

Planning for high capacity transit in the region
Initial HCT Evaluation Results

HCT MTAC/TPAC Subcommittee
March 25, 2009

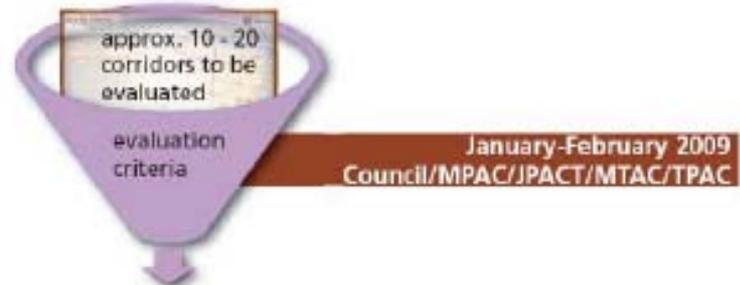


METRO

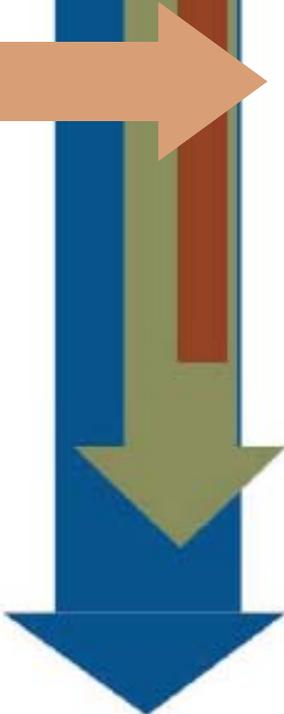
PEOPLE PLACES

OPEN SPACES

Greatest PLACE
2035
Going places

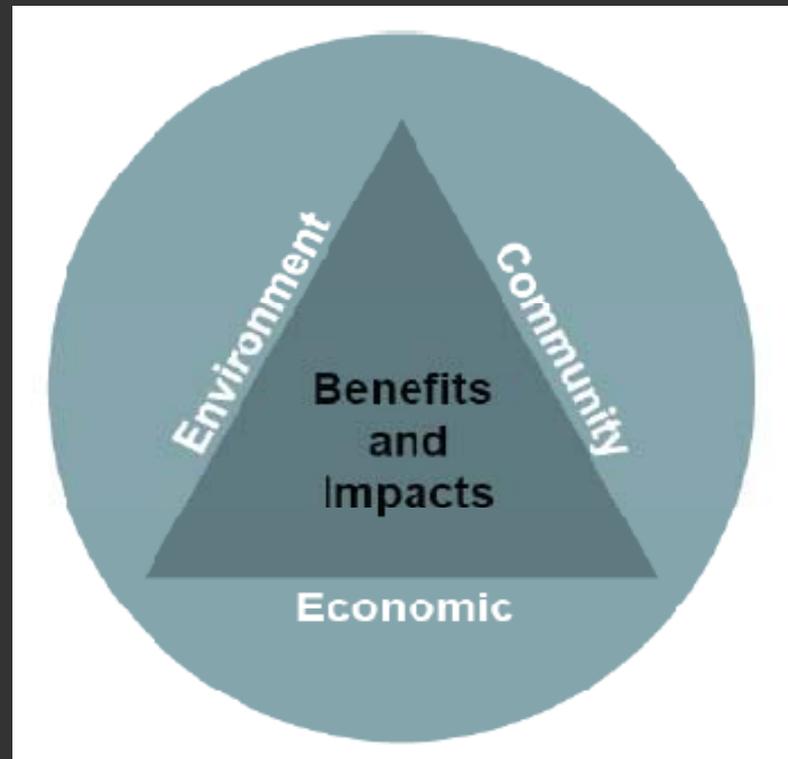


We Are Here



Adopted Evaluation Criteria

- Organized into three “accounts” that correspond to the outcomes-based RTP evaluation approach:



Adopted Evaluation Criteria

- Fourth “account” added to address project deliverability

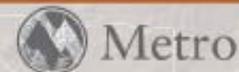


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Community	Environment	Economy	Deliverability
<p>C1: Supportiveness of Existing Land Uses</p> <p>C2: Local Aspirations</p> <p>C3: Placemaking and Urban Form</p> <p>C4: Ridership Generators</p> <p>C5: Support of regional 2040 Growth Concept</p> <p>C6: Integration with Regional Transit System</p> <p>C7: Integration with Other Road Uses</p> <p>C8: Congestion Avoidance Benefit</p> <p>C9: Equity Benefit</p> <p>C10: Health (Promotion of Physical Activity)</p> <p>C11: Safety and Security (<i>Addressed in White Paper</i>)</p> <p>C12: Housing + Transportation Affordability Benefit</p> <p>C13: Transportation Efficiency or Travel Time Benefit to Individual User</p> <p>C14: Transportation Efficiency or Travel Time Benefit to All Corridor Users</p>	<p>EN1: Reduction in Emissions and Disturbance</p> <p>EN2: Risk of Natural Resource Disturbance</p> <p>EN3: Risk of 4(f) Resource Disturbance (<i>Addressed in White Paper</i>)</p>	<p>EC1: Transportation Efficiency (Operator)</p> <p>EC2: Transportation Efficiency (User)</p> <p>EC3: Economic Competitiveness</p> <p>EC4: Rebuilding/Redevelopment Opportunity</p>	<p>D1: Total Project Capital Cost (Exclusive & Non-Exclusive ROW Options)</p> <p>D2: Capital Cost Per Mile (Exclusive & Non-Exclusive ROW Options)</p> <p>D3: Operating & Maintenance Cost</p> <p>D4: Ridership</p> <p>D5: Funding Potential</p>

