

# Planning and Urban Design for Tysons Corner

Community Workshops February 2008



Submitted to:



Fairfax County, Virginia

Submitted by:

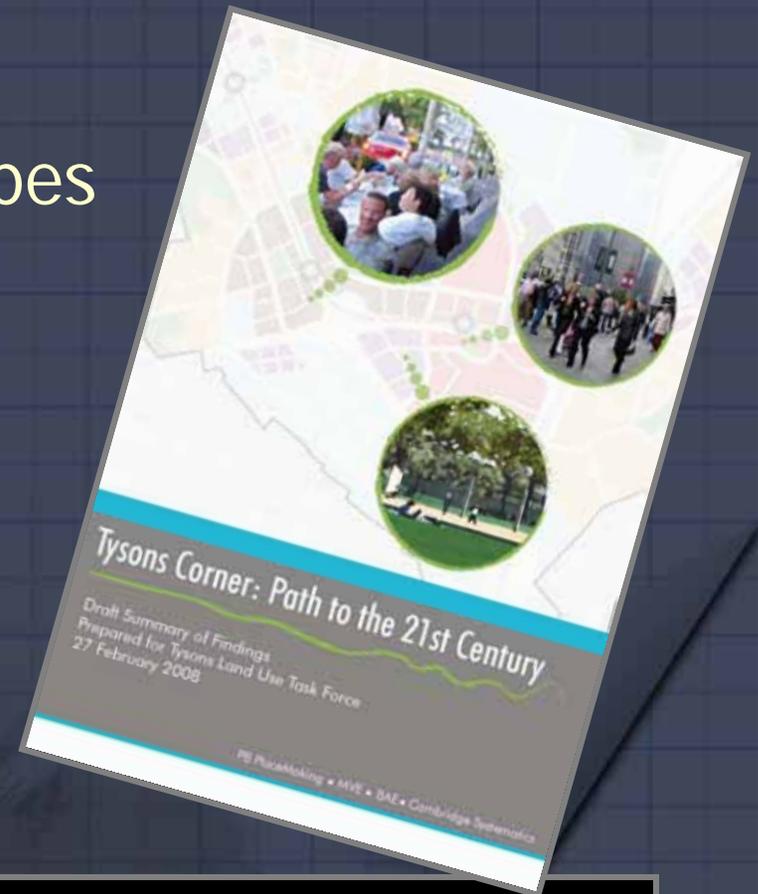


McLarand Vasquez Emsiek & Partners, Inc.

Presentation

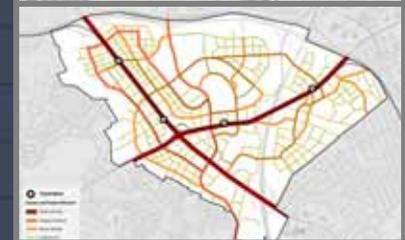
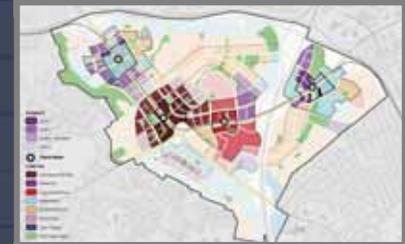
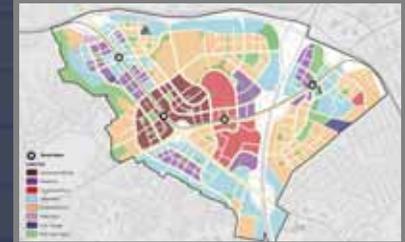
# Overview

- Status report on Prototypes
  - Building the Prototypes
  - Understanding the Prototypes
  - What will they look like
- Transportation networks
  - Performance
- Small group discussion
- Report back



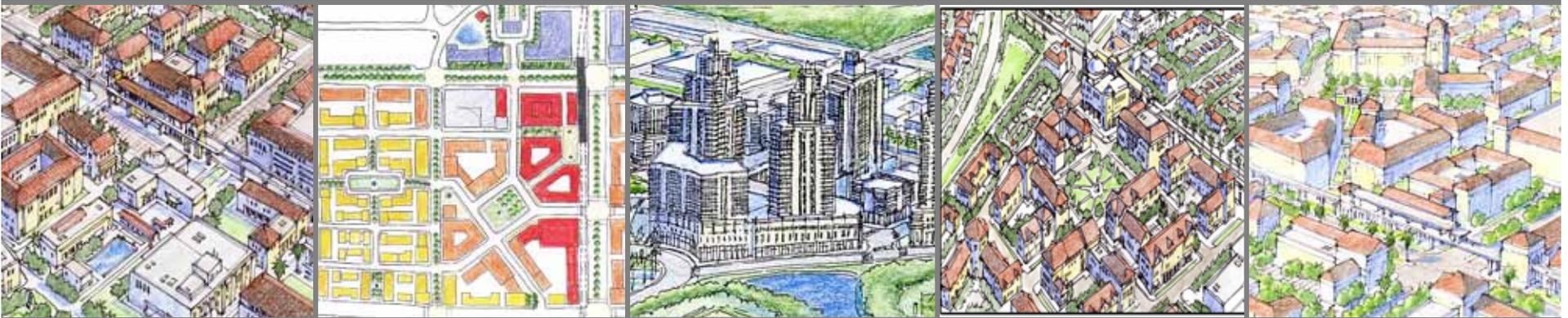
# Preview of Findings

- Alternative ways to grow Tysons, focused on transit with more community benefits
- Compared two prototypes to the comprehensive plan (base case)
- Prototypes add 120 to 190% more growth to Tysons than the plan
- Compared to the plan:
  - More growth
  - More community benefits
  - Somewhat less congested

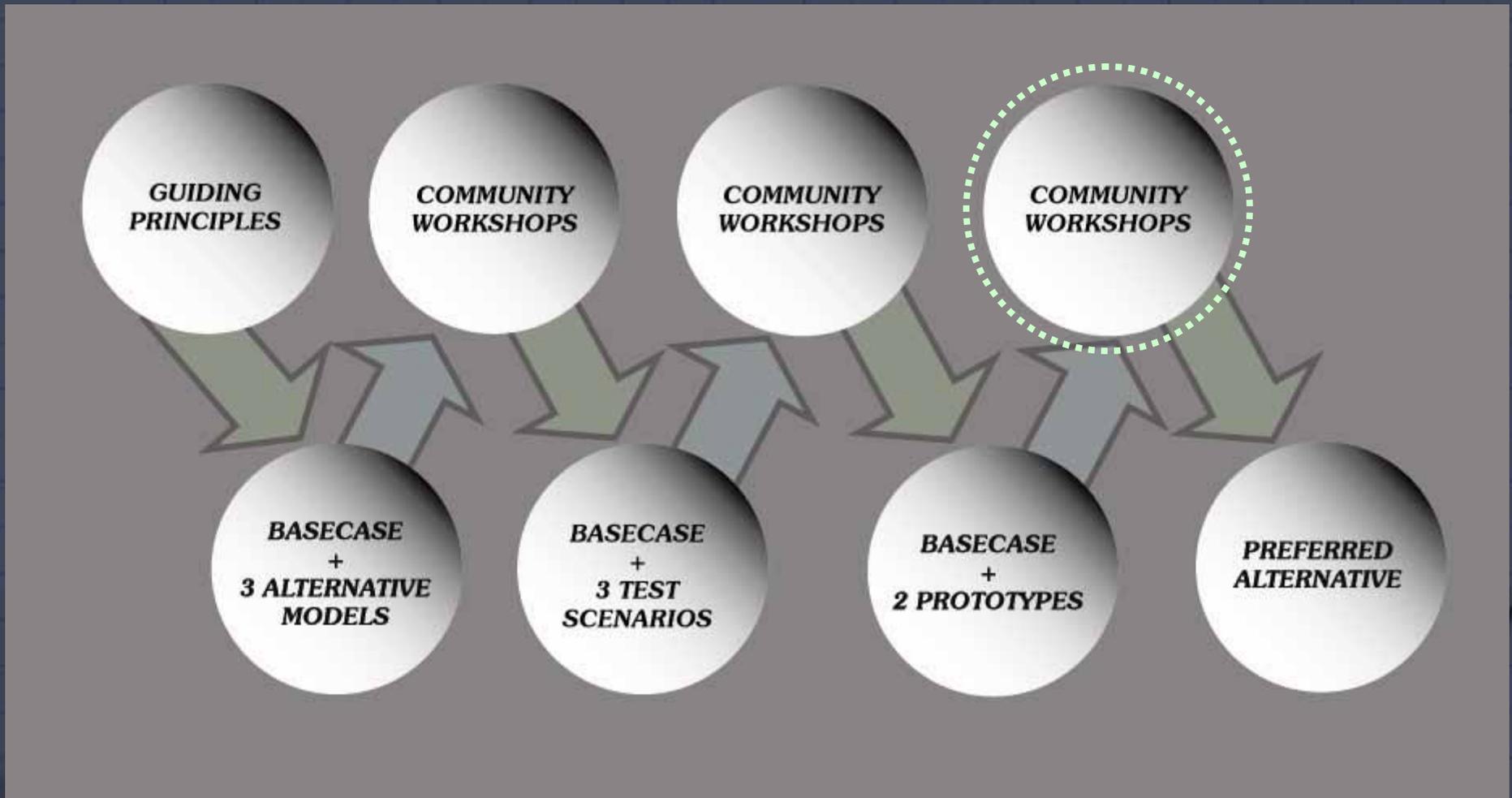


# Path to 21st Century Tysons

- Task Force Principles set the direction
  - Focus growth within Tysons & around transit
  - Mix of uses for an active 24-hour place
  - Increase connectivity & walkability
  - Preserve & enhance natural features



# The Overall Process



# Where Are We Trying To End-Up

- In March & July, you said the new Tysons should be:
  - A different Kind of Place – more walkable, more mixed use, more open space ...
  - Increased housing, grid of streets, focus growth on transit ...



# Need Your Input

- Three questions to keep in mind tonight
  1. *Location of new development & mix of uses*
  2. *Future transportation system for Tysons*
  3. *Growing and enhancing quality of life*
- Will discuss these in small groups
- Input to Preferred Alternative



# Prototypes

Two patterns of growth focusing on transit

- Prototype A
  - 96 m sq ft
  - Circulator
  - Focused TOD
- Prototype B
  - 127 m sq ft
  - Form giving circulator
  - Extended residential TOD



Prototype A



Prototype B

# Common Elements Between Prototypes

- Tysons as a downtown
- Unique districts w/in Tysons
- Density yields community benefits
- Walkable 18-hour TODs at Metro
- Transit circulators connect Tysons
- Fine grid of streets
- Increase housing & mix of uses
- Enhance parks & open space
- Civic uses



# The Prototypes

	Total Floor Area (sq ft)	Residential Population	Employee Population
Existing (2006)	44m	16,000	105,000
Base Case	74m	35,000	161,500
Prototype A	96m	72,000	159,000
Prototype B	127m	100,000	203,000

Tyson's would grow by 120 to 190% over today



Prototype A



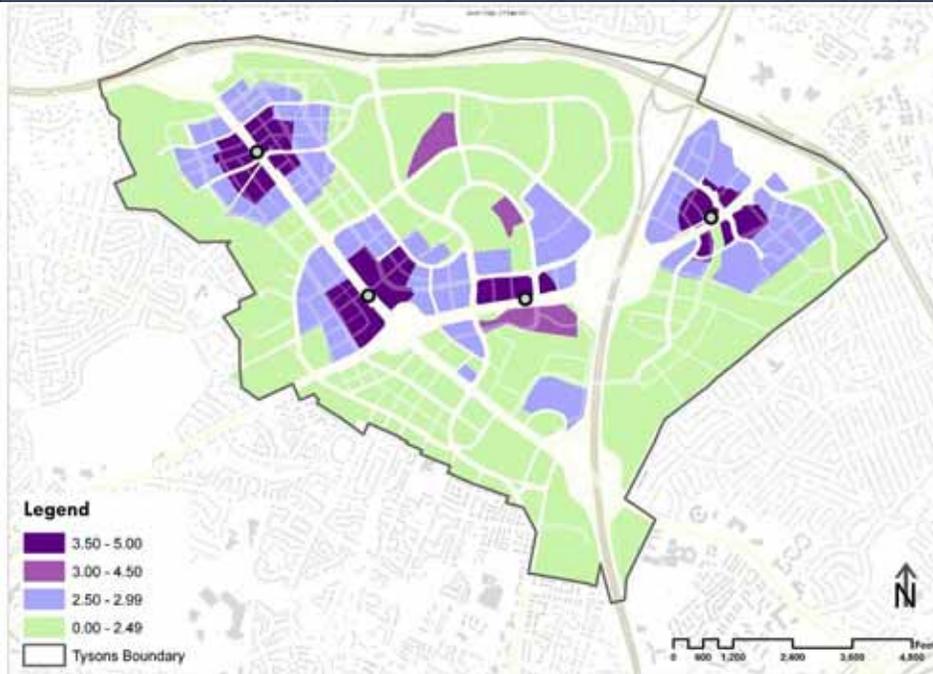
Prototype B

# The New Tysons

- Better, not just bigger
- A top 10 US downtown
- A place people want to live
- Defined by green stewardship
- The civic heart of N. Virginia
- Built around transit & walking

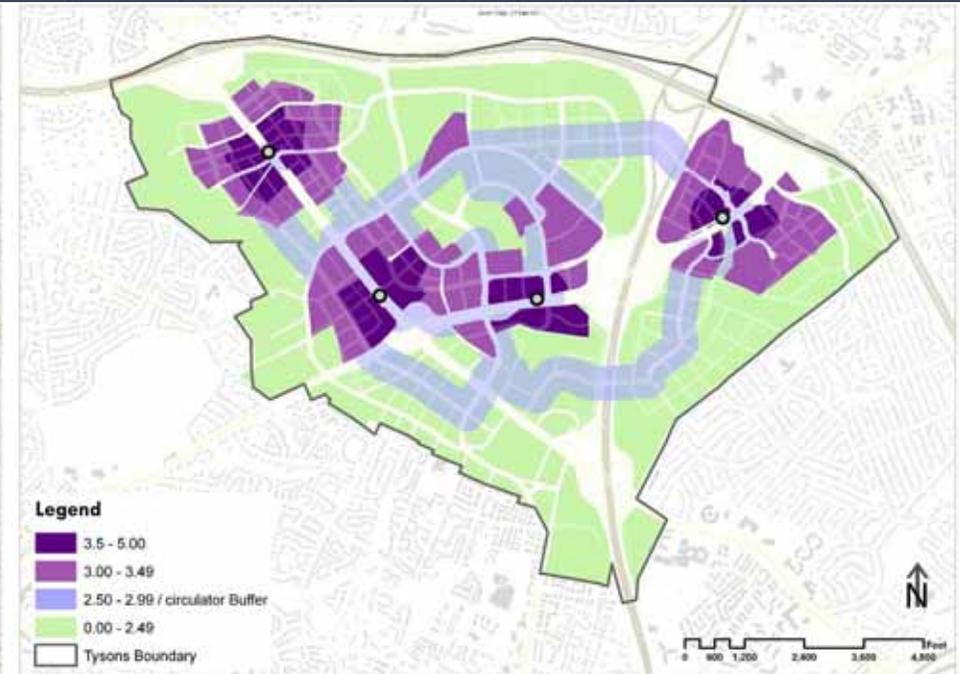


# Prototypes



## Prototype A

- Focused TOD @ Metrorail



## Prototype B

- Extended residential TOD @ Metrorail
- TOD @ Circulators

# Focusing Development in TODs

	Base Case	Prototype A	Prototype B
4 TOD areas	67%	73%	70%
Non TOD areas	33%	27%	30%

	Base Case	Prototype A	Prototype B
4 TOD areas	50M	70 M	89 M
Non TOD areas	23.5 M	26 M	38 M
Total	74 M	96 M	127M

TODs capture 70% or more of the growth in Tysons



Prototype A



Prototype B

# Comparisons

## Percent of Development Relative to 2006

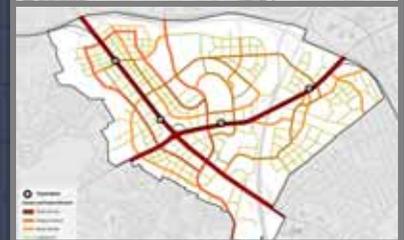
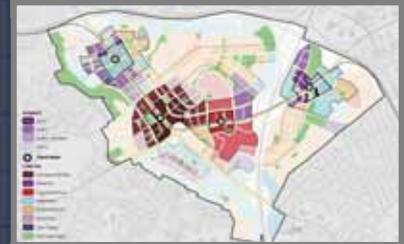
	Base Case	Prototype A	Prototype B
Residential sq. ft.	240%	490%	680%
Employment sq. ft	150%	150%	190%
Total development	170%	220%	290%
Households	220%	450%	620%
Jobs	150%	150%	190%

The personality of Tysons shifts with a growing share of housing

# Slicing the Onion

- Prototypes
  - Figure ground
  - Land use
  - Intensity
  - Green network
  - Transportation
    - Two networks tested
  - Composite

