Cincinnati’s First BRT Lines

June 4, 2025

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Reinventing METRO (2018)

Connections to Jobs
Service to over 93,393 jobs

Infrastructure Improvements
$300 million for improved roads, sidewalks, & bridges for Hamilton County

On-Demand Service
On-Demand Transit with MetroNOW!

Mobility for All
Ensuring mobility for all with $500,000 annually to low-income riders

Crosstown Routes
Better connections with 7 crosstown routes

Expanded Service and Frequency
Seven 24-hour routes, plus 24/7 Access Service

New Facilities
Upgraded bus stops, and a New Transit Center

Enhanced Fleet
Convenience with free WIFI and charging ports on buses, Transit app

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20K
MORE JOBS ACCESSIBLE BY METRO

740
MORE EMPLOYERS ACCESSIBLE BY METRO

850M
TOTAL WAGES ACCESSIBLE BY METRO

93K+
ADDITIONAL JOBS ACCESSIBLE BY METRO

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What is Bus Rapid Transit?

By operating in dedicated lanes with fewer stop locations, BRT results in more frequent and faster bus service

By implementing transit priority measures in addition to BRT design elements, BRT can provide a more reliable service

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BRT services have unique brands and identities that separate them from other services

Better designed vehicles, stations, and roadways lead to a more welcoming and attractive service

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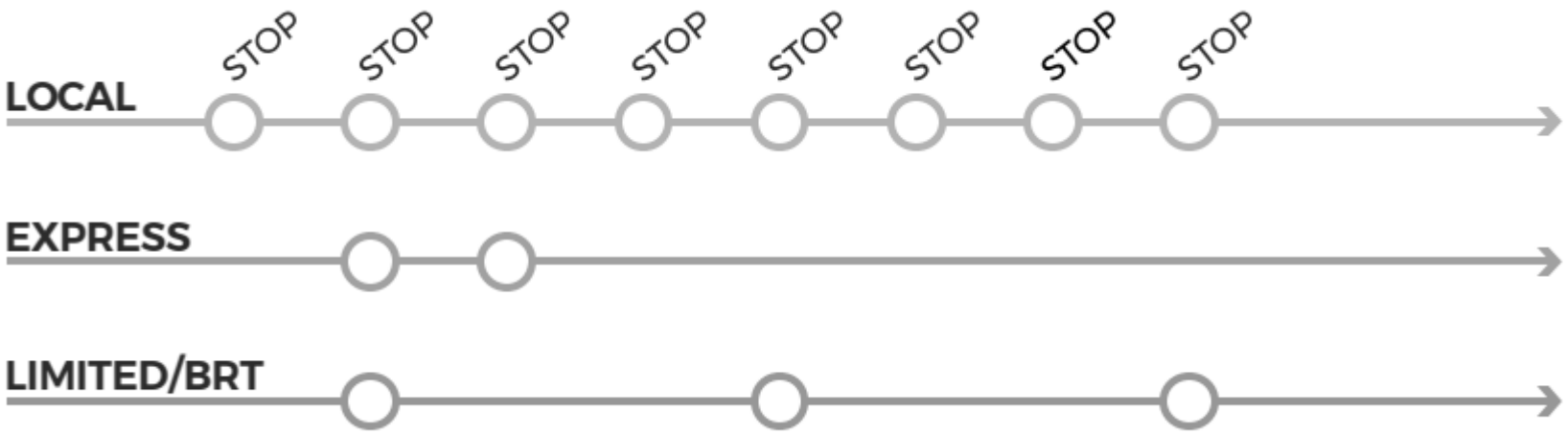
Traditional Service vs BRT Service

- **Local:**
  - On-Street
  - Frequent Stops
  - Variable stop types
  - On-board fare collection
- **BRT:**
  - Dedicated lanes
  - Longer stop spacing
  - Uniform stations
  - Platform fare collection



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BRT Benefits

- Improves systemwide capacity
- Improves speed and reliability on transit corridors
- Provides permanent transit investment to encourage economic development

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Bus Rapid Transit Project Development Process

Develop Alternatives

- Evaluate Corridors
- Environmental “Red Flag” Memo

LPA Concept Engineering

- FTA Small Starts
- 10% Design
- Station Location Evaluation

Preliminary Engineering

- Survey
- Traffic Analysis
- 30% Design

Environmental Documentation

- NEPA/Environmental Clearance

Final Design

- 60-100% Design
- R/W Acquisition

Construction & Revenue Service Initiation

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Bus Rapid Transit Study (2022-2023)

Bus Rapid Transit Study (2022-2023)

- ✓ Population & Density
- ✓ Demographics by Block Group
- ✓ Environmental Justice – Low Income – Minority – Zero Car Household Areas
- ✓ Employment Density & Activity Centers
- ✓ Transit Ridership & Performance
- ✓ On-Off Activity by Bus Stop
- ✓ Transit Delay Hotspots
- ✓ Corridor Travel Patterns (all modes)
- ✓ Traffic Conditions / Volumes, Left Turn Movement Locations, Delay Hotspots
- ✓ Roadway Geometry / Lanes / Parking
- ✓ Community & Neighborhood Plans and Initiatives
- ✓ Regional Plans
- ✓ Parcels with Development Potential

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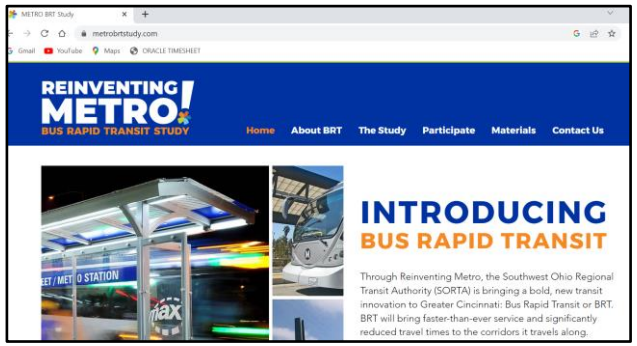
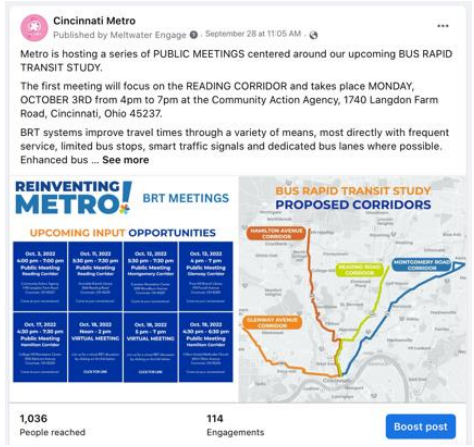
Bus Rapid Transit Study (2022-2023)





