CENTRAL FLORIDA TSM&O CONSORTIUM MEETING SUMMARY

Meeting Date: September 11, 2025 (Thursday)   **Time**: 10:00 AM – 12:00 PM

Subject: TSM&O Consortium Meeting

Meeting Location: FDOT District Five RTMC (4975 Wilson Rd., Sanford, FL 32771)
and Teleconference

I. OVERVIEW

The purpose of this recurring meeting is to provide an opportunity for District Five FDOT staff and local/regional agency partners to collaborate on the state of the TSM&O Program and ongoing efforts in Central Florida. Jeremy Dilmore gave a short introduction and outlined the meeting agenda.

II. FDOT DISTRICT FIVE ITS MASTER PLAN

Dale Cody (Metric) presented on the District Five ITS Master Plan Update.

- Over the next 3 meetings, Dale will provide the cliff notes version of the Master Plan Update.
- This update is a check-in, not a completely new version.
- The ITS Master Plan will be completed by **February 2026**.
- ITS Master Plan Tech Memo Schedule:
    - Review of the previous master plan submitted in July 2025.
    - Existing conditions draft submitted in September 2025.
    - Arterial and freeway rollout planned for November 2025.
    - CV/AI component scheduled for December 2025.
    - Final ITS Master Plan completion by February 2026
- Progress to Date:
    - Met with 4 Transportation Planning Organizations (TPOs) and 13 large operator/maintainer agencies.
    - Stakeholder reviews are ongoing
- Lessons learned from Previous ITS Master Plans:
    - Regional Standards: Standardization of ITS devices, software licensing, asset management, and operations/maintenance practices.
    - Network and Security: Transition to advanced routing protocols (e.g., BGP), fiber connections, firewalls used by each agency or Service Level Agreement (SLA) for FDOT to manage, and centralized user account databases.
    - Data Sharing: Use of JSON/XML formats, regional data hosting by FDOT, and integration with systems like SunStore and Kafka for third party data.
    - Planning Level Recommendations: Use the Capability Maturity Model (CMM) to assess

readiness for and progress toward AI applications in ITS
- o Connected Vehicle (CV) Recommendations:
  - ▪ Progress in CV applications, including I-75 and I-4 FRAME projects.
  - ▪ Deployment of RSUs, signalization improvements, and OBUs for emergency vehicle preemption (EVP).
  - ▪ Lessons learned from previous projects to improve future implementations
- ITS Equipment:
  - o Keeping spare cabinets has been an issue across the board
  - o Utilize no more than 2 different vehicle detection technologies to reduce the amount of training needed as well as the amount of spare parts needed
- Staffing and Training:
  - o Increased workloads necessitate additional staffing.
  - o FDOT established the TSM&O FLEX Portal eLearning platform to make available online courses related to Traffic Operations, ITS Maintenance, and TSM&O concepts
  - o Training programs include SHRP-2 maintenance responder courses and TSM&O technician videos for workforce development
  - o Keeping spare cabinets has been an issue across the board
- Summary of Findings
  - o Recommendations of 2016 ITS Master Plan have been exceeded in several areas
  - o Both FDOT and Operator/Maintainer agencies have advanced their programs well and are well-poised for success as technology advances

Q&A Discussion

- Eric Hill suggested including a narrative on regional successes from ITS/TSMO implementation since 2016. What has been achieved? This would be useful for advocating for TSM&O
  - o Dale indicated they will add this content to the first memo.

III.   SPECIAL EVENT COORDINATION – DAYTONA INTERNATIONAL SPEEDWAY

James Floyd presented on traffic operations coordination at the Daytona International Speedway.

- Goals:
  - o Enhance guest experience through GPS-guided routes for parking and navigation.
  - o Integration with ticketing systems for efficient parking management
  - o Complete traffic disbursement within 2 hours after event ends.
- Security Department Responsibilities
  - o Security, traffic management, navigation, parking, and communication systems
  - o Off-site parking transportation
- Have worked with FDOT for over 5 years.
- Goal: Complete traffic disbursement within 2 hours after event ends.
- 2024 Coke Zero 400
  - o Achieved highest score in Traffic & Operations Survey following the event in the history of the Speedway
- For Daytona 500, transported 12,000 people from offsite locations.
- Planning for Q1 events to begin soon.

- Use pre-event communication to encourage certain routing and parking prior to event; Speedway team reach ~50% of guests
- 17 DMS boards deployed near the Speedway.
    - Additional messages provided as early as DeLand and Ormond Beach.
- What's next
    - Integrating web applications to reach guests when they are enroute to Speedway
    - Pre-determined GPS-guided routes for each parking lot
    - Integrated systems to provide additional data to team, including number of parking tickets sold, to improve traffic operations efforts

IV. CFLSMARTROADS.COM – ITS DESIGN RESOURCES

David Williams provided a brief overview of various resources available on www.CFLSmartRoads.com, hosted and maintained by FDOT District Five.

- Traffic Operations Resources:
    - Systems engineering materials, ITS master plans, ITS design documentation and examples, procurement materials, and integrated corridor management resources
- Design Resources:
    - Guidelines for traffic signal plan preparation, smart signal design guidance, and example project plans.
    - Tools and data like KML maps for conduit access points and fiber optic cable locations, as well as dashboards
- Training Resources:
    - TSM&O FLEX Portal offering on-demand eLearning for traffic signals, systems engineering, ITS fiber design, and vendor-specific training

Design & Plans Production
- ITS Enclosure Labeling Convention
- D5 Mile Markers
- ITS Scoping Considerations
- Design Review Checklist
- ITS Certification Form
- TSP / MSP / Project Plan Examples
- Example Project Plans and Details
- Wrong Way Driving
- PTMS / MVDS
- Connected Vehicle

Network Integration & Maintenance
- Installation & Deployment Guide Template
- Upgrading Bosch AutoDome Camera Firmware to NTCIP
- Field Device Resources
- SOPs for CCTV Cameras
- Sunguide Device Information (.xlsx)
- Signal Information Collection Form (.xlsx)
- KML File - Conduit Access Points
- KML File - Conduit Duct Bank and Fiber Optic Cable

- Best Practices for ITS Design
    - For *Pavement Only Projects (POP)*, utilize *Signal* plans instead of putting them in *Signing & Pavement Markings (S&PM)* plans
    - Ensure the intersection is fully visible on plan sheets; avoid locating intersection near match lines
    - Use *Tabulation of Quantities* sheets and *Pedestrian Detail* inset
    - EOR must ensure maintenance responsibilities for ITS equipment are clearly defined and accepted by the local agency and the Department

- Workforce Development Training
    - The Workforce Development Training series, typically held in Spring, will also be held in Fall 2025
        - Basic Cabinet and Field Equipment – October 6th at 9:00am
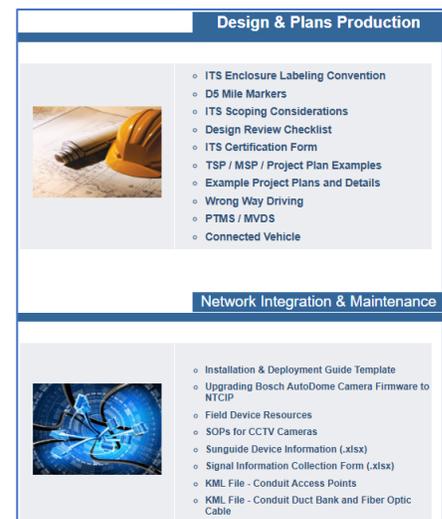
- Traffic Signal Timing Basics – October 13th at 9 AM
- Traffic Signal Controller Programming – October 20th at 9 AM
- CMS and TSP – October 27th at 9 AM
- Signal Maintenance – November 3rd at 9 AM
- ATMS Monitoring and Programming – November 17th at 9 AM
- SIIA and NOEMI – December 1st at 9 AM

V.   BUILD AMERICA, BUY AMERICA UPDATES

Daniel Simpson (FDOT) discussed the recent updates to Build America, Buy America (BABA), and how they will impact projects in Central Florida moving forward.

- Overview of BABA
  - **Iron and Steel**: All manufacturing processes, including melting, coating, and finishing, must occur within the United States.
  - **Manufactured Products**:
    - The product must be made in the U.S.
    - More than **55% of the cost of its components** must come from U.S.-sourced materials.
  - **Construction Materials**: All manufacturing processes for construction materials must take place in the U.S.
- General Waiver – Rescinded
  - For over 40 years, a **Manufactured Products General Waiver** allowed certain exceptions to the Buy America requirements.
  - In **January 2025**, the Federal Highway Administration (FHWA) issued a **final rule** to rescind this waiver in **phases**:
    - **Phase 1**: For federalized projects obligated on or after **October 1, 2025**, the **final assembly** of all manufactured products must occur in the U.S.
    - **Phase 2**: For federalized projects obligated on or after **October 1, 2026**, in addition to the final assembly requirement, the **cost of components** that are mined, produced, or manufactured in the U.S. must exceed **55% of the total cost** of all components in the manufactured product
- While the general waiver is being rescinded, **project-specific waivers** can still be submitted under certain conditions:
  - **Non-availability of compliant products**: If compliant products are not available in sufficient quantity or quality.
  - **Public interest justifications**: If using non-compliant products is deemed to be in the public interest. This condition is harder to justify.
  - Approval is not guaranteed, and agencies must plan accordingly
- Approved Products List (APL)
  - Certain items on the APL will fall off at the end of 2025
  - EOR is required to design around equipment on the APL
  - District Five will work with agencies to update the Local Agency Preferences document
  - If product is not on the APL, Local Agencies are encouraged to ask vendors to get product added to the APL

- Vendors should visit the *Product Evaluation* webpage for more information about registering their product(s) on the APL
- https://www.fdot.gov/programmanagement/productevaluation/default.shtm
  - If product is not on the APL, has a waiver been submitted for use in 2026 for assembly requirement, or use in 2027 for 55%-manufactured requirement?
  - The Department has already submitted waiver requests for many Traffic Operations-related equipment, including UPS, Signals, Cabinets, and CCTVs
- Implications for Projects
  - Waiver process can take several months, which may delay project timelines if non-compliant materials are proposed
  - Agencies are encouraged to plan ahead and work closely with FDOT to avoid disruptions
  - Agencies should reach out if they're unsure about a proposed product

Q&A Discussion

- Have there been any successful waiver approvals to share?
  - None received yet; expecting updates soon
- The waiver for public interest requires a high burden of proof; unlikely to receive this waiver in normal circumstances

VI.   GLOBAL AUTOMOTIVE CONSUMER STUDY

David Williams provided a brief summary of the Global Automotive Consumer Study by Deloitte, conducted from October 2024 through December 2024.

- Vehicle Electrification:
  - Preferences for internal combustion engine in next vehicle purchase
  - For those choosing an EV as next vehicles, reasons include:
    - Lower fuel costs, concerns for environment, driving experience, incentives/subsidies, and less maintenance, among others
  - Most important aspect of EV charging experience includes:
    - Fast charging, accessibility of charging station, ease of use, personal security, etc.
  - Top concerns for driving an all-battery-powered EV include:
    - Driving range, time required to charge, cost/price premium, lack of public EV charging infrastructure, and cold weather performance
- Connectivity:
  - 63% of Americans said vehicle connectivity with smartphones was somewhat or very important in their next purchasing decision
  - There is limited trust in entities managing CV data
  - Survey respondents indicated a willingness to pay for additional CV services related to emergency assistance, automatic detection of vehicles and pedestrians, anti-theft tracking, and other features
- Mobility as a Service (MaaS):
  - There is limited consumer willingness (28%) to give up vehicle ownership for MaaS solutions in America

VII.   NEXT MEETING

- November 13, 2025

VIII.   ATTACHMENTS

- A – Presentation Slides
- B – Meeting agenda

END OF SUMMARY

This summary was prepared by David Williams and is provided as a summary (not verbatim) for use by the Consortium Members. The comments do not reflect FDOT's concurrence. Please review and send comments via e-mail to david.williams2@dot.state.fl.us *so the meeting summary can be finalized.*

Welcome to the
TSM&O Consortium Meeting
September 11, 2025

Meeting Agenda

1. FDOT District 5 ITS Master Plan
2. Special Event Coordination – Daytona International Speedway
3. CFLSmartRoads.com – Helpful Resources
4. Build America, Buy America (BABA)
5. Global Automotive Consumer Study
6. Current Initiatives

ITS Master Plan Update

FDOT District 5

Presented by
Dale Cody, PE, PTOE
Metric Engineering Inc.

