



**CENTRAL TEXAS  
Regional Mobility Authority**

## AGENDA ITEM #5 SUMMARY

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Approve an amended work authorization with HNTB Corporation for additional services provided in connection with the MoPac Improvement Project.

Strategic Plan Relevance: Regional Mobility

Department: Engineering

Associated Costs: \$1,266,375

Funding Source: General Fund, Reimbursed with Either Bond Sale Funds or Other Possible Loan /Grant Options

Board Action Required: Yes

**Description of Matter:**

The Board approved HNTB Corporation Work Authorization No. 5 to provide professional services and deliverables required to assist the Mobility Authority related to the MoPac Improvement Project at their April 28, 2010 meeting. This Supplement provides for continuation of support of current activities which include: project management and administrative tasks; technical support and project design development; support in developing toll concept of operations and tolling design; assistance with procurement of a design-build contractor; and coordination with TxDOT, City of Austin, Capital Metro, UPRR, and the FHWA as required for permitting, environmental approval and development of other agreements.

**Reference documentation:**

Draft Resolution

Draft Supplement No. 1 to Work Authorization No. 5

Contact for further information: Wesley M. Burford, P.E., Director of Engineering

**GENERAL MEETING OF THE BOARD OF DIRECTORS  
OF THE  
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY**

**RESOLUTION NO. 12-\_\_\_**

**APPROVING AN AMENDED WORK AUTHORIZATION WITH  
HNTB CORPORATION RELATING TO DEVELOPMENT OF  
THE MOPAC IMPROVEMENT PROJECT.**

WHEREAS, HNTB Corporation (“HNTB”) serves as a general engineering consultant to the Mobility Authority under the Agreement for General Consulting Civil Engineering Services effective January 1, 2010 (the “GEC Agreement”); and

WHEREAS, by Resolution No. 10-40 enacted on April 28, 2010, the Board of Directors approved a work authorization for HNTB to provide GEC Project Development Services for the MoPac Improvement Project (the “Project”); and

WHEREAS, the Executive Director and HNTB have discussed and agreed to a proposed amended work authorization to continue HNTB’s support of current GEC Project Development Services for the Project; and

WHEREAS, the Executive Director recommends approval of the proposed amendment to the work authorization attached and incorporated into this resolution as Attachment A.

NOW THEREFORE, BE IT RESOLVED that the proposed amended work authorization is approved; and

BE IT FURTHER RESOLVED that the Executive Director may finalize and execute on behalf of the Mobility Authority the proposed work authorization in the form or substantially the same form attached as Attachment A.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 25<sup>th</sup> day of April, 2012.

Submitted and reviewed by:

Approved:

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Andrew Martin  
General Counsel for the Central  
Texas Regional Mobility Authority

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Ray A. Wilkerson  
Chairman, Board of Directors  
Resolution Number: 12-\_\_\_  
Date Passed: 04/25/12

**ATTACHMENT "A" TO RESOLUTION 12-**  
**AMENDED WORK AUTHORIZATION WITH HNTB CORPORATION**

**[on the following 8 pages]**



## APPENDIX D

### WORK AUTHORIZATION SUPPLEMENT

#### WORK AUTHORIZATION NO. 5.0

#### SUPPLEMENT NO. 1

This Supplement No. 1 to Work Authorization No. 5.0 dated May 06, 2010, is made as of this x st day of March, 2012, under the terms and conditions established in the AGREEMENT FOR GENERAL CONSULTING ENGINEERING SERVICES, dated as of December 23, 2009 (the "Agreement"), between the Central Texas Regional Mobility Authority ("Authority") and **HNTB Corporation** ("GEC"). This Supplement is made for the following purpose, consistent with the services defined in the Agreement:

#### *MoPac Improvement Project Development*

The following terms and conditions of Work Authorization No. 5.0 are hereby amended, as follows:

#### **Section A. - Scope of Services**

A.1. GEC shall perform the following Additional Services:

See Attachment A: Scope of Work

A.2. The following Services are not included in this Supplement Agreement, but shall be provided as Additional Services if authorized or confirmed in writing by the Authority.

See Attachment A: Scope of Work

A.3. In conjunction with the performance of the foregoing Services, GEC shall provide the following submittals/deliverables (Documents) to the Authority:

See Attachment A: Scope of Work

#### **Section B. - Schedule**

GEC shall perform the Services and deliver the related Documents (if any) according to the following schedule:

N/A

#### **Section C. - Compensation**

C.1. In return for the performance of the foregoing obligations, the Authority authorizes to the GEC an additional \$1,266,375 based on a Cost Plus fee. This will increase the not to exceed amount for Work Authorization No. 5.0 from \$3,839,597 to \$5,105,972. Compensation shall be in accordance with the Agreement.

The Authority and the GEC agree that the budget amounts for requested services are estimates and that these individual figures may be redistributed and/or adjusted as necessary

over the duration of this Work Authorization. The GEC may alter the compensation distribution between tasks or work assignments to be consistent with the Services actually rendered within the total Work Authorization amount. Upon written approval by the Authority, GEC may alter the compensation distribution between Work Authorizations. The GEC shall not exceed the maximum amount payable without prior written permission by the Authority.

**Section D. - Authority's Responsibilities**

The Authority shall perform and/or provide the following in a timely manner so as not to delay the Services of the GEC. Unless otherwise provided in this Supplemental Agreement, the Authority shall bear all costs incident to compliance with the following:

N/A

**Section E. - Other Provisions**

The parties agree to the following provisions with respect to this specific Supplemental Agreement:

N/A

Except to the extent expressly modified herein, all terms and conditions of the Agreement shall continue in full force and effect.

**Authority:**

**CENTRAL TEXAS REGIONAL  
MOBILITY AUTHORITY**

By: \_\_\_\_\_

Name: Mike Heiligenstein

Title: Executive Director

Date: \_\_\_\_\_

**GEC:**

**HNTB Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**CENTRAL TEXAS RMA**  
**ATTACHMENT A – SCOPE OF SERVICES**

**Supplement No.1 to**  
**WORK AUTHORIZATION NO. 5**

**SERVICES TO BE PROVIDED BY the GENERAL ENGINEERING CONSULTANT**  
**(GEC)**

**General**

The additional services to be performed by the GEC will include, but not be limited to, professional services and deliverables for various tasks related to the study and development of the Mopac Improvement Project. The limits of the services are from FM 734 (Parmer Lane) through the Cesar Chavez Street interchange, with some incidental work south of the Cesar Chavez Street interchange.

Because GEC has no control over the cost of labor, materials, or equipment furnished by others, or over the resources provided by others to meet project schedules, GEC's opinion of probable costs shall be made on the basis of experience and qualifications as a practitioner of its profession. GEC does not guarantee that proposals, bids, or actual project costs will not vary from GEC's cost estimates will not vary from GEC's projected schedules.

**1.0 PROJECT MANAGEMENT & ADMINISTRATION**

The effort for the following tasks will be extended approximately 6 months to account for additional project development time due to project delivery evaluation analysis activities. The GEC will perform project management, administrative and coordination duties, including contract administration, project management, reporting, meeting minutes of required meetings and telephone conversations, and other related administrative tasks (e.g., direct costs) associated with the Project, including:

**1.1. Coordinate, Procure, and Administer Work Authorizations**

Prepare contracts as required between the GEC and the Authority and GEC and subconsultants. The GEC will also assist in the preparation of and/or review of contracts between the Authority and subconsultants. Monitor and supervise GEC and Authority subconsultant activities, review all work products prepared by subconsultant, review and approve subconsultant progress reports and invoices.

**1.2. Progress Reports and Invoices**

Prepare monthly invoices and progress reports for the work tasks, together with evidence of services accomplished during the time period since the previous report. Prepare a detailed schedule (provide in the Authority approved format) of anticipated monthly invoice billing linking to the project work authorization tasks. A monthly progress report will be submitted

and will include: activities completed, initiated or ongoing, during the reporting period; challenges encountered and actions to remedy them; overall status, including a tabulation of percentage complete by task; updated project schedule; and DBE utilization status.

### **1.3. Record Keeping and File Management**

Maintain records and files related to the Project throughout the duration of the Services. Uploading of project files to a shared website will be coordinated with the Authority. Maintain and update via approved software the deliverables tracking log provided by the Authority.

### **1.4. Correspondence**

Prepare written materials, letters, survey forms, etc. used to solicit information or collect data for the project and submit them to the Authority for review and approval prior to its use or distribution. Copies of relevant outgoing correspondence and incoming correspondence will be provided to the Authority on a continuing basis.

