

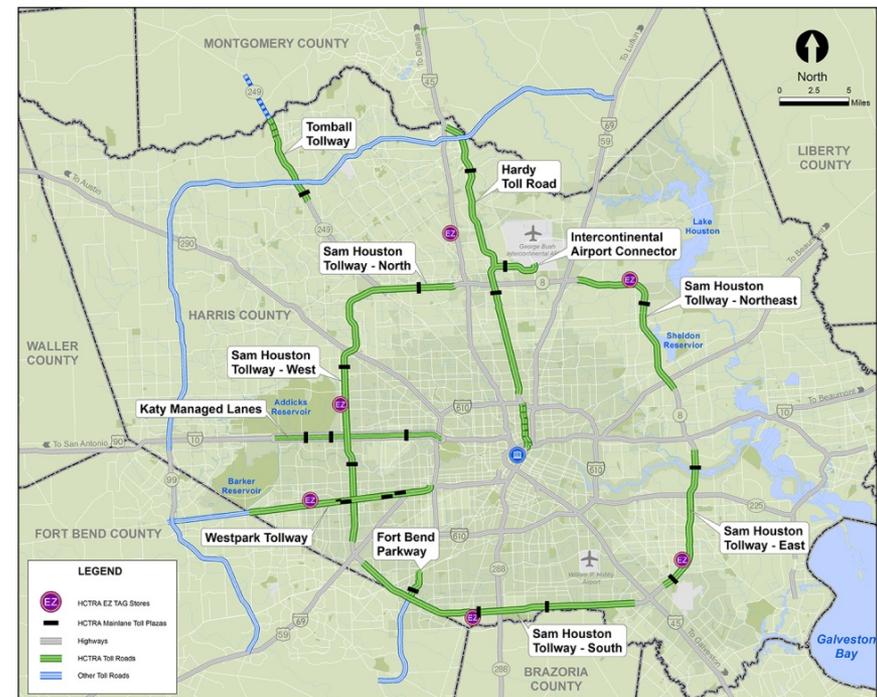
Hardy Toll Road: Improvement to 32-year old facility



HARRIS COUNTY TOLL ROAD AUTHORITY

The Toll Road Authority was created in 1983 after Harris County voters approved a referendum to release \$900 million in bonds to construct toll roads in the rapidly growing Greater Houston Metropolitan area.

Harris County Toll Road Authority provides a transportation option to help address regional growth that is independent of State planning or funding, which cannot support the mobility needs of that region.



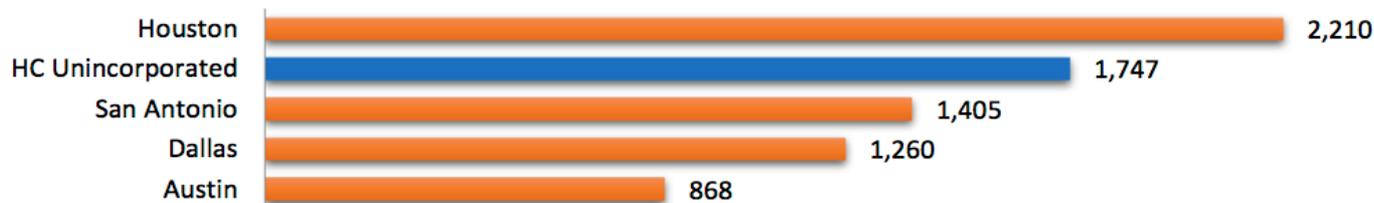
A major challenge for a transportation agency is solving how to maintain aging infrastructure to accommodate growing or densely populated regions. The condition of infrastructure will influence the commerce, growth, and standard of living in a region.

Unique Unincorporated Area

Harris County is essentially home to the 2 largest cities in Texas if you consider the unincorporated area as a stand-alone city. Harris County Unincorporated passed the cities of Phoenix and Philadelphia in the 2010 census meaning that Harris County is essentially home to both the fourth (Houston) and fifth (Harris County Unincorporated) most populous "cities" in the U.S.

Harris County is the only county in Texas and likely the only county in the U.S. with such a significant unincorporated area. The following chart shows the data for the top five "cities" in Texas.

	2000 Census	2010 Census	2012 Estimate	2013 Estimates
City of Houston (entire city)	1,953,631	2,099,451	2,175,000	2,210,000
Harris County Unincorporated	1,041,174	1,561,463	1,698,000	1,747,000
San Antonio	1,144,646	1,327,407	1,383,000	1,405,000
Dallas	1,188,580	1,197,816	1,241,000	1,260,000
Austin	656,562	790,390	843,000	868,000



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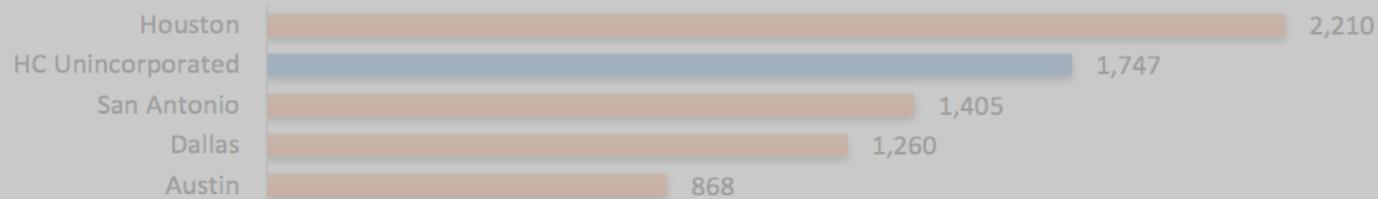
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Harris County is the 3rd largest county in the nation in terms of population.