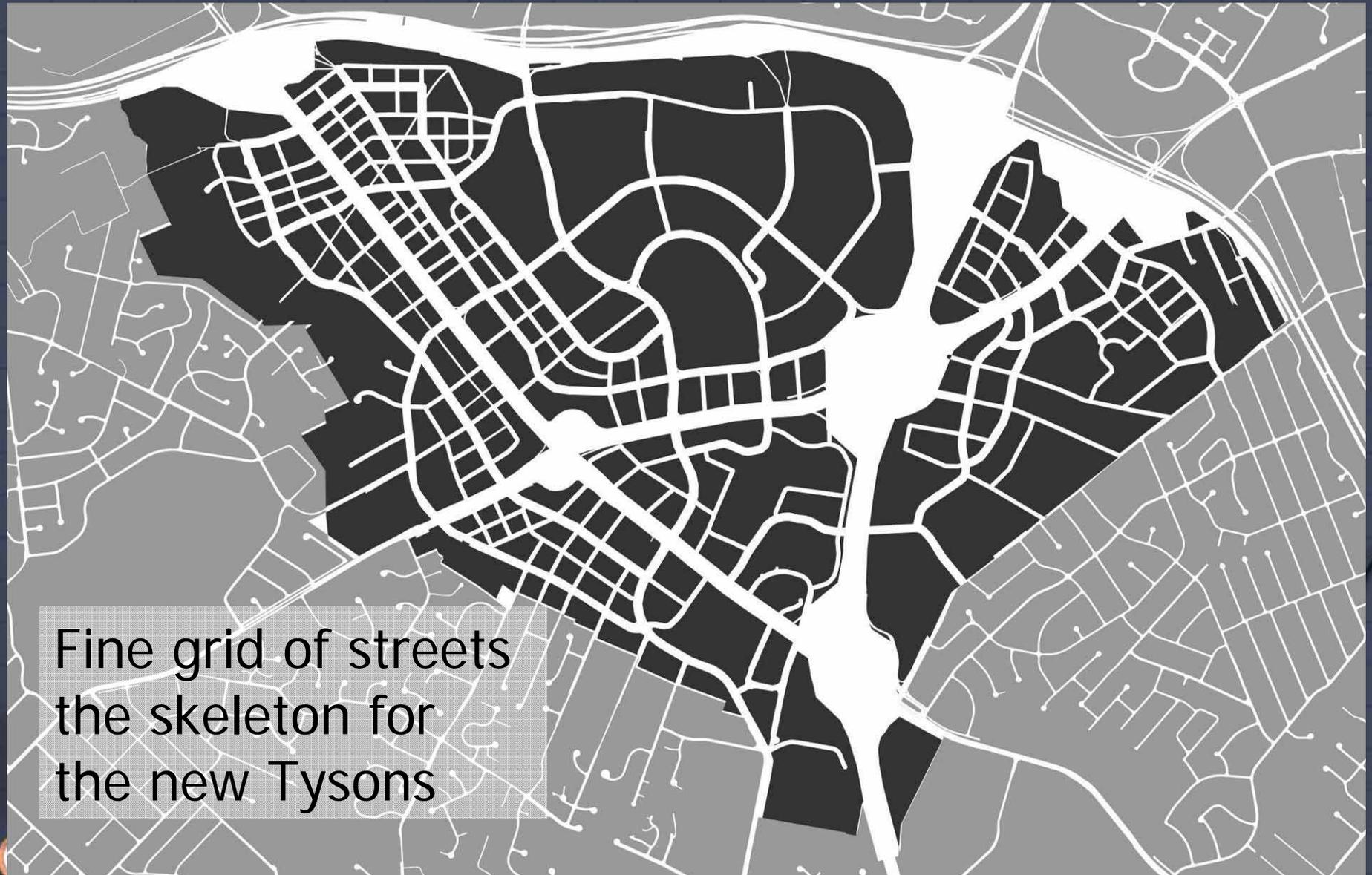
Building the Prototypes  
layer by layer



# Tysons Today

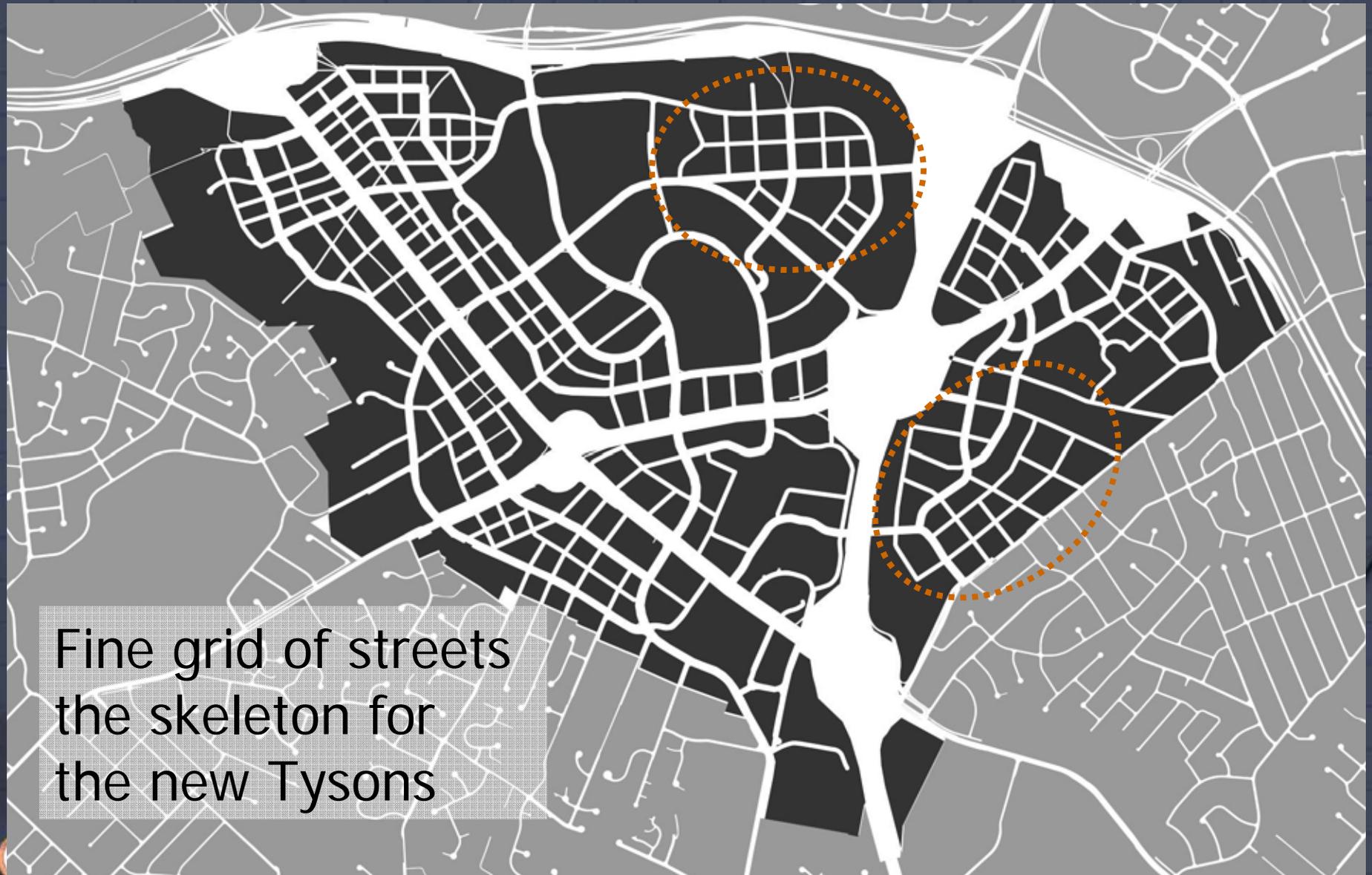


# Prototype A



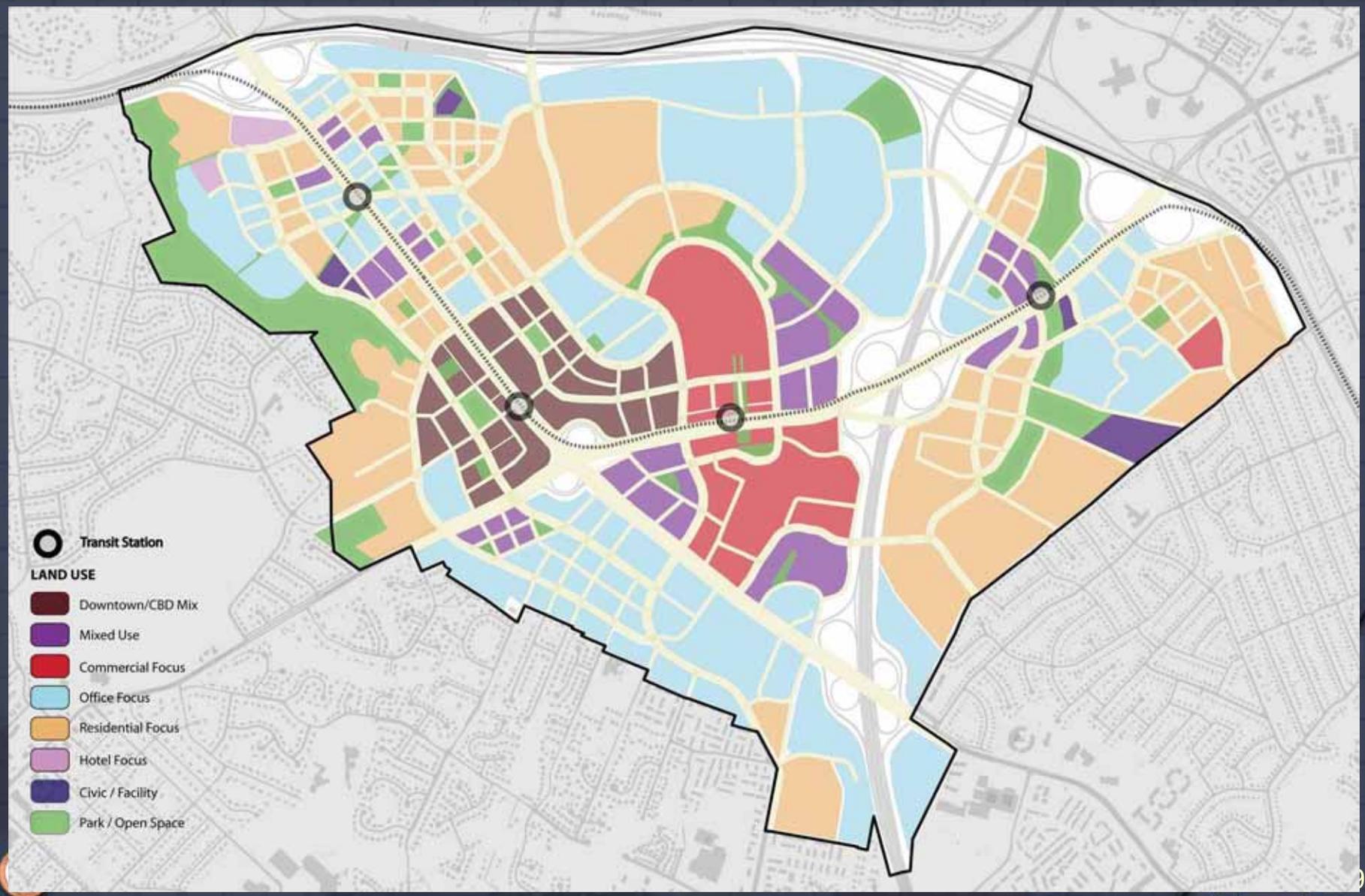
Fine grid of streets  
the skeleton for  
the new Tysons