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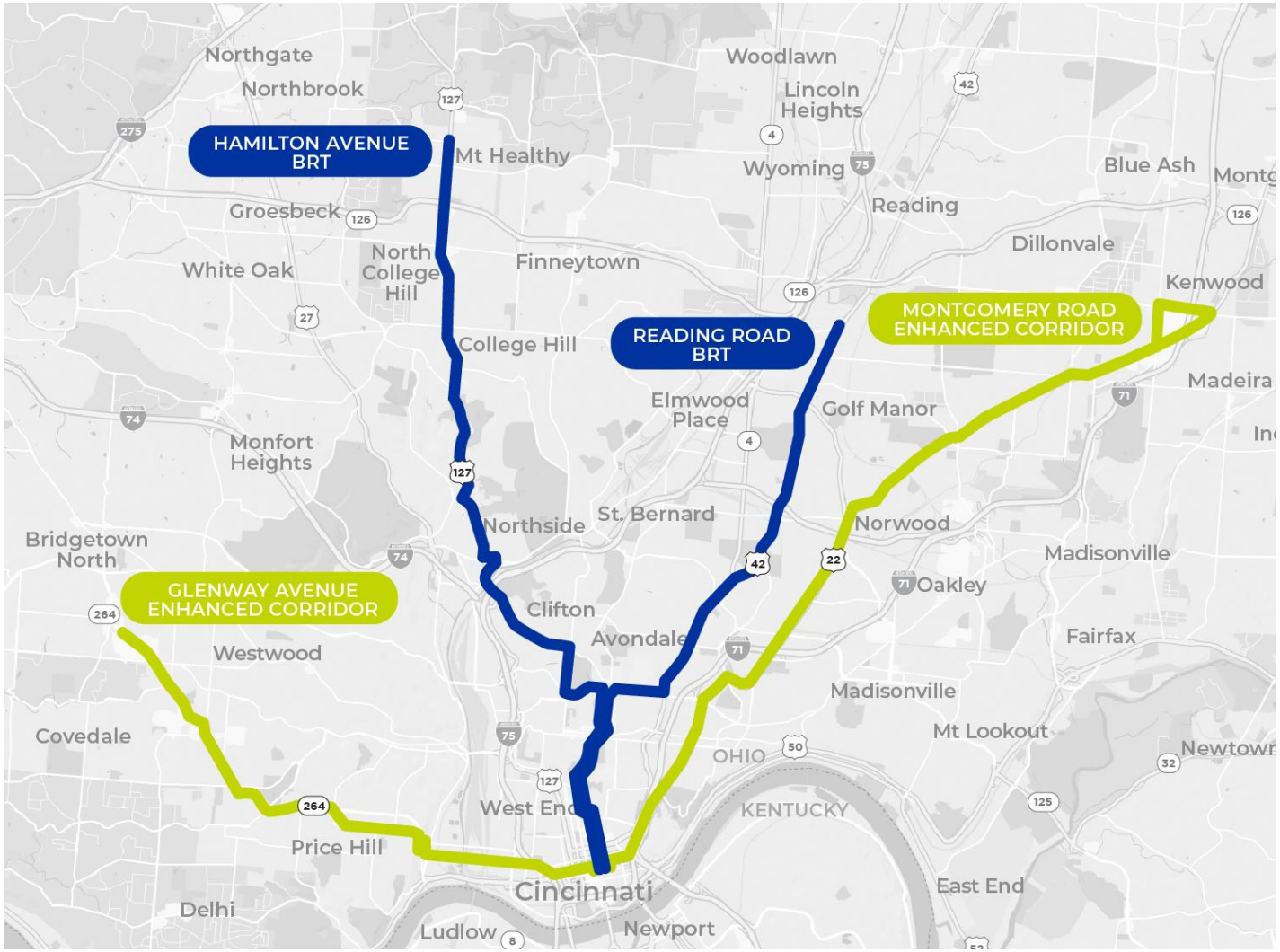
Bus Rapid Transit Study (2022-2023)



Resulting BRT and enhanced corridors

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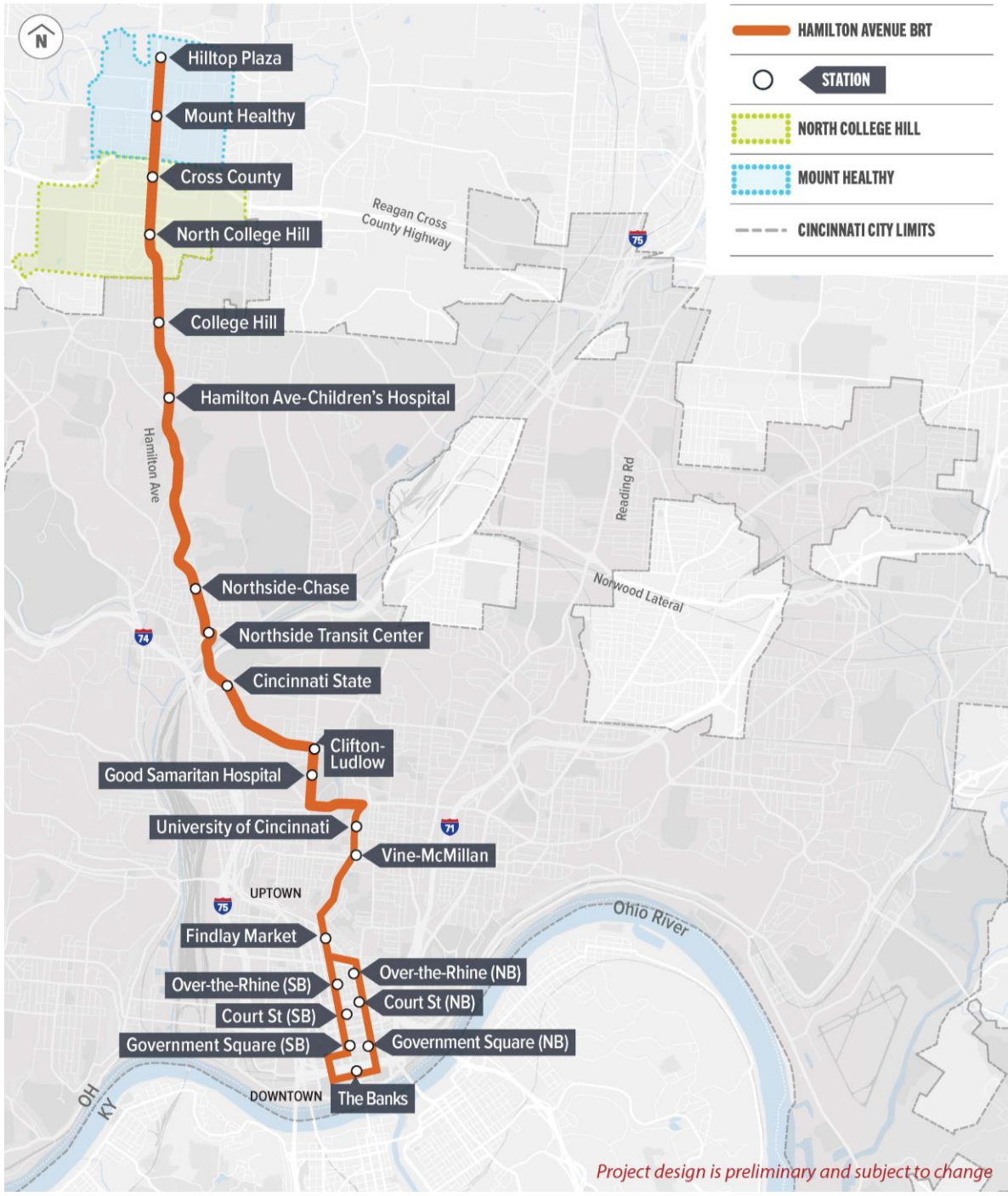
Reading Road Corridor

