INDOT Traffic Data, Statistics and Web Portal

Road School Session #15
Intro

- Count Program Overview
- Current INDOT Count Technologies Used
- Deliverables
- Traffic Counting Issues
- Proposed INDOT Changes & Technologies
- Demo of new Flow Map and Interstate Volumes
INDOT’s Role

- Develop & oversee Indiana’s count program for all Federal-Aid Routes, nearly 23,000 center line miles. Administer funds to MPO and RPO counting partners
  - Post RFPs & Manage Consultant Counting Contracts
  - Annual workflow assignments
  - QC/QA all incoming data
  - Certify and train traffic counters
  - Perform spot audits
  - Research new counting technologies and procedures
  - Facilitate coordination meetings
- Reach out to locals in performing counts on local corridors.
1. **Continuous Counts**
   - Permanently installed count stations
   - Used to develop statewide factors to adjust all counts
   - Used in the Long Term Pavement Program (LTPP)
   - Currently working with ITS as a source

2. **Short-Counts**
   - Portable count technology, usually tube count technology
   - Standard of 48 hours in duration
   - Collect roughly 12,200 counts annually
   - Coordinate with count partners (MPOs, RPOs, Districts, and consultants)
   - Perform Special Counts for Asset and Project Management for Corridor Studies
INDOT Traffic Counting Program

1/3 Counts Annually

- Approximately 12,200 Counts Annually
- Perform Monthly VMT Submittals
- Annual HPMS Submittal
Count Program Standards

- **Traffic Monitoring Guide**
  - FHWA Guidebook – provides general guidance
  - DOTs have the flexibility of creating their own program

- **AASHTO Parameters**
  - Focuses on collection of traffic count volumes, vehicle classification, and WIM
  - Parameters are used to develop statistics and QC/QA data

- **INDOT Traffic Data Collection Manual** – for field technicians. MPOs and RPO may have their own unique manuals and guides

- **INDOT Safety Manual** – supplements INDOT’s Safety and Traffic Control procedures as it relate to traffic data collection

- **INDOT Data Submission Procedure Manual**
  - Helps develop standards for our count partners (recounts, stationing, and other items)

- **Periodic Audits by FHWA**
Technologies Currently Used

- Standard Road Tube Counters (work with MPOs, RPOs, and consultants that use various vendors)
- Tape Switch Counters
- Weigh in Motion (WIM) and Virtual WIM
- Automatic Traffic Recorders
- Laser Counters (Axle Light Application)
- TRADAS Software
AxleLight Application

Courtesy of Peek U. S. Traffic Corporation
Training & Certifications

- Equipment & Staff Certification
- Safety Discussion & Training
  - Safety Equipment (recommended/required)
  - Safety Procedures
- New equipment and procedures
- Written and practical exams
- INDOT’s Traffic Count Program is audited by FHWA
Scheduled Training

- March 12 – 14 (Southern Region – Seymour District)
- March 19 – 21 (Central Region – Indy Sub, Brookville Road)
- March 26 – 28 (Northern Region – Elkhart Sub)
Traffic Count Deliverables

- Annual Highway Performance Monitoring Systems (HPMS) VMT by: road section, FC, and road ownership. Coordination with Road Inventory Team
  - Used for agency performance measures
  - Safety analysis
  - Federal funding apportionment
- Monthly VMT reports submitted to FHWA and Executive Office
- Interstate data for Lane Closure Policy Waivers...New MIP application
- WIM for Long Term Pavement Program (LTPP) and related analysis
- WIM data for enforcement
- Annual and seasonal adjustment factors (K & D factors)
- Special counts to support PM, Corridor Studies, and operational improvements
- Interactive Traffic Data Map
- Traffic Count Database Information (supports various planning and system assessment models and operational needs)
2012 Count Program

- 2012 Count Program
- Subject to change
Traffic Count Program Challenges

- No federal standards, just recommended guidelines (TMG, AASHTO)
- Need additional permanent location on lower functional classification roadways for improve statistical analysis. Current devices are on interstates and freeways. Agency has little interest in investing on lower classifications due to cost.
- New technology uses vehicle length bins
- Staff resources
- Safety concerns
- Inefficient database system
- Coordination with ITS equipment and Research Technology
- Geography
New Technologies for 2012 & Beyond

