PHYSICAL & VIRTUAL ASPECTS OF THE MOBILITY HUB

Urbanism Next
Tuesday, May 7th 2019
9AM-12Pm
WELCOME & CHARTERING
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 AM</td>
<td>Welcome &amp; Chartering</td>
</tr>
<tr>
<td>9:20 AM</td>
<td>Framing Presentations</td>
</tr>
<tr>
<td>9:50 AM</td>
<td>Discussion: Public/Private Partnership for Mobility Hub Implementation</td>
</tr>
<tr>
<td>10:00 AM</td>
<td>Break</td>
</tr>
<tr>
<td>10:15 AM</td>
<td>Overview of Future Mobility Hub Sites</td>
</tr>
<tr>
<td>10:30 AM</td>
<td>Charrette-style Breakouts per Site</td>
</tr>
<tr>
<td>11:30 PM</td>
<td>Charrette Group Report Outs</td>
</tr>
<tr>
<td>12:00 PM</td>
<td>Adjourn</td>
</tr>
</tbody>
</table>
WHAT IS A MOBILITY HUB?

• Major transit station areas—places of connectivity where different modes of transportation come together seamlessly

• Baseline:
  • Transit connections
  • Multimodal integration
  • Safety
  • Comfort
  • Walking/bicycling access
  • Secure bicycle parking
  • Wayfinding and trip planning
  • Payment
Eastgate Mobility Hub Opportunity Analysis

STATE OF THE PRACTICE

The purpose of the Opportunity Analysis is to document best practices in mobility hub planning and implementation as it relates to the desired elements and functions of the future Eastgate Mobility Hub. Building on the future plans for Eastgate and priorities identified by stakeholders as documented in the Preliminary Research Memo, this analysis will explore a range of possible solutions and scenarios for the Eastgate Mobility Hub. The Opportunity Analysis will function as a primer giving champions a baseline understanding of the range of solutions and mobility hub elements possible at Eastgate.

Mobility Hub Strategy Themes

A mobility hub is more than a collection of modes, facilities, and activities—it is a valuable and limited resource that can be leveraged to support local and regional mobility goals. A successful mobility hub design should not only organize the space but also prioritize the needs of different users based on the vision, mission, and objectives of Bellevue and King County Metro for the Eastgate site. Mobility hub best practices can inform the design of individual hub elements as well as the overall site strategy and help create a seamless, safe, and enjoyable user experience.

Mobility Hub Amenities

San Diego Association of Governments (SANDAG)
Regional Mobility Hub Implementation Strategy

1. Transit Amenities
2. Pedestrian Amenities
3. Bike Amenities
4. Mode-Specific Services & Amenities
5. Support Services & Amenities

Prioritization and Model Holisticity

When the context of mobility hubs, all transportation modes are not created equal. Mobility hub design should facilitate and reward the highest-priority use cases. Establishing a crucial hierarchy can help guide special decisions about where each service and activity is located within the site. Rail, biking, walking, and riding transit are all users that support the core values of Bellevue and King County Metro. In particular, prioritizing a safe, enjoyable, and accessible pedestrian environment is essential for a successful mobility hub. Users of all travel modes become at least occasional pedestrians while transferring between transportation networks.

Mobility hubs are appealing locations for transit riders to connect to private mobility services. However, mobility hub site design should reinforce the role that Metro will play as a mobility agency. Well-managed curb space, clear signage, and designated pick-up and drop-off areas are essential for providing seamless connections to these services without compromising transit operations. Operating, stop-sharing, and data-sharing policies at the agency level may have a direct impact on how space is organized and used on the site. Ultimately, a mobility hub should deliver as many transportation options for users as possible without compromising agency goals.

Seamlessness

Providing a seamless experience for users is central to mobility hub design thinking. True seamlessness requires not only a well-organized site plan but also a sophisticated approach to trip planning, fare payment, and wayfinding. Mobility hub design decisions at all scales should be grounded in the experience of users.
WAYFINDING AND INFORMATION

Wayfinding in a Metrolinx station
(Photo courtesy of Metrolinx Mobility Hub Guidelines)

Horizontal wayfinding tool
PEDESTRIAN ACCESS

Pedestrian path in a parking lot
(Photo courtesy of Metrolinx Mobility Hub Guidelines)

Covered pedestrian pathway
Dockless bikes in designated parking area (Photo courtesy of flickr)

