

Mayor Karl Dean, Chairman



NASHVILLE AREA

Metropolitan Planning Organization

Northeast Corridor Mobility Study

Going for what you want, despite the AA

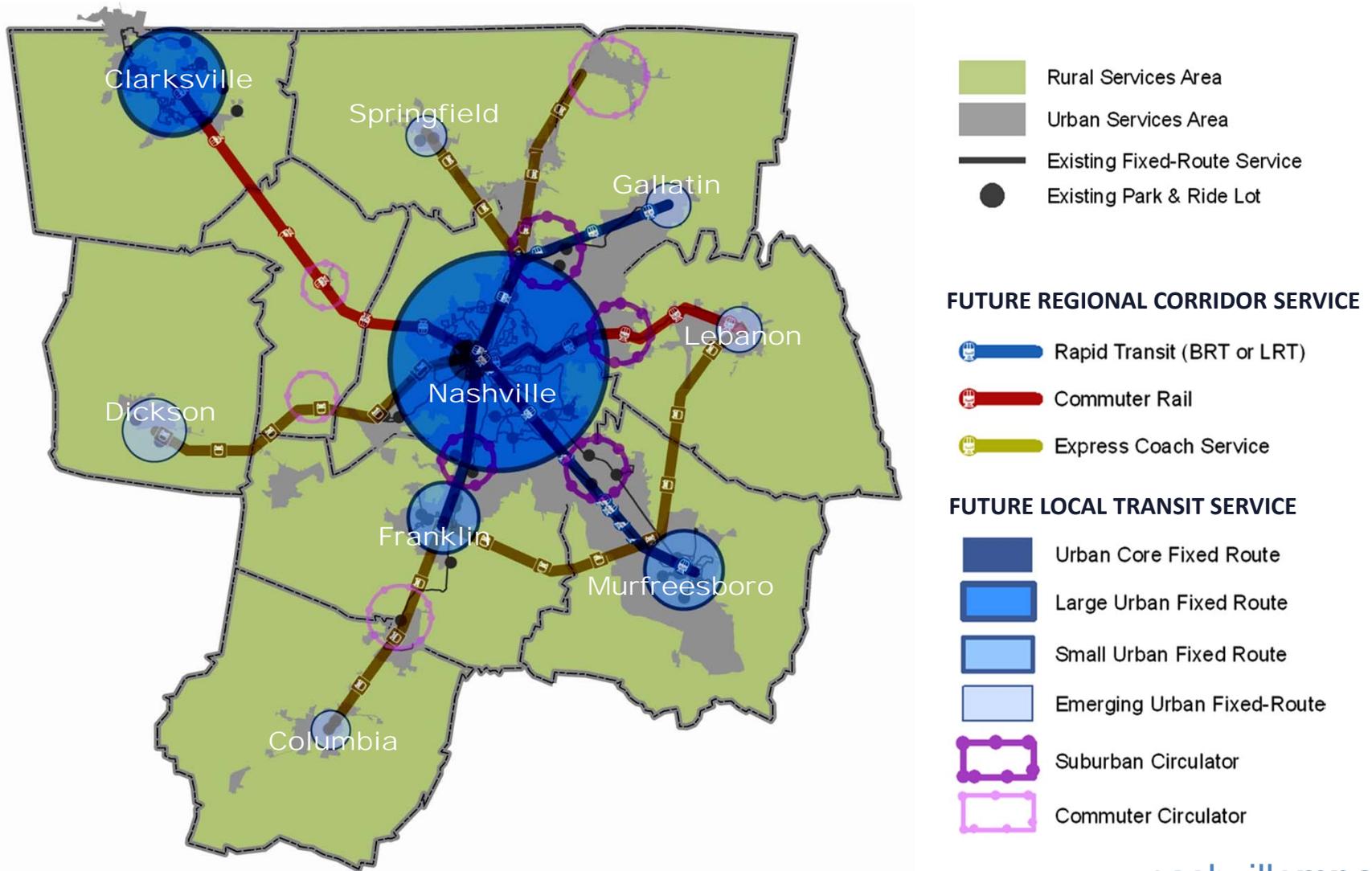
Meeting of the NE Corridor Mayors
December 9, 2010

Three Major Policy Initiatives

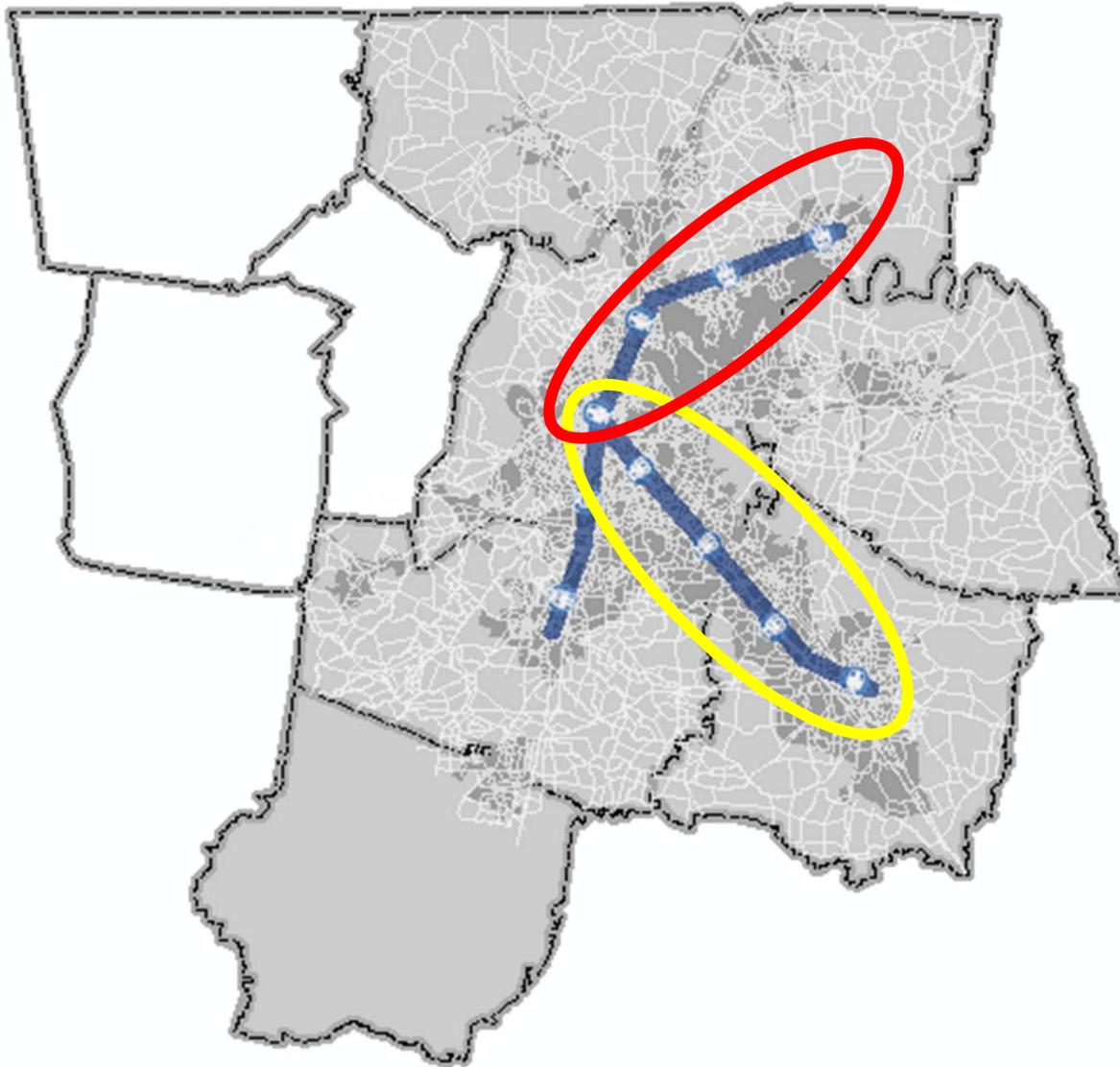
#1

**A Bold, New Vision
for Mass Transit**

A Bold, New Vision for Mass Transit



Rapid Transit Corridor Studies



Northeast Corridor Mobility Study

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Study Approach



Study
Recommendations

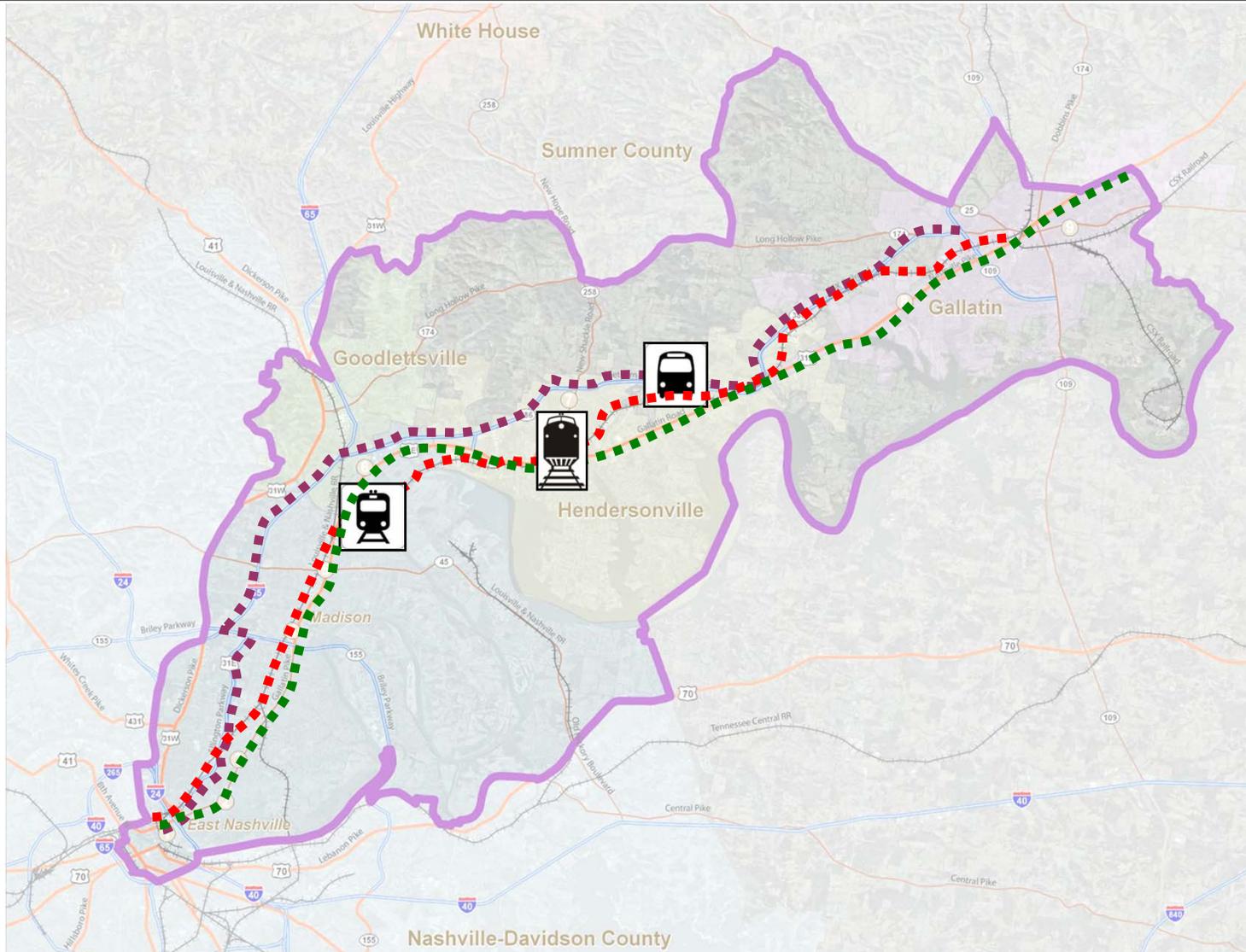


Improvements

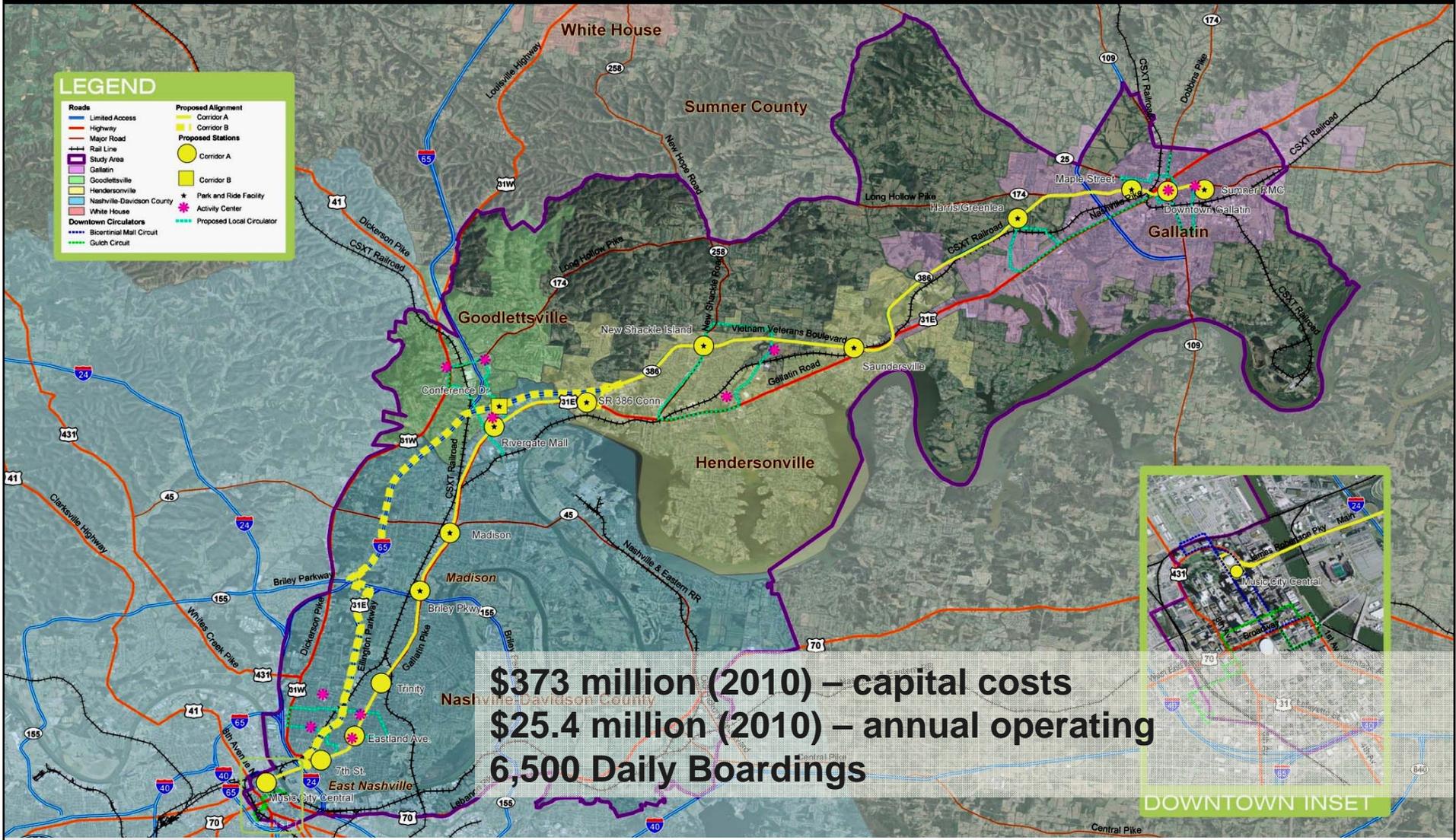
Transit Alternatives

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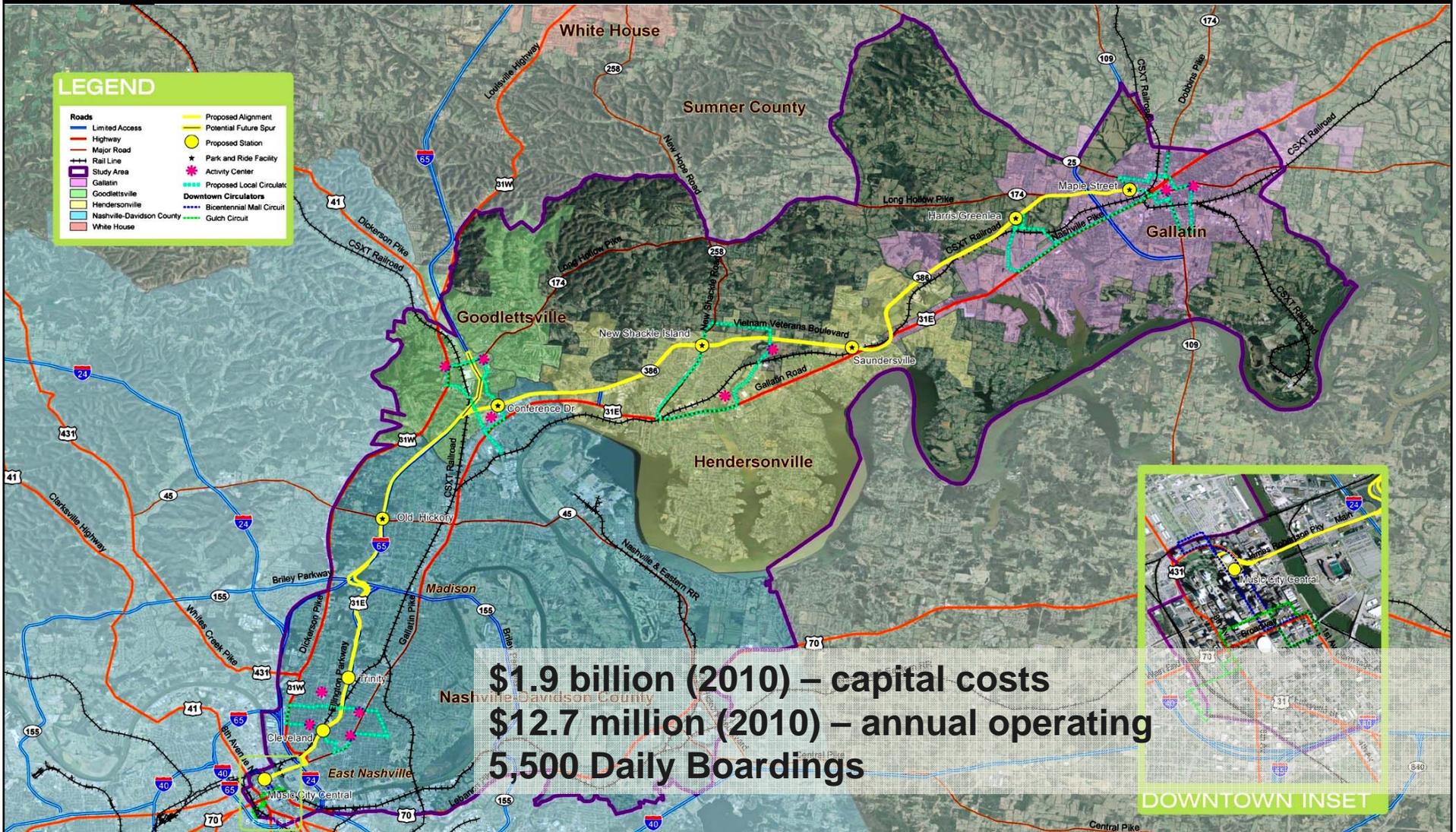
Three Transit Alternatives



