

Travel Demand Modeling At NCTCOG

**Presentation For
TMIP NCDOT Peer Review
February 10-11, 2004**

NCTCOG Departments (9)

Executive Director's Office

Agency Administration

Community Services

Emergency Preparedness

Environment And Development

Public Affairs

Research And Information Resources

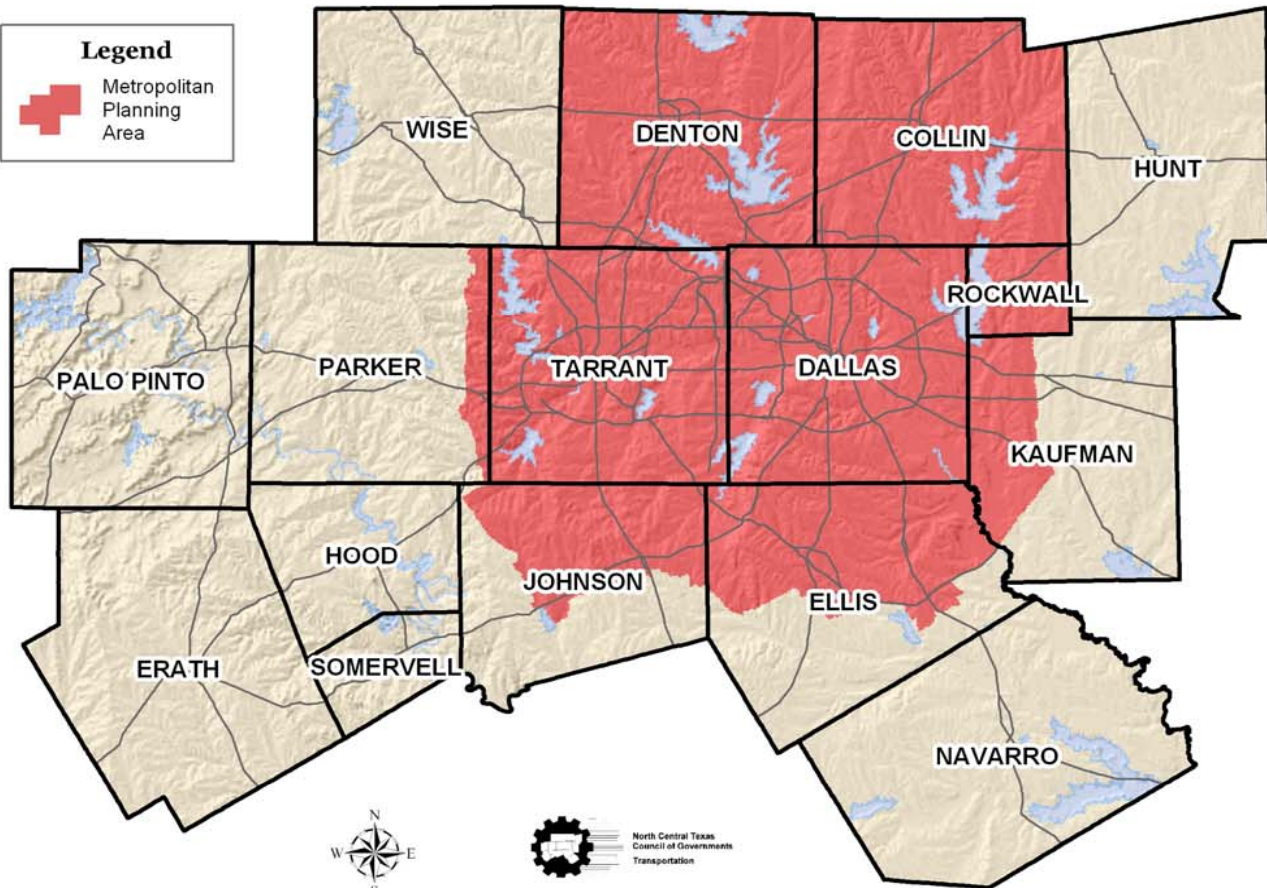
Transportation (Also Serves As The MPO)

Workforce Development

Metropolitan Planning Area Within the NCTCOG Region

Legend

 Metropolitan Planning Area



Transportation Department

Administration (Michael Morris And Dan Kessler)

Air Quality Planning And Operations (Chris Klaus)

Information Systems (Ken Cervenka)

Strategic Initiatives And Community Outreach (Mike Sims)

Transportation Planning (Dan Lamers)

Transportation Programming And Operations (Dan Rocha)

Information Systems

Development, Maintenance, and Support of Travel Demand Forecasting Tools

Transportation Data Management (Including Web-Based Activities And GIS Support)

Vehicle Operations (e.g., Traffic Simulation)

So Who Is Ken Cervenka?

