TRANSIT INFORMATION

MODES | OPERATIONS | FACILITIES | URBAN CONSIDERATIONS

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WHO USES TRANSIT?

- **Transit Captive** – people in this group do not have access to a car or are unable to drive. Reliant on transit for mobility.

Services are typically designed to serve this group

- **Choice** – people in this group may have access to a car, but instead choose to use transit to meet their mobility needs.

Could be very large market if services were made attractive

- **Auto Captive** – this group has *little to no inclination to use transit* – trips do not lend themselves to transit or the trip maker does not want to use transit

Likely inefficient use of resources and public money to serve

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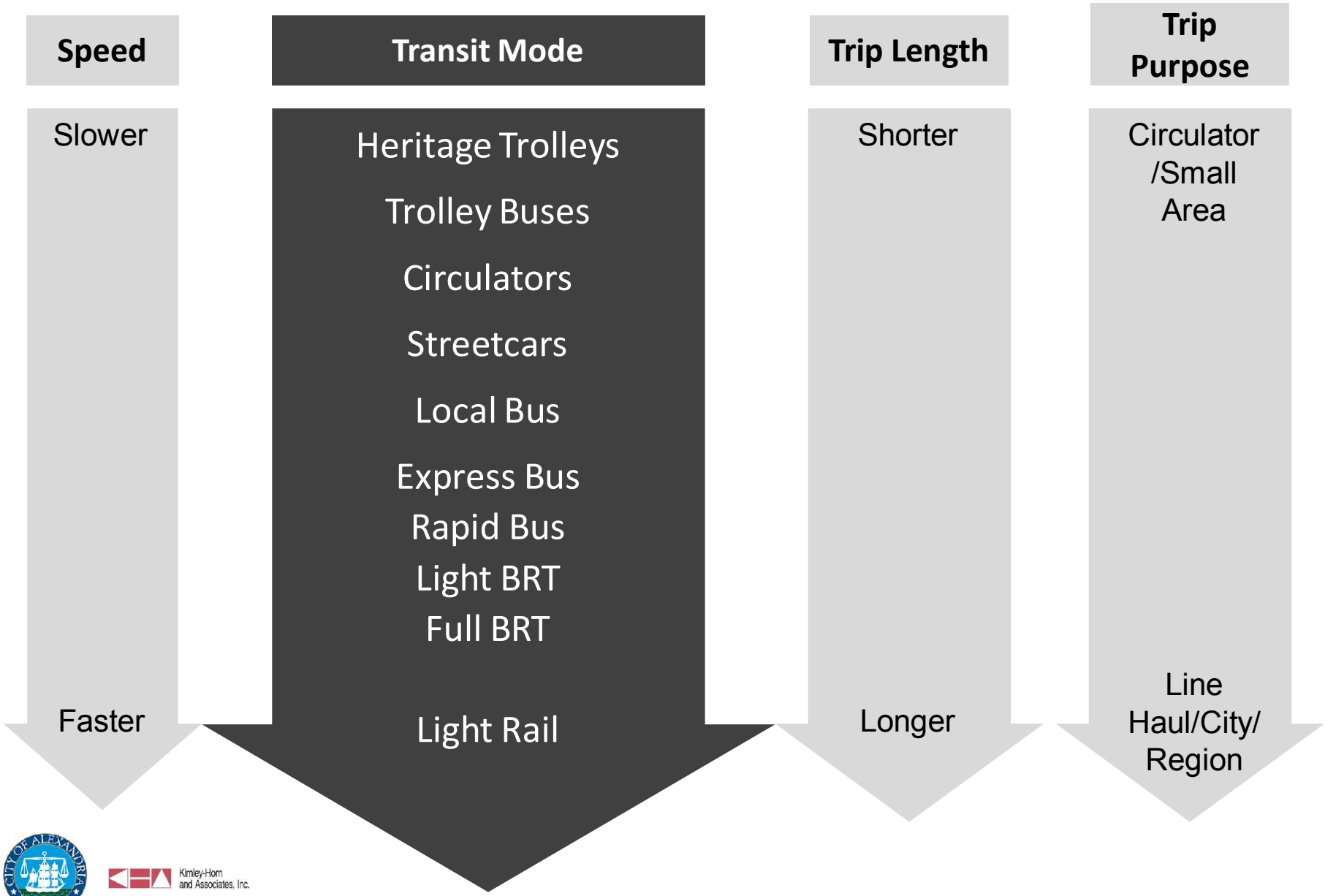
TRANSIT MODE CHARACTERISTICS