Tech Memo Schedule

I. Review of Previous Master Plan/Lessons Learned – Submitted to FDOT in July 2025

II. Existing Conditions – Draft submitted to FDOT this month

III. Arterial and Freeway Rollout – November 2025

IV. CV/AI – December 2025

V. Overall Master Plan Complete – 2/1/26

FDOT

Progress to Date

Have met with 4 out of 5 TPOs

Have met with 13 large operator/maintainer agencies

Review of Previous Master Plan/Lessons Learned Tech Memo

- Updating per FDOT Review and one-on-one meetings with stakeholders; will be distributed for stakeholder review this month

Existing Conditions tech memo in progress

Review of Previous Master Plan/Lessons Learned

Regional Standards Recommendations

- ✓ All ITS devices and ancillary equipment utilized in the District by ITS and signal operator/maintainers to meet latest FDOT standards
- ✓ Regional ITS software licensing
- ✓ Regional ITS asset management
- ✓ Operations and maintenance standards

- Standard ITS testing and system acceptance
  - Progress has been made regionally as many templates have been created for individual edge case testing.
  - Lesson leaned – Documentation for overall system acceptance is still evolving.

Regional Standards Recommendations

✓ Standard ITS creation of Systems Engineering Documents

✓ Standard ITS Network/Re-IP addressing

✓ Regional Active Arterial Management (AAM)

- Standard use of non-number 2 key cabinet locks for cabinets with communications
  - Several agencies have moved or are in the process of moving away from #2 keys
- Standard common clock for all network and signal applications
  - A common clock has not been put in place. However, many more signals have been connected to the FDOT District 5 network, so the result is the same; as network time protocol server sync on windows servers all sync up to the main clock.
  - Lesson learned – A common clock is not necessarily needed for all controllers if they are all connected through the same network or networks that sync to the same time source.

Network and Security Recommendations

- ✓ Hub and spoke topology - Static Routing and gradually migrating to Border Gateway Protocol (BGP) with unique Autonomous System Number (ASN)

- ✓ Fiber Connection between the Agency Router and the District 5 Carrier Ethernet Switch (CES) - Use of Multiprotocol Label Switching (MPLS). Use of Multicast Source Discovery Protocol (MSDP)

- ✓ Firewalls be used by each agency or that they establish a mutually agreed upon Service Level Agreement (SLA) for FDOT to manage

- ✓ Firewall at the D5 Carrier Ethernet Switch

- ✓ Centrally managed user account database (i.e. Microsoft Active Directory)
  - RADIUS is used

Data Sharing Recommendations

- ✓ Format - JSON or XML

- ✓ FDOT District 5 can be the sole source of regional data.
  - Lesson Learned – The District is currently evaluating potentially scaling back the data that is housed based on what data is actually utilized.   Instead of hosting all data FDOT has pivoted to storing data that it produces and linking the other data sets that are owned by others.

- ✓ For 3rd party entities - Data can be published via SunGuide
  - FDOT has been using Kafka and Sunstore for 3rd party. SunGuide is also looking to move to Kafka.

- ✓ Access to a regional partner's data to be read only for Counties and Cities

Planning Level Recommendations

✓ **Use of the Capability Maturity Model (CMM)**
- A recent CMM workshop was held in late 2024 specifically on the topic of Artificial Intelligence (AI) in ITS.

Dimensions	Business and Relationship Dimensions				Technical Dimensions		
	Culture and Organization	Collaboration	Business Processes	Cybersecurity	AI Data and Infrastructure	AI Models and Applications	AI Integration and Operations
Subdimensions	Knowledge, Skills, and Abilities	Peer Cooperation	Business Case and Performance	Threat Awareness	Data Governance	Discovery and Understanding	Requirements Management
	Sponsorship and Leadership	Building Partnerships	Strategy, Policy, and Roadmapping	Scenario Planning	Data Selection and Sources	Model Development	System Design
	Value, Expectation, and Risk	Roles and Responsibilities	Budgeting for AI	Posture and Hygiene	Data Acquisition and Transmission	Model Evaluation	System Integration
	Fostering Innovation	Intra-agency Collaboration	Privacy and Trust	Infrastructure Protection	Data Quality Assurance	Application Deployment	Test and Evaluation
	Ethics and Equity	Effective Data Sharing	Process Transformation	Information Assurance	Data Storage and Curation	Human-AI Interactions	System Launch
	Organizational Structure	Use Case Alignment	Procurement	Resiliency and Recoverability	Data Processing and Enrichment	Application Performance Measures	Operational Feedback

FDOT

Connected Vehicle Recommendations

- Several CV Applications listed in the 2016 ITS Master Plan (see next slide)

- CV Progress in District
  - I-75 FRAME
    - RSUs, Signalization Improvements
  - I-4 FRAME
    - RSUs, Signalization Improvements, Blank Out Signs, OBUs for RR and Fire EVP
    - Divided into 2 projects
      - Project 1 – Hillsborough County
      - Project 2 – Polk County, Orange County, and FTE
        - Utilizing Lessons Learned from Project 1

FDOT
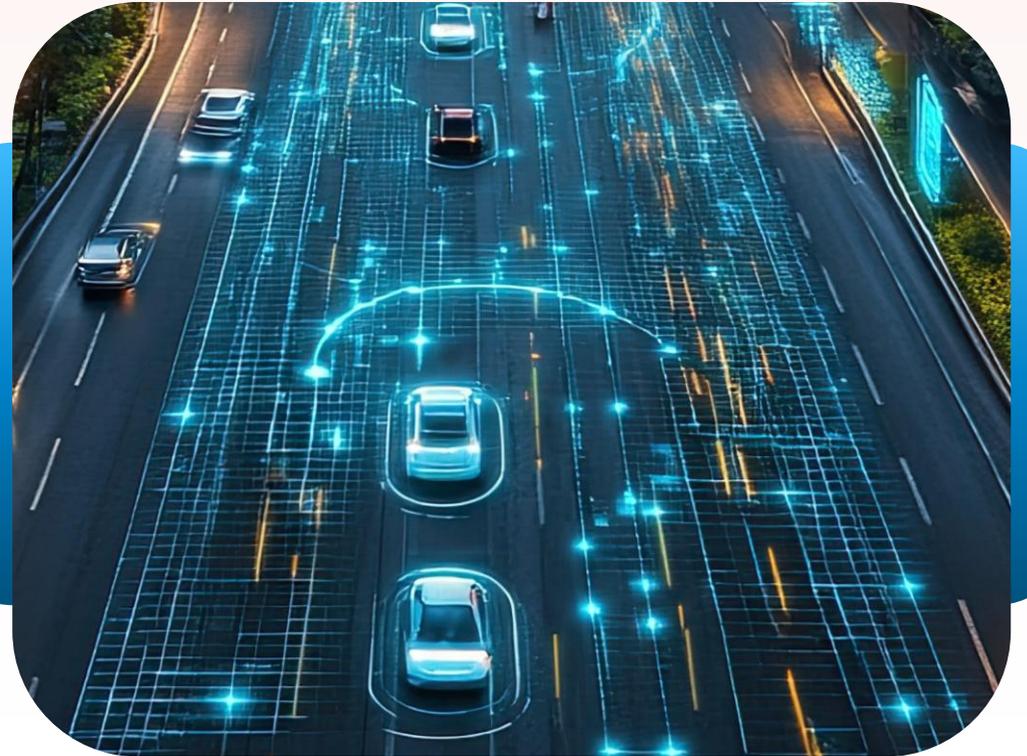
Connected Vehicle Recommendations

CV Strategies Recommended by the 2016 ITS Master Plan

V2I Safety

Red Light Violation Warning
Curve Speed Warning
Stop Sign Gap Assist
Spot Weather Impact Warning
Reduced Speed/Work Zone Warning
Pedestrian in Signalized Crosswalk
Warning (Transit)

V2V Safety

Emergency Electronic Brake Lights (EEBL)
Forward Collision Warning (FCW)
Intersection Movement Assist (IMA)
Left Turn Assist (LTA)
Blind Spot/Lane Change Warning (BSW/LCW)
Do Not Pass Warning (DNPW)
Vehicle Turning Right in Front of Bus Warning
(Transit)

Road Weather

Motorist Advisories and Warnings (MAW)
Enhanced MDSS
Vehicles Data Translator (VDT)
Weather Response Traffic Information
(WxTINFO)

Environment

Eco-Approach and Departure at Signalized
Intersections
Eco-Traffic Signal Timing
Eco-Traffic Signal Priority
Connected Eco-Driving
Wireless Inductive/Resonance Charging
Eco-Lanes Management
Eco-Speed Harmonization
Eco-Cooperative Adaptive Cruise Control
Eco-Traveler Information
Eco-Ramp Metering
Low Emissions Zone Management
AFV Charging/Fueling Information
Eco-Smart Parking
Dynamic Eco-Routing (light vehicle, transit,
freight)
Eco-ICM Decision Support System

Agency Data

Probe-Based Pavement Maintenance
Probe-Enabled Traffic Monitoring
Vehicle Classification-Based Traffic Studies
CV-Enabled Turning Movement &
Intersection Analysis
CV-Enabled Origin-Destination Studies
Work Zone Traveler Information

Mobility

Advanced Traveler Information System
Intelligent Traffic Signal System (I-SIG)
Signal Priority (Transit, Freight)
Mobile Accessible Pedestrian Signal System
(PED-SIG)
Emergency Vehicle Preemption (PREEMPT)
Dynamic Speed Harmonization (SPD-HARM)
Queue Warning (Q-WARN)
Cooperative Adaptive Cruise Control (CACC)
Incident Scene Pre-Arrival Staging Guidance
for Emergency Responders (RESP-STG)
Incident Scene Work Zone Alerts for Drivers
and Workers (INC-ZONE)
Emergency Communications and Evacuation
(EVAC)
Connection Protection (T-CONNECT)
Dynamic Transit Operations (T-DISP)
Dynamic Ridesharing (D-RIDE)
Freight-Specific Dynamic Travel Planning and
Performance

Smart Roadside

Wireless Inspection
Smart Truck Parking

U.S. Department of Transportation
ITS Joint Program Office

Staff Training Recommendations

- ✓ **Documented Preventative Maintenance Plans**
  - Staff Training Standards
    - Most agencies utilize IMSA training standards
    - Master Plan Update will provide additional training recommendations
- ✓ **O&M Training Provided by FDOT**
  - To date, 30 training courses are available. 390 users have completed a total of 426 courses
  - In the year 2024 alone, 274 maintenance responders have been trained in SHRP-2
  - A TSM&O technician video to assist in workforce development has been created

ITS Equipment Recommendations

✓ Agencies utilize a maximum of two different vehicle detection technologies throughout their area so technicians do not have to be trained on multiple technologies and spare parts do not have to be maintained for each type of sensor, thus reducing maintenance costs

- Mostly adhered to. May be exceeded for Beta testing

✓ 10/15% Spare Equipment

- Spare cabinets across the board are an issue

Staffing Recommendations

- Staffing reviewed with each agency at one-on-one meetings

- Staffing has remained relatively consistent since 2016 but workloads have increased considerably

- Master Plan Update will provide statements for each agency's increased workload and need for additional staffing

Data Management Successes – Exceeding Master Plan

- FDOT District 5's goal is to serve as document repository for the region

- SunStore

- DEPOT

- Kafka

- Storage is cheap, processing is expensive

Summary of Findings

- Recommendations of 2016 ITS Master Plan have not only met but exceeded in several areas

- Both FDOT and Operator/ Maintainer agencies have advanced their programs well and are well-poised for success as technology advances

Existing Conditions

Existing Conditions Tech Memo

- Tech Memo is currently in progress

- Will document existing conditions and capabilities at a high level

- We have reached out to each agency and provided them with the information shown for their system in the 2016 ITS Master Plan. Please review and return with up-to-date info as soon as possible for its inclusion in the update

Questions

2025 DIS Security

FDOT Presentation

Our Goals

➤ We are dedicated to maintaining a welcoming environment for all visitors, guests, and employees at Daytona International Speedway.

➤ Staying vigilant and practicing situational awareness is important to ensure the safety and well-being of our guests, employees, and property.

➤ Professional, courteous, competent, proactive, and dedicated - these words describe the mindset required to be a productive member of the Daytona International Speedway team.

➤ Our goal is to demonstrate these qualities with the utmost integrity.

Our Team

➢ Volusia County Sheriff's Office:
  Patrol/EOD/K-9/SWAT /Traffic ISB

➢ Daytona Beach Police Department:
  Exterior roadways/SWAT/Drone

➢ Daytona Beach Traffic Engineering:
  Traffic Lights / Traffic Control

➢ Florida Department of Transportation:
  Interstate/Signage/Forced Navigation

➢ Florida Highway Patrol:
  Interstate Roadways/Radiological

➢ Daytona International Speedway Security

Security Department Responsibilities

➢Traffic- On and Off Property

➢Parking- On and Off Property

➢Bus Transportation

➢Venue Security

➢Event Security

➢24hr Patrol Services

Security Department: Traffic

➢ Pre-planning and implementation of Traffic Routes

➢ Forced Navigation and Website Information "Know Before You Go"

➢ On-property Traffic Direction and Signage

➢ Ingress and Egress of Event Traffic

DAYTONA
INTERNATIONAL SPEEDWAY

Navigation and VMS

➢ Variable Message System

➢ Mobile

➢ Real Time Message Changes

➢ Local and State Roadways

➢ Solar Powered

Security Department: Parking

➢ On and Off Property

➢ Paid Parking

➢ Traffic Patterns for Parking Areas

➢ Signage for all Parking Lots

➢ Venue Parking

M&M Event Management

What's Next

- Integrating Web Applications to reach our Guests when they are en route to the track

- Engage the Guests throughout the entire journey to the track.

