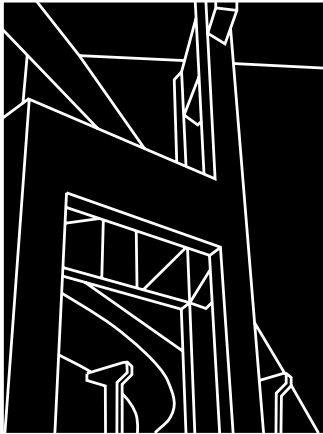


RESEARCH REPORT 1838-1

DESCRIPTION OF DATA ACQUISITION EFFORTS

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16. Abstract As part of the overall strategy of refining and improving the existing transportation and air-quality modeling framework, the current project focuses extensively on acquiring disaggregate and reliable data for analysis. In this report, we discuss the data obtained thus far from various state and local agencies for use in the project. The data obtained may be classified into three broad categories: (1) zonal-level data, (2) link-level data, and (3) household-level data. These categories are discussed in the subsequent three sections. In each section, we describe the data sets, the agency from which the data was obtained, and the reason for obtaining the data.			
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1. INTRODUCTION

As part of the overall strategy of refining and improving the existing transportation and air-quality modeling framework, the current project focuses extensively on acquiring disaggregate and reliable data for analysis. In this report, we discuss the data obtained thus far from various state and local agencies for use in the project.

The data obtained may be classified into three broad categories: (1) zonal-level data, (2) link-level data, and (3) household-level data. These categories are discussed in the subsequent three sections. In each section, we describe the data sets, the agency from which the data was obtained, and the reason for obtaining the data.

2. ZONAL-LEVEL DATA

2.1. Dallas-Fort Worth Zonal Coverages

Description: 1996 GIS zonal coverage for the Dallas-Fort Worth (D-FW) area containing details of zonal disaggregation into different Traffic Survey Zones (TSZs).

Source: North Central Texas Council of Governments (NCTCOG).

Reason for acquiring data: Provides the spatial configuration of the D-FW traffic survey zones and serves as the platform for zonal-level modeling.

2.2. Disaggregate Land-Use Data

Description: Zonal-level land-use characteristics of the Dallas-Fort Worth area (total land area; acreage in manufacturing plants, warehouses, and offices; acreage in retail, hotel, and motel; acreage in institutional buildings like churches, government, museums, schools, and hospitals; acreage in parking structures and lots; and acreage in airport runways and terminals) for each TSZ.

Source: North Central Texas Council of Governments (NCTCOG).

Reason for acquiring data: Needed to (a) model trip attraction-end choice (in Trip Distribution) as a function of various zonal characteristics, and (b) model VMT mix on each link as a function of zonal (TSZ) characteristics.

2.3. Zonal Socioeconomic Data

Description: Zonal-level GIS coverage providing socioeconomic data (number of people in retail, service employment, zonal median salary, number of households in zone, etc.) for each TSZ.

Source: North Central Texas Council of Governments (NCTCOG).

Reason for acquiring data: Needed to (a) develop zonal-level income-quartile information for trip generation modeling, and (b) model VMT mix on each link as a function of zonal socioeconomic characteristics.

2.4. Level-of-Service Data

Description: Level-of-service data, including distance, cost, in-vehicle travel time, etc., between each TAP zone pair during different times of day (peak or off-peak) and for different modes (highway, HOV, and transit).

Source: North Central Texas Council of Governments (NCTCOG).

Reason for acquiring data: Required to (a) develop accessibility measure for inclusion in trip generation modeling, and (b) estimate mode and departure-time choice models.

2.5. Vehicle Registration Distribution

Description: Vehicle registration data by vehicle age and vehicle type for Dallas, Tarrant, Collin, Denton, and Rockwall Counties.

Source: D-12 Vehicle Registration Division of TxDOT.

Reason for acquiring data: Needed to (a) develop most recent vehicle age distribution by vehicle type for urban and rural regions (input for Mobile5a), and (b) develop county-specific conversion factors for converting VMT mix for TxDOT vehicle classes to EPA vehicle classes.

3. LINK-LEVEL DATA

3.1. Local Vehicle Classification Surveys

Description: Annual 24-hour vehicle classification counts at various locations in the Dallas-Fort Worth area for 1977–1993, by vehicle type.

Source: TxDOT's Transportation Planning and Programming Division and TxDOT's Regional Planning Office (RPO).

Reason for acquiring data: To model VMT mix fraction as a function of roadway and area characteristics using observed vehicle counts.

3.2. Dallas-Fort Worth Road Network

Description: 1996 GIS road network for the Dallas-Fort Worth area containing details of link characteristics (length of the link, traffic direction, functional classification, number of lanes, free speed, capacity, area type of zone in which the link is located, and whether the link is divided).

Source: North Central Texas Council of Governments (NCTCOG).

Reason for acquiring data: To develop and apply the Fractional Split Model for VMT mix on each link in the Dallas-Fort Worth network.

4. HOUSEHOLD-LEVEL DATA

4.1. Activity Survey Data

Description: A 1996 survey that includes information on all activities undertaken during a midweek day by each member of several households chosen from the D-FW metropolitan area.

Source: North Central Texas Council of Governments (NCTCOG).

Reason for acquiring data: Forms the basis for modeling (a) intrazonal trip length for estimating VMT on local roads, (b) operating mode fractions (hot-stabilized versus cold-transient trips and hot starts versus cold starts) on local roads, (c) trip generation using an ordered response probit (ORP) structure, (d) trip distribution using a disaggregate attraction-ends choice model, (e) mode choice and departure time choice, and (f) network assignment for intrazonal trips.

4.2. Personal Socioeconomic Data

Description: Data set containing socioeconomic information (age, race, income, gender) for households included in the 1996 Activity Survey.

Source: North Central Texas Council of Governments (NCTCOG).

Reason for acquiring data: Represent exogenous variables for travel demand models.

4.3. Vehicle Survey Data

Description: Data set containing details of vehicles owned by all households included in the 1996 Activity Survey.

Source: North Central Texas Council of Governments (NCTCOG).

Reason for acquiring data: Used to extract household vehicle characteristics for modeling operating mode fractions.