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

RESOLUTION NO. 06-35

WHEREAS, the Central Texas Regional Mobility Authority ("CTRMA") was created pursuant to the request of Travis and Williamson Counties (the "Counties") and in accordance with provisions of the Transportation Code and the petition and approval process established in 43 Tex. Admin. Code § 26.01, *et. seq*. (the "RMA Rules"); and

WHEREAS, the CTRMA is charged with funding and developing transportation improvements throughout the region to help solve the current mobility crisis and improve the quality of life for residents of Central Texas; and

WHEREAS, the general engineering consultant retained by the CTRMA (the "GEC") has developed a scope of work and a proposed budget to conduct traffic simulations and other feasibility work related to various CTRMA projects and potential projects; and

WHEREAS, a copy of that proposed scope of work and budget is contained in the work authorization attached hereto as Attachment "A" ("Work Authorization No. 6.0"); and

WHEREAS, the CTRMA Board of Directors must approve Work Authorization No. 6.0 before the GEC may proceed to work thereunder; and

WHEREAS, the GEC has represented to the Board of Directors that the work reflected in Work Authorization No. 6.0 is necessary and appropriate to further assess the feasibility of certain projects and potential projects.

NOW THEREFORE, BE IT RESOLVED, that the Board of Directors approves Work Authorization No. 6.0 in the form attached hereto as Attachment "A"; and

BE IT FURTHER RESOLVED, that all work preformed under Work Authorization No. 6.0 shall be subject to the Agreement for General Consulting Civil Engineering Services between the CTRMA and the GEC and that no additional work may be undertaken without the specific approval of the Board of Directors.

Adopted by the Board of Directors of the Central Texas Regional Mobility Authority on the 28th day of June, 2006.

Submitted and reviewed by:

Tom Nielson
General Counsel for the Central
Texas Regional Mobility Authority

Approved:

Robert E. Tesch
Chairman, Board of Directors
Resolution Number 06-35
Date Passed 06/28/06

EXHIBIT B

WORK AUTHORIZATION

Work Authorization No. 6.0

This Work Authorization is made as of this 28th day of June, 2006, under the terms and conditions established in the AGREEMENT FOR GENERAL CONSULTING ENGINEERING SERVICES, dated as of September 1st, 2003 (the Agreement), between the Central Texas Regional Mobility Authority (Authority) and HNTB Corporation (GEC). The contract award amount of this Work Authorization is **$315,007.00**. This Work Authorization is made for the following purpose, consistent with the services defined in the Agreement:

Feasibility Study Work

Section A. - Scope of Services

A.1. GEC shall perform the following Services:

Refer to 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.

Refer to 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:

Refer to 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 under this Work Authorization are expected to be substantially complete within 8 months from the date this Work Authorization becomes effective. This Work Authorization 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 **$315,007.00** based on Attachment B-Fee Estimate and Attachment C-Fee Schedule. 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. Compensation shall be in accordance with the Agreement.

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

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	GEC:	HNTB Corporation
By:	Robert. E. Tesch	By:	RICHARD L. RIDINGS
Signature:		Signature:	
Title:	Chairman of the Board	Title:	VICE PRESIDENT
Date:	6/28/2006	Date:	6/28/2006

CENTRAL TEXAS RMA

ATTACHMENT A – SCOPE OF WORK

WORK AUTHORIZATION NO. 6.0

SERVICES TO BE PROVIDED BY THE GENERAL ENGINEERING CONSULTANT (GEC)

This scope of services includes the provision of professional services and deliverables for various tasks related to the study of tolling projects.

Task 1: Potential Toll Project Simulations

CTRMA is proposing to develop traffic simulations at several major interchanges in potential toll project locations. The purpose of this action is to model the results if improvements are not constructed in a timely fashion. The five intersections that have identified as possible candidates for these simulations include:

1. US 71 @ US 290W (Y at Oakhill)
2. US183 @ US 71 near the airport
3. US 71 at the entrance into the airport
4. US183 @ US290 direct connections
5. IH 35 near US 71

These traffic simulations would use CAMPO 2030 volumes on the existing intersection configuration to show operations. The interchanges would then be modeled and simulated with the potential improvements implemented. CTRMA plans on using Vissim to model each location with and without improvements.