Electric scooters parked clear away from pedestrian paths
FIRST/LAST MILE SHUTTLE

- Travelers boarding an employee shuttle
- Medical shuttle offering first/last mile connections to transit
RIDEHAILING/TNC

Smartphone-based mobility services

TNC loading at a managed curb
PLACEMAKING AND AMENITIES

Street furniture and planters

Free library and seating at fixed-route transit stop (Photo courtesy of Soundlandscapes.wordpress.com)
OTHER ELEMENTS

Electric car charging spaces

Commercial storage lockers for grocery pick-up
PORTLAND AREA: NEW MOBILITY PLAN

Jeff Owen, Strategic Planning Coordinator, TriMet &
Terra Curtis, Emerging Mobility Sector Co-lead, Nelson\Nygaard
NEW MOBILITY ASSESSMENT
Urbanism Next – Mobility Hubs Workshop
Radically Rethinking Relevancy

Role as a Mobility Manager

• Industry is in a time of dramatic change
• TriMet is uniquely positioned in size and technology to be a leader
• Integrate seamlessly to support high frequency and high capacity transit
• Relevancy measured by person throughput and job access – ridership and revenue are internal KPIs
Pilot – the safe way to test the water

**FUNCTION**

*What problem are we trying to solve?*

**GEOGRAPHY**

*What areas are hurting for TriMet’s attention?*

**MODE**

*What mode best suits capacity needs?*
Geography - Three Layers of Geographic Analysis

**TriMet Bus and MAX Ridership**
Identify changes in mobility needs and preferences across the region based on ridership trends

**Emerging Mobility Propensity Index**
Aggregate data to estimate relative market demand and identify potential high use markets

**Equity Index**
Aggregate data to illustrate likelihood of mobility limitations and reliance on public transportation
Leverage real estate assets: Mobility Hubs

An opportunity to focus on CUSTOMER EXPERIENCE with MOBILITY HUBS that connect transit and other modes.

- High capacity transit
- Restrooms
- Bike parking
- Carshare
- Inviting to bike and peds

Hamburg Mobility Point
Mobility Hub Concept – Transit Centers
Bus and MAX service is the backbone of mobility landscape.
Geofencing

Bus and MAX service is the backbone of mobility landscape

EV charging and shared use parking

eBike & scooter charging stations

Commercial Storage Opportunity

Information and advertising potential

Pickup and dropoff zones
Mobility Hub Concept – Park & Rides
PUGET SOUND REGION: SOUND TRANSIT

Abby Chazanow, Transportation Planner Mobility Innovation & Brian Brooke, Deputy Director of Innovation and Performance

Mobility Hubs
Futureproofing the regional transit system
SOUND TRANSIT OVERVIEW

We’re connecting more people to more places.

Sound Transit builds and operates regional transit service throughout the urban areas of Pierce, King and Snohomish counties.

With East Link, ST will be serving Mercer Island, Bellevue and Redmond by 2023.

Transit services include:
• Link light rail
• Sounder trains
• ST Express Bus
• Bus Rapid Transit (coming soon)
INNOVATION PROGRAM AT SOUND TRANSIT

• 2016 Voter-approved System Expansion Plan (ST3) calls for innovation, including for:

• **Transportation business models**
  - Research and development of approaches to transition transit facilities into multi-modal or multi-functional transportation hubs
RIDER EXPERIENCE VISION

• We will deliver a transit experience that is dependable, safe, clean and available with informed riders; while striving to create an experience that is **simple**, **seamless** and **intuitive** for our riders.

•
**MOBILITY HUBS DEFINITION**

*Primarily, spaces for people that provide connections with high capacity transit, that:*

1. Are flexible and connected
2. Seamlessly integrate supportive transportation services and infrastructure
3. Provide for convenient and safe pedestrian access between modal options
4. Demonstrate through design, a higher-order of component parts dependent on the surrounding development context
MOBILITY HUBS IN THE SYSTEM TODAY
BY 2023, LINK WILL EXTEND EAST TO REDMOND, NORTH TO NORTHGATE AND WILL INCLUDE SIX NEW TACOMA LINK STATIONS.

