TPO Annual Planning Retreat Summary

Friday, March 23, 2018
9:00 a.m. – 12:00 a.m.
Brannon Civic Center
New Smyrna Beach

On Friday, March 23, 2018, the River to Sea TPO, in partnership with the Volusia County Association for Responsible Development (VCARD), held its annual planning retreat at the Brannon Civic Center in New Smyrna Beach. The focus of the retreat was the "Future of Transportation Technology." There were 126 attendees present including members from the River to Sea TPO Board and advisory committee, VCARD members, city and county government staff representatives, interested citizens, consultants and press.

PURPOSE

The purpose of the retreat was to provide a casual and engaging forum within which current and future transportation technologies, including automated, connected, electric and shared (ACES) vehicles, could be introduced and explored and ideas could be shared. The planning retreat was designed to incorporate several core planning elements of the TPO including:

- Increasing awareness of the Transportation Systems Management and Operations (TSM&O) master planning activity that is currently underway;
- ACES vehicle planning and the upcoming automated vehicle study that will be initiated;
- Long Range Transportation Planning and the influences of advancing technologies; and
- Public outreach (involving citizen advisors and partnering with the Chamber of Commerce)

The event began with a welcome and introductions from River to Sea TPO Chairperson Deb Denys and VCARD Chairperson Maria Summerlin (an agenda is attached). To kick off the retreat, R2CTPO Executive Director Lois Bollenback directed participants at each table to answer a series of questions regarding their personal use of transportation technology including the Uber, Lyft and Life360 apps, as well as their utilization of electric and/or hybrid vehicles. Responses were gathered by the leader for each table and then shared among the attendees (handout attached).

PRESENTATIONS – Session 1

The first set of presentations included a panel of industry experts that focused on the emerging technologies that are expected to be deployed in the next five to ten years and the technology and infrastructure associated with smart cities and ACES vehicles.

- Mr. Nelson Caparas, Traffic Engineering Manager for Alfred Benesch & Company: Mr. Caparas' presentation reviewed the definition of a "smart city" in regards to technology and its components. He reviewed how the Internet of Things (IoT), a system of internet connected

devices, objects or people that are provided with unique identifiers and the ability to transfer data over a network without requiring human-to-human or human-to-computer interact, is required to be a smart city.

- Mr. Kris Milster, Director of Government Accounts with Traffic Technology Services, Inc. (TTS): Mr. Milster explained autonomous vehicles' connectivity to elements of the roadway system and various methods that could be used to institute the vehicles. He noted that his company Traffic Technology Services, Inc. works off the information that is already being generated by the traffic signal systems to predict information for vehicles. He reviewed the interconnected relationships between governments, partners, TTS, customers and end users.

- Mr. Sheldon Pafford, Florida Sales Representative with Temple, Inc., and Mr. Chris Holloway, Southeast Business Development Manager for Applied Information, Inc.: Mr. Pafford and Mr. Holloway spoke about ways to make transportation technology easier to deploy and maintain. They discussed the TravelSafely app and its functions. This app uses technology to connect cell phones to a network of traffic intersections, school beacons, motorists, cyclists and pedestrians. It utilizes audible warnings to alert drivers of dangerous conditions.

INTERACTIVE EXERCISE

Following the first three presentations, an interactive discussion was held where a series of questions were posed to the audience regarding transportation technology. The questions asked focused on the implementation and funding of technology as well as the impact technology will have on traditional capacity infrastructure; how communities may change as these technologies become more common. Several questions were repeated from a previous polling exercise conducted during the 2016 TPO Retreat to gauge changing awareness of transportation technology in recent years. Audience responses were generated through the use of interactive polling clickers (results attached).

Interactive Polling

BREAK

During the break, participants were able to view the vehicles on display including: an autonomous Maritime RobotX Boat (provided by ERAU), a modified "eco-friendly" Chevy Camaro (provided by ERAU), a fully electric and autonomous Tesla X (provided by Applied Information Inc.) and a fully autonomous Ford Escape used in a Defense Advanced Research Projects Agency (DARPA) challenge which required robotic vehicles to travel more than 56 miles through an urban environment without human intervention and included situations such as stop intersections, traffic merges, parking and roadblocks (vehicle provided by ERAU). Technical staff were on hand to answer questions and provide demonstration rides in the Tesla X to introduce riders to in-vehicle technology (electric and automated) as well as connected vehicle technology. Local traffic signals were activated to provide signal information to a smart phone app used in the vehicle.

