

# Bus Rapid Transit in Howard County

Howard County Office of  
Transportation

# Agenda

1)What is BRT

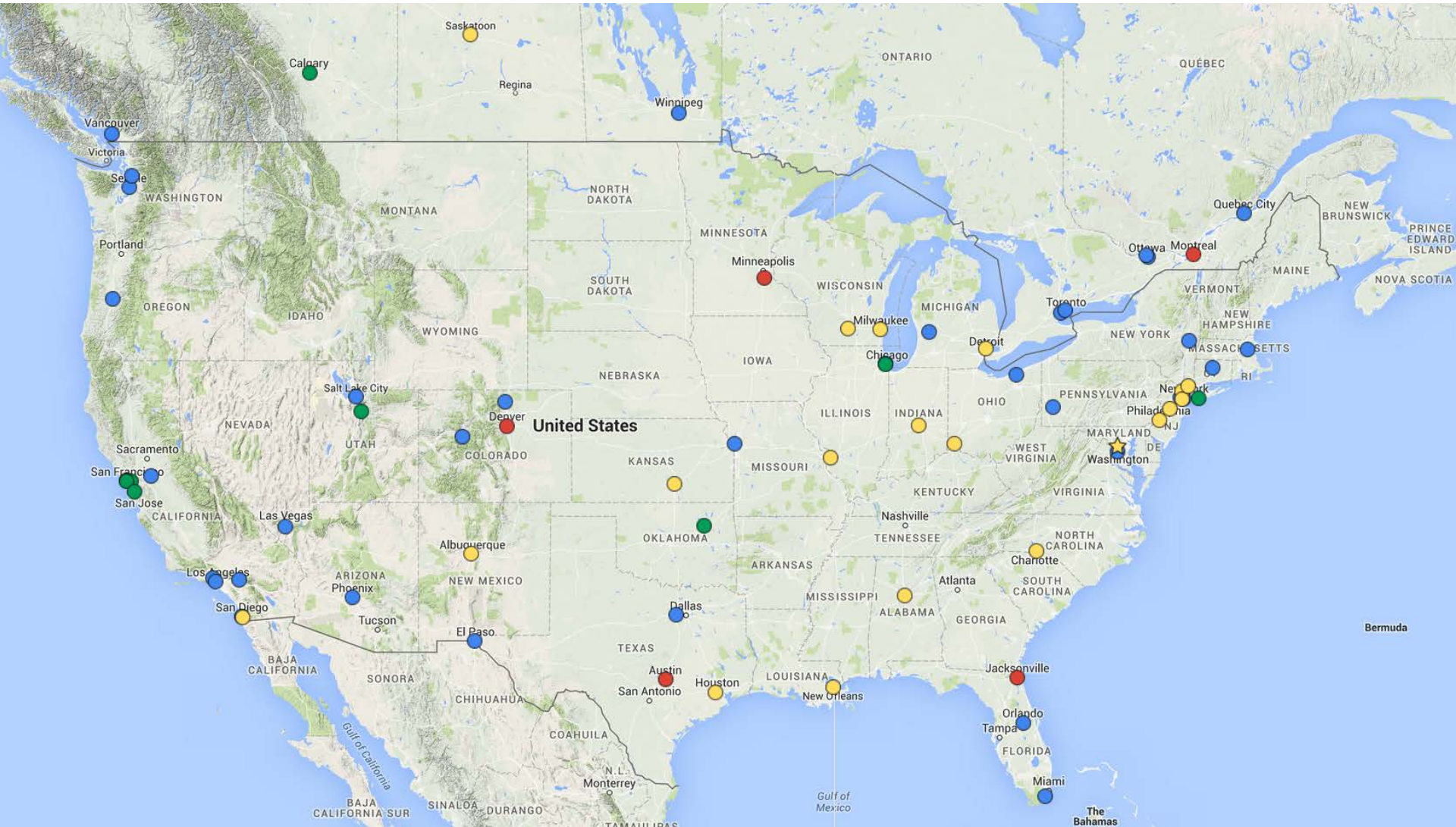
2)What Issues can BRT Solve

3)BRT Planning in Howard  
County

# What is BRT?



# BRT in North America



# BRT FUNDAMENTALS

## Dedicated Rights-of-Way



# BRT FUNDAMENTALS

## Alignment



# BRT FUNDAMENTALS

## Off-board Fare Collection



# BRT FUNDAMENTALS

## Intersection Treatments



# BRT FUNDAMENTALS

## Platform-level Boarding



# Routes and Service

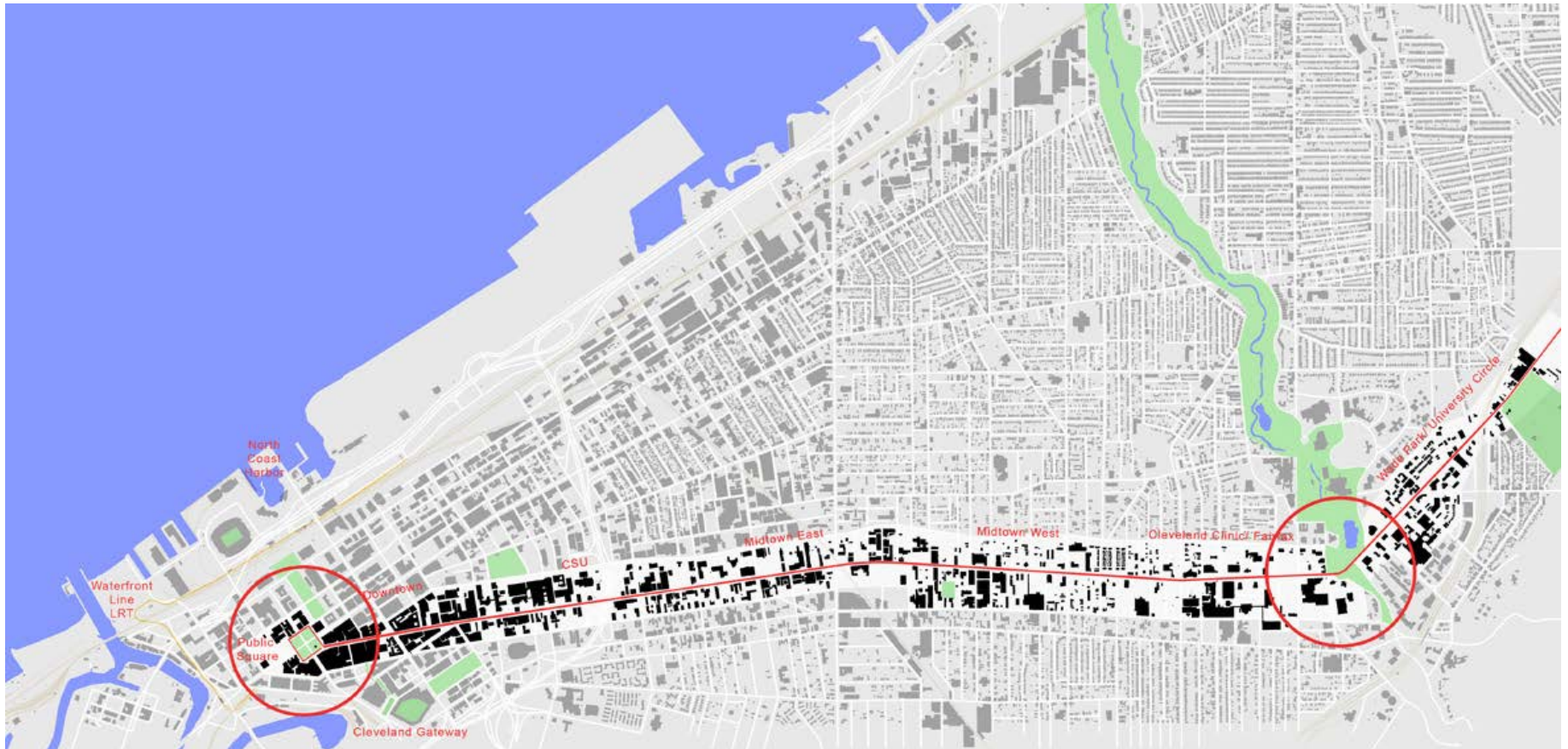
- Direct and more widely spaced stations
- High frequency, turn up and go
- Anchored by major activity centers
- Major corridors-Where people are!
- Feeder routes by local bus service, pedestrian and bike access



# Routes and Service

|  | <b>Boston</b>                  | <b>Chicago</b>                     | <b>Honolulu</b>                    | <b>Las Vegas</b>                   | <b>Los Angeles</b>                 |
|--|--------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
|  | <b>Silver Line</b>             | <b>Neighborhood Express</b>        | <b>City Express!</b>               | <b>MAX</b>                         | <b>Metro Rapid</b>                 |
| <b>Route Structure (Single BRT Route / Overlapping BRT Routes / Network of BRT Routes)</b> | BRT Route replaced Local Route | BRT Route Overlay onto Local Route | BRT Route Overlay onto Local Route | BRT Route Overlay onto Local Route | BRT Route Overlay onto Local Route |
| Number of Routes Operating in Network  | 1                              | 3                                  | 3                                  | 1                                  | 9                                  |
| Number of All-stop Routes  | 1                              | 3                                  | 3                                  | 1                                  | 9                                  |
| Number of Express Routes   | -                              | -                                  | -                                  | -                                  | -                                  |
| <b>Span of Service (Peak Hour Only / All Day)</b>  | All Day                        | All Day                            | All Day                            | All Day                            | All Day                            |
| <b>Frequency of Service (Headway during Peak Hour in Minutes)</b>                          | 4                              | 9 to 12                            | 11                                 | 12                                 | 2 to 30                            |
| <b>Station Spacing (Average Station Spacing in Miles)</b>                                  | 0.22                           | 0.47 to 0.56                       | 0.2                                | 0.84                               | 0.67 to 1.17                       |

# Routes and Service



# Vehicles

- Unique/distinct aesthetic design/look
- High capacity (articulated, bi-articulated)
- Wide aisles, increased passenger comfort
- Low-floor
- Large window design
- Increased amenities (laptop connections)
- Multiple double-wide doors
- Dual-sided entry/exit