Going places

REGIONAL HIGH CAPACITY TRANSIT SYSTEM PLAN



Corridors for Evaluation

02/12/2009



Bi-state HCT corridors to be considered in conjunction with RTC

Portland Central City: To be determined through Central City Plan updates

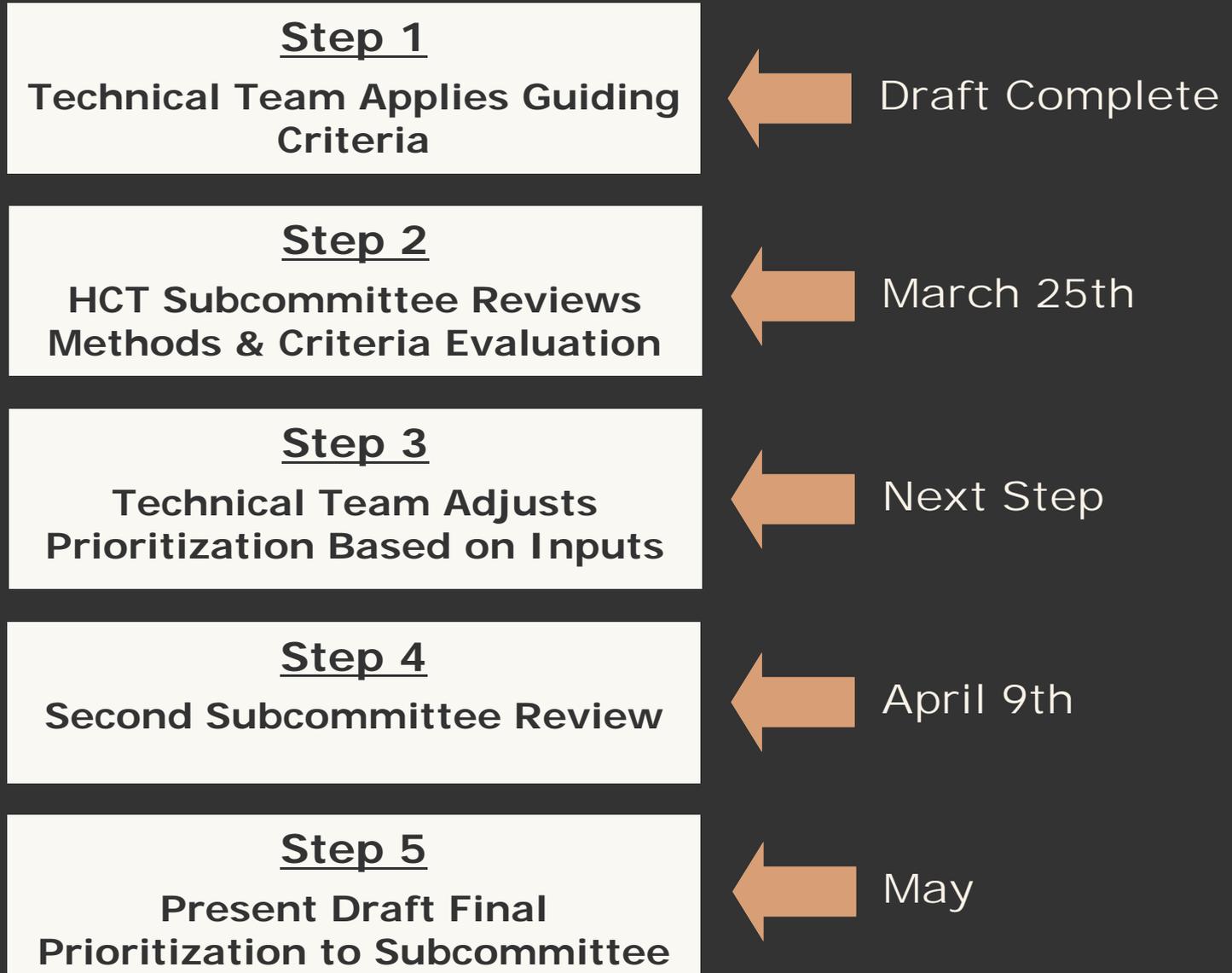
Multiple Account Evaluation Process Goals:

- Identify *guiding criteria* to begin prioritization process
- Provide technical analysis to stakeholders & committee members to recommend adjustments
- Iterate to address inputs from:
 - Sub-Committee
 - Standing Committees & Think Tank
 - Public



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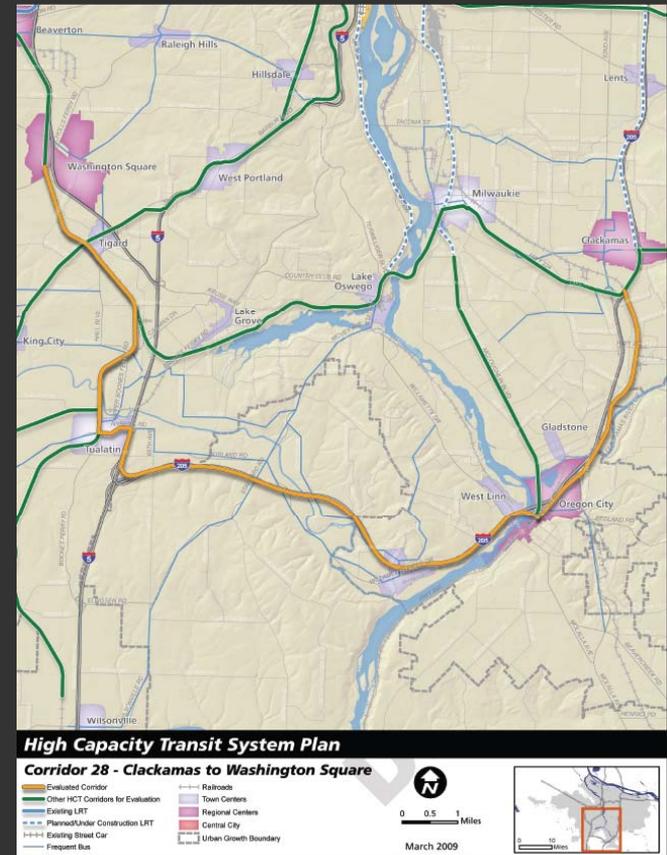
Iterative Process



