



# Route 1 Multimodal Alternatives Analysis

## Public Meeting #2

March 26, 2014



# Agenda

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**Welcome**

**6:00 – 6:15 pm**

**Presentation, Q&A**

**6:15 – 7:00 pm**

**Share your ideas**

**7:00 – 8:00 pm**







# 1. What is the Route 1 Multimodal Alternatives Analysis?

# Multimodal Alternatives Analysis

An **alternatives analysis** is a study that examines different options to address a transportation problem.

**Multimodal** means that a range of different transportation types will be evaluated.





# Purpose and Need

## Purpose:

Provide improved performance for transit, bicycle and pedestrian, and vehicular conditions and facilities along the Route 1 corridor that support long-term growth and economic development.

## Needs:

- Attractive and competitive transit service
- Safe and accessible pedestrian and bicycle access
- Appropriate level of vehicle accommodation
- Support and accommodate more robust land development



# Project goals

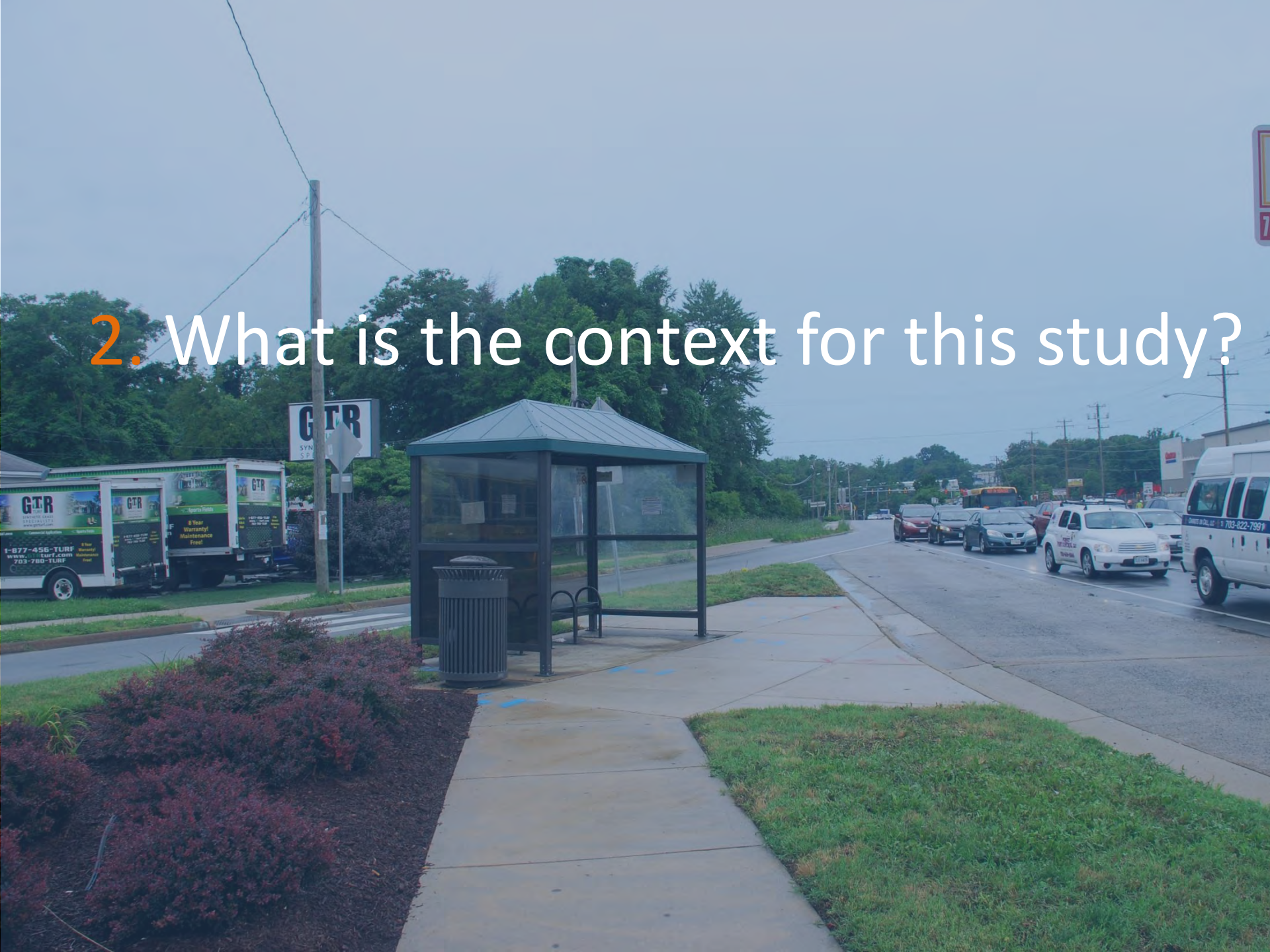
GOAL 1: Expand attractive multimodal travel options to improve local and regional mobility

GOAL 2: Improve safety; increase accessibility

GOAL 3: Increase economic viability and vitality of the corridor

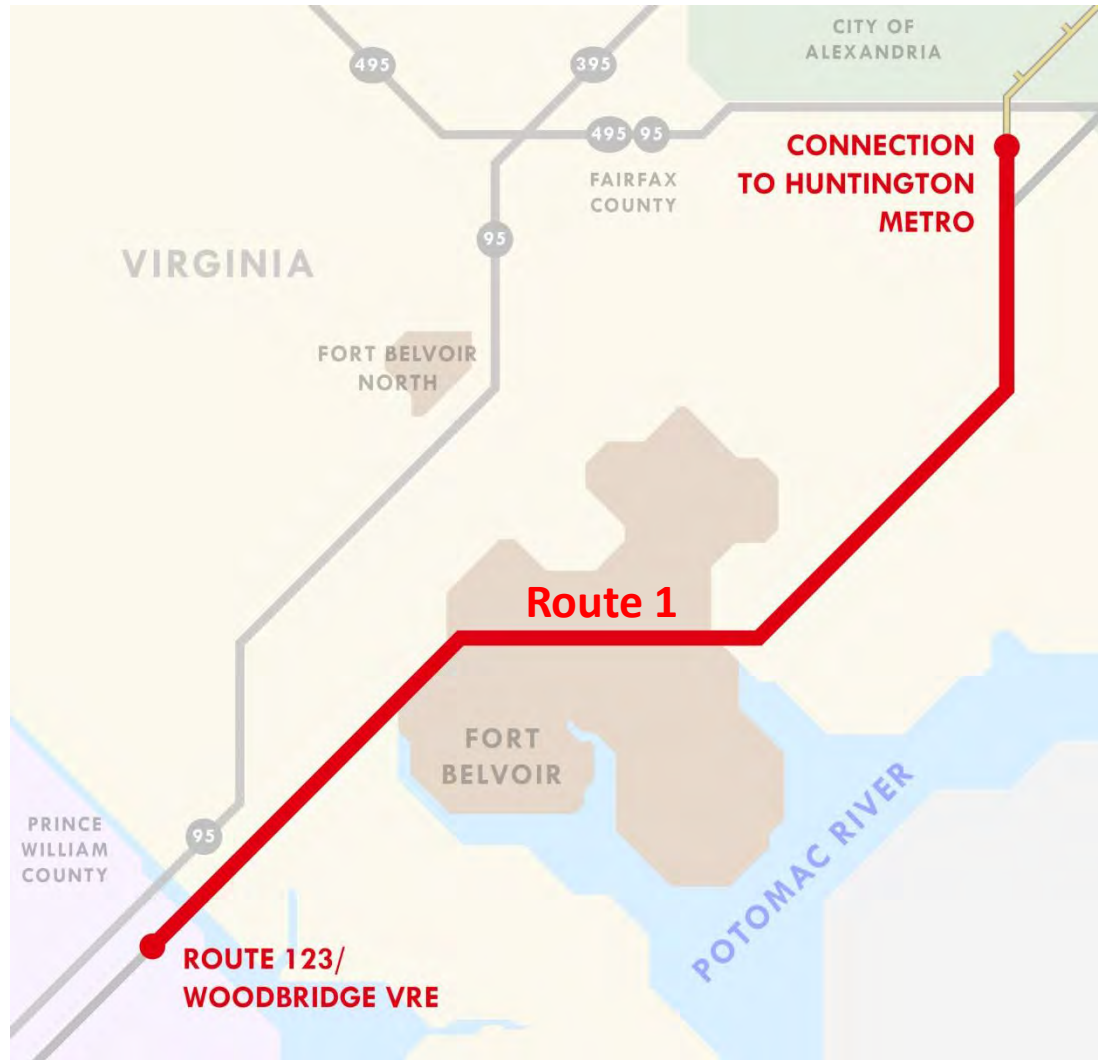
GOAL 4: Support community health and minimize impacts on community resources

## 2. What is the context for this study?

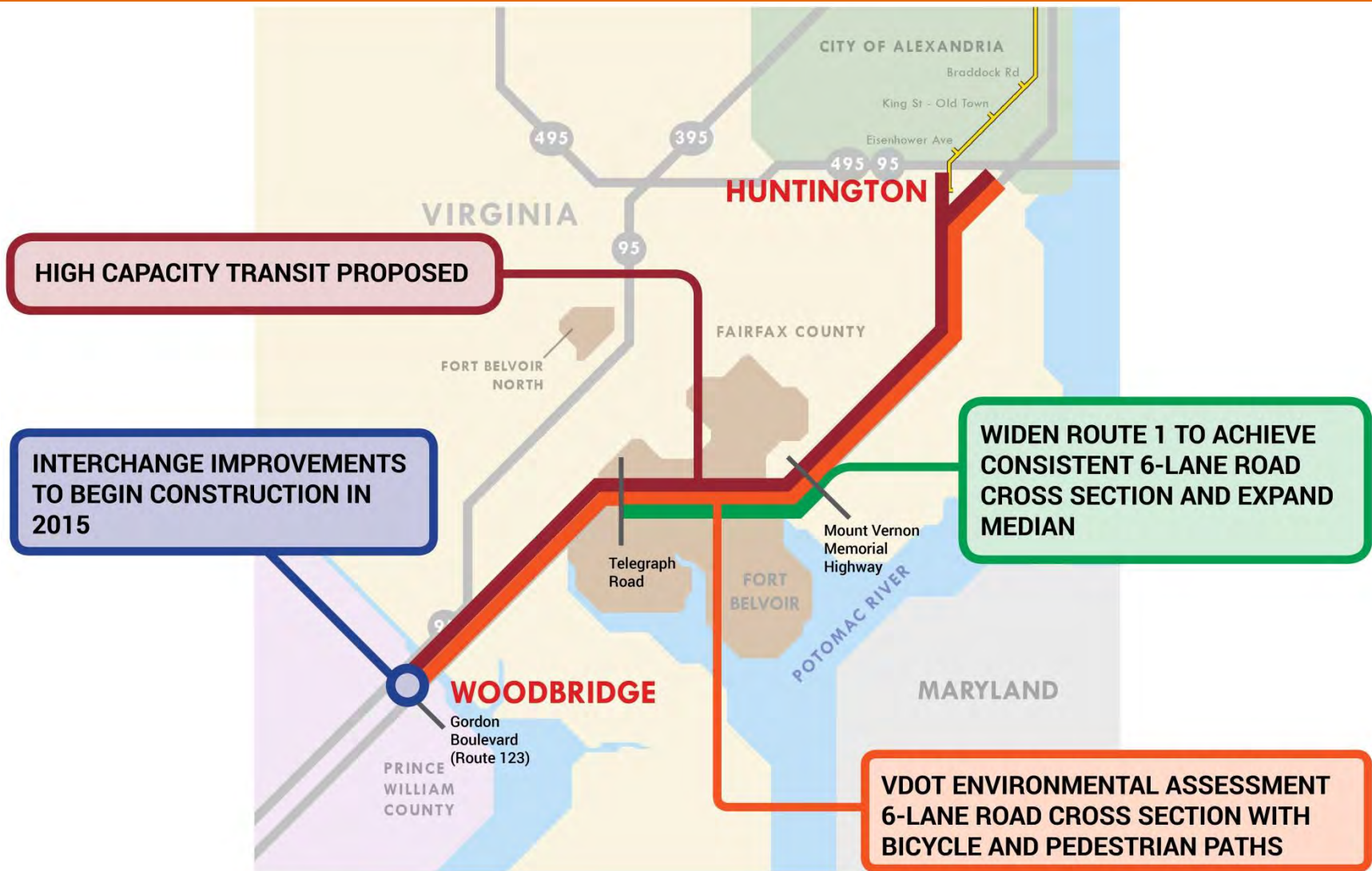




# Project Corridor



# Planned Improvements



# Other Related Studies

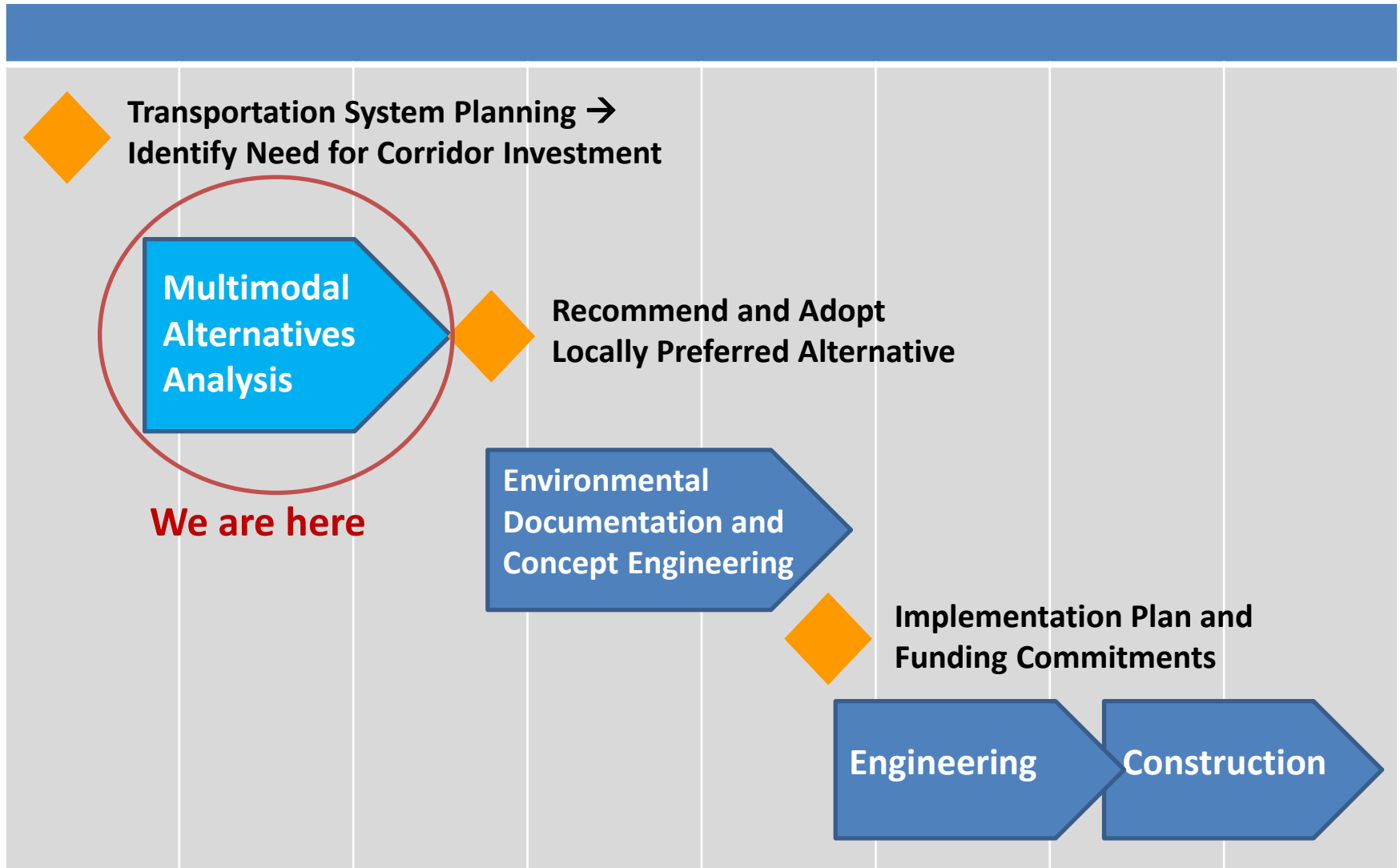
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- **2035 & 2040 Constrained Long Range Plan** (TPB, 2013)
- **Fairfax County Transit Network Plan** (Fairfax, ongoing)
- **Momentum** (Metro, 2013)
- **Regional Transit System Plan** (Metro, 2014)
- **Fort Belvoir Master Plan** (DOD, ongoing)
- **Route 1 Transit Centers Plan** (Fairfax, ongoing)