### **1.5. Work Authorization Schedule**

Prepare a detailed, graphic schedule linking work authorization tasks, subtasks, critical dates, milestones, deliverables, and the Authority/Texas Department of Transportation (TxDOT)/ Federal Highway Administration (FHWA) scheduled review requirements. The project schedule will be in a format that depicts the order and inter-dependence of the various tasks, subtasks, milestones and deliverables for each of the tasks identified therein. Progress will be reviewed periodically, and should these reviews indicate a substantial change in progress, a schedule recovery strategy will be developed and implemented and the schedule will be revised accordingly.

### **1.6. Dashboard Update**

Prepare and submit updated project information, including schedule and budget, for the Authority's dashboard on a monthly basis; provide QC review of revised information on website.

## **2.0 ENHANCED SERVICES**

Throughout the project development to date, the GEC provided enhanced services related to the project activities and current contract scope. These services were identified and tracked utilizing the Table below:

	ENHANCED SERVICE REQUESTED	REQUESTED BY
1	License Plate Survey at Downtown	Mike Heiligenstein
2	Additional Railroad Coordination: Refuge Areas, Double Track feasibility Report, mtgs	Wes Burford
3	NEPA Process PI Efforts: support preparation for and attendance at Open Houses 1 & 2 (2011), graphic renderings development, simulation of Downtown Connection	Ron Fagan, Steve Pustelnyk
4	Non-NEPA Open House Summer 2011 (primarily CSD exhibit board production)	Steve Pustelnyk
5	Context Sensitive Design Committee (CSDC) support activities	Wes Burford, Steve Pustelnyk
6	HHM subconsultant contract: NEPA Process Historic Research continuation	TxDOT/CTRMA - Wes Burford
7	Schematic Design Exceptions: initial submittal preparation support; enhanced historical justification support	TxDOT/CTRMA - Wes Burford
8	Traffic Sign design and exhibit preparation for Focus Groups and Schematic	Wes Burford, Tim Reilly
9	Bike and Pedestrian Facilities enhancements: investigation, development, coordination activities with stakeholders and agencies, exhibit preparation	TxDOT/CTRMA - Mike Heiligenstein
10	Express Lane Dynamic Pricing Algorithms development	Tim Reilly
11	Vissim coordination and updates for algorithm	Tim Reilly
12	TIFIA -LOI - 2011 application preparation and submittal	Bill Chapman
13	Aesthetics Design Package for CDA; Development of exhibits for newsletters and meetings	Wes Burford, Steve Pustelnyk
14	P3 Evaluation Support	Mike Heiligenstein
15	Community Workshops, Stakeholder Meeting support	Wes Burford, Steve Pustelnyk
16	Agency Visit to Mo- I 64 toll	Mike Heiligenstein
17	Utility Coordination: investigations, mtgs with utilities, COA, TxDOT	Wes Burford
18	Additional Contract Oversight & Coordination: TTI, WSA (CDM Smith)	Bill Chapman, Mike Heiligenstein
19	Parmer Road Model coordination with CDM Smith	Sean Beal, Wes Burford

20	Additional Railroad Coordination: engineering, construction, and maintenance agreements development	Wes Burford
21	Public Outreach Informational Workshops and other additional PI support	Steve Pustelnyk
22	Design of Parmer Road entrance; for use in operational analysis and schematic	Wes Burford
23	City of Austin Agreements development and coordination support	Mario Espinoza, Andy Martin
24	Peer Agency Site Visits preparation support and participation - Georgia/Florida	Mike Heiligenstein
25	SUP and sidewalk due diligence and Design Waivers preparation	Wes Burford
26	Toll System Integration Design, Specifications, Plans development (formerly Telvent tasks)	Tim Reilly
27	System Integrator Procurement support	Tim Reilly
28	Express Lanes Policies development support	Tim Reilly
29	CTR Downtown Analysis Peer Review and Coordination	Mike Heiligenstein
30	Potential Second Round of Open Houses	Wes Burford/ Mario Espinoza
31	Potential Lidar Survey, Utility Survey, and Geotechnical Investigation support services by Subconsultants as requested for CDA development and risk management - management	
32	Additional Project Development Support as requested during the course of Procurement and Financing.	Wes Burford

### **3.0 Subcontract Enhanced Services**

**3.1. HMM Historic Research:** Continuation of historic research for Section 106 documentation.

**3.2. DBE Coordination:** Subconsultant support for DBE Coordination and Workshops

**3.3. Survey and Geotechnical:** Potential Lidar Survey, Utility Survey, and Geotechnical Investigation support services by Subconsultants as requested for RFDP development and risk management.

[END OF SECTION]

		Heather	Michelle, Mathews	Stella/Loretta	Kris, Paul	Todd Pendleton	Jon, Dustin	David Williams	Rodrigo	Steve Debella	Agave	Brent, Jim Clark	Summer, (Luke)	Elizabeth	Juan Martinez Group	Bob	Caroline	Ragan				
		Group Director / Program Manager	Department Manager	Sr. Advisor / Project Director	Project Manager II	Project Manager I	Project/Sr. Engineer	Engineer II	Sr. Technician	Sr. Proj Eng / Sr Squad Leader	Sr. CPM Claims Analyst	Sr. Planner	UDLA IV	Sr. Public Involvement Rep.	Sr. Graphic Designer	Office Business Manager	Project Analyst	Admin. Assistant	TOTAL HOURS	LOADED FEE	CREDIT	
<b>1.0 PROJECT MANAGEMENT AND ADMINISTRATION (6 month extension)</b>																						
1.1	Coordinate, Procure, and Administer Work Authorizations	12	6	24	24											24	6		96	\$ 17,981		
1.2	Progress Reports and Invoices	12		6												12	48	48	126	\$ 12,709		
1.3	Record Keeping and File Management	12		6	6												48	48	120	\$ 12,156		
1.4	Correspondence	48		24	24												20	20	136	\$ 25,547		
1.5	Work Authorization Schedule	6		3	3					32									44	\$ 6,703		
1.6	Dashboard Update				3														3	\$ 469		
<b>SUBTOTAL</b>		<b>90</b>	<b>6</b>	<b>63</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>36</b>	<b>122</b>	<b>116</b>	<b>525</b>	<b>\$ 75,564</b>		
<b>2.0 Enhanced Services</b>																						
1	License Plate Survey at Downtown	7		18	10		80	90				200							405	\$ 57,392	\$ (57,392)	
2	Additional Railroad Coordination: Refuge Areas, Double Track feasibility Report, mtgs	9	10	100	40		120												279	\$ 52,667	\$ (52,667)	
3	Open Houses 1 & 2 (2011), graphic renderings development, simulation of Downtown Connection	20	35	40	40							20	60	125	100				440	\$ 59,317	\$ (59,317)	
4	Non-NEPA Open House Summer 2011 (primarily CSD exhibit board production)	8	16	10	18							20	80	8					160	\$ 22,200	\$ (22,200)	
5	Context Sensitive Design Committee (CSDC) support activities	15	60	24	35		10	10				70	640	50				8	922	\$ 105,931	\$ (105,931)	
6	HMM subconsultant contract: NEPA Process Historic Research continuation	1		6													2		9	\$ 2,000	\$ (2,000)	
7	Schematic Design Exceptions: initial submittal preparation support; enhanced historical justification support			16	65		8	8											97	\$ 16,141	\$ (16,141)	
8	Traffic Sign design and exhibit preparation for Focus Groups and Schematic	6		35	40		5	280	20										386	\$ 45,106	\$ (45,106)	
9	Bike and Pedestrian Facilities enhancements: investigation, development, coordination activities with stakeholders and agencies, exhibit preparation	8		50	160		100	100					60						478	\$ 67,707		
10	Express Lane Dynamic Pricing Algorithms development	10		40	70	335													455	\$ 67,140		
11	Vissim coordination and updates for algorithm											50							50	\$ 7,735		
12	TIFIA -LOI - 2011 application preparation and submittal	8		8	8									110	8				142	\$ 15,527		
13	Aesthetics Design Package for CDA; Development of exhibits for newsletters and meetings	8	45	16	16							200	1,035	20					1340	\$ 147,629		
14	P3 Evaluation Support	32		4	4														40	\$ 10,179		
15	Community Workshops, Stakeholder meeting support	33	25	80	95		10	10				20	110	230					613	\$ 84,857		
16	Agency Visit to Mo- I 64 toll	40																	40	\$ 10,615		
17	Utility Coordination: investigations, mtgs with utilities, COA, TxDOT	7		70	75		100	100											352	\$ 53,873		
18	Additional Contract Oversight & Coordination: TTI, WSA (CDM Smith)	30		145	165														340	\$ 72,261		
19	Parmer Road Model coordination with CDM Smith	2		10	10														22	\$ 4,750		
20	Additional Railroad Coordination: engineering, construction, and maintenance agreements development	35		120	16		100												271	\$ 56,462		
21	Public Outreach Informational Workshops and other additional PI support	45	25	80	90								60	200					500	\$ 74,824		
22	Design of Parmer Road entrance; for use in operational analysis			8			40												48	\$ 7,243		
23	City of Austin Agreements development and coordination support	3		10	17														30	\$ 6,109		
24	Peer Agency Site Visits preparation support and participation - Georgia/Florida	80																	80	\$ 21,230		
25	SUP and sidewalk due diligence and Design Waivers preparation	4		10	20		30	40											104	\$ 14,244		
26	Toll System Integration Design, Specifications, Plans development (formerly Telvent tasks)	4		230	40		80		120	100									574	\$ 108,281		
27	System Integrator Procurement support	4		280	20					80									384	\$ 90,841		
28	Express Lanes Policies development support	4		46	20					10									80	\$ 17,940		
29	CTR Downtown Ananlysis Peer Review and Coordination	4		12	24							88						2	130	\$ 21,753		

