



Goals

Benefits

Riders

Community

MDT

Transfer Sites

Next Steps

# Coastal Communities Transit Study

for

City of Miami Beach

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Miami Dade Transit

Project Manager: David Fialkoff

by

Center for Urban Transportation Research (CUTR)

University of South Florida

Principal Investigator: Mark Alvarez



# Participation

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Next Steps

City of Miami Beach and  
Miami Dade Transit  
joint effort with:

- Golden Beach
- Aventura
- Sunny Isles Beach
- Bal Harbor Village
- North Bay Village
- Surfside
- Bay Harbor Islands





# Goals

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Next Steps

1. Analyze existing transit service in the coastal communities



# Goals

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Next Steps

2. Determine if and how existing bus transit can be streamlined to:

- a) improve service
- b) improve traffic with less bus interference
- c) Improve operational efficiency for MDT

**Consolidate duplicative routes along the  
A1A Corridor**



# Goals

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Next Steps

## 3. Determine locations for major transfer facilities, based on:

- a) Proposed streamlining structure
- b) Improvement programming
- c) Coordination and support for long range plans



# Goals

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Next Steps

## 4. Coordinate with the *Coastal Communities Transportation Master Plan*

- to assess current traffic and transportation issues and develop short term, mid-term, and long term solutions



# Coordination

## Goals

## Benefits

## Riders

## Community

## MDT

## Transfer Sites

## Next Steps

- share data and integrate data format
- same sub-study area boundaries
- integrate public input
  - both presentations at each meeting
  - collect input jointly
  - and use as appropriate for transportation and / or transit plans





# Why Consolidate?

Goals

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Next Steps

- 14 MDT routes serving coastal communities

A, C, E, G, H, J, K, L, M, R, S, T, V,

South Beach Shuttle (W)







# Why Consolidate?

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## A1A Corridor:

- of these 10 routes provide some duplicative service along parts of the A1A Corridor

C, E, G, H, J, K, L, S, T, V

- all 10 cross the Bay





# Why Consolidate?

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## East - West

- but of these, 6 routes go on to provide significant east west service in the County (past Biscayne Blvd.)

**E:** to North Miami Beach, and Miami Lakes

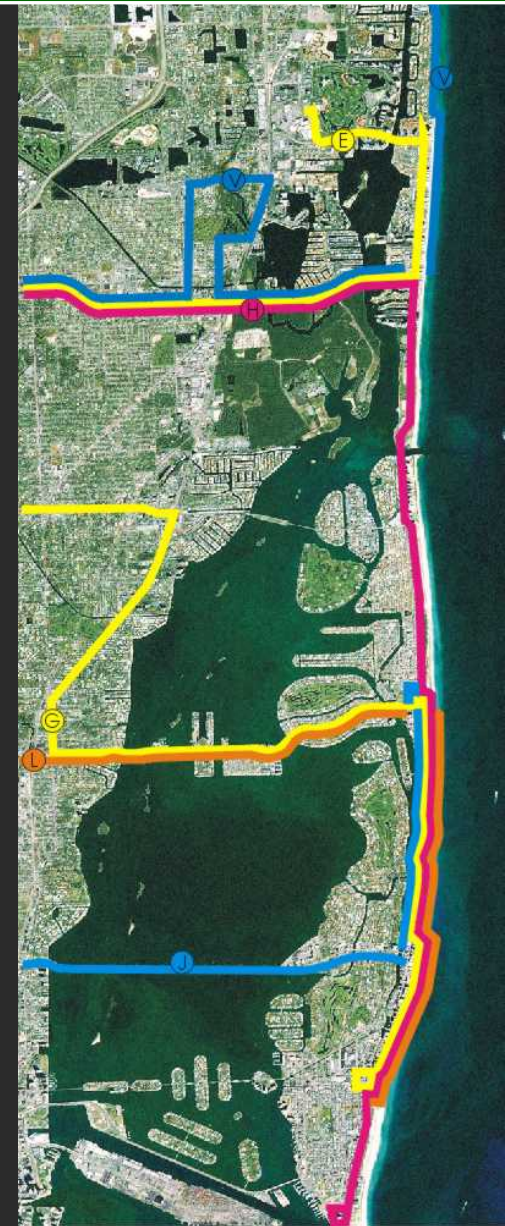
**G:** to Miami, North Miami, and Opa Locka

**H:** to North Miami Beach, and Miami Gardens

**J:** to Miami Int'l Airport, and Coconut Grove

**L:** to Hialeah (Metro-Rail, Tri-Rail, and Amtrak)

**V:** to North Miami Beach and Golden Glades





# Why Consolidate?

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## A1A North - South

- and 4 routes are the backbone of A1A transit service from Hallandale and Aventura to Downtown Miami

C, K, S, T





# Why Consolidate?

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- Can an express and local route **North–South** route with higher frequency along A1A replace several routes?
- Can **East-West** routes, with very different characteristics be truncated at new transfer facilities?



