

C. Greater Triangle Commuter Rail Study



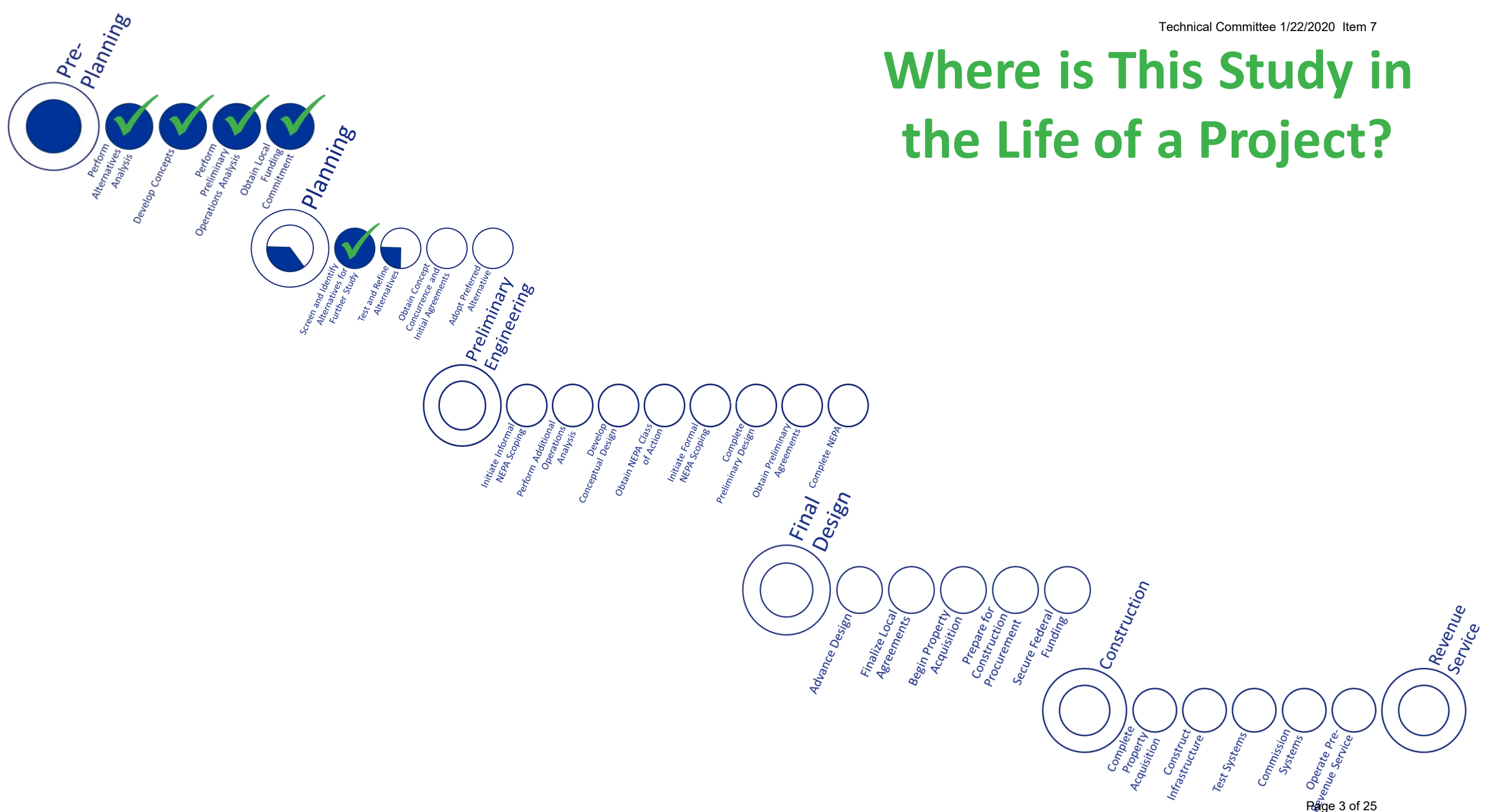
Update of Alternatives
Analysis and Further Study

Updated Draft/Preliminary
Findings Snapshot

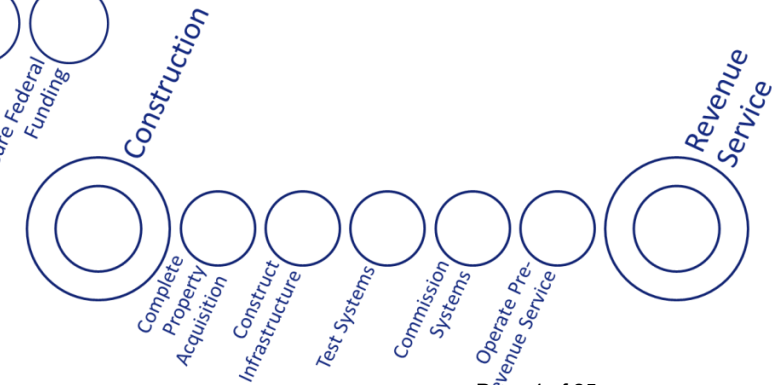
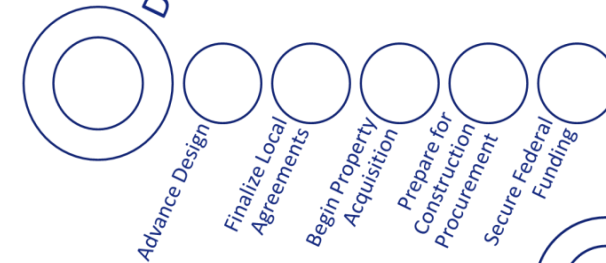
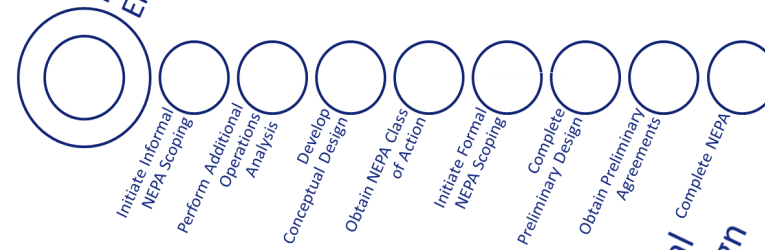
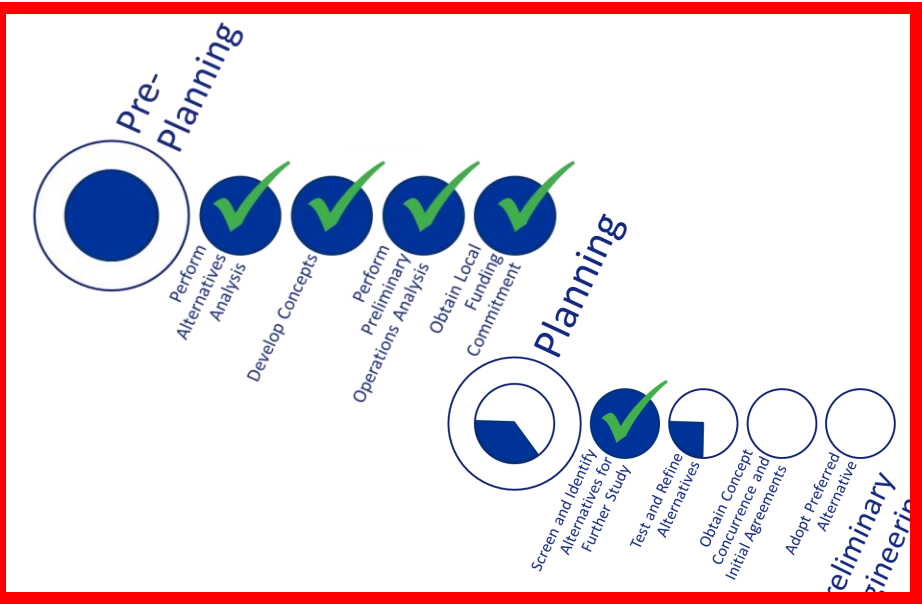
Why Is This Study Being Conducted?

