

7th/9th CONNECTOR PROJECT BACKGROUND

The purpose of the NW 7th and 9th Avenue Connector project was to reduce traffic congestion and facilitate more efficient traffic flow along Sunrise Blvd by constructing roadway improvements that will connect the area of Broward Boulevard and NW 7th Avenue to Sunrise Boulevard and NW 9th Avenue, and will divert and reduce cut-through traffic from local streets through the neighborhoods between Sunrise Blvd and Broward Blvd. The project also included streetscape enhancements for the entire length of the project.

The project was originally initiated in 1995 when the City of Fort Lauderdale approved the incorporation of the NW 7th and 9th Avenue Connector as a component of the Northwest Progresso-Flagler Heights Community Redevelopment Plan, and since then the City has been working with The Florida Department of Transportation (FDOT) on defining the alignment, design parameters and funding sources for the project. The project development & environment (PD&E) study for the project was completed on 2003, and the alignment for the project was defined.

On September 16, 2008 R.J. Behar & Company Inc. was selected as a consultant to produce 60% design plans for the project. The original design was completed based off the approved alignment for the 2003 PD&E study and FDOT estimated right-of-way impacts for this project to cost approximately \$108 million. To help reduce this estimated right-of-way cost, the City requested reduction of the design footprint and design speed. The 60% plans were revised to meet the new design criteria and the right-of-way impacts were reduced to approximately \$34 million.

Work completed to date by R.J. Behar & Company on the project includes development of 60% plans for the project, analysis of potentially contaminated sites along the connector corridor, environmental assessment for some properties along the connector corridor, development of construction cost estimates for the project and public meetings for the project. Also, a report documenting changes in social, economic and environmental impacts was submitted to FDOT for their review and comment, and FDOT responded in a memorandum dated December 1, 2011. Responses to the FDOT memorandum must be provided to FDOT to receive acceptance and approval of funding support.

Work required to bid and construct the project include revaluation of contaminated sites along the connector corridor, contamination assessment and remediation, development of 100% construction documents, right-of-way acquisition, procurement of permits for the project, FDOT coordination and public outreach.

The estimate cost to complete the project is \$ 43,725,000, which includes \$34,000,000 for right-of-way acquisition, \$2,325,000 for environmental assessment and remediation, \$6,500,000 for construction and \$900,000 for engineering design. Total estimated time to complete the project is 55 months.

WORK COMPLETED TO DATE

R.J. Behar & Company Inc. has completed 60% design plans for the new alignment

footprint approved by the City and depicted in Figure 1. The 60% design uses a reduced design speed from 45 mph to 35 mph, which allows for smaller radii on the reverse curve without super elevation (which was determined as necessary to further reduce the right-of-way impacts), reduced median widths, milling and resurfacing north and south of the connector, and an overall reduced footprint.

The chosen alignment meets all minimum design criteria specified in the Florida Greenbook and other required criteria. The Florida Greenbook is the common name for the Manual of Uniform Minimum Standards for Design, Construction, and Maintenance for Streets and Highways. For a breakdown of the minimum criteria used, please refer to Table 1.

Table 1. Design Criteria Used (Oct. 11, 2010)

DESIGN ELEMENT	DESIGN MANUAL	CRITERIA
Design Speed (V)	N/A	35 mph
Clear Zone	2007 Florida Greenbook Table 3 - 12	4 ft
Max. Grades	2007 Florida Greenbook Table 3 - 4	7 %
Max. Grade Change (No VC)	2007 Florida Greenbook Table 3 - 5	0.90
Base clearance water elevation	Broward County Code of Ordinance. Chapter 27 Sec 27-200	2 ft
Min Lane Width	2007 Florida Greenbook Table 3 - 7	11 ft.
Horizontal Alignment	2007 Florida Greenbook Chapter C-4a	Min. Length of Curve = 900 ft for a central angle of 1 degree. Min. Length of Curve = 500 feet long for a central angle of 5 degree.
Roadway Cross Slope	2007 Florida Greenbook Chapter C.7.b.2	2%
Super elevation	NC	NC
Super Elevation Transition	2010 PPM, Vol. 1 Chapter 2 Table 2.9.3	1:175
Roadside Slopes	2007 Florida Greenbook Chapter C.7.f.2	1:4
Stopping Sight Distance	2007 Florida Greenbook Table 3 - 14	250 ft.
Maximum Change in Grade Without Using	2007 Florida Greenbook Table 3 - 5	Design Speed = 30 MPH, 1.00 Design Speed = 35 MPH, 0.90

DESIGN ELEMENT	DESIGN MANUAL	CRITERIA
Vertical Curve		
Vertical Curve	2007 Florida Greenbook Table 3 - 6	$L=KA$ K value of crest vertical curve = 47 K value of sag vertical curve = 49 Min. length of vertical curve = 105 ft. (3V)
Comfort Curve	AASHTO	$L = \frac{AV^2}{46.5}$

The selected alignment resolves traffic problems within the area, allows for pedestrian/transit facilities, and connects the two major arterials with safety as a high priority. Since this project will be partially funded by Broward County, variances were developed to address County design criteria not met (design speed and median width). The comparison of the two typical sections can be seen in Figure 4.

With the criteria for the new alignment set, RJ Behar was then required to go back to the Federal Highway Administration (FHWA) and FDOT to obtain approval to deviate from the approved PD&E alternative. This new alignment was approved in concept but required re-evaluation. Please refer to Figure 1 for an illustration of this revised and approved alignment.

