

Improved Fleet-Efficiency via Telematics



Dallas-Fort Worth
CLEAN CITIES



February 26, 2019, 1:30-2:30 pm



Hosted by Dallas-Fort Worth Clean Cities Coalition



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Agenda



Brief Introductions



Telematics Overview



Fleet Success Story: City of Arlington



Fleet Success Story: Snohomish County Sheriff's Office



Q&A

Today's Presenters

David Garcia

*North Central Texas COG and
Dallas-Fort Worth Clean Cities*

Topic: *Telematics Overview*

Ricky Williams

City of Arlington

Topic: *Convenience of Telematics & Cost-Savings*

Rob Beidler

Snohomish County Sheriff's Office

Topic: *Safety Benefits of Telematics*

What is Vehicle Telematics?



Telematics is a technology that utilizes informatics and telecommunications for various applications



Vehicle telematics relays vehicle data over long distances to central offices for access and analysis

How Does it Work?



Technological advancements in telecommunications and informatics has enabled vehicles to **“connect”** and **“communicate”**

Connectivity + Intelligence = **Connected Vehicles**

Factors to Consider When Using Telematics



What are the **top priorities** for my fleet?



What **data** do I need to address those top priorities?



Choosing a telematics software based on data needs and other important needs

Why Consider Telematics?



Can provide real-time alerts regarding vehicle operations, maintenance, and location



Enables evaluation of driver behavior and vehicle performance to improve fleet efficiency and safety



Can address inefficient practices that waste time and money

Access to Telematics Data



Data is collected and transmitted to service provider



Software analyzes the data to reveal performance indicators based on identified fleet priorities



Customize your program to track vehicle data that suits your purposes

How Does it Work? Data Sources

Combines Two Data Sources:

- **GPS**
 - Spatial and temporal information of the vehicle
- **On-Board Diagnostics (OBD)**
 - A vehicle's computer system that monitors performance of major engine components



Vehicle telematics
tracks location,
movement, and
behavior of a vehicle

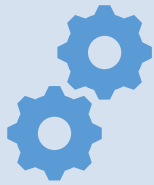
OBD Systems by Vehicle Type

OBD-II	J1939
New standard for LD Vehicles (Classes 2-4)	For MD & HD Vehicles (Classes 4-8)
Specific channels must be requested in back-and-forth communication	Live stream of data broadcasted in channels
Less efficient	More efficient as data can be accessed directly (live feed)

Data Available with Telematics

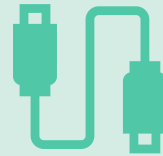
GPS and Route Data	Vehicle and Engine Data
Location coordinates	Engine and vehicle speeds
Time	Acceleration and braking
Speed	NO _x sensor
Ambient conditions	Exhaust temperatures
Route profiles	Engine fluid temperatures

How Does it Work? Telematics Options



Embedded Devices

Built-in *connectivity*
and *intelligence*



Tethered Devices

Built-in *intelligence*
only, *connectivity*
provided externally



Integrated Smartphones

Leverages its
connectivity and
intelligence

OEM Telematics Availability

The “**connected vehicle**” is a major trend in the industry—virtually all leading car manufacturers have telematics services in key geographic regions

Leading adopters of embedded telematics include: GM, BMW, and PSA

Other major car brands include: Mercedes-Benz, Hyundai, Volvo, Toyota, and Tesla

Benefits of Telematics: Cost Savings

Cost Savings

Better driving habits improve fuel economy

Maintenance reminders

Route optimization

Reduced insurance premiums

Benefits of Telematics: Convenience

Convenience
Automated record keeping
GPS monitoring
Asset management
Improved on-time performance

Benefits of Telematics: Safety

Safety

Alerts when vehicle operates outside designated area and time slots

Encourages lawful driving (e.g. Speed alerts)

Promotes safer roadway networks

Success Stories: California



Eastern Municipal Water District of Riverside County, California



350-vehicle fleet



Objectives: Initially focused on driver's habits, improving mpg while reducing accident risk. System allowed supervisors to more efficiently dispatch vehicles.



Solution: Install telematics OBD-II systems on all 1996 or newer vehicles, allowing them to remotely monitor engine diagnostics, fault codes, and emissions control system status.



Results: Employees drove *~165,000 fewer miles* and *fuel costs declined ~\$79,000* compared to the previous year. Productivity savings valued at *nearly \$354,000 in first six months alone*.

