



Regional Transit Feasibility Plan

A ROUTE MAP TO IMPLEMENTATION

DISCUSSION

- Overview and progress
- Step three results
- Technical recommendation for plan and catalyst
- TMA input

OBJECTIVE

Collect TMA Leadership Group input on the **plan and catalyst** draft recommendation **before continuing public outreach.**

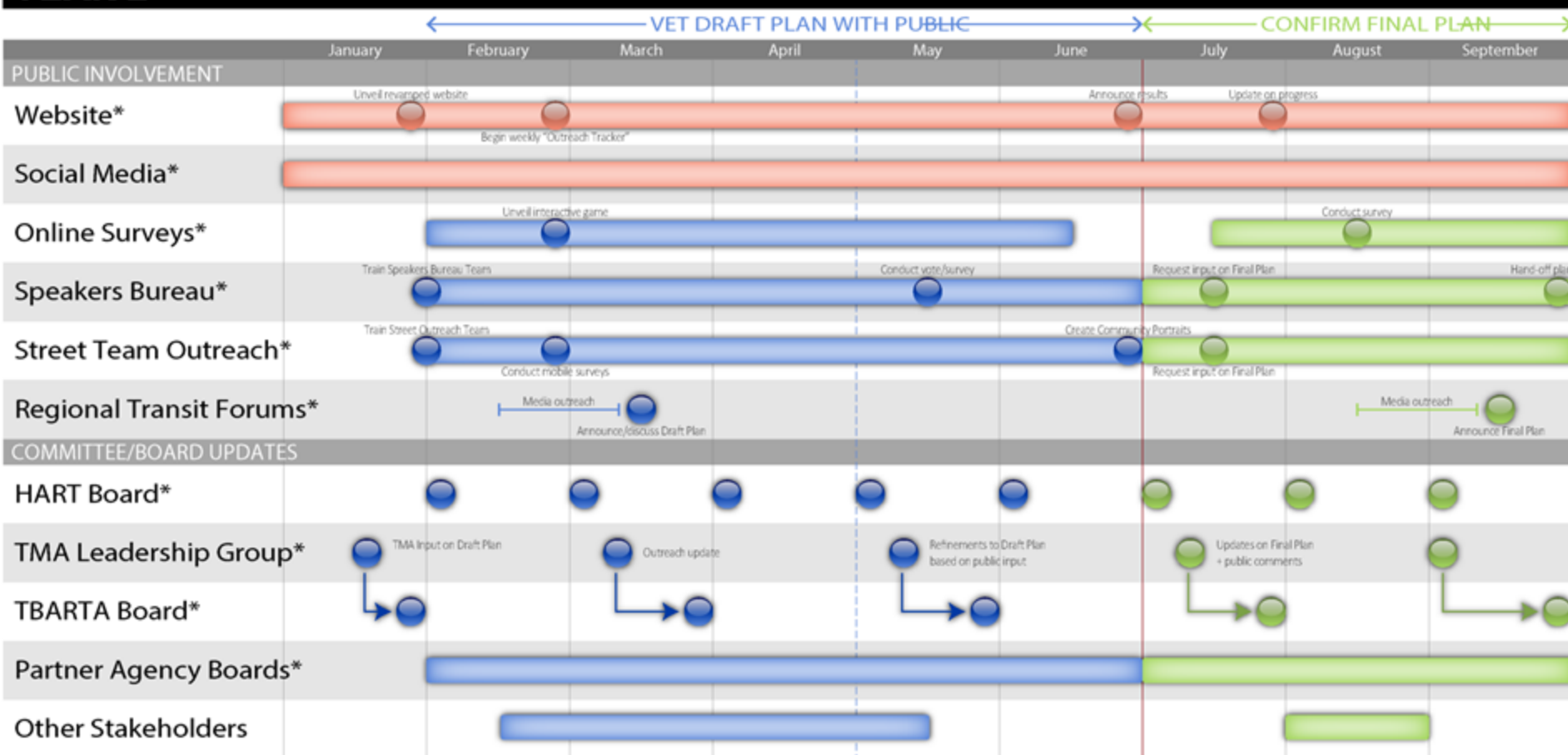
SCHEDULE

- TBARTA Board Meeting January 26, 2018
- Community vetting of Draft Plan Spring/Summer '18
- Incorporate public comment to finalize Plan Summer/Fall '18



PUBLIC INVOLVEMENT SCHEDULE

YEAR 2



* Public comment opportunity

GET INVOLVED

WWW.TBREGIONALTRANSIT.COM



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WATCH OUR VIDEO: **TRANSIT MODES**

This video highlights the transit modes being considered for the Regional Transit Feasibility Plan. They include rubber tire, steel wheel, water, air, and autonomous solutions!

Check it out here!



OVERVIEW

1

What are the projects to be built?



**Regional Transit
Feasibility Plan**
A ROUTE MAP TO IMPLEMENTATION

(Emphasis of the Regional
Transit Feasibility Plan)

2

How is it funded?

3

Who is responsible for building and
maintaining it?



WHY PREMIUM TRANSIT

WHY PREMIUM TRANSIT

As our region grows, we need a
modern multimodal
transportation system that
provides **mobility choices**

PLAN PURPOSE

PLAN PURPOSE

- ✓ Define and validate a *regional transit vision* that serves Tampa Bay today while supporting tomorrow's growth

PLAN PURPOSE

- ✓ Identify a *catalyst* to begin building the vision with a project that has the *greatest potential to be built* (compete for state and federal grants) and

PLAN PURPOSE

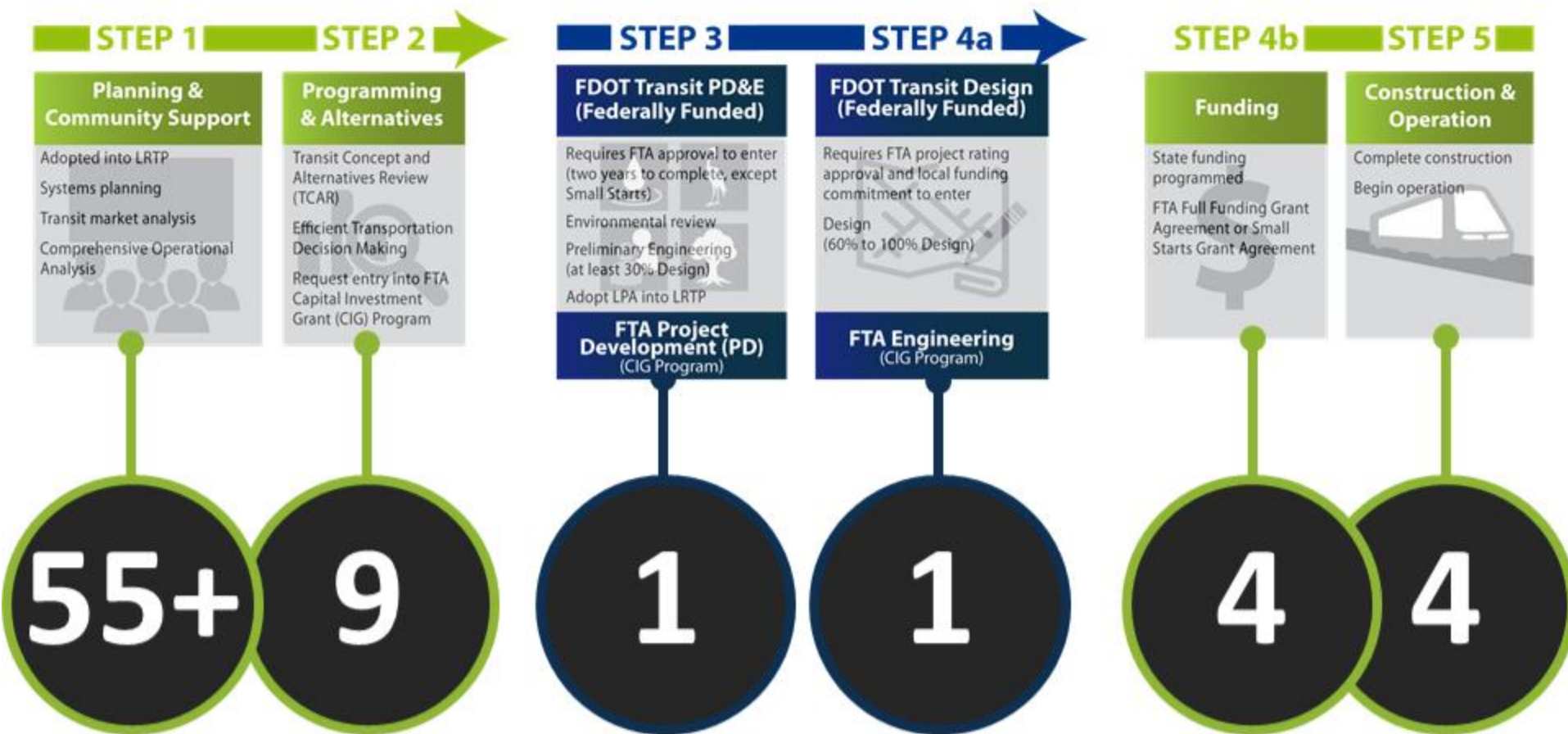
- ✓ Identify a catalyst project that is forward thinking and makes the best use of existing and emerging technology

THE PLAN IS NOT

- ❌ Another study for the shelf
- ❌ A Long Range Transportation Plan
- ❌ A Transit Development Plan
- ❌ A replacement for these efforts

THE CATALYST

- ❌ DOES NOT replace future transit project needs
- ❌ IS NOT the only transit recommendation for Tampa Bay
- ✅ DOES support the growth of a future transit system