TASK DESCRIPTION		Group Director / Program Manager	Department Manager	Sr. Advisor / Project Director	Project Manager II	Project Manager I	Project/Sr. Engineer	Engineer II	Sr. Technician	Sr. Proj Eng / Sr Squad Leader	Sr. CPM Claims Analyst	Sr. Planner	UDLA IV	Sr. Public Involvement Rep.	Sr. Graphic Designer	Office Business Manager	Project Analyst	Admin. Assistant	TOTAL HOURS	LOADED FEE	CREDIT
30	Potential Second Round of Open Houses	10	8	16	16								40	110					200	\$ 24,007	
31	Potentail Lidar Survey, Utility Survey, and Geotechnical Investigation support services by Subconsultants as requested for CDA development and risk management (coordination only see 3.0 below)	4		16	16													8	44	\$ 8,376	
32	Additional Project Development Support as requested during the course of Procurement and Financing.	25		70	80			60											300	\$ 51,390	
<b>SUBTOTAL</b>		466	224	1570	1210	335	748	698	140	190	0	668	2085	853	108	0	12	8	9315	\$ 1,405,727	\$ (360,755)
<b>TOTAL HOURS</b>		556	230	1,633	1,270	335	748	698	140	190	32	668	2,085	853	108	36	134	124	9,840	1,481,291	
<b>CREDITED HOURS</b>		66	121	249	248	0	223	388	20	0	0	310	780	183	100	0	2	8	2,698	0	\$ (360,755)
<b>BASE RATE</b>		\$ 96.81	\$ 76.98	\$ 96.92	\$ 56.99	\$ 46.74	\$ 46.67	\$ 32.50	\$ 43.47	\$ 55.93	\$ 43.83	\$ 56.43	\$ 34.07	\$ 30.44	\$ 38.75	\$ 45.33	\$ 25.73	\$ 23.22			
<b>TOTAL LABOR</b>		\$ 47,438	\$ 8,390	\$ 134,143	\$ 58,246	\$ 15,659	\$ 24,503	\$ 10,075	\$ 5,216	\$ 10,627	\$ 1,403	\$ 20,203	\$ 44,460	\$ 20,398	\$ 310	\$ 1,632	\$ 3,396	\$ 2,693	\$ 408,793		
<b>LABOR BURDEN</b>		\$ 71,675	\$ 14,608	\$ 233,554	\$ 101,412	\$ 27,264	\$ 42,662	\$ 17,541	\$ 9,082	\$ 18,503	\$ 2,442	\$ 35,176	\$ 77,408	\$ 35,514	\$ 540	\$ 2,841	\$ 5,913	\$ 4,689	\$ 700,825		
Overhead Rate 144.74%		\$ 58,913	\$ 12,144	\$ 194,158	\$ 84,306	\$ 22,665	\$ 35,465	\$ 14,583	\$ 7,550	\$ 15,382	\$ 2,030	\$ 29,242	\$ 64,351	\$ 29,524	\$ 449	\$ 2,362	\$ 4,915	\$ 3,898	\$ 591,686		
Profit 12.00%		\$ 12,762	\$ 2,464	\$ 39,396	\$ 17,106	\$ 4,599	\$ 7,196	\$ 2,959	\$ 1,532	\$ 3,121	\$ 412	\$ 5,933	\$ 13,057	\$ 5,991	\$ 91	\$ 479	\$ 997	\$ 791	\$ 120,057		
<b>TOTAL</b>		\$ 119,113	\$ 22,998	\$ 367,697	\$ 159,658	\$ 42,923	\$ 67,164	\$ 27,616	\$ 14,298	\$ 29,131	\$ 3,845	\$ 55,379	\$ 121,867	\$ 55,912	\$ 850	\$ 4,473	\$ 9,309	\$ 7,382	\$ 1,120,536		

SUBTOTALS BY TASK	TOTAL HOURS	TOTAL LABOR
1.0 PROJECT MANAGEMENT AND ADMINISTRATION (6 month extension)	525	\$ 75,564
2.0 Enhanced Services	9,315	\$ 1,405,727
<b>CREDIT</b>	-2,698	\$ (360,755)
<b>TOTAL TASK 1 &amp; 2</b>	<b>7,142</b>	<b>\$ 1,120,536</b>
3.1 Subconsultant -HHM historic research		\$ 32,839
3.2 Subconsultant - PINK - DBE coordination		\$ 20,000
3.3 Subconsultant - Lidar/ Survey/ Goetech		\$ 80,000
EXPENSES		\$ 13,000
<b>SUPPLEMENT TOTALS</b>	<b>7,142</b>	<b>\$ 1,266,375</b>

Shift in funds to cover portion of enhanced services (credit)



**GENERAL MEETING OF THE BOARD OF DIRECTORS  
OF THE  
CENTRAL TEXAS REGIONAL MOBILITY AUTHORITY**

**RESOLUTION NO. 10-40**

**HNTB Work Authorization No. 5 for General Project Development**

WHEREAS, the Central Texas Regional Mobility Authority (“CTRMA”) was created pursuant to the request of Travis and Williamson Counties and in accordance with provisions of the Transportation Code and the petition and approval process established in 43 Tex. Admin. Code § 26.1, *et seq.* (the “RMA Rules”); and

WHEREAS, the Board of Directors of the CTRMA has been constituted in accordance with the Transportation Code and the RMA Rules; and

WHEREAS, the CTRMA utilizes HNTB as a General Engineering Consultant (“GEC”) pursuant to an Agreement for General Consulting Engineering Services dated December 23, 2010 (the “GEC Agreement”); and

WHEREAS, the GEC provides various services to the CTRMA, including activities required to assist the CTRMA in the study and initial development of future projects and any additional activities as requested of the GEC (the “GEC Project Development Services”); and

WHEREAS, Work Authorization No. 5 to the GEC Agreement, including a Scope of Services (“Work Authorization No. 5”) describing the GEC Project Development Services to be provided to the CTRMA has been developed and is in substantially the form attached hereto as Attachment “A”, and such Work Authorization No. 5 establishes an amount to be paid as compensation for the GEC Project Development Services;

WHEREAS, it is necessary that the Board of Directors approve Work Authorization No. 5 and its execution by the Executive Director; and

WHEREAS, the GEC has represented to the Board of Directors that the work reflected in Work Authorization No. 5 and the cost thereof is necessary and appropriate.

NOW THEREFORE, BE IT RESOLVED, that the Board of Directors of the CTRMA hereby approves Work Authorization No. 5 and the related Scope of Services as set forth in Attachment “A”; and

BE IT FURTHER RESOLVED, that Work Authorization No. 5 may be finalized and executed by the Executive Director on behalf of the CTRMA in the form or substantially the same form as Attachment “A”.

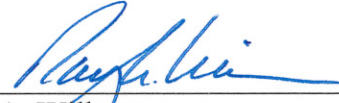
Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 28th day of April 2010.

Submitted and reviewed by:



Andrew Martin  
General Counsel for the Central  
Texas Regional Mobility Authority

Approved:



Ray A. Wilkerson  
Chairman, Board of Directors  
Resolution Number 10-40  
Date Passed 04/28/10

**ATTACHMENT "A"**  
**TO**  
**RESOLUTION NO. 10-40**  
**HNTB Work Authorization No. 5**

## APPENDIX D

### WORK AUTHORIZATION

#### WORK AUTHORIZATION NO. 5.0

This Work Authorization is made as of this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, under the terms and conditions established in the AGREEMENT FOR GENERAL CONSULTING ENGINEERING SERVICES, dated as of December 23<sup>rd</sup>, 2009 (the "Agreement"), between the Central Texas Regional Mobility Authority ("Authority") and HNTB Corporation ("GEC"). This Work Authorization is made for the following purpose, consistent with the services defined in the Agreement:

#### *Mopac Improvement Project Development*

##### **Section A. - Scope of Services**

A.1. GEC shall perform the following Services:

*Please reference Attachment A – Scope of Work*

A.2. The following Services are not included in this Work Authorization, but shall be provided as Additional Services if authorized or confirmed in writing by the Authority.