- Give elected officials the data needed to decide whether to take the project to the next phase of development
- Examine scenarios adding Johnston County/Selma and Orange County/Mebane
- Refresh and update ridership estimates, infrastructure assumptions, and cost estimates that were included in prior high-level planning studies
- Identify additional activities necessary before initiating project design and implementation

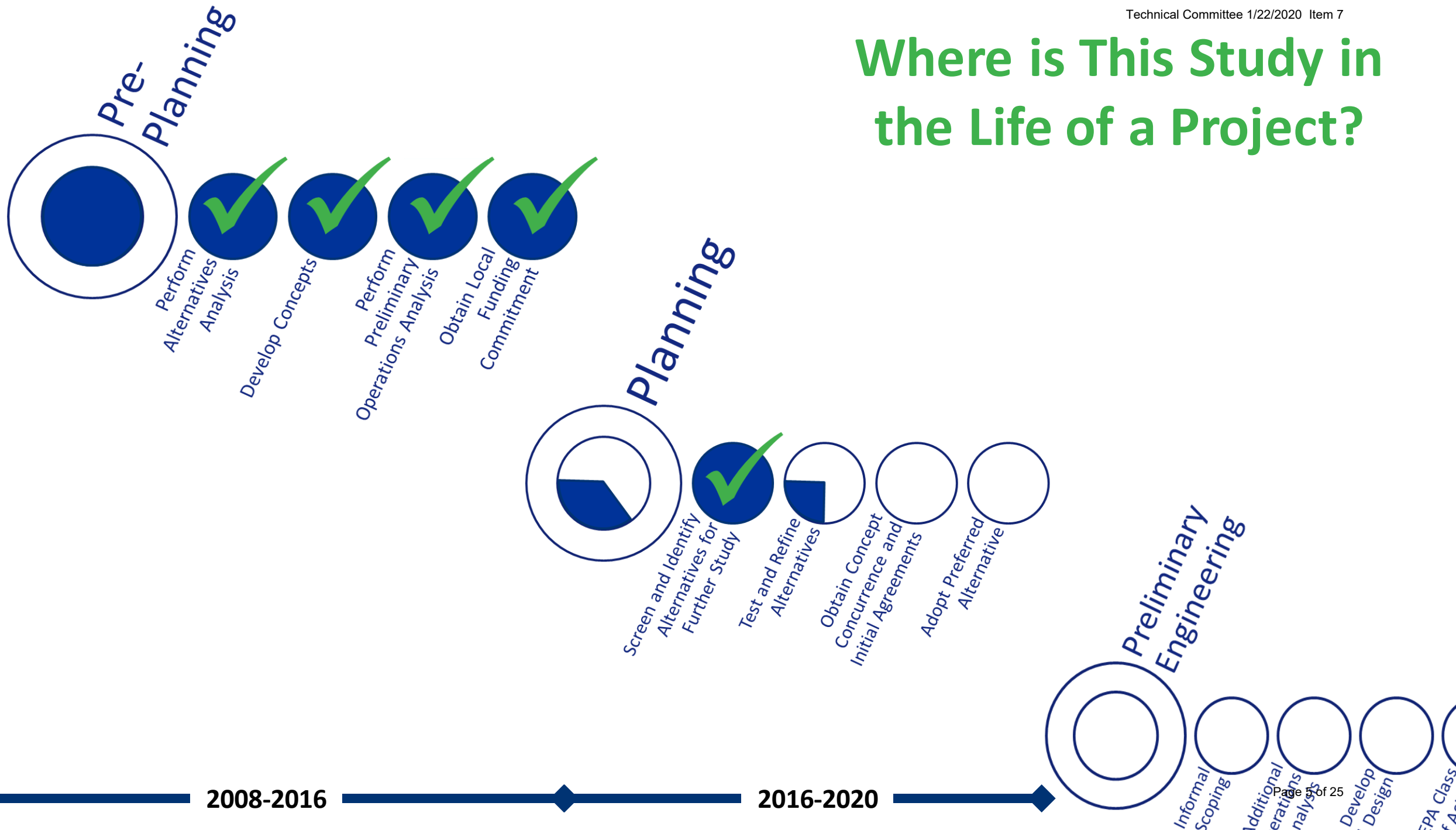
Where is This Study in the Life of a Project?



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This is a Preliminary Feasibility Study

- Further detailed railroad capacity modeling would be needed to confirm infrastructure requirements
- Cost estimates require further definition
 - Cost estimates are planning-level
 - No engineering has been performed yet as part of this study
 - Cost estimates would be refined once preliminary engineering work and railroad capacity modeling is completed
- Ridership estimates would require further refinement

Evaluated Eight Scenarios

Geography	Weekday Round Trips	Service Pattern	Range of Cap. Cost* [YOE\$]	O&M Cost [2019\$]	Range of Ridership**
Durham-Garner	20	8-2-8-2	\$1.4B – \$1.8B	\$29M	7.5K – 10K
Durham-Garner	12	5-1-5-1	\$1.4B – \$1.8B	\$20M	5K – 7.5K
Durham-Garner	7	3-1-3	\$1.4B – \$1.7B	\$13M	4.5K – 6K
Mebane-Selma	20	8-2-8-2	\$2.5B – \$3.2B	\$57M	8K – 11.5K
Mebane-Selma	12	5-1-5-1	\$2.5B – \$3.2B	\$40M	6K – 9K
Mebane-Selma	7	3-1-3	\$2.3B – \$3.1B	\$26M	5K – 7.5K
Hillsb.-Clayton	20	8-2-8-2	\$1.8B – \$2.4B	\$44M (+\$15M)	8K – 11.5K
Durham-Clayton	20	8-2-8-2	\$1.6B – \$2.1B	\$37M (+\$8M)	7.5K – 10K

Note: Current Wake Transit Plan assumes \$1.33B capital cost for Durham-Garner 8-2-8-2

*Cost: Year-of-Expenditure Dollars (YOE\$)