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PLANNING-LEVEL CAPITAL COSTS OF TRANSIT MODES*

- Circulators and Shuttles - varies
- Local Bus - <$50,000 per mile
- Express Bus - $50,000 or less per mile
- Rapid Bus - $3 million/mile
- Light Bus Rapid Transit - $5 million/mile
- Full Bus Rapid Transit - $5 to $15 million/mile
- Modern Streetcar $10 to $25 million/mile
- Light Rail Transit - $20 to $60 million/mile

**Planning-level costs shown are approximate and are in year 2010 dollars. They do not include contingency or escalation to a future year mid-point of construction. Totals listed do not include for initial (or programmed replacement) vehicle purchases, maintenance facilities, right-of-way acquisition (including any condemnation, damages, or relocation costs), major utility relocations/new service, or roadway/streetscape improvements that may be implemented concurrently, but are not required for the transit project. Alignments designated as "optional" are not included in the cost.*

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Alameda-Contra Costa Transit District, California

OPERATIONAL STRATEGIES AND PRIORITY TREATMENTS

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Overview of Transit Signal Priority

Transit Vehicle Approaches a Traffic Signal

Signal is Red

Signal is Green

Transit vehicle is behind schedule

Transit vehicle is ahead of, or on-schedule

Transit vehicle is behind schedule

Red phase length is reduced

Normal signal operation

Green phase is extended

NEAR SIDE/FAR SIDE

- Transit vehicle stops before reaching the intersection
  - May create back-ups for traffic
  - May result in a double stop

- Transit vehicle stops after the intersection
  - Eliminates double stops
  - Can contribute to rear-end collisions

Bus stop, Portland (Oregon)


Healthline BRT runningway, Cleveland (Ohio)

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Off-Board Fare Collection

- Fare collected before boarding
- Validated upon entering the station or through random enforcement
- Payment can be made using cash or credit/debit
- Decreases boarding time/stop dwell time
- Increases service efficiency
- Allows boarding through all doors

Off-board fare collection, Portland (Oregon)

BRT station, Curitiba (Brazil)

Median BRT station faregates, Bogota (Colombia)

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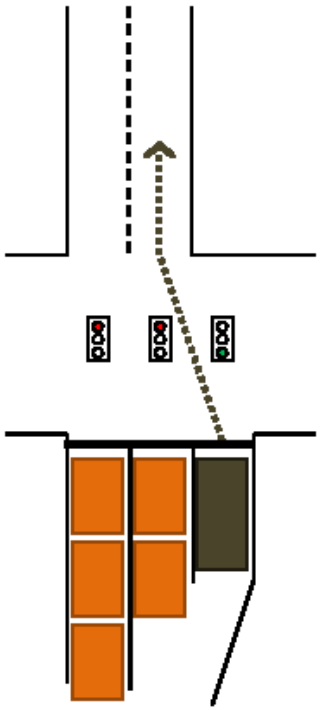
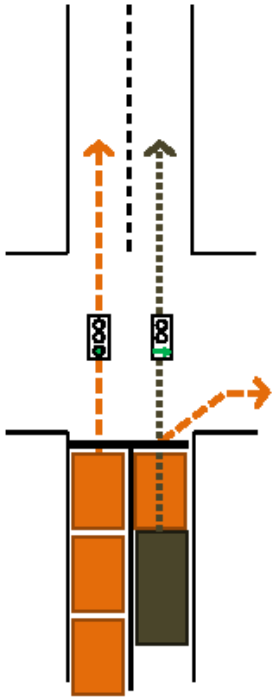
QUEUE JUMP LANES

