Final Report

FDOT Contract No. BDV29-977-32

Use of Communication Technologies
to Enhance Public Involvement in Transportation Projects

Prepared for:

Research Center
Florida Department of Transportation
605 Suwanee Street
Tallahassee, Florida 32399

Prepared by:

Priyanka Alluri, Ph.D., P.E., Assistant Professor
Sajidur Nafis, Graduate Research Assistant
Fabio Soto, Graduate Research Assistant
Monica Gonzalez, Undergraduate Research Assistant
Albert Gan, Ph.D., Professor

Lehman Center for Transportation Research
Florida International University
10555 West Flagler Street, EC 3628
Miami, Florida 33174
Phone: (305) 348-3485
Email: palluri@fiu.edu

June 2018

DISCLAIMER

The opinions, findings, and conclusions expressed in this publication are those of the authors and not necessarily those of the State of Florida Department of Transportation.

METRIC CONVERSION TABLE

U.S. UNITS TO SI* (MODERN METRIC) UNITS

SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL
LENGTH				
in	Inches	25.400	millimeters	mm
ft	Feet	0.305	meters	m
yd	Yards	0.914	meters	m
mi	Miles	1.610	kilometers	km
mm	Millimeters	0.039	inches	in
m	Meters	3.280	feet	ft
m	Meters	1.090	yards	yd
km	Kilometers	0.621	miles	mi

SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL
AREA				
in^2	square inches	645.200	square millimeters	mm^2
ft^2	square feet	0.093	square meters	m^2
yd^2	square yard	0.836	square meters	m^2
ac	Acres	0.405	hectares	ha
mi^2	square miles	2.590	square kilometers	km^2
mm^2	square millimeters	0.0016	square inches	in^2
m^2	square meters	10.764	square feet	ft^2
m^2	square meters	1.195	square yards	yd^2
ha	Hectares	2.470	acres	ac
km^2	square kilometers	0.386	square miles	mi^2

SYMBOL	WHEN YOU KNOW	MULTIPLY BY	TO FIND	SYMBOL
VOLUME				
fl oz	fluid ounces	29.570	milliliters	mL
gal	Gallons	3.785	liters	L
ft^3	cubic feet	0.028	cubic meters	m^3
yd^3	cubic yards	0.765	cubic meters	m^3
mL	Milliliters	0.034	fluid ounces	fl oz
L	Liters	0.264	gallons	gal
m^3	cubic meters	35.314	cubic feet	ft^3
m^3	cubic meters	1.307	cubic yards	yd^3
NOTE: volumes greater than 1,000 L shall be shown in m^3.				

*SI is the symbol for the International System of Units. Appropriate rounding should be made to comply with Section 4 of ASTM E380.

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient′s Catalog No.

4. Title and Subtitle	5. Report Date
Use of Communication Technologies to Enhance Public Involvement in Transportation Projects	June 2018
	6. Performing Organization Code

7. Author(s)	8. Performing Organization Report No.
Priyanka Alluri, Sajidur Nafis, Fabio Soto, Monica Gonzalez, Albert Gan	

9. Performing Organization Name and Address	10. Work Unit No. (TRAIS)
Lehman Center for Transportation Research	
Florida International University	11. Contract or Grant No.
10555 West Flagler Street, EC 3680, Miami, FL 33174	BDV29-977-32

12. Sponsoring Agency Name and Address	13. Type of Report and Period Covered
Florida Department of Transportation	Final Report
605 Suwannee Street, MS 30	January 2017 – June 2018
Tallahassee, FL 32399-0450	14. Sponsoring Agency Code

15. Supplementary Notes
Dr. Rax Jung, P.E., of the Florida Turnpike Enterprise and Dr. Rusty Ennemoser of the Office of Policy Planning at the Florida Department of Transportation served as the Project Managers for this project.

16. Abstract

Public involvement, especially during the Project Development and Environment (PD&E) phase, is key to developing projects that meet the community needs and desires and reduce the risks of litigation that could result in costly project delays. Active participation from people from all backgrounds and cultures is required to ensure that all points of view are taken into consideration. As such, agencies have undertaken special efforts to engage a wide cross-section of people including older population, minorities, low-income households, people with disabilities, and people with limited English-speaking skills.

The public in general, and underrepresented population groups in particular, are often unable to participate in public meetings because of work schedule conflicts or logistic challenges such as physical disability and transportation inaccessibility. Several available communication technologies could be adopted to disseminate information, facilitate two-way remote communication, and help participants engage more in public meetings. The main objective of this project is to increase participation in public involvement activities by making effective use of today's increasingly available communication media. The specific tasks include: (1) exploring and evaluating the available communication media; (2) reviewing the states' current practices in using communication media at public meetings; (3) surveying the general public and the public meeting attendees to document the public perspective in using communication media for public involvement activities; (4) identifying appropriate technology-based communication platforms for different underrepresented population groups; and (5) developing detailed procedures and guidelines for deploying the recommended communication media.

There are many communication tools that could be used to communicate effectively and efficiently. However, the main concern is not the availability of the communication technologies, but their unfamiliarity. Additionally, there is not a single communication medium, or set of media, that caters to all the underrepresented population groups. Different types of communication technologies were found to be suitable to assist different underrepresented population groups. Although several communication tools, including social media, virtual meetings, email and mass text messaging applications, are considered to increase public participation, a multi-pronged approach involving both digital engagement and traditional in-person meetings is considered to be most effective.

17. Key Word	18. Distribution Statement
Public Involvement, Communication Tools, Underrepresented Population, Technology, Survey, Transportation Projects.	

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
Unclassified	Unclassified	181	

Form DOT F 1700.7 (8-72)   Reproduction of completed page authorized

ACKNOWLEDGMENTS

EXECUTIVE SUMMARY

Public involvement, especially during the Project Development and Environment (PD&E) phase, is key to developing projects that meet the community needs and desires and reduce the risks of litigation that could result in costly project delays. Under FDOT Public Involvement Policy Topic No. 000-525-050 (FDOT, 2017), *"The Department recognizes the importance of involving the public in information exchange when providing transportation facilities and services to best meet the State's transportation needs. Therefore, it is the policy of the Florida Department of Transportation to promote public involvement opportunities and information exchange activities in all functional areas using various techniques adapted to the audience, local area conditions, and project requirements."* The policy recognizes the importance of broad-based opportunities for public involvement and encourages the use of different techniques to achieve it.

Although agencies strive to ensure that a wider cross-section of people is included in the public involvement process, there are often people who want to participate but are unable to because of work schedule conflicts or logistic challenges such as physical disability and transportation inaccessibility. While multiple meetings at different times of day could be conducted with additional cost to accommodate people with non-traditional work schedules, efforts to help those with logistic difficulties to participate in public meetings have been a challenge to design and implement. Fortunately, the increasing availability of today's communication technologies offers an opportunity not only to help those with logistic challenges to participate in public meetings, but also to provide an alternative to those who may wish to participate remotely.

The main objective of this project was to increase participation in public involvement activities by making effective use of today's increasingly available communication media. The objective was achieved through the following tasks:

1. Explore and evaluate the different communication technologies that could potentially be used to increase public involvement.
2. Review the states' current practices in using communication technologies at public meetings.
3. Survey the general public and the public meeting attendees to document the public perspective in using communication technologies for public involvement activities.
4. Identify appropriate technology-based communication platforms for different underrepresented population groups.
5. Develop detailed procedures and guidelines for deploying the recommended communication media.

Available Communication Media

The available communication media are divided into the following three broad categories:

- Tools to Disseminate Information
  - Micro-blogs
  - Blogs
  - Web-feeds

- o Broadcast Forums on Government Channel
- o Emails
- o Text Messages

- Tools Facilitating Two-way Remote Communication
  - o Video Conferencing
  - o Social Media
  - o Online Surveys

- Tools Assisting Participation at Public Meetings
  - o Mapping/Geographic Information Systems (GIS) Applications
  - o Online Testing Scenarios
  - o Audio/Video Files

States' Current Practices

States have been using different communication platforms to reach out to the public. States were found to frequently use social media, audio/video files, mapping/GIS applications, and micro-blogs. These tools were also found to be quite successful in engaging the public. The most beneficial outcomes of using Web-based communications were found to be *access to a broad audience for participation* and *more involvement from the public.* On the other hand, the top three barriers for states to adopt new communication technologies were found to be *inexperience with/lack of skill in using these communication media*, *cost*, and *Information Technology (IT) upgrades required for their adoption.* Students and the younger generation, followed by professionals and agency stakeholders, were found to be likely to engage in public involvement activities using technology-based tools. The top three deciding factors for states to adopt new communication technologies were found to be *the ability to reach new or hard to contact population groups*, *the perceived utility of input to the public involvement process*, and *affordability*.

States have undertaken special efforts to engage a wide cross-section of people, including minorities, people with disabilities, and people with limited English-speaking skills. Some states have used GIS applications to identify underrepresented population groups potentially affected by project, and devise a plan to reach out to these groups. Visualization tools, educational videos, devices, easily accessible websites, etc. are some of the strategies states have adopted to reach out to the underrepresented population groups. In general, states were found to use a combination of traditional and new approaches to engage the public.

Public Perception

The perception of the general public in using communication technologies for public involvement activities was documented using two surveys: a mail-out survey targeting the general public, and an in-person survey targeting the public meeting attendees at four public meetings across Florida. A survey questionnaire was mailed out to 4,000 randomly selected households in Florida. A total of 128 completed survey responses were received. A total of 57 public meeting attendees were surveyed to obtain their perception of using communication tools for enhancing public

involvement. Both surveys attempted to gather information about the general public accessibility and frequency of use of technology-based communication tools and their opinion on usefulness of these tools in their day-to-day life.

Some of the specific recommendations to increase participation in public involvement activities include:

- Provide early and frequent notifications about the public meetings. Use multiple media, especially text, email, social media, etc., in addition to the traditional media such as newspaper, flyer, and postal mail.
- Consider scheduling the meetings either in the evenings on weekdays or at suitable time on weekends.
- Consider conducting meetings in the communities of the target population, at common public places such as libraries, churches, schools, etc., and/or near project area.
- Consider having the meetings in small group settings.
- The meeting instructor should be knowledgeable and well trained. In addition to responding immediately, consider collecting the attendees' questions or concerns and uploading the responses on the website and sending the responses via email or text message.
- There are many technologies that could be used to communicate effectively and efficiently. However, the main concern is not the availability of the communication technologies; their unfamiliarity is a serious limitation. Therefore, consider adopting popular technologies, at least in the initial phases.

Appropriate Platforms for Involving Different Population Groups

Agencies often make special efforts to make sure that the following underrepresented residents actively participate in public meetings:

- Older population
- Minority population
- Low-income households
- People with limited English proficiency (LEP)
- People with disabilities
  - People with vision impairment
  - People with hearing impairment
  - People with physical impairment

Table E-1 summarizes the communication media recommended for the aforementioned population groups. As can be inferred from the table, there is not a single communication medium, or set of media, that caters to all the underrepresented population groups. Different types of communication technologies were found to be suitable to assist different underrepresented population groups.

Table E-1: Recommended Communication Media

	Communication Media	General Public & People with Physical Impairment	Older Population	Minority Population	Low-income Population	People with LEP	Hearing-Impaired People	Vision-Impaired People
Disseminate Information	Twitter	Yes	No	No	No	Yes	Yes	Yes
	Feeder	No	No	No	No	No	No	No
	RapidFeeds	No	No	No	No	No	No	No
	Blogger	No	No	No	No	No	No	No
	Broadcast Forums	No	No	No	No	No	No	No
	Email-Blasts	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Textedly	Yes	Yes	May be	May be	Yes	Yes	No
Facilitate Two-way Communication	Skype	May be	May be	May be	May be	No	Yes	Yes
	GoToMeeting	Yes	Yes	Yes	May be	No	No	No
	Adobe Connect Meetings	May be	May be	May be	May be	No	No	No
	Facebook	Yes	Yes	Yes	Yes	May be	Yes	Yes
	YouTube	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	SurveyMonkey	May be	May be	May be	No	Yes	Yes	Yes
	WhatsApp	No[1]	No[1]	No[1]	No[1]	No[1]	No[1]	No[1]
Assist in Participation	Google Maps	Yes	Yes	Yes	May be	Yes	Yes	Yes
	MetroQuest	Yes	No	No	No	No	No	No
	Podcasts	Yes	May be	Yes	Yes	No	May be[2]	Yes

[1] Not recommended because of privacy issues; [2] Only if podcast transcripts are available.

Guidelines for Deploying Communication Media

The existing FDOT policies on using emails and social media and the current protocols for handling confidential information are considered to be adequate for the initial deployment of communication platforms to facilitate remote participation in public meetings and hearings. However, specific guidelines at the Department level as well as project-specific guidelines for deploying communication media are required to streamline the adoption procedures and to achieve consistency in using technology-based communication tools.

In summary, several communication tools, including social media, virtual meetings, email and mass text messaging services, are considered to increase public participation. Nonetheless, a multi-pronged approach involving both digital engagement and traditional in-person meetings is most effective. Using communication media to engage the public remotely is well-suited to collecting opinions and educating the public at large in a short timeframe and to reach out to a broader demographic. On the other hand, traditional public meetings are more suitable to work with a smaller group of people to create solutions. Moreover, the results from virtual meetings and online communications could be used to tailor the traditional public meetings. Therefore, an effective public involvement strategy is to combine online engagement tools with traditional public meetings.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS/ABBREVIATIONS

ADA	Americans with Disabilities Act
ADOT	Arizona Department of Transportation
Caltrans	California Department of Transportation
CART	Computer-assisted Real-time Transcription
CDOT	Colorado Department of Transportation
DOT	Department of Transportation
EST	Environmental Screening Tool
FAQ	Frequently Asked Questions
FDOT	Florida Department of Transportation
FGDL	Florida Geographic Data Library
FHWA	Federal Highway Administration
GDOT	Georgia Department of Transportation
GIF	Graphics Interchange Format
GIS	Geographic Information System
HD	High-Definition
HDOT	Hawaii Department of Transportation
IT	Information Technology
LEP	Limited English Proficiency
MassDOT	Massachusetts Department of Transportation
MPO	Metropolitan Planning Organization
MS	Microsoft
NCDOT	North Carolina Department of Transportation
NMDOT	New Mexico Department of Transportation
NYSDOT	New York State Department of Transportation
ODOT	Oregon Department of Transportation
OS	Operating System
PD&E	Project Development and Environment
PennDOT	Pennsylvania Department of Transportation
Q&A	Question and Answer
RAM	Random Access Memory
RSS	Rich Site Summary
SMS	Short Message Service
STIP	State Transportation Improvement Program
TV	Television
URL	Uniform Resource Locator
VMS	Variable Message Signs

CHAPTER 1
INTRODUCTION

1.1 Background

Public involvement, especially during the Project Development and Environment (PD&E) phase, is key to developing projects that meet the community needs and desires and reduce the risks of litigation that could result in costly project delays. Juarez & Brown (2008) emphasized this concept by stating,

> *"… as a result of developments within the planning and design fields over the past 40 years, the question is no longer if citizen participation should be part of the planning and design process in public works, but rather who should participate, which methods should be employed, what type of knowledge will be produced, and how will that knowledge be integrated into the process."*

Public involvement process requires active participation from people from all backgrounds and cultures to ensure that all points of view are taken into consideration. Involving underrepresented population groups in the public outreach efforts will help on multiple fronts, including (MassDOT, 2014):

- providing fresh perspectives to project planners and developers,
- giving agencies firsthand information about community-specific issues and concerns,
- allowing agencies to understand potential controversies,
- providing feedback to agencies on how to get these communities involved, and
- ensuring that the solutions ultimately selected will be those that best meet all of the communities' needs.

As such, agencies often make special efforts to make sure that the following underrepresented population groups are actively engaged in the public involvement process:

- Older population
- Minority population
- Low-income households
- People with limited English proficiency (LEP)
- People with disabilities

The public in general, and underrepresented population groups in particular, are often unable to participate in public meetings because of work schedule conflicts or logistic challenges such as physical disability and transportation inaccessibility. While multiple meetings at different times of day could be conducted with additional cost to accommodate people with non-traditional work schedules, efforts to help those with logistic difficulties to participate in public meetings have been a challenge to design and implement. Fortunately, the increasing availability of today's communication technologies offers an opportunity not only to help those with logistic challenges to participate in public meetings, but also to provide an alternative to those who may wish to participate remotely.

1.2 Research Objective

The main objective of this research project was to increase participation in public involvement activities by making effective use of today's increasingly available communication media. The objective was achieved through the following tasks:

1. Explore and evaluate the different communication technologies that could potentially be used to increase public involvement.
2. Review the states' current practices in using communication technologies at public meetings.
3. Survey the general public and the public meeting attendees to document the public perspective in using communication technologies for public involvement activities.
4. Identify appropriate technology-based communication platforms for different underrepresented population groups such as older population, minority population, people with limited English-speaking skills, etc.
5. Develop detailed procedures and guidelines for deploying the recommended communication media.

1.3 Report Organization

The rest of this report is organized as follows:

- Chapter 2 focuses on exploring and evaluating the different technology-based communication tools that are available for enhancing public involvement in public meetings.

- Chapter 3 discusses the states' existing practices in using communication technologies at public meetings.

- Chapter 4 presents the general public's perspective in using communication technologies for public involvement activities.

- Chapter 5 presents the public meeting attendees' opinions in using communication technologies for public involvement activities.

- Chapter 6 discusses the appropriate technology-based platforms that can increase the participation of the following underserved population groups: older population; minority population; low-income households; people with LEP; and people with disabilities.

- Chapter 7 provides the FDOT's existing policies on the use of Information Technology (IT) resources including computer hardware and devices, software, networks, emails, etc. It also presents specific guidelines for deploying communication media to increase public involvement.

- Chapter 8 provides a summary of this project effort and the relevant findings, conclusions, and recommendations.

CHAPTER 2
AVAILABLE COMMUNICATION MEDIA

This chapter focuses on exploring and evaluating the different technology-based communication tools that are available for enhancing public involvement in public meetings. The available communication media are divided into the following three broad categories:

- Tools to Disseminate Information
  - Micro-blogs
  - Blogs
  - Web-feeds
  - Broadcast Forums on Government Channel
  - Emails
  - Text Messages

- Tools Facilitating Two-way Remote Communication
  - Video Conferencing
  - Social Media
  - Online Surveys

- Tools Assisting Participation at Public Meetings
  - Mapping/Geographic Information System (GIS) Applications
  - Online Testing Scenarios
  - Audio/Video Files

For each of the aforementioned communication media, the following are discussed:

- Specific features of the communication media
- System requirements to use the communication media
- Pros and cons of the communication media
- Ways for the public to use the communication media

For each communication media, only the specific features that could potentially help in enhancing public involvement in public meetings are presented.

2.1 Tools to Disseminate Information

Some technologies are apt for one-way communication where public can get notified about the transportation projects and upcoming public meetings. Information about the projects and public meetings (such as time, location, etc.) can be published, updated, and announced through these media. These technologies include:

- *Micro-blogs:* A micro-blog is a combination of a Web blog and instant messaging that allows users to disseminate short messages in many formats with an audience online. The most popular micro-blog is Twitter, and is explained in Section 2.1.1.

- *Blogs:* A blog is a website that consists of a series of entries organized in chronological order, continuously updating with new information about different topics. The information can be written by the site owner, collected from other websites or other sources, or provided by users. Blogger is the most popular blog, and is discussed in Section 2.1.2.

- *Web Feeds:* Web Feeds are news updates from different websites. People can read this content through programs called aggregators. These programs collect news from different websites and show them in a news feed in simple form. The most common aggregator is Really Simple Syndication (RSS) Feed, and is explained in Section 2.1.3.

- *Broadcast Forums:* Government access Television (TV) help the community by providing access to local town government services and activities, and facilitating the exchange of public information through various forms of electronic communications. Section 2.1.4 briefly discusses this communication medium.

- *Emails:* Emails are Web and application-based software that allow the exchange of information between people. Users can send and receive texts, photos, videos, and digital documents in several formats. Emails also integrate with other applications such as calendars, chats, and cloud storage. Emails can be used to send information to one user or multiple users. Gmail is one of the several available email services, and is explained in Section 2.1.5.

- *Mass Texts:* Mass text messaging is the dissemination of large numbers of text messages for delivery to mobile phones. It is used by media companies, enterprises, banks, and consumer brands for a variety of purposes including entertainment, enterprise, and mobile marketing. Textedly is a common text messaging application, and is discussed in Section 2.1.6.

2.1.1 Twitter (Source: Twitter, 2018)

Twitter is a social network that allows people to send and post short messages, photos, videos, and website links either publicly or privately. Twitter also offers other social networking features such as one-to-one and group instant messaging communication, and live video streaming.

Features

Some of the relevant features include:

- *Tweets:* These are the information (text, photos, videos, links, etc.) that are shared on Twitter.

- *Twitter Polls:*   These allow users to weigh in on questions posed by other people on Twitter.

- *Direct Messages:*   These are used to have private conversations with other users. Users can start a one-to-one private conversation or create a group conversation. Users can also share videos, photos, and documents.

- *Periscope:*   Users can create live videos through the Periscope application and share them on Twitter. People that are on live video can receive comments, and users can interact with other members of the audience. The amount of people that can be watching a live video is unlimited.

System Requirements

Twitter website works best in the newest and the last prior version of Google Chrome, Mozilla Firefox, Safari, Internet Explorer, and Microsoft (MS) Edge. Twitter desktop application can be downloaded on Windows and Mac. Twitter mobile application works on iOS devices such as iPhone, iPad, iPod and Apple TV, as well as on Blackberry and Android smartphones and tablets. It is recommended to have the most updated version of the mentioned devices and operating systems to be able to use the newest features.

Cost and Maintenance

Twitter is free. It costs the users nothing to download or use the Twitter application or Twitter website. However, advertising on Twitter with a Twitter Business account is not free. Twitter Ads is an auction-based system so the users' budget and bid determine the price of their campaign.

Pros and Cons

Table 2-1 lists the pros and cons of using Twitter.

Table 2-1: Pros and Cons of Using Twitter

Pros	Cons
• Free. • Easy to download and install. • Available in multiple platforms. • Posting Tweets could be scheduled in advance. • Multiple people can share one account. • Provides increased exposure to the community. • Has lower marketing expenses. • Can reach targeted audience.	• Because of high tweet rate, it is hard to guarantee that an audience will read tweets from a specific account. • It takes time to gain followers on Twitter. • Due to the high volume of information being exchanged on Twitter, constant vigilance is needed. Someone from the organization needs to be available to provide immediate responses to tweets and messages. • It is hard to determine if the information communicated is genuine and not a scam. • A lot of people may not take twitter account seriously unless the account is verified.

Twitter can be accessed on a mobile device, tablet, computer application, or in the browser. Twitter application could be downloaded from any application store that supports Twitter, or from www.twitter.com. People must have a Twitter account to send and post information, talk to other Twitter users, and join live video streaming. However, it is not necessary to have an account if people only want to see the information and posts of public accounts.

2.1.2 Blogger (Source: Blogger, 2018)

Blogger is Google's free tool for creating blogs. Blogger allows to share information to targeted audience through a series of entries that are arranged in chronological order.

Features

Some of the relevant features include:

- *Blogger Template Designer*:   Allows users to create professional-looking blogs with templates that can be modified.

- *Free Website*:   Allows users to create their own *Uniform Resource Locator* (URL). Blogger also allows to set up a website domain as the blog domain.

- *Feedback*:   Readers can leave comments on any blog posts, giving useful feedback to the writer.

- *New Post Notifications*:   Users can subscribe to blog's feed, so they are notified whenever there is a new blog post.

- *Google Account Login ID*:   Allows to use a google account to login to the Blogger account.

- *Translation*:   Blogger is available in 41 languages.

- *Group Blogging*:   This feature allows to create a team blog, where multiple users can contribute to a single blog.

System Requirements

The most recent version of the following browsers is needed to get the most updated features: Google Chrome, Mozilla Firefox, Safari, MS Edge, and Internet Explorer. The mobile application is only supported on Android devices.

Costs and Maintenance

Blogger is free. Neither downloading nor using the application or Blogger website have costs. However, users must pay if they want more cloud storage.

Pros and Cons

Table 2-2 lists the pros and cons of using Blogger.

Table 2-2: Pros and Cons of Using Blogger

Pros	Cons
• Free. • Free of advertisements. • Has simple user interface. • Blogger is within Google ecosystem, it integrates with other Google applications.	• All Web blogs must have the blogspot.com URL name. • Users must pay for a custom domain. • Blogs are not as popular as social networking sites. • Mobile application is only supported on Android devices.

Ways to Access

Blogger can be accessed on a mobile device, tablet, or in the browser. However, Blogger application is only available on Android devices. People must have a Google Account to use Blogger and be able to post information. However, it is not necessary to have an account if people only want to see the information and posts of public accounts.

2.1.3 RSS Feeds

Really Simple Syndication (RSS) feeds is a data format for delivering frequently updated Web content. RSS feeds make a collection of Web feeds that are accessible in one place for people to read. People use RSS feeds to keep up-to-date with work feeds, weblogs, news sites, and other online publishers. Some RSS feeds contain images, media links, alternative links, author, and short summaries. One of the most common RSS feed is Feeder, which allows users to read new content published online. On the other hand, RapidFeeds is one of the most common RSS Feed manager, which helps publishers and Web managers to post information for people to read. Feeder and RapidFeeds are explained in the following subsections.

Feeder (Source: Feeder, 2018)

Features

Some of the relevant features include:

- *Simple Mode:* This feature focuses on delivering only the information that matters to users. It removes clutter and just shows the essential material.

- *Advanced Filters:* Advanced filters can be created to find keywords in posts. Also, users can get notified when certain keywords are mentioned in posts.

- *Sharing:*   This feature allows users to share RSS feeds on Facebook, Twitter, LinkedIn, and other social networking sites.

- *Star Posts:*   Allows users to save posts.

- *Import and Export:*   Users can import feeds from other services to Feeder or export them.

As can be observed from Table 2-3, the type of features available for users depends on the type of subscription.

Table 2-3: Features Available in Feeder

Features	Basic	Pro	Business
Extension, apps, and backup	✓	✓	✓
2 hours updates	✓		
1-minute updates		✓	✓
Free of advertisement		✓	✓
Access to all features		✓	✓
Advanced filters		✓	✓
Advanced notifications		✓	✓
User administration tools			✓
Shared feeds and folders			✓
Other advanced professional and business features			✓

System Requirements

Feeder can be accessed from a Web browser, or installed on Web browsers as an extension, from tablets and smartphones. The most recent version of the following browsers is needed to get the most updated features: Google Chrome, Mozilla Firefox, Safari, and Yandex. Note that Feeder is not supported by MS Edge and Internet Explorer. The mobile application is only supported on iOS and Android devices.

Costs and Maintenance

There are three subscription plans, including a free plan and two paid plans that are billed either monthly or annually. Please refer to Table 2-4 for more details about the subscription plans.

Table 2-4: Subscription Plans for Feeder

Subscription	Basic	Pro	Business
Billing Cycle	None	Monthly or Annually	Monthly or Annually
Monthly Subscription	Free	• $5.99/month if billed monthly • $4.99/month if billed annually	$15 per seat*
Yearly Subscription	Free	• $71.88 (monthly subscription) • $59.88 (yearly subscription)	$180 per seat*

*seat: number of users that have access to a Business account.

Pros and Cons

Table 2-5 lists the pros and cons of using Feeder.

Table 2-5: Pros and Cons of Using Feeder

Pros	Cons
• The basic version is free. • Easy to install and use. • Provides rapid access to information. • Spam free.	• Feeder is not very popular. • The published content can be copied and replicated without permission from the owner.

Ways to Access

Feeder can be accessed on a mobile device, tablet, or from a browser. Feeder application could be downloaded from Google Play on Android devices and from App Store on iOS devices, or from www.feeder.co, or from Web browser extension.

RapidFeeds (Source: RapidFeeds, 2018)

RapidFeeds is a Web-based service, which allows publishers and webmasters to create and publish RSS feeds.

Features

Some of the relevant features include:

- *Create RSS Feed:* Allows users to create new content to be posted on RSS feed readers.

- *RSS Feed Scheduling:* Allows automated RSS feed posts.

- *Branded Feed URL:* Facilitates using custom domain for a RSS feed URL.

- *Auto Tweet:* Allows to automate Twitter timeline posting to reflect RSS feed updates.

