

ANNAPOLIS TRANSIT PROPOSAL



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PRESENTATION OUTLINE

1.Introduce problem statement

2.Evaluate existing transit options

3.Proposed alternative

4.Maryland Statewide Transportation Model

5.Evaluation of alternative

6.Costs

7.Conclusion/Recommendations



PROJECT GOAL

- Coincides with AA County Transportation Commission Mission Statement
- Connect the city of Annapolis to BWI and Arundel Mills by providing cost effective, safe, and efficient transportation to improve quality of life.



ANALYSIS OF EXISTING MODES- ROUTE 215

ROUTE 215- COMMUTER BUS FROM BWI TO ANNAPOLIS

3 BUSES IN THE MORNING STARTING AT 5:45AM WITH A HEADWAY OF 1 HOUR FROM BALTIMORE TO ANNAPOLIS ONE WAY

3 BUSES IN THE MORNING STARTING AT 3:17PM WITH A HEADWAY OF 1 HOUR FROM ANNAPOLIS TO BALTIMORE

ANNAPOLIS>CROMWELL>BWI

ONE WAY FARE=\$6.70 INCLUDING LIGHT RAIL FARE

TOTAL TRIP TIME FOR PASSENGER=~60 MINUTES ASSUMING NO WAIT TIME FOR BUS

ANALYSIS

ONLY CONVENIENT FOR PEOPLE WHO HAVE FLIGHTS THAT ARRIVE VERY EARLY IN THE MORNING OR DURING THE AFTERNOON DURING RUSH HOUR