Fully Autonomous Tesla X

Chevy Camaro EcoCar

Maritime RobotX Boat

Fully Autonomous Ford Escape

PRESENTATIONS – Session 2

The final two presentations introduced a number of considerations regarding the changes influenced by emerging technologies. These changes included land use planning, policy/legislation and economics and funding. These changes tie in with the Connected and Automated Vehicle (CAV) Study the River to Sea TPO will be undertaking in the next fiscal year which will help identify strategies to address challenges on subjects such as these (land use considerations, infrastructure improvements and policy changes). The presentations also introduced generational and societal changes, business trends and the work underway at Embry-Riddle Aeronautical University.

- Dr. Abby Morgan, Connected and Automated Vehicle Project Manager for Kittelson & Associates, Inc., covered the ways policies are evolving with emerging technologies as well as each component of ACES vehicles. She defined the levels of vehicle automation. She noted the River to Sea TPO's TSM&O Master Plan's focus was on identifying and prioritizing cost-effective technology deployments and developing operational strategies to realize increased performance of the transportation system. Dr. Morgan also discussed ways to manage curb space and parking requirements.

- Dr. Charles Reinholtz, Professor and former Chair of the Mechanical Engineering Department at Embry-Riddle Aeronautical University, discussed the societal changes that are driving technology; the differences in today's generation in relation to transportation preferences. He explained some of the reasons safety may ultimately expedite vehicle automation; this was backed up with crash statistics from the River to Sea TPO's Crash Analysis Report. Information was also presented on the Embry-Riddle Aeronautical University vehicles that were provided for display.

CLOSING ACTIVITIES

Subsequent to the final presentation, the audience engaged in a question and answer period directed towards the expert panel. Participants were also able to view the display vehicles after the sessions ended.

As we continue to plan for our future, the River to Sea TPO will look to incorporate strategies to accommodate the advances of emerging transportation technologies in the development of our next Long Range Transportation Plan (LRTP) update. The LRTP is a policy document that guides the TPO in the development, management and operation of a safe and efficient transportation system over the next 25 years. In the development of the 2045 LRTP, the TPO must consider the infrastructure and technological improvements necessary to accommodate advances in vehicle technology (such as autonomous technology).

A list of the River to Sea TPO's current and upcoming Transportation Technology projects was provided (attached) to the attendees. This list included information on adaptive traffic signal control system infrastructure projects that are existing, planned and/or programmed in the TPO planning area. Also of note were a number of planning studies that are currently underway or are expected to begin shortly.

A list of informative resources was also provided to the attendees to provide additional information on transportation technology (attached). These resources included information on connected cars and their effect on the auto industry and cities; Waymo's self-driving cars; and driverless car regulation information.

All of the speakers' presentations and additional photos are available on the TPO's website at: https://www.r2ctpo.org/public-involvement/community-presentations/

FOLLOW-UP

A follow-up survey was distributed to participants to evaluate the overall retreat. A total of 29 responses were received. Some of the questions posed focused on the purpose of the retreat, the appropriateness of the venue where the retreat was held, the usefulness of the information presented as well as overall satisfaction with the event. Responses were generally positive with overall satisfaction with the retreat being ranked 9 out of 10 point scale. Additionally, the survey asked for input on the theme for next year's retreat with the majority of responses voting for the topic of "transportation in supporting economic development" followed by "what will transportation look like in the next 25 years?"