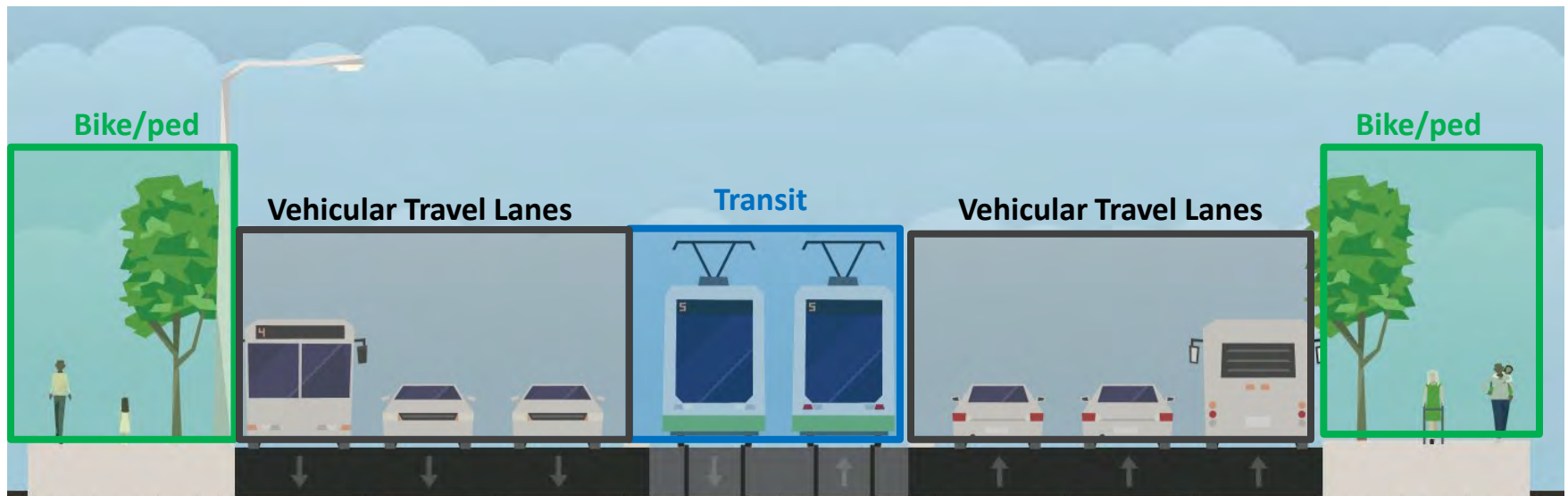


# The Life of a Corridor Transportation Plan



# Outcome of the Current Study

- A recommended multimodal transportation plan for implementation in the Route 1 corridor
- The recommended plan will have three elements:
  - **Transit**: Mode and alignment
  - **Vehicular**: Number of automobile travel lanes
  - **Bike/ Ped**: Facilities and location





3. What have we learned from you to date?



# What We've Learned From You: Survey

- The most important transportation needs on Route 1 are **public transit** and **improved traffic flow**
- The most important improvements to **encourage walking** on Route 1:
  - More sidewalks
  - More destinations within walking distance
  - Marked crosswalks on busy streets
- The most important improvements to **encourage biking** on Route 1:
  - Bike paths separated from car traffic (#1 rating)
  - Bike lanes on Route 1 (#2 rating)
  - More destinations in my neighborhood



# What We've Learned From You: Meeting #1

## Key Themes:

- **Create destinations** on Route 1, not a throughway
- Understand how the Route 1 transit service **connects to the region**, not just destinations on the corridor
- Ensure that **Fort Belvoir is a key participant** as we look to the future. The travel impacts from Ft. Belvoir are very significant
- Create **safe pedestrian and bicycle conditions**, also ADA compliance
- Factor in stream protection and **environmental quality**



# Outreach Methods

- Committee Meetings (technical, elected, community)
- Public Meetings
- Social Media
- News Ads and Press Release
- Flyers and Fact Sheets
- Metro Station and Bus Stop Outreach and Posters
- Community Event Booths
- Bilingual
- On-Line and On-Corridor
- Targeted Efforts to Engage Diverse Populations

## Ruta 1

### Análisis de Alternativas Multimodales

#### ¡ACOMPÁÑENOS PARA LA SEGUNDA REUNIÓN PÚBLICA!

**Miércoles, 26 de marzo**  
**6:00 p.m. – 8:00 p.m.**  
**South County Center**  
**8350 Richmond Highway**  
**Alexandria, Virginia 22309**

[route1multimodal.org](http://route1multimodal.org)  
[route1multimodal](https://www.facebook.com/route1multimodal)  
[@r1multimodal](https://twitter.com/r1multimodal)

El análisis de alternativas multimodal movilidad a lo largo de un segmento y La Estación de Metro Huntington/ pública, carretera, e instalaciones p públicas; la primera se celebró en oct

**Algunos hechos claves:**

- "Multimodal" es una forma abreviada la gente use cuando viaja por trabajo autobús, etc.), automóvil, bicicleta y
- Factores de evaluación del estudio en operación, el flujo de tráfico, seguridad, financiamiento y otras consideraciones
- Basado en la evaluación de alternativa pública, el equipo de estudio recomienda alternativa recomendada, será presentada

El Departamento de Tránsito y Transporte Público de Virginia participará o sin poder disfrutar de los beneficios de sus Actos de Derechos Civiles de 1964. Para información adicional, puede visitar la página web [www.drpt.virginia.gov](http://www.drpt.virginia.gov) Street, Suite 2102, Richmond, VA 23219 o al teléfono (804) 786-4440.

**DRPT**

## Route 1

### Multimodal Alternatives Analysis

#### JOIN US FOR OUR SECOND PUBLIC MEETING!

**Wednesday, March 26**  
**6:00 p.m. – 8:00 p.m.**  
**South County Center**  
**8350 Richmond Highway**  
**Alexandria, Virginia 22309**



[route1multimodal.org](http://route1multimodal.org)  
[route1multimodal](https://www.facebook.com/route1multimodal)  
[@r1multimodal](https://twitter.com/r1multimodal)

The Route 1 Multimodal Alternatives Analysis is a year-long study to enhance mobility along a 15-mile segment of Route 1 between Route 123 in Woodbridge and Huntington Metro Station/I-495. Recommended improvements will include transit, roadway, bicycle and pedestrian facilities. This is the second of three public meetings; the first was held in October 2013.

**A Few Key Facts:**

- "Multimodal" is a shorthand way of referring to the many ways, or modes of transportation, that people use when traveling for work, errands, or recreation. Mass transit (rail, bus, etc.), automobile, bicycle and foot travel are all included in the Route 1 alternatives.
- The study's evaluation factors include transit ridership, capital and operation costs, traffic flow, safety, right-of-way requirements, development impacts, financing, and other key considerations.
- Based on the evaluation of alternatives and input received through the engagement process, the study team will recommend a multimodal alternative for implementation. This recommended alternative will be presented at the final public meeting in the summer 2014.

The Department of Rail and Public Transportation (DRPT) is committed to ensuring that no person is excluded from participation in, or denied the benefits of its services on the basis of race, color or national origin, as protected by Title VI of the Civil Rights Act of 1964. For additional information on DRPT's nondiscrimination policies and procedures or to file a complaint, please visit the website at [www.drpt.virginia.gov](http://www.drpt.virginia.gov) or contact the Title VI Compliance Officer: Linda Robinson, 600 E. Main Street, Suite 2102, Richmond, VA 23219, or 804-786-4440.

**DRPT**








# Goals of Today's Meeting

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## Key takeaways:

- Alternatives to be evaluated
- Land use and transportation planning for the corridor are linked
- Potential implementation sequence for corridor improvements

## We want to feedback from you on:

- The alternatives
- Most important evaluation factors

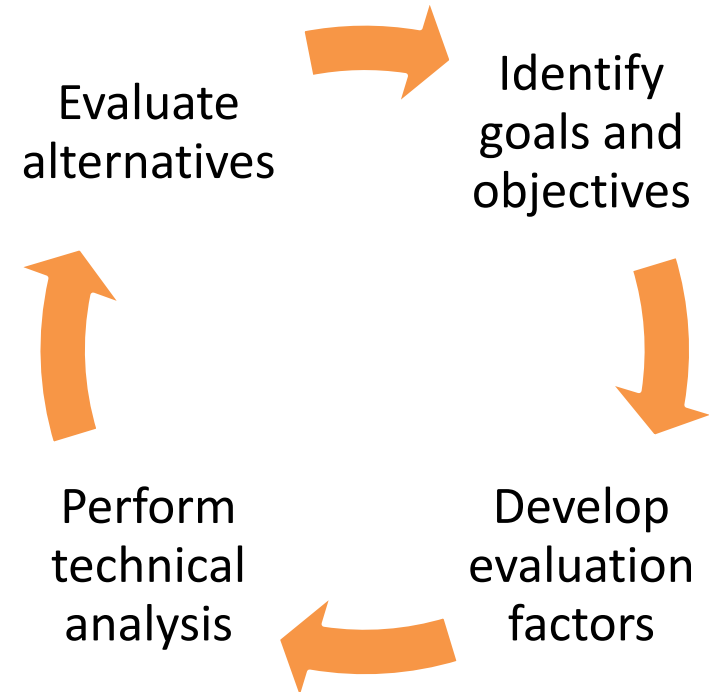
## 4. How have participant input and technical analysis shaped the alternatives?



# Arriving at Recommended Multimodal Alternative: How do we choose one?

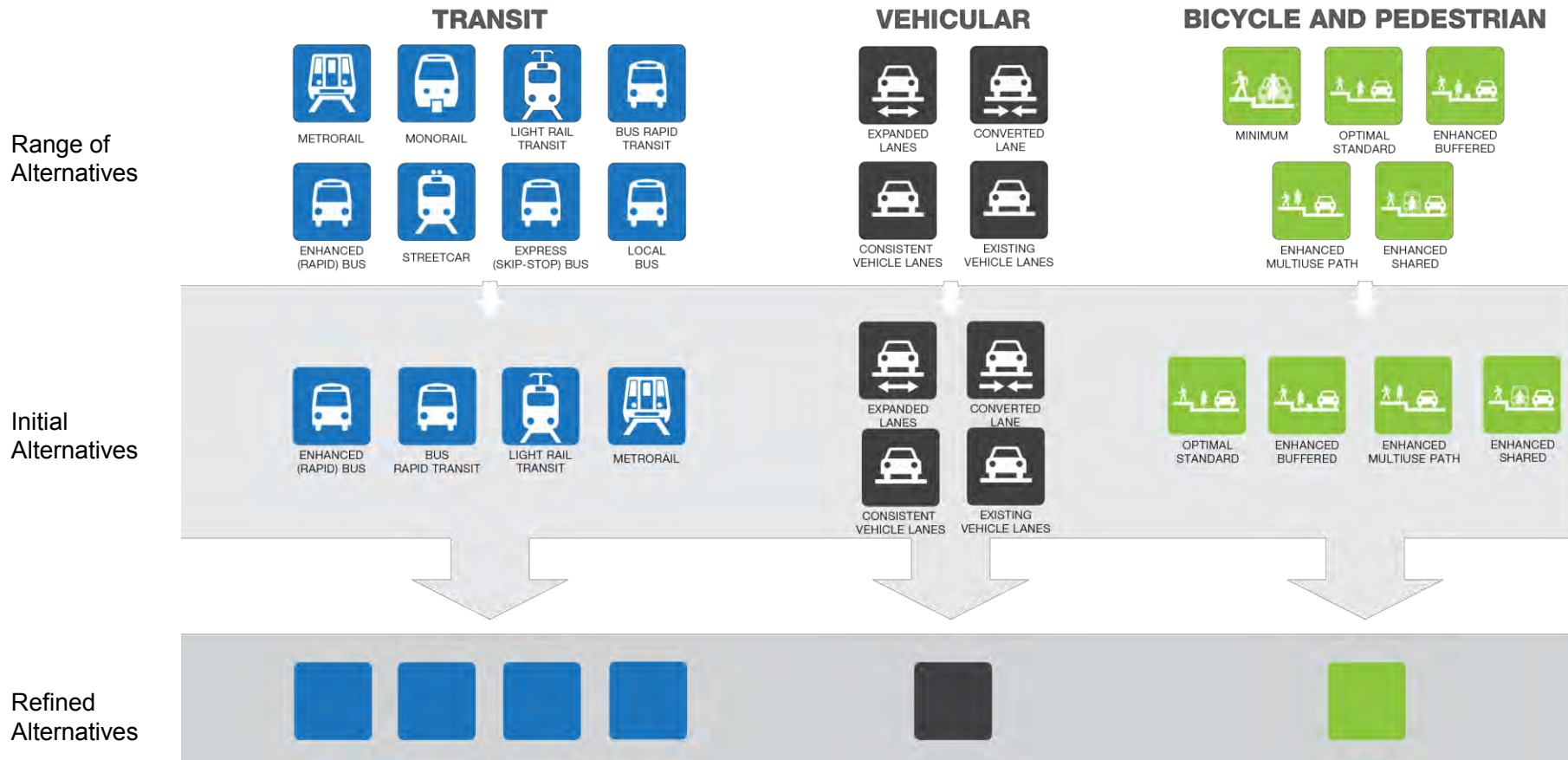
## Key Evaluation Factors:

- Transit system performance
- Bicycle and pedestrian network improvements
- Traffic operations
- Implementation/ ability to phase project
- Financial feasibility
- Capacity to meet current and future needs
- Right-of-Way and impacts on community resources





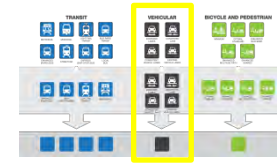
# Step 1: Identify the best transportation options



## Step 2: Combine options into multimodal alternatives



# Vehicular Travel Lanes Alternatives



Existing Lanes



Expanded Lanes:

Three or four lanes, depending on location along the corridor



Converted Lanes



Consistent Lanes



## Key Evaluation factors:

- Level of Service (LOS)
- Volume-to-Capacity (V/C)
- Right of Way (ROW) impacts

## Other, qualitative factors:

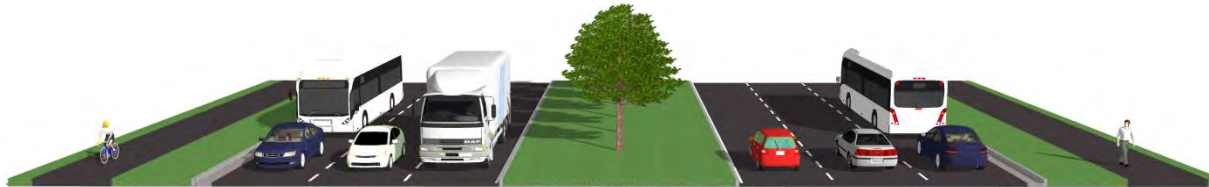
- Maintaining existing speeds
- Minimizing lane transitions
- Reducing pedestrian crossing distance/time



# Vehicular Lanes Recommendation

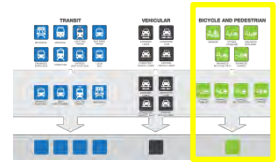


**Consistent, 6 vehicular lanes** along the entire corridor

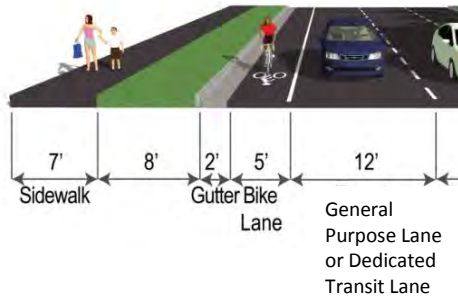


1. **Recommendation from prior studies and plans**  
(VDOT and Fairfax County Comprehensive Plan)
2. **Technical evaluation based on traffic and right-of-way analysis**
3. **Confirmed findings with VDOT**

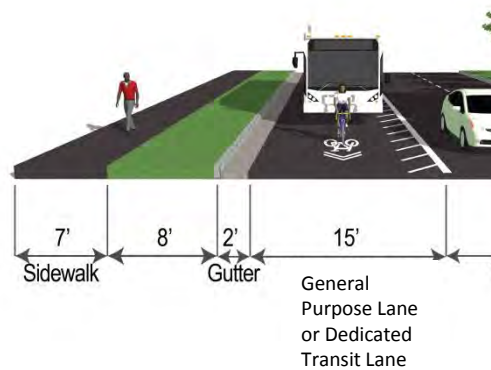
# Bicycle and Pedestrian Alternatives



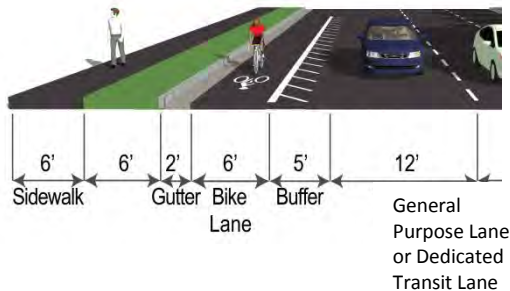
## Sidewalk + bike lane



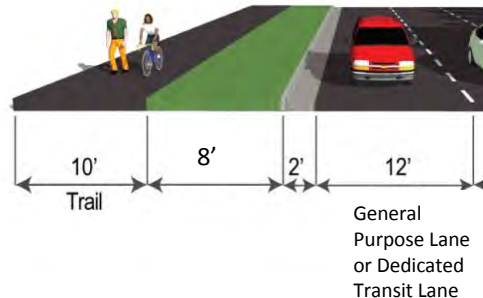
## Sidewalk + bus/bike lane



## Sidewalk + buffered bike lane



## Multiuse path (bike and ped)



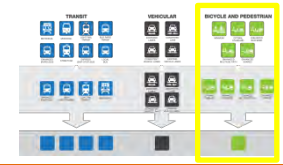
### Key Evaluation factors:

- Safety and comfort for cyclists of all abilities
- ROW impacts

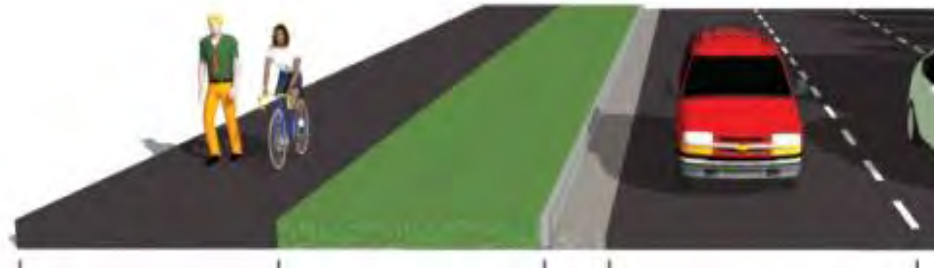
### Measures and factors:

- Bicycle compatibility index and Bicycle Level of Service
- Possible to implement incrementally / flexible over time

# Bicycle and Pedestrian Recommendation



## **10-foot Multiuse Path** (both sides of street)



1. **Technical evaluation based on trade-offs among accessibility, safety, and required right-of-way**
2. **Note: implementation of recommended section varies along corridor**

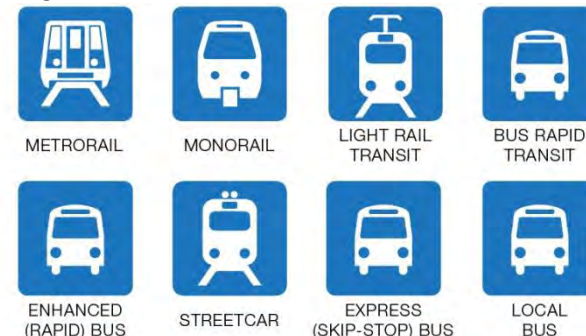


# Transit Evaluation: Overview



1. Screened a wide range of transit **alternatives** based on basic project requirements to arrive at four initial alternatives
2. Analyzed **four transit alternatives** to identify the most promising for further evaluation

## Range of Alternatives



## Initial Alternatives



## Refined Alternatives

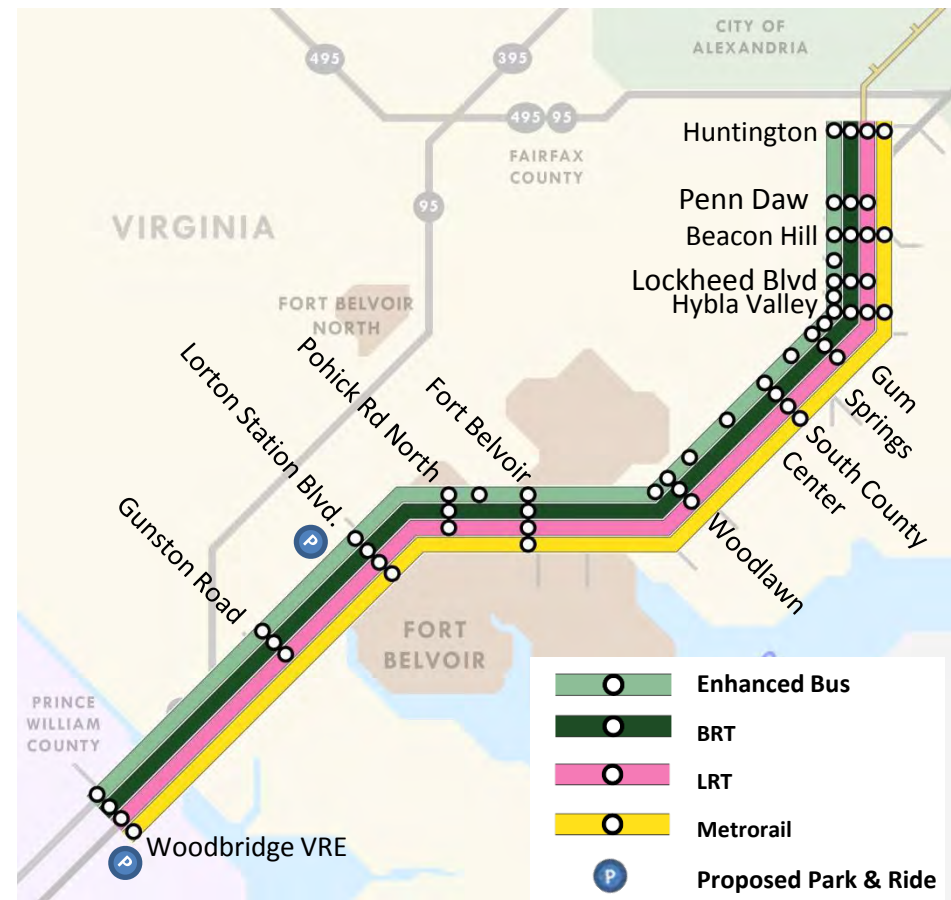


# Initial Alternatives



## Four Initial Transit Alternatives:

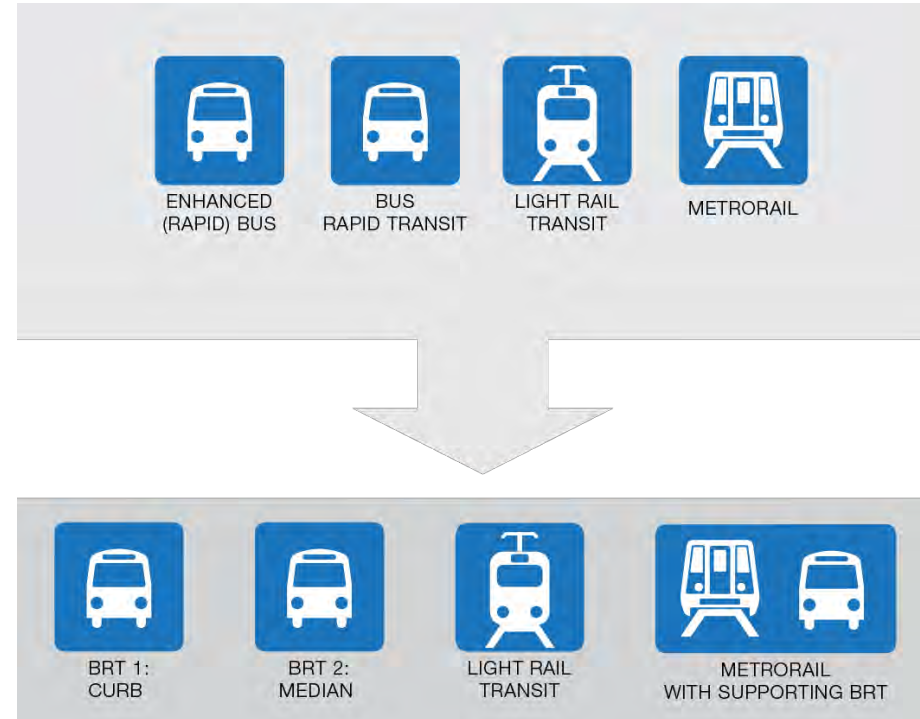
- Enhanced Bus
- Bus Rapid Transit (BRT)
- Light Rail Transit (LRT)
- Metrorail



# How do we refine the initial alternatives for further evaluation?

## 1. Quantitative Key Indicators:

- Ridership
- Estimated Capital Cost
- Estimated O&M Cost
- Cost per Rider



## 2. Land Use Analysis



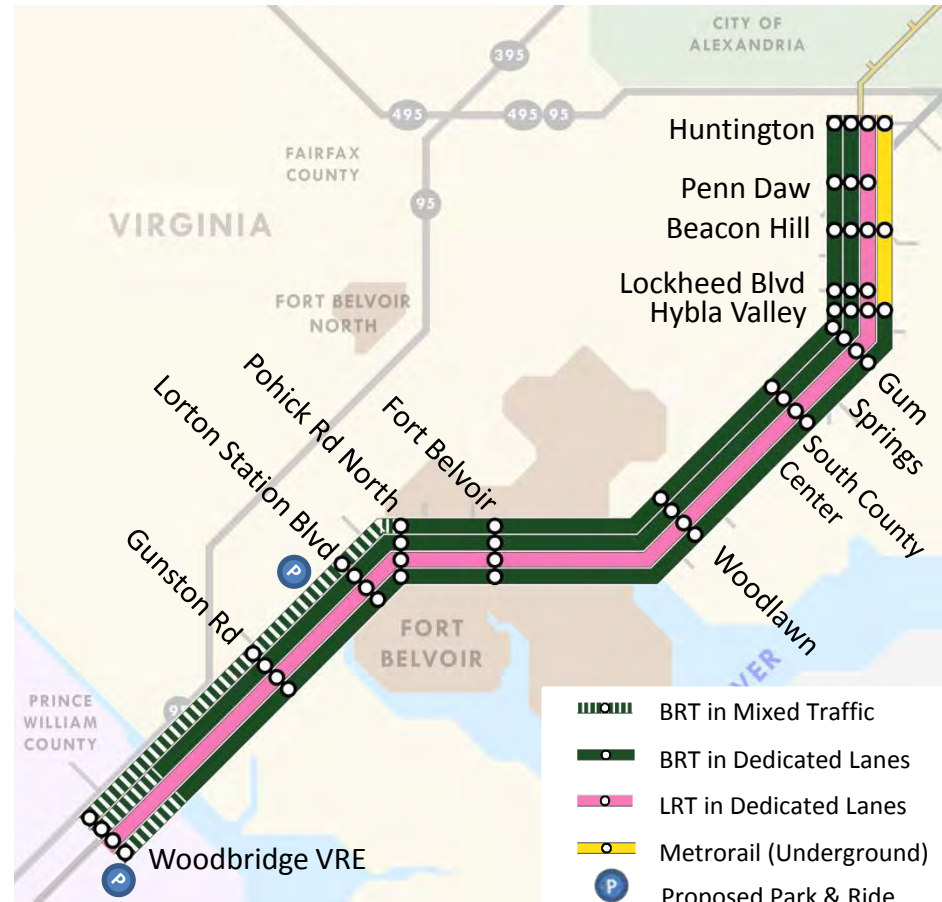
# Four Refined Alternatives for Further Evaluation