• But with the quickening pace of change, and new mobility options continuously evolving, we need to consider adapting stations not on-line yet, for future mobility needs.
MOBILITY HUB COMPONENT PARTS AND CHARACTERISTICS

• Expanded bus shelters
• Widened sidewalks
• Improved landscaping in pedestrian walkways
• Improved lighting in pedestrian walkways around stations
• Furniture and seating placement near transit station
• Shortened crossing signal wait time to transit center
• Public restroom installation
• Placemaking
• Public art installations near transit station
• Curb expansions for decoration/painting
• Business Improvement Associations
• Bike racks
• Bike lockers
• Bike cages (lockable)
• Bike maintenance facilities (washing station, repair stand)
• Electric bike charging station
• Increased electric vehicle parking
• Increased smart parking (e.g. pay-by-phone, smart meters)
• Automated vehicles
• Package delivery lockers
• Grocery collection service
• Mobile retail services (e.g. food trucks, coffee stands)
• Permanent retail services (e.g. cafe)
• Pop-up market
• Wi-fi installation
• Personal device charging stations
• Private housing development
• Affordable housing development
• Improved static wayfinding
• Improved real-time transit signage
• Environmentally-friendly landscaping and renovation
• …
WHAT ARE THE CHANGING MOBILITY NEEDS OF THE MARKETS WE SERVE?

*It’s Unclearly Defined, but Telecommuting Is Fast on the Rise*
https://www.nytimes.com/2014/03/08/your-money/when-working-in-your-pajamas-is-more-productive.html
The future is coming— at 11 miles per hour: Autonomous shuttle companies want to fill the first-mile, last-mile gaps in public transportation

Electric scooters have zipped by docked bikes in popularity

The Uber-Transit Convergence Arrives in Denver
BETTER UNDERSTAND THE MARKET THROUGH GAP ANALYSES

1. Understand the communities we serve (e.g. ridership data, intercept/commute trip reduction survey data)

2. Understand the communities we are not serving (e.g. census data)

3. Identify the gaps, work to understand the barriers

<table>
<thead>
<tr>
<th>Station</th>
<th>Service Options</th>
<th>Employment Density (jobs/sq mi)</th>
<th>Residential Density (pop/sq mi)</th>
<th>Total Daily Ridership (weekday boardings + alightings)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mt Baker</td>
<td>Link light / KCM</td>
<td>9,757</td>
<td>7,060</td>
<td>9,140</td>
</tr>
<tr>
<td>Columbia City</td>
<td>Link light / KCM</td>
<td>8,284</td>
<td>6,895</td>
<td>5,523</td>
</tr>
<tr>
<td>Othello</td>
<td>Link light / KCM</td>
<td>7,279</td>
<td>6,511</td>
<td>6,645</td>
</tr>
<tr>
<td>Rainier Beach</td>
<td>Link light / KCM</td>
<td>3,467</td>
<td>5,360</td>
<td>4,936</td>
</tr>
<tr>
<td>TIBS</td>
<td>Sounder Lakewood-Seattle / KCM / Amtrak</td>
<td>3,996</td>
<td>3,060</td>
<td>13,379</td>
</tr>
<tr>
<td>Angle Lake</td>
<td>Link light / KCM</td>
<td>3,617</td>
<td>3,409</td>
<td>8,985</td>
</tr>
<tr>
<td>Federal Way Transit Center</td>
<td>Buses 574, 577, 578 / KCM / Pierce Transit</td>
<td>1,858</td>
<td>4,091</td>
<td>8,546</td>
</tr>
<tr>
<td>Kent Station</td>
<td>Sounder Lakewood-Seattle / KCM / Buses 566, 567</td>
<td>2,946</td>
<td>3,824</td>
<td>8,361</td>
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<tr>
<td>Redmond Transit Center</td>
<td>Buses 542, 545 / KCM</td>
<td>4,013</td>
<td>4,183</td>
<td>7,146</td>
</tr>
<tr>
<td>Lynnwood Transit Center</td>
<td>Buses 511, 512, 535 / Community Transit</td>
<td>2,312</td>
<td>4,704</td>
<td>2,736</td>
</tr>
</tbody>
</table>

Note: Score weights Employment Density, Residential Density, and Daily Rider Activity equally. Data provided by King County Metro and Sound Transit.
Better understand community needs and interests through engagement

- Create opportunities for people to be involved
  - Focus opportunities for input around project milestones
  - Involve people in decisions in which their input will be used
- Leverage existing relationships with hard-to-reach and traditionally under-represented populations
## PILOTING NEW TECHNOLOGIES

