Life in the Bus Lane: A Conversation on Quick-Build Bus Priority and Design

NACTO’s #MoveThatBus! Transit Discussion Series

May 10, 2022 2 pm ET
NACTO Hosts:

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Senior Engineer, SFMTA
2021 was a big year for the humble bus
Let’s continue to build off that momentum and...
We’re bringing you a better bus experience.
King St, Honolulu
Use phone or another tab to go to menti.com

Enter Code
8076 8148
Reminders

- Please remain muted during the presentations
- Feel free to leave your camera off to spotlight the speakers
- Use the chat for questions
- During the panel discussion, turn your camera on if you’d like to address the panelists
- AICP credits are available for this event
Thank you for joining us!

Next up: TDM for DOT & Transit Agency Practitioners: Engagement, Messaging & Implementation May 12th
Life in the Bus Lane: A Conversation on Quick-Build Bus Priority and Design
What city are you joining us from today?
Name a bus priority project you recently completed!

- RapidTO
- Riverside Drive
- Van Ness BRT
- New Hire! But working on protected bus/bike lanes in DC
- 7th and 8th Street TETL
- Denver Bus Priority Study
- RapidTO: Eglinton East
- Mbta and tsp, several
- 7th St
Name a bus priority project you recently completed!

- 7th Street
- Van Ness BRT
- Bus stop balancing on Vancouver routes 4 & 7
- Federal Blvd Transit Speed and Reliability
- Archer Ave Busway
- Van Ness BRT
- Murfreesboro Pike Transit Signal Priority
- Grand Av and Olive St
- Bronx Bus Network Redesign!
Name a bus priority project you recently completed!

- About to embark on the Pennsylvania Avenue SE Multimodal Corridor Project
- 18th and 19th Street Protected Bike Lane and Transit Only Lane project
- International Boulevard BRT
- Still working in that direction
- New bus lanes on NE 45th St in Seattle's U District
- Working on several.
- 18th / 19th Street
- WeGo
- Van Ness BRT
Name a bus priority project you recently completed!

- Streetcar green light extensions at some intersections
- None!
- Market West/JFK Bus Lanes Pilot
- King St Bus Lane
- TriMet's ETC Alder
- Bus Rapid Transit
- Bus only lanes
- Bus priority zones!
- N/A

102
<table>
<thead>
<tr>
<th>Name a bus priority project you recently completed!</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE Hawthorne Blvd</td>
</tr>
<tr>
<td>Columbus Ave, Boston</td>
</tr>
<tr>
<td>16th Street NW Bus Lanes</td>
</tr>
<tr>
<td>TSP pilot</td>
</tr>
<tr>
<td>(North) Massachusetts Avenue, Cambridge</td>
</tr>
<tr>
<td>Red Line BRT</td>
</tr>
<tr>
<td>Chicago Ave</td>
</tr>
<tr>
<td>RapidTO: Eglinton East</td>
</tr>
<tr>
<td>Bus Stop Balancing - lines 4 &amp; 7</td>
</tr>
</tbody>
</table>
Name a bus priority project you recently completed!

- 3rd Street Pop up bus lane demonstration
- Orange Line BRT
- Tempo
- 8th St
- Jamaica and Archer Aves Busways
- Denver has several BRT and other bus-lane projects in the works.
- 15th and 17th streets downtown Denver
- Columbus Ave in Boston!
- Alvarado Street
Name a bus priority project you recently completed!

- Park Presidio HOV
- Bayer's Road bus lanes
- Broadway All the Way Master Plan
- ART in ABQ
- None
- Still working on it!!
- H & I Street NW 2.0
- Lake Street (Mpls)
- Van Ness BRT
Name a bus priority project you recently completed!

- 5th and 6th in Los Angeles
- Orange Line in Minneapolis
- King Street, Honolulu
- Edmonton Bus Network Redesign
- Rose lanes
- Metro Micro Transit service pilot
- Lincoln St
- El Cajon Boulevard
- 200 South in SLC just started construction!
Name a bus priority project you recently completed!