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Over 30% growth since 2000 and over 56% since 1990.



September 2014

Both Moody's and Fitch released credit rating reports on U.S. toll roads.

"Toll-paying users expect a high rate of service and that the assets will be maintained in a good state of repair."

- Moody's

SEPTMBER 12, 2014 INFRASTRUCTURE

MOODY'S
INVESTORS SERVICE

SPECIAL COMMENT US Toll Roads

[Rate this Research >>](#) **Factors That Drive Strong Credit Quality**

Size matters but so do resilience to downturns and rate-raising ability

FitchRatings

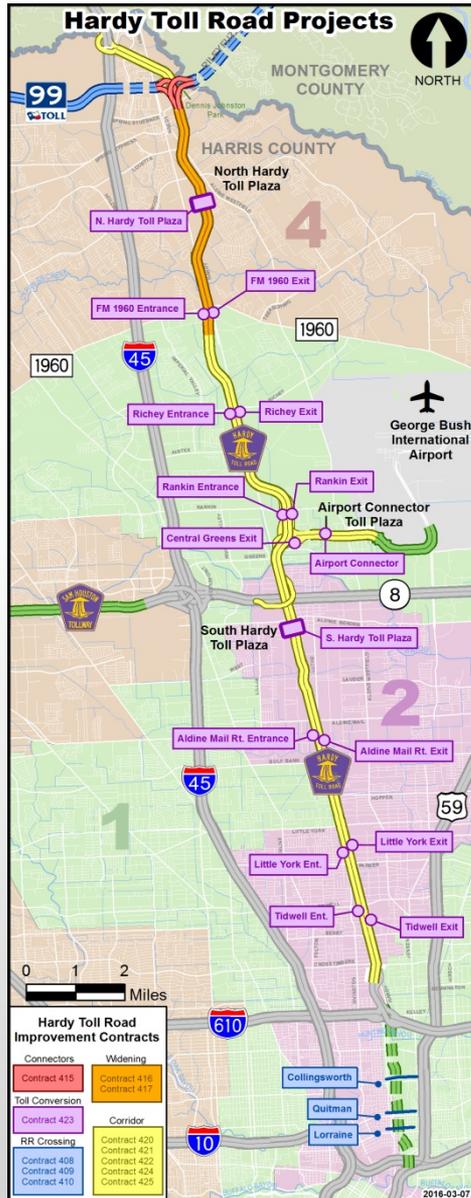
Peer Review of U.S. Toll Roads

Attribute Assessments, Metrics, and Ratings



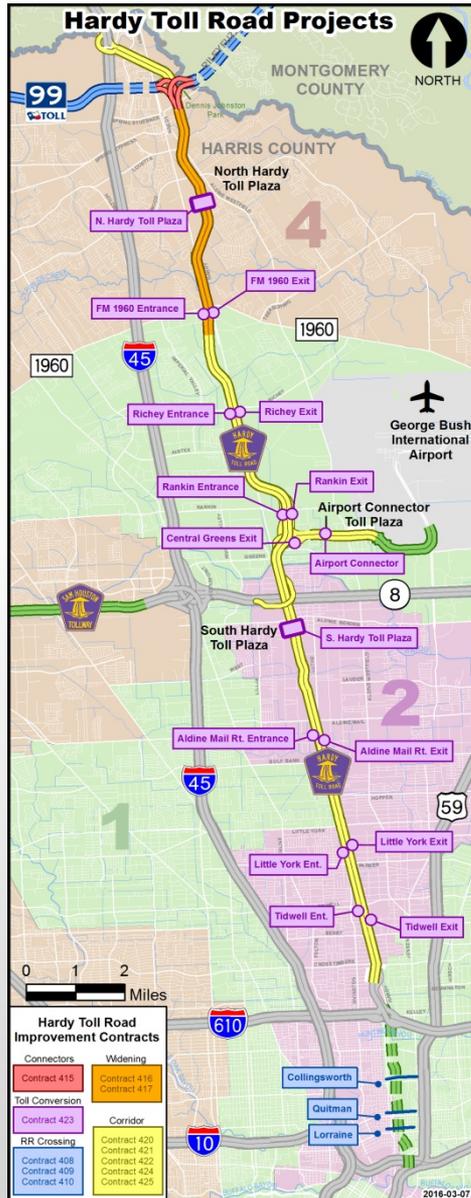
Key Rating Factors

Fitch's rating criteria for toll roads identifies six key rating factors implicit in all toll road ratings: risk related to construction of the toll road (if relevant); traffic demand characteristics (volume); the sensitivity of users to current or proposed toll rates, and the legal, political and economic flexibility to increase tolls if required (price); the toll road operator's approach to maintaining and improving its infrastructure base (Infrastructure



