

North Brunswick Transit Village Traffic Analysis

Langan Engineering and Environmental Services, Inc.

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Langan Engineering and Environmental Services

- Over 14 years of management, planning and design experience with land development and transportation projects.
- Land development projects have included almost every conceivable land use in all types of settings.
- Primary areas of expertise include transportation operations, state and local permitting procurement, preparation of traffic impact studies, and traffic signal design.
- Prepared well over 400 traffic studies for various developments throughout the Northeast.
- Extensive expert witness experience before various Boards in NJ, NY, CT, PA, MA, NH and RI.

Overview

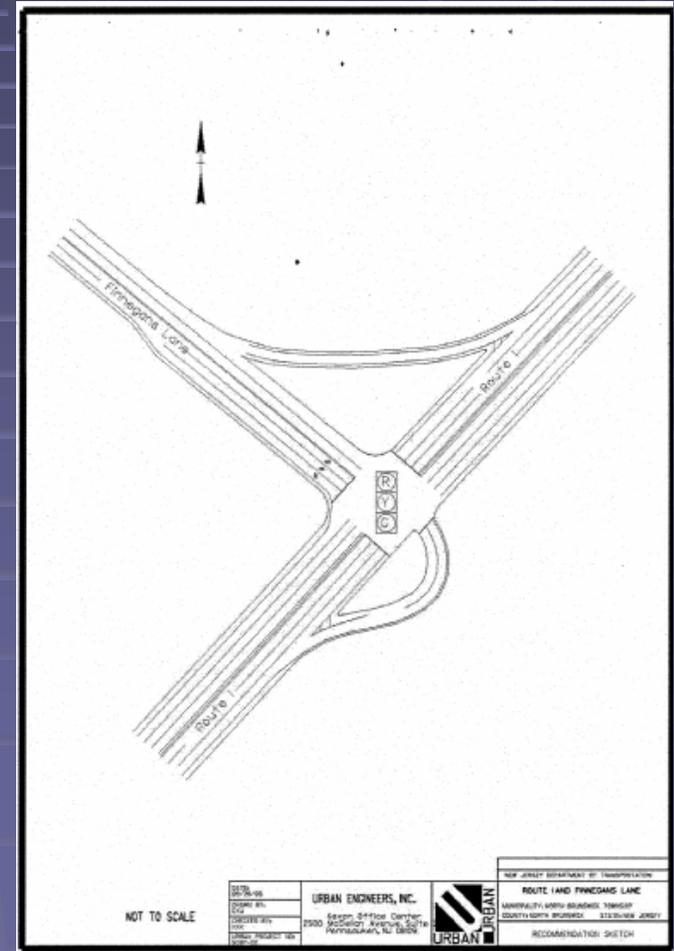
- Master Plan Review
 - Identify Existing Bottlenecks
- Evaluate New Train Station
 - Local and Regional Benefits
 - Traffic Analysis Methodology
 - Jersey Avenue Station - Case Study
 - Train Station Trip Generation
- Evaluate Transit Village
 - Traffic Analysis Methodology
 - Development Scale
 - Trip Generation Estimation
- Access Design

Master Plan Review

Existing Bottlenecks

Route 1 and Finnegan's Lane

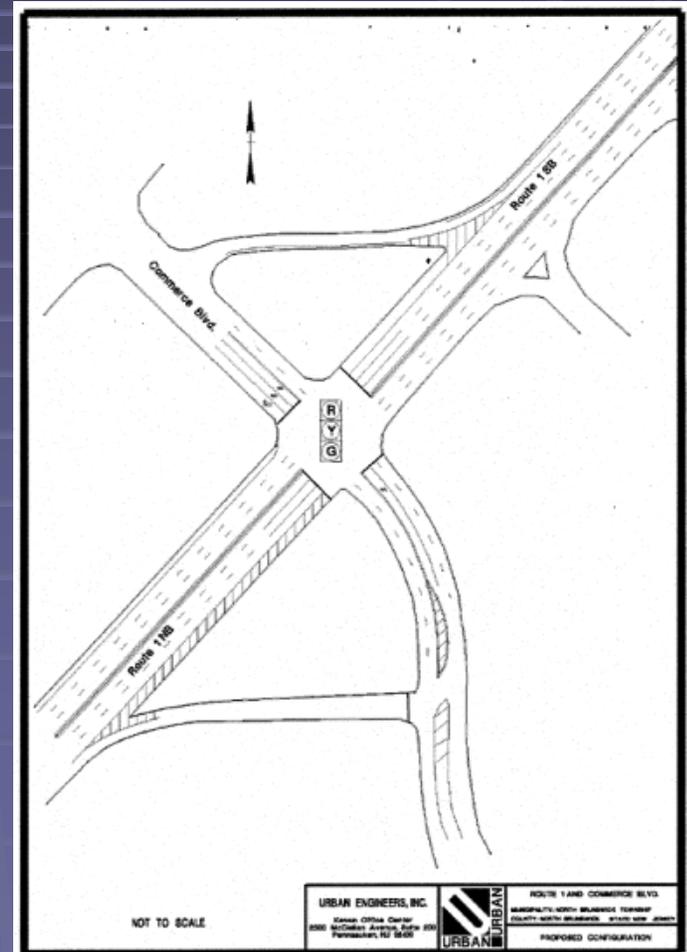
- Widen Route 1 northbound and southbound to provide three lanes in each direction;
- Widen Finnegan's Lane eastbound to provide double left-turn lanes;
- Provide new traffic signal system.