# Prototype B



Fine grid of streets  
the skeleton for  
the new Tysons

# Prototype A: Land Use



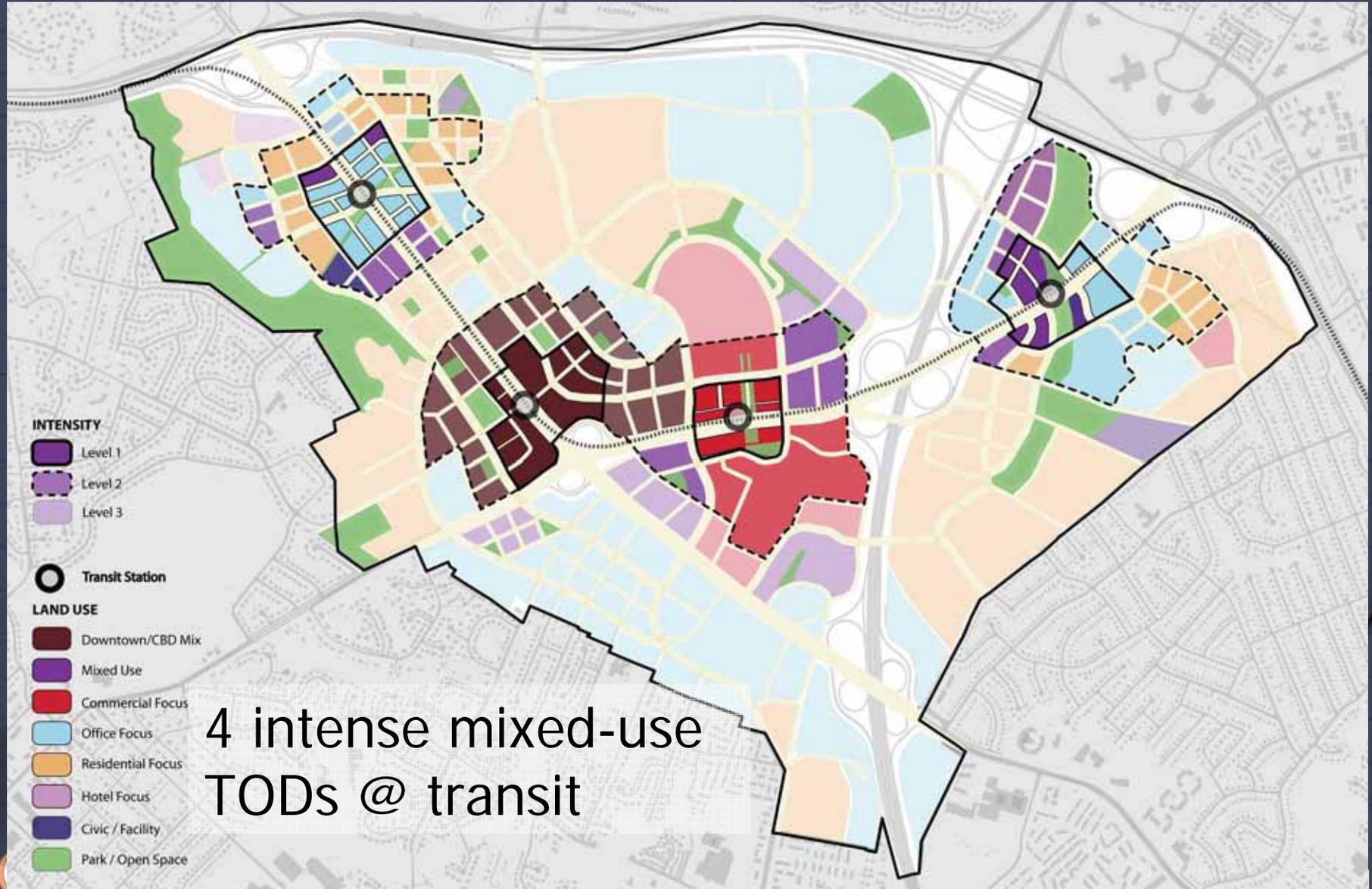
# Prototype A

New growth focused @ transit stations

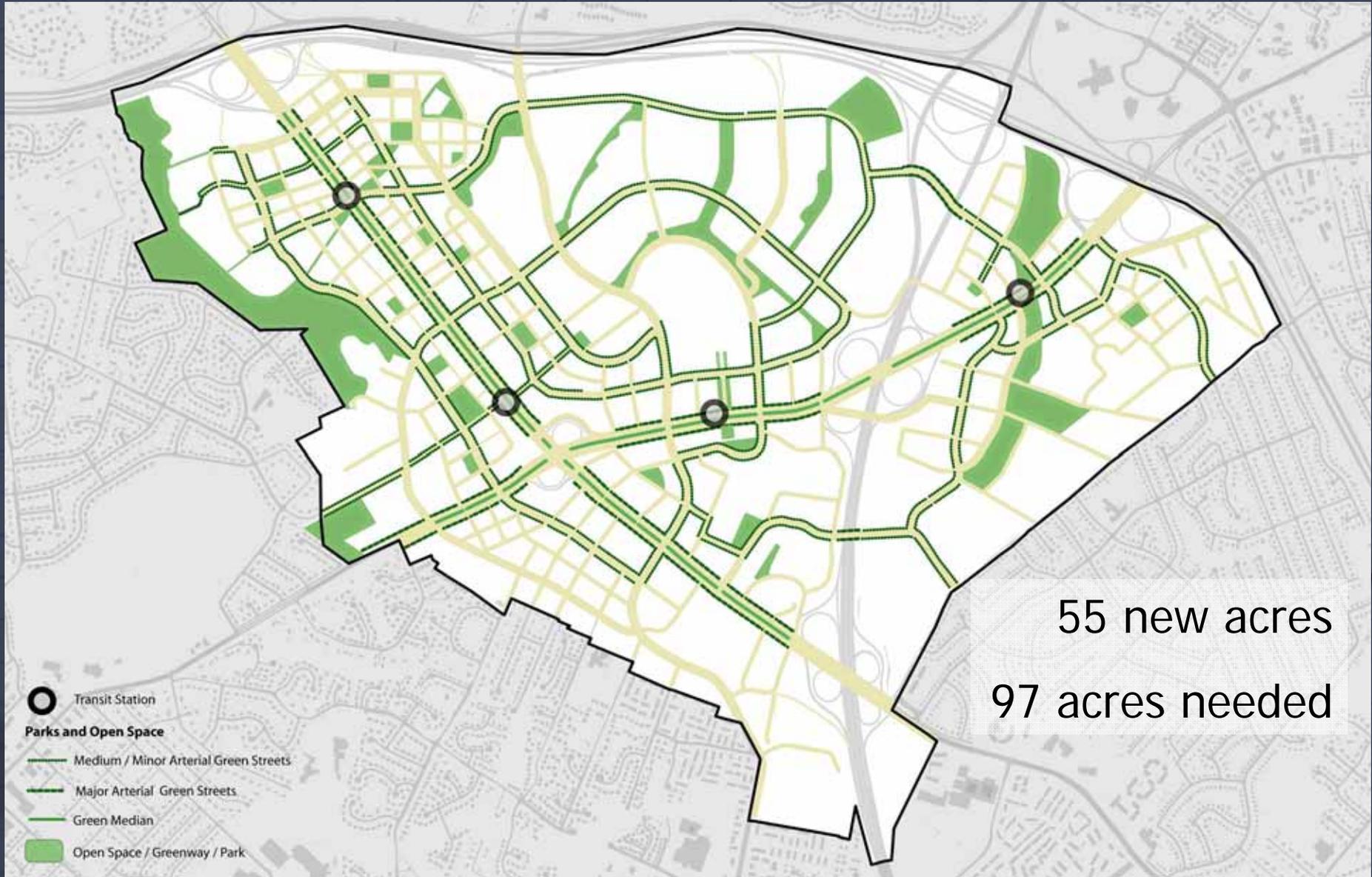
- Jobs @ stations
  - 49,000 *new* jobs
  - 91% of Tysons
- Dwellings @ stations
  - 24,400 *new* dwellings
  - 87% of Tysons