Number of Projects Over the Past 30+ Years in Tampa Bay



PROGRESS

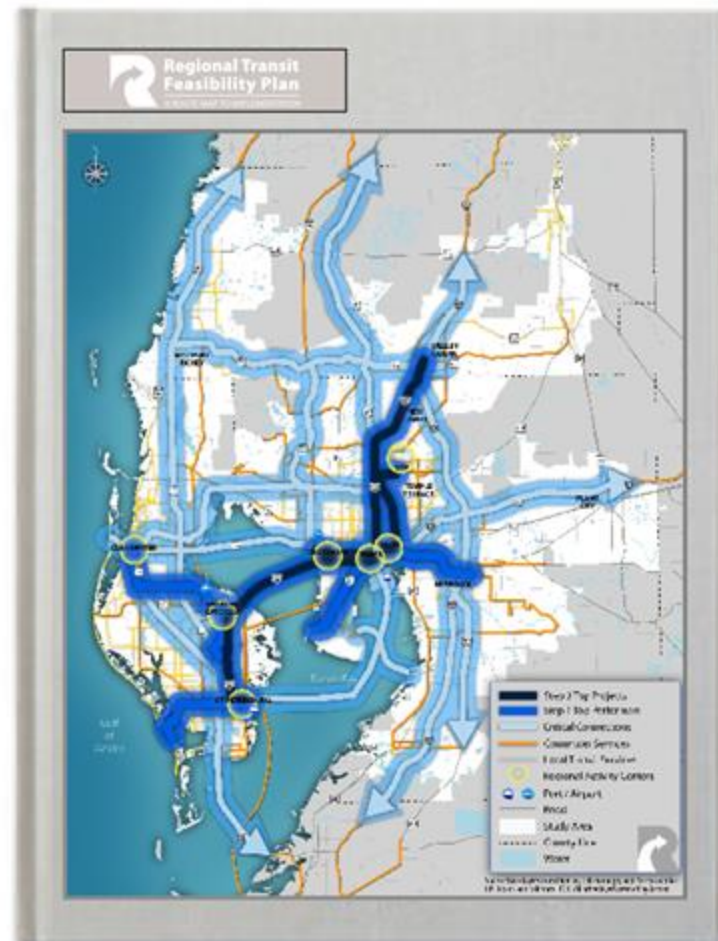
GOAL: DRAFT IMPLEMENTATION PLAN

1A

Identify the steps needed to build each project in the Regional Transit Vision

1B

Provide the information needed to determine the catalyst project



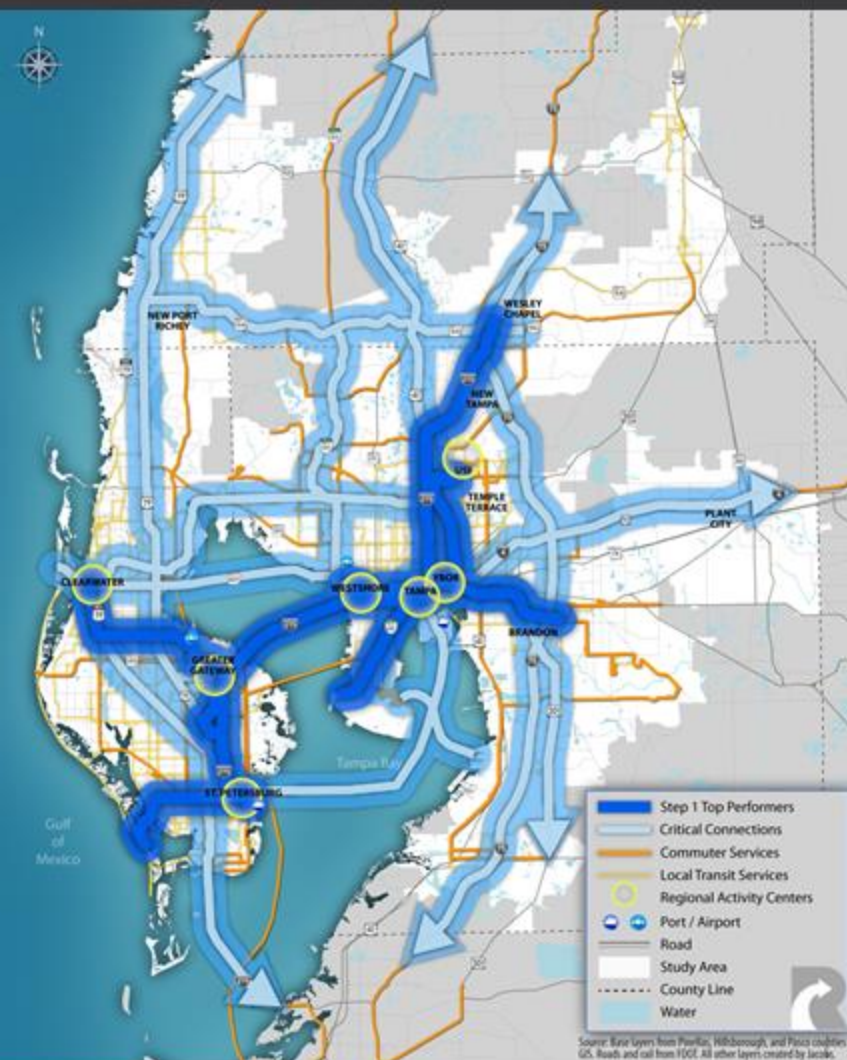
STEP 1:



WHERE ARE THE TOP PERFORMING CONNECTIONS?

REGIONAL TRANSIT VISION

THE **TOP PERFORMERS** AND CRITICAL REGIONAL CONNECTIONS WOULD SERVE THE FOLLOWING WITHIN ½ MILE OF EACH CONNECTION BY 2040



SERVES APPROX.
6 IN 10
JOBS (2040)

SERVES APPROX.
5 IN 10
RESIDENTS (2040)



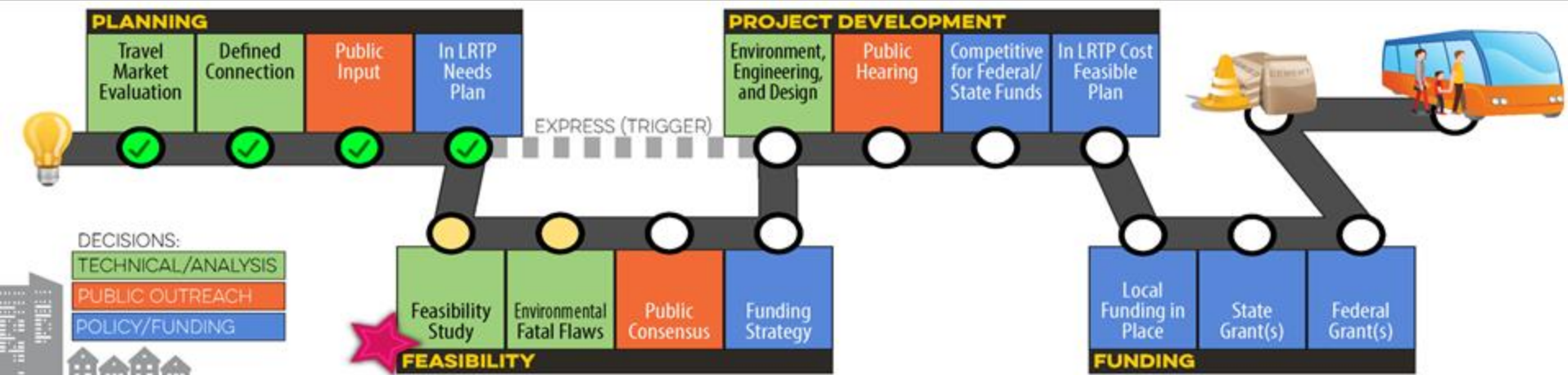
SERVES APPROX. **2,100**
JOBS PER MILE (2040)

SERVES APPROX. **3,000**
RESIDENTS PER MILE (2040)



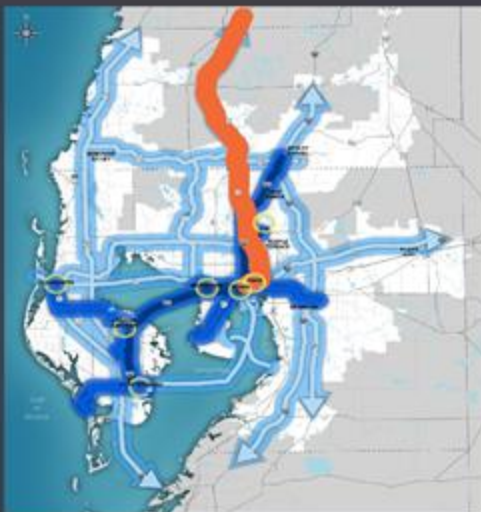
SERVES APPROX.
6 IN 10
RESIDENTS WITHOUT CARS
(2040)

VISION: STEPS NEEDED TO BUILD EACH



CRITICAL CONNECTION: Downtown Tampa to Brooksville

WHERE IS THE CONNECTION?



ABOUT THE CONNECTION

Generally follows the CSX Rail Line between Downtown Tampa and Brooksville

i 3 COUNTIES SERVED

46.0 MILES

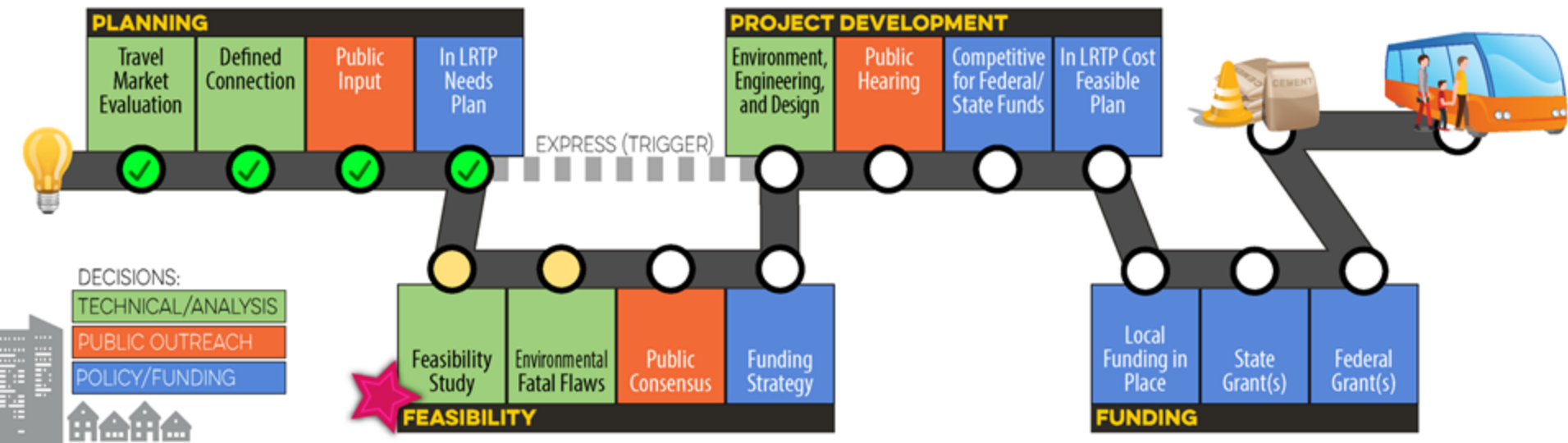
2 ACTIVITY CENTERS SERVED

DOES IT MEET THE FTA MEDIUM RATING?
Totals are estimates. If threshold is met today, bar shows as full.



VISION: STEPS NEEDED TO BUILD EACH

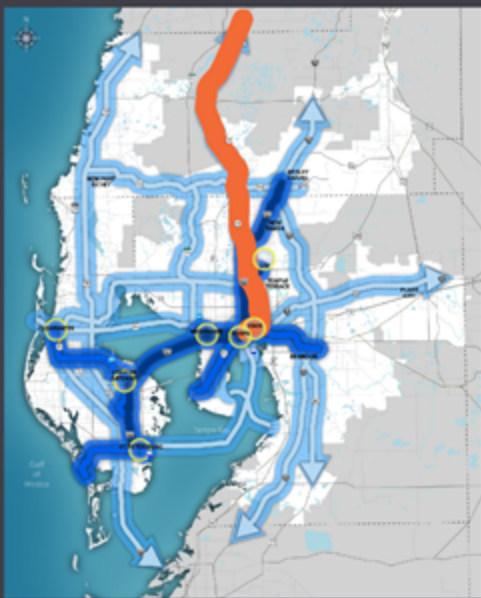
PROJECT ROUTE MAP



VISION: STEPS NEEDED TO BUILD EACH

ABOUT THE PROJECT

WHERE IS THE CONNECTION?