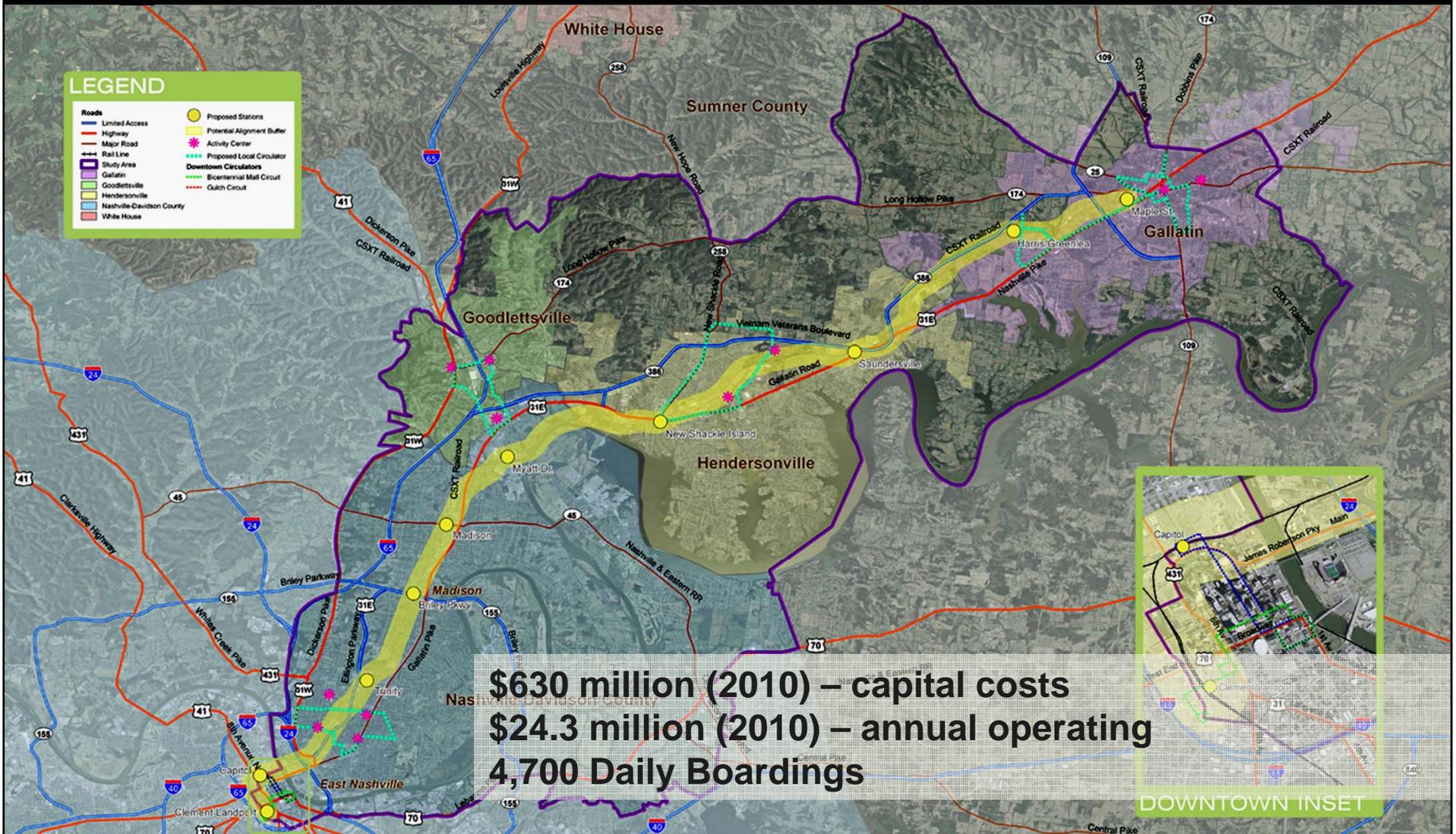
Bus Rapid Transit Alternative



Light Rail Transit Alternative



Commuter Rail Transit Alternative



\$630 million (2010) – capital costs
\$24.3 million (2010) – annual operating
4,700 Daily Boardings

DOWNTOWN INSET

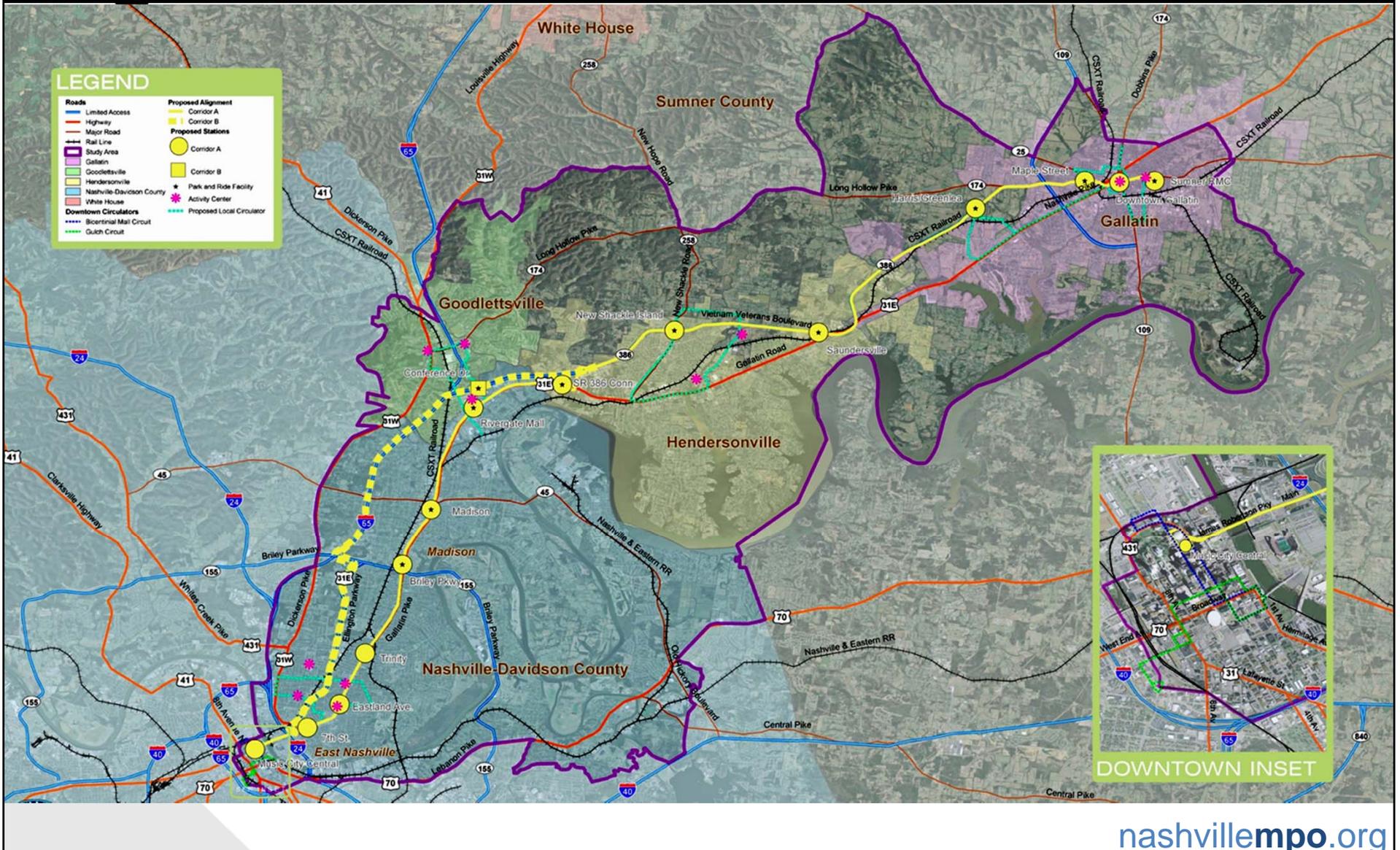
Study Findings

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Study Findings

- ➔ **Commuter Rail is not publicly nor politically desirable due to service characteristics and freight factor.**
- ➔ **Light Rail is not going to be competitive for FTA New Starts funding within the near future.**
- ➔ **Continued development of BRT lite makes the most sense in the short, and mid-term.**
- ➔ **But, the community still wants rail!**

BRT Optimization



BRT Optimization

➔ Davidson County (Urban)

- Intensification of BRT “Lite”
- Selected locations for dedicated lanes
- Queue jumps at selected intersections
- Enhanced stations

➔ Sumner County (Suburban/ Town Centers/ Activity Centers)

- Dedicated / managed lanes along SR 386
- Slip ramps with access to TOD-ready sites

➔ Both Counties

- New local circulator/feeder routes

Madison BRT Station



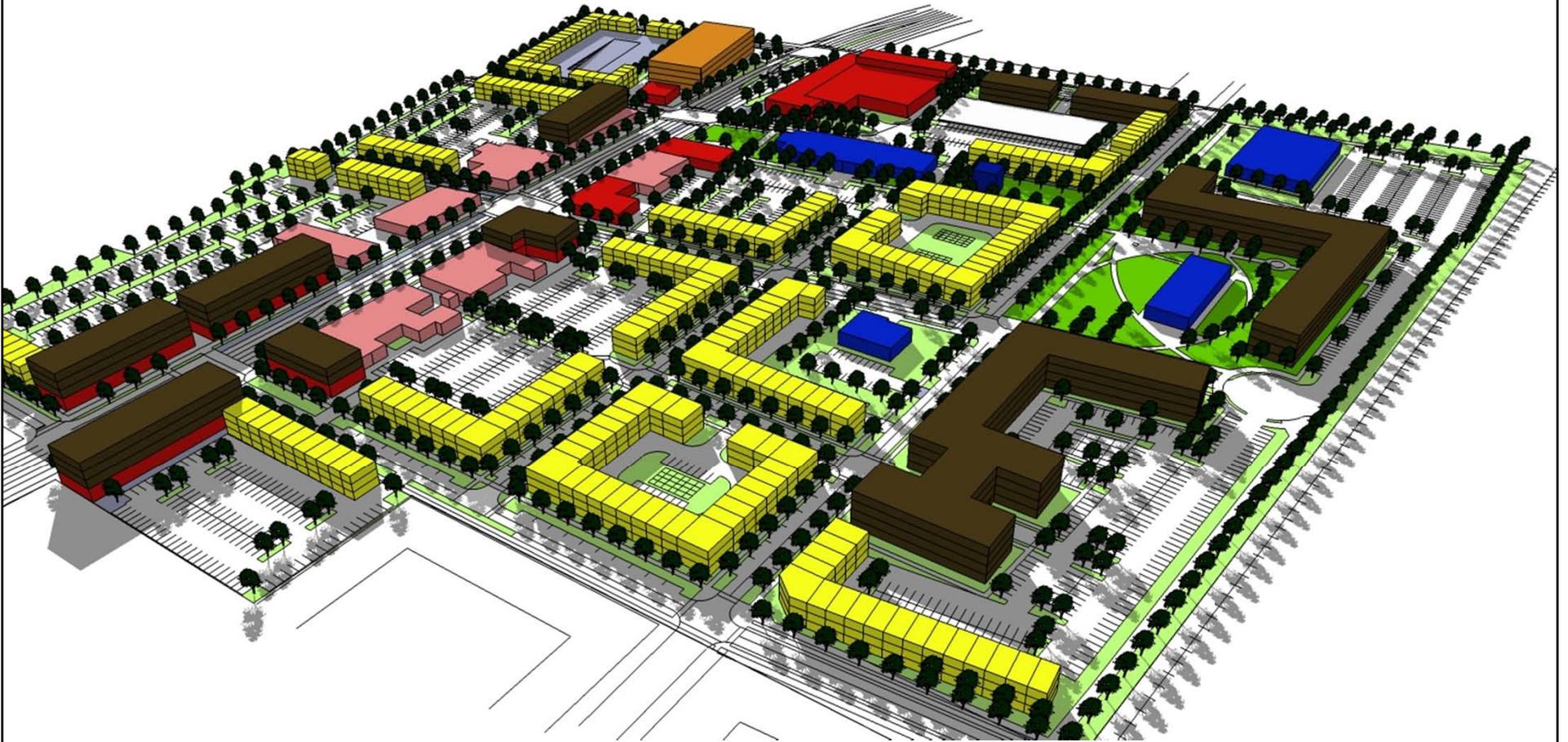
Madison BRT Station



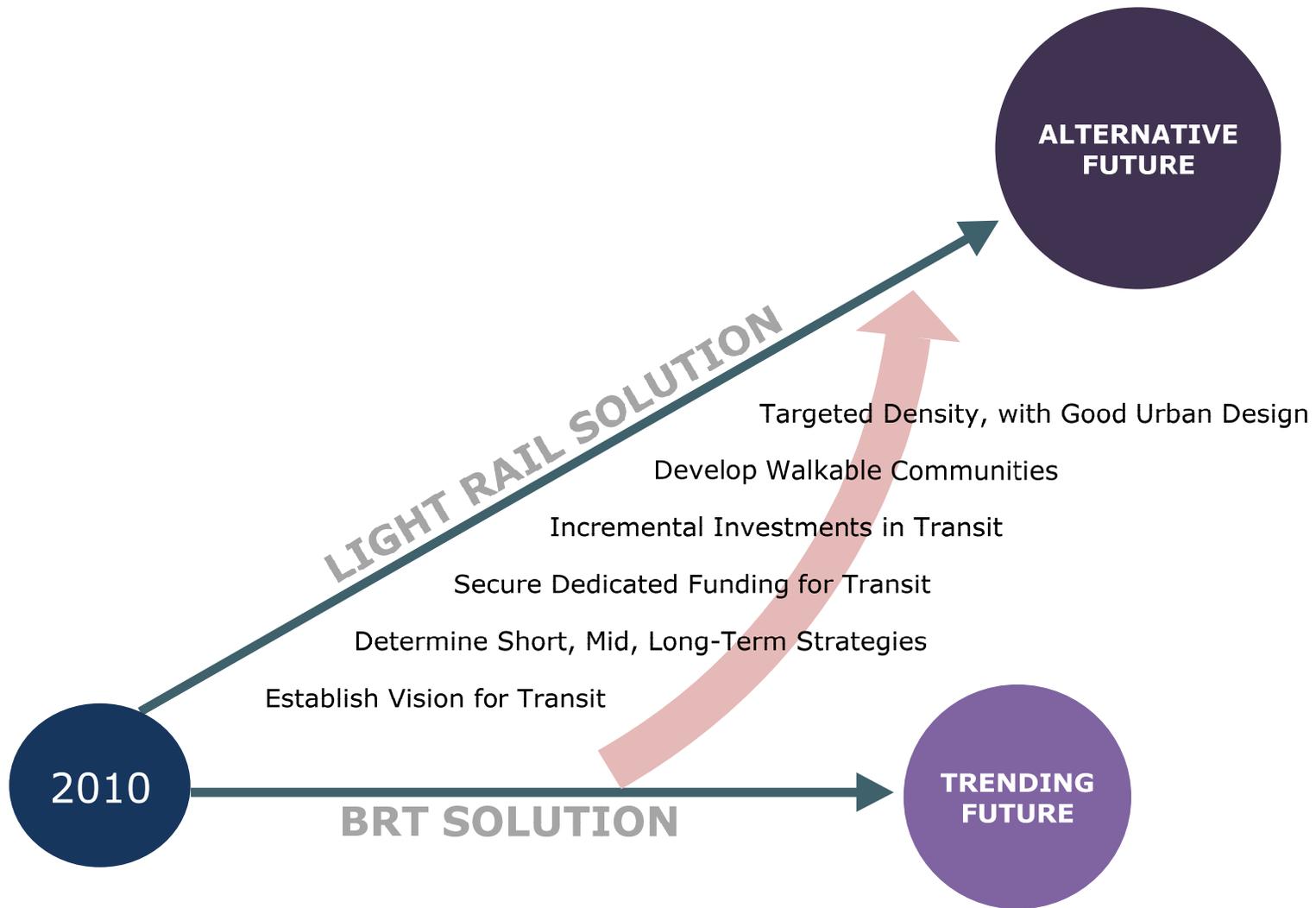
Madison BRT Station



Madison BRT Station



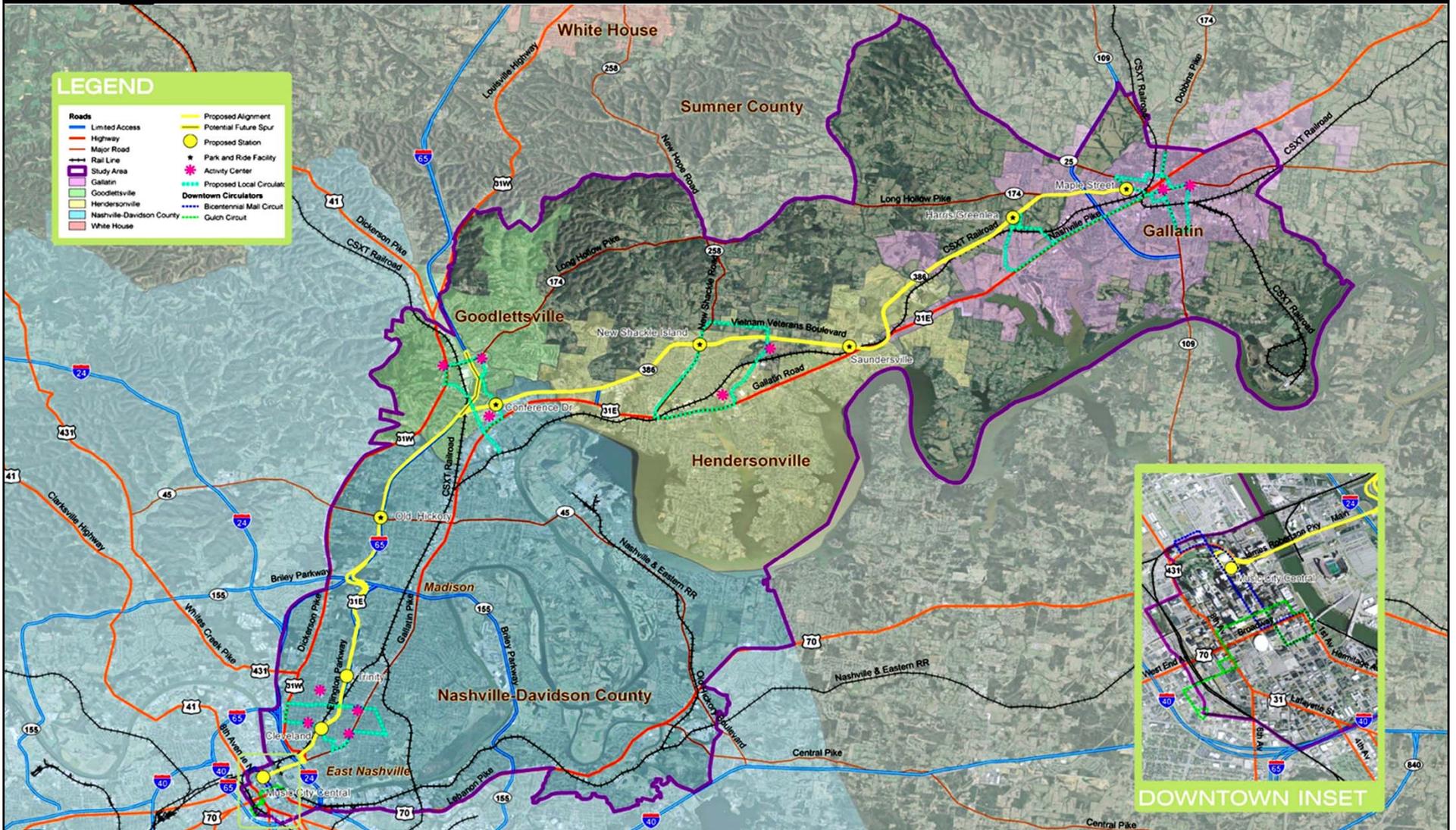
Moving Ahead towards the Vision



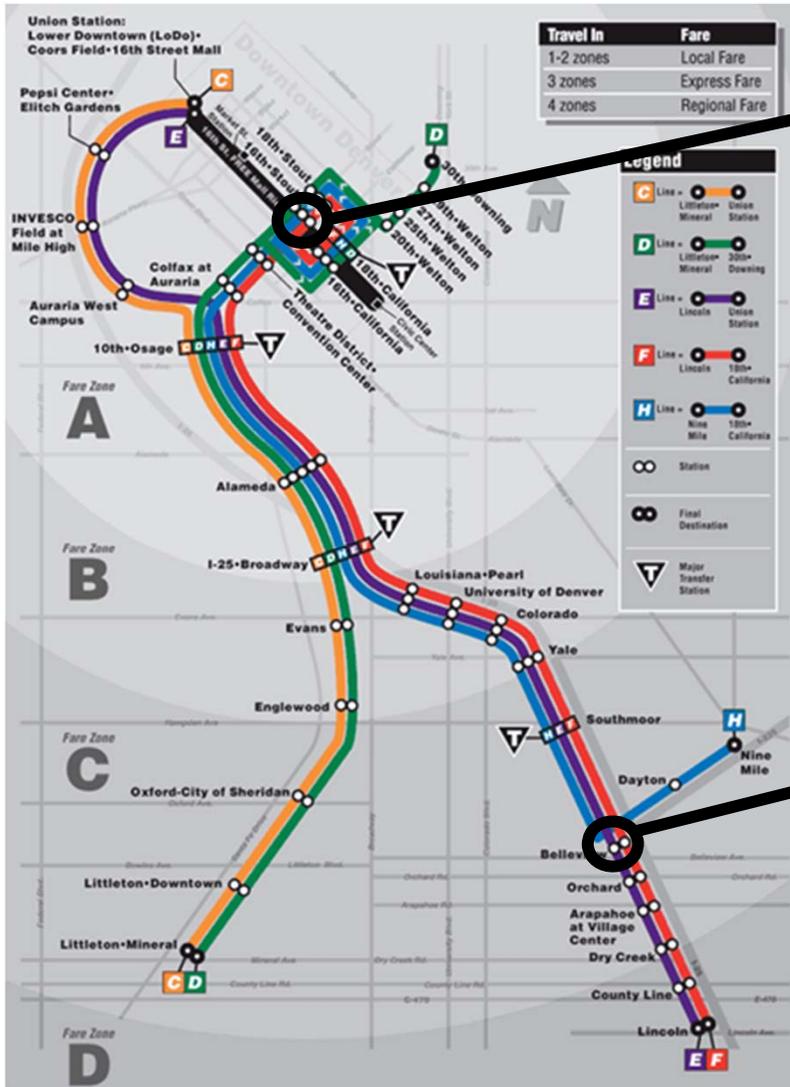
Guidance for Achieving Ultimate Vision

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Moving Ahead towards a Vision



Inspiration: Denver Urban/ Suburban LRT



Moving Ahead towards the Vision

- ➔ How much ridership would be needed to warrant LRT investments?
- ➔ **What land development pattern would be needed to produce that ridership?**
- ➔ How many residents and jobs would be required to support that pattern?
- ➔ **What would that the resulting densities/ urban design look like?**
- ➔ What public policies, regulations, or incentives would be needed to encourage that land development pattern?
- ➔ **What private-sector initiatives could help promote that development pattern?**
- ➔ How would LRT be built/ phased over time?
- ➔ **How much would it cost (locally) to construct and operate LRT?**
- ➔ When should we re-evaluate a NEW STARTS application for LRT?