Central Ave dedicated bus lane pilot project that got canned 😞

El Camino Real TSP

Van Ness BRT

Under construction

Rapid Bus line groundbreaking

Bus lanes on Granville St, Main/Kingsway, and 49th Ave in Vancouver

NE 43rd St in Seattle's U-District! Westbound bus-only.

None yet

Rutherford Ave
Name a bus priority project you recently completed!

- Installation of TSP at ~200 intersections around Washington, DC
- TV Highway, Washington Co, OR
- South Halsted Street, Chicago
- Summerhill BRT
- University Ave
- na
- none
- Broadway
- Durham Station Transit Emphasis Zone
Name a bus priority project you recently completed!

- Tempo BRT Oakland
- El Cajon Boulevard Bus Bike lanes
- South Corridor
- Division Transit Project
- brt
- Van Ness BRT
- DC
- None
- IndyGo Red Line BRT!
Name a bus priority project you recently completed!

- Cameras for bus lane monitoring
- Relocation/Rebuilding of transit station in the heart of Oakland
- None
Name a bus priority project you're working on

- Expansion of RapidTO
- South 1st St bridge
- Better Market Street
- Hennepin Ave S
- Folsom Streetscape
- Boston tsp
- Homestead to McKeesport transit upgrades
- RapidTO: Jane Street
- Denver Bus Priority
Name a bus priority project you're working on

- 21st Street, Astoria
- La Brea Av
- Pennsylvania Avenue SE Multimodal Corridor Project
- Monterey Road
- Hennipen/Lyndale commons
- ... 
- 15th Street Transit Only Lanes
- Sunrunner PSTA
- Boulder Highway
Name a bus priority project you're working on

- Protected Bus/Bike lanes and Queue Jumps
- Kuhio Ave Bus Lane
- San Pablo Ave Transit Priority
- N/A
- Purple Line BRT
- TriMet’s ETC
- Homestead to McKeepost, BRT Oakland to Downtown
- Future of Bus stop balancing in Vancouver
- Market Street
Name a bus priority project you're working on

<table>
<thead>
<tr>
<th>TSP</th>
<th>11th Street NW</th>
<th>EL Grant Highway in Bronx</th>
</tr>
</thead>
<tbody>
<tr>
<td>R6 Scott Rd RapidBus</td>
<td>5 Fulton Improvement Project</td>
<td>Better Bus Routes</td>
</tr>
<tr>
<td>River Street, Cambridge</td>
<td>Lake St (Mpls)</td>
<td>Robie street</td>
</tr>
</tbody>
</table>
Name a bus priority project you're working on

A whole bunch
La Brea Ave
Florence Ave

Georgia Ave NW
Georgiia Avenue NW

Folsom Streetscape
Route 48 Transit+Multimodal Corridor (with SDOT)
Kuhio Avenue, Waikiki
Name a bus priority project you're working on

<table>
<thead>
<tr>
<th>Blue Hill Ave in Boston</th>
<th>Purple Line in Saint Paul</th>
<th>Edmonton Mass Transit Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida Avenue BRT - Tampa</td>
<td>El Camino Real TSP</td>
<td>BRT</td>
</tr>
<tr>
<td>West 4th Ave, Vancouver - Bus bulbs</td>
<td>RapidTO Jane Street</td>
<td>Central Ave</td>
</tr>
</tbody>
</table>
Name a bus priority project you're working on

- Bus stop enhancement plan
- Broadway All the Way Master Plan
- Bus lanes around College Hill bus tunnel in Providence
- Hwy 99 BRT in Vancouver, WA
- Transitway Extension to Pentagon City
- MBTA Bus Network Redesign
- a Network Plan
- Transit Signal Priority
- Next
Name a bus priority project you're working on:

- Rutherford ave
- Monterey Road
- LinkUS - Northwest Corridor and East West BRT
- Automated Camera Enforcement
- Denver: Several are in the works. Colfax BRT comes to mind first.
- Rapid Corridors Project (TSP) Quick Build Project
- Mill Plain BRT
- Gun Hill Rd
- Columbia Rd NW in DC
Name a bus priority project you're working on

- Bus Redesign
- Advanced rapid transit corridors
- Rochester bus stops improvement plan
- metro Micro transit
- Bus Priority Zones (multiple corridors)
- Davis Square TSP
- North-South ART
- MBTA?
- none
Name a bus priority project you're working on

- SW Capitol Hwy - BAT lane conversion to and through the Hilldale town center. [Link](https://www.portland.gov/transportation/rose-lanes) and [Link](https://www.portland.gov/transportation/pbot-projects/construction/sw-capitol-highway-rose-lane-project)
- Rapid Corridors (Oakland, Berkeley)
- Next Generation Rapid Bus Advanced Planning (Washington, D.C.)
- South Corridor
- Denver Bus Priority Plan (citywide)
- None
- IndyGo Purple Line BRT!
Delivering Transit Priority Citywide in San Francisco

NACTO Planning Roundtable

May 10, 2022
Transit Challenges in San Francisco

- Over 80% of Muni trips are by bus or surface rail
- Congestion heavily impacts service quality and cost
The Solution: Muni Forward

- **Reliability upgrades** that implement SF’s Transit-First Policy
- **Integrated improvements** to capital and service
- Incorporates **Vision Zero** upgrades
- **Quick-build** and iterative approach
- Focus on **high-ridership** and **equity priority** routes
About **80 miles** of reliability upgrades approved or built since 2014

Toolkit of 20+ engineering measures to improve reliability and safety, such as:

- Transit lanes and queue jumps
- Transit signal priority
- Transit bulbs and boarding islands
- Stop rebalancing and optimization
- Turn pockets and restrictions
- Pedestrian bulbs on transit corridors
- Road diets
Muni Forward Results

Ridership increased 14% on Rapid bus from 2016 to 2018
- 8 Bayshore corridor: +12%
- Mission/Van Ness corridor: +9%
- Geary corridor: +8%
- 19th Ave corridor: +19%

Time savings of 10% or more
- Church Street: 15%
- 5R Fulton Rapid: 9-12%
- Mission: 13%
- 16th Street quick-build phase: 10%
- Potrero: 20%
- Two-Way Haight: Over 20%
- Sansome: Over 20%

Sales tax revenue increases
- Mission, Taraval (outperformed city)
Transit Quick Build Program

Quick-Build projects use even lower-cost materials and deliver projects more quickly such as:

- Transit lanes
- Temporary boarding islands and bulbs
- Stop spacing improvements
- Turn pockets and restrictions
Transit travel time savings during initial Shelter in Place (April 2020 compared to February 2020)
COVID Response: Temporary Emergency Transit Lanes

- Installed on corridors with most congestion delay
- 15 miles installed; 10 miles made permanent so far after full public outreach and approval process
- Installed on lines serving 40% of current riders
- Travel time savings of up 31%
Project: Urban Arterial HOV Lanes

- HOV-2+ lanes installed on Park Presidio Blvd. (SR-1) and Lombard St. (US-101)
- First urban arterial HOV lanes in state
- Three-year pilot project
- Partnership with state DOT (Caltrans)
- Transit travel times reduced by up to 10%
San Francisco has nearly **70 miles of transit lanes**

We **expanded transit lanes by over 25%** during the pandemic.

Transit lanes benefit routes that serve about two-thirds of all transit riders.
We mapped Muni’s **10 slowest segments**

Spot improvements can complement a corridor-based approach to reducing delay

Next step: Implement plans to speed up Muni at initial locations, using turn pockets, queue jumps, signal timing changes, etc.
What’s Next

- Implementation on 5 approved corridors
- Start planning on 7 new corridors this year
- Continue to use a quick-build approach
- Install quick-build upgrades at delay hot spots
- Roll out red paint to more existing transit lanes
Thank You
Quick-Build Bus Priority


Eric Burkman, AICP
Director of Transit Priority
eburkman@mbta.com
Delivering bus priority projects is different:
While MBTA operates the service . . .
we rely on municipality-owned signals, streets, and curbs for every trip.
Every project is a collaboration to improve travel time and reliability.
What’s Transit Priority?