Hardy Toll Road

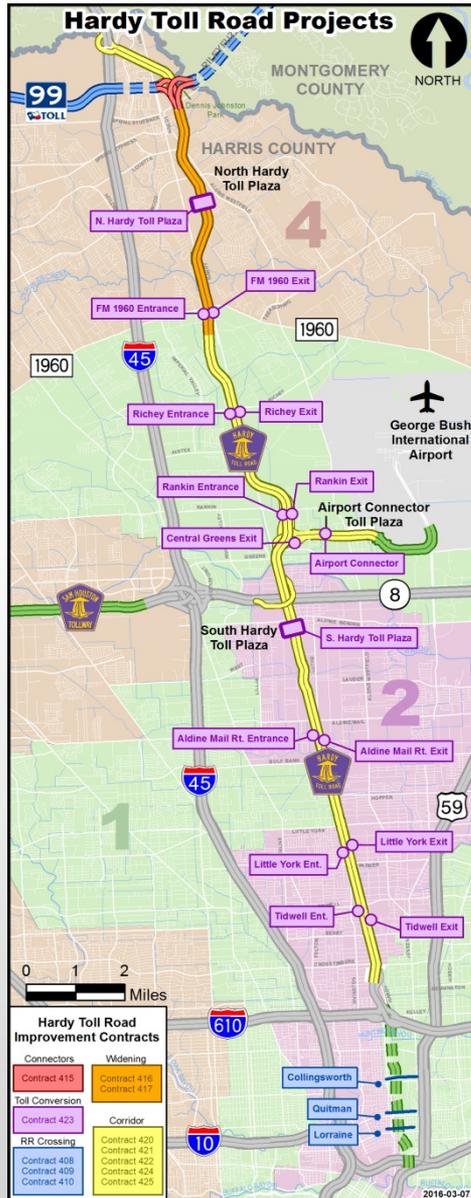
- Construction started in 1984, 22 mile corridor completed in 1988 (32 yrs. old)
- Serves as the North / South alternate route to IH-45
- IH-45: One of the busiest segments of highway in the State of Texas.
(34th/ 42nd / 10th according to recent TTI 2015 study)
- Weekday ADT= Over 30,000
- Peak hour facility , 95% in 12 hr.
- 6 CL mile= 4 lane & 16 CL mile= 6 lane
- During Peak Time ~90% tag penetration
- Exxon recently established corporate headquarters at northern end
- Texas opened all ETC SH99 facility



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Capacity IMPROVEMENT Warranted



Comprehensive Overhaul:

Currently performing \$165 million dollars in infrastructure improvements, which includes:

- Four connector interchange with TxDOT's SH99 toll facility
- Widening 6-miles of the existing roadway from 4 to 6 lanes

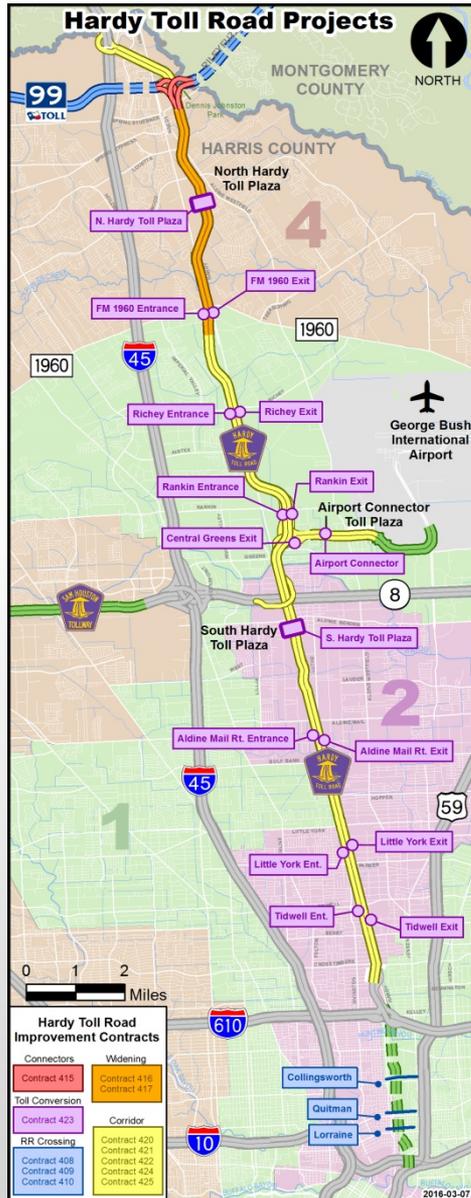


415 / 416/ 417– Main Lane Widening & SH 99 Interchange - \$83.6M

Contractors: Webber & Williams Bros.

The main lanes (FM 1960 to SH-99) are being widened from four to six lanes. The widening ends at a four connector interchange at TxDOT's Grand Parkway (SH 99).





