Report on HCRMA Capital Projects – July 2021

Chief Development Engineer – Eric Davila, PE, PMP, CCM
Chief Construction Engineer – Ramon Navarro, IV, PE, CFM
MISSION STATEMENT:
“To provide our customers with a rapid and reliable alternative for the safe and efficient movement of people, goods and services”
HCRMA STRATEGIC PLAN

DEVELOP THE INFRASTRUCTURE TO SERVE A POPULATION OF APPROXIMATELY 800,000 RESIDENTS AND 5 INTERNATIONAL PORTS OF ENTRY
EXECUTIVE SUMMARY

❑ 365 Toll – Construction starting early 2022
   ▪ Construction Cost: $274,792,764:
     o Roadway construction: $258,326,332 (OPCC of $255,023,177 w/ $3,303,155 cont.)
     o Toll integration: $7,366,432 (separate contract)
     o CEI and Testing: $9,100,000 (by Owner)

❑ International Bridge Trade Corridor (IBTC) - Environmental completion by fall 2021
   ▪ Construction Cost: $107,848,652:
     o Roadway construction: $101,348,652 (OPCC of $96,270,000 w/ $5,078,652 cont.)
     o CEI and Testing: $6,500,000 (by Owner)

❑ Westloop - EIS for Segment A (West) and Section C to initiate upon completion of IBTC environmental.
   ▪ HCRMA and City of Mission drafting Interlocal Agreement for env. clearance support for Mission/Madero-Reynosa International Border Crossing (principally rail) (contingent upon mutual Board / Council acceptance and a Mexican Sponsor).

❑ I-69 Connector
   ▪ HCRMA engaged as a key stakeholder and regional partner.

❑ Overweight Network
   ▪ TxDOT recently let CRCP along Military Highway west of Cage Blvd—with additional improvements to be let as OW funds accumulate.
365 TOLL SEG. 3 LIMITS FROM FM 396 / ANZ. HWY. TO US 281 / BSIF CONNECTOR (365 SEG. 3)
365 TOLL SEG. 4 LIMITS FROM FM 1016 / CONWAY AVE TO FM 396 / ANZ. HWY. (FUTURE CONSTRUCTION)

MAJOR MILESTONES:
- NEPA CLEARANCE: 07/03/2015
- 98% ROW ACQ.
- PH 1: 365 SEG. 3 - LET: 08/2015 OPEN TO TRAFFIC
- PH 2: 365 TOLL SEG. 1 & 2 - RE-LET: FALL 2021 EST. OPEN: 01/2025

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365 TOLL UPDATE

- 365 Seg. 3 (US 281/BSIF Connector) construction was formally accepted by TxDOT November 2018.
365 TOLL UPDATE

- 365 Toll Segs. 1 & 2
  - From Anzalduas Bridge to Pharr Bridge
  - Typically 400’ of ROW
  - Frontage Roads in select areas
**PROJECT PURPOSE AND CRITERIA**

- A 12.2 Mi **four-lane divided** controlled access toll facility divided by a grassy median with rights-of-way (ROW) reserved for future widening for the ultimate facility.

- Proposed grade separations for East-West traffic between Anzalduas and Pharr International Bridges (**13 structures**).

- Provide appropriate pavement for overweight truck utilization (**concrete paving with overweight considerations**).

**MAJOR MATERIAL QUANTITIES**

- Concrete Pavement
- Retaining Wall
- Embankment (roadway)
- Embankment (levee)
- Bridge Structures
- Drainage Infrastructure
- Tolling equipment installation (toll integration under separate contract)
365 TOLL UPDATE

Milestones

- 365 Toll (Segs. 1 & 2) was let November 2017.
- The Low Bidder was conditionally awarded contract April 2018.
- Value Engineering Change Proposal were instituted in CO #2, but could not arrive at a financeable amount.
- Project to be re-bid with optional VECP innovation (which include items for locally-available materials).
- Anticipated to rebid by mid 2020.