# Benefits

Goals

Benefits

## Easy to Understand

Riders

- Easier to understand, more user friendly route structure

Community

MDT

Transfer Sites

Next Steps



# Benefits

Goals

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Next Steps

## Schedule Adherence

- Easier to fine tune schedules
  - reduce bunching
  - improve schedule adherence
  - better on-time performance = better service and better efficiency



# Benefits

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## Efficiency

- Better operational efficiency
  - higher bus utilization
  - scheduling improvements from separating regional east-west functions from beach functions



# Benefits

Goals

Benefits

## Long Range Plans

Riders

- Developing the route structure and transfer infrastructure for possible long range

Community

MDT

Transfer Sites

Next Steps





# Impacts: Transit Riders

Goals

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Next Steps

## Data:

- Large existing data source
  - from 2004, MDT's CBOA data performed by CUTR
- Transit Rider Survey
  - 27,000 records
  - 3,600 parsed for Coastal Communities
  - origin – destination and transfer data
  - trip purpose
  - rider demographics
  - frequency of use and transit se tenure
  - rider attitudes – including toward transfers



# Transit Travel Patterns

Goals

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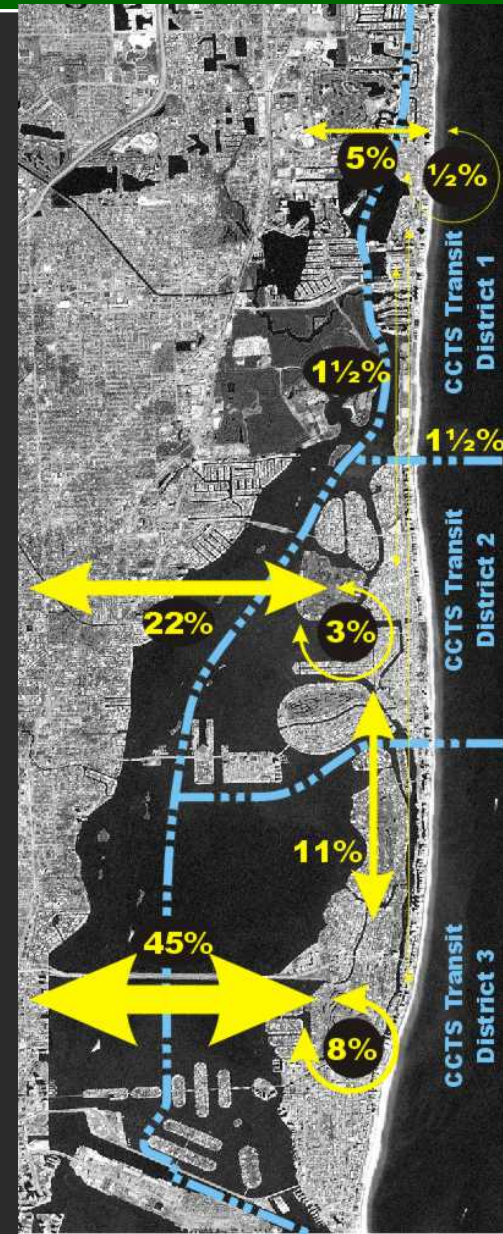
Next Steps

## Origin – Destination

12% of transit trips are short within districts

14% of transit trips are longer along coastal communities

74% of transit trips cross the Bay



# Transit Travel Patterns

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Next Steps

## O-D Tables:

Home-  
Based  
Trips

Non  
Home-  
Based  
Trips

**Coastal Community Home-Based Average Daily MDT Transit Trips**

		Destination District				
		District 1	District 2	District 3	Mainland	Home Total
Home District	District 1	0.4%	0.3%	1%	3%	5%
	District 2	1%	3%	9%	16%	30%
	District 3	0.5%	2%	8%	21%	32%
	Mainland	2%	6%	24%	n.a.	33%
Destination Total ->		5%	12%	42%	41%	100%