# Vehicles



- Unique/distinct aesthetic design/look
- High capacity (articulated, bi-articulated)
- Low-floor
- Large window design
- Multiple boarding locations, wide doors

[Boarding Video](#)



# Vehicles

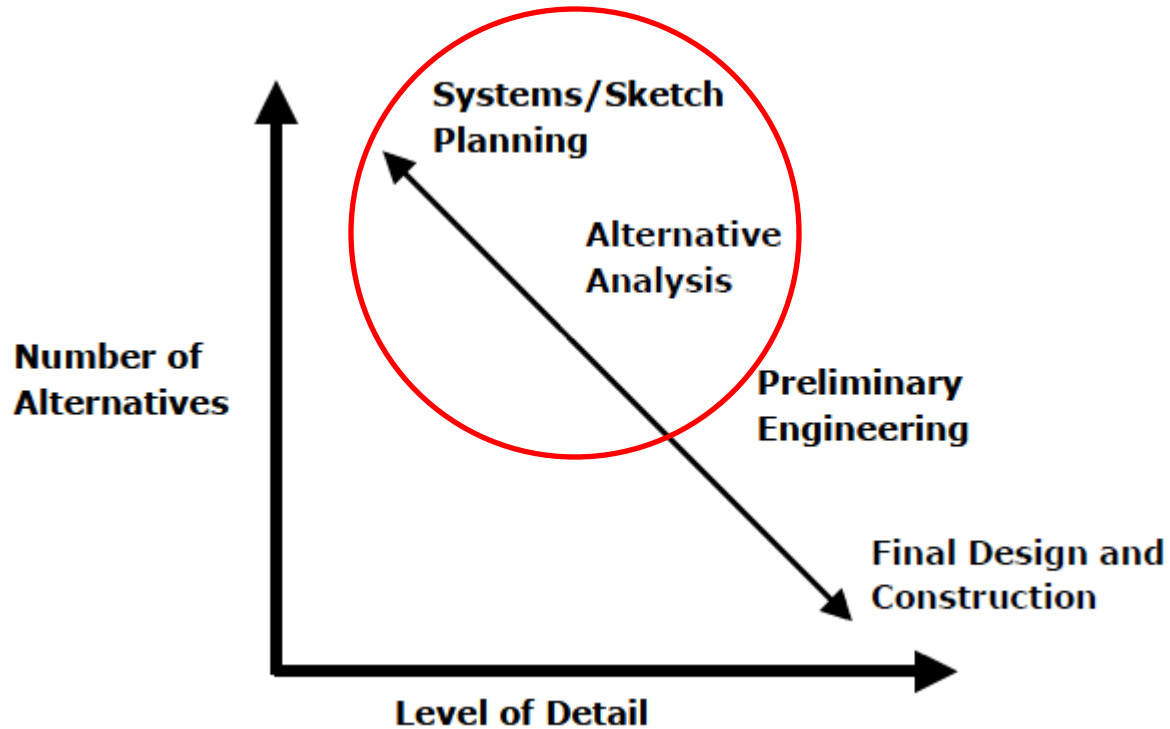
- Wide aisles, increased passenger comfort
- Increased amenities (laptop connections, wifi)
- Dual-sided entry/exit