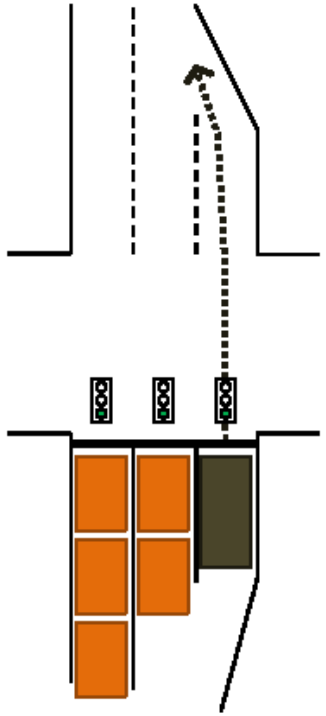
- Do not always require construction of additional lanes
- Allow transit vehicle to bypass stopped through traffic
- Can be operated in several different ways



Queue jump through advance green



Queue jump through transit vehicle exception



Queue jump using a far side merge lane

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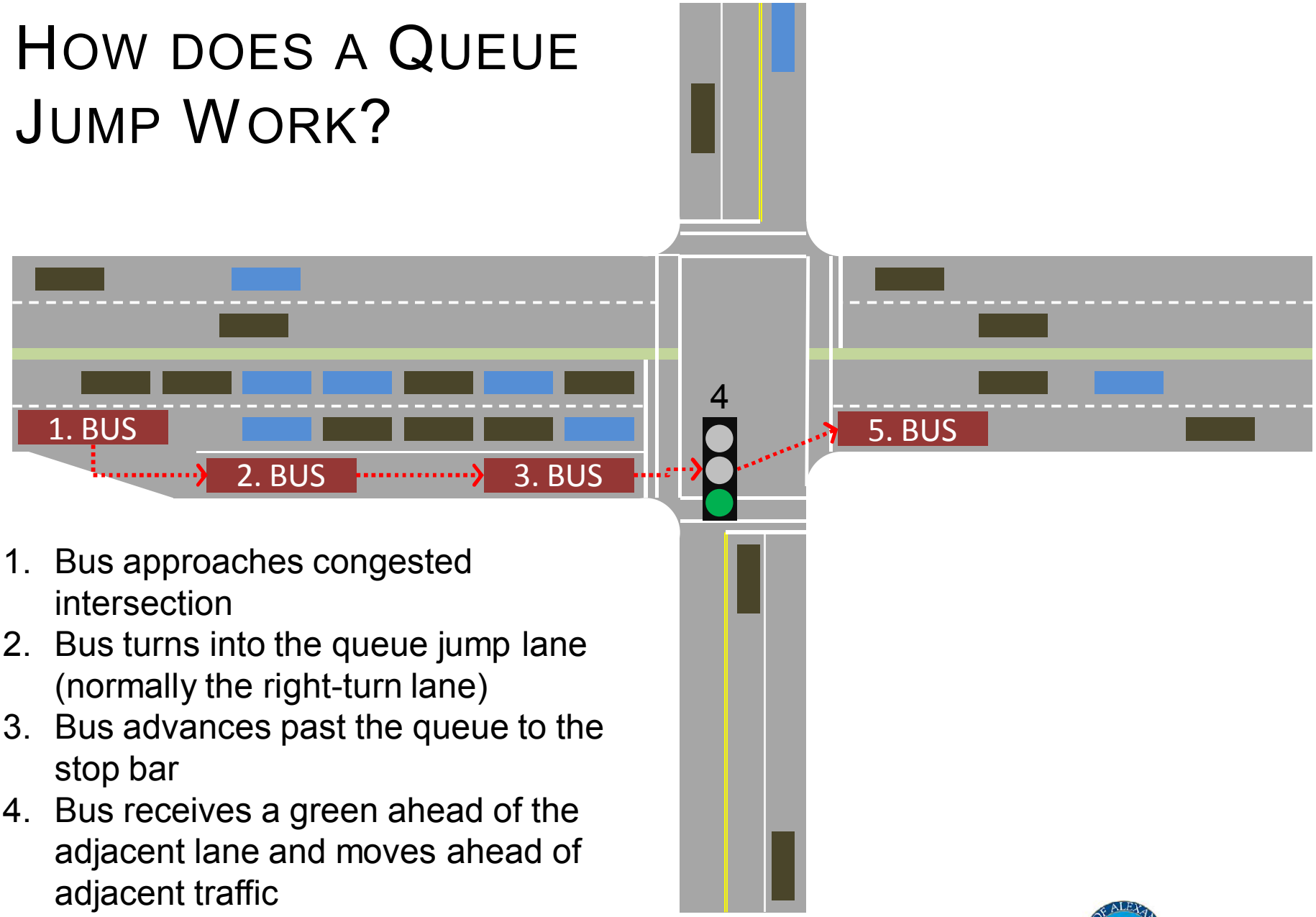
How does a Queue Jump Work?