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Key Evaluation Components

- Travel Demand Modeling
- Capital Costing
- Local Aspirations

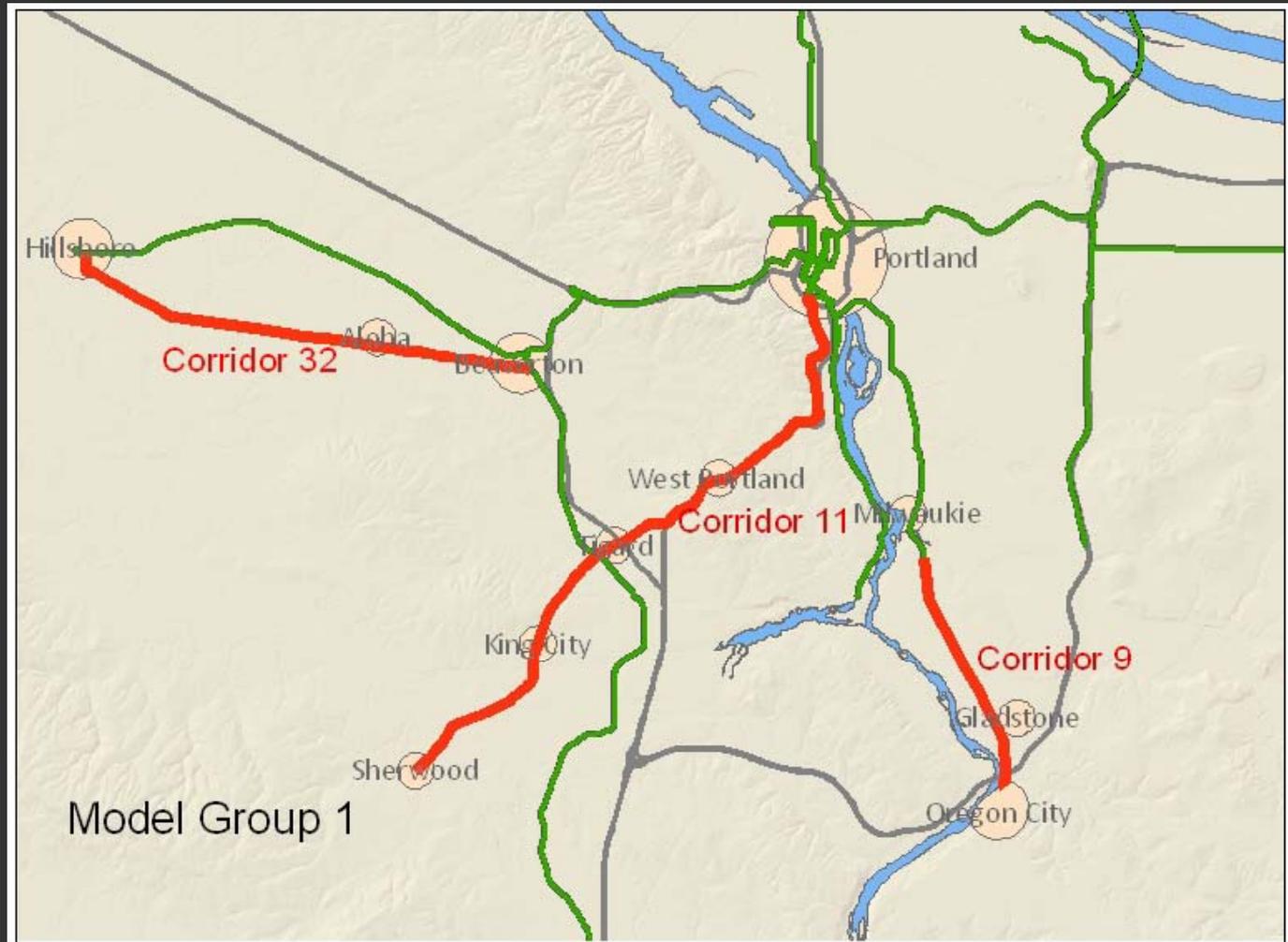


Travel Demand Modeling

- Ridership
- Operating & Maintenance Costs
- VMT Reduction (emissions)
- Travel time savings