CTRMA also proposes to expand one of the intersections to a more refined 3D model that would be more realistic than the Vissims output model for general public consumption. This simulation would be suitable for the media.

1.0 Vissim Simulations:

The services

Data Collection

The GEC will gather the following data from URS, CAMPO, and TxDOT to enter into the Vissim model:

- Aerials
- Schematics
- Signal phasing information that may be available
- Peak-hour volumes.
- General operational information for each location

Two sets of peak-hour volumes will be developed—one for the "existing conditions" scenario (i.e. no improvements to the existing infrastructure), and one for the "roadway improvements" scenario. The "roadway improvements" scenario will involve shifting some of the volume from the existing local intersections over to the new tolled facility.

Vissim modeling of existing configuration
The GEC will model the existing facility with future traffic. The purpose of this exercise will be to depict future traffic conditions in the absence of any roadway improvements.

Vissim modeling of proposed tolling configuration
The GEC will model the proposed direct connectors and at grade facilities. The purpose of this exercise will be to understand the extent to which traffic conditions are improved by the proposed roadway improvements.

Provide data in a presentation type format
The output from the simulation will be provided to the client via CD. The CD will include 10 simulation clips in an .avi format. (Each of the 5 locations will have 2 simulation clips recorded—one for the "existing conditions" scenario, and one for the "roadway improvements" scenario.) Each simulation clip will be between 30 and 60 seconds in length.

2.0 3D Animation:

The services described hereunder are for the production of a 3D animation of one location. The corridor will be modeled for up to a half mile in distance for each direction of the intersecting roadways. Animation will include the existing roadway as well as the proposed year 2030 roadway redevelopment. Traffic will be simulated based on actual Vissim output data. The deliverable will be up to 2 minutes of animation. Services are details below:

Data Collection
The GEC will request the following location-specific data from TxDOT to produce the animation. Specifying a location without this data will not produce the desired animation quality.

- CAD files including schematics, elevations, planimetrics, contours, and related GIS files as needed.
- Raster Data
  - Most current high resolution geo-rectified, color ortho-photography of at least 1' resolution preferably
- Vector Data – CAD, GIS, 3D (all relevant CAD data including but not limited to the following)
  - Existing and Proposed contours of at least 2' contour
  - Existing and Proposed Site drawings and schematics
  - Existing and Proposed 3D alignment center lines and edge of pavement for bridges, main lanes, ramps, frontage roads
  - Existing building and foliage planimetrics for the project area

Pre-Production
The GEC will perform the following during the Pre-Production phase:

- Gather relevant base data
- Gather onsite photography
- Represent 3D topography as a flat ground plane
- Exclude finer details such as signage, guard rails, or attenuators,
- Create generic 3D extrusions of surrounding industrial and residential buildings
- Develop textures limited to roadway striping with minor aerial enhancements
- Create existing 3D foliage within project area

Animation

The GEC will perform the following during the animation phase:

- Animate virtual cars with Vissim traffic patterns
- Create up to (2) flyovers of project area

Post-Production

The GEC will perform the following during the Post-Production phase:

- Edit and Composite rendered sequences
    - Develop final edited animation from rendered sequences
    - Create Titles and Caption overlays
    - Integrate the background music into the final edited sequence
- Create CDs
    - Encode HD WMV format of final edited animations for CD content
    - Produce Graphics for the CD label and packaging

Schedule and Meetings

The GEC agrees to perform the tasks described above and deliver the related deliverables for review via web streaming media and teleconference review meetings with a CTRMA representative according to the following schedule:

- Kick-Off Meeting
    - Discuss production workflow
    - Confirm that sufficient and accurate data datasets are available
    - Determine CTRMA contact to review, comment, and approve incremental deliveries
- Review Meeting: 50%
    - Discuss camera movements and scene development including view distances, speeds, content
    - Review current 3D model
    - Obtain review comments and approval from CTRMA representative
- Review Meeting: 75%
    - Review current 3D model
    - Demonstrate camera development and any current rendered draft sequences
    - Obtain review comments and approval from CTRMA representative

- Review Meeting: 95%
  - Review final 3D model
  - Demonstrate most current edited sequences
  - Determine final post-production changes and/ or enhancements which can be made within remaining budget and schedule
  - Obtain review comments and approval from CTRMA representative

Additional Services

The following Additional Services can be provided to the CTRMA via an addendum to this contract for an additional fee:

- Night-time Sequences
- Narration
- Website Development
- Kiosk Solutions

Task 2: Analysis of Phase II Toll Projects

The GEC will perform financial analyses to identify near-term and long-term cash flow impacts of the Phase II Toll Projects. Specific efforts will include:

- Update implementation schedules, total project cost estimates, and location maps for the Phase II Toll Projects.
- Develop a cash flow model assuming the Phase II Toll Projects are implemented as tolled facilities. This cash flow model will provide an estimate of the financial requirements of the system in the near-term (through 2016) and the long-term (through 2030).
- Develop a cash flow model assuming the Phase II Toll Projects are implemented as non-tolled facilities. This cash flow model will provide an estimate of the financial requirements of the system in the near-term (through 2016) and the long-term (through 2030).
- Conduct a comparison of the two cash flow models to determine the financial and schedule impacts related to toll revenues of the system.
- Develop a summary presentation which will document the findings of the cash flow modeling comparison; a series of tables, graphs, and/or bullet points will be provided to communicate the findings.

Task 3 US 79/ RM 620 Connector Feasibility and Environmental Constraints

The Central Texas Regional Mobility Authority (CTRMA) desires to study potential connector extending from SH 45 near O'Connor Boulevard, along RM 620 to US 79 in Round Rock.

Conceptual Feasibility Analysis

The Consultant will conduct a Conceptual Feasibility Analysis of a proposed facility extending from SH45 at O'Connor Boulevard (western terminus) to US 79 (eastern terminus; near Mayes Avenue). Specific efforts will include:

- Identify two separate tolled improvement scenarios that meet the intended objectives of the facility. Preliminary concepts (plan view only) will be developed for the two scenarios.
- Conduct conceptual-level T&R forecasts for the two scenarios using a sketch planning T&R model based on average per-mile toll rates.
- Develop preliminary project implementation cost estimates for the two scenarios. These cost estimates will include preliminary engineering, final engineering, right-of-way acquisition, environmental mitigation, utility relocations, construction, construction engineering & inspection, management, and oversight.
- Develop preliminary operations and maintenance costs for the two scenarios.
- Conduct a conceptual-level financial analysis for each of the two scenarios. This analysis will compare estimated costs to potential toll revenues of the toll project to ultimately determine the project's ability to be financed through revenue bonds.
- Develop a letter report which will include a brief summary of the analysis methodologies, analysis findings, and supporting feasibility model documentation.

Environmental Constraints Analysis

The Engineer shall provide services consisting of environmental constraints analysis of a new connection from SH 45 near O'Connor Rd to US 79 in Round Rock just east of IH 35, within a defined study area.

The outcome of this work authorization shall be a technical memorandum summarizing analysis of the defined study area.

Data Collection

The data collection phase and site reconnaissance visits within existing roadway ROW will begin upon notice to proceed. For the proposed study area, the Engineer will obtain publicly available information including:

- Locations of public buildings, schools, churches, parks, etc.

- Aerial/Infrared photography, if available.
- National Wetland Inventory Maps.
- County Soil Survey Maps.
- TCEQ & EPA Hazardous Materials Database Information.
- FEMA 100-year floodplains.
- Vegetation Information.
- Threatened and Endangered Species Information.

Historical Site Listings

The Engineer will conduct literature-based surveys of research and documentation of historic buildings, structures, and objects within the Area of Potential Effect (APE) for the study area. The survey will include:

- Literature Review
- Documentation of the survey results
- For buildings and other structures, objects and districts, the documentation will include the following for the study area or APE for any property over 45 years old:
    - A map showing the location of the property in relation to the study area
    - Date of construction
    - Research on historical associations
- Identification of cultural resources that are listed in the National Register of Historic Places, including historic sites, buildings and other structures, objects, districts, traditional cultural properties, and cultural or historic landscapes located during the survey.