**Coastal Community Destination-Destination Average Daily MDT Trips**

		Destination District				
		District 1	District 2	District 3	Mainland	Home Total
Destination District	District 1	0%	0%	0%	4%	4%
	District 2	1%	0%	0%	21%	22%
	District 3	2%	7%	0%	65%	73%
	Mainland	0%	0%	0%	n.a.	0%
Destination Total ->		3%	7%	0%	90%	100%



# Transit Travel Patterns

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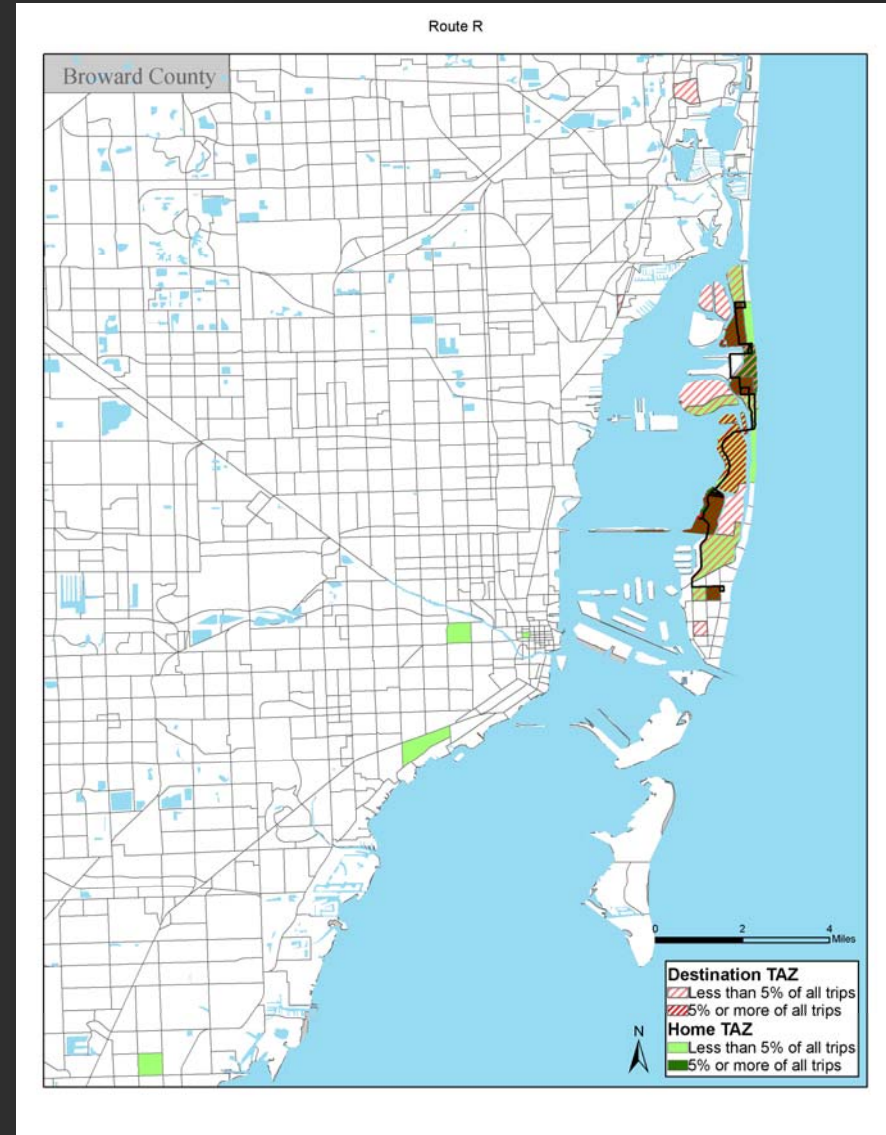
Next Steps