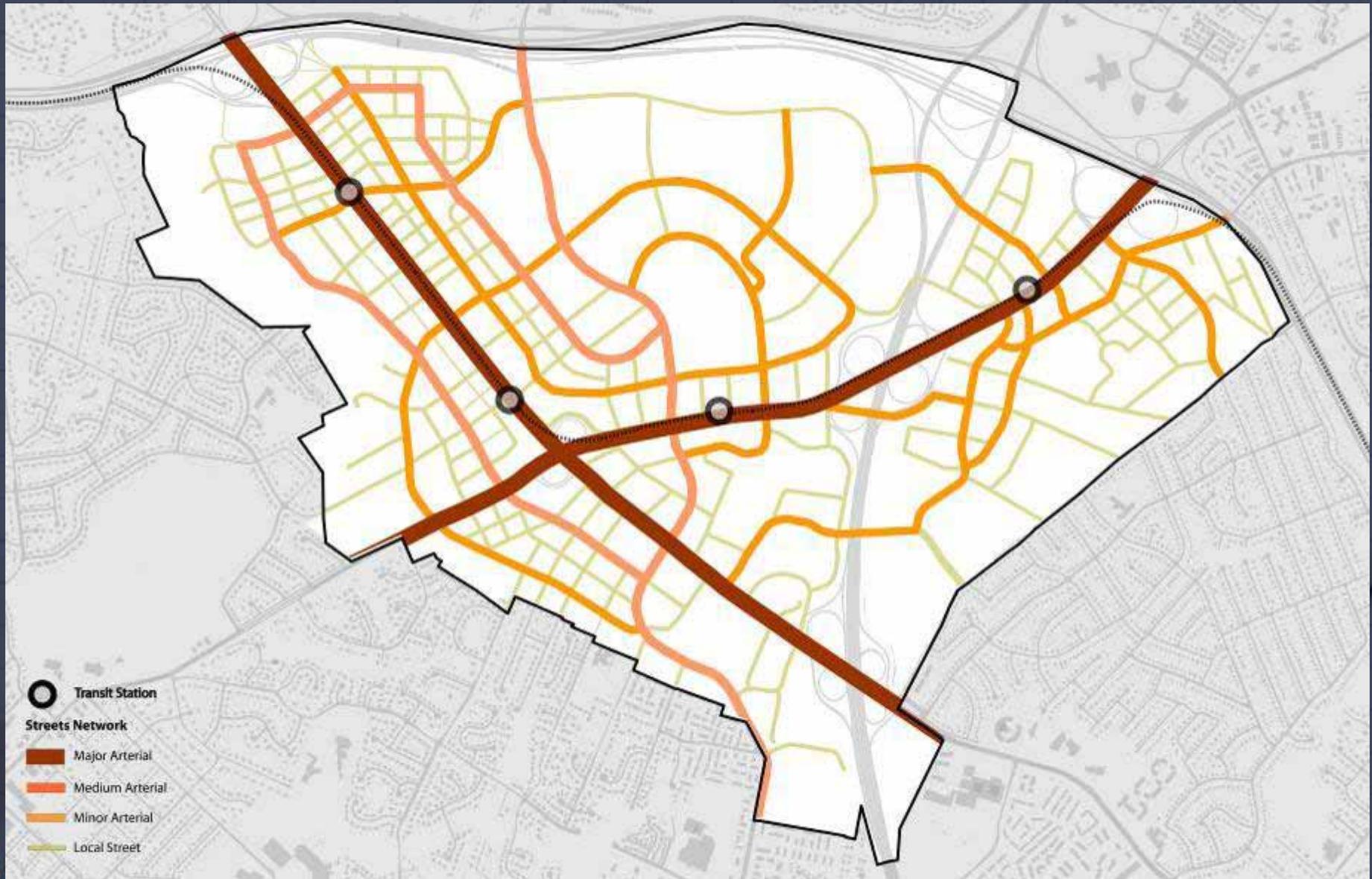
# Prototype A: Intensity



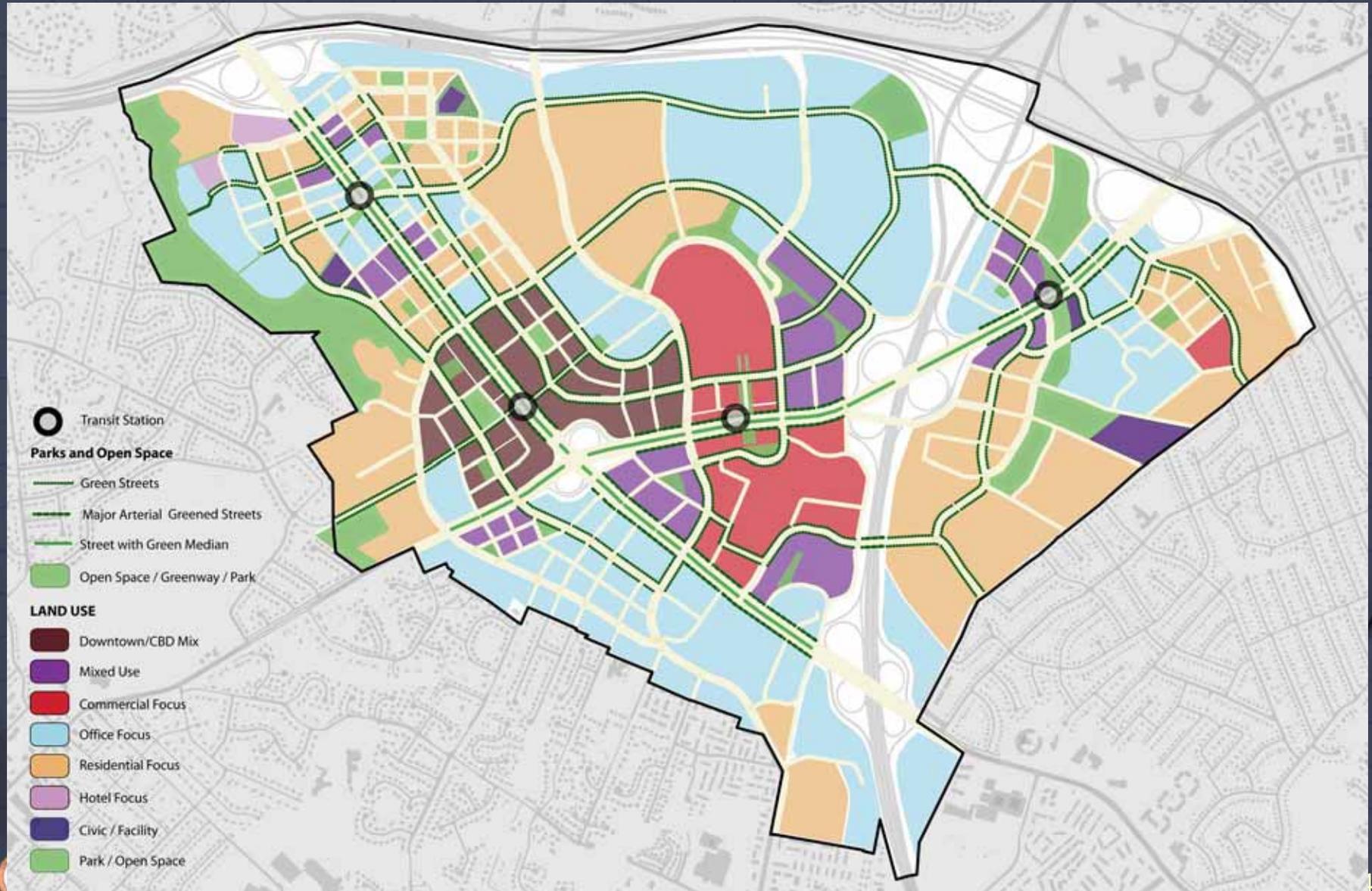
# Adv Prototype A: Green Network



# Prototype A: Transportation



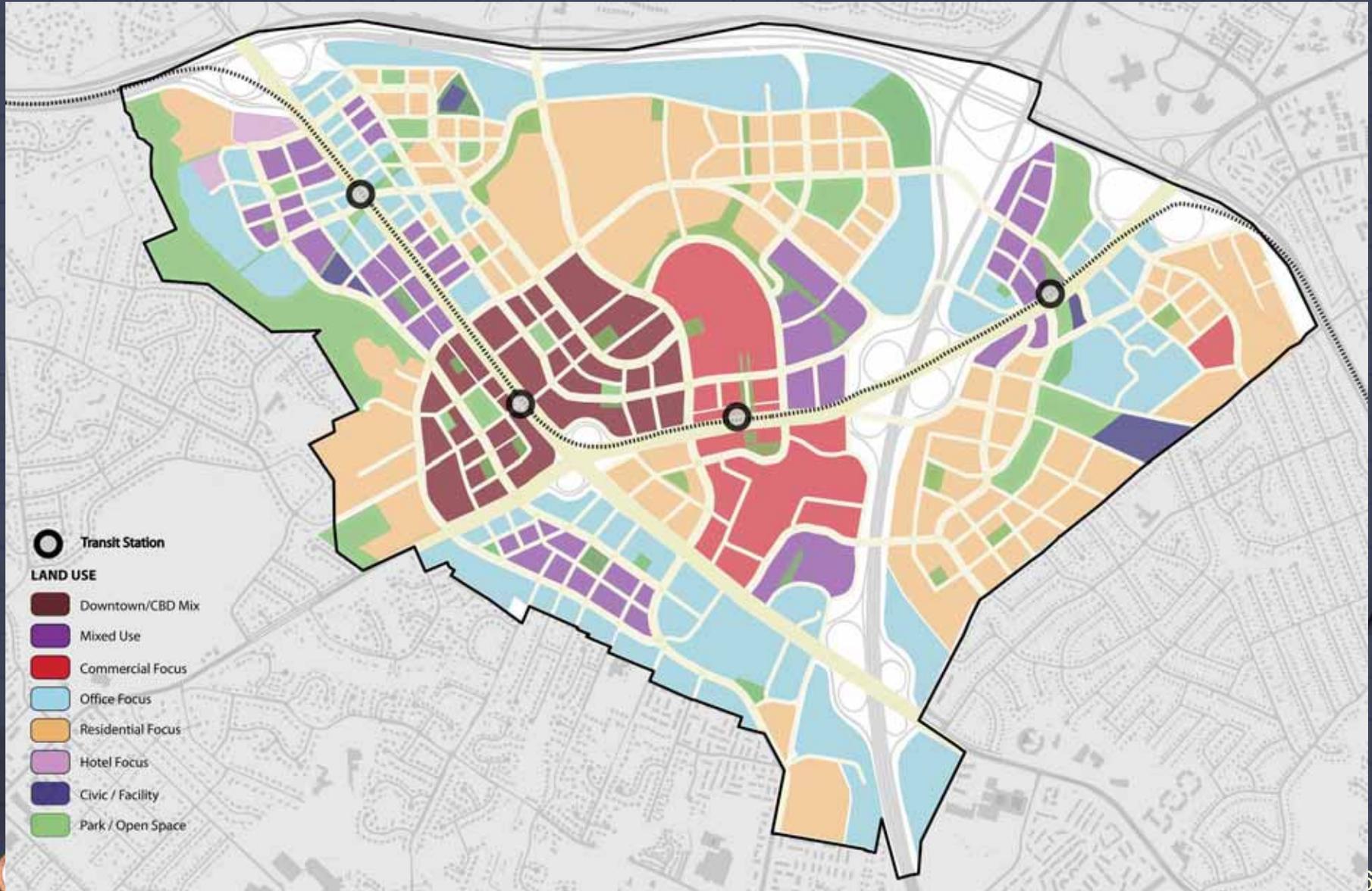
# Prototype A



# Prototype B



# Prototype B: Land Use



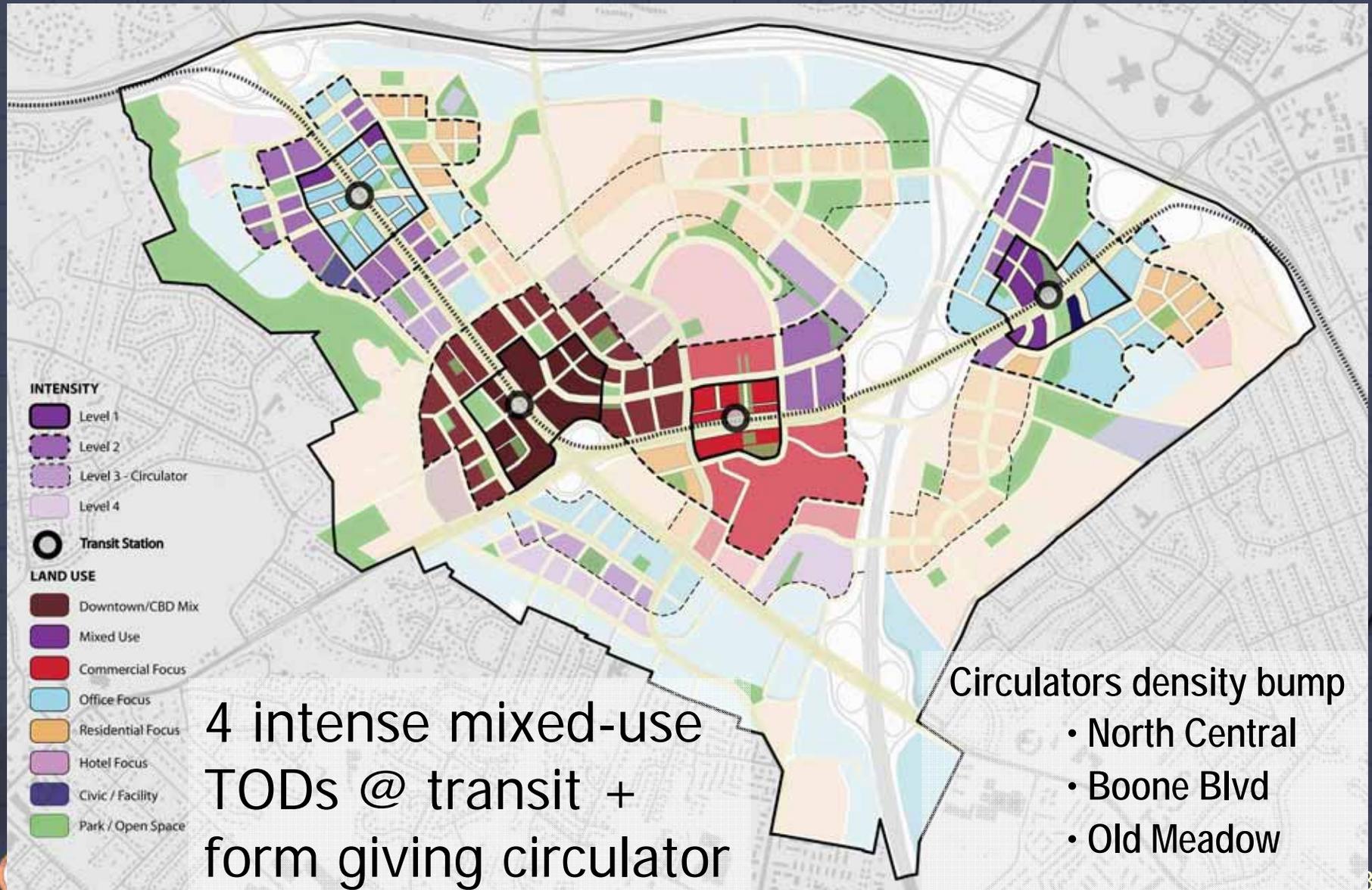
# Prototype B

New growth focused @ transit stations

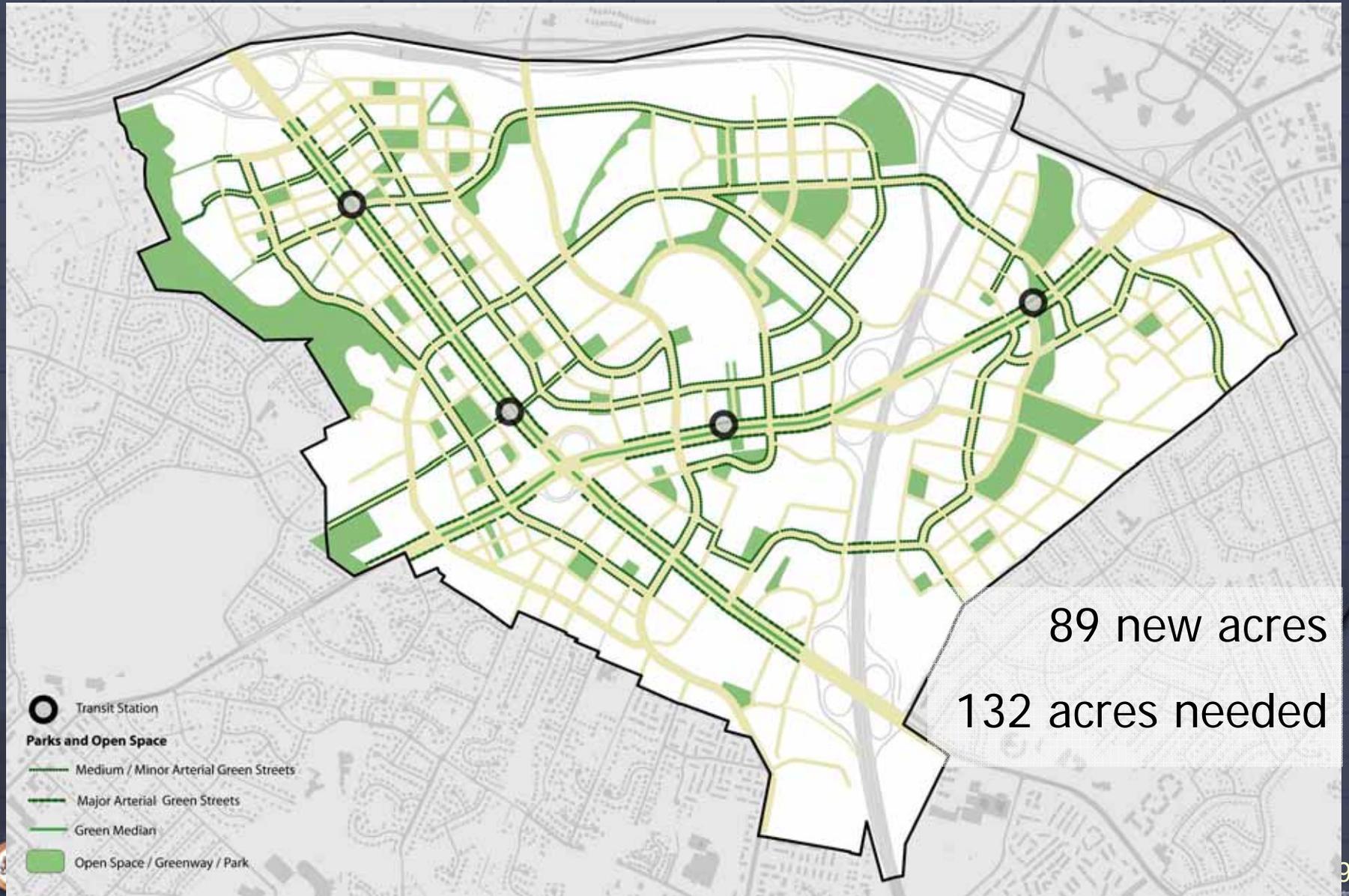
- Jobs @ stations
  - 98,500 *new* jobs
  - 100% of Tysons
- Dwellings @ stations
  - 27,200 *new* dwellings
  - 65% of Tysons



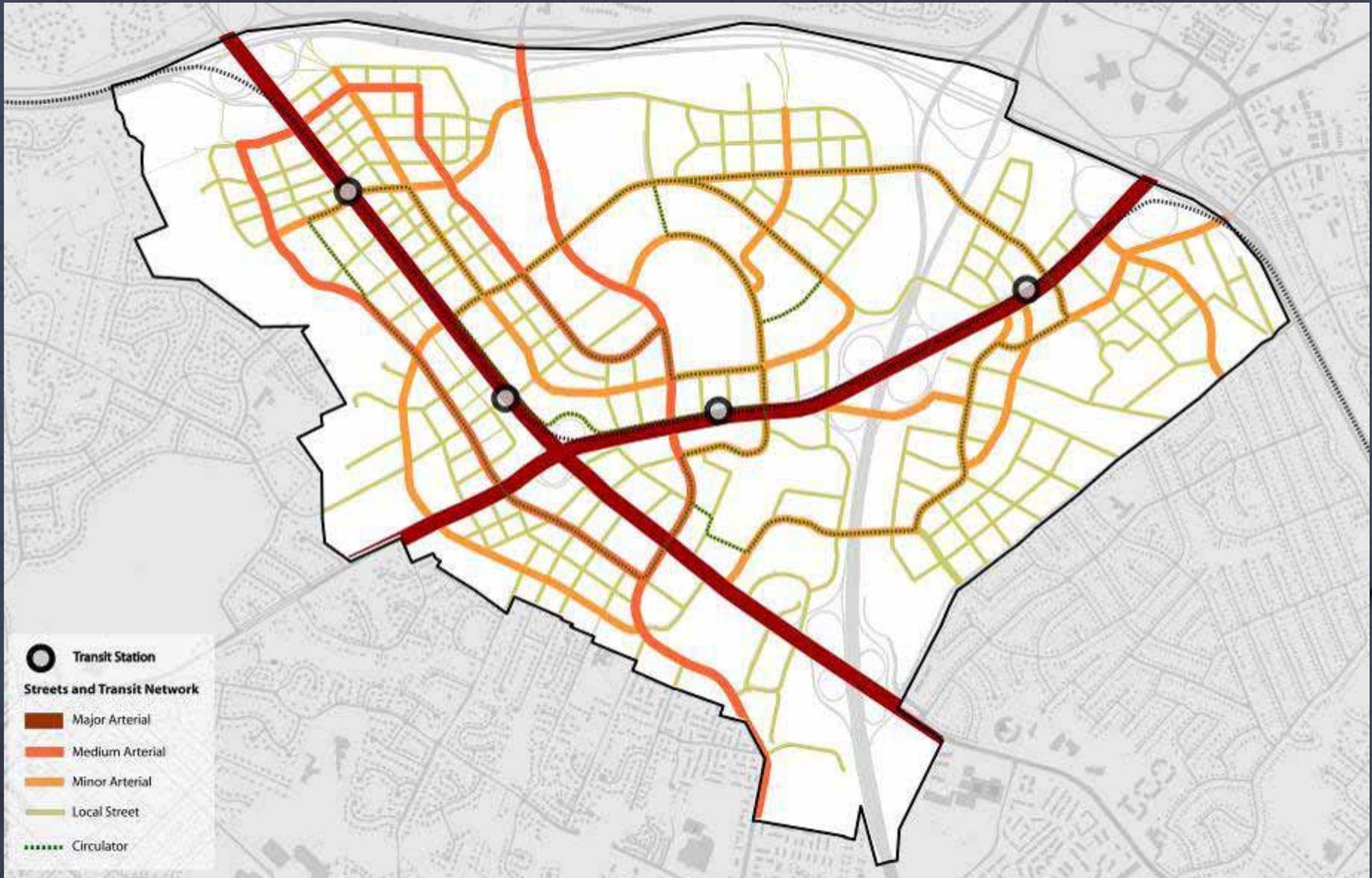
# Prototype B: Intensity



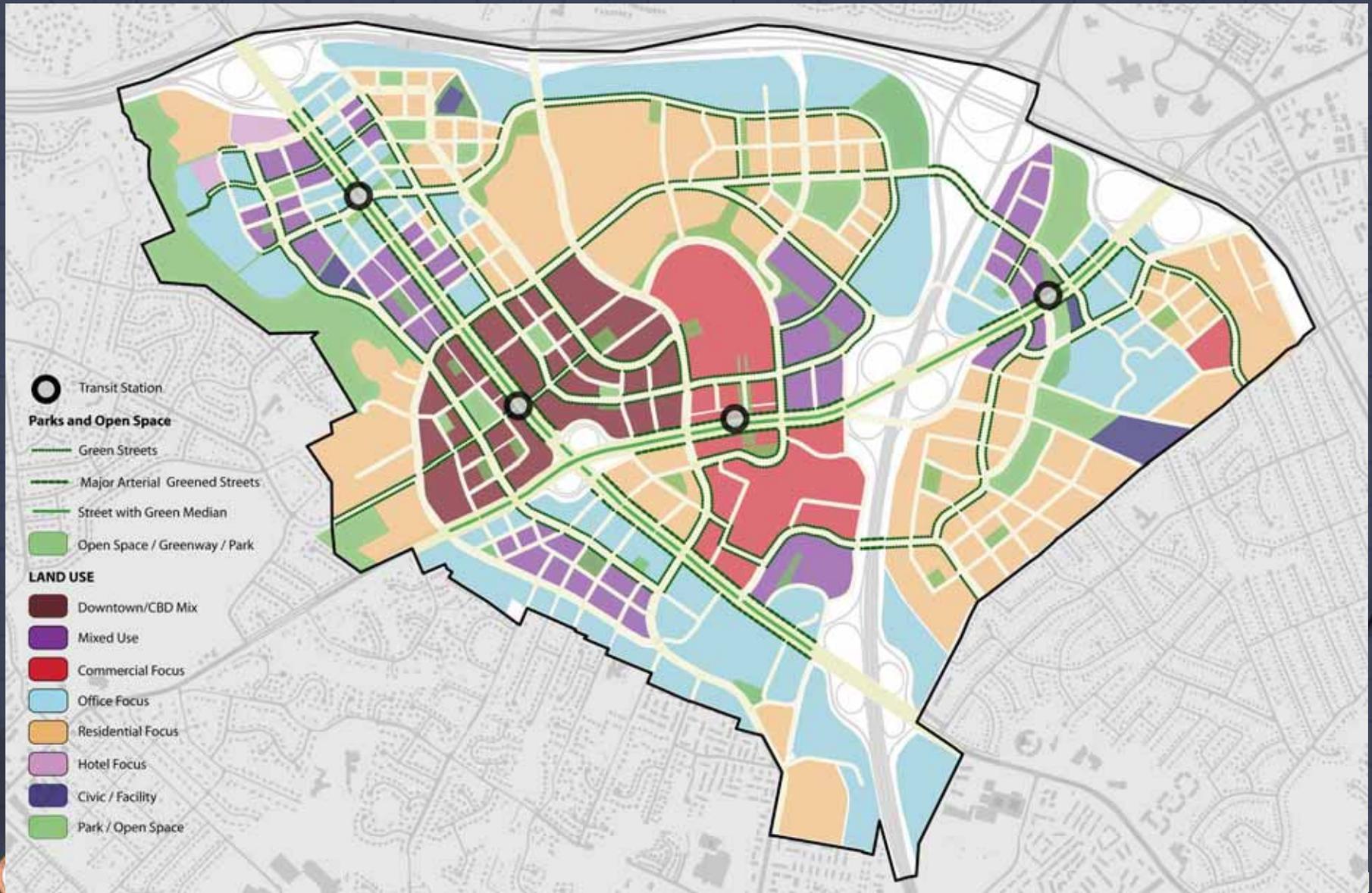
# Prototype B: Green Network



# Adv Prototype B: Transportation



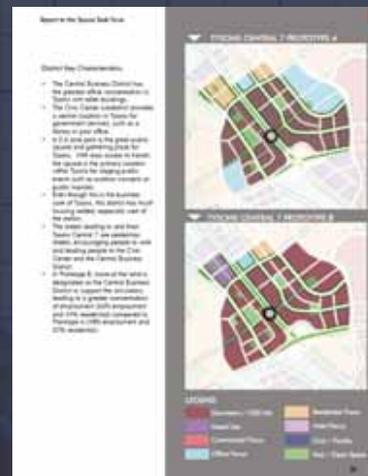
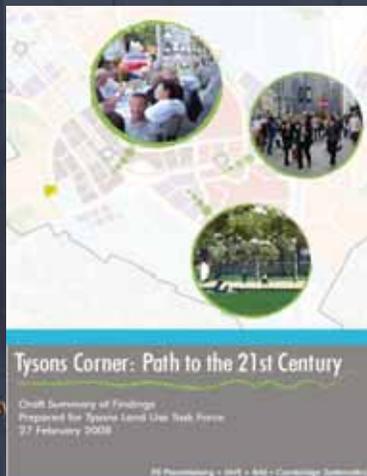
# Advanced Prototype B



# 21<sup>st</sup> Century Tysons: Many Unique Places

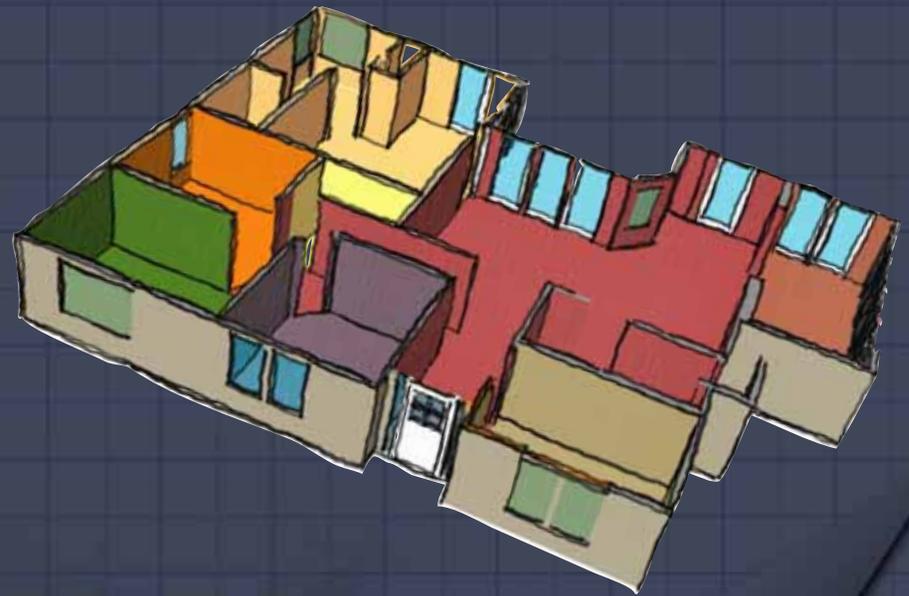
- One Plan With a Series of Individual Parts
  - Working Tysons
  - Living Tysons
  - Shopping Tysons
  - Playing Tysons
- Each District With its Own Mix

*District details in the report*



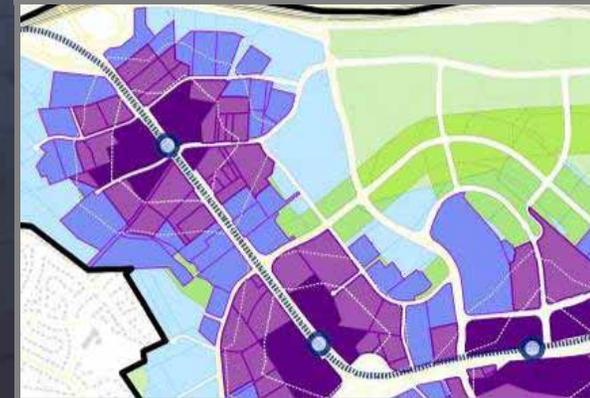
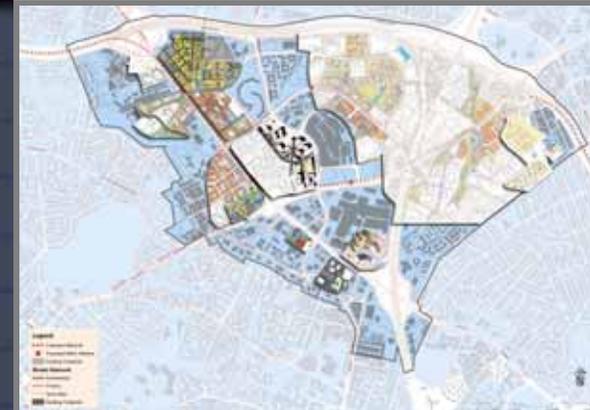
# 21<sup>st</sup> Century Tysons: Many Connected Places

