

# Transformation: Broward's Plan for Change



JACOBS



2035 Needs Assessment

## **Discussion Topics**

- **Cost Feasible Plan, how do we get there?**
- **Needs Evaluation Process Summary**
- **Evaluation Criteria for Ranking of Needs Assessment Projects**

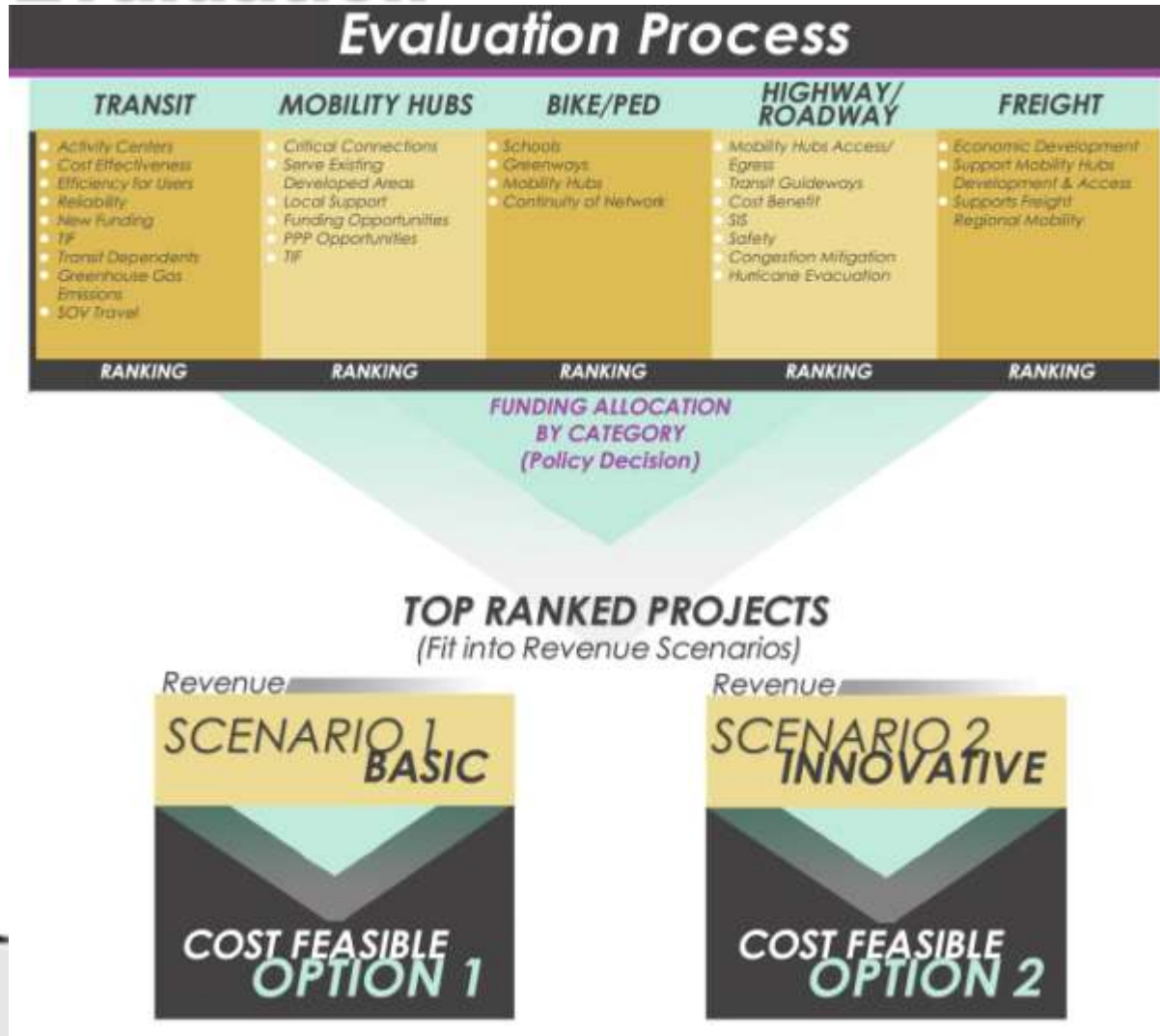
# Getting to Cost Feasible Plan

## Route To Cost Feasible Plan

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- STEP 1** *Transit Corridors Selection*
  - STEP 2** *Mobility Hub Selection*
  - STEP 3** *Pedestrian Bike Roadway  
ITS Safety Freight Selection*
  - STEP 4** *Ranking of all Projects by Category*
  - STEP 5** *Transit Link Level Analysis*
  - STEP 6** *Proposed Cost Feasible  
Transit Corridors & Operating Plans*
  - STEP 7** *Identify Cost Feasible Mobility Hubs*
  - STEP 8** *Cost Feasible  
Pedestrian, Bike, Roadway, ITS,  
Safety, Freight Selection*
  - STEP 9** *Create Scenarios Based on  
Revenue Projections*
  - STEP 10** *Select Cost Feasible Plan*
  - STEP 11** *Define Policies/Strategies*



# Evaluation



## **Transit**

- Critical Connections
- Transit
- Activity Centers
- Cost Effectiveness
- Efficiency for Users
- Reliability
- New Funding
- TIF
- Transit Dependents
- Greenhouse Gas Emissions
- SOV Travel

Evaluation Criteria	Measure	Points Awarded	Reason for Points
Connects Major Activity Centers	# of trip served	3	Top 76-100 percentile
		2	51-75 percentile
		1	26-50 percentile
		0	0-25 percentile
Cost Effectiveness	Cost Per Rider (Premium LRT/BRT)	3	0-25 percentile
		2	26-50 percentile
		1	51-75 percentile
		0	Top 76-100 percentile
Contributes to Efficiency of Transit System users	# of connections to premium transit routes	3	More than 3 connections
		2	2 connections
		1	1 connections
		0	Does not connect to other premium transit routes
Introduces Reliability of Transit Service by providing transit signal priority and exclusive transit lane/ fixed guideway)	Type of Transit Project/Service	3	High capacity transit project
		2	Rapid Bus and/or Breeze Route
		1	Local buses
		0	Not Applicable
Ability to Leverage New Funding Sources	New Funding Options (i.e. sales tax, user tax, VMT tax, New Starts)	3	Greater than 50% of project capital cost
		2	20-50% of project capital cost