**Daily Ridership: Average of Current Year and Horizon Year Forecast

Funding Capacity



Needs federal funding to be affordable

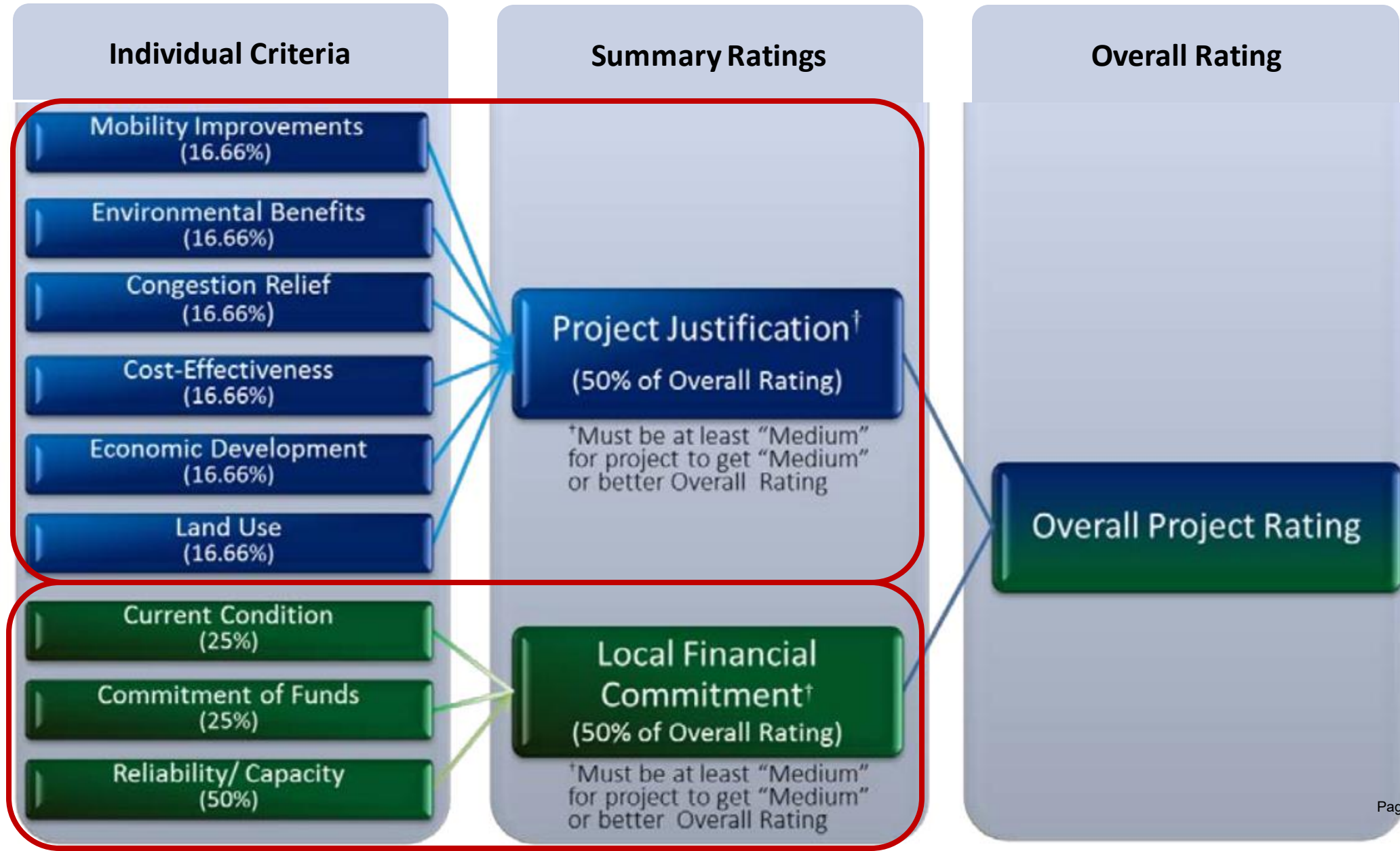
Orange: Incremental cost to include Hillsborough and/ or Mebane is large relative to est. ridership

Johnston: Would require significant additional new revenue

Durham and Wake: Affordability will depend on:

- Cost share
- Prioritization versus other investments
- Ability to control costs

Federal Criteria: Must Score Medium in Both Categories



Lower Service and Higher Cost Scenarios Do Not Score Well

End Points	Weekday Round Trips	Service Level	Expected Score	“Upside” Score	“Downside” Score
Mebane-Selma	20	8-2-8-2	Medium-Low	Medium	Medium-Low
Mebane-Selma	12	5-1-5-1	Medium-Low	Weak Medium	Medium-Low
Mebane-Selma	7	3-1-3	Medium-Low	Weak Medium	Medium-Low
Durham-Garner	20	8-2-8-2	Medium	Medium	Medium-Low
Durham-Garner	12	5-1-5-1	Weak Medium	Weak Medium	Medium-Low
Durham-Garner	7	3-1-3	Weak Medium	Weak Medium	Medium-Low
Hillsb.-Clayton	20	8-2-8-2	Weak Medium	Medium	Medium-Low
Durham-Clayton	20	8-2-8-2	Medium	Medium	Medium-Low

Note: Scenarios rated as “Weak Medium” are projected to score at the low end of the Medium range, meaning that if any single component score is reduced, the overall score would fall below the eligibility requirements