Master Plan Review

Existing Bottlenecks

- Route 1 and Commerce Boulevard
 - Re-stripe eastbound approach for double left-turn lanes and a shared through and right-turn lane.



Master Plan Review

Existing Bottlenecks

Route 1 and Adams Lane/Cozzens Lane (Phase A)

- Addition of a series of local streets to the area including:
 - A new connection from Cozzens Lane to Adams Lane;
 - An extension of Adams Lane to Hartland Commons;
 - A connection from Cozzens Lane to the new Adams Lane Extension; and
 - A connection from the new Adams Lane Extension to Hartland Commons (south of Elizabeth Street).

Master Plan Review

Existing Bottlenecks

Route 1 and Adams Lane/Cozzens Lane (Phase A)



Figure 3 - Cozzens Lane Network (Phase A)

Township of North Brunswick

Master Plan 2006

Not to Scale



Master Plan Review

Existing Bottlenecks

Route 1 and Adams Lane/Cozzens Lane (Phase B)

- Phase B of the Cozzens Lane improvements includes:
 - An extension of Cozzens Lane across Route 1 via a grade separated structure;
 - A new connector from the Cozzens Lane Extension to Adams Lane;
 - A new connector from Adams Lane to Cozzens Lane;
 - Close median across Route 1;
 - Remove signal at Route 1 and Adams Lane intersection
 - Remove jug-handle from southbound Route 1 to Adams Lane; and
 - Remove existing connector from Cozzens Lane to Adams Lane.

Master Plan Review

Existing Bottlenecks

Route 1 and Adams Lane/Cozzens Lane (Phase B)



Figure 4 - Cozzens Lane Network (Phase B)

Township of North Brunswick
Master Plan 2006

Not to Scale



Master Plan Review

Existing Bottlenecks

- Route 130 and Renaissance Boulevard East
 - Modify signal timing.



Master Plan Review

Existing Bottlenecks

- Route 130 and Davidson's Mill Road/Finnegan's Lane
 - Add exclusive right-turn lanes northbound and southbound on Route 130;
 - Re-stripe eastbound approach to provide an exclusive left-turn lane, and a shared through and right-turn lane; and
 - Modify signal timing.



New Train Station

- Local and Regional Benefits
 - Take Cars Off the Roads
 - Attracts Funding to Fix Area Bottlenecks
 - A Train Station in North Brunswick would move the area bottlenecks up higher on the NJDOT project priority list.

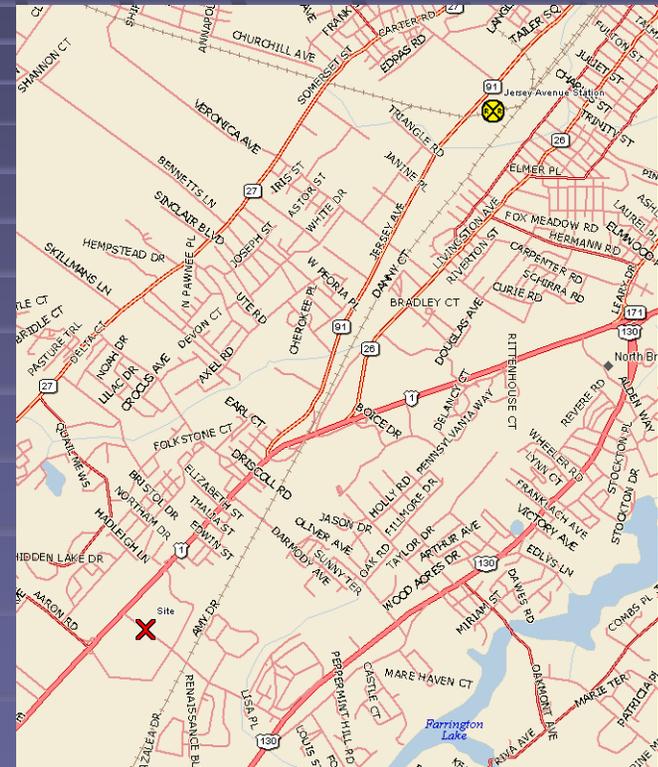
New Train Station

- Traffic Analysis Methodology
 - Estimate External Trip Generation;
 - Design for Weekday Peak Hours;