1. Bus approaches congested intersection
2. Bus turns into the queue jump lane (normally the right-turn lane)
3. Bus advances past the queue to the stop bar
4. Bus receives a green ahead of the adjacent lane and moves ahead of adjacent traffic
5. Bus merges back into the through lane

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Hiawatha Line LRT Station, Twin Cities (Minnesota)

FACILITIES

BASIC STOP

Bus stop, Toronto (Ontario, Canada)

- Bench
- Shelter
- Lighting
- Service information
- Trash can
- Paved waiting area

ENHANCED STOP/STATION


Healthline BRT station, Cleveland (Ohio)

- Purpose designed for a line or service
- Substantial shelter
- Larger waiting area
- Real time service information
- Off-board fare collection (optional)
- Climate controlled area
- Level boarding

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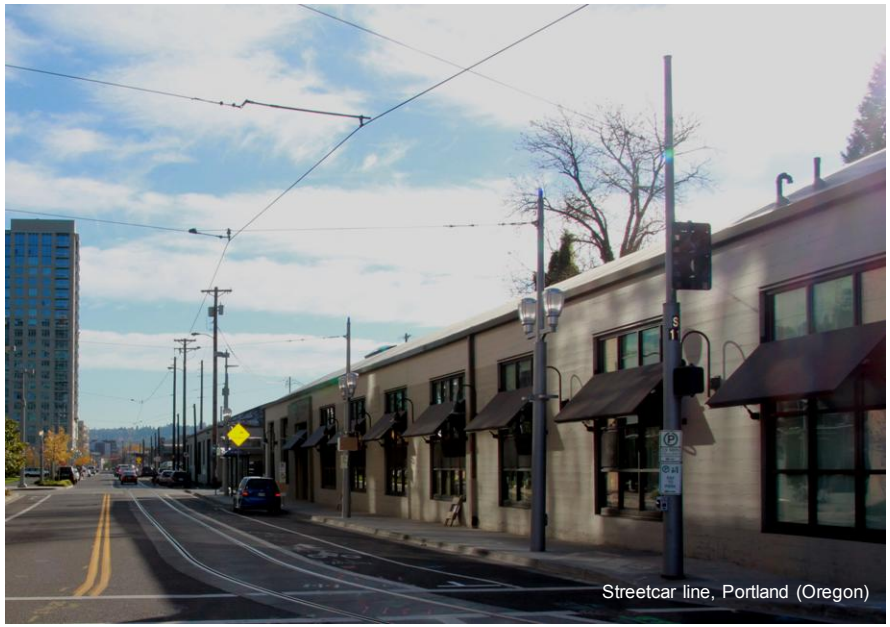
Other Facilities

- Maintenance and storage yards
- Traction power components
- Catenary

Traction power transformer, unknown location

Catenary, Bay Area California

Streetcar storage and maintenance facility, Seattle (Washington)