Success Stories: New Mexico



Public Service Company of New Mexico



700-vehicle fleet



Objectives: Transition a portion of fleet to PHEVs and EVs with included EVSE infrastructure, while monitoring fleet performance, and driver behavior through telematics

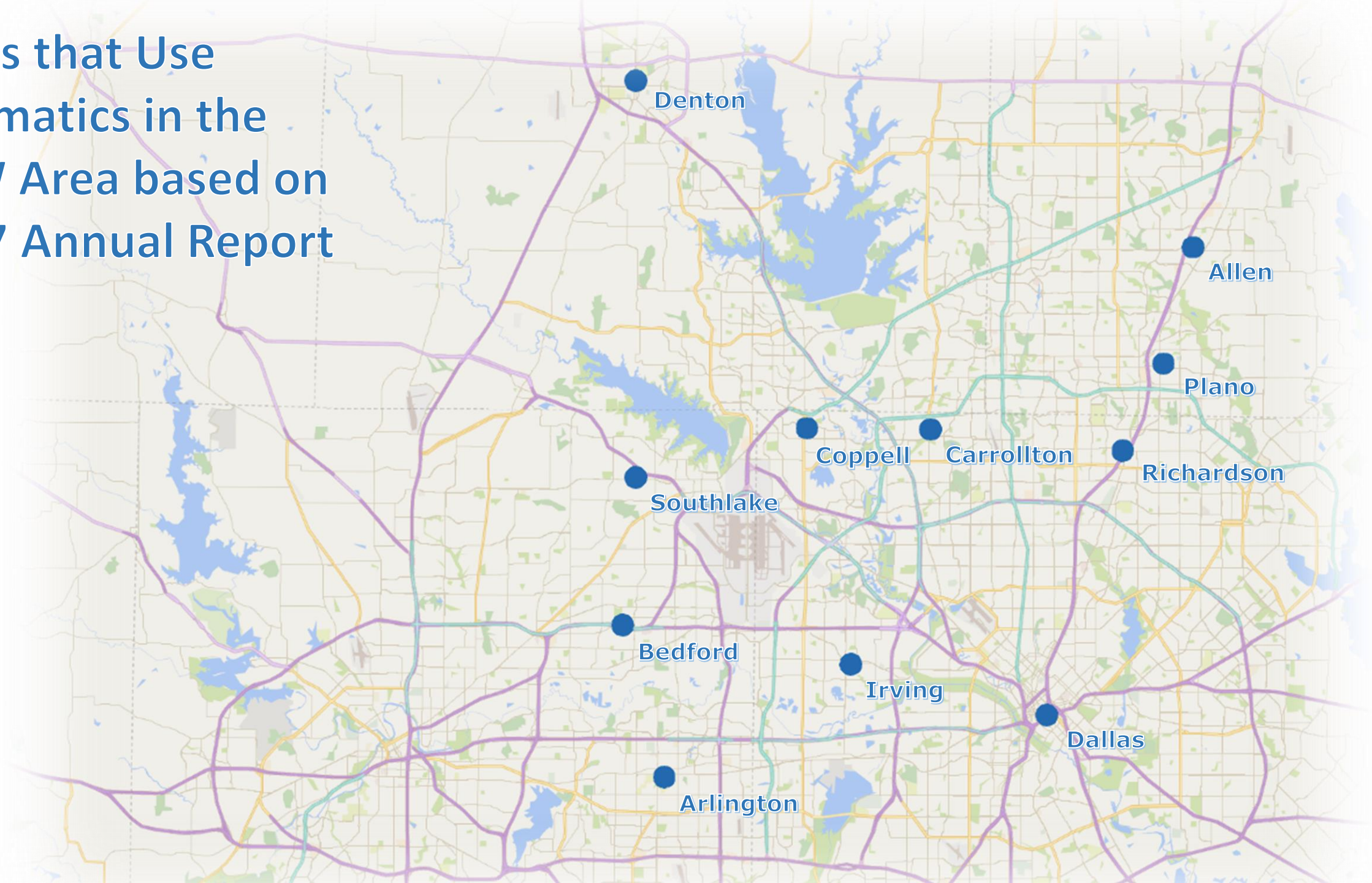


Telematics Results: Improved the fleet's average fuel economy by 15%.



Combined Results: 606 tons of GHGs reduced annually, and a cost savings of around \$166,000 per year.