# What Issues can BRT Solve

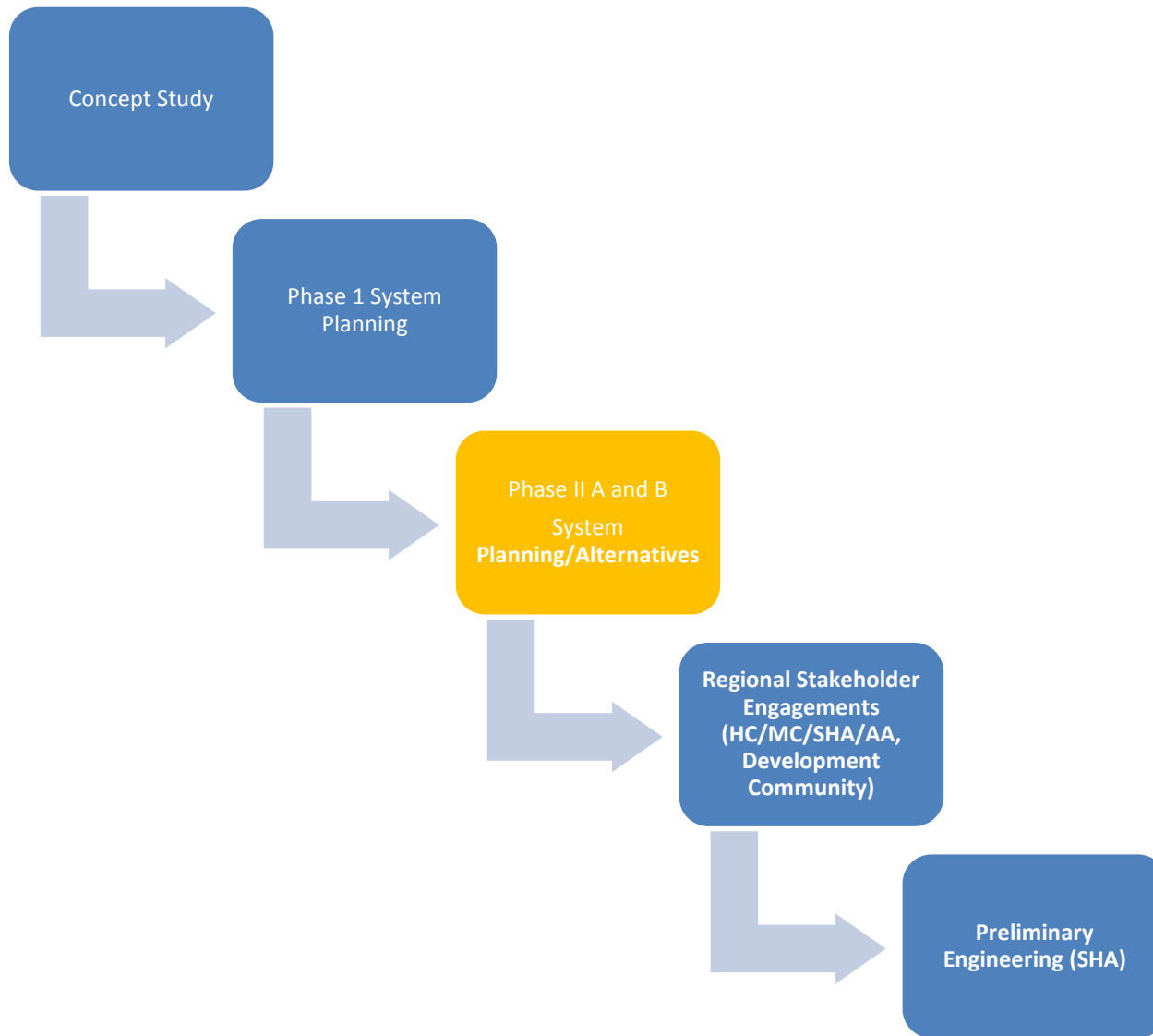
- Congestion - Takes cars off the road
- Travel Time - Provides a quicker trip
- Reliability - Improves punctuality
- More riders - Attracts more people to ride transit
- Capacity - Carries more people
- Economic development - Entices development close to stations