*Please reference Attachment A – Scope of Work*

A.3. In conjunction with the performance of the foregoing Services, GEC shall provide the following submittals/deliverables (Documents) to the Authority:

*Please reference Attachment A – Scope of Work*

##### **Section B. - Schedule**

GEC shall perform the Services and deliver the related Documents (if any) according to the following schedule:

*Services defined herein are expected to be substantially complete within forty-eight (48) months from the date this Work Authorization 5.0 becomes effective. This Work Authorization 5.0 will not expire until all tasks associated with the Scope of Services are complete.*

##### **Section C. - Compensation**

C.1. In return for the performance of the foregoing obligations, the Authority shall pay to the GEC the amount not to exceed **\$3,839,597.00**, based on a Cost Plus fee listed in Attachment B – Fee Estimate. Compensation shall be in accordance with the Agreement.

The Authority and the GEC agree that the budget amounts contained in Attachment B-Fee Estimate for the various companies and firms composing the GEC are estimates and that these individual figures may be redistributed and/or adjusted as necessary over the duration

of this Work Authorization. The GEC may alter the compensation distribution between tasks or work assignments to be consistent with the Services actually rendered within the total Work Authorization amount. The GEC shall not exceed the maximum amount payable without prior written permission by the Authority.

C.2. Compensation for Additional Services (if any) shall be paid by the Authority to the GEC according to the terms of a future Work Authorization.

**Section D. - Authority's Responsibilities**

The Authority shall perform and/or provide the following in a timely manner so as not to delay the Services of the GEC. Unless otherwise provided in this Work Authorization, the Authority shall bear all costs incident to compliance with the following:

*N/A*

**Section E. - Other Provisions**

The parties agree to the following provisions with respect to this specific Work Authorization:

*N/A*

Except to the extent expressly modified herein, all terms and conditions of the Agreement shall continue in full force and effect.

**Authority:**

**CENTRAL TEXAS REGIONAL  
MOBILITY AUTHORITY**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**GEC:**

**HNTB Corporation**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**CENTRAL TEXAS RMA**  
**ATTACHMENT A – SCOPE OF SERVICES**  
**WORK AUTHORIZATION NO. 5**

**SERVICES TO BE PROVIDED BY the GENERAL ENGINEERING CONSULTANT**  
**(GEC)**

**General**

The services to be performed by the GEC will include, but not be limited to, professional services and deliverables for various tasks related to the study and development of the Mopac Improvement Project. The limits of the services are from FM 734 (Parmer Lane) through the Cesar Chavez Street interchange, with some incidental work south of the Cesar Chavez Street interchange. Because GEC has no control over the cost of labor, materials, or equipment furnished by others, or over the resources provided by others to meet project schedules, GEC's opinion of probable costs shall be made on the basis of experience and qualifications as a practitioner of its profession. GEC does not guarantee that proposals, bids, or actual project costs will not vary from GEC's cost estimates will not vary from GEC's projected schedules.

**PROJECT MANAGEMENT & ADMINISTRATION**

The GEC will perform project management, administrative and coordination duties, including contract administration, project management, reporting, meeting minutes of required meetings and telephone conversations, and other related administrative tasks (e.g., direct costs) associated with the Project, including:

**1.1. Coordinate, Procure, and Administer Work Authorizations**

Prepare contracts as required between the GEC and the Authority and GEC and subconsultants. The GEC will also assist in the preparation of and/or review of contracts between the Authority and subconsultants. Monitor and supervise GEC subconsultant activities, review all work products prepared by subconsultant, review and approve subconsultant progress reports and invoices.

**1.2. Progress Reports and Invoices**

Prepare monthly invoices and progress reports for the work tasks, together with evidence of services accomplished during the time period since the previous report. Prepare a detailed schedule (provide in the Authority approved format) of anticipated monthly invoice billing linking to the project work authorization tasks. A monthly progress report will be submitted and will include: activities completed, initiated or ongoing, during the reporting period; challenges encountered and actions to remedy them; overall status, including a tabulation of percentage complete by task; updated project schedule; and DBE utilization status.

### **1.3. Record Keeping and File Management**

Maintain records and files related to the Project throughout the duration of the Services. Uploading of project files to a shared website will be coordinated with the Authority. Maintain and update via approved software the deliverables tracking log provided by the Authority.

### **1.4. Correspondence**

Prepare written materials, letters, survey forms, etc. used to solicit information or collect data for the project and submit them to the Authority for review and approval prior to its use or distribution. Copies of relevant outgoing correspondence and incoming correspondence will be provided to the Authority on a continuing basis.

### **1.5. Work Authorization Schedule**

Prepare a detailed, graphic schedule linking work authorization tasks, subtasks, critical dates, milestones, deliverables, and the Authority/Texas Department of Transportation (TxDOT)/ Federal Highway Administration (FHWA) scheduled review requirements. The project schedule will be in a format that depicts the order and inter-dependence of the various tasks, subtasks, milestones and deliverables for each of the tasks identified therein. Progress will be reviewed periodically, and should these reviews indicate a substantial change in progress, a schedule recovery strategy will be developed and implemented and the schedule will be revised accordingly.

### **1.6. Dashboard Update**

Prepare and submit updated project information, including schedule and budget, for the Authority's dashboard on a monthly basis; provide QC review of revised information on website.

## **2.0 PROJECT DEVELOPMENT**

This scope of services includes professional services and deliverables in support of the Authority's development of the Mopac Improvement Project from south of Cesar Chavez to north of FM 734 – Parmer Lane.

### **2.1. Project Development Support**

The GEC will provide support to the Authority as required during the Project Development process. Specific efforts will include

2.1.1. Loan and/or Grant Applications: Assist the Authority in the development of loan and/or grant applications for the project as required. This will include preparation of various elements of the loan and/or grant form & associated documentation for the Authority's review and approval; it will also include participation in the coordination efforts with State and/or Federal agencies as requested by the Authority.

2.1.2. Engineering and Technical Support: Provide various engineering and technical tasks as requested by the Authority including but not limited to: general



engineering assistance, general technology assistance, general environmental coordination, reports, research, presentations, preparation of 3D video animation and meetings.

- 2.1.3. Traffic Modeling: Conduct a peer review of the CORSIM and/or VISSIM Traffic Models and provide summary of suggested revisions. Assist with coordination between consultants.
- 2.1.4. Managed Lane Projects Workshop: As requested by the Authority, coordinate the presentation of industry Managed Lane projects to gain insight to their funding, design, operational issues and lessons learned. It is anticipated that industry expertise will participate in the workshop. The GEC will coordinate, as requested, the attendance of additional agencies, such as CAMPO, TTI, and TxDOT.
- 2.1.5. TxDOT Coordination: Provide appropriate staff as part of coordination efforts between the Authority and TxDOT. GEC will provide coordination efforts on the Authority's behalf at the direction of the Authority.
- 2.1.6. Union Pacific Railroad (UPRR) Coordination: Provide appropriate staff as part of coordination efforts between the Authority and UPRR. GEC will provide coordination efforts on the Authority's behalf at the direction of the Authority.
- 2.1.7. Traffic and Revenue (T&R) Consultant Coordination: Provide coordination and support to the Authority's T&R Consultant, as directed by the Authority.
- 2.1.8. Market Valuation: Assist in the development of the market valuation by providing industry knowledge and research for market valuation options.
- 2.1.9. Project Development Agreement (PDA): Assist in the development of the PDA, generation of PDA exhibits, review of PDA drafts, and TxDOT coordination support, as directed by the Authority.
- 2.1.10. CAMPO Coordination: Provide appropriate staff as part of coordination efforts between the Authority and CAMPO. GEC will provide coordination efforts on the Authority's behalf at the direction of the Authority.
- 2.1.11. Provide DBE Outreach and Public Involvement support as requested by the Authority.

## **2.2. Financial Planning Support**

### **2.2.1. Operation, Maintenance, and Renewal & Replacement Estimate Updates**

- 2.2.1.1. Develop and/or update GEC's opinion of probable operations cost estimates using either a Sketch Level approach (i.e., an assumed per transaction cost based on average operations costs of similar toll systems) or a Level 1 approach (i.e., estimate actual quantities for the various elements of the toll operations, enforcement and incident management and applying anticipated unit prices to same to develop an opening year cost estimate which can be escalated over time).
- 2.2.1.2. Develop and/or update GEC's opinion of probable annual/routine maintenance cost estimates using either a Sketch Level approach (i.e., an estimated per centerline mile cost based on the facility type which



considers the number of lanes, pavement material, and location) or a Level 1 approach (i.e., estimate actual quantities for the various elements of the maintenance efforts and applying anticipated unit prices to same to develop an opening year cost that can be escalated over time).