<table>
<thead>
<tr>
<th>Typical today</th>
<th>Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wayfinding, visual and some tactical</td>
<td>Accessible wayfinding technology and comprehensive wayfinding</td>
</tr>
<tr>
<td>Customer information (stationary/ analog kiosks)</td>
<td>Integrated passenger information and accurate real-time arrival information</td>
</tr>
<tr>
<td>Connections to freefloating bikeshare</td>
<td>First/last mile partnerships that provide “complete trip” data insights for planning purposes</td>
</tr>
<tr>
<td>Auditory and visual transit arrival announcements</td>
<td>Efficiencies in communications to and with customers about real-time arrivals</td>
</tr>
<tr>
<td>Designated pickup/dropoff curbspace, including for paratransit and separate for private providers/ TNCs</td>
<td>Enhanced data collection tools to baseline curbspace utilization and plan for dynamic use types; Partnerships in first/last mile connections; Smart infrastructure</td>
</tr>
<tr>
<td>Bike storage</td>
<td>Smart lockers and partnerships</td>
</tr>
<tr>
<td>Plaza space and seating</td>
<td>Placemaking and flexible use space for new and emerging micromobility modes; Temporary treatments</td>
</tr>
<tr>
<td>Ticket Vending Machines</td>
<td>Fully integrated mobile payment across platforms and modes</td>
</tr>
</tbody>
</table>
Thank you.

soundtransit.org
SEATTLE AREA: EASTGATE MOBILITY HUB

Rachel Wilch, Parking Program Manager, King County Metro & Dan Rowe, Supervisor of Research & Innovation Programs, King County Metro
THE IMPETUS FOR EASTGATE MOBILITY HUB

Why a mobility hub?
- Metro’s is becoming a mobility agency
- Mobility hubs = one-stop-shop for mobility options

Why Eastgate?
- Abundant services, high demand and conflicting interests
- Willing partners
- Supportive transportation and land use plans
- Ownership and funding complexities
Eastgate's Relationship to Surrounding Areas and Future Conditions:

• WSDOT-owned
• Bellevue College
• Bellevue's TOD Vision
• Eastgate Corridor Plan
• Major employers
• RapidRide Expansion
  - Totem Lake-Bellevue-Eastgate
  - Renton-Bellevue-Overlake
• ST LINK light rail station (2041)
Eastgate Park & Ride:

- 1,614 stalls
  - 311 surface stalls
  - 1303 garage stalls
- Lot reaches 100% utilization most weekdays

- Amenities
  - Reserved carpool permit parking spaces
  - Ticket vending machines
  - 3 electric vehicle charging spaces
  - Pedestrian overpass to 142nd Ave SE
  - 14 leased bike lockers
  - 8 on-demand bike lockers
  - Bike Racks

- Transit Routes
  - I-90 Freeway Express ramps: 216, 218 & 219
  - Sound Transit: 555
  - I-90 Freeway Express ramps: 554 & 556)
EASTGATE ASSETS

- Highly visible
- Transit-rich
- Easily accessible from I-90
- High demand for use
- Proximity to major employers
EASTGATE CHALLENGES

- Fierce competition for use
- No designated space for shuttles or shared mobility services
- Lack of wayfinding
- Low-quality customer experience
- WSDOT land ownership limits possible uses of Eastgate
EASTGATE MOBILITY HUB - THE VISION

Potential Elements

- Mode prioritization
- Managed parking
- Flexible pick up/drop off areas
- Improved bike and pedestrian facilities
- Designated microtransit areas
- Real-time customer information kiosks
- Placemaking
IMPLEMENTATION CONSIDERATIONS

- Proof of concept: quick to deploy projects and pilots
- Policy action to support new modes/business models
- Alignment with other projects and programs
- Evaluation using performance indicators
CARSHARE

- Free Floating vs. Station Based
- Visibility, Access, Flexibility
- EV Charging
- Future Growth
TEN MINUTE DISCUSSION:

Public/Private Partnership for Mobility Hub Implementation
GATEWAY TRANSIT CENTER
PORTLAND, OR

Bob Hastings and Jeff Owen, TriMet
BELRED 130TH STATION
BELLEVUE, WA

Abby Chazanow & Brian Broooke, Sound Transit
Bel-Red / 130th Station

Workshop overview

Urbanism Next
BEL-RED / 130TH STATION

- Part of East Link Extension
- 14 miles, 10 stations
- Opens for service: 2023
- Travel time: 24 minutes to International District / Chinatown Station in Seattle
City of Bellevue 130th Station Area Plan, 2012