Achieving Ridership Targets

- ➔ **Low-End Ridership Threshold: 1,000 daily boardings per mile**
 - LRT ranges from 300 to 8,000+ daily boardings per mile
 - **Cleveland** Blue and Green Lines see **550** daily boardings per mile
 - **St. Louis** Metrolink sees **1,050** daily boardings per mile
 - **Charlotte** LRT sees **2,000** daily boardings per mile
 - **Boston** Green Line sees **8,250** daily boardings per mile

Methodology for Increasing Ridership to Minimum Threshold:

- ➔ Modify travel demand model assumptions to achieve target
 - Modest increase in cost to operate vehicles
 - Modest increase in the travel time savings for LRT
 - Maintain countywide auto ownership rates through 2035
 - Reduced corridor auto ownership by 1/3
- ➔ Modify growth and land use assumptions
 - New growth to occur closer to existing development
 - Double households and jobs forecast within ½ mile of LRT alignment

Achieving Ridership Targets

➔ Business-as-Usual Scenario Model Results

- 6,500 daily boardings
- 217 daily boardings per mile (30 miles)

➔ Alternative Scenario Model Results

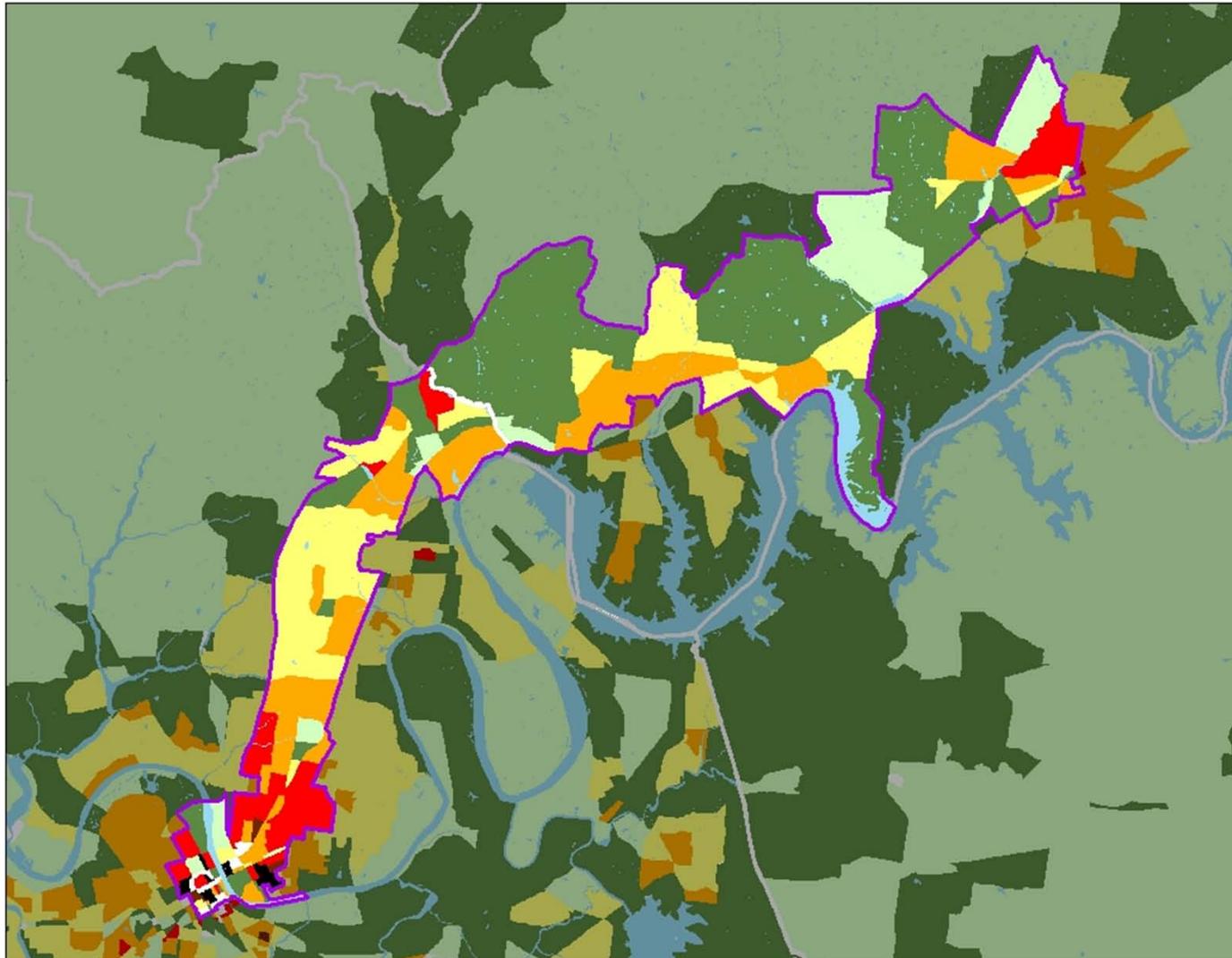
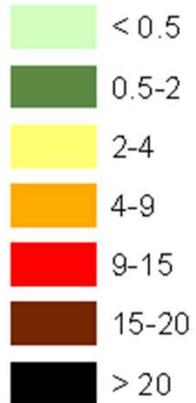
- 22,000 daily boardings
- 734 daily boardings per mile (30 miles)

➔ Modified Transit Scenario

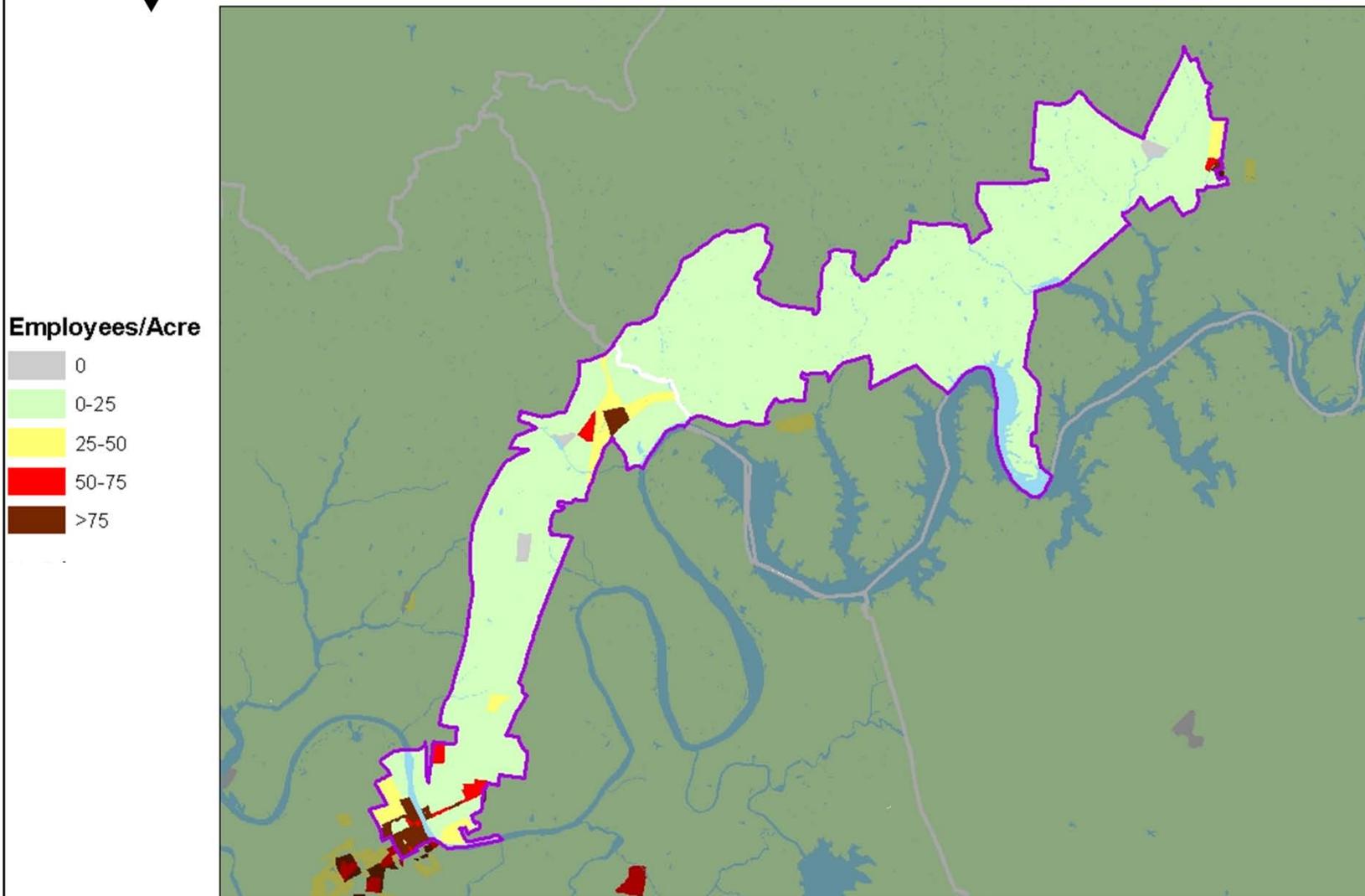
- LRT distance shortened from 30 miles to 15 miles, Nashville to Hendersonville instead of Gallatin
- Ridership Discounted by 2,000 (Gallatin)
- **1,334 daily boardings per mile (15 miles)**

Residential Density, BAU vs Transit

HH / ACRES



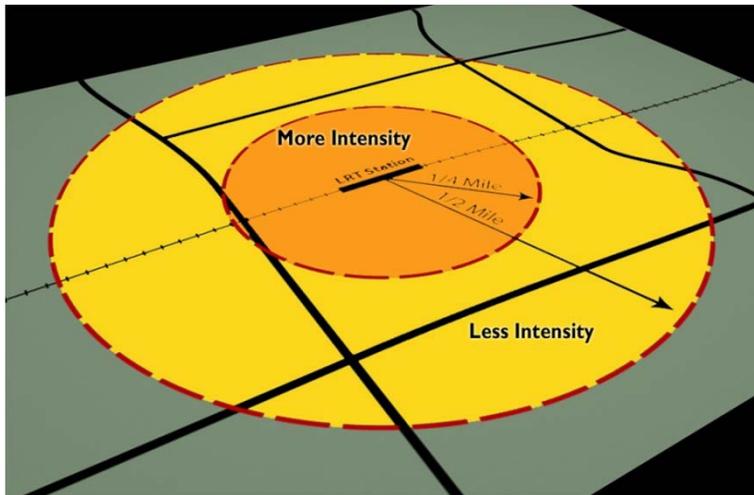
Employment Density, BAU vs Transit



Station Concepts for Long-Range Vision

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Station Area Land Use Planning



Transit Oriented Development (TOD)

Minimum Density Goal:

(1/2 mile of station)

Residential:

15-20 units/acre minimum

Mixed Use, Office, Commercial:

.50 -.75 FAR

Station Planning Principles:

- Station areas should focus on roughly a half-mile radius around each station to promote walkability.
- Densities and Intensities should be highest adjacent to the stations to take advantage of the greater transportation opportunities.
- Each station should have a mix of uses and intensities that effectively support the transit and are appropriate to its land use context.
- Densities and Intensities should step down and transition into the surrounding existing uses.
- Vertical mixing of uses is a necessity to the success of transit stations.
- Plans should capitalize on the development of vacant lands and the redevelopment of marginal and transitional lands.
- Existing neighborhoods should be protected and strengthened.

Station Area Development Evaluation

Station Specific TOD Land Use Evaluation:

- Identified potential development and redevelopment parcels within each station area,
- Applied land use & density assumptions (see below),
- Compared “TOD Scenarios” to current land use policy to identify potential land use obstacles to TOD.

Density Assumptions: Station Specific TOD Scenarios				
	Residential Units/acre (net)	Office FAR (net)	Retail FAR (net)	Industrial FAR (net)
Low	15 2-3 story, Townhome	.38 4-6 story, surface parking	.25 1 story, big box, surfacing parking	--
Medium	30 2-6 story, some structured parking	1.0 5-15 story, partial surface parking	.60 1-2 story, big box, partial structured parking	.40
High	75 10 story +, structured parking	4.5 20+ story, structured parking	.80 1-3 story, mixed use, all structured parking	--

Residential Density Examples

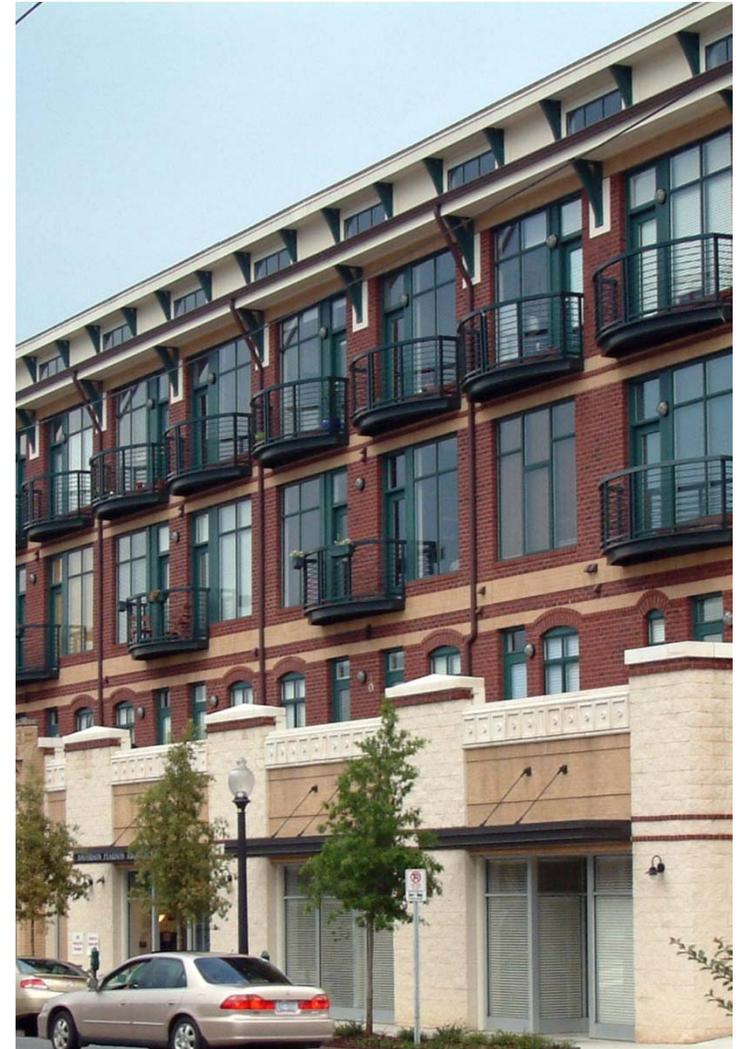


Residential: 10-20 units/acre
(2-3 stories, surface parking)



Residential Density Examples

Residential/Mixed Use: 15-30 units/acre
(2-4 stories, surface & structured parking)



Residential Density Examples

Residential/Mixed Use: 30-40 units/acre
(4-6 stories, structured parking)



Residential Density Examples

Residential: 75 + units/acre
(10 + stories, structured parking)



Office Intensity Examples

Office – 0.4 FAR

(4-6 story, surface parking)



Office – 1.0 FAR

(5-15 story, partial structured parking)



Office Intensity Examples



Office – 4.0 + FAR
(20-30 story, structured parking)



Retail Intensity Examples



Retail: 0.25 FAR
(1 story, retail, big box, surface parking)



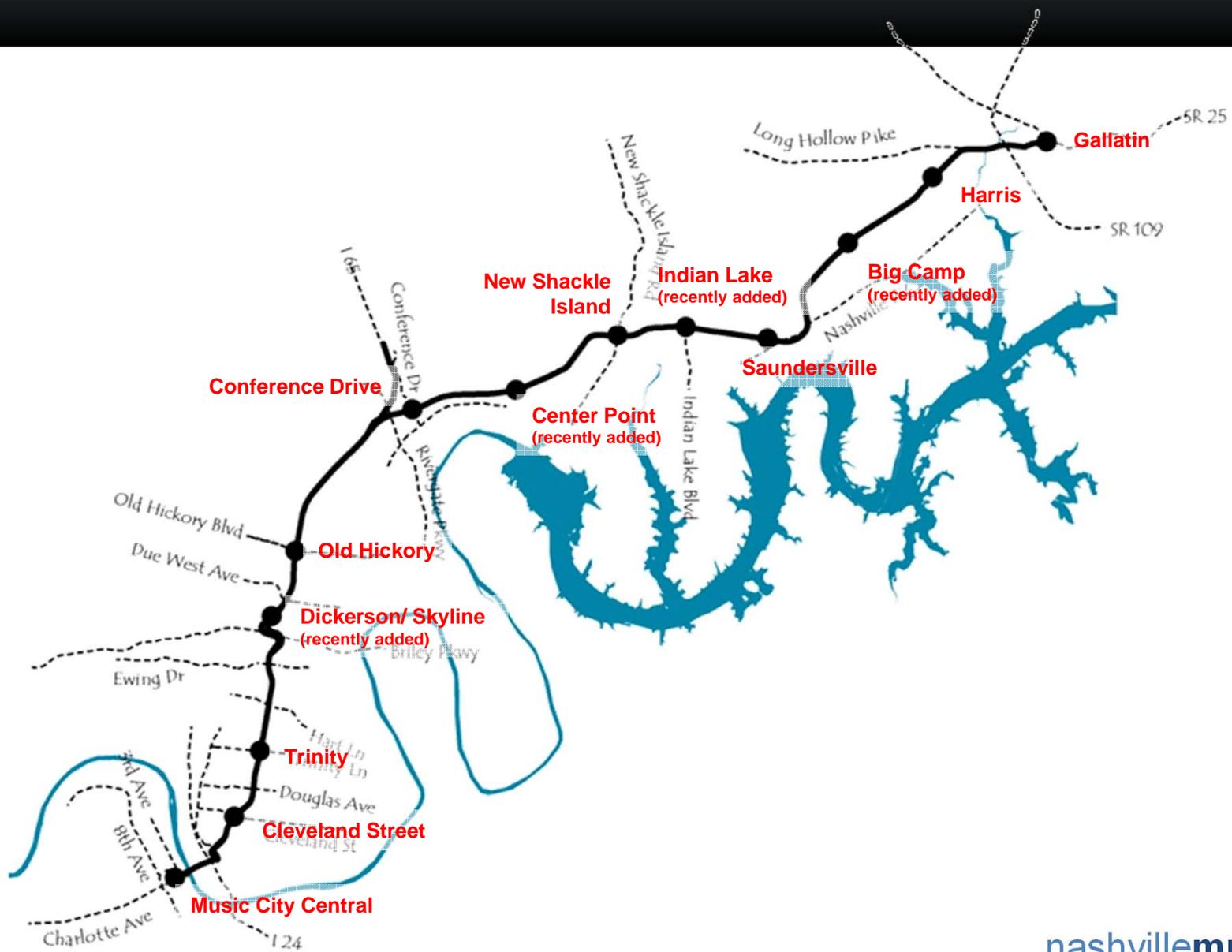
Retail Intensity Examples

Retail: 0.6 - 0.8 FAR

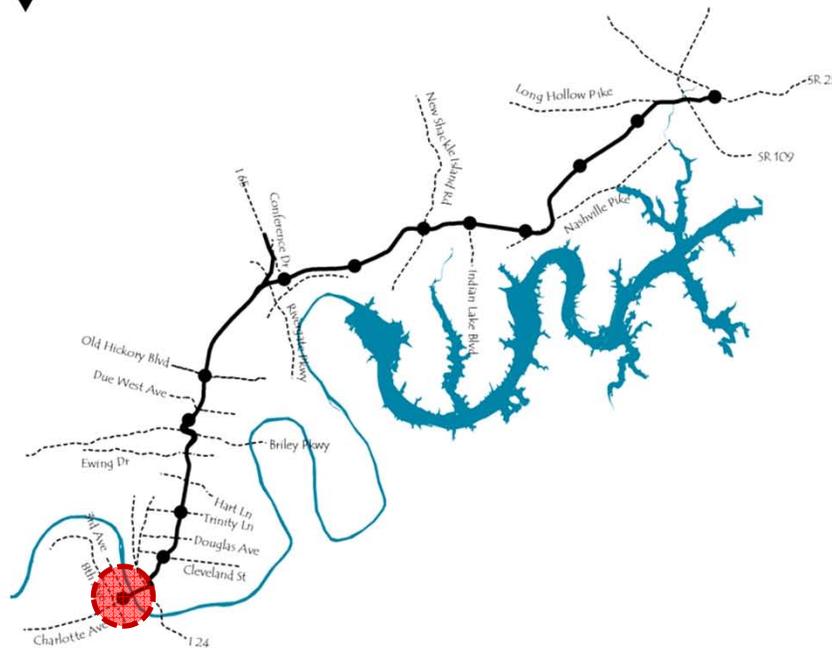
(2-3 story, retail, big box, office, structured parking)



13 Potential Station Sites

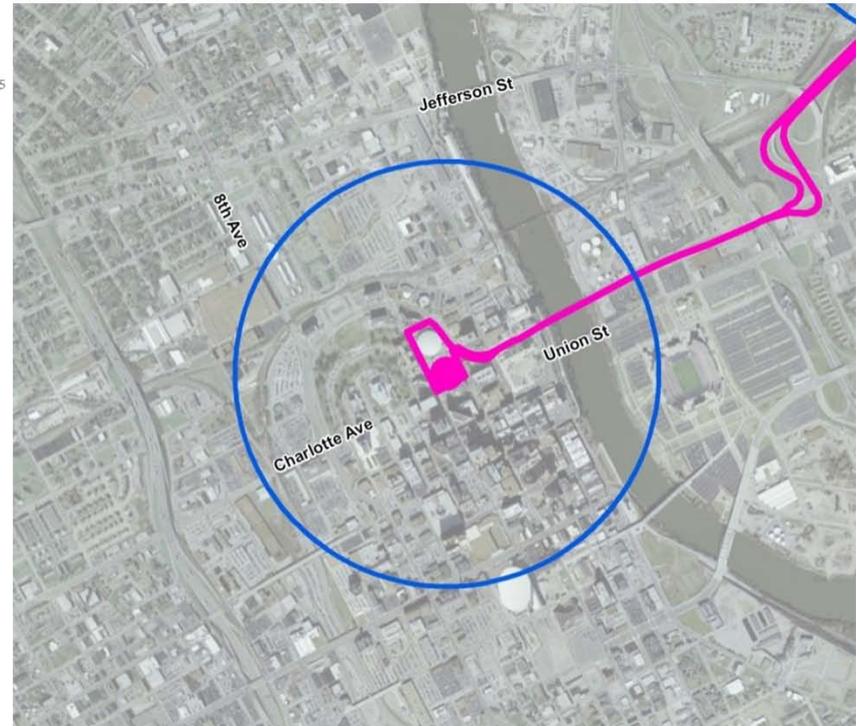


Music City Central Station



Station Context:

Urban Downtown Center,
Regional employment destination



Land Use Issues:

- Needed density/intensity increases must come from high density office and residential redevelopment in downtown core.
- Will be driven by policy decisions (focusing high density regional employment and residential opportunities) more than land use decisions.