Updated Opinion of Probable Constr. Cost (OPCC):

- Despite upward pressure by a glut of contracts and stresses on the supply chain—competition for the work has held prices steady since 2017's gains.
- A project of this scale would appeal to bidders looking to leverage long-term investments in a rapidly growing RGV market with many large-scale transportation projects in the pipeline.
365 Toll Update

- OPCC Conducted by HCRMA Staff and the update included data sources from:
  - 365 Toll Bids from November 2017 as a baseline of what contractors thought were risks in the work,
  - TxDOT Statewide Averages to obtain latest pricing on key bid items of similar quantity (utilization is key), and
  - Regional / Local TxDOT let jobs (e.g. US 83 Relief Rte Ph 2) and jobs of similar scale so that local labor (or lack thereof) and material availability can be taken into account.
- 2017: GEC OPCC: $168,951,005 (+0%, baseline), plus 3 mid-tier bids.
- 2019: HCRMA Staff OPCC: $255,023,177 (+51% from baseline).
### 365 TOLL UPDATE

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Advantages</th>
<th>Challenges</th>
</tr>
</thead>
</table>
| 1    | Reconfigure I Road to Cross over 365 Toll and Reconfigure Thomas Drive Connection to I Road | • Reduction in required fill volume  
• Reduction in bridge square footage  
• Bridge can be FSC Beams instead of Steel Plate Girders | • Requires additional ROW  
• Could require NEPA re-evaluation, however this concept for Thomas Dr was shown to public during previous public meeting |
| 2    | Pavement Design Modifications - Combination of the following optimizations:  
1. Jointed Concrete Pavement  
2. Design using “Layered” philosophy: Higher COTE aggregate in bottom layer and Lower COTE aggregate in top 4-5” | • Reduces initial capital cost  
• Cost of reinforcing steel is on the rise, thus eliminate the risk of steel cost escalation  
• Local aggregates are less expensive  
• Reduces carbon footprint due to reduced hauls  
• JCP has successful track record of performance with heavy truck traffic with performance more than 40 years on some of the busiest interstates in US  
• Can be overlaid with asphalt in future as traffic and revenue grows to extend life beyond 30 years | |

3. Design for 30 year life  
4. Replace Cement Treated Base layer with asphalt base layer  
5. Use only 2 thicknesses: one for entire mainline and a second for all frontage roads  
6. Use partial depth outside shoulder. Extend mainline travel lane pavement section 2” into shoulder to provide strength for tire “wander”  

3 Use precast box culverts with enhanced joint sealing (waterproof joints) in lieu of CIP box culverts.  

4 Increase Maximum Grade from 3% to 4%  

- Faster construction  
- Lower cost  
- Reduced temporary bypass pumping duration  

- Requires approval by canal owner. Previous concern with leaking joints was expressed.  
- Detailed specs of installation method and bedding criteria will be required  
- Reduction in fill quantity  
- Potential impacts to heavy trucks climbing steeper grades  
- May be in conflict with driver expectancy  
- May give driver a “roller coaster” effect feeling
### 365 TOLL UPDATE

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| 5    | Use Alternate Storm Drain Pipe (HDPE) Outside of Pavement Footprint | • Reduces cost of pipe in areas outside of pavement section  
• Reduces trucking costs and carbon footprint  
• Corrosion Resistant  
• Should not be used under pavement due to load carrying capacity and replacement cost  
• Proper installation and bedding per in situ soil conditions is critical | |
| 6    | Revise MSE Wall Backfill Spec from AS to BS | • Allows use of local materials  
• Reduction in cost of import material  
• Reduction in trucking and carbon footprint  
• TxDOT past experience with migration of fines through panel joints  
• Requires enhanced panel joint filter media detail  
• If local material is corrosive, requires non-metallic MSE reinforcement | |
| 7    | Alternate MSE Wall System for Corrosive Soils (GeoMega by RECO) | • Will allow for use of corrosive soils as backfill  
• Is easier to install correctly than traditional geosynthetic wall | • Not a current TxDOT approved product |
| 8    | Driven Piles in Lieu of Drilled Shafts for Bridge Foundations | • Reduces cost and schedule. Pile driving is faster than drilled shaft construction  
• Reduces impact on environment due to potential loss of slurry associated with drilled shaft construction  
• Reduces risks of shaft construction  
• Confidence in foundation capacity. Axial capacity will be verified through dynamic load testing, PDAs, and pile driving acceptance criteria  
• Potential reduction in 404 permit impacts in Floodway  
• Could apply to other bridges on project | • Potential noise issues due to pile driving  
• Potential issue with levee owner concerned with vibration impacts  
• Revise hydraulic model for the floodway  
• Some interior bents may require pilot holes to allow piles to penetrate through stiff to hard clay layers above minimum pile embedment  
• Additional borings may need to be performed and advanced deeper to verify bearing layers. |
| 9    | Lower Profile Grade of Floodway Bridge | • Maximum reduction in profile grade is approximately 3 feet to maintain 2 feet of freeboard over 100 year event | • Reduces quantity of pile or column concrete  
• Reduces unsupported length of piling for pile option |
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<th>Challenges</th>
</tr>
</thead>
</table>
| 10   | Ware Rd. Levee Relocation (Sta. 800 to 856) to be Constructed by Federal Government as Part of Border Wall Project | - Transfers project cost to Federal Government under border wall project  
- Advantage to stakeholder to participate  
- Uncertainty of timing of border wall project | |
| 11   | ITS System Optimizations  
- Potentially move gantries to optimize structure lengths and heights  
- Possibly consolidate gantries into fewer locations | - Take advantage of new technologies  
- Reduce costs  
- Redesign approval required  
- Can limit future sign attachments | |
| 12   | Use of Non-Conforming Fill in Core of Embankment (PI >15) | - Reduce cost of imported borrow  
- Reduce waste of on-site material  
- Reduced hauling and carbon footprint  
- Must be compacted to standard density so some very high PI materials (> 30) may not be feasible | |
| 13   | Revise MSE Wall Abutments to Header Fills at Bridge Overpasses | - Reduces MSE wall quantity  
- Reduces fill quantity  
- Improves sight distance in turn-arounds  
- Lengthens bridge end spans | |
| 14   | Revise Outside Shoulder to 6'-0" Paved and 4'-0" Unpaved on Frontage Roads | - Reduced cost  
- Reduced impervious area  
- Additional maintenance due to vegetation management  
- May require additional maintenance due to rough when trucks pull off in emergency situations | |
| 15   | Revise Outside Shoulder to 6'-0" Paved and 4'-0" Unpaved on Mainline SH 365 | - Reduced cost  
- Reduced impervious area | |