Travel Demand Modeling



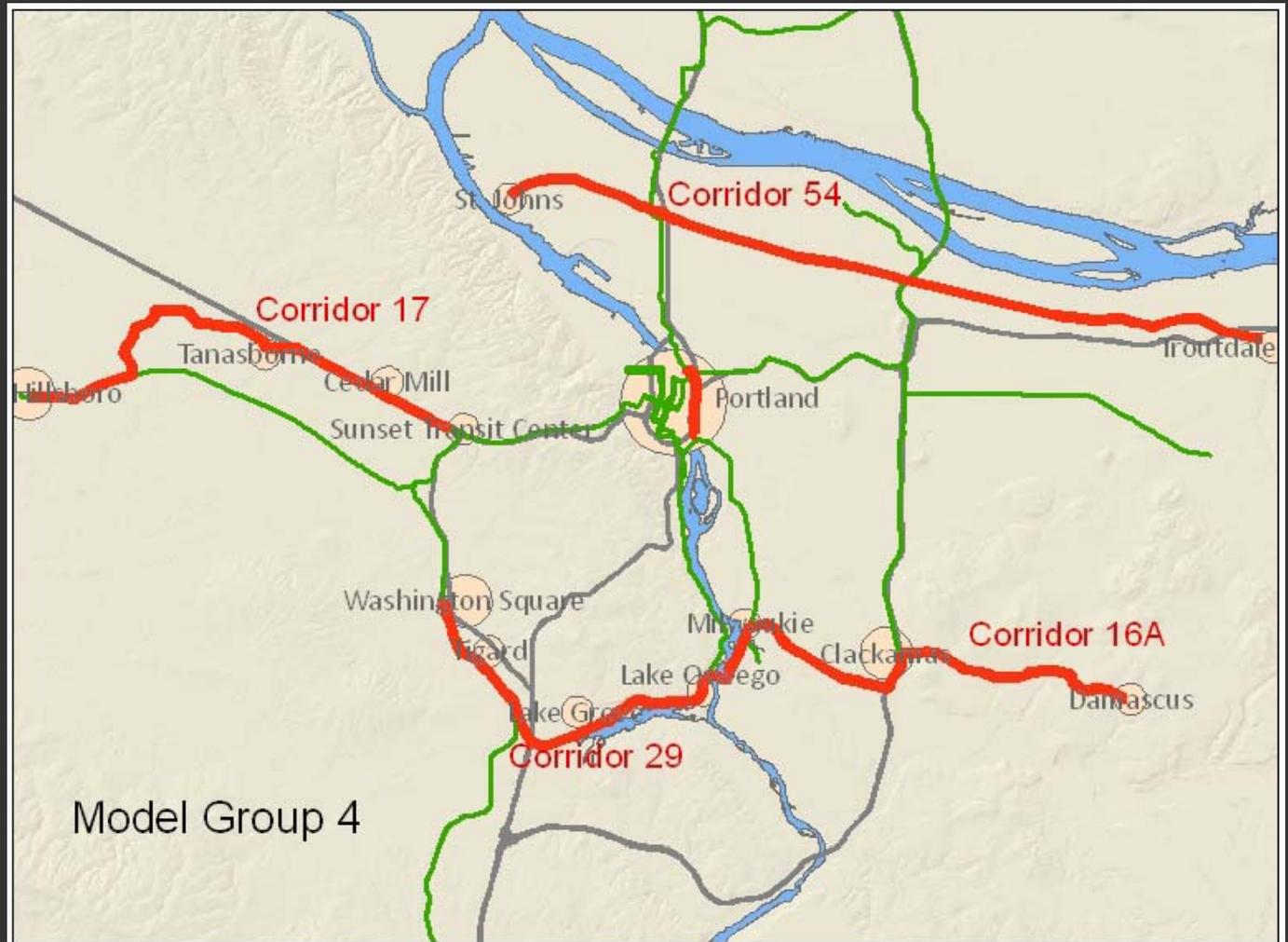
Travel Demand Modeling



Travel Demand Modeling



Travel Demand Modeling



Travel Demand Modeling



Capital Costing

- Derived from actual TriMet construction costs and other comparable projects

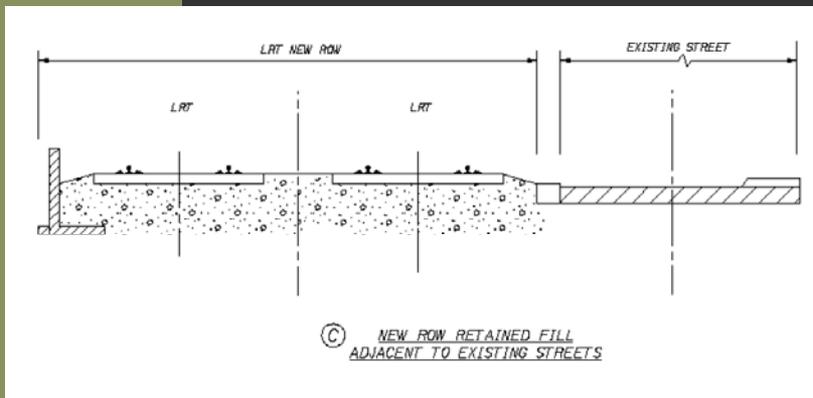
Two scenarios:

1. Assumes new ROW
2. Use of existing ROW (to extent possible)

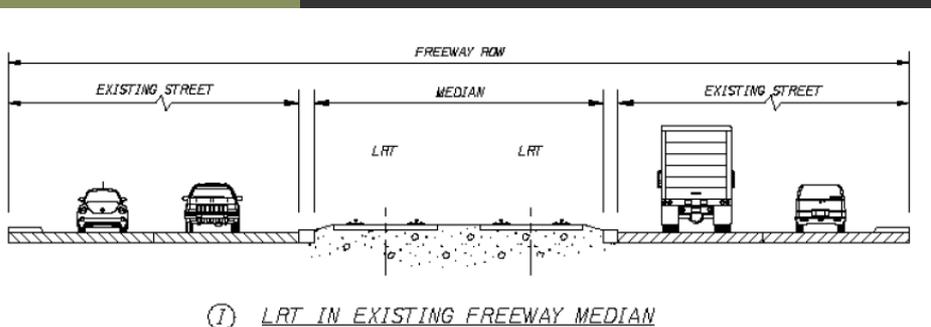


Capital Costing

- Nine different valuation scenarios developed



1. In-street median
2. New ROW adjacent to existing streets
3. New ROW retained fill adjacent to existing streets

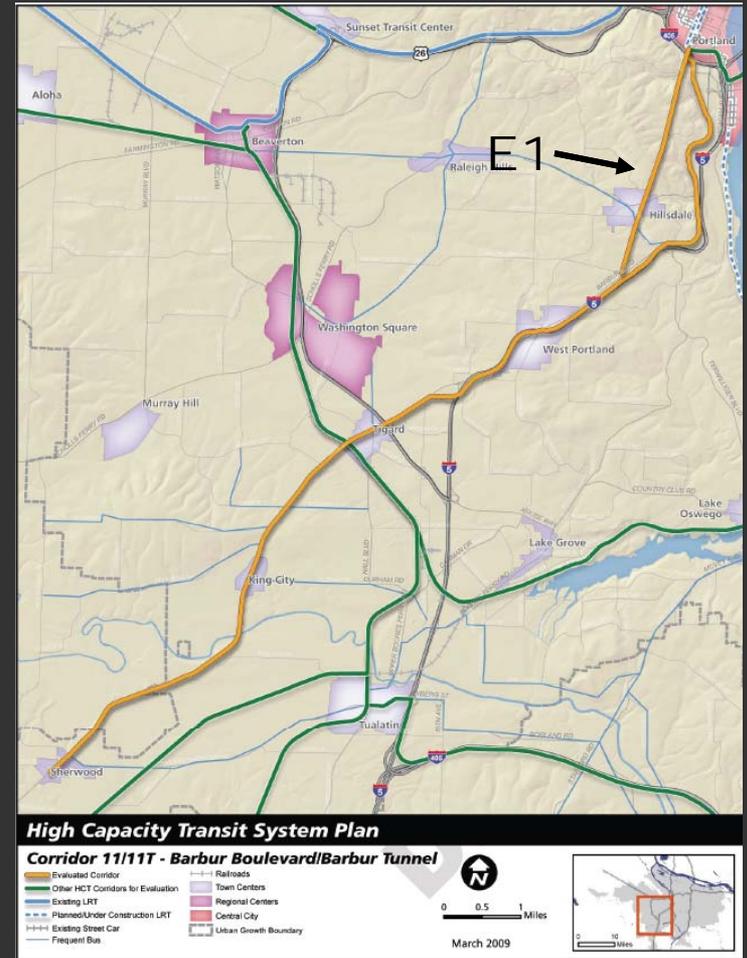


4. Aerial guideway
5. Tunnel
6. Abandoned rail ROW
7. Existing rail ROW
8. Existing rail ROW in cut
9. LRT in existing freeway median

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Capital Costing

- Corridors reviewed in segments
- Valuations applied to each segment to determine cost



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Capital Costing

- Valuation scenarios applied to each corridor
- Total cost includes factor for vehicles / maintenance facility



Local Aspirations Data Source

- Planning Directors submitted descriptions of stated aspirations for:
 - Growth
 - Values
 - Infrastructure investments
 - Barriers
- Supplemented by interviews and results of the HCT/Local aspiration workshops.