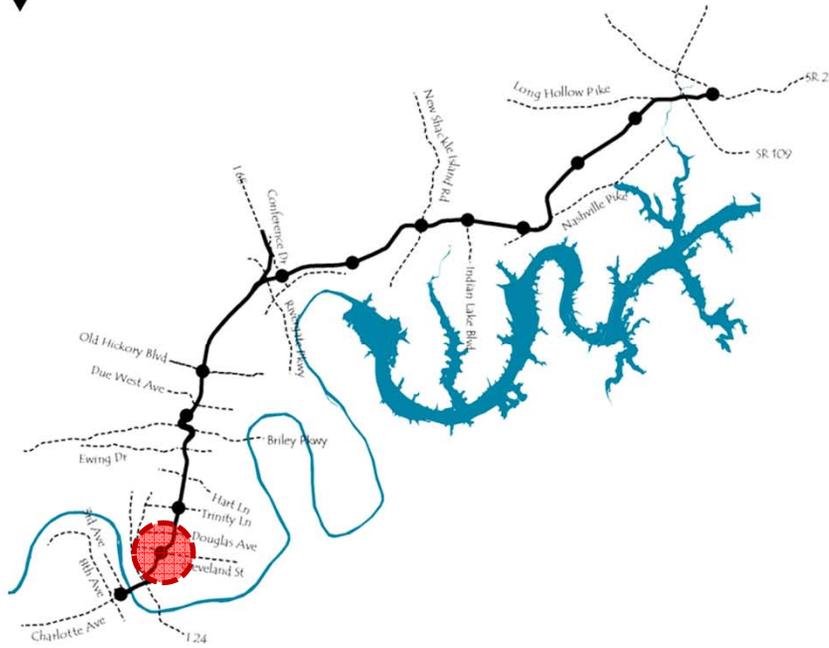
Music City Central Station



Music City Central Station

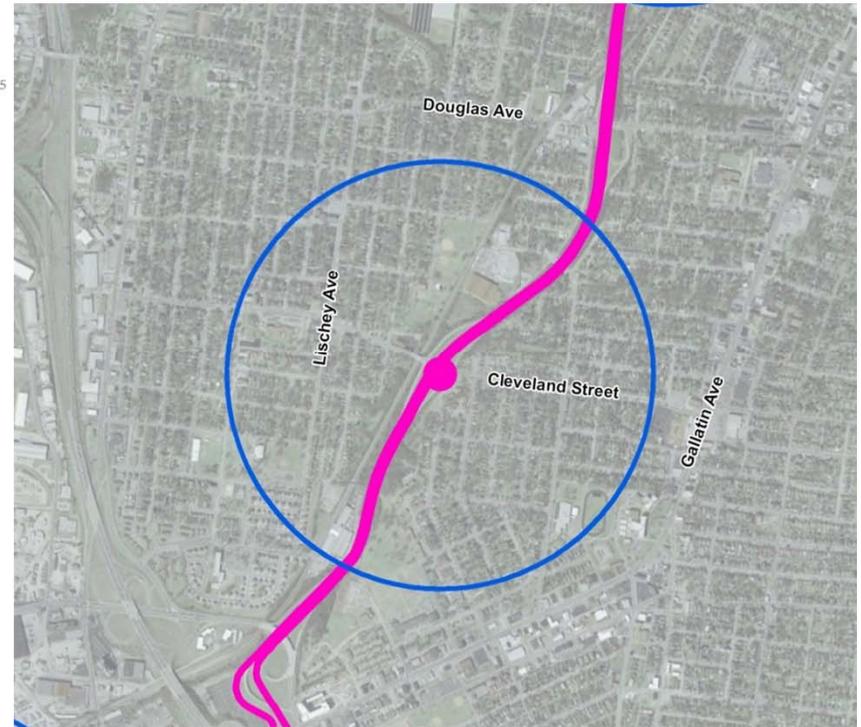


Cleveland Street Station



Station Context:

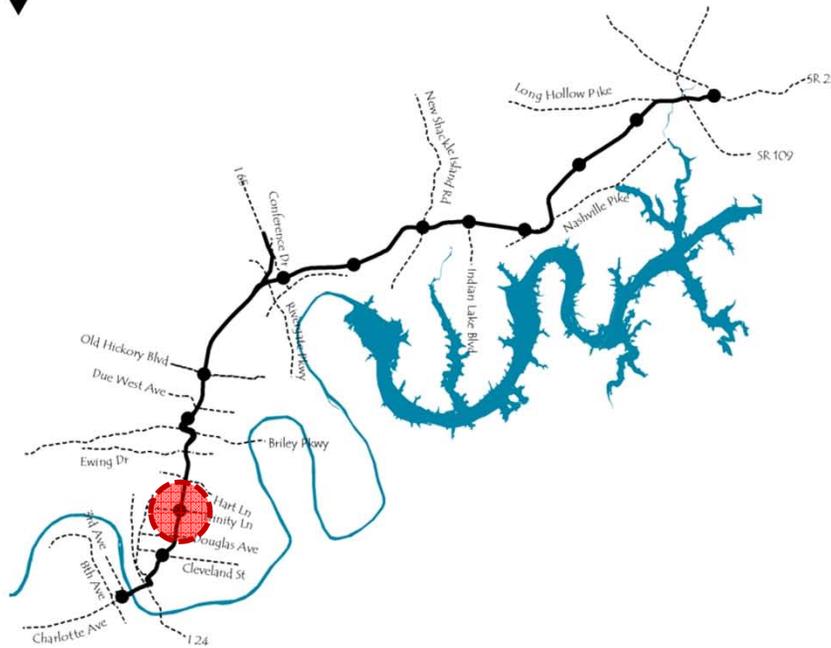
Established urban neighborhood



Land Use Issues:

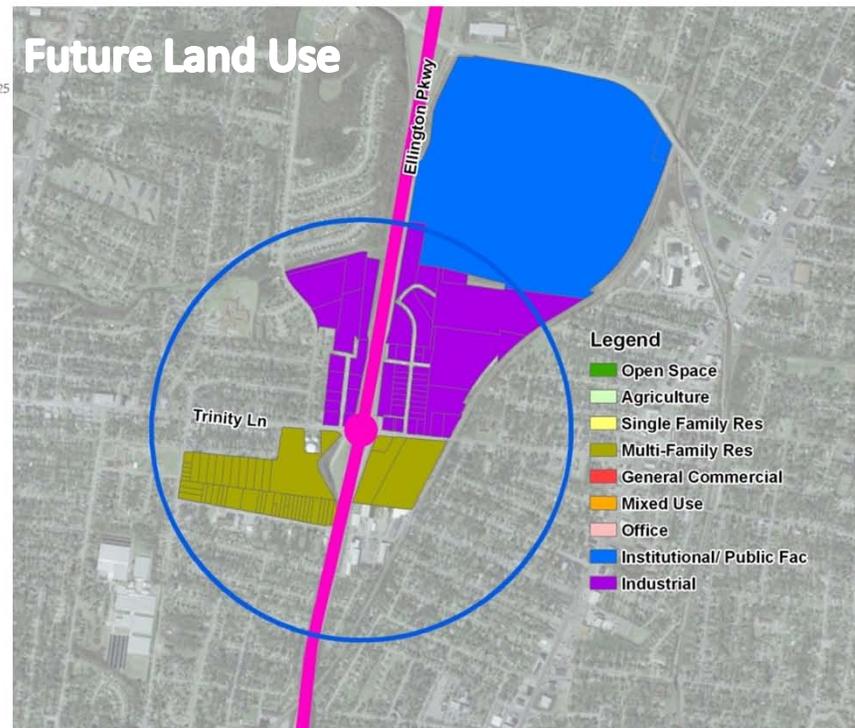
- New density increases must come from small-scale residential infill
- Scale and density will be limited by neighborhood compatibility issues

Trinity Station



Station Context:

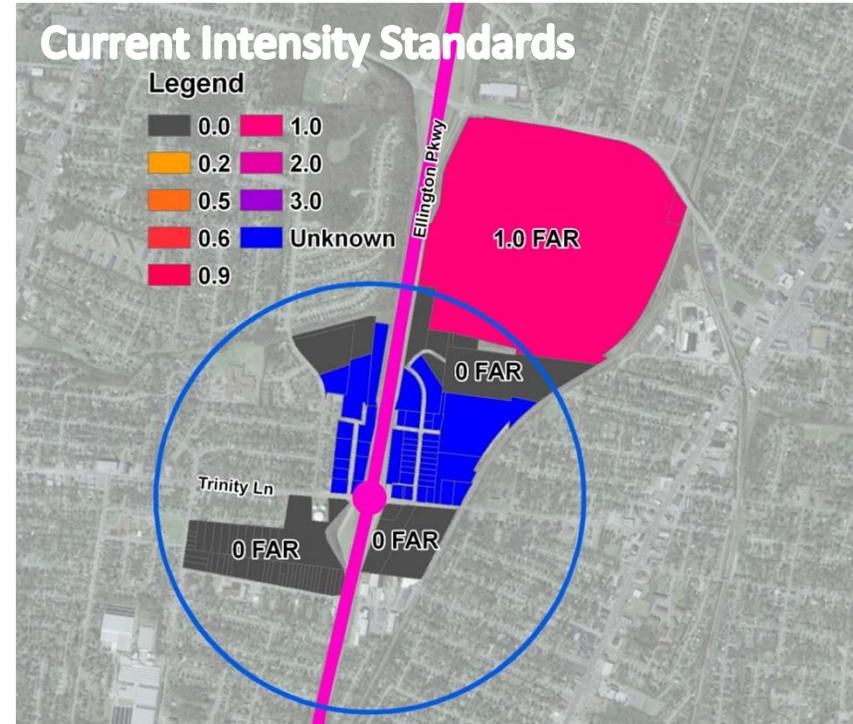
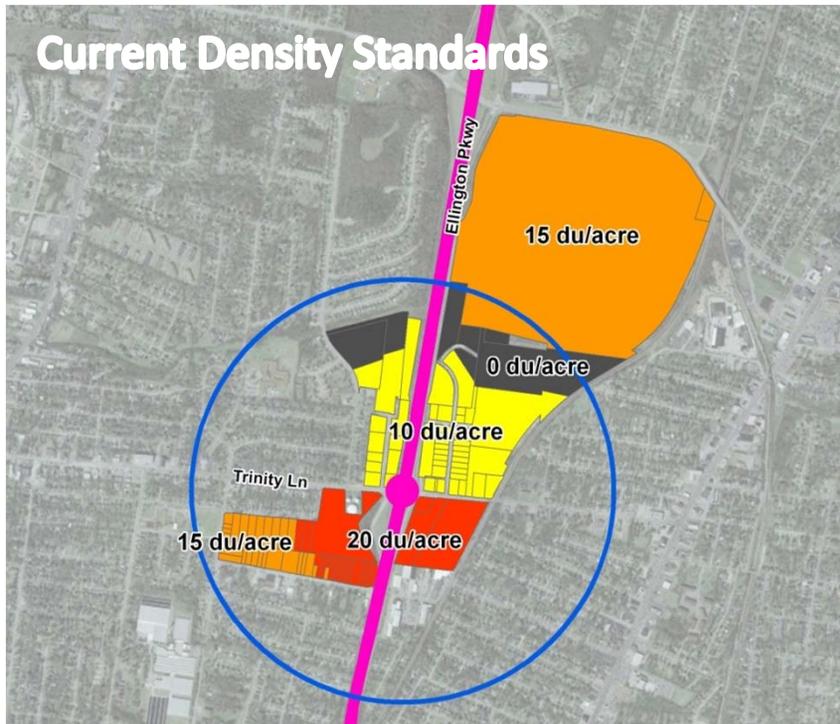
Urban neighborhood with larger scale development opportunities



Land Use Issues:

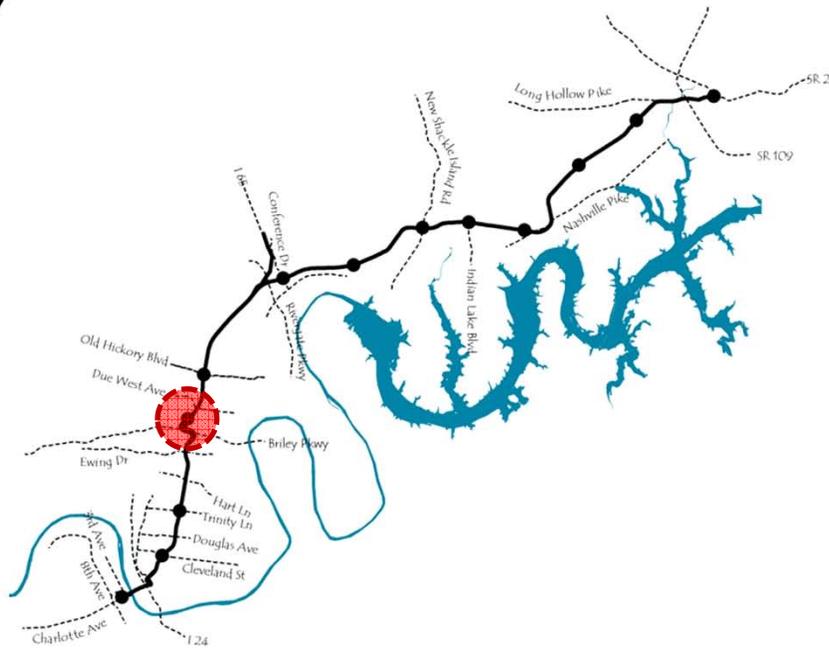
- Single-use categories – need to permit a mix of uses adjacent to station
- Adjacent industrial uses could be changed to support TOD (office/residential).
- Need to increase allowable residential density adjacent to station
- Vertical mixed-use not currently permitted.

Trinity Station



	Generic TOD Density Goal	Station Specific TOD Scenario	Existing Standards
Residential Density (units/acre)	15-20 units/acre minimum (net)	15-75 units/acre 35 units/acre (net) average	15 units/acre maximum
Non-Residential Density (FAR)	.50-.75 FAR minimum (net)	.25-.40 FAR .30 FAR (net) average	1.0 FAR maximum

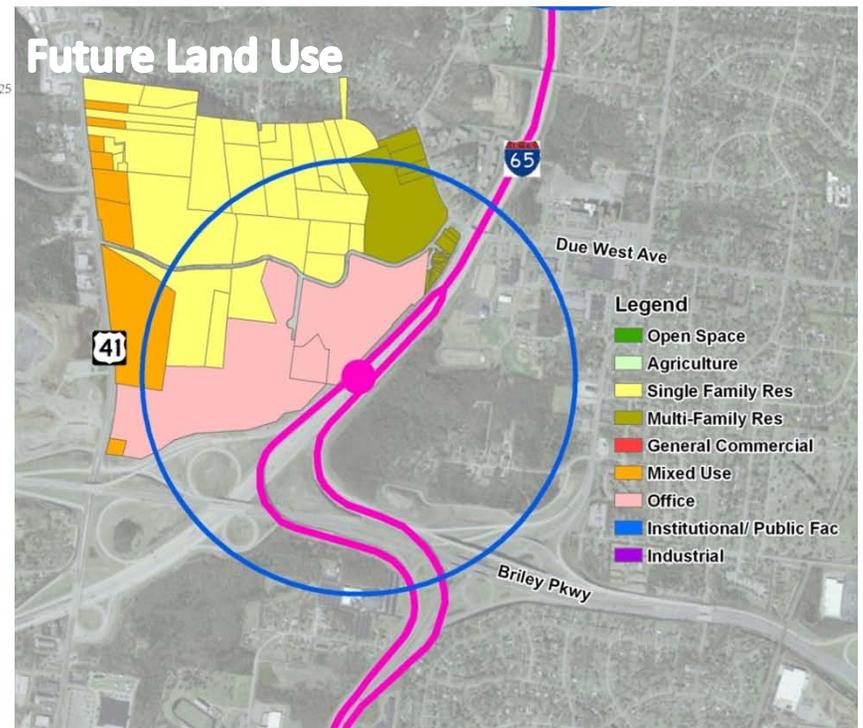
Dickerson/ Skyline Station



Station Context:

Suburban interchange - Significant office, residential, and commercial opportunity adjacent to I-65, Route 41, and future LRT

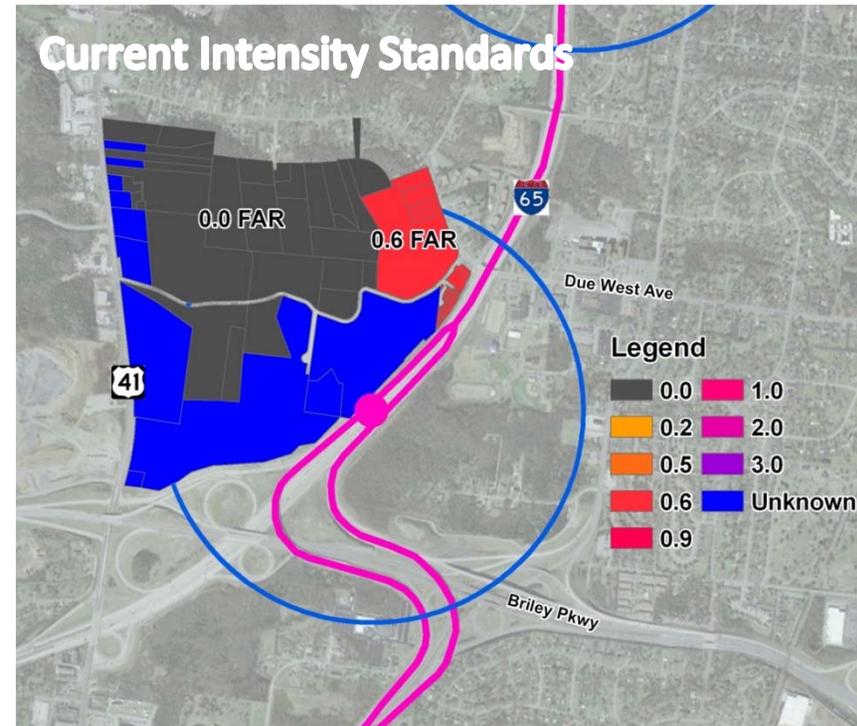
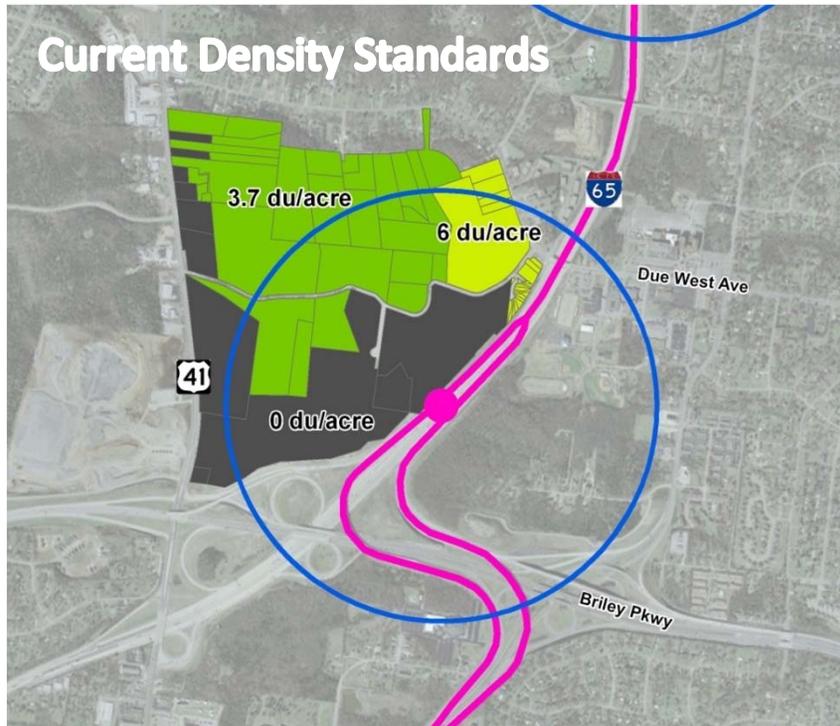
Primarily undeveloped & large parcels provide unique opportunity for coordinated, mixed use master plan