- Predetermined GPS-guided routes for each parking lot. Inbound and Outbound

- Interface with ticketing systems for color and lot number designation.

- Integrated systems will allow more detailed information to all parties. Parking Spots Sold, coupled with the number of guests on their way, and the timing before arrival.

What's Next

➢ Inbound and Outbound leave the same way they arrived.

➢ Embracing what others can provide for successful outcomes.

➢ Communication

➢ Teamwork

➢ Determination to succeed and willingness to improve after every event.

Traffic Operations Contacts

- District Traffic Operations Engineer (DTOE) – Jay Williams
- Interim TSM&O Program Engineer – Tushar Patel
- TSM&O Engineer (Arterials) – Tricia Ballard
- TSM&O Pushbutton – Kevin Marquez
- **TSM&O Planning Project Manager – Katie King**
- **TSM&O Design Project Manager – Daniel Simpson**
- TSM&O Construction Project Manager – Jennifer Sardonini
- TSM&O Maintenance Project Manager – Lorena Cucek
- TSM&O RTMC Manager – Lauren Pearson

CFLSmartRoads – Traffic Operations Resources

- Storehouse of District 5 Traffic Operations Resources
  - Systems Engineering Materials
  - ITS/TSM&O Master Plans in Central Florida
  - ITS Design Materials
  - Smart Signal Guidance
  - ITS Tools and Data
  - Procurement Materials
  - Training
  - Integrated Corridor Management – Operations Resources

CFLSmartRoads – Design Resources

- ## Design & Plans Production

  - ITS Scoping Reference Document

  - Technical Special Provision / Modified Special Provision samples

  - Example Project Plans and Details

  - ITS Plans Review Checklist

Design & Plans Production

- ITS Enclosure Labeling Convention
- D5 Mile Markers
- ITS Scoping Considerations
- Design Review Checklist
- ITS Certification Form
- TSP / MSP / Project Plan Examples
- Example Project Plans and Details
- Wrong Way Driving
- PTMS / MVDS
- Connected Vehicle

Network Integration & Maintenance

- Installation & Deployment Guide Template
- Upgrading Bosch AutoDome Camera Firmware to NTCIP
- Field Device Resources
- SOPs for CCTV Cameras
- Sunguide Device Information (.xlsx)
- Signal Information Collection Form (.xlsx)
- KML File - Conduit Access Points
- KML File - Conduit Duct Bank and Fiber Optic Cable

CFLSmartRoads – Design Resources

- **Design & Plans Production**
  - – ITS Scoping Reference Document
  - – Technical Special Provision / Modified Special Provision samples
  - – Example Project Plans and Details
  - – ITS Plans Review Checklist

Design & Plans Production Resources

- I-75 FRAME
  - TSP 612 - ITS/ATMS Device Integration and Testing - 440900-2
  - TSP 612 - ITS Device Integration and Testing - 441616-152-01
  - TSP 690 - Connected Vehicle Equipment
  - MSP 611 - As-Built
  - MSP 670 - Controller Software Key
  - MSP 671 - Controller Software Key
  - MSP 685 - PDU

- Connected Vehicle Roadside Unit
  - 436325-2-52-01 TSP 681

- I - 75 US 27 to Alachua County Line
  - 428213-2-52-02 TSP 612
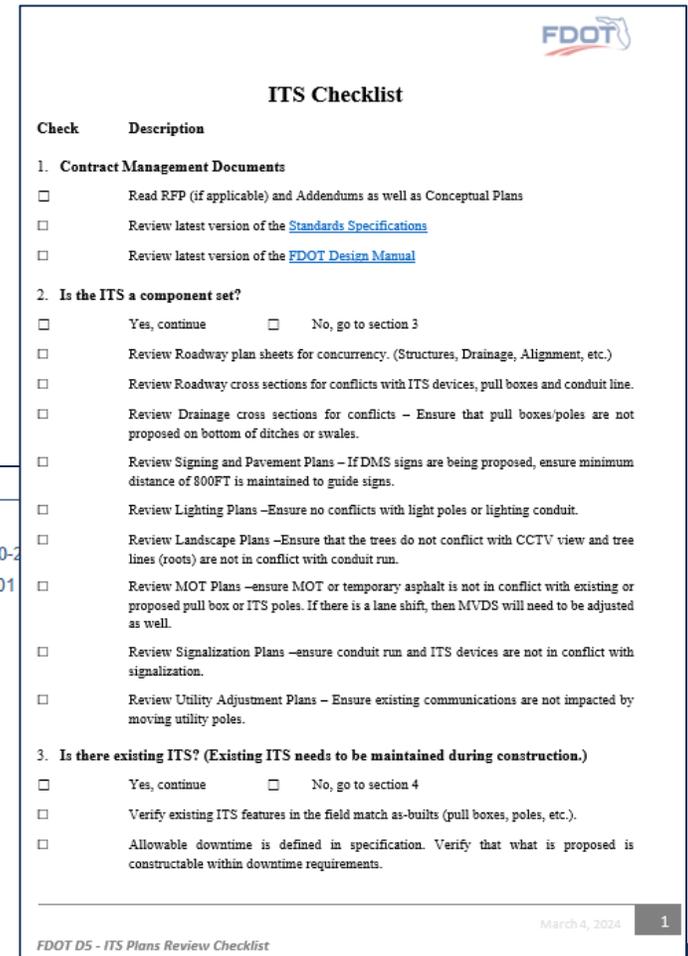
ITS Checklist

Check	Description
	1. Contract Management Documents
☐	Read RFP (if applicable) and Addendums as well as Conceptual Plans
☐	Review latest version of the Standards Specifications
☐	Review latest version of the FDOT Design Manual
	2. Is the ITS a component set?
☐	Yes, continue ☐ No, go to section 3
☐	Review Roadway plan sheets for concurrency. (Structures, Drainage, Alignment, etc.)
☐	Review Roadway cross sections for conflicts with ITS devices, pull boxes and conduit line.
☐	Review Drainage cross sections for conflicts – Ensure that pull boxes/poles are not proposed on bottom of ditches or swales.
☐	Review Signing and Pavement Plans – If DMS signs are being proposed, ensure minimum distance of 800FT is maintained to guide signs.
☐	Review Lighting Plans – Ensure no conflicts with light poles or lighting conduit.
☐	Review Landscape Plans – Ensure that the trees do not conflict with CCTV view and tree lines (roots) are not in conflict with conduit run.
☐	Review MOT Plans – ensure MOT or temporary asphalt is not in conflict with existing or proposed pull box or ITS poles. If there is a lane shift, then MVDS will need to be adjusted as well.
☐	Review Signalization Plans – ensure conduit run and ITS devices are not in conflict with signalization.
☐	Review Utility Adjustment Plans – Ensure existing communications are not impacted by moving utility poles.
	3. Is there existing ITS? (Existing ITS needs to be maintained during construction.)
☐	Yes, continue ☐ No, go to section 4
☐	Verify existing ITS features in the field match as-builts (pull boxes, poles, etc.).
☐	Allowable downtime is defined in specification. Verify that what is proposed is constructable within downtime requirements.

March 4, 2024

FDOT D5 - ITS Plans Review Checklist

CFLSmartRoads – Design Resources

- Guidelines for Traffic Signal Plan Preparation v11

- Smart Signal Design Guidance
  - Design Guidance v2.0 (March 2025)
  - Local Maintaining Agency Preference Document

CFLSmartRoads – Tools and Data

- District 5 KML*
  - Conduit Access Points
  - Conduit Duct Bank and Fiber Optic Cable
- NOEMI Dashboard
- SIIA Dashboard
- District 5 SunStore

*Provides a general location of fiber. No guarantee of accuracy or timeliness.

CFLSmartRoads – Tools and Data

CFLSmartRoads – Tools and Data

CFLSmartRoads – Training Resource

- **TSM&O FLEX Portal**

  - On-demand eLearning platform with video and documentation materials

    - Traffic Signals

    - Systems Engineering

    - Network Training

    - ITS Fiber Design and Network Equipment

    - BlueTOAD Spectra probe detector and other vendor trainings

    - Other
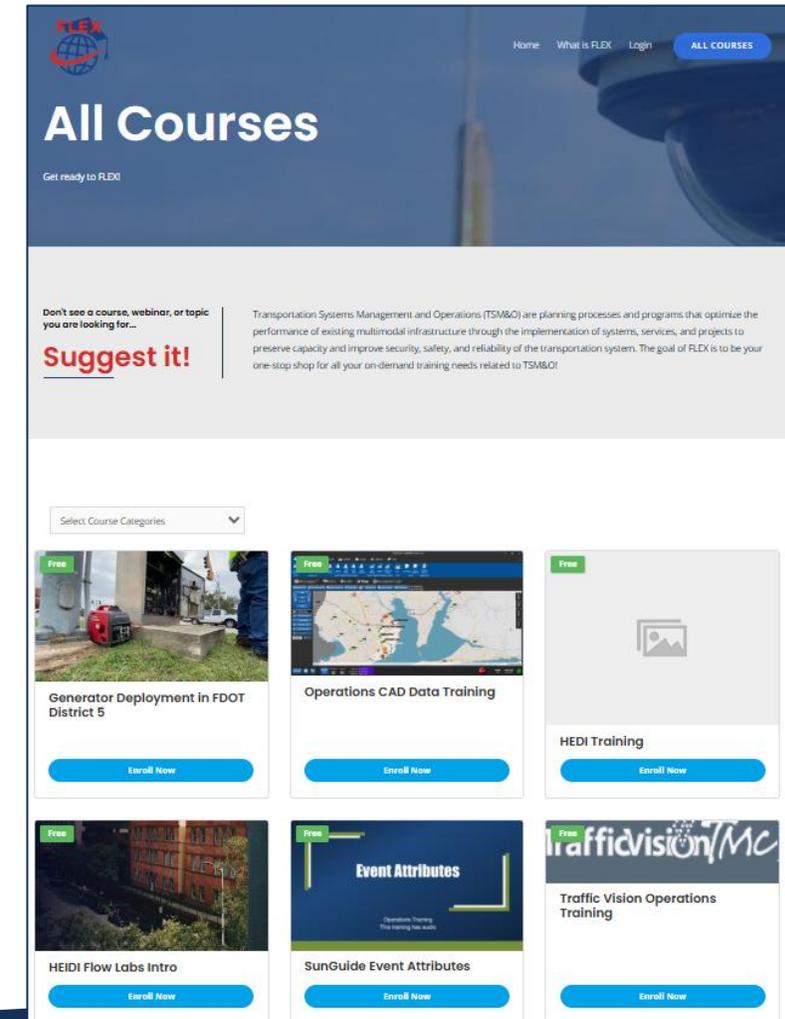
https://elearning.cflsmartroads.com/

CFLSmartRoads – Training Resource

- TSM&O FLEX Portal
  - On-demand eLearning platform with video and documentation materials
    - Generator Deployment in FDOT District 5
      - Meeting Recording – D5 Generator deployment
      - Videos – Connecting generator to cabinet
      - Deployment process during storm events
      - Field checklist

New Training
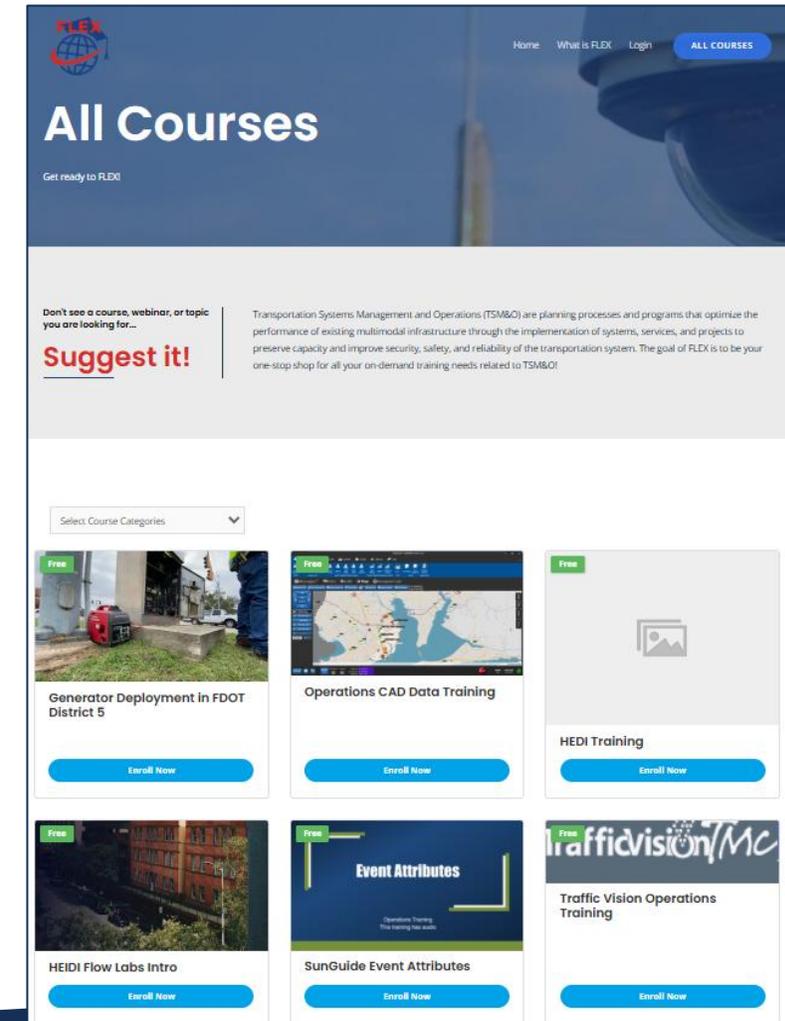
CFLSmartRoads – Training Resource

- ## TSM&O FLEX Portal

  - – On-demand eLearning platform with video and documentation materials

    - ■ Design-related trainings delivered by ITS design consultant (AtkinsRealis) will be posted to FLEX Portal shortly

Don't see a course, webinar, or topic you are looking for...

