Transportation Safety Enhancing Livability

GPA Fall Conference 2010

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Atlanta Regional Commission
September 30, 2010
How Does Atlanta MPO Compare?

- Georgia Ranks 4th in Nation for Number of Fatalities (2006-2008 Annual Average)*
  - California: 3,890 Fatalities (max)
  - Georgia: 1,610 Fatalities
  - Alaska: 50 Fatalities (min)

- Atlanta 18-County MPO Ranks Higher than 24 States with Yearly 573 Fatalities

- Goals
  - AASHTO National Goal: Reduce Fatalities by 1,000 per Year
  - Georgia Goal: Reduce Fatalities by 41 per Year (share of national 3.9%)
  - Atlanta MPO: Reduce Fatalities by 15 per year (share of state 36%)

* Based on Fatality Analysis Reporting System (FARS) Data
All Crashes
Region to State Comparison

Source: Critical Analysis Reporting Environment (CARE)
Fatal Crashes
Region to State Comparison

Annual Avg 2006-08 - Fatal Crashes

Source: Critical Analysis Reporting Environment (CARE)
Number of Fatalities
Region to State Comparison

Source: Critical Analysis Reporting Environment (CARE)
The region accounts for more than half of PDO and Injury Crashes for the state, but less than half for Fatal Crashes.
2006-2008 Injury Averages
region percent of state total

The Atlanta region accounts for 52% of Georgia’s population and 48% of Georgia’s total VMT.

Fatalities

- 35% of Fatalities
- 65% of Total

Serious Injuries

- 46% of Serious Injuries
- 54% of Total

All Injuries

- 51% of All Injuries

Visible Injuries

- 57% of Visible Injuries
- 43% of Total

Complaint Injuries

- 45% of Complaint Injuries
- 55% of Total

Source: Critical Analysis Reporting Environment (CARE)
GA SHSP Emphasis Areas

1. Aggressive Driving/Super Speeder
2. Impaired Driving
3. Occupant Protection
4. Age-related
   • Young Driver
   • Older Driver
5. Serious Crash Type
   • Intersections
   • Lane Departure
   • Work Zones
6. Vehicle Type
   • Heavy Trucks
   • Motorcycles
7. Non-motorized Users
   • Pedestrians
   • Bicyclists
1. Aggressive Driving/Super Speeder

Atlanta MPO (18-county) Fatal Crashes & Fatalities, 2006-08

At least one vehicle was speeding in crash

ARC Region (116) accounts for 38% of all State (309) Fatalities involving speeding for Year 2008

<table>
<thead>
<tr>
<th></th>
<th>Fatal Crashes</th>
<th>Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td># of Fatal Crashes with Speeding involved in Region</td>
<td>334</td>
<td>378</td>
</tr>
<tr>
<td># of Fatal Crashes in Region</td>
<td>1,589</td>
<td>1,732</td>
</tr>
<tr>
<td>% of all Fatal Crashes</td>
<td>21%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Source: Critical Analysis Reporting Environment (CARE), GA 2008 Fatality Source NHTSA National Center for Statistics and Analysis
2. Impaired Driving

Persons Killed in Crash With at Least One Driver Impaired

<table>
<thead>
<tr>
<th>Year</th>
<th>18-County</th>
<th>Georgia</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>180</td>
<td>454</td>
</tr>
<tr>
<td>2007</td>
<td>146</td>
<td>445</td>
</tr>
<tr>
<td>2008</td>
<td>159</td>
<td>416</td>
</tr>
</tbody>
</table>

2006-08 Change
Georgia: 8% decrease
Region: 12% decrease

Source: Fatality Analysis Reporting System (FARS)
3. Occupant Protection

Out of all Fatal Crashes in the Region

- Crashes: 20% Yes, 24% None Used, 56% Unknown
- Vehicles: 15% Yes, 23% None Used, 62% Unknown
- Occupants: 16% Yes, 26% None Used, 58% Unknown

Source: Critical Analysis Reporting Environment (CARE)
4. Age Related:

**Older Drivers & Young Drivers**

- **Fatal Crashes (Older)**
  - 2006: 110
  - 2007: 118
  - 2008: 74
  - 06 to 08 change: 35% decrease
- **Fatalities (Older)**
  - 2006: 92
  - 2007: 101
  - 2008: 60
  - 06 to 08 change: 33% decrease
- **Fatal Crashes (Young)**
  - 2006: 59
  - 2007: 57
  - 2008: 54
  - 06 to 08 change: 12% decrease
- **Fatalities (Young)**
  - 2006: 57
  - 2007: 47
  - 2008: 50
  - 06 to 08 change: 8% decrease

Source: Critical Analysis Reporting Environment (CARE)
4. Age Related:

**Older Drivers & Young Drivers**

![Bar graph showing cumulative fatalities by age group from 2006-08. The graph indicates that 79% of fatalities are among young drivers and 88% among older drivers. The source is the Critical Analysis Reporting Environment (CARE).](image-url)

Source: Critical Analysis Reporting Environment (CARE)
5. Serious Crash Type

### Fatal Crashes and Fatalities at Intersections

<table>
<thead>
<tr>
<th>Intersections</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2006-08 Change</th>
<th>3-Year Total</th>
<th>% of all Region Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td># Fatal Crashes</td>
<td>157</td>
<td>159</td>
<td>135</td>
<td>-22</td>
<td>-14%</td>
<td>451</td>
</tr>
<tr>
<td># Fatalities</td>
<td>167</td>
<td>175</td>
<td>148</td>
<td>-19</td>
<td>-11%</td>
<td>490</td>
</tr>
</tbody>
</table>

Source: Critical Analysis Reporting Environment (CARE)

“The [State] goal by 2014 is to reduce the expected average number of intersection fatalities of 415 to 365.”

### Georgia Totals

<table>
<thead>
<tr>
<th>Georgia Totals</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intersection Fatalities</td>
<td>500</td>
<td>371</td>
<td>366</td>
<td>394</td>
<td>443</td>
<td>415</td>
</tr>
</tbody>
</table>

Source: Georgia 2009 SHSP Intersection Safety Action Plan
6. Vehicle Type

Heavy Trucks & Motorcycles

**Heavy Trucks**

<table>
<thead>
<tr>
<th>Year</th>
<th># Fatal Crashes</th>
<th># Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>65</td>
<td>59</td>
</tr>
<tr>
<td>2007</td>
<td>59</td>
<td>39</td>
</tr>
<tr>
<td>2008</td>
<td>39</td>
<td>36</td>
</tr>
</tbody>
</table>

**Motorcycles**

<table>
<thead>
<tr>
<th>Year</th>
<th># Fatal Crashes</th>
<th># Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>67</td>
<td>68</td>
</tr>
<tr>
<td>2007</td>
<td>77</td>
<td>78</td>
</tr>
<tr>
<td>2008</td>
<td>70</td>
<td>68</td>
</tr>
</tbody>
</table>

Source: Critical Analysis Reporting Environment (CARE); Photo: Muncie Free Press

Emphasis Areas

GA = 177 Fatalities
6. Vehicle Type

*Heavy Trucks & Motorcycles*

**Vehicle Type as Percent of Region Total Fatal Crashes and Fatalities**

<table>
<thead>
<tr>
<th></th>
<th>Fatalities</th>
<th>Fatal Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy Trucks</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Motorcycles</td>
<td>12%</td>
<td>13%</td>
</tr>
</tbody>
</table>

Source: Critical Analysis Reporting Environment (CARE)
7. Non-Motorized Users

Pedestrians & Bicyclists

<table>
<thead>
<tr>
<th>Year</th>
<th># Fatal Crashes</th>
<th># Fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>83</td>
<td>85</td>
</tr>
<tr>
<td>2007</td>
<td>71</td>
<td>71</td>
</tr>
<tr>
<td>2008</td>
<td>73</td>
<td>77</td>
</tr>
</tbody>
</table>

Fatalities: 53%

Source: Critical Analysis Reporting Environment (CARE)
7. Non-Motorized Users

Pedestrians & Bicyclists

Non-Motorized User as Percent of Region Total Fatal Crashes and Fatalities

### Fatalities
- Pedestrians: 13%
- Bicyclists: 1%

### Fatal Crashes
- Pedestrians: 14%
- Bicyclists: 1%

Source: Critical Analysis Reporting Environment (CARE)
2006-08 Percent Change in Fatalities