ABOUT THE CONNECTION

Generally follows the CSX Rail Line between Downtown Tampa and Brooksville

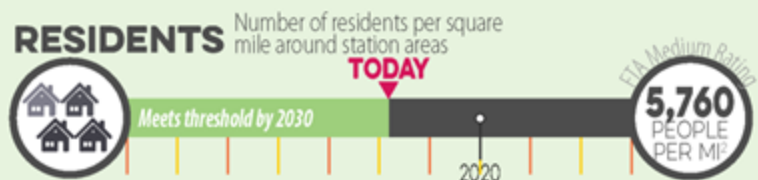
i **3** COUNTIES SERVED

46.0 MILES

2 ACTIVITY CENTERS SERVED

DOES IT MEET THE FTA MEDIUM RATING?

Totals are estimates. If threshold is met today, bar shows as full.



VISION: STEPS NEEDED TO BUILD EACH

Total projects =

21

Planning efforts =

16

Feasibility efforts =

5

Projects advanced by Plan =

10

PROJECT DEVELOPMENT

Environment,
Engineering,
and Design

Public
Hearings

PRESS (TRIGGER)

Identify
Flaws

Public
Consensus

Funding
Strategy

STEP 1:



WHERE ARE THE TOP PERFORMING CONNECTIONS?

STEP 2:



WHAT ARE THE BEST PROJECTS?

CHOOSING MODES

Understanding the travel needs of riders along and near each of the top connections illustrates which modes best serve that need.

Ferry and Aerial Propelled Transit



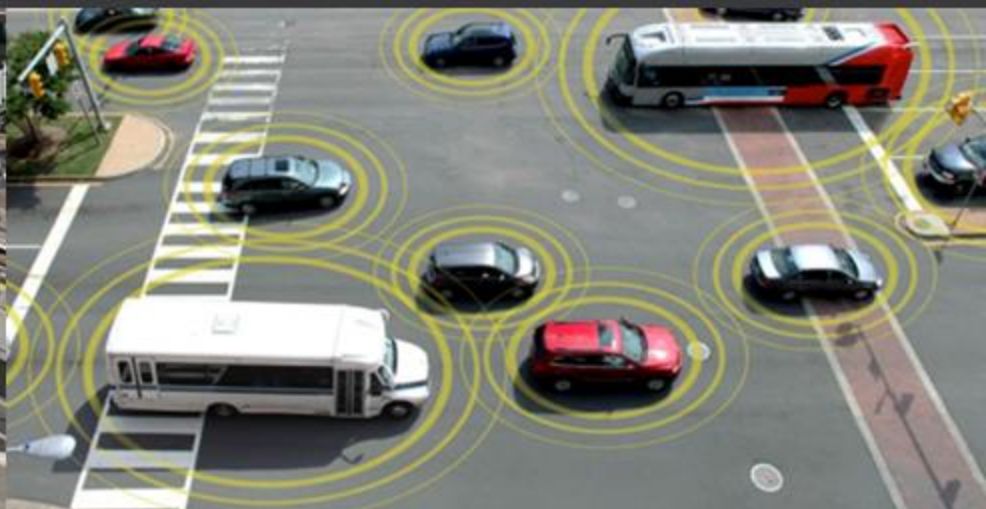
Steel Wheel or Rail Transit



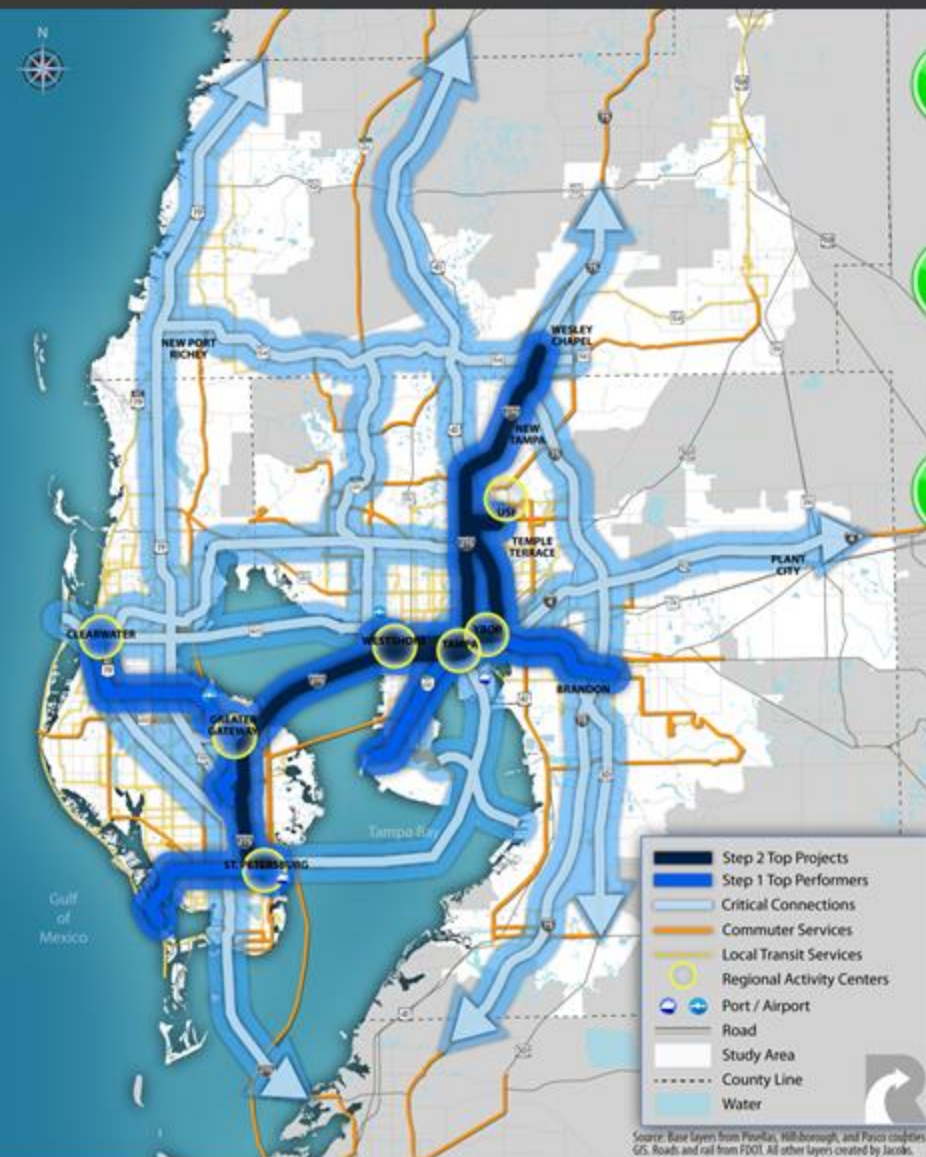
Rubber Tire Rapid Transit



EMERGING AUTONOMOUS SOLUTIONS



STEP 2 RESULTS: TOP PERFORMING PROJECTS



Projects that have the greatest potential to be funded (compete for state and federal grants)



Projects that are the most forward thinking and make the best use of today's technology



Projects that best serve our region today while supporting tomorrow's growth

(I-275) Wesley Chapel, USF, Tampa, Gateway, St. Petersburg

(CSX North) Downtown Tampa to USF

STEP 1:



WHERE ARE THE TOP PERFORMING CONNECTIONS?

STEP 2:



WHAT ARE THE BEST PROJECTS?

STEP 3:

January 19, 2018

**HOW AND WHEN ARE
PROJECTS BUILT?**



STEP 3 RESULTS

STEP 3: EVALUATION



2017 LAND USE

- Employment
- Population density

2017 MOBILITY

- New riders
- Annual ridership

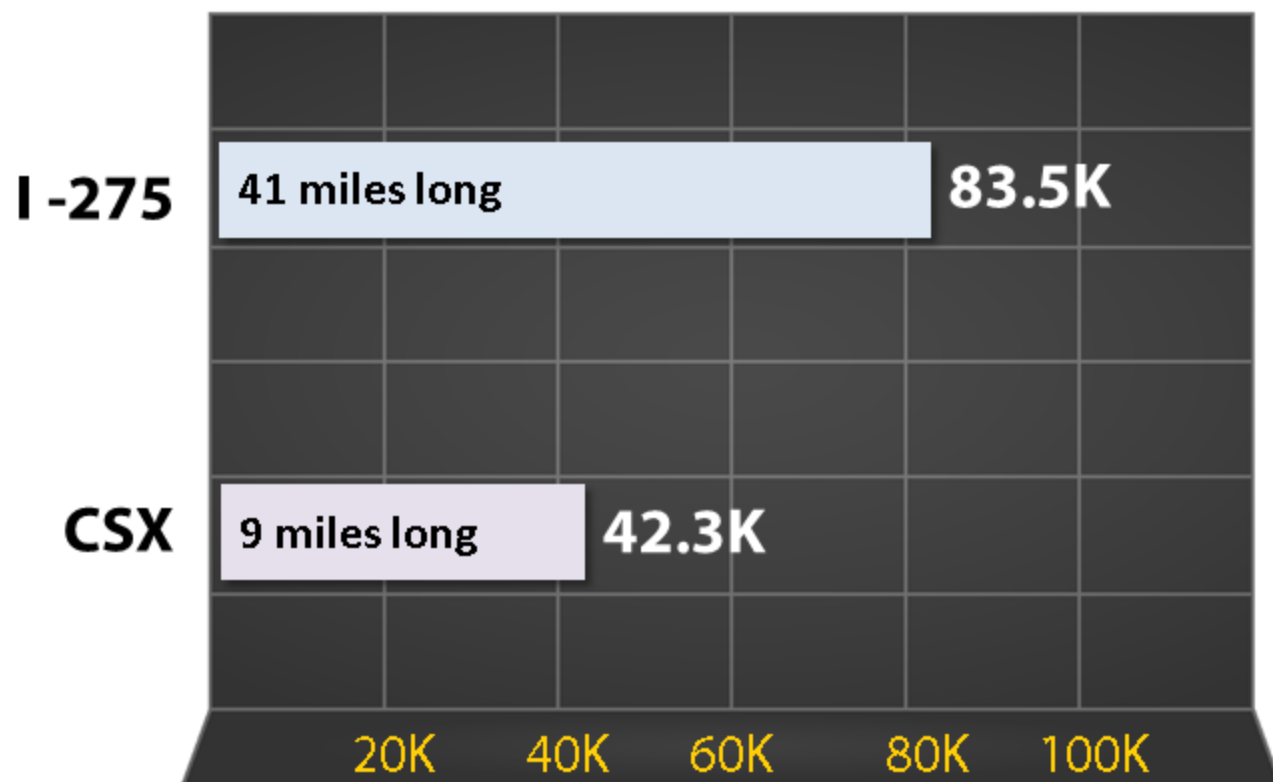
2017 ENVIRONMENTAL BENEFITS

2017 COST EFFECTIVENESS

STEP 3: EVALUATION RESULTS

2017 LAND USE:

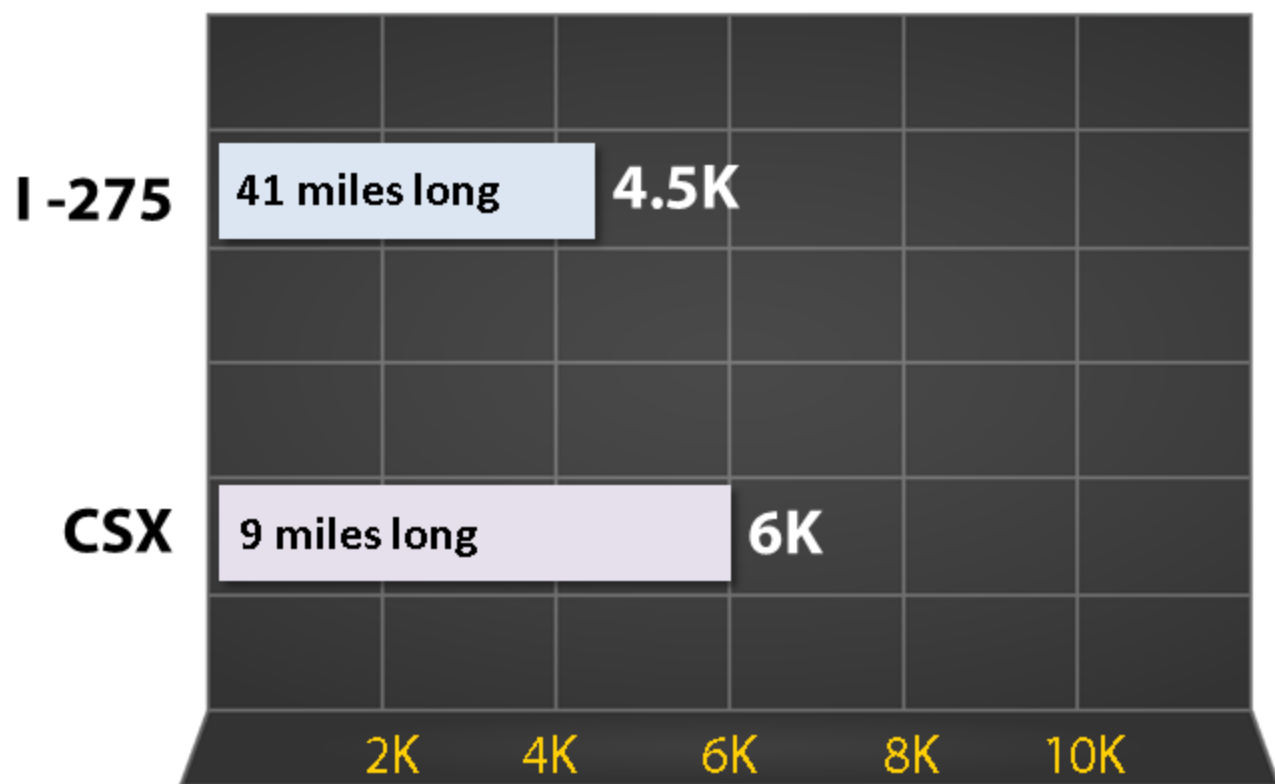
Total employees within ½ mile of corridor
(Per FTA guidance)



STEP 3: EVALUATION RESULTS

2017 LAND USE:

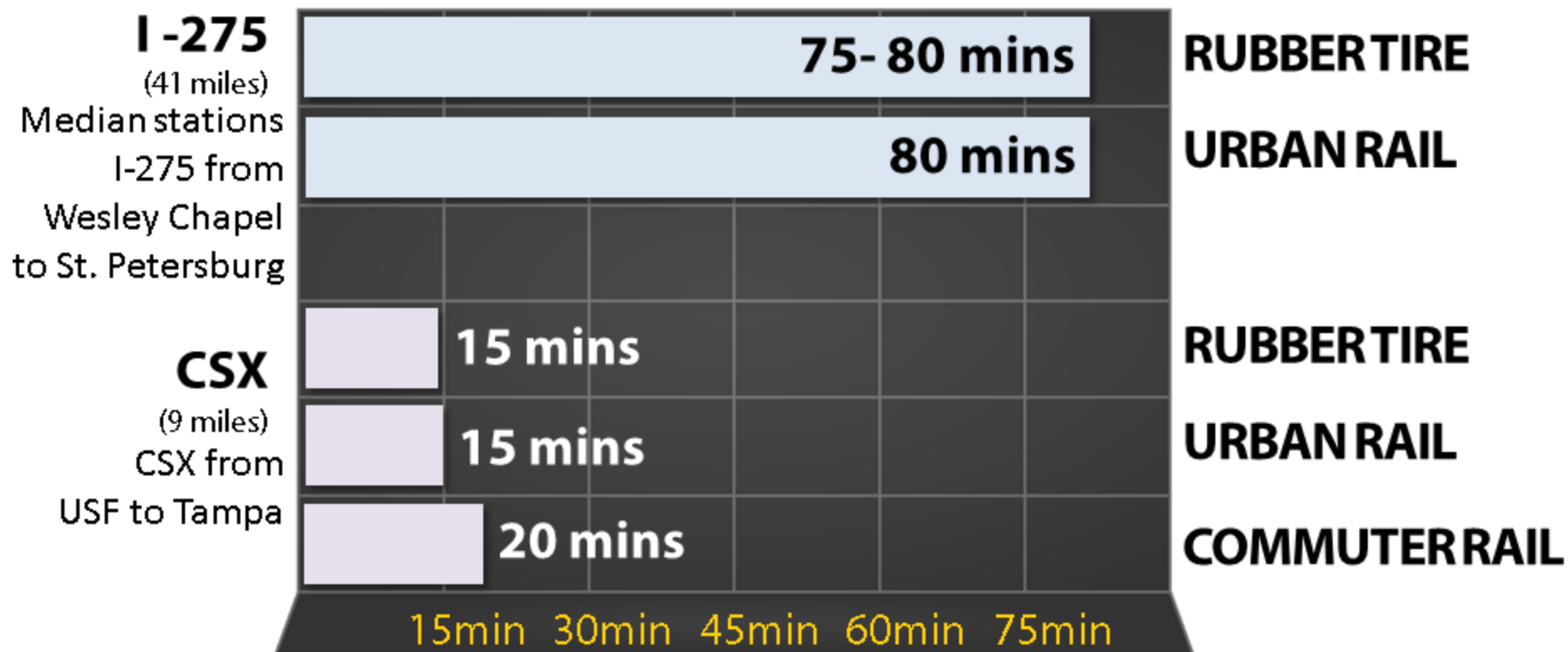
Station area population density
(persons/sq mi)



STEP 3: EVALUATION RESULTS

TRAVEL TIME

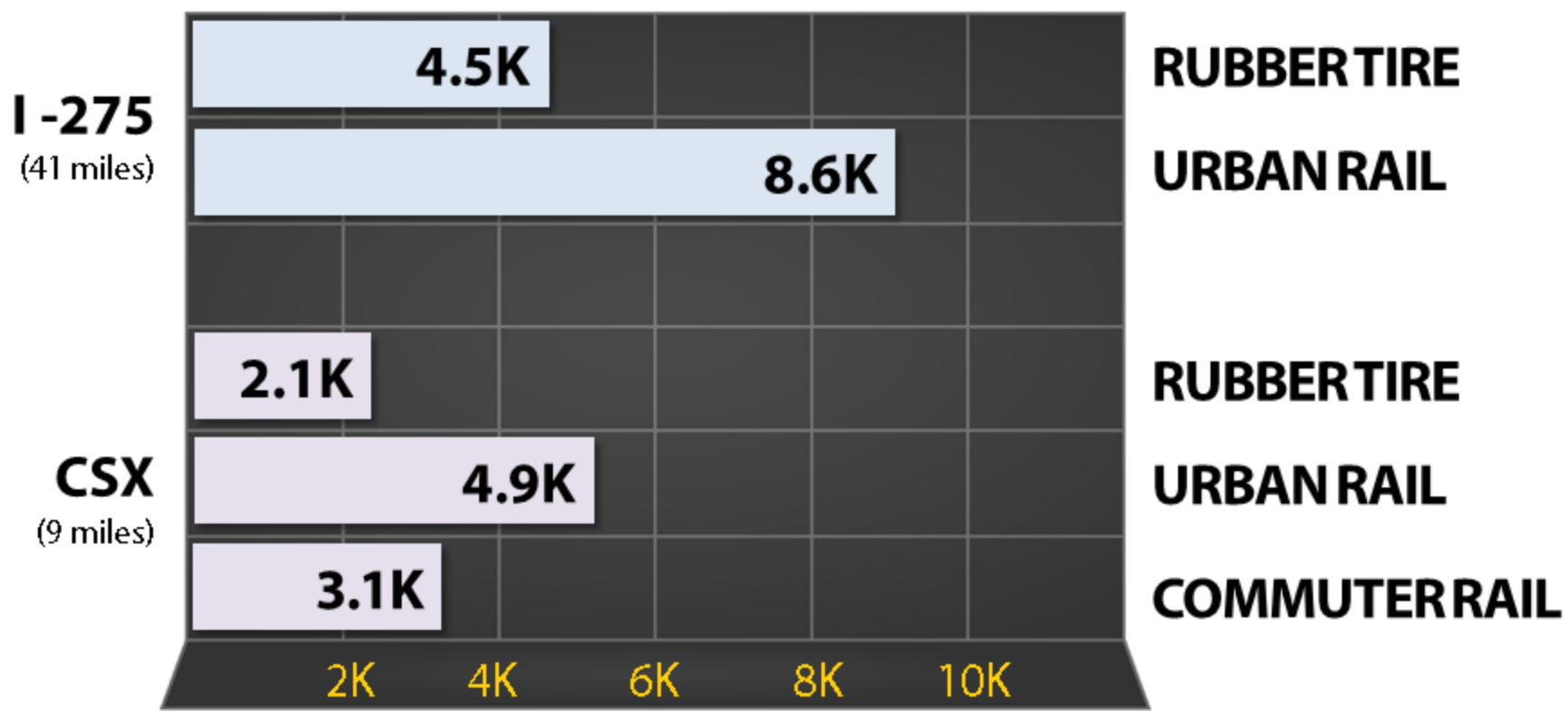
Assumes service arrive every 15 minutes
during peak commuter periods