Annual Retreat

Friday, March 23rd
9:00 a.m. – 12:00 noon / 8:30 a.m. Registration Opens
Brannon Civic Center, New Smyrna Beach FL

8:30 a.m. **Registration / Breakfast / Vehicle Display**

9:00 a.m. **Welcome Remarks / Introduction**

Volusia County Council Vice Chair Deb Denys
River to Sea TPO Board Chair

Maria Summerlin, S&ME
VCARD Board Chair

9:15 a.m. **Opening Exercise #1**

9:30 a.m. **PART I: Transportation Technology on the Horizon**

Speakers: Nelson D. Caparas, P.E., Alfred Benesch & Company
Sheldon Pafford, Temple, Inc.
Chris Holloway, Applied Information
Kris Milster, P.E., PTOE, Traffic Technology Services, Inc.

10:00 a.m. **Exercise #2 / Break / Vehicle Display**

10:30 a.m. **PART 2: Transportation Technology Influencing Our Future**

Speakers: Abby Morgan, Ph.D., P.E., Kittelson & Associates, Inc.
Charles Reinholtz, Ph.D., Embry-Riddle Aeronautical University

11:00 a.m. **Questions & Answers**

11:30 a.m. **Closing Remarks**

RIVER TO SEA Transportation Planning Organization TPO
VISION - PLAN - IMPLEMENT

2018 Annual Planning Retreat on

Emerging Transportation Technologies

Exercise #1

Thank you for taking the lead at your table!!

Please review these questions with others at your table to collect the information requested.

Don't worry – you won't be asked to address the crowd.

Questions	Responses
1. How many people at the table have a transportation network app (Uber, Lyft or other) on their smart phone?	#_____.
2. Approximately how many total rides did members take in the past year using one of these services?	#_____.
3. Thinking back 5 years, how many members had one of these apps on their smart phone?	#_____.
4. Does anyone at your table:	
a. Use the Life360 app (or similar technology) to track driving behavior?	Yes / No
b. Have a car with Alexa voice integration?	Yes / No
c. Have a car that uses a parking assist, automatic breaking or lane departure feature?	Yes / No
d. Own an electric or hybrid electric vehicle?	Yes / No

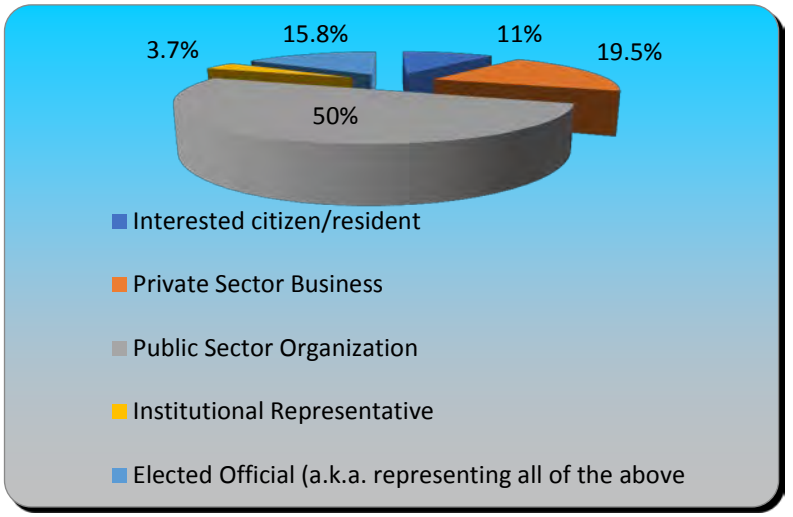
A.C.E.S

Turning Graphical Results by Question

Session Name: TPO 3-23-2018 11-52 AM
Created: 3/27/2018 1:59 PM

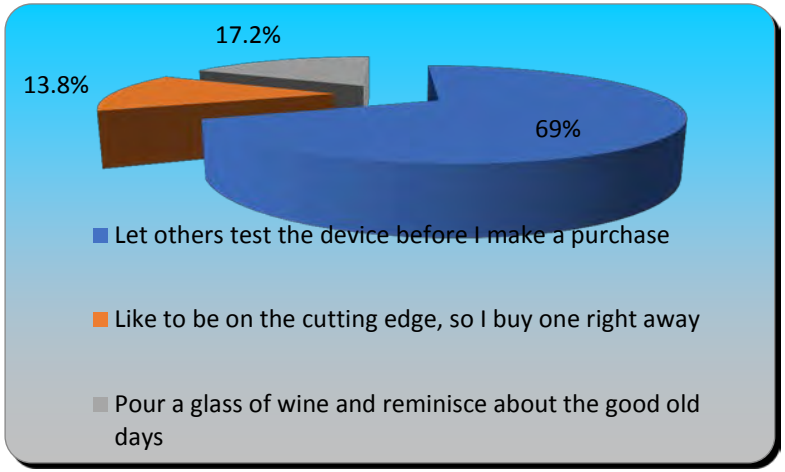
1.) What group do you represent with your attendance today? (multiple choice)