- 9.2 Mile Corridor
- 13 Station Areas
- ~85% Dedicated Bus Lanes
- 10-Minute Headways During Peak Periods

Hamilton Road Corridor

- 8.8 Mile Corridor
- 11 Station Areas
- ~80% Dedicated Bus Lanes
- 10-Minute Headways During Peak Periods



BRT Design Elements

- Branding
- Vehicles
- Running Way
- Stations
- Fare Collection
- Transit Signal Priority (TSP)

Branding

BRT Branding conveys a recognizable, consistent and unique system identify and image

Vehicles

Stations

Running Ways

Vehicles

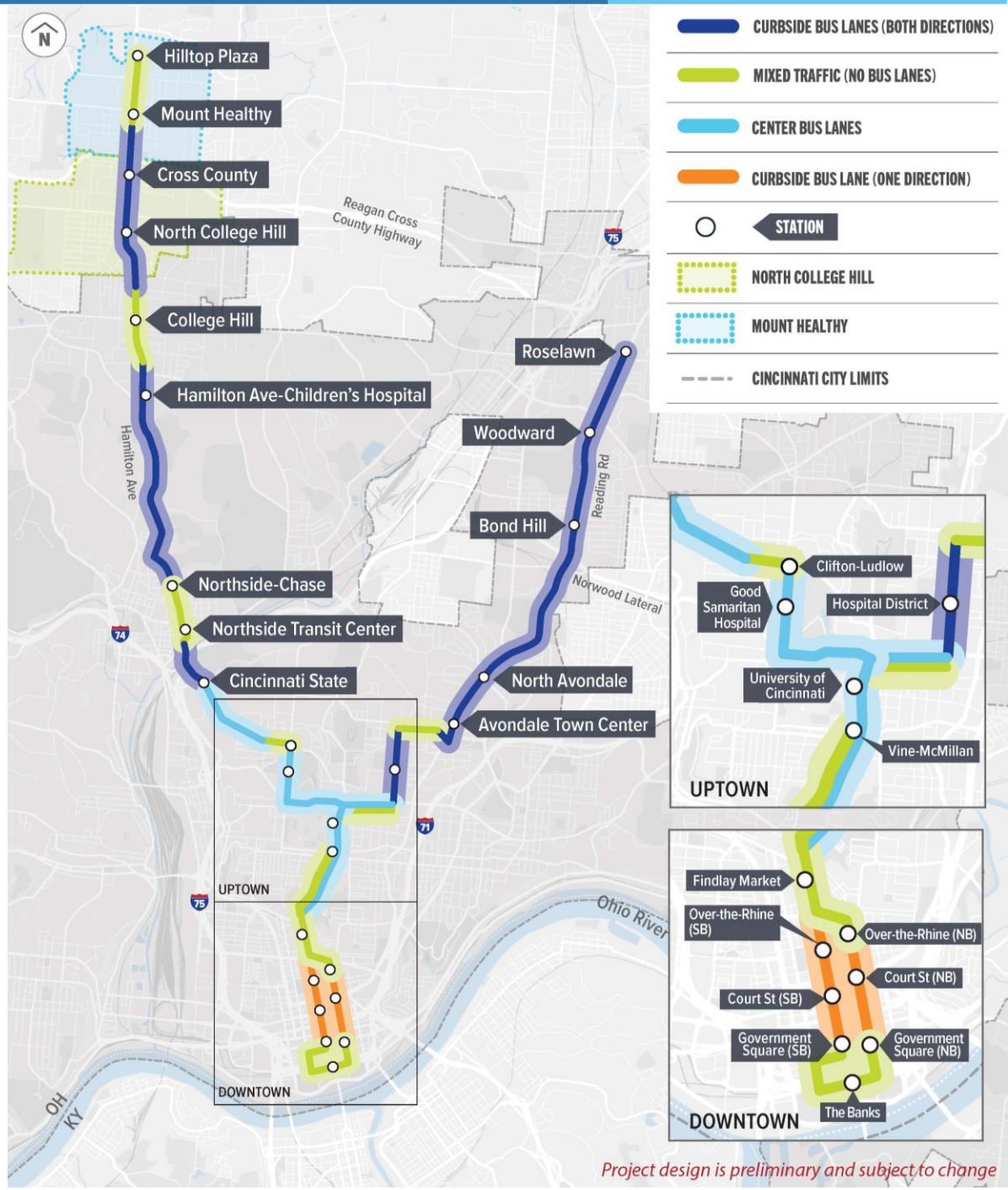
- BRT vehicles contribute to the overall success and operational capacity of BRT
- When determining vehicles, the following should be considered:
  - Vehicle size and seating
  - Door configuration
  - Passenger amenities
  - Accessibility
  - Bicycle accommodation

Running Way

- Dedicated median busway on-street
- On-street curbside bus lanes or offset bus lanes
- Mixed-use lanes with queue jump lanes
- Distinctive pavement treatment
- Bi-directional option