Land Use Issues:

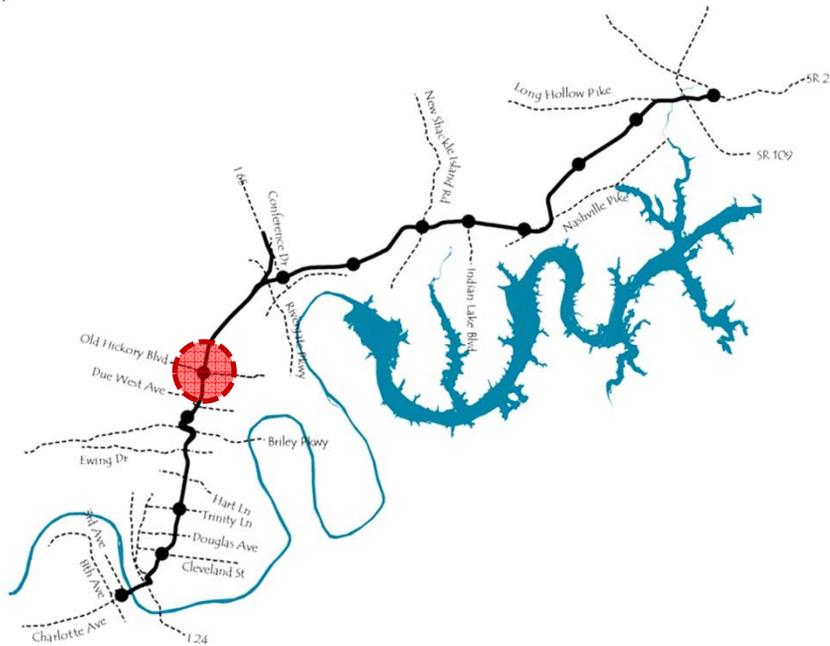
- Single-use categories – need to permit a mix of uses adjacent to station
- Vertical mixed-use development not permitted
- Need to increase residential density and office/commercial FAR adjacent to station
- New street connectivity will be needed to maximize access to station area.

Dickerson/ Skyline Station



	Generic TOD Density Goal	Station Specific TOD Scenario	Existing Standards
Residential Density (units/acre)	15-20 units/acre minimum (net)	15-75 units/acre 50 units/acre (net) average	6 units/acre maximum
Non-Residential Density (FAR)	.50-.75 FAR minimum (net)	.40-.80 FAR .70 FAR (net) average	.60 FAR maximum

Old Hickory Station

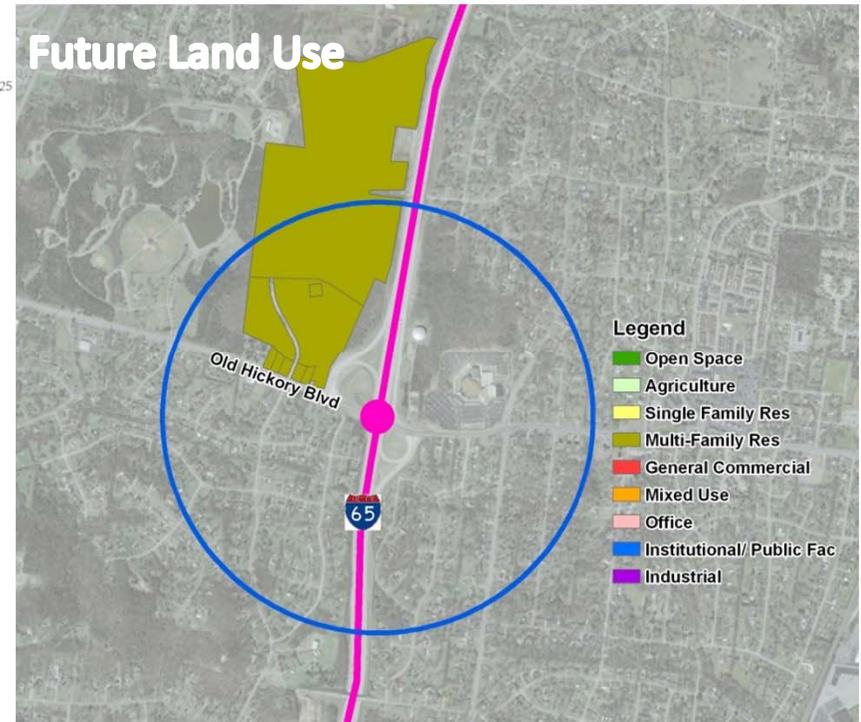


Station Context:

Single-family neighborhood

Large undeveloped multi-family opportunity adjacent to station and I-65

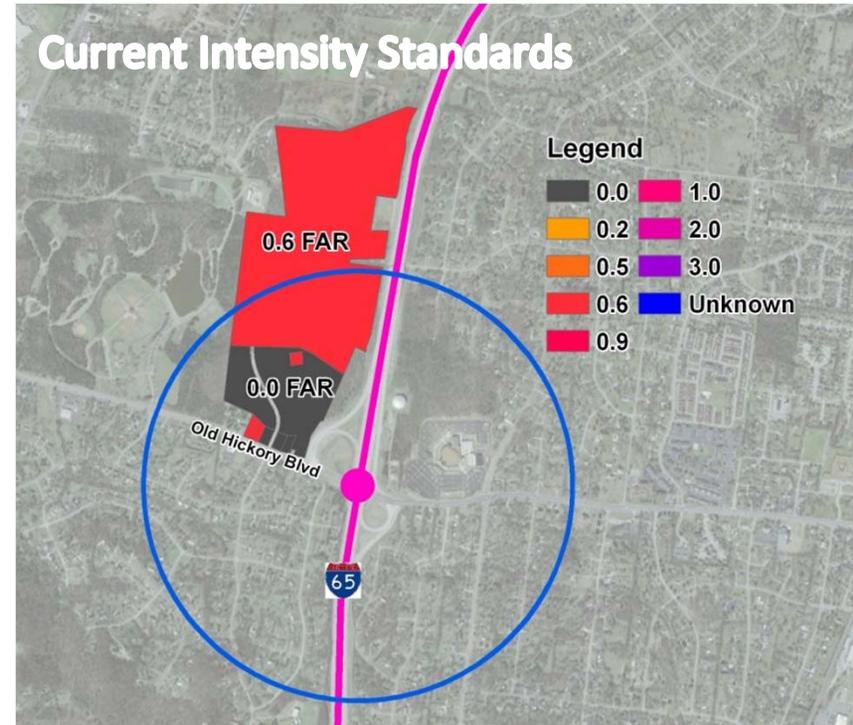
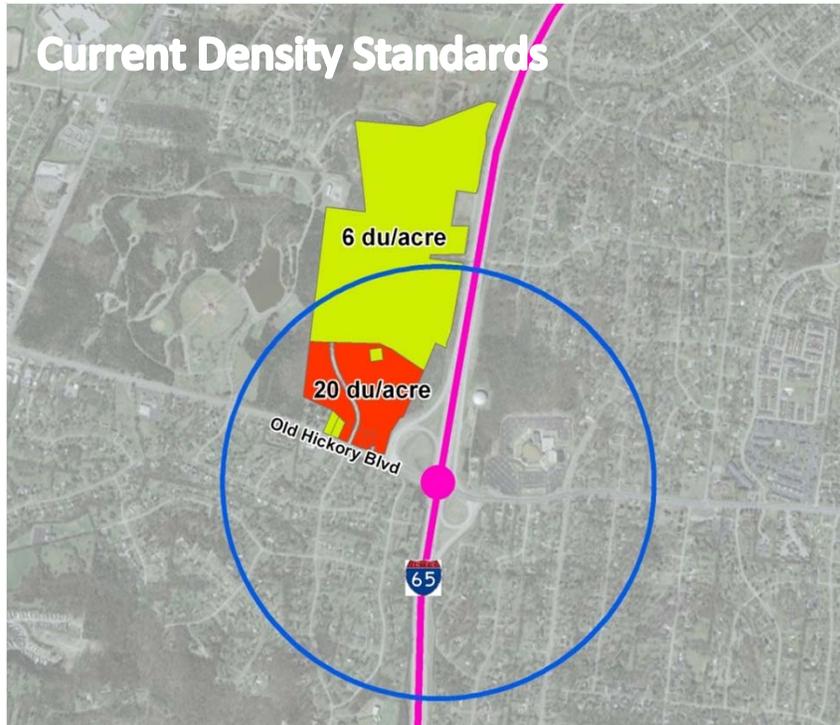
Limited office/commercial opportunity



Land Use Issues:

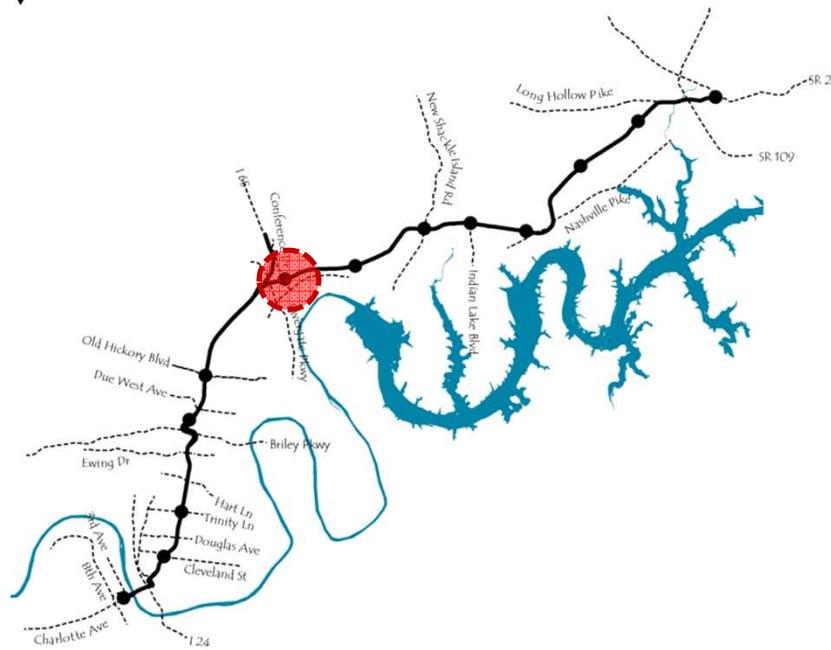
- Need to increase allowable residential density adjacent to station

Old Hickory Station



	Generic TOD Density Goal	Station Specific TOD Scenario	Existing Standards
Residential Density (units/acre)	15-20 units/acre minimum (net)	15-75 units/acre 27 units/acre (net) average	6-20 units/acre maximum
Non-Residential Density (FAR)	.50-.75 FAR minimum (net)	None	.60 FAR maximum

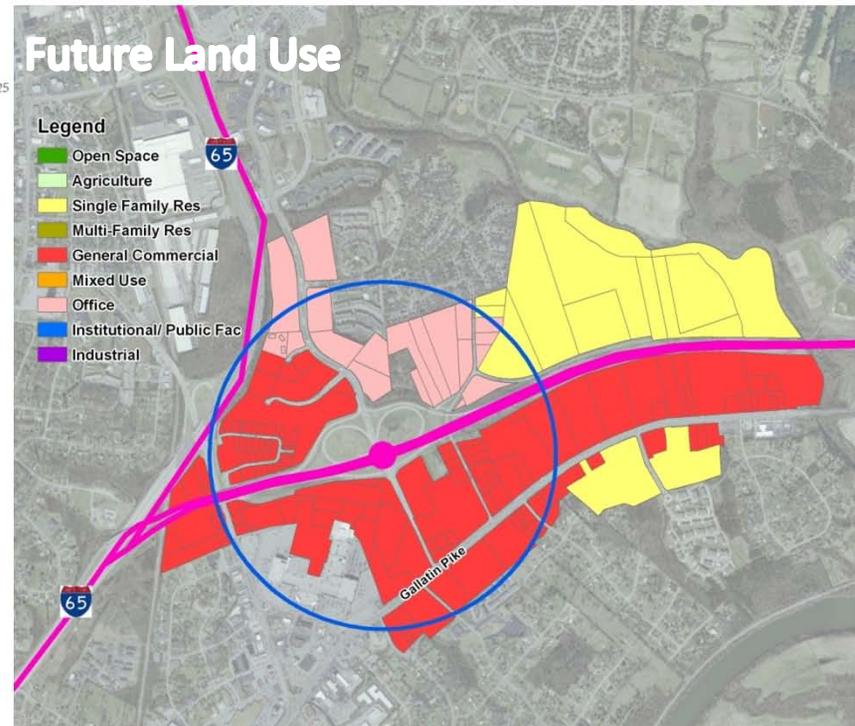
Conference Drive Station



Station Context:

Established regional commercial & office activity center, primarily single-use, suburban development pattern

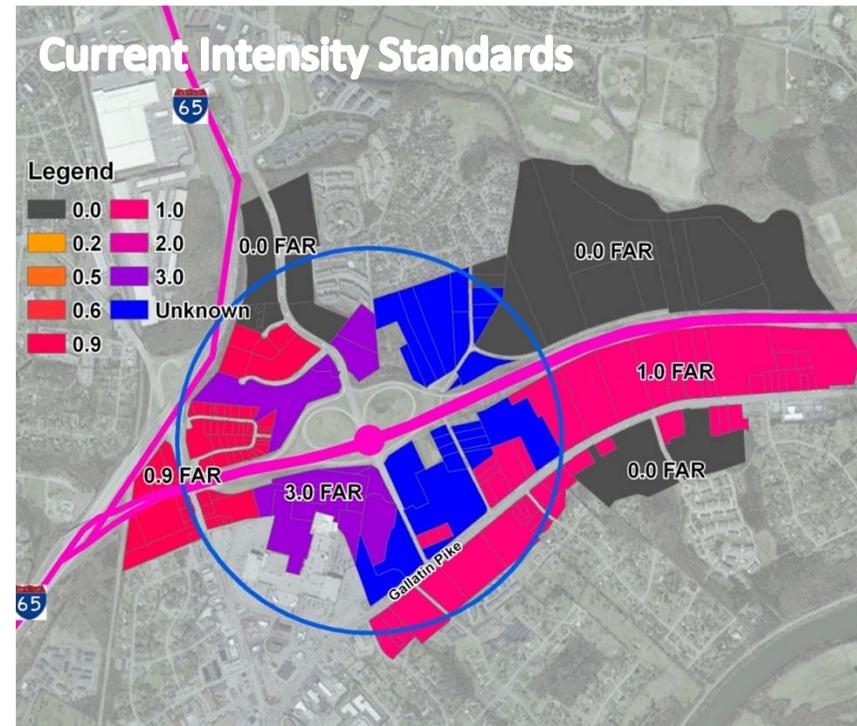
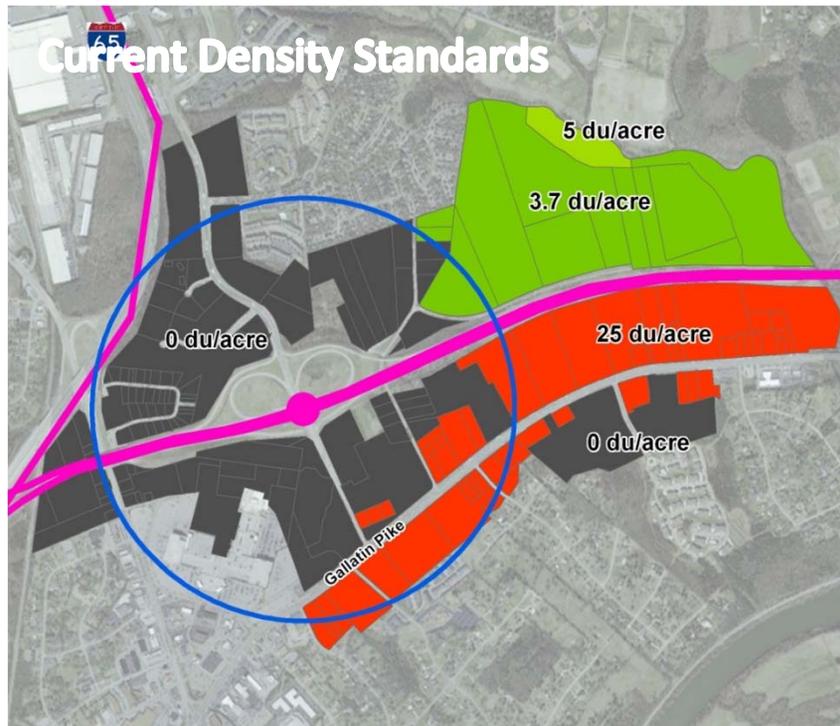
TOD density/intensity increases will come from redevelopment



Land Use Issues:

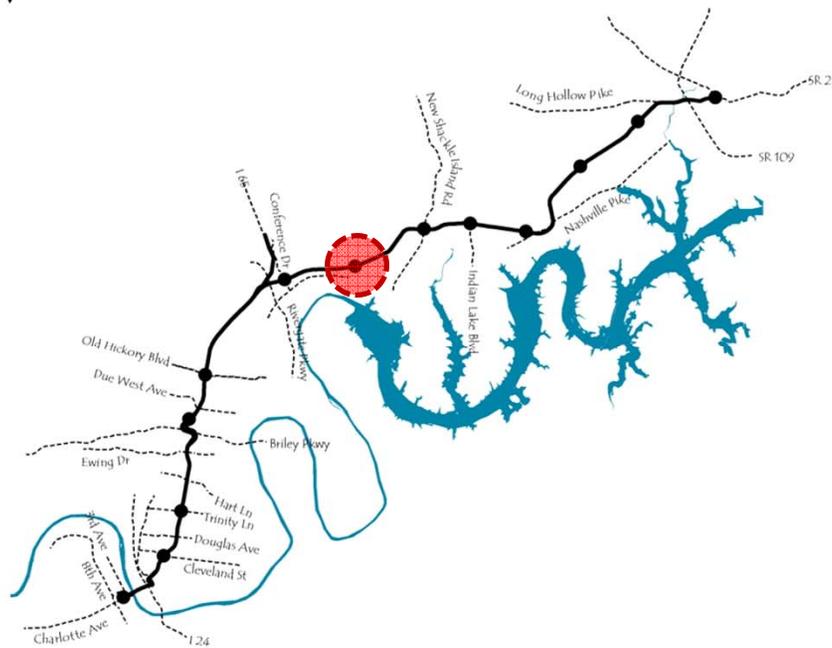
- Single-use categories – need to permit a mix of uses adjacent to station
- Maximum FAR standards are sufficient - need minimum standards to ensure intensity adjacent to station
- Reduce suburban parking standards to allow increased intensity (via shared/transit access standards)

Conference Drive Station



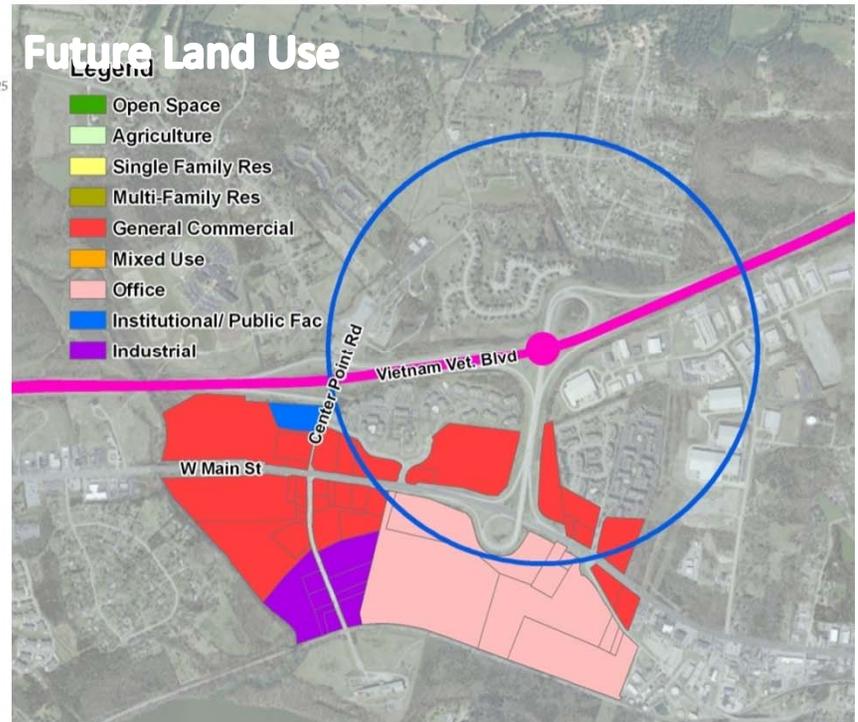
	Generic TOD Density Goal	Station Specific TOD Scenario	Existing Standards
Residential Density (units/acre)	15-20 units/acre minimum (net)	15-75 units/acre 26 units/acre (net) average	25 units/acre maximum
Non-Residential Density (FAR)	.50-.75 FAR minimum (net)	.25-4.5 FAR .70 FAR (net) average	3.0 FAR maximum

Center Point Station



Station Context:

Developing suburban activity center with mix of multifamily, commercial & office development.