	Responses	
Interested citizen/resident	9	10.98%
Private Sector Business	16	19.51%
Public Sector Organization	41	50%
Institutional Representative	3	3.66%
Elected Official (a.k.a. representing all of the above	13	15.85%
Totals	**82**	**100%**



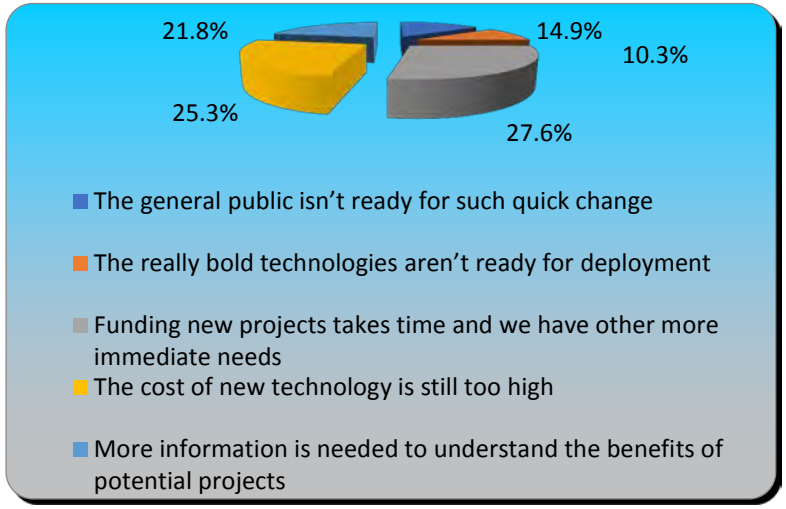
2.) When new technology comes out such as smart TV's, Fire-sticks, or a new iPhone, I: (multiple choice)

	Responses	
Let others test the device before I make a purchase	60	68.97%
Like to be on the cutting edge, so I buy one right away	12	13.79%
Pour a glass of wine and reminisce about the good old days	15	17.24%
Totals	**87**	**100%**



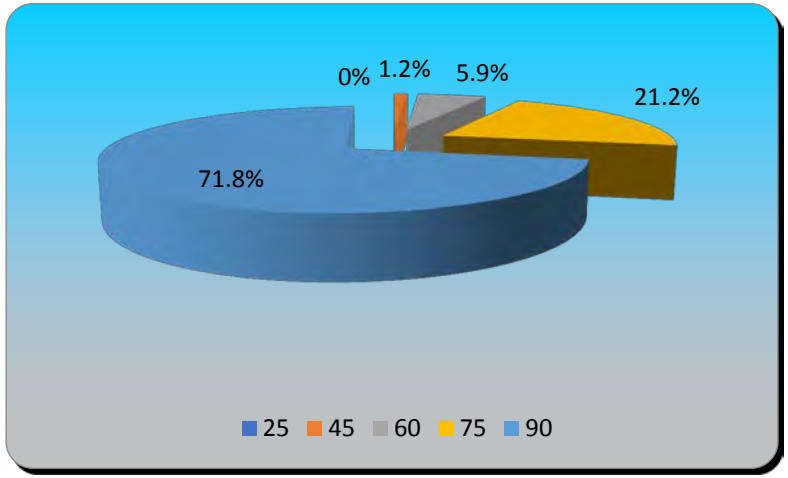
3.) Transportation technology is advancing at a rapid pace. The primary delay in implementing new technology in this planning area is? (multiple choice)