**Data-driven**

Founding based on successful pilots and on Prioritization of Dedicated Bus Lanes Report (CTPS, 2016)

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**Collaborative**

Four dedicated staff working with many, many internal and external stakeholders

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**Implementation Focus**

Collaborating with stakeholders to deliver projects that **improve travel time and reliability** for buses*

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*we also work on Transit Signal Priority for Green Line in mixed-traffic intersections
Recent Bus Lanes Expansion

Municipalities with bus lanes as of 2015

- 1 municipality and
- 2.8 lane miles as of 2015

Municipalities with bus lanes constructed or in-progress as of 2021

- 12 municipalities and
- 25.6 lane miles as of 2021
Rapid Response Bus Lanes Program

• Addressing reliability and crowding during COVID

• Bus lanes can help support public health:
  • Faster cycle times → more trips and less crowding
  • Faster travel times → less time spent on the bus
  • More frequent service → fewer people at bus stops

• Relies on key data:
  • Daily ridership and crowding reports from Service Planning
  • Real-time crowding information from Customer Technology

• How does this work?
Service Planning: Improving Reliability

Before Dedicated Bus Lane

- Travel Time: 20 minutes
- Buffer Time: 10 minutes
Service Planning: Improving Reliability

Before Dedicated Bus Lane

- Travel Time: 20 minutes
- Buffer Time: 10 minutes

After Dedicated Bus Lane

- Travel Time: 15 minutes
- Buffer Time: 5 minutes
Service Planning: Improving Reliability

Before Dedicated Bus Lane

<table>
<thead>
<tr>
<th>Travel Time</th>
<th>Buffer Time</th>
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</thead>
<tbody>
<tr>
<td>20 minutes</td>
<td>10 minutes</td>
</tr>
</tbody>
</table>

After Dedicated Bus Lane

<table>
<thead>
<tr>
<th>Travel Time</th>
<th>Buffer Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 minutes</td>
<td>5 minutes</td>
</tr>
</tbody>
</table>
Service Planning: Improving Reliability

Before Dedicated Bus Lane
- Travel Time: 30 minutes
- Buffer Time

After Dedicated Bus Lane
- Travel Time: 20 minutes
- Buffer Time

Cycle Time Improvement

Travel Time Savings
Reliability Improvement
# Service Planning: Reducing Crowding

<table>
<thead>
<tr>
<th></th>
<th>Before Dedicated Bus Lane</th>
<th>After Dedicated Bus Lane</th>
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</thead>
<tbody>
<tr>
<td>Travel Time</td>
<td>60 minutes</td>
<td>60 minutes</td>
</tr>
<tr>
<td>Buffer Time</td>
<td>2 trips</td>
<td>3 trips</td>
</tr>
<tr>
<td>Reschedule Service</td>
<td></td>
<td>Reinvest Savings</td>
</tr>
</tbody>
</table>

- Before Dedicated Bus Lane: 60 minutes travel time, 2 trips, Reschedule Service
- After Dedicated Bus Lane: 60 minutes travel time, 3 trips, Reinvest Savings
Service Planning: Reducing Crowding

Before Dedicated Bus Lane

- Travel Time: 60 minutes
- Buffer Time: 2 trips

After Dedicated Bus Lane

- Travel Time: 60 minutes
- Buffer Time: 3 trips
Service Planning: Reducing Crowding

Before Dedicated Bus Lane

<table>
<thead>
<tr>
<th>Travel Time</th>
<th>Buffer Time</th>
<th>Travel Time</th>
<th>Buffer Time</th>
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<tbody>
<tr>
<td>30 passengers</td>
<td></td>
<td>30 passengers</td>
<td></td>
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</table>