Suggest it!

ITS Design – Best Practices

- For *Pavement Only Projects (POP)*, utilize *Signal* plans instead of putting them in S&PM plans

- Ensure intersection is fully visible on plan sheet; avoid locating it near match lines

- Please use *Tabulation of Quantities* sheets

- Please use *Pedestrian Detail* inset

ITS Design – Best Practices

- EOR must ensure maintenance responsibilities for ITS equipment are clearly defined and accepted by the local agency and the Department

  - Interconnected & Monitored Traffic Signal
  - Intersection Beacon Control
  - Pedestrian Flashing Beacon
  - Emergency Fire Dept. Signal
  - Speed Activated Warning Display
  - Illuminated Street Name Sign
  - Blankout Sign
  - Traffic Warning Beacon

  - Probe Data Detection System
  - Uninterruptible Power Supply
  - Connected and Automated Vehicle Devices
  - Pedestrian Hybrid Beacon
  - Arterial Dynamic Message Sign
  - Passive Pedestrian Detection
  - Traffic Monitoring Camera
  - In-Roadway Warning Lights

QUESTIONS?

Workforce Development Training

David Williams, VHB

Workforce Development Training – Fall 2025

- Basic Cabinet and Field Equipment – October 6th at 9:00am
- Traffic Signal Timing Basics – October 13th at 9:00am
- Traffic Signal Controller Programming – October 20th at 9:00am
- CMS and TSP – October 27th at 9:00am
- SIIA and NOEMI – TBD*
- ATMS Monitoring and Programming – TBD*
- Signal Maintenance – TBD*

- Reach out to Manny Rodriguez for more information
  - Manny.Rodriguez@dot.state.fl.us

*Will occur on either November 1, November 17, or December 1

Build America, Buy America Updates

Daniel Simpson, FDOT District Five

Updates to Build America, Buy America (BABA)

- **BABA** stipulates that no federal funds can be used for infrastructure projects unless the following materials are produced in the United States:
    - Iron and Steel: all manufacturing processes (melting, coating, etc.) must occur in US
    - Manufactured Products: product must be made in the US, and more than 55% of the cost of its components must come from US-sourced materials
    - Construction Materials: all manufacturing processes must take place in the US

- For 40+ years, the *Manufactured Products General Waiver* has been available
- In January 2025, FHWA established a final rule rescinding the waiver in phases
    - **For federalized projects obligated on or after October 1, 2025**: final assembly of all manufactured projects must occur in the US
    - **For federalized projects obligated on or after October 1, 2026**: in addition to the final assembly requirement, the cost of components of products that are mined, produced, or manufactured in the US must be greater than 55% of the total cost of all components of the manufactured product

Updates to Build America, Buy America (BABA)

Obligation Date	→	Advertisement	→	Letting Date
• October		• 60-day advertisement		• January Letting

- For 40+ years, the *Manufactured Products General Waiver* has been available
- In January 2025, FHWA established a final rule rescinding the waiver in phases
  - **For federalized projects obligated on or after October 1, 2025**: final assembly of all manufactured projects must occur in the US
  - **For federalized projects obligated on or after October 1, 2026**: in addition to the <u>final assembly</u> requirement, the cost of components of products that are mined, produced, or manufactured in the US must be greater than 55% of the total cost of all components of the manufactured product

Updates to Build America, Buy America (BABA)

- While the *Manufactured Products General Waiver* is being rescinded, project-specific waivers can still be submitted under certain conditions:
  - **Non-availability** of compliant products in sufficient quantity or quality
  - **Public interest** justifications

Waivers must go through FHWA for approval

- The process for these waivers will take time and approval is not guaranteed
  - **Non-availability** – process may take 6 to 24 months
  - **Public interest** – process may take up to 24 months

Design – Approved Products List

- Certain items on the APL will be removed at the end of 2025
- The EOR is required to design around equipment on the APL
- District 5 will be reaching out to update the Local Agency Preferences document.
  - If an agency can't identify a product on the APL, the Department will do everything it can to accommodate requests, but there is a risk those products cannot be included in the project.
- If possible, Local Agencies should encourage vendors to get their preferred products on the APL.
- If preferred products are not added to the APL, associated projects may be affected or alternative products used on the APL

Design – Approved Products List

- For more information about the APL and to apply, please direct vendors to the *Product Evaluation* webpage
  - https://www.fdot.gov/programmanagement/productevaluation/default.shtm
  - (search: "FDOT Product Evaluation")

- The APL is a living document
  - Updating the Local Agency Preferences document will be an ongoing ask from the Department as we go through this transition

Design – Approved Products List

- Is the product on the APL?

  YES Do nothing.

  NO Ask vendor to get product added to the APL.
  If not, access to product may be at risk.

- If not on APL, has a waiver been submitted for use in 2026 for assembly requirement, or use in 2027 for 55% manufactured requirement?

> **This is part of the current process that Design EORs should be following**

Waiver Tracking: APL Product Types included in current FDOT Waiver Requests

620-002-xxx Surge Protective Device for 120V or 120_240V Power
620-003-xxx Surge Protective Device at Point of Use
620-004-xxx Surge Protective Device for Low Voltage Power, Control, Data and Signal Systems

620 UPS

650-001-xxx 12" Polycarbonate Vehicle Signal
650-002-xxx 12" Die Cast Vehicle Signal
650-005-xxx 12" Die Cast Optically Programmable Signal Head
650-007-xxx 8" Polycarbonate Vehicle Signal
650-008-xxx Plastic Vehicle Signal Assembly
650-010-xxx 12" LED Red Signal
650-011-xxx 12" LED Red Arrow Signal
650-012-xxx 12" LED Yellow Signal
650-013-xxx 12" LED Green Signal
650-014-xxx 12" LED Yellow Arrow Signal
650-015-xxx 12" LED Green Arrow Signal
650-016-xxx 12" Die Cast All LED Vehicle Signal Assembly
650-018-xxx Programmable Visibility Red LED Lamp for Optically Programmable Signal
650-019-xxx Programmable Visibility Yellow LED Lamp for Optically Programmable Signal
650-020-xxx Programmable Visibility Green LED Lamp for Optically Programmable Signal
650-025-xxx Light Rail Transit Signal"

650 Signals

653-009-xxx International Symbol Pedestrian Signal
653-022-xxx Countdown Pedestrian Signal

715-010-xxx LED Luminaire Wildlife (Conventional)

676-001-xxx Wired Cabinet Assembly Type II
676-009-xxx Wired Cabinet Assembly Type III

676 Small Cabinets

678-003-xxx Conflict Monitor Type 12
678-005-xxx Transfer Relay
678-006-xxx Flasher Type 1
678-007-xxx Flasher Type 3
678-008-xxx Time Switch Type 1
678-016-xxx Malfunction Management Unit Type 16
678-017-xxx Cabinet Power Supply (TS2)
678-021-xxx Cabinet Power Supply (170)
678-022-xxx Conflict Monitor for 170 Controllers
678-023-xxx Conflict Monitor for 170/2070 Controllers"

678 Cabinet Items

682-001-xxx Camera - External Positioner
682-002-xxx Camera – PTZ
682-005-xxx Camera - Fixed

682 CCTV Cameras

684-011: Cellular Modem

684-008-xxx Managed Hub Ethernet Switch

685-003-xxx Uninterruptible Power Supply (Real-Time Active Power Conditioner)

695-001-xxx Vehicle: Class II Piezoelectric Axle Sensor
695-004-xxx Adhesive Bonding Agent
695-012-xxx Vehicle: Quartz Piezoelectric Sensor
695 others

695 TDA

932-005-xxx Pre-Cured Silicone Sealant

Design – Approved Products List

- If not on APL, has a waiver been submitted?

  YES Wait and hope it is approved.

  NO Verify with Specs/Central Office that one hasn't been submitted and is needed.

  - EOR will notify Local Agency and Local Agency has the right to submit waiver for their preferred product.

  - Alternatively, Local Agency may discuss with FDOT to submit as a program waiver, where more than one Local Agency is using a product.

This is part of the current process that Design EORs should be following

Questions?

Consumer Sentiment – Mobility Options

David Williams, VHB
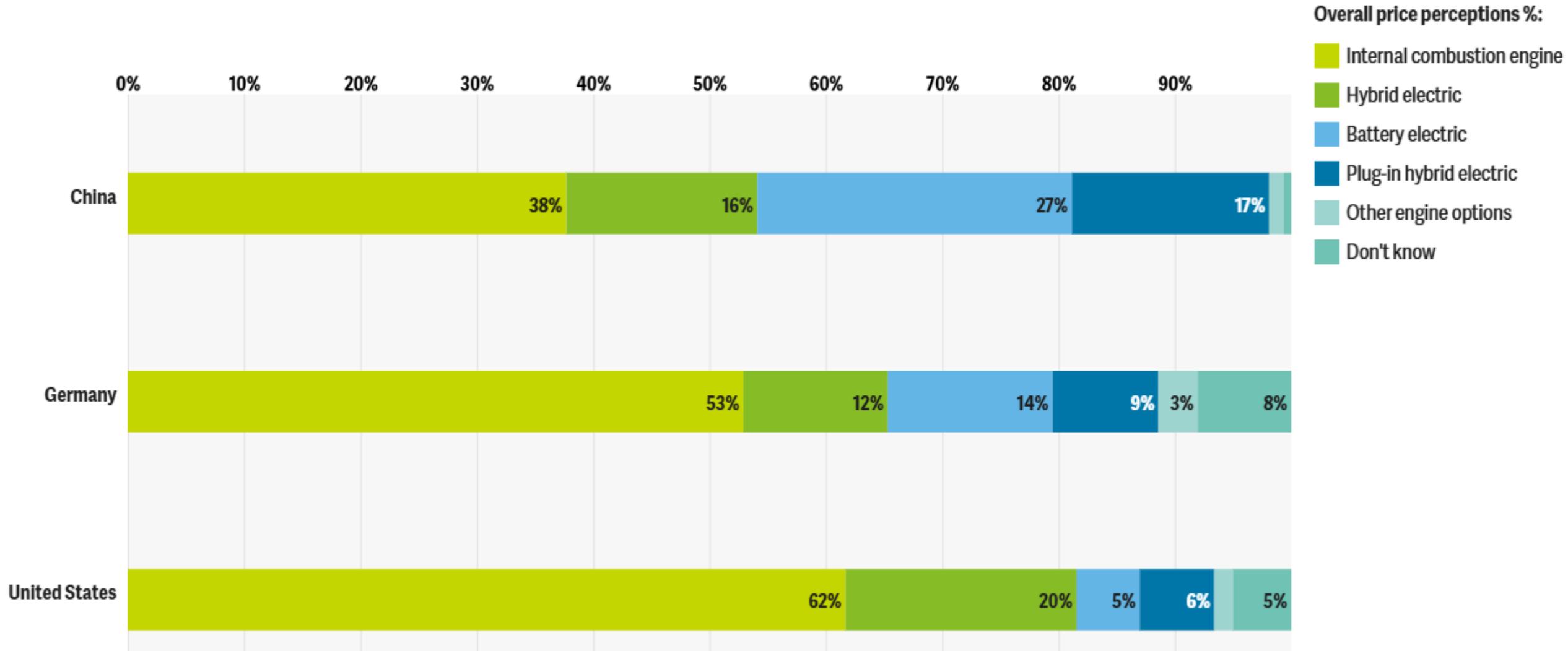
2025 Global Automotive Consumer Study