New Train Station

■ Jersey Avenue Station – Case Study

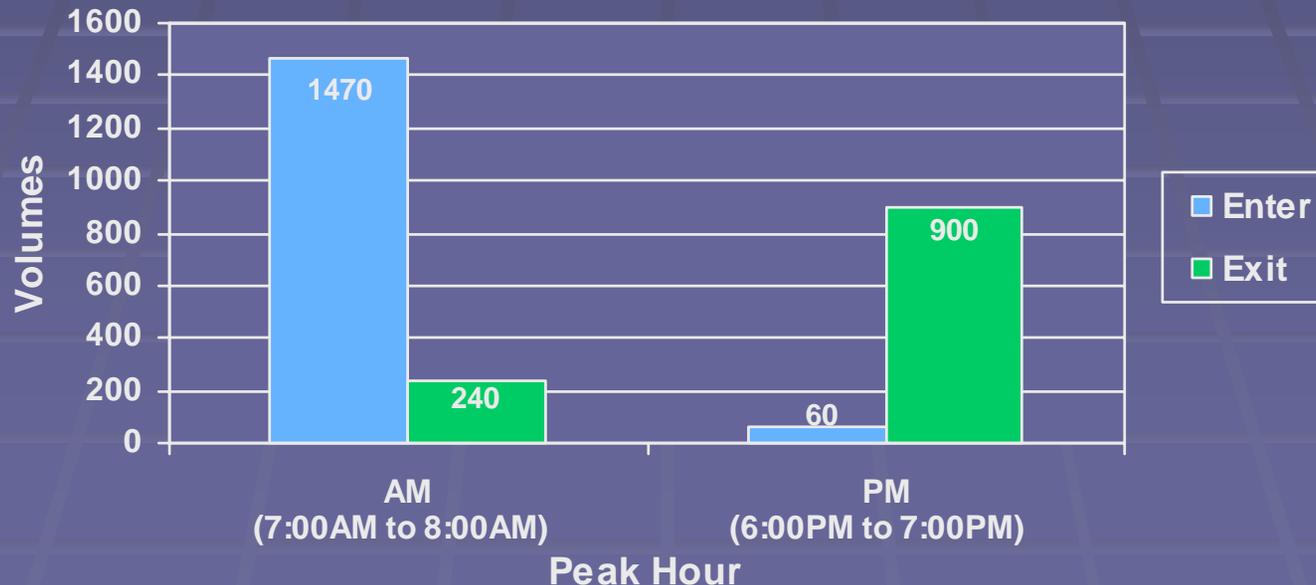
- Conducted manual counts on Tuesday, September 26, 2006 from 5:00 AM to 9:00 AM and from 2:00 PM to 7:00 PM;
- Determined AM peak hour for train station is from 7:00 AM to 8:00 AM;
- Determined PM peak hour for train station is from 6:00 PM to 7:00 PM;
- Developed trip rates using data collected.



New Train Station

- Train Station Trip Generation
 - 3,000 Parking Spaces
 - Based on Trip Rates Developed at Jersey Avenue