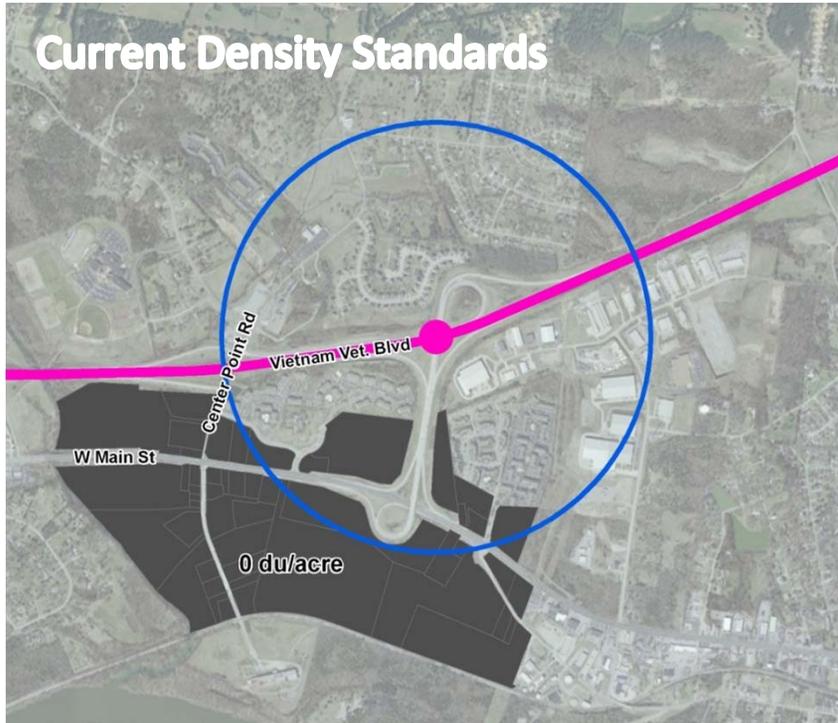


Land Use Issues:

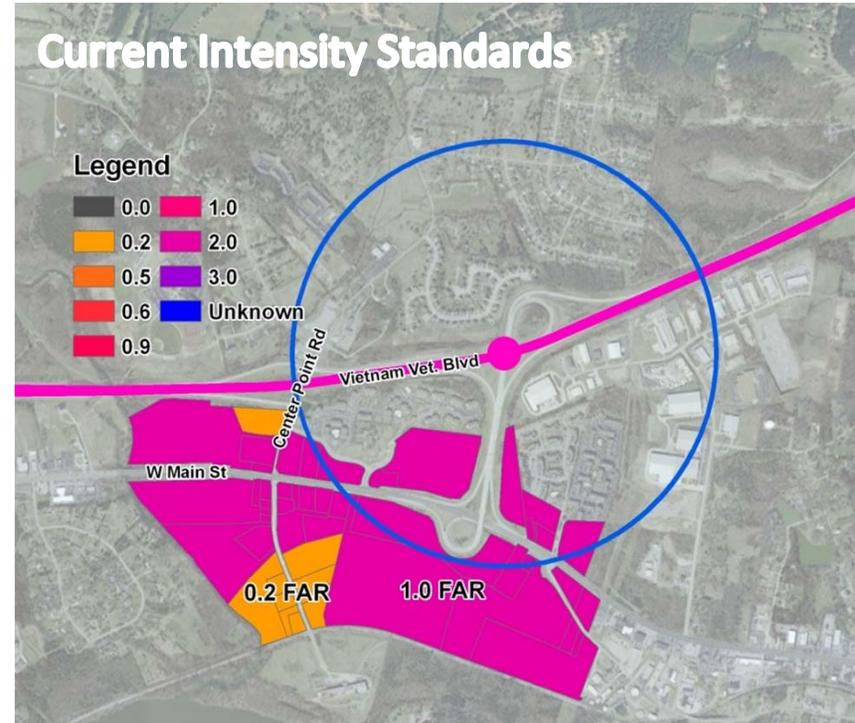
- Single-use categories – need to permit a mix of uses adjacent to station
- Maximum FAR standards are sufficient - need minimum standards to ensure intensity adjacent to station
- New street connectivity will be needed to maximize access to station area.

Center Point Station

Current Density Standards

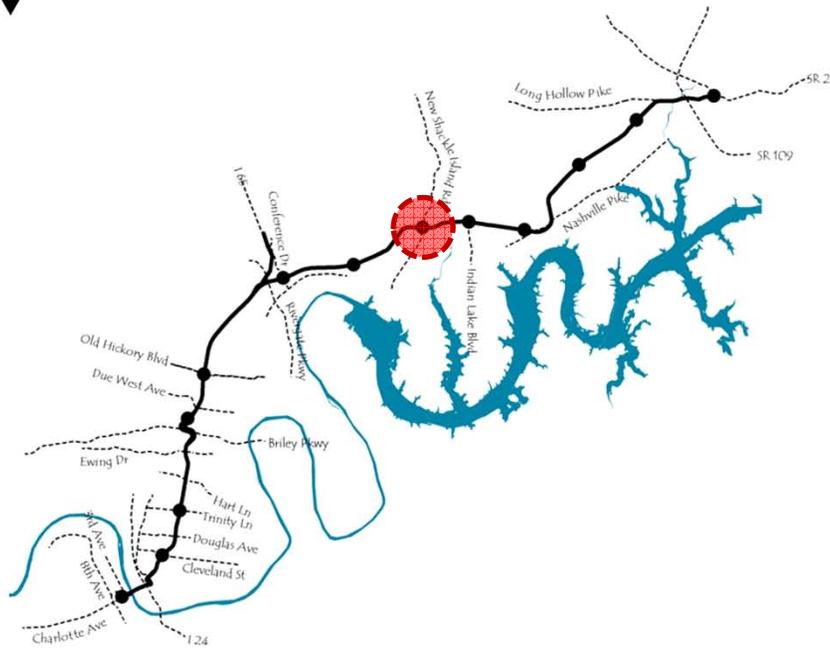


Current Intensity Standards



	Generic TOD Density Goal	Station Specific TOD Scenario	Existing Standards
Residential Density (units/acre)	15-20 units/acre minimum (net)	15-30 units/acre 23 units/acre (net) average	None
Non-Residential Density (FAR)	.50-.75 FAR minimum (net)	.25-1.0 FAR .60 FAR (net) average	.20-1.0 FAR maximum

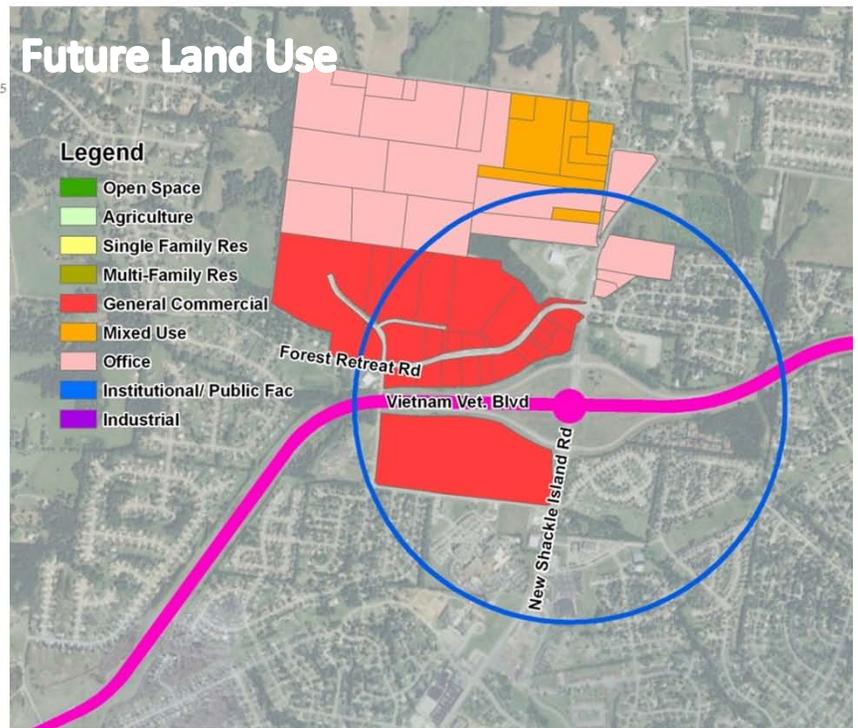
New Shackle Island Station



Station Context:

Undeveloped suburban interchange adjacent to single-family neighborhoods

Partially developed suburban retail center

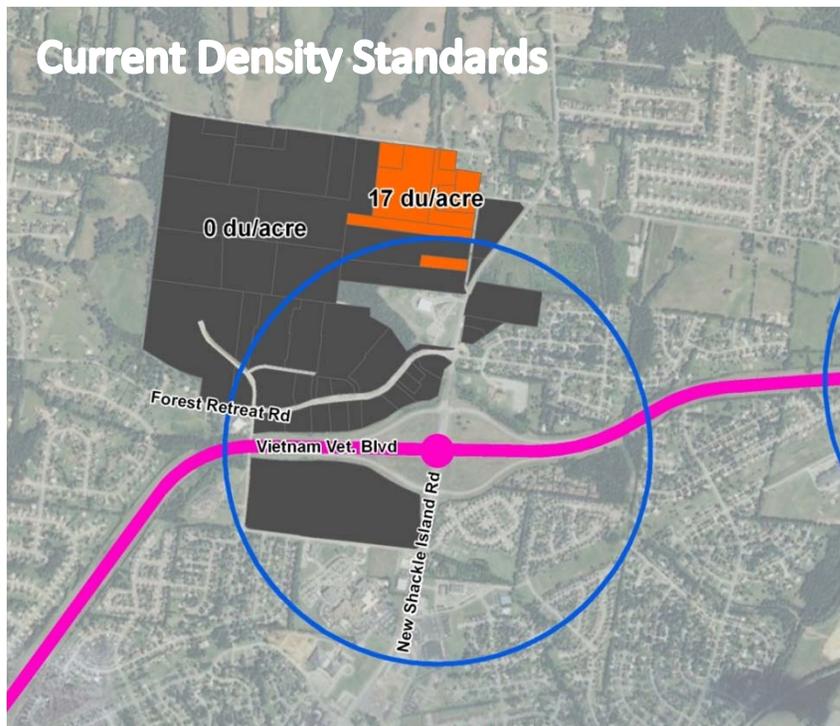


Land Use Issues:

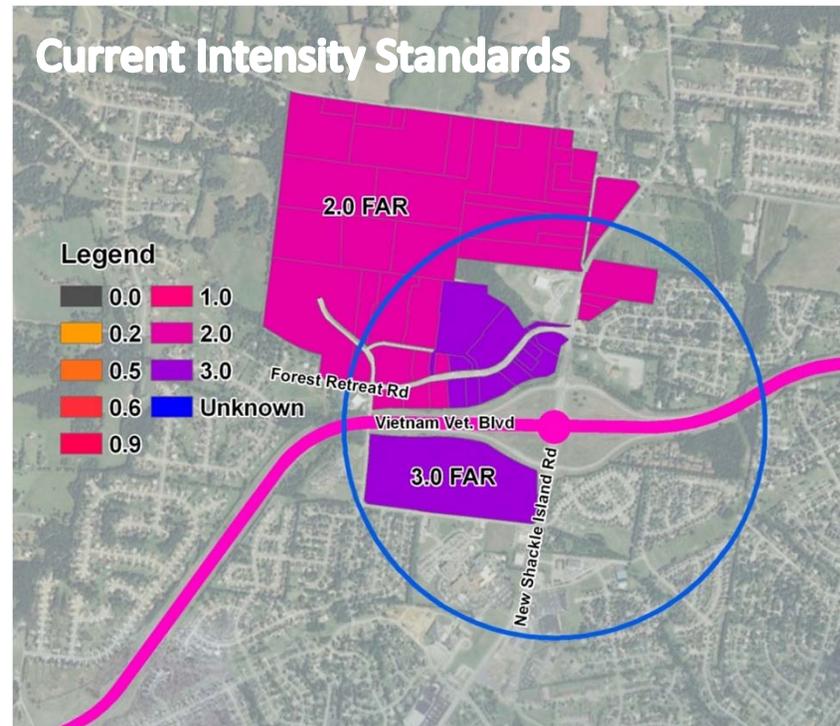
- Single-use categories – need to permit a mix of uses adjacent to station
- Need to increase allowable residential density adjacent to station
- Maximum FAR standards are sufficient - need minimum standards to ensure intensity adjacent to station
- New street connectivity will be needed to maximize access to station area

New Shackle Island Station

Current Density Standards

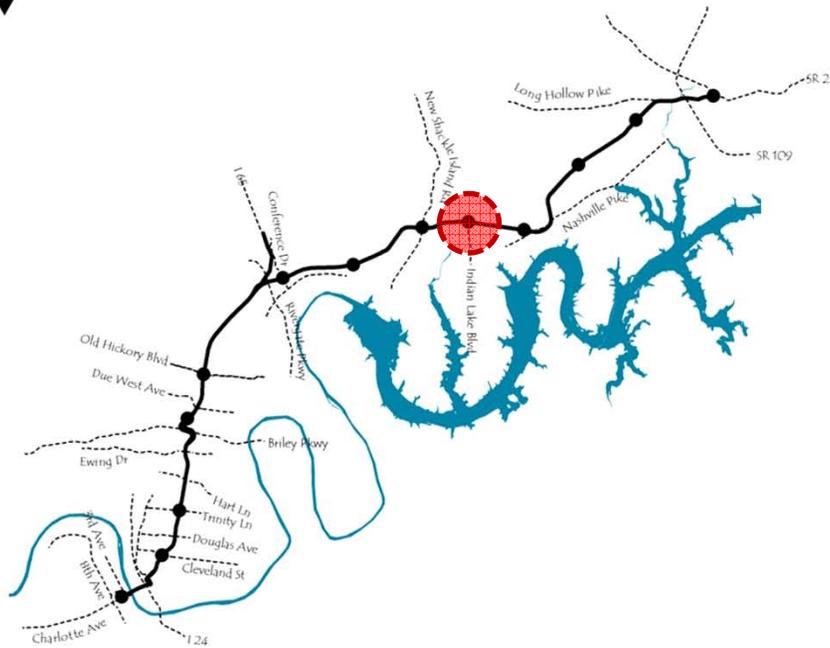


Current Intensity Standards



	Generic TOD Density Goal	Station Specific TOD Scenario	Existing Standards
Residential Density (units/acre)	15-20 units/acre minimum (net)	15-75 units/acre 32 units/acre (net) average	17 units/acre maximum
Non-Residential Density (FAR)	.50-.75 FAR minimum (net)	.25-1.0 FAR .50 FAR (net) average	2.0-3.0 FAR maximum

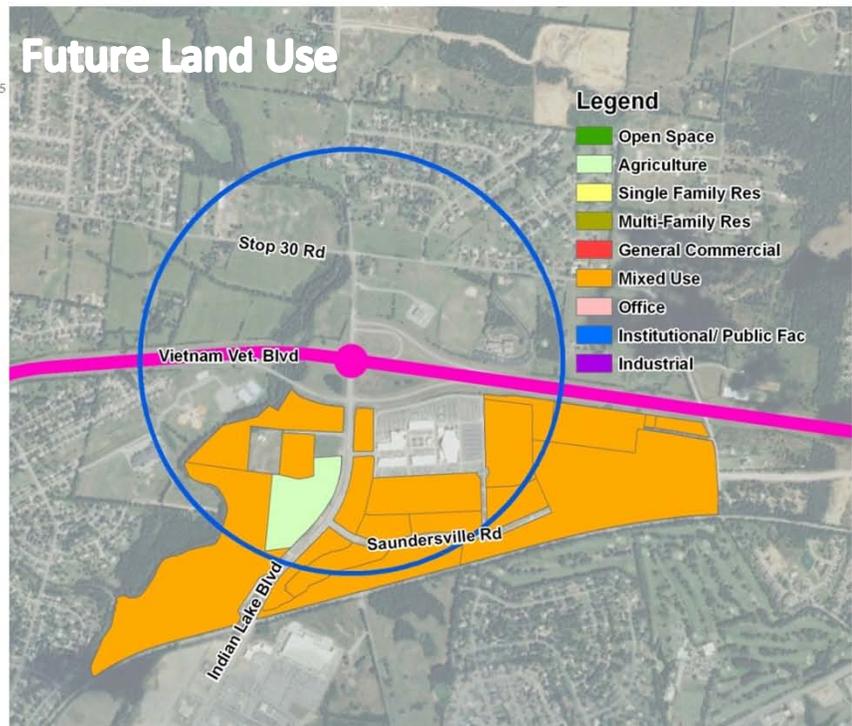
Indian Lake Station



Station Context:

Undeveloped suburban interchange with recent “lifestyle” retail development

Significant mixed use development opportunity

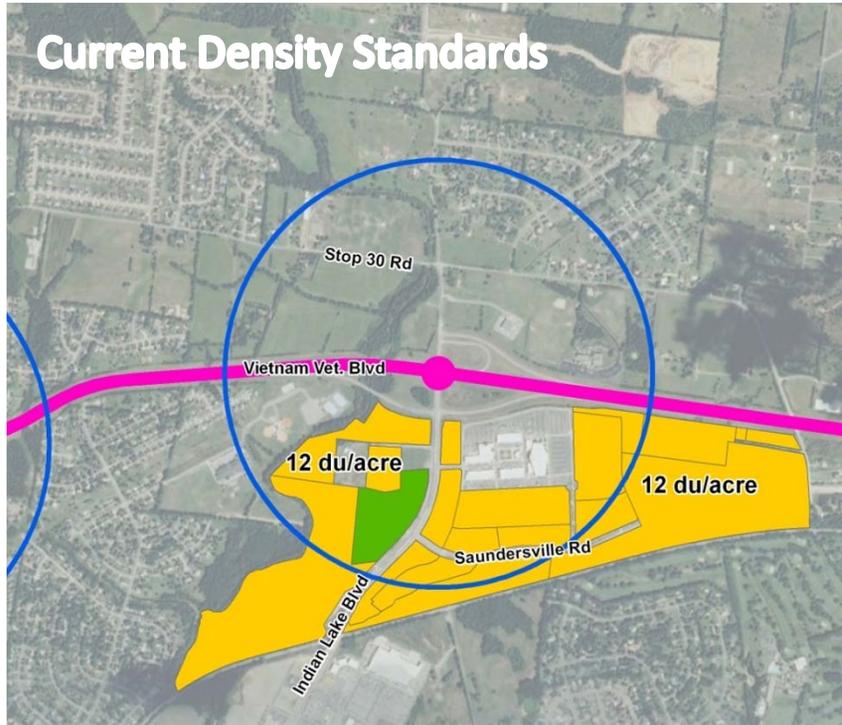


Land Use Issues:

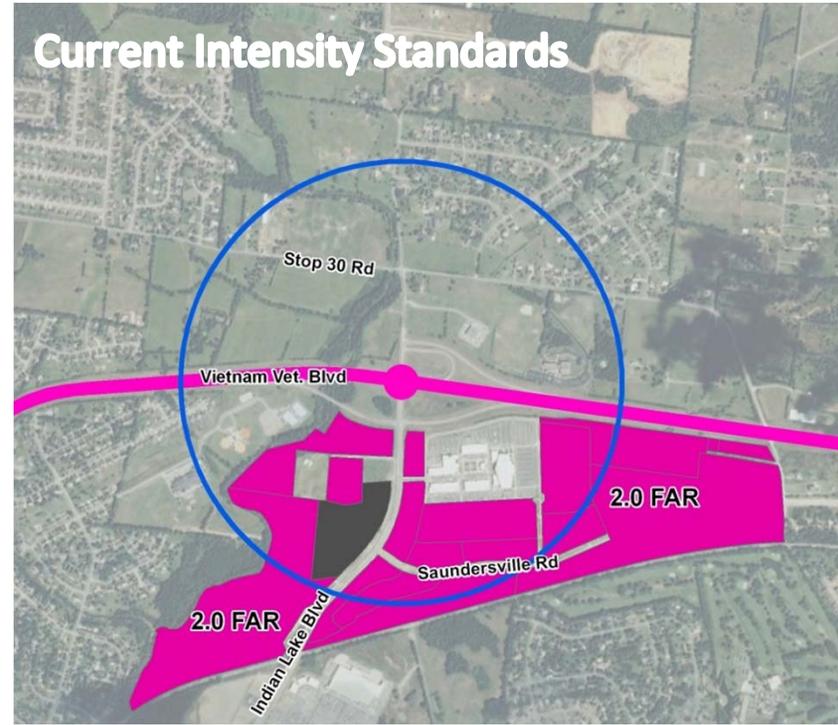
- Need to increase allowable residential density adjacent to station
- Vertical mixed-use development not permitted
- Maximum FAR standards are sufficient - need minimum standards to ensure intensity adjacent to station

Indian Lake Station

Current Density Standards

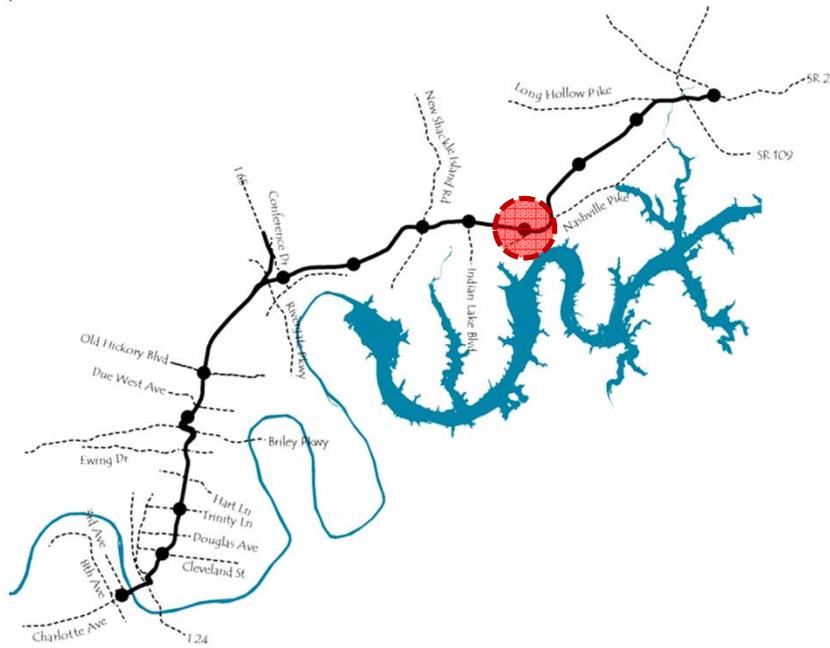


Current Intensity Standards



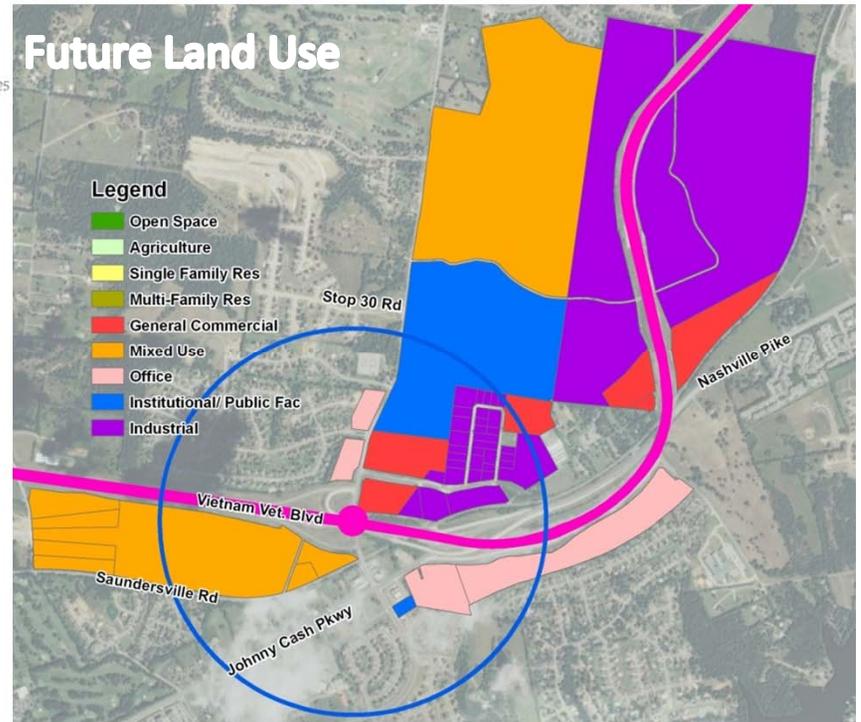
	Generic TOD Density Goal	Station Specific TOD Scenario	Existing Standards
Residential Density (units/acre)	15-20 units/acre minimum (net)	15-75 units/acre 32 units/acre (net) average	5-12 units/acre maximum
Non-Residential Density (FAR)	.50-.75 FAR minimum (net)	.25-1.0 FAR .60 FAR (net) average	2.0 FAR maximum

Saundersville Station



Station Context:

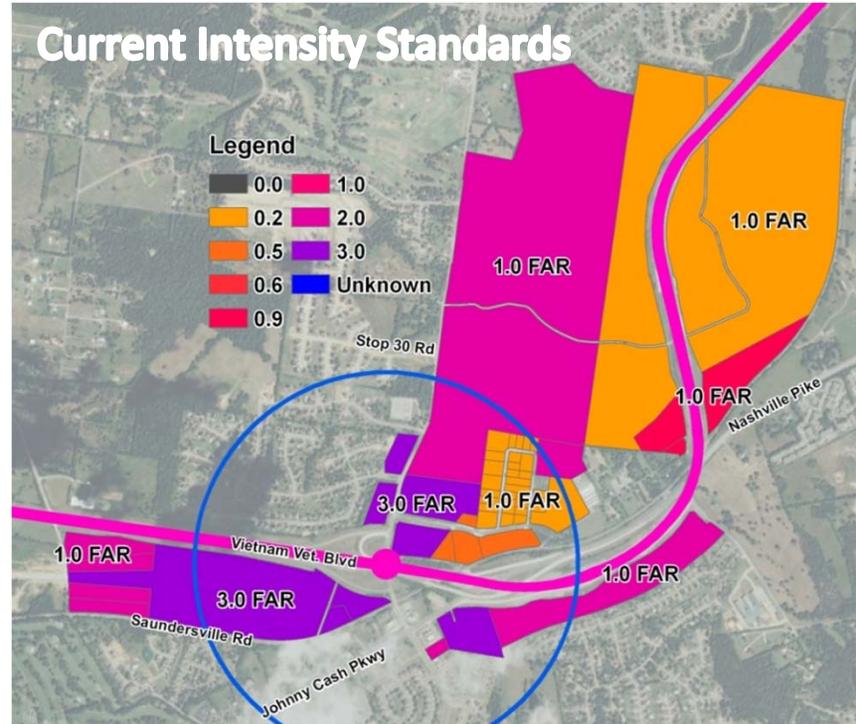
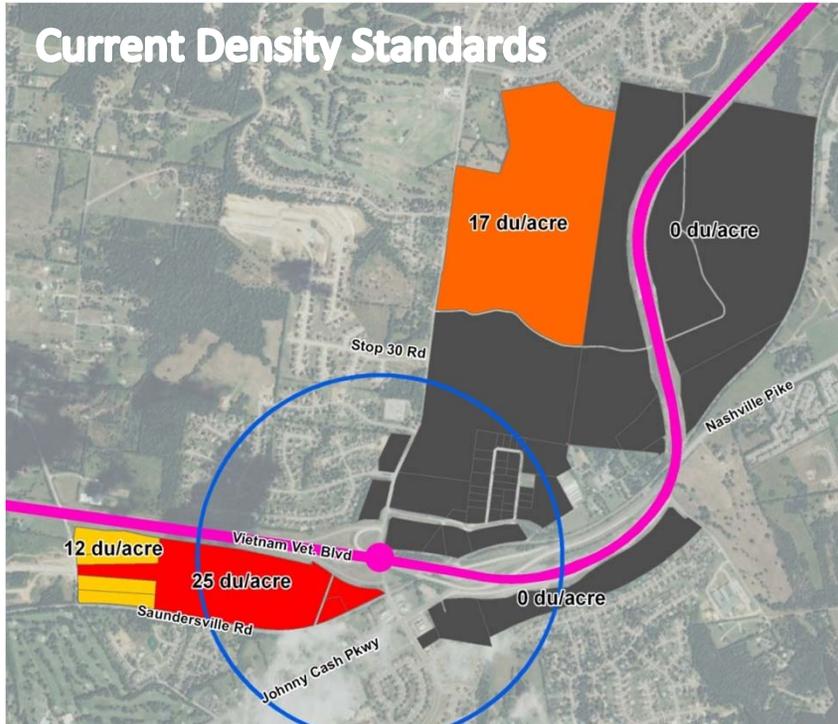
Suburban interchange with significant industrial and institutional uses



Land Use Issues:

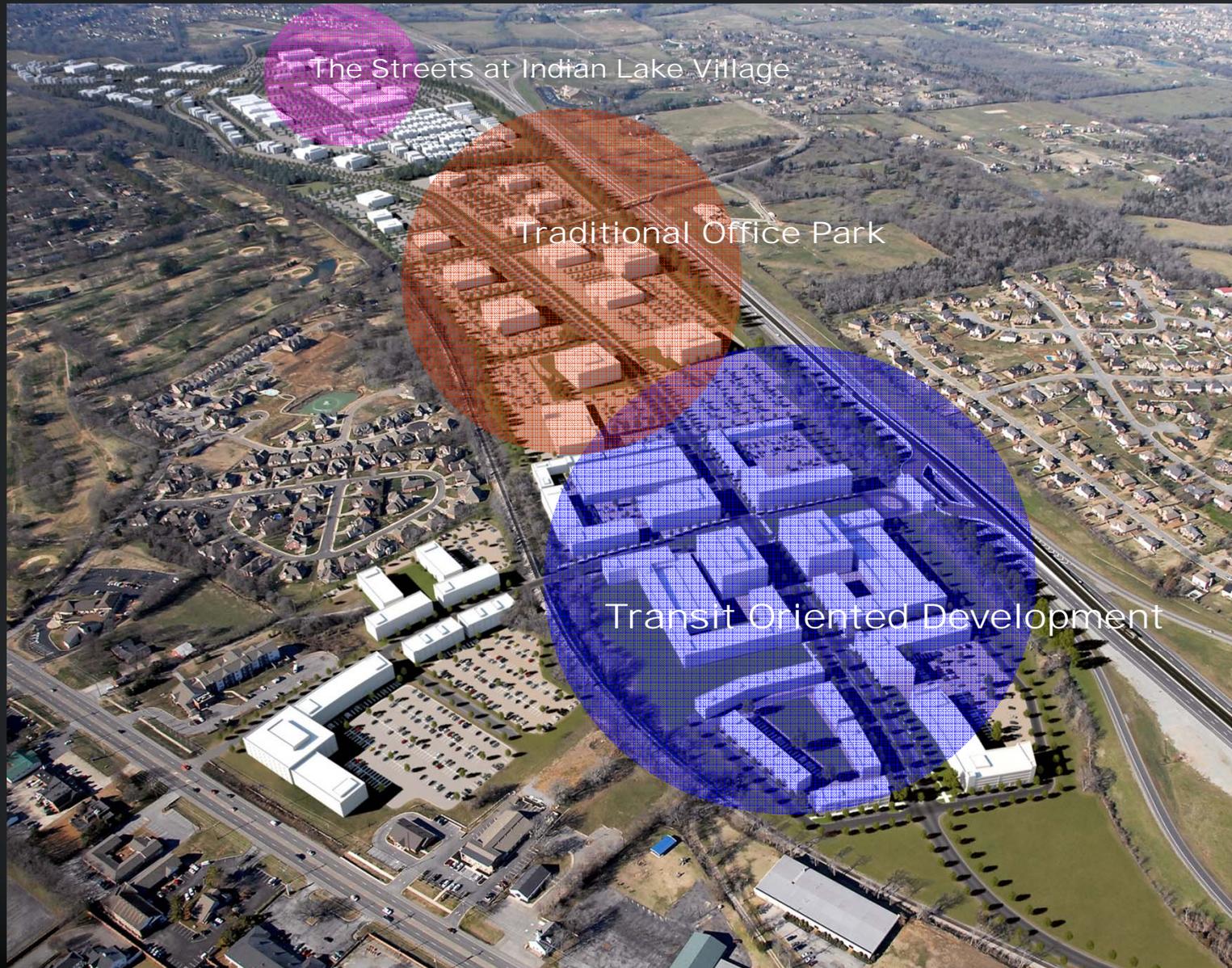
- Single-use categories – need to permit a mix of uses adjacent to station
- Significant industrial and public facilities land uses limit TOD opportunities in station area
- Vertical mixed-use development not permitted
- New street connectivity will be needed to maximize access to station area

Saundersville Station



	Generic TOD Density Goal	Station Specific TOD Scenario	Existing Standards
Residential Density (units/acre)	15-20 units/acre minimum (net)	15-75 units/acre 26 units/acre (net) average	25 units/acre maximum
Non-Residential Density (FAR)	.50-.75 FAR minimum (net)	.25-1.0 FAR .40 FAR (net) average	3.0 FAR Maximum

Saundersville Station



The Streets at Indian Lake Village

Traditional Office Park

Transit Oriented Development

Saundersville Station



Saundersville Station



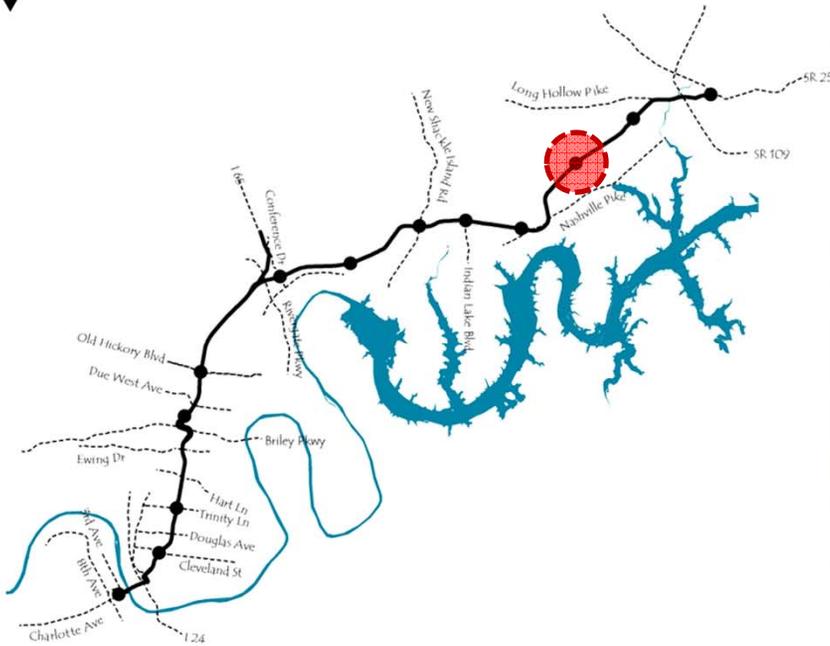
Saundersville Station



Saundersville Station



Big Station Camp

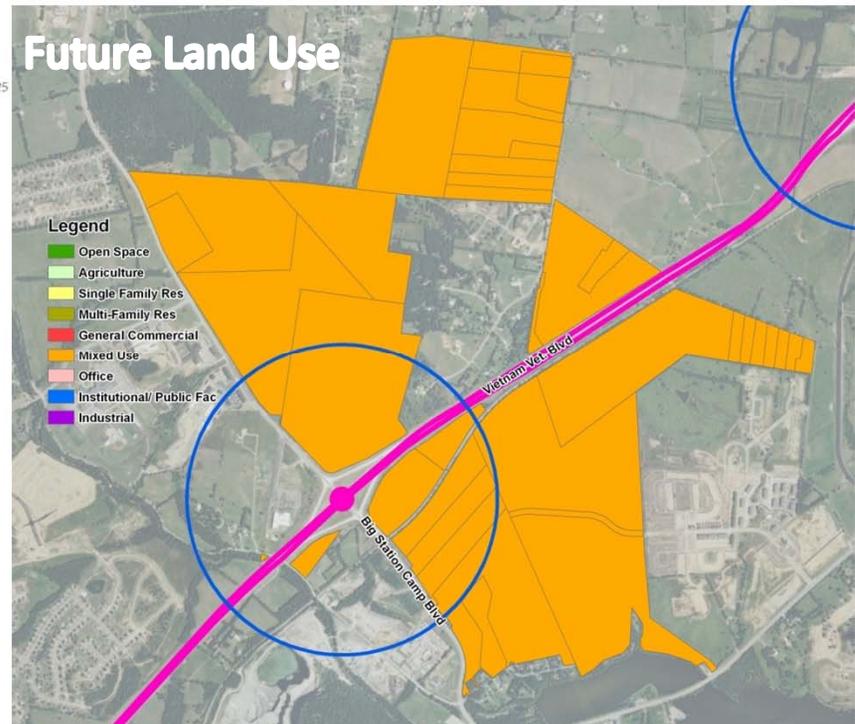


Station Context:

Undeveloped suburban Interchange

Primarily undeveloped & large parcels provide unique opportunity for coordinated, mixed use master plan

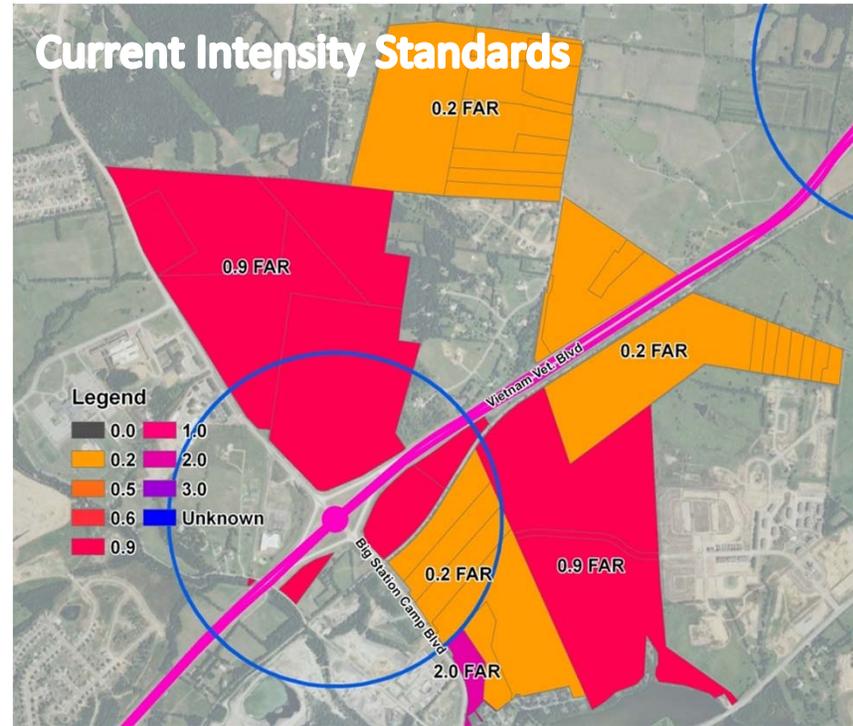
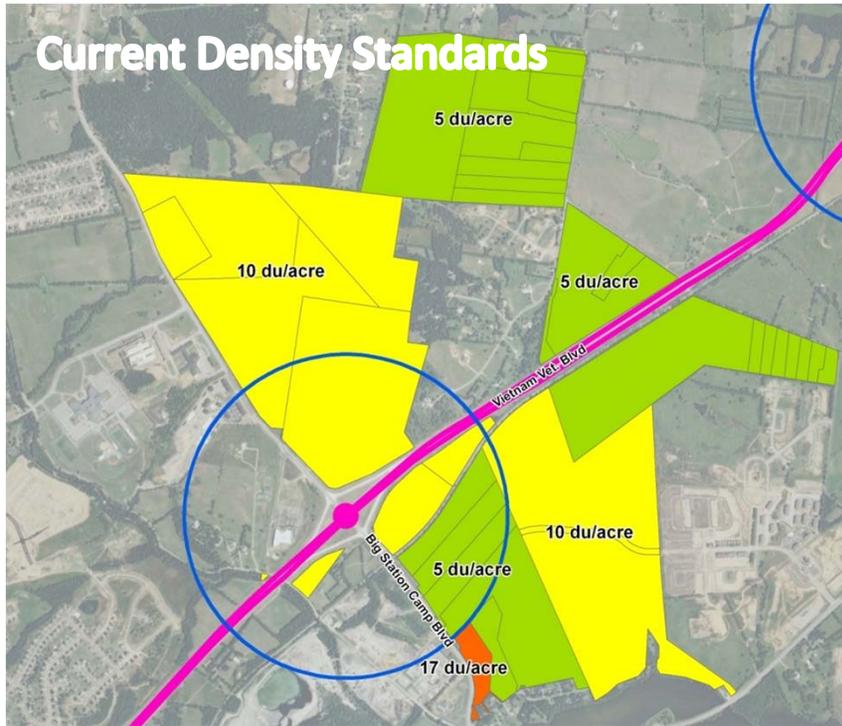
Future Land Use



