

BLUE LINE CORRIDOR EXTENSION STUDY



FINAL RECOMMENDATIONS

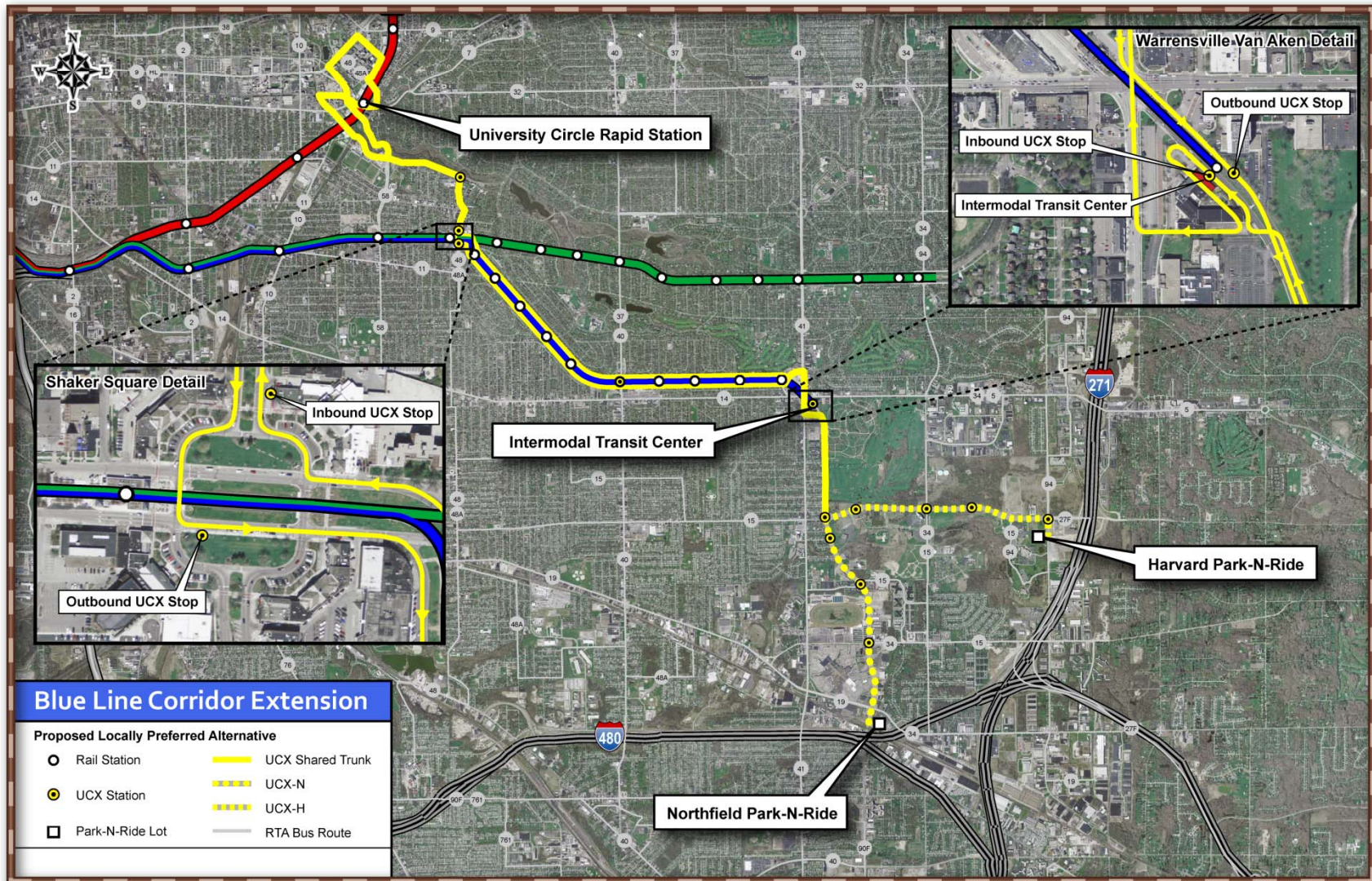
January 2012

Why We Are Here

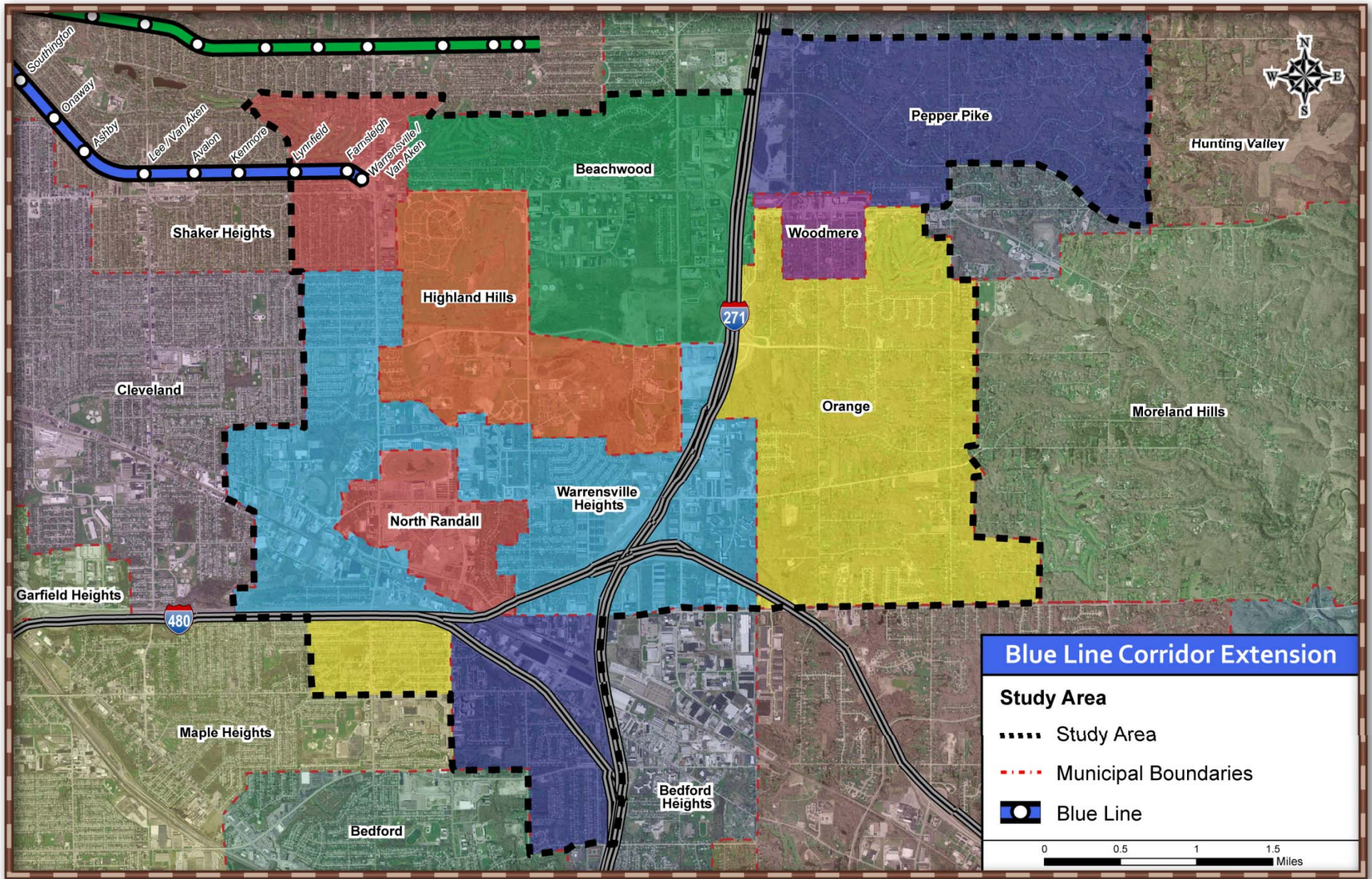


- Recommend Baseline Alternative as Locally Preferred Alternative
- Baseline Alternative Includes:
 - ▣ 0.3 mile Blue Line extension
 - ▣ Shaker Intermodal Transit Center
 - ▣ University Circle Express (UCX) direct bus service
 - ▣ Construction of Bus Stations
 - ▣ Construction of Park-N-Ride lots at both Northfield and Harvard