Environmental Constraints Mapping and Analysis

The Engineer will build a geographic information system (GIS) based environmental constraints map for the proposed alignment using ArcView, Version 8.1, based on data collected under the data collection phase. Available GIS coverages for the project area will be acquired or purchased from various data sources and used to prepare the constraints map. The Engineer will also conduct site investigations to assist in the development of this map. The map will serve as a report exhibit. Constraint information will include, for example:

- Cemeteries, churches, schools; other land use features
- Existing and proposed roadways, railroads, utilities, and pipelines
- City limits
- Development plats
- Parklands
- Floodplains
- NWI wetlands
- Potential sensitive noise receptors
- Documented hazards sites
- Documented historical/archeological sites
- Threatened or Endangered species habitat or occurrence

The Engineer shall analyze environmental constraints within the study area to identify the project area's status with respect to various resource categories and permits, including but not limited to determinations for:

- Critical habitats
- Wetlands
- Floodplains
- Parklands
- Cultural resources
- Hazardous materials
- Noise
- Air quality
- Visual and aesthetic elements

Environmental Constraints Report

The Engineer will prepare a environmental constraints analysis document to help identify those environmental issues that could play a significant role in the study area planning process. The Engineer will utilize the constraints information gathered to assist in development of the constraints analysis document. Four copies of the draft document will be submitted to CTRMA. Once comments on the document are received and addressed, four copies of the final document will be submitted to CTRMA.

EXCLUSIONS

The following tasks are not included in this work authorization and would be scoped and detailed at a later date, as necessary:

- Traffic modeling of existing or proposed roadways, origin-destination surveys, or any other traffic data collection or detailed analysis.
- Historic/Archeological coordination involving surveying, National Register Testing and/or Data Recovery-level excavation or mitigation or Section 106 Coordination;
- Preparation and coordination for Section 4(f) or Section 6(f) approval;
- Hazardous materials Phase I or II Environmental Site Assessments;
- Additional documentation services requested as a result of a change in environmental regulations or TxDOT/FHWA documentation standards from those in practice and acceptable at the time of approval of this Work Authorization;
- Intensive field investigation;
- Preparation of NEPA documentation (Environmental Assessment);
- Environmental Permitting;
- USACE permit coordination;
- Ground Surveying;
- Aerial Surveying and photogrammetry; and,
- Subsurface Utility Engineering (SUE) services or any other utility location determination.

Feasibilty Study Work **HNTB Corporation - Fee Summary- WA 6.0**	**CTRMA**	
Summary		
Task 1 --Tolling Plan Simulation	**$**	**68,526**
Task 2 - Analysis of Phase II Toll Projects	**$**	**129,945**
Task 3 -- US 79/ RM 620 Connector	**$**	**116,536**
	$	**315,007**

Task 1 --Tolling Plan Simulation

		MAN-HOURS						
		A	*B*	*C*	*D*	*E*	*F*	**TOTAL**
	(Labor Rates	**$ 70.00**	**$ 60.00**	**$ 50.00**	**$ 36.00**	**$ 30.00**	**$ 20.00**	**HRS**
TASK / WORK DESCRIPTION								
Vissim (5 locations)								
1 Collect Data - schematics, plans, traffic data		2	16		40			58
2 Vissims modeling of existing configuration (5 locations)					115			115
3 Vissims modeling of proposed Phase II configuration (5 locations)					115			115
4 Generate presention materials		2			24			26
3D animation (one location)								
1 Project coordination/ meetings/Data collection		4		18	8	10	4	44
Preproduction								
3D Buildings (generic only)						20		20
3D Roadway Development				4		110		114
Animations				10		100		110
Aerial and Texture enhancement						5		5
Post Production								
Editing and compositing					20			20
Video encoding						8		8
Graphic Design						4		4
Project Archival Network Rendering Administration					4			4
Admin/ meetings		4	4		4	4		16
TOTAL HNTB DIRECT LABOR		12	20	32	330	261	4	659
% Total by Classification		*1.82%*	*3.03%*	*4.86%*	*50.08%*	*39.61%*	*0.61%*	
Labor Costs		$ 840	$ 1,200	$ 1,600	$ 11,880	$ 7,830	$ 80	$ 23,430
Overhead Costs	1.5228	$ 1,279	$ 1,827	$ 2,436	$ 18,091	$ 11,924	$ 122	$ 35,679
Profit	15.0%	$ 318	$ 454	$ 605	$ 4,496	$ 2,963	$ 30	$ 8,866
Total Loaded Labor		$ 2,437	$ 3,481	$ 4,642	$ 34,466	$ 22,717	$ 232	**$67,976**

Direct Expenses		
Plotting and Reproduction	$	150
Mail and Deliveries	$	200
Travel and Field Expenses	$	200
Total Direct Expenses	**$**	**550**