		1	<20 of project capital cost
		0	No new capital funding potential
Tax Increment Financing Opportunities	% of Route Covered by CRA/TOD/TOC/Higher Density Mixed Use designation	3	Top 76-100 percentile
		2	51-75 percentile
		1	26-50 percentile
		0	0-25 percentile
Service to Transit Dependents	# of transit dependent population within ¼ mile of transit project	3	Top 76-100 percentile
		2	51-75 percentile
		1	26-50 percentile
		0	0-25 percentile
Reduction in Greenhouse Gas Emissions	Passenger miles on transit project/service	3	Top 76-100 percentile
		2	51-75 percentile
		1	26-50 percentile
		0	0-25 percentile
Reduction in Single Occupancy Vehicle Travel or VMT	Ridership	3	Top 76-100 percentile
		2	51-75 percentile
		1	26-50 percentile
		0	0-25 percentile

## 2035 Needs Assessment

Evaluation Criteria	Measure	Points Awarded	Reason for Points
Critical Connections Along Selected Cost Feasible Transit Corridors	Types of Transit Corridors Served	3	More than 2 high capacity transit projects
		2	More than 1 high capacity transit project
		1	Rapid Bus and/or Breeze or More than 3 local bus routes
		0	Does not meet threshold of categories 1-3
Serves Existing Developed Areas	# of jobs (employment) and population within ½ mile	3	Top 76-100 percentile
		2	51-75 percentile
		1	26-50 percentile
		0	0-25 percentile
Local Request/support through LRTP input or other Plan Designation	# of published plans/studies and requests	3	3 or more published plans/studies/requests
		2	2 or more published plans/studies/requests
		1	1 or more published plan/study/request
		0	No plans/studies or requests
Near Term Funding Opportunities for Planning, Design, and or Implementation	Project status/initiative	3	In Design Phase
		2	In Feasibility or Concept Study
		1	Study Money Allocated
		0	No funding/effort identified
Public/Private Partnership Opportunities	Project status/initiative	3	Private/Public Partnership Underway (design) or in bid process
		2	Project identified in government work program
		1	Study Underway
		0	Unknown
Tax Increment Financing Opportunities	Land use status	3	CRA Established
		2	CRA/TOD/TOC/Higher Density Mixed Use Designation
		1	Infill or redevelopment sites available but not designated
		0	Not likely to support TIF

