Social Media and Big Data for Transportation Planning

Three Case Studies from GHMPO
Presenters

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Three Case Studies from GHMPO

1. Dawsonville Highway – McEver Road
   [Link](http://www.ghmpo.org/DocumentCenter/View/1152/Dawsonville-Hiwy-McEver-Rd-Connectivity-Study_Final)

2. Jackson County Transportation Plan

3. GHMPO Regional Transportation Plan
   [Link](http://www.ghmpo.org/180/Gainesville-Hall-RTP-2020-Update)
Dawsonville Highway – McEver Road Connectivity Study
The Study scope entailed the retail corridor surrounding the Dawsonville Highway and McEver Road Intersection (State Route 53)
Project Background

• Severe Traffic Congestion
• Rapid Development
  • Mainly retail but some new housing developments in the vicinity as well
• Existing Housing
  • Established neighborhoods to the north and south of the corridor
• Limiting Geography
  • Lake Lanier surrounding three sides of the corridor
Public Outreach – Social Media

- Facebook geofencing
  - 1,517 people got the ad pushed to their phone
  - Focused on the area directly around the intersection
- Twitter
- Instagram
Public Outreach – Survey Response

• Q4. On weekends, do you avoid the Dawsonville Highway - McEver Road study area at certain times due to traffic congestion? (select all that apply)

- No traffic congestion: 4%
- Peak AM (6am-10am): 12%
- Mid-Day (10am-3pm): 47%
- Peak PM (3pm-7pm): 43%
- No Alternate: 36%
Public Outreach – Survey Response

- SurveyMonkey
  - 644 participants

- Wikimapping
  - 110 participants
Public Outreach - Meetings
Big Data and Analysis

Input | Data
Big Data and Analysis

- Origins and Destinations (O&D)
  - Vehicles
  - Trucks
- Congestion “Hot Spots”
  - Locations
  - Time of Day
  - Origins and Destinations
- Safety Concerns
Origins and Destinations

- **What?**
  - Autos
  - Trucks

- **Where?**
  - Study area limits (x3)

- **When?**
  - Weekend/Weekday
  - Time (AM/PM)

- **Why?**
  - Local trips
  - Through trips
Origins and Destinations
### TABLE 15 WEEKDAY ORIGIN-DESTINATION TRIP DISTRIBUTION BY DIRECTION, TIME PERIOD, AND VEHICLE TYPE

<table>
<thead>
<tr>
<th>Location</th>
<th>Days of Week</th>
<th>Direction</th>
<th>Time Period</th>
<th>Personal</th>
<th>Commercial</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Dawsonville Highway (North of Alabama Drive)</td>
<td>Weekday</td>
<td>Southbound</td>
<td>All Day (12am-12am)</td>
<td>50% 27% 12% 2%</td>
<td>66% 29% 7% 3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peak AM (6am-10am)</td>
<td>70% 17% 4% 2%</td>
<td>86% 23% 4% 3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mid-Day (10am-3pm)</td>
<td>35% 22% 10% 0%</td>
<td>0% 27% 3% 3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peak PM (3 pm-7pm)</td>
<td>52% 24% 14% 7%</td>
<td>63% 30% 3% 1%</td>
</tr>
<tr>
<td></td>
<td>Weekday</td>
<td>Northbound</td>
<td>All Day (12am-12am)</td>
<td>43% 24% 11% 1%</td>
<td>61% 28% 9% 4%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peak AM (6am-10am)</td>
<td>50% 24% 8% 5%</td>
<td>62% 29% 5% 3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mid-Day (10am-3pm)</td>
<td>44% 20% 24% 7%</td>
<td>62% 29% 5% 3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peak PM (3 pm-7pm)</td>
<td>44% 28% 21% 7%</td>
<td>54% 38% 6% 5%</td>
</tr>
<tr>
<td>B: Dawsonville Highway (South of Shallowford Road)</td>
<td>Weekday</td>
<td>Southbound</td>
<td>All Day (12am-12am)</td>
<td>40% 13% 38% 2%</td>
<td>69% 9% 17% 3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peak AM (6am-10am)</td>
<td>44% 12% 20% 3%</td>
<td>66% 25% 10% 2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mid-Day (10am-3pm)</td>
<td>30% 15% 48% 3%</td>
<td>0% 12% 22% 3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peak PM (3 pm-7pm)</td>
<td>33% 13% 44% 2%</td>
<td>33% 9% 14% 3%</td>
</tr>
<tr>
<td></td>
<td>Weekday</td>
<td>Northbound</td>
<td>All Day (12am-12am)</td>
<td>44% 12% 33% 2%</td>
<td>78% 9% 16% 3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peak AM (6am-10am)</td>
<td>69% 13% 11% 1%</td>
<td>68% 9% 10% 2%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mid-Day (10am-3pm)</td>
<td>35% 11% 42% 2%</td>
<td>74% 8% 14% 1%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peak PM (3 pm-7pm)</td>
<td>51% 11% 20% 1%</td>
<td>77% 11% 9% 1%</td>
</tr>
<tr>
<td>C: McEver Road (Northwest of Sherwin-Williams / Aaron’s Driveway)</td>
<td>Weekday</td>
<td>Westbound</td>
<td>All Day (12am-12am)</td>
<td>32% 21% 37% 3%</td>
<td>61% 20% 15% 3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peak AM (6am-10am)</td>
<td>25% 38% 11% 3%</td>
<td>37% 20% 13% 3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mid-Day (10am-3pm)</td>
<td>30% 20% 35% 7%</td>
<td>57% 20% 22% 3%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Peak PM (3 pm-7pm)</td>
<td>28% 20% 42% 4%</td>
<td>65% 20% 14% 3%</td>
</tr>
<tr>
<td></td>
<td>Weekday</td>
<td>Eastbound</td>
<td>All Day (12am-12am)</td>
<td>33% 25% 28% 6%</td>
<td>61% 15% 13% 3%</td>
</tr>
<tr>
<td></td>
<td></td>
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<td>Peak AM (6am-10am)</td>
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<td>29% 24% 33% 9%</td>
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<td></td>
<td></td>
<td></td>
<td>Peak PM (3 pm-7pm)</td>
<td>44% 22% 25% 9%</td>
<td>64% 19% 11% 2%</td>
</tr>
</tbody>
</table>