HEADWAY IS RELATIVELY LONG, AND THE FARE IS HIGH

ANALYSIS OF EXISTING MODES- ROUTE 014

ROUTE 014- ANNAPOLIS TO BWI

RUNS 7 DAYS A WEEK FROM 5AM-12AM

FARE \$3.40 INCLUDING LIGHT RAIL FARE

ANNAPOLIS>CROMWELL>BWI

TOTAL TRIP TIME INCLUDING LIGHT RAIL = ~1.5 HOURS

HEADWAY IS 20 MINUTES

ANALYSIS

CHEAP FARE

SHORT HEADWAY

ANALYSIS OF EXISTING MODES- ROUTE 017

ROUTE 017- BWI TO ARUNDEL MILLS

OPERATION HOURS: 24/7

FARE \$1.70

TOTAL TRIP TIME FROM BWI TO ARUNDEL MILLS = ~28 MINUTES

TOTAL TRIP TIME FROM ANNAPOLIS TO ARUNDEL MILLS = ~2 HOURS

HEADWAY

WEEKDAY PEAK	22 MINUTES
WEEKDAY OFF PEAK	1 HOUR 10 MINUTES
WEEKEND	1 HOUR

ANALYSIS

CHEAP FARE, HEADWAY CAN BE LONG DEPENDING ON WHEN YOU ARE TRAVELING

PROPOSED ROUTE

FIXED TRANSIT BUS ROUTE

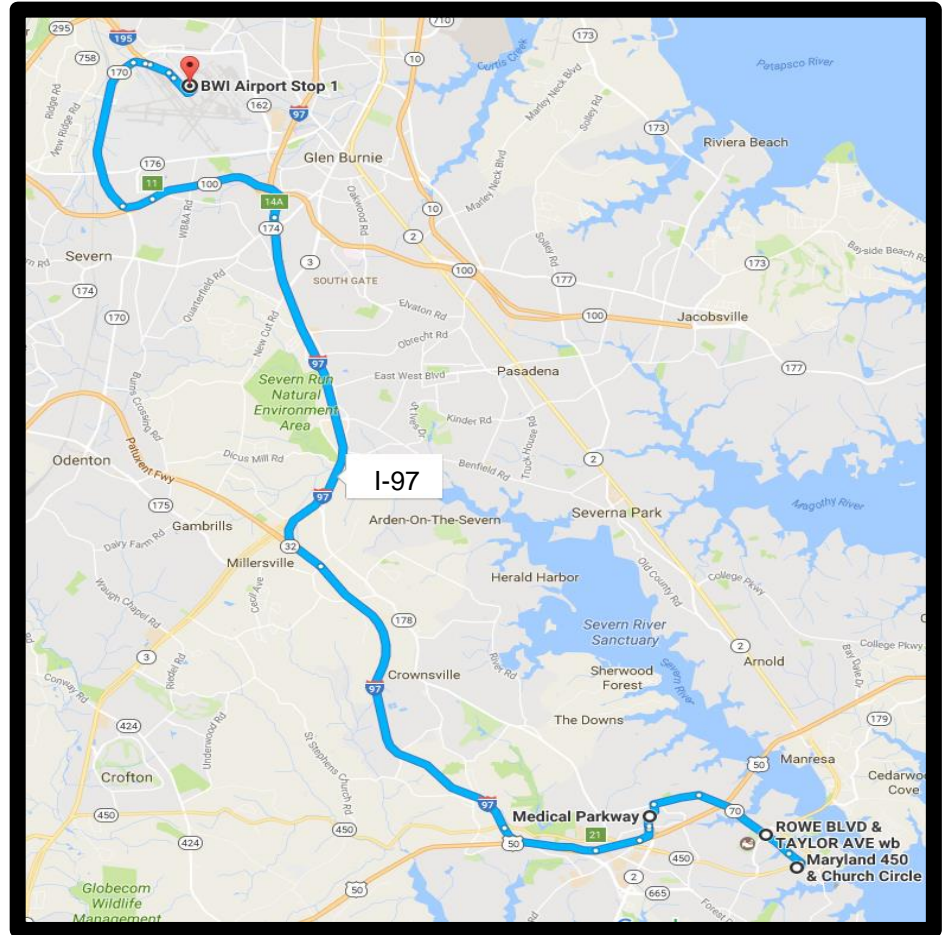
FOUR STOPS:

MD 450 & CHURCH CIRCLE

ROWE BLVD & TAYLOR AVE

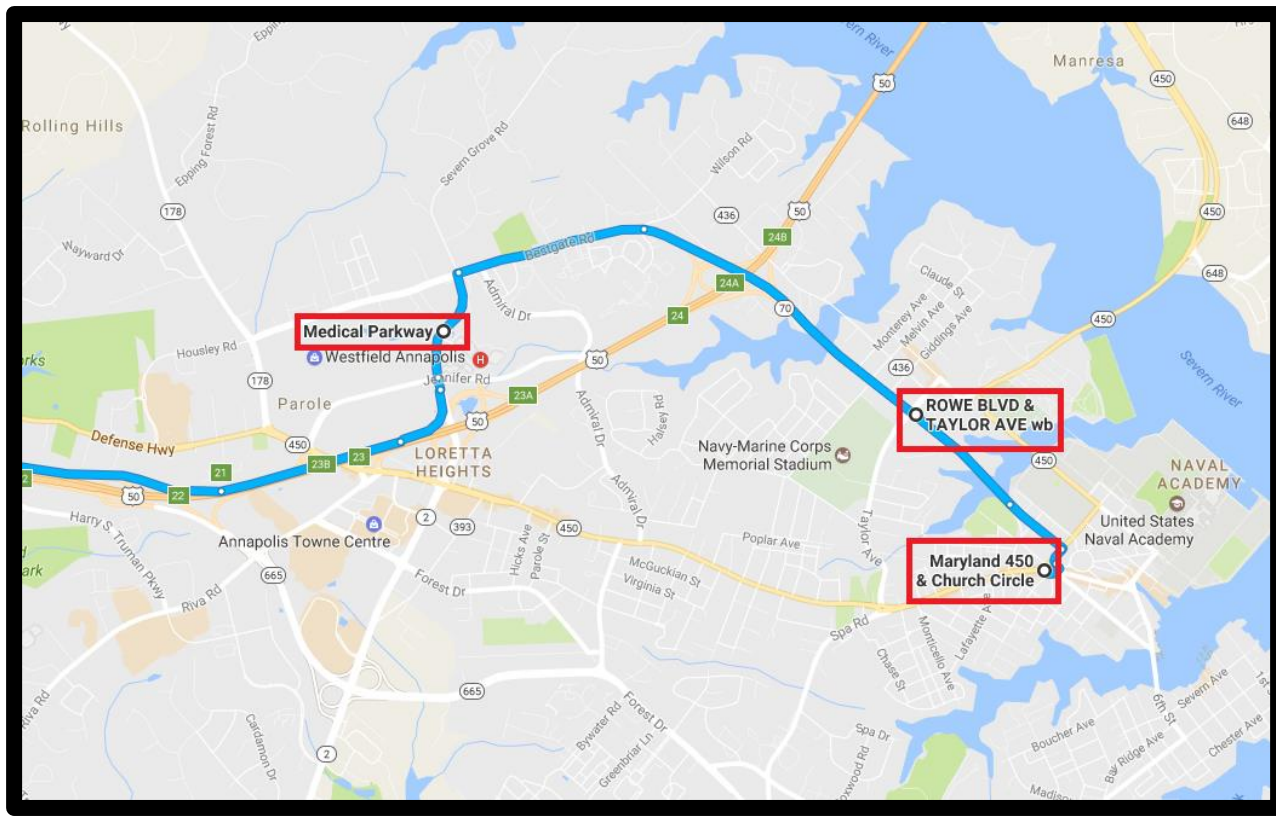
MEDICAL PARKWAY

BWI AIRPORT



PROPOSED ROUTE

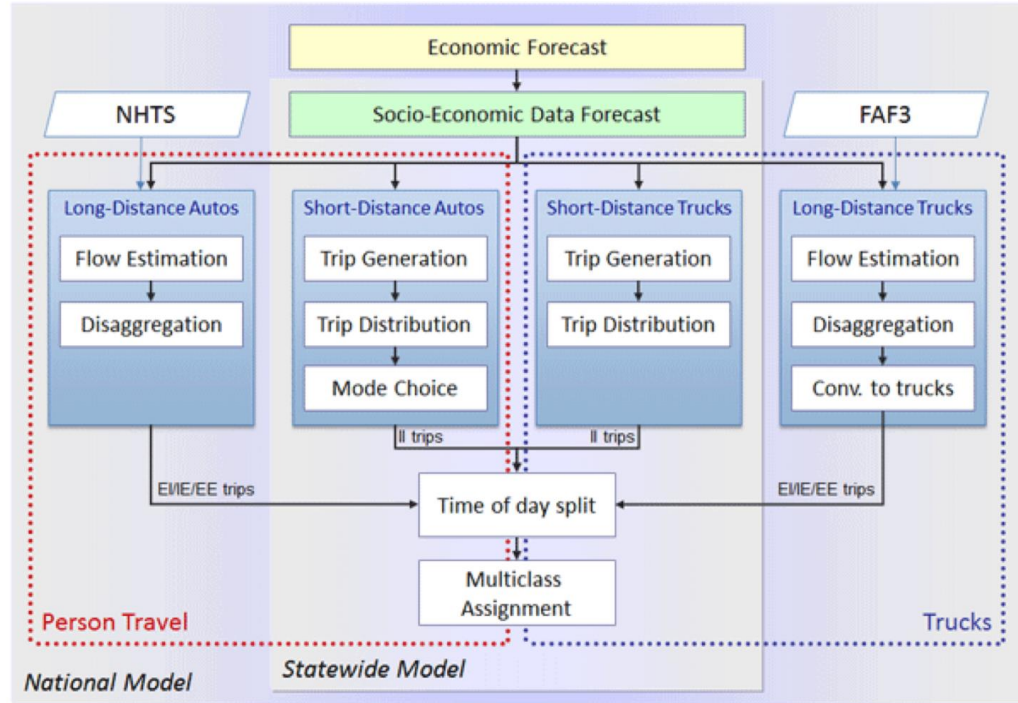
STOPS IN CITY OF
ANNAPOLIS



PROPOSED ROUTE

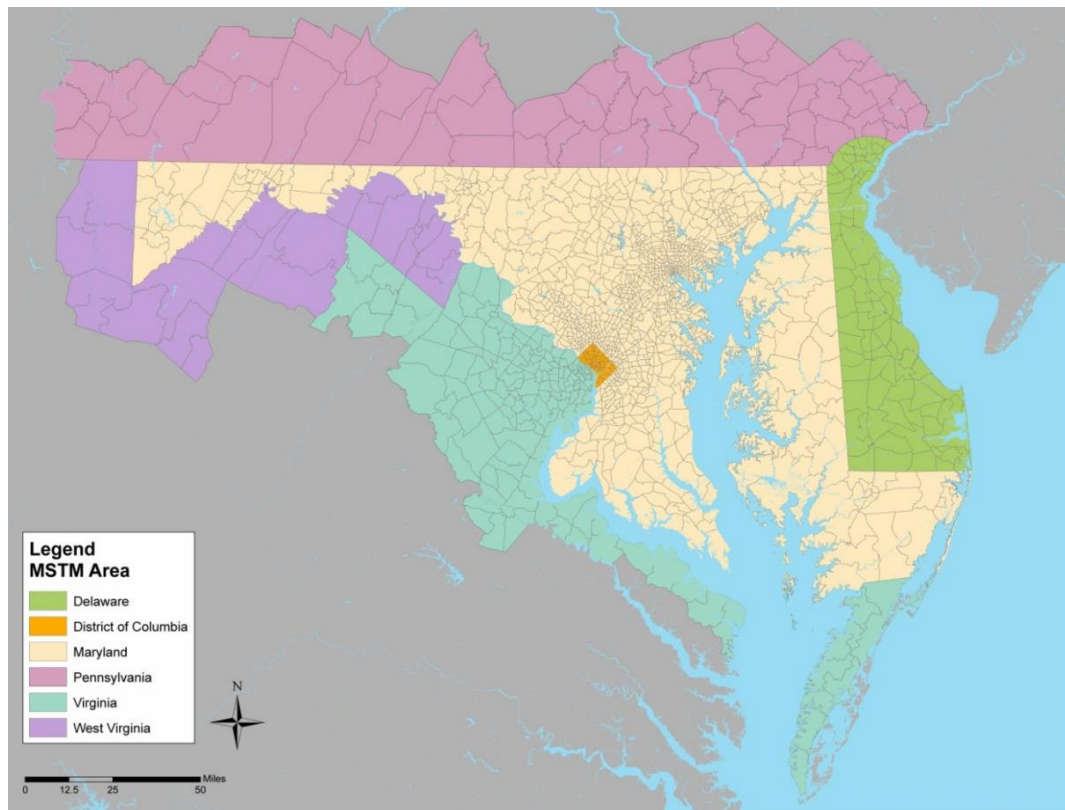
- One Way Trip: 40-45 minutes
- Operating Cost per average week day is 338\$/day.