- *Advanced Statistics:* Allows tracking RSS feed performance, and geographical distribution.

The type of features available for users depends on the type of subscription, as shown in Table 2-6.

System Requirements

The most recent version of the following browsers is needed to get the most updated features: Google Chrome, Mozilla Firefox, Safari, MS Edge, and Internet Explorer. RapidFeeds does not provide a mobile application.

Table 2-6: Features Available in RapidFeeds

Features	Basic	Pro	Enterprise
Number of Feeds	3	7	Unlimited
Number of Items	Unlimited	Unlimited	Unlimited
iTunes Support	✓	✓	✓
Scheduling	✓	✓	✓
Password Protection	one	Unlimited	Unlimited
Advanced Tracking		✓	✓
Auto Tweet	✓	✓	✓
Branded Feed URL		✓	✓
Support	Regular	Regular	Priority

Costs and Maintenance

There are three subscription plans, all are paid and are billed monthly. Please refer to Table 2-7 for more details about the costs associated with the subscription plans.

Table 2-7: Subscription Plans for RapidFeeds

Subscription	Basic	Pro	Enterprise
Billing Cycle	Monthly	Monthly	Monthly
Monthly Subscription	$4.49	$6.95	$13.95
Yearly Subscription	$53.88	$83.40	$167.40

Pros and Cons

Table 2-8 lists the pros and cons of using RapidFeeds.

Table 2-8: Pros and Cons of Using RapidFeeds

Pros	Cons
• Web-based, no download required. • Allows to reach larger audience. • Allows tracking RSS feed performance, and geographical distribution.	• Does not provide mobile application. • RSS feeds can become cluttered.

Ways to Access

RapidFeeds does not offer a desktop or mobile application. It can only be accessed from Web browsers. Users can create an account and login from www.rapidfeeds.com.

2.1.4 Broadcast Forums on Government Channel

Government access TV serves the community by providing access to local town government services and activities; informing residents about local government issues and public affairs; and facilitating the exchange of public information through various forms of electronic communications (Town of Penfield, 2017). Local agencies could use this communication medium to inform its citizens on the operations and activities of the agency and to increase citizen access to public involvement meetings through televising and webcasts of the meetings.

- *Televising Meetings:* Allows to inform citizens on the operations and activities of the agency and increase citizen access to public involvement meetings.

- *Webcasting:* Users can watch live webcasts of public involvement meetings or search archived meetings.

- *Analytic Tools:* Most TV service providers offer analytic tools to track the performance of programs. This include, number of people watching, type of audience reached, etc.

- *Event Schedule:* This allows people to know the time of upcoming events.

- *Audio/Video Files:* Allows people to listen to past or pre-recorded meetings.

Costs and Maintenance

TV broadcasting and advertising are a complex and more specialized service; therefore, prices might vary depending on the needs and objectives of the client. In this case, TV service providers must be contacted for more detailed information about broadcasting, webcasting, and advertising prices and plans.

Pros and Cons

Table 2-9 lists the pros and cons of using broadcast forums on government channel.

Table 2-9: Pros and Cons of Using Broadcast Forums on Government Channel

Pros	Cons
• Allows to reach target audience. • Allows to advertise through different platforms. • Could be used to reach older and low-income population that typically use traditional communication media such as TV and radio. • Increase citizen access to public involvement meetings.	• Developing content for TV broadcasting and webcasting can be expensive and requires a lot of work. • TV advertisements can range from as low as $1,000 to more than $350,000. • Fewer people are watching traditional television.

Ways to Access

Agencies must contact their county communication department or a broadcasting cable television company that offers public access television services to obtain more information on how to broadcast their meetings.

2.1.5 Gmail (Source: Google, 2018a)

Gmail is an emailing service that can be accessed on the desktop, and phone and tablet applications. Gmail allows people to send and receive messages in many formats, such as text, photos, videos,

and documents. Gmail also offers add-on features that let users interact with other users in many ways, such as chatting with Gmail contacts in real-time and scheduling events and meetings.

Features

Gmail features and capabilities are different depending on the type of Gmail account. Free Gmail offers the following features.

- Broadcast Lists: send messages to several contacts at once.
- Add links to a location, email address, or phone number
- Find out when someone reads a message you sent
- Schedule: See upcoming events, locations, and details of meetings.
- Create email templates
- Send very large attachments
- Type emails in different languages
- Schedule events from the inbox
- Automatically add events from Gmail
- Create to-do lists in Gmail
- Send email from multiple addresses in one inbox

System Requirements

The most recent version of the following browsers is needed to get the most updated features: Google Chrome, Mozilla Firefox, Safari, MS Edge, and Internet Explorer. Gmail also works well with most Android and iOS browsers, although Google Chrome is recommended. Gmail mobile application is only supported on iOS devices and Android devices.

Costs and Maintenance

Gmail is free. It costs the users nothing to download and/or use the Gmail application or Gmail website. However, there are some paid features, such as increasing Google Drive cloud storage, or upgrading to G-Suite (i.e., Gmail for business).

Pros and Cons

Table 2-10 lists the pros and cons of using Gmail.

Table 2-10: Pros and Cons of Using Gmail

Pros	Cons
- Free. - Easy to access, download, and install. - Gmail's spam filtering program is efficient. - Provides 15 GB of free cloud storage. - Connects directly with popular social media pages. It also imports social media contacts into Gmail address book. - Connects to Google free programs. - Available in multiple platforms.	- Maximum attachment size is only 25 MB. - Gmail for Business is a paid subscription. - If users do not have Microsoft Office, they must pay for the most expensive G-Suite plan. - There is no integration with desktop email or with the mobile clients. - G-Suite accounts cannot be accessed without an internet connection.

Gmail can be accessed on a mobile device, tablet, third party computer applications, or from a Web browser. The Gmail official mobile application is available on Android and iOS devices. If using the Web browser instead of the application, users must go to www.gmail.com and login with their username and password.

2.1.6 Textedly (Source: Textedly, 2018)

Textedly is a text marketing service that provides a communication channel that allows to advertise, promote, announce, and engage with an audience through text messaging directly to their mobile devices.

Features

Some of the relevant features include:

- *Mass Group Texting*:   Send mass group text messages to all subscribers.

- *Mobile Subscribers*:   Public can easily sign up for alerts by texting a custom keyword.

- *Text* Message *Scheduling*: Has the ability to schedule a single text message, or mass group text messages to go out on any future date and time.

- *Comprehensive Analytics*: Can provide real-time data on all public outreach efforts.

Table 2-11 lists the features included in the subscription plans.

System Requirements

The most recent version of the following browsers is needed to get the most updated features: Google Chrome, Mozilla Firefox, Safari, MS Edge, and Internet Explorer.

Table 2-11: Features Available in Textedly

Plans	# of Messages	# of Keywords*	Recipients Costs
Starter	300	1 Custom Keyword	
Plus	2,000 per month	2 Custom Keywords	
Enterprise	3,500 per month	3 Custom Keywords	
Elite	5,000 per month	4 Custom Keywords	
Business	10,000 per month	6 Custom Keywords	Incoming Messages: FREE
Silver	15,000 per month	7 Custom Keywords	
Premium	25,000 per month	10 Custom Keywords	
Gold	50,000 per month	15 Custom Keywords	
Platinum	100,000 per month	20 Custom Keywords	

*Keywords: the words people can text back to sign up to receive messages.

Costs and Maintenance

Table 2-12 provides the costs of using Textedly.

Table 2-12: Costs of Using Textedly

Plans	Billing Cycle	Monthly Subscription	Yearly Subscription
Starter		Free (for first 14 days)	NA
Plus		$20	$240
Enterprise		$40	$480
Elite		$55	$660
Business	Monthly	$110	$1,320
Silver		$160	$1,920
Premium		$275	$3,300
Gold		$550	$6,600
Platinum		$1,100	$13,200

Note: The rest of the plans were not provided due to their high monthly fee.

Pros and Cons

Table 2-13 lists the pros and cons of using Textedly.

Table 2-13: Pros and Cons of Using Textedly

Pros	Cons
• Easy user interface. • Allows to send up to 100,000 SMS text messages to any mobile phone number. • Can easily schedule mass group text messages to go out on any future date and time. • Allows people to easily sign up for alerts. • Can provide real-time data on all text marketing efforts.	• Expensive. • Only 160 characters are allowed in a text message. • Can only be accessed from a Web browser.

Ways to Access

Textedly is a Web-based mass text messaging service. Organizations that wish to create an account must go to www.textedly.com and subscribe to a subscription plan. Users must always login from the website since there is no mobile application.

2.2 Tools Facilitating Two-Way Remote Communication

The public can use some technology-based tools to remotely participate in public meetings. These tools could be used for two-way communication between the agencies and the public. These technologies will facilitate obtaining information and providing feedback in real time. These technologies include:

- *Video Conferencing Tools:* These technologies allow participants to meet remotely and share screen via the internet in real-time, facilitating two-way communication between the organizer and the participants. Skype, GoTo Meeting, and Adobe Connect Meetings are a few of the many available video

| | | conferencing tools, and are discussed in Sections 2.2.1, 2.2.2, and 2.2.3, respectively. |

- *Social Media:* These platforms facilitate the creation and sharing of information, ideas, and other forms of expression through virtual communities and networks. These platforms provide an avenue for the organizations to directly and constantly interact with the public. Facebook and YouTube, the most common social media platforms, are discussed in Sections 2.2.4 and 2.2.5, respectively.

- *Online Surveys:* These user-directed online polling tools help "survey administrators communicate information and gather immediate feedback from target users" (CDOT, 2010). Survey Monkey is a common tool used to conduct online surveys, and is discussed in Section 2.2.6.

- *Text Messaging Applications:* Text messaging applications such as WhatsApp let users text, chat, make voice and video calls, and share media, including documents, photos, voice, and video messages, with individuals or groups. More information on WhatsApp is provided in Section 2.2.7.

2.2.1 Skype (Source: Skype, 2018)

Skype is an internet-based communication software that focuses in providing voice calls, video calls, and instant messaging services with the ability to send and receive text messages, and digital documents between mobile devices, tablets, and computers. Skype provides one-to-one communication as well as group communication. There are two Skype versions, Skype Personal account, and Skype for Business account.

Features

The following are some of the relevant features that Skype Personal account offers:

- *Skype-to-Skype Calls:* With this feature users can make either national or international calls for free. Free calls are only allowed when the call is made through Skype from one user to another.

- *Calls to Mobiles and Landlines:* This feature allows users to make call from Skype to regular mobile numbers and landline numbers. It is a paid feature.

- *Group Calls:* Free group calls between Skype users for up to 25 people. Adding people that are not on skype has some costs.

- *Group Video Calls:*   Free group video calls have a capacity of 25 participants. Adding people that have Skype is free, adding regular mobile or landline numbers incurs additional costs.

- *Instant Messaging:*   Users can send messages through a one-to-one chat or group chat. Users can send text, files, photos, and video messages.

- *Text Messages:*   With this feature text messages can be sent from Skype to mobile devices. However, this feature includes some costs.

- *Screen Sharing:*   During a video conference call, users can share their computer screen.

- *Skype Translator:*   People can speak in different languages in real-time using this feature. This feature has an online voice translator in eight languages, and text translator in 50 languages.

The Skype for Business account offers high-definition (HD) video for online meetings and features such as automatic cropping and head tracking. This version of skype includes same features as the Personal account version plus the followings features.

- *Unlimited Number of Meetings:*   With this feature users can schedule meetings (voice calls, or video calls) or begin one at any time; the capacity of the online meeting is up to 250 people.

- *Skype for Business Manager:*   A profile page is available to help improve the users' online presence. People will be able to see relevant information such as hours, business offerings, and meeting times.

- *URL Invites:*   Users can invite people to their voice or video meeting through a personalized link.

- *PowerPoint Upload:*   During video conferencing calls users can present their PowerPoints with annotation, highlighting, and laser pointer.

- *Whiteboard:*   People can draw and edit together using this feature.

The following features are available while using with Microsoft Office 365:

- *Schedule Meetings with Outlook:*   Meetings link can be shared to Outlook.com contacts so they can join meetings from their calendars.

- *Large Group Meetings:*   The capacity of the online meeting is from 250 people to 10,000 people.

- *Online Storage:*   This feature allows users to store 1 TB of files on a cloud.

- *Collaboration Tools:*   People can record meetings, take polls, run Q&As, and share files.

System Requirements

Table 2-14 summarizes the system requirements to use Skype for different devices.

Table 2-14: System Requirements to Use Skype for Different Devices

Platform	System Requirements	
Windows Desktop	Processor	At least 1 GHz
	RAM	At least 512 MB
Mac	Processor	At least 1 GHz
	RAM	At least 1 GB
Linux	Processor	Intel Pentium 4 processor or later
	RAM	At least 512 MB
Android	Version	Android OS 6.0 or higher
iOS	Version	iOS 9 or higher
Windows 10 Mobile	Version	Windows Mobile Anniversary update or higher
Other Compatible Platforms	• Xbox One • Amazon Kindle Fire HD/HDX • Amazon Fire HD Tablet	

Costs and Maintenance

There are different costs when using Skype, and those costs depend on the type of feature and Skype account being used. There are two types of costs (Subscriptions and Pay-as-you-go) and two different types of Skype (Skype Personal account and Skype for Business). This section just focuses on the Skype for Business and their features. There are two types of payment plans for Skype for Business.

- *Business Essentials Plan:* It includes all the features discussed earlier only if the user has the latest version of Microsoft Office. It costs $5.00/user/month with an annual commitment.

- *Business Premium Plan:* This plan is for users that do not have a Microsoft Office license. It includes all the features discussed earlier, plus the Microsoft Office applications (Outlook, Word, Excel, PowerPoint, OneNote, and Access). It costs $12.50/user/month with an annual commitment.

Table 2-15 summarizes the pros and cons of using Skype.

Table 2-15: Pros and Cons of Using Skype

Pros	Cons
• Easy to download and install. • Most people are familiar with Skype. • Skype for Business allows up to 250 people in online meetings. • Provides unified communication system in a single platform. • Has real-time voice and text translator. • People can access conference calls from URLs. • Skype for Business provides enterprise-grade security.	• Users need to have an account to use Skype. • Skype has complicated user interface on mobile application. • Slow connection when there are a lot of participants. • Several of the features are not free. • High bandwidth requirement: voice and video call will be as good as the internet connectivity.

Ways to Access

People can access Skype from their Windows or Mac computer, as well as from their iOS, Android, or Windows devices. Skype can be downloaded either from the website www.skype.com or from any application store that supports Skype. Skype is accessible only to people who have a Skype account. A Skype account can be created either from the application or from the website.

2.2.2 GoTo Meeting (Source: GoToMeeting, 2018)

GoToMeeting is a Web-based software that provides online communication among users. It facilitates delivering presentations, performing product demonstrations, and securely sharing confidential information online. It can facilitate one-to-one private conversation or group conversations.

Features

Some of the relevant features include:

- *Web Audio:* Connect meetings over the Internet. No telephone is required.

- *Screen Sharing:* Allows to share the screen or pass control to participants to collaborate.

- *HD Video Conferencing:* Provide high-definition video meetings.

- *Drawing Tools:* Allows to take notes, mark, or draw on the screen, and can be shared with the meeting participants.

- *Recording:* Allows to record and share meetings.

- *Personal Meeting Room:* Can have a custom meeting link that never changes.

- *Mobile Applications:*   People can join meetings from smartphones, tablets, or desktops.

- *Sightboard:*   Broadcast real-time image of physical whiteboard.

System Requirements

GoToMeeting can be run on Windows, Mac, and Linux operating systems. The most updated version of Google Chrome, Mozilla Firefox, MS Edge, Safari, and Opera, is recommended to be able to use all features. Also, it is recommended to have at least 2 GB RAM.

GoToMeeting can also be run on smartphones and tablets. iOS, Android, and Windows mobile phones and tablets have a free GoToMeeting application. iOS 9 for Apple devices, Android 4.4, and Windows Phone 8 are needed to be able to run the GoToMeeting application.

Costs and Maintenance

There are two types of payment plans, either billed monthly or annually, and there are three types of subscriptions, Starter, Pro, and Plus, and are summarized in Table 2-16.

Table 2-16: GoToMeeting Subscription Plans

	Starter	Pro	Plus
Maximum Capacity	10 participants	50 participants	100 participants
Billing Cycle	Monthly or Annually	Monthly or Annually	Monthly or Annually
Monthly Payment	- Monthly Cycle: $24/organizer/month - Annual Cycle: $19/organizer/month	- Monthly Cycle: $36/organizer/month - Annual Cycle: $29/organizer/month	- Monthly Cycle: $59/organizer/month - Annual Cycle: $49/organizer/month
Yearly Total	- Monthly Cycle: 288/organizer - Annual Cycle: $228/organizer	- Monthly Cycle: $432/organizer - Annual Cycle: $348/ organizer	- Monthly Cycle: $708/organizer - Annual Cycle: $588/organizer

Pros and Cons

Table 2-17 summarizes the pros and cons of using GoTo Meeting.

Table 2-17: Pros and Cons of Using GoToMeeting

Pros	Cons
- Easy to access, download, and install. - People can attend meetings for free and do not need to have a GoToMeeting account. - Intuitive and easy to use. - Available in multiple platforms. - Sessions are completely private and secure. - Provides HD video conferences.	- Expensive compared to other similar software applications. - Lacks advanced features such as polling. - Voice and video call quality depends on how good the internet connectivity is. - An additional subscription is needed to get webinar features.

People can install GoToMeeting on their Windows or Mac computer, as well as their iOS, Android, or Windows devices. People can either log in with their account email and password at www.gotomeeting.com or use the desktop or mobile application. Organizers, co-organizers, and presenters need to have a GoToMeeting account to start sessions and have access to all features, while attendees do not need an account to join the meetings.

2.2.3 Adobe Connect Meetings (Source: Adobe, 2018)

Adobe Connect is a Web conferencing software service that offers online meeting for collaboration, Web conferencing, virtual classrooms, and large-scale webinars. Also, Adobe Connect gives users the ability to send and receive messages, video, audio, and digital documents between mobile devices, tablets, and computers.

Features

Some of the relevant features include:

- *Screen/document sharing:* Allows users to share desktop, specific windows, or specific applications or to upload several file types.

- *Polls, Q&A, chat, notes, whiteboards:* Allows users to add multiple polls, capture and moderate questions using the Q&A pod, and use notes and whiteboards as ways to share information and interact with an audience.

- *Persistent rooms, URL's, and content:* Users can create a personalized room once and re-use it repeatedly. They can also add a custom URL to personalize it. The Adobe Connect room will keep all content, notes, and layouts intact between sessions.

- *Recordings:* Advanced options allow for automatic indexing of recordings allowing for search of specific content, creating bookmarks, and anonymizing participants.

System Requirements

Adobe Connect can be accessed from the desktop application, Web browser, or mobile application. Table 2-18 summarizes the system requirements for the different operating systems and platforms.

Table 2-18: System Requirements to Use Adobe Connect for Different Devices

	Operating System/Platform	System Requirements
Desktop Application and Browsers	Windows	RAM: 512 MB Browser: Internet Explorer 8 or higher, Mozilla Firefox, or Google Chrome Adobe Flash Player: 13.0 or higher
	Mac	RAM: 512 MB Browser: Mozilla Firefox, Apple Safari, or Google Chrome Adobe Flash Player: 13.0 or higher
	Linux	Can only be accessed from a Web browser. Browser: Google Chrome Adobe Flash Player: 13.0 or higher
Mobile Devices	iOS (iPhone, iPad, and iPod touch)	Requires iOS 7.0 or later.
	Android	4.0 and up

Costs and Maintenance

The three subscription plans include all features described earlier, and only vary in the number of hosts and meeting participants allowed in meetings. Table 2-19 summarizes the costs associated with the three Adobe Connect meeting subscription plans.

Table 2-19: Adobe Connect Meeting Subscription Plans

	3 Online Participants	25 Online Participants	100 Online Participants
Billing Cycle	None	Monthly or Annually	Need to contact Adobe for more information pertaining to this plan.
Monthly Payment	Free	$50/month if billed monthly $45/month if billed annually	
Yearly Total	None	Monthly Cycle: $600 Annual Cycle: $540	

Pros and Cons

Table 2-20 summarizes the pros and cons of using Adobe Connect meeting.

Table 2-20: Pros and Cons of Using Adobe Connect Meeting

Pros	Cons
• Allows up to 100 users in group calls. • Allows to record meetings. • Low band-width is sufficient. • Polls, Q&A, chat, notes, whiteboard, and PowerPoints are available. • No account is required to access meetings. • Available in multiple platforms.	• No shared accounts are allowed. • It has a more complex interface compared to Skype and other online meeting software applications. • It is relatively expensive. • First time users may struggle with its complexity. • Frequent flash player updates are needed.

Ways to Access

The Adobe Connect meeting application is required to join, present, host a meeting, or share the screen in an Adobe Connect meeting if Adobe Flash Player is not installed. The application can be

automatically installed during a meeting via lightning download or it can be installed before the meeting using the installers. People can also attend and host Adobe Connect meetings from mobile phones or tablets using the mobile application.

2.2.4 Facebook (Source: Facebook, 2018)

Facebook is a social network website and application that allows people, businesses, and organizations to create and customize their profiles with personal information, photos, videos, and website links. Facebook offers a News Feed where users can post messages in different formats for people to see publicly or privately. Facebook also offers a communication platform where users can interact through voice calls, video calls, and instant messages. Facebook allows one-to-one and group communication, as well as live video streaming.

Features

Some of the relevant features include:

- *Messaging:* It allows people to communicate instantly. Users can send text messages, photos, videos, attachments, stickers, and *Graphics Interchange Formats* (GIFs) from Facebook chat or Messenger.com on a computer.

- *Voice and Video Call:* Allows both one-to-one and group communication.

- *Pages:* Organizations can connect with the public on Facebook by creating a Facebook Page. Anyone with a Facebook account can create a Page or help manage one, as long as they have a role on the Page. People who like a Page can get updates about the Page, such as posts, photos, or videos, in their News Feed.

- *Events:* They let users organize and respond to gatherings in the real world with people on Facebook. When a user creates an event, the user can control who sees or joins that event.

- *Facebook Accessibility:* Built-in features and technologies help people with disabilities, such as vision loss and deafness.

- *Facebook Live:* Allows sharing live video with the public (i.e., followers) on Facebook.

System Requirements

Facebook works best in the newest and the last prior version of the following browsers: Google Chrome, Mozilla Firefox, Safari, Opera, Internet Explorer, and MS Edge. Facebook website and its mobile application are also supported on iOS, Android, Blackberry, and Windows phones.

Facebook is free; users can take advantage of all the features for free. However, advertising on Facebook is a paid service.

Pros and Cons

Table 2-21 summarizes the pros and cons of using Facebook.

Table 2-21: Pros and Cons of Using Facebook

Pros	Cons
• Free. • Easy to access, download, and install. • Most people are familiar with Facebook. • Facilitates instant and direct communication between users. • Available in multiple platforms. • Can provide live video streaming. • Allows to schedule, organize, and respond to meetings with Facebook Event Pages. • Help to increase exposure to the community. • Lower marketing expenses. • Reach targeted audiences.	• Has issues with privacy of personal data. • Difficult to identify fake accounts and pages. • Due to the high volume of information being exchanged on Facebook, constant vigilance is needed. Someone needs to be available to interact with Facebook users. • Generating engagement can be difficult. It takes time to attract followers. • Lack of interaction portrays a bad image of a business or an organization.

Ways to Access

People can download the mobile application from any application store that supports Facebook. If people decide to use the browser instead of the application, they must go to www.facebook.com. People must have a Facebook account to send and post information, call and text other Facebook users, and to use most of the features. However, it is not necessary to have an account if people only want to see the information, posts of public accounts, and join Facebook Live events that are public.

2.2.5 YouTube (Source: Google, 2018c)

YouTube is a website and mobile application designed for sharing videos. YouTube allows users to upload, view, rate, share, add to favorites, report, comment on videos, and subscribe to other users.

Features

Some of the relevant features include:

- *Video Closed Caption & Auto-Translate:* Transcription of audio to text, and translation to several languages.

- *Channel Subscriptions:* Users can subscribe to channels to see more content from those channels. Once subscribed,

users will get notification when the channel has a new video.

- *YouTube Channel:*   YouTube channel lets users to upload videos, comment, or make playlists.

- *YouTube Button on Websites:*   People can access channels and YouTube videos from websites.

The following are some additional features available to only registered users:

- *Longer Videos:*   When an account is verified, users can upload videos longer than the 15-minute limit.

- *Live Events:*   Users can stream live events.

- *Customize Channel Layout:*   Users can customize their channel's layout with branded banners and channel trailers.

System Requirements

The most recent version of the following browsers and an internet connection with > 500 Kbps are needed to run YouTube: Google Chrome, Mozilla Firefox, MS Edge, Safari, Internet Explorer, and Opera. Some premium content on YouTube such as live events require a faster connection with > 1 Mbps and greater processing power to ensure optimal streaming speeds.

Costs and Maintenance

People can watch and upload videos on YouTube for free.

Pros and Cons

Table 2-22 summarizes the pros and cons of using YouTube.

Table 2-22: Pros and Cons of Using YouTube

Pros	Cons
- YouTube is free to watch and upload videos. - Easy to access, download, and install. - YouTube is popular; there are over 1 billion users. - Allows sharing videos across social networking platforms. - Available in multiple platforms. - YouTube Analytic tool gives statistics about the performance of uploaded videos. - Uploaded videos can be watched on low bandwidth. - Can monitor engagement and social conversation during live events in real-time.	- Users can easily provide negative comments and "dislike" the videos. - Sometimes people must watch long advertising videos to watch a video. - Requires huge effort to promote live streaming events. - High bandwidth is required for live video streaming.

Ways to Access

YouTube can either be accessed from a Web browser, iOS device, Android device, or Smart TV. YouTube mobile application is supported on Android and iOS devices. Smart TVs that support YouTube come with an integrated application. People can access YouTube from a browser at www.YouTube.com. People with a Google Account can comment and like videos, create and subscribe to channels, and use most of the YouTube features. However, a Google account is not needed to watch videos.

Without a YouTube channel, users have no public presence on YouTube. Even if they have a Google Account, they need to create a YouTube channel to upload videos, comment, or make playlists. People can either use a computer or the YouTube mobile site to create a new channel. People can also create channels with different names for their business or brand, these types of account are called Brand Account, and they can still be managed from a personal Google Account.

2.2.6 Survey Monkey (Source: SurveyMonkey, 2018)

SurveyMonkey provides free, customizable surveys, as well as a suite of paid back-end programs that include data analysis, sample selection, bias elimination, and data representation tools. In addition to providing free and paid plans for individual users, SurveyMonkey offers more large-scale enterprise options for companies interested in data analysis, brand management, and consumer-focused marketing.

Features

SurveyMonkey's features depend on the type of subscription. Some of the relevant features include:

- *Team Collaboration*: these features allow multiple people to work together on surveys, such as to build surveys and analyze results.

- *Team Management*: allows multiple users to manage one account.

- *Survey Builder*: This is the interface that help users to create surveys. It offers survey templates, question banks, language translation, rating questions, quizzes, etc.

- *Customization and Branding*: SurveyMonkey lets users customize their surveys, include features to add company logo, create custom URL, remove SurveyMonkey footer, etc.

- *Analysis and Reporting*: these tools give users the ability to perform data analysis. These tools include features such as filter and cross tabulate responses, data trends, text analysis, etc.

- *Security*:   SurveyMonkey offers password-protected surveys, and IP blocking options.

System Requirements

The most updated version of the following Web browsers is recommended to be able to use all features: Google Chrome, Mozilla Firefox, Safari, Microsoft Edge, and Internet Explorer. SurveyMonkey is also supported on iOS and Android smartphones and tablets.

Cost and Maintenance

The type of plan determines the set of features available in an account. SurveyMonkey offers one free plan with limited features and several paid plans with more advanced features. Table 2-23 lists the four types of plans and their prices. User number is the total number of user accounts included in a plan. Plans with more than one user have access to all the team collaboration tools.

Table 2-23: SurveyMonkey Subscription Plans

	Basic	Standard	Advantage	Premier
Users	1	1	2	2
Billing Cycle	None	Monthly or Annually	Annually	Annually
Monthly Payment	Free	$35/month if billed monthly $31/month if billed annually	$34 billed annually	$99 billed annually
Yearly Total	Free	Monthly Cycle: $420 Annual Cycle: $372	Annual Cycle: $408	Annual Cycle: $1,188

Pros and Cons

Table 2-24 summarizes the pros and cons of using SurveyMonkey.