## **Mobility Hubs**

- Critical Connections
- Serve Existing Developed Areas
- Local Support
- Funding Opportunities
- PPP Opportunities
- TIF



# 2035 Needs Assessment

Evaluation Criteria	Measure	Points Awarded	Reason for Points
Critical Connections Along Selected Cost Feasible Transit Corridors	Types of Transit Corridors Served	3	More than 2 high capacity transit projects
		2	More than 1 high capacity transit project
		1	Rapid Bus and/or Breeze or More than 3 local bus routes
		0	Does not meet threshold of categories 1-3
Serves Existing Developed Areas	# of jobs (employment) and population within ½ mile	3	Top 76-100 percentile
		2	51-75 percentile
		1	26-50 percentile
		0	0-25 percentile
Local Request/support through LRTP input or other Plan Designation	# of published plans/studies and requests	3	3 or more published plans/studies/requests
		2	2 or more published plans/studies/requests
		1	1 or more published plan/study/request
		0	No plans/studies or requests
Near Term Funding Opportunities for Planning, Design, and or Implementation	Project status/initiative	3	In Design Phase
		2	In Feasibility or Concept Study
		1	Study Money Allocated
		0	No funding/effort identified
Public/Private Partnership Opportunities	Project status/initiative	3	Private/Public Partnership Underway (design) or in bid process
		2	Project identified in government work program
		1	Study Underway
		0	Unknown
Tax Increment Financing Opportunities	Land use status	3	CRA Established
		2	CRA/TOD/TOC/Higher Density Mixed Use Designation
		1	Infill or redevelopment sites available but not designated
		0	Not likely to support TIF

## **Ped/Bike**

- Schools
- Greenways
- Mobility Hubs
- Continuity of Network



# 2035 Needs Assessment

Evaluation Criteria	Measure	Points Awarded	Reason for Points
Improvements near schools	Proximity to schools	3	Projects Within 1/4mile
		2	Projects within ¼ -1/2 mile
		1	Projects within 0 - ¼ mile
		0	Project more than 1 mile of schools
Integration with Greenways	Proximity to greenways	3	Projects Within 1/4mile
		2	Projects within ¼ -1/2 mile
		1	Projects within 0 - ¼ mile
		0	Project more than 1 mile of greenways
Supports Mobility Hubs	Within Range of Mobility Hub and Ranked according to Mobility Hub Priority	3	Top 76-100 percentile
		2	51-75 percentile
		1	26-50 percentile
		0	0-25 percentile
	<b>Gateway Hub</b>		
	Pedestrian - within 1/2 mile of Hub		
	Bike - within 2 miles of Hub		
	<b>Anchor Hub</b>		
	Pedestrian - within 1/4 mile of Hub		
	Bike - within 1 miles of Hub		
<b>Community Hub</b>			
Pedestrian - within 2 blocks of Hub			
Bike - within 2 blocks of Hub			
Provides Continuity/Connectivity	Proximity to Transit Route/Type of Service	3	Adjacent/connects to Premium or Regular Transit Route
		2	Adjacent/connects to Community Bus Route
		1	Provides "Missing Link" to Ped/Bike System-no transit connection
		0	Does not meet above categories

## Highways/Roadways

- Schools
- Mobility Hubs Access/Egress
- Transit Guideway
- Cost Benefit
- SIS
- Safety
- Congestion Mitigation
- Hurricane Evacuation