- Like different rooms in your house
  - May use all of your house,
  - but not at the same time
- Tysons is the same



# Building the Prototypes One Room at a Time

- Bottom up process
- No targets for growth
- Informed by
  - Community input
  - Results of analysis
  - Developer plans
- Intensity at transit
  - Walking influence



# Visualizations: North View



Prototype A

Prototype B

- Northern edge unchanged between Prototypes
- B adds intensity along West Park

# Visualizations: West View



Prototype A

Prototype B

- Note extended TOD @ Tysons West in B
- More intensity along Rt 7 in B w/ circulator

# Visualizations: East View



Prototype A

Prototype B

- North Central and Old Meadow intensify w/ circulator in B

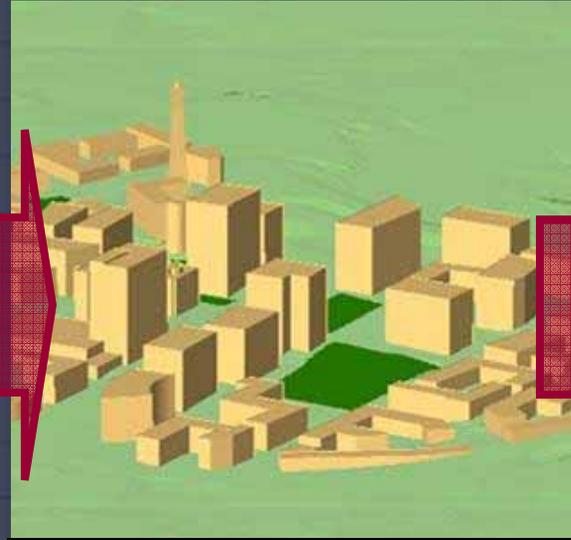


- Tysons East extended TOD in B

# Visualization: Tysons Central 7



Quilt of Proposals



Growth Allocations



Urban Design Site Plan



Detailed Testing



3D Model



Photo Visualization

# Visualization: Tysons Central 7



# Visualization: Tysons Central 7



# Visualization: Tysons Central 7



View



Old Courthouse Rd looking north toward Metrorail

# Visualization: Tysons Central 7



View



South of Westpark looking east

# Visualization: Tysons West



# Visualization: Tysons West



# Visualization: Tysons West



View



Spring Hill Rd looking north from Metrorail

# Visualization: Tysons West



View



Near Tyco Rd looking east

# Visualization: Tysons East



# Visualization: Tysons East



# Visualization: Tysons East



View



Old Meadow Rd looking north

# Visualization: Tysons East



View



Looking east

# Creating Active Places

- Better jobs to resident balance
  - 6.6 to 1 today
  - 4.6 to 1 base case
  - 2.2 to 1 prototype A
  - 2 to 1 prototype B
- Metro station areas more likely to become 18 hr active places
- Lower parking requirements provides space for other public uses – like parks



# Being a Good Neighbor

- TODs have 90% to 100% of jobs *growth*
- TOD area captures nearly 40% of work trips
- Tallest buildings near transit
- Development on the edge is less dense



# Questions ?



# Transportation Analysis

- Methods
- Networks
- Findings and Conclusions

# Methods

- MWCOG / CS Fairfax Post-Processor Model
- FHWA TDM Analysis Tool
- EPA Smart Growth 4D Tool
- CS Circulator Pivot-Point Model

# Two Networks

Two networks tested with each Prototype

Element	Network 1	Network 2
Metrorail extension through Tysons Corner	✓	✓
Beltway HOT Lane improvements	✓	✓
Enhanced connectivity; grid of streets	✓	✓
Enhanced TDM and parking management	✓	✓
Grade separations at key intersections and access management on Route 7 and 123	✓	
Additional ramps to Beltway and Toll Road	✓	
Transit Circulators (in mixed traffic)	✓	
Transit Circulators (dedicated right-of-way)		✓