Table 2-24: Pros and Cons of Using SurveyMonkey

Pros	Cons
• Easy to access, download, and install. • Ready-made tools help design surveys. • Question bank offers specific inbuilt and customizable questions. • Surveys can be filled out and shared across teams within an organization through one single account. • Does not require advanced technical knowledge. • Allows to quickly and easily share surveys with large numbers of people. • Available in different platforms.	• Can become hard to use due to the number of features offered.

Ways to Access

SurveyMonkey can be accessed on computers, mobile phones, and tablets. People can either access SurveyMonkey from the website www.surveymonkey.com or download SurveyMonkey's mobile application on iOS or Android devices.

2.2.7 WhatsApp (Source: WhatsApp, 2018)

WhatsApp is a messaging application that lets users text, chat, make voice and video calls, and share media, including documents, photos, voice, and video messages, with individuals or groups. WhatsApp relies on internet data, which means that it does not charge for sending messages or making calls. There are two types of WhatsApp accounts, WhatsApp Messenger account and WhatsApp for Business.

Features

Some of the relevant features for both the WhatsApp Messenger and the WhatsApp for Business accounts include:

- Features in the WhatsApp Messenger
  - Text messages
  - Group chats
  - Voice and video calls
  - WhatsApp Web and desktop
  - Photos and videos
  - Voices messages
  - Documents
  - Broadcast list

- Features in the WhatsApp for Business
  - All the features of the WhatsApp Messenger account
  - Business profile
  - Quick replies
  - Automated messages

System Requirements

The WhatsApp Messenger account is available on iOS, Android, Windows Phone, and Nokia S40. People can also access WhatsApp from a Web browser. The latest versions of Google Chrome, Mozilla Firefox, Opera, Safari, or MS Edge are recommended to be able to use all features. The WhatsApp for Business account is only available on Android devices that are running Android 2.3.3 or later, and Android phones that can receive SMS or calls during the verification process.

Costs and Maintenance

The WhatsApp application and services are free for both the WhatsApp Messenger and the WhatsApp for Business accounts.

Pros and Cons

Table 2-25 summarizes the pros and cons of using WhatsApp.

Table 2-25: Pros and Cons of Using WhatsApp

Pros	Cons
• Free. • Easy to access, download, and install. • Intuitive and easy to use. • Has ability to send messages to multiple contacts at once. • Include advanced features such as chat backup, and broadcast list. • WhatsApp is popular, and has ~ 450 million users. • Contacts are added automatically to the application. • Help to decrease data usage for calls. • WhatsApp for Business makes interacting with customers easy by providing tools to automate, sort, and quickly respond to messages. • WhatsApp for Business allows to access important metrics such as how many of the messages were successfully sent, delivered, and read.	• Group chat limits to 256 WhatsApp members. • Does not work without Internet. • Profile picture is visible to every person in the WhatsApp group. • Phone number is required to use the application, and it is visible to others.

Ways to Access

People can access WhatsApp using the desktop application from their Windows or Mac computer, or the mobile application from their iPhone, Android, Windows devices, or Nokia S40. People can also access WhatsApp from a Web browser through the following link https://web.whatsapp.com/. Note that an account is required to use this instant messaging application.

2.3 Tools Assisting Participation at Public Meetings

These technology-based tools help meeting participants to engage more in meetings and hearings. The following are a few technology-based tools that fall into this category:

- *Mapping/GIS Applications:* These are computer software and hardware systems that enable users to capture, store, analyze, and manage spatially referenced data. These applications have the ability to tag specific locations, add photos, and provide comments, and can assist in increasing the participation of the public in public meetings and hearings. Section 2.3.1 discusses these tools in detail.

- *Online Testing Scenarios:* These are "proprietary software programs used by municipalities and planning agencies to educate and communicate the long-term impacts of the various policy choices to non-expert audiences" (CDOT, 2010). MetroQuest, a popular public engagement software application, is discussed in Section 2.3.2.

- *Audio or Video Files:* Pre-recorded video and audio files available on YouTube and Podcasts help better engage the public meeting attendees. These are particularly helpful since the files could be made available after the meeting, and has a potential to reach out to a broader audience. Sections 2.3.3 and 2.3.4 discuss YouTube and Podcasts in detail.

2.3.1 Google Maps (Source: Google, 2018b)

Google Maps is a Web-based and mobile application mapping service that offers satellite imagery, street maps, 360° panoramic views of streets, real-time traffic conditions, and route planning for traveling by foot, car, bicycle, or public transportation.

Features

Some of the relevant features include:

- *Explore the map:*   On the computer, users can click anywhere on the map to get details about a place. On the phone or tablet, users can touch and hold anywhere on the map to get details about a place.

- *Measure distances between points:*   Users can calculate the distance between two or more points on the map.

- *See traffic, transit, and terrain info:*   Users can see information about travel routes, traffic, bus stops, biking routes, or the landscape.

- *See Street View:*   Users can explore the area and may even view inside small businesses.

- *Create custom maps:*   Users can create routes, polygons, and measure distances and areas.

System Requirements

For Web browsers to have the full Google Maps with 3D imagery and Earth view, the latest versions of one of the following browsers are needed: Google Chrome, Internet Explorer, Mozilla Firefox, Safari, and MS Edge.

For operating systems to run the full Google Maps with 3D imagery and Earth view, the latest versions of one of the following operating systems are needed: Mac OS, Windows, Chrome OS, or Linux. Google Maps still works, without 3D imagery and Earth view, on Windows XP and Vista OS. To receive updates, and be able to use all Google Maps features, Android phones or tablets must be on Android 4.4 or later. To download Google Maps on an iOS device, users must make sure their phone or tablet is on iOS version 7 or up.

Costs and Maintenance

Google Maps is free.

Pros and Cons

Table 2-26 summarizes the pros and cons of using Google Maps.

Table 2-26: Pros and Cons of Using Google Maps

Pros	Cons
• Free. • Easy to access and download. • Shows traffic rules. • Gives detailed information about public transportation options. • Map details are easy to read. • Street View allows to see the actual image of a place. • Shows current traffic load, road work and road closures, photos of areas and landmarks, nearby webcams, and weather forecasts. • Helps meeting participants to engage more in meetings. • Allows printing, sharing, and exporting maps and routes.	• High bandwidth is required for Google Street View.

Ways to Access

Google Maps can be accessed from a computer, phone, or tablet. Google Maps can be accessed via a Web browser from www.google.com/maps. Google Maps Application must be downloaded to use on mobile devices. People can use Google Maps without having to sign up or subscribe. However, people must sign in with a Google account to access some features such as search memory and data synchronization across different devices.

2.3.2 MetroQuest (Source: MetroQuest, 2018)

MetroQuest is a Web-based public engagement software. Agencies and planning firms use MetroQuest to enable them to engage the general public, and to obtain quantifiable data and actionable results in support of their planning and investment decisions.

Features

Some of the relevant features include:

- *Visually engaging screens:* These are screen templates that are designed to optimize engagement. Organizations can use these screens to design public engagement surveys in many formats for different topics.

- *Maximize participation:* Allows to engage 2,000 to 10,000 participants.

- *Collect informed input:* Allows to quickly collect people choices and opinions.

- *Insights:* Used to monitor, evaluate, report, and export public input. MetroQuest Insights allows to visualize the results through colorful graphs and maps, summarize findings, break the

results down by demographic group and export the data in specially formatted spreadsheets.

- *Workshop:* Allows people to use their laptops, tablets, and smartphones to participate in group discussions and provide their comments and opinions individually, or in a group format. Also, allows polling and Q&A sessions.

System Requirements

MetroQuest can only be accessed through Web browsers. It is recommended to download the most recent version of the following browsers to access MetroQuest: Google Chrome, Mozilla Firefox, MS Edge, Safari, Internet Explorer.

Costs and Maintenance

An annual subscription is offered at a fixed price for unlimited number of MetroQuest sites; however, since MetroQuest is a specialized software, the prices and subscription depend on the type of needs. Therefore, businesses and organizations must contact MetroQuest support team to request pricing. Table 2-27 provides the general costs of using this software.

Table 2-27: MetroQuest Pricing

Plan	Price	Additional language
Single Use (One project)	$15,000	$3,000
Annual Subscription (Unlimited sites)	Around $200,000	$3,000

Pros and Cons

Table 2-28 summarizes the pros and cons of using MetroQuest.

Table 2-28: Pros and Cons of Using MetroQuest

Pros	Cons
- Requires no download. - Has interactive survey templates. - Accessible from desktop and mobile devices. - Allows to quickly collect attendees' choices and opinions. - Allows to engage 2,000 to 10,000 participants - Offers automated tools for data analysis. - Allows polling and Q&A sessions. - Participants do not need to sign-up to access a MetroQuest site. - Supports multiple languages.	Very expensive compared to other options.

Ways to Access

MetroQuest surveys can be accessed and displayed on desktops, smartphones, tablets, and kiosks from a Web browser. Mobile devices and laptops can be used as polling devices to provide real-time results during meetings and workshops. Public do not need to sign-up to access the MetroQuest surveys.

2.3.3 YouTube

As discussed in Section 2.2.5, YouTube allows people to upload pre-recorded videos, and share them online with other people across YouTube platform, websites, and social networking sites. YouTube offers video content such as video clips, TV show clips, music videos, short and documentary films, audio recordings, live streams, and other content such as video blogging, short original videos, and educational videos. Uploaded videos and audios on YouTube are tools that could potentially help meeting participants to engage more in public meetings and hearings. Also, YouTube would allow meeting participants to watch or download videos related to public involvement meetings after the meeting or hearing has ended.

2.3.4 Podcasts

A podcast is a digital audio file made available on the Internet for downloading to a computer or a mobile device. Podcasts are about topics that people find interesting to be posted online. Most common podcasts are news, educational audios, and interviews. Podcasts can help public involvement participants to engage more during and after public meetings. PodBean, a common podcasting company, provides hosting and tools for podcasters and organizations. Their podcasting platform includes tools for publication, management, syndication, and analysis of podcasts traffic and listeners, and they also offer crowdfunding and advertising tools for podcasters who want to monetize their podcasts (KeriLynn Engel, 2018).

Features

Some of the relevant features available in PodBean include:

- *Website builder and full-featured podcast site:* Allows users to easily create their sites and podcasts.

- *Reliable cloud hosting:* Users can store their audio files online using PodBean cloud storage.

- *iTunes and play store support:* Users can upload their podcasts to iTunes from PodBean.

- *Search engine optimized:* Help users to promote their podcasts.

- *Own domain and branding:* Users can brand their podcasts and site, and even have their own domain.

- *Performance analysis tools:* It gives users an in-depth dimensional view of their audience, episodes, and trends.

System Requirements

PodBean can be accessed from a Web browser or a mobile application. It is recommended to download the most recent version of the following browsers: Google Chrome, Mozilla Firefox,

MS Edge, Safari, and Internet Explorer. PodBean is only available on iOS devices (iOS 8.0 or later) and Android devices (OS 4.0.3 or later).

Costs and Maintenance

Table 2-29 summarizes the costs associated with the four PodBean subscription plans.

Table 2-29: PodBean Subscription Plans

	Advanced	**Unlimited Audio**	**Unlimited Video**	**Business**
Billing Cycle	Monthly or Annually	Monthly or Annually	Monthly or Annually	Monthly or Annually
Monthly Payment	• $3/month if billed annually • $5/month if billed monthly	• $9/month if billed annually • $14/month if billed monthly	• $29/month if billed annually • $39/month if billed monthly	• $99/month if billed annually • $129/month if billed monthly
Yearly Total	• $36/year if billed annually • $60/year if billed monthly	• $108/year if billed annually • $168/year if billed monthly	• $348/year if billed annually • $468/year if billed monthly	• $1,188/year if billed annually • $1,548/year if billed monthly

Pros and Cons

Table 2-30 summarizes the pros and cons of using podcasts.

Table 2-30: Pros and Cons of Using Podcasts

Pros	Cons
• Easy to access and download. • Relatively low subscription prices. • Available in multiple platforms. • User-friendly interface. • Offers analysis tools to check podcasts performance. • Cloud storage and hosting. • Allows to share podcasts across social networking sites.	• Limited in the amount of content that can be uploaded for free. • Podcasts are not very popular. • Mobile application crashes frequently.

Ways to Access

PodBean can be accessed from a Web browser. The following are the supported Web browsers: Google Chrome, Mozilla Firefox, MS Edge, Internet Explorer, and Safari; the most recent version of these browsers is recommended. PodBean also offers a mobile application that is only available on iOS and Android devices.

2.4 Innovative Technology-based Tools and Strategies in Involving Minority and Underserved Population Groups

Public involvement process requires active participation from people from all backgrounds and cultures to ensure that all points of view are taken into consideration. This approach helps keep the involvement process as diverse as possible. Underserved population groups such as low income households or people with limited English proficiency should be given special attention because they bring fresh prospective, they provide feedback about community specific issues, they give

feedback on how to increase the involvement of specific communities, etc. As such, agencies often make special efforts to make sure that the following underrepresented residents actively participate in public meetings:

- Older population
- Minorities
- Low-income households
- People with limited English proficiency (LEP)
- People with disabilities

The following subsections discuss the innovative technology-based tools, strategies, and techniques that can enhance the participation of the above-listed underserved population groups.

2.4.1 Community Characteristic Inventory to Identify Underserved Communities

These inventories use GIS applications to generate customized demographic reports of specific communities. The approach can help identify traditionally underserved population groups (e.g., low-income households, minority groups, older population, etc.), provide community background reports, suggest public involvement strategies, generate interactive mapping and reports of census-based data, etc. For instance, FDOT has invested in developing a similar tool known as Environmental Screening Tool (EST). The data layers of this system include race, income, age, and other demographic indicators. The EST system helps to screen and identify potential impact of a project on natural and human environment (FDOT, 2017). It helps agencies identify locations with underserved populations, and engage them in transportation decision-making processes.

2.4.2 Hearing-Impaired and Vision-Impaired people

States have been using the following innovative technology-based tools and strategies to involve people with hearing and vision impairments.

Innovative Games

The Center for Neighborhood Technology, a nonprofit advocacy group in Chicago, Illinois which is committed to sustainable development and livable urban communities, played a game, Transopoly, with hearing- and vision- impaired people to identify transportation infrastructure needs. Volusia County Metropolitan Planning Organization (MPO) also played 'Strings and Ribbons' game for similar purpose (Aimen and Morris, 2012).

Devices

The following devices assist people with hearing and vision impairment. These devices could be made available during the public meetings to encourage more participation from hearing- and vision- impaired people.

- *Assistive Listening Devices as Hearing Aid*: These are electronic devices where sound is transmitted wirelessly over an FM frequency. These devices assist people with hearing disability to listen better.

- *Text Telephone (TTY)*: These devices are text communication electronic devices which connect through a telephone line. These devices are used for hearing- or speech- impaired people. People can communicate through this system by texting, without any verbal communication.

- *Video Remote Interpreting for Deaf Individuals*: These are video communication services where a deaf person communicates with regular people via webcams or videos phones. Note that a sign language interpreter is necessary to establish communication between the individuals.

- *Descriptive Video/Described Narration for Blind Individuals*: These systems assist blind people by describing situations in a video, TV program, film, or other visual media with vocal narrations. Key visual elements in a video, which can be missed by a vision-impaired audience, are specially narrated by this method.

- *CART in Engaging Listening and Speaking Disabled People*: Computer-assisted Real-time Transcription (CART) is a method where a specialist transcribes spoken words into written format using a keyboard or stenography technique. It helps the public with listening or speaking impairment. The CART method can be performed on site or remotely by using computer or telephone.

2.4.3 Low Literacy and Limited English Proficiency (LEP) People

States have been using the following innovative technology-based tools and strategies to involve low literacy and limited English proficiency (LEP) people.

- *Morphs*: The South Carolina Department of Transportation (SCDOT) used morphs to show how a corridor appears if changed from two lanes to five lanes (Aimen and Morris, 2012). Since this approach coveys the message with fewer words, it helps people with low literacy to engage more in public meetings.

- *Educational Videos*: These can help people with low literacy to understand and learn quickly about specific subjects. Educational videos were made by Sound Transit in Seattle, Washington to spread awareness on pedestrian safety. The videos were made as a part of student film competition, which helped bring more attention to the project. The videos were later posted on YouTube (Aimen and Morris, 2012).

- *Easily Accessible Websites*: Caltrans has resourceful LEP website. This website includes several helpful items to assist people with LEP. The site contains a video for staff to assist LEP people, 'I Speak Cards', a volunteer list of state transportation employees with bilingual capabilities (Caltrans, 2017). Another helpful website is LEP.Gov which works as a clearinghouse of toolbox for assisting LEP people (LEP.gov, 2017). New York City DOT (NYCDOT) analyzes the calls they receive from 311 which provides non-emergency services and government information in multiple languages. The public can make most of the NYCDOT service requests in several non-English languages (NYCDOT, 2015).

- *Color-coded Roadway Alternatives*: Alternative routes of a project could be shown in different colors instead of labeling them to assist people with limited reading capabilities (see Figure 2-1). Special provisions can be given to color-blind people. This process can be enhanced using visualization, traffic simulations, etc. (FHWA, 2006).

- *Looped Videos*: The Mississippi Department of Transportation (Mississippi DOT) showed videos in approximately 85% of their public hearings. The Department usually prepares 10-12 minute videos, and continuously run in a loop. For complex projects, they show a project background video, then in the next part they show aerial views, cross-section, details, etc. Videos were shown in English only, but they can be made for other languages too, when needed. This type of videos assists low literate individuals to understand projects. Figure 2-2 gives an example of a public meeting where looped videos are played (FHWA, 2006).

Figure 2-1: Example of Color-coded Roadway Alternatives (Source: FHWA, 2006)

Figure 2-2: Looped Videos at Public Meeting in Mississippi (Source: FHWA, 2006)

2.4.4 Physically Impaired People

The American with Disabilities Act of 1990 strongly encourages involving disabled people in highway planning and development of a project (ADA, 1990). As such, public meetings are often held at locations that are ADA accessible. Additionally, providing wheeled mobility devices at the locations might increase their participation in the public involvement activities.

2.5 Summary

Several technology-based communication tools are available for the agencies to adopt for their public involvement activities. The technologies are divided into the following three broad categories:

- Tools to Disseminate Information
  - o Micro-blogs
  - o Blogs
  - o Web-feeds
  - o Broadcast Forums on Government Channel
  - o Emails
  - o Text Messages

- Tools Facilitating Two-way Remote Communication
  - o Video Conferencing
  - o Social Media
  - o Online Surveys

- Tools Assisting Participation at Public Meetings
  - o Mapping/Geographic Information System (GIS) Applications
  - o Online Testing Scenarios
  - o Audio/Video Files

For each of the aforementioned communication media, the following are discussed:

- What is the software application about?
- How to download the software application?
- What device(s) are compatible with the software application? (computers, tablets, smartphones, etc.)
- What features do the software application have?
- What is the cost of software application?
- What are the software application's pros and cons?

Table 2-31 summarizes the 17 different communication media reviewed to assess their ability in enhancing public involvement in public meetings. As can be observed from the table, the following communication media have the potential to enhance public involvement in public meetings. However, these recommendations are solely based on the capabilities and limitations of the communication media and are not based on the public perception.

- Tools to Disseminate Information
  - Twitter
  - Gmail (or any other email service)
  - Textedly (or any other mass text messaging service)

- Tools Facilitating Two-way Remote Communication
  - GoTo Meeting (or any other video conferencing service)
  - Facebook
  - YouTube

- Tools Assisting Participation at Public Meetings
  - Google Maps
  - Podcasts

Table 2-31: Comparison of the Communication Media

Communication Media		Cost	Do Participants Need an Account?	Familiarity	Set up	Overall Recommendation
Disseminate Information	Twitter	Free	No	Very Familiar	Easy	High
	Feeder	Free	Yes	Least Familiar	Intermediate	Low
	RapidFeeds	Paid	Yes	Least Familiar	Hard	Low
	Blogger	Free	Yes	Least Familiar	Intermediate	Low
	Broadcast Forums	NA	NA	Not Applicable	Not Applicable	Low
	Gmail	Free	Yes	Very Familiar	Easy	High
	Textedly	Paid	No	Not Applicable	Easy	High
Facilitate Two-way Communication	Skype	Paid	Yes	Very Familiar	Intermediate	Intermediate
	GoToMeeting	Paid	No	Moderately Familiar	Intermediate	High
	Adobe Connect Meetings	Paid	No	Least Familiar	Hard	Intermediate
	Facebook	Free	No	Very Familiar	Easy	High
	YouTube	Free	No	Very Familiar	Easy	High
	SurveyMonkey	Paid	No	Moderately Familiar	Intermediate	Intermediate
	WhatsApp	Free	Yes	Very Familiar	Easy	Low*
Assist in Participation	Google Maps	Free	No	Very Familiar	Easy	High
	MetroQuest	Paid	No	Least Familiar	Intermediate	Intermediate
	Podcasts	Free	No	Least Familiar	Intermediate	High

* Not recommended because of privacy issues.

CHAPTER 3
STATES' EXISTING PRACTICES
IN USING COMMUNICATION TECHNOLOGIES AT PUBLIC MEETINGS

This chapter focuses on the states' current practices in using communication technologies at public meetings. It provides a review of the states' past and current efforts related to public involvement with the use of communication technologies to identify effective ways to enhance community engagement in transportation projects.

3.1 Review of States' Public Involvement Manuals

Several public involvement manuals from the state Departments of Transportation (DOTs) were reviewed. While reviewing these documents, emphasis was given to public involvement approaches, especially technology-based techniques. Documents from the following state DOTs were reviewed and summarized below:

- Arizona
- California
- Colorado
- Florida
- Georgia

- Hawaii
- Iowa
- Maine
- Massachusetts
- New Mexico

- New York
- North Carolina
- Oregon
- Pennsylvania
- Washington State

3.1.1 Arizona

Arizona Department of Transportation's (ADOT's) Public Involvement Plan Manual (2017) describes methods for project information sharing and enhancing public involvement. It states that social media cannot replace traditional or other forms of outreach, such as workshops, public meetings, local outreach, and hard copy information; however, it definitely can increase public participation by enhancing awareness, spreading information, knowledge, and providing opportunities for the public who do not usually participate.

ADOT has their own Blog, Facebook, Twitter, and YouTube accounts. ADOT generally does not create social media accounts for individual projects, they update project notifications on their general social media pages to inform the public and increase their involvement. Besides these techniques, ADOT also implements many tools and techniques from International Association of Public Participation (IAP2). Some of these tools include display boards for showing information, online public meetings and hearings, online surveys, computer facilitated workshops, information hotline, etc.

ADOT uses their website effectively by tracking public's interest through Web traffic tracking and other analysis tools. For major project milestones, ADOT takes surveys and polls through their website. ADOT also gives special attention to people with disabilities and people with limited English proficiency (LEP). They make sure that the website meets American with Disabilities Act (ADA) accessibility requirements, and the website also contains an automated tool that allows to change languages from a list of options. ADOT suggests using visual images and simulation videos for people with limited English proficiency in public meetings.

ADOT sets up kiosks at a variety of public places to reach large groups of people who might have interest and/or are impacted by the project but cannot attend traditional public meetings. The public places include but are not limited to transportation hubs, transfer stations, heavily used transit, community fairs, shopping centers, etc. (ADOT, 2017).

3.1.2 California

The California Department of Transportation (Caltrans) is actively researching potential new technologies for involving the public. To enhance public involvement, Caltrans website contains Frequently Asked Questions (FAQ) page, information on statewide planning, public comment form with timely response delivery, project timelines, translation of summary material in Spanish and other languages, videos, surveys, links to Facebook and Twitter, etc. Caltrans encourages public participation by using different visualization techniques such as wall graphics, maps, flowcharts, picture simulations, artist renderings, interactive displays, audience response systems, etc. Some of their technology-based public involvement tools include podcasting, webcasting, blogging, online videos, etc. (Caltrans, 2013).

The Department has a Caltrans *QuickMap* application for mobile phones to help the public stay up-to-date on current developments in transportation projects. Caltrans believes that the technology-based outreach programs such as using the internet to reach the public primarily focuses on educated people and the younger generation. As such, they focus on using different technologies to involve a wider cross-section of people.

Caltrans believes that using technologies such as Web-based surveys, online videos, webcasts, podcasts, Facebook, YouTube, Google Earth mapping, wiki tool, user-generated content mapping, Craigslist, etc., help attract broader audience. Caltrans has been successfully using social media and their website as a means to involve the public. They survey their staff to find the success rate of these technologies, and act accordingly. In addition to the aforementioned techniques, Caltrans has been researching a few more techniques such as webinar town hall meetings, telephone town hall meetings, YouTube for visual representations, blogs, electronic voting pads, on-line scenario games, and Web-based surveys. These tools are still under development (Caltrans, 2011; CDOT, 2010).

3.1.3 Colorado

The Colorado Department of Transportation (CDOT) uses different public involvement techniques before, during, and after the project planning process and implementation. This helps them avoid mistakes and potential conflicts in the later phases of the project. The Department's public involvement processes include social media (Twitter, Facebook), online surveys, online decision boards and blogging, digital presentations, educational videos, electronic maps, location-specific commenting tools, online mapping tools (e.g., ArcGIS), traditional media (e.g., newspaper, radio, television), and traditional public meetings and hearings. CDOT also uses interactive electronic voting, telephone town halls, civic advisory committees and speaker's bureau, small group meetings for separate committee members, emails, etc.

CDOT continues to research ways to enhance public involvement process as it helps boost the planning process and avoid potential conflicts in the later phases of a project. CDOT has, therefore, set four goals for keeping up with the public involvement process: (1) raise the level of awareness through educating the public about the project; (2) spread the knowledge of transportation and related opportunities so they can help to plan effectively; (3) use up-to-date and emerging technologies to involve the public to help in the long run; and (4) widen the level of participation by reaching out to a wider cross-section of people, including children, elderly, disabled people, people with LEP, underserved people, and students (CDOT, 2015).

3.1.4 Florida

The Florida Department of Transportation (FDOT) believes that public involvement is needed from the beginning to the end of a project to avoid future unwanted problems. As such, they adapt their public involvement techniques depending on the nature of the transportation project. The Department tries to use modern technologies in addition to the traditional public involvement strategies. FDOT is striving to keep up with the pace of modern technological developments, and keep upgrading their public involvement tools for the ease of the public.

FDOT has been using interactive strategies in its public meetings. For example, they have been using strings and ribbons to choose the locations for transportation funding, visual surveys for the public to choose project location or funding, and color dots surveys to prioritize issues pertaining to a project. FDOT has also been using remote controlled real-time polling which helps get instant responses from the audience on any topic being discussed. Buying or renting remote controls can be costly; hence, online response systems (e.g., Poll Everywhere) where the public can instantly respond with their smart devices are sometimes used. Surveys are us0ed to document the public opinion and involve them in questionnaire through phone, online, or text messages. The online surveys can be done using *SurveyMonkey*, *MetroQuest*, or *MindMixer*.

Besides having meetings at physical locations, sometimes electronic or virtual meetings are held for those who cannot attend physically but want to participate. Using virtual meetings is a cost-effective approach, and can be used fairly easily using online technologies such as Skype, WebEx, GoToMeeting, etc. These types of virtual meetings are usually closely and carefully handled by the agency. Town hall technologies are also used to hold online meetings. They normally use a combination of many technologies to organize a meeting, such as telephone, television, or webcast. This is also another cost-saving method, and is normally used by the local agencies.

FDOT usually announces its new plans and developments via media resources, such as social media, radio, television, or websites. They try to reach out to the growing body of internet users via social media, including Facebook, Twitter, and YouTube. They sometimes use billboards, text messages, Variable Message Signs (VMS), and advertising websites to broadcast their projects. For project advertisement and announcement, visualization is an effective technique to involve the public. As such, FDOT uses several visualization tools including videos, sketches, photographs, and simulations to help the public very clearly understand the concepts of the project. FDOT is also planning to setup kiosks at public places to reach out to the public (FDOT, 2014).