Alternative 1:  
**Bus Rapid Transit 1- Curbside**

Alternative 2:  
**Bus Rapid Transit 2- Median**

Alternative 3:  
**Light Rail Transit**

Alternative 4:  
**Metrorail- BRT Hybrid**



# Alternative 1: Bus Rapid Transit 1 – Curbside

BRT operates in dedicated curbside lanes from Huntington to Pohick Road North

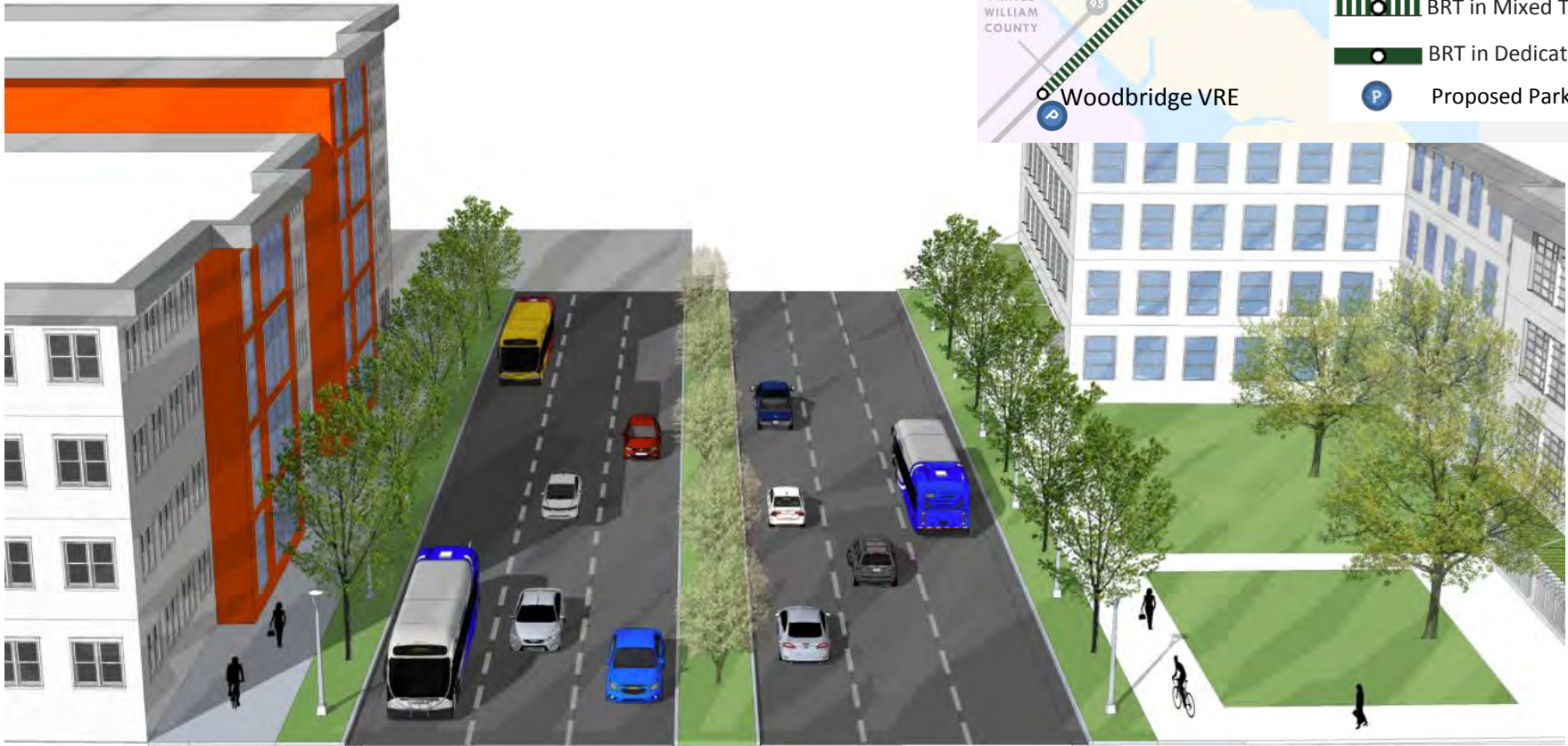




# Alternative 1:

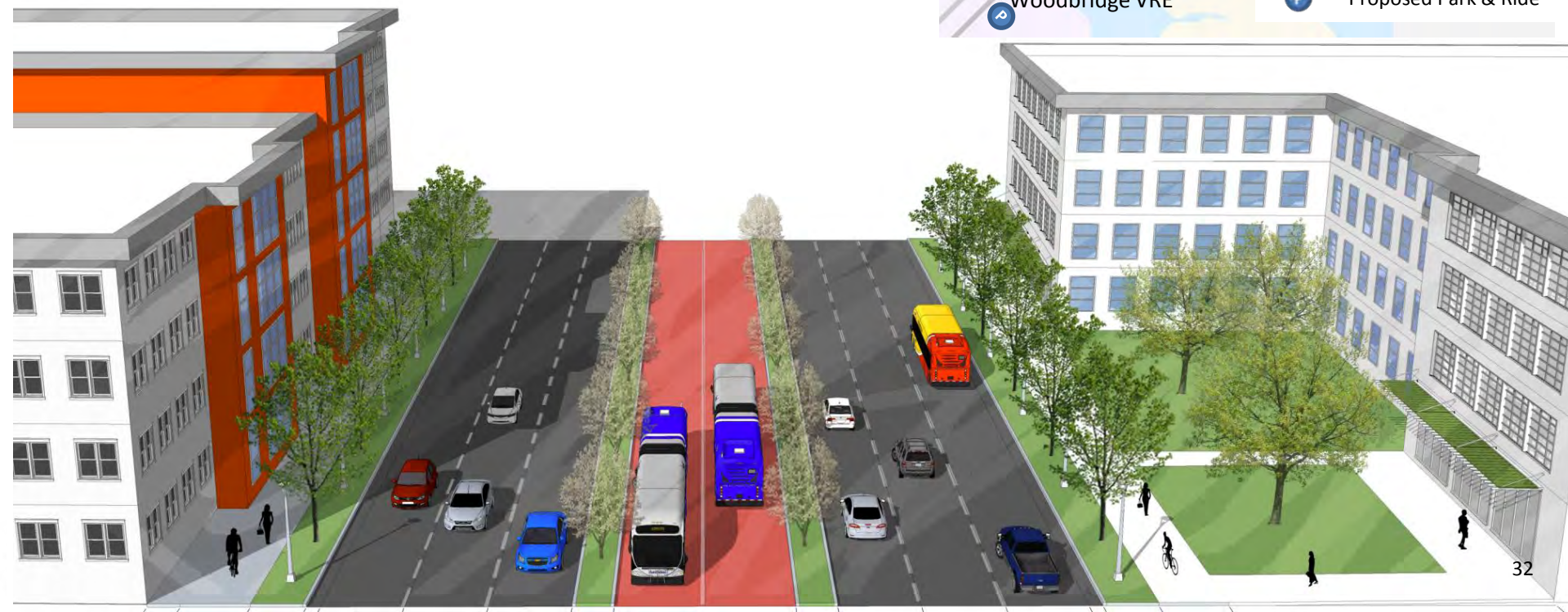
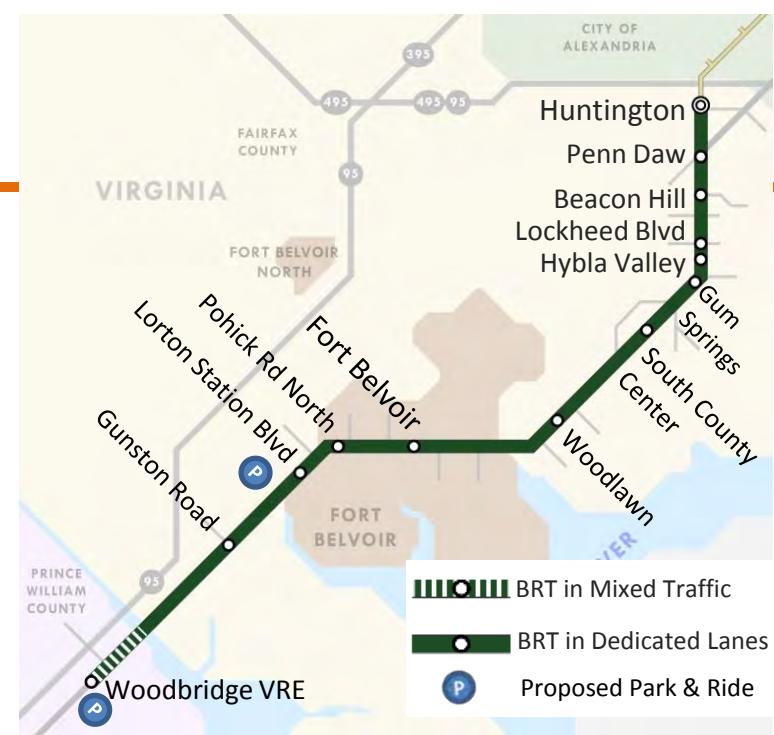
## Bus Rapid Transit 1 – Curbside

BRT operates in mixed traffic between Pohick Road North and Woodbridge



# Alternative 2: Bus Rapid Transit 2 - Median

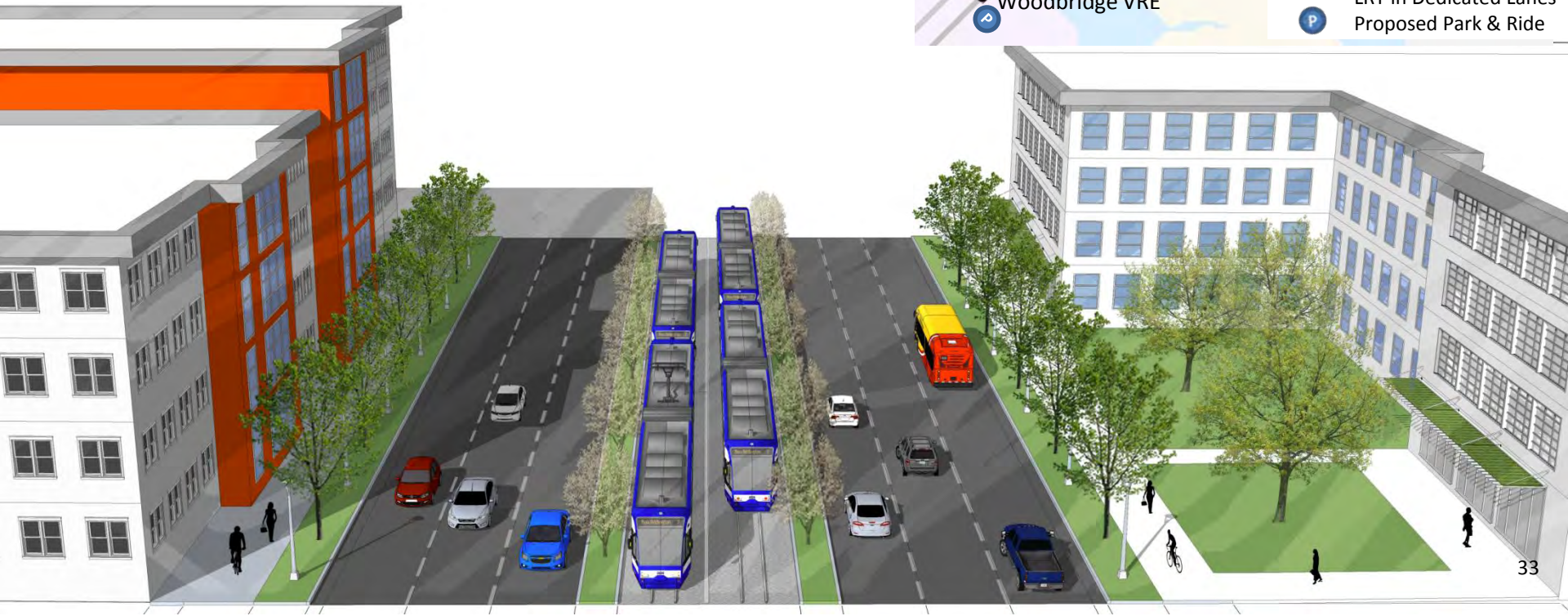
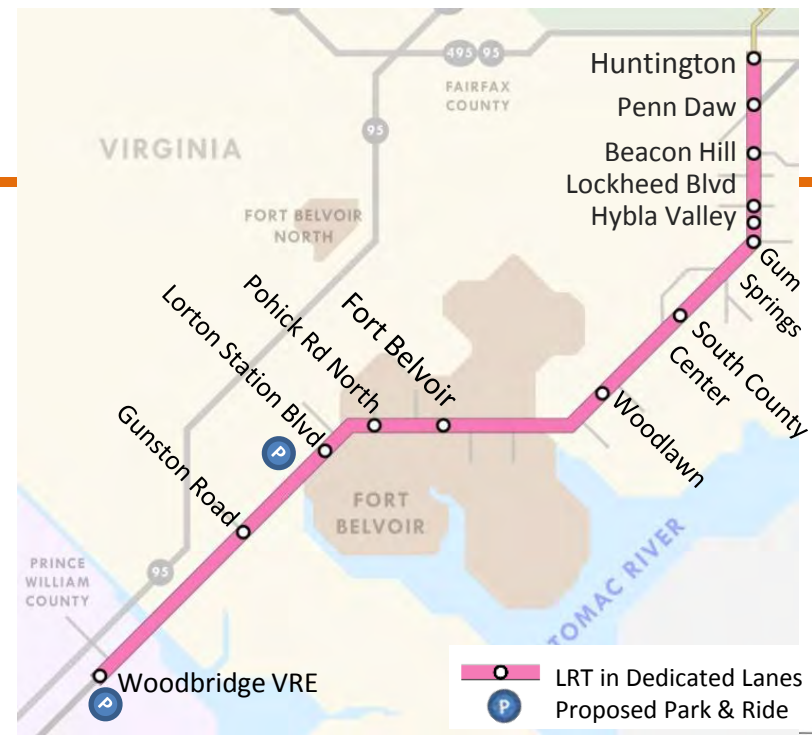
BRT operates in median in dedicated lanes in Fairfax County; transitions to mixed traffic in Prince William County





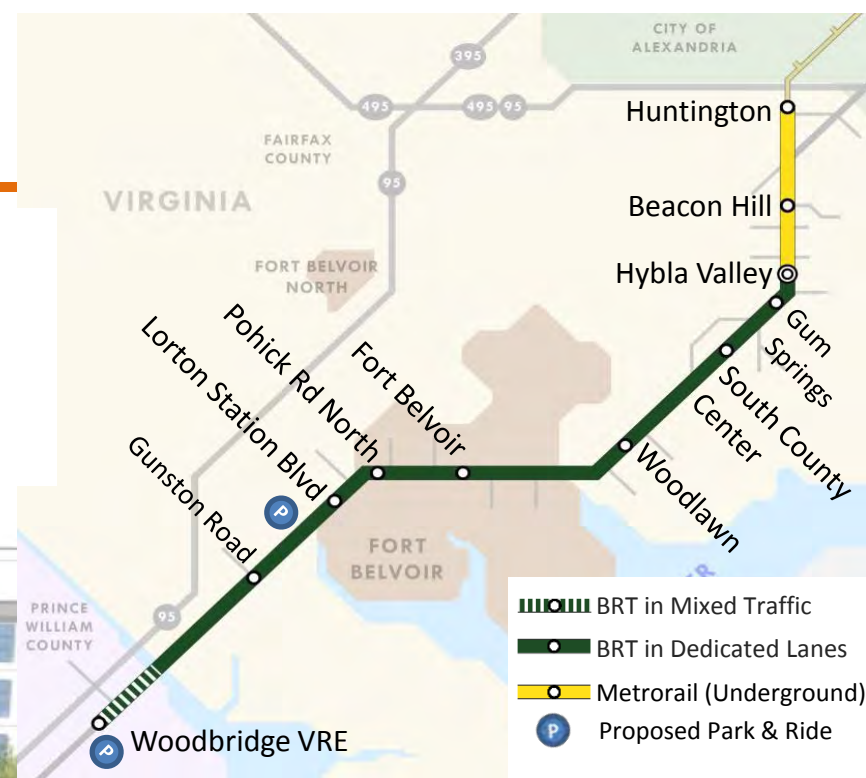
# Alternative 3: Light Rail Transit (Median)

Light Rail operates in median in  
dedicated lanes for entire corridor



# Alternative 4: Metrorail- BRT Hybrid

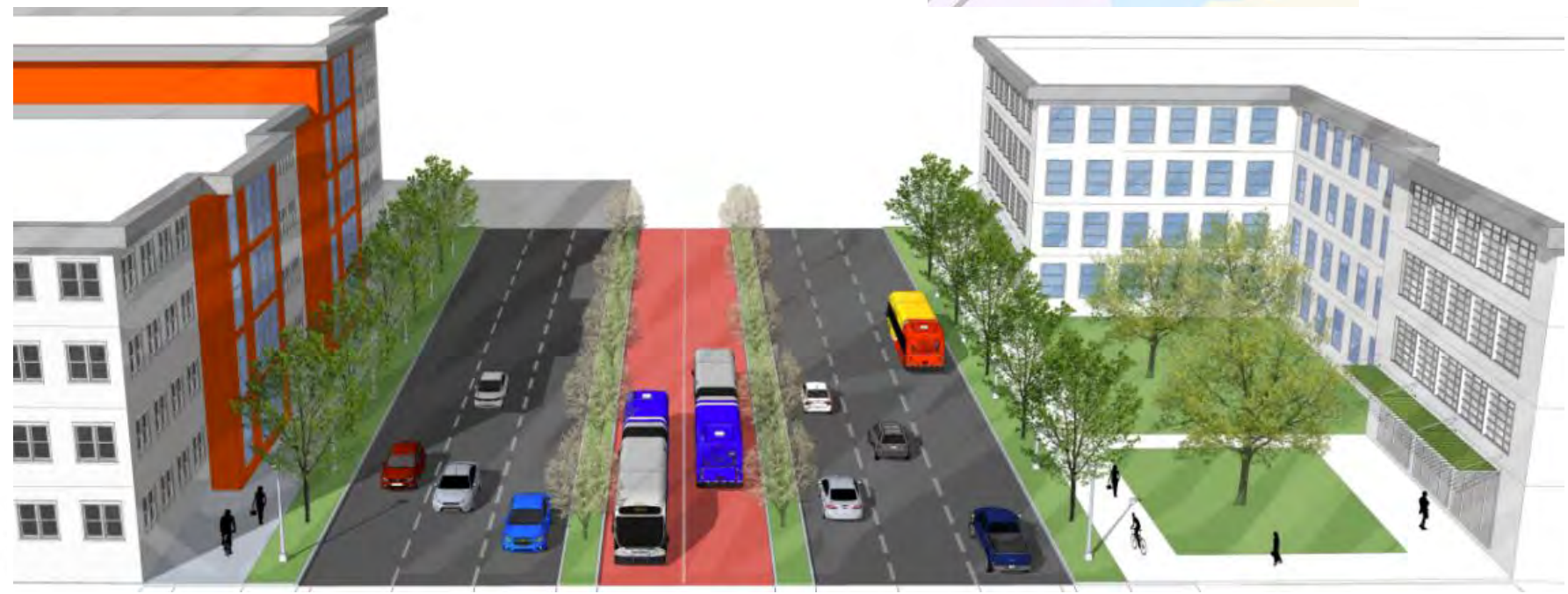
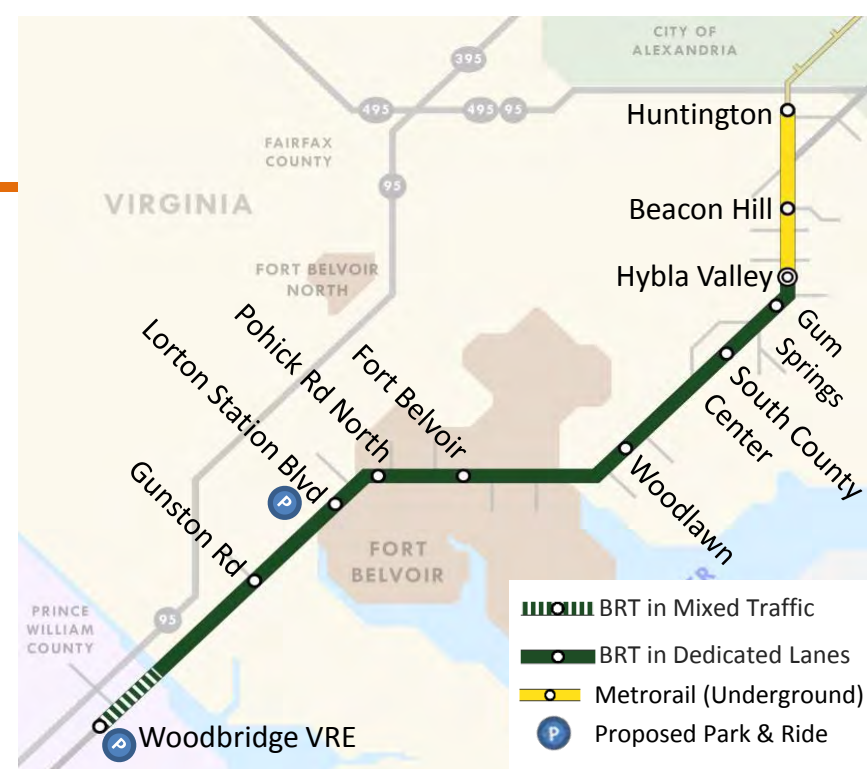
Metrorail operates underground from  
Huntington to Hybla Valley;  
Transfer to BRT service at Hybla Valley to  
Woodbridge





# Alternative 4: Metrorail- BRT Hybrid

BRT operates in dedicated lanes from Hybla Valley, and transitions to mixed traffic in Prince William County



# Key Indicators: Refined Transit Alternatives



	Bus Rapid Transit 1- Curbside	Bus Rapid Transit 2- Median	Light Rail Transit- Median	Metrorail/BRT Hybrid
Average Weekday Ridership (2035)	15,200	16,600	18,400	26,500* (BRT 10,600; Metro 22,900)
Conceptual Capital Cost	\$500 M	\$780 M	\$1.20 B	\$1.57 B
Annual O&M Cost	\$18 M	\$17 M	\$24 M	\$31 M
Cost Per Rider**	\$12	\$15	\$21	\$18

\* Corridor ridership, excluding transfers between Metrorail and BRT portions

\*\*Assumes Annualized Capital Cost + Operating Costs divided by total boardings (2035)

Note: FTA Cost Effectiveness measure averages current (2015) and horizon year (2035) costs and boardings



# Arriving at a Preferred Alternative

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Evaluate the Alternatives based on:

- How well does each alternative address the **Project Goals and Objectives**?
- Which alternatives are most competitive for **Federal funding**?