After Dedicated Bus Lane

<table>
<thead>
<tr>
<th>Travel Time</th>
<th>Buffer Time</th>
<th>Travel Time</th>
<th>Buffer Time</th>
<th>Travel Time</th>
<th>Buffer Time</th>
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<td></td>
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</tr>
</tbody>
</table>
Reducing Crowding

Before Dedicated Bus Lane

- Travel Time
- Buffer Time
- Travel Time
- Buffer Time

30 passengers 30 passengers

After Dedicated Bus Lane

- Travel Time
- Buffer Time
- Travel Time
- Buffer Time
- Travel Time
- Buffer Time

20 passengers 20 passengers 20 passengers
Delivering Projects Quickly

• 2020: “What if our projects that are meant to address COVID-related impacts aren’t completed until after the pandemic is over?”

• Focus on areas where we can improve timeline:
  • **Design:** Use of on-call contracts
  • **Public Process:** Reference existing planning documents; Design in parallel
  • **Funding:** Existing agency funding; Emergency funding programs
  • **Implementation:** Cooperative purchasing agreement

• 2022: “Why not use this same approach for quick-build projects even when we’re not in a pandemic?”
Implementation-Ready Design

• MBTA-funded, on-call General Engineering Contracts
  • Typically funds through concept or 25% design, depending on project
  • Allows for fast start-up of projects
  • Allows for applying for funding programs with concept designs in-hand

• MassDOT Shared Streets and Spaces Technical Assistance
  • Barr Foundation funded TA for grant applicants
  • More details on next slide
Implementation-Ready Public Process

- Example: Lynn Transit Action Plan (2020)
  - Comprehensive community process led by MassDOT and Advisory Committee of public stakeholders and elected officials
  - Documented community support, especially for bus lane projects

- Additional supportive planning documents throughout region:
  - Local Transit Action Plans
  - Master Plan documents

- Designing in parallel with public process
Implementation-Ready Funding

• MassDOT Shared Streets and Spaces grant program supporting bike, pedestrian, transit, and outdoor dining projects in response to COVID-19
• MBTA Capital funding
• Other funding sources (federal grant programs, Metropolitan Planning Organization, FHWA funding, etc.)
Funding Example: MassDOT Shared Streets and Spaces

- **2020 grant program:**
  - **Chelsea:** Broadway (bike lane component)
  - **Everett:** Main St and Broadway
  - **Lynn:** N Common St
  - **Malden:** Florence St
  - **Somerville:** Washington St (phase 1)
  - **Somerville & Medford:** Mystic Ave

- **2021 grant program:**
  - **Revere:** Broadway (inbound AM peak)
  - **Lynn:** Western Ave
  - **Malden:** Centre St
  - **Somerville:** Washington St (phase 2)
  - **Boston:** North Washington St (outbound) and Roslindale Square enhancements
  - **Brookline:** Gateway East

- **Total awards of approximately $3 million**
Implementation-Ready Procurement

• Ready-to-go contract for installing bus lanes and related markings (no additional procurement time cost)

• MAPC regional collective purchasing agreement for roadway treatments
  • MBTA, MassDOT, MassPort, and 13 Cities and Towns
  • Quantity pricing resulted in cost savings of up to 60% on bus and bike lane aggregate
  • Reduced Rapid Response Bus Lanes Program cost by $2 million
Delivering Projects Quickly

• Focus on areas where we can improve timeline:
  • **Design**: Use of on-call contracts
    *saved 3-6 months*
  • **Public Process**: Reference existing planning documents; Design in parallel
    *saved 6-12 months*
  • **Funding**: Existing agency funding; Emergency funding programs
    *saved 6-12 months*
  • **Implementation**: Cooperative purchasing agreement
    *saved 1-3 months*

• Estimated time saved: 1-3 years
Quick Build; Big Benefits

8% of weekday passenger mileage occurring in a bus lane (2021)

7.9 lane miles completed in 2021 and early 2022

42% of weekday passenger mileage experiencing reliability and other benefits from their route using a bus lane