Cities that Use Telematics in the DFW Area based on 2017 Annual Report





GPS and Telematics

GPS

Powered by



CITY OF ARLINGTON
CURRENTLY HAS 305 GPS'S
INSTALLED ON EQUIPMENT.



PUBLIC WORKS HAS
115



WATER DEPARTMENT HAS
69



CODE/ANIMAL CODE HAS
56



INSPECTIONS HAS
29



FIRE DEPARTMENT HAS
36



Route activity



Fuel Usage



Driver
Behavior



Idling



Maintenance

GPS and Telematics

What Are We Doing?

PARTNERSHIPS

- Below 100 Organization
- NHTSA
- Risk Management
- Fleet
- Labor Groups/Leadership
- LEO Near Miss
- Municipal/State LE agencies
- Telogis
- WSTSC
- Behind the Badge Foundation



Integration to Training

- FTO Program
- EVOC Program
- Essential Skills Training
- Supervisor Training
- Below 100 Roll Call Training
- Near Miss Roll Call Training
- Below 100 Spouses Training
- Dispatch Center Supervisors



Changing Agency Culture

- **Pursuit Policy**

- Decrease pursuits through training and education
- Increase direct supervision
- Better define need for a pursuit

- **Driving Review Board**

- Consistency in findings
- Identify training needs
- Identify trends
- Education and support opportunity



**THINK
OUTSIDE
THE
BOX**



Changing Agency Culture

Telematics – A Powerful Tool

- Speed and seatbelt
- Overall vehicle operation
- Airbag deployment
- Emergency locate
- Vehicle malfunction
- Drivers scoring
- Operational advantages
- Significant fleet savings



CHANGING AGENCY CULTURE

- Promotional Testing
- Expenditures
- Mission and Goals
- Upgraded Armor
- Upgrade Lighting Systems
- Visual
 - Posters
 - Stickers
 - Computer screen
 - Data updates



Overview

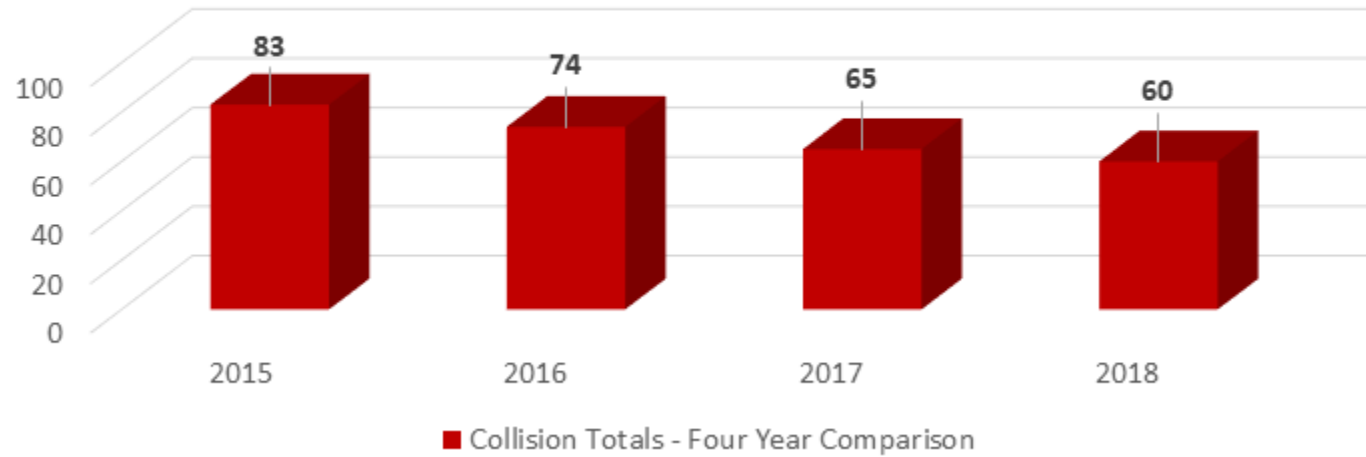
- We drive over 350,000 miles per month
- Fully Commissioned Deputies = 300
- Personnel = 800
- **Since 2015:**
 - Average speed of accidents down 50%-70%
 - The number of pursuits went down ~30%
 - One significant injury. (Eleven in 2015)

Are we saving lives?

