“IF YOU CAN’T EXPLAIN IT SIMPLY, YOU DON’T UNDERSTAND IT WELL ENOUGH” —Albert Einstein
WHY DOES THIS SUBJECT MATTER TO GOVERNMENT COMMUNICATORS?

• Improve the public debate about your program
• Engage key stakeholders
• Increase awareness among your colleagues
• Educate the media
• Make your website more useful
• Improve your presentations
BEFORE WE GET STARTED, A LITTLE ABOUT

RESEARCH AT THE U.S. DEPARTMENT OF TRANSPORTATION
TRANSPORTATION IN THE U.S. IS MORE COMPLEX THAN YOU KNOW

- Connected vehicles
- Automated vehicles
- Vehicle-to-vehicle (V2V), vehicle-to-infrastructure (V2I), and vehicle-to-pedestrian (V2P) communications
- Smart cities
- Big data
- Mobility on demand
- Pedestrian safety
- Accessible transportation
- Emerging technologies
- Road weather safety
- Much, much more
ITS JPO FUNDS AND COORDINATES THE USDOT’S RESEARCH
WHAT ARE CONNECTED VEHICLES AND HOW DO THEY WORK?
IMAGINE A TRANSPORTATION SYSTEM IN WHICH VEHICLES CAN SENSE & COMMUNICATE THINGS THAT YOU CAN’T.
CONNECTED VEHICLES ARE COMING AND THE PUBLIC DOES NOT UNDERSTAND THEM

- Connected Vehicle Safety Pilot Begins
- NHTSA Decision to Move Forward with Connected Vehicle Rulemaking
- Application Development
- Selection of Connected Vehicle Pilot Deployment Sites
- Launch of Smart City Challenge (Ends 2019)
- NHTSA NPRM on V2V for Light Duty Vehicles
- FHWA V2I Deployment Guidance
- Final: FHWA Guidance
- Security Credential Management System Proof of Concept
- Advanced Transportation & Congestion Management Technology Deployment Initiative (Through 2020)
- Connected Vehicle Pilots Phase 2 Award
- Announcement of Columbus as Smart City Challenge Winner
- Safety Pilot Data Released on Research Data Exchange
- General Motors 2017 Cadillac CTS Equipped with V2V Communications Technology
- Connected Vehicle Pilot Sites Begin Operation
CONNECTED VEHICLES ARE ON OUR STREETS TODAY

V2V SAFETY TECHNOLOGY IS NOW STANDARD IN CADILLAC CTS SEDANS
THOUSANDS OF NEW CONNECTED VEHICLES WILL HIT THE STREETS NEXT YEAR
‘TALKING’ CARS?
THEY NEED TO HAPPEN, FEDS SAY
CONNECTED VEHICLE TECHNOLOGY IS FAR MORE COMPLEX THAN JUST “TALKING CARS”

- Standards and architecture
- One language among all cars
- Applications
- Real-world testing
- Big data
- V2V, V2I, V2P, vehicle-to-everything (V2X)
- Secure communication between vehicles
- Policy
- Cyber security
- International harmonization
- 5.9GHz spectrum
OUR KEY COMMUNICATIONS CHALLENGES

- Connected vehicles are in very limited use today.
- Many don’t understand the safety, mobility, and environmental benefits of connected vehicles.
- Certain industries will be directly impacted by the technology, but they are not aware of it.
- Some mistakenly believe that connected vehicle technology is similar to the technology in cars today.
SOME OF OUR KEY MESSAGES

• Connected vehicles are coming.
• Connected vehicles can significantly reduce most unimpaired car crashes, mitigate traffic congestion, and curb pollution.
• Connected vehicles are being tested in real-world environments today.
• Connected vehicles will protect your privacy.
• The automated vehicles of the future will be based on connected vehicle technology.
• Communities should begin preparing for connected vehicles today.
7 RULES FOR COMMUNICATING COMPLEX IDEAS TO THE GENERAL PUBLIC

1. Know your audience and identify what you want to accomplish
2. Find ways to make it matter to them
3. Explain concepts using information they already understand
4. Whenever possible, use an image
5. Tell stories and use analogies
6. Avoid jargon
7. Anticipate problem areas where people will question or challenge what you are communicating
1. KNOW YOUR AUDIENCE

IDENTIFY WHAT YOU WANT TO ACCOMPLISH
KNOW YOUR AUDIENCE

- Why is this audience interested in your research and/or program
- How will your program benefit them
- How much knowledge do they have about your program
- How can you tailor your message to this audience
## Some of Our Target Audiences

<table>
<thead>
<tr>
<th>Stakeholder</th>
<th>USDOT's Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic Engineers</td>
<td>Deploy V2I technology</td>
</tr>
<tr>
<td>Technology/Data Firms</td>
<td>Develop new applications</td>
</tr>
<tr>
<td>City Planners</td>
<td>Include connected vehicles in the planning process</td>
</tr>
<tr>
<td>Car Rental/Leasing/Taxi Firms</td>
<td>Prepare for new cars with connected vehicle technology</td>
</tr>
<tr>
<td>Aftermarket Firms</td>
<td>Develop devices for older cars</td>
</tr>
</tbody>
</table>
TARGET YOUR MESSAGE TO YOUR AUDIENCE
2. WHY IT MATTERS

FIND WAYS TO MAKE IT MATTER TO YOUR AUDIENCE
HOW TO CONNECT WITH YOUR AUDIENCE

• Research the organization beforehand
• Identify the nexus between your research and the audience’s interest
• Find ways to personalize how your program will benefit the audience
• Understand their problems
3. EXPLAIN CONCEPTS

USE INFORMATION THAT THE AUDIENCE ALREADY UNDERSTANDS
EXPLAIN CONCEPTS WITH INFOGRAPHICS

- **Do Not Pass Warning**
  Warns the driver that it is not safe to pass a slower moving vehicle if the passing zone is occupied by another vehicle.