3.1.5 Georgia

The Georgia Department of Transportation (GDOT) uses multiple techniques to reach out to the public. The Department uses media outreach to inform the public through press releases, special mentions in radio, region-based editorials written by experts in the agency, etc. They inform the public about the project using different advertisement material including brochures, newsletters, flyers, e-alerts, etc. They use visual representations for better understanding during public information meetings. Throughout the entire public involvement activities, GDOT makes sure that the responsible engineers and experts are present to avoid confusions and mistakes.

The Department uses several online advertisement platforms such as animations, simulations, PowerPoint presentations, display boards, logos for larger projects, tabletop displays, posters, etc. They also use new software and sites for surveys such as *MetroQuest*, *MindMixer*, *Crowdbrite*, and *IdeaScale*. They use their own website and social media (e.g., Twitter, Facebook, YouTube) for reaching out to the public and for receiving feedback more effectively. For example, as shown in Figure 3-1, a survey of over 700 citizens in Georgia revealed that a majority of the participants (i.e., over 50%) preferred to learn about Georgia Express Lanes from their GDOT's website (GDOT, 2016). Similar to other states, GDOT also tries to use virtual meetings (e.g., electronic town hall meetings) along with social media as an effort to increase public participation.
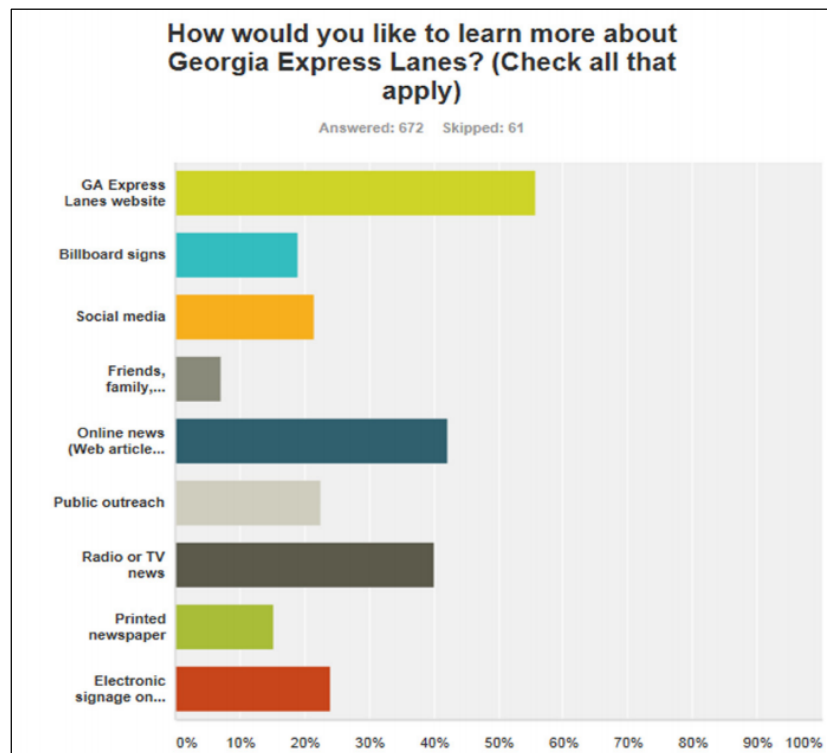

Figure 3-1: GDOT Survey on Public's Preferred Media for Public Outreach (GDOT, 2016)

3.1.6 Hawaii

Hawaii DOT's public involvement policy emphasizes the partnership between the Department and its stakeholders. The Department believes that the public participants can help the managers make

well-versed decisions. As such, Hawaii DOT (HDOT) tries to adopt all possible measures to effectively involve the public.

The Department informs the public about general announcements and meetings or updates on a project using both traditional and new approaches. The traditional methods include telephone surveys, house-to-house personal interviews, stakeholder interviews, public meetings, posters, flyers, newspapers, etc. The new technologies, including websites, blogs, and social media, are used to announce their activity and take comments from the public.

The Department also uses visualization techniques to clearly demonstrate a project plan. These techniques include digital photography, project maps, GIS map overlays, photo simulations, technical sketches, aerial photographs, charts and graphs on PowerPoint, etc. Moreover, the Department also ensures that a wider cross-section of people is included in the public involvement process. The Department tries to provide interpreters during public meetings and makes sure the meeting locations are accessible to disabled persons.

One of the main concerns of HDOT is to keep the audience updated about the status of the project. As such, they constantly update and review the public involvement procedures and keep the Department notified about the concerns regarding the project (HDOT, 2012).

3.1.7 Iowa

The Iowa Department of Transportation (Iowa DOT) gives public involvement the same importance as the project design and implementation. Hence, they continuously attempt to keep up with the pace of the new communication technologies (Iowa DOT, 2012). Iowa DOT conducts online open house public meetings to get timely responses from stakeholders and get opinions from the people who are affected by the project. They also use social media (e.g., Facebook, Twitter) to announce new information and status updates about the projects. This approach provides a platform for the public to comment and reach out to relevant people in the Department.

GIS mapping is a very informative tool to inform both the public and the agency about a project location in detail. Geocoding helps the public make location-specific comments on a certain project and maintain the database. This helps to understand the public perspective and to clearly visualize the project. Visualization is used as a technique to demonstrate complicated projects in a clearer view. It normally includes simulations, animations, videos, etc. GIS information is sometimes merged with visualization efforts to obtain more insights about the project (Iowa DOT, 2012).

3.1.8 Maine

The Maine Department of Transportation (Maine DOT) uses different traditional techniques as well as some new methods to communicate with the public. Their traditional methods include public meetings, public hearings, charrettes, workshops, informational sessions, etc. Maine DOT has its own website to deliver publications, new upcoming plans, and all necessary updates going on in the Department. The public can become directly involved through the website by providing their opinions through comments. Maine DOT has Facebook and Twitter pages to raise awareness

about their projects. They mainly use Facebook to provide links to important projects that need attention. They use another website tool called *Mysidewalk* to help the public actively participate by asking questions to the relevant authorities. It provides real-time data and helps the Department solve issues in regional plans. Maine DOT uses their website to provide a GIS map to help the public understand the locations of the new projects. The Department also uses visualization in their public meetings and website announcements of new projects. Visualization often includes animations, photographs, or digitized images of landscape, urban area, vegetation, etc., to help the public clearly visualize the project (Maine DOT, 2015).

3.1.9 Massachusetts

The Massachusetts Department of Transportation (MassDOT) Public Participation Plan (2014) includes instructions and strategies for enhanced, effective, and maximum public involvement. In this manual, MassDOT has included traditional techniques as well as some innovative techniques to engage the public in regular meetings. The techniques also include strategies for involving minority groups, people with LEP, and disabled people.

MassDOT has been reaching out to the community using press releases, posters, display boards, flyers, project fact sheets, newsletters, brochures, public service announcements, information stands at local events, legislative briefings, mailing and email lists, civic advisory committees and working groups, presentations, public hearings and meetings, open houses, workshops, public media (including local non-English newspapers, radio and TV stations), etc. MassDOT utilizes multiple communication channels to convey their message to the public (MassDOT, 2014).

In addition to the above-mentioned techniques, MassDOT uses their website and social media tools to inform the public about all of their activities. The social media tools include YouTube, Twitter, the Commonwealth's transportation blog, Rich Site Summary (RSS) feeds, and Flickr (MassDOT, 2017).

One vital aspect about the MassDOT Public Participation Plan (2014) is that it explains how deeply MassDOT focuses and concentrates on involving minority groups and people with disabilities. The Department also uses the following approaches in public meetings:

- Google Translate and other language translators to assist people with LEP;
- Braille version of meeting content and descriptive video/described narration to assist blind people;
- assistive listening device, TTY (Text Telephone), computer assisted real-time transcription, and video remote interpreting facilities to assist hearing-impaired and people with speech problems (MassDOT, 2014).

3.1.10 New Mexico

The New Mexico Department of Transportation (NMDOT) researches regularly on how to improve public involvement in transportation projects. They have categorized the different ways of getting the public involved. For public information, they suggest using the traditional mailing lists, newsletters, and website posts. They also use social media and public awareness campaigns.

They plan on setting up kiosks at certain key places where the public gets involved to influence a plans development and notice issues.

In case of using media, NMDOT uses newspapers for press releases or press conferences to announce plans. They plan on using their YouTube channel and radio and television channels to draw public attention via advertisements and announcements. The Department believes that teaching the public about certain projects is crucial to their success, and hence, effective outreach programs are critical. As such, NMDOT tends to use speaker's bureau and webinars to disseminate the information. They gauge the public preferences with the help of surveys using both quantitative and qualitative data. The online survey process is still under development, and will be adopted once complete.

NMDOT realizes public involvement is crucial for a project's success. As such, the Department uses several tools to receive the feedback from the public, and to listen to their opinions in real-time. Telephones are already being used by the Department to get the public involved. They provide instructions in different languages for people with LEP. The Department is currently planning on using a blog system to let the public comment elaborately. They use authoritative groups to distribute the decision-making process. They are still researching and developing new tools to engage the public (NMDOT, 2014).

3.1.11 New York

The New York State Department of Transportation (NYSDOT) uses public involvement strategies to educate the public about the project, and help the public to identify their issues with the upcoming project. This approach helps the Department avoid future complaints, reduces lengthy process, and sometimes, helps land a sponsor for the project thus reducing financial cost.

NYSDOT uses several techniques to involve the public. The Department conducts public outreach by sending e-mails notifying the public about the progress of the project. They use newsletters to announce upcoming public meetings and to inform about any new upcoming plans on a regular basis. They use telephone hotline for people to call in and ask questions regarding the project. They use media, such as radio/TV/internet, for project announcements.

The Department uses visual aids, such as plan and location maps, photographs, digital ortho-imagery, to publicize the project. They also use simulation techniques, GIS, computer-aided design, 3D animation, traffic simulation, etc. They use CORSIM and Synchro with SimTraffic for traffic simulations.

A citizen advisory committee is formed with all the stakeholders who are interested in the project planning process. The committee consists of subject matter experts, and their diversity is vast. This helps the Department to plan considering a wider cross-section of people, including minority, people with religious values, and disabled people (NYSDOT, 2004).

3.1.12 North Carolina

The North Carolina Department of Transportation's (NCDOT's) website has a well-developed public involvement toolkit to ensure that proper techniques are used in the public involvement

process to maximize public involvement. The development of the toolkit was initiated with an effort in 2004 with Federal Highway Administration (FHWA) grant for long-range transportation planning. The toolkit contains three major sections: Public Participation Techniques, Selecting the Appropriate Technique, and Special Considerations.

The toolkit's Public Participation Technique section includes an extensive list of techniques for public participation covering seven areas. The techniques vary from traditional low-tech approaches to new high-tech approaches (NCDOT, 2011; NCDOT, n.d.).

For example, for the public involvement meeting for the NCDOT's C. F. Harvey Parkway Extension Project (State Transportation Improvement Program (STIP) project number R-5703), in addition to traditional outreach activities, email and website were used to reach the public. The public were asked to give their responses at the end of the meeting. The questions for the public were provided in multiple languages. Technologies including GIS maps, PowerPoint presentation, 3D simulated pictures, were used in the meeting for better visualization (NCDOT, 2015).

3.1.13 Oregon

The Oregon Department of Transportation's (ODOT's) public involvement website has a meeting calendar which shows upcoming public meeting dates. This helps the public be informed about the upcoming meetings. The website contains resources to reach diverse communities. The ODOT's Public Involvement Planning webpage has mapping tool collection. These mapping tools are GIS-based, and are divided into three sections depending on their job: Environment Protection Agency's Environmental Justice Screening and Mapping (EPA EJScreen) tool, ODOT EJ Mapping Tool (ODOT TRANSGIS), and LEP Mapping Tool (ODOT, n.d.). In addition to maintaining the website, ODOT also has their own Facebook, Twitter, TripCheck, YouTube, and Flickr accounts. ODOT has been using these social media accounts for more than seven years (CDOT, 2010).

3.1.14 Pennsylvania

The Pennsylvania Department of Transportation (PennDOT) believes that constant participation of the public will increase the Department's success rate in fulfilling a mission. PennDOT's Project Level Public Involvement Handbook (2011) describes PennDOT's actions to improve public involvement. In addition to using traditional approaches, they use modern technologies to promote public involvement. For instance, they use a special telephone system for hearing disabled people. For people with limited English proficiency, the Department uses pre-recorded messages for communication. PennDOT also suggests using webcast, webinar, podcast, and virtual public meetings to increase public participation. Additionally, the Department is also using social media (e.g., Facebook, Twitter, YouTube, and blogs) to announce project updates and keep the public informed. PennDOT also uses surveys to accurately gauge the public viewpoint on a project. Survey results are considered as the public's perception, and is taken as a consideration and not as final decisions for the project. PennDOT also uses visualization techniques, 3D animation, computer generated 3D designs, GIS, etc., to help the public easily understand the project. They use their website to update the public about new developments. They sometimes use video recordings to provide a better understanding of the project. Figure 3-2 provides a guide to help select tools and techniques for effective public involvement (PennDOT, 2011).

Tools	Available Resources			Project Phases						
	Cost	Time	Skills	Planning	Preliminary Design/ Environmental Clearance			Final Design	Construction	Maintenance
					CEE	EA	EIS			
Announcements										
▪ Direct Mail	◐●	◐●	○◐	X	X	X	X	X	X	X
▪ Flyers and Posters	○	○	○	X		X	X	X	X	X
▪ Newspaper Advertisements	○◐	○	◐	X	X	X	X	X	X	X
▪ E-Mail Announcements	○	○	◐	X	X	X	X	X	X	X
▪ PSA's	○◐●	○◐●	◐●	X		X	X	X	X	X
▪ Road Signs	○◐	○	◐	X	X	X	X	X	X	X
Brochures	◐●	◐●	◐●	X		X	X	X	X	X
Websites	◐●	◐●	●	X	X	X	X	X	X	
BLOGS	○◐	○◐	◐●	X	X	X	X	X	X	
Citizens Advisory Committees	○	●	◐●	X		X	X	X		
Field Offices/Project Offices	◐●		◐●	X		X	X	X	X	X
Information Lines	○◐	○◐	◐	X		X	X		X	
Media Relations	○	◐	●	X	X	X	X	X	X	X
Newsletters	◐●	◐●	◐●	X	X	X	X	X	X	X
Traditional Public Meetings										
▪ Formal Meetings	○◐	○◐	●	X		X	X	X		
▪ Open Houses	○◐	◐●	◐●	X	X	X	X	X	X	
Public Officials Meetings	○	◐	◐●	X	X	X	X	X	X	X
Special Purpose Meetings										
▪ Charettes	◐	●	●	X		X	X	X		
▪ Focus Groups	◐	◐●	●	X		X	X	X		
▪ Neighborhood Meetings	○	◐	◐●	X		X	X	X	X	X
▪ Workshops	◐	◐●	◐●	X		X	X	X	X	
Non-Traditional Public Meetings										
▪ Web Conferencing	◐●	◐●	●	X	X	X	X	X		
▪ Webinar	◐●	◐●	●	X		X	X	X		
▪ Webcast	◐●	◐●	●	X		X	X	X		
▪ Podcast	◐●	◐●	●	X		X	X	X		
▪ Virtual Public Meetings	◐●	◐	●	X	X	X	X	X		
Public Hearings	◐	◐●	●	X		X	X			
Public Officials Meetings	○	◐	◐●	X	X	X	X	X	X	X
Surveys	○◐	◐	◐●	X	X	X	X			
Visualization										
▪ Computer Images	◐●	◐●	●	X	X	X	X	X		
▪ GIS	◐●	◐●	●	X	X	X	X	X		
▪ Scale Models	◐●	●	●	X	X	X	X	X		
Videos	◐●	◐●	◐●	X	X	X	X	X	X	

○ Low
◐ Medium
● High

✕ Potential Application

Figure 3-2: Public Involvement Tool Selection Guide (Source: PennDOT, 2011)

3.1.15 Washington State

The Washington State Department of Transportation (WSDOT) Community Engagement Plan (2016) elaborately describes how they involve public in different stages of their transportation decision making process. The Department uses several approaches to engage the public. These approaches include public meeting with breakout sessions, webpages, folios, emails, press releases, newsletters, MPO meetings, charrette/workshops, advisory groups, social media, video conferencing, tribal consolation, television/radio announcements, mailing, travel displays, open houses, community meetings, face-to-face onsite meetings, surveys, focus groups, display/kiosks, etc. Note that the WSDOT website has links for the following social media accounts: Blogger, Flickr, RSS, Twitter, YouTube, Facebook, Instagram, and LinkedIn (WSDOT, 2017).

As part of engagement strategies, WSDOT conducts polls and surveys to gather public opinion. These are done through telephone calls, electronic surveys via internet, or hard copy survey forms. The Web-based surveys are conducted through Washington Transportation Commission's 'Voice of Washington state' or survey tools such as *SurveyMonkey*. Besides engaging the general public

in the transportation decision making process, WSDOT is also concerned about involving minority, low income, low English proficiency and disable population groups (WSDOT, 2016).

3.2 State-of-the-practice Survey Administration

An online survey questionnaire was administered to the public involvement officials in each state. The survey questionnaire, provided in Appendix A, explored the current state-of-the-practice in using communication technologies for public involvement. More specifically, the survey focused on the following aspects:

- the type of technology-based communication tools currently being used by the agency,
- an assessment of who the agency is reaching through these communication tools with a focus on demographics,
- the agency's experience with these technology-based tools, and
- the agency's evaluation of the benefits and challenges of using the tools.

A draft survey questionnaire was prepared and submitted to the Project Managers, Dr. Rusty Ennemoser and Dr. Rax Jung, for their review. Once the questionnaire was reviewed and approved, the survey was uploaded into Qualtrics, an online survey administration tool, and an online link to the survey was created. Next, the contact information of public involvement officials in each state was gathered from state DOT websites. Table 3-1 lists the contacts in each state. A personalized invitation email was sent to each of these contacts on April 07, 2017.

Table 3-1: List of Contacts at State DOTs

State	Person	Title
Alabama	Sandra Bonner	
Alaska	Katherine Wood	Public Involvement Lead
Arizona	Timothy Tait	Communications Director
Arkansas	Ruby Jordan	Section Head - Public Involvement
California	Chris Ratekin	Chief, Office of State Planning
	Erin Thompson	Chief, Office of Regional Planning
Colorado	Aaron Willis	Transportation Planner
Connecticut	Scott A. Hill	Engineering Administrator
Delaware	C.R. McLeod	Dept. of State Community Relations Officer
Florida	Rusty Ennemoser	State Public Involvement and Community Resources Coordinator
Georgia	Natalie Dale	Media & Govt Relations Liaison
Hawaii	Public Affairs Office	Information Specialist
Idaho	Adam Rush	Public Involvement Coordinator
Illinois	Guy Tridgell	Director of communications
Indiana	Rickie Clark	Manager-Public Involvement
	Mary Wright	Public Hearing Officer-Public Involvement
Iowa	Valerie Brewer	Public Involvement
Kansas	Brianna Landon	Office of Public Affairs (Communications Director)
Kentucky	Ryan Watts	Executive Director, Office of Public Affairs
Louisiana	Rodney Mallett	Communications Director
Maine	Scott Rollins	Outreach Office Director
Maryland	Erin Henson	Director, Office of Public Affairs
	Heather Murphy	Director, Office of Planning & Capital Programming
Massachusetts	Thomas J. Tinlin	Highway Administrator, Highways Division

Table 3-1, Continued

State	Person	Title
Michigan	Robert H. Parsons	Public Involvement and Hearings Officer, Bureau of Highway Development
Minnesota	T.J. Melcher	Public Affairs Coordinator
Mississippi	Jeff Ely	Planning Engineer; Planning Division
Missouri	Elizabeth Prestwood	Transportation Planning Specialist
Montana	Lori Ryan	Public Information Officer
	Jan Nesset	Public Involvement Coordinator
Nebraska	Sarah Kugler	Public Involvement Coordinator
Nevada	Julie Maxey	NDOT Public Hearings Officer
New Hampshire	Bill Boynton	Administrator (Public Information)
New Jersey	Raymond S. Tomczak	Office of Community Relations
New Mexico	Chief Public Relations Officer	Emilee Cantrell
New York	Michael Flick	Public Involvement Coordinator
North Carolina	Jamille Robbins	Public Involvement Group Leader
	Diane Wilson	Senior Public Involvement Officer
North Dakota	Russ Buchholz	Information Technology Division
Ohio	Jacque Annarino	NEPA Coordinator
Oklahoma	Frank Roesler III	Public Involvement Officer
Oregon	Dave Thompson	Public Information Coordinator
Rhode Island	Michael Moan	Principal Planner
South Carolina		
South Dakota	Kristi Sandal	Public Information Officer
Tennessee	Beth Emmons	Manager of Communications
	Chelsea Bell	Public Involvement Coordinator
	Amanda Tidwell	Coordinator of Public Meetings/Hearings
Texas	Jefferson Grimes	Public Involvement Section Director
Utah	Dan Kuhn	Railroad & Freight Planner
Vermont	Erik Filkorn	Public Outreach
Virginia	Tamara Rollison	Director of Communications
Washington	Bill Bennion	Communications & Engagement Planner
West Virginia	Carrie Jones	Communications Specialist
Wisconsin	Robert Spoerl	
Wyoming	Ronda Holwell	Public Involvement Specialist (District 4)

3.3 State-of-the-practice Survey Results

Of the fifty states, the following 27 states (i.e., 54%) responded to the survey.

- Alabama
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- Florida
- Hawaii
- Idaho
- Iowa
- Maine
- Minnesota
- Missouri
- Montana
- New Hampshire
- North Carolina
- North Dakota
- Ohio
- Oregon
- Tennessee
- Texas
- Utah
- Vermont
- Washington State
- West Virginia
- Wyoming

As there is no one-size-fits-all approach for public outreach and public involvement activities, state and local agencies often use different approaches, as they see fit, to involve the public. As such, the survey responses from one (or two) representative(s) from each state do not necessarily reflect the views and practices of the entire state.

Agencies could convey information remotely during public meetings either using one-way communication tools such as broadcast forums on government channel, or two-way communication technologies such as GoTo Meeting. Two-way communication obviously provides more opportunities for the public to be involved in the process. As can be observed from Figure 3-3, six states have used both one-way and two-way communication technologies; six states have used just one-way communication; while three states have adopted two-way communication tools.
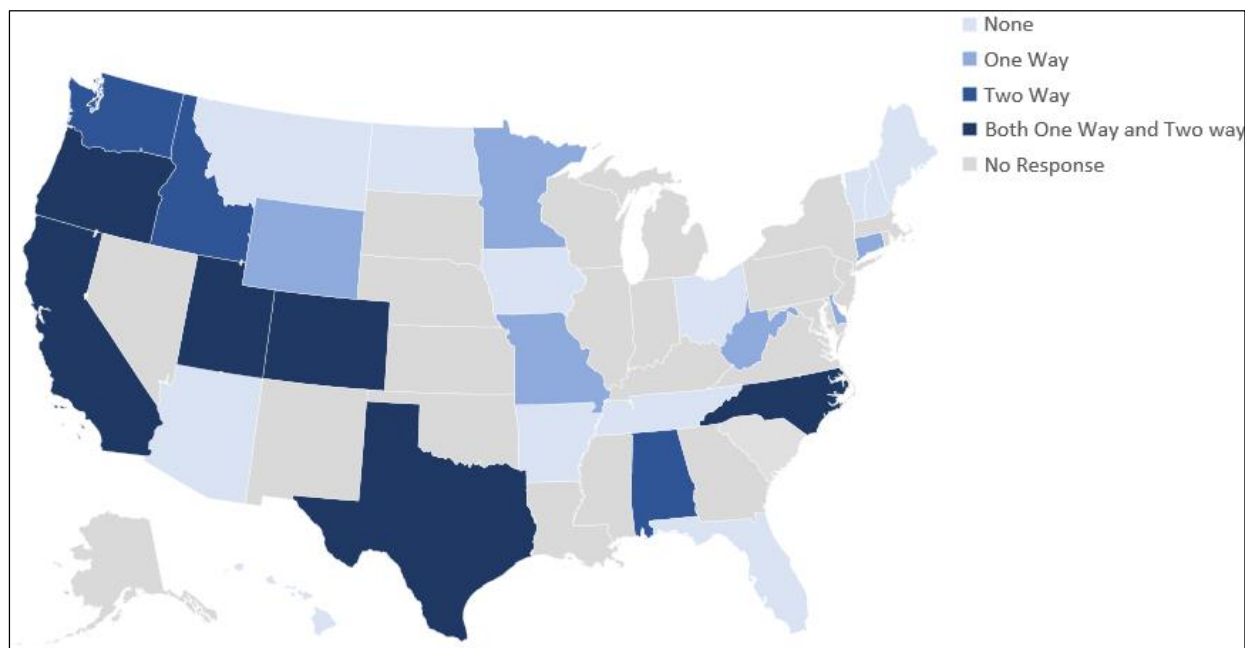
Figure 3-3: States' Experience with Technology-based Communication Tools

3.3.1 Adoption of Technology-based Communication Tools

As discussed in Chapter 2, several technology-based communication tools are available for the agencies to adopt for their public involvement activities. As such, the next questions focused on how frequently have the states used the following communication tools, and how successful were these communication technologies.

- Micro-blogs (e.g., Twitter)
- Blogs (e.g., Blogger)
- Web Feeds/Pushed Content (e.g., RSS Feeds)
- Social Media (e.g., Facebook)
- Mapping/GIS Applications (e.g., Google Maps, Google Earth)
- Video Conferencing/Webinars (e.g., Skype, GoTo Meeting)
- Broadcast Forums on Government Channel

- Audio or Video Files (e.g., YouTube, Podcasts)
- Online Surveys (e.g., Survey Monkey)
- Online Testing Scenarios (e.g., Metro Quest)

Table 3-2 provides the states' responses to this question. As can be observed from the table, for each communication technology, the frequency of usage was rated on a scale of 1 (never) to 5 (very frequently), and the level of success was rated on a scale of 1 (not successful) to 5 (very successful). Table 3-3 summarizes these responses. For each communication tool, the table provides two measures: (a) number of states that have used it either frequently or very frequently; and (b) number of states that have considered the tool to be either successful or very successful.

As can be observed from Tables 3-2 and 3-3, social media, mapping/GIS applications, and micro-blogs were found to be frequently used by the states. Surprisingly, video conferencing was frequently used by only three of the responding states. Very few states were found to have used online testing scenarios, broadcast forums on government channel, and blogs. Note that Idaho uses electronic, touch-screen displays at public meetings and public hearings to display project information; this approach reduces the reliance on the static foam-core displays. Mapping/GIS applications were found to be most successful, followed by online surveys and social media. Table 3-4 provides the specific reasons for adopting these technology-based tools.