- 13th year that Deloitte has carried out the Consumer Study
- From October to December 2024, survey of more than 31,000 consumers in 30 countries
- Focus on four topics:
  - Vehicle electrification
  - Future vehicle intentions
  - Connectivity
  - Mobility as a service (MaaS)

https://www.deloitte.com/us/en/insights/industry/retail-distribution/global-automotive-consumer-study.html#banner
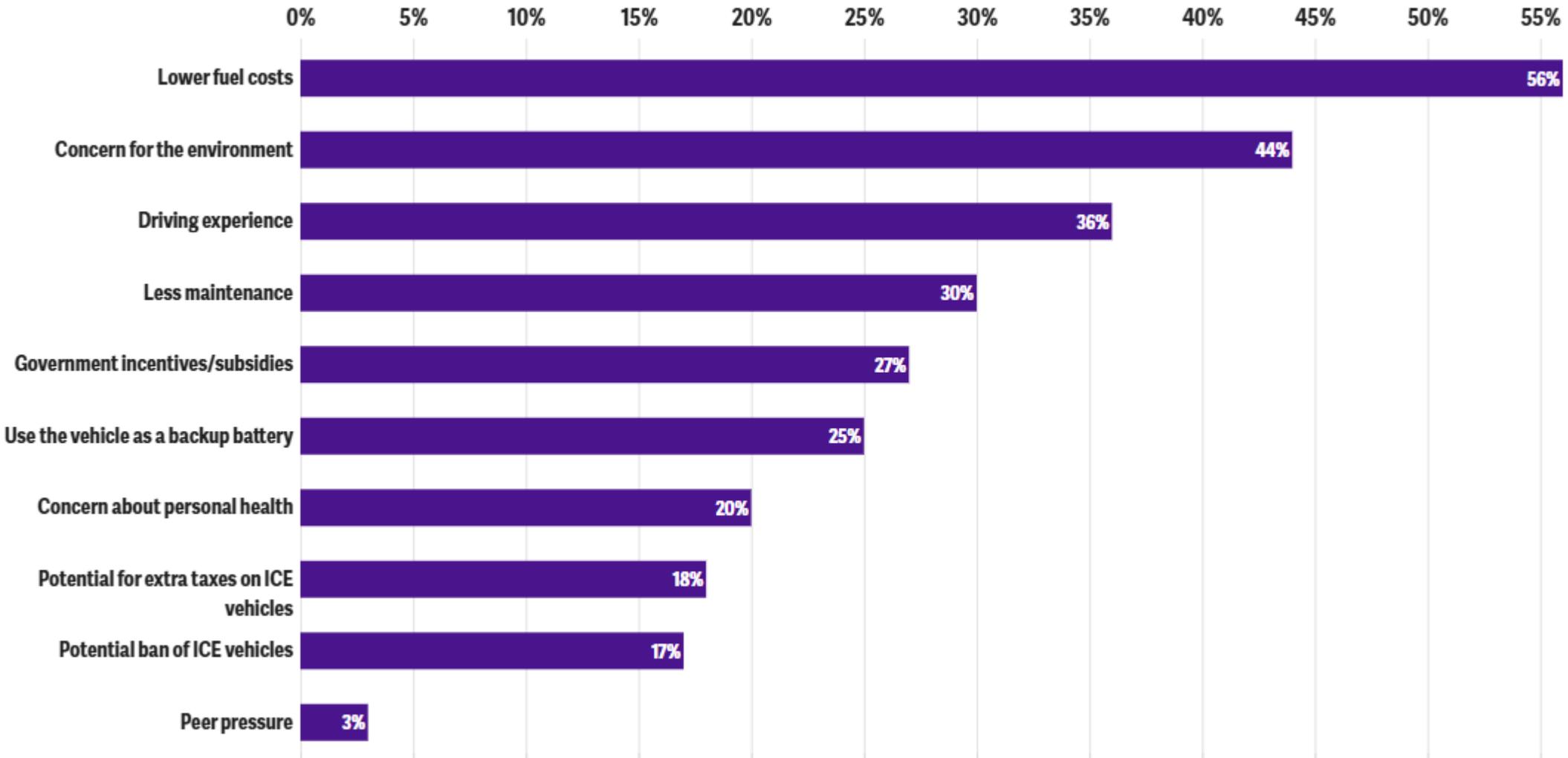
Consumer Study – Vehicle Electrification

Preference for engine type in next vehicle

Overall price perceptions %:

- Internal combustion engine
- Hybrid electric
- Battery electric
- Plug-in hybrid electric
- Other engine options
- Don't know

	Internal combustion engine	Hybrid electric	Battery electric	Plug-in hybrid electric	Other engine options	Don't know
China	38%	16%	27%	17%		
Germany	53%	12%	14%	9%	3%	8%
United States	62%	20%	5%	6%		5%

Consumer Study – Vehicle Electrification

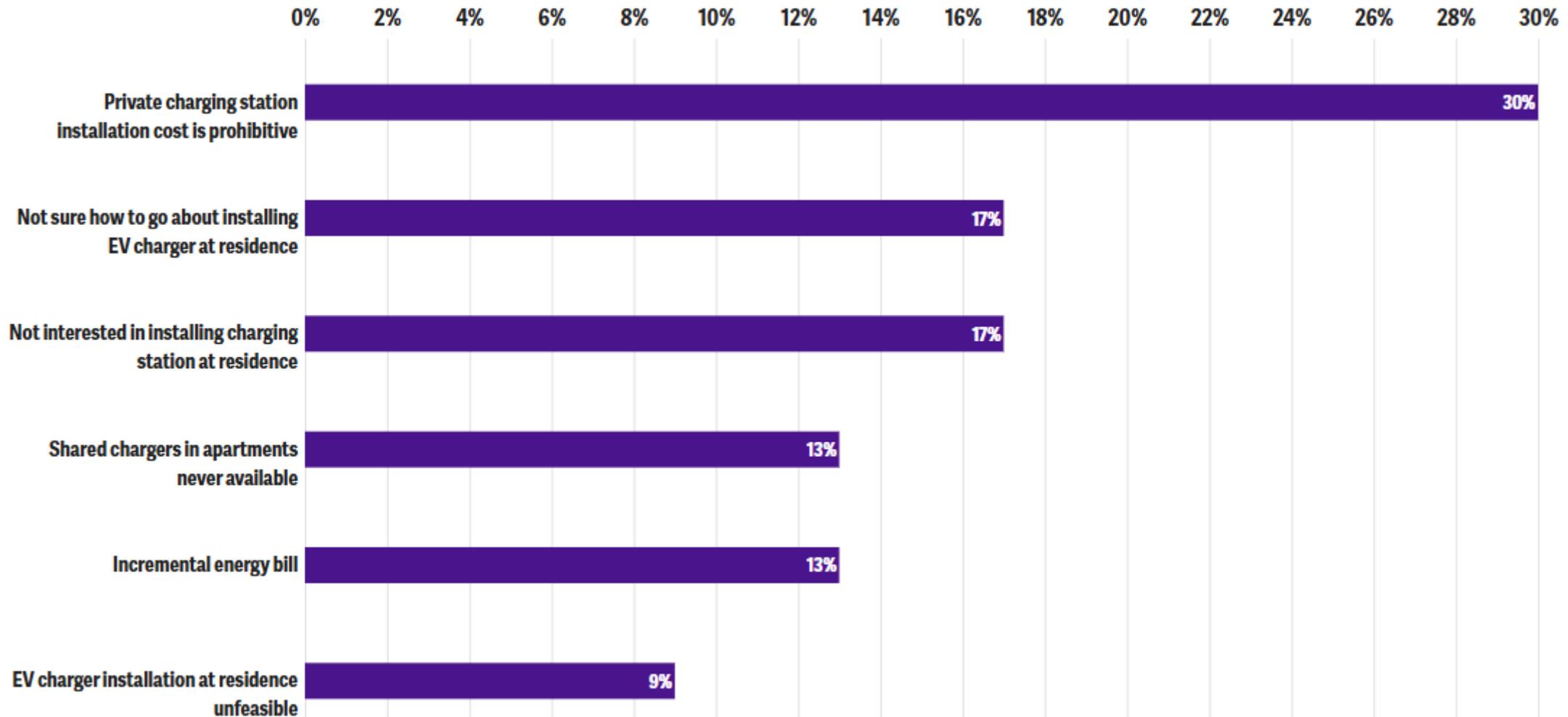## Reasons for choosing an EV as next vehicle

Consumer Study – Vehicle Electrification

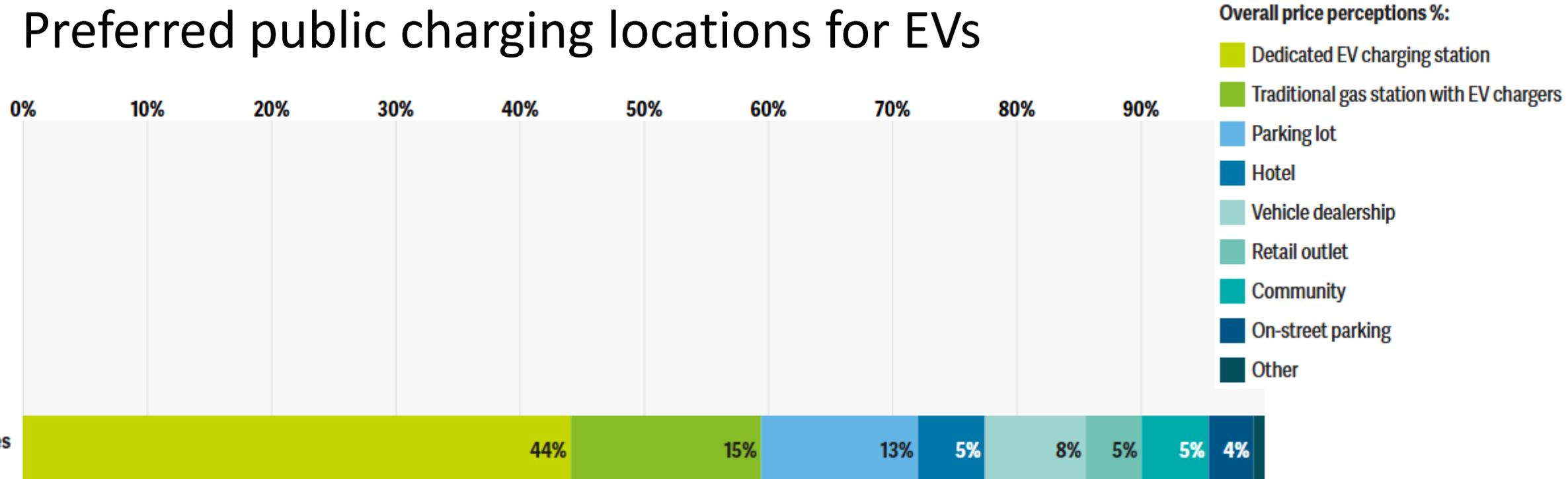## Reasons for not charging EVs at home

Consumer Study – Vehicle Electrification
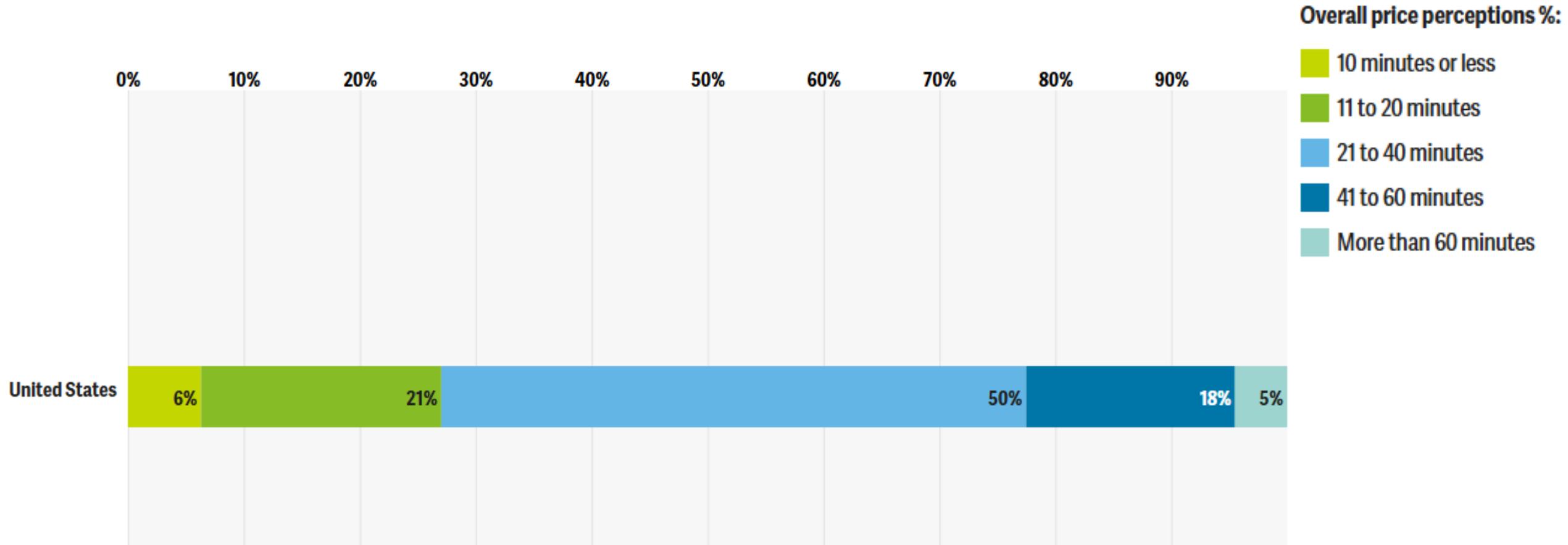
Preferred public charging locations for EVs