STEP 3: EVALUATION RESULTS

2017 NEW RIDERS DAILY

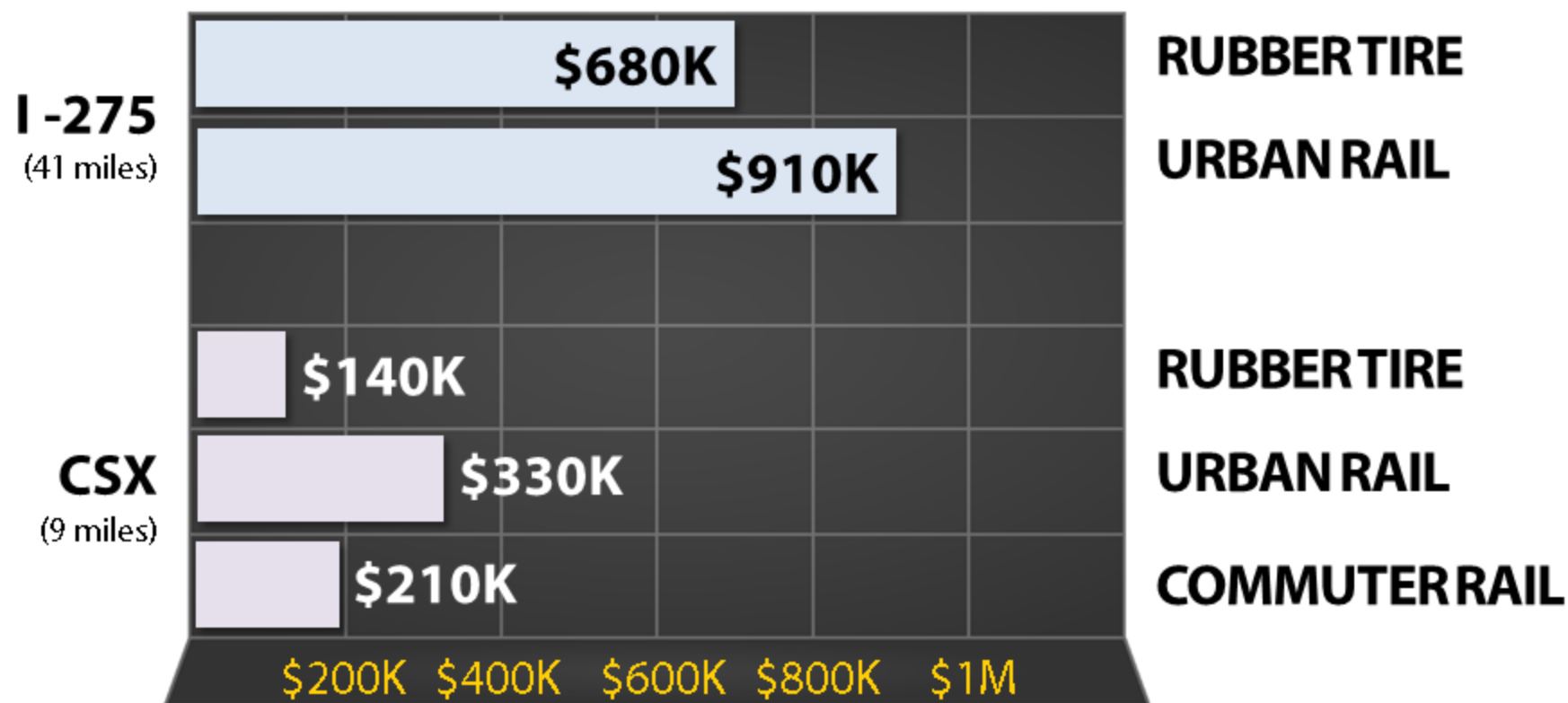
Using FTA STOPS model by mode



STEP 3: EVALUATION RESULTS

EMISSION COSTS SAVED

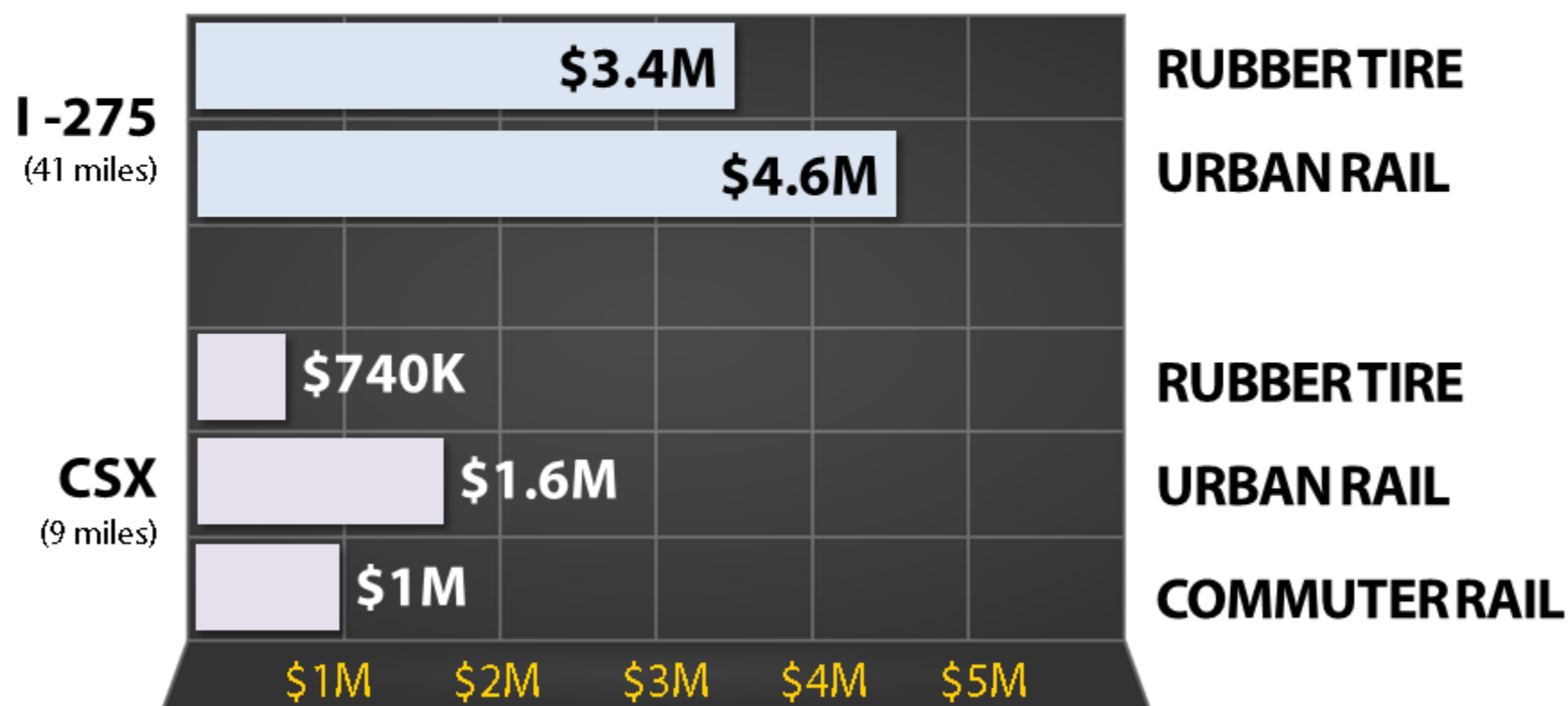
Annual emissions & greenhouse gas based on
VMT reductions (Source: FTA STOPS model)



STEP 3: EVALUATION RESULTS

COSTS OF CRASHES SAVED

Annual cost of accidents based on VMT reductions (Source: FTA STOPS model)