25.6 total lane miles in operation today, with nearly 20 miles built in past four years
## CY 2021 Bus Lanes Expansion

<table>
<thead>
<tr>
<th>Project</th>
<th>Municipality</th>
<th>Lane Mileage</th>
<th>Funding Program</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Washington St OB</td>
<td>Boston (North End)</td>
<td>0.3</td>
<td>Shared Streets (MassDOT)</td>
</tr>
<tr>
<td>Washington St OB (peak-only)</td>
<td>Boston (Roslindale)</td>
<td>1.4</td>
<td>City-funded</td>
</tr>
<tr>
<td>Columbus Ave</td>
<td>Boston (JP/Roxbury)</td>
<td>1.4</td>
<td>MBTA and City-funded (90/10)</td>
</tr>
<tr>
<td>Broadway IB (peak-only)</td>
<td>Revere</td>
<td>1.2</td>
<td>Shared Streets (MassDOT)</td>
</tr>
<tr>
<td>Washington St (queue jumps)</td>
<td>Somerville</td>
<td>0.1</td>
<td>Shared Streets (MassDOT)</td>
</tr>
<tr>
<td>Congress St and Hanover St*</td>
<td>Boston (Haymarket Area)</td>
<td>0.6</td>
<td>City- and Developer-funded</td>
</tr>
<tr>
<td>North Massachusetts Ave</td>
<td>Cambridge</td>
<td>0.9</td>
<td>City-funded</td>
</tr>
<tr>
<td>Western Ave*</td>
<td>Lynn</td>
<td>0.8</td>
<td>Shared Streets (MassDOT)</td>
</tr>
<tr>
<td>Centre St*</td>
<td>Malden</td>
<td>0.7</td>
<td>Shared Streets (MassDOT)</td>
</tr>
<tr>
<td>Washington St (Gateway East)*</td>
<td>Brookline</td>
<td>0.5</td>
<td>Shared Streets (MassDOT)</td>
</tr>
</tbody>
</table>

|                                      |                                  |              |                                        |
| Total New Lane Mileage (CY 2021)    | 7.9                              |              |                                        |
| Total Existing Lane Mileage (before CY 2021) | 17.7                              |              |                                        |
| Total Lane Mileage                  | 25.6                             |              |                                        |

*expected completion spring/summer 2022
New Partnerships and Regional Firsts

First bus lane in a rotary
Sweetser Circle, Everett

First center-running bus lane
Columbus Ave, Boston

Welcoming new municipalities to the bus lane club!

Florence St, Malden
N Common St, Lynn
Broadway, Chelsea
ROSE LANE PROJECT

April Bertelsen, PBOT Transit Coordinator
Life in the Bus Lane NACTO Webinar, May 10, 2022
Adopt some plans and build some projects - big and small

**Enchanced Transit Corridors Plan**

June 2018

**Transportation for Everyone**

Central City in Motion Implementation Plan

**Rose Lane Project**

Implementing Transit Priority Projects in Portland

Portland.gov/RoseLanes
The Rose Lane Vision:

Portland's premier, city-wide bus and streetcar network that riders can count on to get where they need to go quickly and reliably.
What are “Rose Lanes?”

• Rose Lanes are transit routes where buses and streetcars get priority on the road in congested areas.

• There are over 20 transit priority tools we can use to make transit faster and more reliable. Not all Rose Lanes will be bus only lanes.

• We pick the tool best suited to address the needs and context in areas where transit is most delayed.
Putting People First: Project Better-Off Measures

- People of color will experience **average commute times comparable** to white people.
- People will consider public transit to be a **rapid and reliable** choice for **daily transportation**
- People who use public transit will have **more choices for where they want to live and work**.
- People who use public transit will have **lower transportation costs** (time and money)
- People will experience **better health outcomes** through improved air quality.
Pilot Approach

**FOUR-STEP APPROACH**

1. **PILOT**
   Implement pilot projects in ideal locations using lower-cost, quick-build materials.

