Cleveland Opportunity Corridor Project
Challenges in the Urban Core

OTEC
October 27, 2015
Agenda

- Project Background
- Study Area History
- Challenges in the Urban Core
  - Public Involvement
  - Project Coordination
  - Data Collection
  - Utility Issues
  - Maintenance of Traffic
  - Unforeseen Conditions
Project Background

- **Project Purpose**
  - Improve the roadway network within a historically underserved, economically depressed area in the City of Cleveland

- **Project Features**
  - Urban boulevard
    - 1.4 miles existing alignment
    - 2.2 miles new alignment
  - 5 roadway bridges
  - 2 pedestrian bridges
  - 1 rail bridge
  - Retaining walls
  - 24 intersections
  - 13 signalized intersection
  - Medians and landscaping
  - Multi-purpose path
  - Sidewalks
  - Storm sewers
  - Sanitary sewers
  - Waterlines
  - Street lighting
  - Underground power distribution system
  - 1 GCRTA platform/headhouse
  - Bus shelters
Project Background

**Project Impacts**

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent Land – Acres (City Owned)</td>
<td>46.9</td>
<td>(10.2)</td>
</tr>
<tr>
<td>Potential Regulated Material Sites</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>Historic Sites</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Park and Recreation Sites</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Residential Structures (Relocations)</td>
<td>64</td>
<td>(76)</td>
</tr>
<tr>
<td>Church Displacements</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Commercial Business Structures (Relocations)</td>
<td>25</td>
<td>(16)</td>
</tr>
</tbody>
</table>
Study Area History

E105th Street/Euclid Avenue (Circa 1920s)

Euclid Avenue /E 105th Street (Circa 1908)

Nickelplate Road (Circa 1930)

Source: Cleveland State University Library 2005
Study Area History

2010 percent persons below federal poverty level by neighborhood

<table>
<thead>
<tr>
<th>Neighborhood</th>
<th>2010 Poverty Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buckeye-Shaker</td>
<td>43.1%</td>
</tr>
<tr>
<td>Central</td>
<td>65.0%</td>
</tr>
<tr>
<td>University Circle</td>
<td>26.5%</td>
</tr>
<tr>
<td>Fairfax</td>
<td>39.3%</td>
</tr>
<tr>
<td>Kinsman</td>
<td>42.9%</td>
</tr>
<tr>
<td>North Broadway</td>
<td>65.0%</td>
</tr>
</tbody>
</table>

2010 minority population by neighborhood

<table>
<thead>
<tr>
<th>Neighborhood</th>
<th>Minority Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buckeye-Shaker</td>
<td>98.2%</td>
</tr>
<tr>
<td>Central</td>
<td>93.3%</td>
</tr>
<tr>
<td>University Circle</td>
<td>99.2%</td>
</tr>
<tr>
<td>Fairfax</td>
<td>93.6%</td>
</tr>
<tr>
<td>Kinsman</td>
<td>51.7%</td>
</tr>
<tr>
<td>North Broadway</td>
<td>62.7%</td>
</tr>
</tbody>
</table>


- Buckeye-Shaker: -13%
- Central: -56%
- University: -26%
- Fairfax: -67%
- Kinsman: -62%
- North Broadway: -33%
- Buckeye-Shaker: -13%

Source: Draft EIS (August 2013)
Study Area History

- Urban
- Mixed land use
- No major natural resources
- Many human-made resources
- Vacant parcels
- Brownfields
Public Involvement

... lots of it!

- 13 Formal Public Involvement Meetings
- 1 Public Hearing
- Steering Committee Meetings
- Neighborhood Meetings
- Business Coordination Meetings
- Property Owner Meetings
- Other Stakeholder Meetings
- Public Forums
- Media Interviews
- Project Tours
Public Involvement

Coordination of Alternatives

1. Start with what you see, coordinate what you don’t see

2. RECENT CENTER SHIFT

3. BUSINESS EXPANSION SHIFT
Public Involvement
Project Coordination

Steering Committee - Participating Organizations

**Public**
City of Cleveland
State of Ohio
Cuyahoga County
Northeast Ohio Areawide Coordinating Agency
Regional Transit Authority
Federal Highway Administration

**CDCs and Residents**
Buckeye Area Development Corp.
Burten Bell Carr
Fairfax Renaissance Development Corp.
Maingate
Slavic Village Development
University Circle Inc.

**Civic/Non-Profit**
Greater Cleveland Partnership
The Cleveland Foundation
The George Gund Foundation
Case Western Reserve University

**Private**
Cleveland Clinic
Early Stage Partners
New Era Builders
Orlando Baking Company
The Plain Dealer
University Hospitals

**Labor**
North Shore AFL-CIO
# Project Coordination

## City of Cleveland Coordination

<table>
<thead>
<tr>
<th>Engineering and Construction</th>
<th>Cleveland Water Department</th>
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</thead>
<tbody>
<tr>
<td>Traffic Engineering</td>
<td>Water Pollution Control</td>
</tr>
<tr>
<td>City Planning</td>
<td>Cleveland Public Power</td>
</tr>
<tr>
<td>Planning Commission</td>
<td>Bureau of Street Lighting</td>
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<tr>
<td>Real Estate</td>
<td>Office of Sustainability</td>
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<tr>
<td>Economic Development</td>
<td>Police</td>
</tr>
<tr>
<td>Community Development</td>
<td>Fire</td>
</tr>
<tr>
<td>Parks and Recreation</td>
<td>EMS</td>
</tr>
<tr>
<td>Urban Forestry</td>
<td>Mayor’s Office</td>
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<tr>
<td>Park Maintenance</td>
<td>City Council</td>
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</tbody>
</table>
Project Coordination