- Optimal spacing is 0.27 miles
- Headway - 10 minutes

MARYLAND STATEWIDE TRANSPORTATION MODEL (MSTM)



MSTM PEAK PERIOD: 3:30 PM TO 6:30 PM

MARYLAND STATEWIDE MODEL TRANSPORTATION (MSTM)



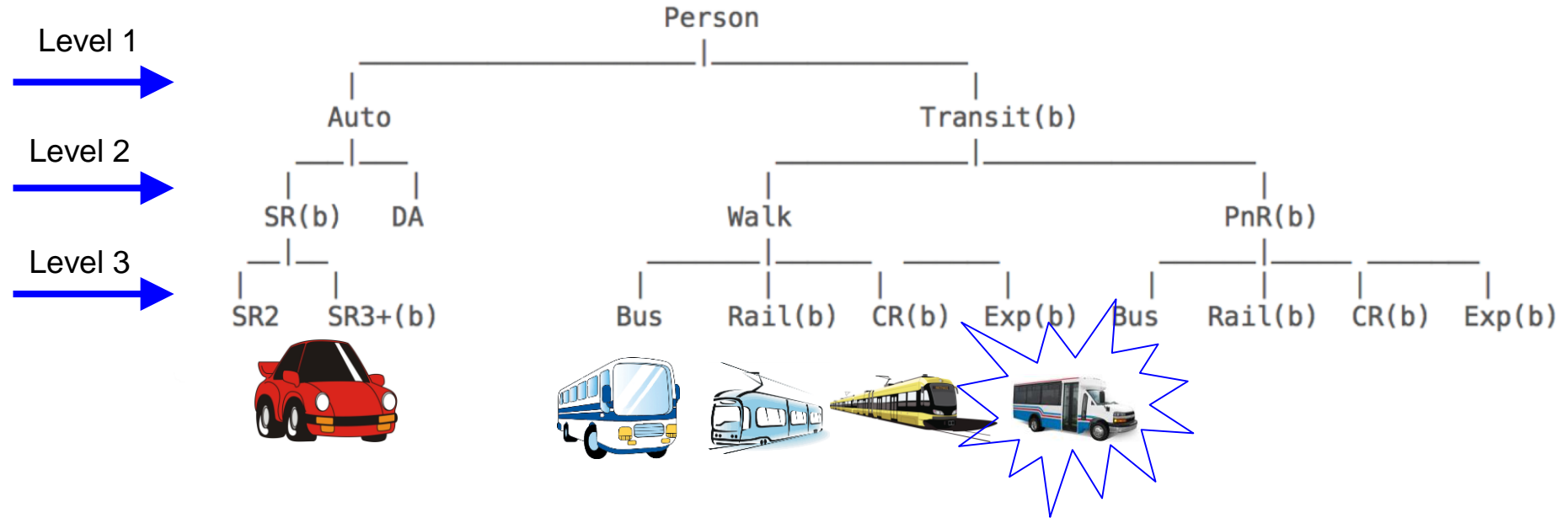
State	SMZ (Statewide Model Zone)
MD	1151
VA	171
PA	55
WV	30
DE	97
DC	84
Total	1588