	Responses	
The general public isn't ready for such quick change	13	14.94%
The really bold technologies aren't ready for deployment	9	10.34%
Funding new projects takes time and we have other more	24	27.59%
The cost of new technology is still too high	22	25.29%
More information is needed to understand the benefits of	19	21.84%
Totals	**87**	**100%**



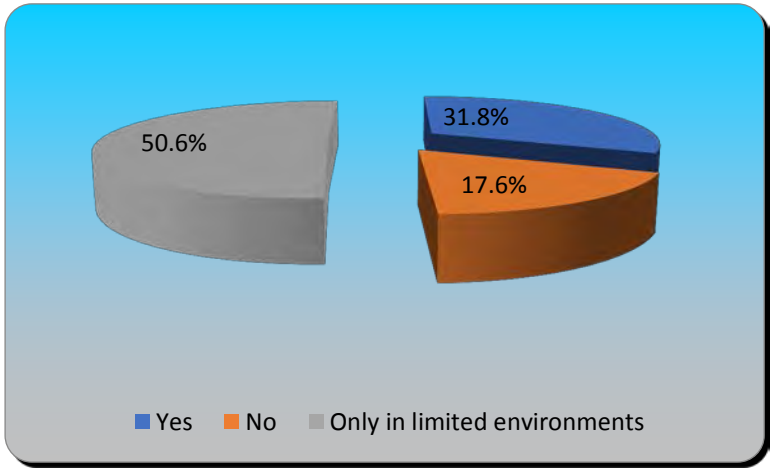
4.) On average, what percentage of vehicle crashes are due to human error? (multiple choice)

	Responses	
25	0	0%
45	1	1.18%
60	5	5.88%
75	18	21.18%
90	61	71.76%
Totals	**85**	**100%**

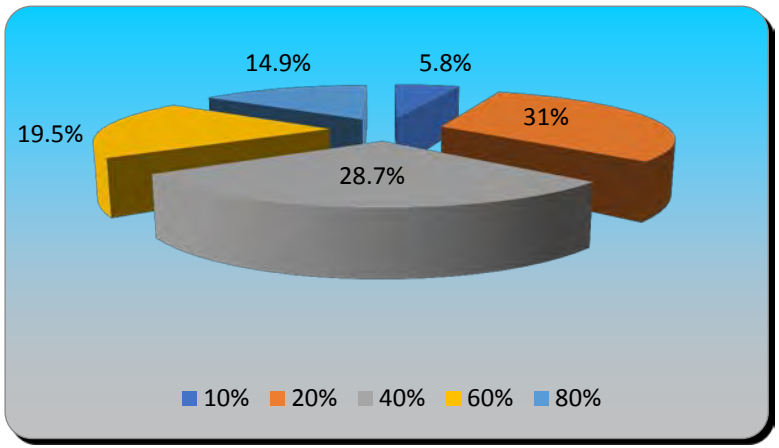


Estimates attributing vehicle crashes to human error range from 90 to 99%

5.) Would you feel safe on the roads today (driving, walking or biking) with fully autonomous vehicles? (multiple choice)	Responses	
Yes	27	31.76%
No	15	17.65%
Only in limited environments	43	50.59%
Totals	**85**	**100%**



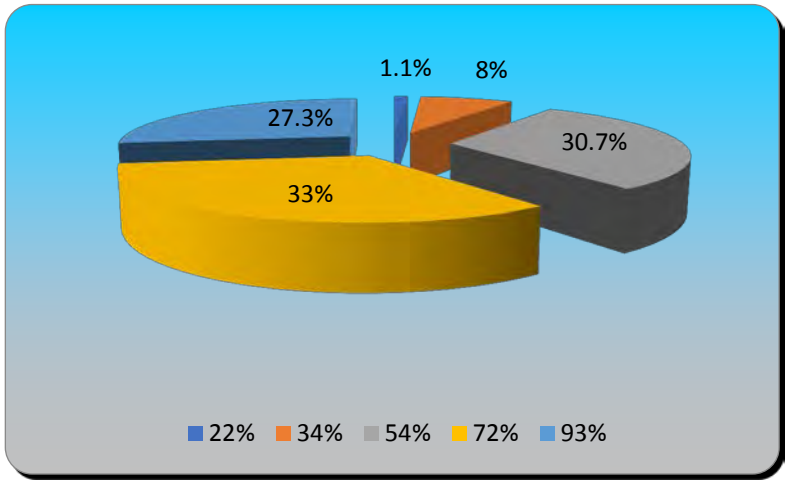
6.) In the year 2040, the horizon of our current long range plan, private automobile insurance is expected to shrink by how much as a result of improved transportation technologies? (multiple choice)	Responses	
10%	5	5.75%
20%	27	31.03%
40%	25	28.74%
60%	17	19.54%
80%	13	14.94%
Totals	**87**	**100%**