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- Rehabilitating and retrofitting existing structures

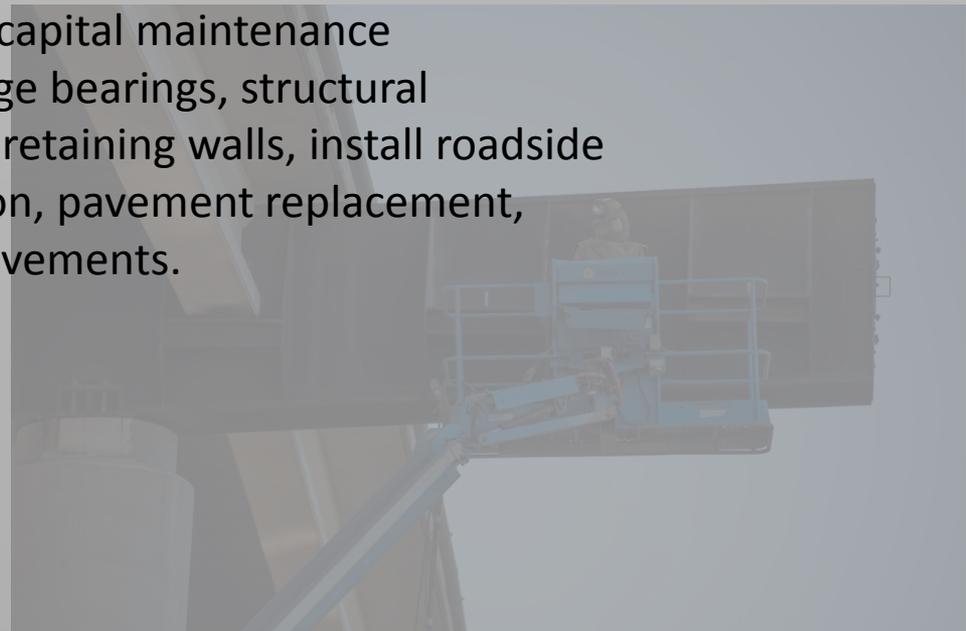


**421 / 422 – Bridge, Roadway and Drainage
Maintenance Improvements - \$29M**

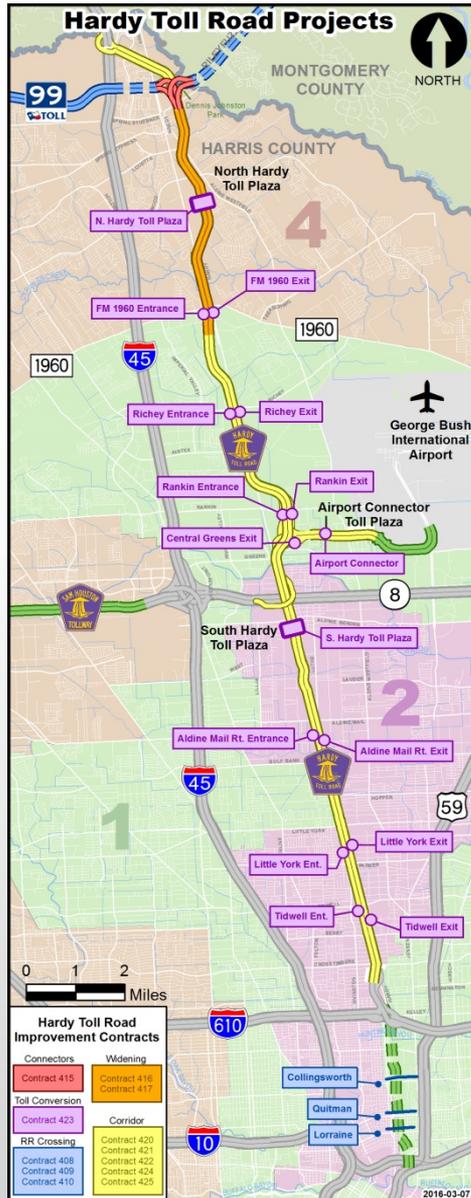
Contractors: OHL and ISI



The project includes multiple capital maintenance improvements; replacing bridge bearings, structural improvements to bridges and retaining walls, install roadside safety devices, ramp relocation, pavement replacement, and main lane drainage improvements.







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- Rehabilitating and retrofitting existing structures
- Upgrading pavement markings and signage
- Enhancing roadside safety devices and lighting



