Creating Travel-Time Contour maps using NPMRDS

North Central Texas Council of Governments

Kissimmee, FL
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NPMRDS

- NPMRDS stands for National Performance Management Research Data Set
- It refers to a Vehicle probe-based travel time data set acquired by the Federal Highway Administration (FHWA)
- The source of data is INRIX traffic, since January 2017
Vehicular Data Available

- Travel times, in seconds
- At 5 minutes intervals
- Every single day of each month
- By vehicle type: passenger cars, freight trucks, and all
- Associated to geographic segments referred as TMCs (Traffic Message Channels)
- Includes all freeways and main roads
- Available since July 2013
Coverage NCTCOG

TMCs: 8,987
Length, miles
Total: 5,565
Average 0.2
Records/month: 28 millions
Coverage by Road Type

- 1. Freeways: 98% Center-Line Miles, 99% VMT
- 2. Major Arterials: 65% Center-Line Miles, 77% VMT
- 3. Minor Arterials: 14% Center-Line Miles, 24% VMT
- 4. Collectors: 1% Center-Line Miles, 5% VMT
- 6. Ramps: 24% Center-Line Miles, 37% VMT
- 7. Frontages: 59% Center-Line Miles, 78% VMT
- 8. HOVs: 47% Center-Line Miles, 48% VMT
- Overall: 70% Center-Line Miles, 70% VMT
Tools used

Data storage and management

GIS and network analysis
Roadway Network
Conflate TMCs to Travel Model Network
Transfer speeds to Travel Model

1. Use NPMRDS data for all segments when it is available
2. Use estimated speeds from travel model
3. Use speed limits otherwise
Creating Contours
Travel Time Contours (Bands)

- 15 minutes
- 30 minutes
- 45 minutes
- 60 minutes
- 75 minutes
- 90 minutes
- 120 minutes
Location of Intermodal Center

Travel Time from Mesquite

Legend
- 10 Minutes
- 20 Minutes
- 30 Minutes
- 40 Minutes
- 50 Minutes
- 60 Minutes
- 70 Minutes
- 80 Minutes
- 90 Minutes
- 100 Minutes
- 110 Minutes
- 120 Minutes
- Highways
- Counties
- MPA Boundary
Facility Location

Travel Time from Alliance

Legend
- 10 Minutes
- 20 Minutes
- 30 Minutes
- 40 Minutes
- 50 Minutes
- 60 Minutes
- 70 Minutes
- 80 Minutes
- 90 Minutes
- 100 Minutes
- 110 Minutes
- 120 Minutes
- Highways
- Counties
- MPA Boundary
Facility Location
Facility Location
Less than One Hour Travel Time from Arlington Entertainment District
Demographics

- Population
- Households
- Employment
- Income
Accessibility
Dallas and Fort Worth CBDs
Population Accessible within Time Contours
Accessibility of Population

![Accessibility Graph](image)

- **Dallas Midnight**
- **Fort Worth Midnight**
- **Dallas 8 AM**
- **Fort Worth 8 AM**

**Travel Time, minutes**

- 0
- 20
- 40
- 60
- 80
- 100
- 120

**Population Counts**

- 0
- 1,000,000
- 2,000,000
- 3,000,000
- 4,000,000
- 5,000,000
- 6,000,000
- 7,000,000
- 8,000,000
DFW and Love Field airports
Accessibility to Airports, 8 AM
Questions?

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