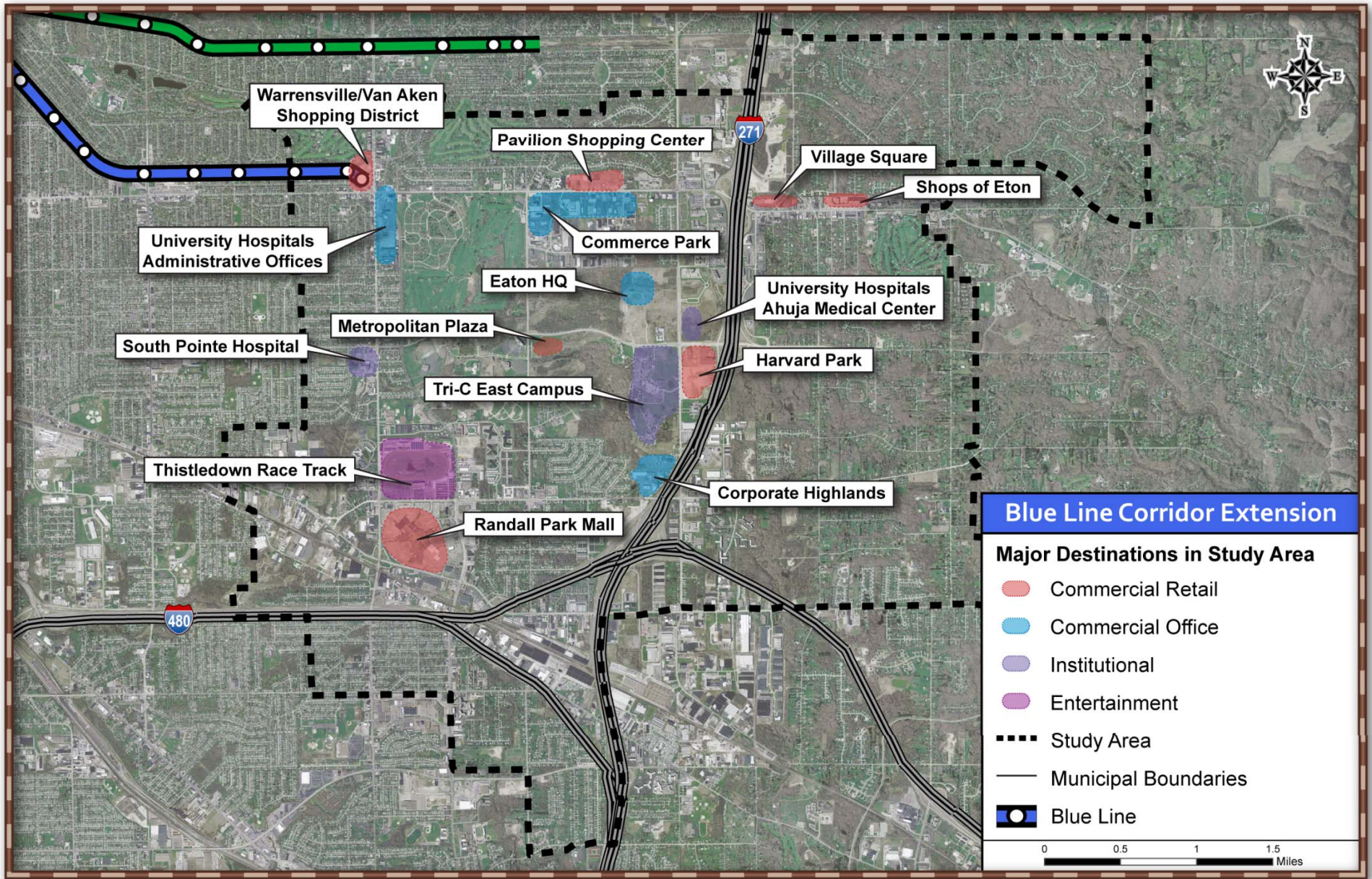
Recommended Alternative: Baseline



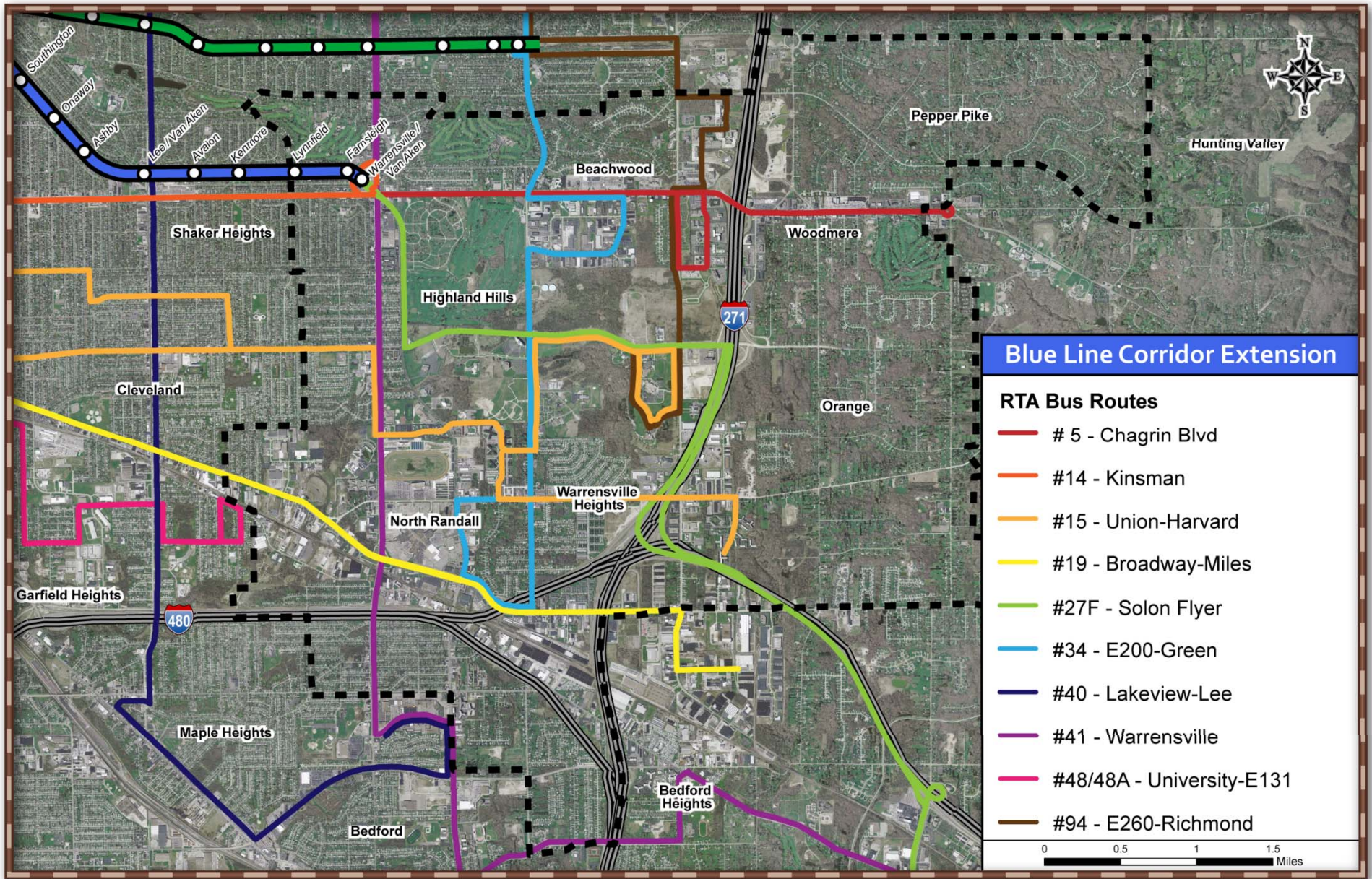
Study Corridor



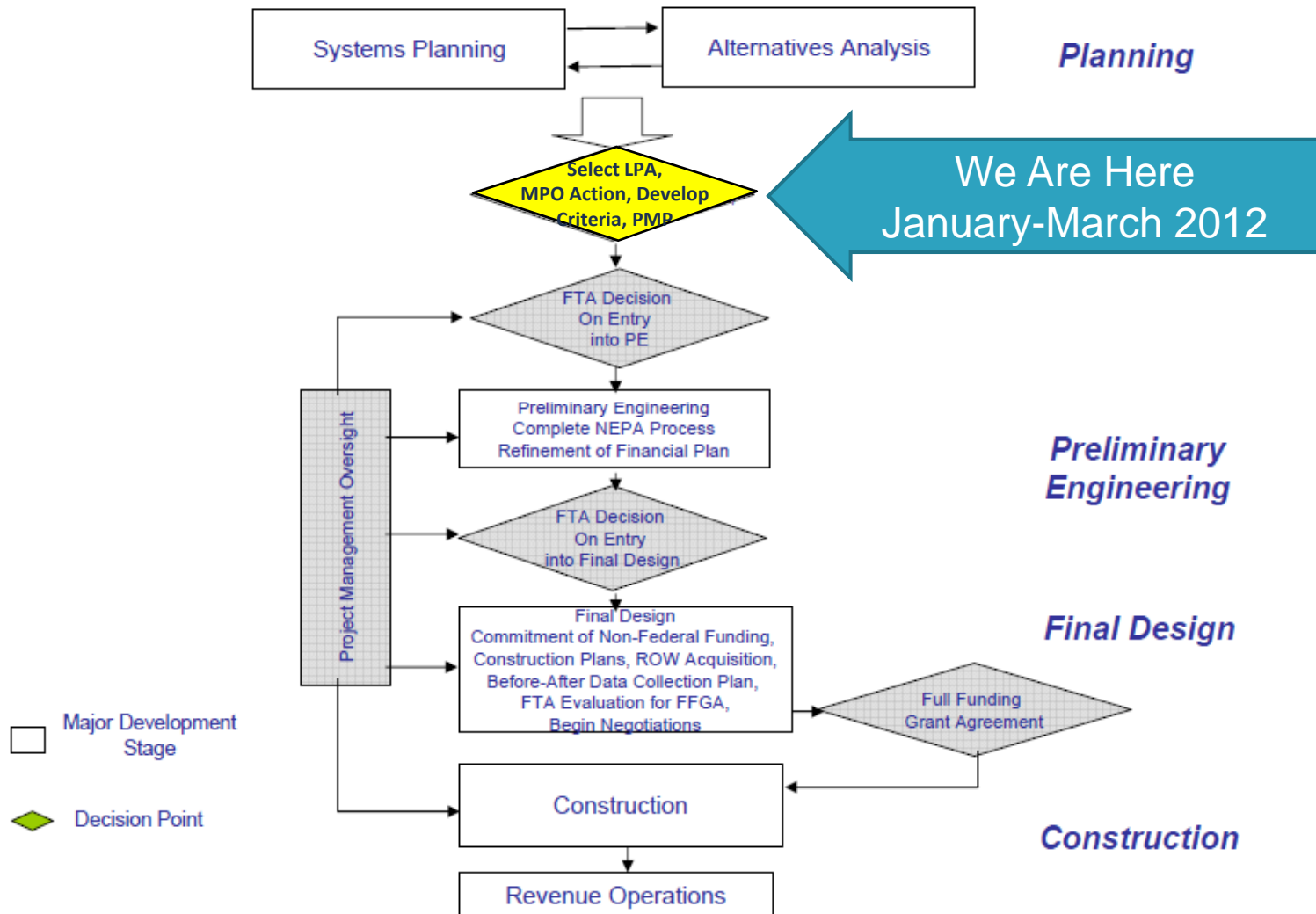
Major Attractions



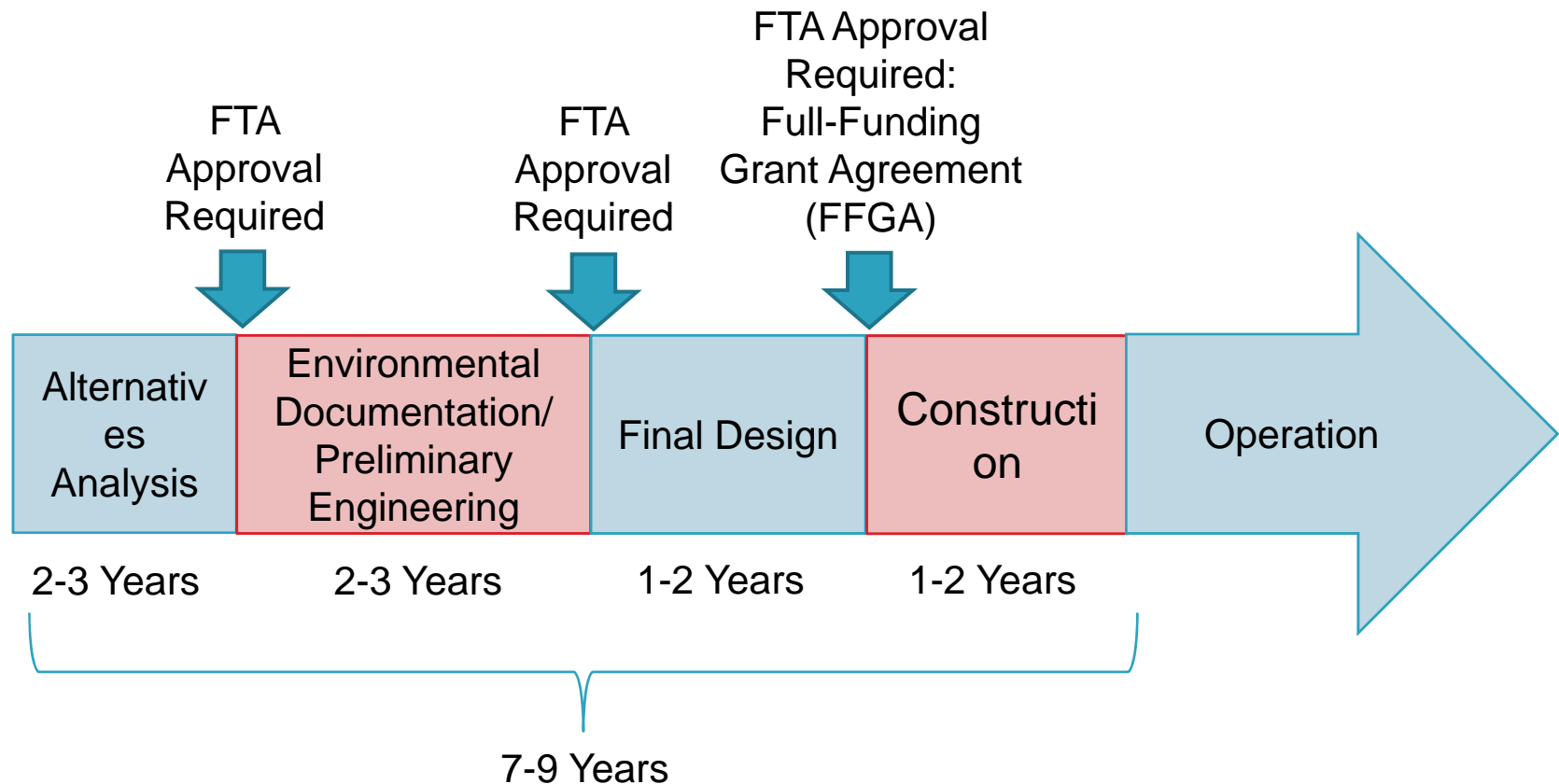
Transit Network



FTA New Starts/Small Starts Process



FTA New Starts/Small Starts Process



FTA New Starts Requirements

- Study MUST include the following alternatives
 - ▣ A No Build Alternative – existing transportation system plus planned and *funded* projects
 - Includes reconstructed Chagrin-Warrensville intersection, to be completed in 2014 by City of Shaker Heights, County Engineer
 - ▣ A Baseline Alternative – the best you can do with buses (BRT Light) and little or no dedicated guideway
 - ▣ One or more Build Alternatives that include light rail or BRT with dedicated guideway
 - ▣ Project must meet FTA New Starts/Small Starts Program funding criteria

FTA New Starts Requirements



- ❑ The Baseline Alternative is compared to the No Build to show what can be done with limited infrastructure