M.S. in Civil Engineering, UT-Austin (1979)

Professional Engineer (Texas) And AICP Since 1992

NCTCOG, 1979-1981

UT-Austin Center For Transportation Research, 1982-1984

Dallas-Based Transportation Engineering Firm, 1985-1992

NCTCOG, 1993-to-Present

Modeling Environment

NCTCOG-Developed FORTRAN Programs (Mainframe)

MOBILE5A Emissions Analysis

Latest Mobility Plan Update

For Legacy Applications

TRANPLAN (PC)

Subarea Traffic Modeling (Legacy Applications)

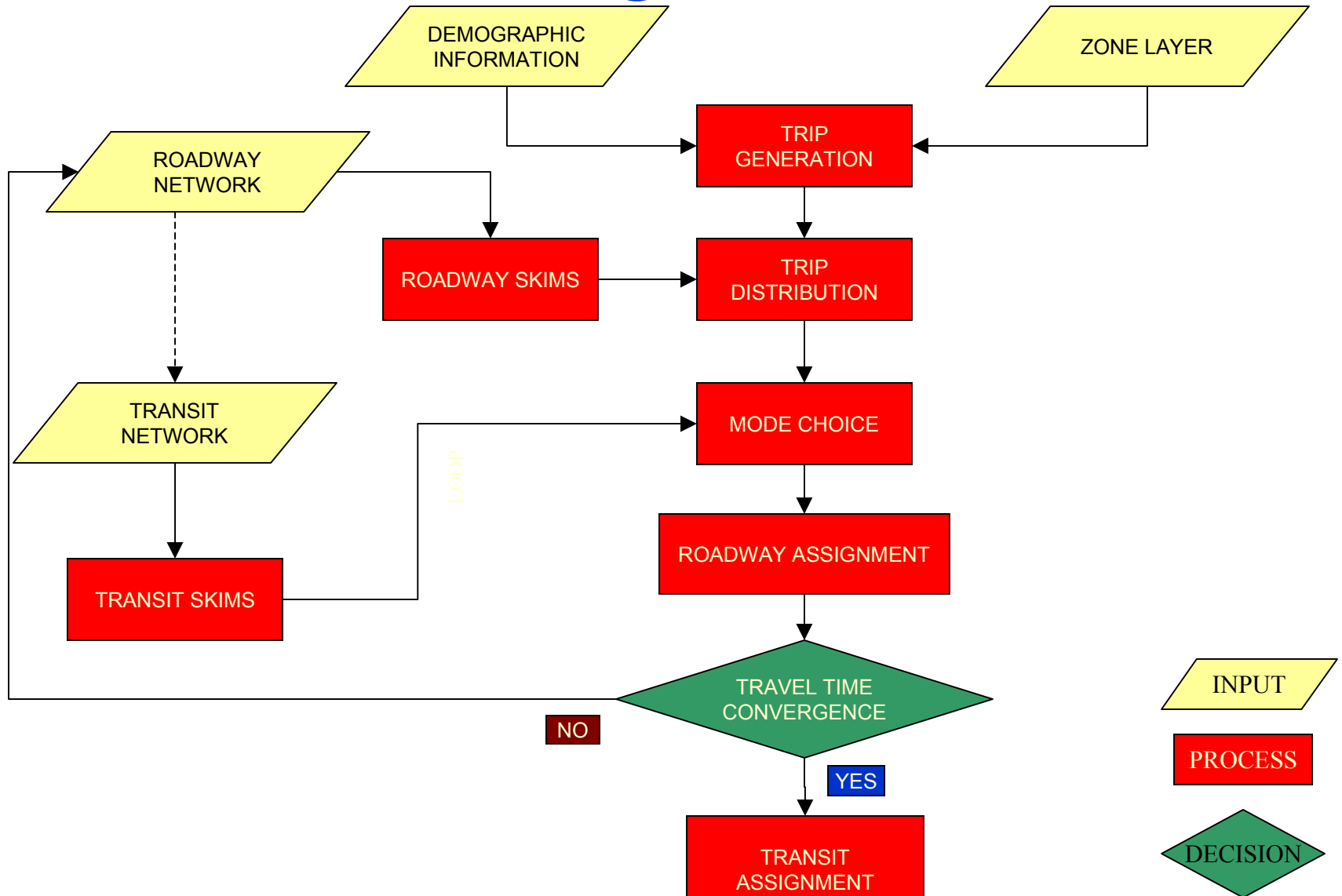
TransCAD (PC-Windows)