Overall price perceptions %:

- Dedicated EV charging station
- Traditional gas station with EV chargers
- Parking lot
- Hotel
- Vehicle dealership
- Retail outlet
- Community
- On-street parking
- Other

	Dedicated EV charging station	Traditional gas station with EV chargers	Parking lot	Hotel	Vehicle dealership	Retail outlet	Community	On-street parking	Other
United States	44%	15%	13%	5%	8%	5%	5%	4%	

Consumer Study – Vehicle Electrification

Expected charging time at public stations for EVs

Overall price perceptions %:

- 10 minutes or less
- 11 to 20 minutes
- 21 to 40 minutes
- 41 to 60 minutes
- More than 60 minutes

United States: 6% | 21% | 50% | 18% | 5%

Consumer Study – Vehicle Electrification
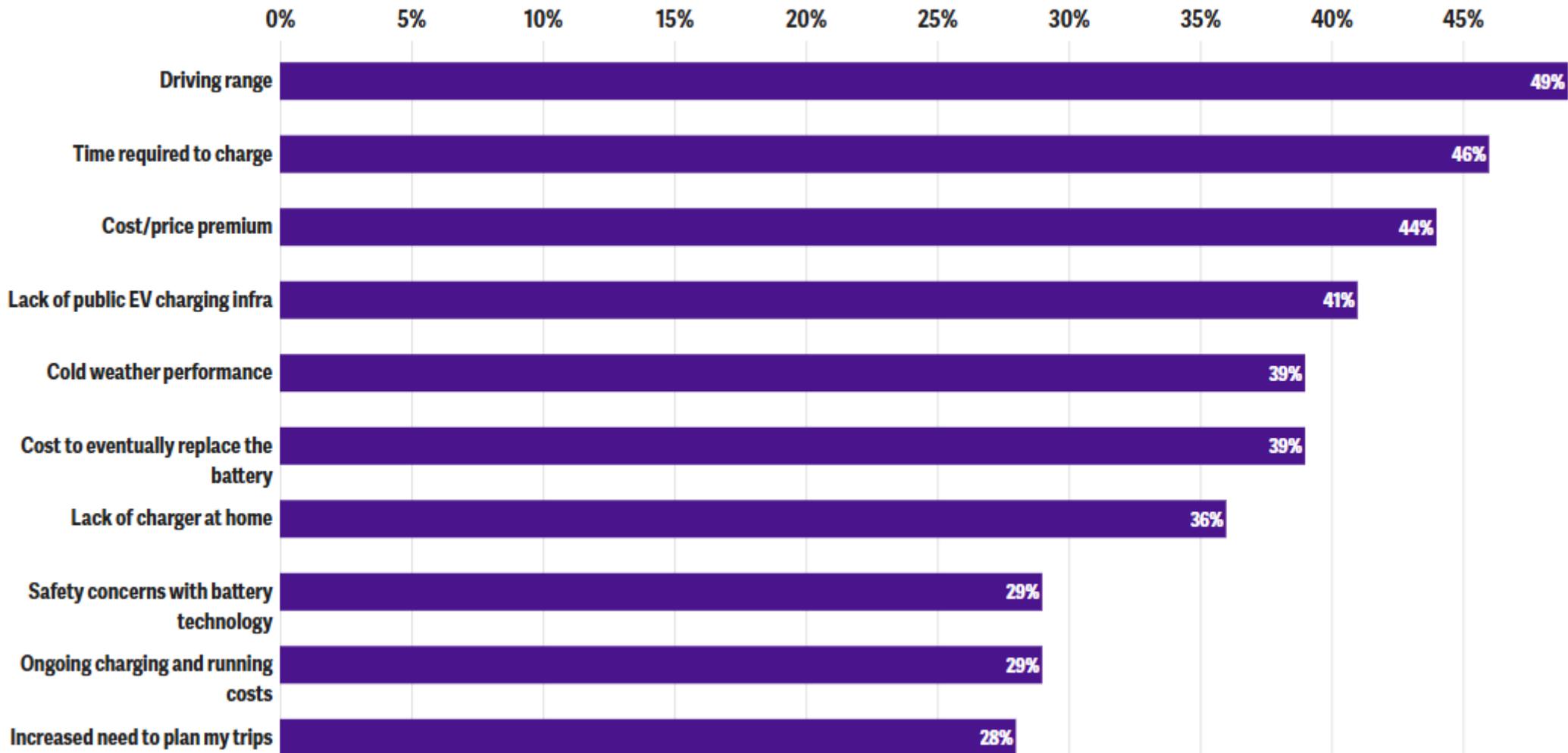
Most important aspect of an EV charging experience
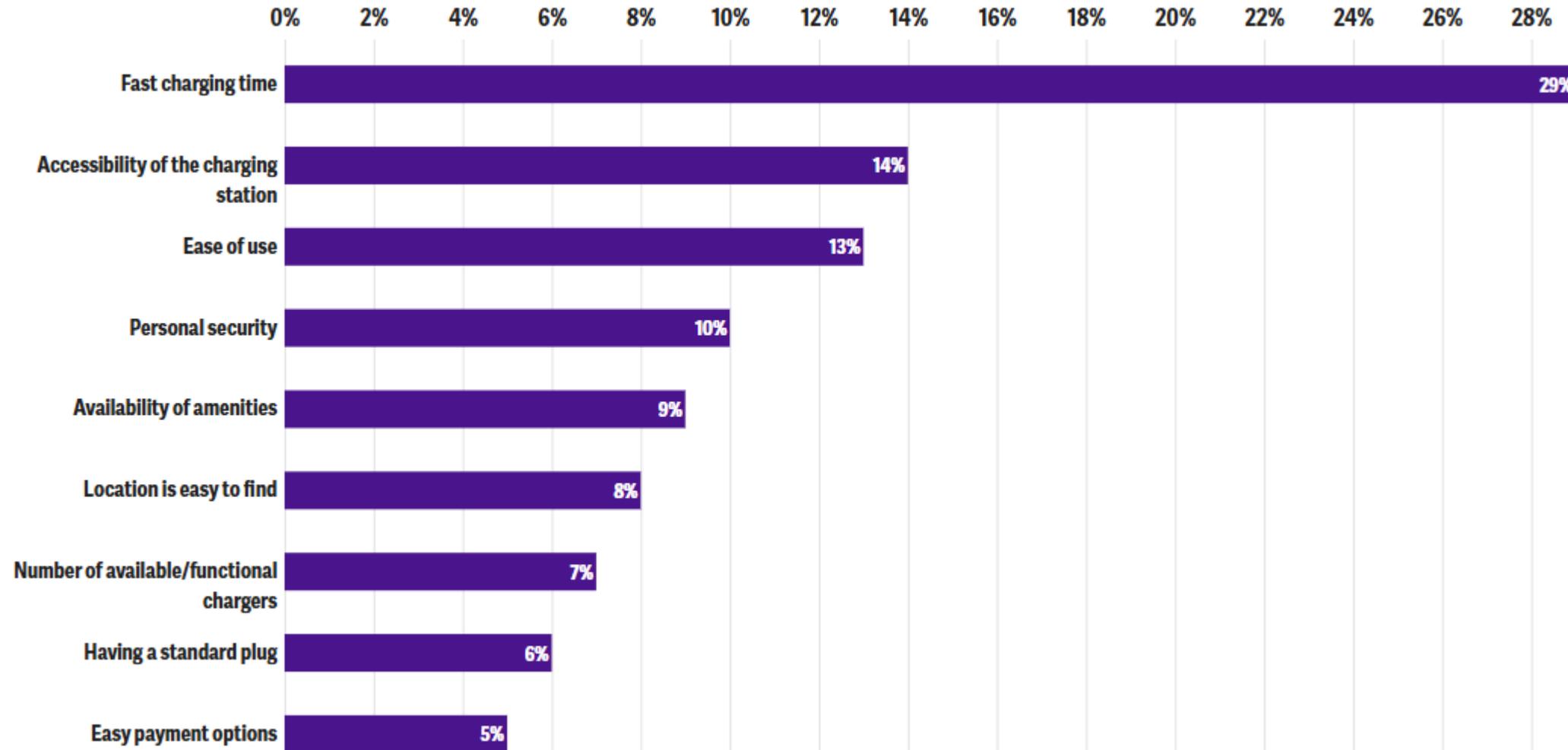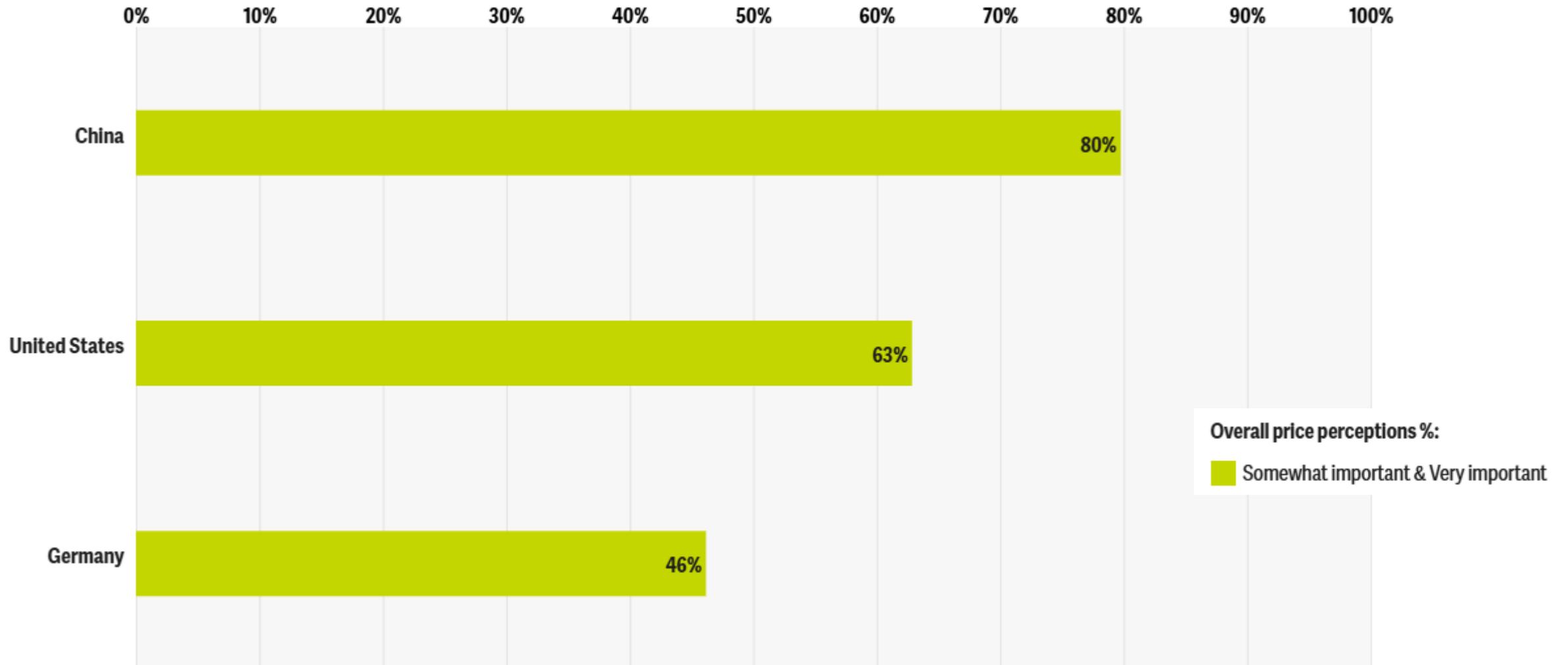
Consumer Study – Vehicle Electrification

Top concerns regarding all-battery-powered EVs

| Concern	Percentage
Driving range	49%
Time required to charge	46%
Cost/price premium	44%
Lack of public EV charging infra	41%
Cold weather performance	39%
Cost to eventually replace the battery	39%
Lack of charger at home	36%
Safety concerns with battery technology	29%
Ongoing charging and running costs	29%
Increased need to plan my trips	28%