# Example Measures: Goals and Objectives

- Ridership
- Travel time
- Safe bike/ped facilities
- Traffic
- Capital and operating costs
- Cost effectiveness
- Ability to spur economic development
- Impacts on Right of Way and environmental resources
- Decrease in Vehicle Miles Traveled

# Federal Transit Administration: New Starts Small Starts Funding Evaluation Criteria

## Overall Project Rating

### Project Justification

50%


- **Mobility Improvements**
- **Environmental Benefits**
- **Congestion Relief**
- **Cost-Effectiveness**
- **Economic Development**
- **Land Use**

50%

### Local Financial Commitment

- **Current Condition**
- **Commitment of Funds**
- **Reliability/Capacity**

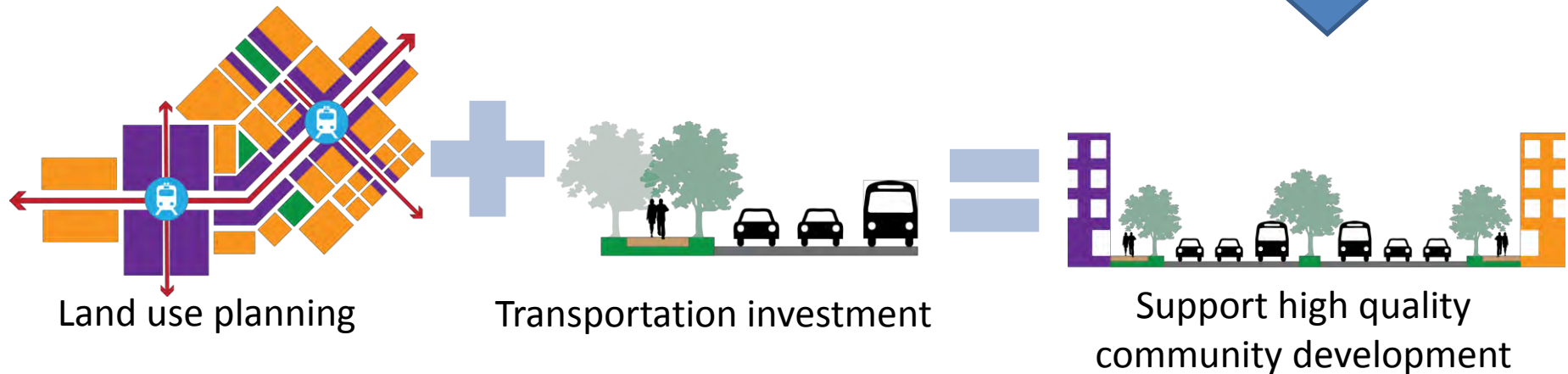


An aerial photograph of an industrial or commercial area. The scene is dominated by large, rectangular warehouse-like buildings with flat roofs. Several large parking lots are interspersed among the buildings, filled with numerous cars. A network of roads and highways is visible, including a prominent intersection in the lower center. The overall impression is of a developed, functional industrial zone.

5. How does land use relate to the alternatives?



# Transportation Investment helps to increase economic viability and vitality of the corridor



# Example: Cleveland, OH (Bus Rapid Transit)



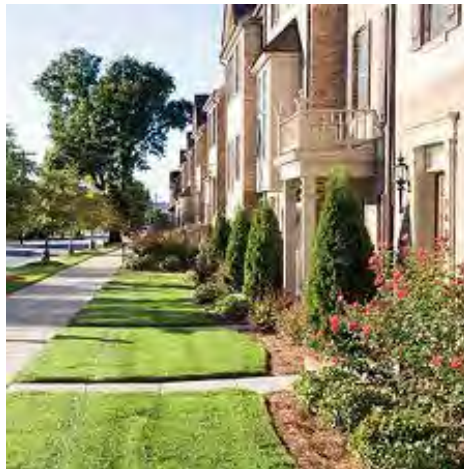
- Pedestrian-oriented, higher concentration development
- Larger tax base
- Increased travel demand



# Example: Charlotte, NC (Light Rail)



- Pedestrian-oriented, higher concentration development
- Larger tax base
- Increased travel demand





# Example: Arlington, VA (Metrorail)



- Pedestrian-oriented, higher concentration development
- Larger tax base
- Increased travel demand



# Land Use: Three Growth Scenarios

## Scenario 1:

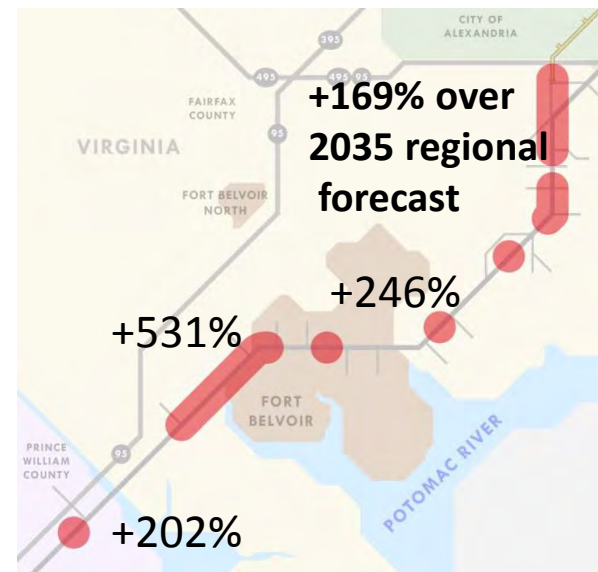
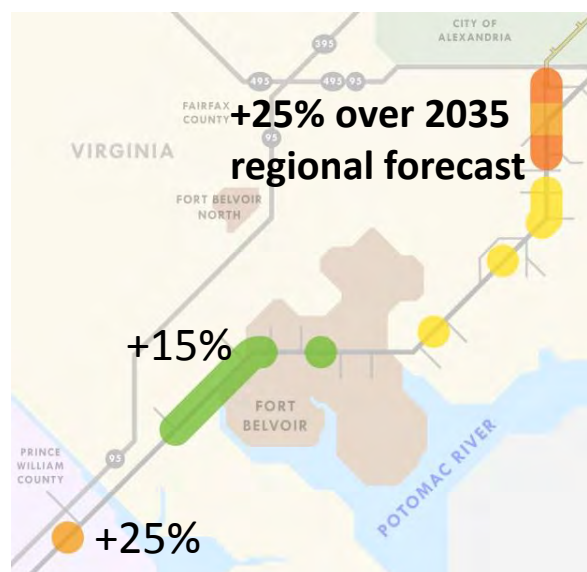
“Base Land Use Scenario” =  
2035 MWCOG regional  
forecast

## Scenario 2:

What is a reasonable growth  
expectation for a corridor that  
invests in high-quality transit  
(BRT or LRT)?

## Scenario 3:

How much do population and  
employment need to increase  
to achieve density levels  
typically supportive of  
Metrorail?



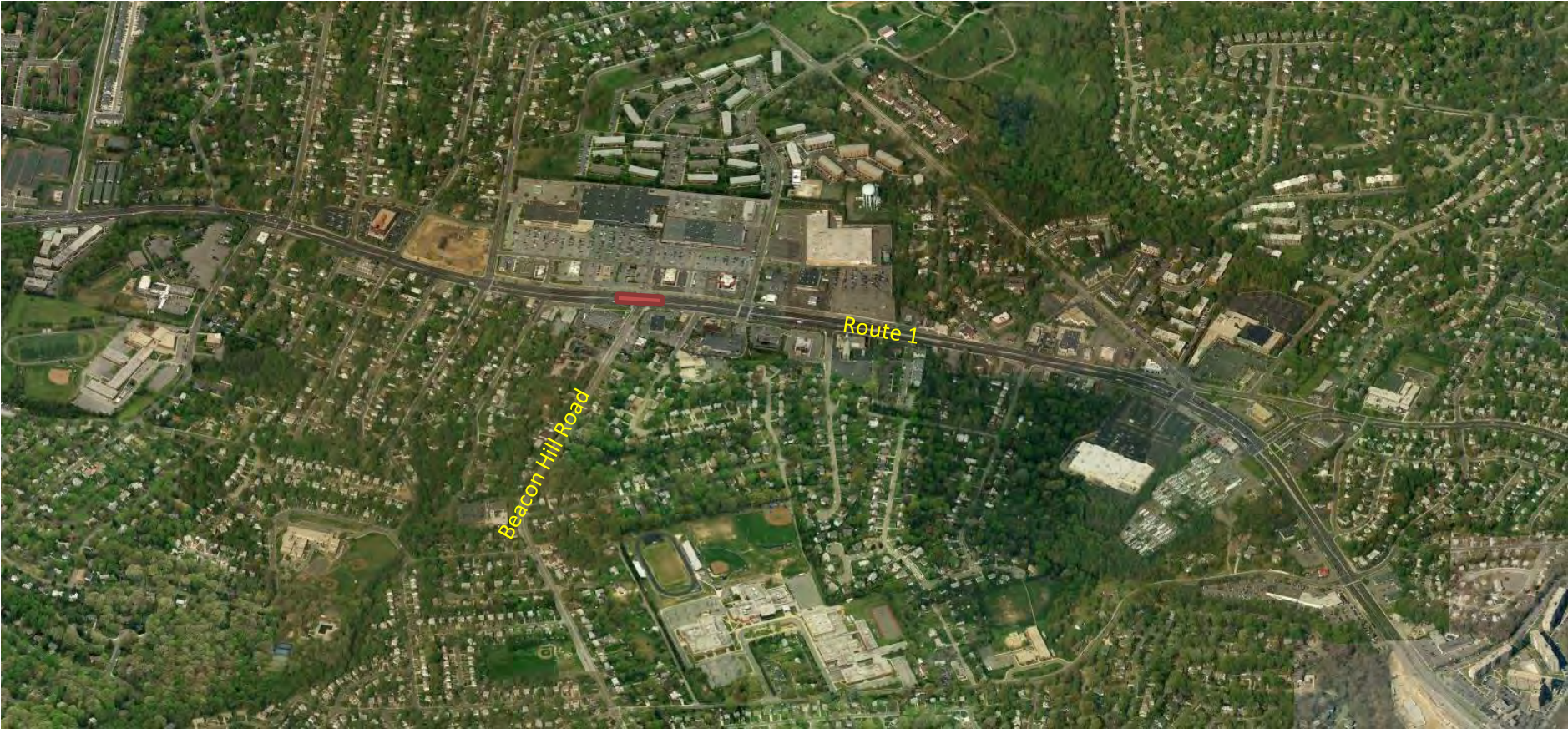
- Urban Core (Rail)
- Urban Center (BRT/ LRT)
- Large Town/Suburban Center (Express Bus)
- Medium Town/Suburban Center (Fixed Route Bus)

Source: DRPT Multimodal Design Guidelines (2013)





# Beacon Hill: Bird's Eye View Today

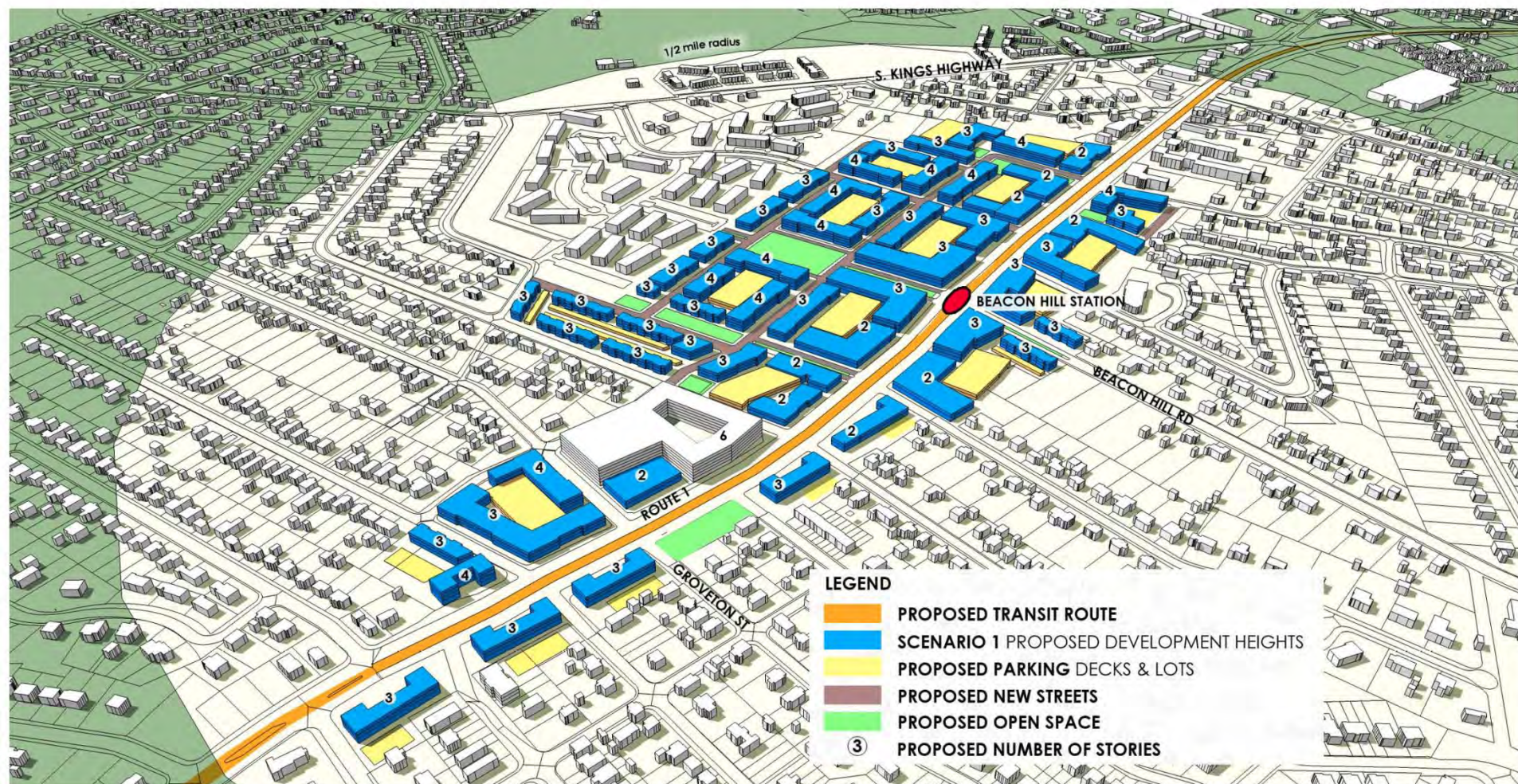


Source: Bing Maps





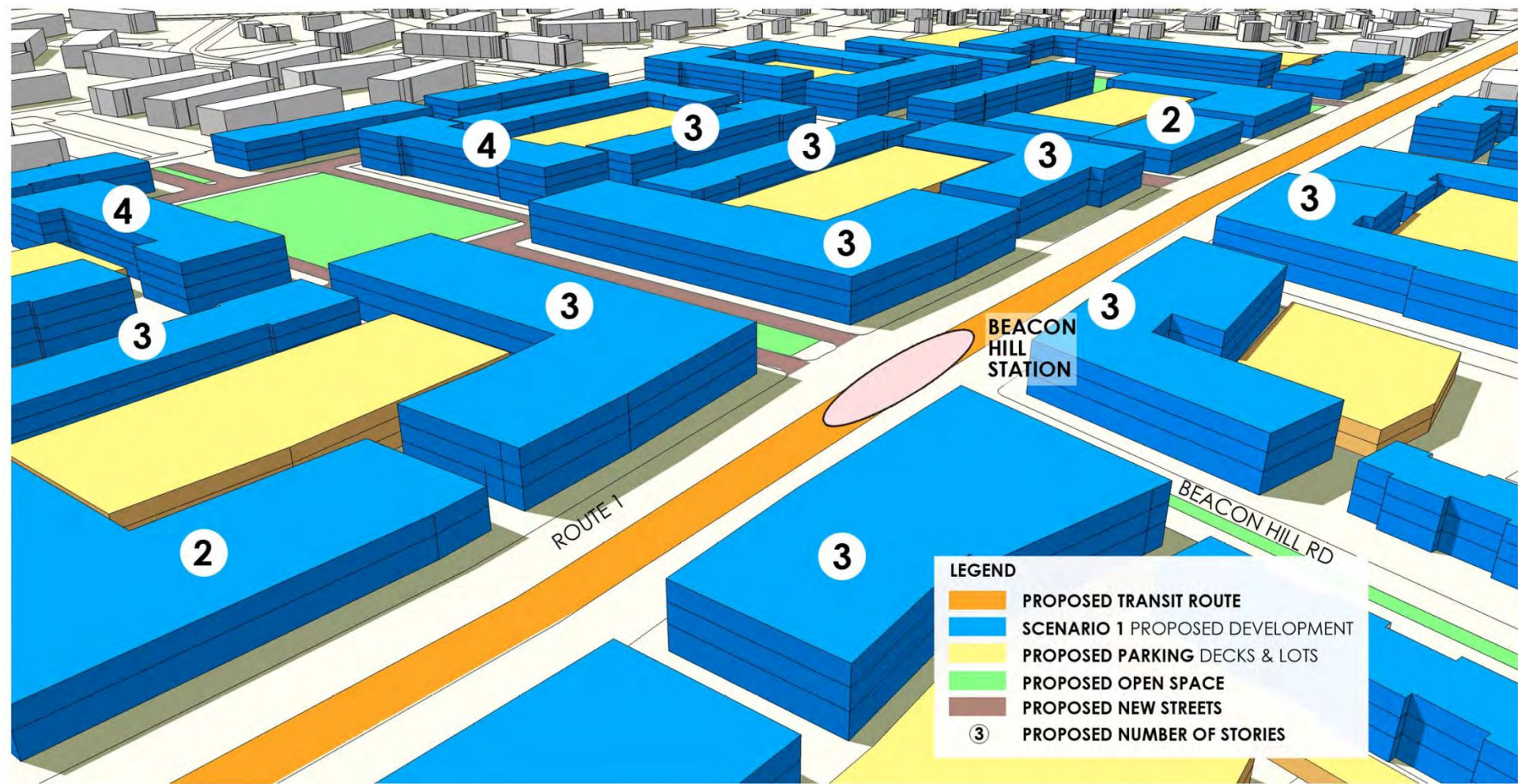
# Beacon Hill: Land Use Scenario One (2035 COG Projection)