- ❑ Then the Build Alternatives are compared against the Baseline to show the benefit and cost of adding guideway infrastructure and additional service.

Project Purpose & Need



□ GOAL #1

- ▣ Improve connections to downtown Cleveland from transportation markets south and east of the existing Warrensville-Van Aken station.

□ GOAL #2

- ▣ Develop transit improvement concepts that promote development and redevelopment opportunities.

□ GOAL #3

- ▣ Develop transit improvements while minimizing impacts to the natural and man-made environment.

□ GOAL #4

- ▣ Develop a transit improvement strategy that is both efficient and cost-effective.

Alternatives Studied

- ❑ **No Build**

- ▣ Realignment of Warrensville-Chagrin Intersection

- ❑ **Baseline**

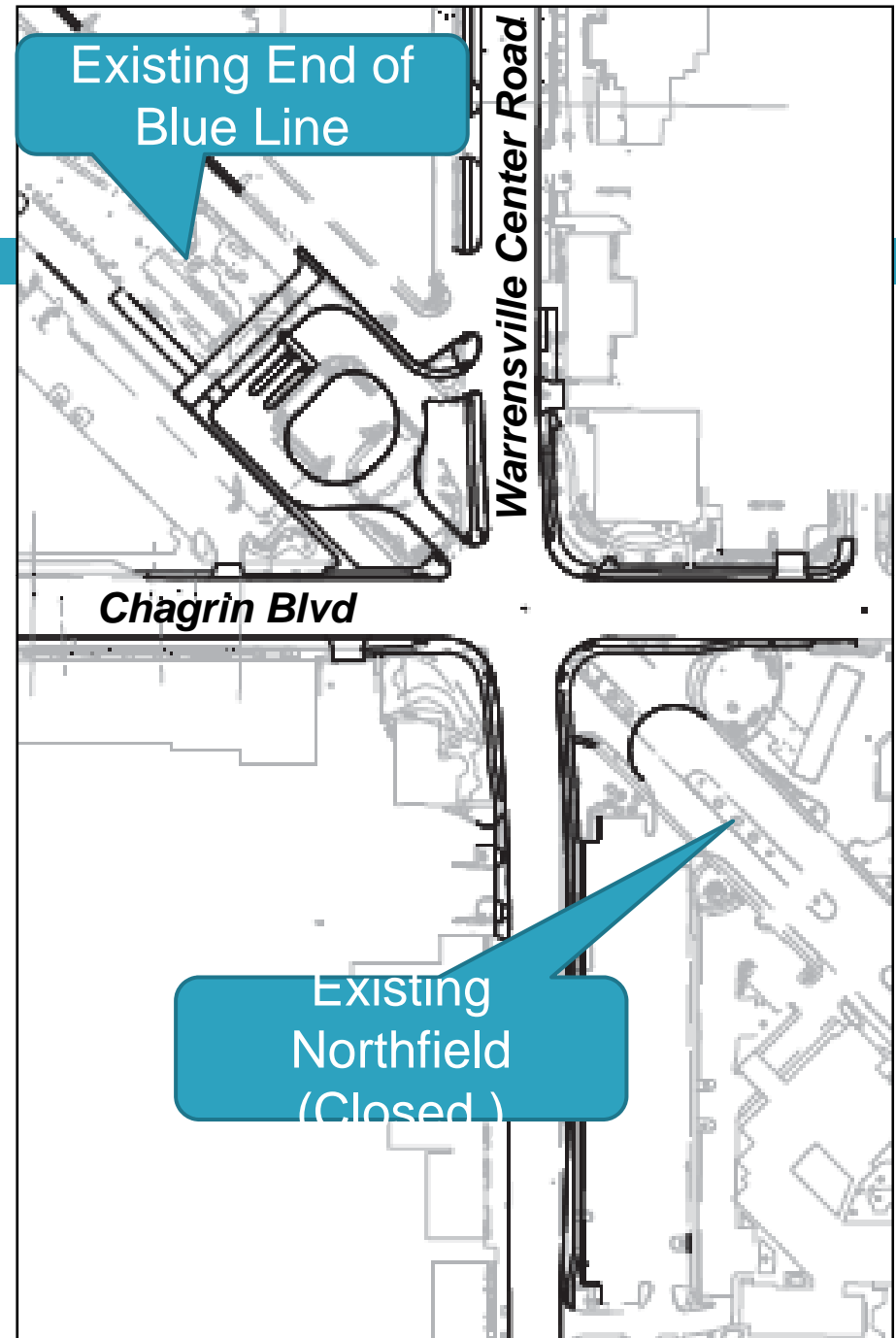
- ▣ Realigned Warrensville-Chagrin intersection
 - ▣ 0.3 mile Blue Line extension
 - ▣ Shaker Intermodal Transit Center
 - ▣ UCX (University Circle Express) Bus Service
 - ▣ Park and Ride lots at Northfield/I-480 and Harvard/I-271

- ❑ **Light Rail or Bus Rapid Transit** (includes all elements of Baseline plus...)