420– Signing & Pavement Marking Improvements - \$7.3M

Contractor: Traffic Systems

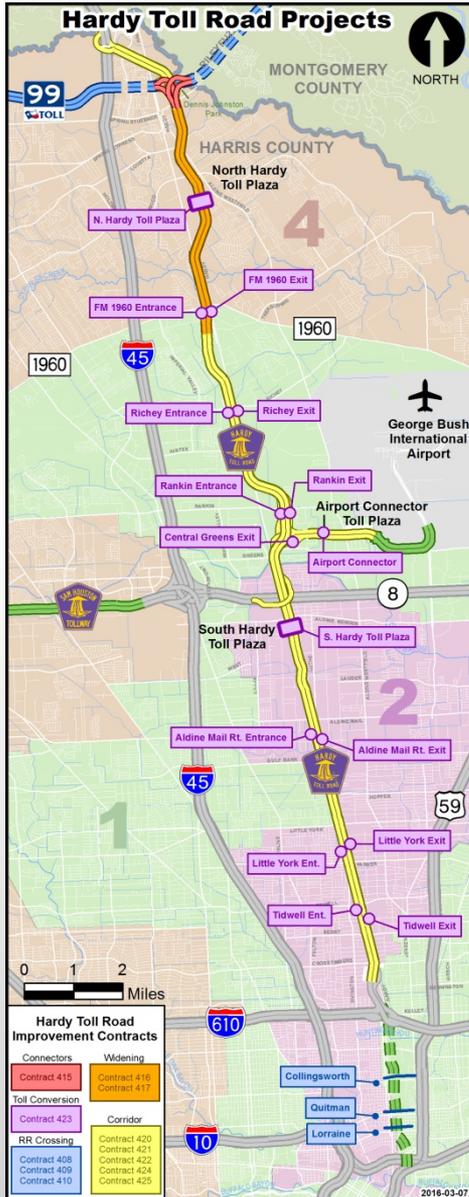
The project is updating the existing roadway pavement markings and installing overhead roadway signage for the length of the 22-mile corridor, outside of the limits of the main lane widening.







20 to 30% reduction in Kw per mo. ~4% reduction in overall consumption.



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- Rehabilitating and retrofitting existing structures
- Upgrading pavement markings and signage
- Enhancing roadside safety devices and lighting
- Reconstructing the toll plazas and converting the corridor to an all-electronic toll collection facility.
- The overall program consists of nine projects, with an overall duration of 24 months*. Prior to Super Bowl



423– Toll Plaza Conversion - \$26.3M

Contractor: Texas Sterling

The project includes reconstructing 13 ramp and 3 main lane toll plazas along the Hardy corridor to support converting Hardy Toll Road to an EZ TAG only facility. Conversion of the corridor is scheduled to occur Summer of 2016.