Running Way

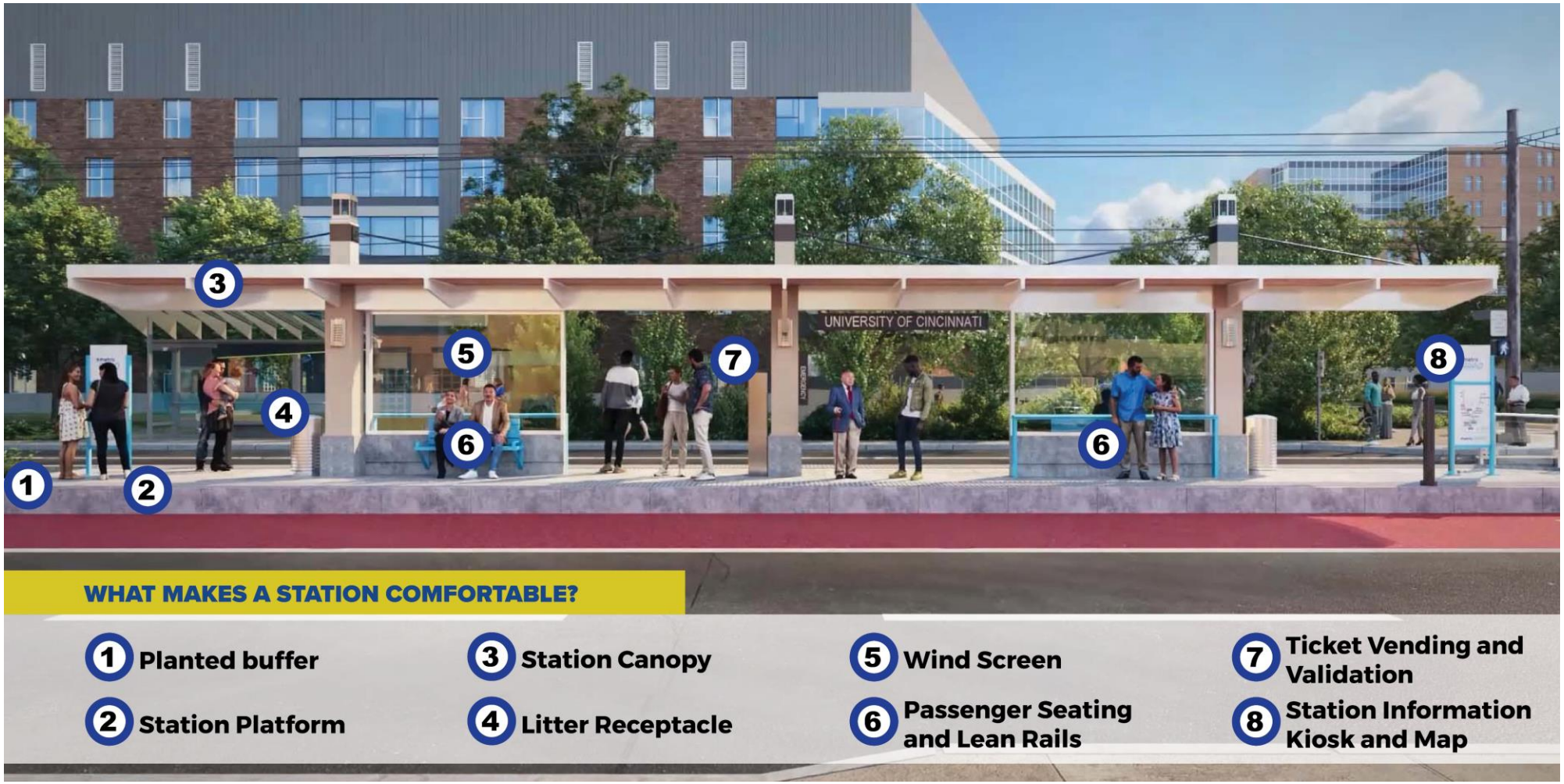
- Downtown
  - Curbside Bus Lanes
  - Mixed Traffic
- Uptown
  - Center-running Bus Lanes
  - Mixed Traffic
- Reading
  - Curbside Bus Lanes
- Hamilton
  - Curbside Bus Lanes
  - Mixed Traffic



Stations

- Three station types
  - Curbside
  - Center
  - Neighborhood Business District
- Station type determined based on site-specific conditions at each location