Task 1 --Tolling Plan Simulation	Total	**$**	**68,526**

Task 2 - Analysis of Phase II Toll Projects

		MAN-HOURS						
		A	*B*	*C*	*D*	*E*	*F*	**TOTAL**
	(Labor Rates	**$ 70.00**	**$ 60.00**	**$ 50.00**	**$ 36.00**	**$ 30.00**	**$ 20.00**	**HRS**
TASK / WORK DESCRIPTION								
Analysis of Phase II Toll Projects								
1 Update schedules, estimates, and location maps		80	80	140	160	60	60	580
2 Develop cash flow model assuming tolled facilities			16		24			40
3 Devlelop cash flow model assuming non-tolled facilities			16		24			40
4 Conduct comparison of cash flow models			16					16
5 Devlop summary presentation		40	80		80			200
6 Mangment/Admin/ meetings		12	23		20	15		70
TOTAL HNTB DIRECT LABOR		132	231	140	308	75	60	946
% Total by Classification		*13.95%*	*24.42%*	*14.80%*	*32.56%*	*7.93%*	*6.34%*	
Labor Costs		$ 9,240	$ 13,860	$ 7,000	$ 11,088	$ 2,250	$ 1,200	$ 44,638
Overhead Costs	1.5228	$ 14,071	$ 21,106	$ 10,660	$ 16,885	$ 3,426	$ 1,827	$ 67,975
Profit	15.0%	$ 3,497	$ 5,245	$ 2,649	$ 4,196	$ 851	$ 454	$ 16,892
Total Loaded Labor		$ 26,807	$ 40,211	$ 20,309	$ 32,169	$ 6,528	$ 3,482	**$129,505**

Direct Expenses		
Plotting and Reproduction	$	300
Mail and Deliveries	$	20
Travel and Field Expenses	$	120
Total Direct Expenses	**$**	**440**

Task 2 - Analysis of Phase II Toll Projects	**Total**	**$**	**129,945**

CTRMA

Task 3 -- US 79/ RM 620 Connector

		MAN-HOURS						
	A	*B*	*C*	*D*	*E*	*F*	**TOTAL**
(Labor Rate	**$ 70.00**	**$ 60.00**	**$ 50.00**	**$ 36.00**	**$ 30.00**	**$ 20.00**	**HRS**
TASK / WORK DESCRIPTION							
US 79/ RM620 Connector Feasibility							
1 Identification of Tolled Improvement Scenarios	8		40		80		128
2 Conceptual level T&R Forecast Development		80	80				160
3 Prliminary Project Implementation Cost Estiimate				40	40		80
4 Preliminary Operations and Maintenance Cost Estimates			24				24
5 Finacial Analysis		40	40	4			84
6 Letter Report Development	8	40	40	4	40		132
7 Administrative/ meetings	6	8				10	24
US 79/ RM620 Environmental Constraints							
1 Data Collection		10		4	40	24	78
2 Historical Site Listings					24	40	64
3 Develop Constriants map		2	2	8	88		100
4 Report		2		8	20		30
5 Administrative/ meetings	6	4	14	6	2	8	40
TOTAL HNTB DIRECT LABOR	28	186	240	74	334	82	944
% Total by Classification	*2.97%*	*19.70%*	*25.42%*	*7.84%*	*35.38%*	*8.69%*	

Labor Costs		$ 1,960	$ 11,160	$ 12,000	$ 2,664	$ 10,020	$ 1,640	$ 39,444
Overhead Costs	1.5228	$ 2,985	$ 16,994	$ 18,274	$ 4,057	$ 15,258	$ 2,497	$ 60,065
Profit	15.0%	$ 742	$ 4,223	$ 4,541	$ 1,008	$ 3,792	$ 621	$ 14,926
Total Loaded Labor		$ 5,686	$ 32,378	$ 34,815	$ 7,729	$ 29,071	$ 4,758	**$114,436**

Direct Expenses		
Plotting and Reproduction	$	500
Horizon Archeological Site Listings	$	1,000
Mail and Deliveries	$	100
Travel and Field Expenses	$	500
Total Direct Expenses	**$**	**2,100**

Task 3 -- US 79/ RM 620 Connector	**Total**	**$**	**116,536**