2004-2005 UPWP
Special Project Descriptions

Collector Street Plan

Development of a coordinated network of collector streets within the DCHC MPO boundary is the emphasis of this plan. It will incorporate processes and methods proven successful in the Center of the Region Enterprise (CORE) Collector Street Plan, which was partially funded by the DCHC MPO's FY 2003-2004 UPWP. This Plan will be consistent with existing collector street plans adjacent to (e.g., Wake County) and within (Wake-Durham Comprehensive Street System Plan) the MPO boundary. Ensuring that the road network not addressed in the MPO's long-range transportation plan contributes to the creation of a more efficient and effective transportation network is the goal. A technical team of partner agency staff will guide the development of the Collector Street Plan.

Project products are likely to be divided into three main categories:

Facilities: Collector street systems Plan, including document and mapping, standards driveway and cross-section), trasit accesibility, physical barriers, and integration with the overall MPO transportation systems.

Funding: Identify costs and potential funding sources for building projects.

Implementation: Summarize the implementation process, prioritization, and establish a process to track decisions related to completing the collector street network.

Once adopted by the appropriate governing bodies, the Collector Street Plan will be used for identifying and preserving right-of-way in development projects to ensure that a cost-effective local street network is constructed in the future.

2005 Major Model Enhancement

Upon completion of the 2005 AQ Conformity modeling operation, the Triangle Regional Model will begin to undergo substantial revisions and enhancements in order to better respond to the evolving needs and policies of the DCHC MPO and other model stakeholders. One of the first tasks will be to identify and select model enhancements for implementation based on the needs of the various partners, which include local governments, and, on the feasibility and costs of desired enhancements. Enhancements specifically discussed within the DCHC MPO include; enhancing model precision for small area studies, improving non-motorized models, increasing sensitivity to travel demand management policies, and improving HOV lane models. Additional technical enhancements have also been proposed relative to trip generation, destination choice and mode choice. Integrated land use and transportation modeling is addressed in a separate item below. Specific activities to develop model enhancements include; staff time preparing and evaluating technical proposals for model revision and developing the model, negotiating the scope of enhancements with regional model partners (NC-DOT, TTA, CAMPO), consultant

assistance in preparing technical specifications and in developing the model, and research and peer contact aimed at assessing the technical merits and operational challenges of the various modeling strategies that will be under consideration. The TRM is a regional project, and it is possible that some enhancements sought by DCHC will not be included in the regional model plan. In that case, additional specific activities may include developing extensions to the regional model to meet DCHC's remaining policy needs.

2005 Travel Behavior Survey

The existing Triangle Regional Model was calibrated with Travel Behavior Survey (TBS) data collected in 1995. Since then, the region has undergone substantial development and demographic changes. While some of these changes are captured in updates to socio-economic data that is input to the model, including Census 2000, there is much more information from the 1995 survey that needs to be updated in order to prepare more accurate forecasts. The TBS will collect detailed information on personal and household travel patterns from approximately 4,000 households across the Triangle. Information about trip purposes, mode choice, travel routes, time of day when travel is undertaken, response to road congestion, average trip distances and durations, and neighborhood and work destination characteristics will likely be gathered in these surveys.

In addition, the new TBS will allow better prediction of transit and non-motorized transportation. Despite the comprehensive character of the current TBS, it under-represents persons who travel by modes other than automobile. Consequently, in order to provide sufficient high-quality data to pursue the MPO's goal of understanding and increasing use of transit and non-motorized travel, the proposed budget also includes a separate transit on-board survey (survey of bus riders) and surveys of bicycle and pedestrian activity and facilities.

The benefit to the MPO will be more accurate and reliable travel demand model that represents and captures local travel behaviour and travel patterns.

Land Use/Transportation Model Integration

Increasingly, planners have recognized that land use policies and the transportation system interact extensively to both encourage and to constrain development. Large metropolitan areas known as Transportation Management Areas (TMAs) designated as non-attainment for air quality have come under pressure to respond to federal regulations callingl for the linking of land use, transportation, and air quality. This MPO recognized the importance of land use and transportation linkage and therefore programmed STP-DA funds for a land use/Transportation integration model. Increasingly, counties within the MPO are being designated as non-attainment, thus, an increasing and urgent need to address, in dynamic fashion, the side effects of growth such as sprawl, congestion, loss of open space, and air quality issues has arisen. Addressing these problems sytematically requires analytical tools integrating land use and transportion and allowing for a feedback loop. The existing Triangle Regional Model and its immediate successors were not designed to address these land use and transportation feedback loop questions. Essentially, the model treats land use as a given input and static. Likewise, most land use decisions will continue to be made without a clear means to assess their impact on the transportation network. The Triangle Regional Model needs to incorporate land use data because

there is great interest among the DCHC MPO member agencies in being able to assess complex policy decisions as they relate land use and transportation, and joint land use and transportation modeling may eventually become a requirement for achieving air quality conformity.

UrbanSim is a new model system that has been developed to respond to these emerging issues and requirements. It has been successfully used in three states and several MPOs, including Eugene, Oregon, Seattle, Salt Lake City, and Houston.

Expected work product will be an integrated model that has the ability to project transportation impacts from changes in land use. Other specific work products to be performed by staff or consultants, include collecting information on currently operational land use/transportation models, evaluation of UrbanSim, identifying a model appropriate for our regional, developing a work plan for piloting such a model within the MPO, and completing the first phases of incorporating the land use/transportation model into the Triangle Regional Model.