# BRT Planning in Howard County





# BRT Planning in Howard County



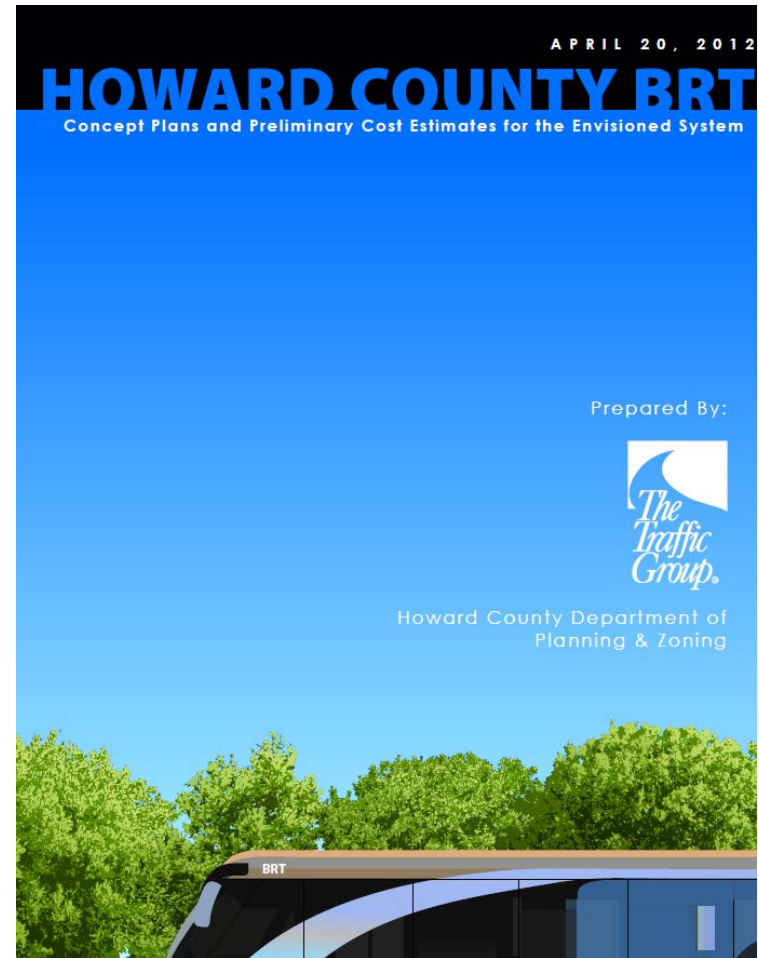
# BRT Planning in Howard County

## Concept Study

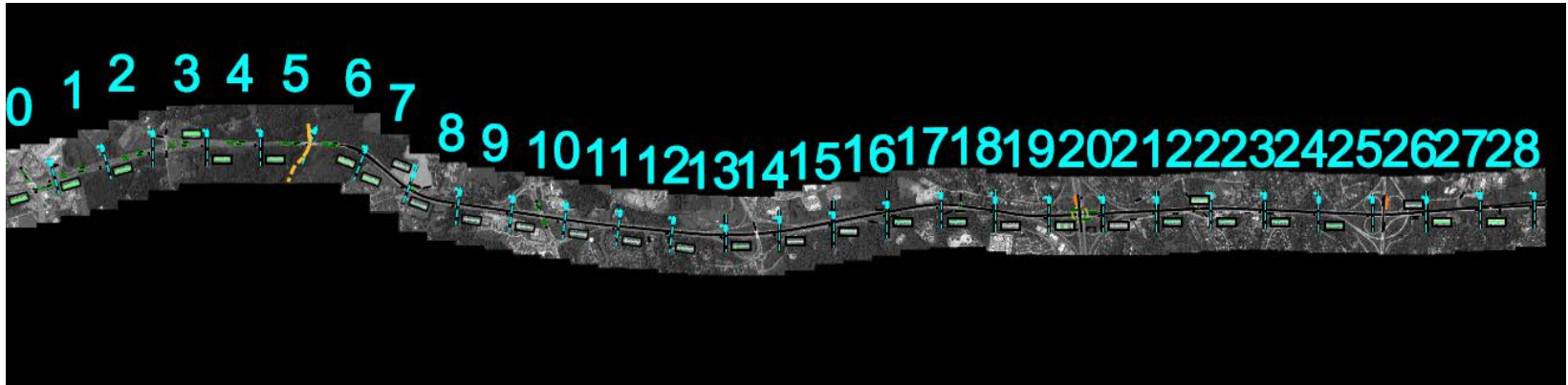
- Developed conceptual stations and alignments
- Guide way recommendations
- Conceptual station locations
- Developed opinion of probable cost- ie very unknown
- No Ridership

The Traffic Group has designed Howard County's Phase I Rapid Transit Vehicle System (B.R.T.) with the following goals and attributes.

- Rapid
- Efficient
- Cost-effective - different cross section typicals
- Quickly constructed
- Little or no environmental impact if bridges are not built for the transit ways
- Creative and Innovative (Example: Uses railroad right of way)
- Rapid Transit Technology - for vehicle and stations
- Traffic Engineering Problem Solving Techniques
- Little or No R.D.W. required
- Limited utility pole relocations



# BRT Planning in Howard County



## Corridors

- 29
- 32
- 216
- BLP
- CSX Row

# BRT Planning in Howard County



# BRT Planning in Howard County

## Phase I

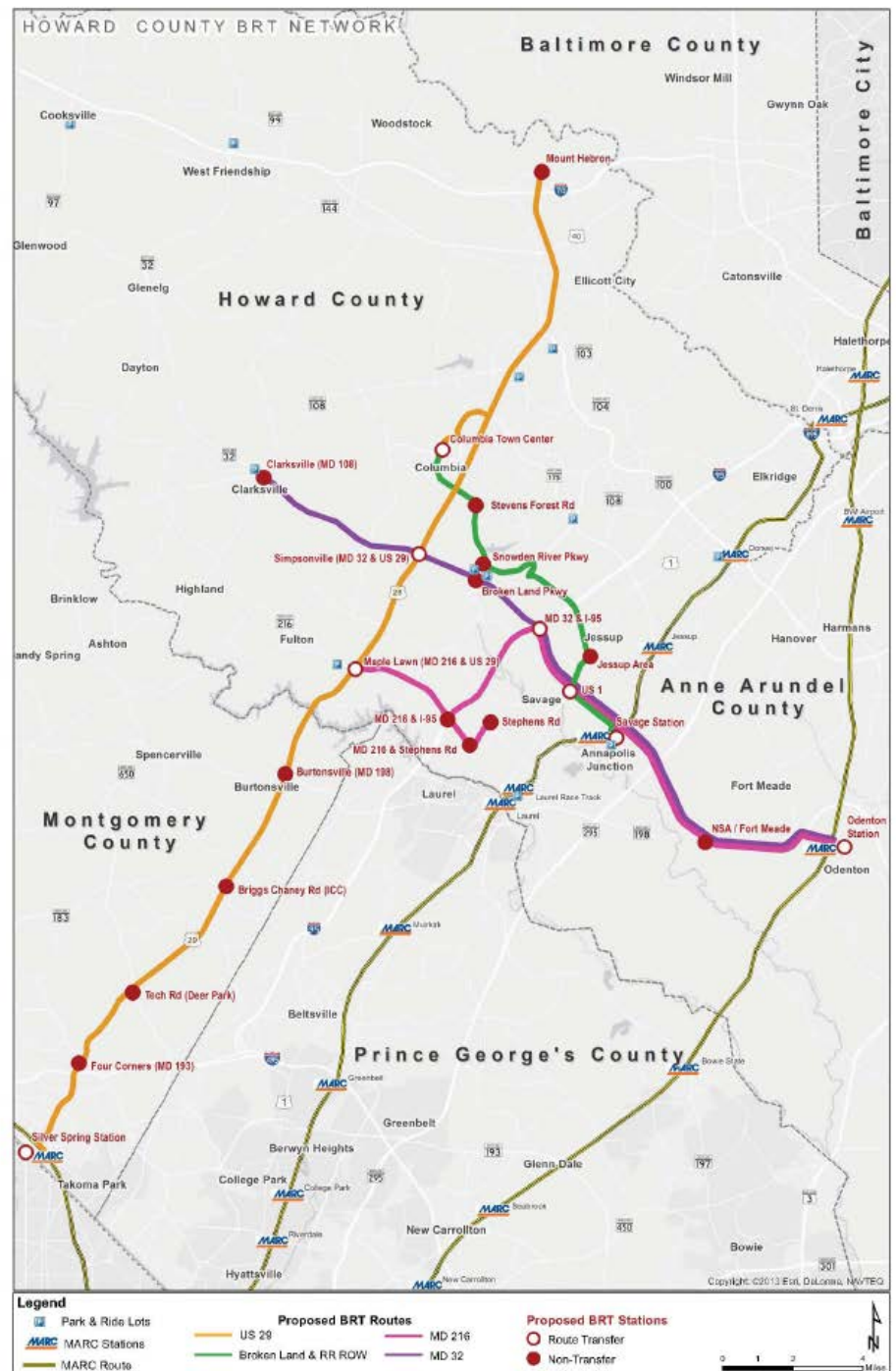
- Travel Forecasting Study
- BRT route evaluation
- Most viable networks
- Assumed: all day service, high frequency service, dedicated ROW