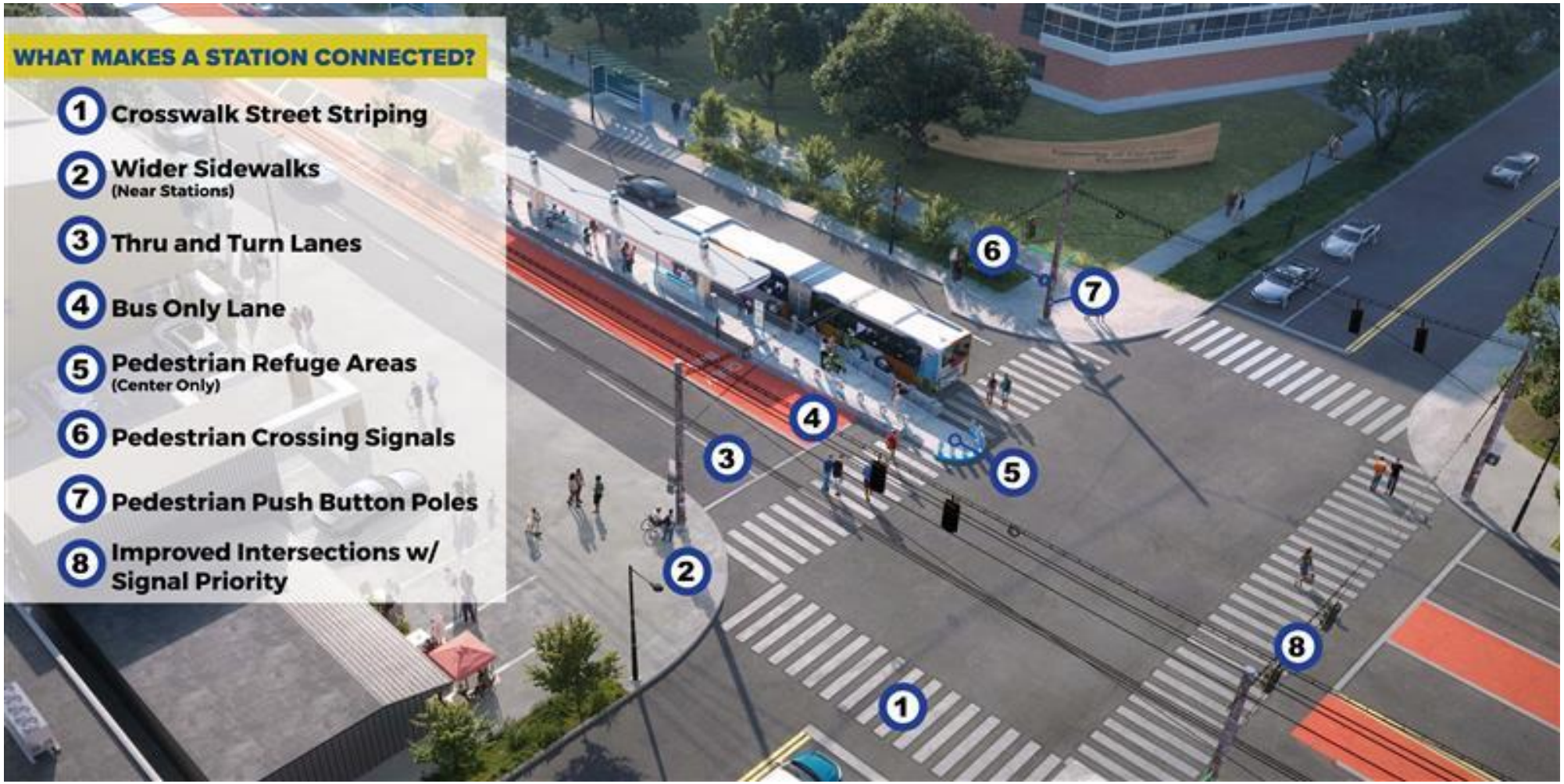
Stations – Comfort Features



Stations – Safety Features

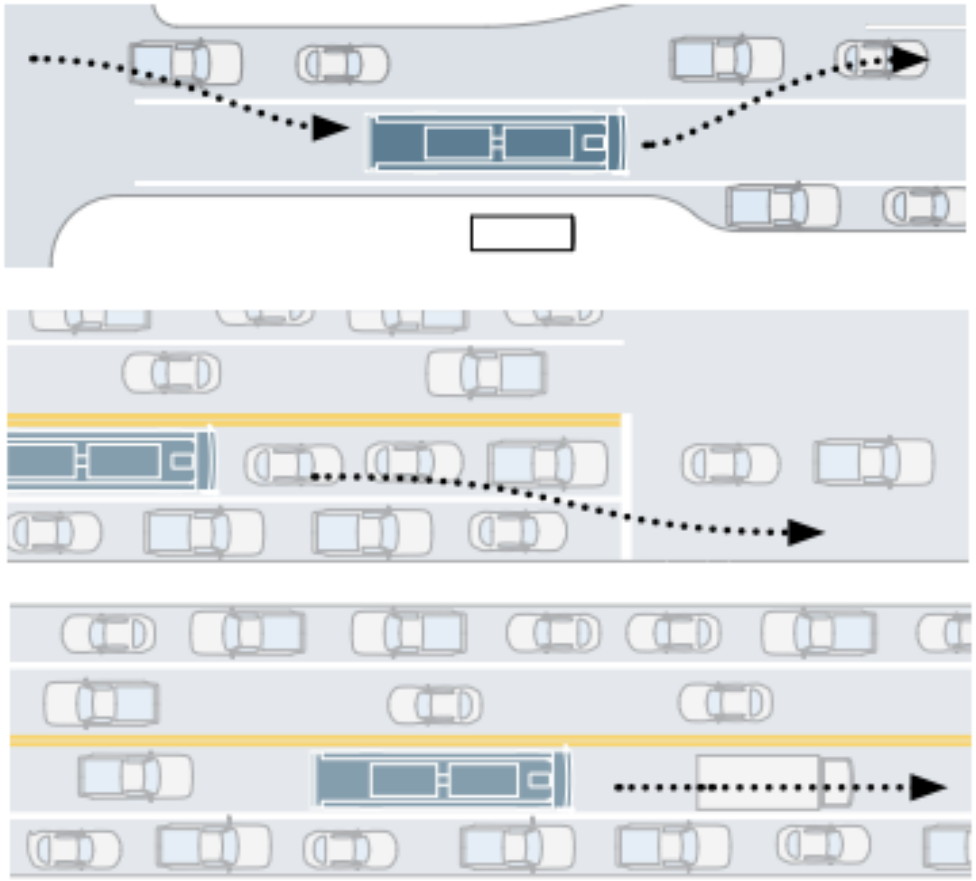
Stations – Accessible Features

Stations – Connected Features



Travel Time & Reliability Challenges

- Congested Intersections & Streets
- Right & left turn queues
- Heavy curbside loading activity
- Long boarding times
- Frequent stopping at signals & closely spaced stops
- Double stopping at stops/signals



Transit Signal Priority

Passive Priority

- Operates continuously, based on knowledge of transit route and ridership patterns.
- Does not require the hardware and software investment.
- Does not require transit detection/priority requests.