Transportation Data Automation/Management and GIS

Transportation and land use models are critically dependent on comprehensive, detailed, high-quality input data. In the past, such data has been gathered through an intensive, short-term work effort, and has been used to produce model output for multiple years. As the region grows toward more sophisticated models, and, as detailed land use information is collected more routinely by various local, regional and state agencies, it becomes increasingly desirable to connect these two efforts. Data automation proposes to link the model's input directly to existing databases of tax value, land use, building permits, housing information and other types of information (especially at the parcel level). More broadly, it is proposed to integrate these external data with existing and new geographic information so that they can be overlaid easily with transportation improvement projects, thoroughfare and corridor plans, updated street centerline locations and other information that will assist policy makers and the public to envision the impact of proposed projects and policies.

Specific products to be output by staff or consultants include; designing work flow processes and data access strategies to support routine access to relevant information, designing a centralized databased for information that will be used by transportation and land use models, developing presentation tools for the data, and adjusting the travel demand model so that it can use such detailed data directly. One important result will be the ability to frequently and routinely refresh the model input data using the most current local data.

2004-2005 UPWP Special Emphasis Projects - Work Elements and Program

						Local	FHWA	Total
Bicycle and Pedestrian Trip (non-motorized) Model Enhancement								
					City of Durham			
	II	B	3		Travel Model Update	11,586	46,346	57,932
					Town of Chapel Hill			
	II	B	3		Travel Model Update	2,539	10,156	12,695
					Town of Carrboro			
	II	B	3		Travel Model Update	875	3,499	4,373
					Orange County			
	II	B	3		Travel Model Update	0	0	0
					Total	**15,000**	**60,000**	**75,000**
Travel Demand Model Major Update and Enhancement								
(FY 2006)					**City of Durham**			
	II	B	3		Travel Model Update	0	0	0
					Town of Chapel Hill			
	II	B	3		Travel Model Update	0	0	0
					Town of Carrboro			
	II	B	3		Travel Model Update	0	0	0
					Orange County			
	II	B	3		Travel Model Update	0	0	0
					Total	**0**	**0**	**0**
Travel Behavior Survey, Intercepts, On-Board, & Stated Preference Surveys								
					City of Durham			
	II	B	4		Travel Surveys	43,256	173,024	216,281
					Town of Chapel Hill			
	II	B	4		Travel Surveys	9,479	37,914	47,393
					Town of Carrboro			
	II	B	4		Travel Surveys	3,265	13,061	16,327
					Orange County			
	II	B	4		Travel Surveys	0	0	0
					Total	**56,000**	**224,000**	**280,000**
MPO Transportation Data Management/Automation & GIS Integration								
					City of Durham			
	II	B	1		Collection of Base Year Data	7,724	30,897	38,622
	II	B	2		Collection of Network Data	7,724	30,897	38,622
	III	D	4		Regional or Statewide Planning	15,449	61,794	77,243
					Total	**30,897**	**123,589**	**154,486**

2004-2005 UPWP Special Emphasis Projects - Work Elements and Program

						Local	FHWA	Total
					Town of Chapel Hill			
	II	B	1		Collection of Base Year Data	1,693	6,770	8,463
	II	B	2		Collection of Network Data	1,693	6,770	8,463
	III	D	4		Regional or Statewide Planning	3,385	13,541	16,926
					Total	**6,770**	**27,082**	**33,852**
					Town of Carrboro			
	II	B	1		Collection of Base Year Data	583	2,332	2,915
	II	B	2		Collection of Network Data	583	2,332	2,915
	III	D	4		Regional or Statewide Planning	1,166	4,665	5,831
					Total	**2,332**	**9,329**	**11,662**
					TJCOG			
	II	B	1		Collection of Base Year Data	0	0	0
	II	B	2		Collection of Network Data	0	0	0
	III	D	4		Regional or Statewide Planning	10,000	40,000	50,000
					Total	**10,000**	**40,000**	**50,000**
					Total data automation/GIS	**50,000**	**200,000**	**250,000**
Land Use / Transportation/AQ Integration Model								
					City of Durham			
	II	B	3		Travel Model Update	38,622	154,486	193,108
					Town of Chapel Hill			
	II	B	3		Travel Model Update	8,463	33,852	42,315
					Town of Carrboro			
	II	B	3		Travel Model Update	2,915	11,662	14,577
					Orange County			
	II	B	3		Travel Model Update	0	0	0
					Total	**50,000**	**200,000**	**250,000**
Collector Street Plans								
					City of Durham			
	II	B	13		Collector Street Element of LRTP	16,000	64,000	80,000
					Town of Chapel Hill			
	II	B	13		Collector Street Element of LRTP	4,000	16,000	20,000
					Town of Carrboro			
	II	B	13		Collector Street Element of LRTP	0	0	0
					Orange County			
	II	B	13		Collector Street Element of LRTP	0	0	0
					Total	**20,000**	**80,000**	**100,000**
						191,000	764,000	955,000

2004-2005 UPWP Special Emphasis Projects - Work Elements and Program

						Local	FHWA	Total
					Town of Carrboro	9,388	37,551	46,939
					Town of Chapel Hill	31,251	125,004	156,255
					City of Durham	140,361	561,445	701,807