- **Eco-Approach and Departure at Signalized Intersections**
  Traffic signals broadcast data about their current signal phase and timing (SPGT). Vehicle applications use these data to determine speed advice that can be presented to drivers allowing them to adapt their vehicle’s speed to pass the next traffic signal on green or to decelerate to a stop in the most eco-friendly manner. More advanced applications leverage cooperative adaptive cruise control (CACC) capabilities. Start-stop technology may be used to turn the vehicle’s engine off while the vehicle is stopped at a red light.

- **Information and Routing Support for Emergency Responders**
  Provides information on determining road and weather conditions on specific roadway segments to emergency responders, including extrication operator, paramedics, and fire and rescue organizations, to determine response routes, calculate response times, and influence decisions to hand off an emergency call from one responder to another responder in a different location.
INSIDE A CONNECTED VEHICLE

1. An under-the-hood box (a processor with memory) collects and transmits data between the vehicle’s onboard equipment (OBE) and between OBE on near-by connected vehicles and safety devices along the roadside.

2. A display panel, sitting in the vehicle’s center console opposite the driver’s dashboard, displays audio or visual safety warnings to the driver.

3. A radio and antenna, using dedicated short-range communications (DSRC) and a GPS receiver, receive and transmit data about the vehicle’s position to other vehicles and to safety devices along the roadway.

4. Sensors collect additional information that improves the accuracy of the data being collected and transmitted by the vehicle.
4. USE IMAGES WHENEVER POSSIBLE
CONNECTED VEHICLE ANIMATION: MOBILITY
CONNECT VEHICLE IMAGES
5. STORY TELLING

TELL STORIES AND USE ANALOGIES
This is Lauren. She has an important meeting at work today.

Lauren is heading to work on a code red air quality day. She looks at her tablet and chooses the least polluting travel route which has the fewest number of stops and starts. Unlike today’s applications, Lauren is able to get multimodal travel data at one time.

Because of increasing pollution levels along Lauren’s route, she is asked to adjust her speed to avoid a potential traffic jam. Lauren’s car will give off fewer emissions.

The message telling Lauren to adjust her speed is coming from a special Eco-Traffic Signal that helps optimize vehicle speeds so that they produce fewer emissions.
6. AVOID JARGON

ASSUME YOUR AUDIENCE DOESN’T KNOW THE “LATEST TERMS”
7. QUESTIONS?

ANTICIPATE AREAS THAT THE AUDIENCE MIGHT QUESTION OR CHALLENGE
COMMON QUESTIONS ABOUT CONNECTED VEHICLE

- How long will it take before I see these cars in my dealership?
- How much will this technology increase the cost of a new car?
- How is my privacy protected?
- Will the system be secure?
- What are the challenges to deploying this technology?
- How is this different from the technology that is in cars today?
- How do connected vehicles relate to automated vehicles?
- What are the safety benefits of connected vehicles?
- Will connected vehicle technology work on public transportation?
- What is the USDOT’s role in the development of the technology?
- Will my community have to make any changes to accommodate these new vehicles?
- What are the next steps?
*BONUS TIP*

KNOW WHAT TO LEAVE OUT

- If a talking point will generate questions you can’t answer, don’t use it.
- If it is not clear whether your administration is on board with a talking point, don’t use it.
- If the talking point is so controversial people won’t pay attention to the rest of your message, don’t use it.
## Ways USDOT Can Simplify Complex Terms

<table>
<thead>
<tr>
<th>Jargon</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedicated Short-Range Communications (DSRC)</td>
<td>Wi-Fi for cars</td>
</tr>
<tr>
<td>Interoperability</td>
<td>All cars speak one language</td>
</tr>
<tr>
<td>Pilot</td>
<td>Real-world testing with everyday drivers</td>
</tr>
<tr>
<td>Security Credential Management System (SCMS)</td>
<td>Secure communications between vehicles</td>
</tr>
<tr>
<td>Connected Vehicle Reference Implementation Architecture (CVRIA)</td>
<td>Everything that connects to a connected vehicle environment needs to have the same standards</td>
</tr>
<tr>
<td>Research Data Exchange</td>
<td>Web site where application developers can get access to free open source data</td>
</tr>
</tbody>
</table>
ONE FINAL THOUGHT...

“IT'S MUCH EASIER TO BE CONVINCING IF YOU CARE ABOUT YOUR TOPIC. FIGURE OUT WHAT'S IMPORTANT TO YOU ABOUT YOUR MESSAGE AND SPEAK FROM THE HEART.”

—Nicholas Boothman
FOR MORE INFORMATION

Mike Pina
USDOT / ITS JPO
Mike.pina@dot.gov

Twitter: @ITSJPODirector
Facebook: www.facebook.com/DOTRITA
Website: www.its.dot.gov