Figure 1.2 Major land use types in the Bel-Red Subarea

Source: Bel-Red Corridor EIS, 2006
VISION FOR THE FUTURE

City of Bellevue 130th Station Area Plan, 2012
**PROJECTED RIDERSHIP**

- In 2030: 1,500 average weekday boardings at Bel-Red / 130th Station

- For context:

<table>
<thead>
<tr>
<th>Station</th>
<th>Q4 2018 Average Weekday Boardings**</th>
</tr>
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<tbody>
<tr>
<td>University of Washington</td>
<td>10,012</td>
</tr>
<tr>
<td>Capitol Hill</td>
<td>7,761</td>
</tr>
<tr>
<td>Westlake</td>
<td>11,236</td>
</tr>
<tr>
<td>University Street</td>
<td>5,812</td>
</tr>
<tr>
<td>Pioneer Square</td>
<td>4,219</td>
</tr>
<tr>
<td>International District / Chinatown</td>
<td>6,200</td>
</tr>
<tr>
<td>Stadium</td>
<td>1,581</td>
</tr>
<tr>
<td>SODO</td>
<td>2,514</td>
</tr>
<tr>
<td>Beacon Hill</td>
<td>3,067</td>
</tr>
<tr>
<td>Mount Baker</td>
<td>2,727</td>
</tr>
<tr>
<td>Columbia City</td>
<td>2,810</td>
</tr>
<tr>
<td>Othello</td>
<td>2,882</td>
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<tr>
<td>Rainier Beach</td>
<td>2,186</td>
</tr>
<tr>
<td>Tukwila International Boulevard</td>
<td>3,016</td>
</tr>
<tr>
<td>SeaTac / Airport</td>
<td>5,457</td>
</tr>
<tr>
<td>Angle Lake</td>
<td>3,715</td>
</tr>
</tbody>
</table>

**Service Delivery Quarterly Performance Report, Q4 2018
**STATION OVERVIEW**

- At-grade station platform, with track in the center median of the road along NE Spring Blvd and 136th Pl NE
STATION/AREA FEATURES

- Wayfinding, visual and some tactical
- Customer information (stationary / analog kiosks)
- Auditory and visual transit arrival announcements
- Designated pickup/drop-off curbspace
- Ticket Vending Machines
- Streetscape enhancements (e.g. street trees, lighting, sidewalks)
- Protected bike lanes

- Features provided as Transit Access Improvements through adjacent city TOD project (summarized):
  - 300 parking contiguous spaces designated for transit access & wayfinding relative to station
  - Parking management tools (kiosks, payment, monitoring, dynamic signage, counters)
  - Bicycle storage & wayfinding
  - Pickup/drop-off curbspace proximate to station
ROOSEVELT STATION
SEATTLE, WA

Lauren Squires & Evan Corey, Nelson\Nygaard
HILLSBORO CENTRAL TRANSIT CENTER
HILLSBORO, OR

Jeff Owen and Bob Hastings, TriMet
ALASKA JUNCTION

King County Metro: 7 routes, 2,500 average daily boardings in Alaska Junction

- West Seattle transit volumes:
  - 16,000 all routes, peak
  - 56,000 all routes, daily

- **BRT:** RapidRide C-Line
- **Ride2** on-demand service

Future ST3 **light rail station** (2040)

- Anticipated ridership: 11,000-12,500 based on station location, elevated vs tunnel

**Water taxi** to downtown and regional ferry service to Kitsap County

**Urban Village:** Recent upzones 75’-95’ neighborhood commercial

Mobility services: Carshare, bike share, TNC
METRO: FIXED ROUTE TRANSIT CONNECTING TO LIGHT RAIL

SOUND TRANSIT: POTENTIAL LIGHT RAIL STATION LOCATIONS
Level 3 Alternatives - West Seattle Tunnel/ C-ID 4th Ave/Downtown 5th Ave/ Ballard Tunnel
CHARRETTE-STYLE BREAKOUTS

Group 1: Gateway Transit Center
• Facilitators: Gerry Tierney & Terra Curtis

Group 2: BelRed 130th Station
• Facilitators: Ingrid Stromberg & James McGrath

Group 3: Alaska Junction Station
• Facilitators: Michael Austin & Lauren Squires

Group 4: Hillsboro Transit Center
• Facilitators: Bob Hastings & Jeff Owen
BREAK OUT SESSION
THANK YOU!

Jeff Owen
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