- Speeding: -12%
- Impaired Driving: -8%
- Young Driver: -11%
- Older Drivers: 3%
- Intersections: -9%
- Heavy Trucks: 3%
- Motorcycles: -20%
- Pedestrians: -33%
- Bicyclists: -40%
- Young: -19%
- Older: -33%
- Intersec: -40%
- Heavy: -50%
- Motor: -60%

Source: Critical Analysis Reporting Environment (CARE)
2006-08 Percent of Total Region Fatalities

- Speeding: 22%
- Impaired Driving: 28%
- Young Driver: 21%
- Older Drivers: 12%
- Intersections: 28%
- Heavy Trucks: 10%
- Motorcycles: 12%
- Pedestrians: 13%
- Bicyclists: 1%

Source: Critical Analysis Reporting Environment (CARE)
Crash Profiles
Regional Crash Profiles

Life – Congestion - Costs

- **Purpose**
  - Expand role of safety in regional dialogue about congestion
  - Establish magnitude of crash problem at regional and county levels
  - Help project sponsors identify hot spots and prioritize improvements
  - Connect regional initiatives with statewide goals
44,718 Non-Fatal Injury Crashes (annual average)

86 Non-Fatal Injury Crashes per 100M VMT (annual average)

24% of Total Crashes Were Non-Fatal Injury

Non-Fatal Injury Crashes per Half Mile
- Minimum = 0
- Maximum = 343
Bicycle Crashes

- **0.2%** Bicycle Crashes out of all Regional Crashes

- **0.9%** Bicycle Fatal Crashes out of Total Regional Fatal Crashes

- **92.3%** Crashes Occurred in the Urbanized Area

### Bicycle Crashes Severity

<table>
<thead>
<tr>
<th>Severity</th>
<th>% of Total Crashes</th>
<th>% of Fatal Crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy Trucks</td>
<td>6%</td>
<td>11%</td>
</tr>
<tr>
<td>Pedestrians</td>
<td>0.7%</td>
<td>13%</td>
</tr>
<tr>
<td>Bicycles</td>
<td>0.2%</td>
<td>0.9%</td>
</tr>
</tbody>
</table>
County Crash Profiles

- **Maps**
  - Top Roadway Segments
  - Top Intersections
  - By Route Type
  - By Severity
  - By Total Number of Crashes
  - Tables & Lists Identifying Locations

- **Graphs**
  - Crash Data Summaries
  - Crash Rates per 100M VMT (AnnAvg 06-08)
  - Number of Crashes by County (AnnAvg 06-08)
  - Crash Rates by Year 2000-08
  - Number of Crashes by Year 2000-08
Injury Crashes

Top 10 Roadway Segments by Route Type

Top 25 High Crash Intersections
Injury Crashes – Graphs

Crash Rate = 
\# crashes/ 
[(2008 Daily VMT*365)/100,000,000]

Number of Injury Crashes by County (Annual Average 2006-08)

Injury Crash Rate: Injury Crashes per 100 Million Vehicle Miles Traveled (VMT) by County (Annual Average 2006-08)
Injury Crashes – Graphs

Henry County Injury Crashes, 2000-2008

Henry County Injury Crash Rate, 2000-2008
PLAN 2040 Safety Filter

- Included Visible, Severe or Fatal Crashes (Bike also included Complaint)

- Projects remained eligible for evaluation if located at one of these high crash locations
PLAN 2040 Transit Crash Reduction Score

- Estimate the number of crashes prevented from occurring on the roadway system as the result of a specific transit investment

Data Items
- Daily Passenger Miles (Source: ARC Model Output)
- Average Crash Rate for Private Vehicle Travel
- Average Crash Rate for Travel by Transit