North Brunswick Train Station Estimated Trip Generation

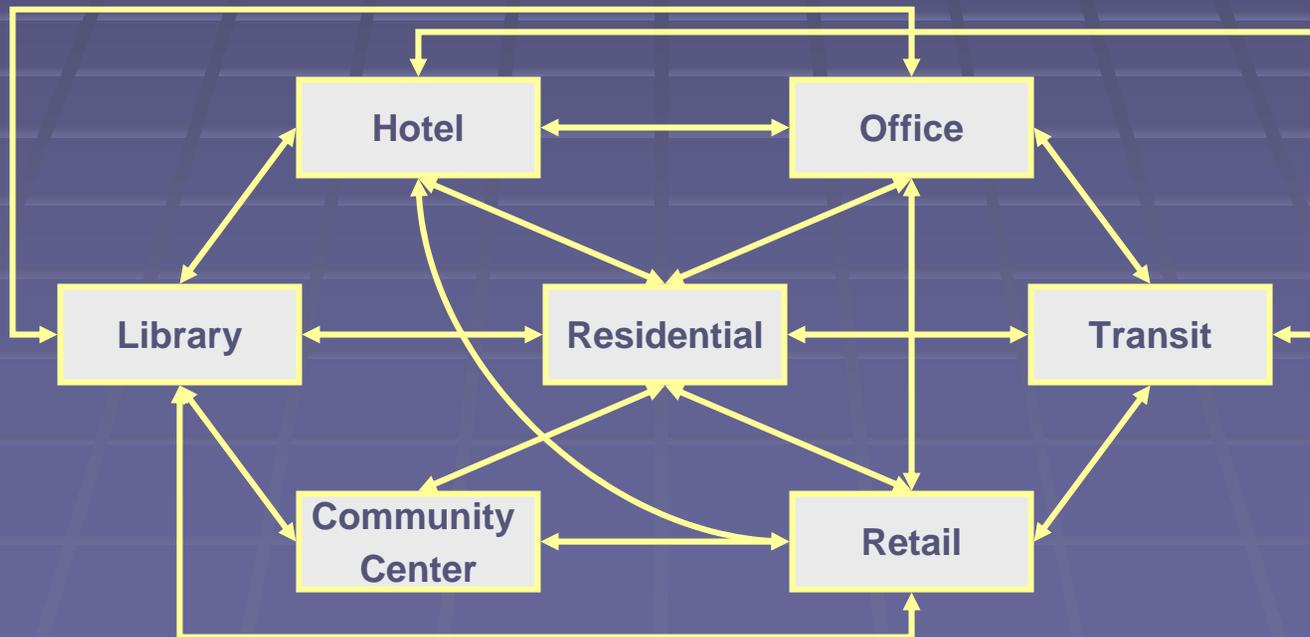


Transit Village

- A Transit Village is a walkable mixed-use community within 1/3 mile of a transit facility.
- A Transit Village is a compact, mixed-use neighborhood with a strong residential component.
- A Transit Village promotes Smart Growth initiatives.
- A Transit Village in North Brunswick would move the area bottlenecks to the top of the NJDOT project priority list.

Transit Village

- Synergies exist to allow internal trips.
- A Transit Village generates less external traffic when the mix is right.



Transit Village

- Traffic Analysis Methodology
 - Estimate External Trip Generation;
 - Design for Weekday Peak Hours;
 - Identify Mixed-Uses;
 - Apply Standard Trip Rates for Each Land Use;
 - Estimate Internal Trip Generation; and
 - Determine External “New” Trips.