- Midwestern Solutions Traffic Count Database Software
- WaveTronix – work with ITS in connecting to select devices to supplement ATR needs. Use portable WaveTronix devices on difficult locations
- Nu Metrics – Quicker deployment in busy areas and intersections
- Modernized Traffic Signals – Coordination with ITS in being able to collect data traffic signal data
- Video count devices - Already being used and leased for activities. Would like to purchase devices
- Bike & Pedestrian Counts
- Sensys devices – to replace some ATR type technology
Counting Technologies for INDOT Consideration
Counting Technologies for INDOT Consideration
Midwestern Software Solutions Traffic Count Software

- Off the shelf software package for traffic count data management
- Online Portal for data uploads by our various count partners
- Data can be uploaded from various count device equipment: (WIM, VVIM, ATRs, Side-Firing Radar, Laser, Video, Pneumatic Counters, Magnetic Counters, modern traffic signals, and others)
Midwestern Software Traffic Count Software

**VOLUME COUNT DATA INFO**

**START DATE:** 5/10/1999  
**END DATE:** 5/11/1999  
**START TIME:** 11:00:00 AM  
**END TIME:** 11:00:00 AM  
**DIRECTION:**  
**STATION:** LAKEVILLE F0348  
**FILENAME:** F0258  
**NOTES:**  
**CONDITION:**  
**WEATHER:**  

**INTERVAL: 60-MIN**

<table>
<thead>
<tr>
<th>TIME</th>
<th>HOURLY COUNT</th>
<th>TIME</th>
<th>HOURLY COUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0:00-1:00</td>
<td>24</td>
<td>0:00-1:00</td>
<td>20</td>
</tr>
<tr>
<td>1:00-2:00</td>
<td>15</td>
<td>1:00-2:00</td>
<td>10</td>
</tr>
<tr>
<td>2:00-3:00</td>
<td>10</td>
<td>2:00-3:00</td>
<td>5</td>
</tr>
<tr>
<td>3:00-4:00</td>
<td>10</td>
<td>3:00-4:00</td>
<td>4</td>
</tr>
<tr>
<td>4:00-5:00</td>
<td>14</td>
<td>4:00-5:00</td>
<td>4</td>
</tr>
<tr>
<td>5:00-6:00</td>
<td>33</td>
<td>5:00-6:00</td>
<td>32</td>
</tr>
<tr>
<td>6:00-7:00</td>
<td>109</td>
<td>6:00-7:00</td>
<td>158</td>
</tr>
<tr>
<td>7:00-8:00</td>
<td>315</td>
<td>7:00-8:00</td>
<td>445</td>
</tr>
<tr>
<td>8:00-9:00</td>
<td>263</td>
<td>8:00-9:00</td>
<td>445</td>
</tr>
<tr>
<td>9:00-10:00</td>
<td>204</td>
<td>9:00-10:00</td>
<td>325</td>
</tr>
<tr>
<td>10:00-11:00</td>
<td>292</td>
<td>10:00-11:00</td>
<td>204</td>
</tr>
<tr>
<td>11:00-12:00</td>
<td>123</td>
<td>11:00-12:00</td>
<td>297</td>
</tr>
<tr>
<td>12:00-13:00</td>
<td>210</td>
<td>12:00-13:00</td>
<td>270</td>
</tr>
<tr>
<td>13:00-14:00</td>
<td>249</td>
<td>13:00-14:00</td>
<td>263</td>
</tr>
<tr>
<td>14:00-15:00</td>
<td>179</td>
<td>14:00-15:00</td>
<td>321</td>
</tr>
<tr>
<td>15:00-16:00</td>
<td>271</td>
<td>15:00-16:00</td>
<td>456</td>
</tr>
<tr>
<td>16:00-17:00</td>
<td>315</td>
<td>16:00-17:00</td>
<td>504</td>
</tr>
<tr>
<td>17:00-18:00</td>
<td>297</td>
<td>17:00-18:00</td>
<td>543</td>
</tr>
<tr>
<td>18:00-19:00</td>
<td>305</td>
<td>18:00-19:00</td>
<td>422</td>
</tr>
<tr>
<td>19:00-20:00</td>
<td>243</td>
<td>19:00-20:00</td>
<td>261</td>
</tr>
<tr>
<td>20:00-21:00</td>
<td>130</td>
<td>20:00-21:00</td>
<td>213</td>
</tr>
<tr>
<td>21:00-22:00</td>
<td>145</td>
<td>21:00-22:00</td>
<td>180</td>
</tr>
<tr>
<td>22:00-23:00</td>
<td>103</td>
<td>22:00-23:00</td>
<td>60</td>
</tr>
<tr>
<td>23:00-24:00</td>
<td>54</td>
<td>23:00-24:00</td>
<td>42</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3,919</strong></td>
<td><strong>TOTAL</strong></td>
<td><strong>5,510</strong></td>
</tr>
</tbody>
</table>