To be eligible for federal funding, project must score a Medium rating

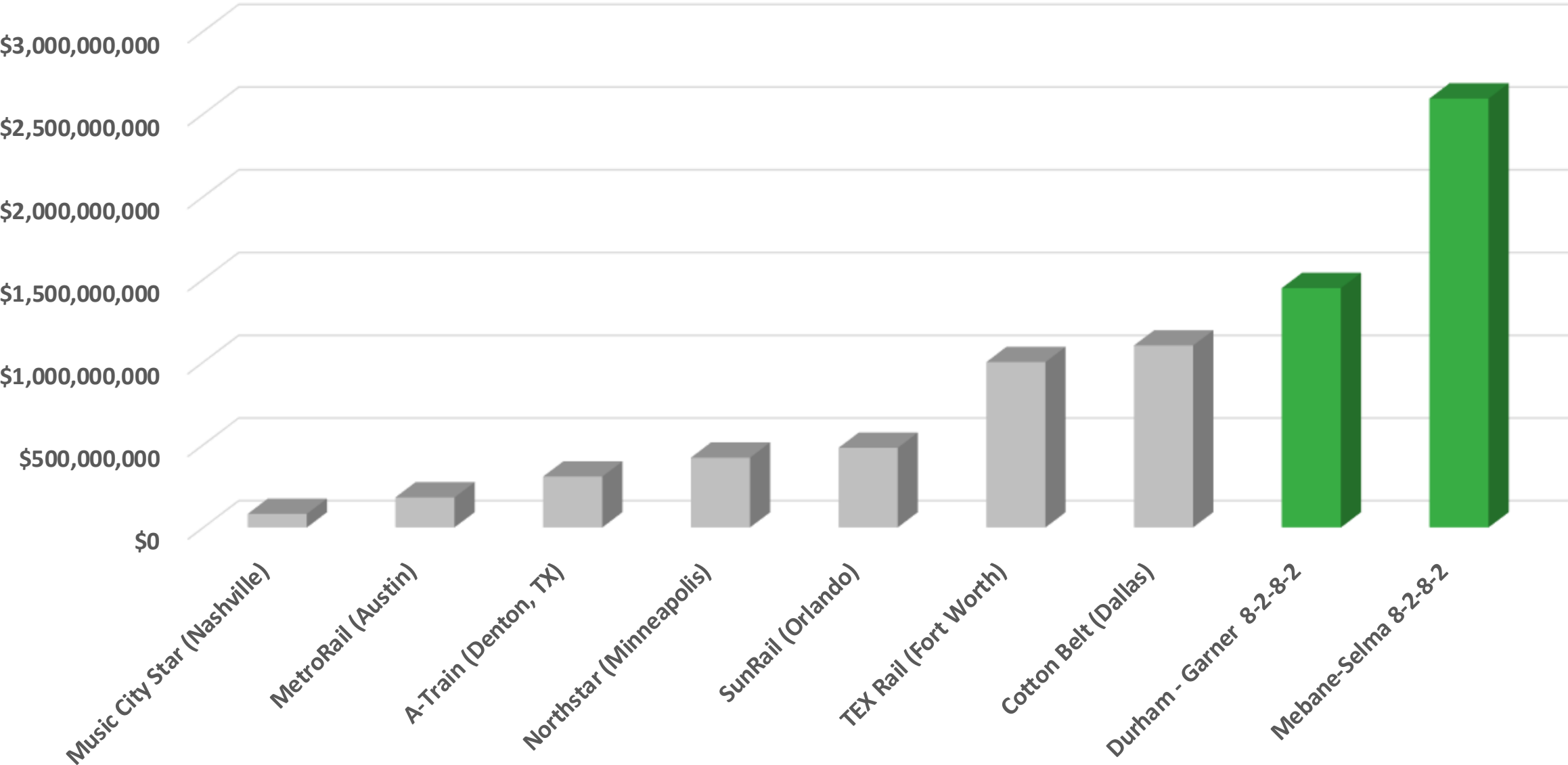
Peer Comparison

Prior Major Investment Study identified peer systems for comparison of key metrics:

- System Capital Cost
- Capital Cost Per Mile
- Average Weekday Trips
- Average Trip Length
- Capital Cost Per Passenger Mile Traveled
- Operating Cost Per Passenger Mile Traveled

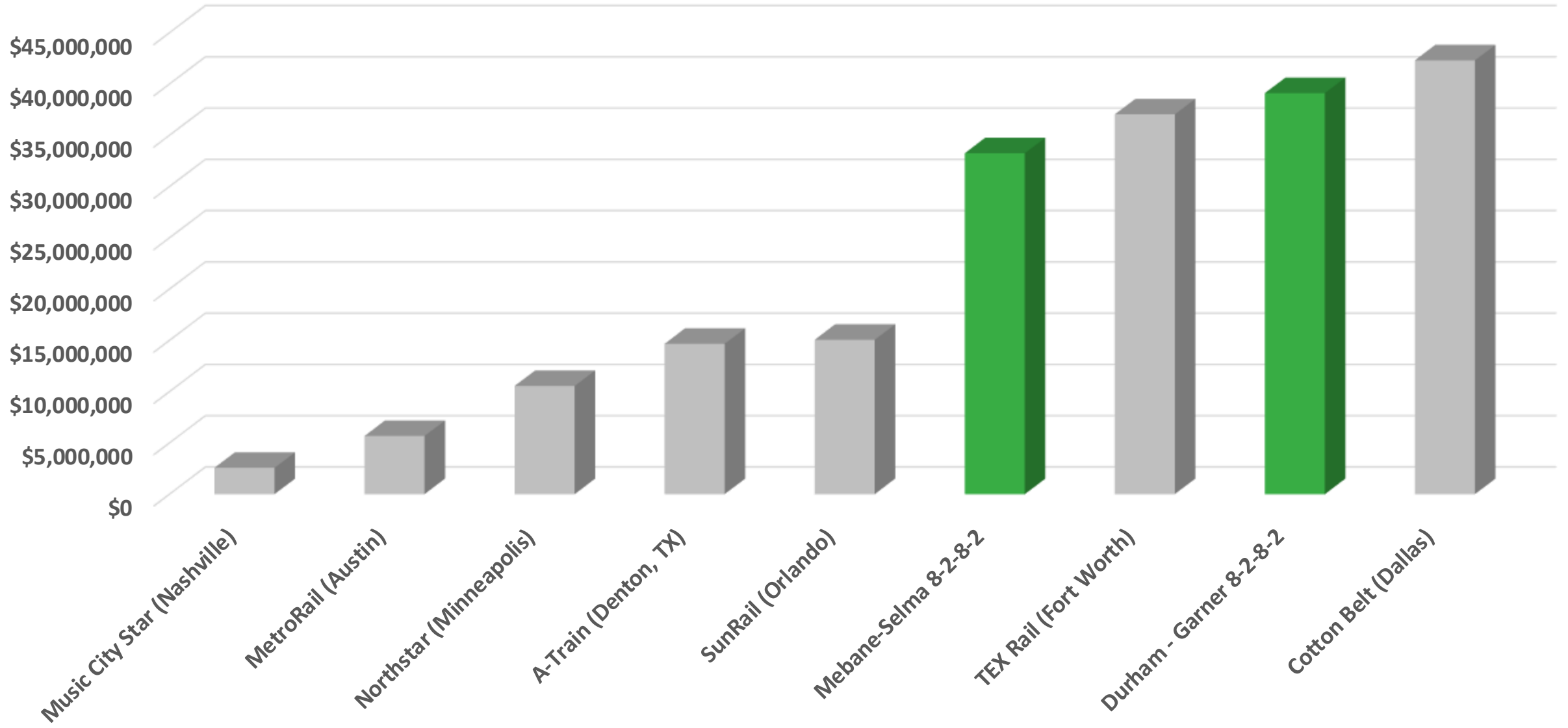
note: not all data were available for each peer system

System Capital Cost (2020\$)