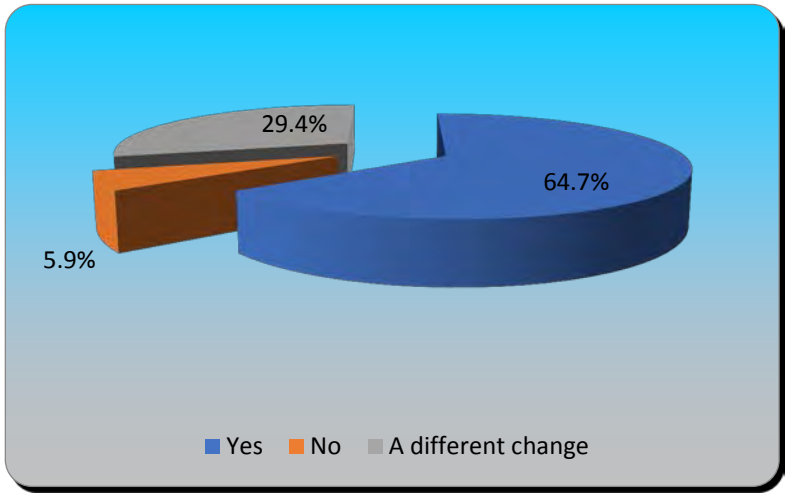
Estimates regarding auto insurance include:

- **Cost shifts to premium discounts for cars with advanced safety features**
- **Reduced rates & declines in individual premiums beginning in 2024-26**
- **Cyber security/product liability/infrastructure replacing traditional insurance**

7.) What percentage of overall vehicle sales are expected to be electric vehicles in the year 2040? (multiple choice)	Responses	
22%	1	1.14%
34%	7	7.95%
54%	27	30.68%
72%	29	32.95%
93%	24	27.27%
Totals	**88**	**100%**

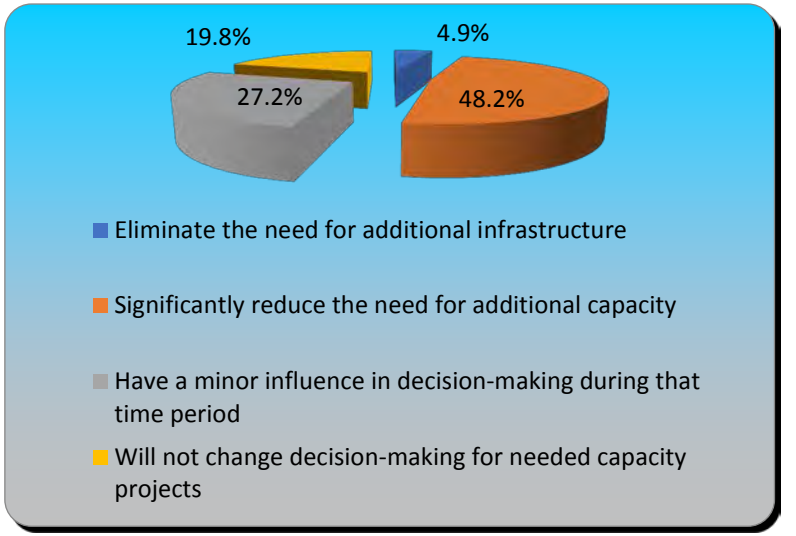


8.) Do you believe funding at the national level will change to a vehicle-miles-travelled (VMT) tax within the 2040 planning horizon? (multiple choice)	Responses	
Yes	55	64.71%
No	5	5.88%
A different change	25	29.41%
Totals	**85**	**100%**



