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## **Scope of Services**

### **A Comprehensive Approach to Transportation Planning**

This section presents the suggested technical approach to be followed by the members of the consultant team. The work task descriptions address all of the objectives and the various technical elements outlined in the Scope of Services issued by the City of Gahanna on October 26, 1999.

A project initiation meeting will be held with City staff at the outset of the assignment. This meeting will have the following objectives:

- Discussion and review of the work program, and project schedule.
- Confirmation of contact information to ensure the proper flow of communication between the parties.
- Identification of consultant team data requirements and the availability of information through City staff.
- Conceptualization of the public involvement process including interaction with City Boards and Commissions and key points of contact.

If desired by the City, meetings will be sought by the consultant team with significant or interested public and private agencies. The emphasis here will be on meeting with entities that may contribute relevant planning information affecting the land use or traffic projections used in the model. Example agencies include:

- The Franklin County Engineer
- City of Columbus Engineering
- City of Columbus Airport
- The Ohio Department of Transportation
- Jefferson Township Administration

A data collection program will be performed by the consultant team that will reveal existing sources of relevant information and obtain new information for the project.

Existing data sources that are known to be available include:

- The 1995 City of Gahanna Thoroughfare Plan
- The US 62/Morse Road "Triangle" study
- Port Columbus International Airport planning material
- Westover site impact analysis prepared by EMH&T including recent model updates for northeastern Franklin County by EMH&T and MORPC.
- New Albany Business Campus site impact analysis prepared by EMH&T
- Blacklick site impact analysis prepared by EMH&T
- Hamilton Road Access study prepared by EMH&T

New information to be obtained by the consultant team for this project includes:

- Highway inventory information, e.g. current functional classification, width, speed, signalization, etc.
- Traffic count data
- Truck routes and location of principal truck traffic generators
- Ohio Department of Highway Safety crash records summary
- Emergency services facilities location and access characteristics
- Railway crossing identification and inventory
- Recent traffic impact studies for proposed development projects

Traffic volume data will be compiled from available information maintained by the City of Gahanna, the Ohio Department of Transportation, MORPC, and Franklin County. This data will be supplemented by new traffic counts proximate to the limits of the study area and along other street segments if needed for calibration of the computer model volume estimates or detailed analysis of special impact areas.

## **Phase 1/Trip Generation Projections**

The consultant team will develop a trip generation forecast based on existing development, anticipated development and planned land uses that will affect area roadways. Two levels of analysis will be pursued including one level examining the land use and transportation corridors in the entire study area and one level tailored to specific impact areas where more detailed analysis is desired. The Mid-Ohio Regional Planning Commission will update land use assumptions and generate traffic data at the regional level using their established computer models. EMH&T will prepare more detailed studies for the special impact areas to supplement the MORPC data.

The basic framework involved in establishing the regional model will be performed as Phase 1 and includes the following major elements:

### **Definition of base year data**

Socio-economic land use variables used in the existing travel demand model have a 1995 base year established. The MORPC will calibrate the model output using traffic counts on file or counts prepared for this project in order to adjust volumes to closely match known conditions. All land use scenarios will incorporate local planning efforts and policies. The existing traffic analysis zone structure will be reviewed and modified if necessary to assure adequate modeling geography. These variables are intended as a quantification of the land use goals and objectives identified in the City's zoning policy and through our data collection and interviewing process.

### **Mapping of land use for 2020 Base Network**

Land use scenarios will be mapped at the traffic analysis zone level. Though detailed information, it is not the intent of this study to assign future land use assumptions to individual parcels. Data sources used for developing the land use scenarios will include, but not be limited to, aerial photography, available land use plans, utility service area data, annexation records, Franklin County Auditor parcel data and building permits. City staff is expected to assume an important role in reviewing the projections made and commenting on their adherence to the general policies and goals of the City.

Land use data for the 1995 base year will be provided and land use data for the 2020 design year will be provided in two scenarios, "normal" and "high". Normal land use projections are those normally maintained in the model for the entire region. High land use projections can include additional development or higher densities in Gahanna or surrounding areas that is not committed but could impact transportation planning.