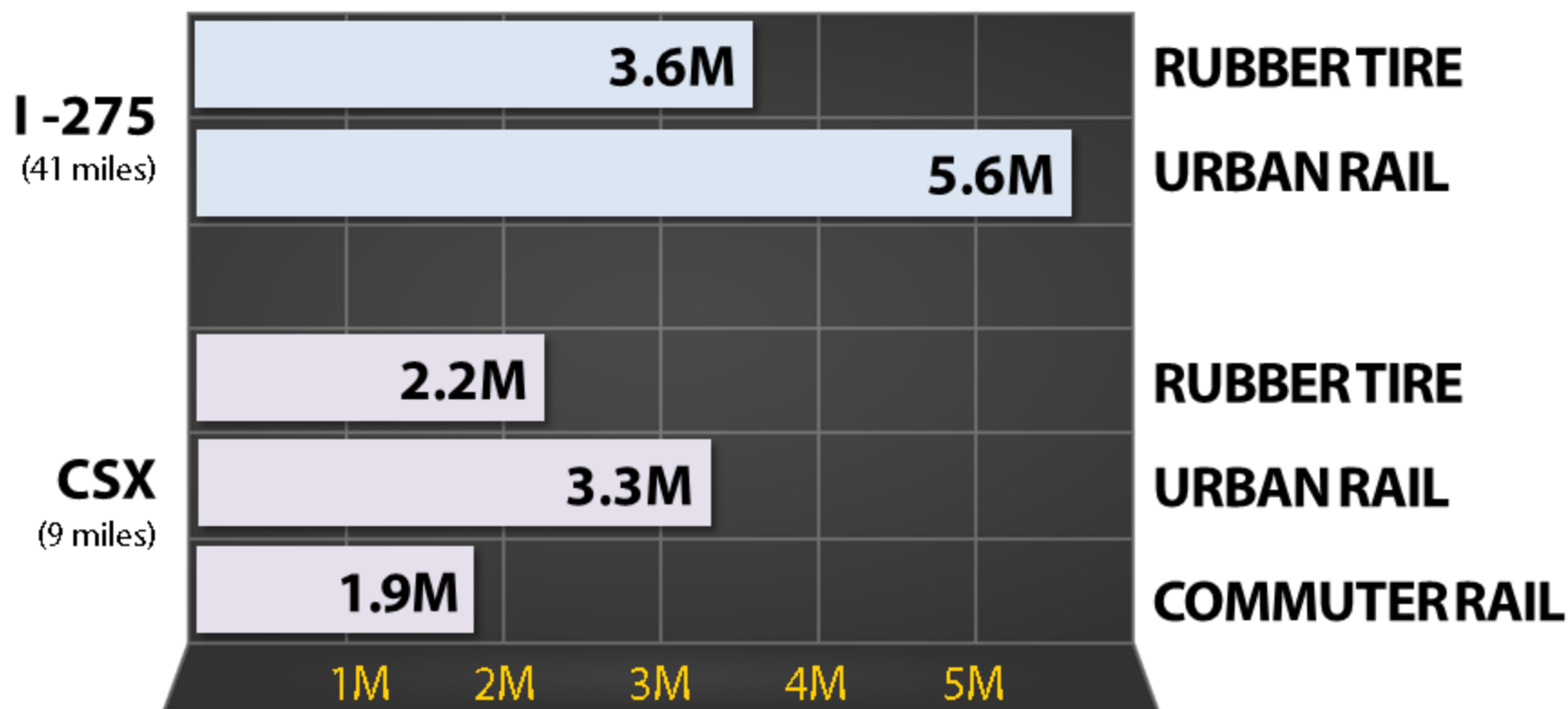


STEP 3: EVALUATION RESULTS

2017 ANNUAL RIDERSHIP

Using FTA STOPS model by mode

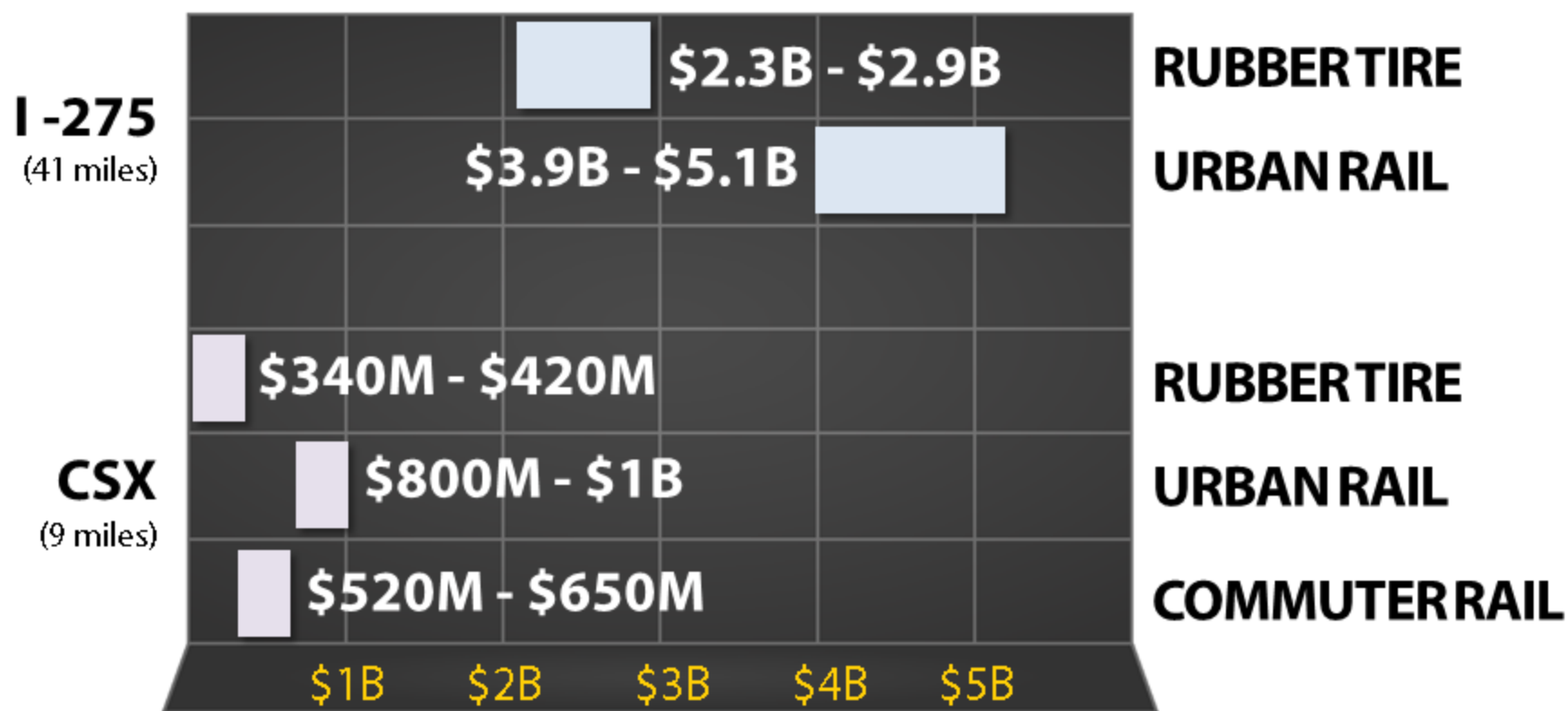
(Source: FTA STOPS model, weighted per FTA guidance)



STEP 3: EVALUATION RESULTS

2017 TOTAL PROJECT COST

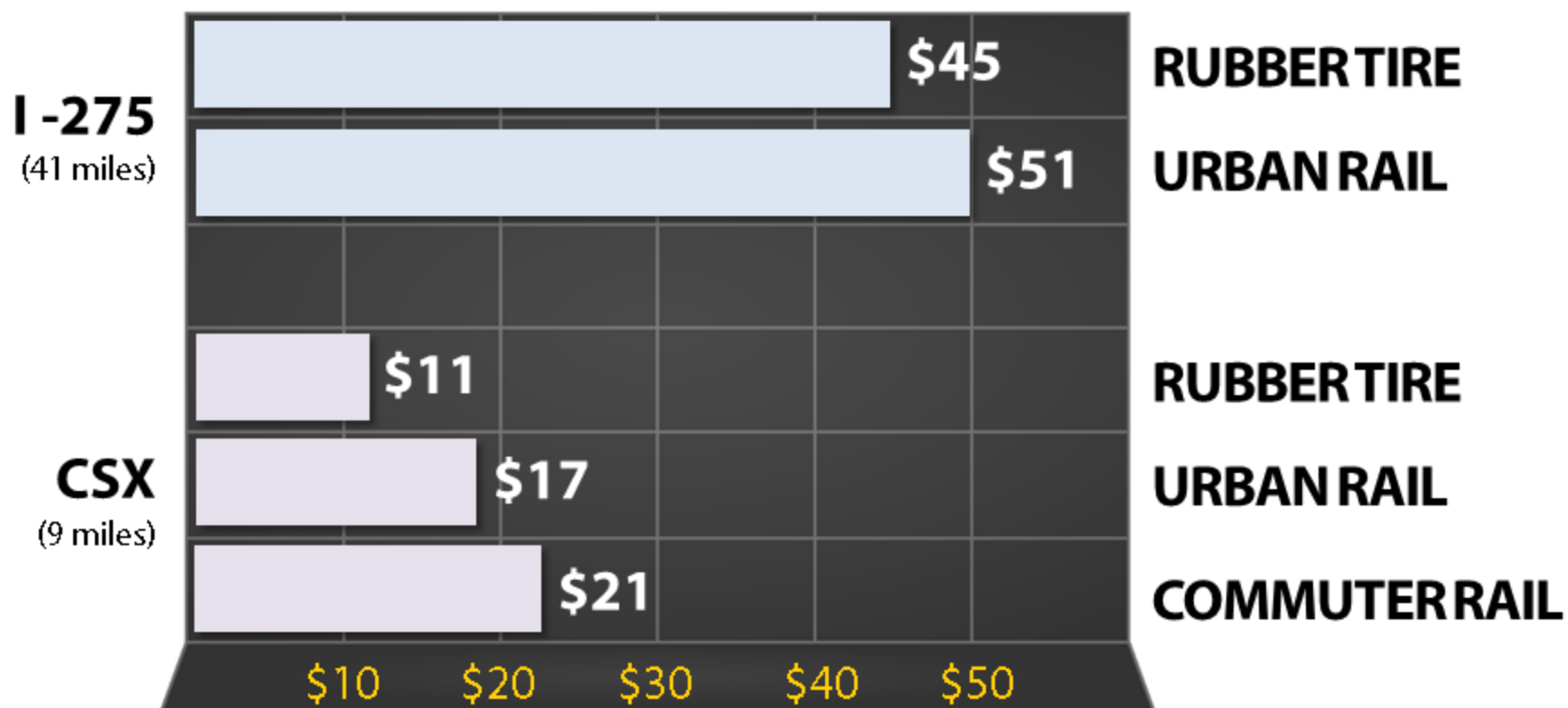
Assumes current year dollars with contingencies



STEP 3: EVALUATION RESULTS

2017 COST PER TRIP

Using FTA STOPS model by mode



COMPETITIVE FOR FEDERAL/STATE FUNDING



	I-275 RUBBER TIRE	I-275 URBAN RAIL
EMPLOYMENT AND POPULATION DENSITIES		
COST EFFECTIVENESS, COST PER TRIP		
MOBILITY		
NEW RIDERS, IMPACT ON CONGESTION		
ENVIRONMENTAL BENEFITS, ROI		
TOD POLICIES		

COMPETITIVE FOR FEDERAL/STATE FUNDING

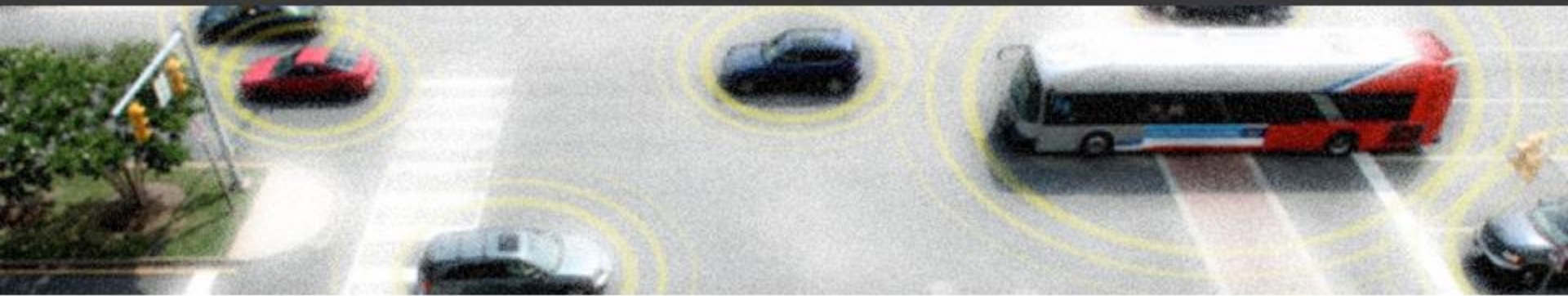


	CSX RUBBER TIRE	CSX URBAN RAIL	CSX COMMUTER RAIL
EMPLOYMENT AND POPULATION DENSITIES			
COST EFFECTIVENESS, COST PER TRIP			
MOBILITY			
NEW RIDERS, IMPACT ON CONGESTION			
ENVIRONMENTAL BENEFITS, ROI			
TOD POLICIES			



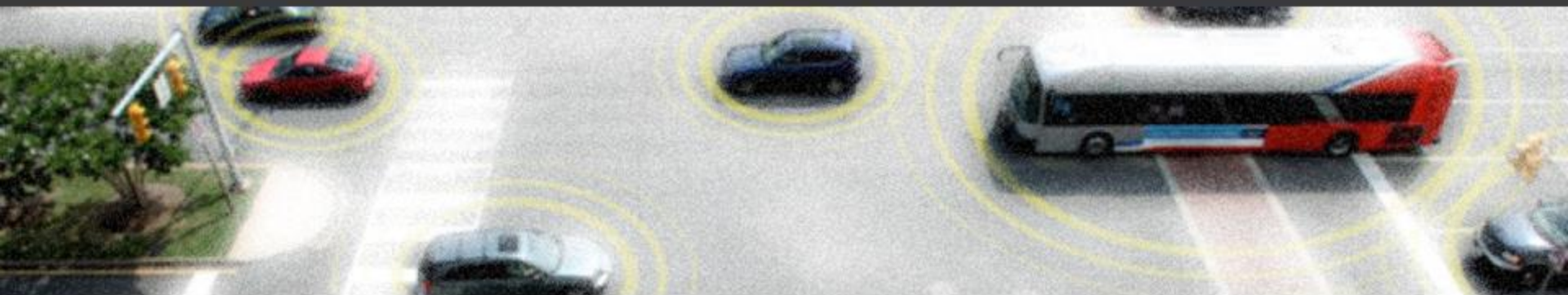
VALUE ENGINEERING

VALUE ENGINEERING: **PROJECT COSTS**



- Transit improvements within interstate
 - Requires transit project to shoulder burden of costs for structure, fill, noise walls, and other elements
 - Requires right-of-way if in median
- CSX costs include use/purchase of right-of-way and cost to “double track” entire corridor

VALUE ENGINEERING: **PROJECT COSTS**



How much capital investment does the ridership support?

$$\text{COST PER TRIP} = \frac{\text{Annual capital + operations}}{\text{Annual ridership}}$$

VALUE ENGINEERING: **PROJECT COSTS**

Competitive Capital Investment

I-275 RUBBER TIRE	~ \$520M
I-275 URBAN RAIL	~ \$740M
CSX RUBBER TIRE	~ \$390M
CSX URBAN RAIL	~ \$550M
CSX COMMUTER RAIL	~ \$105M

VALUE ENGINEERING: **PROJECT COSTS**

OPPORTUNITY TO REDUCE COSTS

How/Why

I-275 RUBBER TIRE	YES	Use existing roadway assets
I-275 URBAN RAIL	NO	Width of rail requires right-of-way and new structures
CSX RUBBER TIRE	NO	Requires additional right-of-way to co-operate with freight or removal of freight rail
CSX URBAN RAIL	YES	Use existing freight rail assets
CSX COMMUTER RAIL	NO	Already assumed to use existing freight rail assets