Local Aspirations Methodology

- Is a form of HCT desired by the local jurisdiction?
- Does the jurisdiction have adopted population and employment growth aspirations for that would support HCT?
- Does the local jurisdiction have plans to update land use policies to help support HCT?

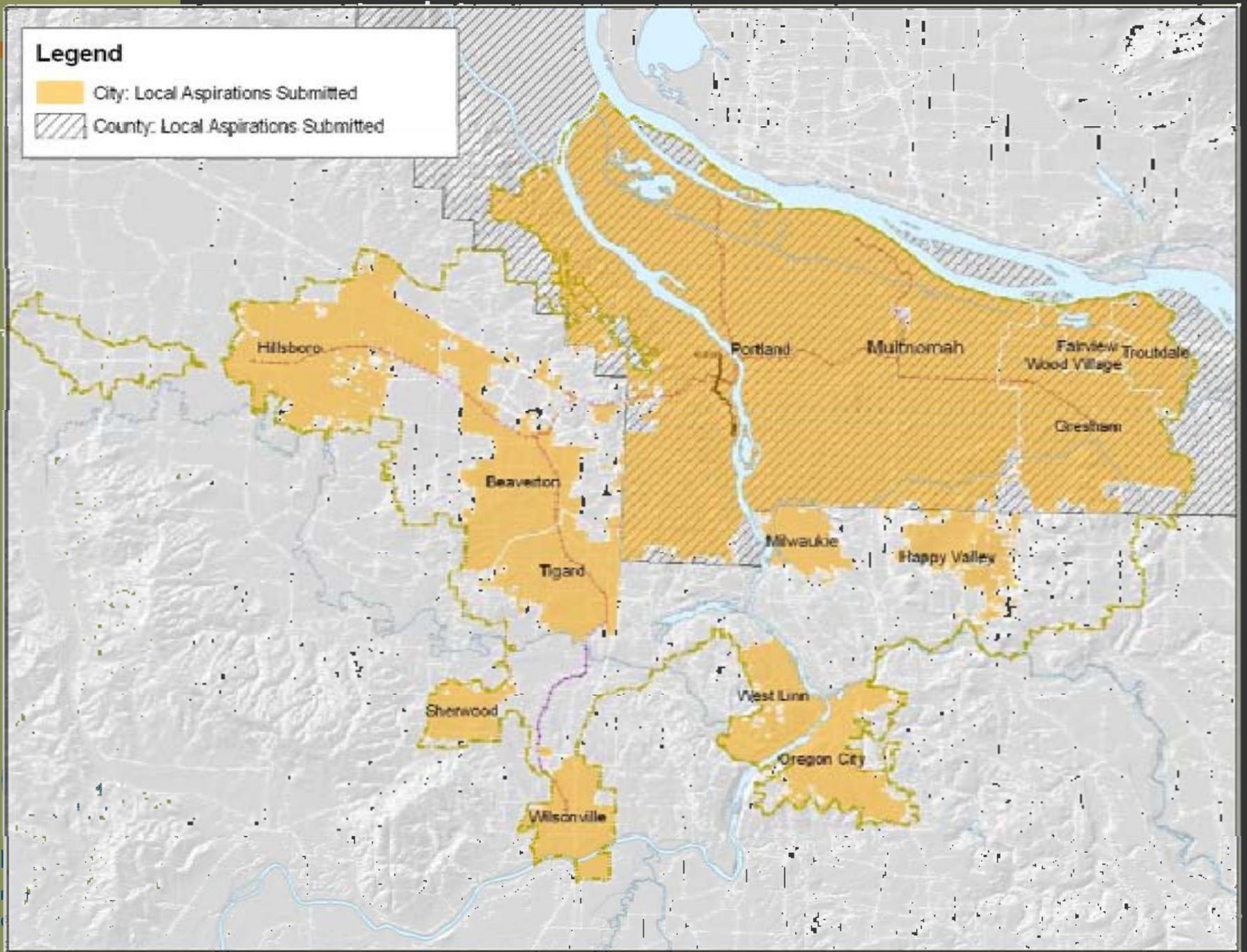


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Legend

- City: Local Aspirations Submitted
- County: Local Aspirations Submitted



Other Criteria

- Draft report provides methods and rankings
- Algorithm used to calculate natural breaks (Jenks Optimization) for quantitative outputs

Significant benefit



Neutral



Significant constraint or adverse impact



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Criteria not individually scored due to level of corridor preciseness

- Safety & Security – White Paper
- 4(f) avoidance – White Paper
- Integration with other road uses – Corridor Advancement Procedures