Table 3-2: Frequency of Usage and Success of Different Communication Technologies

Responding State	Micro-blogs		Blogs		Web Feeds		Social Media		Mapping Applications		Video Conferencing		Broadcast Forums on Govt. Channel		Audio or Video Files		Online Surveys		Online Testing Scenarios	
	Freq.	Success	Freq.	Success	Freq.	Success	Freq.	Success	Freq.	Success	Freq.	Success	Freq.	Success	Freq.	Success	Freq.	Success	Freq.	Success
Alabama	2	3	2	3	2	3	2	3	2	3	2	3	1	n/a	1	3	2	n/a	1	n/a
Arizona	5	4	4	3	3	2	4	3	3	4	2	n/a	1	n/a	2	2	4	4	4	4
Arkansas	4	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a
California	3	3	2	2	1	ns	4	3	4	5	4	4	1	n/a	3	3	4	4	1	n/a
Colorado	4	3	1	n/a	4	n/a	5	3	5	3	3	3	4		4	4	4	4	1	n/a
Connecticut	ns	ns	ns	ns	ns	ns	ns	ns	3	3	4	4	4	4	ns	ns	3	4	ns	ns
Delaware	4	5	1	n/a	1	n/a	4	5	4	5	3	4	1	n/a	4	4	4	4	1	n/a
Florida	1	n/a	1	n/a	ns	n/a	4	3	ns	n/a	1	ns	1	n/a	2	2	2	ns	1	n/a
Hawaii	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	2	n/a	1	n/a
Idaho	1	n/a	1	n/a	ns	n/a	5	5	5	5	3	5	1	n/a	3	5	1	n/a	1	n/a
Iowa	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a
Maine	3	3	1	n/a	1	n/a	3	3	3	3	1	n/a	3	3	3	3	3	3	3	n/a
Minnesota	4	2	1	n/a	1	n/a	4	3	4	4	2	2	2	3	1	n/a	3	4	3	n/a
Missouri	3	3	ns	ns	ns	ns	5	4	4	4	2	2	2	3	4	4	3	3	1	n/a
Montana	1	ns	1	ns	1	ns	3	3	4	3	1	ns	1	ns	1	ns	4	ns	3	3
New	1	n/a	1	n/a	1	n/a	1	n/a	1	n/a	2	n/a	1	n/a	1	n/a	2	n/a	1	n/a
North Carolina	3	ns	1	n/a	1	n/a	3	ns	2	4	3	4	2	ns	3	ns	3	4	3	4
North Dakota	1	n/a	1	n/a	5	5	5	4	1	n/a	1	n/a	1	n/a	4	n/a	4	n/a	1	n/a
Ohio	1	n/a	1	n/a	1	n/a	3	5	1	n/a	1	n/a	1	n/a	1	n/a	3	5	1	n/a
Oregon	4	4	2	4	4	3	4	4	5	4	2	3	2	2	4	4	4	4	1	n/a
Tennessee	1	n/a	1	n/a	1	n/a	1	n/a	ns	n/a	1	n/a	1	n/a	1	n/a	ns	n/a	1	n/a
Texas	4	3	1	n/a	4	4	5	3	5	4	3	4	2	3	3	4	4	4	2	3
Utah	4	3	4	3	3	3	4	5	3	4	4	5	1	n/a	4	5	3	3	1	n/a
Vermont	ns	n/a	ns	n/a	ns	n/a	ns	n/a	ns	n/a	3	3	ns	n/a	ns	n/a	3	n/a	ns	n/a
Washington	3	3	2	3	4	3	3	4	4	3	1	3	ns	ns	3	3	3	3	2	ns
West Virginia	5	3	1	n/a	1	n/a	5	3	5	3	1	n/a	3	3	2	3	1	n/a	1	n/a
Wyoming	4	3	1	n/a	1	ns	5	5	5	4	2	ns	2	ns	3	ns	3	ns	1	ns

Frequency of usage: 5-very frequently; 4-frequently; 3-occasionally; 2-rarely; 1-never; ns-not sure; n/a-not applicable or no response.

Level of success: 5-very successful; 4-successful; 3-moderately successful; 2-of little success; 1-unsuccessful; ns-not sure; n/a-not applicable or no response.

Table 3-3: Summary of States' Experience with New Communication Technologies

Technology	Number of Responding States That have used the Technology Either Frequently or Very Frequently	Number of Responding States That have Considered the Technology to be Successful or Very Successful
Micro-blogs (e.g., Twitter)	10	3
Blogs (e.g., Blogger)	2	1
Web Feeds/Pushed Content (e.g., RSS Feeds)	5	2
Social Media (e.g., Facebook)	14	9
Mapping/GIS Applications (e.g., Google Maps, Google Earth)	12	11
Video Conferencing/Webinars (e.g., Skype, GoTo Meeting)	3	7
Broadcast Forums on Government Channel	2	1
Audio or Video Files (e.g., YouTube, Podcasts)	6	7
Online Surveys (e.g., Survey Monkey)	8	10
Online Testing Scenarios (e.g., Metro Quest)	1	2

Table 3-4: States' Reasons for Adopting Technology-based Tools

Tool	Reason for Adopting the Tool
Micro-blogs	• Provide continuous updates on a specific project • Engage a huge audience • Provide ease of use and access • Inform more people about meetings • Easily push content, allowing easy access for questions and answers • Inform people who are interested but unable to attend the meeting or hearing • Reach out to a younger, more active demographic • Be as transparent as possible • Make information as available as possible to as wide of an audience as possible • Engage people from remote locations • Generate public awareness • Reach out to media, other government organizations, and the public
Blogs	• Provide regular updates on specific project • Can be used to provide background and as a media source • Support deeper engagement with the community
Web Feeds/Pushed Content	• Can create a website for specific project • Can push information to the media outlets and the public • The public can access information at their convenience
Social Media	• Provide continuous updates on a specific project • Provide accessibility and widespread use • Inform more people about meetings • It is another means of transmitting information, videos/pictures, etc. • Can be used for advertising meetings • Reach a huge audience in a short amount of time • Meeting feature allows for updates/reminders • Able to reach large numbers of constituents • Ability to connect with a specific audience, often using paid promotions and targeted advertising to that specific community • Reach customers quickly in the event of road closures.

Table 3-4, Continued

Tool	Reason for Adopting the Tool
Mapping/GIS Applications	• Can use as presentation aid • Allow people to make geo-specific comments • Provide ease of use and accessibility • Provide information during meetings • Can zoom into specific locations for individual questions • Can interact and engage more, and get information by clicking on the map
Audio or Video Files	• Can access presentations from state DOT website and specific project link • Can be easily accessed through website or project link, and can easily distribute information • Provide information during meetings • Can serve as an archive for online public meetings
Online Surveys	• Can be used for a wide range of public involvement activities • Provide ease of use for polling • Can be used for planning/study projects to help gather information/needs/opinions • Can be used to obtain input in addition to or in place of written comments • Provide easy access for the public to comment • It is an attractive tool for those who are unable to attend a public meeting • Able to reach a huge audience who are interested in the project
Online Testing Scenarios	• Successfully engage in an uncomplicated way, making use of game theory

The effectiveness of new communication technologies is often evaluated using online surveys, comment forms, traffic on the website, etc. Figure 3-4 provides the approaches used by the responding states to measure the effectiveness of the new communication tools. Comment forms were found to be the most common method, followed by online surveys, and the number of people logged into the system.
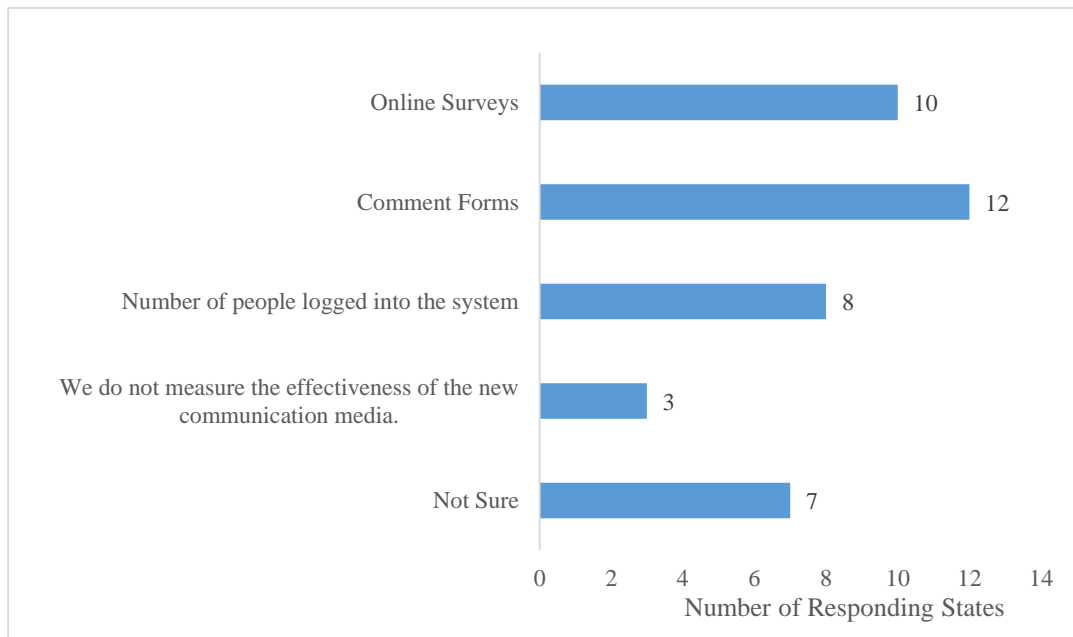
Figure 3-4: States' Approaches to Measure the Effectiveness of Communication Tools

In addition to these approaches, some states were found to use different evaluation methods. For instance, Oregon checks engagement/likes/shares/views, etc. to evaluate their performance in

reaching out to the public. Idaho determines effectiveness from those who attend public meetings and public hearings. Texas uses Web analytics associated with online tools, while Colorado measures the effectiveness of communication tools from number of reposts and number of participants in telephone town halls.

States were asked if they have cut back on any traditional outreach activities while using the technology-based tools. Among all the responding states, the following five states stated that they have cut back on traditional outreach tools: Alabama, California, Colorado, Oregon, and Wyoming. Over the course of the past 4-6 years, Colorado has significantly reduced the number of public meetings related to statewide and regional transportation plan development. Oregon has replaced physical open house with a virtual one. Wyoming has conducted fewer press releases as a result of increased implementation of technology-based outreach activities.

Of the eleven communication technologies, states were asked to specify the communication technologies they have considered using but have not used yet. Figure 3-5 summarizes the survey results. As can be observed from the figure, a total of nine states have considered using video conferences and webinars as part of their public involvement activities, but have not yet used. Social media was the next most frequently considered communication technology. It is interesting to note that none of the responding agencies have considered mapping/GIS applications. This could be because several states are already using GIS applications in their public involvement activities.
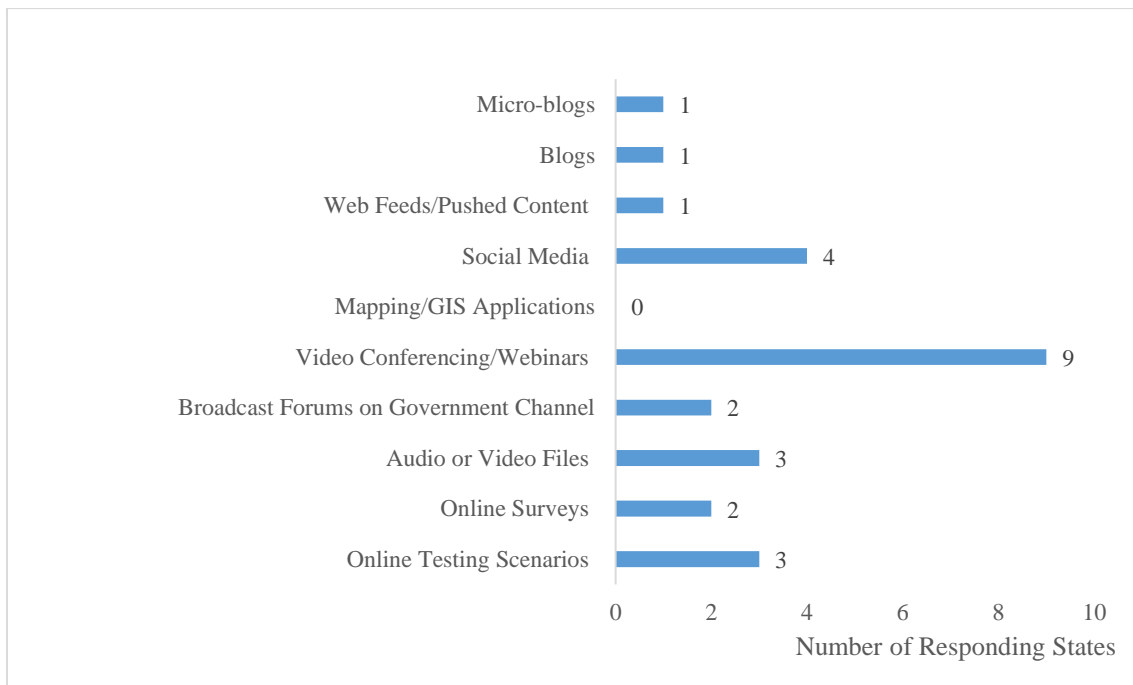
Figure 3-5: Communication Tools Considered But Not Yet Adopted by the State DOTs

Some states were found to have stopped using some technologies. For instance, Oregon has found *Broadcast Forms on Government Channel* unhelpful in engaging the public because citizens rarely get involved through this medium. Minnesota stated that public involvement through social media is tricky because it is tough to tell an entire story in a post. They also found users tend to turn to social media as an outlet to express frustrations.

3.3.2 Factors Affecting the Adoption of Communication Technologies

Figure 3-6 summarizes the top barriers identified by states for adopting new communication technologies. As can be observed from the figure, the most frequently considered barriers are: *inexperience with/lack of skill in using these communication media*, *cost*, and *Information Technology (IT) upgrades required for their adoption*.

In addition to the options provided, some states listed the following concerns with adopting the new communication technologies:

- Arizona: Concurrence on use of tools by federal authorities is difficult.
- Tennessee: FHWA rules are barriers.
- Ohio: Keeping information updated and the amount of resources/time to attend to this format is a problem.
- New Hampshire: It is not demonstrated that these approaches are needed in New Hampshire.
- Delaware: Staff time to set up and manage additional communication tools is a problem.
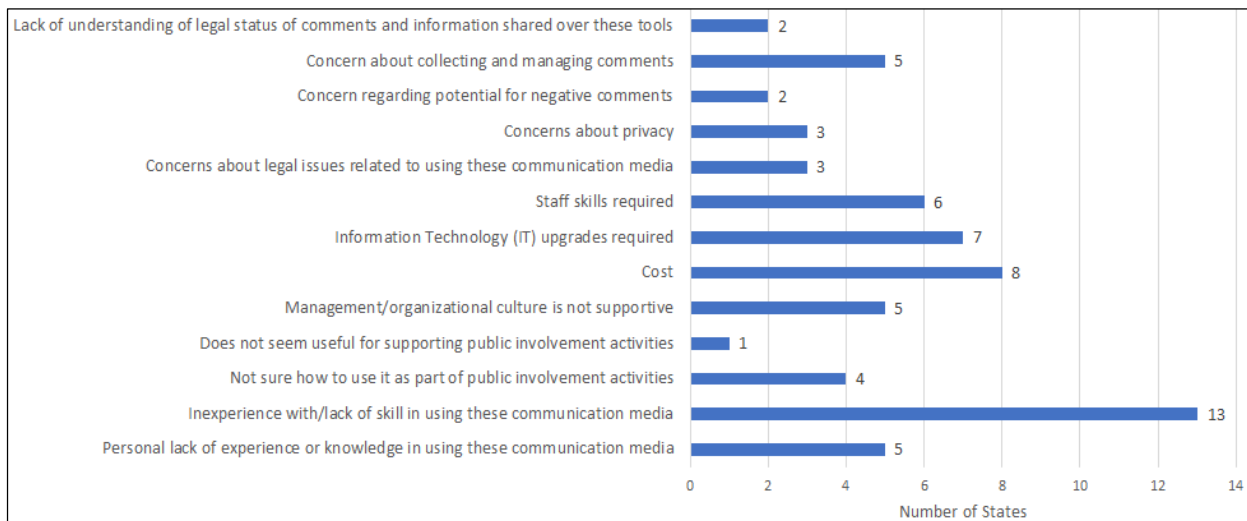
Figure 3-6: Barriers for Adopting Communication Technologies

Figure 3-7 provides the most important deciding factors that states consider in implementing technology-based communication media to encourage people to participate remotely. A high 63% of the responding states (17 of 27) have chosen *the ability to reach new or hard to contact population groups* as one of the factors to consider technology-based communication strategies. This choice was followed by *the perceived utility of input to the public involvement process*, and *affordability*. In addition to the factors provided in the survey, some states have listed other factors that they consider to affect the adoption of communication technologies. Utah considers desire to be publicly transparent as an influencing factor, and New Hampshire considers a demonstrated need as a factor.
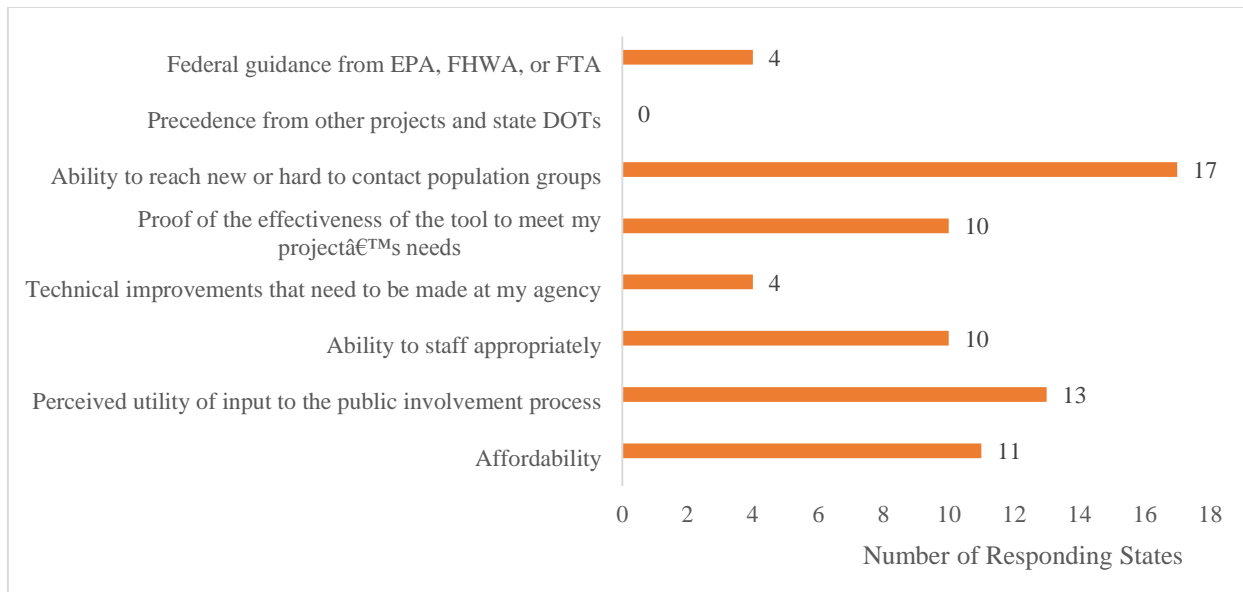
Figure 3-7: Deciding Factors for Adopting Communication Technologies

3.3.3 Role of Technology in Involving Underserved Population Groups

Table 3-5 summarizes the efforts made by states to involve low-income households, minority population, persons with LEP, persons with disabilities, and older population.

States were asked what group of people they want to engage but were not yet able to engage. Six states mentioned they want to engage minority population, while five states mentioned low-income households. Figure 3-8 summarizes these results.

A few states such as Florida managed to include all groups but they want to improve the level of involvement. North Carolina suggested going to these underserved groups and conducting small group meetings to increase their involvement. They mentioned that they have seen satisfactory results when they go the extra mile and conduct small group meetings. Colorado informed that they are improving their engagement with underserved communities via new outreach activities.

States were asked to identify the groups of people who will engage in technology-based public involvement processes. Figure 3-9 provides the groups likely to engage in public involvement processes using technology-based communication tools. A majority of the responding states (22 of 27 responding states) identified students and the younger generation to be likely engaged in public involvement activities using technology-based tools. Besides this demographic group, many states identified professionals and agency stakeholders to be likely to participate in technology-based public involvement activities.

Table 3-5: Efforts Made by States to Involve Underserved Population Groups

Underserved Population Groups	Special Efforts to Involve Underrepresented Residents In Public Involvement Activities
Low-Income Households	• Provide convenient meeting times and child-centered activities • Provide suitable meeting location • Notify and engage through house visits, emails, phone calls, and mailers • Visit area affected by project and assist people in that area • Saturate the area with notices • Conduct targeted outreach (i.e., small group meetings) and specialized notification of upcoming public meetings • Provide notification through social media
Minority Population	• Provide meeting locations near transit stops • Engage and notify through house visits, emails, phone calls, and mailers • Offer refreshments and advertise more about the meeting • Visit all areas affected by projects • Saturate the area with notices • Interact with community leaders • Look for LARCS (Local area/Language Assistance Resource Contacts) in the community to help disseminate information, encourage participation at scheduled public involvement events, and/or organize small group meetings • Collaborate with the Office of Equal Opportunity that engages all people • Work with legislators • Engage with population leadership/groups
Persons with Limited English Proficiency (LEP)	• Complete comprehensive LEP analysis to determine languages meeting threshold for translation services • Make sure that websites are translated into other languages • Provide interpreters and other translation and interpretation services at meetings • Identify all the stakeholders within a project area, and reach out to them • Translate meeting materials for LEP stakeholders • Provide specific language newsletters to local markets/churches, etc.
Persons with Disabilities	• Ensure that facilities meet ADA requirements before scheduling meetings • Provide special accommodations • Upon request, provide reasonable accommodations including auxiliary aids and services necessary to afford an individual with a disability an equal opportunity to participate in the agencies' services, programs, and activities • All meeting locations should be ADA-compliant facilities and accessible • Provide ADA statement on meeting notifications/advertisements for people to call in to request special services to participate. Work with social services to share information • Provide Facebook, Twitter, and other social media posts announcing the meetings as well as opportunities to provide information to those who cannot participate
Older Population	• Provide hearing assistance tools; larger-format handouts and slides • Provide special accommodations • Notify and engage through house visits, emails, phone calls, and mailers • Visit all areas affected by projects • Saturate the area with notices • Provide convenient meeting time and meeting location • Provide engagement meetings/talks with community groups
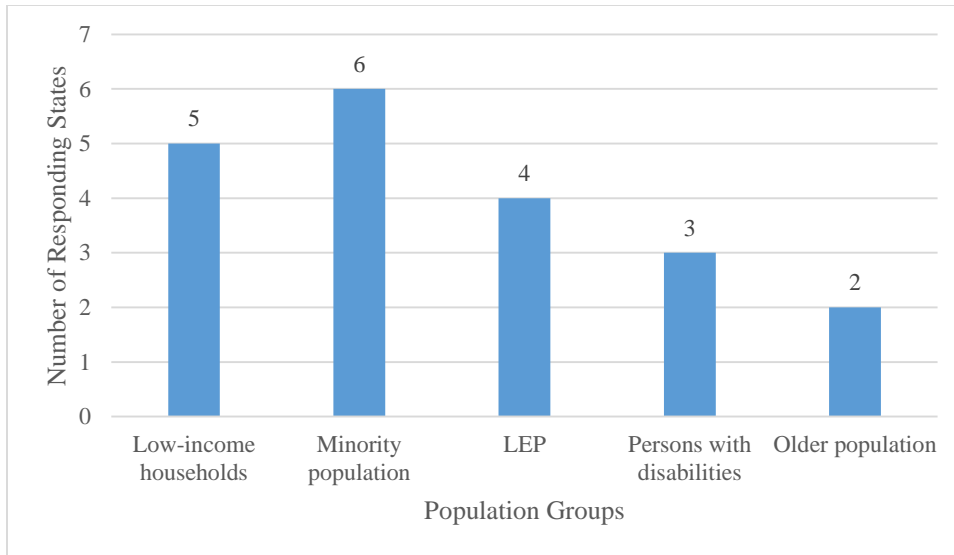
Figure 3-8: Underserved Groups Not Yet Engaged by State DOTs

3.3.4 Availability of Policies for Using Technology-based Tools

As can be observed from Figure 3-10, among the 27 responding states, eight states have protocols for using technology-based tools, 13 states have no policy in place, while the remaining six states responded as not sure.
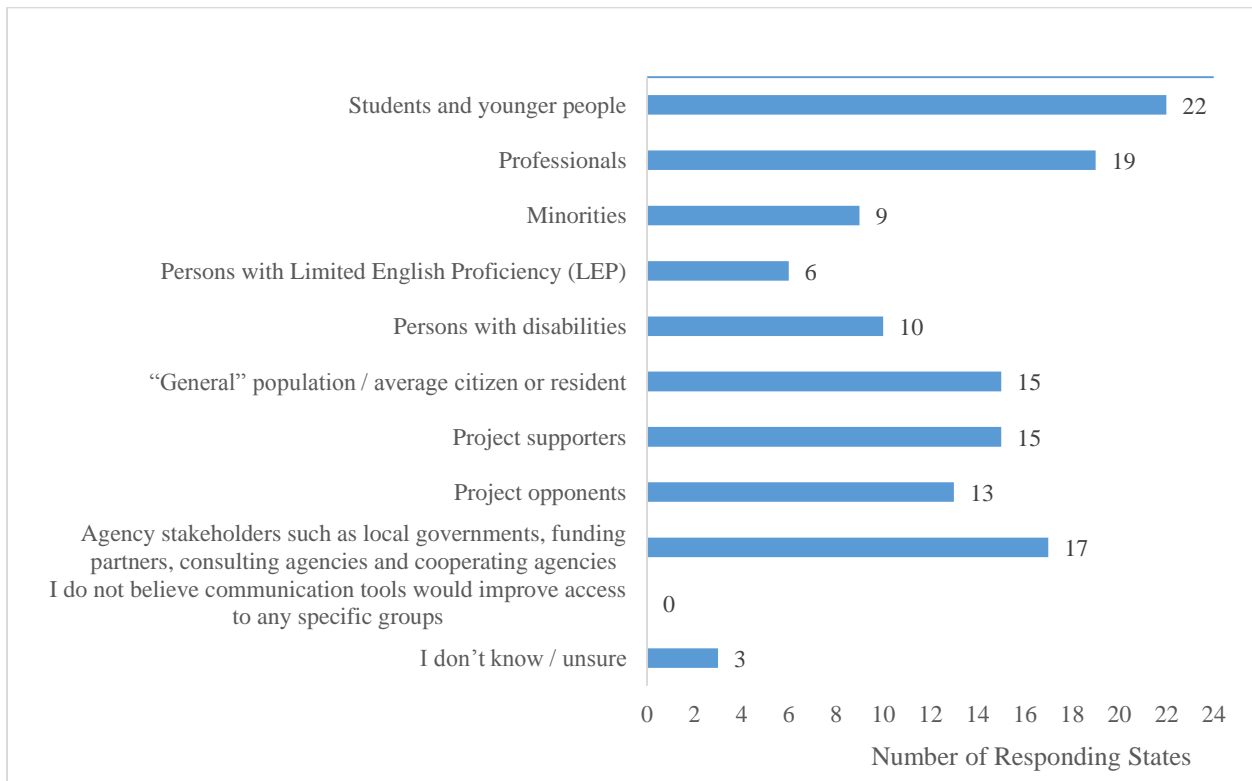
**Figure 3-9: Groups Likely to Engage in Public Involvement Processes
Using Technology-based Tools**

59
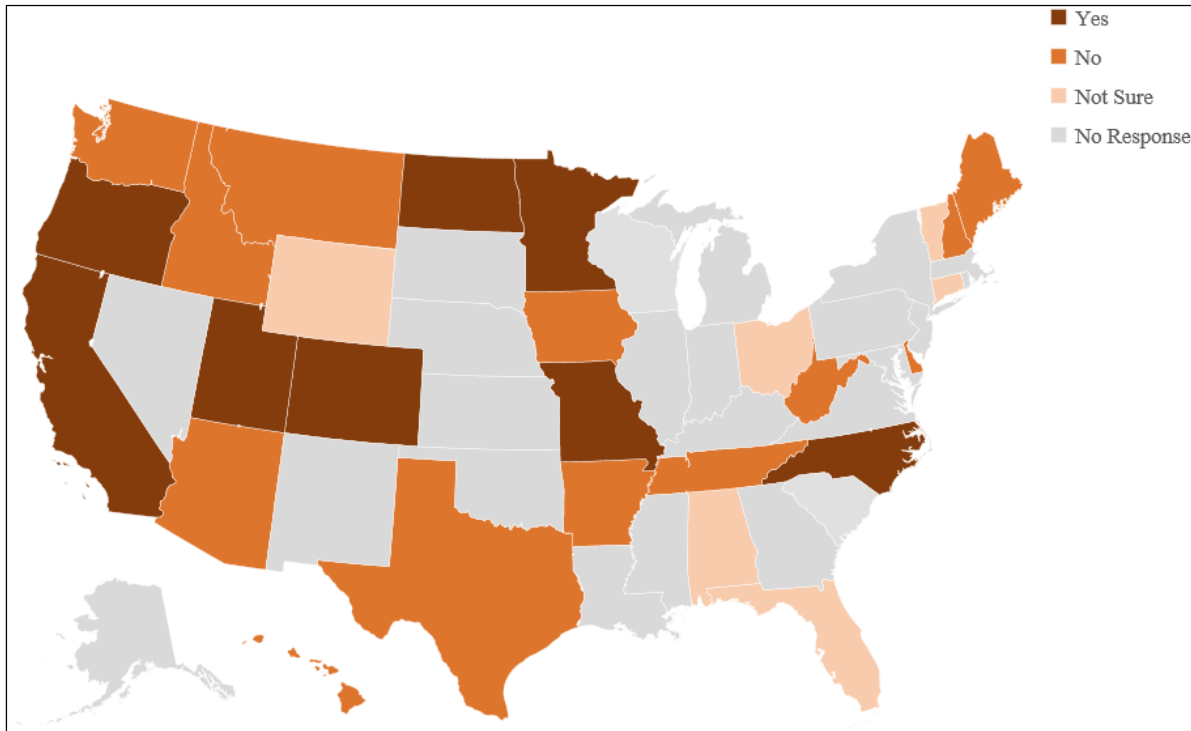
Figure 3-10: Availability of Statewide Policies for
Adoption of Technology-based Communication Tools

Four states selected the primary purpose of the policy as *to achieve consistency in using technology-based communication tools throughout the agency*. Four other states identified *providing a protocol for developing content, including approvals and responses when technology-based communication tools are adopted* as the policy's primary purpose. California stated that their policy is indirectly stated in all its Equal Employment Opportunity (EEO) policies, Director's Policies, and Deputy Directives. Ohio stated that they have overall public involvement guidance and a set of minimum requirements that must be followed for each type of project. However, these guidelines are not specific to technology-based communication tools.