MOBILE6 Emissions Analysis

Future 2030 Mobility Plan

All New Travel Modeling Activities

Four-step TRANSCAD Modeling Process



TRANSCAD Model Size

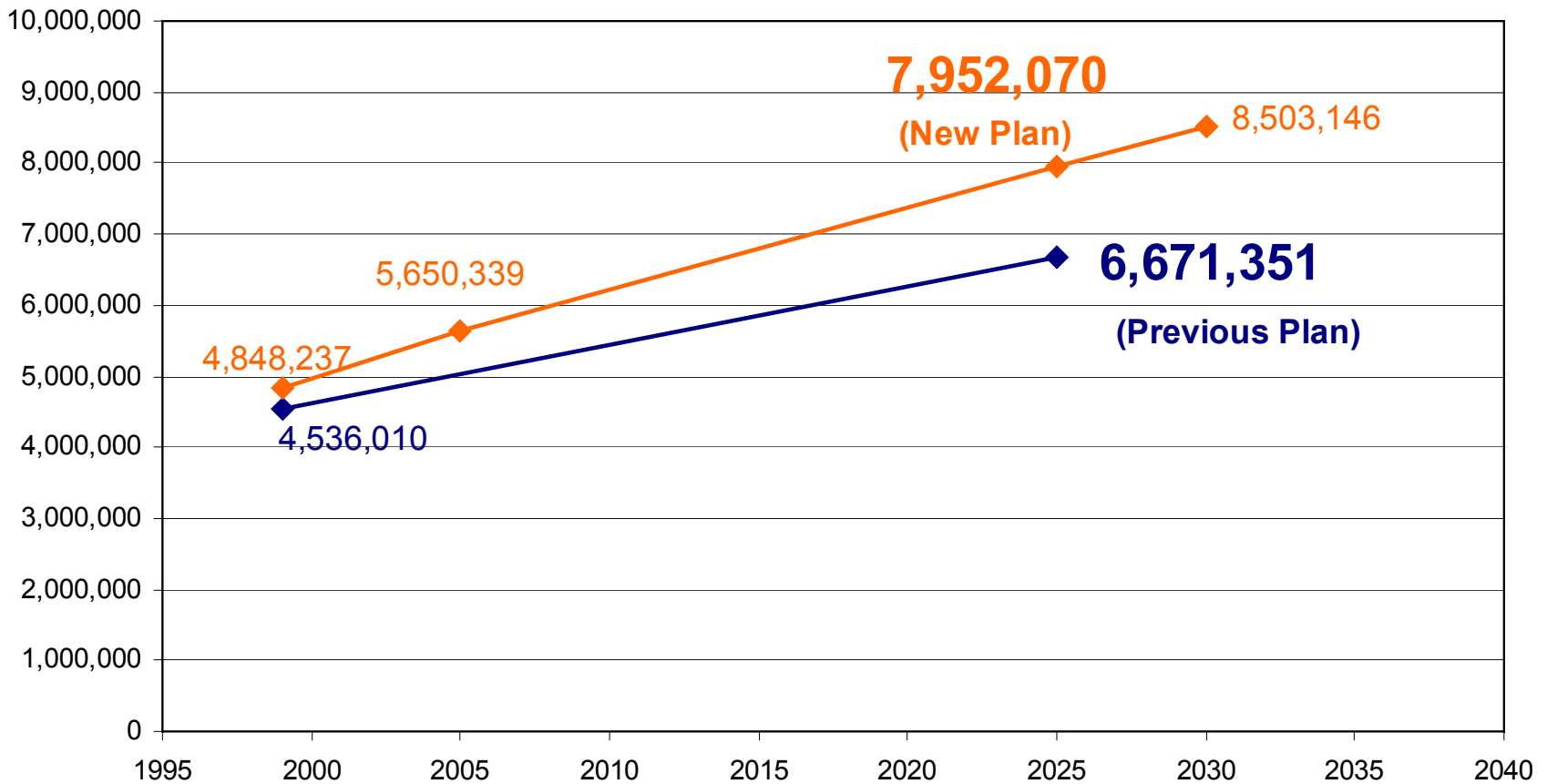
**4874 Zones Retained For ALL Modeling Steps
From Trip Generation To Traffic/Transit Assignment
Number Of Zone-To-Zone Pairs = 23.8 Million**

**Year 2025: 27,000 Roadway Links
+ 9,600 Zone Connectors
Over 36,000 Coded Links
22,000 Network Nodes**

2025 Transit

**410 Coded One-Way Bus Lines And 36 Rail Lines
14,500 Bus Stops And 171 Rail Stations**

Total Population Within The Dallas – Fort Worth Metropolitan Planning Area



◆ Previous Plan Demographics (Mobility 2025 Update) ◆ New Plan Demographics (Mobility 2025, 2004 Update)

What Happens Next For NCTCOG

Training Of “TransCAD Model Application Champions”

NCTCOG Staff

DART Transit Staff

Other Agencies (???)

Certification Of Consultants (???)

Prepare Additional Roadway/Transit “Supply And Demand” Performance Reports

Model Documentation

Include The “What” As Well As The “Why”

Recommendations For Model Applications Work At NCTCOG

**Every Modeling Study Needs “Direct Oversight”
By A TransCAD Model Applications Champion
-- So, What Is A Champion?**

**Has A Good Understanding Of GIS And Travel
Model Theory**

Maybe We Should Give An Oral Certification Test!

**Is Very “Hands-On” Experienced With TransCAD
We Can Test People On This, Too!**

**...And (Ideally) Spends Over 70% Of His/Her Time
On Model Applications Work**

What Happens Next (Cont.)

Greater Focus On Underlying Information System

Improvements/Updates To Modeling Procedures

LOGSUM Consistencies

Destination Choice Instead Of Gravity Model Trip Distribution

Expansion Of Modeled Area

Sensitivity Tests Of Person Tour (e.g., Activity-Based) Models

New Travel Surveys In 2006

Coordination With TxDOT Statewide Analysis Model

Traffic Microsimulation For Operations Analysis