Anne Arundel County SMZ - 111 to 217



MSTM (MODE CHOICE)

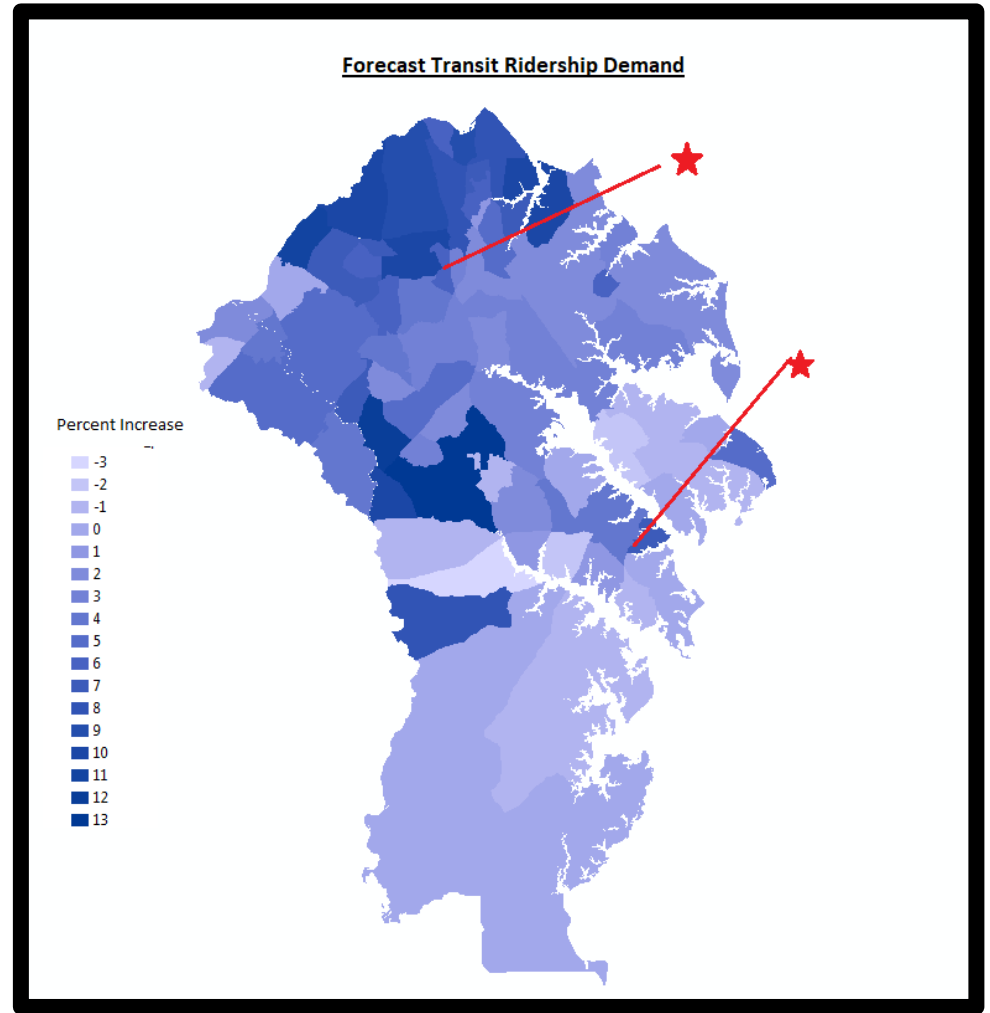
Levels of Mode Choice - Utilize Nested Logit Model