<table>
<thead>
<tr>
<th>Mode/Technology of Travel</th>
<th>Crashes per 100 Million Passenger Miles</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Private Vehicle</td>
<td>379</td>
<td>CARE, GDOT, ARC</td>
</tr>
<tr>
<td>Transit: Bus</td>
<td>36.7</td>
<td>NTD data for MARTA, GRTA, CCT, GCT, 2009</td>
</tr>
<tr>
<td>Transit: Heavy Rail</td>
<td>0.3</td>
<td>NTD data for MARTA, 2009</td>
</tr>
<tr>
<td>Transit: Light Rail</td>
<td>32.3</td>
<td>NTS National Average, 2007</td>
</tr>
<tr>
<td>Transit: Commuter Rail</td>
<td>1.1</td>
<td>NTS National Average, 2007</td>
</tr>
</tbody>
</table>

Crash Reduction = \( \frac{\text{Project Daily Pax Miles} \times 260 \text{ weekdays in a year}}{100 \text{ million constant}} \times \left( \frac{\text{Crash Rate Private Vehicle}}{\text{Crash Rate Transit by Transit Technology}} \right) \)
PLAN 2040 Highway Incident Analysis

- Calculate Average Regional Crash Rate by Functional Classification
- Calculate Crash Rate per Project
  - Model output
    - VMT & Functional Class
- Spatial join crashes to projects

- Crash Rate:
  \[
  \text{Crash Rate} = \frac{(5\text{-Year Crash Annual Avg per Project}) \times (100 \text{ million})}{(\text{VMT per Project}) \times (260 \text{ weekdays in a year})}
  \]

- Crash Ratio:
  \[
  \text{Crash Ratio} = \frac{\text{Project Crash Rate}}{\text{Regional Crash Rate by Func. Class}}
  \]
Congestion

- Over 50% of all Traffic Congestion is Caused by Non-recurring Incidents

Sources of Traffic Congestion

- Special Events: 15%
- Poor Signal Timing: 10%
- Bad Weather: 10%
- Work Zones: 15%
- Traffic Incidents: 25%
- Bottlenecks: 10%

Crashes and Congestion

Crash Density laid over CMP Network
‘Most Congested Facilities’
Examples of Various Crash Analyses Conducted
## Livable Centers Initiative (LCI)

### Average Number of Annual Crashes in LCI Areas

#### Before and After Establishing an LCI Area

<table>
<thead>
<tr>
<th></th>
<th>Total Crashes</th>
<th>Crashes involving Peds</th>
<th>Crashes involving Bikes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>After</td>
<td>Before</td>
</tr>
<tr>
<td>Average # of Crashes in an LCI Area</td>
<td>443</td>
<td>419</td>
<td>4.13</td>
</tr>
<tr>
<td>Percent Change</td>
<td>-6%</td>
<td>-21%</td>
<td>-17%</td>
</tr>
</tbody>
</table>

#### Before and After Construction of an LCI Transportation Project

<table>
<thead>
<tr>
<th></th>
<th>Total Crashes</th>
<th>Crashes involving Peds</th>
<th>Crashes involving Bikes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before</td>
<td>After</td>
<td>Before</td>
</tr>
<tr>
<td>Average # of Crashes in an LCI Area with a Completed Transportation Project</td>
<td>512</td>
<td>469</td>
<td>5.14</td>
</tr>
<tr>
<td>Percent Change</td>
<td>-8%</td>
<td>-20%</td>
<td>-19%</td>
</tr>
</tbody>
</table>

Note: The LCI program was established in 1999, first transportation project was completed in 2000. Since inception of the LCI program, 102 communities across the region have been designated as an LCI area.
Atlanta Senior Zones with ARC Aging Division

- Pedestrian and vehicle crash data for the 64 senior zone facilities
- Sent to the City of Atlanta Public Works staff responsible for implementing the Senior Zone guidelines
- Tool for prioritizing implementation of pedestrian safety improvements where the need is greatest according to the data
- Help direct limited funds

2005-2008 Crashes Within 700 Feet of Selected Senior Facilities
Lifelong Communities – East Point

with ARC Aging Division

- Crash data for the East Point NORC
- Coordination with East Point Public Works department
- Pedestrian safety improvements
- Prep to submit an application for 2010 New Freedom funds in 2010.
Older Adult High Crash Intersections

- Pilot Intervention: Older Driver Task Force (ODTF)

- “ODTF goal is to identify effective roadway treatments in specific senior aged communities.”