- 2.2.1.3. Develop and/or update GEC's opinion of probable renewal & replacement budget cost estimates (non-routine maintenance estimates) using either a Sketch Level approach (i.e., an estimated per mile cost based on renewal & replacement budgets utilized on similar facilities) or a Level 1 approach (i.e., includes the identification of a long-term, periodic maintenance/replacement schedule, estimation of quantities for the associated elements, and inflated prices of same to assess the overall cost requirements of the system in the target years).

#### 2.2.2. Project Cost Estimate Updates

As directed by the Authority, GEC will provide opinion of probable project cost estimate updates for the project. GEC will prepare an estimate of probable construction costs which will include quantity/cost estimates for major components of work such as; roadway paving, roadway earthwork, roadway drainage, bridge structures, retaining walls, other structures, signing and marking, lighting, and signalization. The estimate of probable construction costs will be used to estimate total project costs that will also include program management and oversight, preliminary engineering, final engineering, right-of-way (ROW) acquisition, environmental compliance/mitigation, construction, toll collection systems utility relocation and construction engineering and inspection (CEI), and financing costs.

Provide updates to preliminary costs estimate, schedule, financial feasibility analysis necessitated by the on-going project scoping/sizing process. GEC will develop and certify the Engineers Report for the Official Statement (OS) and, as requested, review and comment on the OS.

#### 2.2.3. Toll Feasibility Analysis Updates

GEC will assist the Authority in updating toll feasibility analyses which includes the incorporation of traffic and revenue forecast updates (by others); operations, maintenance, and renewal & replacement estimates; and total project cost estimates to determine the financial feasibility of the project.

#### 2.2.4. Financial Advisor Support/Financial Plan Development

GEC will provide financial advisor support necessary for the Authority to conduct financial programming of their system. This will include the development of cash flow analyses which contemplate implementation costs and schedules. GEC will also assist in the identification of priorities to support the determination of alternate project delivery scenarios. The tasks will include:

- Develop GEC's opinion of probable project costs based upon alternative project delivery approaches. Assess third party related costs for utility adjustments/relocations
- Assess funding sources such as state funds, federal formula funds, federal discretionary funds, and toll revenues.

- Assist with the assessment of financing techniques such as State Infrastructure Banks, the Transportation Infrastructure Finance and Innovation Act (TIFIA), Advanced Construction, Toll Revenue Bonds, TxDOT Toll Equity Grants, and other state bonds.
- Develop and provide summary of revenue shortfall mitigation strategies to minimize impacts on scheduled project delivery and prepare a summary of cost increases or reductions that could affect the cost of the project.
- Develop a Funding Contingency Plan should funding for the project as a whole not be provided and determine the impact of various design approaches on estimated project costs and project design life. GEC will:
  - Develop a list of “reasonable” design options for consideration such as project length reductions, ramp reductions, and pavement structure modifications
  - Meet with the Authority to get concurrence regarding design options prior to additional analysis.
  - Analyze and document the financial implications of the various design options considered and include such things as project cost, schedule impact, local economic impact, length of useful life, and impact on financing options.

### **2.3. Design Services - UPRR Double Track Investigations**

The project intends to utilize offset and staggered refuge bays for the Managed Lanes operations along the northbound and southbound lanes of the project. The Union Pacific Railroad (UPRR) currently owns a 60' right of way within a portion of the project limits. Before considering any shared use of their property, the UPRR has requested the Authority provide a due diligence engineering exercise to show that a conceptual double track alignment would not be precluded within this proposed and restricted right of way (ROW).

This task involves assisting the Authority with professional consulting services that include schematic project development and coordination with the UPRR and the Authority for preliminary engineering design services and construction phase sequencing.

#### 2.3.1. Design Standards

This project shall be designed in accordance with the following:

- TxDOT *Standard Specifications for Construction and Maintenance of Highways, Streets, and Bridges*.
- UPRR Engineering Standards

#### 2.3.2. Meetings

- Attend up to three (3) one hour meetings with the Authority/UPRR, as necessary

#### 2.3.3. Research and Data Collection

- The GEC will obtain from the Authority and TxDOT any pertinent record drawings, plats, easements information and other information available

for the project area. The GEC will review the information to determine if potential issues exist. Also, the GEC will collect necessary UPRR right-of-way map(s)/ valuation maps and existing aerial photography exhibits from the Authority. The Authority represents that GEC may reasonably rely on any information or materials provided by the Authority or other project participants to the GEC in the performance of the services herein.

- The GEC will identify in the field the locations, sizes and types of existing railroad bridges, as well as span lengths and descriptions. Photographs from the data collection will be labeled and placed in a photo log for identification purposes.

#### 2.3.4. Preliminary Design

- Identify and evaluate four anticipated critical “pinch-point locations”, such as refuge bays, signal equipment locations, overhead bridge piers, et al, along the project limits where the proposed double track alignment might encounter horizontal restrictions within the ROW. The Authority’s aerial photography exhibits will be utilized. Additional ground survey is not included as part of this task.
- Develop preliminary horizontal and vertical track geometry that complies with UPRR standard design criteria for the authorized train operating speeds. The GEC will note any items that do not comply with standard UPRR design criteria and provide potential resolution. Identify locations along the project limits that may require retaining walls due to double track alignment and profile. Provide 1”=100’ scale roll plot.
- The GEC will evaluate each existing railroad bridge throughout the project limits to determine the existing type of superstructure, substructure to ground line, deck and handrails and determine a proposed method to modify the existing bridges to support the proposed double track alignment geometry and modifications to existing abutments and substructures.
- Identify and evaluate existing drainage ditches and any visible underground grade drainage structures (i.e. drop inlets) using provided aerial exhibits. Identify any potential issues to the existing drainage system based on the proposed double-track alignment.
- Using the proposed double-track geometry and typical section, determine a proposed ditch section needed to support the runoff within the UPRR right of way. This ditch section will follow UPRR requirements, including the 100- year water surface elevation (WSEL) at or below the top of the track sub-grade.
- Using the Rational Method, determine stormwater runoff coefficients, times of concentration and intensity values, and drainage areas throughout the project limits.

- Determine spacing for any inlets, along the double-track section within the right of way. Identify the necessary proposed overall drainage system needed to accommodate the proposed double track section throughout the project.

#### 2.3.5. Railroad Coordination

- Prepare and submit to the Authority a recommended Letter of Agreement (LOA) between the Authority and UPRR for plan set review and comment.
- Prepare and submit to the Authority a listing of any requests to deviate from UPRR design standards for submittal to UPRR.
- Prepare and submit to the Authority proposed construction staging for refuge bays and double-track railroad section.

#### 2.3.6. Assumptions

- The existing DTM (digital terrain modeling) used for the project was obtained from AECOM and Parsons Brinkerhoff. Based on information GEC had received from AECOM, the original DTM was provided by TxDOT that appears to include survey for the centerline of track (not top of rail) and right of way limits. Additional survey was performed by AECOM of the top of rail, edge of ballast and bottom of ditch in the vicinity of RM 2222. It is assumed that the UPRR profile does not align with DTM in the same locations.
- The existing top of rail profile will be drawn based on the data GEC has received to date with the addition of 8" for the height of rail. The existing top of rail and DTM will be used to provide cross sections to determine top of slope, top of cut and the limits and heights for the proposed retaining walls, if required.

### Section 2.3 DELIVERABLES

Deliverables will consist of the following:

- Photo log containing photographs and descriptions of railroad bridges and abutments in the field.
- Roll plot at 1"=100' scale depicting horizontal alignment, profile, typical section, and aerial photography.
- List of potential 'pinch-points' and proposed deviations from UPRR design standards with potential plan for resolution.
- Documentation for means of modifying existing bridges along the double-track section.
- Documentation for sequencing of construction operations along the double-track section.

- White paper with exhibits detailing the assumptions, calculations, and findings for the drainage for the double-track section.
- Draft LOA between the Authority and UPRR for plan set review and comment.
- Provide draft summary report of findings.

## **2.4. Design Services – Toll Systems / Facilities Design**

### 2.4.1. Toll Schematic Design Plans

The GEC will provide design services to develop schematic design plans for the toll collection system for the Project. It is anticipated the toll system will have eight (8) access point locations along the Corridor and will utilize an Electronic Toll Collection (ETC) System (cashless). The GEC will prepare toll facilities preliminary design utilizing the roadway schematic prepared by others as a basis for the design. Sufficient input from the Authority and TxDOT will be included so that proper input is received regarding the design concept(s). The toll schematic design plans will be submitted to the Authority and TxDOT for approval prior to development of PS&E documents. Toll Systems/Facilities Schematic Design will include:

- Locate toll systems / facilities on Schematic Design plans.
- Include in the Schematic Design (in reference to toll systems):
  - Plan view (Structural, Equipment Enclosures, Large Signs, Striping)
  - Elevations
  - General Sections
- Analysis of:
  - Toll Operations
  - Mechanical and Electrical Operations
  - Provisions for local utilities services
  - Facilities for surveillance, communication and control
  - Conceptual ITS interface and infrastructure
- Layouts for toll gantries
- Outline Specifications
- Opinion of Probable Construction Cost

### 2.4.2. Toll System/ Facilities PS&E Design 95%

- Based on the approved Schematic Design drawings and documents, the GEC will prepare the PS&E Documents. These documents will set forth in detail the requirements for construction of the toll collection systems portion of the Project. The PS&E Documents shall establish in detail the quality level of materials and systems for the toll collection systems / facilities and will include:
  - Plans
  - Elevations
  - Sections
  - Details



- General Conditions
- Technical Specifications
- Updated Opinion of Probable Construction Cost
- 95% Review Documents and Plans will be submitted to the Authority and TxDOT for review. Any comments will be addressed and the updated 95% plans will be utilized for the CDA procurement. Any revisions that may be required for construction will be part of a future work authorization.