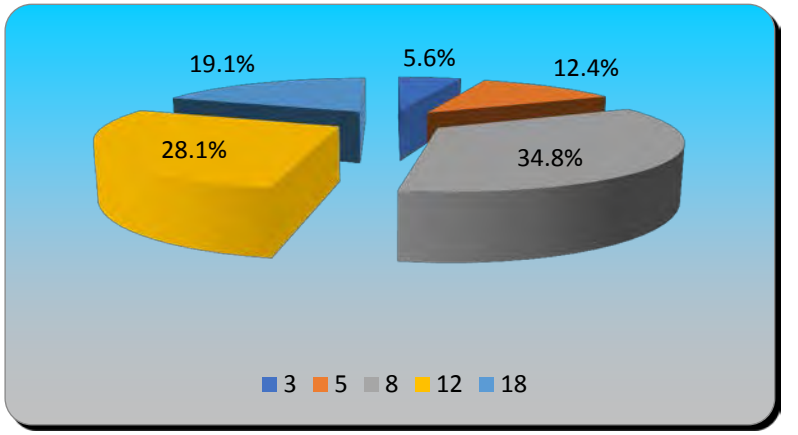
9.) What impact will the implementation of advanced vehicle technology, ride sharing services (Uber & Lyft), electronic communication (telecommuting, video-conferencing, etc.) and e-commerce will have on the need for traditional capacity infrastructure projects in the next 10 to 20 years: (multiple choice)

	Responses	
Eliminate the need for additional infrastructure	4	4.94%
Significantly reduce the need for additional capacity	39	48.15%
Have a minor influence in decision-making during that time	22	27.16%
Will not change decision-making for needed capacity projects	16	19.75%
Totals	**81**	**100%**

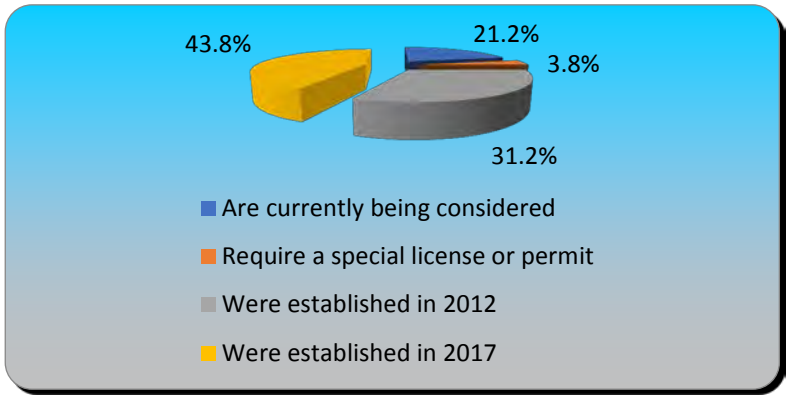


10.) Car sharing networks reported roughly 1.7 million members in 2012. What are the estimates for 2020 (in millions)? (multiple choice)

	Responses	
3	5	5.62%
5	11	12.36%
8	31	34.83%
12	25	28.09%
18	17	19.10%
Totals	**89**	**100%**



11.) Florida laws permitting autonomous vehicles with an operator: (multiple choice)	Responses	
Are currently being considered	17	21.25%
Require a special license or permit	3	3.75%
Were established in 2012	25	31.25%
Were established in 2017	35	43.75%
Totals	**80**	**100%**



F.S. 316.85 Autonomous vehicles; operation

- **"A person who possesses a valid driver license may operate an autonomous vehicle"**
- **"a person shall be deemed to be the operator of an autonomous vehicle operating in autonomous mode when the person causes the vehicle's autonomous technology to engage, regardless of whether the person is physically present in the vehicle"**

River to Sea TPO Transportation Technology Projects

Infrastructure Projects -- Planned & Programmed

Adaptive Traffic Signal Control System is a technology-based traffic management strategy in which traffic signal timings change, or adapt, based on actual traffic demand. This is accomplished using both hardware and software and will ultimately lead to reduced congestion, improved travel time reliability, increased safety and environmental benefits.