BEACON HILL STATION SCENARIO 1



# Beacon Hill: Land Use Scenario One (2035 COG Projection)

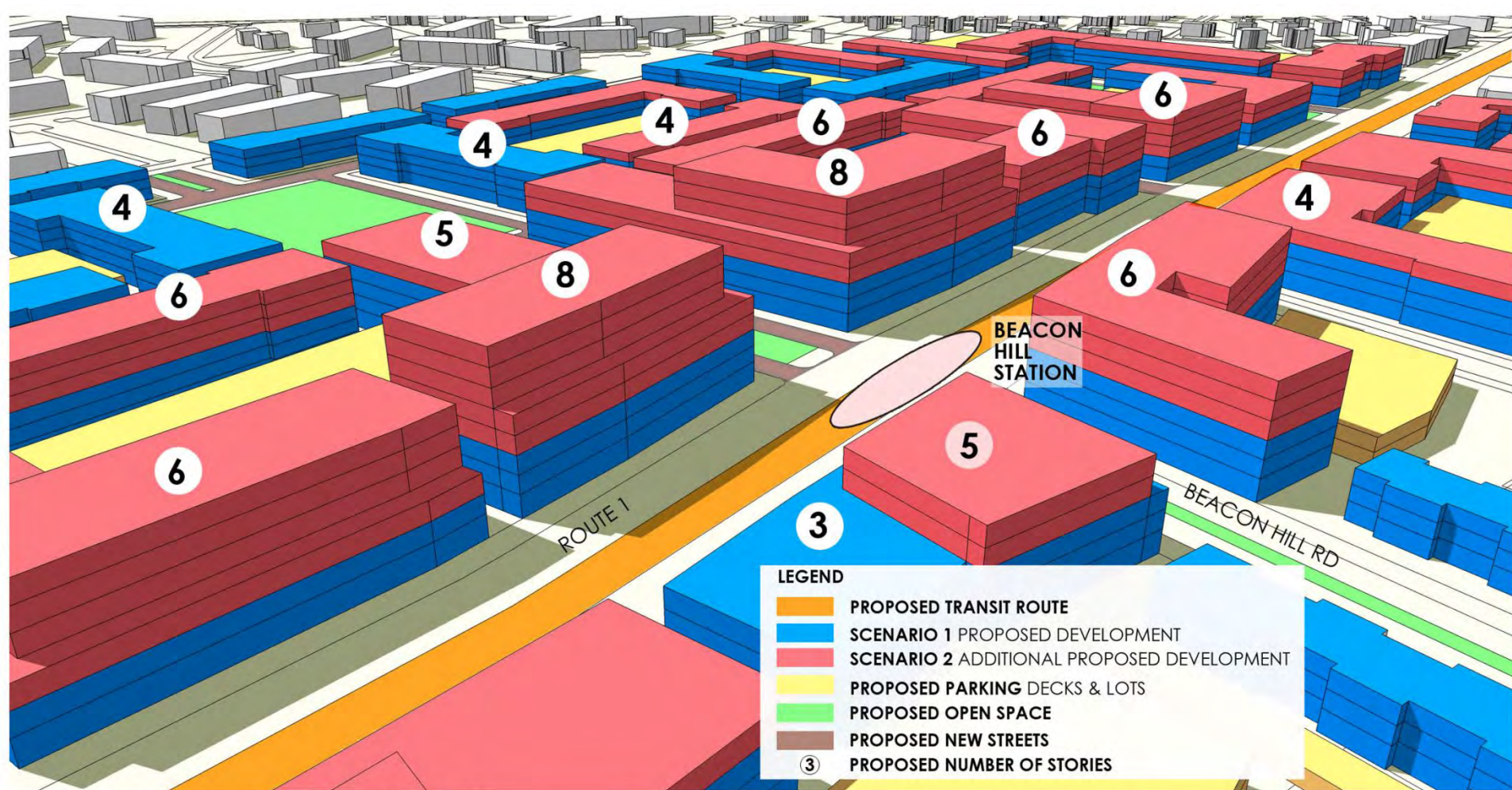


BEACON HILL STATION SCENARIO 1



# Beacon Hill: Land Use Scenario Two

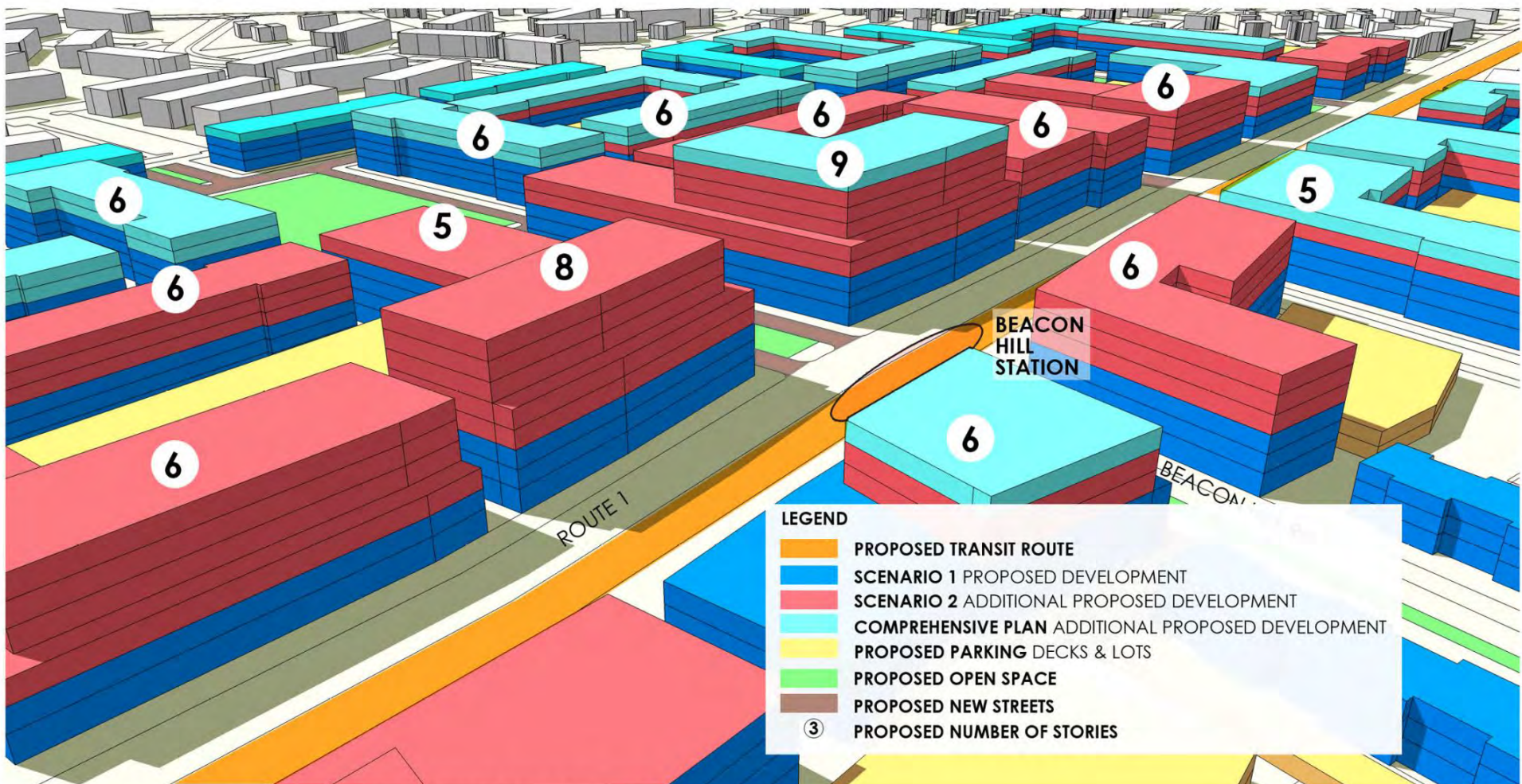
## (Transit investment and additional growth)



BEACON HILL STATION SCENARIO 2



# Beacon Hill: County Comprehensive Plan (Envisioned “build-out” level of development)

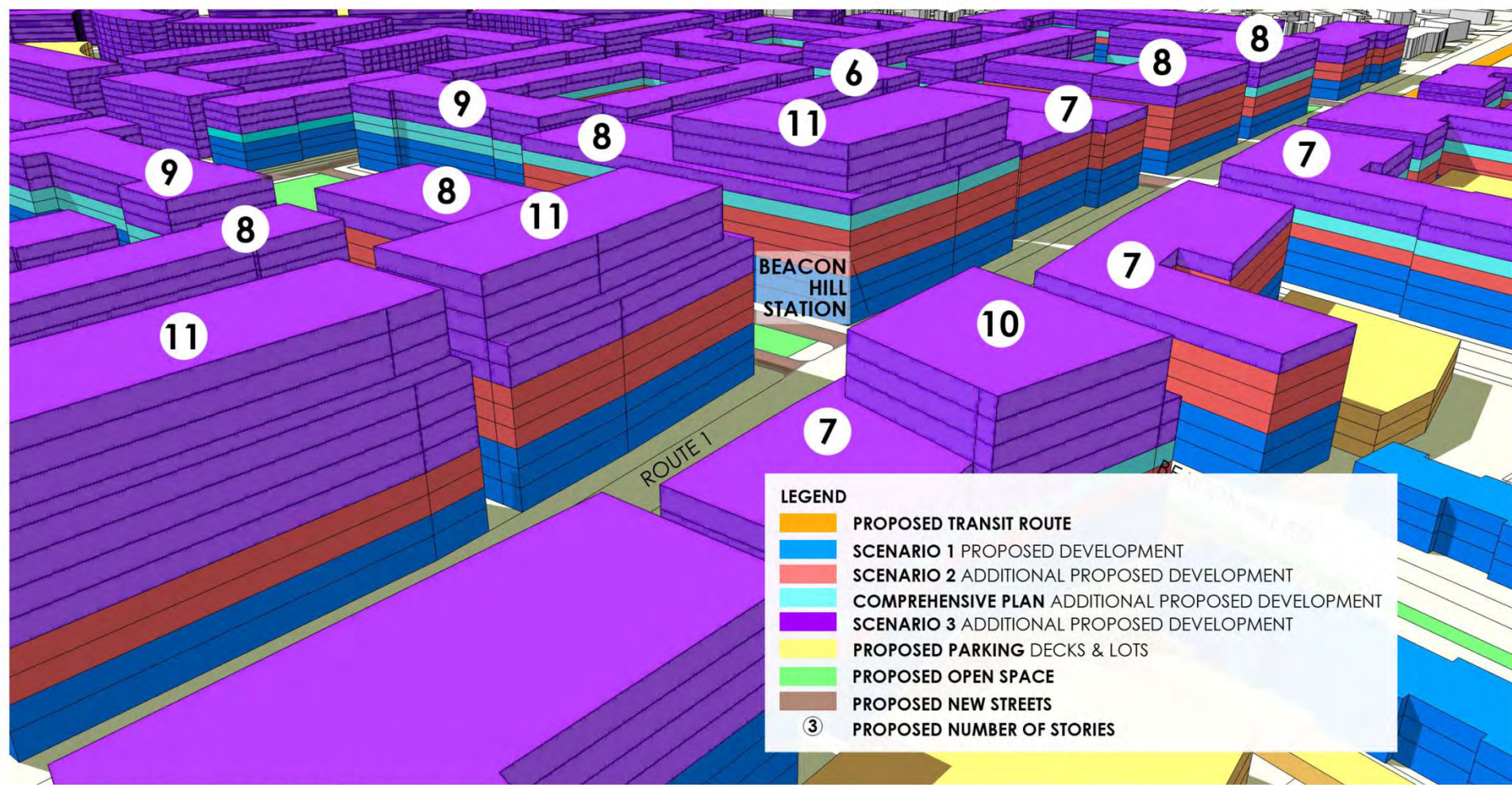


**BEACON HILL STATION SCENARIO COMPREHENSIVE PLAN**



# Beacon Hill Station: Scenario Three

## (Growth and development that would support Metrorail)



BEACON HILL STATION SCENARIO 3



# Beacon Hill: Bird's Eye View Today





# Beacon Hill: Scenario Two Bird's Eye View



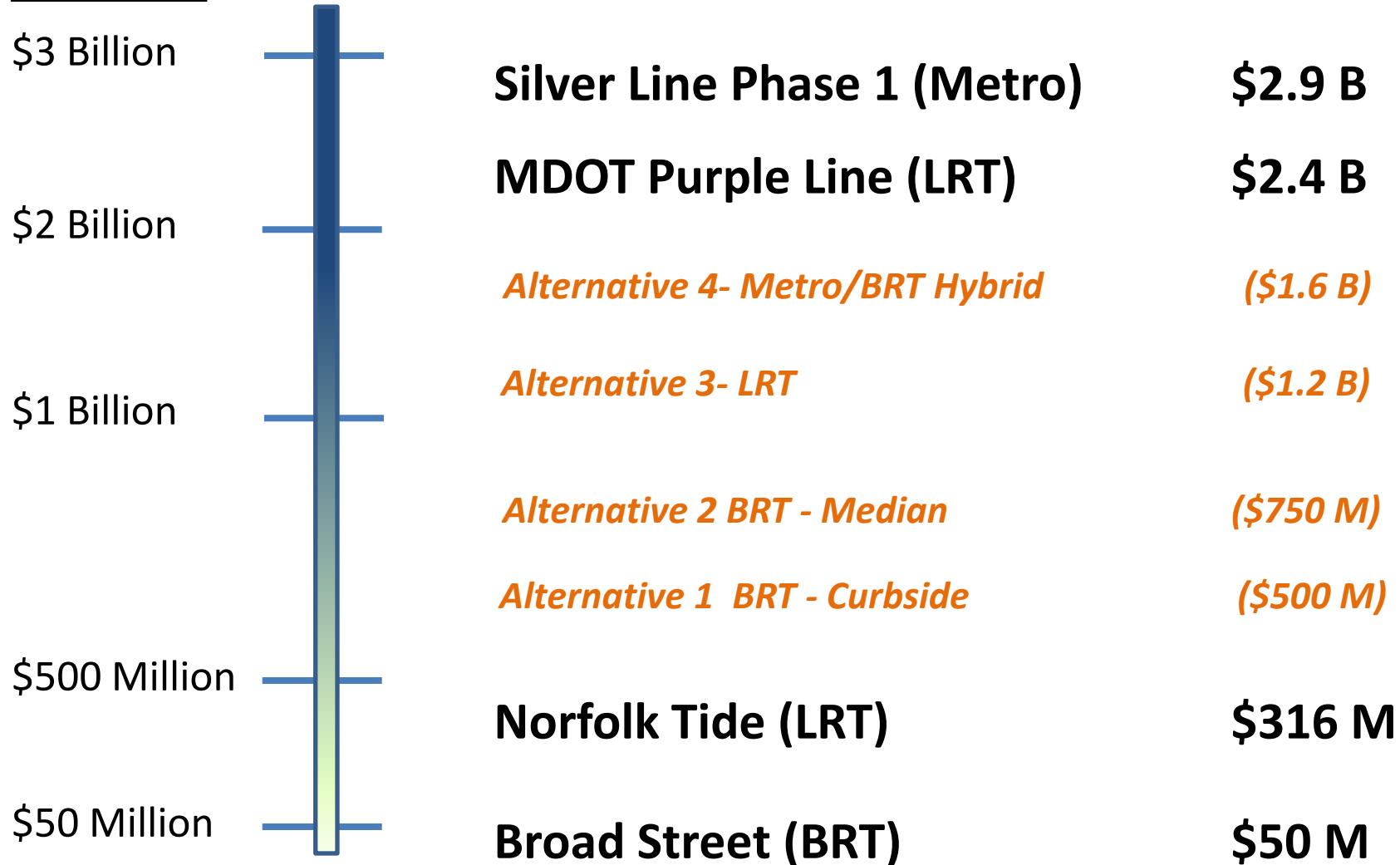


## 6. How do communities fund major transportation investments?



# Comparison of Route 1 Alternatives with Other Regional Transit Projects

## Capital Cost



# Project Funding Examples:

## MDOT Purple Line

**16-mile / 21-station LRT line along exclusive and shared ROW**  
**Operation expected to begin late 2020**  
**\$2.4 billion**