Surveillance, Communication and Control

- Development of Surveillance, Communication and Control (SC&C) plans, details and estimates is not included in this scope of services. However, conduits for SC&C facilities provided by others will be included as directed by the Authority.

Electrical Design

- The GEC will provide electrical design efforts related for the toll collection systems aspects of the Project.
- The GEC will provide required electrical standards.
- The GEC will provide necessary drawings and specifications to adequately describe the Electrical Design for the toll collection systems portion of the Project.

Utility Design

- The GEC will provide a preliminary report on utility requirements at the toll gantry locations.
- The GEC will determine availability of utilities locally and regionally at the gantry's.
- The GEC will develop utility plan for regional and onsite service.
- Utility relocation plans are not included in this scope of services. Any utility relocation plans in the project area are assume to be the responsibility of the CDA Developer.

Miscellaneous

- The GEC will prepare general notes for the construction documents.
- The GEC will prepare list of governing specifications, special specifications and special provisions.
- The GEC will provide Quality Control/Quality Assurance for toll facilities design and plan production activities.

**2.5. Design Services – Schematic Design of Direct Connectors**

As directed by the Authority, the GEC will provide design services to develop schematic design plans for one northbound and one southbound direct connector connecting the Mopac Improvement Project to the downtown Austin area. The fee allows for up to 4 alternatives for each of the direct connectors. Survey from TxDOT will be utilized for the direct connector design; however, the GEC will supplement the survey as necessary for any areas that survey is not available. The GEC will coordinate with the environmental consultant by providing schematic design for the direct connectors.

**2.6. Conceptual Operations Plan** The schematic design will be submitted to the Authority and TxDOT for approval.

Prepare a preliminary draft Conceptual Operations Plan for the Mopac Improvement Project which is intended to establish the basic framework for operations of the facility; including a basic definition of systems architecture for ITS and toll collection, incident management, safety and enforcement, and maintenance. The plan will include the roles and responsibilities of the various agencies. The basic approach for the development of the Conceptual Operations Plan will utilize the "*LOOP 1 MANAGED LANES PRELIMINARY CONCEPT OF OPERATIONS*" prepared for TxDOT by the Texas Transportation Institute to the extent possible as a starting point for the Conceptual Operations Plan. This living document will identify program goals and specific project operational requirements, infrastructure, personnel, operations and maintenance support efforts, and resource requirements. In addition, the Conceptual Operations Plan will provide a preliminary program schedule and timeline of various activities to meet the Authority's goals within the desired timeframe.

This task involves assisting the Authority with professional consulting services that include conceptual operations plan development and coordination with TxDOT, the City of Austin, the UPRR, TTI, and the Authority's Toll Systems Integrator. The work associated with the development of the Conceptual Operations Plan will include the following specific tasks.

**2.6.1. Industry Research**

Update available data on existing managed lane facilities in the United States to identify current approaches to operations and maintenance of managed lanes, including methods of toll operations, enforcement, traffic control, incident management, and maintenance. The intent is to define a set of "Best Practices" for the operation of a Managed Lane facility.

Obtain available information on specific operations plans for managed lane projects currently in operation, particularly focused on interagency agreements for coordination and cooperation in operating the facilities.

**2.6.2. Operations Plan Development**

Based, in part, on the findings of industry research and the development of "Best Practices" for the operation of Managed Lanes, prepare a draft preliminary Conceptual Operations Plan which presents the concept for operation of the proposed Mopac Improvement Project facility to include:

- Definition of the Operations Concept
- Description of the Managed Lanes facility
- Description of the Systems Architecture, including
  - Toll Collection System components
  - Communications Infrastructure
  - ITS System and Interface
- Incident Management
- Enforcement
- Facility Maintenance

**2.6.3. Interagency Coordination**

Assist the Authority in conducting a series of agency work sessions in order to develop a basic framework for establishment of the roles and responsibilities for the various respective agencies.

Based on discussions and conclusions identified during the interagency work sessions, prepare a basic organizational structure describing the roles and responsibilities of the agencies to be involved in the operation of the Managed Lane facility.

### **3.0 ENVIRONMENTAL SERVICES**

#### **3.1. Agency Coordination**

Support the Authority in coordination activities with TxDOT Austin District, Consultants, Resource Agencies, TxDOT's Environmental Affairs Division, and the FHWA, as required; including meeting preparation, meeting participation, public outreach support and attendance at public meetings, hearings, and noise workshops.

#### **3.2. Environmental Program Management Schedule**

- Monitor the schedule and provide updates to the Authority on a monthly basis.

#### **3.3. Document Review**

- Review draft and final Environmental Documents and provide written comments and recommendations on such documents.
- Review draft and final schematic and provide written comments and recommendations on schematic.
- Reviews shall be for conformance to the applicable requirements of TxDOT and FHWA. Sources of materials will include data received from TxDOT and other federal, state and local governmental and quasi-governmental agencies and field investigations.

### **4.0 CDA PROCUREMENT MANAGEMENT SERVICES**

Deliverables required to complete the procurement of a development team (the Developer) to enter into a comprehensive development agreement (CDA) with the Authority to develop and construct the Project. The selected development team should consist of participating firms whose abilities, professional skills, and experience qualify them to develop the manage lane facility for the Authority. Only one development team will be selected to enter into the CDA for the Mopac Improvement Project.

Services include those required to assist the Authority in: the preparation of a Request of Detailed Proposals (RFDP); the issuance of the RFDP to a shortlist of development teams (the shortlisted proposers); and the receipt and assessment of submitted Detailed Proposals.

#### **4.1 Requests for Competing Qualifications (RFCQ) Phase**

- 4.1.1 Working jointly with the Authority's General Counsel and Financial Advisors, the GEC will develop a RFCQ for the Mopac Improvement Project, post the RFCQ



as required by the Authority rules, and provide responses to questions/modifications as may be required during the process. RFCQ provisions shall include at a minimum:

- General Understanding of the Project
- Scope of Services to be requested
- Developer Team and Personnel requirements
- Financial statements and requirements
- Bonding and Insurance information
- General Disclosures

- 4.1.2 Divide responses to the RFCQ for the Mopac Improvement Project into the several qualifying/measurable components as posed in the RFCQ. Evaluate the measurable qualifications of each component utilizing the evaluation procedures and formulae provided by the GEC or the Authority approved modifications thereto as might be suggested by the GEC. Provide summaries of strengths and weaknesses of all respondents for each component. Participate in meetings with the Authority staff to discuss evaluations of RFCQ and to explain the positions and reasonings of the GEC applicable to each component.
- 4.1.3 Prepare and distribute agenda for oral presentations/briefings/discussions (the "orals") by and with the respondents if requested by the Authority. Prepare questions to be asked by the Authority at the orals. Assist and advise the Authority in planning and managing the orals. Assist the Authority in answering questions at the orals. Prepare written answers to respondent questions posed at the orals for consideration by the Authority.
- 4.1.4 Participate with the Authority in discussions and reviews of the respondents' comments and answers to the Authority questions after orals. Prepare final written synopses of those responses in a style and format suitable for review and evaluation by the Authority Staff Selection Committee (the "Committee") (the Committee may be composed of the Authority staff members and non-voting representatives of the GEC and other the Authority advisors and consultants). Document for the record the review and short list selection procedure followed.
- 4.1.5 Assist the Authority staff in preparing for and presenting the recommendations of the Committee to the Authority Board of Directors (the "Board"). Prepare and organize all documents, exhibits, and visual aids helpful to the comprehension and supportive of the presentation to the Board.
- 4.1.6 Prepare, submit for review by the Authority, and implement for the Authority a document classification and identification system, a document distribution policy with recorded verification of receipt, and a permanent document filing system, both hard copy and computerized. Review and tailor those documents to fit the document handling/filing systems of the Authority.
- 4.1.7 Prepare correspondence for consideration of execution by the Authority.