Countywide Bus Rapid Transit System  
Travel Forecasting Study  
October 2013



- **US 29** between Mount Hebron and Silver Spring
- **Broken Land Parkway** between Columbia Town Center and Savage MARC Station
- **MD 32** between Clarksville and Odenton Town Center
- **MD 216** between Scaggsville and Odenton Town Center





- **Ridership forecast model suggests US 29 and Broken Land Parkway, are viable**

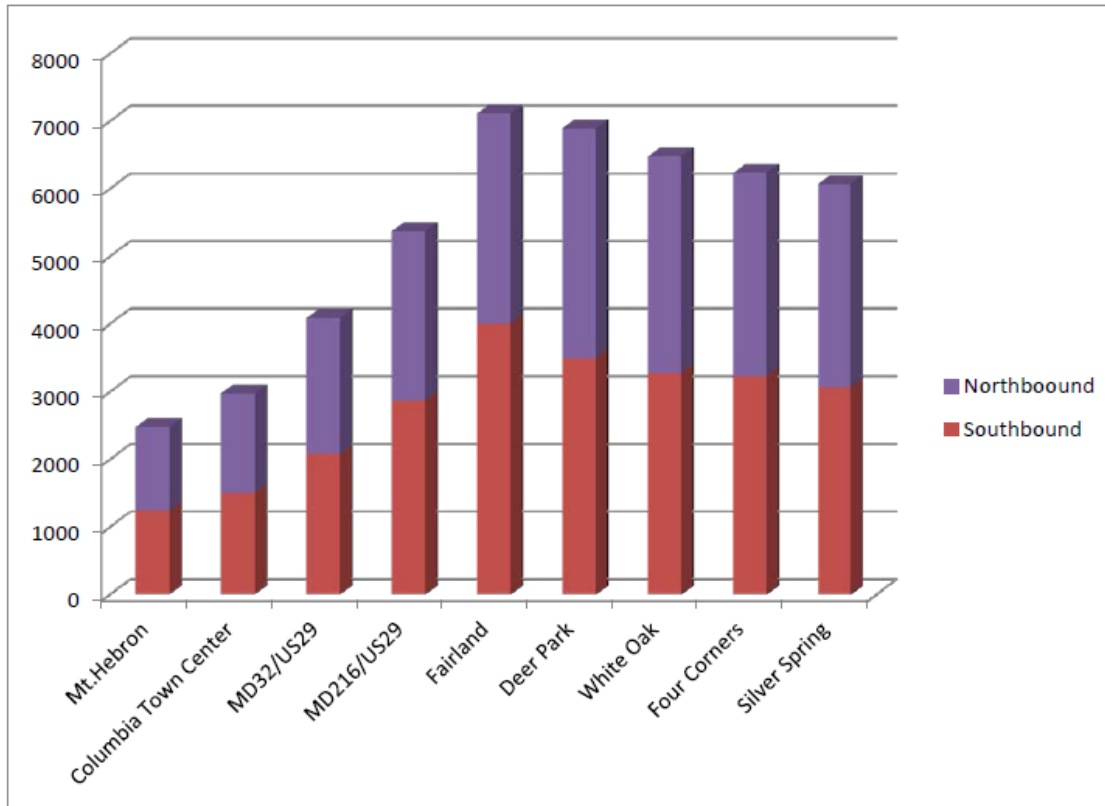


Figure 8. US 29 BRT Route Average Station Daily Boarding Forecasts.