2. **MONITOR**
   Observe and evaluate performance of the pilot projects against key metrics, such as the “better off” measure and other performance metrics.

3. **MODIFY**
   Based on the results of monitoring each pilot, make design modifications as needed and evaluate the performance of these improvements.

4. **MAKE PERMANENT**
   If the pilot projects successfully improve performance on key measures, then make transit priority improvements permanent.
An investment in our future: Why transit priority still matters despite Covid-19

- Transit remains one of the most **efficient, sustainable and equitable** ways to move people around our growing city.
- **Hundreds of thousands of people have continued to ride transit** during the pandemic, including essential workers.
- The Rose Lane Project helps **today’s transit riders** enjoy a better journey and **will encourage more to get on board** in the future.
- Rose Lanes will keep **our most important transit lines running smoothly as traffic and demand grows**, preventing a return to the transit delay experienced in 2019.
- Shovel-ready transit priority projects set Portland up for a **rapid recovery** from the COVID-19 crisis and will **help our city thrive**.
Estimated access benefits

People in these areas can reach more jobs and places

Jobs and places in these areas become reachable by more people
ETC Capital/Operational Toolbox
(20 tools that can be applied on streets and transit fleets)
Enhanced Transit Toolbox

Contents

List of Tools

Laneways and Intersection Treatments
- Dedicated Bus Lane
- Business Access and Transit (BAT) Lane
- Intersection Queue Jump/Right Turn Except Bus Lane
- Transit-only Aperture
- Pro-Time (Peak Period Only) Transit Lane
- Bus on Shoulder

Multi-Modal Interaction
- Bikes Behind Station
- Left-Side Bike Lane
- Dedicated Bike Signal
- Shared Bus/Bike Zone

Stops and Stations
- Curb Extensions for Stations/Stops
- Level Boarding
- All-Door Boarding
- Far-Side Bus Stop Placement
- Bus Stop Consolidation

Operations/Other
- Rolling Stock Modification
- Street Design Traffic Flow Modifications
- Transit Signal Priority and Signal Improvements
- Headway Management
Temporary Platform Evaluation

- Inform if & when to use, design guidance, context considerations, delivery and maintenance needs
- Asphalt platforms
- Rubber modular platforms by Zicla

Learn more:
www.portland.gov/transportation/rose-lanes/temporary-platform-evaluation

How to use these platforms Instagram story highlight:
www.instagram.com/stories/highlights/17928686935663150/
Red Pavement Markings FHWA Experiment

- Evaluate effectiveness of red in reducing driver incursions in transit priority lanes
- Inform how much red is enough to balance with installation and maintenance costs

Example Location: W Burnside (3rd – 2nd Ave)

Before Bus Priority Lane and Bike Lane

After Bus Priority Lane and Bike Lane

After Red added to Bus Priority Lane June 2021
Roll out status

18
Built Projects
(built in 2019 or after)

16
Design & Construction Projects
(currently funded and in design, out to bid or slated for construction)

22
Exploratory & Planning Projects
(identified for future development when funding is available)
Built Project: SW Madison (5th - 2nd) to Hawthorne Bridge (2019 & 2020)

- Separate Bus lane and Bike lane to the left from 5th to 4th Ave
- Bus-and-bike lane from 4th to 2nd
- Both through parking conversion
Proposed project: SW Alder (18th – 2nd)
- Business Access and Transit (BAT) lanes on MLK Jr Blvd and Grand Ave between E Burnside and NE Broadway
- Piloting transit, commercial truck, and turn lanes on MLK Jr Blvd and Grand Ave from SE Mill to E Burnside
- Both through travel lane conversion
- ~3 miles total of transit priority lanes benefitting Bus line 6 and Streetcar

Built Project: MLK/Grand Transit Lane Improvements (2020)
Built Project: SE Hawthorne, Grand - 12th Ave (2021)

- Business Access and Transit (BAT) lane, parking protected bike lane, pro-time 2nd general purpose lane
- Through road re-org/lane conversion
- 1/3 mile
Extra Slides
Performance Monitoring

Maximize Benefits

• Are we reducing transit delay to save time for transit riders and operations?