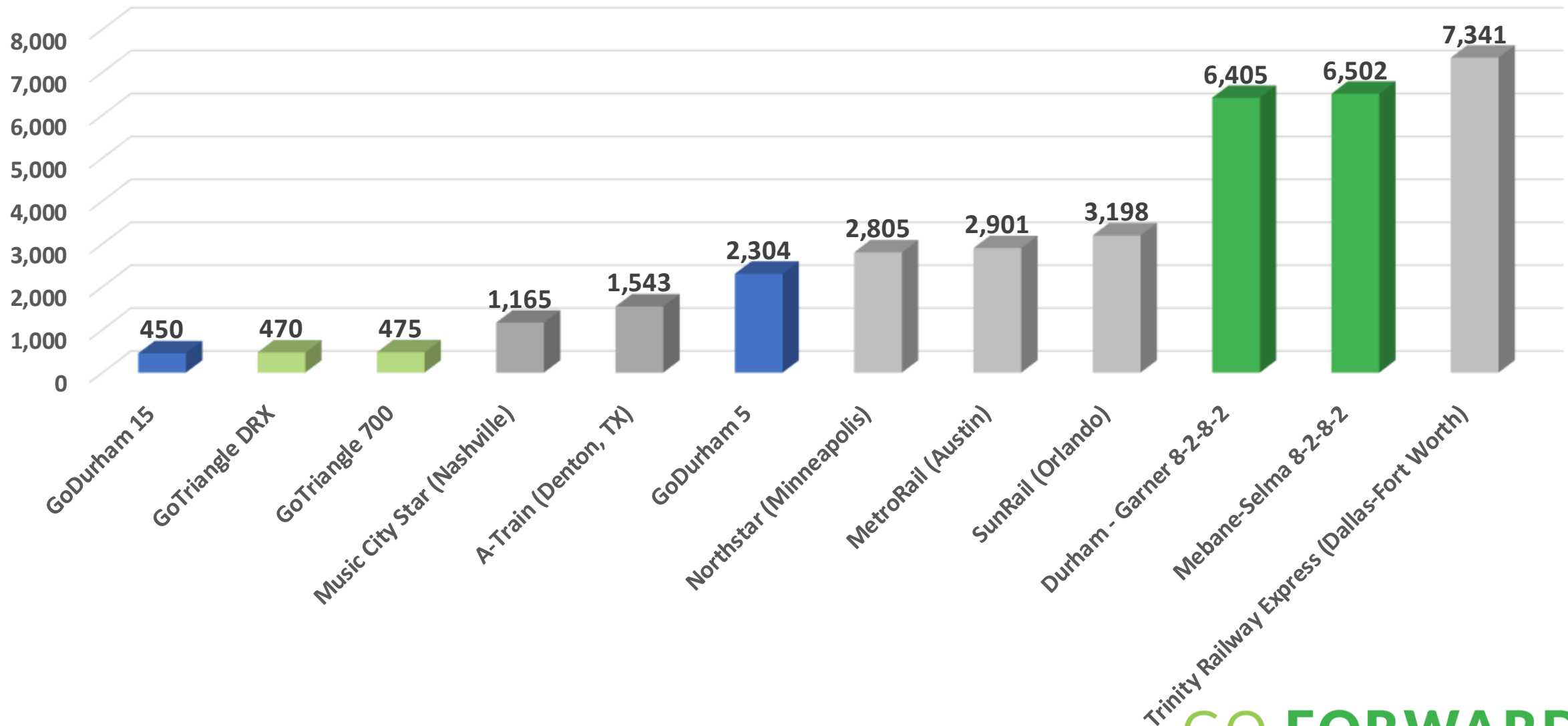
System Capital Cost in 2020\$
Source: 2019 CRT MIS Report

Capital Cost (2020\$)/Mile



System Capital Cost in 2020\$ divided by length of system.
Source: 2019 CRT MIS Report

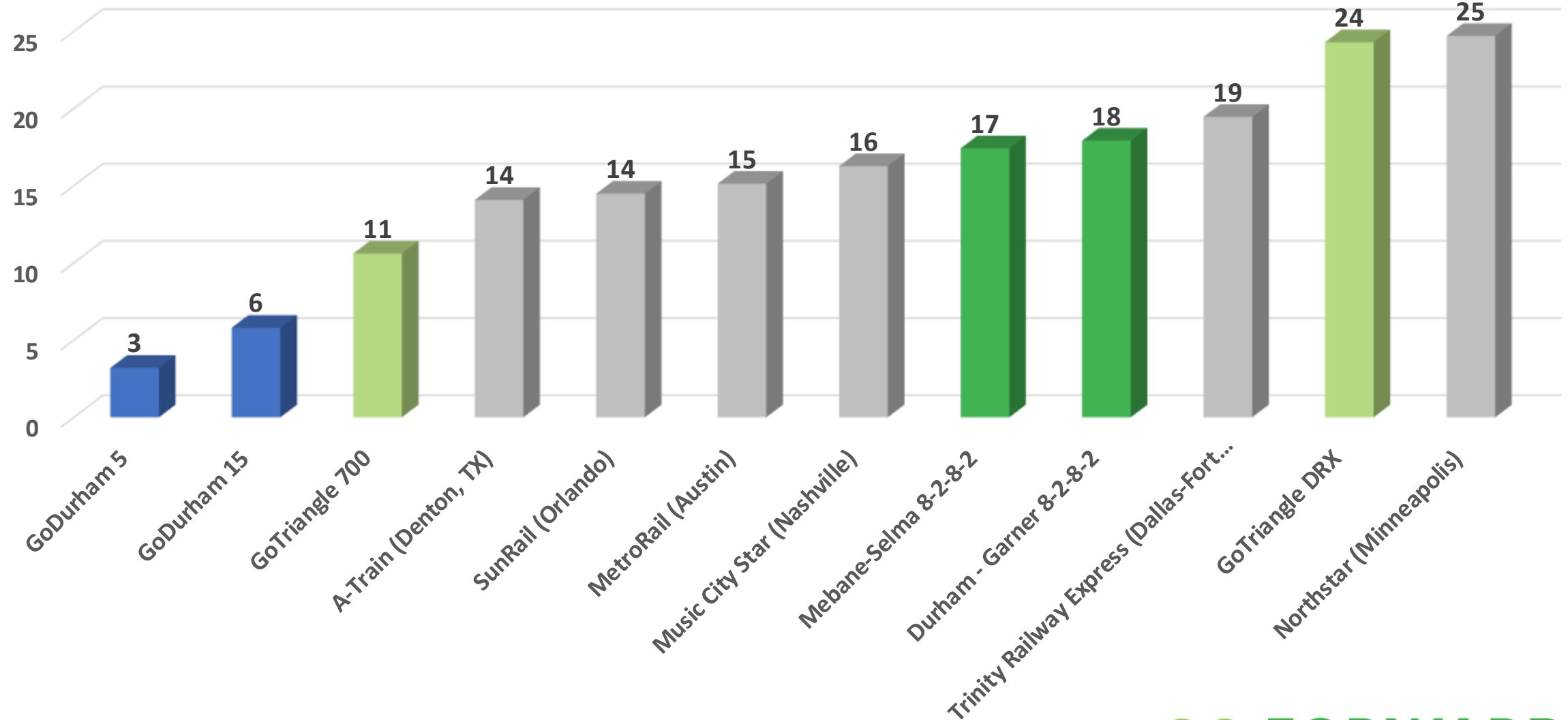
Average Weekday Trips (2018)



Average Weekday Ridership for 2018.

Source: NTD 2018 and GoTriangle FY2018 Bus Performance Report.

