



## State Nears New I-395 Signature Bridge Downtown Miami

The state transportation department is closer than ever to final plans to improve I-395 and build a new signature bridge spanning Biscayne Boulevard in downtown Miami.

If the current timetable unfolds without unexpected detours, work on the massive project should begin within 12 months. That's the word from the Florida Department of Transportation.

Five firms approved by the state to enter the final phase of the procurement process are currently preparing final details of price proposals. A bid opening is set for spring. A public meeting to announce technical scores and open price proposals is scheduled for April 10, Maria I. Perdomo of the transportation department said this week. She is project manager for the I-395 revamp. The project, which includes improvements to I-95 and 836, has an estimated cost of \$800 million and will be accomplished through a team effort.

Ms. Perdomo identified the five joint ventures that passed the pass/fail phase of the Aesthetic Signature Bridge Proposal as:

- Archer Western – de Moya JV
- Building a New Miami Partners
- Flour-Astaldi-MCM
- Kiewit Granite Construction, a Joint Venture
- Miami Community Builders JV

In February, when the transportation department requested proposals concerning procurement for the I-395 / SR 836 / I-95 Reconstruction Project, state officials said they were requesting proposals from design/build firms. The state is seeking a qualified firm that is experienced in the reconstruction of roadways and bridges and "must have proven ability to deliver a reconstruction project of this magnitude." The five design/build firms were short-listed this fall.



The bulk of the project is to rebuild 1.4 miles of I-395 from the I-95/Midtown interchange to the west channel bridge of the MacArthur Causeway in Miami. The freeway to be rebuilt is part of State Road 836, known as the Dolphin Expressway. The portion between I-95 and the causeway is designated as I-395 and takes traffic to and from Watson Island and Miami Beach. The total project consists of four components: the I-395 reconstruction; improvements to Miami-Dade Expressway Authority's SR 83611; I-95 pavement reconstruction; and the westbound connector.

All of the work is to be completed in five years, according to the state.

To read more see excerpt://www.miamitodaynews.com/2016/12/20/state-nears-new-395-signature-bridge-downtown/



### About The FDOT

The goal of the DBE Supportive Services Program is to increase the number of DBEs participating on FDOT contracts and facilitate the opportunity for DBEs to obtain contracts. The services are designed to:

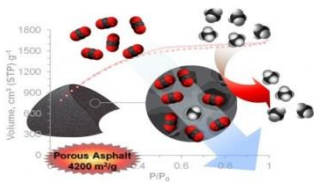
- Assist established construction firms to move them from bidding as a subcontractor to bidding as a Prime Contractor to produce sound bids.
- Provide access to training increases DBE expertise in handling of daily business operations.

### About The Program

The Construction Estimating Institute (CEI) works with FDOT as the statewide provider of the federally funded Disadvantaged Business Enterprises (DBE) Supportive Services Program.

We want to increase the number of certified DBEs participating in highway and bridge construction, as well as assist DBEs in growing and eventually becoming self-sufficient. Additionally, CEI provides supportive services by assisting prime contractors and consultants with identifying DBEs for subcontracting opportunities on priority projects.

## New Asphalt Technology Captures Carbon Dioxide



Rice University scientists have improved their asphalt-derived porous carbon's ability to capture carbon dioxide, a greenhouse gas, from natural gas.

### How It's Made

The lab heated a common type of asphalt known as Gilsonite at ambient pressure to eliminate unneeded organic molecules, and then heated it again in the presence of potassium hydroxide for about 20 minutes to synthesize oxygen-enhanced porous carbon with a surface area of 4,200 square meters per gram, much higher than that of the previous material. The Rice lab's initial asphalt-based porous carbon collected carbon dioxide from gas streams under pressure at the wellhead and released it when the pressure was released. The carbon dioxide could then be repurposed or pumped back underground while the porous carbon could be reused immediately.

Raw natural gas typically contains between 2% and 10% carbon dioxide and other impurities, which must be removed before the gas can be sold. The cleanup process is complicated and expensive and most often involves flowing the gas through fluids called amines that can soak up and remove about 15% of their own weight in carbon dioxide. The amine process also requires a great deal of energy to recycle the fluids for further use.

"It's a big energy sink," says Rice University chemist James Tour, whose lab developed a technique last year to turn asphalt into a tough, sponge-like substance that could be used in place of amines to remove carbon dioxide from natural gas as it was pumped from ocean wellheads.

Initial field tests in 2015 found that pressure at the wellhead made it possible for that asphalt material to adsorb, or soak up, 114% of its weight in carbon at ambient temperatures.

Tour said the new, improved asphalt sorbent is made in two steps from a less expensive form of asphalt, which makes it more practical for industry. "This shows we can take the least expensive form of asphalt and make it into this very high surface area material to capture carbon dioxide," Tour says. "Before, we could only use a very expensive form of asphalt that was not readily available."

To read more see excerpt://[www.forconstructionpros.com/article/12257388/asphalt-that-captures-carbon-dioxide](http://www.forconstructionpros.com/article/12257388/asphalt-that-captures-carbon-dioxide)

In the latest tests with its new material, Tours group showed its new sorbent could remove carbon dioxide at 54 bar pressure. One bar is roughly equal to atmospheric pressure at sea level, and the 54 bar measure in the latest experiments is characteristic of the pressure levels typically found at natural gas wellheads, Tour said.

### Smog Eating Concrete

Another study being conducted in the Netherlands is being said to cut pollution by up to 45%.

Researchers working for the Eindhoven University of Technology spent years studying smog-eating pavement used on a city block in Hengelo, Netherlands.

The "photocatalytic" pavement used in Hengelo had been sprayed with titanium oxide (TiO<sub>2</sub>), a chemical that can take air pollutants, such as nitrogen oxide, and convert them into less-dangerous chemicals, such as nitrates, the paper's authors report.

"[The concrete] could be a very feasible solution for inner city areas where they have a problem with air pollution," Brouwers said.

## Supportive Services Offered



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- Creating a Business Plan
- Building a Website



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