## **Phase 2/ Traffic Volume Projections**

This task principally involves the use of a computer model capable of simulating traffic conditions in the City of Gahanna and surrounding areas. The purpose of maintaining such a model is to permit the simulation of land development and road network alternatives and identify capacity deficient links in the City street system. Once defined, the model can be a useful tool in prioritizing improvement projects and assessing the impact of future changes to the land use or street elements of the system.

### **Trip generation, distribution, and assignment**

The 1995 and 2020 land use scenarios will be used to create a 1995 and two 2020 trip tables showing the estimate of trips generated in each traffic analysis zone. Tables will be reviewed with City staff for compliance with land use policy and project objectives. Following any necessary adjustments to the data, final trip tables will be developed and input into the transportation demand model.

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### **Phase 3/Street Classification**

A functional classification system will be developed for Gahanna streets prioritizing roadway links based on traffic volume, level of access provided, regional significance, and other factors. Functional classification data will be input to an existing database of street characteristics maintained by the City of Gahanna. Functional classification will be used as a basis for additional planning recommendations such as pavement typical section, right of way needs and access management policy.

### **Phase 4/Review of Proposed Additional Roadway Links**

A 2020 base street network will be developed for use in the regional travel demand model. The base network will include all existing roadways together with committed improvements such as those shown on the current Transportation Improvement Program or identified through consultation with City staff. Additional networks will be modeled to assess the necessity of creating new links in the network such as the Tech Center Drive extension.

#### **Formulation of Alternative Networks**

Up to ten transportation networks will be modeled to emulate the following conditions for both 2020 (normal and high) land use scenarios:

- 1) 2020 Base network
- 2) 2020 Base network plus Tech Center Drive extension
- 3) 2020 Base network plus north "triangle" interior roadway system
- 4) 2020 Base network plus a modification to be determined during the planning process
- 5) 2020 Base network plus a modification to be determined during the planning process

#### **Evaluation of Alternative Networks**

Once model output is obtained and calibrated for the various alternatives, an evaluation strategy will be developed to permit the consultant team and City staff to understand the performance characteristics of the networks. The evaluation criteria will be suggested by the consultant team and reviewed by City staff. Network performance will initially be assessed by the consultant team using the volume to capacity ratio of key links.

## **Phase 6/Analysis of Special Impact Areas**

Following substantial completion of the regional transportation model update, additional analyses will be performed focusing on special impact areas within the study boundaries. These areas are expected to include:

- Port Columbus International Airport
- Interchanges between City thoroughfares and the interstate highway system
- Morrison Road and Tech Center Drive area
- US 62/Morse Road "triangle"
- US 62/Stygler Road intersection

In-depth study of these areas will include individualized analysis of trip generation potential using manual methods. Site specific trip distribution and assignment will be performed where useful and capacity analysis techniques will be used to evaluate the impact of anticipated growth on area thoroughfares. Recommendations for further action are expected to be more detailed than in the balance of the Thoroughfare Plan and may include intersection geometry and signal operations proposals.

## **Phase 6/Future Traffic Count Locations**

Based on an examination of model output, current traffic counts, and the physical characteristics of the street system, locations will be recommended for future monitoring of traffic volumes.

## **Phase 7/City Mapping and Text**

Mapping products generated for the Thoroughfare Plan work will be generated in AutoCAD format and capable of posting on the City's internet web page. At a minimum the Thoroughfare Plan will show existing and proposed streets with their functional classification with other relevant features. Mapping will be tied to the state plane coordinate system. Type .DWF files will be created showing the various elements of the Thoroughfare Plan for use on the City web page. Our GIS/computer mapping personnel will be available to consult on the variety of mapping products and formats available from EMH&T.

A report will be prepared documenting the Thoroughfare Plan development process and detailing the conclusion and recommendations of the study. Capacity deficient links identified during the modeling process will be shown and discussed. The reason for the

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**PROPOSAL COST SUMMARY**

C/R/S City of Gahanna Thoroughfare Plan Update

Overhead Percentage = 111%

CONSULTANT:

EMH&T, Inc.