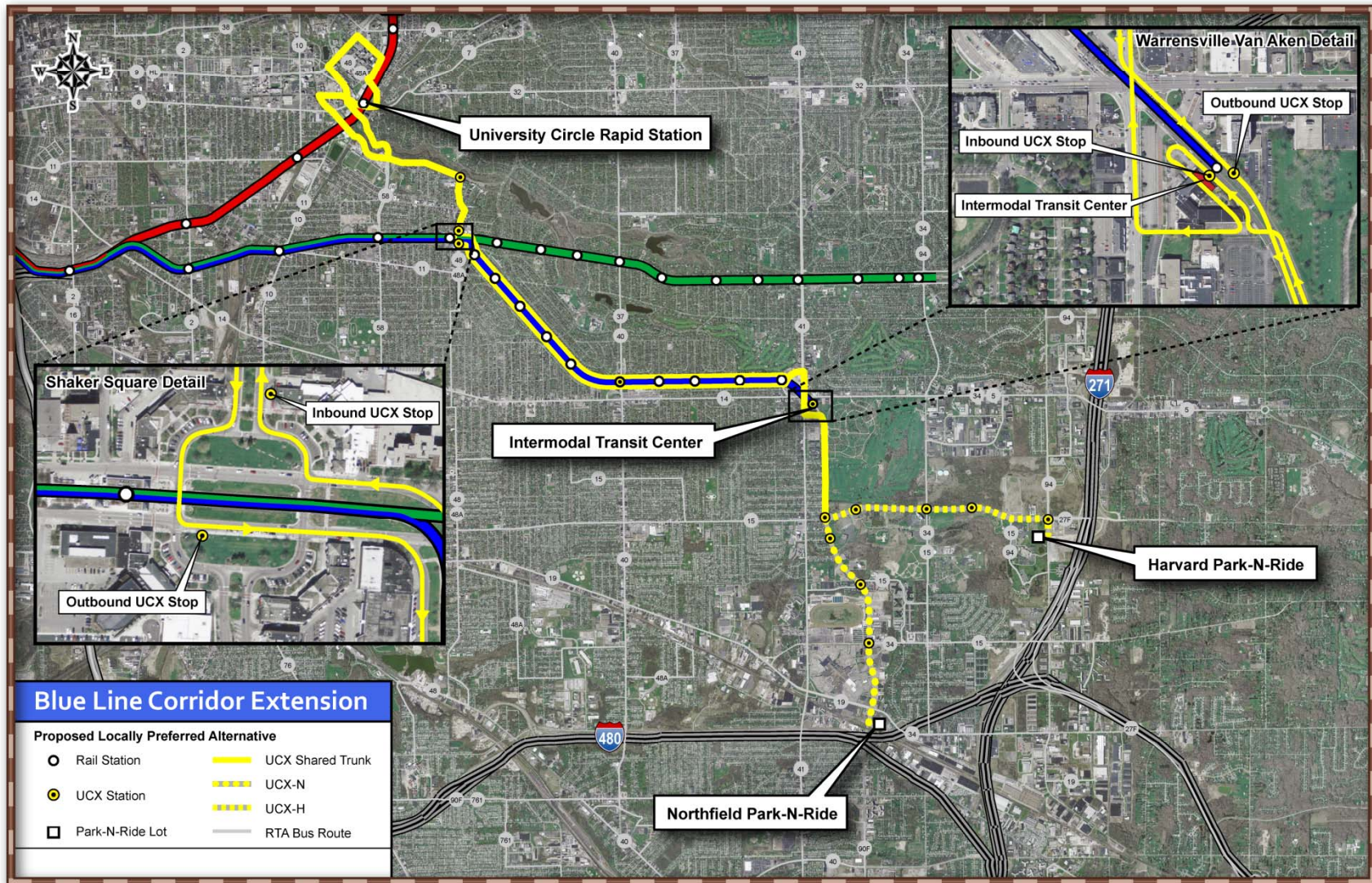
- ▣ Northfield Road to I-480
 - ▣ Northfield and Harvard Roads to I-271
 - ▣ Warrensville Center and Miles Roads to I-480

No Build

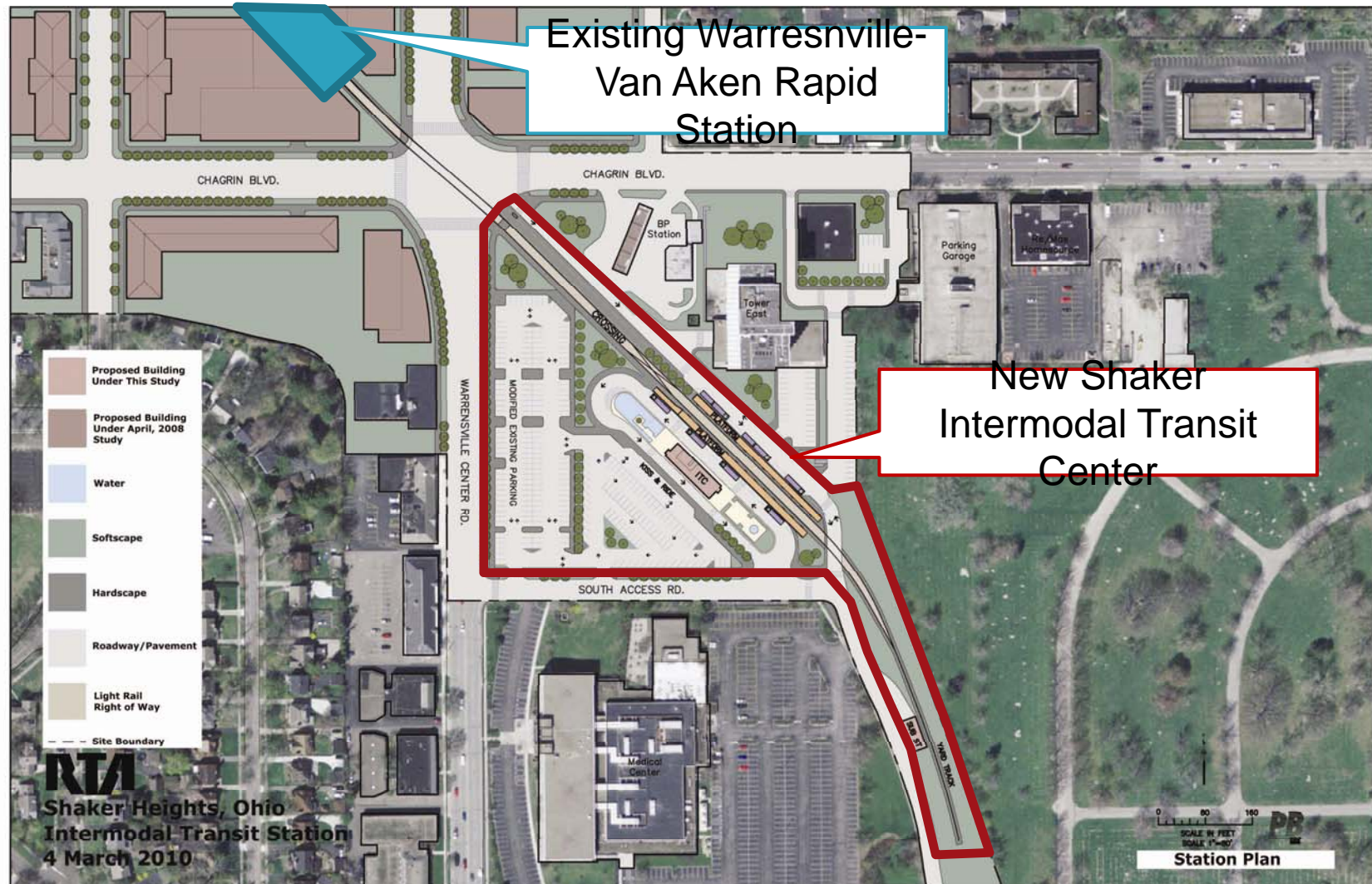
- ❑ Reconstruction of Warrensville-Chagrin Intersection
- ❑ Project Sponsors:
 - ▣ City of Shaker Heights
 - ▣ Cuyahoga County
- ❑ Design Underway
- ❑ To be completed 2014