Consumer Study – Connectivity

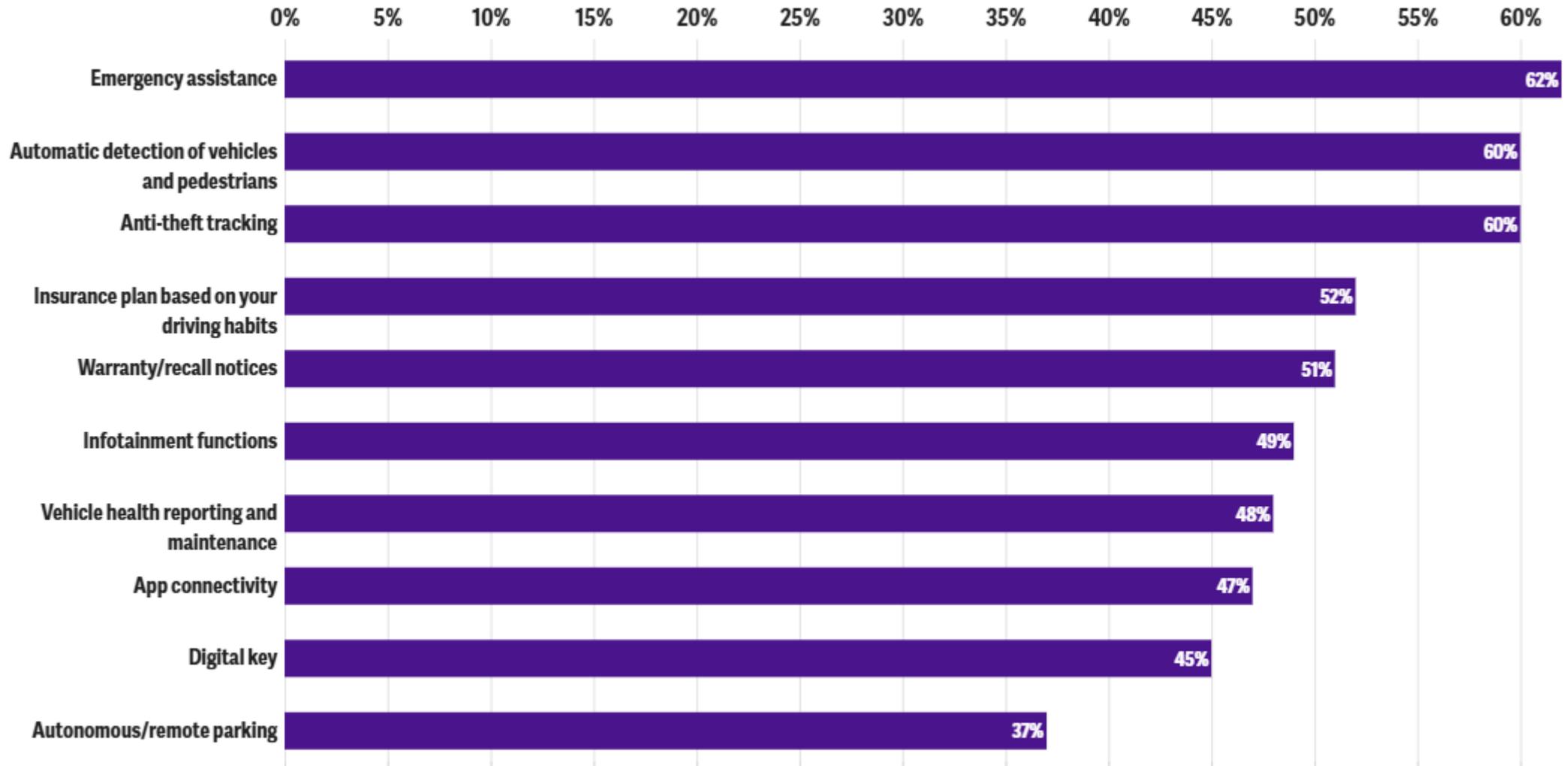## Importance of vehicle connectivity with smartphone

Consumer Study – Connectivity

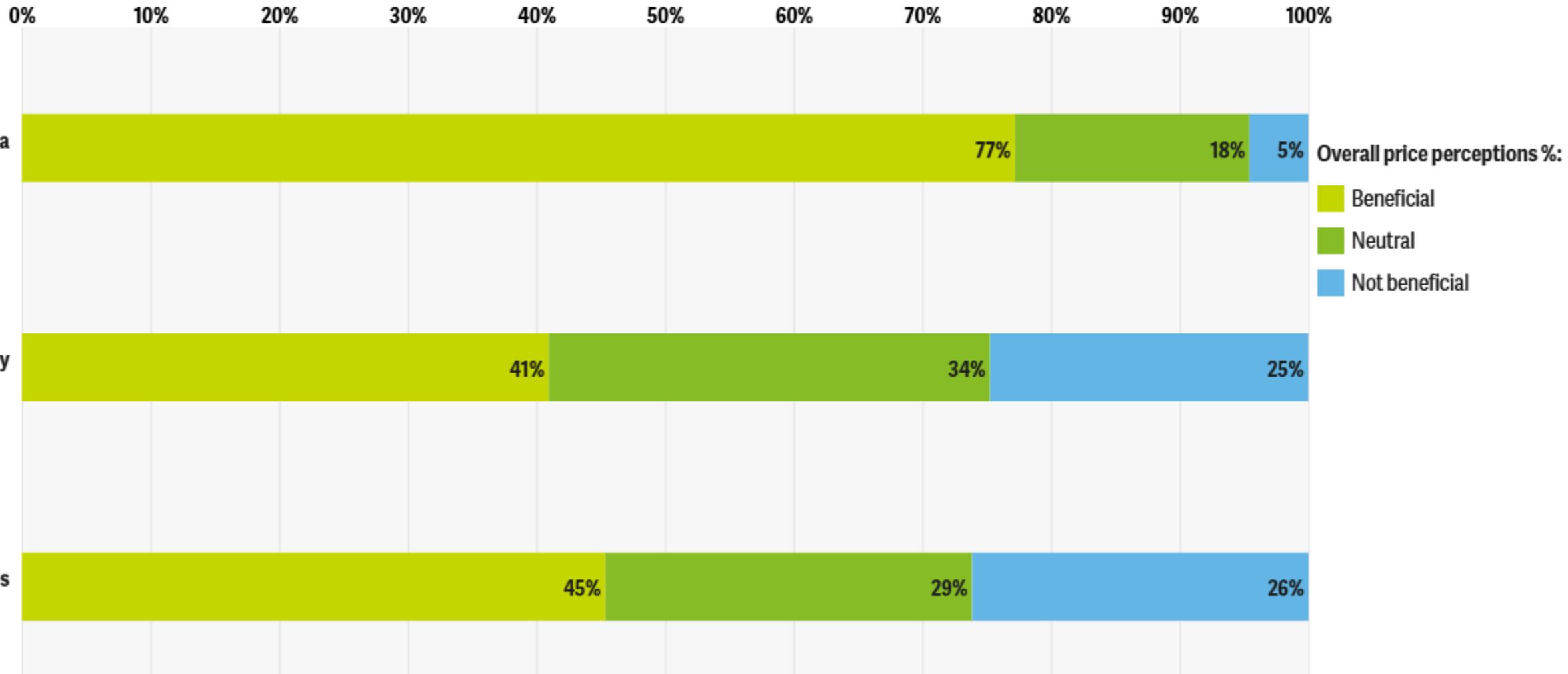## Most trusted entity for managing connected vehicle data
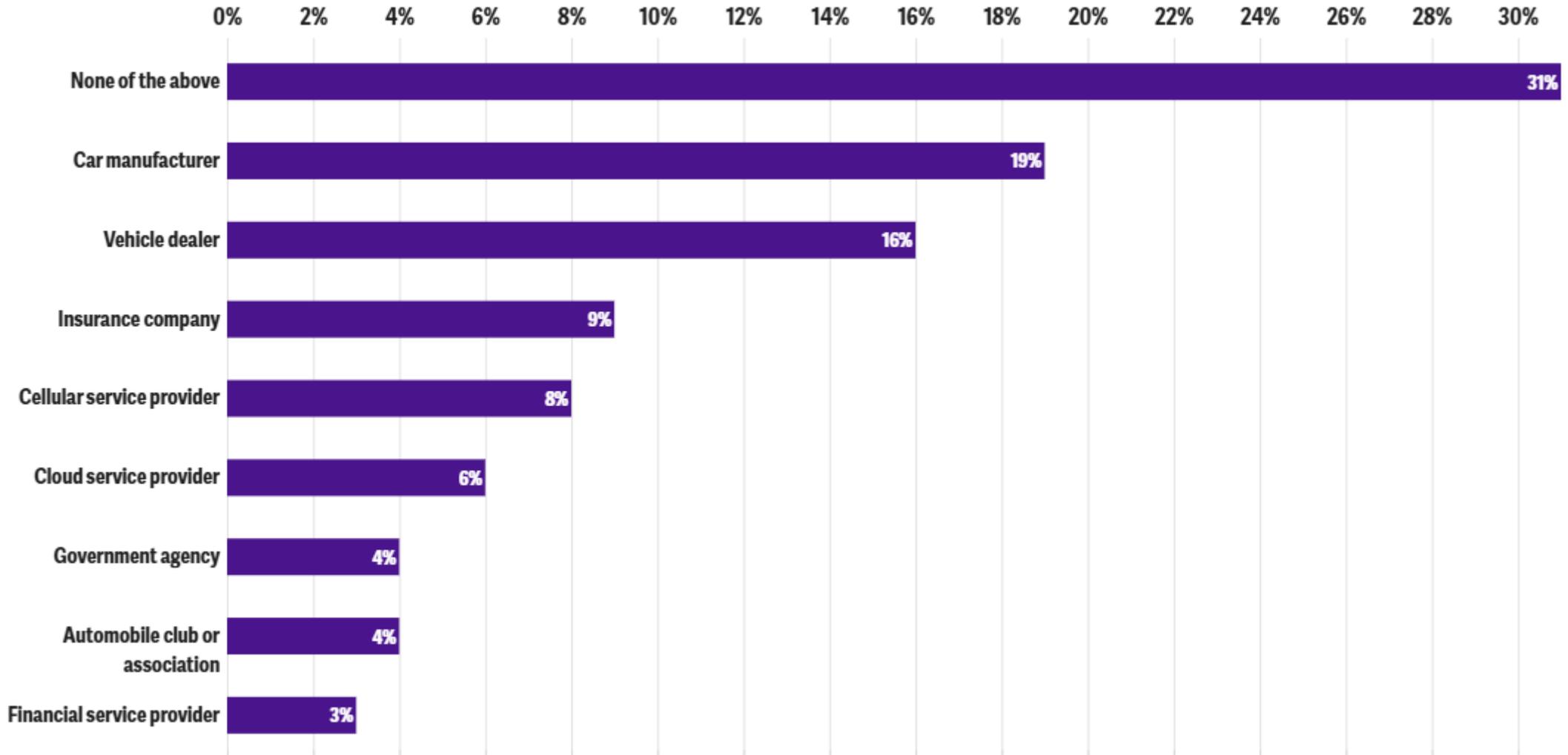
Consumer Study – Connectivity

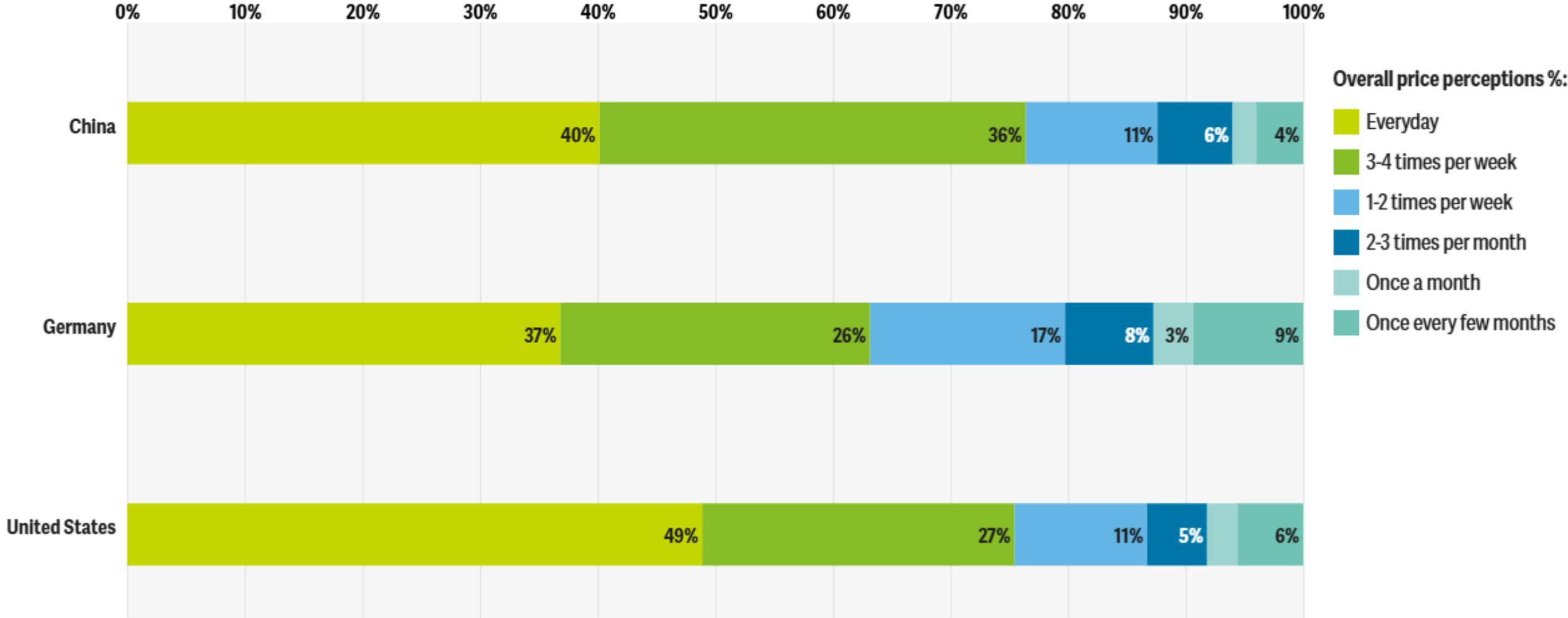Willingness ("somewhat" or "very willing") to pay extra for CV services