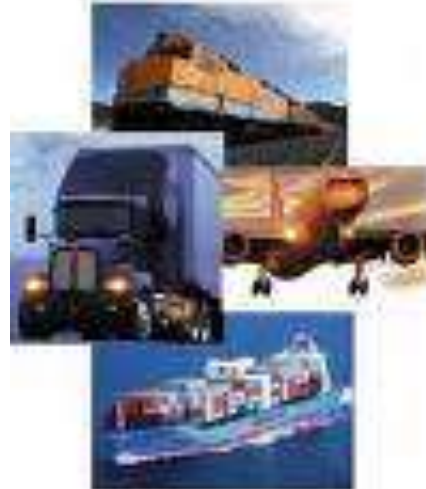


## 2035 Needs Assessment

Evaluation Criteria	Measure	Points Awarded	Reason for Points
Roadway Supports Access/Egress to designated cost feasible Mobility Hubs	Projects that provide access/egress to Cost Feasible Mobility Hubs	3	Direct connection to the Mobility Hub
		2	Within ¼ mile of the Mobility Hub
		1	Within ½ mile of the Mobility Hub
		0	Does not support Mobility Hub and/or not in close proximity
Roadway Multimodal Project Supports Transit Guideway Project	Type of Transit Operating on Roadway	3	2+ High Capacity Routes
		2	1+ High Capacity Routes
		1	Rapid Bus/and or Breeze
		0	No Support for Transit routes
Cost Benefit	Cost per mile per trip	3	0-25 percentile
		2	26-50 percentile
		1	51-75 percentile
		0	Top 76-100 percentile
Relevance to SIS facility	Impact on designated SIS facilities	3	Designated in SIS plan
		2	New links that relieve congestion on SIS facilities
		1	No relevance to SIS facilities
		0	Negatively impacts SIS facilities
Relevance to Safety	Improves design at high crash/incident locations	3	Top 76-100 percentile
		2	51-75 percentile
		1	26-50 percentile
		0	0-25 percentile
Congestion Mitigation	Volume Over Capacity (V/C)	3	Reduction in V/C compared to E+C
		2	-not applicable-
		1	-not applicable-
		0	No Reduction in V/C compared to E+C
Hurricane Evacuation	Improves traffic flow on designated hurricane evacuation routes	3	Reduction in V/C compared to E+C
		2	-not applicable-
		1	-not applicable-
		0	No Reduction in V/C compared to E+C

## Freight

- Economic Development
- Support Mobility Hubs
- Development and Access
- Supports Freight Regional Mobility



# 2035 Needs Assessment

Evaluation Criteria	Measure	Points Awarded	Reason for Points
Economic Development	Cargo/Vehicle Capacity	3	Top 76-100 percentile (High Volume)
		2	51-75 percentile (Medium Volume)
		1	26-50 percentile (Low Volume)
		0	0-25 percentile (Non Volume)
Supports Development of Designated Cost Feasible Mobility Hubs	Provides passenger connections to/from Mobility Hubs	3	Top 76-100 percentile (High Ridership)
		2	51-75 percentile (Medium Ridership)
		1	26-50 percentile (Low Ridership)
		0	0-25 percentile (No Ridership)
Improves Regional Freight Mobility	# of published Studies/Plans identified	3	More than 3 published plans/studies
		2	More than 2 published plans/studies
		1	More than 1 published plan/study
		0	None

# Examples





**Sample: Transit Projects Evaluation Criteria Application**

**Criterion 2**

Cost Effectiveness					
Performance Measure	24-mile Urban Premium Transit	40-mile Urban Premium Transit	3.5-mile Premium Transit	15-mile Rapid Bus	10-mile Rapid Bus
Capitla Cost Per Rider (BRT)	51.97	65.54	49.16	6.82	5.35
Points	2	1	2	3	3

Descriptive Statistic		Scoring System	Points
Average	54	< 25th Percentile	3
SD	49	26th - 50th Percentile	2
Maximum Value	236	51st - 75th Percentile	1
Minimum Value	5	> 76th Percentile	0
Sum	1,237		
Median	52		
< 25th Percentile	21		
26th Percentile	21		
50th Percentile	52		
75th Percentile	67		
Range	231		

**Sample: Transit Projects Evaluation Criteria Application**

**Criterion 3**

<b>Contributes to Efficiency of Transit System users</b>					
<b>Performance Measure</b>	<b>24-mile Urban Premium Transit</b>	<b>40-mile Urban Premium Transit</b>	<b>3.5-mile Premium Transit</b>	<b>15-mile Rapid Bus</b>	<b>10-mile Rapid Bus</b>
# of connections to premium transit routes	9	9	9	6	6
Points	3	3	3	1	1