Baseline Alternative

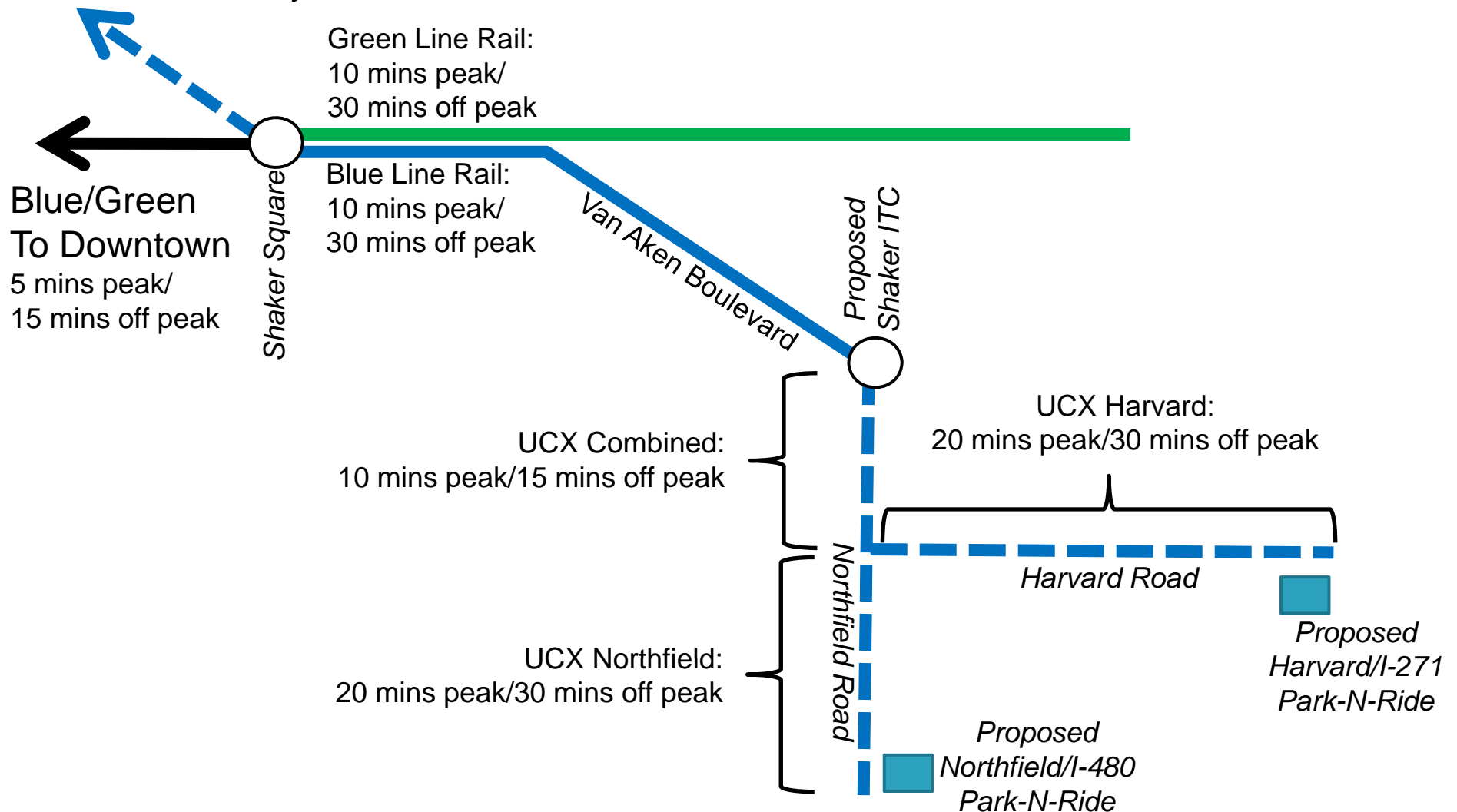


Rail Extension, Shaker Intermodal Center

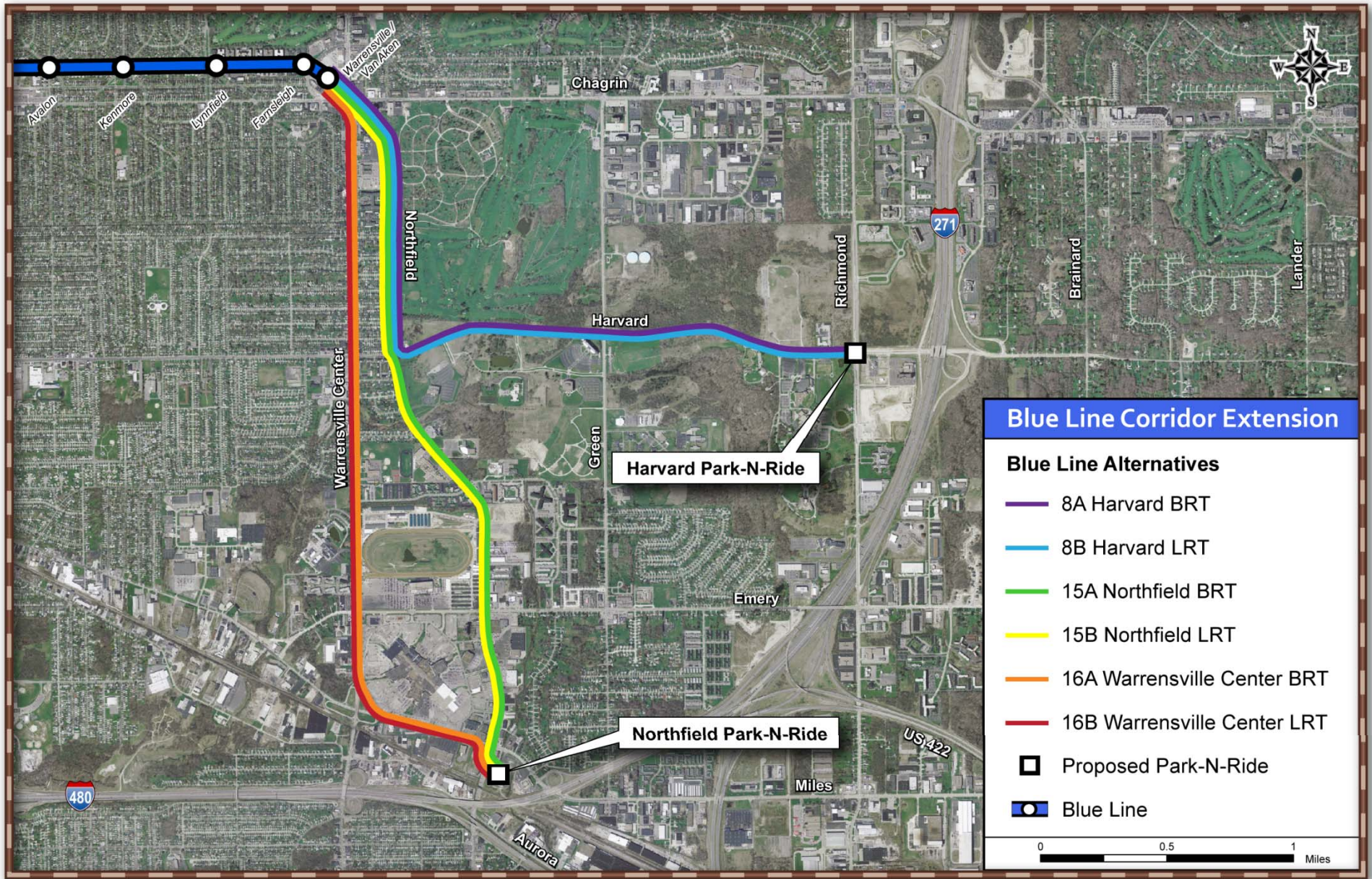


Operating Plan-Baseline Alternative

UCX To University Circle 10 mins peak/15 mins off peak

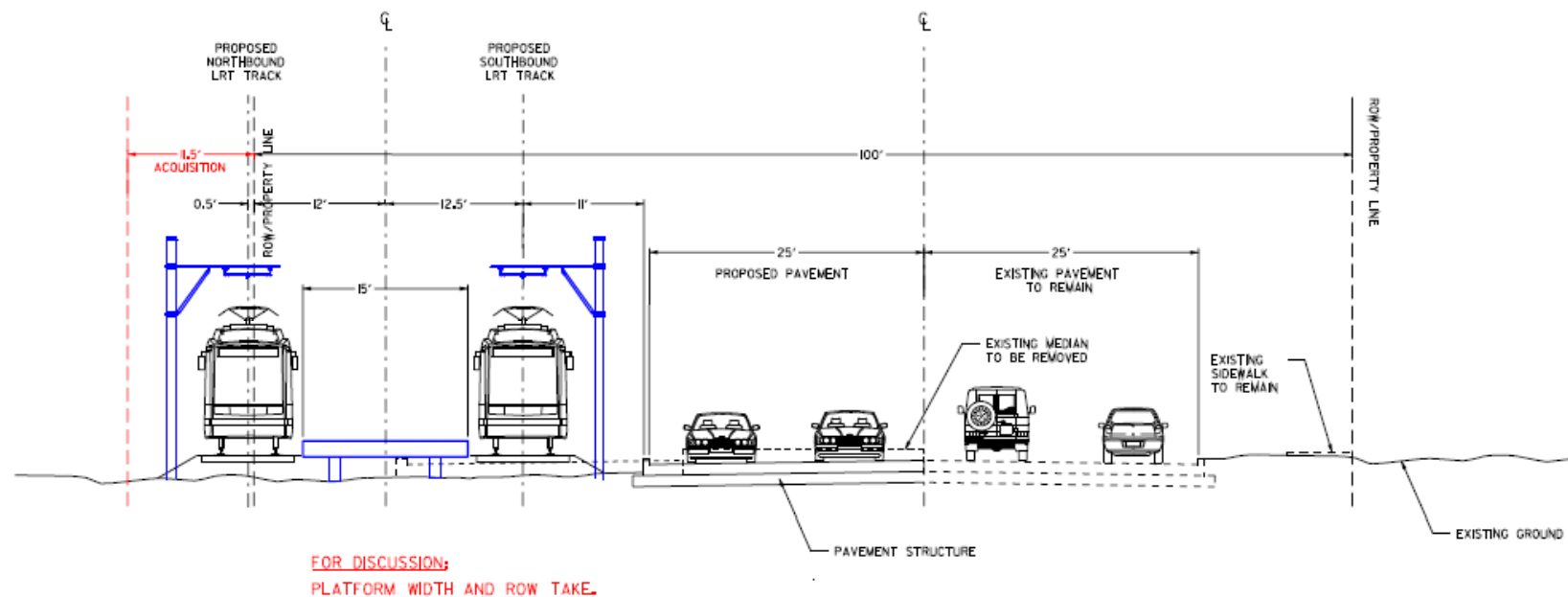


Build Alternatives



Light Rail Alternatives

Northfield LRT



LEGEND

--- EXISTING PAVEMENT
— PROPOSED FACILITY

NOTE:

NORTHFIELD ROAD IS OHIO ROUTE 8.
THE LAYOUT SHOWN CONFORMS TO ODOT
GEOMETRIC STANDARDS FOR ROADWAY DESIGN.