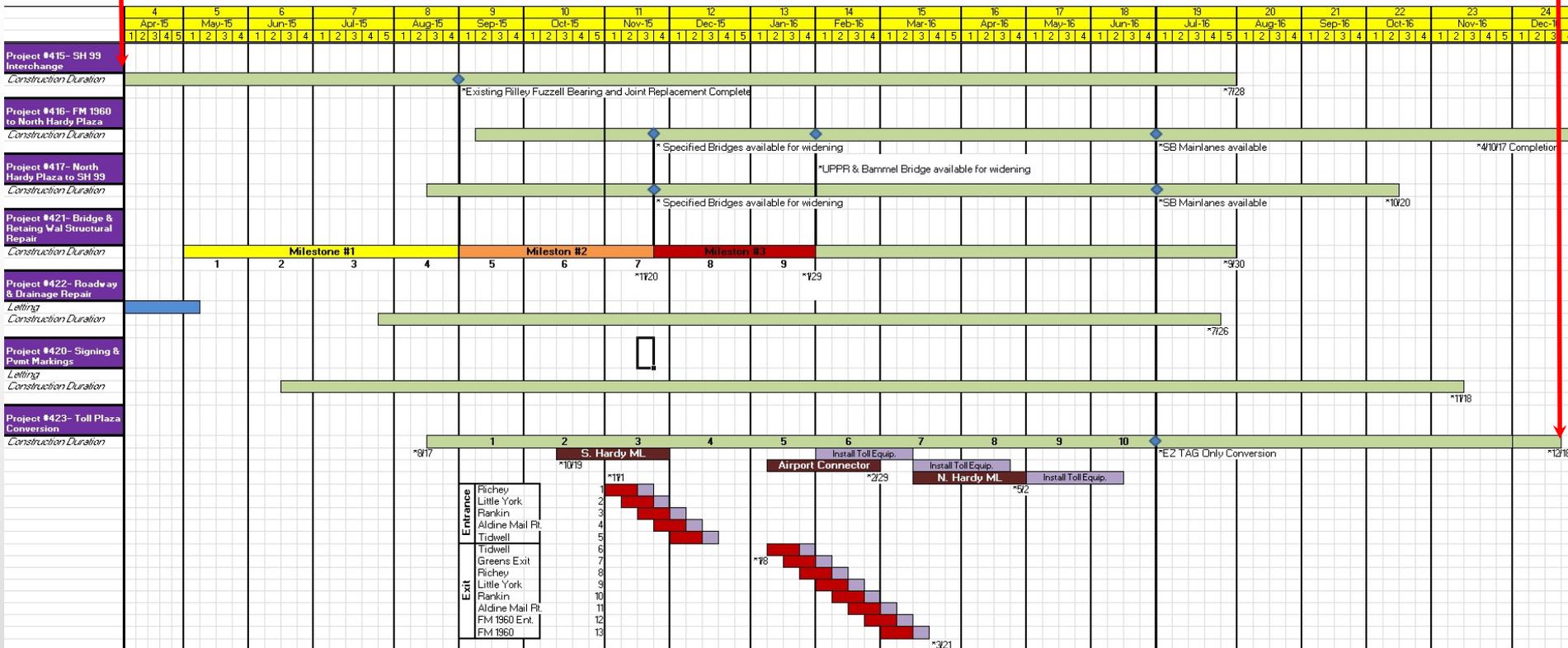


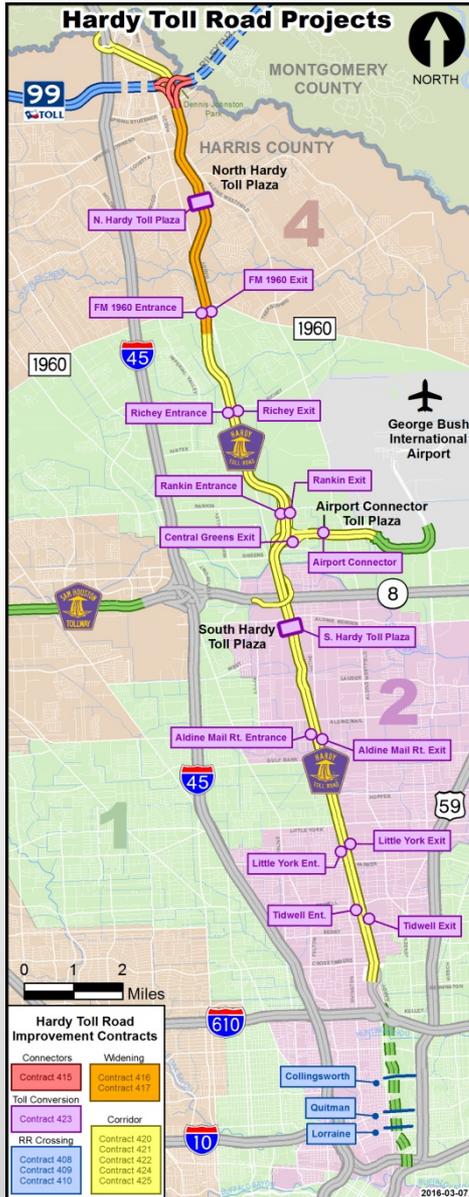
Completed in 21 Days

Project Time Line

Project Start:
1.2015

Project End:
1.2017





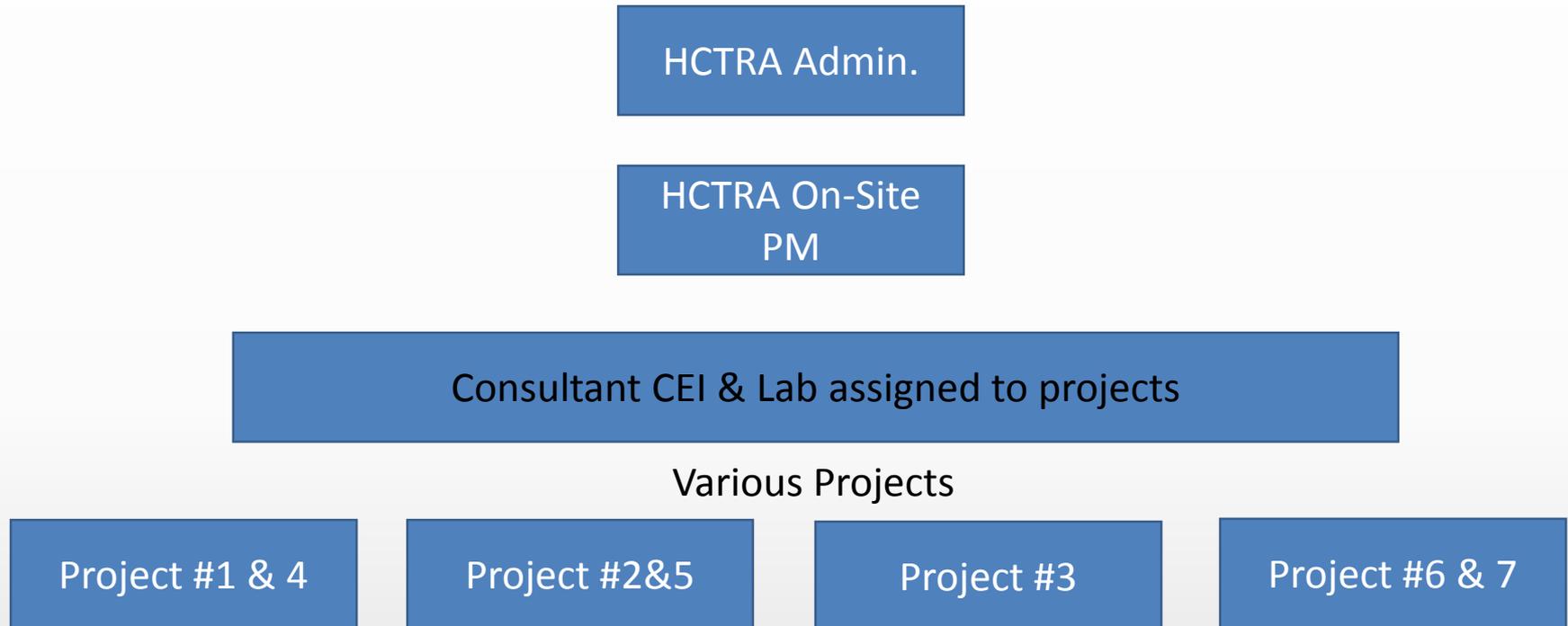
Contract Make-up:

HCTRA incorporate as much improvement as possible, since traffic will to be impacted.