Transit Village

Existing Trip Generation



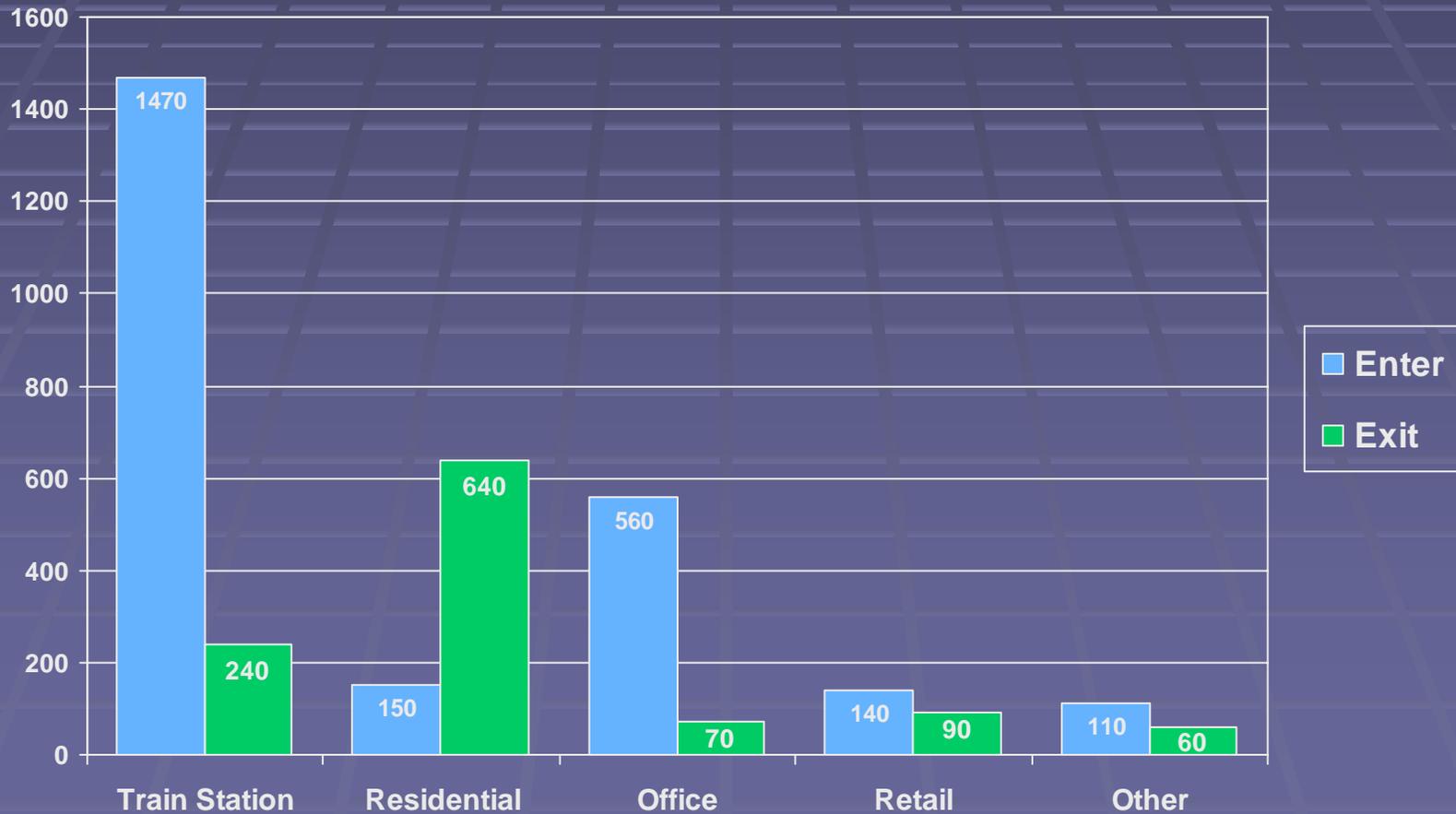
Transit Village Development Scale

Land Uses and Development Scale

Proposed TOD	Residential Units			Nonresidential sf (000's)			
	Market	CoAH	Total	Office	Retail	Other	Total
Small A	1,697	327	2,024	1,509	350	220	2,079
Small B	2,725	342	3,077	610	350	220	1,180
Medium	3,662	441	4,103	720	350	300	1,370
Large	4,602	531	5,133	750	350	300	1,400
Existing Zoning		270	270	2,725	300	975	4,000