- Collaboration with GDOT engineers, assessing environmental design features aimed at maintaining the safety of older adults who drive, walk, or take alternative transportation

Quote from ODTF Recommendations Report
Safe Kids Cobb County

- Contacted ARC for Pedestrian crash statistics

Cobb County - # of Pedestrians Injured by Injury Type

- 1-Killed
- 2-Serious
- 3-Visible
- 4-Complaint
- 0-Not Injured
Safe Routes to School (SRTS)

- Received request from SRTS coordinator for schools within their counties that experienced high number of pedestrian and bike crashes.
- Target schools in areas of concern.
Pedestrian Crashes at Bus Stops

- ARC Bicycle and Pedestrian Task Force
- Peds (Pedestrians Educating Drivers on Safety)
  - Analyzing the data further for environmental justice areas/corridors

### Bus Stop (300 ft)

<table>
<thead>
<tr>
<th>Bus Stop (300 ft)</th>
<th>Service Provider</th>
<th>Direction of Travel</th>
<th># Pedestrian Crashes</th>
<th># Persons Injured</th>
<th># Persons Killed</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLEVELAND AVE SW@METROPOLITAN PKY S</td>
<td>MARTA</td>
<td>Southbound</td>
<td>13</td>
<td>12</td>
<td>0</td>
</tr>
<tr>
<td>COLUMBIA DR@GLENWOOD RD</td>
<td>MARTA</td>
<td>Northbound</td>
<td>10</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>JESSE HILL JR DR SE@EDGEWOOD AVE</td>
<td>MARTA</td>
<td>Southbound</td>
<td>9</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>BUFORD HWY@CLIFF VALLEY WAY</td>
<td>MARTA</td>
<td>Southbound</td>
<td>9</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>NORTH AVE NW@SPRING ST NW</td>
<td>MARTA</td>
<td>Southbound</td>
<td>9</td>
<td>8</td>
<td>0</td>
</tr>
</tbody>
</table>
HSIP Project Selection

- Evaluated Pedestrian & Bicycle High Crash Corridors with
  - Serious & Fatal Crashes, Fatalities
  - Nearby Schools and Community Facilities
  - Minority, Poverty Areas
  - Older Adult Age 55+ Populations
  - Pedestrian Crash/ Bus Stop Analysis Results

Highway Safety Improvement Program (HSIP)
Regional Traffic Operations Program (RTOP)

- ARC Bike & Ped Task Force Areas of Concern:
  - LCI areas, ARC Bike/Ped Network Plan, Buffers Around Hospitals, Pedestrian “Hot Spot” Crash Corridors Based on 2006-2008 Data, Senior Zones, UGPM Activity Centers

- Suggested
  - avoid long signal times that would encourage peds to jaywalk
  - upgrade loop detectors to detect bicyclists
  - location of control boxes and signal masts
  - refuge islands for larger intersections
  - leading or lagging pedestrian signals
  - 2009 MUTCD Ped crossing speed
  - add signage

- Specific notes on 12 corridors

**RTOP Mission:** To increase travel throughput by minimizing congestion and reducing delays along regional commuter corridors through improved signal operations.

UGPM – Urban Growth Policy Map developed by ARC
MUTCD – Manual on Uniform Traffic Control Devices (FHWA)
RTOP – Google Earth – Sharing Data
Crash Data Resources

- Georgia Electronic Accident Reporting System (GEARS)
  - GDOT Electronic Crash Reporting
    - https://gearsportal.com/Pages/Public/Home.aspx
    - http://openportalsolutions.com/w_i_gears.html
    - http://www.buy-crash.com/

- Online Analytical Statistical Information System (OASIS)
  - Office of Health Indicators for Planning (OHIP)
    - http://oasis.state.ga.us/oasis/index.aspx
Access to CARE
Using CARE: Critical Analysis Reporting Environment

- Created and Housed at Center for Advanced Public Safety – University of Alabama
  - Download CARE software and Georgia Crash Data: FREE! [http://caps.ua.edu/downloads/downloads.aspx](http://caps.ua.edu/downloads/downloads.aspx)
- Six tables of information available
  - Commercial Vehicle Data, Crash Data, Passenger Data, Pedestrian Data, Road Data, Unit Data
- Years 2000-2009 available
How to Export CARE Crash Data to Create Your Own Database