## Local Route:

- by route and TAZ

## Route R:

Origin – Destination patterns only in Coastal Communities





# Transit Travel Patterns

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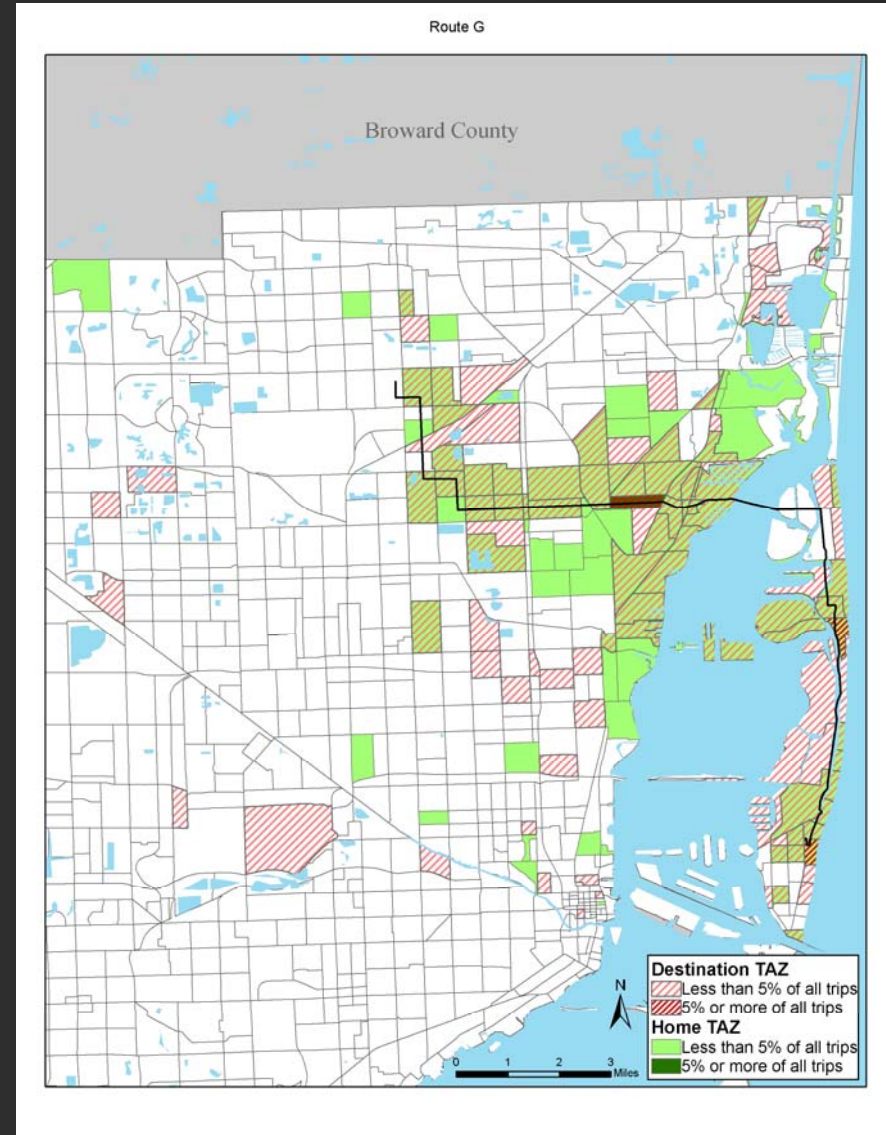
Next Steps

## East-West Route:

- by route and TAZ

## Route G:

Origin – Destination patterns both along Coastal Communities and east-west on mainland