Selecting Guiding Criteria



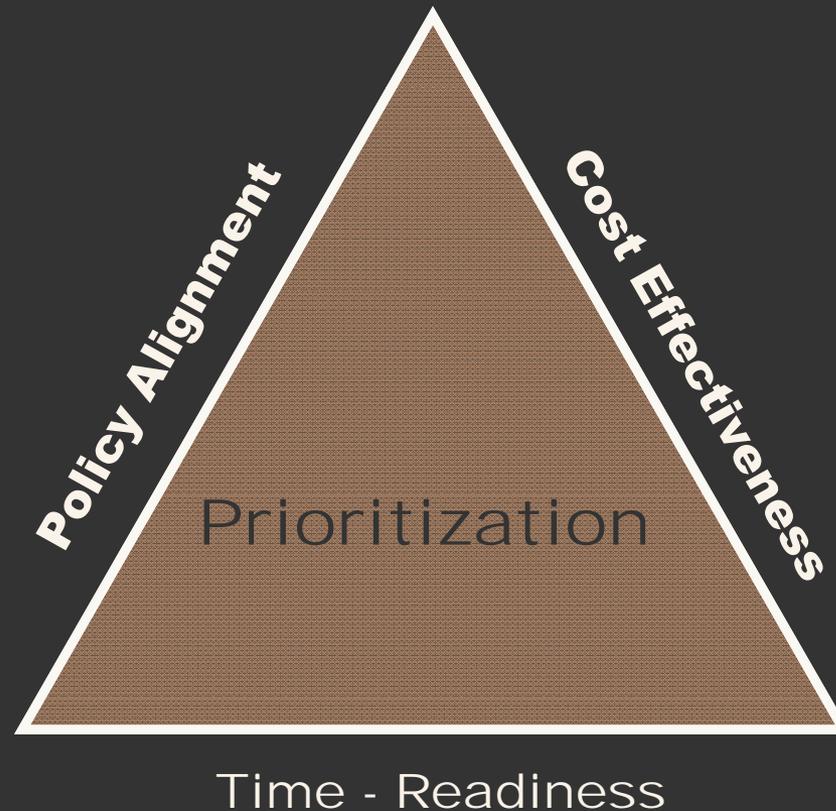
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Selecting Guiding Criteria

- Identified small set of *guiding criteria* to initiate prioritization process



Selecting Guiding Criteria

- Most important criteria from survey of Standing Committees & Think Tank include:

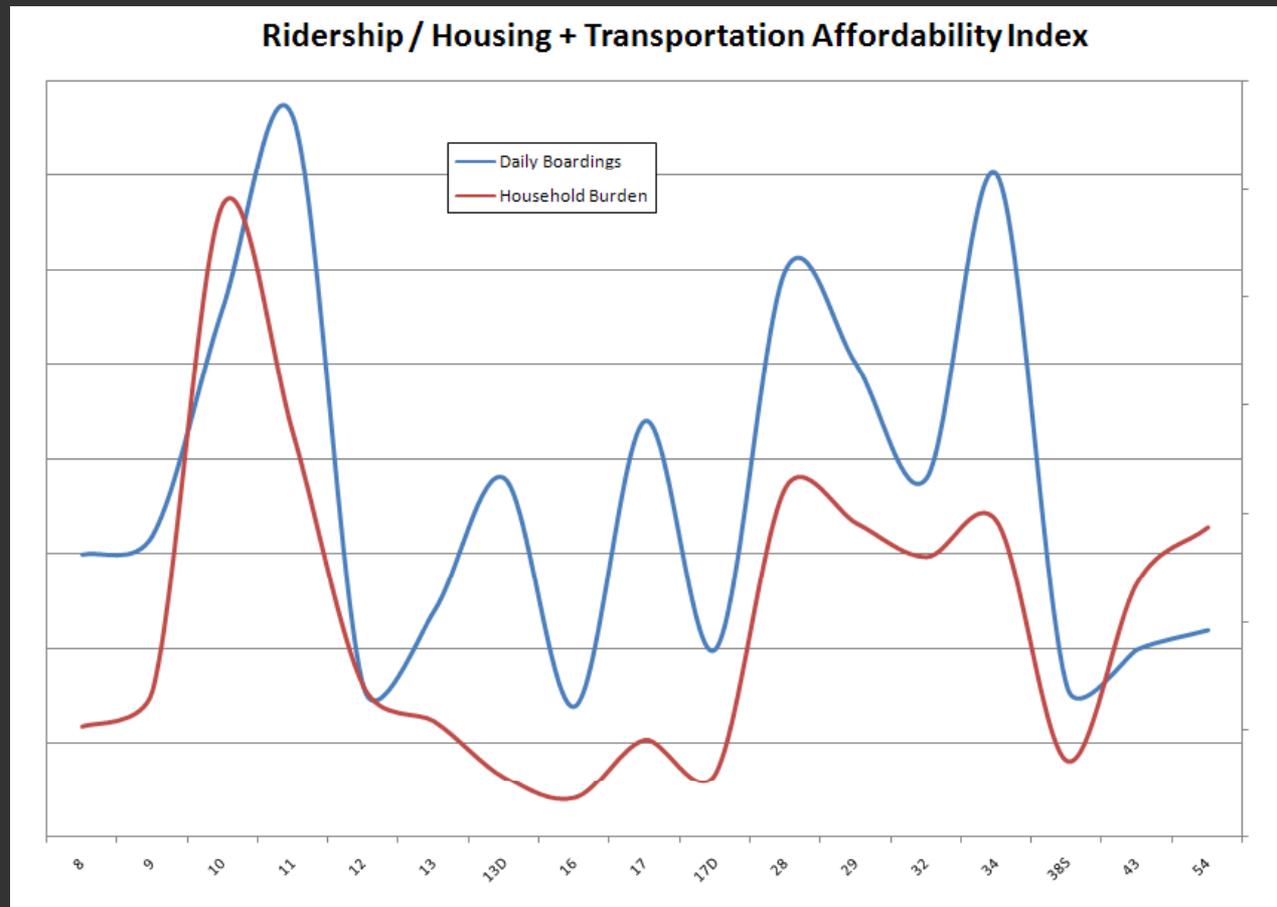
Account	Criteria
Community	Serves Major Ridership Generators
Community	Local Land Use
Environment	Minimizes Impacts to Natural Resources
Economy	Transportation Efficiency/ Cost Effectiveness
Deliverability	Total Ridership