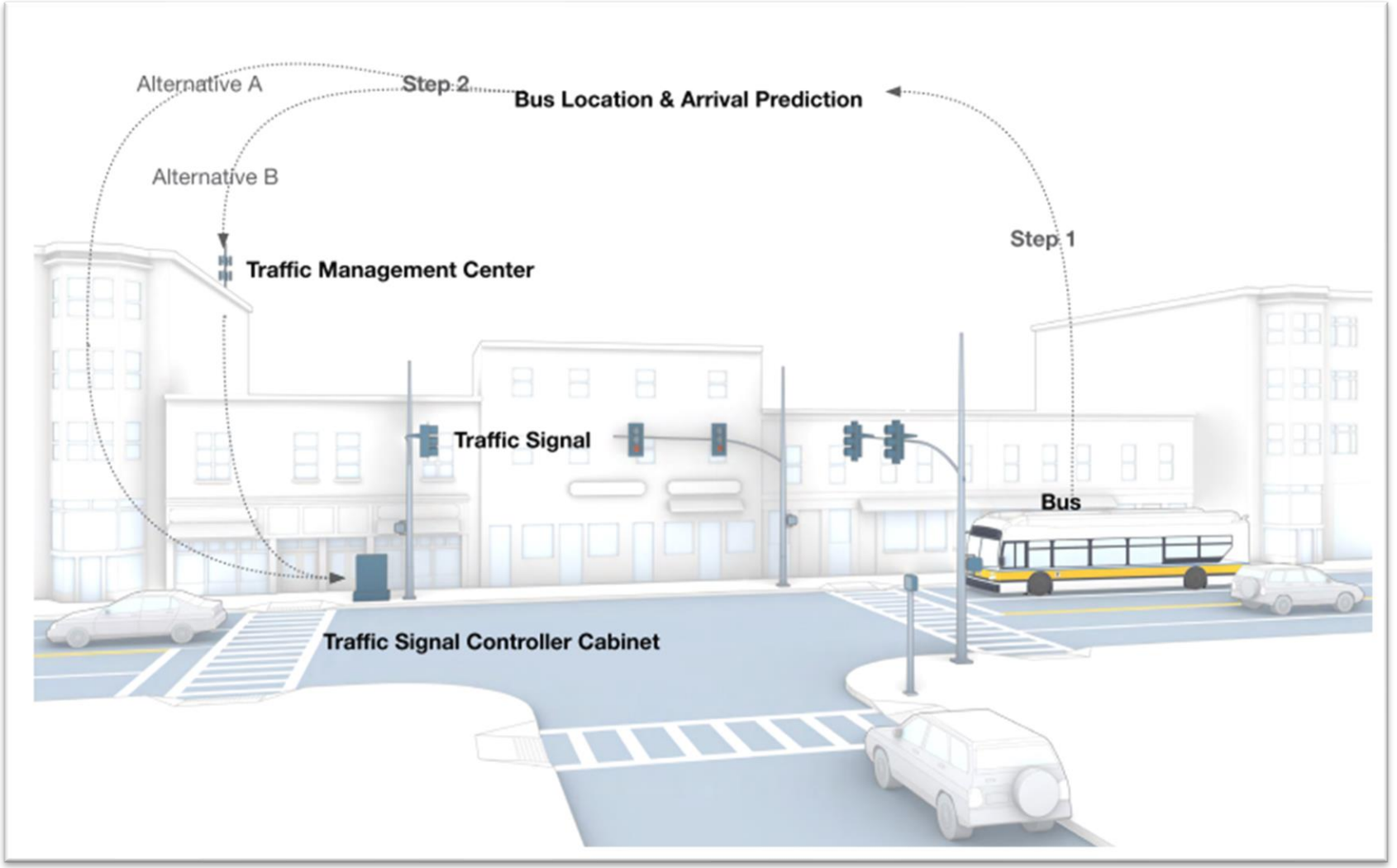
Active Priority

- Provide priority treatment to a specific transit vehicle following detection and priority request.
- Can be scheduled for certain times.
- Can be tied to the bus schedule, only giving priority when a bus is behind schedule.

Adaptive Priority

- Provides transit priority while optimizing general traffic progression and vehicular delays.
- Possible to account for person delay, transit delay, vehicle delay, and / or a combination of these criteria.

Transit Signal Priority



TSP Benefits and Use

- Experiences from prior deployments generally indicate bus travel time savings on the order of **15%** (depending on the exiting delay) with minor impacts on the overall intersection operations.

- TSP is effective in high-volume conditions up to **LOS of E** or a **v/c** ratio of about **0.9**.

- TSP can be used for the following conditions:
  - Transit Lane
  - Shared Right Turn/ Queue Jump
  - Near-Side or Far-Side; Pull-Out or In-Lane
  - Upstream Green Truncation
  - Mixed Travel
  - Phase Insertion/Phase Sequence Change

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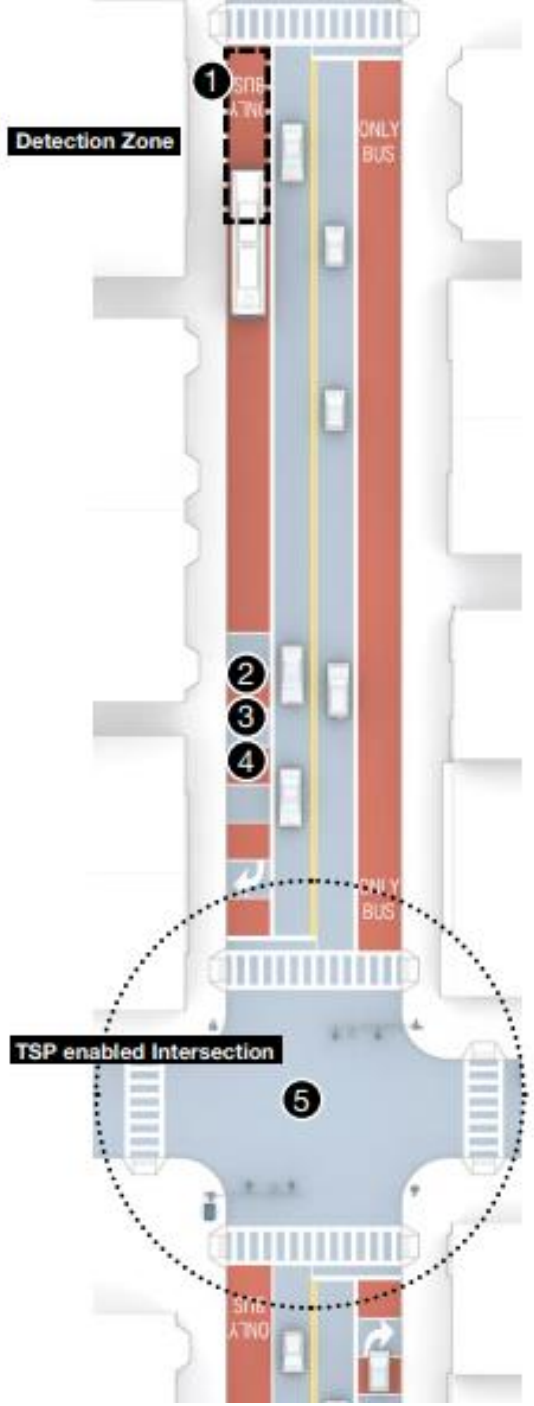
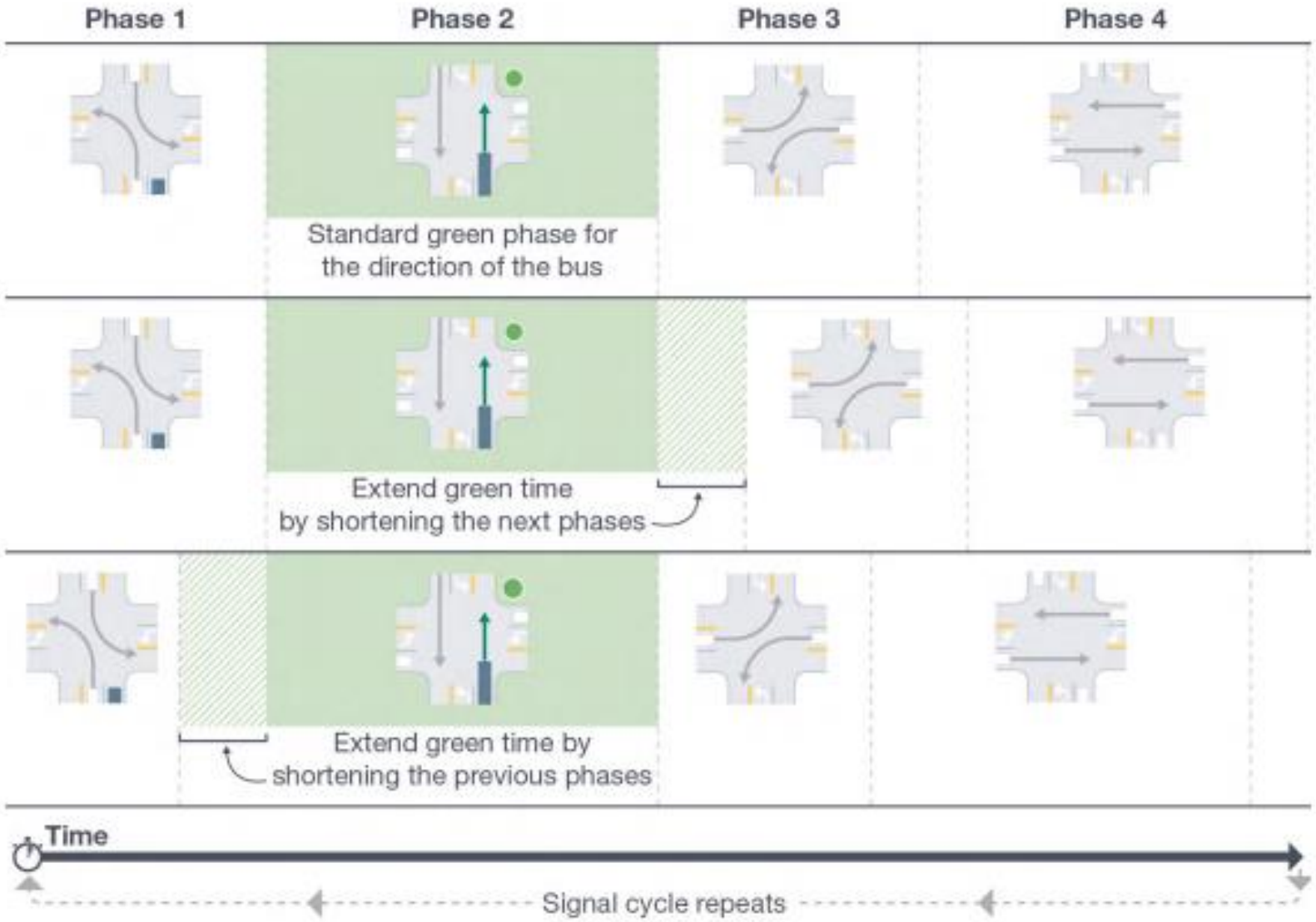
TSP in a Dedicated Lane