# Transit Travel Patterns

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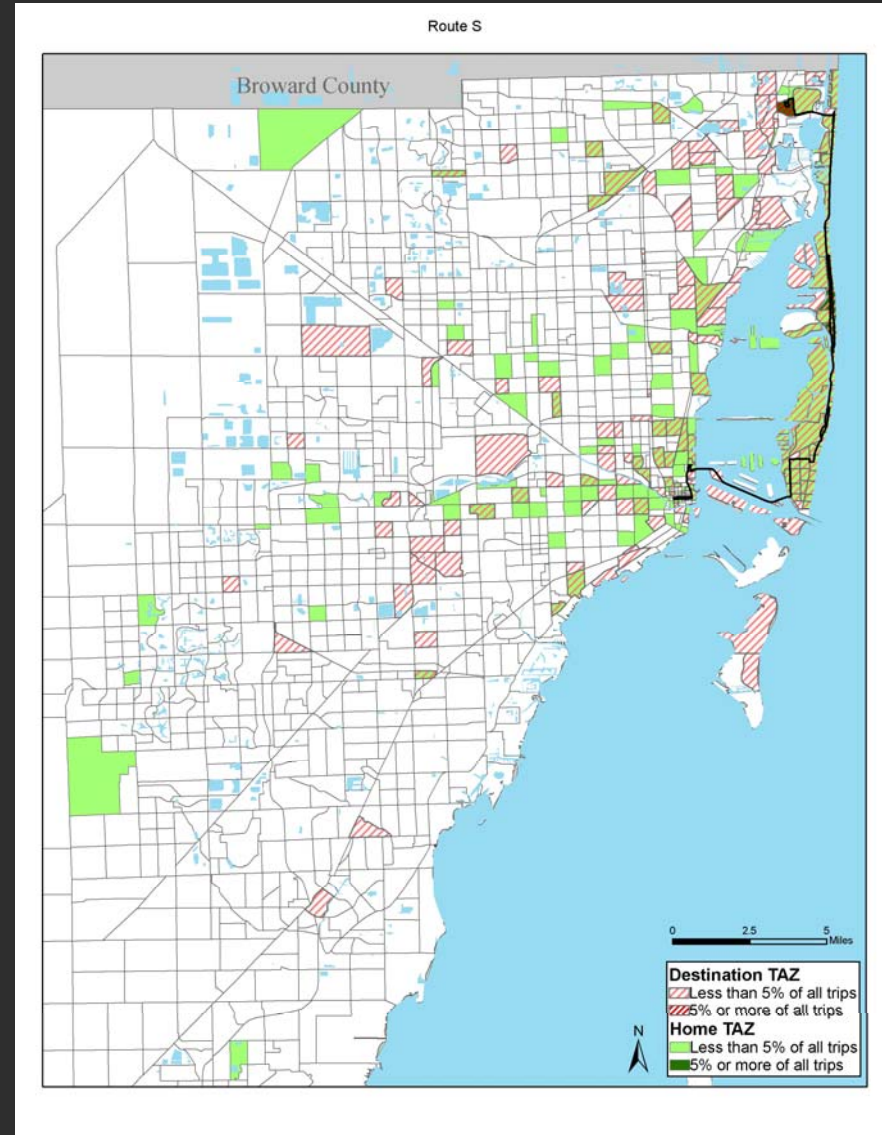
Next Steps

## North-South Route:

- by route and TAZ

## Route S:

Origin – Destination patterns both along Coastal Communities and scattered on mainland





# Transit Transfer Patterns

Goals

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Next Steps

## Transfer Patterns:

- by route

### Route S:

Transfer patterns match origin-destination patterns in the scattered areas on mainland





# Transit Riders

Goals

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Next Steps

## Additional Inputs

- Travel purpose
  - (home-based work, home-based school, home-based shopping, work to shopping, etc.)
- Transit Rider Demographics
- Transit Rider Mode To and From Transit





# Trip Characteristics

Goals

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Next Steps

## Transit Travel Purpose:

District:	1	2	3
Home to Work	41%	41%	48%
Home to School	5%	5%	6%
Home to Medical	3%	3%	6%
Home to Shopping	11%	7%	11%
Home to Recreation	3%	3%	5%
Home to Hotel	1%	1%	1%
Home to Other	8%	8%	12%
Work to Shopping	1%	1%	1%
Work to Other	3%	3%	1%
Other Not Home-Based	24%	28%	9%



# Trip Characteristics

Goals

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Next Steps

## Transit Mode To and From Bus:

District:	1	2	3
Walked Less Than 3 Blocks	60%	62%	77%
Walked More Than 3 Blocks	16%	14%	14%
Dropped Off	3%	2%	2%
Drive Self and Park	<1%	<1%	<1%
Bicycle	<1%	1%	<1%
Bus	13%	11%	3%
Metro Rail	3%	4%	1%
Metro Mover	1%	2%	1%
Tri-Rail	<1%	1%	<1%
Other	2%	1%	1%



# Transit Riders' Characteristics

Goals

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Next Steps

## Transit Rider & Household Demographics:

District:	1	2	3
Average Age	39	38	39
Gender: Female	56%	52%	53%
Male:	44%	48%	47%
Average Household Income	\$16,598	\$19,590	\$17,121
Number In Household	2.7	2.6	2.5
Vehicles In Household	0.7	0.7	0.5
Disability	3%	4%	4%
Frequency of Transit Use/Week	4.5	4.3	4.7



# Transit Transfers

Goals

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Transfer Sites

Next Steps

## District 1 (Aventura, Sunny Isles)

- 83% make no transfers
- 14% make 1 transit transfer
- 3% make 2 or more transfers
  
- Transfer Attitudes:
  - 57% are not bothered by making transfers
  - 24% are willing to make 1 transfer
  - 17% would rather not make a transfer
  - 2% will not use transit if required to transfer