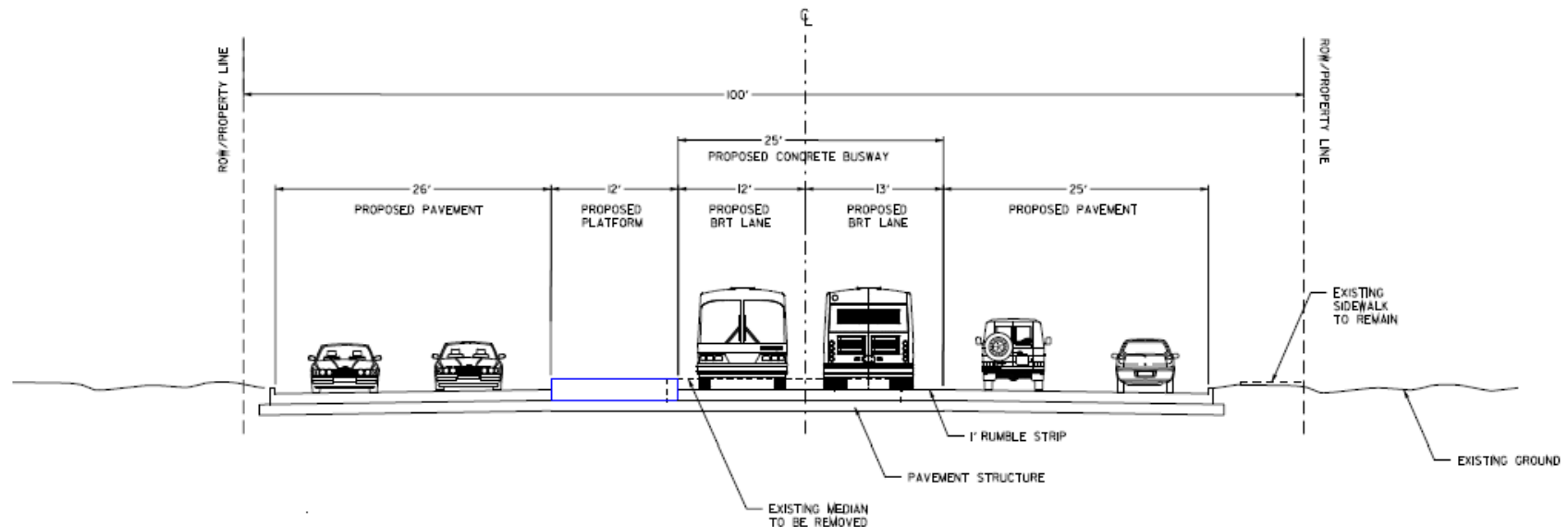
**PARSONS
BRINCKERHOFF**

GCRTA BLUE LINE EXTENSION

TYPICAL LRT SECTION VIEW WITH STATION
NORTHFIELD RD., LOOKING SOUTH
AT RIDGEWOOD

BRT Alternatives

Northfield BRT



LEGEND

----- EXISTING PAVEMENT
----- PROPOSED FACILITY



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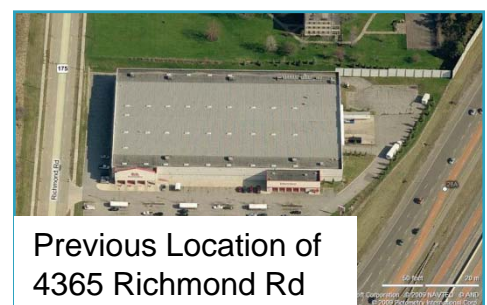
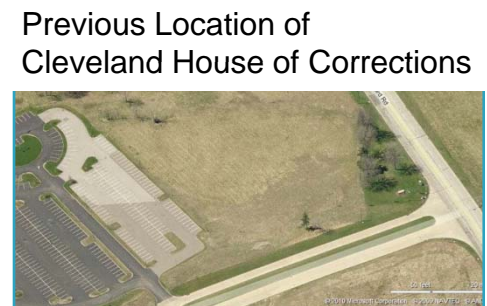
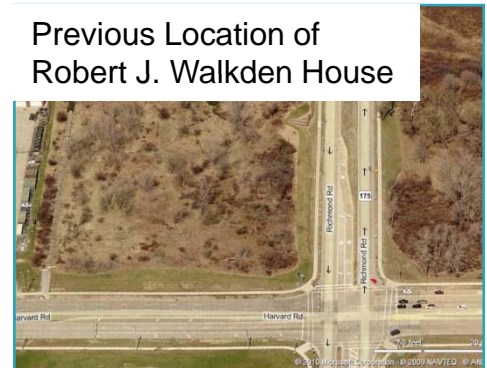
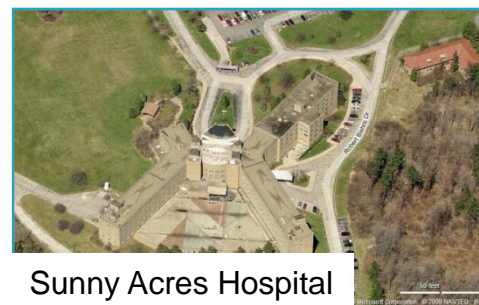
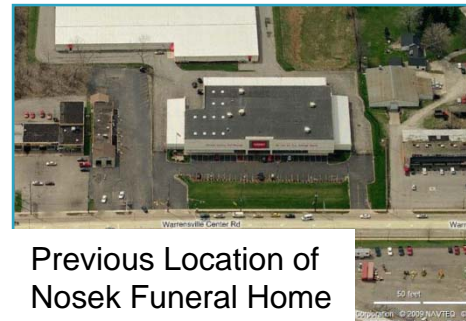
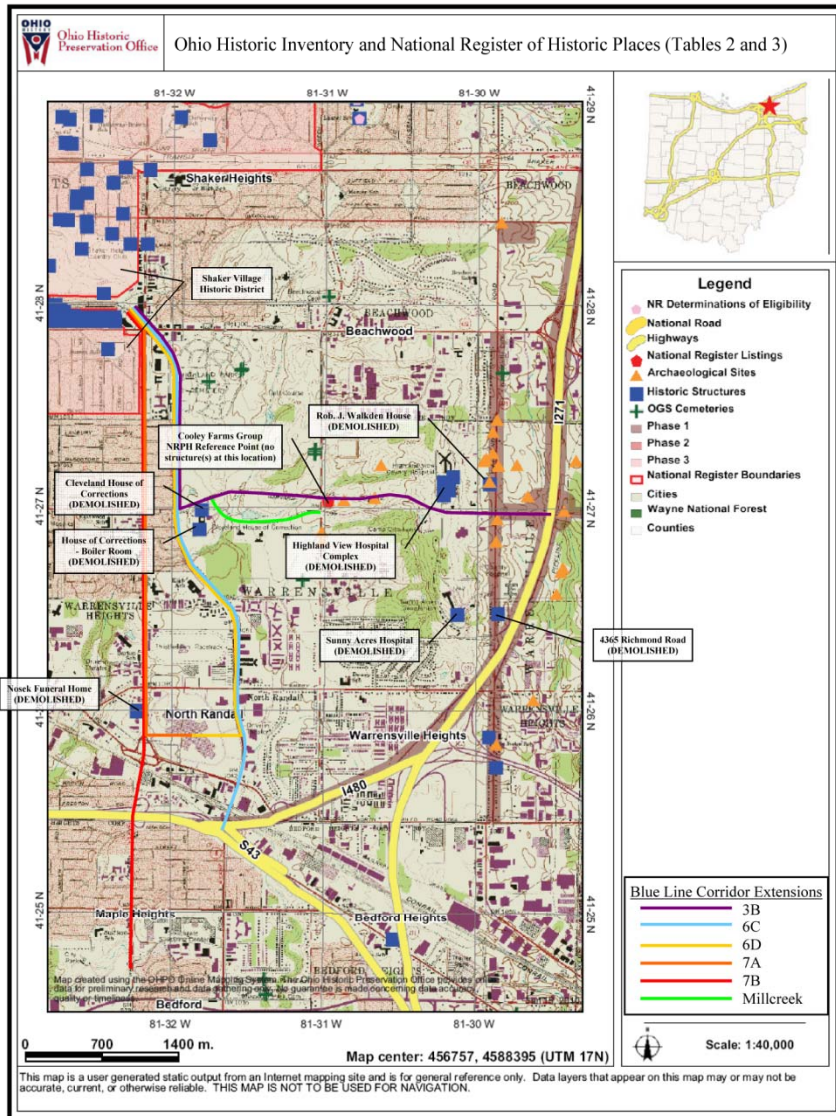
GCRTA BLUE LINE EXTENSION