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365 TOLL UPDATE

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<th>Description</th>
<th>Advantages</th>
<th>Challenges</th>
</tr>
</thead>
</table>
| 16   | Revise Inside Shoulder to 2'-0" Paved and 2'-0" Unpaved on Mainline SH 365 | • Reduced cost  
• Reduced impervious area | • Additional maintenance due to vegetation management.  
• May require additional maintenance due to ruts when trucks pull off in emergency situations |
OFFSITE DRAINAGE W/ HC DD1
OFFSITE DRAINAGE W/ HC DD1 CONT.
OFFSITE DRAINAGE W/ HCDD1 CONT.
IBTC SEG S. 1 – 3: FROM THE INTERCHANGE WITH 365 TO LL AND FM 493 TO INTERSTATE 2

MAJOR MILESTONES:

- OBTAINED EA ENV CLASSIF.: 11/2017
- EST. NEPA CLEARANCE: EARLY FALL 2021
- EST. OPEN: EARLY 2026
IBTC Configuration

- West leg (365 Tollway to Valley View Interchange)
IBTC Configuration

- North Leg (Valley View interchange to IH-2)
IBTC Configuration

East Leg (Valley View Interchange to FM 493)
DESCRIPTION:

- Proposed construction beyond 2035 (long term) or as funding/partnership opportunities develop.
- Combined project length: 38 miles
- From FM 1016 / Conway Ave (Mission/Madero) to I-69C (North Edinburg)
- Key corridor of independent utility for future industrial development that provides: 1) A safe east/west movement of traffic to complement I-2; and 2) A parallel north/south corridor to I-69C in West Hidalgo County.
- Likely to be classified as an Environmental Impact Statement (EIS) NEPA document (36 to 48 months)—to be engaged after IBTC clearance.
- Potential for Class I rail within the ROW pending developments for rail crossing in Mission area.
West Loop: Section A (West) + Section C

- Remaining core HCRMA Loop project with no active project development.
- As destinations (e.g. residential developments / industrial facilities) come online they will generate traffic in this area without high-capacity corridors.
- This provides opportunities for developing corridors to drive smart growth in this western county region before the potential for relocations increases.
- Potential border rail crossing (by Others) in the Madero area (south of Mission) could be a major traffic generator (including rail) for these project segments.
**I-69 Connector**

(COLLABORATION W/ TXDOT, CCRMA, AND HCRMA)

**DESCRIPTION:**

- PROJECT LENGTH ~ 27 MILES
- FROM I-69C IN HIDALGO COUNTY TO I-69-E IN CAMERON COUNTY
- KEY PARALLEL CORRIDOR TO I-2 WITH IMPORTANCE TO MOBILITY PROJECTS BY TXDOT, CCRMA AND HCRMA
- TXDOT COMMITTED SUPPLEMENTAL DEVELOPMENT AUTHORITY FUNDS FOR THE ENTIRE 27 MILE CORRIDOR AS AN EXPRESSWAY FACILITY.
- TXDOT HAS COMMITTED TO FUNDING THE DEVELOPMENT OF THE SCHEMATIC DESIGN AND ENVIRONMENTAL DOCUMENTS.
- STAKEHOLDER KICKOFF SCHEDULED FOR EARLY OCT 2019.
### Overweight Report for Period:

#### Jan 1, 2014 – June 30, 2021

<table>
<thead>
<tr>
<th>Total Permits Issued:</th>
<th>206,491</th>
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<tbody>
<tr>
<td>Total Amount Collected:</td>
<td>$32,821,748</td>
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<tr>
<td>► Convenience Fees:</td>
<td>$687,348</td>
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<tr>
<td>► Total Permit Fees:</td>
<td>$32,134,400</td>
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<tr>
<td>– Pro Miles:</td>
<td>$619,473</td>
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<tr>
<td>– TxDOT:</td>
<td>$27,314,240</td>
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<td>– HCRMA:</td>
<td>$4,200,687</td>
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## Overweight Report for Period:
**Jan 1, 2021 – June 30, 2021**

<table>
<thead>
<tr>
<th>Total Permits Issued:</th>
<th>21,812</th>
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<td>Total Amount Collected:</td>
<td>$4,417,588</td>
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<tr>
<td>■ Convenience Fees:</td>
<td>$55,188</td>
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<td>■ Total Permit Fees:</td>
<td>$4,362,400</td>
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<tr>
<td>– Pro Miles:</td>
<td>$65,436</td>
</tr>
<tr>
<td>– TxDOT:</td>
<td>$3,708,040</td>
</tr>
<tr>
<td>– HCRMA:</td>
<td>$588,924</td>
</tr>
</tbody>
</table>
Notes:
1. The permit count for 2020 (36,040) ended with a +6.7% increase compared to 2019 (33,790).
2. For the year 2021, the total monthly permit count of 4,417 represents an +10.0% increase compared to the same month in 2020.
Construction Cost Index (CCI) Change (%) Year-to-Year for the month of July

Costs increased +7.0% since July 2020

Source: McGraw Hill Construction ENR
CONSTR. ECONOMICS July 2021

20-CITY AVERAGE

<table>
<thead>
<tr>
<th>ITEM</th>
<th>UNIT</th>
<th>PRICE</th>
<th>%MONTH</th>
<th>%YEAR</th>
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<tbody>
<tr>
<td>ASPHALT PAVING</td>
<td>TON</td>
<td>439.25</td>
<td>+3.8</td>
<td>+10.6</td>
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<td>Cutback, MC800</td>
<td>TON</td>
<td>387.19</td>
<td>0.0</td>
<td>+3.9</td>
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<tr>
<td>Emulsion, RAPID SET</td>
<td>TON</td>
<td>360.67</td>
<td>0.0</td>
<td>+1.2</td>
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<tr>
<td>Emulsion, SLOW SET</td>
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<td>371.54</td>
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<tr>
<td>PORTLAND CEMENT</td>
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<td>147.11</td>
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<td>-0.9</td>
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<td>70-lb bag</td>
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<td>11.18</td>
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<td>+4.3</td>
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<tr>
<td>CRUSHED STONE</td>
<td>TON</td>
<td>12.75</td>
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<td>+1.3</td>
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<td>Base course</td>
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<td>+0.2</td>
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<tr>
<td>Concrete course</td>
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<td>+3.6</td>
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<td>SAND</td>
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<td>-0.2</td>
<td>+4.7</td>
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<tr>
<td>Concrete</td>
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<td>13.61</td>
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<td>+9.8</td>
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<tr>
<td>Masonry</td>
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<tr>
<td>READY-MIX CONCRETE</td>
<td>CY</td>
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<tr>
<td>3,000 psi</td>
<td>CY</td>
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<td>5,000 psi</td>
<td>CY</td>
<td>186.62</td>
<td>+0.1</td>
<td>-3.4</td>
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<tr>
<td>CONCRETE BLOCK</td>
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<tr>
<td>Normal weight: 8&quot; x 8&quot; x 16&quot;</td>
<td>C</td>
<td>162.85</td>
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<td>+10.7</td>
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<td>Lightweight: 8&quot; x 8&quot; x 16&quot;</td>
<td>C</td>
<td>159.54</td>
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<tr>
<td>12&quot; x 8&quot; x 16&quot;</td>
<td>C</td>
<td>204.31</td>
<td>+0.1</td>
<td>+11.6</td>
</tr>
</tbody>
</table>

SOURCE: ENR