CONCEPTS

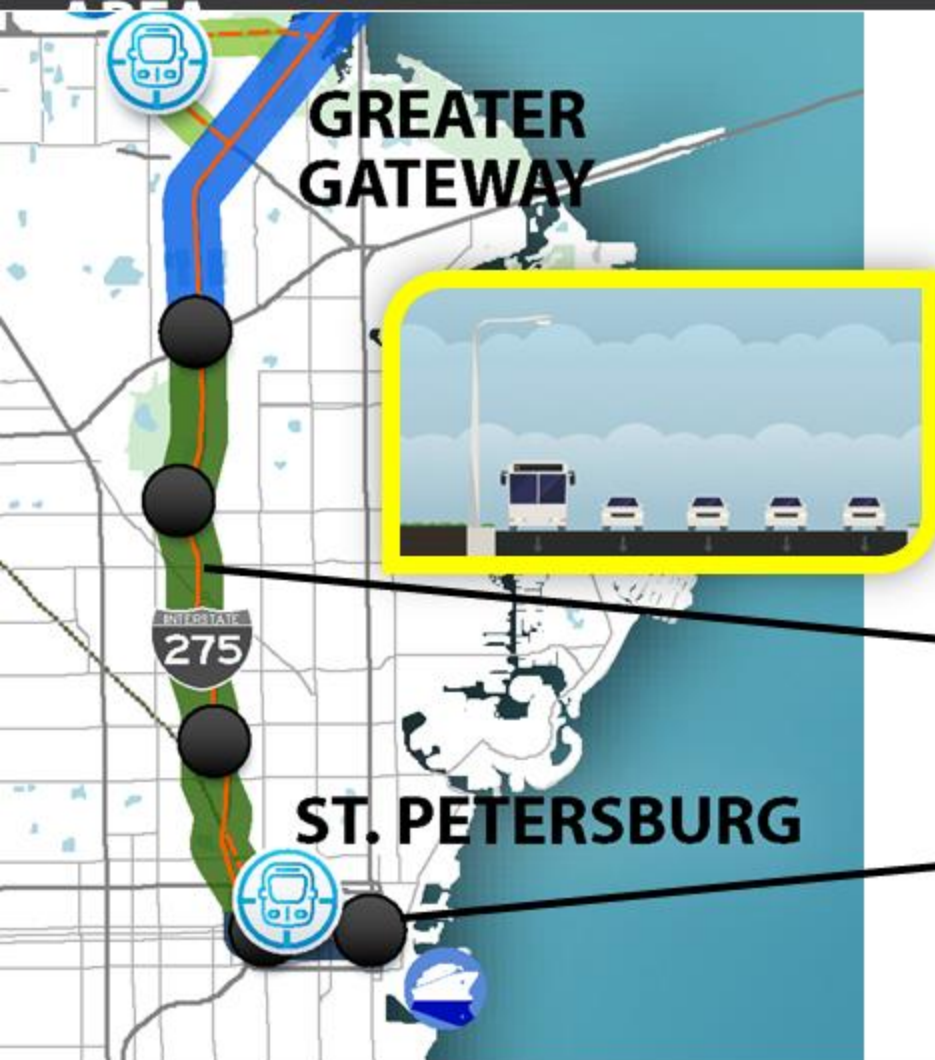
PROJECT CONCEPT: I-275 RUBBER TIRE



- Combination of shoulder running and median running transit lane, as well as mixed operations
- **NO RIGHT-OF-WAY NEEDED** (with the exception of stations)
- 21 total stations
- 80-95 minutes to travel from Wesley Chapel to St. Petersburg (assumes street level stations)

PROJECT CONCEPT: I-275 RUBBER TIRE

ST PETERSBURG TO GREATER GATEWAY



Stations:

- | | |
|--------------------------|------------------------|
| ■ 4 th Street | ■ 27 th Ave |
| ■ 8 th Street | ■ 62 nd Ave |
| ■ Tropicana Field | ■ Gateway |
| | ■ Carillon |

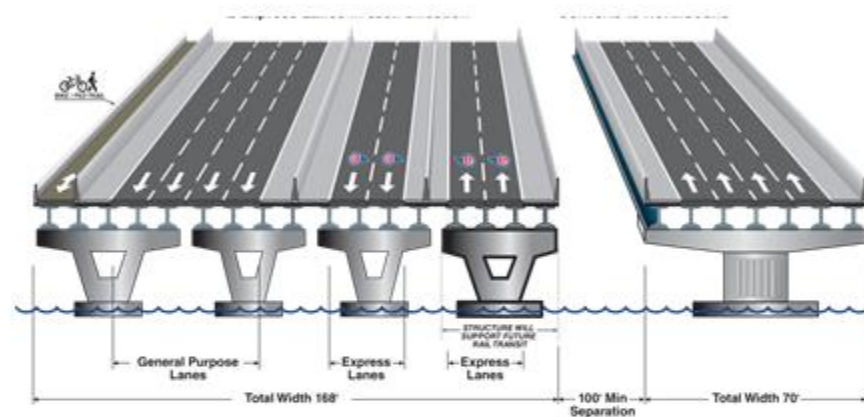
Dedicated transit lane on shoulder



Connect with PSTA Central Avenue BRT and use same lane

PROJECT CONCEPT: I-275 RUBBER TIRE

HOWARD FRANKLAND BRIDGE



Use planned improvement for bridge, significant transit project cost reduction

PROJECT CONCEPT: I-275 RUBBER TIRE

AIRPORT AND WESTSHORE



Direct connection to airport using planned SR 60 improvements

Connect to Westshore Intermodal Center

PROJECT CONCEPT: I-275 RUBBER TIRE

WESTSHORE TO TAMPA



Elevated Stations:

- Westshore
- Howard - Armenia

Street Level Stations:

- Himes
- North Blvd.
- Tampa



Use preserved transit corridor for median running dedicated transit lane

PROJECT CONCEPT: I-275 RUBBER TIRE

TAMPA



Opportunity to make Floribruska a transit only access point to interstate

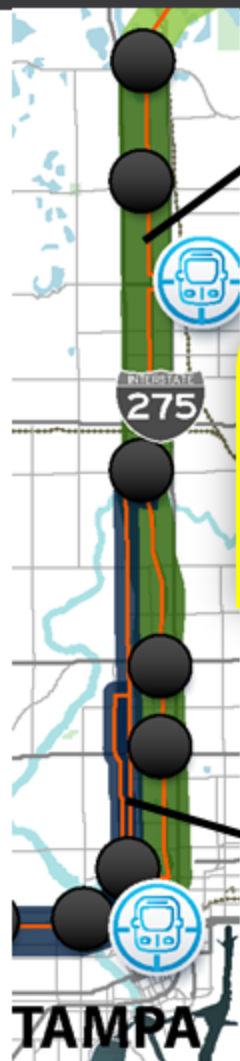


Connects with and could share a dedicated lane with City of Tampa Streetcar Extension

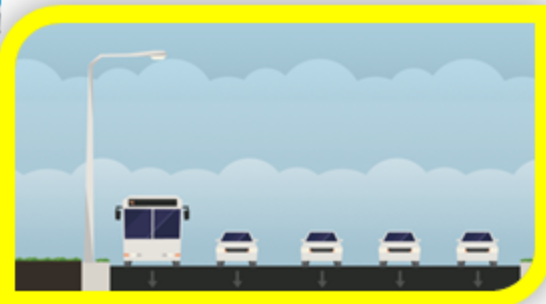
Dedicate a transit lane on Tampa and Florida

PROJECT CONCEPT: I-275 RUBBER TIRE

TAMPA TO WESLEY CHAPEL



Dedicated
transit lane
on shoulder



Connects
with Vision
54/56

Opportunity to continue
dedicated transit lane on
Tampa and Florida



PROJECT CONCEPT: I-275 RUBBER TIRE

TAMPA TO WESLEY CHAPEL



Stations:

- | | |
|----------------|------------|
| ■ Tampa | ■ Waters |
| ■ Floribraska | ■ Fowler |
| ■ MLK | ■ Bearss |
| ■ Hillsborough | ■ SR 54/56 |
| | ■ SR 54 |



PROJECT CONCEPT: I-275 RUBBER TIRE

SHOULDER RUNNING DEDICATED TRANSIT LANE

Serves Three Counties

COST

I-275 END TO END MEDIAN
RUNNING RUBBER TIRE

\$2.3B- \$2.9B

I-275 SHOULDER RUNNING
CONCEPT

\$1.3B- \$1.6B

I-275 SHOULDER RUNNING
CONCEPT INTEGRATED WITH
FUTURE INTERSTATE
MODERNIZATION PLANS

\$380M - \$455M



Source: Sweden, Super Bus, Wikipedia



Source: Las Vegas, MAX BRT, Wikipedia

PROJECT CONCEPT: I-275 RUBBER TIRE

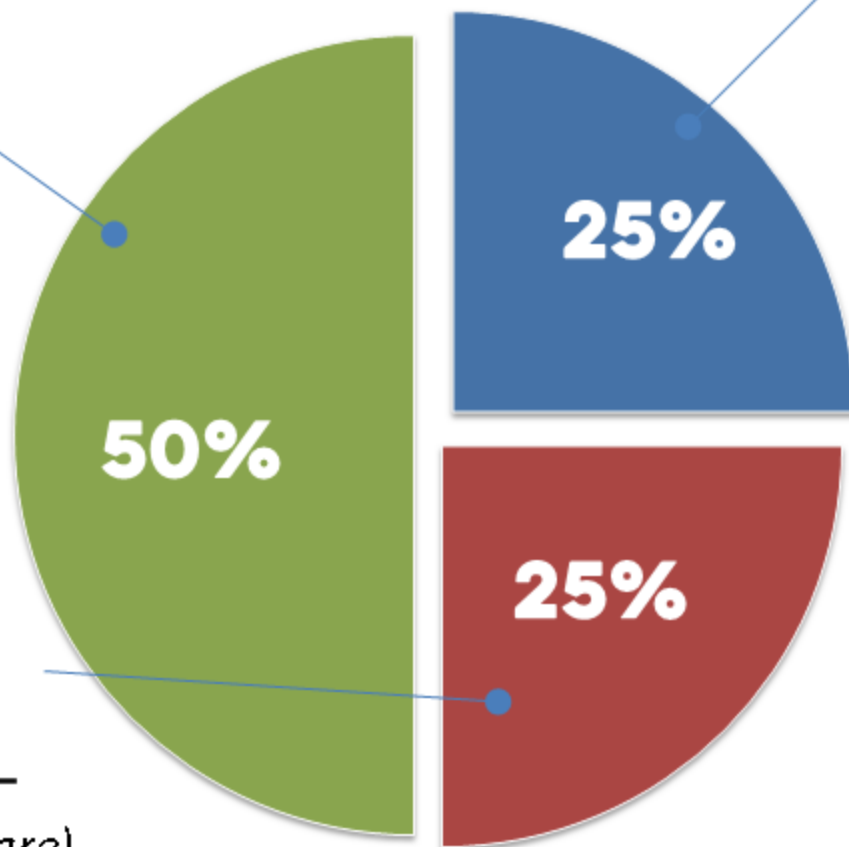
ANNUAL COST BREAKDOWN

\$2.7M-\$3.3M

FEDERAL
CAPITAL
(FTA Capital
Investment Grant
Program)

\$1.3M-\$1.6M

STATE CAPITAL
(match of local share)