**TCDS Administration**

General TCDS, SMS, TLC, TIB, SMS, PMDS, TCDS, SMS, WOT, RTIV

**Import/Export Data**

- PRM State File, NutkeFile
- JAMAR PerYeh (Park) Single File, Multiple Files
- Diamond State File, Multiple Files
- HiStar Single File
- TMDV Vehicle Count, State File

- DATrink Single File
- XLS Template Single File
- IVAS Veh Single File, Multiple Files
- IVAS PerYeh Single File, Multiple Files

- CDOT Class (data) Single File
- CDOT Class (state) Single File
- NDORP (data) Single File
- NDORP (state) Single File
- IVAS MLB Single File, Multiple Files

*For Single Direction examples and templates, download:
volume template, single template, volume example, single count example

*For Multiple Direction examples and templates, download:
volume template, single count template, volume example, single count example

1 For Single Direction examples and templates, download:
volume template, single count template, volume example, single count example
Software Benefits

- Instant detailed traffic data access throughout the agency, both historical, current, and continuous data sources
- Improved data distribution and access of traffic data to the public
- Productivity increase for Central Office Staff, field technicians, and our count partners.
- Expandable to allow INDOT to process and store local traffic counts
- Better data QA/QC
- More accountability
- Integrated data from various count devices and sources
Proposed 2012 Count Program Changes

- 24-hour and volume only counts on low volume rural area roads
- Continue count setting on Mon-Wed
- Vehicle Length Bins
- Use non-intrusive technologies on high volume roads
Demonstration of Devices

- Autumn Young & Greg Katter
  - Interactive Traffic Data Map
  - Adjustment Factors
  - Hourly Interstate Traffic Data
Getting Interstate Hourly Traffic Data From the MIP

Presented by:
Greg Katter, PE
Long Range Planning and Modeling
Email: gkatter@indot.in.gov  Phone: 317-232-6779
Interstate Traffic Data

- Where does the data come from?
- What data is available?
- How do I get it?
- What does the report tell me?
Where does the data come from?

- **Short term counts** - .PRN files
  
  ```plaintext
  000000105276 0000097001211 01 1245 102708 1400 103008 0060 02 1 100 80210
  0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
  'INTERSTATE 02 15 0001 0002 0003 0004 0005 0006 0007 0008 0009 0010 0011 0012 0013 0014 0015
  00 00
  00 00
  00 00 1 1300 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
  00 00 1 1400 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
  00 00 1 1500 0001 0011 0006 0000 0000 0002 0001 0000 0000 0019 0001 0000 0000 0000 0000
  00 00 1 1600 0001 0012 0011 0000 0001 0000 0003 0000 0026 0001 0000 0002 0000 0000 0000
  00 00 1 1700 0000 0013 0015 0000 0001 0001 0002 0000 0013 0000 0000 0000 0000 0000 0000
  00 00 1 1800 0000 0013 0018 0000 0000 0000 0001 0009 0000 0000 0000 0001 0000 0000 0000
  00 00 1 1900 0001 0013 0010 0000 0000 0000 0000 0008 0000 0000 0000 0000 0000 0000 0000
  00 00 1 2000 0000 0009 0005 0000 0000 0000 0000 0001 0004 0000 0000 0001 0000 0000 0000
  00 00 1 2100 0000 0001 0005 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000 0000
  ```

- **Continuous count sites** (ATR/WIM)

- Gathered in database with more than 2 million records
What Data is Available?

