NextGen NHTS Data Products and Opportunities for NC

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NextGen NHTS

The goal of the NextGen NHTS is to obtain timely and sustainable travel behavior data and information to provide effective technical support to Federal legislative actions by Congress, policy developments and program evaluations by U.S. DOT.

To the extent possible, the NextGen NHTS will continue its tradition to partner with State, local governments, and private entities to expand the data coverage.
Motivations for Redesign

- Release data more frequently
- Capture emerging trends and travel modes
- Take advantage of passive data availability
- Provide local and long-distance trip information
- Improve response rates
- Reduce survey cost/respondent burden
NextGen NHTS Components

NextGen NHTS

Core Data (Why, How, and When...)

Origin Destination (Where to Where)
NextGen NHTS Project Team

FHWA NextGen

- Program Support (Oak Ridge National Laboratory + MacroSys)
- Core Data (Ipsos)
- OD Data (UMD)
National Survey Core Data

✓ Probability-based sampling approach
✓ Independent surveys every other year
✓ Smaller data collection effort
  • Fewer national samples (approx. 7,500)
  • Fewer, but more targeted questions
✓ Similar products/summaries to previous NHTSs
  • Data files, technical and supporting documents
  • Interactive analytics & visualizations
✓ Testing viability of probability-based panel sample
National OD Flow Passive Data Products

✓ Annual data product summarizing national OD flows
✓ Truck and Passenger products
✓ Available for 2020-2024, each year an independent product.
✓ Similar products/summaries to previous NHTSs
  • Data files, technical and supporting documents
  • Interactive analytics & visualizations
✓ Technical support
There are 583 zones specified by FHWA.

These zones include:

a) 446 MSA based zones divided into state specific MSAs for these multistate MSA zones, and

b) 137 new zones created from counties of remainder of States.

https://www.fhwa.dot.gov/policyinformation/analysisframework/04.cfm
2020 National Passenger OD Flow Data

• Annual count of total passenger trips (intra- and inter-zonal)
• Count of passenger trips by distance (same categories as truck data)
• Imputed characteristics
  • Mode (air, rail, vehicle, other)
  • Trip purpose (work, non-work)
• Data Sources: Passively collected mobile device location data from multiple providers
2020 National Truck OD Flow Data

- Annual count of total truck trips (intra- and inter-zonal)
- Count of truck trips by 8 distance categories
- Data Sources: INRIX and ATRI
# 2020 NextGen NHTS OD Product Summary

<table>
<thead>
<tr>
<th>Specification</th>
<th>National Truck</th>
<th>National Passenger</th>
<th>Add-on Passenger</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trip Count</td>
<td>Annual</td>
<td>Annual</td>
<td>Annual, monthly, weekday/weekend, and hour of day</td>
</tr>
<tr>
<td>Coverage</td>
<td>50 States + DC</td>
<td>50 States + DC</td>
<td>Agency-specified</td>
</tr>
<tr>
<td>Zone</td>
<td>FHWA’s 582 Zones</td>
<td>FHWA’s 582 Zones</td>
<td>Agency-specified</td>
</tr>
<tr>
<td>Distance</td>
<td>8 categories</td>
<td>8 categories</td>
<td>8 categories</td>
</tr>
<tr>
<td>Travel Mode (imputed)</td>
<td>N/A</td>
<td>Air, rail, vehicle, other</td>
<td>Air, rail, car, bus, walk, bike, other</td>
</tr>
<tr>
<td>Trip Purpose (imputed)</td>
<td>N/A</td>
<td>Work, non-work</td>
<td>Home-based work, home-based other, work-based other, and other</td>
</tr>
<tr>
<td>Demographics (imputed)</td>
<td>N/A</td>
<td>N/A</td>
<td>Age, gender, and income</td>
</tr>
</tbody>
</table>
Add-on Products have a 3-tier geography:
- Agency defined zone structure
- Halo area
- Remainder of US in FHWA zone structure

Halo area is defined as the immediately adjacent counties (blue areas shown in the map).
National OD Zones (NC)

- 18 MSA-based area zones
- 4 nonMSA zones
- For any add-on product, agency specifies geography (lowest is census block group)

2020 data: # trips originated in NC
- 10.4 billion pax trips
- 10.2 billion intrastate trips
- 9.4 billion intrazonal trips

506 million truck trips
- 460 million intrastate trips
- 351 million intrazonal trips

Preliminary results (subject to change)
Origin = Raleigh

1.3 billion pax trips originated in Raleigh in 2020.
✓ 92% intrazonal
✓ 8% interzonal

Top interzonal destinations
Durham-Chapel Hill
NonMSA areas to south
NonMSA areas to east

Preliminary results (subject to change)
Origin = Charlotte (NC portion)

180 million truck trips originated in Charlotte (NC) in 2020.
✓ 82% intrazonal
✓ 18% interzonal

Top interzonal destinations
Hickory-Lenoir-Morganton
Winston Salem
NonMSA areas east/south of MSA

Preliminary results (subject to change)
FHWA Commitment on OD Flow Data Product Quality

• Complete and transparent technical documentation
  • Data sources
  • Data assembly processes
  • Algorithms released as open source
• Technical Advisory Committee involvement in product development
• Independent quality control task
Quality checks for reasonableness of results

- Results consistent with known geographic characteristics and logical reasonableness
  - Proportion of elderly travelers in Arizona and Florida
  - Appropriate travel modes between mainland and Hawaii/Alaska
- Results trend in same direction and magnitude as similar data sources
  - NextGen NHTS results
  - HPMS VMT trends
  - National Transit Database (NTD)
  - DB1B/T100 airline data
Pooled Fund Project TPF-5(398)

1. Participation without data purchase ($5K/year)
   • Join the Working Group (annual in-person meeting)
   • Access the latest national data and information
   • Gain centralized technical and peer support in data applications

2. Participation with data purchase
   • Purchase additional household survey data and/or OD data for any data year(s) between 2020-2024
   • Lower the data cost (economies of scale)
   • Gain nationally consistent data so that data controls and comparisons can be efficiently enabled
   • Having no or minimum contracting or oversight hassles

For more info, https://www.pooledfund.org/Details/Study/651
NextGen NHTS Pooled Fund Opportunities

**Core Data (Survey):**
- Biennial
- National: 7,500 HH
- Add-on:
  - Up to 40,000 HH across all agencies
  - Specify up to 6 questions
  - Specify goals by geography
- $260-$275 per HH

**Passive Data:**
- Annual
- National: Passenger and Truck OD Data
- Add-on:
  - Passenger Travel
  - Additional imputed variables
  - Custom zonal geography
- Population-based cost

**Tech Advisory Committee:**
- Design Input and Priorities
- Shared Research
- Travel for one person to attend one meeting per data cycle
- $5000 per FY
- NCDOT is a member
NextGen FHWA Contacts

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