## **4.2 Pre-Request for Design Proposals (RFDP) Phase**

- 4.2.1 Develop a management plan for the procurement of a Developer for the Mopac Improvement Project. This will entail working closely with the Authority in the

preparation of a procurement process / protocol and reasonable time schedule to define progress achievement milestones between the issuance of the RFDP and the issuance of Notice(s) to Proceed to the selected proposer for the Project. This schedule will allow sufficient time for all elements of the procurement process, including: development of the RFDP by the Authority and GEC; preparation of Detailed Proposals by the shortlisted proposers; assessment of the Detailed Proposals by the Authority / GEC; selection of the "Best Value" proposal; and negotiation of the terms and execution of the CDA.

4.2.2 Develop draft versions of the main sections of the RFDP for the Mopac Improvement Project. These main sections will include:

- Draft Instructions to Proposers – This document will contain relevant information to the shortlisted proposers regarding the project and their associated submittals, including: an introduction and summary of the project; a procurement schedule defining the major milestone dates to be adhered to during the CDA procurement process; detailed description of the procurement process which the Authority will utilize during the review and evaluation of the responses to the RFDP; detailed information pertaining to the Proposal delivery, content and format; Proposal evaluation criteria and weighting; CDA award and approval process; and stipend information and amounts (if applicable).
- Draft Comprehensive Development Agreement – This document will contain the actual Agreement to be executed between the Authority and successful proposer. It is anticipated that this section of the RFDP will be prepared by the Authority's legal counsel and that the GEC will serve in a coordination / review role in the development of document.
- Draft Scope of Work – This document will contain detailed information, specifications, and associated guidance intended to apply specifically to the development and implementation of the Mopac Improvement Project.
- Draft Technical Provisions – This document will contain detailed information, specifications, and associated guidance intended to apply to the development and implementation of the Mopac Improvement Project by the Authority.

4.2.3 Conduct a series of Risk Allocation Workshops with the Authority staff, legal counsel, financial advisors, and others to develop a policy and methodology to divide and assign the risks associated with the design, construction, operation, maintenance and financing elements of the Mopac Improvement Project. A Risk Allocation matrix will be developed which will divide and assign potential risks associated with the development and implementation of the project, including:

- Design Process: design defect (damages, third party injury); design defect (Nonconforming Work); system integrator (SI) delays; other cost increases and delays; accuracy of schematics and reference documents; alignment change creating need for additional right-of-way.
- Utility Relocation: delay due to Utility Adjustments, including unidentified utilities; cost estimate of unidentified utilities; failure of Utility Owners to comply with Adjustment Agreements.

- Governmental Approvals: governmental approvals; new environmental approvals and changes to the Authority-Provided Approvals due to changes in Final Design; governmental approvals required due to Force Majeure or the Authority-Directed Change After NTP.
  - Force Majeure Events: actions of the elements; acts of war; strikes and labor disputes; archaeological, paleontological or cultural resource; threatened or endangered species; changes in law; injunctions against the Project; temporary no-work restrictions resulting from the discovery within the Site of any karst features; hazardous materials (third party spills after proposal date); hazardous materials (existing).
  - Construction, Supply and Installation: GEC's opinion of probable cost increase due to the Authority-Directed Change or the Authority-Caused Delay; differing site conditions; delay in completion (other than the Authority-Caused Delay, Force Majeure and certain uncooperative utility delays); delay in completion due to the Authority-Caused Delay, Force Majeure and certain uncooperative utility delays; construction defect (damages, third party injury); construction defect (Nonconforming Work); delays in opening Project for revenue service due to System Integrator work.
- 4.2.4 Prepare a Revised Draft RFDP by incorporating the Risk Allocation assignments agreed to by the Authority under Task 4.1.3 into the Draft RFDP prepared under Task 4.1.4. An extensive internal review of this Revised Draft RFDP will be completed by senior level GEC staff having experience in CDA processes. Comments developed / identified during this internal review process will be discussed with the Authority staff, legal counsel, and financial advisers to obtain their approval prior to modifying the Draft RFDP.
- 4.2.5 Organize Reference Documents for inclusion into the Draft RFDP as attachments. These documents will include:
- 4.2.5.1 Design Schematic
  - 4.2.5.2 Utility Memorandums of Agreement
  - 4.2.5.3 Cooperative Agreements
  - 4.2.5.4 Environmental Permits / Agreements
  - 4.2.5.5 Right-of-way Acquisition Documentation
- Status assessments will be prepared for inclusion in the RFDP for those documents which have not been fully completed at the time of RFDP issuance to the shortlisted proposers.
- 4.2.6 Develop an Industry Review RFDP utilizing documents / information prepared under Tasks 4.1.4 and 4.1.5 for transmittal to the shortlisted proposers for their review and comment; written review comments / responses will be formally requested from the shortlisted proposers. Additionally, a series of individual meetings with each shortlisted proposer will be conducted to discuss the RFDP and solicit feedback; documentation of these meetings will be prepared by the GEC. All comments / responses will be reviewed by the GEC; a memo summarizing the comments / responses will be prepared for submittal to the Authority. Comments identified during this Industry Review process will be

discussed with the Authority staff, legal counsel, and financial advisers to obtain their approval prior to modifying the RFDP.

- 4.2.7 Assist the Authority in obtaining Texas Department of Transportation (TxDOT) and Federal Highway Administration (FHWA) approval of the Draft RFDP (updated per the Industry Review process described in Task 4.1.6). The GEC will attend meetings with the Authority to present the Draft RFDP to TxDOT and FHWA; written comments will be formally requested from both agencies. Comments received from TxDOT and FHWA will be discussed with the Authority staff, legal counsel, and financial advisers to obtain their approval prior to modifying the RFDP.

#### **4.3 Request for Design Proposals (RFDP) Phase**

- 4.3.1 Based upon the completion of Tasks 4.1.6. thru 4.1.7 and working jointly and cooperatively with the Authority, compile the Final RFDP. The GEC will prepare correspondence for execution by the Authority distributing the Final RFDP to shortlisted proposers.
- 4.3.2 Develop a secure system for receiving, handling, distributing, tracking, storing, and dating all documents, correspondence, facsimile transmissions, and other telecommunications after the date of acceptance of the Final RFDP. Search and locate a secure site acceptable to the Authority to store all documents and correspondence received and created on and after the date of receipt of the Final RFDP. With the assistance of the Authority Executive Director, create and maintain a list of parties who have been authorized access to the secured data by the Authority Executive Director. Create a controlled system in which the evaluators must check out, check in, and be recorded as holding the secured data.
- 4.3.3 Plan, organize, and administer a series of workshops to be attended by the Authority staff, legal counsel, financial advisers, GEC staff, and shortlisted respondents. These workshops will be held to allow shortlisted proposers the opportunity to ask questions / request clarifications on the Final RFDP; it will also provide the shortlisted proposers the opportunity to solicit preliminary feedback regarding potential Alternative Technical Concepts they intend to include in their Technical Proposals. The GEC will solicit information from the shortlisted proposers such that agendas and related documents / exhibits can be prepared and distributed prior to the workshops; minutes of all workshops will also be prepared by the GEC. The GEC will evaluate questions (oral and written) posed at the workshops (and submitted later in writing) and draft answers for consideration by the Authority. Upon receipt of the Authority approval, the GEC will assemble and distribute the Authority answers to questions.
- 4.3.4 Re-assess the status of Reference Documents. These documents include:
- Design Schematic
  - Utility Memorandums of Agreement
  - Cooperative Agreements
  - Environmental Permits / Agreements
  - Right-of-way Acquisition Documentation

Documentation describing the status of the Reference Documents will be prepared for submission to the shortlisted proposers by way of addenda to the Final RFDP such that the shortlisted proposers can include additional efforts in their Proposals for the completion of these items, if required.

- 4.3.5 Prepare and issue all addenda to the Final RFDP, if required, suggested by meetings, discussions, workshops, questions posed by potential respondents, and clarifications suggested and / or approved by the Authority; addenda will also include status updates on Reference Documents originally included in the RFDP, if required.
- 4.3.6 Working with the Authority staff and counselors, develop a detailed and thorough two (2) part procedure and methodology for evaluating the Proposals to be submitted by the shortlisted proposers, as follows:
- Initial Proposals, which include conceptual information pertaining to Alternate Technical Concepts (ATCs), will be evaluated. The evaluation procedure and methodology for the Initial Proposals will include a detailed review by a Technical Subcommittee approved by the Authority; this review will be completed such that recommendations of “Accepted”, “Conditionally Approved” or “Rejected” will be made for each component of the Initial Proposal.
  - Technical Proposals, which include detailed information pertaining to the development of the Mopac Improvement Project as defined in the Final RFDP, innovative financing plans, opening schedule, and overall approach to the project will be evaluated. The evaluation procedure and methodology for the Technical Proposals will utilize the “Best Value Concept” process and will include detailed reviews by a series of specialized Technical Subcommittees approved by the Authority. The findings of each Technical Subcommittees’ review will be documented for presentation to the Detailed Proposal Evaluation Committee (appointed by the Authority) such that a five-level adjectival evaluation process (Excellent, Very Good, Good, Fair, or Poor) can be completed by each Committee member for each proposal. Upon completion of the individual Committee member evaluation / scoring, an average of all scores will be prepared for each Proposal.