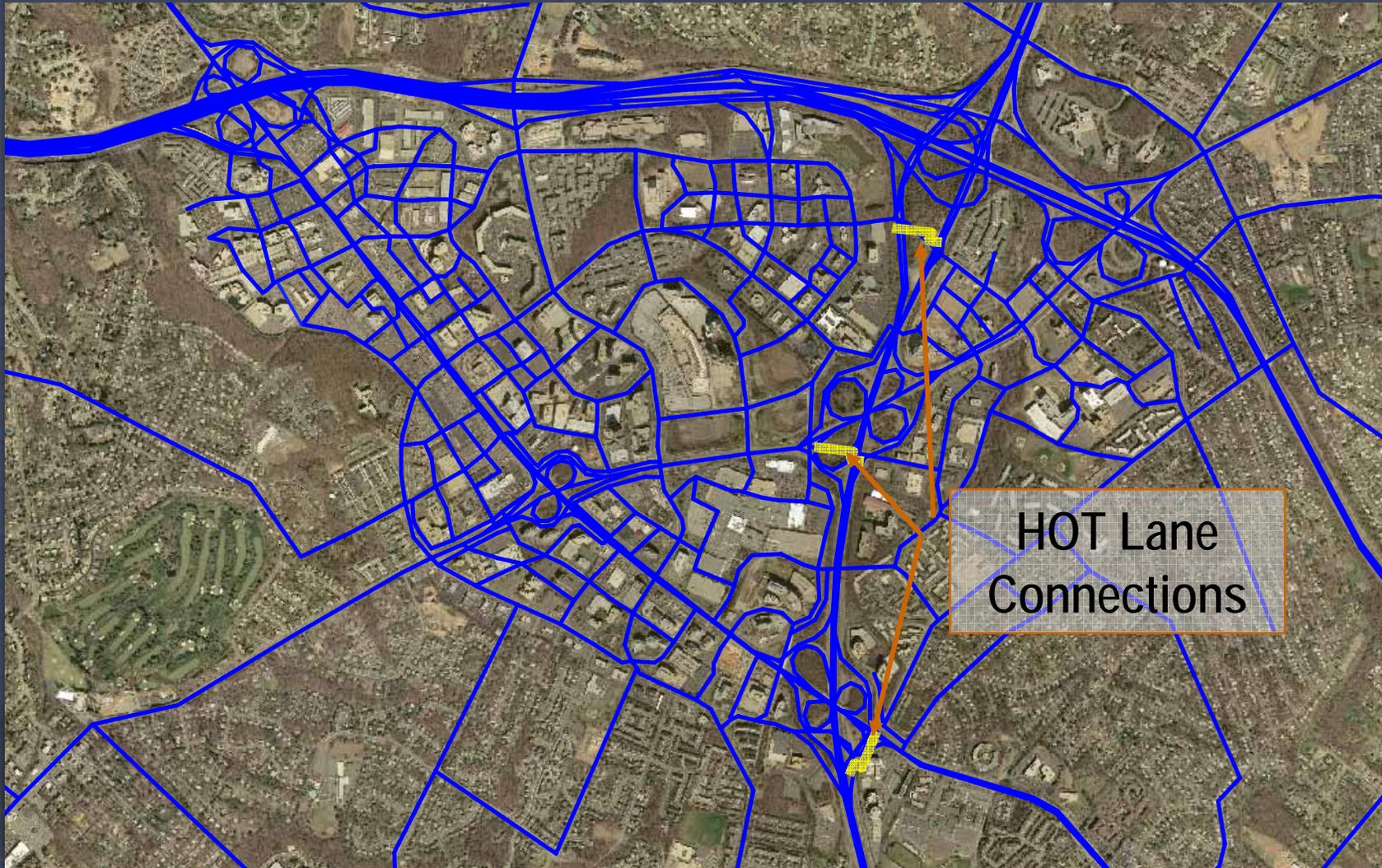
# Networks 1 and 2

## Metrorail Extension through Tysons



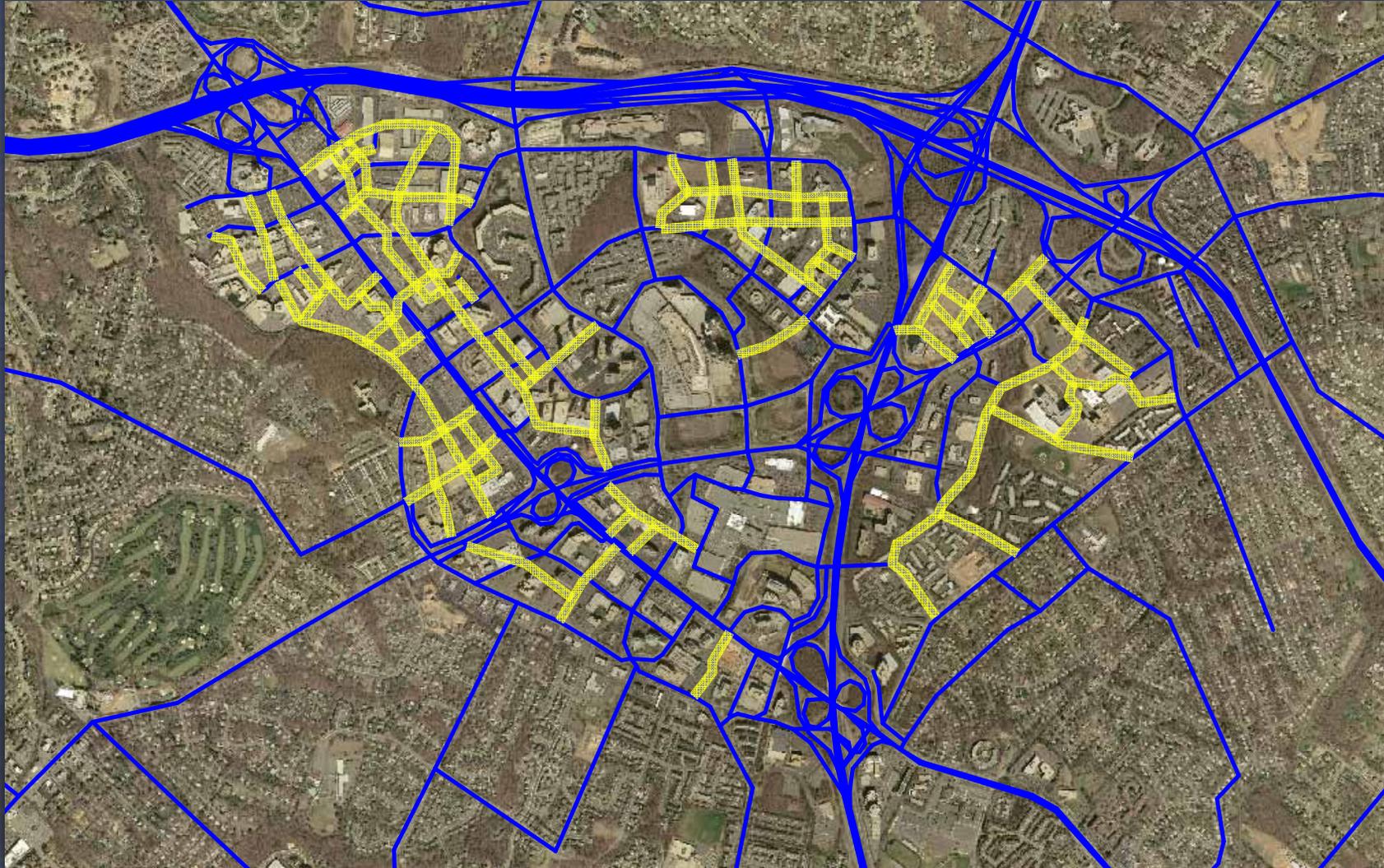
# Networks 1 and 2

## HOT Lane Connections



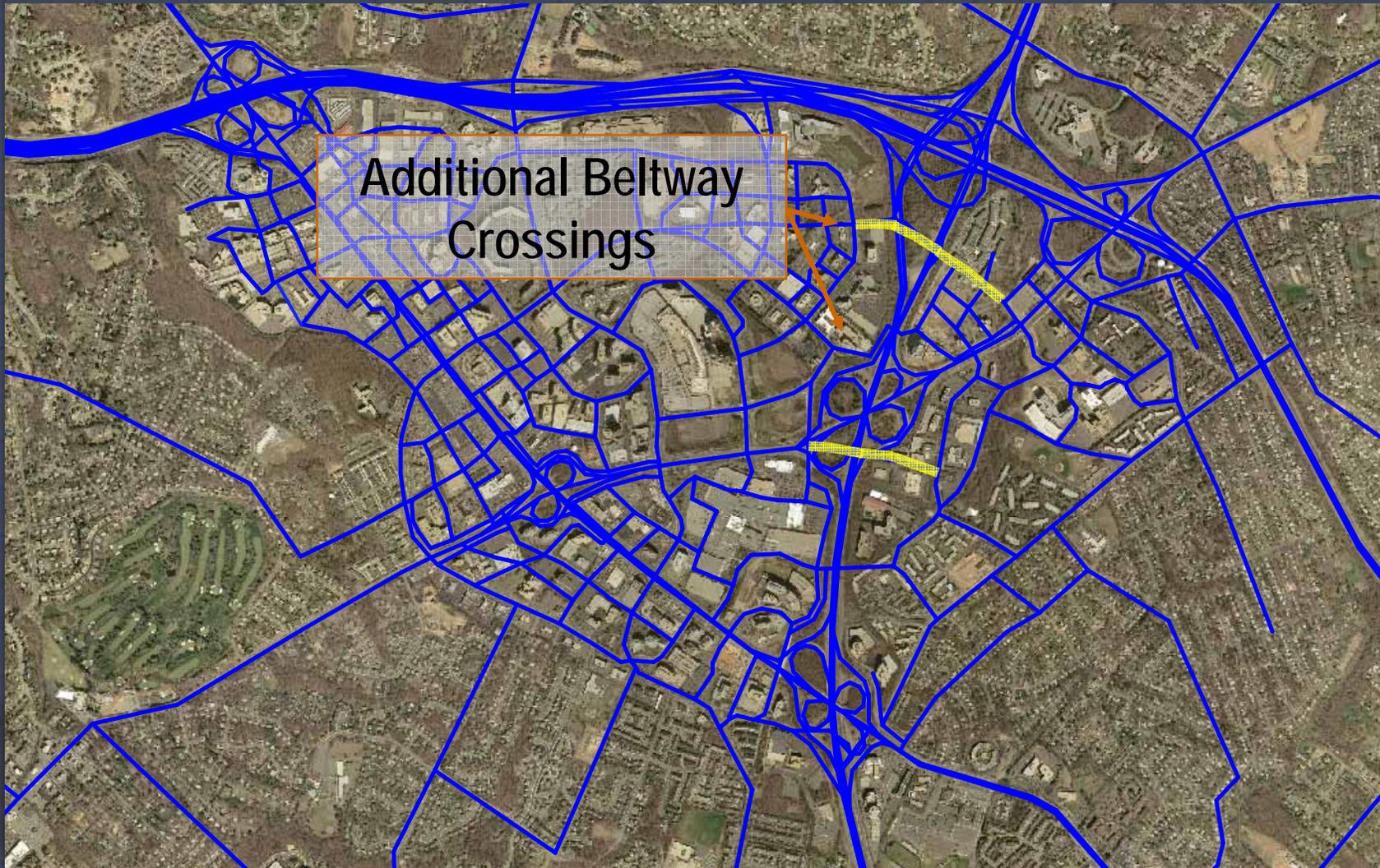
# Networks 1 and 2

## Grid of Streets



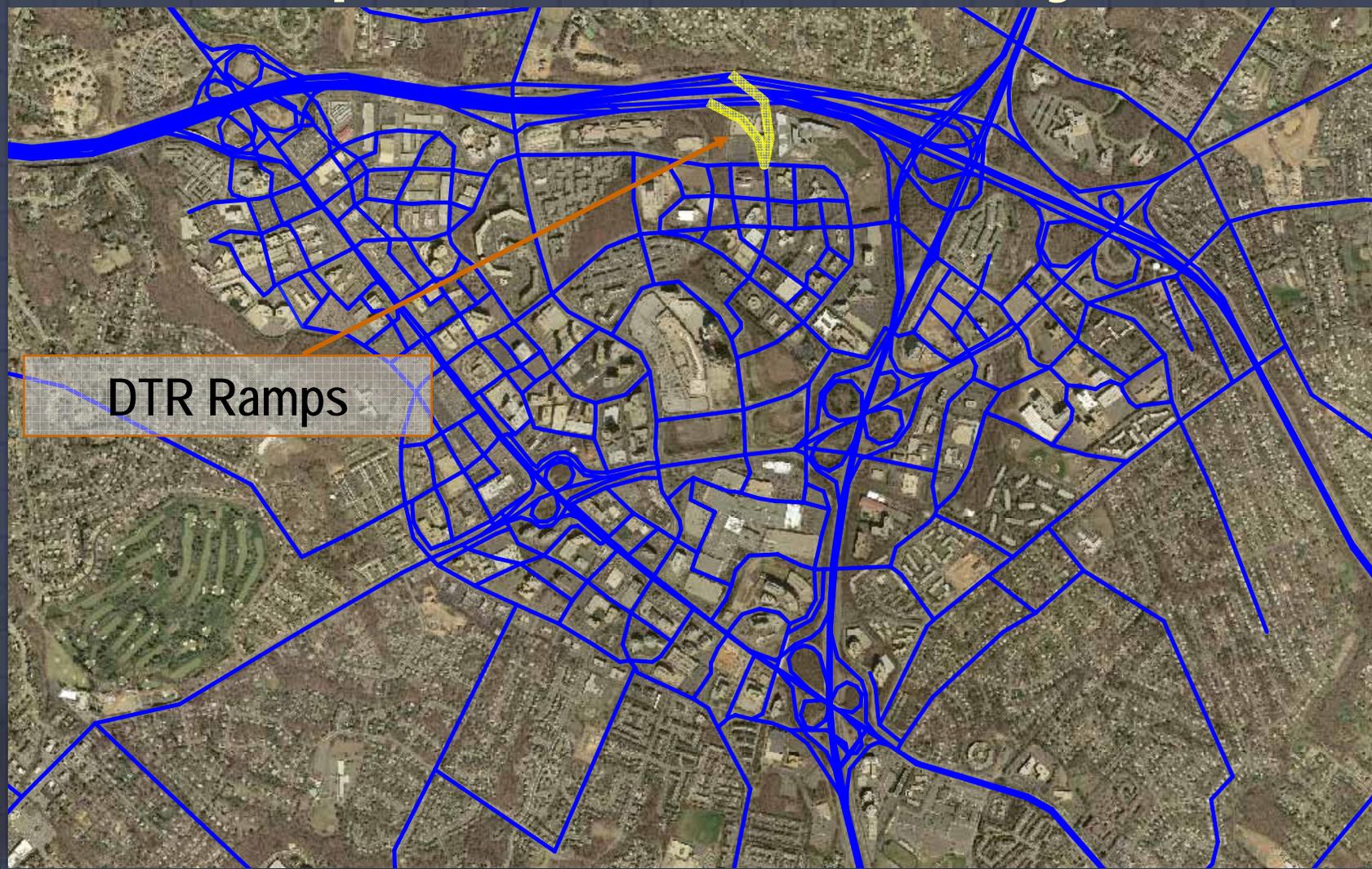
# Networks 1 and 2

## Beltway Crossings (more connectivity)



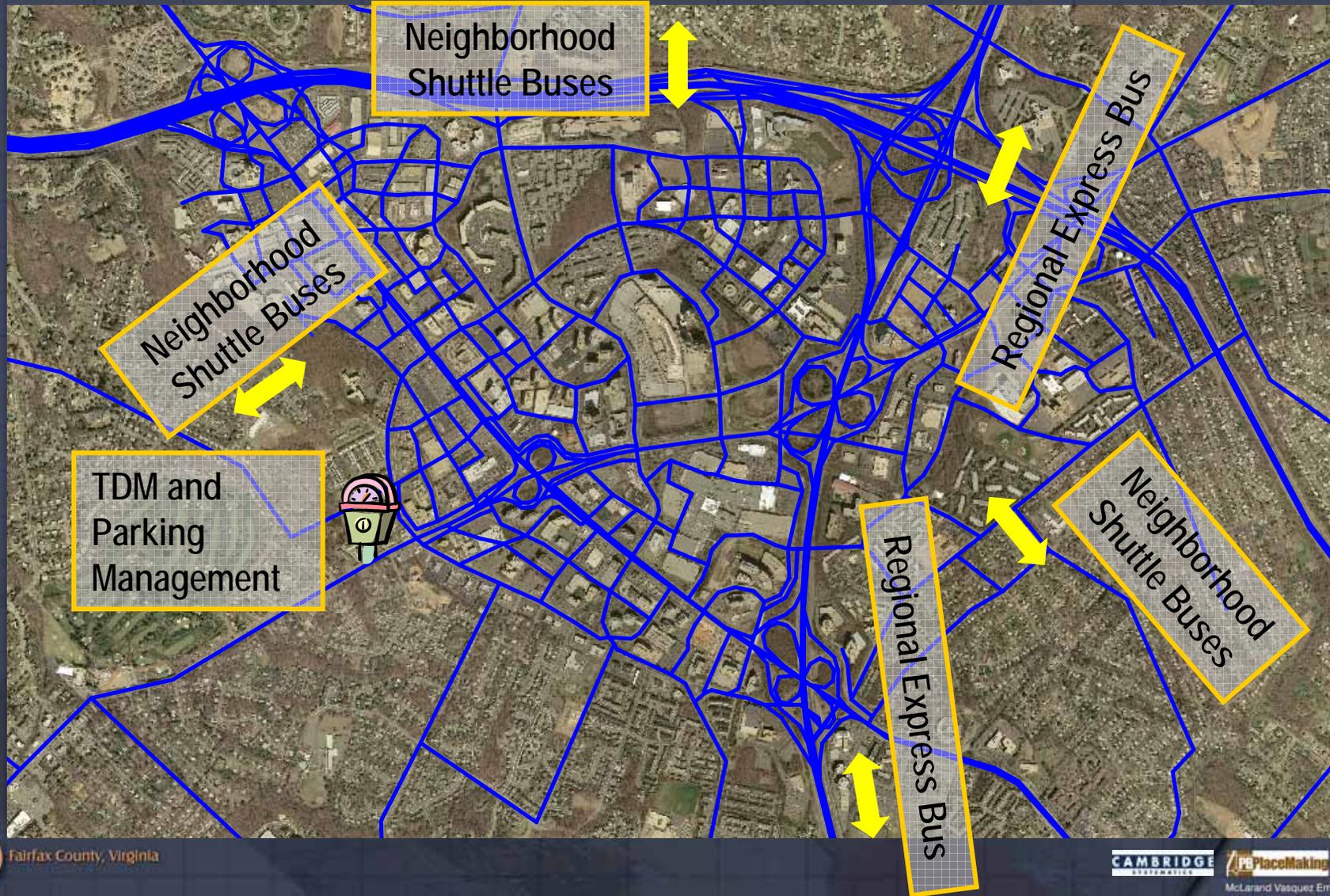
# Network 1 and 2

## DTR Ramps (more connectivity)



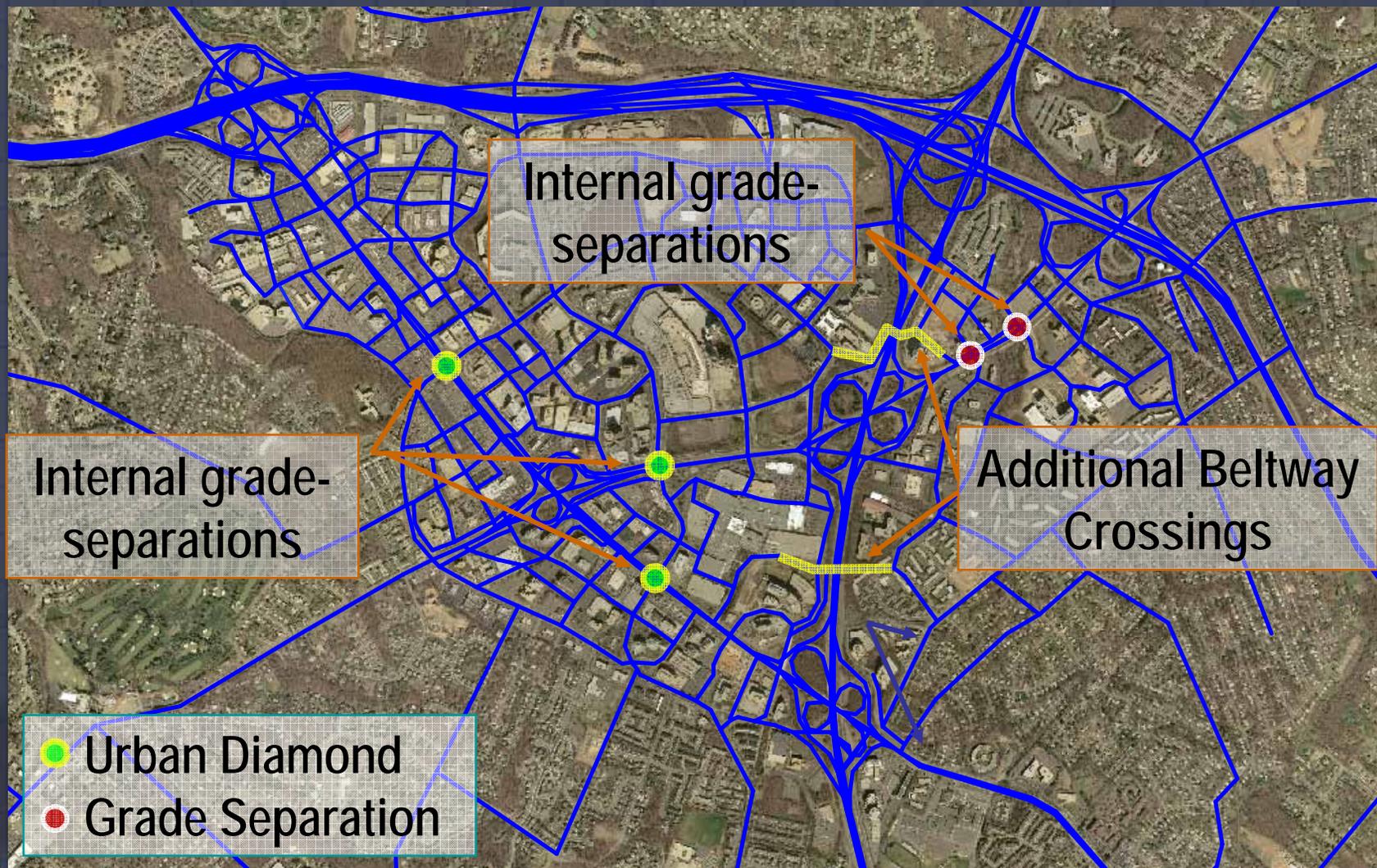
# Networks 1 and 2

## Transit/TDM/Parking Management



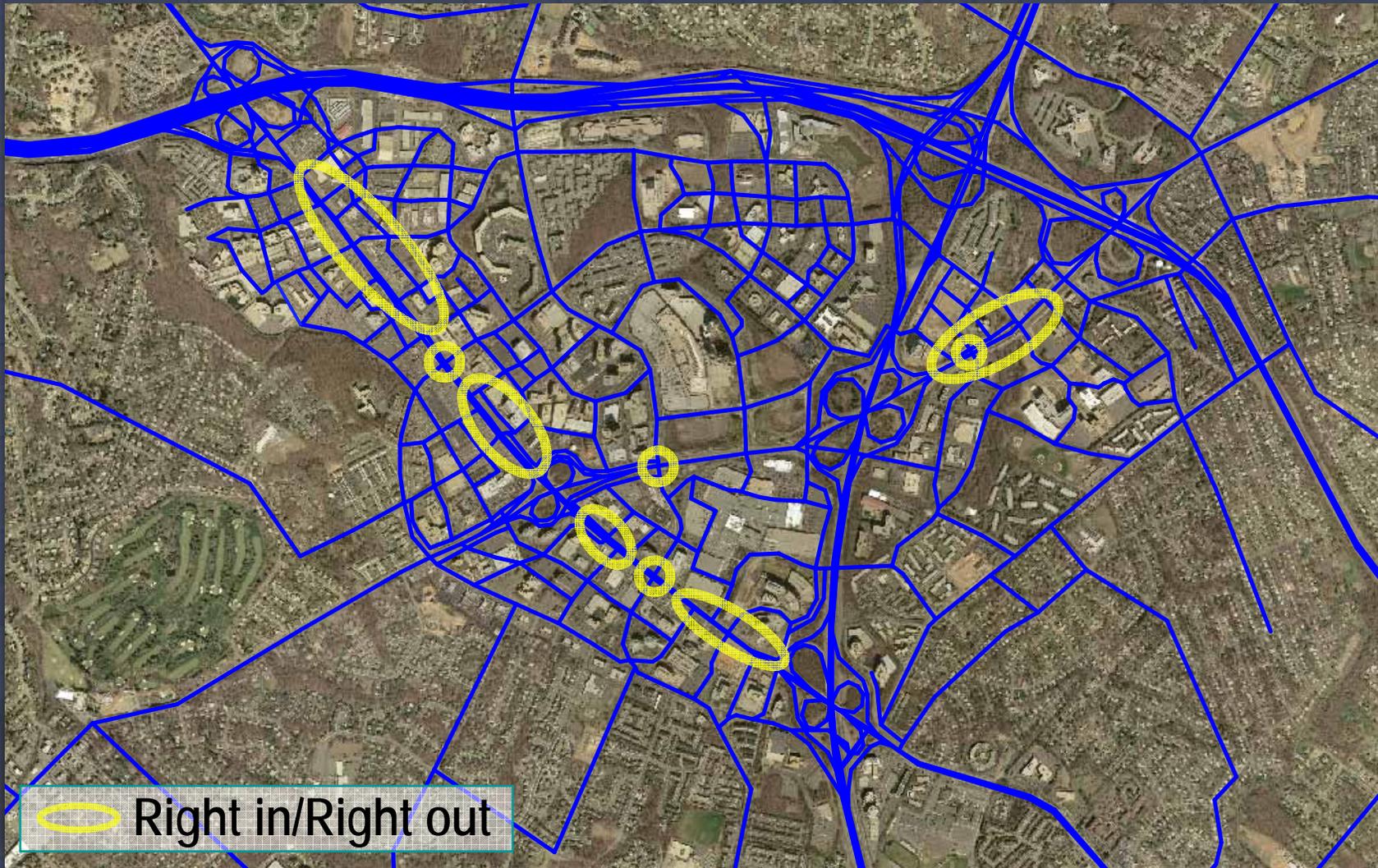
# Network 1

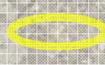
## Crossings and Grade Separations



# Network 1

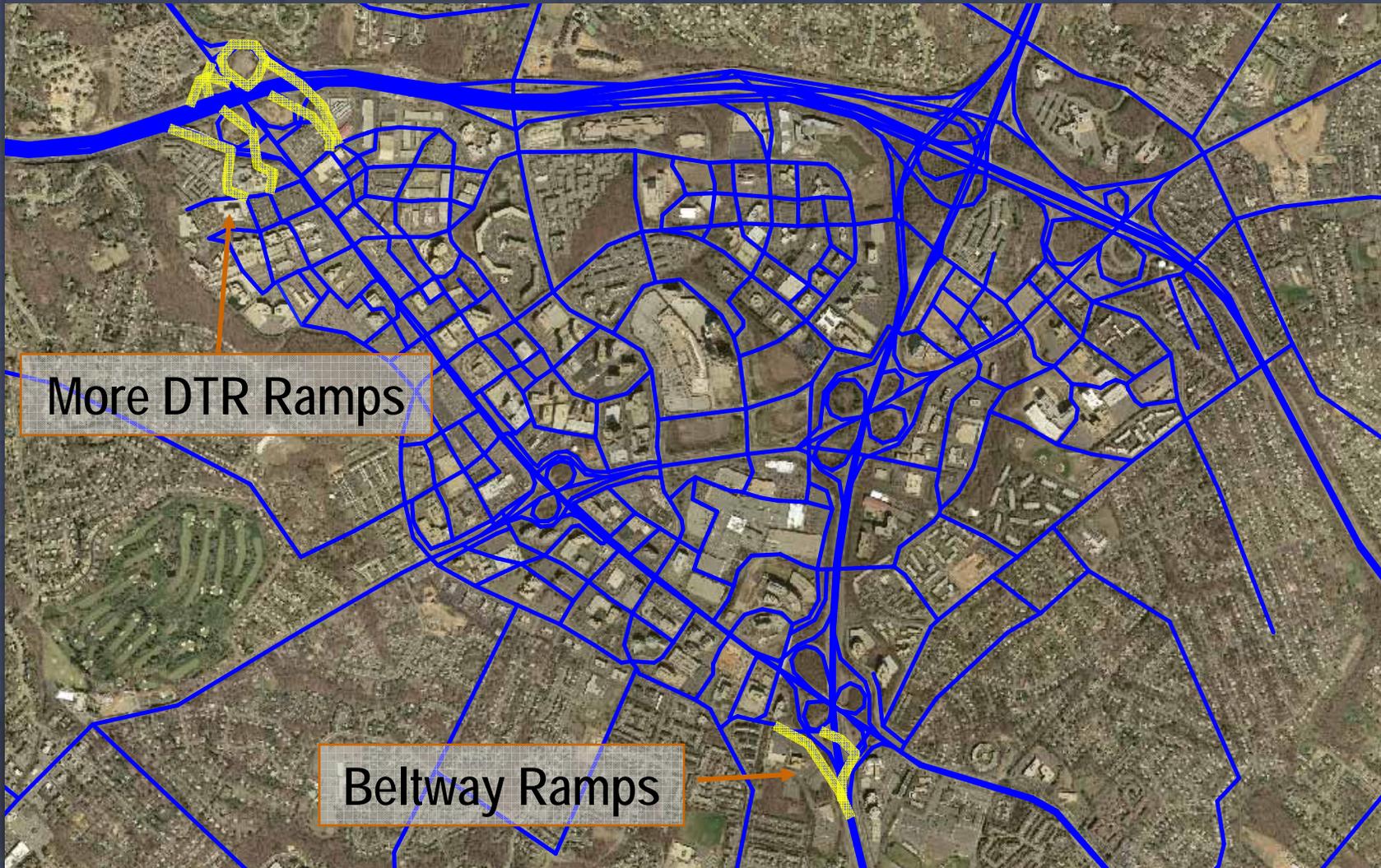
## Access Management



 Right in/Right out

# Network 1

## Ramps



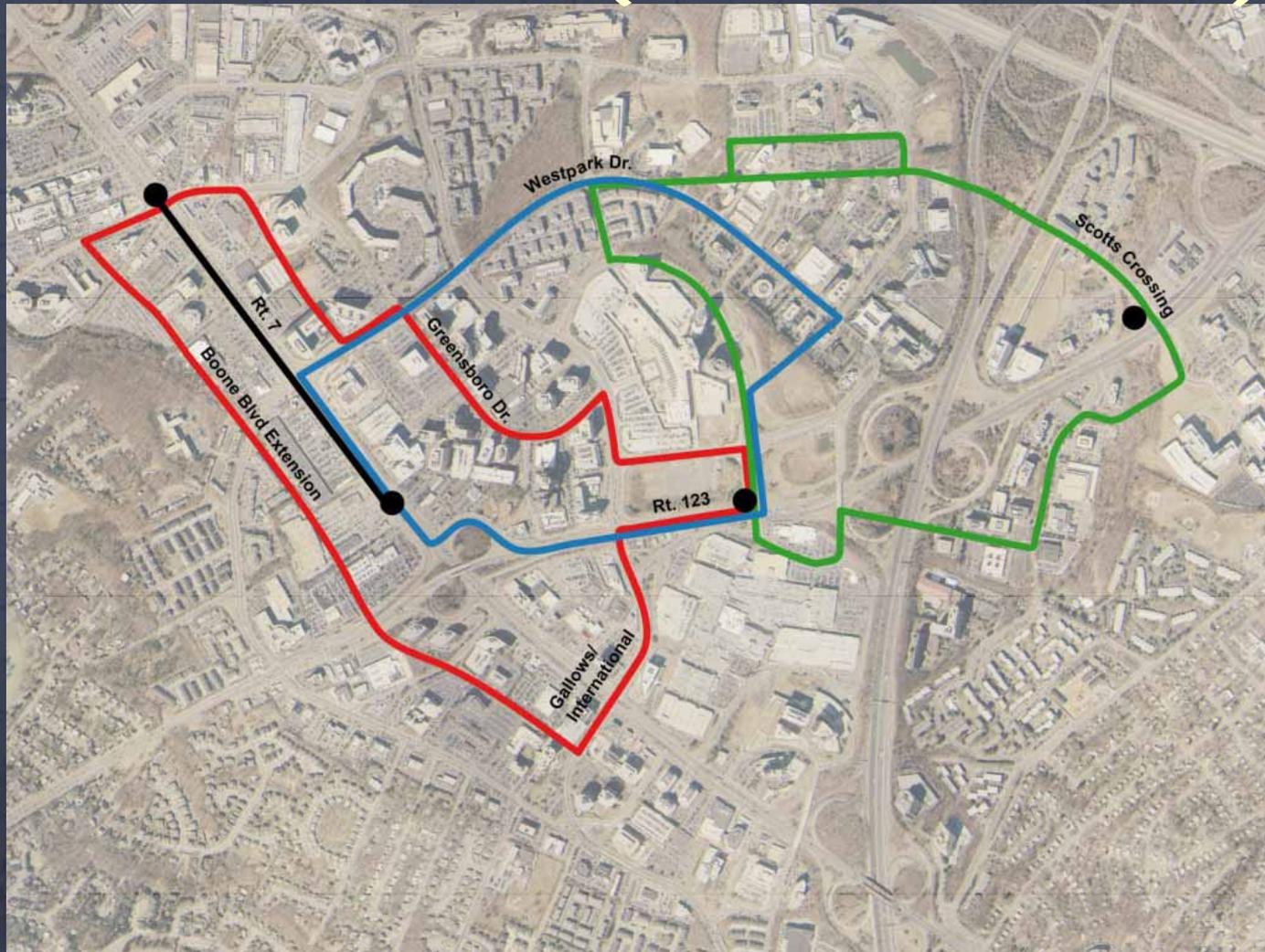
More DTR Ramps

Beltway Ramps



# Network 1

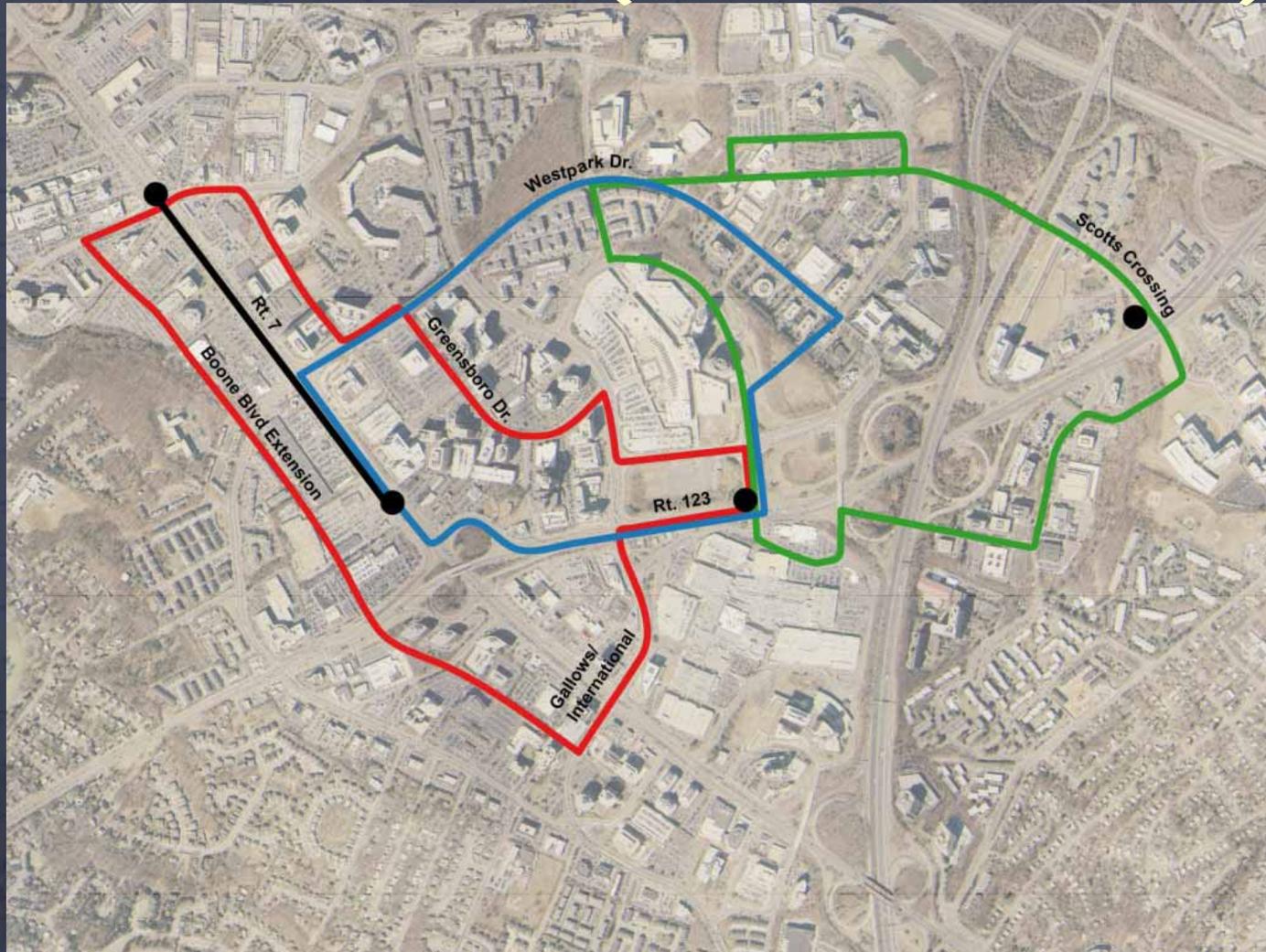
## Transit Circulators (in Mixed Traffic)



(CONCEPT FOR TESTING PURPOSES )

# Network 2

## Transit Circulators (Dedicated ROW)



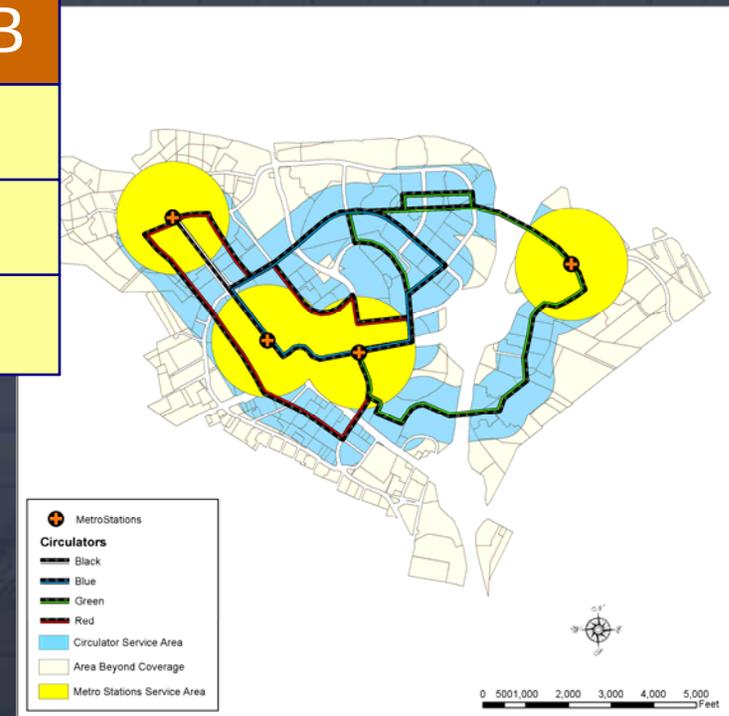