\$1.3M-\$1.6M

LOCAL CAPITAL

\$7M

LOCAL OPERATING

\$8.3M-\$8.6M

TOTAL ANNUAL
COST FOR THREE
COUNTIES

PROJECT CONCEPT: **CSX URBAN RAIL**



Electric or Diesel Multiple Unit

Stations:

- Tampa
- 21st Street
- MLK
- Hillsborough
- Waters
- Fowler



Germany (Courtesy of Bombardier)



New Jersey
(upload.wikimedia.org/wikipedia/commons/8/80/Gtw_riverline.JPG)



Texas (By Michael Barera, CCBY-SA 4.0, <https://commons.wikimedia.org>)

PROJECT CONCEPT: **CSX URBAN RAIL**

Diesel Multiple Unit

Uses existing freight rail corridor

COST

DOUBLE TRACKED URBAN RAIL	\$800M - \$1B
DMU SINGLE TRACK WITH SIDINGS	<u>\$490M - \$620M</u>



Germany (Courtesy of Bombardier)



France (www.rail-pictures.com))



Texas (By Michael Barera, CC BY-SA 4.0, <https://commons.wikimedia.org>)

PROJECT CONCEPT: CSX URBAN RAIL

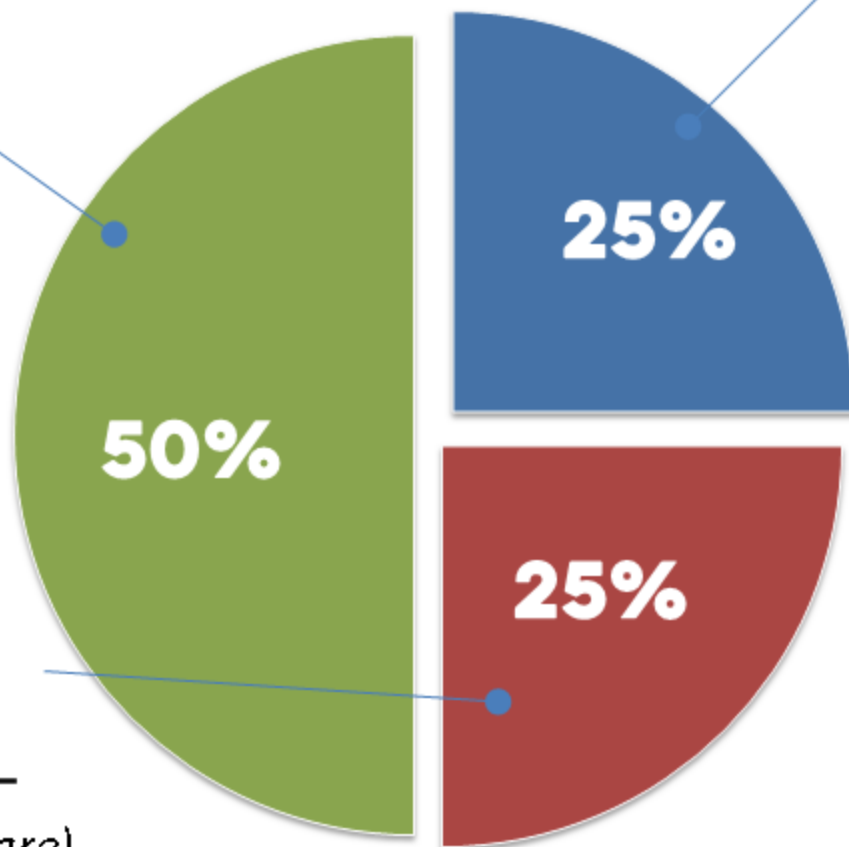
ANNUAL COST BREAKDOWN

\$7.7M-\$9.2M

FEDERAL
CAPITAL
(FTA Capital
Investment Grant
Program)

\$3.6M-\$4.6M

STATE CAPITAL
(match of local share)



\$3.6M-\$4.6M

LOCAL CAPITAL

\$12M

LOCAL OPERATING

\$15.6M-\$16.6M

TOTAL ANNUAL
COST FOR
HILLSBOROUGH
COUNTY



CATALYST

CATALYST: **RECOMMENDATION**

		I-275 SHOULDER RUNNING RUBBER TIRE	CSX URBAN RAIL
COMPETITIVE FOR FEDERAL AND STATE FUNDS	CATALYST	YES	YES
COST PER TRIP		\$8-\$10	\$11-\$13
TOTAL COST		\$380M - \$455M	\$490M - \$620M
NEEDS RIGHT-OF-WAY		NO (EXCEPT FOR STATIONS)	YES (CSX CORRIDOR)
TIME TO CONSTRUCT		5 YRS	10 YRS

CATALYST RECOMMENDATION

GOLD STANDARD ASPIRATIONS



Institute for Transportation
& Development Policy



Source: Las Vegas MAX BRT, EricWeber-flickr

CATALYST RECOMMENDATION

LOOKS LIKE A TRAIN



Source: Metz, France METTIS BRT system, Wikipedia user Occitandu34

CATALYST RECOMMENDATION

AS FAST AS A TRAIN



Source: Metz, France METTIS BRT system, Wikipedia user Agora midr

CATALYST RECOMMENDATION

PASSENGER AMENITIES



Source: Mexico City, Institute for Transportation & Development Policy

CATALYST RECOMMENDATION

BYPASSES CONGESTION



METROLINX | VIVANEXT

A Metrolinx vivaNext Project

CATALYST RECOMMENDATION

MUCH LESS COST



Source: Alstom manufacturer, i.pinimg.com

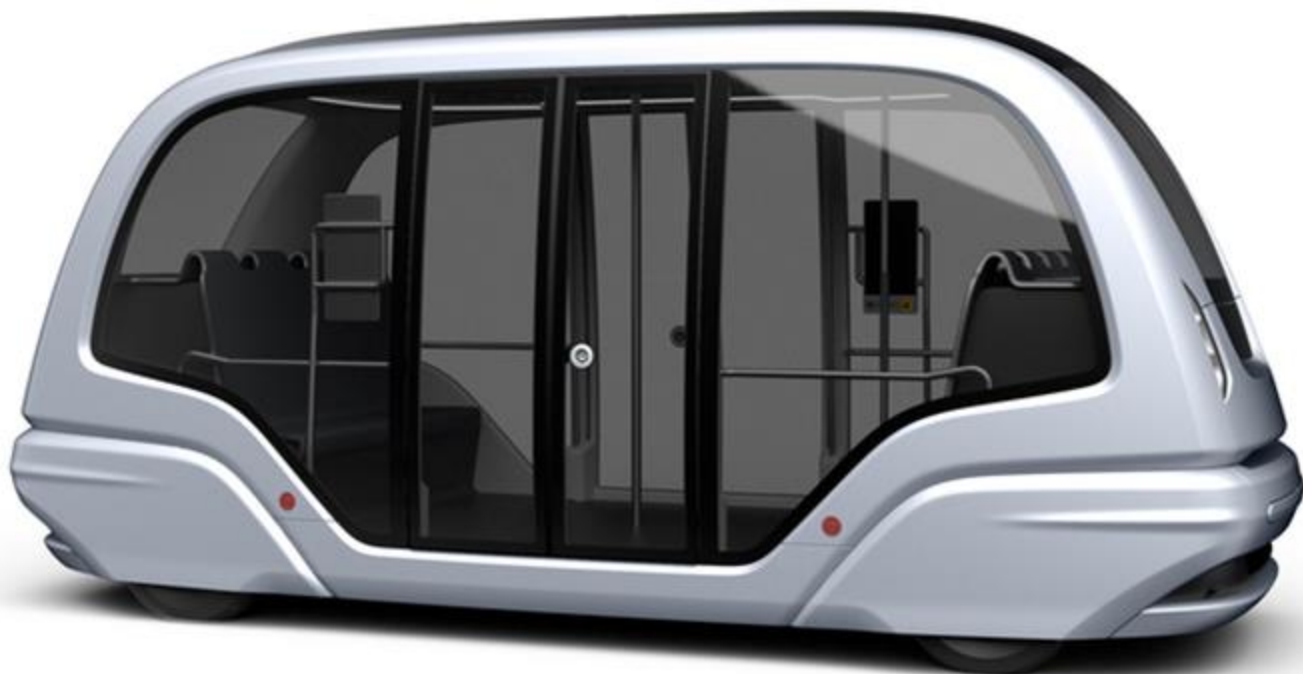
CATALYST RECOMMENDATION

INVEST IN STATIONS

Source: Orange Line Minneapolis Lake Station Concept

CATALYST RECOMMENDATION

INVEST IN THE FUTURE

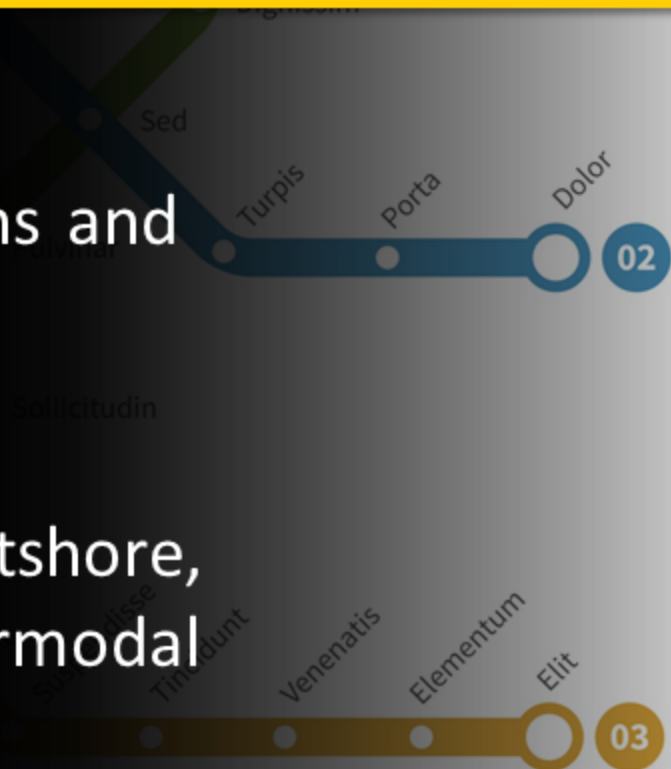


Source: 2GetThere

CATALYST RECOMMENDATION

SUPPORTS AND NEEDS SUPPORT FROM LOCAL SERVICES AND PLANS

- PSTA Central Avenue BRT
- City of Tampa Streetcar Extensions and Modernization
- USF and Westshore Circulators
- Wesley Chapel, USF, Tampa, Westshore, Gateway, and St. Petersburg Intermodal Centers Study



CATALYST RECOMMENDATION

A GREAT START



Source: Rio, TransCarioca RPT, World Resources Institute

CATALYST RECOMMENDATION

Does not replace other future transit project needs

Would benefit from a higher investment in local transit

Supports the development of a Regional Transit Network

CATALYST RECOMMENDATION

Highly visible start to a modern transportation system

Unique opportunity

Feasible and implementable in approximately 5 years



INPUT

TMA INPUT

What are the key pieces of information that need to be brought to the public's attention?

What questions should we ask the public over the next 6 months?



Regional Transit Feasibility Plan

A ROUTE MAP TO IMPLEMENTATION

UPCOMING MILESTONES



- January 19 TMA Leadership Group Meeting
- January 26 TBARTA Board Meeting
- February start for Community Vetting of Draft Plan
- Late spring regional forum
- Early fall regional forum