Upon receipt of the Authority approval on the evaluation procedures and methodologies, a workshop will be held to convey this information to the Detailed Proposal Evaluation Committee appointed by the Authority.

- 4.3.7 Receive and commence review of the Initial Proposals submitted by the shortlisted proposers, which include information pertaining to Alternate Technical Concepts (ATCs). The GEC will establish a series of specialized Technical Subcommittees approved by the Authority to evaluate the thoroughness and quality of the Initial Proposal responses to each inquiry item contained in the Final RFDP utilizing the evaluation procedures and formulae adopted by the Authority. The GEC will prepare documentation of the findings resulting from the



Technical Subcommittee evaluations; meetings with the Authority staff, legal counsel, and financial advisors will also be held to discuss same.

- 4.3.8 Perform detailed reviews of Alternative Technical Concepts (ATCs) submitted by the shortlisted proposers. These ATCs will include proposed changes to the project requirements set forth in the Final RFDP, including alternatives for operating and maintaining the Managed Lane. The GEC will establish an ATC Review Core Team composed of senior level staff to lead the review of these Concepts. Upon completion of the GEC review, recommendations will be made to the Authority regarding which ATCs should be accepted, conditionally approved, or rejected. Upon acceptance of the GEC's recommendations by the Authority, the GEC will assist the Authority in obtaining necessary agency approvals, including Texas Department of Transportation (TxDOT) and Federal Highway Administration (FHWA), if required. The GEC will attend meetings with the Authority to present and discuss the selected ATCs with TxDOT and FHWA; written comments will be formally requested from both agencies.
- 4.3.9 Prepare correspondence for execution by the Authority transmitting the findings of the Authority's evaluation of the Initial Proposals (as defined in Tasks 4.2.7 and 4.2.8). This correspondence will be utilized by the shortlisted proposers during their preparation of their Technical Proposals.
- 4.3.10 Receive and commence detailed reviews of the Technical Proposals submitted by the shortlisted proposers, which include detailed information pertaining to the Mopac Improvement Project as defined in the Final RFDP, innovative financing plans, opening schedule, and overall approach to the project; review of the associated price proposals submitted by the shortlisted proposers defining their maximum price for the Mopac Improvement Project will also be reviewed. The GEC will establish a series of specialized Technical Subcommittees approved by the Authority to evaluate the thoroughness and quality of the Technical Proposal responses to each inquiry item contained in the Final RFDP utilizing the evaluation procedures and formulae adopted by the Authority. There may be other unsolicited technical, contractual or financial proposals in addition to the base guidelines provided by the Authority in the Final RFDP; such alternate responses also shall be evaluated and reported by the GEC. The GEC will prepare documentation of the findings resulting from the Technical Subcommittee evaluations; meetings with the Authority staff, legal counsel, and financial advisors will also be held to discuss same.
- 4.3.11 Prepare and distribute agenda for meetings called at the option of the Authority for final deliberations pertaining to the Proposals. These meetings will allow the Authority the opportunity to discuss any remaining questions / issues related to the Proposals prior to the identification of the "Best Value" Proposal. Documentation of these meetings will be prepared by the GEC.
- 4.3.12 Assist the Authority in the identification and selection of the "Best Value" Proposal. An evaluation outline will be prepared which documents the procedure followed during the evaluation of the Proposals, indicating what measurable Developer performance categories were identified and individually analyzed. Using the outline, a detailed summary report of the review and analysis process followed by the GEC will be prepared, describing how the evaluators used the

analytical work performed by the GEC to rank the responses in a best value order.

- 4.3.13 Serve as a resource participant with the evaluators and the Authority staff in delivering final reports and recommendations for Best Value Developer selections and designations to the Committee and to the Board. GEC will also prepare final reports summarizing the deliberations, actions, and recommendations of the Committee and the Board relative to the review and consideration of the Proposals and their final selection and designation of the Developer for the Mopac Improvement Project based on the "Best Value" evaluations.

#### **4.4 Post-Request for Design Proposals Phase**

- 4.4.1 With the full participation of the Authority staff, formulate a future needs forecast encompassing staffing for the GEC and the Authority during the further implementation of the Mopac Improvement Project through construction, operation & maintenance, including floor space, office equipment, and computer hardware and software needs. Review the management requirements and challenges facing the Authority and prepare a recommendation to the Authority detailing the staffing needs by number and qualifications and a recommended staffing plan. Develop a budget for implementation of this GEC recommendation which will illustrate the number of employees for each identified service. If requested by the Authority, prepare a job/duties description for each identified position with qualifications.
- 4.4.2 In conjunction with the Developer and the Authority, jointly and cooperatively develop QC/QA programs for materials and construction quality assurance. GEC will not be responsible for construction means, methods, or safety in connection with the project; failure of any contractor, subcontractor, vendor, or other project participant, not under contract to GEC.
- 4.4.3 Conduct debriefings on behalf of the Authority, under the guidance of General Counsel of the Authority, for respondents to the RFDP that were not selected to enter CDA with the Authority.
- 4.4.4 Prepare a benchmarking evaluation report to capture lessons learned throughout the process and identify alternative or refined strategies that the Authority should consider for future procurements. The report shall be based upon a series of interviews to be held with the Authority, proposers, the Authority counselors, and other appropriate parties. Issues to be addressed include; risk shifting, potential for contract change orders, quality, time savings, GEC's opinion of probable life cycle costs, design and construction management changes, GEC's opinion of probable total project cost, etc.

[END OF SECTION]

CLASSIFICATION													TOTAL HOURS								
Group / Division / Program Manager	Department Manager	Sr. Advisor / Project Director	Sr. Project Manager	Project Manager II	Project/Sr. Engineer	Engineers III	Sr. Technician	Sr. Claims Analyst	Sr. Inspector	Field Tech Spec III	Field Tech Spec II	Sr. UDLA	Sr. Public Involvement Rep.	Sr. ITS Design Engineer	GIS Team Leader	Sr. Graphic Designer	Scientist II	Office Business Manager	Project Analyst	Admin. Assistant	TOTAL HOURS
<b>1.0 PROJECT MANAGEMENT AND ADMINISTRATION</b>																					
100	20			80									70								410
120				120														35			120
40				40																	664
32	16			60	40																180
40				60																	148
																		36			160
<b>SUBTOTAL</b>																					<b>2,118</b>
<b>2.0 PROJECT DEVELOPMENT</b>																					
240	60	40	240	240	240	240	240	40					240	120	120	1,800					200
120	16	40	200	120	64			40													200
16	4	4	24					480													4
40		40		40	480	480	480														24
40	160	40	40	200	360	360	360			160	160										24
40	24	40	160	200	40																200
40	40			40																	160
<b>SUBTOTAL</b>																					<b>8,624</b>
<b>3.0 ENVIRONMENTAL SERVICES</b>																					
40	200		40																		480
40	160		40		240																280
40	460		80		240																1,100
<b>SUBTOTAL</b>																					<b>1,860</b>
<b>4.0 CDA PROCUREMENT MANAGEMENT SERVICES</b>																					
120	240	80	120	120	120																480
240	240	80	360	360	100	300	200	200	200				100	200	80						400
480	480	80	720	720	200	600	480	480	480				160	360	80						2,940
240	240	80	360	360	100	300	200	200	200				100	200	40						800
1080	1200	320	1560	1560	400	880	880	880	880				360	880	204						2,684
<b>SUBTOTAL</b>																					<b>12,284</b>
<b>TOTAL LABOR</b>																					<b>24,906</b>
155.00%																					3,835.597
12.00%																					460.000
<b>TOTAL</b>																					<b>100,000</b>
<b>EXPENSES</b>																					
MISCELLANEOUS EXPENSES \$ 100,000																					
MISCELLANEOUS SUBCONSULTANTS \$ 100,000																					
Estimated Subconsultant Fee = \$450,000																					
<b>SUBTOTALS BY TASK</b>													HNTB		TOTAL						
													LABOR		LOADED						
													FEE		FEE						
1.0 PROJECT MANAGEMENT AND ADMINISTRATION													2,118		\$ 284,880						
2.0 PROJECT DEVELOPMENT													8,644		\$ 1,199,278						
3.0 ENVIRONMENTAL SERVICES													1,860		\$ 274,442						
4.0 PROCUREMENT MANAGEMENT SERVICES													12,284		\$ 1,931,142						
<b>JOB TOTALS</b>													<b>24,906</b>		<b>\$ 3,835,597</b>						