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Selecting Guiding Criteria

- Looked for corollaries

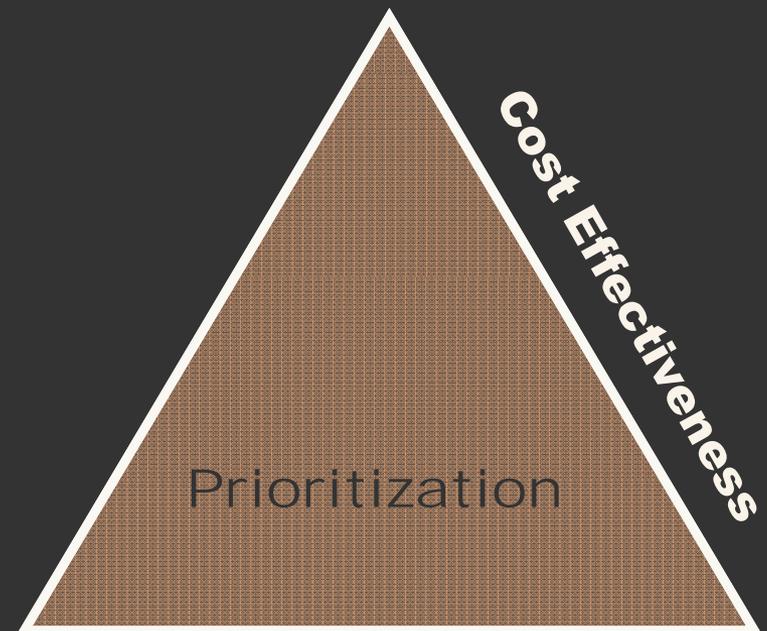


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Selecting Guiding Criteria

- Long-Term Business Case –
Cost Effectiveness
 - Ridership - 2035
 - Transportation Efficiency



D4. Ridership

- Generated from the Regional Travel Demand Model
- Total line ridership in 2035 – measure of project benefit
- Ranked high by TPAC, MTAC, JPACT and Think Tank members



D4. Ridership

Guiding Criterion	Corollaries
	Emissions & Disturbance (EN)
Ridership	Equity (C)
	Housing + Transportation Affordability (C)
	Integration with Regional Transit System (C)
	Economic Competitiveness (EC)



EC2. Transportation Efficiency

- *Annualized capital and operating cost estimate per passenger trip*
 - Capital costs from recently completed Trimet projects
 - Operating costs from travel demand forecasting / Trimet costs
- Ranked most important criterion for *Economy Account*



EC2. Transportation Efficiency

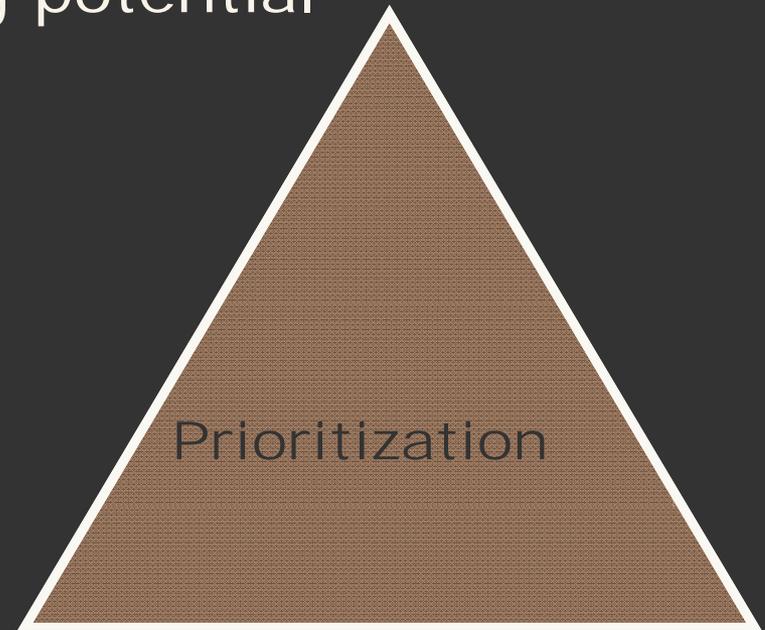
Guiding Criterion	Inputs
Transportation Efficiency	Capital Costs (D)
	Operating and Maintenance Costs (D)
	Ridership (D)

- Excellent measure of overall cost effectiveness of corridor investment over time



Selecting Guiding Criteria

- Short-Term Business Case - *Project Readiness*
 - Existing Land Use (2005 TOI)
 - Federal Funding potential



Time - Readiness



C1. Existing Land Use

- Assessed by using the 2005 Transit Orientation Index
 - Estimates transit ridership based on population and employment density
- Critical to identify projects viable in short-term
- Ranked second highest in importance for *Community Account*



C1. Existing Land Use

Guiding Criterion	Corollaries
Existing Land Use (2005 TOI)	Ridership Generators (C)
	Placemaking & Urban Form (C)



D5. Funding Potential

- Assessment of potential to qualify for limited federal funding
- Uses Federal formula to demonstrate cost-effectiveness (TSUB)
 - Cost per user benefit
 - Peak period in vehicle travel time savings per rider
- Ranked second after Ridership in *Deliverability Account*



D5. Funding Potential

Guiding Criterion	Inputs
Funding Potential	Capital Costs (D)
	Operating and Maintenance Costs (D)
	Ridership (D)
	Travel Time Savings (Model)



Selecting Guiding Criteria

- Policy Alignment – *Local Aspirations*
 - Desire for HCT
 - Adopted population and employment growth aspirations that supports HCT
 - Plans to update land use policies
 - Outcomes of interactive Community Workshops



C2. Local Aspirations

- Measures desire of local jurisdictions to promote urban form conducive to HCT
- Also measures ability to meet 2040 growth management objectives
- This criterion is among top ranked *Community* criteria

