riders typically need to board at each station per day to justify the investment?
			Mixed Traffic	Dedicated Lane				
All-Day Frequent Service	Local Bus	Varies	✓		5-15 miles	$	1/8 - 1/4 mile	N/A
	Arterial Bus Rapid Transit	Every 7-15 minutes	✓		5-15 miles	$$	1/4 - 1/2 mile	50+
	Streetcar	Every 7-15 minutes	✓		1-5 miles	$$$-$$$$	1/8 – 1/2 mile	No regional guidance
	Light Rail Transit	Every 10 minutes		✓	5-20 miles	$$$$$	1 mile	300+
	Dedicated Busway	Every 10 minutes		✓	5-20 miles	$$$$	1 mile	No regional guidance
	Highway Bus Rapid Transit Station-to-Station	Every 10-15 minutes	✓	✓	10-25 miles	$$$	2 miles	100+
Commuter Express Service	Express Bus	Every 30+ minutes	✓		10-25 miles	$-$$	5 miles (Market Specific)	200+
	Highway Bus Rapid Transit Express	Every 30+ minutes	✓	✓	10-25 miles	$$-$$$	5 miles (Market Specific)	200+
	Commuter Rail	Every 30+ minutes		✓	20-50 miles	$$$	7 miles or longer	200+

What is BRT?

A flexible, high performing rapid transit mode that is an integrated system of physical, operating, and system amenities, with a quality image, to improve the speed, reliability, and identify of bus transit.

Typical elements:

- Transit Way – Dedicated BRT Lanes
- Active Transit Signal Priority
- Queue Jumps
- Accessible, safe, secure, and attractive stations
- Off-board Fare Vending
- Frequent Headways
- Extended Service Span
- Short Headways
- Reduced Travel Times
- Branded, Stations and Low Floor Vehicles



BRT can be BIG where needed

- Dedicated BRT Lanes
- Transit Signal Priority
- Rail-like Stations
- Off-board Fare Vending
- Frequent Headways
- Extended Service Span
- Reduced Travel Times
- Service Branding

BRT can be Small where needed

- Corridor Running
- Transit Signal Priority
- Defined Stations
- Frequent Headways
- Extended Service Span
- Reduced Travel Times
- Service Branding

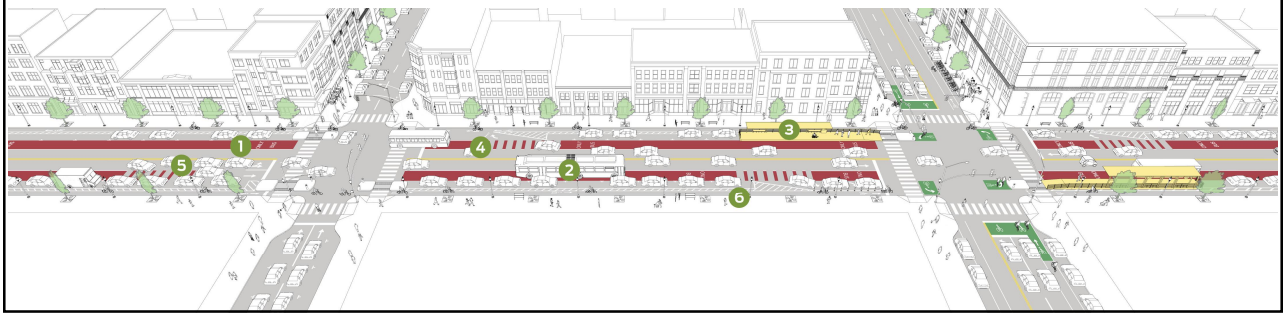
BRT Corridors

- Travel lanes
  - Mixed Use Lanes
  - Dedicated running way
    - Median lanes
    - Shoulder or curb lanes
- Intersection improvements
  - Transit signal priority
  - Queue jump lanes
  - Grade separations

BRT elements scalable to the needs of Jackson!

Dedicated Running Way

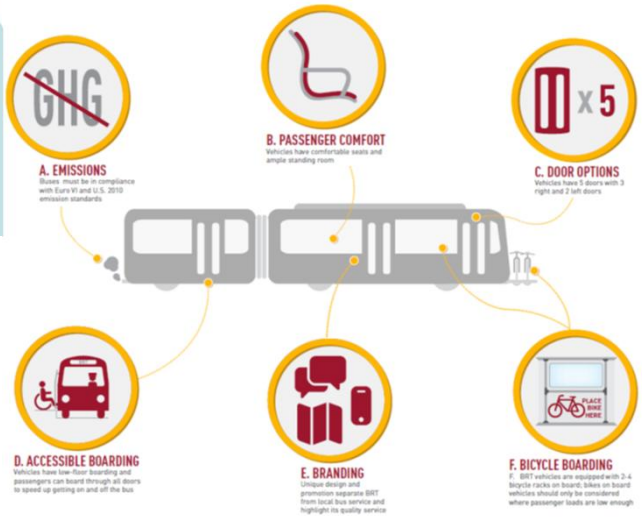
- Dedicated lanes separate buses from traffic, increasing speed and reliability
- Time specific or peak-only