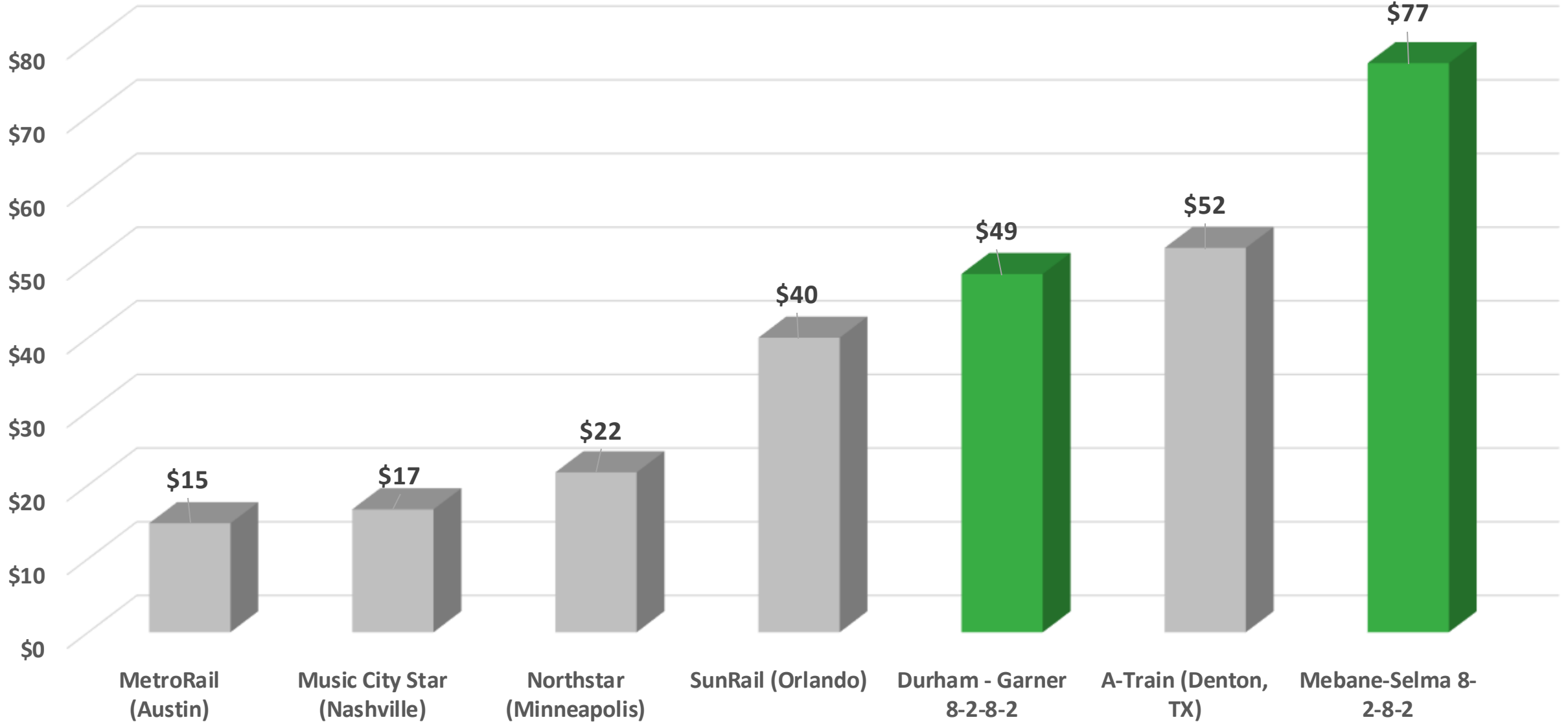
Average Trip Length (miles)



Average Unlinked Trip length.

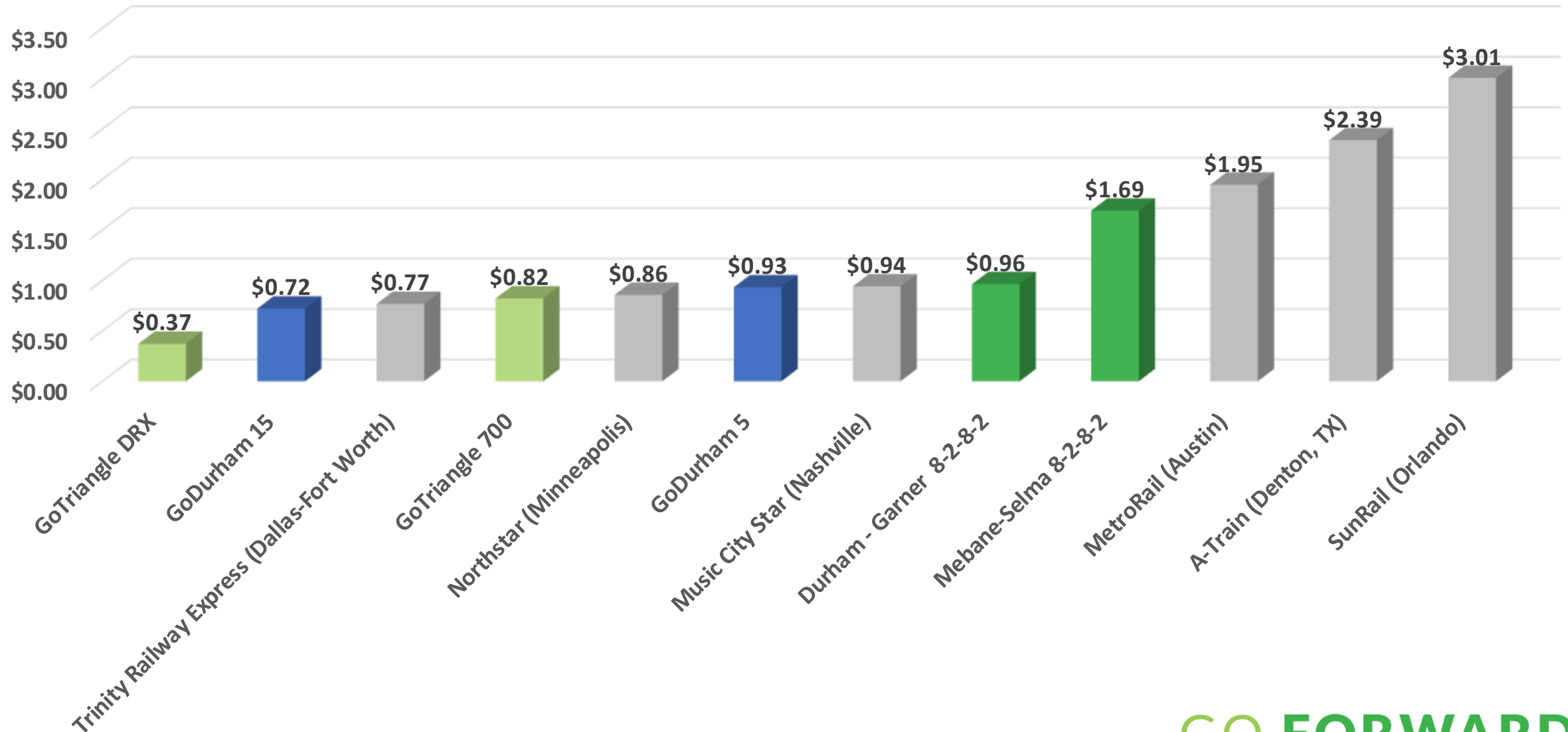
Source: NTD 2018 and GoTriangle FY2019 Bus Operations Report.