Consumer Study – Connectivity

Addition of AI to vehicle systems
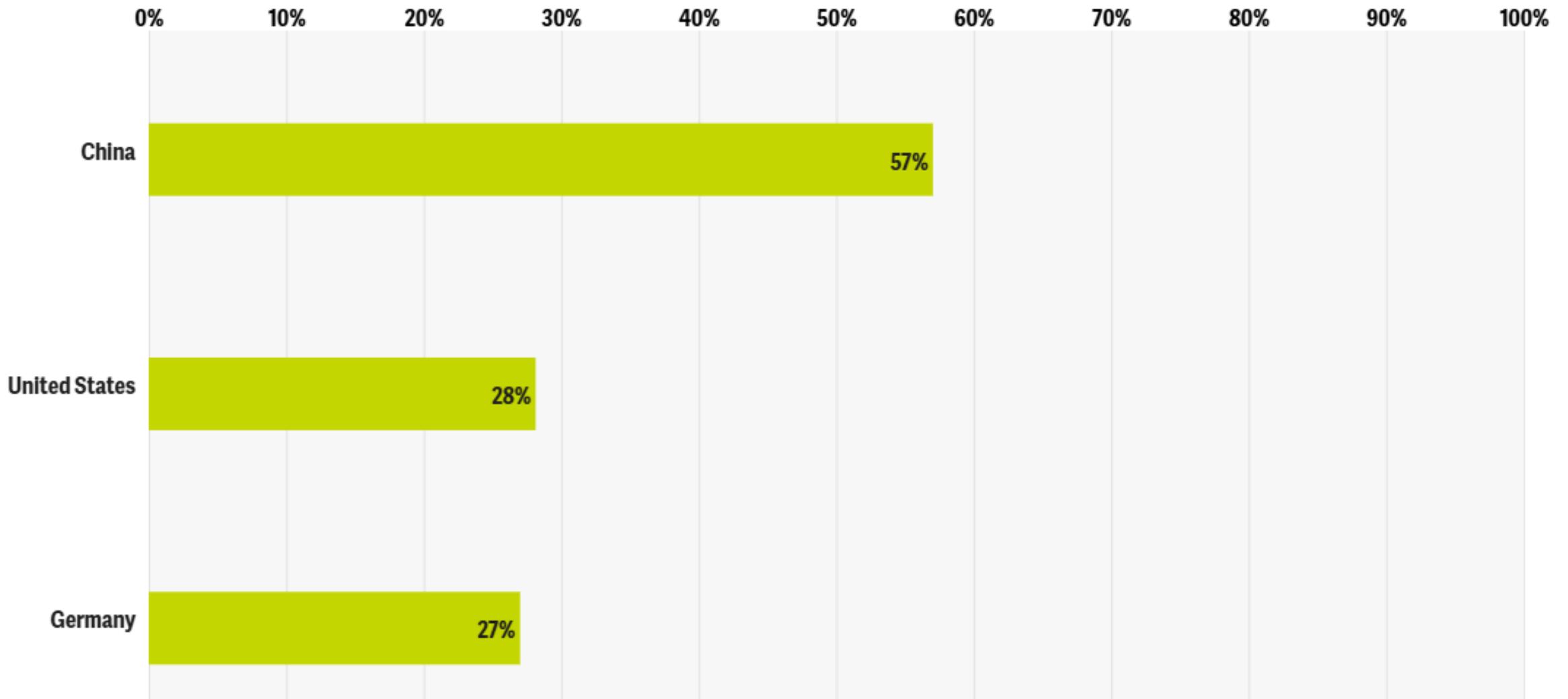
Consumer Study – Mobility as a Service

Frequency of driving personal vehicles

Overall price perceptions %:
- Everyday
- 3-4 times per week
- 1-2 times per week
- 2-3 times per month
- Once a month
- Once every few months

| Country	Everyday	3-4 times per week	1-2 times per week	2-3 times per month	Once a month	Once every few months
China	40%	36%	11%	6%		4%
Germany	37%	26%	17%	8%	3%	9%
United States	49%	27%	11%	5%		6%

Consumer Study – Mobility as a Service

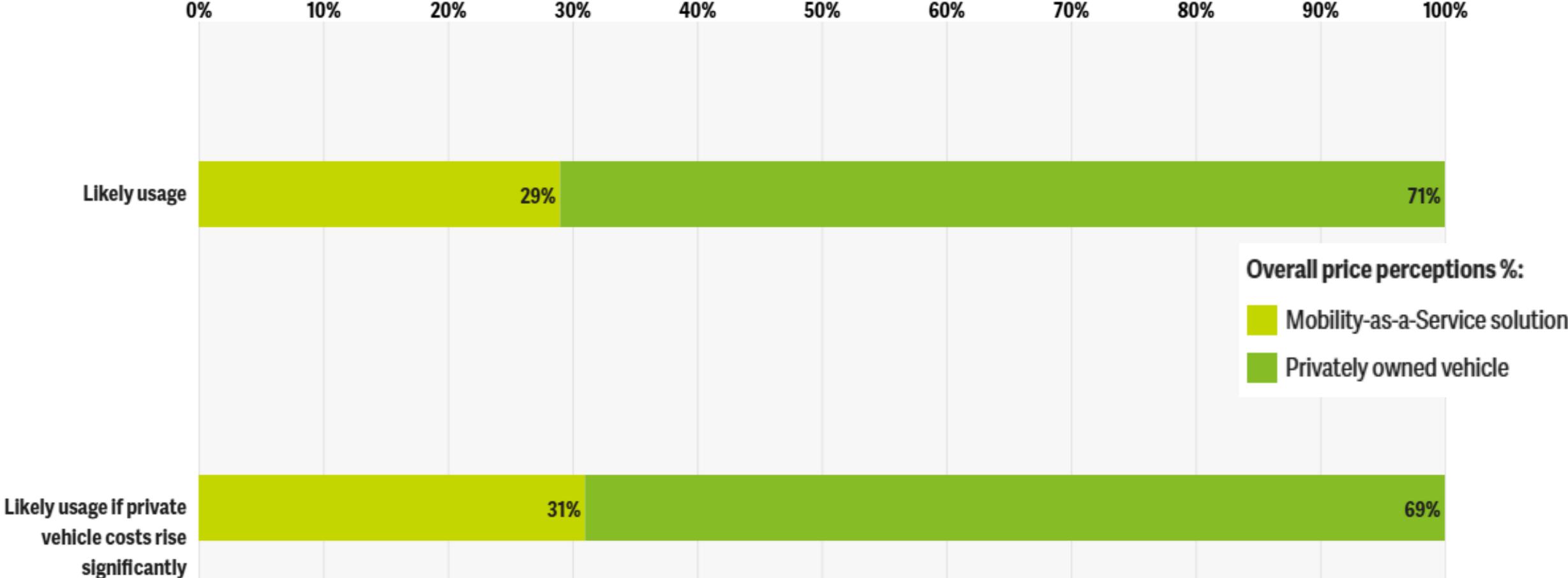## Willingness to give up vehicle ownership for a MaaS solution

Consumer Study – Mobility as a Service

MaaS VS Private Vehicle Ownership to meet **current** mobility needs
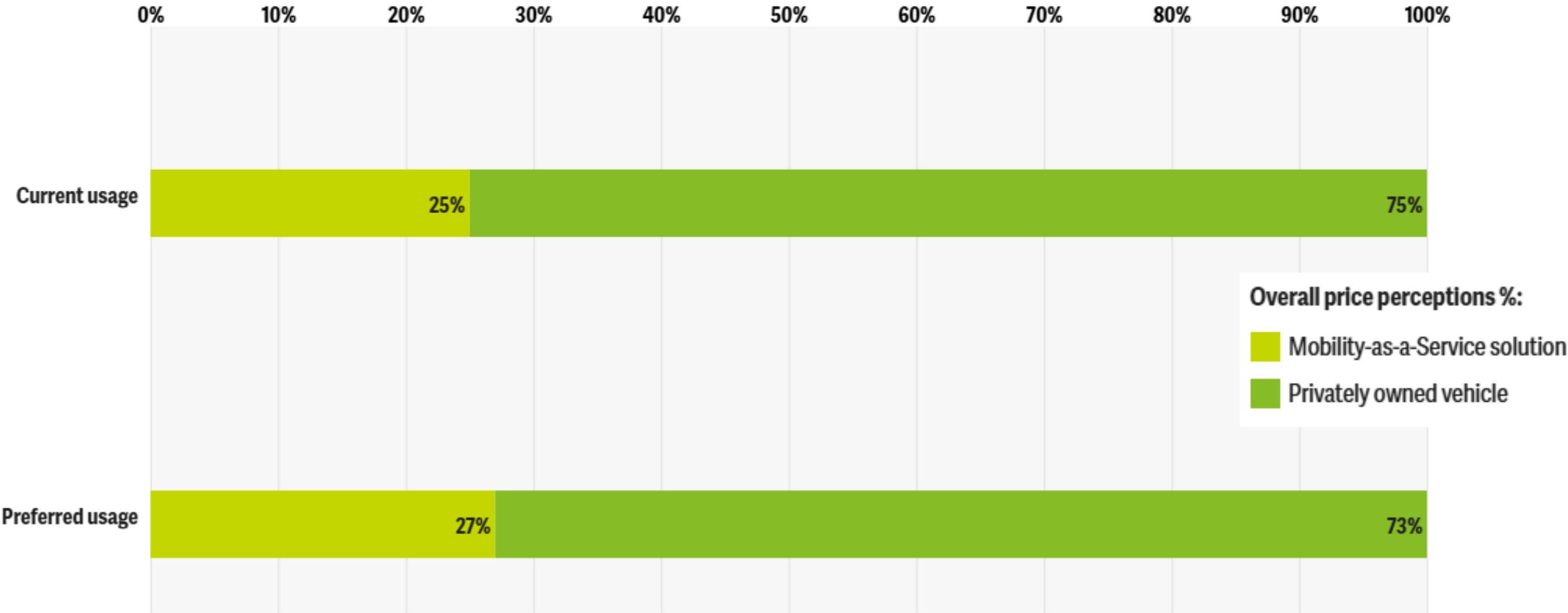
Consumer Study – Mobility as a Service

MaaS VS Private Vehicle Ownership to meet **future (5 years)** mobility needs

Questions?

Current Initiatives

David Williams, VHB

Current Initiatives

- I-4 Express Lanes

- I-4 FRAME

- OBU Deployment

Current Initiatives

- DANIEL (Digital Analytics Notification for Incident and Event Localization)

- HEIDI (High-Definition Engineering Intersection Data via Integrative Modeling)

- CRISI

THANK YOU!

Next Consortium – November 6, 2025

TSM&O Consortium Meeting

MEETING AGENDA
Teleconference or
FDOT District 5 RTMC (4975 Wilson Rd, Sanford, FL 32771)

September 11, 2025
10:00 AM-12:00 PM

1) SPECIAL EVENT COORDINATION – DAYTONA INTERNATIONAL SPEEDWAY

   - James Floyd, Daytona International Speedway

2) FDOT DISTRICT FIVE ITS MASTER PLAN UPDATE

   - Dale Cody, Metric Engineering

3) CFLSMARTROADS.com – HELPFUL RESOURCES

   - David Williams, VHB

4) GLOBAL AUTOMOTIVE CONSUMER STUDY – CONSUMER SENTIMENT

   - David Williams, VHB

5) CURRENT INITIATIVES

   - David Williams, VHB