- Hourly Traffic Volumes
- Directional Totals
- Cars and Trucks (FHWA Class 1-3, 4-13)
- Adjusted Passenger Car Equivalent Totals
- Seasonally Adjusted
- Growth Factors applied to give 2010 data
A word about Seasonal Adjustment

Seasonal Adjustment Factors are applied to counts collected in a given month to calculate the Annual Average Daily Traffic.
How Do I Get the Data?

Go to the “Traffic” tab on the Management Information Portal
How Do I Get the Data?

Select the type of data you’re interested in, Weekday or Weekend

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weekday Interstate Hourly Traffic Data</td>
<td>INTERSTATE HOURLY TRAFFIC DATA Business Purpose: Provide the most current Weekend hourly Interstate Traffic Closure Policy.</td>
</tr>
<tr>
<td>Weekday Interstate Hourly Traffic Data</td>
<td>Business Purpose: Provide the most current Weekend hourly Interstate Traffic Closure Policy.</td>
</tr>
<tr>
<td>List of Interstate Count Stations</td>
<td>Business Purpose: Provide a listing of Count Stations to facilitate determin...</td>
</tr>
</tbody>
</table>
How Do I Get the Data?

Determine the Site Id you are interested in.

Available Resources

- List of Short Term Interstate Count Stations

<table>
<thead>
<tr>
<th>Route</th>
<th>Preceeding Exit</th>
<th>Preceeding_Cross_Road</th>
<th>Subsequent Exit</th>
<th>Subsequent_Cros_Road</th>
<th>WEEKDAY STATION</th>
<th>WEEKEND STATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>64 Begin</td>
<td>Illinois State Line</td>
<td>4</td>
<td>Griffin Road</td>
<td>970010</td>
<td>970030</td>
</tr>
<tr>
<td>I</td>
<td>64 4</td>
<td>Griffin Road</td>
<td>12</td>
<td>SR 65</td>
<td>970020</td>
<td>970030</td>
</tr>
<tr>
<td>I</td>
<td>64 12</td>
<td>SR 165</td>
<td>18</td>
<td>SR 65</td>
<td>970030</td>
<td>970030</td>
</tr>
<tr>
<td>I</td>
<td>64 18</td>
<td>SR 65</td>
<td>25</td>
<td>US 41</td>
<td>970040</td>
<td>970030</td>
</tr>
<tr>
<td>I</td>
<td>64 25</td>
<td>US 41</td>
<td>29</td>
<td>I 164 / SR 57</td>
<td>970050</td>
<td>970050</td>
</tr>
<tr>
<td>I</td>
<td>64 29</td>
<td>I 164 / SR 57</td>
<td>39</td>
<td>SR 61</td>
<td>970060</td>
<td>970050</td>
</tr>
<tr>
<td>I</td>
<td>64 39</td>
<td>SR 61</td>
<td>54</td>
<td>SR 161</td>
<td>970070</td>
<td>970050</td>
</tr>
<tr>
<td>I</td>
<td>64 54</td>
<td>SR 100</td>
<td></td>
<td></td>
<td>970080</td>
<td></td>
</tr>
</tbody>
</table>

- Interchange .PDF files
  Found on Y: drive

Y:\TrafficManagement\waivers
How Do I Get the Data?

Enter the Site Id on the search tool and press "Go"
How Do I Get the Data?

In the case of a Weekday Report, you will get...

<table>
<thead>
<tr>
<th>Count Station No</th>
<th>Count Hour End</th>
<th>Total Volume</th>
<th>Total Cars</th>
<th>Total Trucks</th>
<th>NB or EB Car Count</th>
<th>NB or EB Truck Count</th>
<th>NB or EB Adjusted Total</th>
<th>SB or WB Car Count</th>
<th>SB or WB Truck Count</th>
<th>SB or WB Adjusted Total</th>
<th>Route</th>
<th>Location Descr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>971250</td>
<td>656</td>
<td>487</td>
<td>169</td>
<td>214</td>
<td>81</td>
<td>376</td>
<td>273</td>
<td>88</td>
<td>449</td>
<td>I-65</td>
<td>ON I-65 1.00 MI NORTH OF GREENWOOD RD</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>475</td>
<td>321</td>
<td>154</td>
<td>154</td>
<td>70</td>
<td>295</td>
<td>166</td>
<td>84</td>
<td>335</td>
<td>I-65</td>
<td>ON I-65 1.00 MI NORTH OF GREENWOOD RD</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>405</td>
<td>264</td>
<td>141</td>
<td>103</td>
<td>63</td>
<td>230</td>
<td>161</td>
<td>78</td>
<td>317</td>
<td>I-65</td>
<td>ON I-65 1.00 MI NORTH OF GREENWOOD RD</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>391</td>
<td>234</td>
<td>157</td>
<td>97</td>
<td>70</td>
<td>238</td>
<td>137</td>
<td>87</td>
<td>311</td>
<td>I-65</td>
<td>ON I-65 1.00 MI NORTH OF GREENWOOD RD</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>382</td>
<td>232</td>
<td>149</td>
<td>125</td>
<td>65</td>
<td>255</td>
<td>108</td>
<td>84</td>
<td>275</td>
<td>I-65</td>
<td>ON I-65 1.00 MI NORTH OF GREENWOOD RD</td>
</tr>
</tbody>
</table>
How Do I Get the Data?