Capital Cost (2020\$) / Annual Passenger Miles Traveled (2018)



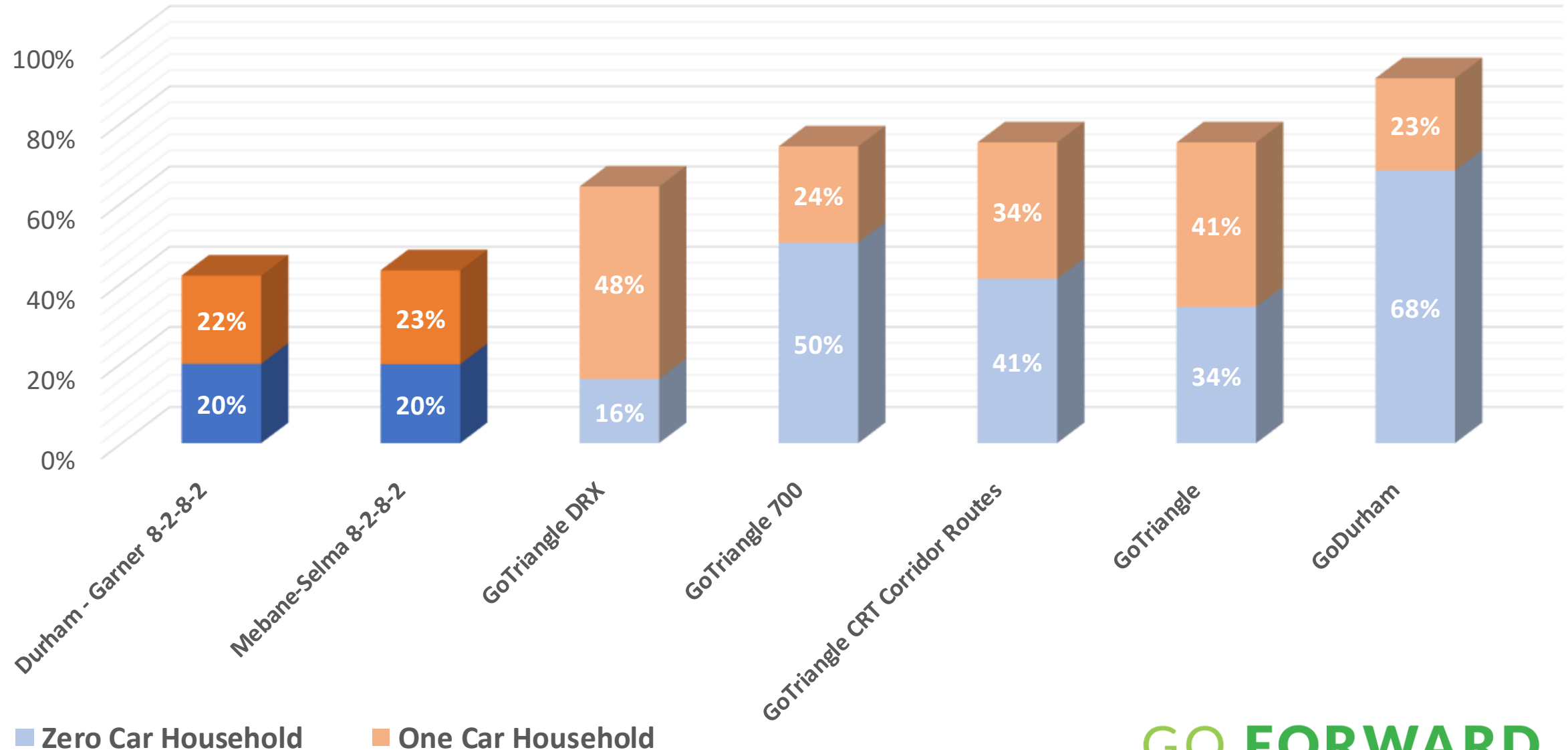
Average System Capital Cost in 2020\$ divided by total annual passenger miles traveled
 Source: NTD 2018 and 2019 CRT MIS Report.

Operating Cost (2019) / Annual Passenger Miles Traveled (2018)



Average System Operating Cost in 2019\$ divided by total annual passenger miles traveled
 Source: NTD 2018, and GoTriangle FY19 Bus Operations Report

Percentage of Riders from Zero Car and One Car Households



Source: 2018 GoTriangle and GoDurham onboard surveys. 2016 GoTriangle Onboard survey.

Remaining Study Effort



- Refine ridership and travel demand modeling
- Additional funding capacity analysis for Durham and Wake
- Discuss initial risk assessment with GoTriangle Board

Types of Risks

- **Requirements Risk:**
 - Difficulty of succinctly and fully developing project requirements
 - Differences in project stakeholder goals
- **Design Risk:**
 - Design-related assumptions change
 - Situations where unknown factors cause designs to change
- **Market Risk:**
 - Open market pricing and/or contract packaging strategies
- **Construction Risk:**
 - Site activities
 - Coordination of contractors