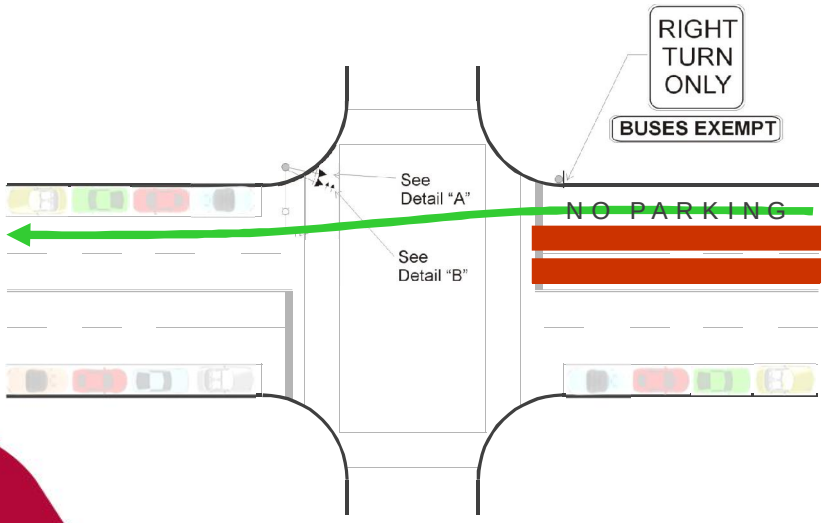
Enhanced Stations

- Near-level platforms
- Off-board fare payment
- Real time arrival information
- Shade & passenger amenities

Specialized Vehicles & Branding



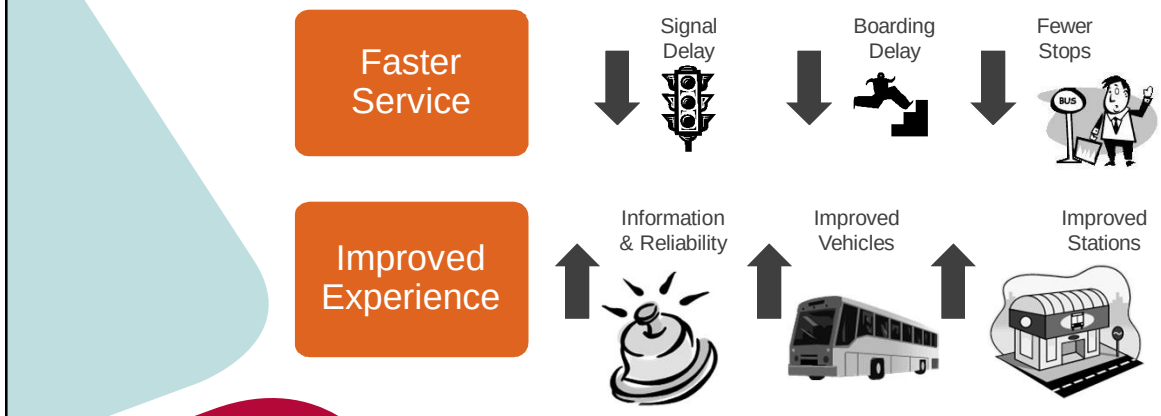
Queue Jump Operations (Exclusive Transit Phase, RT or LT lanes)



BRT Results?

- FASTER SERVICE
- INCREASES RELIABILITY
- IMPROVES PASSENGER EXPERIENCE
- ATTRACTS NEW RIDERS
- INCREASES CARRYING CAPACITY
- AFFORDABLE MOBILITY

How does arterial BRT provide these results?

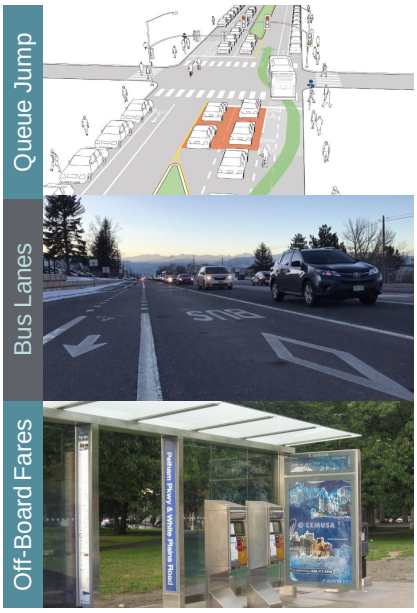


Discussion: Goals, Objectives, Improvements to Consider

1. Improvements goals and objectives
2. Types of transit improvements that should be evaluated and prioritized

Break into 2 groups (15 minutes)

Report out



Next Steps

- Project Need Overview
  - Review Existing Documentation and Planning Efforts
  - Transportation Network Review
  - Best Practice Targets
  - Summary of Project Needs and Objectives
- Strategy Concepts
- Public Meeting
- Project Summary