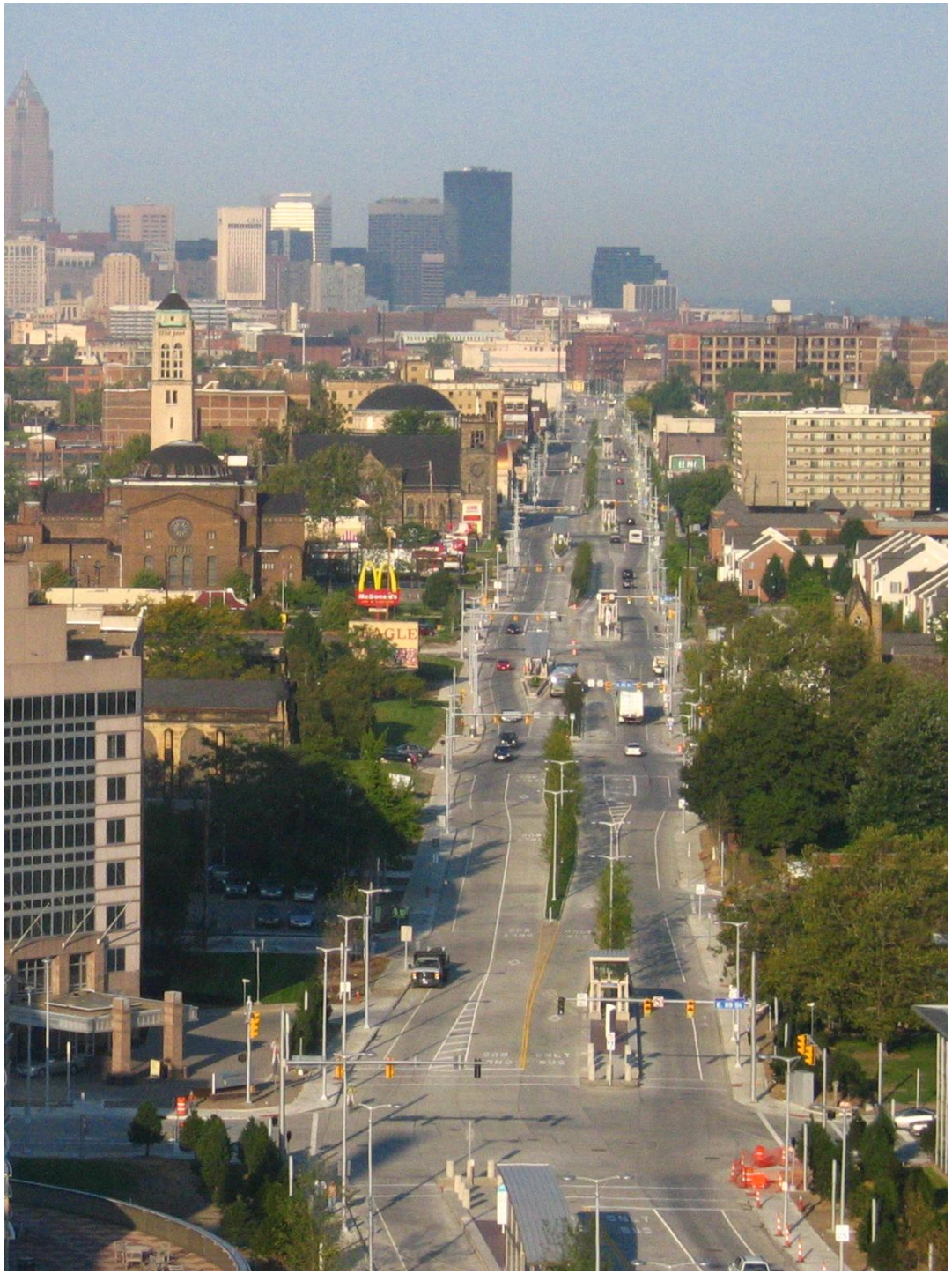


Streetcar line, Portland (Oregon)

INTEGRATION INTO URBAN PLACES

Pioneer Square transit station, Portland (Oregon)

Bus stop, Charlotte (North Carolina)


Healthline BRT, Cleveland (Ohio)

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STREETSCAPE

- Green runningways
- Landscaped medians
- Catenary does not need to damage the tree canopy

Rail lines, Portland (Oregon)


Healthline BRT, Cleveland (Ohio)


Emerald Express BRT, Eugene (Oregon)

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STREETSCAPE

Transit street, Portland (Oregon)


Bus stop, Portland (Oregon)

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MULTIMODAL CONSIDERATIONS: PEDESTRIANS & BICYCLES

LUAS Streetcar, Dublin (Ireland)

Cyclist on rail line, Portland (Oregon)

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