Funding Source	Type	Share (YOE)
Federal	New Starts	\$0.9 B (38%)
Regional	n/a	
State	MD Transportation Trust Fund (TTF)	\$0.7 B (28%)
Other	-Federal TIFIA with financing by private sector	\$0.7 B (31%)
	-Private equity & borrowed funds	\$0.1 B (3%)
<i>Total Cost</i>		<b>\$2.4 B</b>





# Project Funding Examples:

## MWAA Silver Line Phase 1 & Phase 2

**Phase 1: 11.7 miles/5 stations ... Phase 2: 11.4 miles/6 stations + yard**  
**Phase operation expected to begin in 2014; Phase 2 in 2018**  
**\$5.5 Billion**

Funding Source	Type	Phase I (YOE)	Phase II (YOE)	Total Share (YOE)
Federal	New Starts	\$900 M		\$900 M (16%)
State	DRPT	\$252 M	\$323 M	\$575 M (11%)
Local	Fairfax County	\$400 M	\$484 M	\$884 M (16%)
	Loudoun County		\$264 M	\$264 M (5%)
Other	MWAA (Aviation)		\$225 M	\$225 M (4%)
	MWAA (Dulles Toll Road)	\$1.4 B	\$1.3 B	\$2.6 B (48%)
<i>Total Cost</i>		<i>\$2.9 B</i>	<i>\$2.6 B</i>	<i>\$5.5 B</i>

# Project Funding Examples:

## Richmond Broad Street Rapid Transit

**7.6-mile / 13-station BRT line on existing streets**  
**Operation expected to begin 2017**  
**\$50 Million**

Funding Source	Type	Share (YOE)
Federal	Small Starts	\$25 M (50%)
State	DRPT	\$17 M (34%)
Local	City County	\$8 M (15%) \$0.4 M (1%)
<i>Total Cost</i>		<i>\$50 M</i>

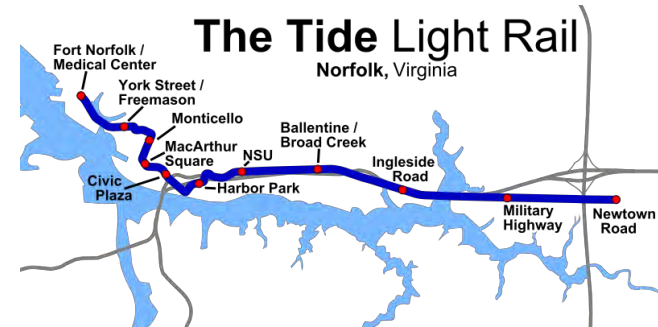




# Project Funding Examples: Norfolk TIDE Light Rail

7.4-mile / 13-station LRT line on rail right of way and existing streets  
Operation initiated 2011  
\$316 Million

Funding Source	Type	Share (YOE)
Federal	FTA New Starts	\$129 M (41%)
	Other Federal	\$74 M (23%)
	Total Federal	\$200M (64%)
Regional	n/a	
State	Commonwealth of Virginia	\$62 M (20%)
Local	City of Norfolk	\$54 M (17%)
<b>Total Cost</b>		<b>\$316 M</b>





7. What are the next steps?



# Stepping back – Purpose of the study:

- Recommend a program of road, bike and pedestrian improvements, and a high-quality transit alternative to be carried forward for implementation
- Consider project funding options
- Determine the appropriate level of environmental documentation

# Continued Solutions: This study will serve as a tool to...

- Identify short-term and long-range improvements along Route 1
- Plan infrastructure that supports future growth in the corridor
- Define an ultimate Route 1 concept configuration
- Better define how Route 1 fits in to the regional transportation plan
- Define multi-modal approach for Route 1 and seek out funding and implementation opportunities





A group of five people are gathered in a meeting room, looking at a presentation board. The room has large windows with blinds on the left. A man in a black jacket and a woman in a yellow top are in the foreground, looking at the board. A man in a blue jacket and a woman in a black top are also looking at the board. A woman in a yellow top is standing to the right. The board has the title "Issues and Goals" and a list of items. The text "8. We need your feedback!" is overlaid on the image.










8. We need your  
feedback!

# APPENDIX





# Vehicular Lane Evaluation

Alternative		Intersection Performance	Right of Way Impacts
Expanded		No intersections with LOS E or worse 	Significant ROW impacts 
Consistent		3 intersections with LOS E or worse 	Moderate ROW impacts 
Converted		10 intersections with LOS E or worse 	Few ROW impacts 



Compares less favorably





















Compares more favorably

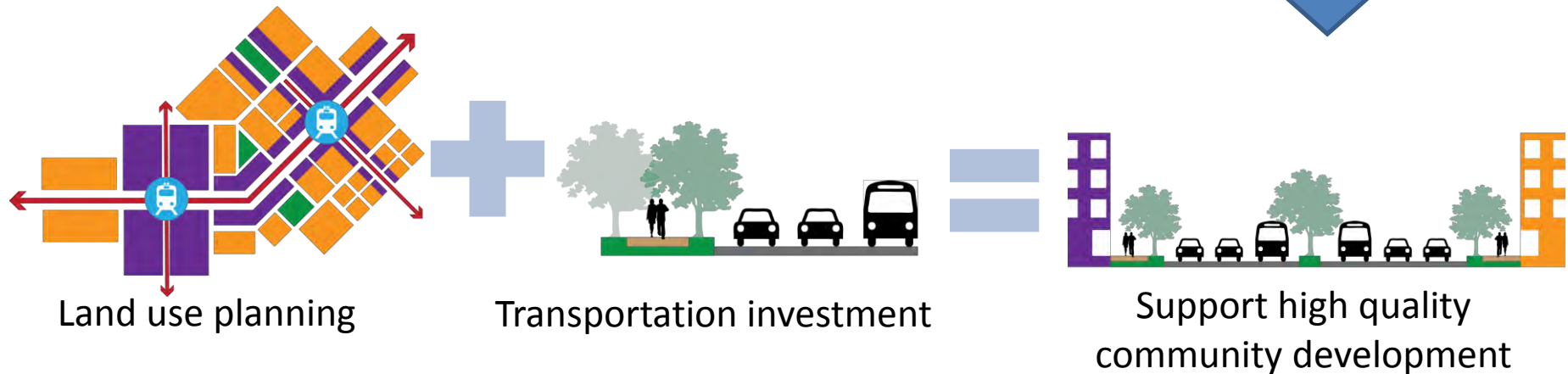
## Other, qualitative factors:

- Desire to maintain existing speeds (45 mph)
- Minimize lane transitions that contribute to travel delays
- Minimize pedestrian crossing distance/time

# Bicycle and Pedestrian Evaluation

	In-street bike lane and sidewalk	Shared bus/bike lane and sidewalk	Buffered bike lane and sidewalk	Multiuse path
<b>Legend for ratings:</b>  Compares more favorably  Compares less favorably				
<b>Provides access along full corridor</b>	Improves walk & bike access to destinations 	Improves walk & bike access to destinations 	Improves walk & bike access to destinations 	Improves walk & bike access to destinations 
<b>Provides safety and comfort given high auto speeds and volumes</b>	In-street bike lane not recommended for 45 mph+ 	Shared bike/travel lane not recommended for 45 mph+ 	Bike lane buffered from 45 mph traffic 	Bike lane buffered from 45 mph traffic with curb and landscape strip 
<b>Requires additional right-of-way</b>	Requires some new ROW 	Requires little new ROW 	Requires significant new ROW 	Requires some new ROW 

# Transportation Investment helps to increase economic viability and vitality of the corridor



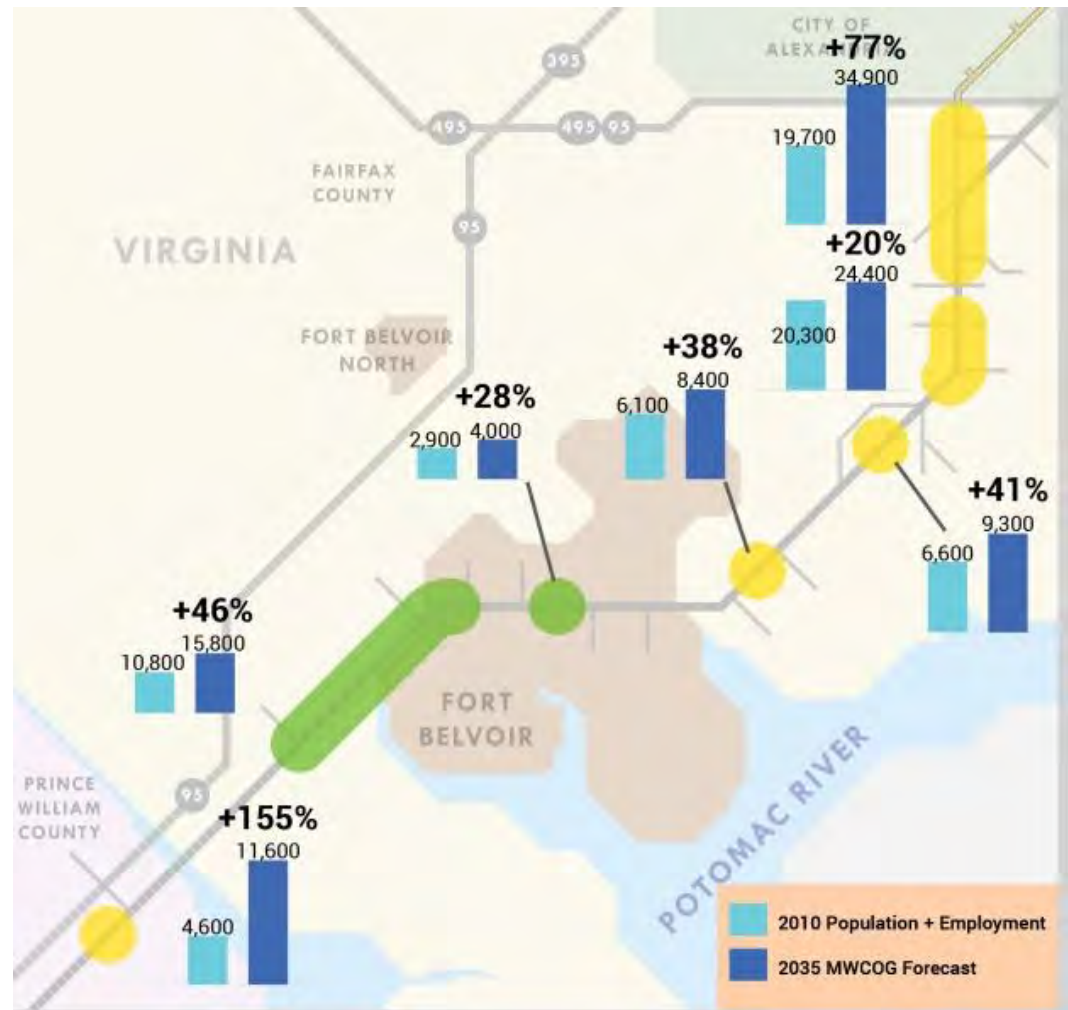


# Summary of Land Use Scenarios

- **Scenario One** (2035 COG projections)  
Compare transportation alternatives in light of projected growth levels
- **Scenario Two** (growth above 2035 projections)  
What is a reasonable growth expectation for a corridor that invests in high-quality transit (BRT or LRT)?
- **Scenario Three** (Metrorail supportive)  
How much do population and employment need to increase to achieve density levels typically supportive of Metrorail?

# Scenario 1

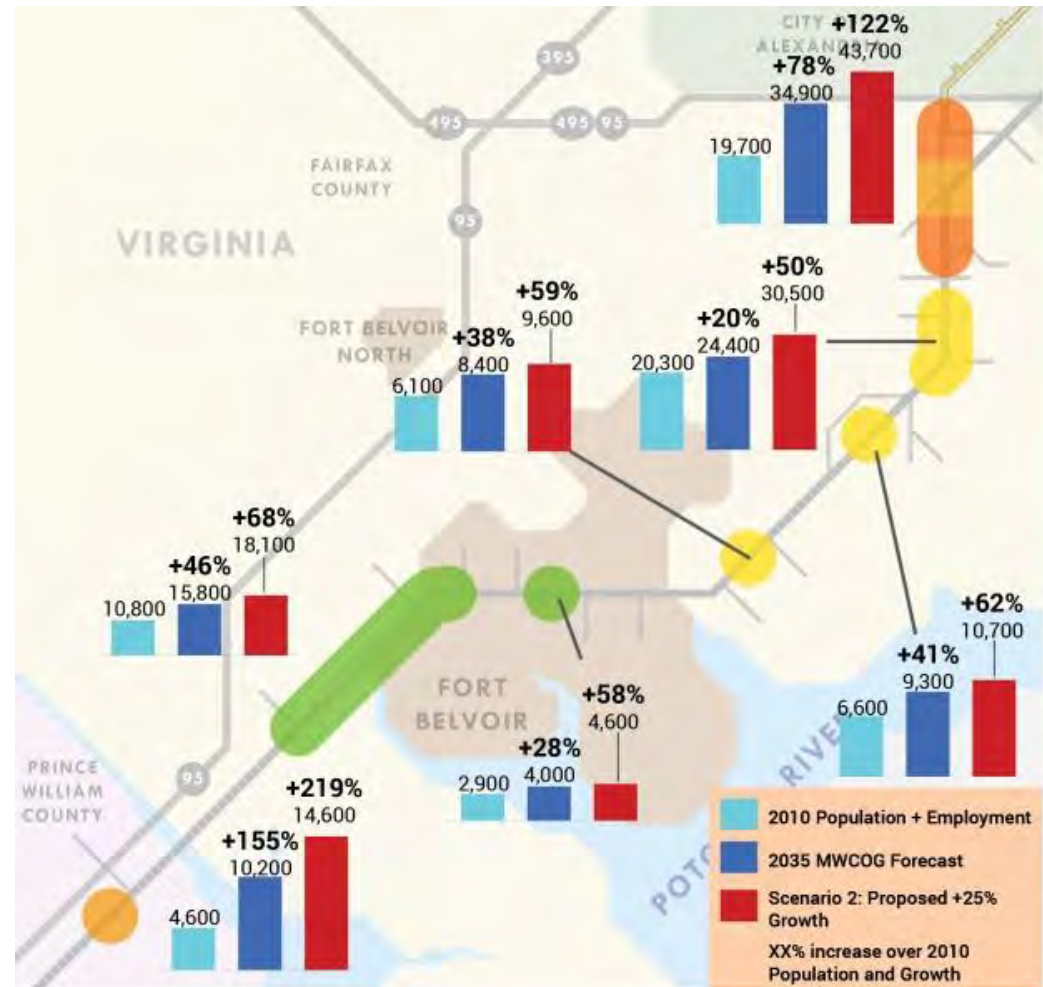
- **Scenario One**  
(2035 COG  
projections)  
**Compare**  
**transportation**  
**alternatives in light**  
**of projected growth**  
**levels**



# Scenario 2

- **Scenario Two**  
(growth above 2035 projections)

What is a reasonable growth expectation for a corridor that invests in high-quality transit (BRT or LRT)?

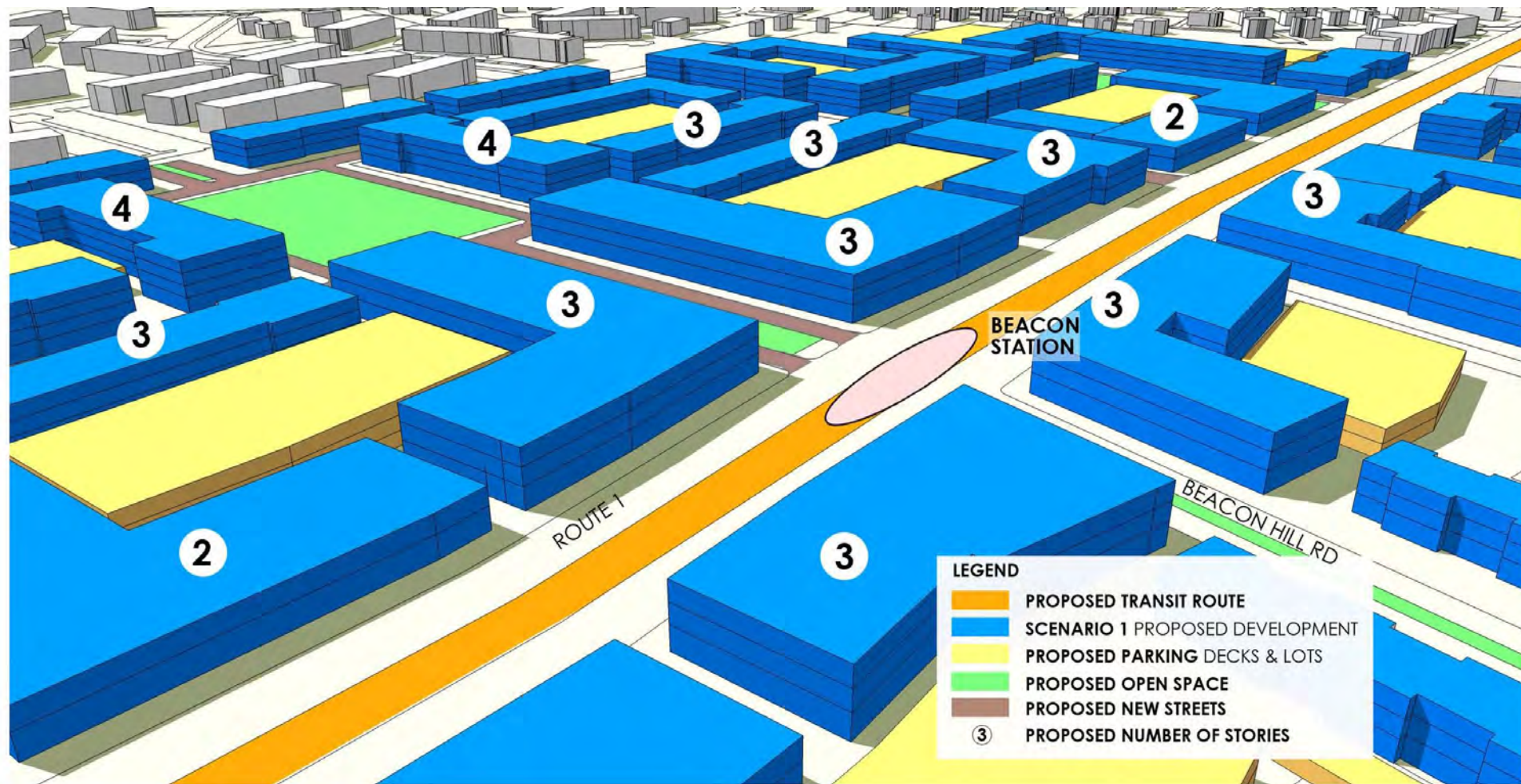




- How much do population and employment need to increase to achieve density levels typically supportive of Metrorail?