# Transit Transfers

Goals

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MDT

## District 2 (North Beach, Surfside, Bal Harbour, North Bay Village, Bay Harbor Islands)

- 84% make no transfers
- 14% make 1 transit transfer
- 2% make 2 or more transfers
- Transfer Attitudes:
  - 57% are not bothered by making transfers
  - 23% are willing to make 1 transfer
  - 19% would rather not make a transfer
  - 1% will not use transit if required to transfer

Transfer Sites

Next Steps



# Transit Transfers

Goals

Benefits

Riders

Community

MDT

Transfer Sites

Next Steps

## District 3 (South Beach, Middle Beach)

- 95% make no transfers
- 4% make 1 transit transfer
- 1% make 2 or more transfers
- Transfer Attitudes:
  - 59% are not bothered by making transfers
  - 23% are willing to make 1 transfer
  - 16% would rather not make a transfer
  - 2% will not use transit if required to transfer



# Transit Riders

Goals

Benefits

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MDT

Transfer Sites

Next Steps

## Transit Transfer Data - by route

- How many passengers transfer, once, twice, etc.
- What are their attitudes towards transfers
- On a route-by-route basis, is there evidence to determine passenger impact if routes are split



# Passenger Comfort - Efficiency

Goals

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MDT

Transfer Sites

Next Steps

## Segment Loads

- Segment Loads

- How many passengers on the bus along segments of the route by periods of the day
- **Crowding vs Productivity**

- County-Wide Ride Check Data

- from 2004, MDT's CBOA data performed by CUTR
- 11,750 surveyed trips, 14,900 survey hours
- over 1-million data records for ons and offs
- over 100,000 time point records
- checked schedule adherence
- boardings and alightings by stop – every stop
- calculated loads





# Community Impacts

Goals

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Next Steps

## Coastal Community Transit Users

- Already Evaluated



# Community Impacts

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## Coastal Community Non-Transit Users

- Residential and Business Impacts
  - noise / smoke
  - residential street intrusion
  - location of stops
  - specifics as input from community meetings
- Traffic Impacts
  - “friction” caused by buses in traffic
  - blockage at bus stops
  - “Hot Spots”
  - input from *Coastal Communities Transportation Master Plan*
  - specifics as input from community meetings

Transfer Sites

Next Steps



# Community Impacts

Goals

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Next Steps

## Coastal Community Visitors

- Attract More Visitors to Public Transit
  - frequent visitor destinations
  - likeliness to use public transit
  - parking issues
  - specifics as input from committees, visitor and convention bureau data as available



# MDT Impacts

Goals

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Transfer Sites

Next Steps

## Operational Efficiency

- Utilization
  - Productivity (boardings per hour)
  - Activity (boardings and debarkings per hour)
    - by route
    - by alignment segment
    - by time of day
    - by day of week



# MDT Impacts

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Transfer Sites

Next Steps

## Capacity

- Load
  - passengers on-board as % of bus capacity
  - impacts passenger satisfaction, and
  - affects transit operating efficiency
    - by route
    - by alignment segment
    - by time of day
    - by day of week



# MDT Impacts

Goals

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Transfer Sites

Next Steps

## Scheduling Efficiency

- Goal to save buses while meeting demand
  - Reduce non-productive time
    - recovery time
    - deadhead time
  - Increase utilization = less capacity for same demand

# Transfer Sites

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Next Steps

## Where?

After preliminary recommendations  
Where should transfer locations be:

- traffic considerations
- access and walking distance
- on-street or off-street
- public-private opportunities
- land ownership and cost
- adjacent land uses
- LDC incentives?





# Transfer Sites

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Transfer Sites

Next Steps

## What?

After preliminary recommendations  
What should transfer locations be:

- bus bay capacity
- bus layover capacity
- on-street and off-street
- amenities and space
- complementary uses







# We're Not Done

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Next Steps

More Analysis

Public Input

No Conclusions Yet



# Concepts

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Next Steps

Importance of analysis:

Focus on the North-South  
A1A Corridor

- with connections from west
- with feeder service from local routes





# Concepts

Goals

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Next Steps

Importance of analysis:

Focus on the East-West  
Connections

- with feeder service from local routes
- and from A1A route





# Concepts

Goals

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Next Steps

Importance of analysis:

Focus on the Primary  
East-West Connections

- with seamless service into community
- local feeder connections
- and connections from A1A route





# Next Steps

Goals

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Next Steps

Committee Meetings

September – October 2006

Public Meetings

October 2006\*

Draft Recommendations

December 2006

Final Presentations

January 2007

\* in coordination with Coastal Communities Transportation Master Plan schedule