TYPICAL BRT SECTION VIEW @
MEDIAN STATION
NORTHFIELD RD, LOOKING SOUTH

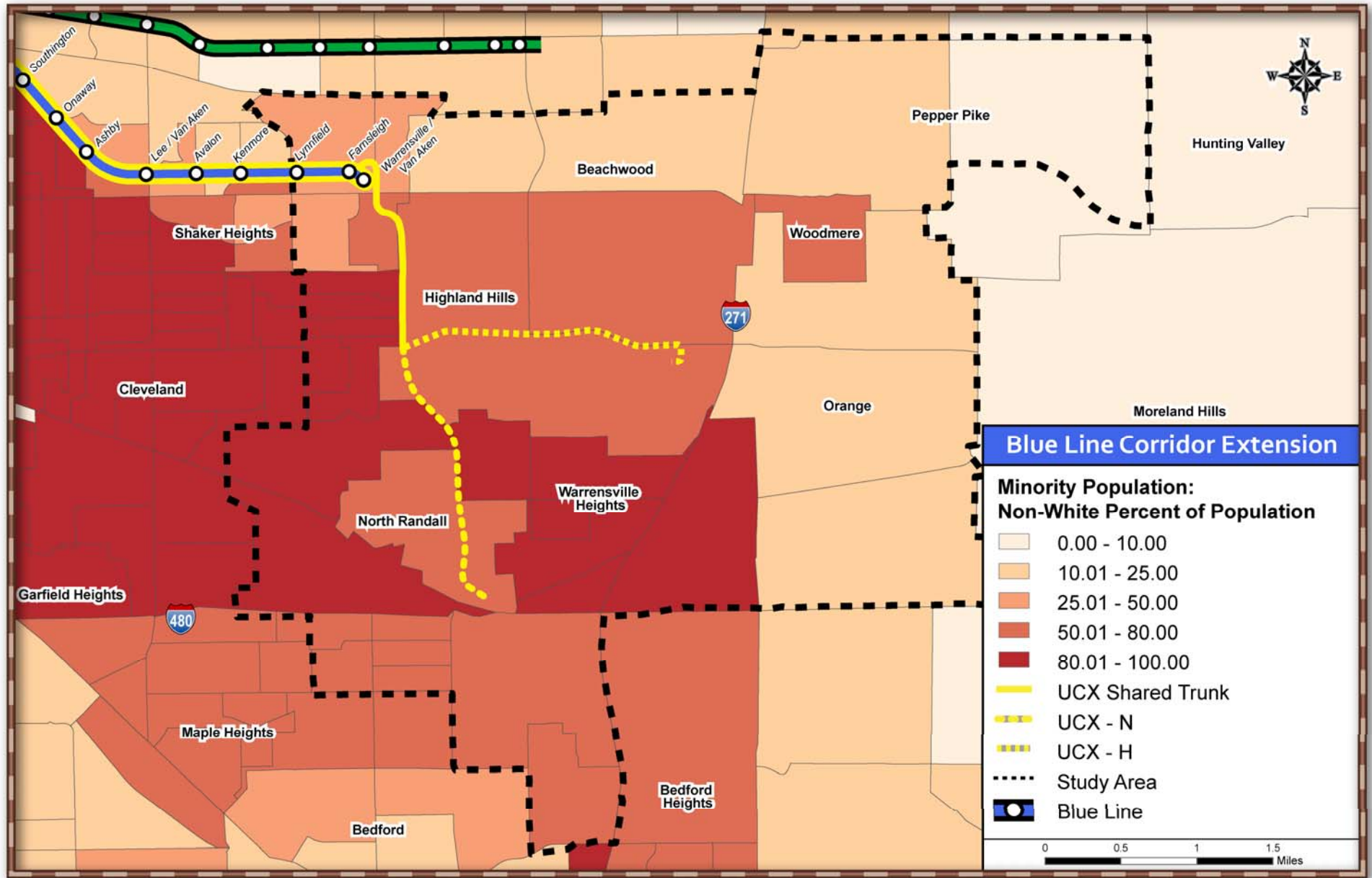
Mobility Improvements

Alternative	Compared To	New Transit Trips	Minutes of User Benefit
Baseline	No Build	1,932	79,282
Harvard Light Rail	Baseline	863	52,077
Harvard Bus Rapid Transit	Baseline	412	26,666
Northfield Light Rail	Baseline	789	47,130
Northfield Bus Rapid Transit	Baseline	408	26,036
Warrensville Light Rail	Baseline	621	38,294
Warrensville Bus Rapid Transit	Baseline	265	18,449