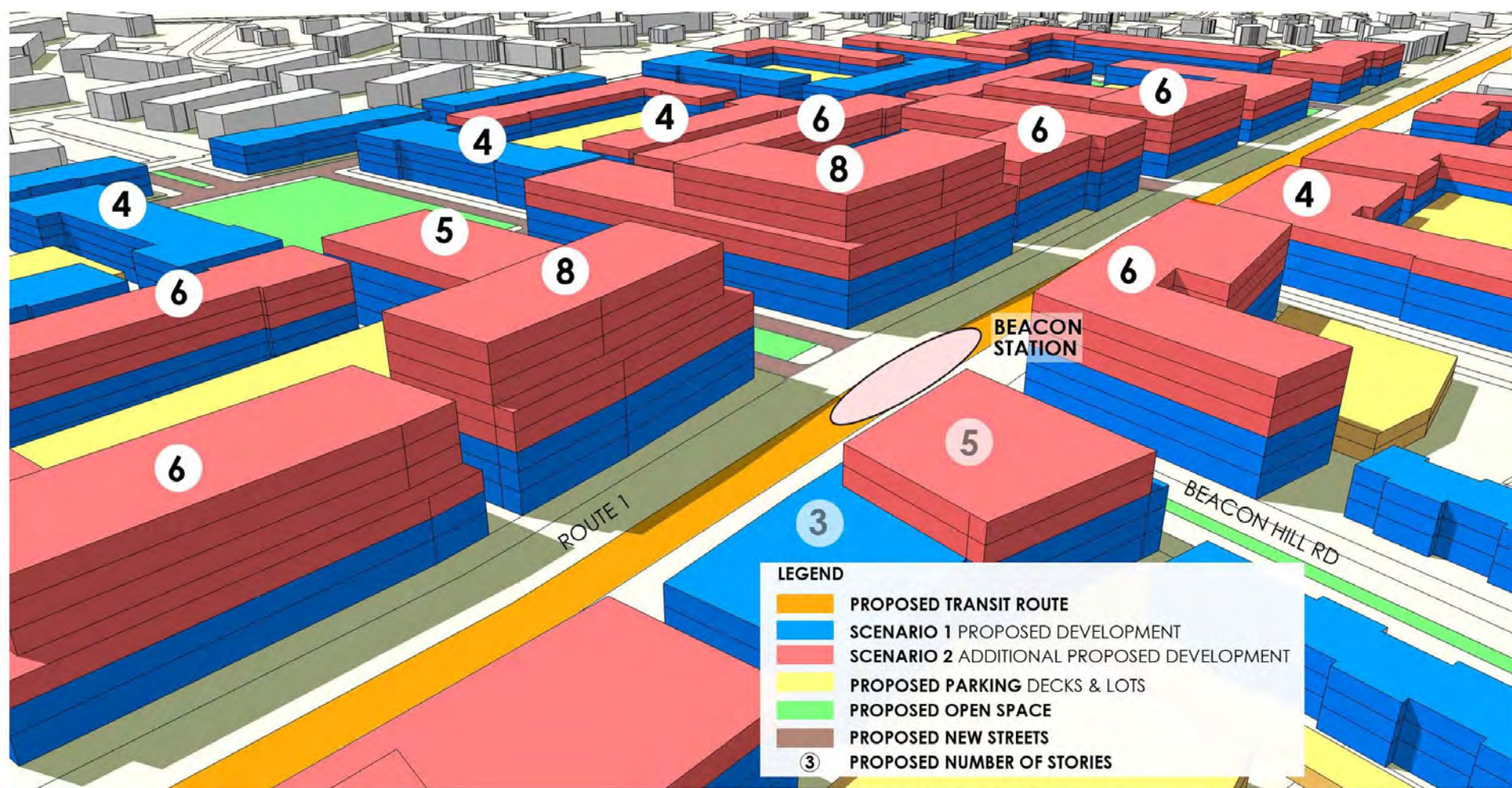
# Beacon Hill: Land Use Scenario One (2035 COG Projection)



BEACON STATION SCENARIO 1



# Beacon: Land Use Scenario Two (additional growth increment)



BEACON STATION SCENARIO 2



This 3D rendering illustrates the proposed development scenarios around the Beacon Station. The image shows a grid of city blocks with buildings colored according to the legend. A yellow line indicates the proposed transit route, and a yellow oval marks the Beacon Station. The buildings are labeled with numbers in white circles, representing the proposed number of stories. The legend identifies the following elements:

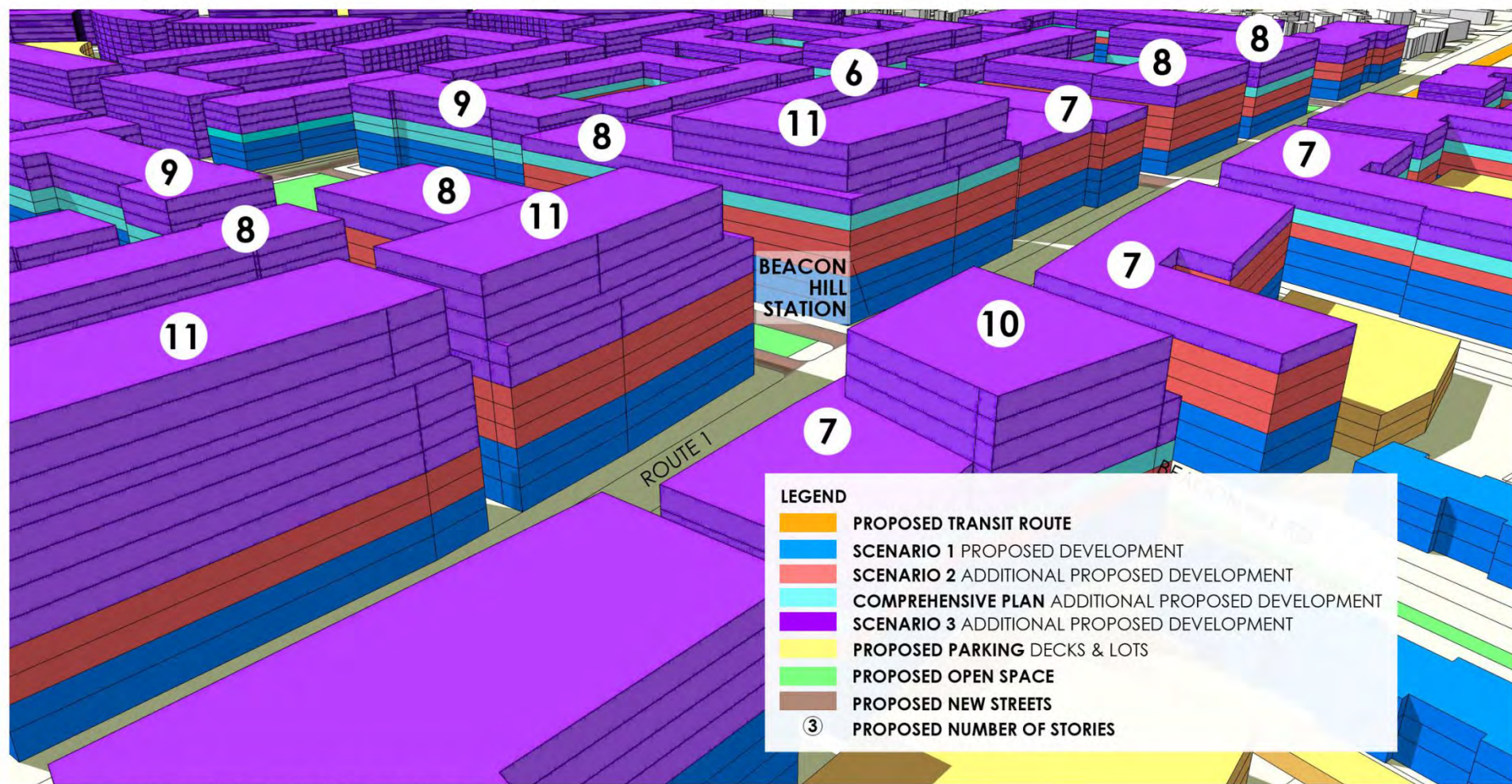
- PROPOSED TRANSIT ROUTE:** Yellow line.
- SCENARIO 1 PROPOSED DEVELOPMENT:** Blue buildings.
- SCENARIO 2 ADDITIONAL PROPOSED DEVELOPMENT:** Red buildings.
- COMPREHENSIVE PLAN ADDITIONAL PROPOSED DEVELOPMENT:** Light blue buildings.
- PROPOSED PARKING DECKS & LOTS:** Yellow areas.
- PROPOSED OPEN SPACE:** Green areas.
- PROPOSED NEW STREETS:** Brown lines.
- PROPOSED NUMBER OF STORIES:** Numbers in white circles (e.g., 3, 5, 6, 8, 9).

# Route 1

## Multimodal Alternatives Analysis

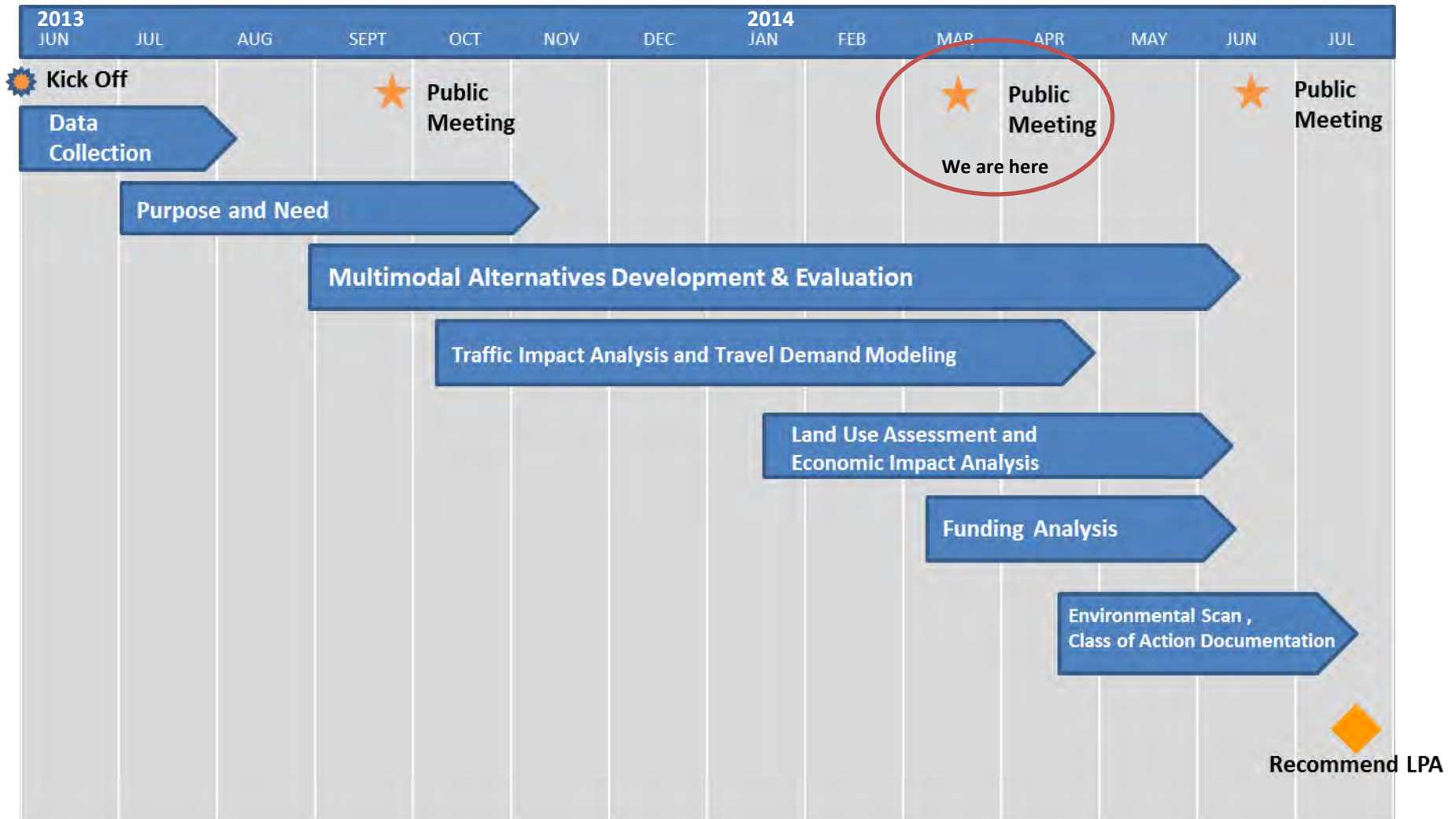


# Scenario 3: Beacon Hill Station



BEACON HILL STATION SCENARIO 3

# Study Schedule





# Evaluation Criteria: FTA New Starts/Small Starts

## Project Justification Criteria

**Economic Development:** Transit supportive plans and policies; plans to preserve affordable housing

**Mobility Improvements:** Total project boardings; transit-dependent ridership is weighted 2x

**Cost Effectiveness:** Annualized cost per annual linked trip on the project

**Land Use:** Quantitative analysis of station area development, proportion of legally binding affordability

**Environmental Benefits:** Environmental benefits are monetized and compared to the annualized costs

**Congestion Relief:** Project sponsors will receive a medium rating until further guidance is released

## Financial Commitment Criteria

**Current Condition** (capital and operating)

**Commitment of Funds** (capital and operating)

**Reasonableness of Assumptions and Financial Capacity** (capital and operating)

# Evaluation Criteria: Project Goals and Objectives

Goals and Objectives	Multimodal Measures
<b>GOAL 1: Expand attractive multimodal travel options to improve local and regional mobility</b>	
Increase transit ridership	Transit ridership
Improve transit to reduce travel times	Transit travel time, Automobile travel time
Increase transportation system productivity	Total person throughput
Improve bicycle and pedestrian networks	Continuous sidewalk and bike pathway
Integrate with other transit service	Connections to existing and planned transit
<b>GOAL 2: Improve safety; increase accessibility</b>	
Provide accessible pathways	Continuous sidewalk and bike pathway
Reduce modal conflicts	Separate facilities for separate modes
Improve pedestrian crossings	Average pedestrian delay to cross, Adequate pedestrian refuges
Maintain traffic operations	Traffic LOS
<b>GOAL 3: Increase economic viability and vitality of the corridor</b>	
Support higher activity levels	Accommodate 2035 density (growth scenarios)
Investments are financially feasible to construct and operate	Project costs, cost effectiveness, Allows incremental implementation
High-capacity transit facilities at appropriate locations	Serves low-income residents, value added to adjacent properties
<b>GOAL 4: Support community health and minimize impacts on community resources</b>	
Minimize negative impacts to the natural environment	ROW impacts on environmental and historic resources
Contribute to improvements in regional air quality	Change in VMT
Increase opportunities for bicycling and walking	Continuous sidewalk and bike pathway



# Project Funding Examples:

## Lynx Blue Line Extension Charlotte, NC

**9.3-mile / 11-station LRT line along exclusive ROW**  
**Operation expected to begin 2017**  
**\$1.16 billion**

Funding Source	Type	Share (YOE)
Federal	New Starts	\$580 M (50%)
Regional	Charlotte Area Transit System	\$250 M (26%)
State	NC DOT	\$299 M (26%)
Local	City of Charlotte City/In-kind ROW	\$18 M (2%) \$13 M (1%)
<i>Total Cost</i>		<i>\$1.16 Billion</i>