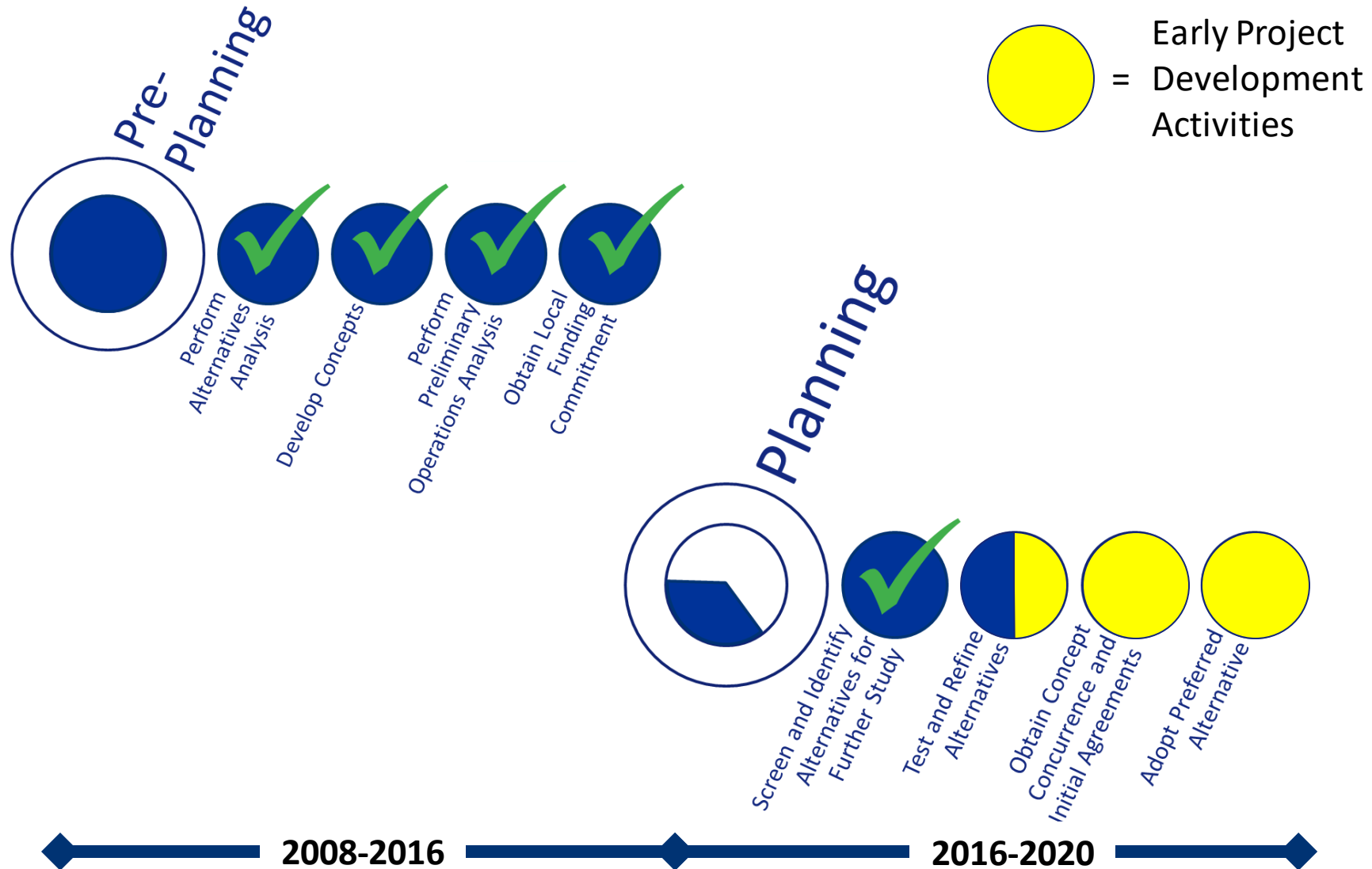
Upcoming Decision to Undertake Additional CRT Study

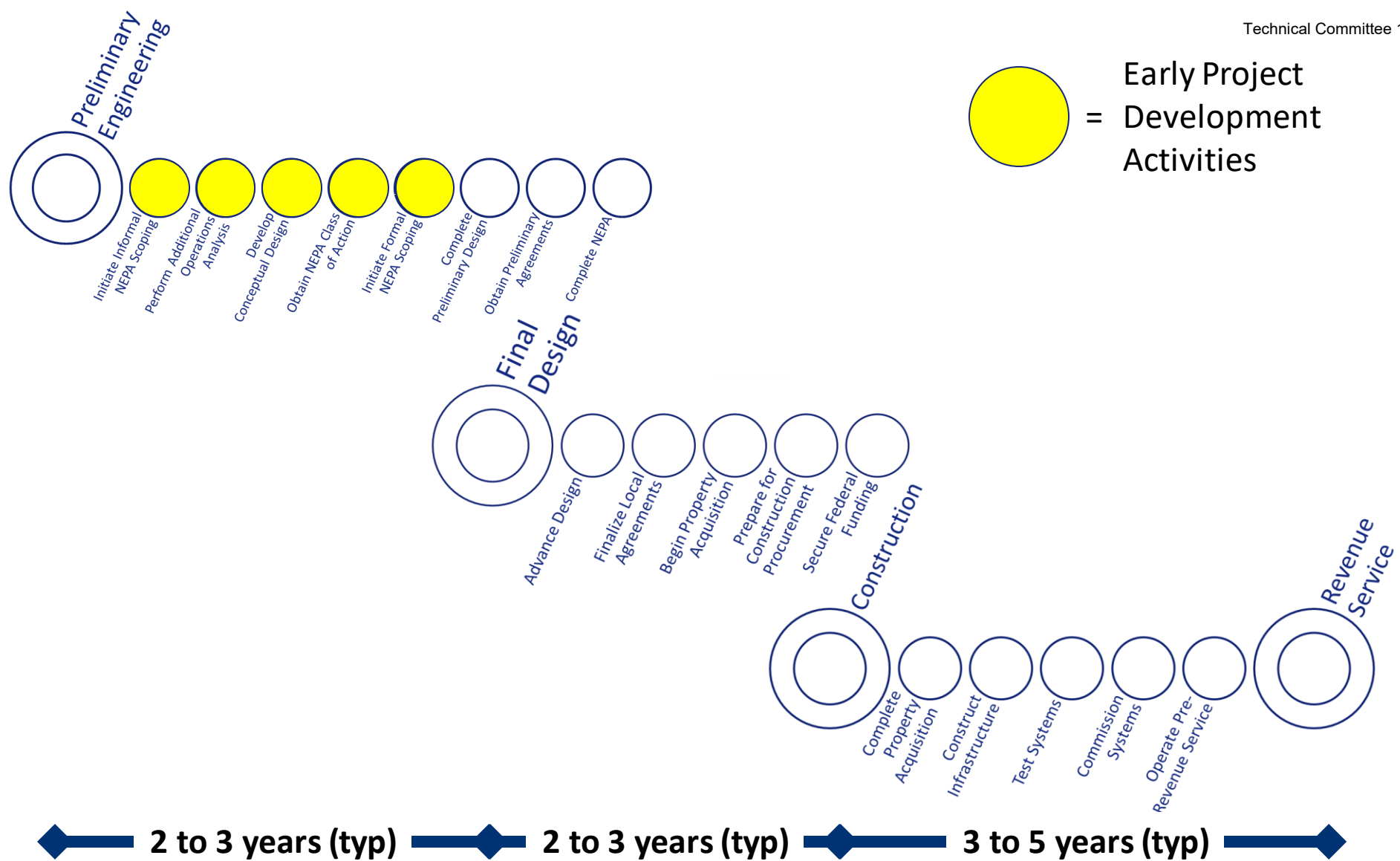
Timeline

- Brief Durham CRT partners:
 - Durham BOCC: Jan 6
 - DCHC MPO board: Jan 15
 - Joint MPO boards: Jan 30

“Early Project Development Activities”

- Rail Traffic Controller (RTC) model
- Preliminary engineering to evaluate critical risks only (e.g. Downtown Durham grade crossings)
- Additional ridership modeling
- Public engagement, integrated with local plan updates
- Agreements with funding partners, municipalities, and railroads





Next Steps

- Present updated results and metrics
- Present risk assessment - GoTriangle board workshop on Jan. 22
 - Primer on risk for transit capital projects
 - Walk-through of initial risk assessment findings
- Consider pursuing early project development activities necessary prior to initiating project design and implementation
- Consider adopting memorandum of understanding among project management partners for early project development activities
 - Roles, responsibilities, and goals of the project management partners, municipalities, and other stakeholders if moving forward

GO FORWARD
A COMMUNITY INVESTMENT IN TRANSIT

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Questions