Descriptive Statistic		Scoring System	Points
Average	7	< 25th Percentile	0
SD	2	26th - 50th Percentile	1
Maximum Value	10	51st - 75th Percentile	2
Minimum Value	5	> 76th Percentile	3
Sum	156		
Median	6		
< 25th Percentile	5		
26th Percentile	5		
50th Percentile	6		
75th Percentile	8		
Range	5		

**Sample: Transit Projects Evaluation Criteria Application**

**Criterion 1**

<b>Connects Major Activity Centers</b>					
<b>Performance Measure</b>	24-mile Urban Premium Transit	40-mile Urban Premium Transit	3.5-mile Premium Transit	15-mile Rapid Bus	10-mile Rapid Bus
Potential # of trips served (2035)	1,725,749	2,088,498	230,344	693,029	634,694
Points	3	3	0	3	3

Descriptive Statistic		Scoring System	Points
Average	653,578	< 25th Percentile	0
SD	470,454	26th - 50th Percentile	1
Maximum Value	2,088,498	51st - 75th Percentile	2
Minimum Value	162,498	> 76th Percentile	3
Sum	15,032,285		
Median	538,276		
< 25th Percentile	439,876		
26th Percentile	439,878		
50th Percentile	538,276		
75th Percentile	619,585		
Range	1,926,000		

**Sample: Transit Projects Evaluation Criteria Application**

**Criterion 5**

Ability to Leverage New Funding Sources					
Performance Measure	24-mile Urban Premium Transit	40-mile Urban Premium Transit	3.5-mile Premium Transit	15-mile Rapid Bus	10-mile Rapid Bus
New Funding Options (i.e. sales tax, user tax,VMT tax, New Starts)	20.89	26.88	18.88	7.94	6.18
Points	2	1	2	3	3

Descriptive Statistic		Scoring System	Points	Rationale
Average	23	Greater than 50% of project capital cost	3	CE index in 76 - 100 percentile
SD	13	20-50% of project capital cost	2	CE index in 51 - 75 percentile
Maximum Value	56	<20 of project capital cost	1	CE index in 26 - 50 percentile
Minimum Value	3	No new capital funding potential	0	CE index less than 25 percentile
Sum	529			
Median	22			
< 25th Percentile	14			
26th Percentile	15			
50th Percentile	22			
75th Percentile	30			
Range	53			



**Sample: Transit Projects Evaluation Criteria Application**

**Criterion 4**

<b>Introduces Reliability of Transit Service</b>					
<b>Performance Measure</b>	24-mile Urban Premium Transit	40-mile Urban Premium Transit	3.5-mile Premium Transit	15-mile Rapid Bus	10-mile Rapid Bus
<b>Type of Transit Project/Service</b>	HC	HC	HC	RB	RB
<b>Points</b>	3	3	3	2	2

Descriptive Statistic		Scoring System	Points
<b>Average</b>	0	Not Applicable	0
<b>SD</b>	0	Local buses	1
<b>Maximum Value</b>	0	Rapid Bus and/or Breeze Route	2
<b>Minimum Value</b>	0	High capacity transit project	3
<b>Sum</b>	0		
<b>Median</b>	0		
<b>&lt; 25th Percentile</b>	NA		
<b>26th Percentile</b>	LB		
<b>50th Percentile</b>	RB		
<b>75th Percentile</b>	HC		
<b>Range</b>	0		

## Sample: Roadway Projects Evaluation Criteria Application

### Criterion 1

Access/Egress to Mobility Hubs					
PERFORMANCE MEASURES	Project A (2 to 4 Lane)	Project B (New Link)	Project C (Restriping)	Project D (New Link)	Project E (Widening)
Projects that provide access/egress to Cost Feasible Mobility Hubs	HM	HM	DC	NS	NS
Points	1	1	3	0	0

Descriptive Statistic		Scoring System	Points	
Average	0	Does not support Mobility	0	NS
SD	0	Within ½ mile of the Mobility Hub	1	HM
Maximum Value	0	Within ¼ mile of the Mobility Hub	2	QM
Minimum Value	0	Direct connection to the Mobility Hub	3	DC
Sum	0			
Median	0			
< 25th Percentile	NS			
25th Percentile	HM			
50th Percentile	QM			
75th Percentile	DC			
Range	0			