Land Use Issues:

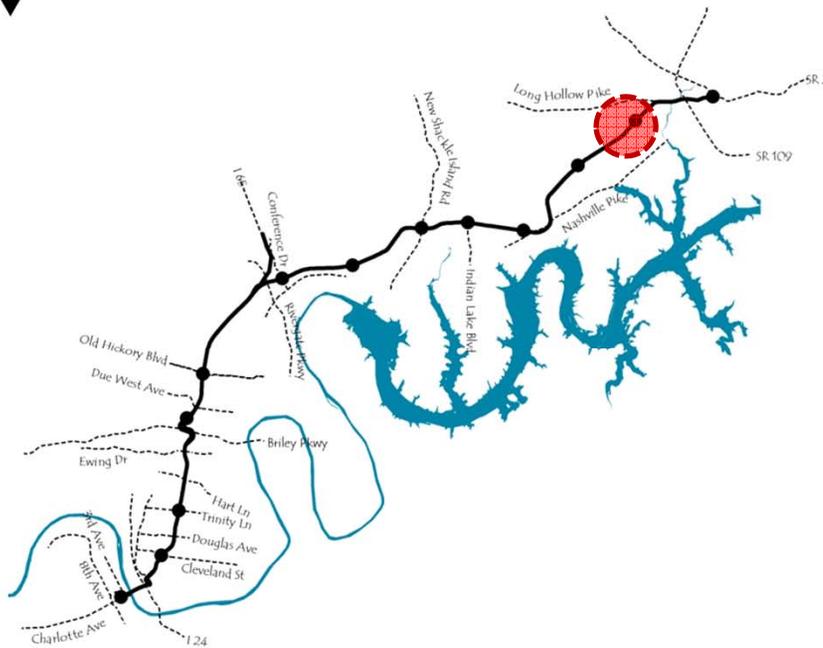
- Need to increase allowable residential density adjacent to station
- Vertical mixed-use development not permitted
- Establish minimum FAR standards to ensure intensity adjacent to station
- New street connectivity will be needed to maximize access to station area

Big Station Camp



	Generic TOD Density Goal	Station Specific TOD Scenario	Existing Standards
Residential Density (units/acre)	15-20 units/acre minimum (net)	15-75 units/acre 24 units/acre (net) average	5-17 units/acre maximum
Non-Residential Density (FAR)	.50-.75 FAR minimum (net)	.25-1.0 FAR .40 FAR (net) average	.90 FAR Maximum

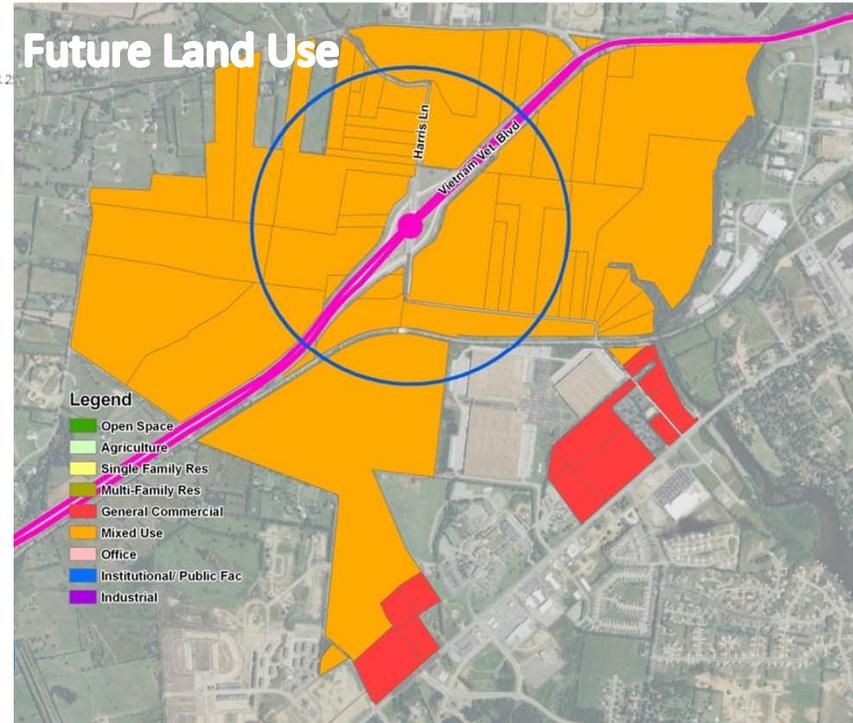
Harris-Greenlea Station



Station Context:

Undeveloped suburban Interchange

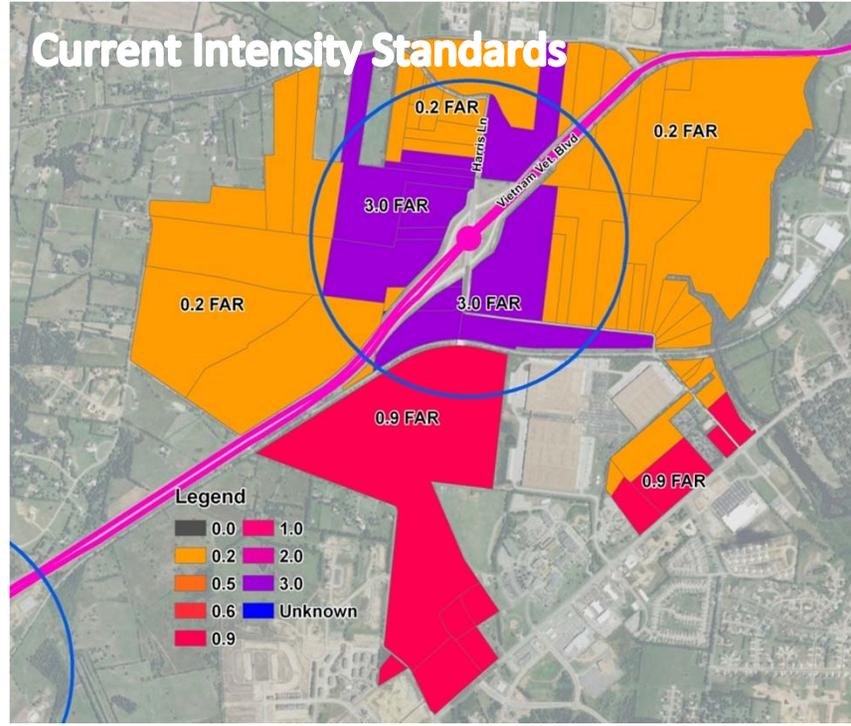
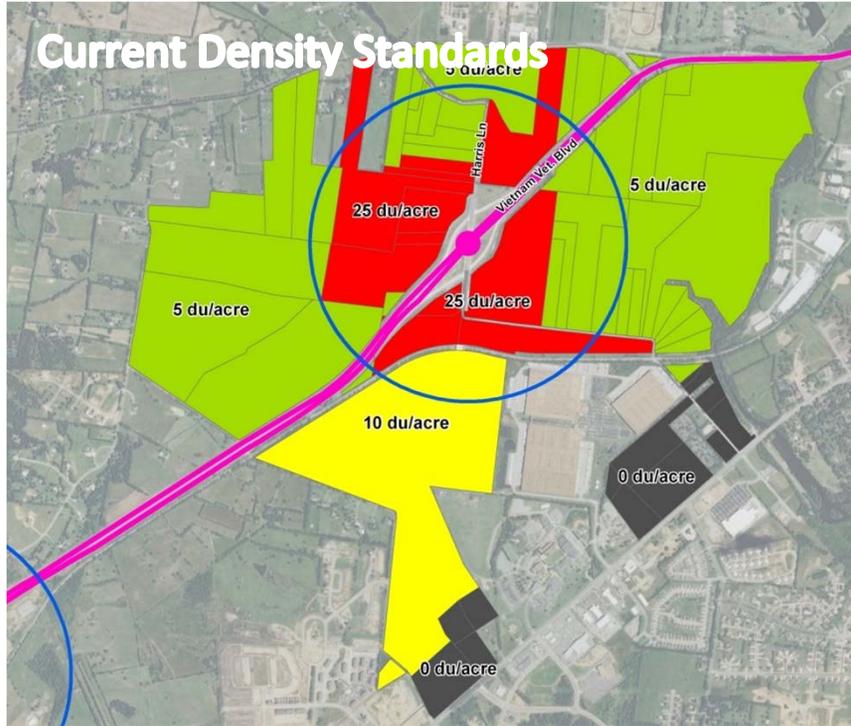
Primarily undeveloped & large parcels provide unique opportunity for coordinated, mixed use master plan



Land Use Issues:

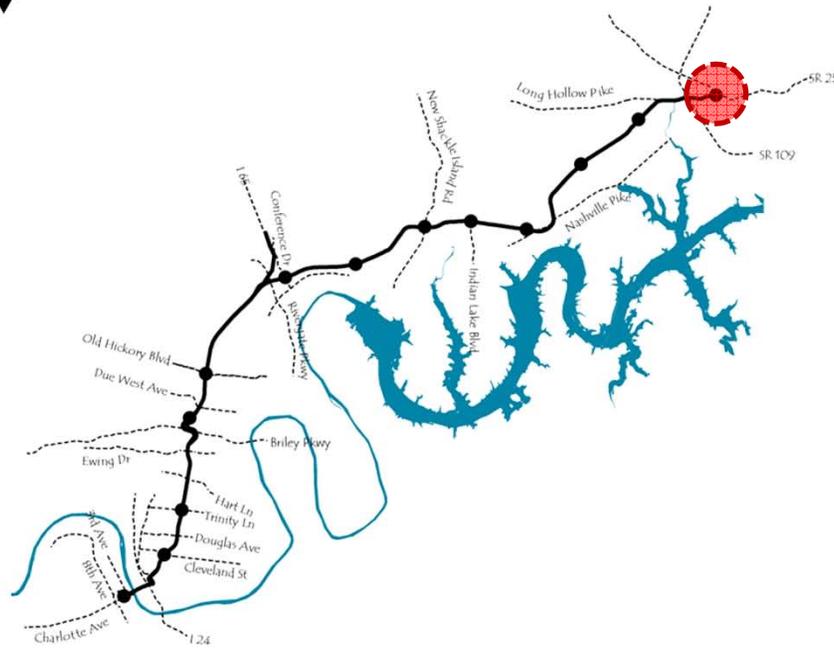
- Need to increase allowable residential density adjacent to station
- Maximum FAR standards are sufficient - need minimum standards to ensure intensity adjacent to station
- Vertical mixed-use development not permitted
- New street connectivity will be needed to maximize access to station area

Harris-Greenlea Station



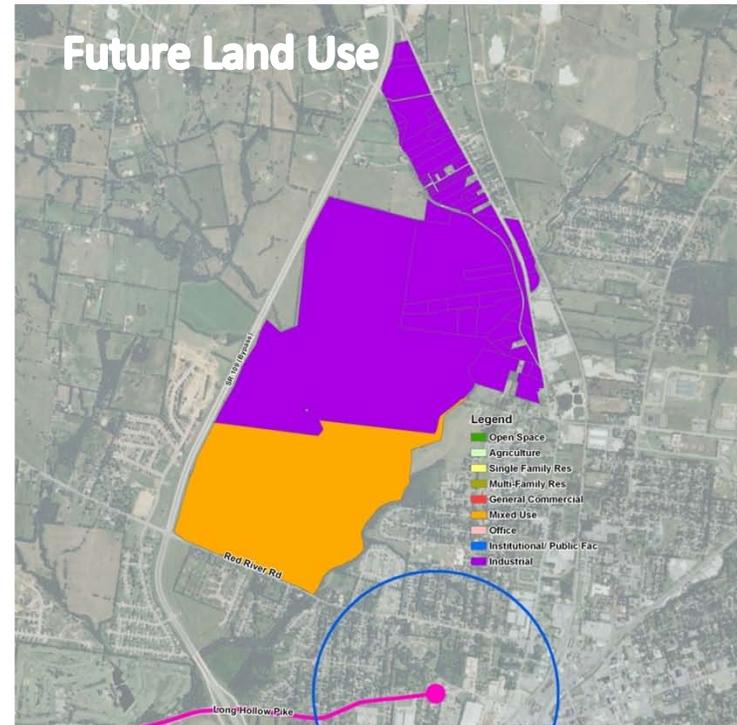
	Generic TOD Density Goal	Station Specific TOD Scenario	Existing Standards
Residential Density (units/acre)	15-20 units/acre minimum (net)	15-75 units/acre 24 units/acre (net) average	25 units/acre maximum
Non-Residential Density (FAR)	.50-.75 FAR minimum (net)	.25-1.0 FAR .40 FAR (net) average	.20-3.0 FAR Maximum

Gallatin Station



Station Context:

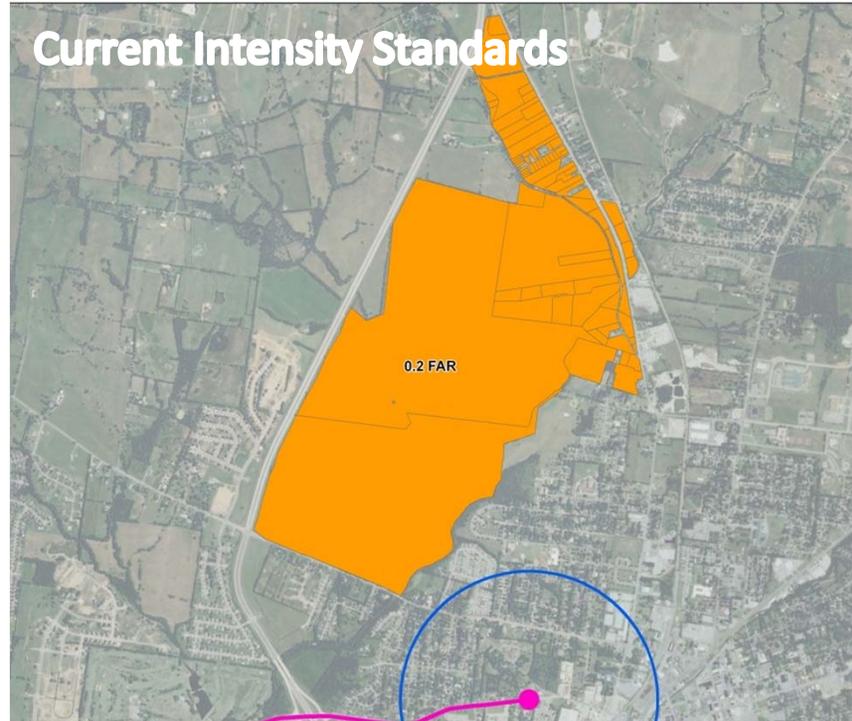
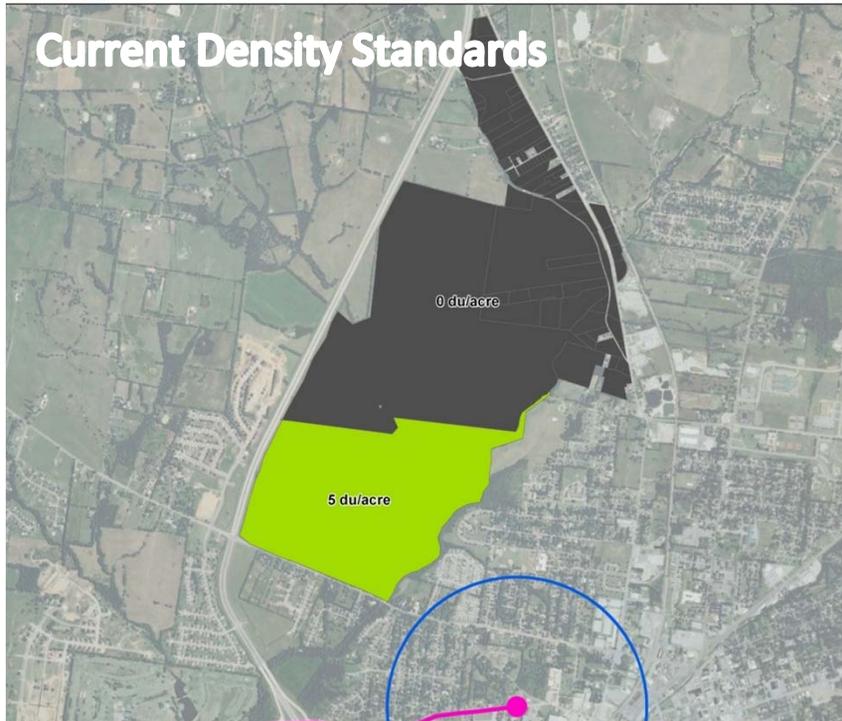
Mixed-use and industrial development opportunity outside of station area



Land Use Issues:

- Need to increase allowable residential density adjacent to station
- Industrial FAR could be increased to support more employment
- Vertical mixed-use development not permitted
- New street connectivity will be needed to maximize access to station area

Gallatin Station

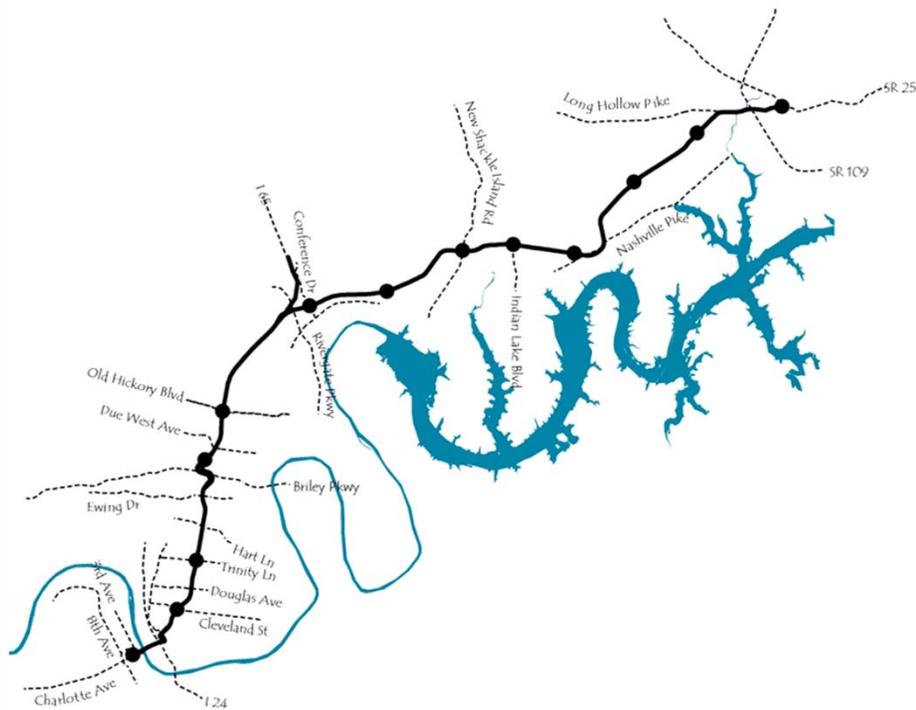


	Generic TOD Density Goal	Station Specific TOD Scenario	Existing Standards
Residential Density (units/acre)	15-20 units/acre minimum (net)	15-75 units/acre 24 units/acre (net) average	5 units/acre maximum
Non-Residential Density (FAR)	.50-.75 FAR minimum (net)	.25-1.0 FAR .40 FAR (net) average	.20 FAR Maximum

Gallatin Station (Phasing)



Corridor Wide Land Use Issues



- Residential densities throughout corridor need to be increased in station areas
- Vertical mixed-use is not permitted in Davidson County outside of downtown Nashville.
- Some station areas include non-transit supportive uses (such as industrial)
- New land use categories will have to be created to incorporate these densities.
- Minimum densities and intensities should be established for station areas
- Connectivity standards should be established to ensure maximum access to stations

Next Steps

- ➔ **Translate revised growth scenario into a future land use plans for local governments**
- ➔ Educate the public and policy-makers on the benefits of targeted density with good urban design
- ➔ **Analyze gaps in policies to identify regulatory barriers to an more compact land development pattern**
- ➔ Identify and promote market incentives that encourage increased development around targeted TOD locations
- ➔ **Align public sector investment strategies with stated vision to help created a more suitable environment for major transit investment, or at least to not contradict it**

But First, Two Questions:

- ➡ Should we take the position that the planned 6-laning of Ellington Parkway be re-scoped as a transit improvement, consistent with the long-range vision for the corridor??
 - ROW acquired by TDOT. 2035 Plan provides \$51 M for construction in the mid-term horizon (#1012-218).
- ➡ What about the planned 6-laning of Vietnam Veterans??
 - Some ROW acquired by TDOT. 2035 Plan provides \$121 M for widening to Saundersville Rd during the long-term horizon (#1052-179)
 - #1052-264 provides \$8.8 M for new interchange at Forest Retreat Rd during the long-term horizon.



Livability. Sustainability. Prosperity. Diversity.