Source: STREETLIGHTDATA
Origins of Commercial Trips Destined for McEver Rd (SR 53) NB Weekday Peak AM (6am-10am)

- SR 53 Connector WB 20%
- Shaltsford 3%
- Local 14%
- Street 2%
- 57%
- 30%
O&D Results: Big Data vs. Survey
Corridor Congestion

When...

Where...

Source: INRIX / RITIS
Congestion & Safety

Big Data vs. Survey
Project Location

All of Jackson County, including cities
Project Background

- Why Was it Needed?
  - No update to the county-wide transportation plan since 2008
  - Better coordination between County and Cities desired
  - Jackson County growing
    - Rapid industrialization along I-85

- Background
  - The southwestern portion of urbanized Jackson County and the cities of Braselton and Hoschton joined GHMPO following the 2010 US Census
  - First stand-alone plan produced in partnership with GHMPO
Jackson County Transportation Plan

Digital Public Input Results

**VIEWS**
- **13,141**

**RESPONSES**
- **10,217**

**SUBSCRIBERS**
- **135**

**PARTICIPANTS**
- **831**

**COMMENTS**
- **567**

**IMPRESSIONS**
- **19,318**
Social Media Campaign Matrix
Social Media and Survey - Results

<table>
<thead>
<tr>
<th>Date</th>
<th>Subject</th>
<th>Impressions *</th>
<th>People Reached **</th>
<th>Link Clicks</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/4 to 10/18</td>
<td>Survey</td>
<td>8,730</td>
<td>5,903</td>
<td>457</td>
<td>9</td>
</tr>
<tr>
<td>10/9 to 10/18</td>
<td>Event</td>
<td>5,243</td>
<td>3,439</td>
<td>106</td>
<td>0</td>
</tr>
<tr>
<td>10/9 to 10/18</td>
<td>Event</td>
<td>2,682</td>
<td>2,310</td>
<td>53</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Survey Participants</th>
<th>Live</th>
<th>Work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside Study Area</td>
<td>217</td>
<td>211</td>
</tr>
<tr>
<td>Outside Study Area</td>
<td>260</td>
<td>282</td>
</tr>
<tr>
<td>Total</td>
<td>477</td>
<td>493</td>
</tr>
</tbody>
</table>

- Traffic congestion (including intersection operations): 287
- Improve condition of roads (fix potholes and pavement): 286
- Widen existing roads: 214
- Increase set truck routes to direct truck traffic: 195
- Increase number of pedestrian and bicycle facilities: 173
- Improve condition of interstates: 159
- Create new roadways: 165
- Increase attractiveness of roads (landscaping): 157
- New fixed-route bus services (bus follows the same route and stops at predetermined locations on a pre-determined schedule): 115
- Additional on-demand bus services: 112
Public Outreach – Survey Response

• Please drop a pin on any specific locations that you deem as a problem area in Jackson County and explain the location and problem
Public Outreach – Survey Response

• Please drop a pin where you would like to see a bus stop
Public Outreach – Pop-Ups as Meetings
Congestion (Big) Data

Travel Demand Model

RITIS/INRIX Bottlenecks

Legend
- Interstate
- State Route
- Other Roads

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA
USGS, AeroGRID, IGN, and the GIS User Community
Survey Input: Clusters / Trends?
Safety Data vs. Survey
Deep Dive...
Causes and Potential Solutions

Thompson Mill Rd/Ednaville Rd/Jesse Cronic Rd: Dangerous intersection with increasing traffic due to development

SR 52/Ednaville: Dangerous intersection, lots of accidents, signal may be needed

SR 332/Old Pendergrass Rd/Creek Nation Rd: Dangerous intersection. New School Coming.

SR 52: Travel lanes end/are not well marked, vehicles (and trucks) changing lanes at the last minute.