In the case of a Weekend Report, you will get...

Weekend counts were collected for this site and they are reported.

OR

Only Weekday counts were collected at this site. The reported values are adjusted using Weekend Factors.
How Do I Get the Data?

What is a “Weekend?”

Traffic Statistics defines a weekend as the 72 hour period between 12:00am Friday morning and 12:00am Monday morning.
How Do I Get the Data?

In the case of a Weekend Report, you will get...

<table>
<thead>
<tr>
<th>Count Station No</th>
<th>Count Hr End Time</th>
<th>Weekend Day</th>
<th>Total Cars</th>
<th>Total Trucks</th>
<th>NB or EB Car Count</th>
<th>NB or EB Truck Count</th>
<th>NB or EB Adjusted Total</th>
<th>SB or WB Car Count</th>
<th>SB or WB Truck Count</th>
<th>SB or WB Adjusted Total</th>
<th>Route</th>
<th>Location Descr</th>
<th>Weekday Station</th>
<th>Weekend Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>972100</td>
<td>1</td>
<td>Friday</td>
<td>400</td>
<td>398</td>
<td>200</td>
<td>174</td>
<td>548</td>
<td>200</td>
<td>224</td>
<td>648</td>
<td>ON I-69</td>
<td>972100</td>
<td>972090</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td></td>
<td>Friday</td>
<td>296</td>
<td>356</td>
<td>145</td>
<td>166</td>
<td>476</td>
<td>151</td>
<td>191</td>
<td>532</td>
<td>ON I-69</td>
<td>972100</td>
<td>972090</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td></td>
<td>Sunday</td>
<td>291</td>
<td>432</td>
<td>118</td>
<td>154</td>
<td>426</td>
<td>173</td>
<td>278</td>
<td>729</td>
<td>ON I-69</td>
<td>972100</td>
<td>972090</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td></td>
<td>Sunday</td>
<td>326</td>
<td>361</td>
<td>103</td>
<td>164</td>
<td>430</td>
<td>223</td>
<td>198</td>
<td>619</td>
<td>ON I-69</td>
<td>972100</td>
<td>972090</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td></td>
<td>Monday</td>
<td>614</td>
<td>389</td>
<td>110</td>
<td>204</td>
<td>519</td>
<td>503</td>
<td>184</td>
<td>872</td>
<td>ON I-69</td>
<td>972100</td>
<td>972090</td>
</tr>
</tbody>
</table>
A word about Weekend Factors

Weekend Factors are developed from a nearby site for which both Weekday data and Weekend data is available.

\[ F_{\text{Friday}} = \frac{\text{Total Friday Volume}}{\text{Total Weekday Volume}} \]

This factor is then multiplied by each Weekday hourly volume for the requested site to approximate the Friday Hourly Volumes.
How Do I Get the Data?

From here you can get details or export.

Details include adjustment factors and Functional Classification.

Export can be MS Excel.
What Does The Report Tell Me?

- Hourly 2010 AADT total and by direction (uses military 24 hour style)
- Car and Truck volumes
- Adjusted Totals applying a Passenger Car Equivalency Factor of 2.0
- Growth Factor applied to bring to 2010
Contact Information:

**Greg Katter, PE**
Long Range Planning, Modeling, and Traffic
Email: gkatter@indot.in.gov
Phone: 317-232-6779