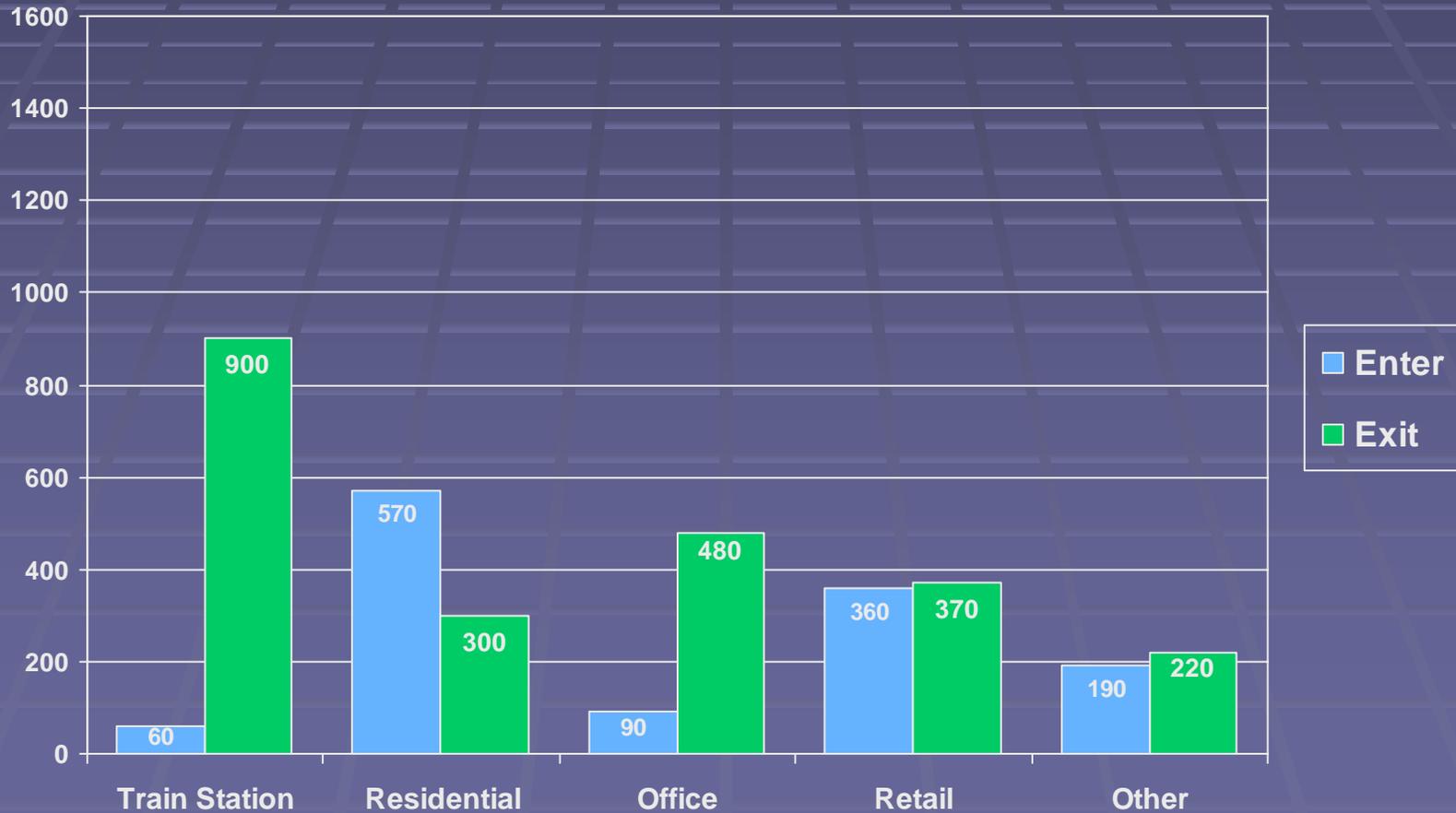
Transit Village Development Scale

AM Peak Hour Trip Generation by Land Use
Development Scale Small B



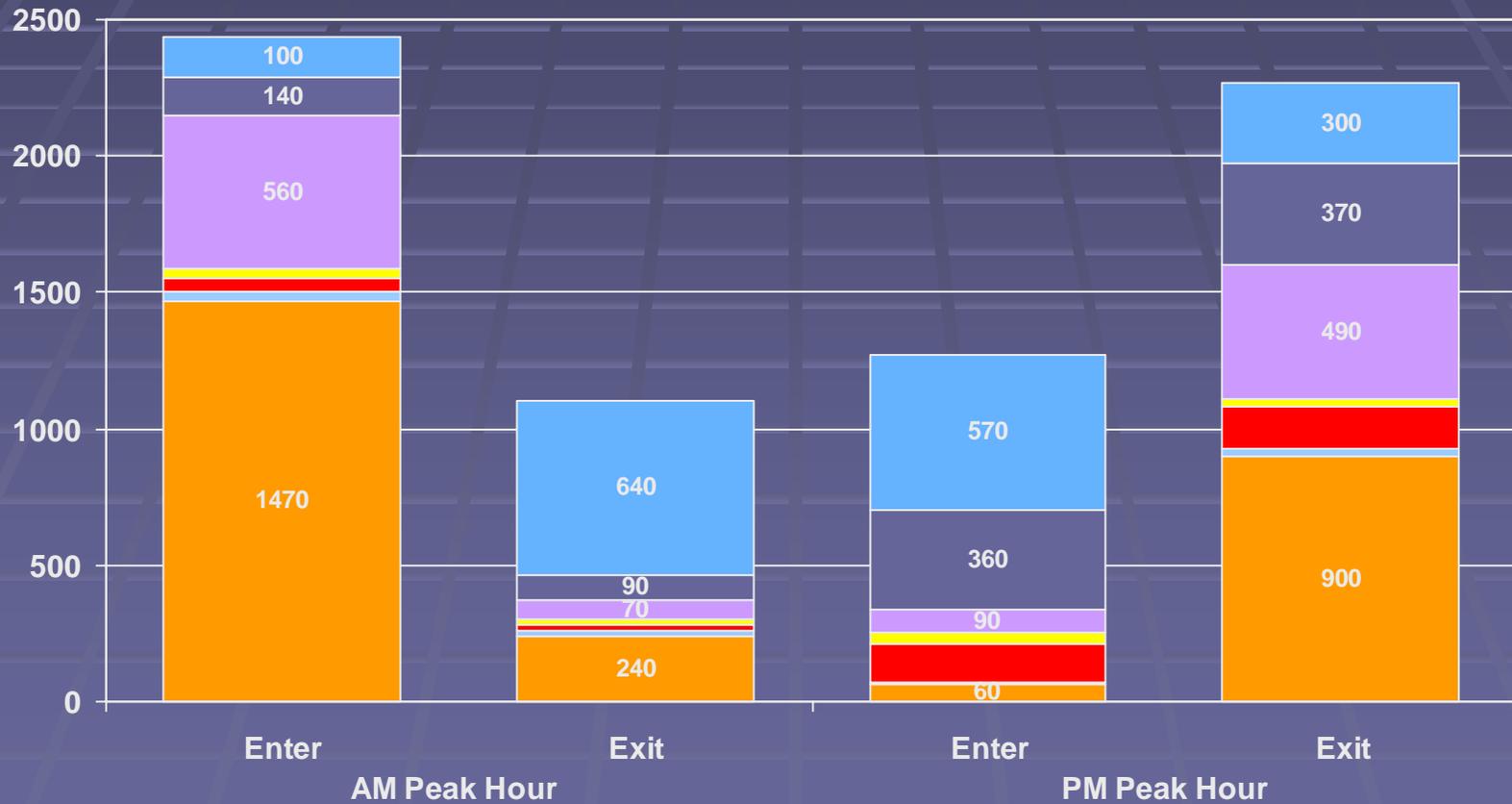
Transit Village Development Scale

PM Peak Hour Trip Generation by Land Use
Development Scale Small B