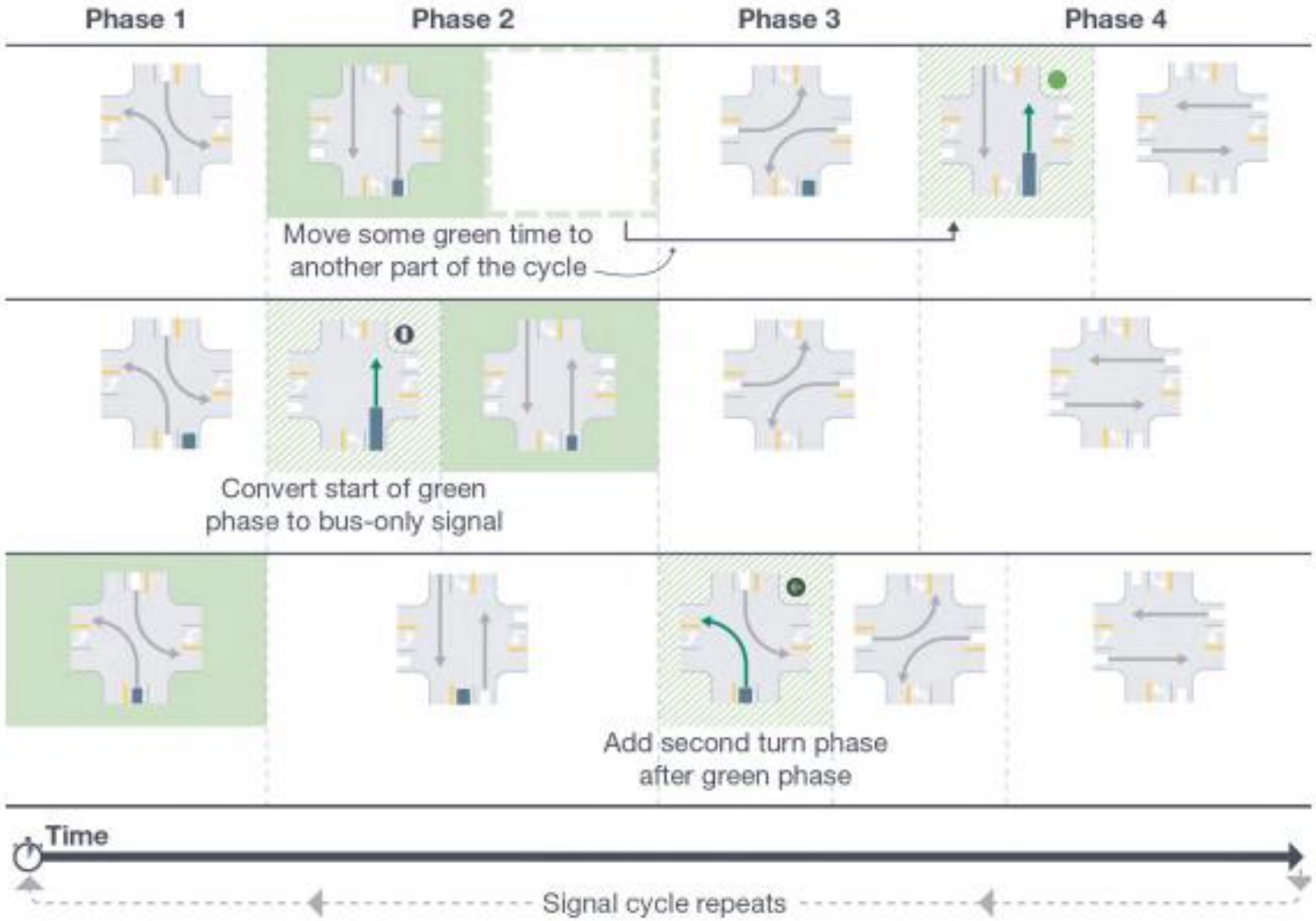
1. **Detection Zone:** Set detection zone for the bus at the farside of the upstream intersection to the TSP enabled intersection to maximize the amount of time for the controller to respond to the TSP call.
2. **Enforcement :** Ensure there is a strategy to prevent activities such as illegal parking, standing, or traveling in the bus lane.
3. **Turn Volume :** Account for right and left turn volumes.
4. **Traffic Volumes and Queueing :** Use dedicated lanes where there are high vehicle volumes and where the bus is often delayed due to vehicle queuing.
5. **TSP Strategies :** Can support all TSP strategies including green extension, red truncation, phase insertions, green reallocation and transit signal optimization (adaptive corridors).