States have provided several reasons for not having a policy for using technology-based communication tools. Four states, California, Delaware, Ohio, and West Virginia, stated that technology-based tools fall under other existing policies regarding use of IT at their agency. The remaining states provided the following reasons:

- Alabama: As warranted by project impacts.
- Arizona: When we are able to use e-tools to assist with outreach, they are in addition to (and not replacing) traditional outreach modes.
- Arkansas: Lack of funding.
- Hawaii: We follow the state social media policy.
- Idaho: We primarily use Facebook and Twitter to share project information. Communication staff are encouraged to try new communication tools, so a formal policy has not been deemed necessary at this point.
- Montana: Technology-based tools are the responsibility of the IT Department, and do not pertain to the rest of the agency. Furthermore, technology-

60

based tools fall under other existing policies regarding use of information technology at our agency.
- Tennessee: We follow FHWA rules and regulations.
- Vermont: We have a public outreach guide.
- Washington State: The appropriate way to engage varies by project. We want to do what works for the communities. Protocols seem unnecessary and bureaucratic.

States were asked to identify potential benefits of Web-based communication for transportation projects. Figure 3-11 summarizes the states' responses.
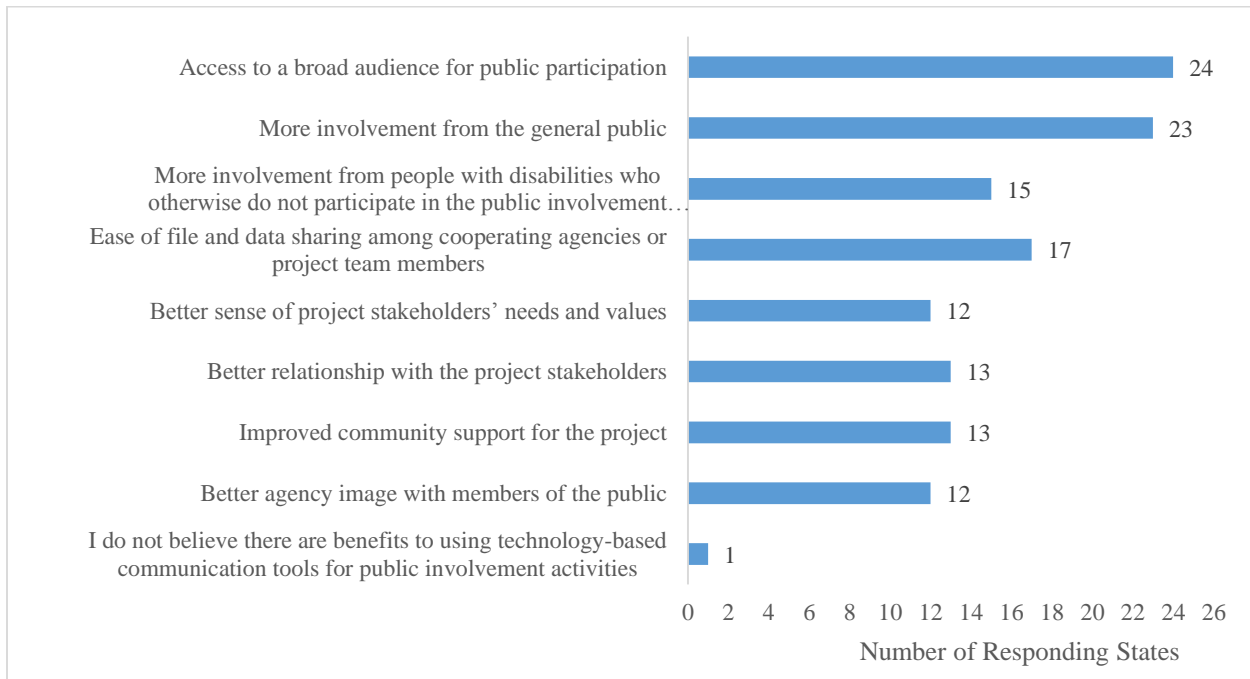
Figure 3-11: Potential Benefits of Web-based Communication for Transportation Projects

As can be observed from Figure 3-11, of the different potential benefits, *access to a broad audience for participation* and *more involvement from the public* were the most beneficial outcomes of using Web-based communications. New Hampshire stated that it does not believe there are benefits to using technology-based communication tools for public involvement activities. Washington State mentioned that Web-based communication enhances public involvement, but does not replace traditional engagement methods.

Although technology-based communication tools have several advantages, they may not be suitable for some activities. States were asked if there are any specific type of public meetings that they do not recommend using communication media for meeting remotely. Three states, Alabama, Vermont, and California, responded to this question. Alabama suggested using traditional public involvement strategies along with technology-based communication tools for complex projects. Vermont suggested avoiding remote communication in controversial projects. California recommended communicating in person during the Native American tribal listening sessions.

3.4 Summary

This chapter focused on documenting the states' current practices in using communication technologies at public meetings. An online survey was administered to the public involvement officials in each state. The survey explored the current state-of-the-practice in using communication technologies for public involvement. A total of 27 states responded to the survey. Some of the key findings include:

- States were found to frequently use social media, mapping/GIS applications, and micro-blogs.
- Mapping/GIS applications, followed by online surveys and social media, were found to be most successful.
- Comment forms, followed by online surveys, and the number of people logged into the system, were found to be the most common methods to evaluate the effectiveness of the new communication tools.
- The top three barriers for states to adopt new communication technologies were found to be *inexperience with/lack of skill in using these communication media*, *cost*, and *IT upgrades required for their adoption.*
- The top three deciding factors for states to adopt new communication technologies were found to be *the ability to reach new or hard to contact population groups*, *the perceived utility of input to the public involvement process*, and *affordability*.
- States were found to have difficult in engaging minority population and low-income households in public involvement processes.
- Students and the younger generation, followed by professionals and agency stakeholders, were found to be likely to engage in public involvement activities using technology-based tools.
- The most beneficial outcomes of using Web-based communications were found to be *access to a broad audience for participation* and *more involvement from the public.*
- Some states mentioned the technology-based communication tools might not be suitable for complex projects, controversial projects, and for projects involving tribal communities.

CHAPTER 4
SURVEY OF GENERAL PUBLIC

This chapter focuses on the survey of the general public conducted to document their perceptions in using communication technologies for public involvement. It first describes the survey administration efforts, and then discusses the survey results.

4.1 Survey Administration

A survey was mailed to the public to gather information about the general public accessibility and frequency of use of technology-based communication tools, their opinion on usefulness of these tools in their day-to-day life. The survey also asked people about preferred formats for public involvement activities, how the general public hear about these activities, and how often they participate in these activities. Table 4-1 lists the survey questions.

Table 4-1: Survey Questions

Category	Survey Question
General Information	• What is your age? • What is your gender? • What is your ethnicity? • How would you describe where you live? (e.g., Urban, Suburban, Rural)
Education, Employment, and Income	• Which best describes your level of education? • What is your employment status? • What is your household income?
Specific Group	• Would you identify yourself with any of the minority groups?
Language	• Is English your primary language? • How fluent are you in English?
Involvement	• In general, how involved are you within your community? • In the past year, how many public meetings have you attended as part of FDOT's transportation planning process? • Have you participated in the recent public involvement activities?
Preference of Meeting Type and Meeting Time	• What is your preferred day and time for public involvement activities? • What are your preferred formats of public involvement activities? • If FDOT provided more opportunities to using technology rather than attend public meetings, how likely would you be able to participate?
Suggestions from Public	• Do you have suggestions for improving how FDOT interacts with the public? • How could FDOT improve your opportunities for getting involved?
Familiarity with Technology, Frequency of Use, and Preference of Technology	• Do you agree or disagree with these statements? o In today's world, people are better able to learn more about their community and local issues because of electronic technologies and the Internet o The Internet gives me the opportunity to connect with other people and be a part of a larger community, even if the community does not meet in person o Technology skills give regular people a greater opportunity to make a difference in their communities and the country • How do you hear about public meetings and hearings for transportation projects? • How familiar are you with the following communication tools? (e.g., blogs, social media, etc.) • How often do you use the Internet to find out what is happening in your community, and to find events or activities? • How often do you use the following communication tools? (e.g., blogs, social media, etc.) • How likely would you use the following communication tools to participate in public meetings and to communicate with the DOT? (e.g., micro-blogs, blogs, social media, etc.) • Do you have access to a computer, smartphone, Internet, etc.?

Once the questionnaire was reviewed and approved by the Project Managers, it was distributed via postal mail. The United States Postal Service (USPS) mailing envelope included the survey questionnaire in English and Spanish, and an addressed postage prepaid envelope. Appendices B and C provide the survey questionnaire in English and Spanish languages, respectively.

The research team contacted the Public Involvement Officers of recently completed public meetings/hearings to obtain the mailing lists of the public that were informed about the meetings. A total of 4,000 addresses were randomly selected from the mailing lists obtained, and the survey questionnaire was sent in two batches. The first batch was sent to 2,500 addresses on September 15th, 2017, and the next batch was sent to the remaining 1,500 addresses on October 10th, 2017.

4.2 Survey Results

A total of 128 completed surveys were received. The response rate is 3.2%. This section discusses the survey results in detail.

4.2.1 Demographic Characteristics

Table 4-2 gives the summary of demographic information of the survey respondents.

Table 4-2: Demographic Information of Survey Respondents

Category	Frequency	Percentage
Gender		
Female	67	53%
Male	60	47%
Total	127[a]	100%
Age		
< 30 years	1	1%
30-39 years	13	10%
40-49 years	13	10%
50-59 years	30	24%
60-69 years	38	30%
70-79 years	23	18%
80-89 years	6	5%
> 90 years	3	2%
Total	127[a]	100%
Primary Language		
English	95	75.4%
Spanish	28	22.2%
Other	3	2.4%
Total	126[a]	100%
Race and ethnicity		
Hispanic/Latino	42	31%
White	70	51%
Black	11	8%
Asian	6	4%
Native America/Alaskan Native	3	2%
Native Hawaiian	1	1%
Others	1	1%
Don't want to respond	2	1%
Total	136[b]	100%

[a] A few respondents did not answer the question; [b] Respondents chose multiple options.

The male-female ratio of the survey respondents was 47%-53%. About 72% of the respondents were older than 50 years. English was the primary language for a majority (~75%) of the responding public. Most respondents were from urban (~50%) and suburban areas (~41%). About 51% were white Americans, followed by Latino Americans (31%). As can be observed from Figure 4-1, almost 90% of the respondents stated that they are fluent in English (writing, reading, and speaking skills).
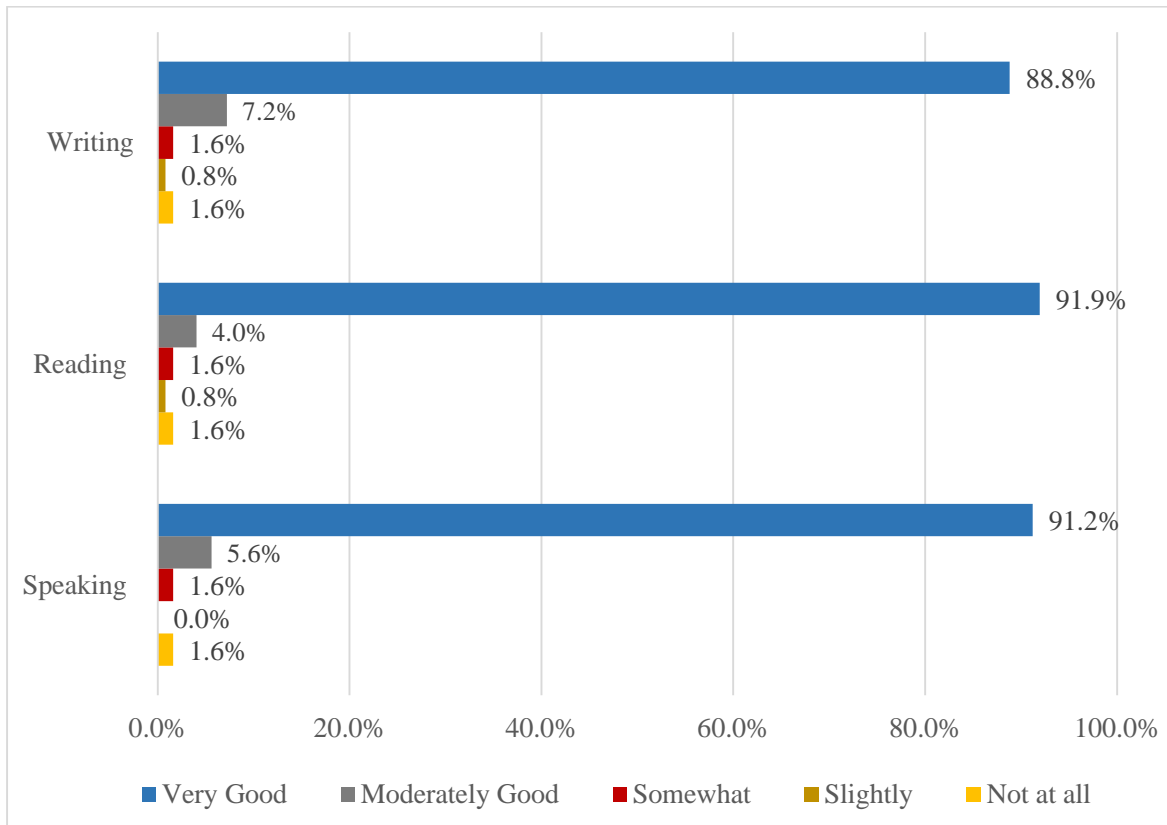
Figure 4-1: Fluency in English

4.2.2 Socioeconomic Characteristics

Figure 4-2 summarizes the level of education of the survey respondents. About half of the responding public were found to either hold a bachelor's degree (25%), or a graduate/professional degree (25%). Only 1% were less than high school educated, and 10% were high school graduates. It can therefore be inferred from the data that the survey respondents were relatively highly educated. As can be observed from Figure 4-3, 46% of the responding public were employed full-time, and 33% were retired. In terms of income level, as can be observed from Figure 4-4, about 56% reported that they earn over $50,000 annually, greater than the median household income in Florida. The survey sample might not reflect the opinions of the public who earn less than the median income.
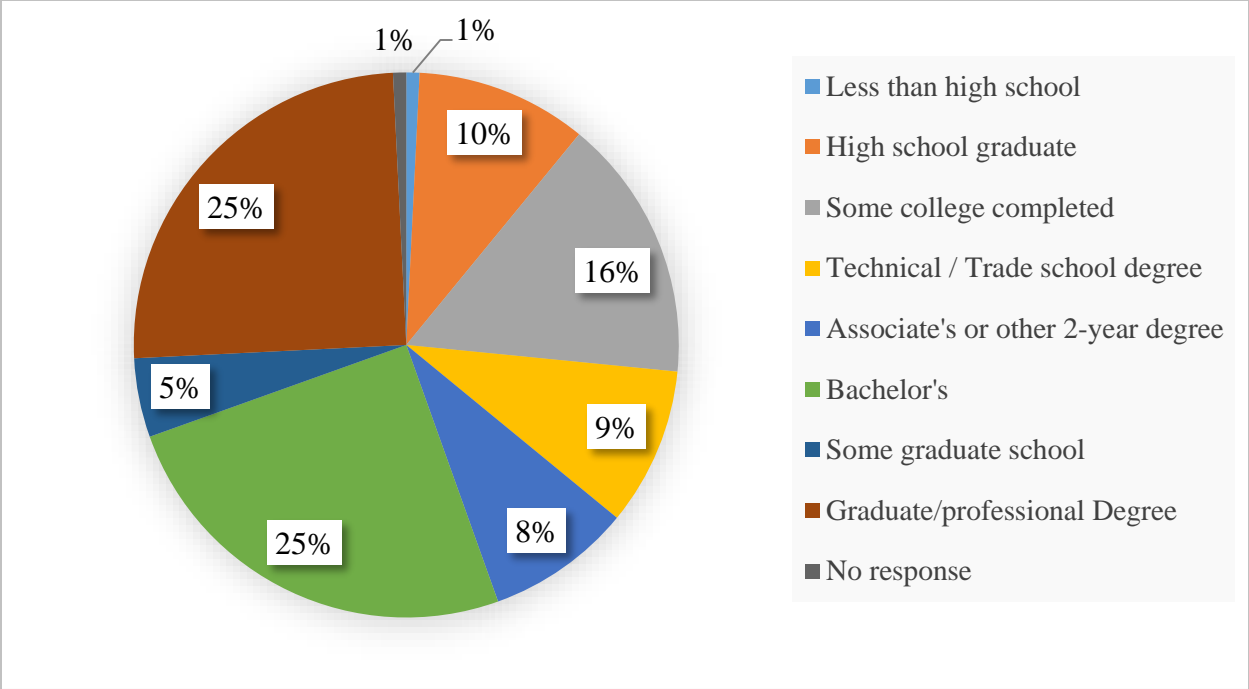
Figure 4-2: Level of Education
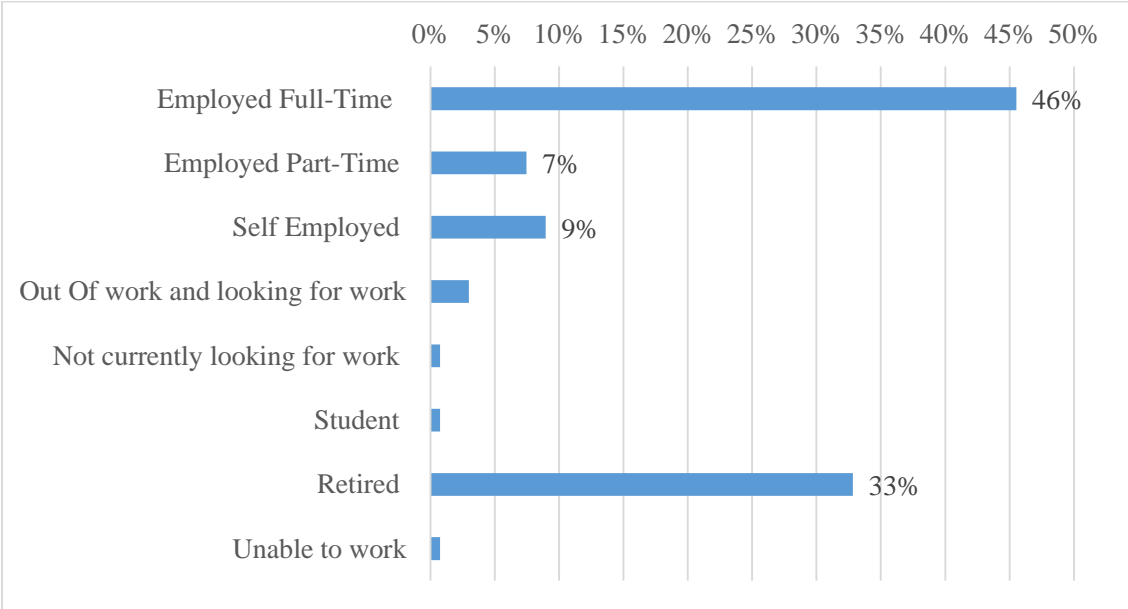
Figure 4-3: Employment
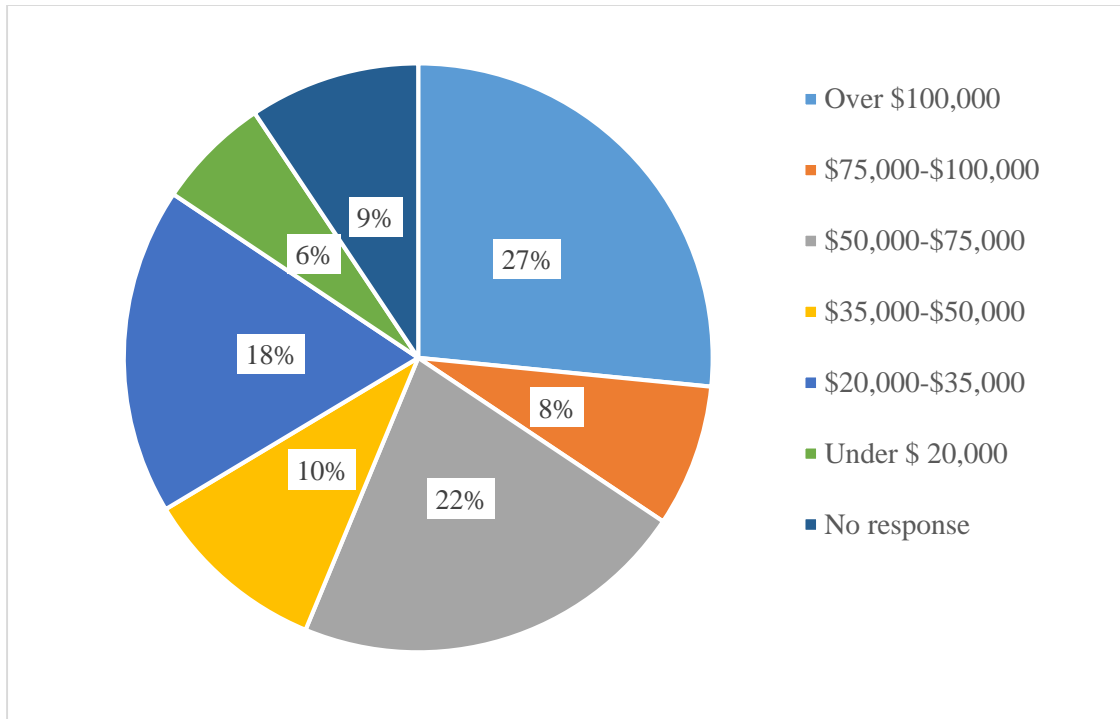
Figure 4-4: Annual Household Income

Traditional methods often fail to reach all groups of people. The public, in general, have different needs, depending on their cultural background, ethnicity, disabilities, etc. For instance, people with hearing impairment may need listening devices to be able to actively participate in public meetings. Similarly, people with LEP may need translators. As such, one of the survey questions asked if the respondents would identify themselves with any of the following groups:

- low-income households
- minority population
- persons with Limited English Proficiency (LEP)
- persons with disabilities
- older population

Figure 4-5 summarizes the survey responses. About 32% of the responding public identified themselves as older population. Persons with disabilities, low-income households, minority population, and persons with LEP were 6%, 7%, 8%, and 3% respectively.
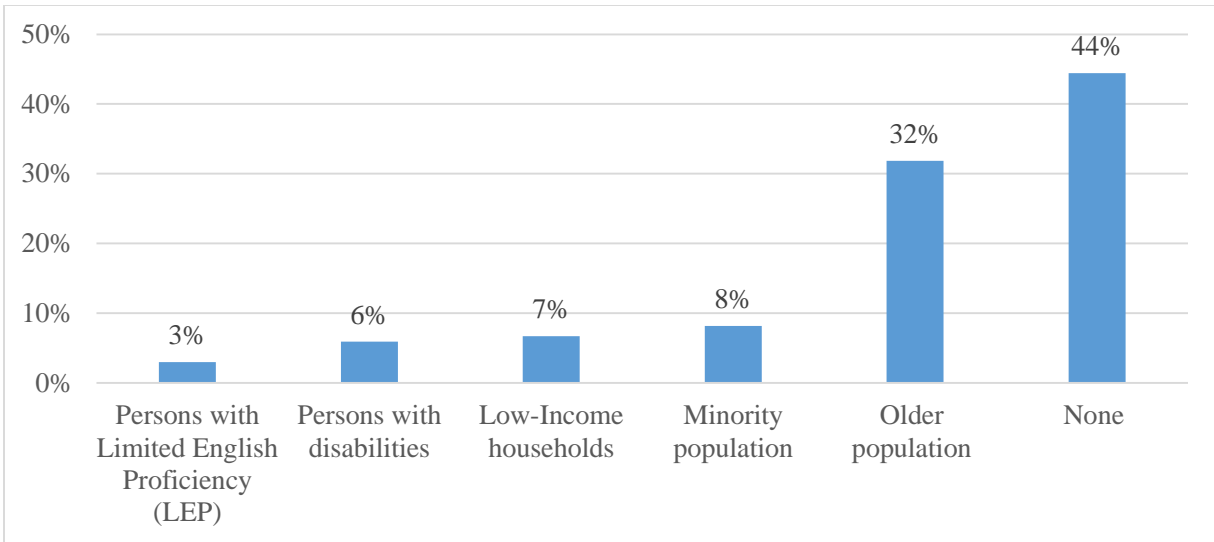
Figure 4-5: Special Population Groups

4.2.3 Involvement in Public Meetings

Public Involvement and Preferences

As can be inferred from Figure 4-6, about 47% of the survey respondents indicated that they are at least moderately involved with their communities. One in five respondents (i.e., 20%) stated that they are not at all involved with their communities. Efforts have to be taken to encourage the public who are not currently involved with their communities to get more involved.
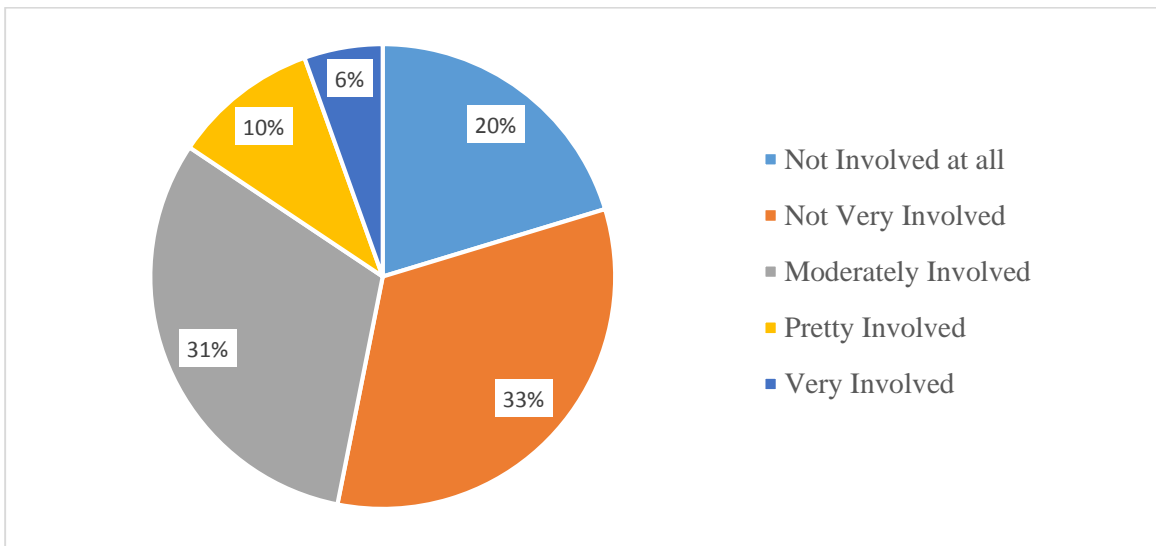
Figure 4-6: Involvement in the Community