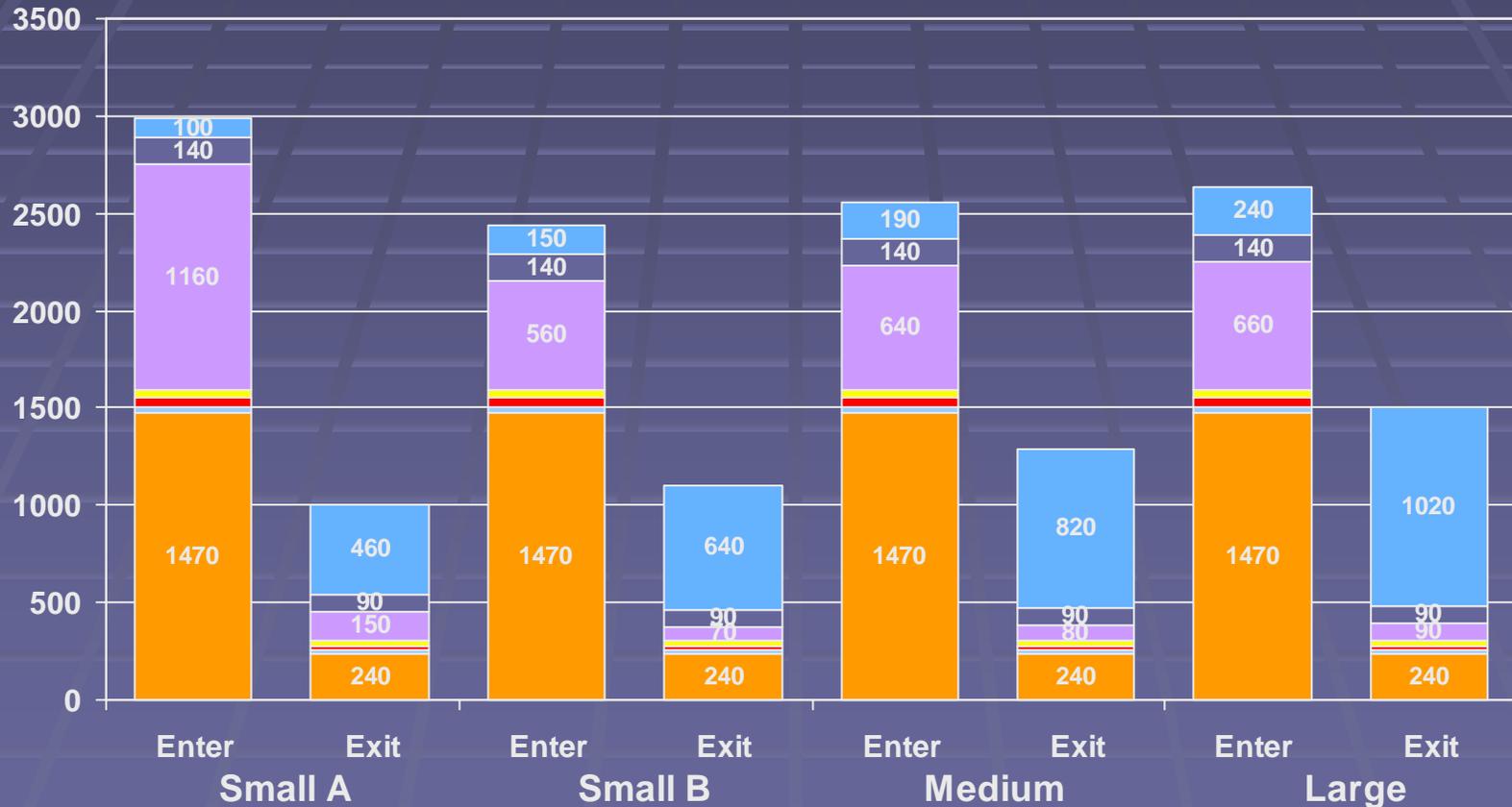
Transit Village Development Scale

Trip Generation - Small B



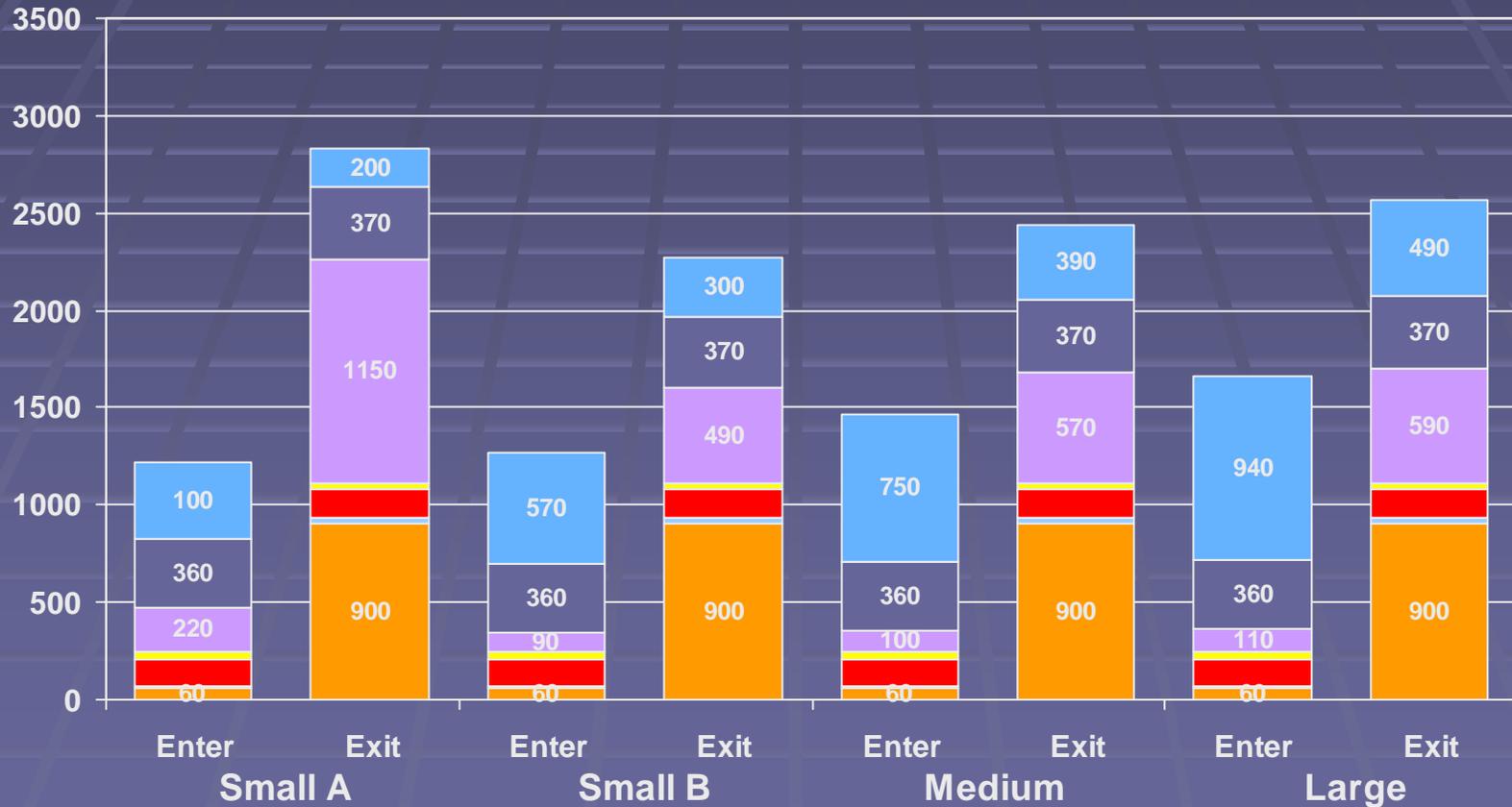
Transit Village Development Scale

Trip Generation - AM Peak Hour



Transit Village Development Scale

Trip Generation - PM Peak Hour



Access Design

- Existing Route 1 Access Points
 - Route 1 and Aaron Road
 - Route 1 and Commerce Boulevard

Access Design

- Proposed Route 130 Connection Alternatives
 - Community Park;
 - Renaissance Boulevard East;
 - Renaissance Boulevard South;
 - Finnegan's Lane; and
 - Black Horse Lane.

Access Design