Early Green & Green Extension



Phase Additions



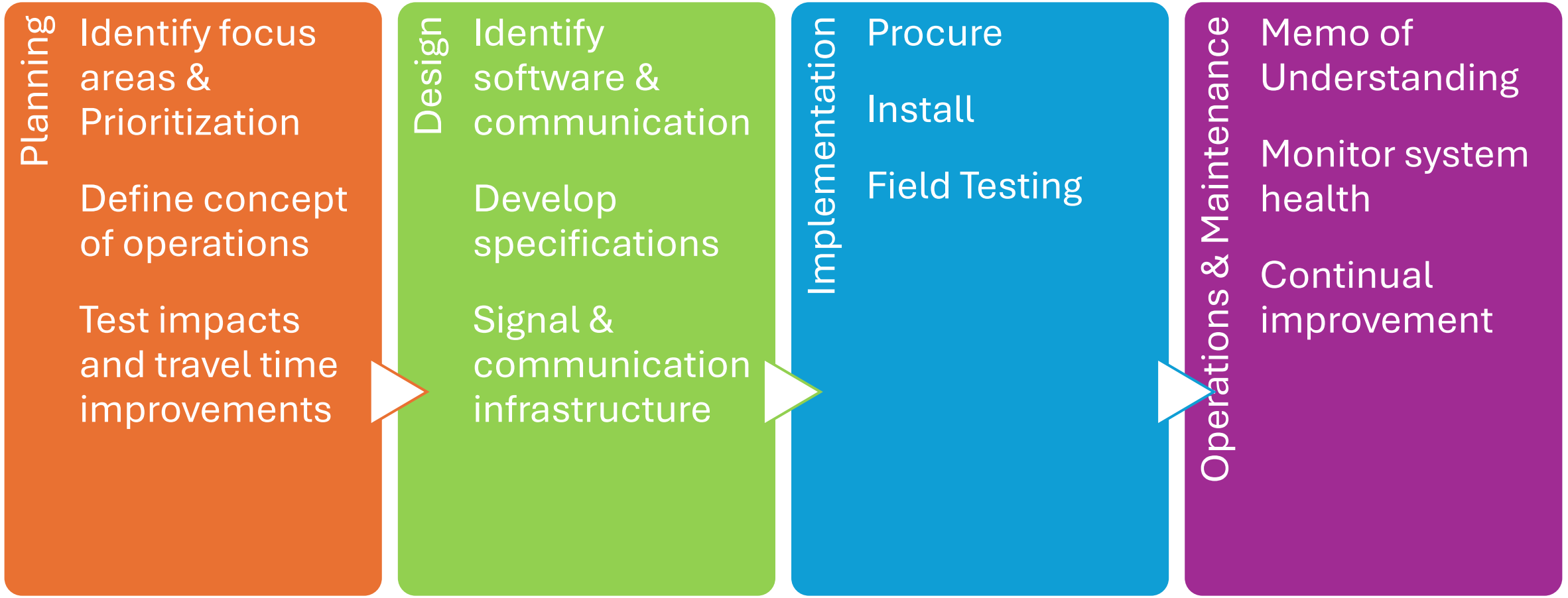
TSP Efficacy & Challenges

- **Flexibility in Signal Timings:** could mean breaking with coordination for a cycle to serve the TSP request or increasing the cycle length so phases are not all set to the minimum time to serve pedestrian crossings so that time can be borrowed from other phases to serve the TSP request.

- **Moderate Congestion:** works best for intersections with moderate levels of congestion.

- **Newer Technology to support TSP Operations:** functionality of TSP would be impacted by limitations in software.

TSP Implementation Process



Project Timeline

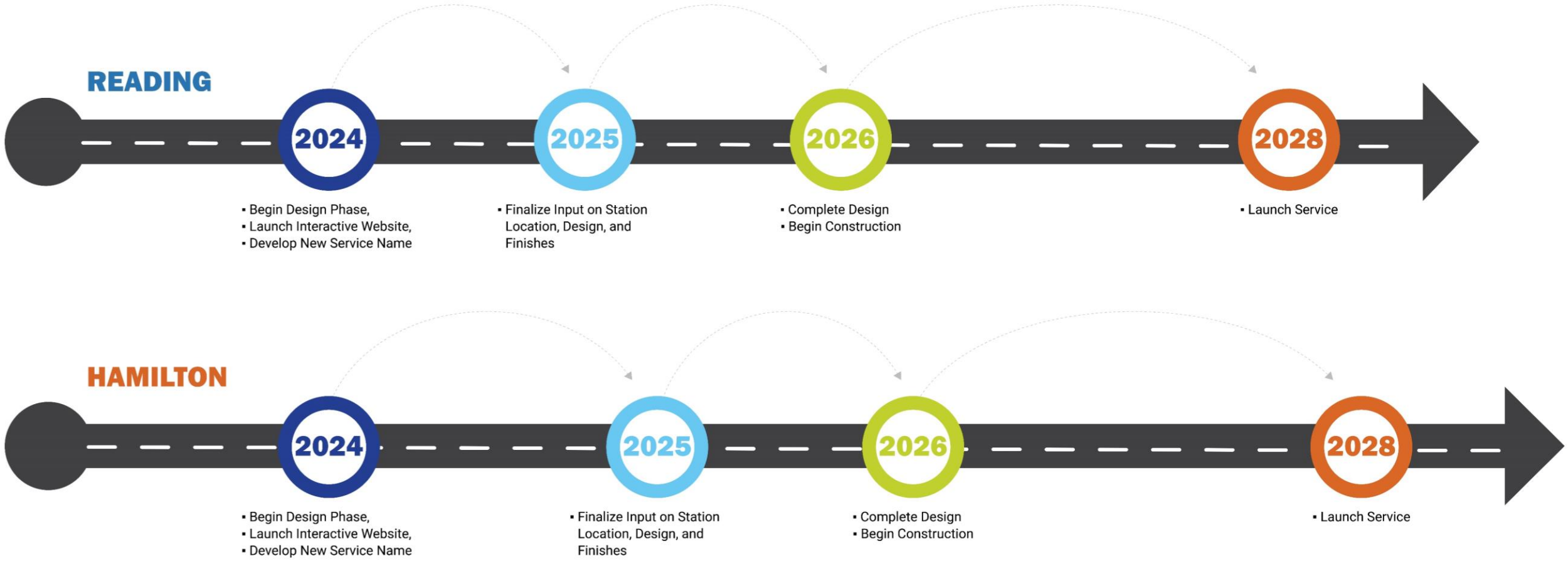


Photo Credit: Maya Drozdz, Heart of Northside

THANK YOU

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