Jesse Cronic Rd: Narrow road, dangerous with truck traffic

Hwy 60/Hwy 124: Traffic and high travel speeds. Signal may be needed
Transit Propensity?
Project Location

- Entire GHMPO Area
Project Background

- Federal Requirement
  - MPOs are required to update their Regional Transportation Plan (RTP) every 4-5 years
  - RTP must plan for 25+ year horizon
- Communities Evolve
  - New developments may spur new transportation needs
  - Previously planned projects may no longer be needed
  - Community priorities may change

- Funding Sources May Change
  - Funding is not guaranteed, may go up or down
  - New funding sources may become available (HB 170)
Public Outreach – Public Input

- Attend a public meeting:
  - August 19, 2019 - 5:30 to 7:00 PM, location TBD
  - August 20, 2019 - 5:30 to 7:00 PM, location TBD
  
- Check the project website for updates.

**Project Survey**

Thank you for helping GWMPO plan the future of its transportation system. To start the online survey, please click on “Continue” in the green box at the bottom of this page. The online survey is available until June 3, 2019.

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**Gainesville-Hall MPO 2020 RTP: Study Area**

If you would like to receive project updates, please provide your contact information below.

Email: [Submit]

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**AUG 19**

Public Meeting for Gainesville-Hall 2020 Regional Transportation Plan

Monday, Aug 19, 5:30pm - Add to calendar

The project team will set up a booth to answer questions about the 2020 RTP.

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**AUG 20**

Public Meeting for Gainesville-Hall 2020 Regional Transportation Plan

Tuesday, Aug 20, 5:30pm - Add to calendar

The project team will hold a public meeting to share initial results.
# Social Media Campaign Matrix

<table>
<thead>
<tr>
<th>Platform</th>
<th>Content Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>Image Post</td>
<td>Promote event details and encourage attendance.</td>
</tr>
<tr>
<td>Instagram</td>
<td>Story</td>
<td>Showcase behind-the-scenes footage and photos.</td>
</tr>
<tr>
<td>Twitter</td>
<td>Tweet</td>
<td>Share event updates and encourage engagement.</td>
</tr>
<tr>
<td>LinkedIn</td>
<td>Article</td>
<td>Highlight event details and encourage professional networking.</td>
</tr>
</tbody>
</table>

## Social Media Campaign Strategy

1. **Pre-Campaign Phase**
   - Create buzz on social media platforms.
   - Engage with potential attendees.

2. **During the Event**
   - Live streaming and updates.
   - Interactive segments.

3. **Post-Event Phase**
   - Recap of the event on social media.
   - Feedback gathering and appreciation posts.

## Key Metrics

- **Engagement**: Measure likes, shares, comments, and followers.
- **Conversions**: Track sign-ups and event attendance.
- **ROI**: Calculate return on investment for each platform.

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Note: Content and strategy should be tailored to the specific event and audience.
Social Media - Results
Public Outreach – Survey Response

Add points to the map to indicate congestion, and leave us a comment
Public Outreach – Survey Response

• Add a point(s) to the map to indicate a location where you would like to see bus service offered.
Public Outreach – Pop-Ups and Meetings
Travel Demand and Travel Time Index Data
Safety Analyses – Crash Locations
Safety Analyses – High Crash Segments
Where do you live and Work?
Identified Congestion

Identified Safety Concern
## Incorporating Performance-Based Planning

### Quantitative

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Reported Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck Use</td>
<td>Percent</td>
</tr>
<tr>
<td>Congestion</td>
<td>2015 Base Year Volume-to-Capacity (V/C)</td>
</tr>
<tr>
<td></td>
<td>2050 Base Year V/C</td>
</tr>
<tr>
<td></td>
<td>Change in V/C (2015 to 2050)</td>
</tr>
<tr>
<td>Safety</td>
<td>Bike/Ped Crashes (All, Injury &amp; Fatality)</td>
</tr>
<tr>
<td></td>
<td>Crash Rates (All, Injury &amp; Fatality)</td>
</tr>
</tbody>
</table>

### Qualitative

<table>
<thead>
<tr>
<th>Category</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freight</td>
<td>Supports Freight</td>
</tr>
<tr>
<td>Tourism</td>
<td>Supports Tourism</td>
</tr>
<tr>
<td>Other</td>
<td>Planned Bike/Ped Facilities</td>
</tr>
<tr>
<td></td>
<td>Existing / Planned Transit</td>
</tr>
<tr>
<td></td>
<td>Regional Multimodal Connections</td>
</tr>
<tr>
<td></td>
<td>Improved Access to Airport</td>
</tr>
<tr>
<td></td>
<td>Impacts to Natural Resources</td>
</tr>
<tr>
<td>Outreach</td>
<td>Local Support</td>
</tr>
<tr>
<td></td>
<td>Impacts to Historic Resources</td>
</tr>
</tbody>
</table>
Recommendations!
Thank you and Questions

• Joseph Boyd, AICP jobyd@hallcounty.org
• Steve Cote, AICP steve.cote@rsandh.com
• Caroline Evans, AICP caroline.evans@bluecypress-consulting.com