(CONCEPT FOR TESTING PURPOSES )

# TDM Trip Reductions

- Enhanced TDM programs provide important daily vehicle trip reductions

## Daily Trip Reduction Outputs

Area	Prototype A	Prototype B
Station Areas	11.4%	10.4%
Circulator Areas	4.4%	4.5%
Other Tysons	1.2%	1.3%



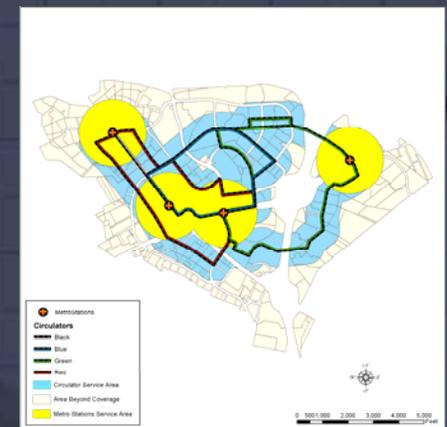
# Urban Form Trip Reductions

- Density
- Diversity
- Destinations
- Design



## Daily Trip Reduction Outputs

Area	Prototype A	Prototype B
Station Areas	7%	8%
Circulator Areas	6%	10%
Other Tysons	2%	5%



# Transit Circulator Reductions

- Transit Circulator has potential to in-effect extend comfortable walking distances from Metrorail stations

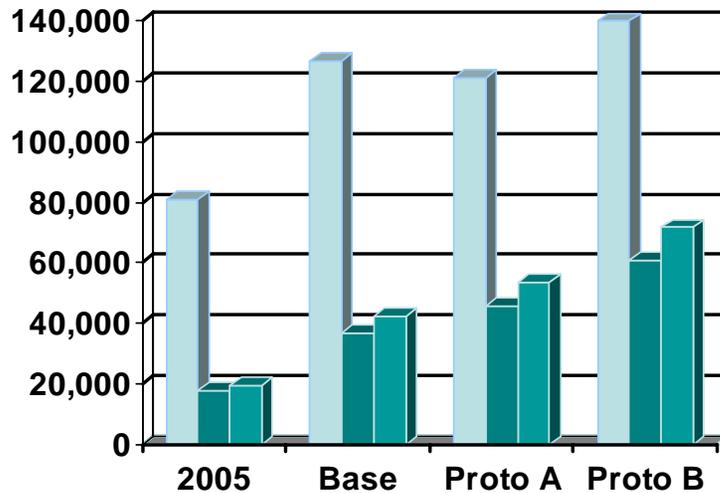
## Daily Trip Reduction Outputs

	Additional Transit Capture
Prototype A	6%
Prototype B	14%



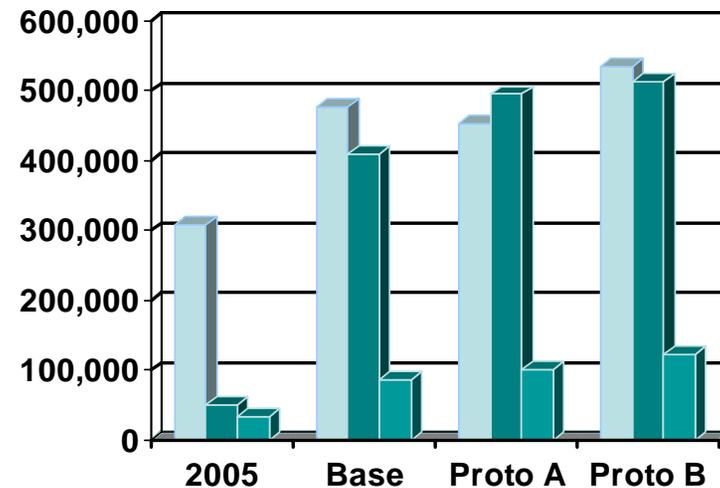
# Resulting Trip Forecasts

## Daily Work Trips



SOV HOV Transit

## Total Daily Trips



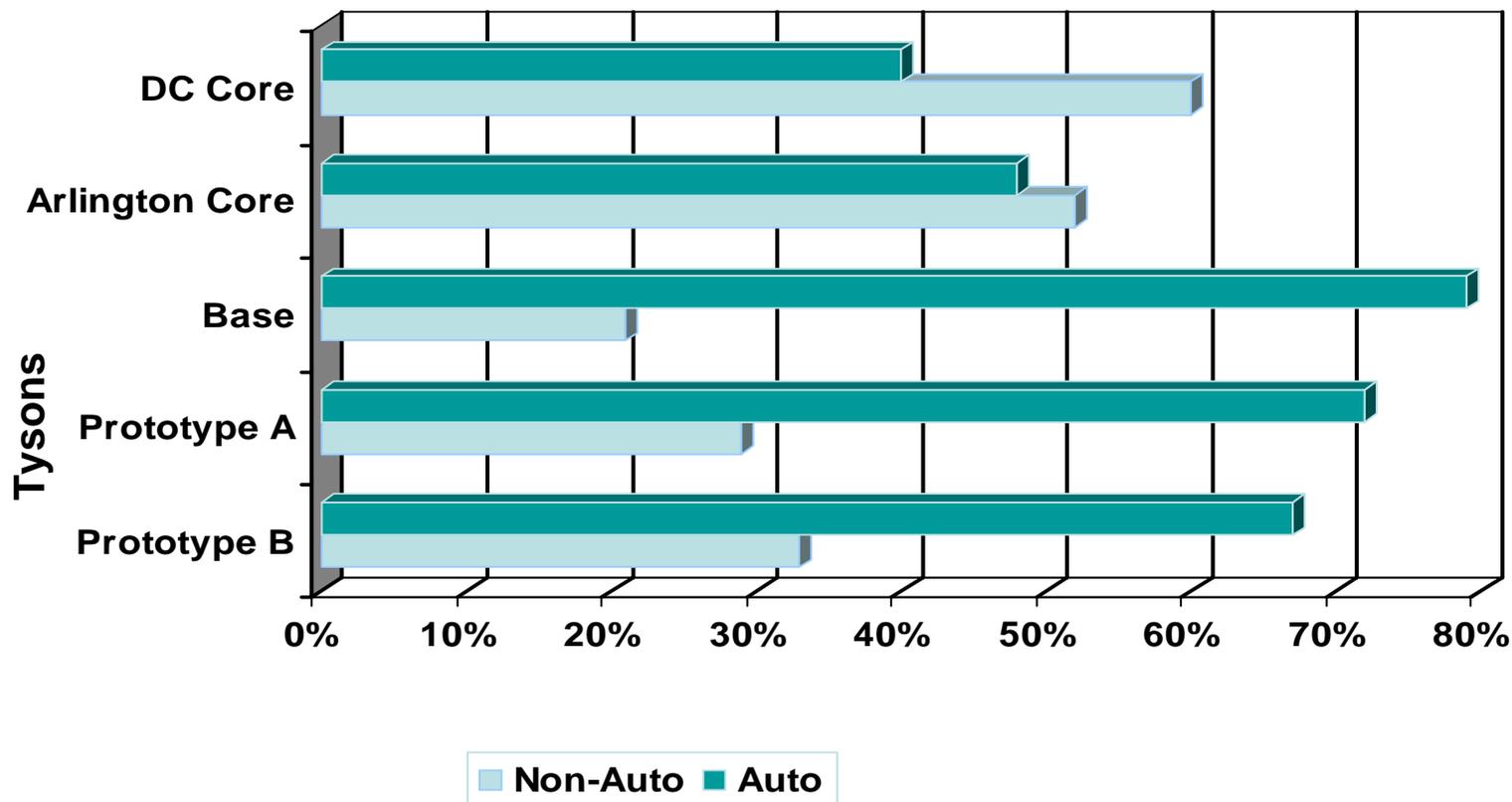
SOV HOV Transit

Resulting mode shares are similar in Prototype A and B:

- SOV and HOV each 43%-46% share of total trips
- Transit 10%-11% share of total trips
- Transit 24%-26% share of work trips

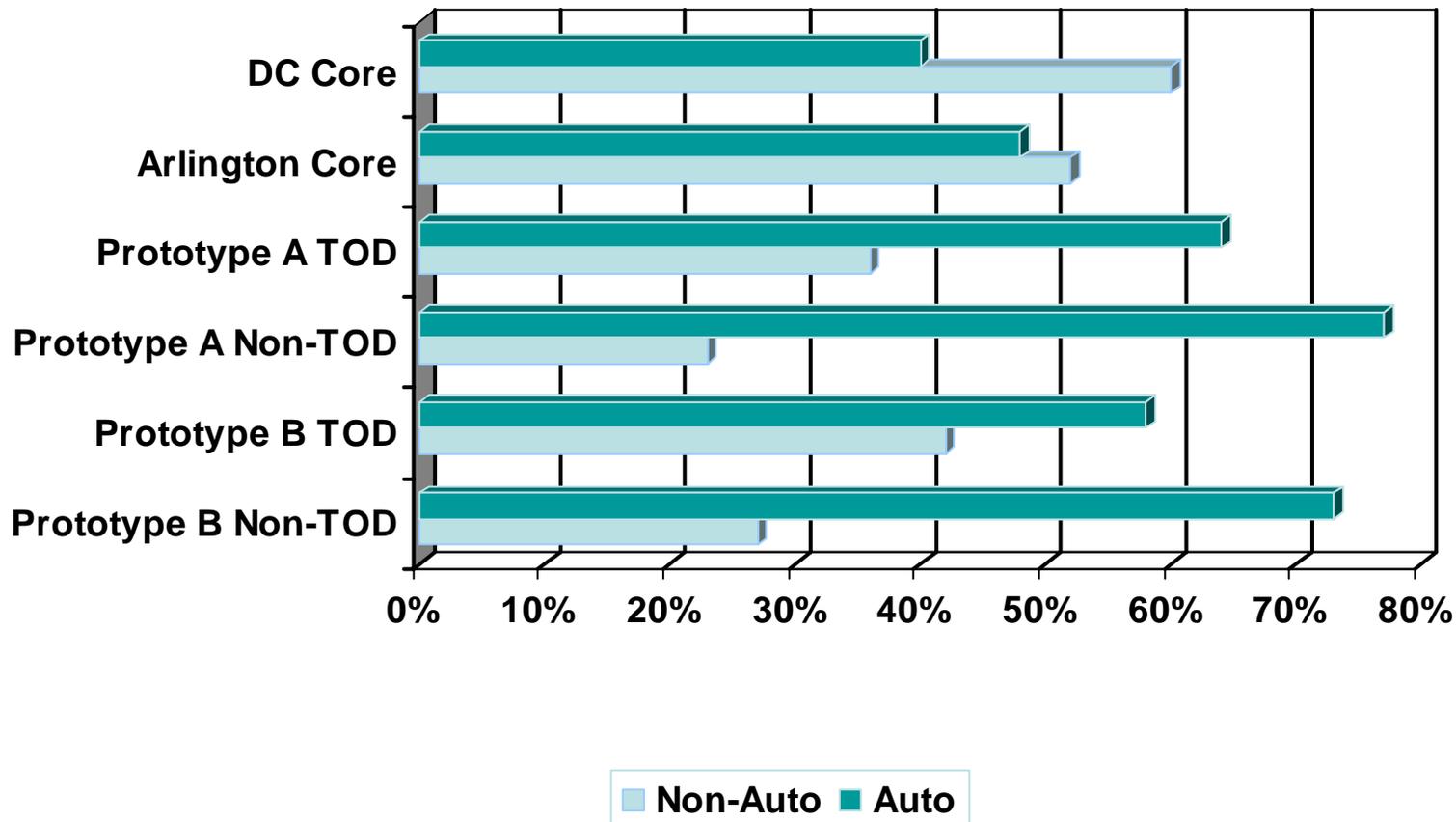
# More Transit Usage

## Daily Work Trip Mode Share Comparison of Indicated Areas



# More Transit Usage

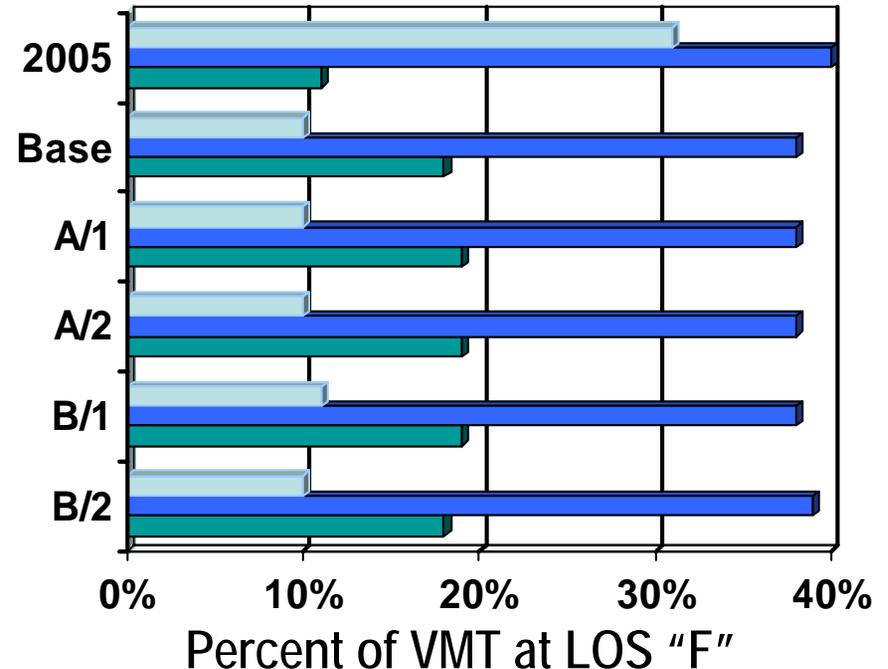
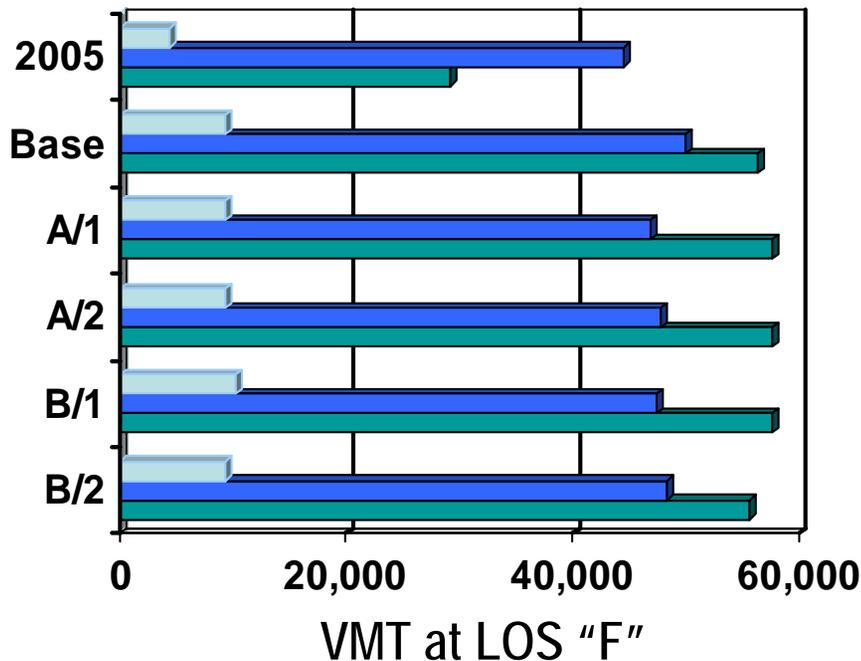
## Daily Work Trip Mode Share Comparison of Indicated Areas



TOD = Area within ¼ Mile of Stations

# Congested VMT

## Tysons Corner Area Roadways (including I-495 and Dulles Toll Road)



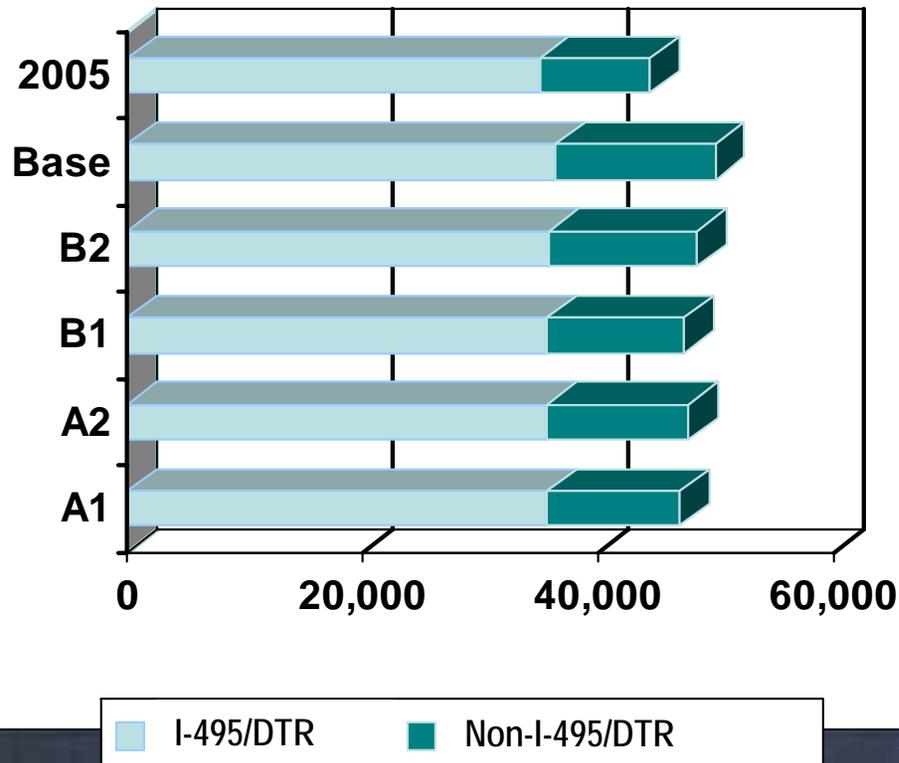
■ Off-Pk ■ PM ■ AM

■ Off-Pk ■ PM ■ AM

- Congestion level is similar in Base and Prototypes
- Greater street connectivity and improved jobs/housing balance are mitigating factors

# Congested VMT in PM

PM Peak Period VMT at LOS "F"



- Most of the congested conditions are in the PM peak
- Most of the congested VMT is on I-495/DTR links

# Travel Times within Tysons

## Increase in Evening Travel Times over 2005 Model Results

Location	Base	A/1	A/2	B/1	B/2
VA 7 & VA 123 to Dulles Toll Road & VA 7	+3.7 min (69%)	+1.9 min (36%)	+2.4 min (45%)	+1.5 min (28%)	+1.9 min (33%)
International Drive & VA 123 to Dulles Toll Road	+5.3 min (53%)	+4.2 min (42%)	+4.7 min (47%)	+4.8 min (48%)	+4.7 min (47%)
VA 7 & VA 123 to I-495	+0.8 min (15%)	+0.3 min (5%)	+0.2 min (3%)	+0.3 min (5%)	+0.3 min (5%)

- Travel times increase less under the Prototypes than under the Base
- The model does not respond dramatically to the grade separations

# Travel Times to Tysons

## Increase in Evening Travel Times over 2005 Model Results

Location	Base	A/1	A/2	B/1	B/2
Lawyers Rd & Hunter Mill Rd to VA 7 & VA 123	+2.9 min (10%)	+1.6 min (5%)	+1.3 min (4%)	+1.4 min (5%)	+1.3 min (4%)
Bailey's Crossroads to VA 7 & VA 123	+3.7 min (14%)	+2.0 min (7%)	+3.8 min (14%)	+4.3 min (16%)	+3.7 min (14%)
McLean (VA 123 & Old Dominion Dr) to International Drive & VA 123	+1.3 min (14%)	+1.6 min (18%)	+1.4 min (16%)	+1.3 min (15%)	+1.4 min (16%)

- Modest differences from the Base under the Prototype development levels
- Difference between Prototype A and B is relatively small

# Surrounding Road Impacts



- Impacts being reviewed at selected surrounding road locations
- Congestion would still exist as it does today at most locations
- Six locations perform better under Prototype A and B as compared with the Base (Blue Circles)

# Surrounding Road Impacts

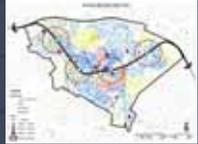


- Impacts being reviewed at selected surrounding road locations
- Congestion would still exist as it does today at most locations
- Six gateway locations show congested conditions under Base and Prototype A & B (Orange Circles)

# Findings and Conclusions

- Added development generates additional trips, but transit ridership is significant
- Forecast congestion levels are similar in Base and Prototypes A and B
- Prototype B has highest non-automobile mode share
- Grade separations do not result in marked improvements in network performance

# Comparing the Prototypes



## Base Case – “Comprehensive Plan”

- 74m sq ft
- 220% more housing than today
- 170% more growth than today
- Highly congested roads over 1/3<sup>rd</sup> of the time

\*(before TDM measures)

# Comparing the Prototypes



## Prototype A

- 96m sq ft
- 450% more housing than today
- 33% more growth than base case
- Outperforms the base case transportation
- Forecast congestion similar to today



## Prototype B

- 127m sq ft
- 620% more housing than today
- 76% more growth than base case
- Outperforms the base case transportation
- Forecast congestion similar to today

# Location of new development

## Small Group Conversation

- Growth focused on transit
  - 70%+ at stations
- Circulator major difference
  - Form giving in B
- 30 story buildings w/in 1/8 mile of stations
- No change along edges



# Tyson's Transportation System

## Small Group Conversation

- Two different ideas tested
  - Auto orientation / interchanges
  - Greater transit orientation
- Both worked well
  - Less congestion than base case
- Transit orientation supports land use vision



# Enhancing quality of life

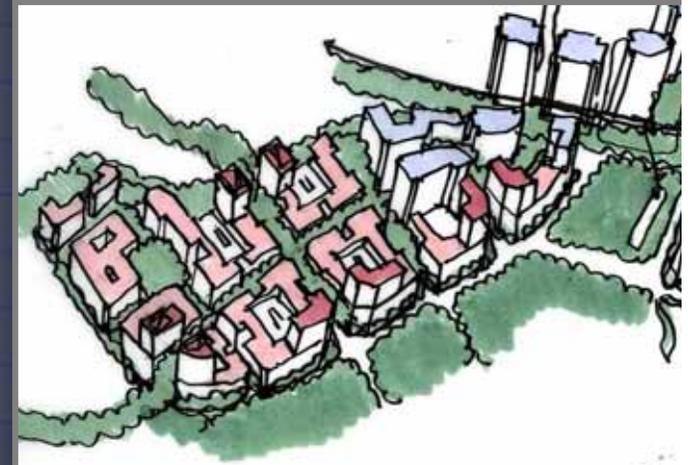
## Small Group Conversation

- Both include community benefits
  - Tied to growth
- Civic uses focused at transit
- Fewer impervious surfaces
- Increased parks & open space
  - Are taller building a fair trade off for more open space?



# Questions

- Next small groups
- The three questions:
  - Location of new development & mix of uses
  - Future transportation system for Tysons
  - Growing and enhancing quality of life
- Preferred Alternative in April / May





Questions ?