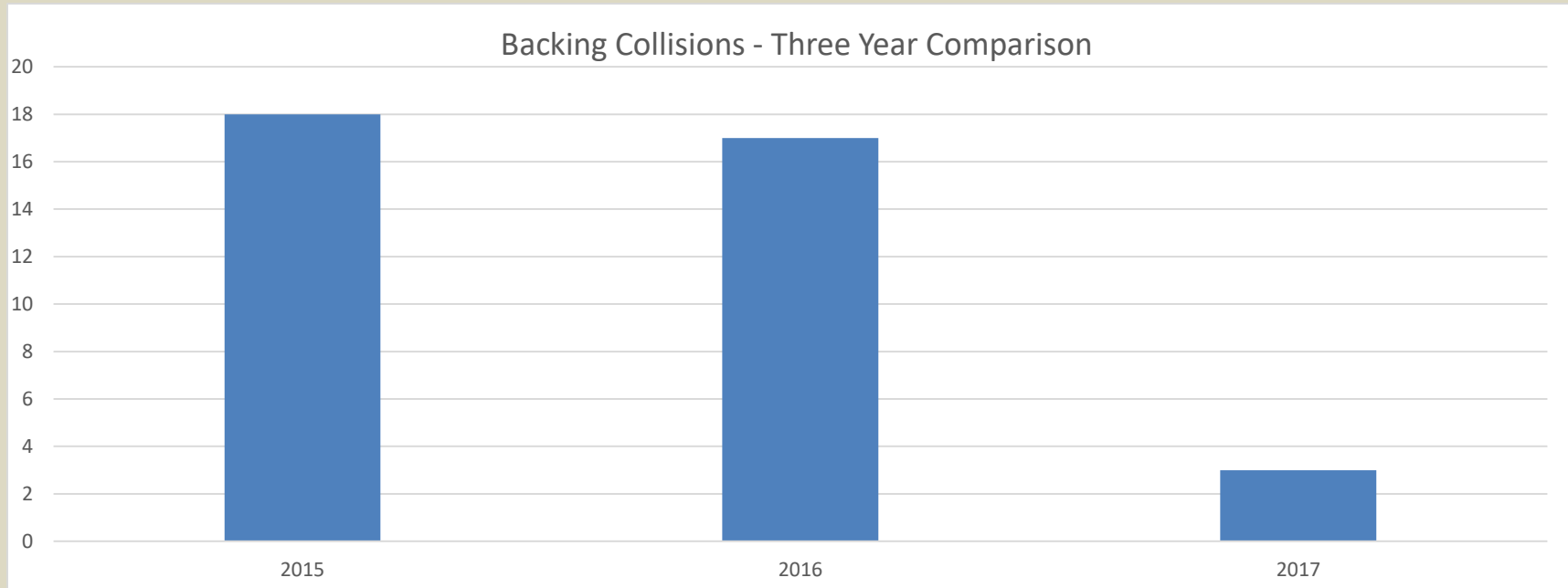


Collision Trend

Collision Totals - Four Year Comparison

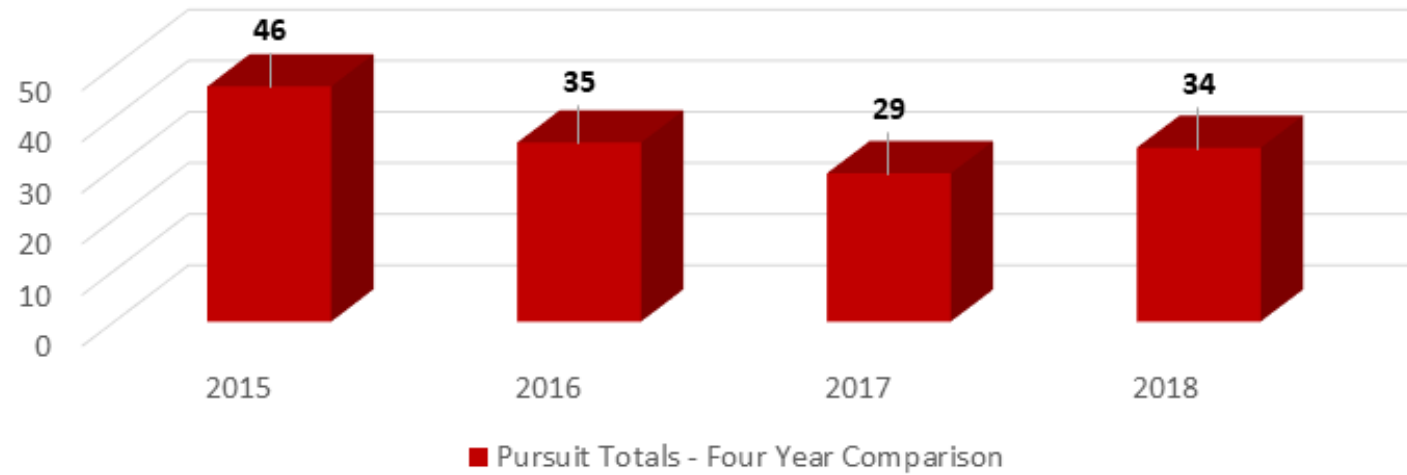


Does Backing Training Work?