• Are we increasing equitable transit access for people and places?

• Is transit ridership increasing?

• Since the pandemic: Are we staying below 2019 transit delay levels?

Minimize or Mitigate Trade-offs

• Are we maintaining safety for all modes?

• Are we avoiding traffic diversion to nearby local neighborhood streets?

• Are we avoiding long traffic queues that delay the bus and traffic upstream?
3. TRAVEL TIME SAVINGS & DELAY REDUCTION

Telling the story: preserve roadway space to guard against future delay and make transit a more attractive travel option.
How do we measure transit delay?

Delay = Difference between 90th and 10th percentile travel times
• 10th percentile ("free flow") travel time is 20 minutes
• 90th percentile ("congested") travel time is 30 minutes
• Delay is 50%.

“When I ride the bus during rush hour it takes me 50% longer to get home.”

Measurement
• Stop to stop – targeted delay point
• Line segment or entire line – corridor delay
NW Everett BAT Lane Installation

- Business Access and Transit (BAT) lane
- Lane conversion in 2019
- Added red in 2021
- 1/3 mile benefitting bus lines 4, 8, 35, 44, 77, 16
# NW Everett BAT Lane Performance

<table>
<thead>
<tr>
<th></th>
<th>All Day</th>
<th>PM Peak (3:00 – 7:00pm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Delay Decrease per Trip</td>
<td>Total Passenger Load</td>
</tr>
<tr>
<td>Line 4</td>
<td>00:16</td>
<td>912</td>
</tr>
<tr>
<td>Line 8</td>
<td>00:34</td>
<td>942</td>
</tr>
<tr>
<td>Line 35</td>
<td>00:20</td>
<td>532</td>
</tr>
<tr>
<td>Line 44</td>
<td>00:17</td>
<td>694</td>
</tr>
<tr>
<td>Line 77</td>
<td>00:19</td>
<td>821</td>
</tr>
</tbody>
</table>
Anticipated benefits:
A faster, more reliable transit network
Estimated benefits analysis: Travel Time Savings by Bus Line

Travel Time Savings add up!

Once we implement all of the projects Built, in Design & Construction or Planned, we will save several minutes for Rose lane transit lanes.

A couple TriMet bus lines could save over 7 minutes.
Estimated access benefits

People in these areas can reach more jobs and places

Jobs and places in these areas become reachable by more people
W Burnside plan view configuration (Before Red)

Example of Bus and Bike Lane Configuration that Changes at Bus Stop

W Burnside (3rd Ave – 2nd Ave)
ROSE LANE PROJECT

SW Capitol Highway
Project Extents
Traffic Conditions and COVID-19 Impacts
Motor Vehicle Traffic is Down to 50%-80%

- Down to 50%-80% of previous conditions.
- All modeling of project impacts has been done with pre-COVID traffic data.
- Any traffic reduction as a result of COVID in the short and long term will translate into fewer impacts on other streets.
COVID-19 Impacts to Traffic:

Travel activity will increase over time. Our choices today inform how it comes back. This is an opportunity to help set a new normal, to minimize impacts as travel activity increases in our communities.
Monitoring & Mitigation
Monitoring Approach

PBOT is preparing a Monitoring and Mitigation Plan for some projects. The plan will:

• Identify specific locations for monitoring.
• Define thresholds for a mitigation response.
• Provide a menu of appropriate mitigation options.
• Clarify a timeline for monitoring and mitigation.
Monitoring Local Streets

As part of project construction, PBOT will monitor traffic conditions on key local streets to identify unwanted behavior and subsequent mitigation.

The following streets are identified for consideration in the monitoring and mitigation plan.
Key Questions

What types of impacts are most concerning for you? Do you have specific locations or streets you are concerned about?

What types of mitigation should we consider (speed bumps, diverters, etc)?