RESULTS/ ANALYSIS OF PROPOSED ROUTE

Evaluating Route:

- Changed In Transit Ridership Demand
- 7% Increase Annapolis
- 9% Increase BWI



RESULTS/ ANALYSIS OF PROPOSED ROUTE

Vehicle Selection

Demand requires 13-25 seats

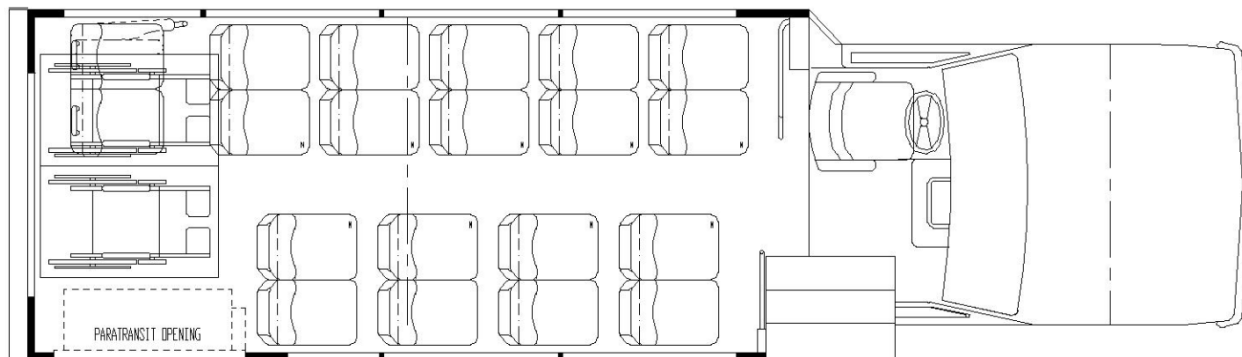
Champion Defender F550-RL

20 seats, can accommodate 2 wheelchairs

\$121,700



DEFENDER F550



DF 281 R/L F-550
189.0" W/B
(20) PASSENGERS & (2) W/C'S

RESULTS/ ANALYSIS OF PROPOSED ROUTE

Amenities

Shelter

Bench

Trash Receptacle

Route or Patron

Information

Vending Machines

(Newspaper)

At All Stops:

- Route info regarding getting to Arundel Mills

West St. and Church Circle:

- Bench closer to bus stop

Rowe Blvd and Taylor Avenue:

- Provide bench at bus stop
- Provide trash receptacle

Medical Pkwy:

- Provide bench at bus stop
- Provide trash receptacle

RESULTS/ ANALYSIS OF PROPOSED ROUTE

Reliability

11 buses

10 min or less waiting time

Overlap of buses

Environmental Impacts

Ridership increases of 7%, 4%,
and 13% along our bus route by
2040

Emission reductions

20% as much carbon monoxide per
passenger mile as a single-
occupant auto (SOA)

10% as many hydrocarbons per
passenger mile as a SOA

75% as many nitrogen oxides per

CONCLUSION & RECOMMENDATION

Headway: 10 min

Fleet Size: 11 buses

Round Trip: 1 h 22 min

Forecasted increase in Transit ridership

Total Operating Cost: \$123,370

PICTURE SOURCES

http://www.transitfacts.com/light_rail.php

<http://www.stopthefrackattack.org/buses-2/>

<http://www.championbus.com/models/crusader/>

<http://www.istockphoto.com/nl/illustrations/light-rail-transit>

<http://www.annapolis.org/>

<http://www.jmt.com/project-portfolio/bwi-airport-terminal-bc-and-concourse-c/>

ACADEMIC SOURCES

Commercial Truck Trader. (n.d.). CHAMPION buses For Sale - 20 Listings - Page 1 of 1. Retrieved May 4, 2017, from <http://www.commercialtrucktrader.com/Champion-bus-For-Sale/search-results?category=bus|2000551&make=CHAMPION|101609516>

Fitzpatrick, K., Hall, K., Perkinson, D., Nowlin, L., & Koppa, R. (1996). Guidelines for the location and design of bus stops. *Transit Cooperative Research Program Report, 19*.

Yang, D. (Writer). (2015, August 4). *Maryland Statewide Transportation Model, SESYNC Workshop*.