SEMCOG Innovative Traffic Data Quality Assurance / Quality Control (QA/QC) Procedures

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About SEMCOG

- Established 1968 COG and 1974 MPO
  - 11 largest MPO with respect to Population
  - 4.8 million people
  - 4 million vehicles / 3.4 million drivers
  - 57 billion annual vehicle miles traveled
  - 23,000 miles of road
  - 3,560 bridges
  - 27.5 million vehicles crossing our borders annually
In 1997 we took a look at our traffic count program and realized that the program was not working. We were collecting data from many sources it was very fragmented. Questionable data quality. This was a problem because counts are used for planning, modeling, and making decisions for our region. We really had to do something to streamline the data. So we decided to better understand what we had with respect to traffic count program and see how we can fix it.
Late 1997 - Findings

Our findings:
• Data Collection
• Quality
• Inefficiency

UNSUSTAINABLE COUNT PROGRAM

From our assessment, we found that ...

Agencies that provided counts to SEMCOG were all doing there own thing.

Lack of quality control excepted counts face value, data entry issues.

SEMCOG was spending a lot of time entering data and not analyzing data.
Focused on two counties programs Oakland and Wayne county.
SEMCOG met with the consultant that created the program for the two counties.
SEMCOG was impressed and formed a Traffic Count Committee to discuss the potential to move to a new software platform.
Traffic Count Committee was divided but we moved forward.
SEMCOG worked with the consultant for 6 months to improve the software program.
Mid 1998 the new traffic volume software was implemented as SEMCOG’s standard.
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In order for our program to be successful, we needed buy-in from the 7 county road commissions and the City of Detroit.

SEMCOG decided to purchase the new software for the 7 counties and the City of Detroit and pay the yearly maintenance fees.

BUY-IN Success
State DOT

- Data from State DOT
- Format
- Seasonal Factors
- HPMS

Yearly download of data in State format
Worked with consultant to convert state format to SEMCOG format
State PTR in our region used to develop seasonal factors for our region
Send AADT data back to MDOT for HPMS submittal
20 years later

- State of the Art Traffic Count Program

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- Michigan Department of Transportation 2018
  - Program update

Traffic Count Database System
County Road Commissions and the City of Detroit
Uniform traffic count submittal
Easy access to counts
Web based system
Data is stored offsite
Data visualization / interaction

2018 MDOT switched to same software as SEMCOG and transfers are now seamless.
QA/QC – Validity Process

• Multi Level QA/QC Practice
  – Data collection level
    • QA/QC built into software that Counties and City of Detroit use to enter data.
    – Counts are flagged based on a series of parameters entered into the software.
    – Technicians entering data can accept, fix, or reject counts based on flags.
  – SEMCOG data usage level
    • SFMCOG downloads data annually from our users.
    – A 46 step count validity process is used to further eliminate counts that do not meet SFMCOG standards (outlined in Case Study FHWA-SA-17-035)

Scripting to fill gaps!

SOUTHEAST MICHIGAN COUNCIL OF GOVERNMENTS, INNOVATIVE TRAFFIC DATA QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES AND AUTOMATING AADT ESTIMATION CASE STUDY, FHWA-SA-17-035 Documents our 46 step count validity process.
Lessons Learned

- Understanding your program
  - “Knowing yourself is the beginning of all wisdom.” — Aristotle
- Know your end result
  - Understand where you want to be
- Get stakeholders involved early
  - Don’t let obstacle hold you back
- Quality Standards
  - QA
  - QC
- Institutional Change
  - Don’t tell other agencies how to run their program offer options
Lessons Learned

- Develop a sustainable solution
  » Be realistic
  » Empty promises
- Ask for help
  » You don’t have the answer for everything
  » Don’t reinvent what’s been invented
- Follow-up and Follow-through
  » Everyone is informed
- Continuous improvement
  » Is not perfection
  » Monitor your results
  » Patience
Safety Program

- We have an entire section of our website dedicated to Safety.
- We developed the Southeast Michigan Traffic Safety Plan in partnership with MDOT. The Safety Plan was to respond to the burden that Traffic Crashes have on our region (medical and insurance costs, lost production potential, delay of other drivers and freight). The plan provides a data driven comprehensive approach to identifying key safety needs and guide investment decisions aimed to reduce fatalities and serious injuries.
- Analyze annual traffic crash data to identify key traffic safety challenges and promote effective solutions.
- By law, all law enforcement agencies are required to submit qualifying crash reports (UD-10) to the MSP.
- Traffic Crash Reporting Unit Criminal Justice Information Center
- Providing technical assistance in order to identify specific traffic safety concerns and countermeasures to improve safety performance; and Working with safety partners in the region to implement strategies which integrate the four E's of traffic safety: engineering, education, enforcement and emergency medical services.
- Walk.Bike.Drive Safe is SEMCOG's educational campaign to encourage safe transportation choices. Graphic resources, safety tips, as well as explanations of state laws, infrastructure, and signage, are available.
Contact information

*Southeast Michigan Council of Governments*

[www.semcog.org](http://www.semcog.org)

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