- Average AADT reduction of 4.5% in Howard County and 3% in Montgomery County when compared to No Build year 2035 conditions.
- 2.5% more person-throughput in Montgomery County.
- Up to 23% faster travel time advantages between Burtonsville and Silver Spring
- A 500% increase in transit ridership when compared to current commuter bus ridership to and from Washington, DC.

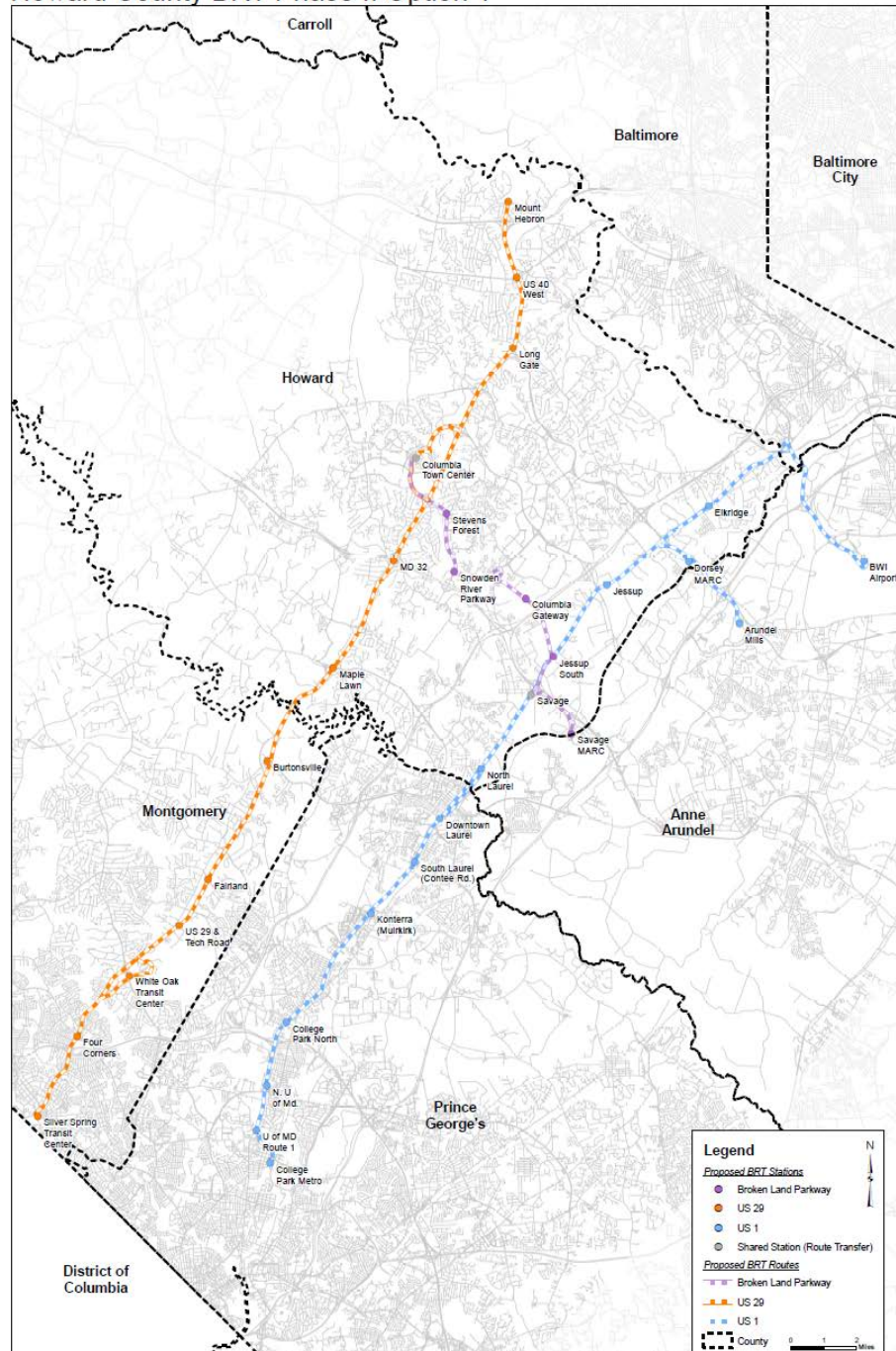
# BRT Planning in Howard County

## Phase II A and B

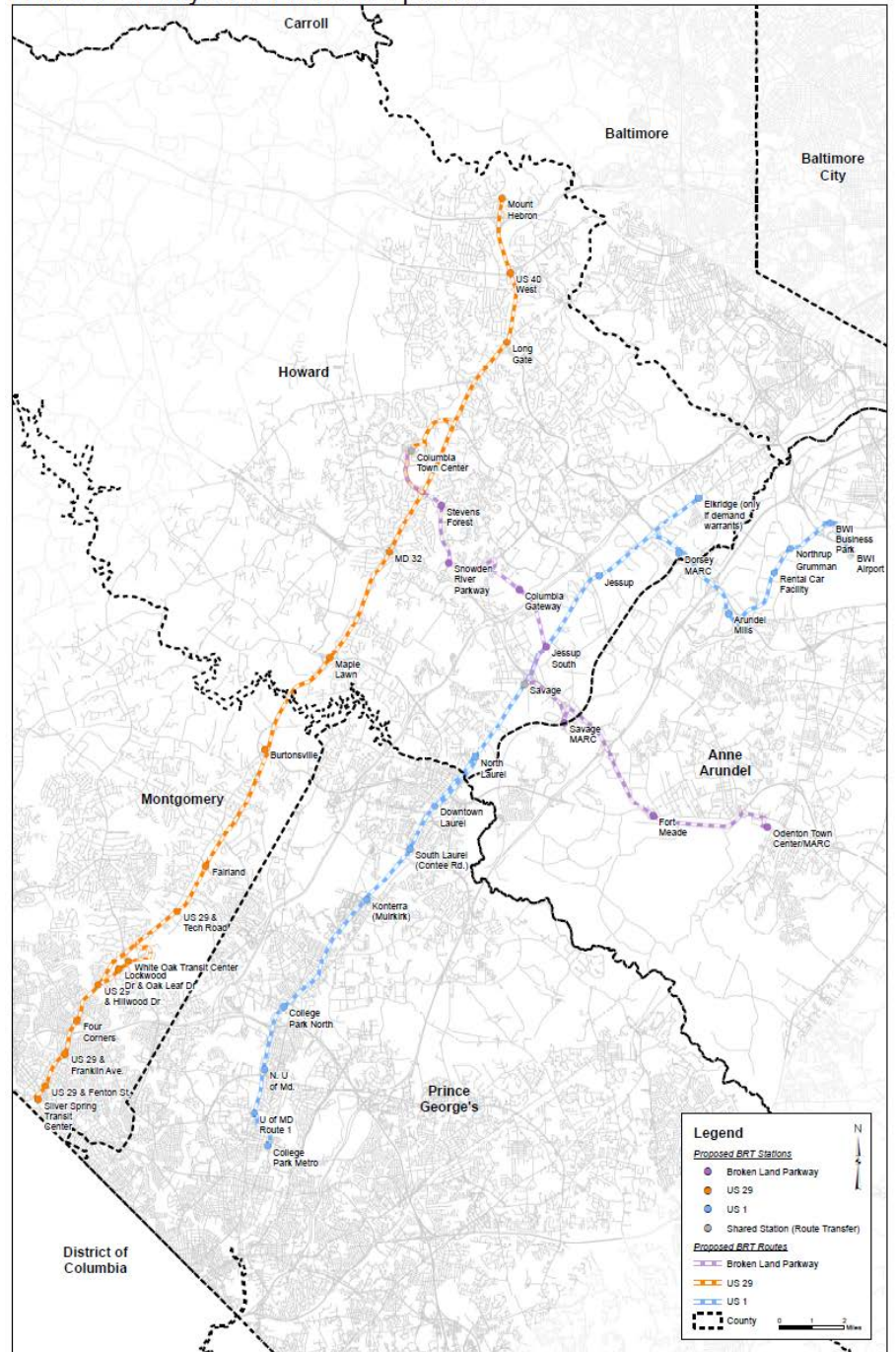
### Extend Work From Phase 1

- Refine BRT corridors to include local feeder networks, potential park-and-rides, and increased pedestrian accessibility
- Congestion reduction impacts on future transportation networks
- Develop alternative land use scenario Select alignments to test
- Develop Final recommendations and next steps
- Add Route 1
- Enhanced Regional Coordination

# Howard County BRT Phase II Option 1



# Howard County BRT Phase II Option 2



# Howard County BRT Phase II Study Corridors



## Bus Rapid Transit Phase II

### Long Gate Station US 29 & MD 100

#### LEGEND:

##### Proposed BRT Stations

- US 29