## Sample: Roadway Projects Evaluation Criteria Application

### Criterion 2

Roadway Multimodal Project					
PERFORMANCE MEASURES	Project A (2 to 4 Lane)	Project B (New Link)	Project C (Restriping)	Project D (New Link)	Project E (Widening)
Type of Transit Operating on Roadway	HC1+	HC1+	RB	NS	NS
Points	2	2	1	0	0

Descriptive Statistic		Scoring System	Points	
Average	0	No Support for Transit routes	0	NS
SD	0	Rapid Bus/and or Breeze	1	RB
Maximum Value	0	1+ High Capacity Routes	2	HC1+
Minimum Value	0	2+ High Capacity Routes	3	HC2+
Sum	0			
Median	0			
< 25th Percentile	NS			
25th Percentile	RB			
50th Percentile	HC1+			
75th Percentile	HC2+			
Range	0			

**Sample: Roadway Projects Evaluation Criteria Application**

**Criterion 3**

Cost Benefit					
PERFORMANCE MEASURES	Project A (2 to 4 Lane)	Project B (New Link)	Project C (Restriping)	Project D (New Link)	Project E (Widening)
Capital Cost per Trip	62.35	53.48	15.89	102.86	216.48
Points	2	3	3	0	1

Descriptive Statistic		Scoring System	Points
Average	90	< 25th Percentile	3
SD	77	26th - 50th Percentile	2
Maximum Value	216	51st - 75th Percentile	1
Minimum Value	16	> 76th Percentile	0
Sum	451		
Median	62		
< 25th Percentile	53		
25th Percentile	53		
50th Percentile	62		
75th Percentile	103		
Range	201		



**Sample: Roadway Projects Evaluation Criteria Application**

**Criterion 4**

Relevance to SIS Facility					
PERFORMANCE MEASURES	Project A (2 to 4 Lane)	Project B (New Link)	Project C (Restriping)	Project D (New Link)	Project E (Widening)
Impact on designated SIS facilities	NO	NO	NO	NEG	RC
Points	1	1	1	0	2

Descriptive Statistic		Scoring System	Points	
Average	0	Negatively impacts SIS facilities	0	NEG
SD	0	No relevance to SIS facilities	1	NO
Maximum Value	0	New links that relieve congestion on SIS facilities	2	RC
Minimum Value	0	Designated in SIS plan	3	SIS
Sum	0			
Median	0			
< 25th Percentile	NEG			
25th Percentile	NO			
50th Percentile	RC			
75th Percentile	SIS			
Range	0			

**Sample: Roadway Projects Evaluation Criteria Application**

**Criterion 6**

Congestion Mitigation					
PERFORMANCE MEASURES	Project A (2 to 4 Lane)	Project B (New Link)	Project C (Restriping)	Project D (New Link)	Project E (Widening)
Volume Over Capacity (V/C)	NR	NR	NR	NR	RED
Points	0	0	0	0	3

Descriptive Statistic		Scoring System	Points	
Average	0	No Reduction in V/C compared to E+C	0	NR
SD	0	-not applicable-	NA	NA
Maximum Value	0	-not applicable-	NA	NA
Minimum Value	0	Reduction in V/C compared to E+C	3	RED
Sum	0			
Median	0			
< 25th Percentile	NR			
25th Percentile	NA			
50th Percentile	NA			
75th Percentile	RED			
Range	0			

**Sample: Roadway Projects Evaluation Criteria Application**

**Criterion 7**

Hurricane Evacuation					
PERFORMANCE MEASURES	Project A (2 to 4 Lane)	Project B (New Link)	Project C (Restriping)	Project D (New Link)	Project E (Widening)
Improves traffic flow on designate	NA	NA	NR	NA	RED
Points	NA	NA	0	NA	3

Descriptive Statistic		Scoring System	Points	
Average	0	No Reduction in V/C compared to E+C	0	NR
SD	0	-not applicable-	NA	NA
Maximum Value	0	-not applicable-	NA	NA
Minimum Value	0	Reduction in V/C compared to E+C	3	RED
Sum	0			
Median	0			
< 25th Percentile	NR			
25th Percentile	NA			
50th Percentile	NA			
75th Percentile	RED			
Range	0			