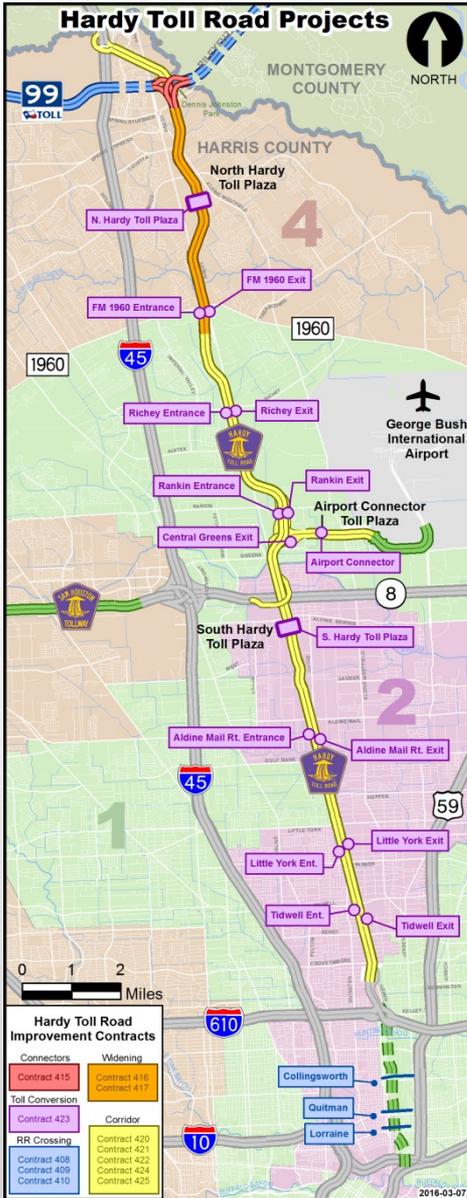
Broke contracts up into groupings to help successfully delivery:

- Widening / Connector= General Roadway Contractor
- Structural Repair Contract= Specialty Contractor
- Capital Maintenance:
(Drainage, Pavement, Roadside treatments)= Maintenance Contractor
- Sign & Striping= Sign Structure Contractor
- Conversion*= General Roadway Contractor performing Civil Installation.

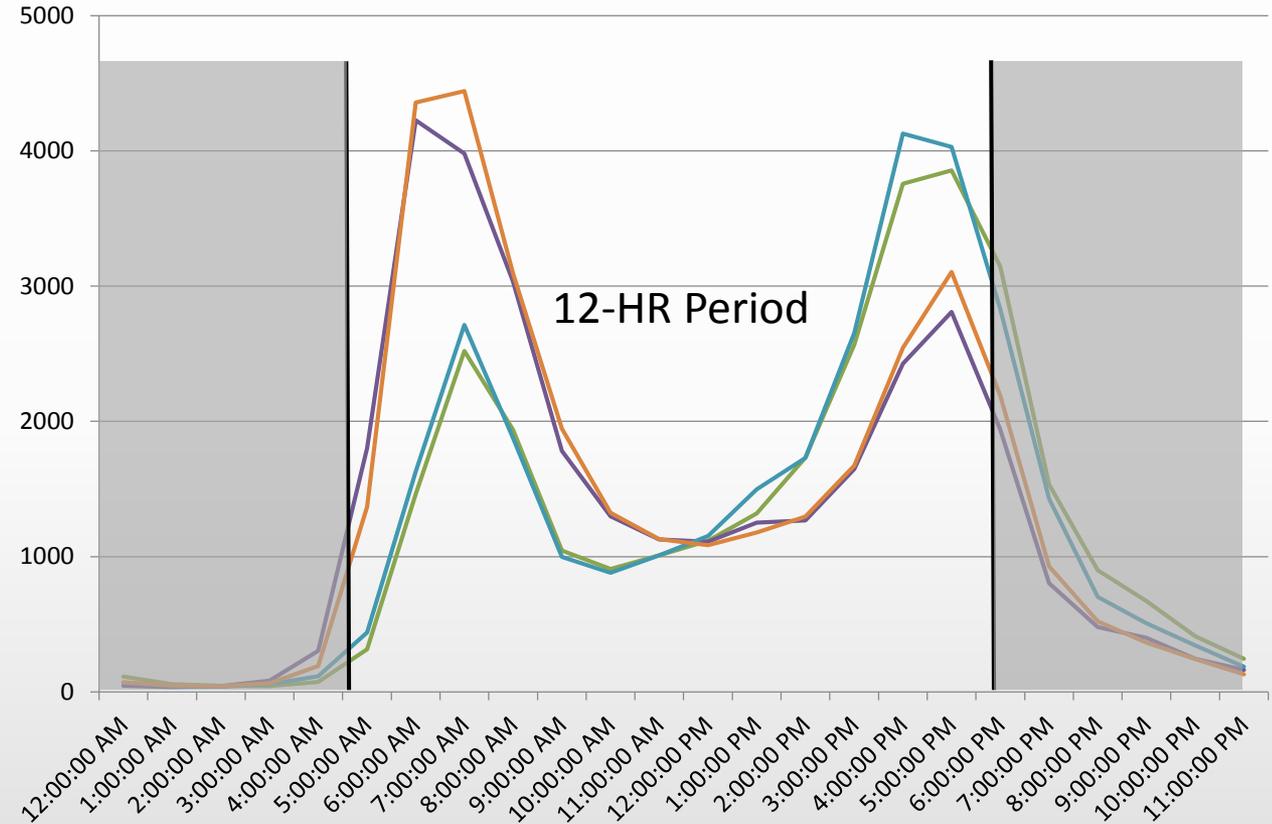
Contract Structure:



- All Low Bid Contracts
- Contracts are calendar day jobs, with no allowance for Holidays, weekends or weather



Hardy Toll Road: Over 30,000 ADT



Over 60% reduction in ADT in the weekends.

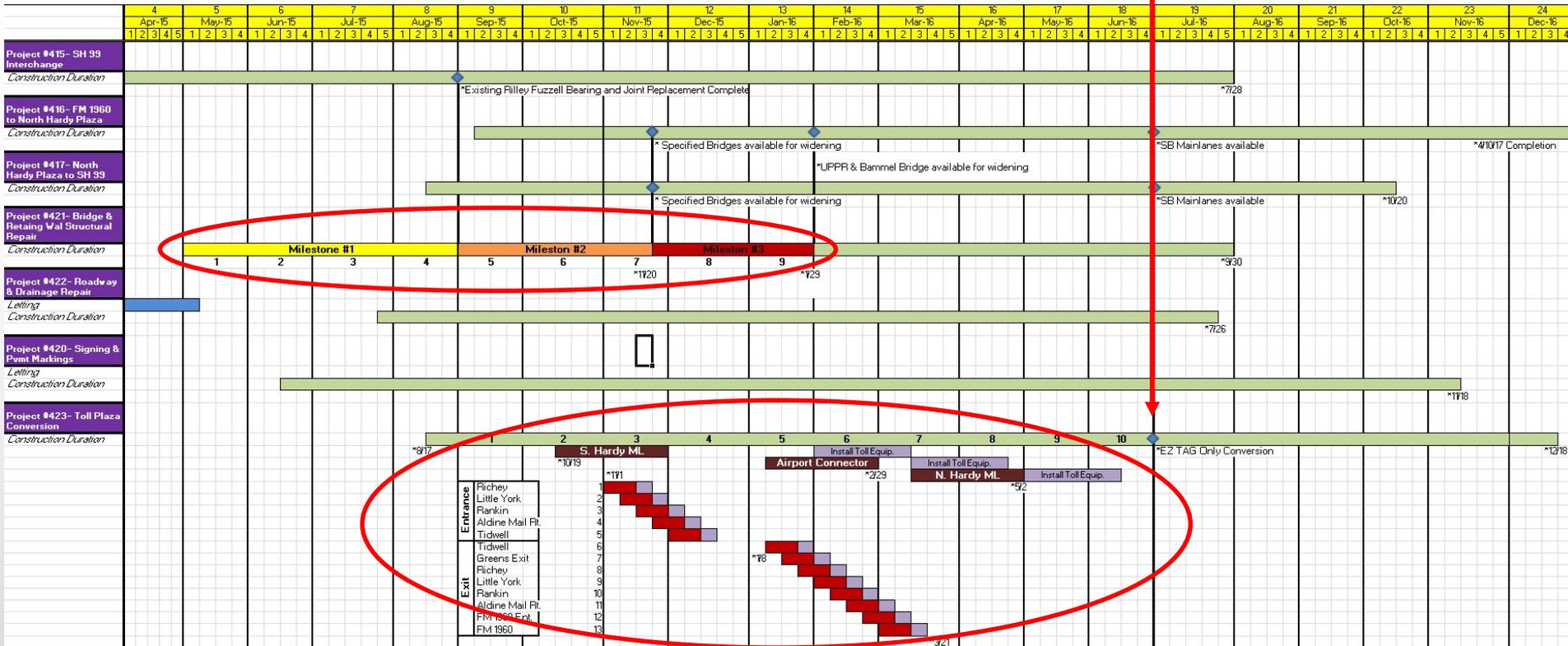
Limit available work periods to nights & weekends

Contract Structure:

- All Low Bid Contracts
- Contracts are calendar day jobs, with no allowance for Holidays, weekends or weather
- While all contracts include disincentives, only two established clearly defined project milestones (Structural rehabilitation & Conversion)
- The Structural rehabilitation's defined milestones are disincentive only
- Plaza reconstruction & conversion includes combination of both I/D & D only milestones. (Incentives = ~ 6% Contract value)
 - i. Ramp Plaza Reconstruction= 14 Days
 - ii. Conversion= 65 hours
 - iii. Plaza pavement restoration= 45 Days ea.

Project Time Line:

Conversion:



Contract Challenges To Date:

Limited work times require work to be coordinated between the various contracts.

- Major closures restricted to weekends
- When the system is scheduled for closure, all contractors expected to work (Save contractor money, removes Patron impact to peak time travel)
- 2015- 5th wettest year ever recorded
- 2016 on similar track
- Confined ROW with multiple rail road crossings





THANK YOU

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