The next question focused on the number of public meetings the respondents have attended as part of FDOT's transportation planning process in the past year. As can be observed from Figure 4-7, more than half of the respondents (~55%) stated that they did not attend any meeting in the past year. About 37% mentioned that they attended one meeting in the previous year. Very few respondents (1%) stated that they attended six meetings in the previous year.
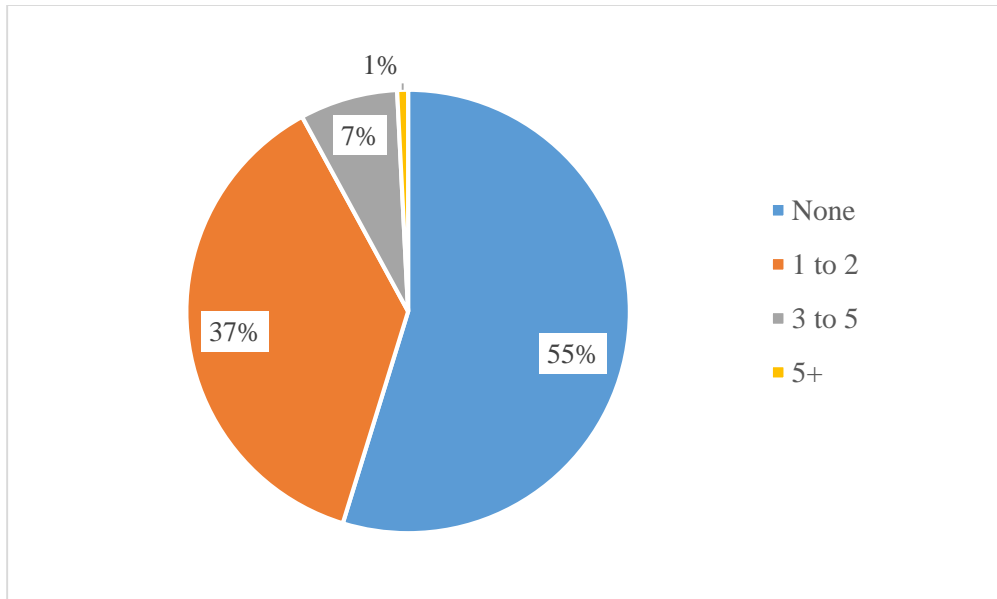
Figure 4-7: Number of FDOT Meetings Attended in 2016

When asked if they participated in the recent public meeting conducted by FDOT, approximately 63% of the respondents mentioned that they did not attend the most recent public meeting. The respondents provided several reasons for not attending the meetings. Figure 4-8 summarizes these responses. *"Not informed about the meeting in advance"* was stated by about 34% of the responding public. About 25% stated that the meeting time was not convenient. About 20% stated that they did not had time in their schedule. These results indicate that frequent and timely dissemination of information is crucial in increasing public participation in public involvement activities. Furthermore, scheduling the activities at a convenient time could potentially increase public participation.
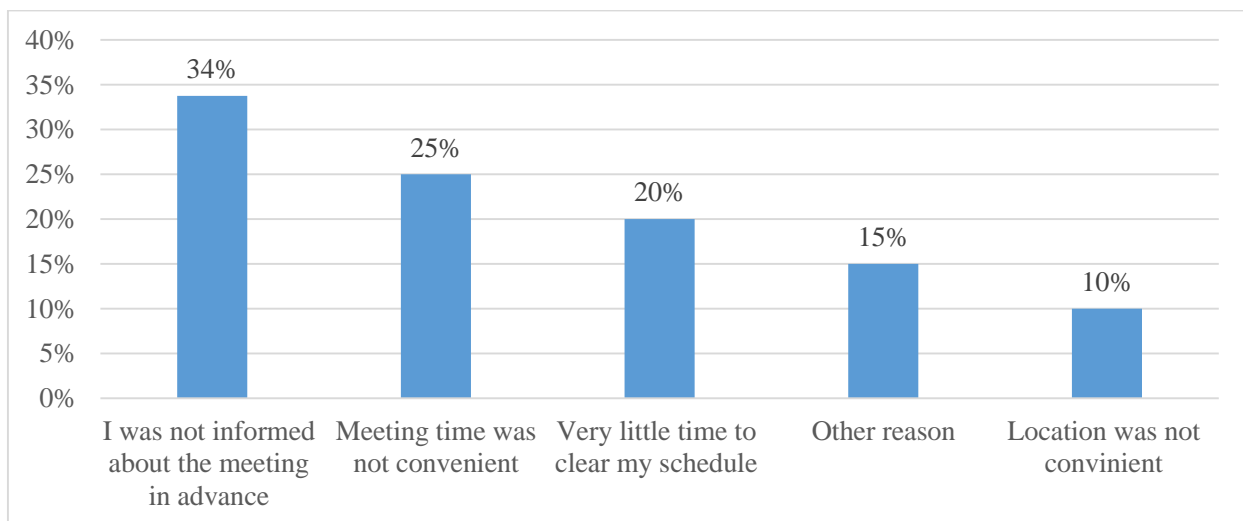
Figure 4-8: Reason for Not Participating in Recent Public Involvement Activities

Figure 4-9 provides information on the public's preferred meeting times. Approximately 64% of the responding public preferred meeting in the evenings. About 39% preferred weekdays; while 21% preferred weekends. Meeting during lunch time on weekdays was not popular.

69
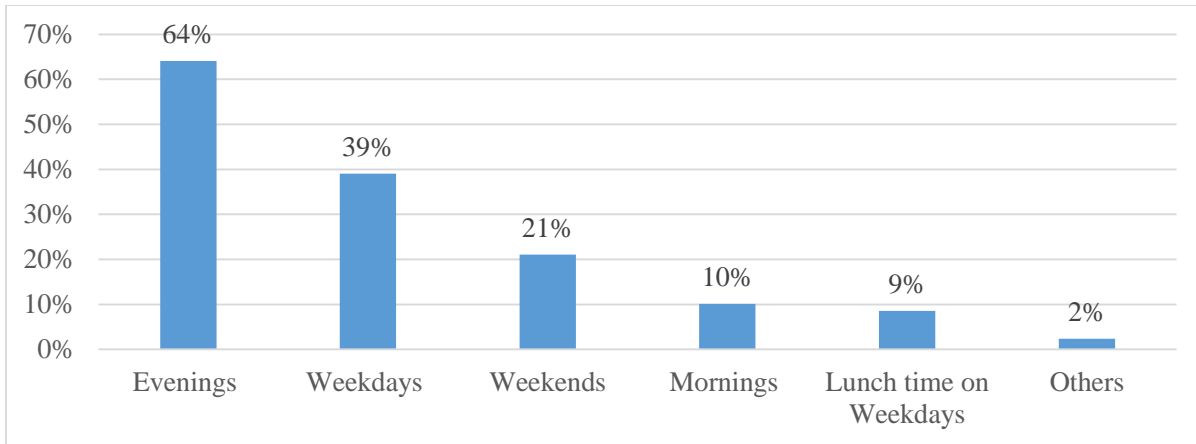
Figure 4-9: Preferred Meeting Time

Figure 4-10 provides information on the preferred meeting type. About 35% of the responding public preferred small groups, probably because it is easy to communicate in small groups and the meetings are usually shorter. Working groups, workshops, and focus groups were almost equally preferred, by about 25% of the respondents. Very few respondents preferred one-on-one and interview type meetings.
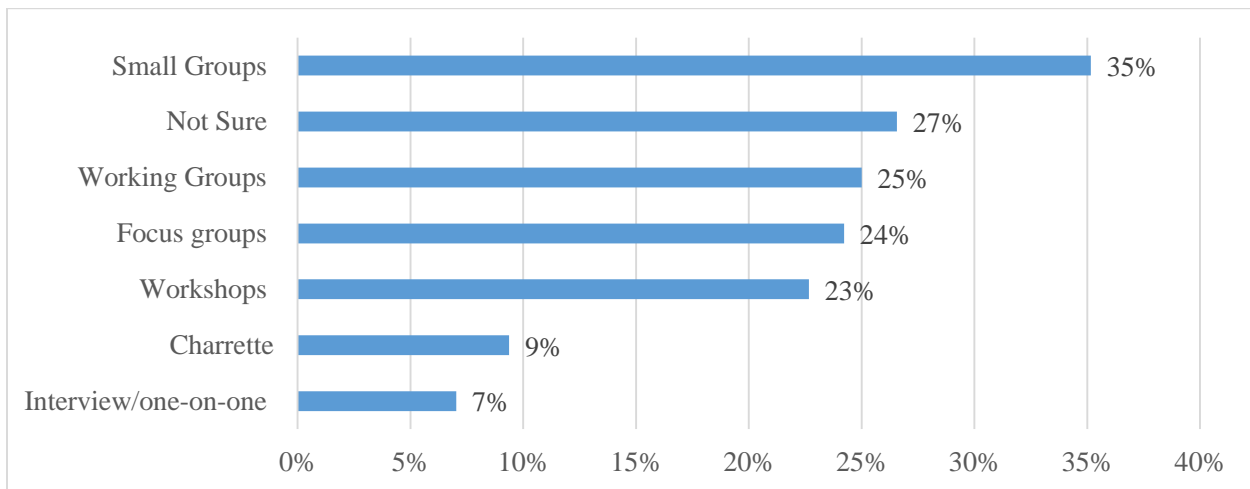
Figure 4-10: Preferred Meeting Type

The survey respondents were asked how likely they would be able to participate in public meetings if FDOT provided more opportunities to attend remotely instead of attending in-person. About 62% responded that they are either likely or very likely to participate remotely. On the contrary, about 20% stated that they are either unlikely or extremely unlikely to participate remotely. A probable reason that respondents are non-receptive to participating remotely could be their unfamiliarity with the new technologies. It can be inferred from Figure 4-11 that approximately 20% of the responding public are unfamiliar with new technologies.
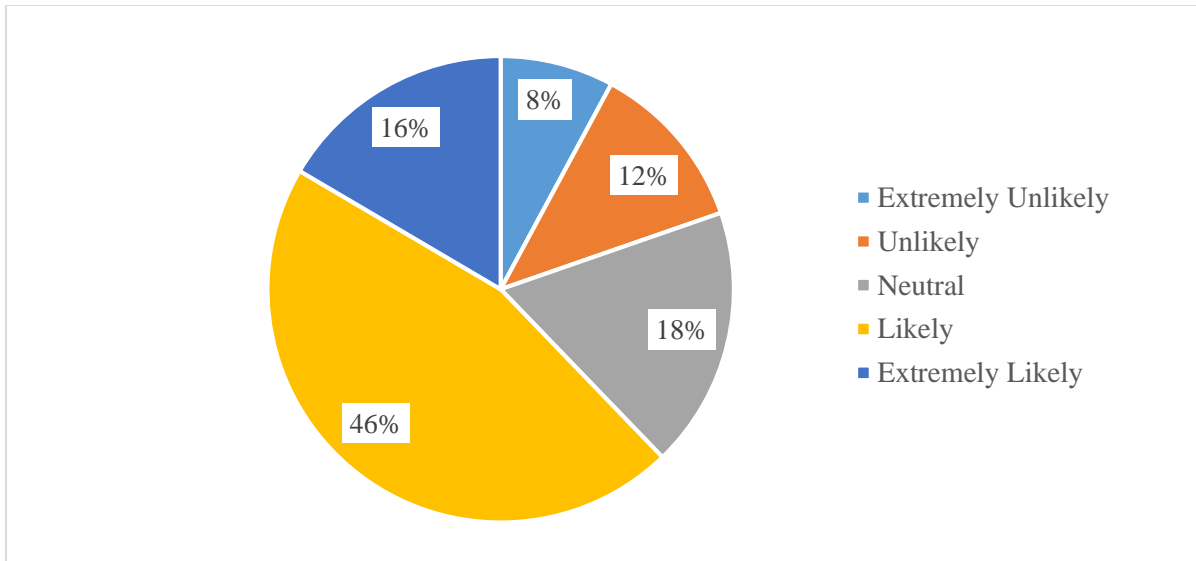
Figure 4-11: Preference to Virtual Public Meetings

Technologies in Use

One of the survey questions focused on the respondents' opinions regarding the role of internet and technology in day-to-day activities. More specifically, the respondents were asked whether they agree or disagree with the following statements:

- In today's world, people are better able to learn more about their community and local issues because of electronic technologies and the Internet.
- The Internet gives me the opportunity to connect with other people and be a part of a larger community, even if the community does not meet in person.
- Technology skills give regular people a greater opportunity to make a difference in their communities and the country.

Figure 4-12 summarizes the responses. About 70% of the responding public were found to be receptive to the idea that Internet and other electronic technologies help bring communities together. It enforces the idea that technology-based tools provide greater opportunities for the public to get involved with their communities.

Figure 4-13 illustrates how the survey respondents generally receive notifications about the upcoming transportation projects. More than half of the respondents stated they get the information through printed media such as USPS postal mails, fact sheets, newsletters, etc. About 21% of the respondents stated that they receive their information from newspapers. About 16% mentioned that they are notified using social media. Only 6% of the responding public were found to receive information through DOT websites. Information kiosks were also not found to be popular in disseminating information to the public. Some of the respondents said that they learnt about the projects from television and radio. Note that a couple of respondents said that they never heard about any projects.

71
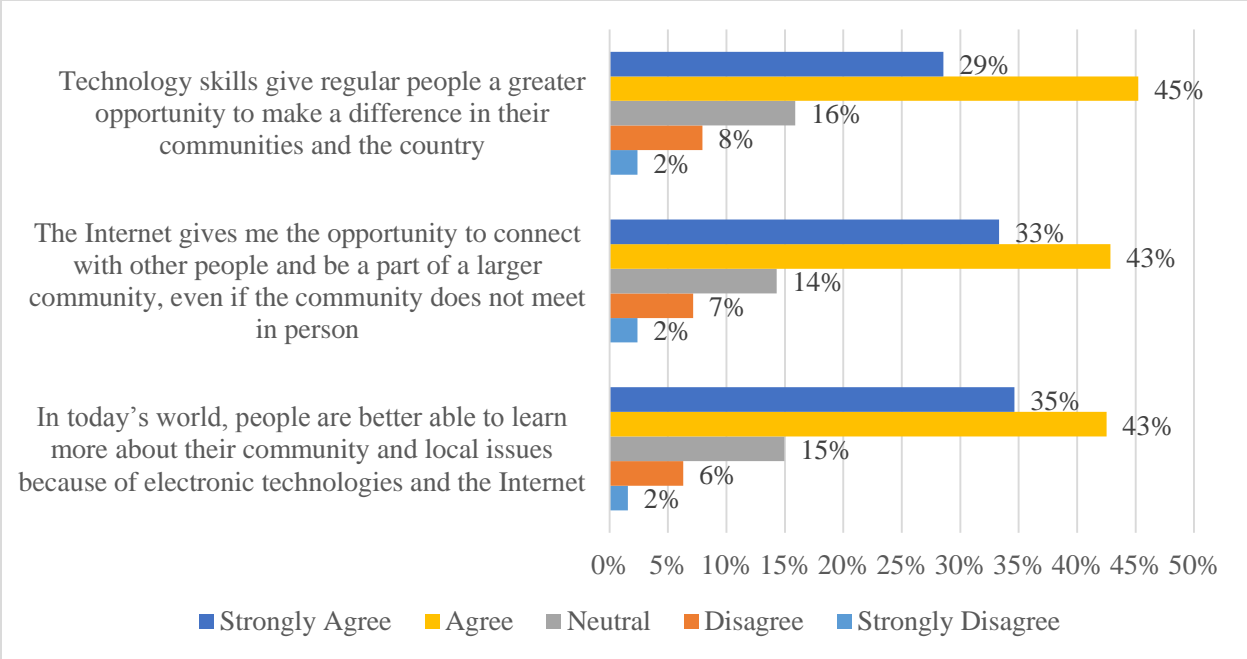
Figure 4-12: Public Perception on Technology
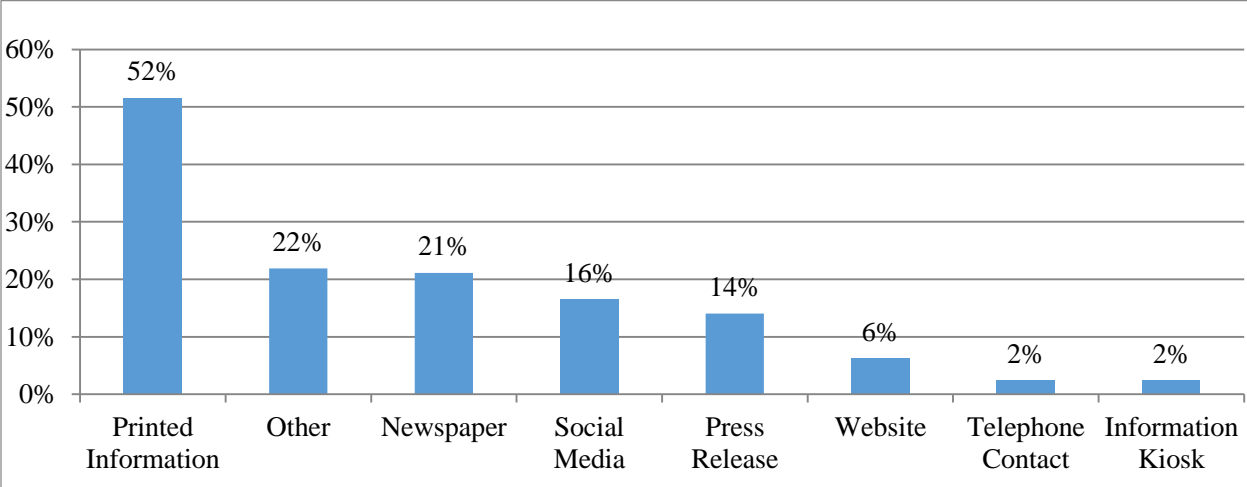
Figure 4-13: Avenues to Receive Public Meeting Notices

One of the deciding factors in determining if the public could use communication technologies is their accessibility to these technologies. Almost all the respondents were found to have access to essential technologies, such as a computer, cellphone, access to Internet, etc. (see Figure 4-14). However, almost half of the respondents stated that they do not have internet or a computer at work. Therefore, using technology-based tools, such as websites, mobile-based surveys, Smartphone applications that help to communicate remotely, etc., can be feasible for a majority of the public. However, the public with no or limited access to the essential tools such as computer, Internet, mobile phone, etc., needs to be taken into consideration while designing and adopting new technology-based public involvement activities.
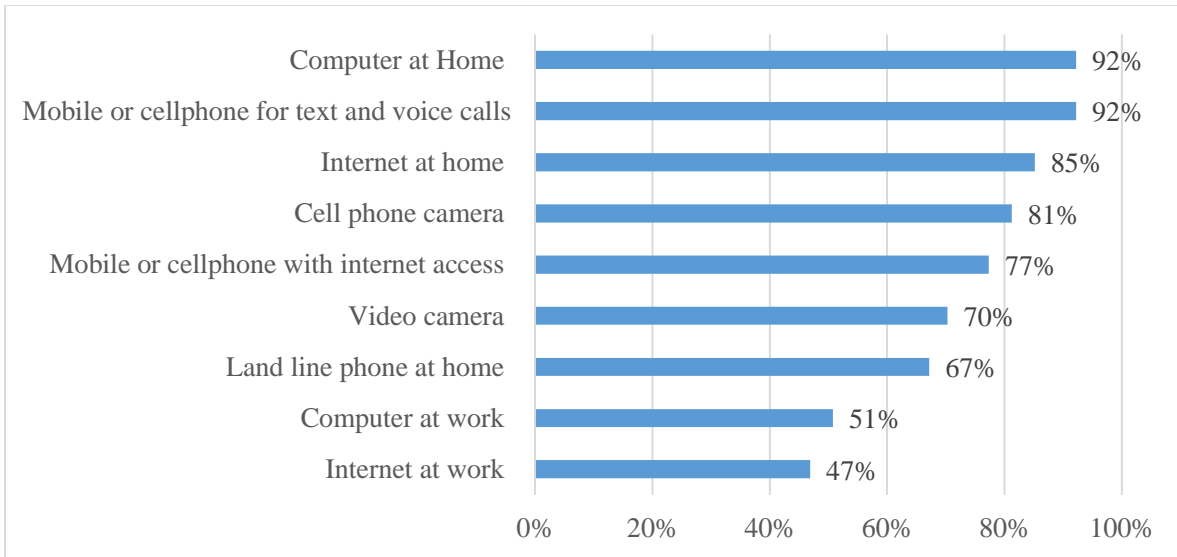
Figure 4-14: Accessibility to Essential Technologies

4.2.4 Technology-based Tools

Several technology-based communication tools are available for the agencies to adopt for their public involvement activities. As such, the next questions focused on how familiar the respondents are with the current technologies, how often they use these technologies in their day-to-day life, and how likely they would want to use them if the technologies are adopted in public meetings. The technologies are divided into the following three broad categories:

- Tools to disseminate information
- Tools facilitating two-way remote communication
- Tools assisting participation at public meetings

Tools to Disseminate Information

Some technologies are apt for one-way communication where public can get notified about the transportation projects and upcoming public meetings. Information about the projects and public meetings (such as time, location, etc.) are published, updated, and announced through these media. These technologies include:

- Micro-blogs (e.g., Twitter)
- Blogs (e.g., Blogger)
- Web Feeds/Pushed Content (e.g., Really Simple Syndication (RSS) Feeds)
- Broadcast Forums on Government Channel

Figure 4-15 illustrates the respondents' familiarity, day-to-day use, and likeliness of using these technologies. The responding public were found to be quite unfamiliar with these technologies. Over half of the responding public stated that they are either only slightly familiar or not at all familiar with these technologies. About 20-30% responded that they were moderately familiar or very familiar with these technologies.

At least 50% of the responding public stated that they never used these technologies in their day-to-day activities. More than 60% of the responding public were found to be either unlikely or very unlikely to use these technologies. Unfamiliarity with these technologies could be one of the main reasons for the responding public to be non-receptive to using these technologies.

Tools Facilitating Two-way Remote Communication

The general public can use some technology-based tools to remotely participate in public meetings. These tools could be used for two-way communication between the agencies and the public. These technologies will facilitate obtaining information and providing feedback in real time. Some of these technologies include the following. Note that several of these technologies, especially emails and text messages, are also great avenues to disseminate information.

- Social media (e.g., Facebook Live, YouTube Live, etc.)
- Video conferencing (e.g., Skype, GoTo Meeting, etc.)
- Online surveys
- Emails
- Texts

Figure 4-16 illustrates the respondents' familiarity, day-to-day use, and likeliness of using these technologies. The responding public were found to be familiar with emails, texts, and social media. About 35% were found to be unfamiliar with online surveys. This is concerning since online surveys are a common avenue to gauge public interests. Video conferencing tools were found to have a mixed response; 20% were unfamiliar with video conferencing tools.

Results on daily use of technology indicates that people are inclined to use traditional technology such as emails and text messages. About 78% of the respondents stated that they use email either frequently or all the time. Video conferencing tools and online surveys were also not popular; less than 25% of the responding public stated that they used these tools either frequently or all the time. Compared to non-users, more respondents were found to use social media daily.

Regarding likeliness to use for public meeting, social media, videos conferencing tools, and online surveys were found to have similar results. In these three cases, approximately 35% of the responding public were found to be either likely or very likely to use them. On the contrary, 40%-45% were found to be either unlikely or very unlikely to use them. From the results, it is clear that people are willing to use emails. One thing that needs to be considered is that 18%, 20% and 35% of the responding public were found to be not at all familiar with social media, video conferencing, and online surveys, respectively. It can be inferred from the figure that the responding public who encourage using a technology are the ones who are familiar with that technology. Moreover, the more the people know about a technology, the more they are likely to use that technology.

Tools Assisting Participation at Public Meetings

These technology-based tools help meeting participants to engage more in meetings or hearings. The following are some technology-based tools that fall into this category, and are used by many state DOTs:

- Online Testing Scenarios (e.g., Metro Quest)
- Mapping/GIS Applications (e.g., Google Maps, Google Earth)
- Audio or Video Files (e.g., YouTube, Podcasts)

Figure 4-17 shows that 76% of the responding public were either only slightly familiar or not at all familiar with online testing scenarios. Only 17% are moderately familiar or very familiar with this technology. Similarly, 63% and 72% of the respondents stated that they are at least moderately familiar with audio/video files and mapping applications, respectively.

About 72% of the respondents never used online testing scenarios. About 56% of the public responded that they use mapping tools either frequently or all the time. The day-to-day usage of audio/video files was distributed equally; about 39% responded that they never or not at all used audio/video files, while about 42% stated that they use audio/video files either frequently or all the time.