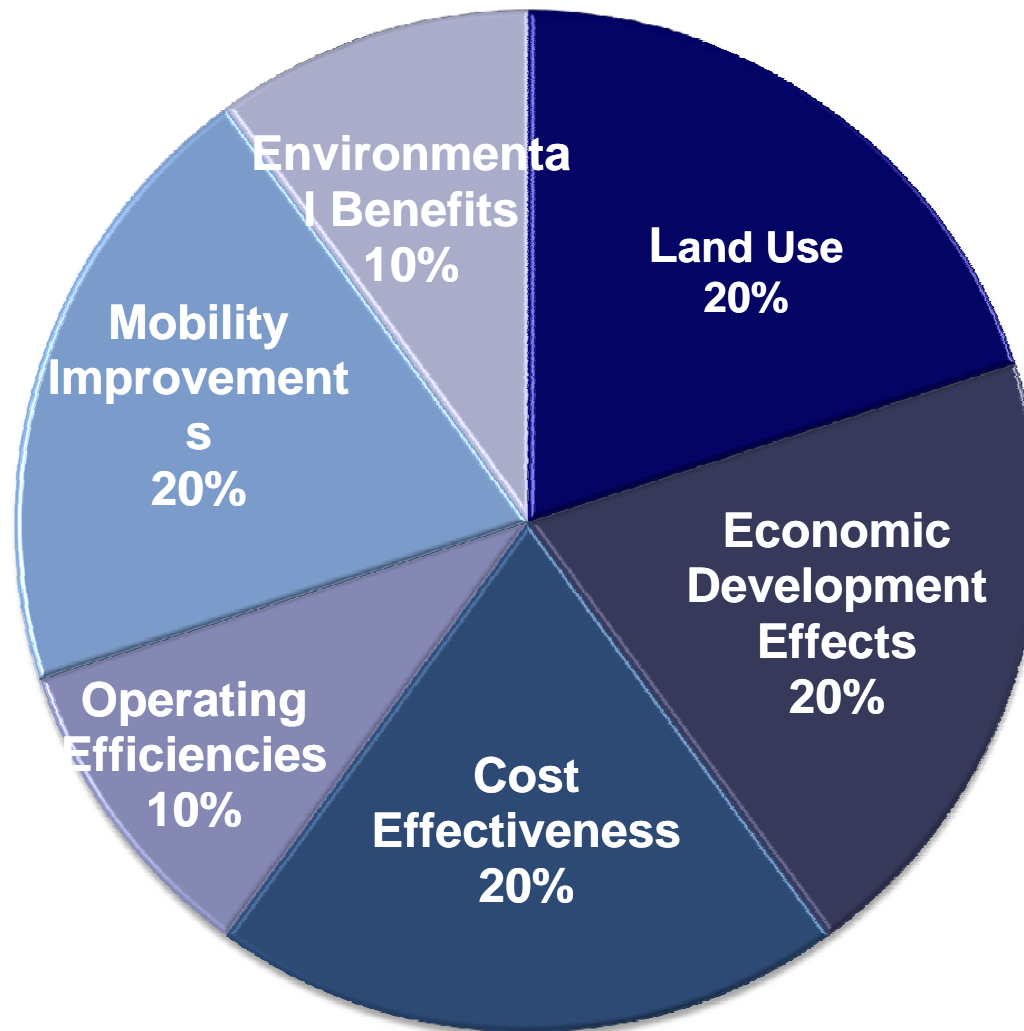
Environmental Analysis



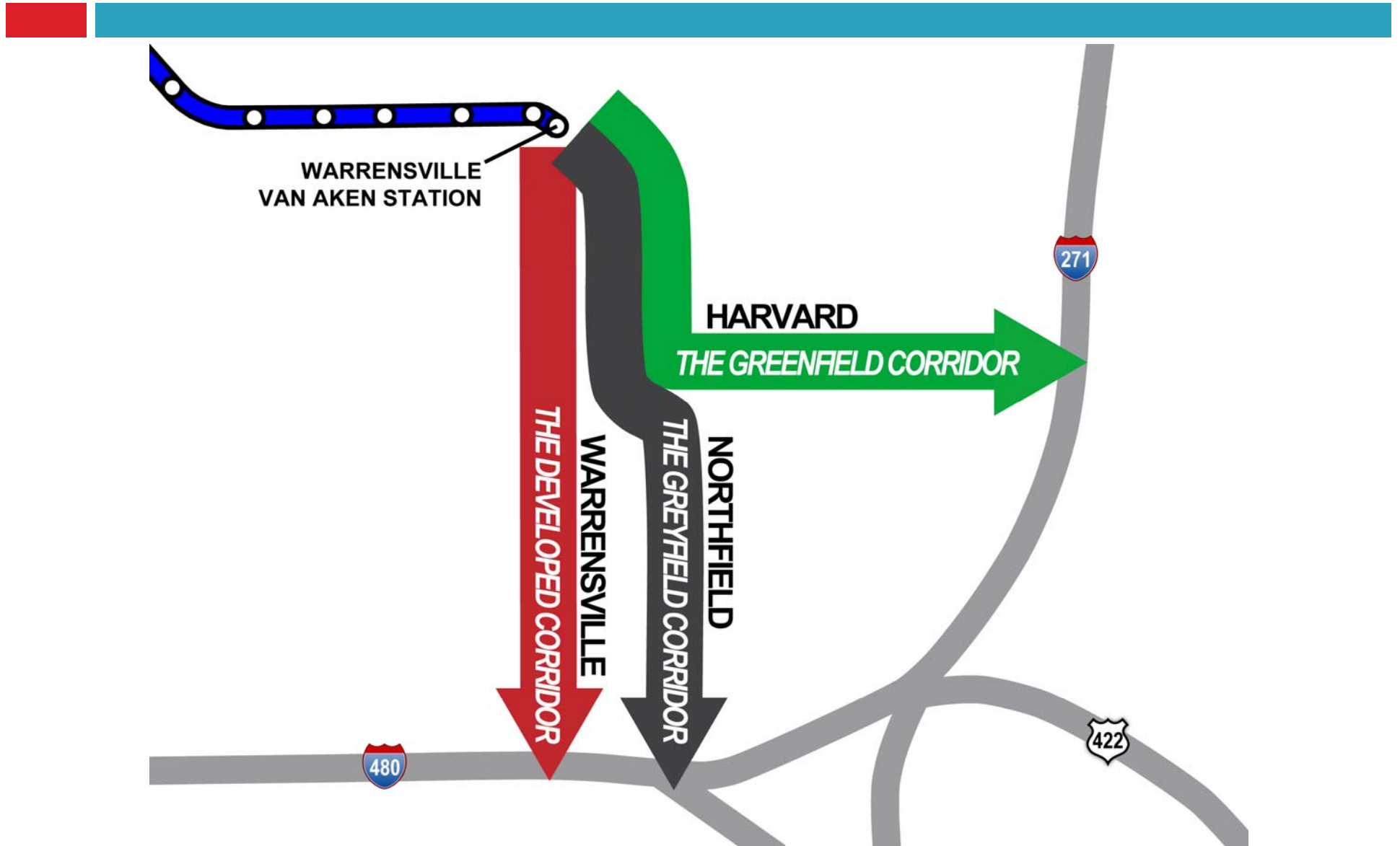
Socio-Economic Analysis



Land Use/Economic Development



Land Use



Cost Effectiveness

- ❑ Cost estimates consider capital (primarily construction) and operating costs
- ❑ FTA Cost Effectiveness Index (CEI) (20% of FTA Rating)
 - ▣ User benefits are expressed in hours of travel time savings for **new and existing transit and roadway** users
- ❑ New Starts Threshold is \$20/Hour of Annual User Benefit

Capital Cost

Alternative	Total Capital Cost
Baseline	\$36.30 M
Harvard Light Rail	\$144.85 M
Harvard Bus Rapid Transit	\$76.26 M
Northfield Light Rail	\$187.79 M
Northfield Bus Rapid Transit	\$82.49 M
Warrensville Light Rail	\$198.39 M
Warrensville Bus Rapid Transit	\$57.17 M

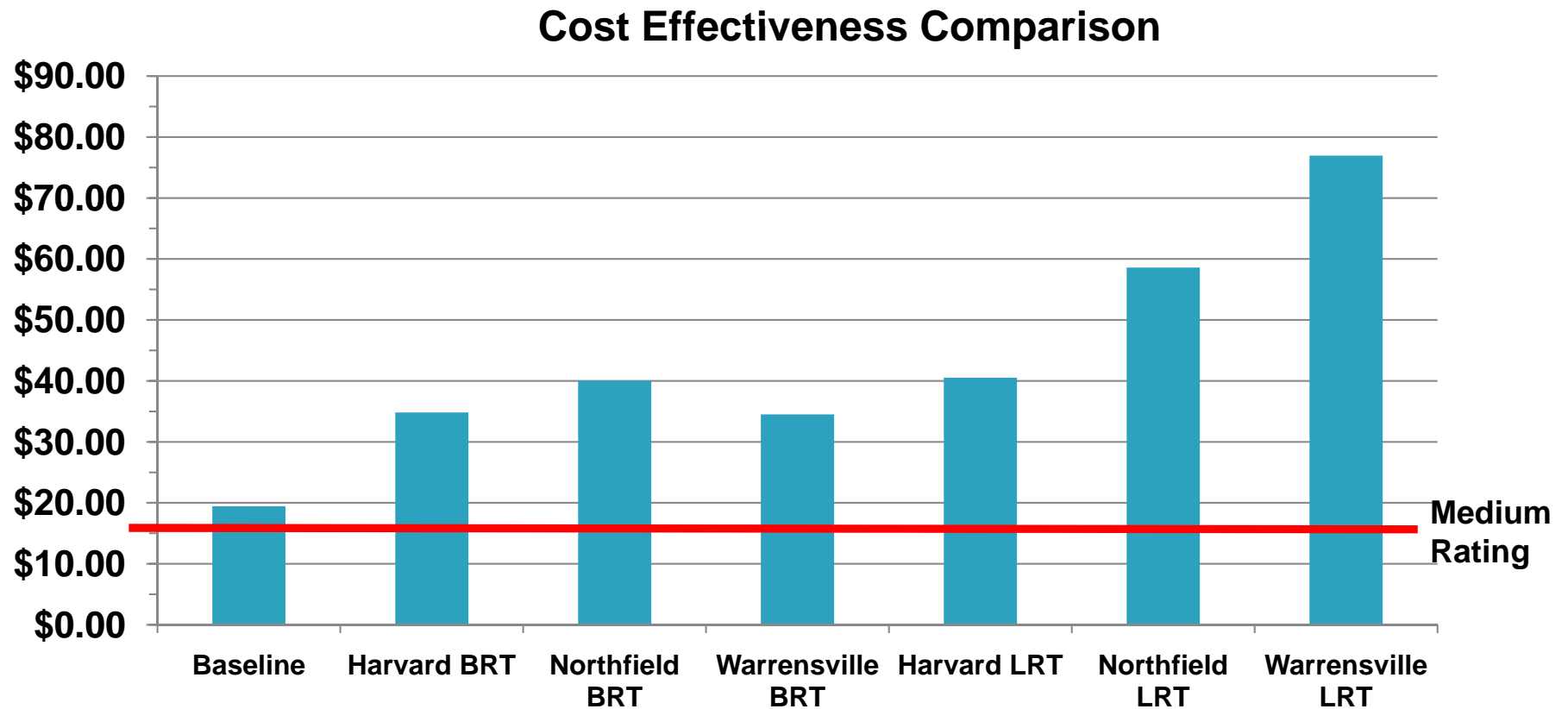
Annualized Costs

Alternative	Annualized Capital Cost	Annual Operating Cost	Total Annualized Cost
Baseline	\$2.96 M	\$4.51 M	\$7.47 M
Harvard Light Rail	\$11.15 M	\$6.57 M	\$17.72 M
Harvard Bus Rapid Transit	\$6.34 M	\$5.63 M	\$11.97 M
Northfield Light Rail	\$14.32 M	\$6.56 M	\$20.89 M
Northfield Bus Rapid Transit	\$6.89 M	\$5.65 M	\$12.54 M
Warrensville Light Rail	\$14.94 M	\$6.84 M	\$21.78 M
Warrensville Bus Rapid Transit	\$4.81 M	\$5.75 M	\$10.56 M

Cost Effectiveness Index

Alternative	Compared to	Cost per Hour of User Benefit	Rating
Baseline	No Build	\$19.43	Medium
Harvard Light Rail	Baseline	\$40.53	Low
Harvard Bus Rapid Transit	Baseline	\$34.82	Low
Northfield Light Rail	Baseline	\$58.59	Low
Northfield Bus Rapid Transit	Baseline	\$40.02	Low
Warrensville Light Rail	Baseline	\$76.94	Low
Warrensville Bus Rapid Transit	Baseline	\$34.49	Low

Cost Effectiveness Index- Comparison



Evaluation Conclusion



- ❑ **Recommendation: Pursue Baseline Alternative in short-term**, build market for possible upgrade to full (Healthline-style) BRT or rail extension later
- ❑ Baseline alternative is cost effective
- ❑ None of the Full-Length Rail Extension or Full BRT Alternatives are cost effective at this time
- ❑ Land use and other benefits are unlikely to overcome the build alternatives' low cost effectiveness rating

Recommendations



- ❑ Recommend Baseline Alternative as Locally Preferred Alternative
- ❑ Baseline Alternative Includes:
 - ❑ 0.3 mile Blue Line extension
 - ❑ Shaker Intermodal Transit Center
 - ❑ University Circle Express (UCX) direct bus service
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Next Steps



- ▣ RTA Planning & Development Committee: January 17
- ▣ RTA CAB Presentation: February 9
- ▣ Public Meetings
 - February 2: Tri C East Campus
 - January 31: Shaker Heights Community Building
- ▣ NOACA Transportation Committee:
 - February 17
 - March 16
- ▣ NOACA Governing Board:
 - March 9
 - April 13
- ▣ RTA Board Approval: March 20
- ▣ Submission to and Approval by FTA: August 2012