- US 1
- Broken Land Pkwy
- Shared (Route Transfer)
- Half Mile Station Buffer

##### Proposed BRT Routes

- US 29
- US 1
- Broken Land Parkway

##### Existing Surface Parking

- Paved Surface Parking
- Unpaved Surface Parking
- Public Surface Parking

##### Planned Surface Parking

- Future Park & Ride Lot

##### Existing Ped & Bike Facilities

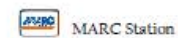
- Existing Sidewalk
- Existing Shared Use Path
- Existing Bike Lane
- Existing Paved and Striped Shoulder
- Existing Shared Roadway

##### Planned Ped & Bike Facilities

- Planned Ped Facility/Improvement
- Planned Shared Use Path
- Planned Bike Lane
- Planned Paved/Striped Shoulder
- Planned Shared Roadway
- Planned Cycletrack

##### Existing Transit

- Bus Stop
- Bus Route



##### Basemap Elements

- Railroad
- Parcels
- Buildings
- Vegetation
- County Line
- Water

Source: Esri, DigitalGlobe, GeoEye, iSat, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Sabra, Wang & Associates, Inc.

# What's Next

- Enhanced engagement with:
  - Montgomery County
  - Development community
  - SHA and MTA
  - Anne Arundel County

Funding/Buy in?