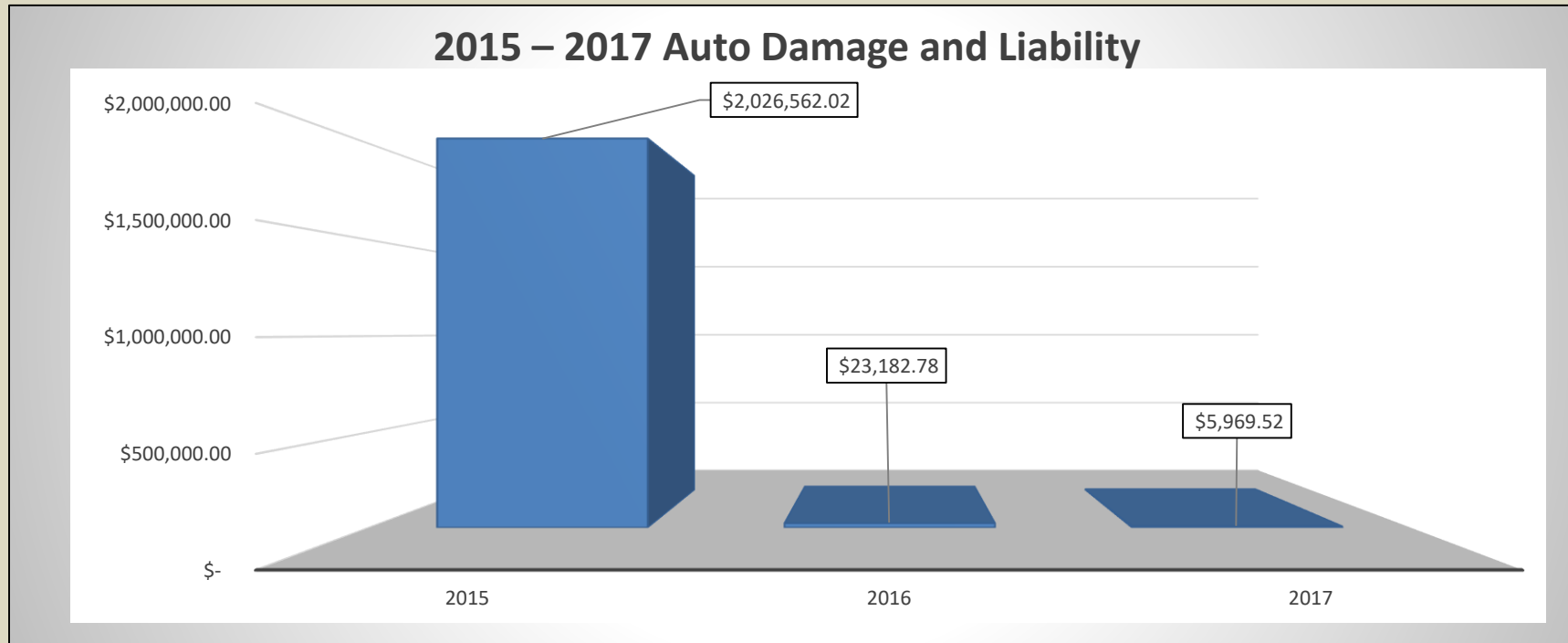


Pursuit Trend

Pursuit Totals - Four Year Comparison



Saving Money??



What's your role?





*"I Lost the Love of
My Life.*

*My Children Lost
Their Dad.*

*Don't Let This
Happen to Your
Family."*

Susan Moody
Wife of Officer Bradley A. Moody
EOW 10-07-2008

**Wear Your Seatbelt.
Watch Your Speed.**



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This is no way to visit friends.



Remember: Complacency Kills!

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BELOW 100 MESSAGING - ONGOING



Questions?