The River to Sea TPO currently has five Adaptive Traffic Signal Control System projects identified as priorities for funding and implementation as well as support for the development of a traffic management center:

- In Ormond Beach on Granada Blvd. (SR 40), from Tymber Creek Rd. to A1A
- In Port Orange on Dunlawton Blvd. (SR 421), from Summertrees Blvd. to US 1
- In New Smyrna Beach on SR 44, from Airport Rd. to East 3rd Ave.
- In Unincorporated Volusia County on LPGA Blvd., from I-95 interchange to Clyde Morris Boulevard
- In Orange City and Deltona on Saxon Blvd., from Marketplace Dr. to Normandy Blvd.
- Relocation of fiber optic cables to the Volusia County Traffic Management Center in New Smyrna Beach

Infrastructure Projects -- Existing

- In Daytona Beach on International Speedway Blvd. (US 92) – adaptive signals
- In DeLand on Woodland Blvd. (US 17/92) – adaptive signals

Planning Studies

Transportation Systems Management & Operations (TSM&O) Master Plan – Rather than attempting to increase transportation capacity and efficiency through traditional methods, such as roadway widenings, TSM&O strategies provide alternative means to meet the ever increasing demands on the transportation network. The River to Sea TPO is currently developing a TSM&O Master Plan to identify and prioritize cost-effective technology deployments and develop operational strategies to realize increased performance of the transportation system.

Connected and Automated Vehicle (CAV) Study – No longer a question of "if", but "when", the deployment of CAVs will present new challenges for transportation agencies. In the next fiscal year, the River to Sea TPO will undertake a study to help identify strategies to address these challenges on subjects including, but not limited to, infrastructure improvements, land use considerations, and policy changes.

Long Range Transportation Plan (LRTP) – Updated every five years, the LRTP is a policy document that guides the TPO in the development, management, and operation of a safe and efficient transportation system. As we continue to plan for the future, the River to Sea TPO will look to incorporate strategies to accommodate the advances of emerging transportation technologies in the development of the next LRTP update.

Transportation Technology Resources

Connected Cars and their effect on the Industry and Cities

- "Connected cars make money for automakers in a new way" from CNET: https://www.youtube.com/watch?v=sDk9Pn49vgc
- "The Future of Freeways: The Impact of Connected and Automated Vehicles" from Stantec: https://www.youtube.com/watch?v=4NTPRBTczA8
- "What a driverless world could look like" from TED Talks: https://www.youtube.com/watch?v=OlLFK8oSNEM
- "A Revolution in the Automotive Industry" from The Atlantic: http://www.theatlantic.com/sponsored/microsoft-2016/a-revolution-in-the-automotive-industry/849/
- "Autonomous Vehicles" from the American Planning Association (APA): https://www.planning.org/knowledgebase/autonomousvehicles/

Driverless Shuttle in Tampa

- "Driverless shuttle coming to Tampa" from ABC Action News: https://www.youtube.com/watch?v=Pjfot0VHj1Q

The Connected Car and Automated Vehicles

- "Connected and Automated Vehicles" from the Center for Advanced Automotive Technology: http://autocaat.org/Technologies/Automated_and_Connected_Vehicles
- "Florida Automated Vehicles" from FDOT: http://www.automatedfl.com/
- "An introduction to autonomous vehicles" from the Federation of International Automobiles (FIA): https://www.youtube.com/watch?v=HgF7E5q9sU4

Waymo's Self Driving Cars

- "Waymo's fully self-driving cars are here" from Waymo: https://www.youtube.com/watch?v=aaOB-ErYq6Y
- Waymo website: https://waymo.com/
- "Waymo 360° Experience: A Fully Self-Driving Journey" https://www.youtube.com/watch?v=B8R148hFxPw

Driverless Car Regulations

- "Driverless Cars: Innovating Regulation" from the Federalist Society: https://www.youtube.com/watch?v=SSLZYNBxaIs
- "When Regulating Self-Driving Cars, Who's at the Wheel?" from Governing the States and Localities: http://www.governing.com/topics/transportation-infrastructure/gov-driverless-car-regulations.html