As part of the re-evaluation, the City was required to complete an analysis of potentially contaminated sites along the connector corridor. This was completed to satisfy the Federal Highway Administration’s requirements for compliance with the National Environmental Policy Act (NEPA) (as a condition of receiving funding from FDOT), to support selection of pond locations, and to prepare the Community Redevelopment Act (CRA) to manage possible contamination resulting from historical industrial activities in the area. The re-evaluation included the following tasks:

- Cultural Resources Assessment
- Updated Contamination Screening Evaluation
- Pond Siting Report
- Evaluation of Major Design Changes and Revised Design Criteria
- Drainage, FONSI, CRAS

The updated Contamination Screening Evaluation involved reviewing historical documentation and regulatory information to assess the potential for contamination at each site along that section of the corridor. The evaluated sites were provided a “risk

rating” per FDOT’s requirements. Soil and groundwater testing was conducted on a portion of some of the sites. The following summarizes the results:

- Ninety six (96) sites were evaluated
- Of the nine six (96) sites evaluated, fifty four (54) “high” and “medium” risk ranked sites were identified. FDOT requires medium and high risk ranked sites with the potential to impact the project to be tested for possible contamination.
- The fifty four (54) site boundaries were designated by land use. However, to obtain access to the sites, ownership by parcels was determined.
- Of the fifty four (54) sites, twenty four (24) sites (totaling 30 property parcels) were selected for environmental testing based on their location and proximity to the proposed corridor.
- Testing was conducted on four of the “high” and “medium” risk ranked sites (seven parcels) within the specified project area. Soil contamination was identified on two of the sites. Possible underground structures, such as oil/water separators or underground storage tanks, were identified on three sites. These issues can be managed as part of construction and should not affect the scope or design of the project. Groundwater contamination was not identified at the tested sites

After the re-evaluation was conducted, all of construction documents were revised and updated to a 60% capacity and the right-of-way figures were re-estimated. The right of way impacts were re-estimated and came in around \$34 million, which was significantly lower than previously estimated and aligned. The impacted properties can be seen in Figure 5.

ADDITIONAL WORK REQUIRED TO COMPLETE 100% DESIGN

The project construction documents are currently at 60% completion. These plans have been approved by the City via the CRA Department. To progress forward to 100% construction documents and permitting, the following would be required:

- Another re-evaluation from the re-evaluation conducted in 2010 to address any changes that have occurred since then and finalize the design.
- Finalize construction documents (plans, specifications, etc.)
- Permits will need to be procured (roadway, drainage, environmental, etc.)
- Create ROW Acquisition Maps
- FDOT to commence right-of-way acquisition process
- Utility coordination meetings will be needed to relocate all of their facilities to be in accordance with the proposed design. This utility coordination phase will be very extensive and time consuming due the complexity of the project and to ensure services to those property owners which are unaffected by these improvements remain uninterrupted throughout the construction of this project.
- Receive Final FHWA Approval
- Final FDOT Local Agency Program (LAP) Coordination

To address the known and potential future contamination issues, the following tasks will be required:

- Test the remaining 20 “high” and “medium” risk ranked sites to identify the presence/absence of contamination and to delineate identified areas of contamination. This testing would likely be conducted in two phases:
 - The first phase would be implemented prior to acquisition of the sites and the second phase would be conducted once the properties are abandoned.
 - The second phase would be deferred because the properties are occupied and the testing will need to be conducted inside buildings that are currently inaccessible.
- Remove and properly dispose (incineration, landfilling, etc.) of contaminated soils identified during testing.
- Remove underground structures that may contain petroleum or other wastes such as underground storage tanks or oil/water separators. Properly dispose of such wastes and structures.
- Possible treatment of groundwater contamination during dewatering or relocation of drainage systems, if groundwater contamination is identified at the sites to be tested in the future.

As mentioned above, a draft re-evaluation report documenting changes in social, economic or environmental impacts was submitted to FDOT for their review and comment. FDOT responded in a memorandum dated December 1, 2011 with comments that essentially require the following to be addressed:

- Update the format of the re-evaluation to utilize a recently updated version of the form. This new form compels the City to provide additional information to include a Planning Consistency Component and a section on Relocation Potential.
- Provide clarification or additional language related to items such as public information, funding, project limits and coordination with other redevelopment projects.
- Submittal of a full hard copy Cultural Resources Assessment Survey report.
- Updates of status of items since the previous re-evaluation.
- Include relevant pages from the Long Range Transportation Plan.
- Conduct an updated endangered and species survey.

The re-evaluation report will need to be submitted prior to FDOT’s acceptance and approval of funding support.

An estimated timeline for completion of the above tasks is as follows:

- Nine (9) months for design and permitting from 60% to 100% construction documents.
- Three (3) months for first phase of environmental contamination process.
- Sixteen (16) months for creation of ROW acquisition maps.
- Two (2) years for ROW acquisition process.
- Three (3) months for second phase of environmental contamination process.
- **Total estimated completion timeline of 55 months.**

The estimated cost for the above tasks can be broken down as follows:

Engineering Design

Final Design	\$425,000
Re-evaluation	
New Survey	
100% Plans	
Specifications	
Utility Relocation Schedules	
FHWA Approval	
FDOT LAP Coordination	
R/W Acquisition Maps	\$425,000
Total Engineering	\$900,000

R/W Acquisition **\$34,000,000**

Pre-Construction

Contamination Screening	\$325,000
Environmental Remediation (Clean Up)	\$2,000,000
Total Pre-Construction	\$2,325,000

Roadway Construction **\$6,500,000**

Estimated Project Cost **\$43,725,000**