Net Fee Percentage = 15%

DATE:

12/17/99

Cost of Money = N/A

Task - Description	Senior Engineer	Project Engineer	Engineering Aide	Clerical	Total Hours	Direct Cost
<b>Phase 1/Trip Generation Projections</b>						
Field Data Collection		2	8		10	
Definition of Base Year Data	2	5			7	
Mapping of Land Use for 2020 Base Network	2	5	4		11	
<b>Phase 2/Traffic Volume Projections</b>						
Trip Generation Distribution and Assignment	3	6	4		13	
Subconsultant Cost-MORPC (Phases 1 & 2)						\$ 15,000.00
<b>Phase 3/Street Classifications</b>	6	12	10		28	
<b>Phase 4/Review of Proposed Additional Roadway Links</b>						
Formulation of Alternative Networks	10	30	5		45	
Evaluation of Alternative Networks	10	35	5		50	
Subconsultant Cost-MORPC (3 Network Alternatives)						\$ 2,100.00
<b>Phase 5/Analysis of Special Impact Areas</b>						
Airport Expansion	4	8	4	2	18	
I-270 interchanges at Morse, 62/670, Hamilton, and Taylor Station/Broad	10	16	10	2	38	
Tech Center Drive Extension	5	6	4	2	17	
North Triangle Interior Roadway System	4	8	4	2	18	
Easton/New Albany/Jefferson Township	4	8	4	2	18	
<b>Phase 6/Future Traffic Count Locations</b>	3	6	2		11	
<b>Phase 7/City Mapping and Text</b>	8	12	45	8	73	
<b>Phase 8/Presentation</b>						
Preparation of Meeting Exhibits and Materials	15	12	35	18	80	
Attendance at Public Meetings	24	8			32	
Documentation of Public Input	4	6	2	8	20	
Subconsultant Cost-MORPC (2 Presentations)						\$ 1,720.00
<b>Subtotal Hours</b>	<b>114</b>	<b>185</b>	<b>146</b>	<b>44</b>	<b>489</b>	
Hourly Rate	\$ 28.85	\$ 24.73	\$ 20.61	\$ 14.00		
Total Labor	\$3,288.90	\$ 4,575.05	\$ 3,009.06	\$ 616.00	\$ 11,489.01	
Overhead @ 111% (projected for 1999)	\$3,650.68	\$ 5,078.31	\$ 3,340.06	\$ 683.76	\$ 12,752.80	
Net Fee @ 15%	\$ 493.34	\$ 686.26	\$ 451.36	\$ 92.40	\$ 1,723.35	
<b>EMH&amp;T Total</b>	<b>\$7,432.91</b>	<b>\$10,339.61</b>	<b>\$ 6,800.48</b>	<b>\$ 1,392.16</b>	<b>\$ 25,965.16</b>	
Total Subconsultant Proposal						\$ 18,820.00
<b>Grand Total</b>						<b>\$ 44,785.16</b>
<b>Recommendations for Expansion in Scope of Services</b>						
Olde Gahanna/Riverfront development	8	12	8	3	31	
Select Link/Select Centroid Model runs	8	14	8	2	32	
Access Management Guidelines	12	30	4	6	52	
Accident Summary	8	20	4	4	36	
Subconsultant Cost-MORPC (3 Select Links)						\$ 2,100.00
<b>Subtotal Hours</b>	<b>36</b>	<b>76</b>	<b>24</b>	<b>15</b>	<b>151</b>	
Hourly Rate	\$ 28.85	\$ 24.73	\$ 20.61	\$ 14.00		
Total Labor	\$1,038.60	\$ 1,879.48	\$ 494.64	\$ 210.00	\$ 3,622.72	
Total Subconsultant Cost of Scope Additions						\$ 2,100.00
<b>Grand Total of Scope Additions</b>						<b>\$ 5,722.72</b>