- Install CARE (make sure you do this before you download the data)
- Download GA Crash Data
- Open CARE
- Decide which of the six tables you want to export the data from
- Figure out what Geography and Years you want in your database
  - This will be your filter you create described on following slide
- Click Filters – **Create/Modify Filter**
- Create Filter for Geography (i.e. Carroll County) and Year (i.e. 2000-2009)
- **Example to create filter:**
  - ‘County’ = ‘Carroll’
    - Click ‘County’ in the left column under variable
    - Click ‘Carroll’ in the right column under value
  - ‘Year’ = 2000-2009
    - Click ‘Year’ in left then ‘2000’, then ‘2001’…to…’2008’
    - Click ‘OR CLAUSE’ to the right of the screen and it pops up in the workspace you’ve been working in
    - Take all the years and pull them into the OR CLAUSE
  - Click ‘AND CLAUSE’ again pulls up in workspace
    - Pull ‘County=Carroll’ into the ‘AND CLAUSE’
    - Then pull ‘OR CLAUSE’ into the ‘AND CLAUSE’ (if you just pull the one line that says ‘OR CLAUSE’ it should pull all the years with it)
  - At the bottom of the screen give your filter a name, i.e. Carroll_00-08
    - Make sure the top most line “[AND Clause]” is highlighted when naming the filter, like in pic below
Export excel spreadsheet for all variables

- Click File – Export Data (Data Gen)
- In DataGen Properties Box click ‘Select All’ on the left and click your filter (i.e. ‘Carroll_00-08’) on right
- Choose to save as CSV, then resave as excel
Export GIS points which will but used to join to the excel variables

- Make sure you have the table (of the six tables of information) chosen as ‘Default Data Source’ (i.e. 2000-2009 Crash Data)
- Click Locations – GIS Map
- Click Point Layers – Individual Events Layer – Next
- Select your Filter (i.e. Carroll_00-08)
  - You don’t really need to name the Events Layer, you’ll name it when you export it as a shapefile
  - Click Next
- Select the variables you wish to export to the GIS map
  - CARE tends to crash a lot. If it does Exit, then reopen. If you try to export a lot of variables on this screen with the GIS export, CARE will most likely crash. The variables are not needed at this point because these points will be joined to the excel spreadsheet that has all the variables that was exported in previous step. Choose the variables below to check dates and times to ensure the joining of the points match correctly to the variables in the spreadsheet.
    - County, Month, Date of Month, Year, Time of Day
  - Click Next

Note: Exporting city is not all that valuable as that variable tends to be inaccurate.
Export as a Shapefile

- Right click on the Event layer
- Click Export to Shapefile
- Name as you like
Join excel to shapefile

- Now you have an excel spreadsheet and a shapefile (i.e. for Carroll County, years 2000-08)
- The Crash ID (excel) matches the Event_ID (GIS) however, not exactly. You need to add zeros in front of the Crash ID to match the Event_ID.
  - Open excel and make sure there are not spaces in the field titles or tab name, use underscore. Add new field called “Event_ID” to fill in later
  - Import Excel table with variables into a GeoDB (table single) or convert it to a DBF so that it can be edited in GIS, add table to ArcMap
  - Open Attribute Table - Use the field calculator to populate the new Event_ID field using this expression: “00000” & [Crash_ID] – what this does is add 5 zeros to the left of the Crash ID number. Crash ID should have a total of 8 digits.
  - Finally, recalculate this same new Event_ID field with just the 8 rightmost characters from that field, using this expression: “Right ([Event_ID], 8)” – this will create an 8 digit Event ID with zeros in front filling in the missing characters so that it now can be joined to the shapefile using the Event_ID and Crash_ID fields
- Join shapefile to dbf table
- The variables in the attribute table are codes for values
  - You can find in CARE if you go to File – View Variable Names and Codes
  - You can export these if you go to File – Export Variable Names and Codes (excel)
Thank You. Questions?

Contact:
Talya Trudell
Senior Planner
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