PL1



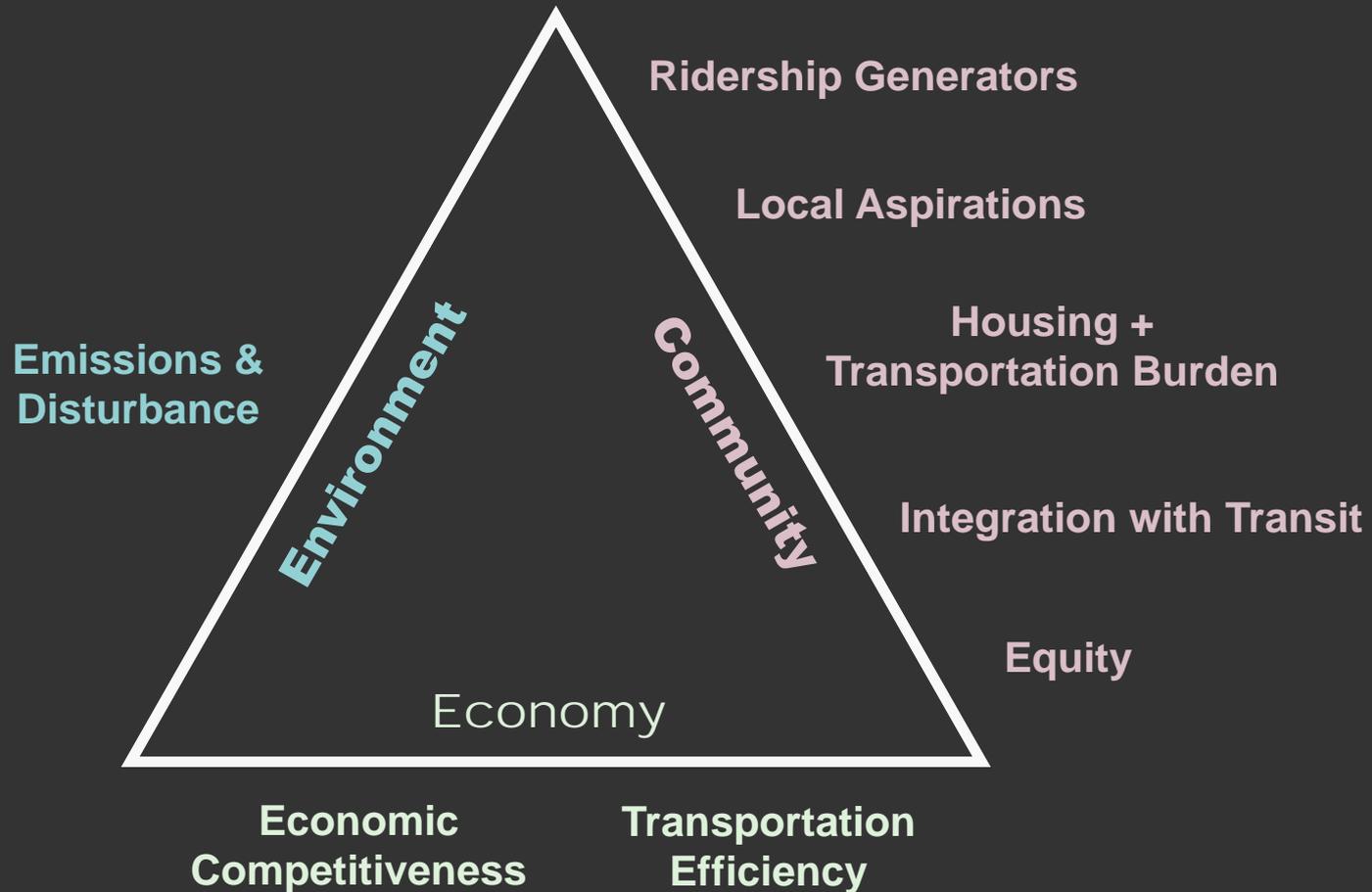
PL1

TOM - not sure what you mean by this...

Paul Lutey, 3/24/2009

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Guiding Criteria Corollaries



Guiding Criteria Corollaries

- 4th Side of the Triangle - *Deliverability*
- All deliverability criteria align
 - Capital Cost
 - Cost per Mile
 - Operating & Maintenance Costs
 - Ridership
 - Change in Corridor Ridership
 - Funding Potential



Application of Guiding Criteria

- 5 guiding criteria given equal weighting provide good starting point for prioritization
- Corridor-by-corridor adjustments can be made based on other criteria



Description of Tiers



Description of Tiers

Tier	Corridors/ Projects
Regional Priority Corridors	2 to 3
Regional and Local Action Corridors	Up to 6
Developing Corridors	Up to 6
Vision Corridors	No limit



Description of Tiers

- Regional Priority Corridors
 - Corridors most viable for implementation in next four years.
 - Progress into Alternative Analysis in next 4 years



Description of Tiers

- Regional and Local Action Corridors
 - Future HCT investment may be viable if recommended planning and policy actions are implemented
 - Next to progress to Alternative Analysis in 5-12 years
 - Possible Metro Actions:
 - Staff and/or funding support for TOD/Station Area Plans
 - Support station access plans
 - Preliminary AA work



Description of Tiers

- Developing Corridors
 - Projected 2035 land use and commensurate ridership not supportive of HCT
 - BUT, have long-term potential
 - Possible Metro actions:
 - Land use planning support
 - TOD staff assistance or funding



Description of Tiers

- Vision Corridors
 - Projected 2035 land use and commensurate ridership not supportive of HCT
 - Land use aspirations are for low-intensity built form
 - Possible Metro Actions:
 - Support long-range planning
 - Support corridor preservation efforts



Grouping Corridors

- FTA requires Alternatives Analysis (AA) for all federally funded projects
- AA requires evaluation of multiple alignments
- In many cases adopted corridors would be part of same AA evaluation
- ODOT requires refinement studies for Mode, Function and General Location as part of the TPR



Introducing Other Modes

- Light rail
- BRT
- Commuter rail
- BRT Lite – TriMet
- Express Bus – TriMet/SMART
- Regional Bus – TriMet/SMART



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Sample Ranking Using Guiding Criteria

Regional Priority Corridors

- **11** (Portland to Sherwood via Barbur Hwy 99w) & **34** (Beaverton - Wilsonville)
- **10** (Portland - Gresham via Powell)

Local and Regional Action Corridors

- **29** (Washington Square TC – Clackamas TC) & **28** (Washington Square TC - Clackamas TC via I- 205)
- **17** (STC - Hillsboro), **17D** (Red Line extension to Tanasbourne), & **32** (Hillsboro - Hillsdale)
- **8** (Clackamas TC – Oregon City TC) via I-205 & **9** (Park – Oregon City TC) via McLoughlin

Developing Corridors

- **13D** (Troutdale - Damascus) & **13** (Gresham - Troutdale MHCC via Kane Dr)
- **43** (St. Johns - Vancouver/Union Station)
- **38S** (Tualatin-Sherwood)

Vision Corridors

- **12** (Hillsboro - Forest Grove)
- **16** (Clackamas TC - Damascus)
- **54** (Troutdale - St. Johns)



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Discussion