### Projects

<table>
<thead>
<tr>
<th>Projects</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under Construction</td>
<td>$962M</td>
</tr>
<tr>
<td>Health Education Campus</td>
<td>$515M</td>
</tr>
<tr>
<td>Cancer Building</td>
<td>$276M</td>
</tr>
<tr>
<td>Parking Garage</td>
<td>$43M</td>
</tr>
<tr>
<td>Ring Bus</td>
<td>$128M</td>
</tr>
</tbody>
</table>

### Planned

- Opportunity 105 Development
- New Economy Neighborhood
- Playwright Square
Project Coordination

- Site access
- Traffic maintenance
- Material deliveries
- Joint use of temporary easement
Data Collection

- Record Plans
  - Can you find them?
  - Can you trust them?
- Field Survey
  - Locating a culvert – how hard could it really be?
- ESA Testing
  - Does it really take a dozer?
- Piecing it all together
  - How’d they do that 100 years ago?
5' BRICK SEWER CONSTRUCTED VIA TUNNEL METHOD @ 60' ± COVER

SINGLE SPAN BRIDGE TO REDUCE RISK

PROPOSED BRIDGE LOCATIONS

BRIDGE LOCATIONS

DATA COLLECTION

BRIDGE LOCATIONS

5' BRICK SEWER CONSTRUCTED VIA TUNNEL METHOD @ 60' ± COVER

SINGLE SPAN BRIDGE TO REDUCE RISK

Record Plans
Data Collection

Field Survey – locating a culvert
Data Collection

Field Survey – locating a culvert

- Record Plans downstream
- Manholes upstream
- Junk in between
Data Collection

Field Survey – locating a culvert

72” ROUND
6’ X 6’ BOX
42” CONCRETE

48” RIVETED IRON
48” CONCRETE
10’ X 6’ BOX
Data Collection

Field Survey – locating a culvert
Data Collection

Field Survey – locating a culvert – Found it!

CLEARING

DEBRIS REMOVAL

HOLE IN PIPE FOUND

USED TIRES FOR SALE!
Data Collection

How to locate a culvert

- Manhole construction
- Internal gyroscopic surveys

 NOTES:
1. PRECAST MANHOLE PER ASTM C-478.
2. REINFORCING IN WALLS TO BE ONE LAYER OF 2" X 8" W5.5/W3 WELDED WIRE MESH CIRCUMFERENTIAL REINFORCEMENT =0.33 SQ. IN./VERT. FT.

84" DIA. STORM MANHOLE — 8" WALLS

MACK INDUSTRIES, INC.
201 COLUMBUS ROAD, VALLEY CITY, OHIO 44280
(216)483-3111
Data Collection

Piecing it all together 1910
Data Collection

Piecing it all together

E 105\textsuperscript{TH} ST

QUINCY AVE

TROLLEY TRACKS

1928
Data Collection

Piecing it all together

CULVERT THROUGH ABUTMENT

90" BRICK
Data Collection

Piecing it all together

APPARENT SIPHON CONDITION

SIPHON DRAIN CONSTRUCTED UNDER INVERT OF EXISTING 90” BRICK SEWER

RR TRACKS PLACED ON CULVERT SLAB
Data Collection

Piecing it all together 1930

- RE-PROFILING
- CULVERTS THROUGH FOOTINGS
- 2-SPAN TO 5-SPAN CONVERSION
Data Collection

ESA Testing – does it really take a dozer?
Utility Issues

- Old
- Extensive networks
- Lots of owners
- Identifying abandoned utilities
- Relocation constraints
- Maintain old during construction
Utility Issues

Extensive Networks

Looks as bad in the field as it does in the plans
Utility Issues

Site Constraints

CPP ducts... Some are easy

...Some are hard
Utility Issues

Shallow Utilities

- Shallow AT&T ducts in clay tile
- Demo ducts and support cables
- Split casings and concrete encasement

EXISTING 36" WATER

PICK A WIRE
ANY WIRE
Utility Issues

And they said it couldn't be built

The quick way to drain a water line

A water line in an electric manhole… Shocking
Maintenance of Traffic

- Tight zones
- High traffic volumes
- Concurrent work by others
- Need to be flexible
Unforeseen Conditions

Buried Treasures

Double decker trolley tracks?

Unrecorded storage tanks

Buried building debris… one way to fill a hole
Unforeseen Conditions

Pre-removal of waterlines… by others

Signal foundations at unstable locations – how deep do we go?
Section 1 Design

Challenges

- Expedited design schedule
- “Just in time” right of way clearance
- Concurrent utility relocations
Section 1 Construction

Mitigation Measures in Plans

- Contingency quantities (backfill, excavation)
- Large contingencies for MOT quantities
- Paid for on-hand materials
  - Waterline bends
  - Installing waterline bends
- Pay item for trolley tracks
- Pre-phased utilities in MOT
- Utility test holes driving construction
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