Only 11% of the respondents stated that they will likely or very likely use online testing scenario in the future for transportation projects' public participation meetings. On the contrary, 69% stated that they are unlikely or very unlikely to use this technology. For mapping, 49% are likely or very likely to use this technology, while 37% are unlikely or very unlikely to use. The respondents' likeliness to use audio/video files is inconclusive; the unlikely/very unlikely to likely/very likely ratio is 39%-44%.
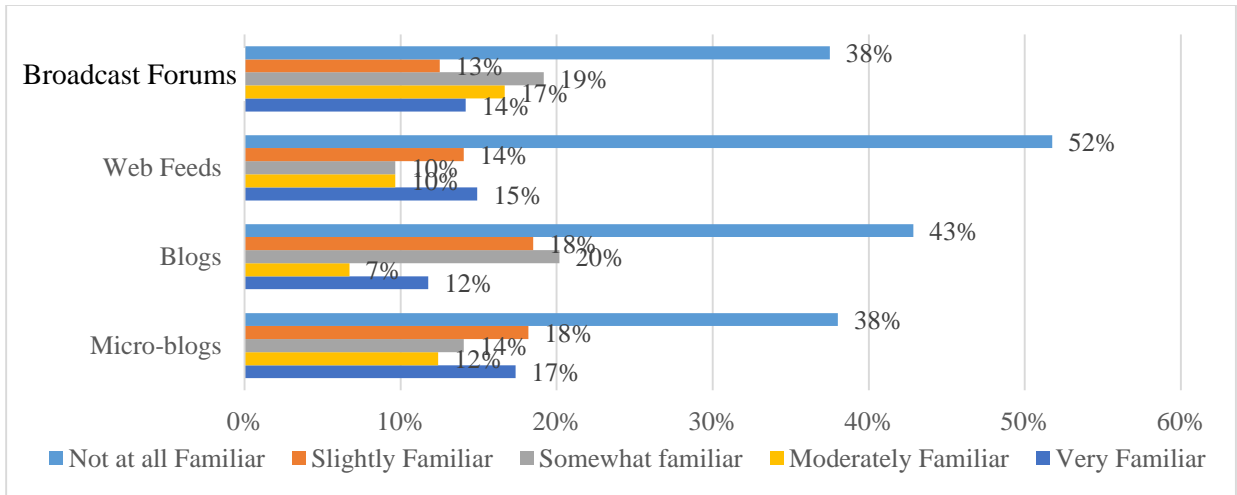
(a) Familiarity
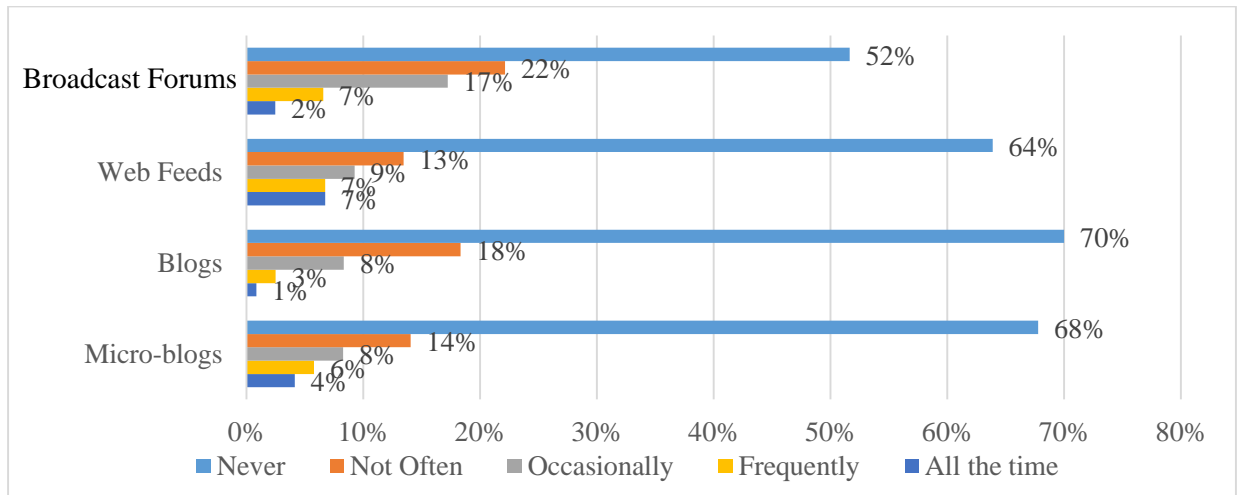
(b) Day-to-Day Use
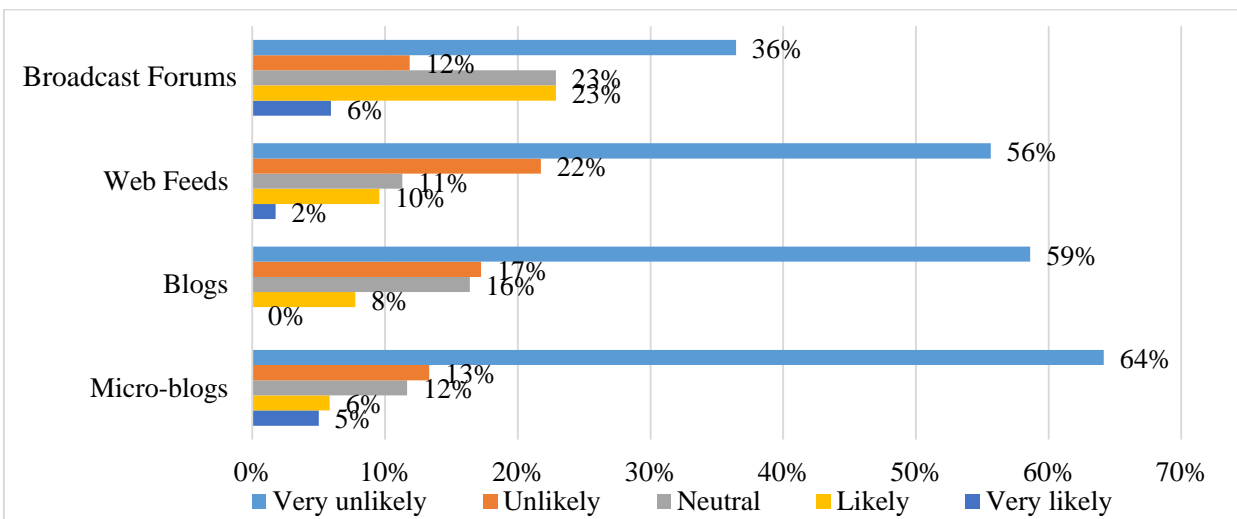
(c) Likeliness

Figure 4-15: Public Perception on Tools to Disseminate Information
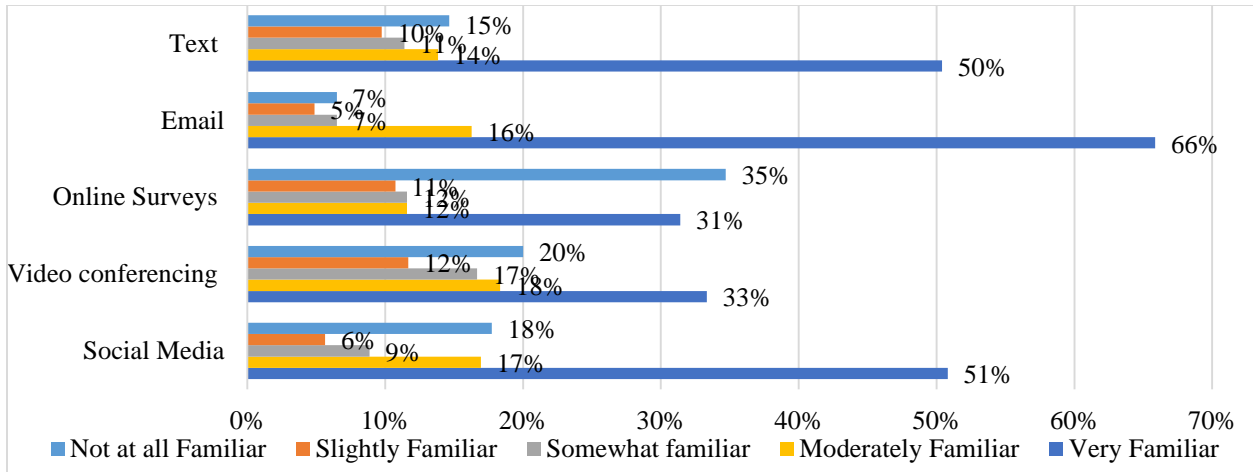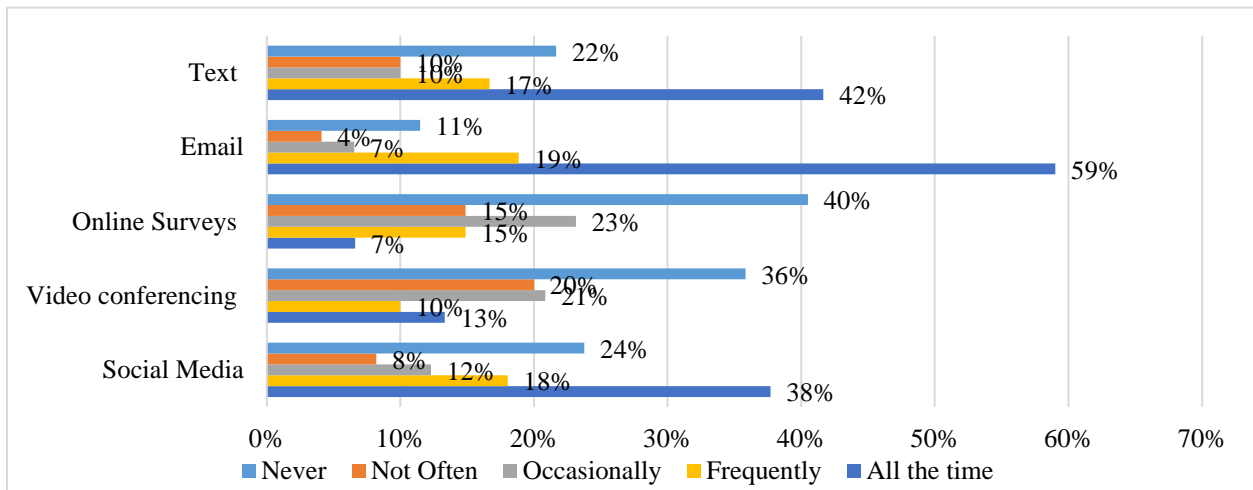
(a) Familiarity
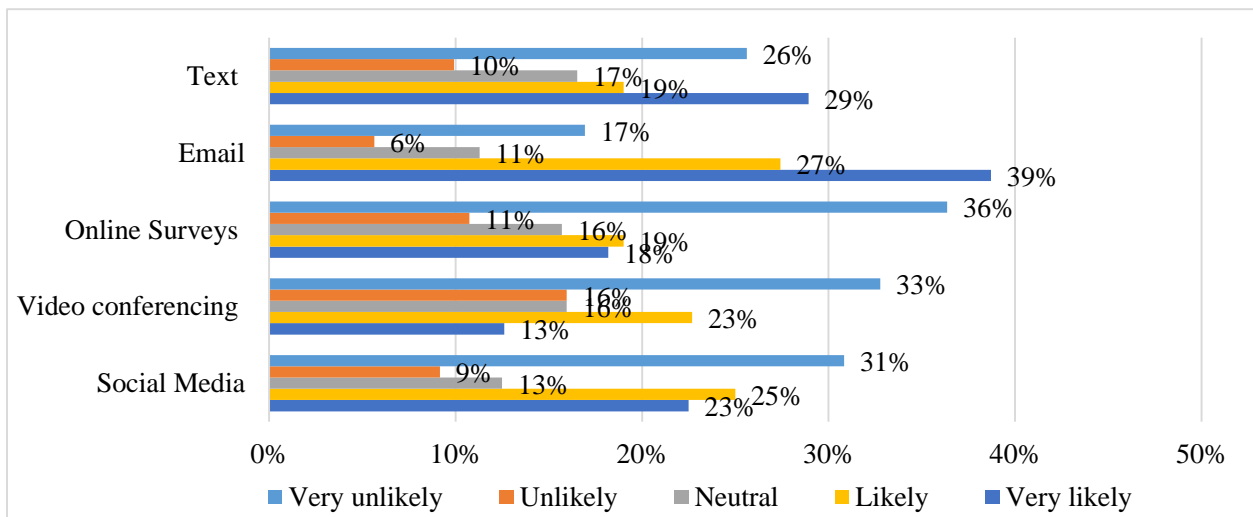
(b) Day-to-Day Use

(c) Likeliness

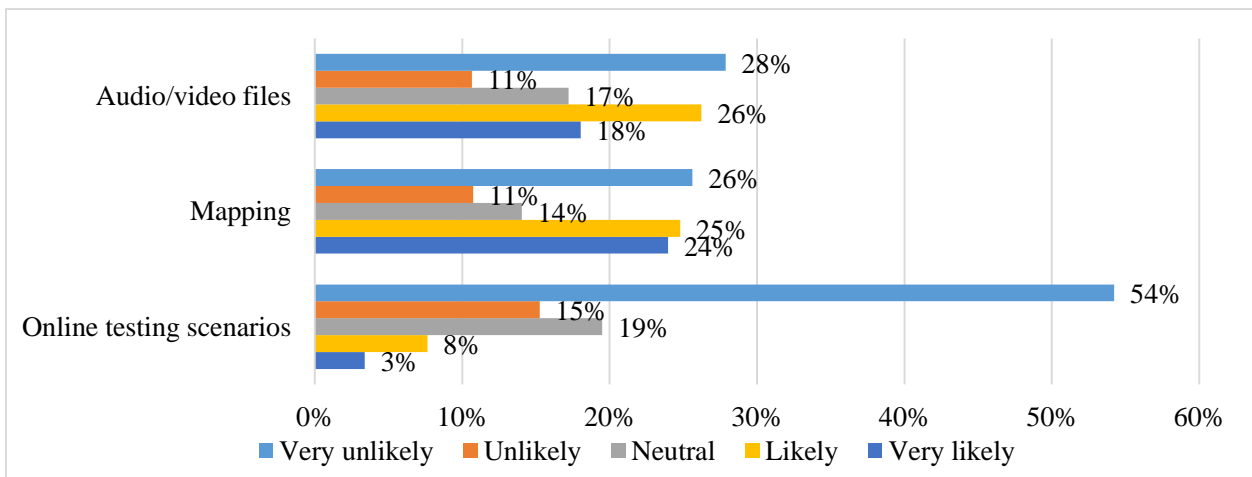**Figure 4-16: Public Perception on Tools Facilitating Two-way Remote Communication**

(a) Familiarity

(b) Day-to-Day Use

(c) Likeliness
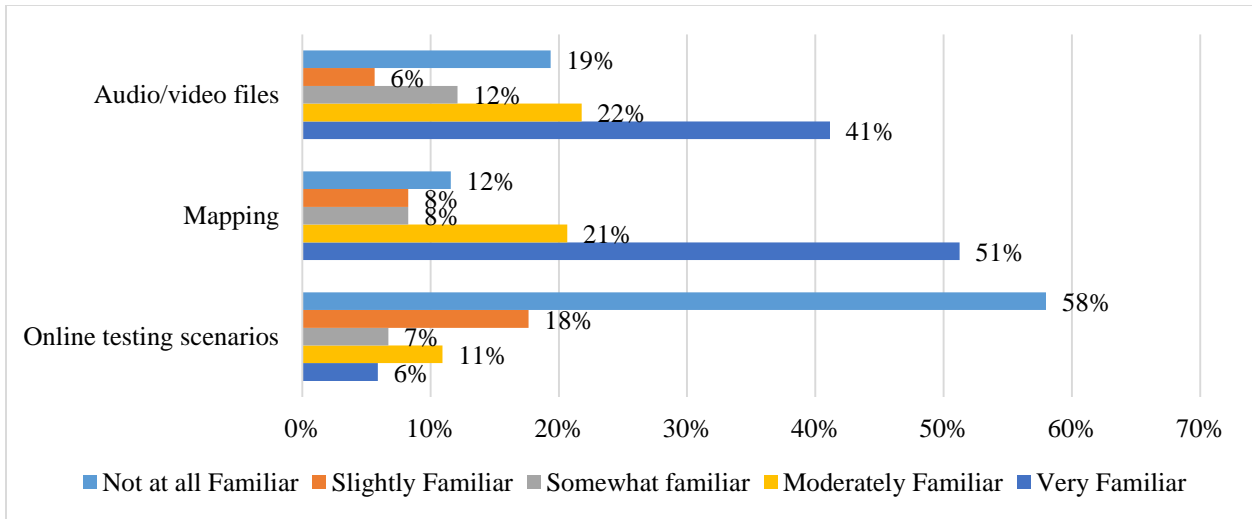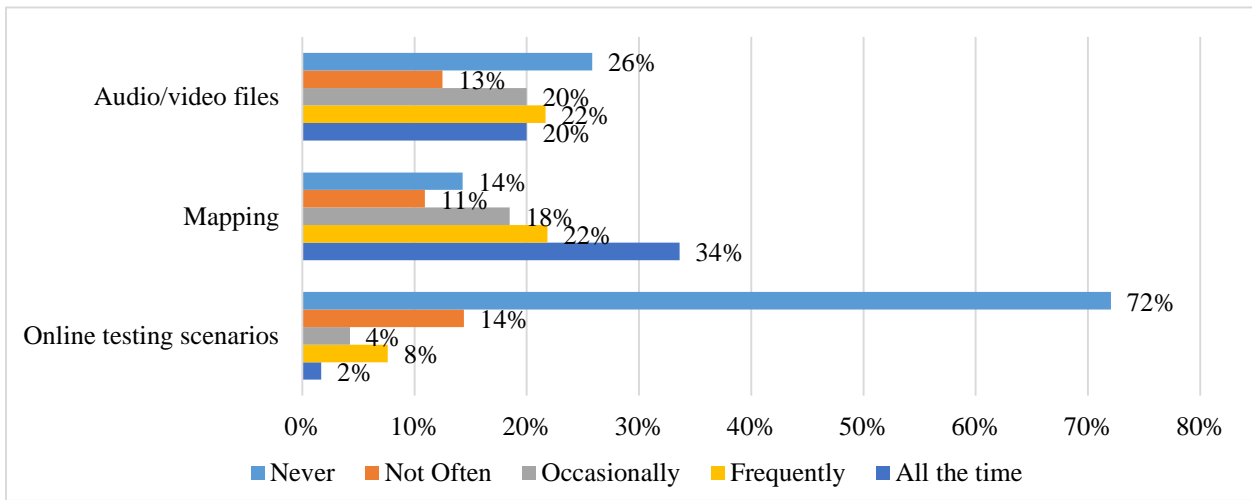
Figure 4-17: Public Perception on Tools Assisting Participation at Public Meetings

The survey respondents were asked if they have any suggestions for improving how FDOT interacts with the public and how FDOT could improve opportunities for the public to get more involved. The main goal for asking these questions was to get the public's opinion and advice on improving public involvement. The respondents' comments and suggestions gave valuable insights on how to increase public participation in public meetings.

Many respondents commented about the meeting location and meeting time. The responding public preferred the meetings to take place near their communities and at common public places such as libraries, churches, schools, etc. It is recommended to consider providing more alternative location choices for the meetings. One recommendation was to arrange the meetings near the project area. Some of the respondents suggested having more meetings in the evenings and on weekends.

Another common recommendation was to announce the meeting time and location several days prior to the meeting date. This approach gives the public enough time to clear their calendars and attend the meeting. Some of the respondents said that informing 1-2 days before the meeting is not adequate to make themselves available.

On the type of media to disseminate information, many respondents preferred emails, texts, social media, and regular postal mail. In fact, several preferred frequent emails. Some respondents suggested sending Facebook notifications to the target public (i.e., only to the public who will potentially be affected by the project). Alternatively, it is recommended to open a Facebook event for a project and then invite people who will potentially be affected by the project. Some of the respondents recommended announcing the project and public meeting details through radio, television, and local news stations. Some of the responding public preferred video conferences, webinars, and evening/weekend symposiums.

Regarding the meeting types, the respondents preferred the meetings to be concise and informative. The public will become uninterested and leave if the meetings are long and the topic is not relevant to them. Furthermore, public meetings should be divided into multiple short sessions, and tentative agenda and the meeting topics to be discussed should be provided in the meeting announcement. The respondents also suggested that the FDOT personnel should communicate well and verbally explain the project in detail. The FDOT personnel should be well trained, well prepared for the meeting, and be able to explain in a concise manner. In addition to disseminating information about the project, the public meetings should also focus on listening to the public.

4.3 Summary

A survey questionnaire was developed to explore the perception of the general public in using communication technologies for public involvement. The questionnaire was mailed to 4,000 households across Florida. A total of 128 responses were received. The demographics and socioeconomic characteristics of the survey sample include:

- The male-female ratio of the survey respondents was 47%-53%.
- About 72% of the respondents were older than 50 years.

- English was the primary language for a majority of the responding public; almost 90% of the respondents stated that they are fluent in English.
- A majority of the respondents were from urban and suburban areas.
- About 51% were white Americans, followed by Latino Americans (31%).
- A majority of the respondents are well educated; over 50% hold at least a bachelor's degree.
- About 56% reported that they earn over $50,000 annually, greater than the median household income in Florida.
- Only a few respondents identified themselves as persons with disabilities, low-income households, minority population, or persons with Limited English Proficiency.

Some of the key findings include:

- About 20% of the respondents stated that they are not at all involved with their communities.
- More than half of the respondents stated that they did not attend any public meeting in the past year.
- *"Not informed about the meeting in advance"* and *"inconvenient meeting time"* were identified as the most common reasons for not attending the public meetings.
- Meetings in the evenings were preferred the most; while meetings during lunch time on weekdays were preferred the least.
- Meetings in small group settings were preferred the most, while one-on-one meetings and interview type meetings were preferred the least.
- About 76% of the responding public were found to be receptive to the idea that Internet and other electronic technologies help bring communities together.
- The survey respondents were generally receptive to the idea of using communication technologies to participate in public meetings; if FDOT provides more opportunities to attend remotely instead of attending in-person, public are likely to attend more meetings.
- Some of the respondents were found to be non-receptive to participating remotely using new communication tools because of their unfamiliarity with these new technologies.
- Almost all the respondents were found to have access to essential technologies, such as a computer, cellphone, access to Internet, etc.
- The responding public were found to be generally unfamiliar with one-way communication tools that could be used to disseminate information (micro-blogs, blogs, Web feeds/pushed content, etc.)
- The survey respondents were found to be quite familiar with several two-way communication tools including social media, video conferencing, etc.
- Among the tools that could assist public in participating at public meetings, online testing scenarios were not popular among the survey respondents.
- The responding public who are familiar with new technologies were found to be more receptive to adopting these new technologies to increase participation in public involvement activities.

CHAPTER 5
SURVEY OF ATTENDEES OF PUBLIC MEETINGS

This chapter focuses on documenting the perception of the public meeting attendees in using communication technologies for public involvement. It first describes the survey administration efforts, and then discusses the survey results.

5.1 Survey Administration

A survey questionnaire was provided to the attendees of public meetings to learn about their opinions in adopting communication media for public involvement activities. The research team conducted in-person surveys at four public meetings across the state. Table 5-1 provides more information about these meetings.

Table 5-1: Public Meetings Attended

Date	Meeting Type	Location	Point of Contact	Total Attendees	Total Survey Responses Received	Response Rate
October 19th, 2017	District Two's Tentative Five-Year Work Program.	Jacksonville	Mr. James Driggers	16	12	75%
October 24th, 2017	Public Hearing to discuss Normandy Drive at Rue Granville and Rue Vendome Project.	Miami Beach	Mr. Rodolfo Roman	17	14	82%
November 14th, 2017	Public Hearing Regarding the PD&E Study for the Proposed Replacement of the Northbound Howard Frankland Bridge in Hillsborough and Pinellas Counties.	Tampa	Ms. Kristen Carson	20*	15	75%
December 14th, 2017	Public Hearing Regarding the Polk Parkway and Braddock Road Interchange Project.	Orlando	Mr. Brian Ribaric	17	16	94%
			Total	**70**	**57**	**81%**

* About 70 people attended this public meeting. However, a majority of the attendees were contractors.

The survey questionnaire was divided into four broad categories:

1. About Yourself
2. About Your Involvement in Public Meetings
3. About This Public Meeting
4. About Your Familiarity with Communication Technologies

Table 5-2 summarizes the survey questions. Appendices D and E provide the survey questionnaire in English and Spanish languages, respectively.

Table 5-2: Survey Questions

Category	Survey Questions
General Information	• What is your age? • What is your gender? • What is your ethnicity? • How would you describe where you live? (e.g., Urban, Suburban, Rural)
Education, Employment, and Income	• Which best describes your level of education? • What is your employment status? • What is your household income?
Specific Group	• Would you identify yourself with any of the minority groups?
Language	• Is English your primary language? • How fluent are you in English?
Involvement	• In general, how involved are you within your community?
Preference of Meeting Type and Meeting Time	• What is your preferred day and time for public involvement activities? • What are your preferred formats of public involvement activities? • If FDOT provided more opportunities to using technology rather than attend public meetings, how likely would you be able to participate?
Suggestions from Public	• Do you have suggestions for improving how FDOT interacts with the public? • How could FDOT improve your opportunities for getting involved?

Familiarity with Technology, Frequency of Use, and Preference of Technology	• Do you agree or disagree with these statements?
	  o In today's world, people are better able to learn more about their community and local issues because of electronic technologies and the Internet
	  o The Internet gives me the opportunity to connect with other people and be a part of a larger community, even if the community does not meet in person
	  o Technology skills give regular people a greater opportunity to make a difference in their communities and the country
	• How do you hear about public meetings and hearings for transportation projects?
	• How familiar are you with the following communication tools? (e.g., blogs, etc.)
	• How often do you use the Internet to find out what is happening in your community, and to find events or activities?
	• How often do you use the following communication tools? (e.g., micro-blogs, etc.)
	• How likely would you use the following communication tools to participate in public meetings and to communicate with the DOT? (e.g., micro-blogs, blogs, emails, etc.)
	• Do you have access to a computer, smartphone, Internet, etc.?

Meeting Convenience/ Expedience	• Was this meeting held at a convenient time? • Was this meeting held at a convenient location? • Was there ample notice of this meeting? • Have you requested special accommodation? • If you had requested special accommodation, were your expectations met? • Were ADA accessible features at this location satisfactory?

5.2 Survey Results

As can be observed from Table 5-1, a total of 57 public meeting attendees completed the surveys. This section discusses the survey results in detail.

5.2.1 Demographic Characteristics

Table 5-3 gives the summary of demographic information of the 57 survey respondents. The male-female ratio of the survey respondents was 53%-47%; four respondents did not provide their gender. About 67% of the respondents were older than 50 years, and about 35% were 60 years or older. English was the primary language for a majority (~96%) of the responding attendees.

According to the respondents, 47% were from urban areas, 27% and 25% were from suburban and rural areas, respectively. As can be observed from Table 5-3, a majority of the respondents were white (72%), followed by Hispanic/Latino (11%). Even though English was not the primary language for all the respondents, all the participants are able to speak, read, and write fluently in English.

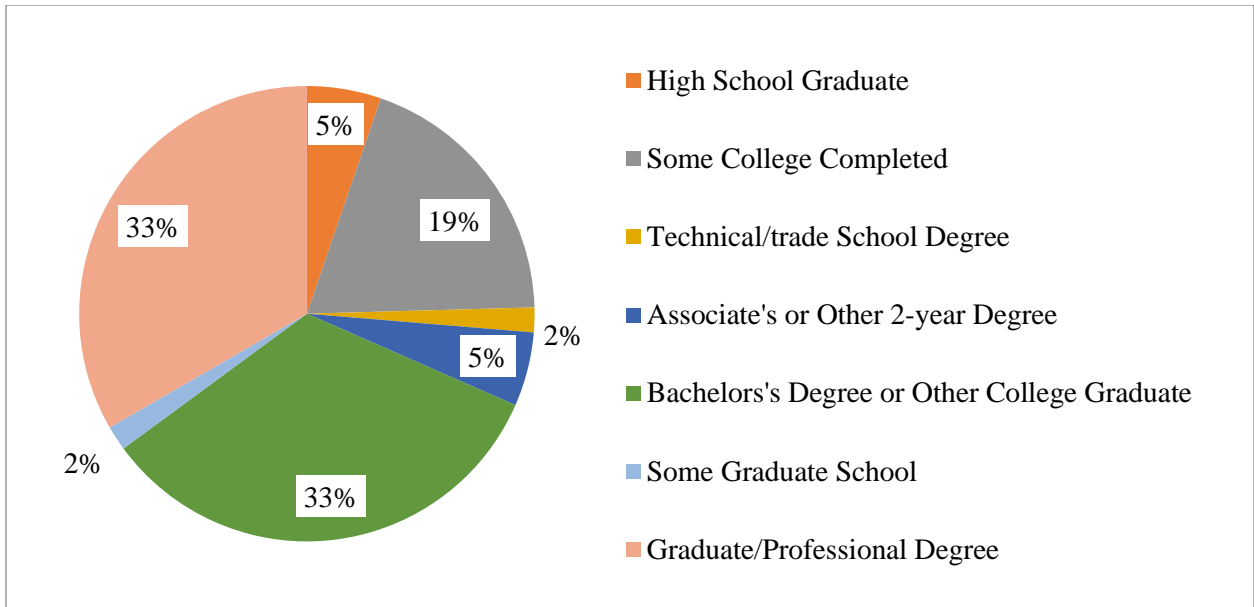**Table 5-3: Demographic Information of Survey Respondents**

Category	Frequency	Percentage
Gender		
Female	25	47%
Male	28	53%
Total	53[a]	100%
Age		
< 30 years	4	7%
30-39 years	6	11%
40-49 years	9	16%
50-59 years	18	32%
60-69 years	11	19%
70-79 years	7	12%
80-89 years	2	4%
> 90 years	0	0%
Total	57	100%
Primary Language		
English	55	96%
Spanish	1	2%
Other	1	2%
Total	57	100%
Race and Ethnicity		
Hispanic/Latino	6	11%
White	41	72%
Black	2	4%
Asian	3	5%
Native America/Alaskan Native	2	4%
Native Hawaiian	0	0%
Others	2	4%
Don't want to respond	1	2%
Total	57	100%

[a] Four respondents did not provide this information.

5.2.2 Socioeconomic Characteristics

Figure 5-1 summarizes the level of education of the survey respondents. All the participants were at least High School graduates. A majority of the respondents have attended college or higher level educational centers; 33% of the respondents hold a Professional Degree and 34% hold Bachelor's Degree. It can therefore be inferred that the survey respondents are highly educated. As can be observed from Figure 5-2, 62% of the responding attendees are employed full-time, 17% are self-employed, and 17% are retired. None of the respondents are unemployed or unable to work.

As can be inferred from Figure 5-3, the annual household income for 88% of the respondents is over $50,000 which is greater than the median household income in Florida. The survey sample, therefore, might not be representative of low-income households who earn less than the median income.

Figure 5-1: Level of Education

Legend:
- High School Graduate
- Some College Completed
- Technical/trade School Degree
- Associate's or Other 2-year Degree
- Bachelors's Degree or Other College Graduate
- Some Graduate School
- Graduate/Professional Degree

Pie values: 5%, 19%, 2%, 5%, 33%, 2%, 33%

Figure 5-2: Employment

Category	Percentage
Employed Full-time	62%
Employed Part-time	3%
Self Employed	17%
Out of Work and Looking for Work	
Not Currently Looking for Work	
Student	
Retired	17%
Unable to Work	

Figure 5-3: Annual Household Income

Traditional public engagement methods often fail to reach all groups of people. The public, in general, have different needs, depending on their cultural background, ethnicity, disabilities, etc. For instance, people with hearing impairment may need listening devices to be able to actively participate in public meetings. Similarly, people with LEP may need translators. As such, one of the survey questions asked if the respondents would identify themselves with any of the following groups:

- low-income households
- minority population
- persons with Limited English Proficiency (LEP)
- persons with disabilities
- older population

Figure 5-4 summarizes the survey responses to this question. Note that only 52 out of 57 respondents provided this information. The majority of the respondents (i.e., 73%) did not identify themselves with any of the special population groups. About 15% of the responding public identified themselves as older population which is consistent with the retirement percent and within the group of 70 years and older. A low 10% identified themselves as minority population, and a very low 2% identified themselves as persons with disabilities. None of the respondents identified themselves as low-income households or persons with LEP.
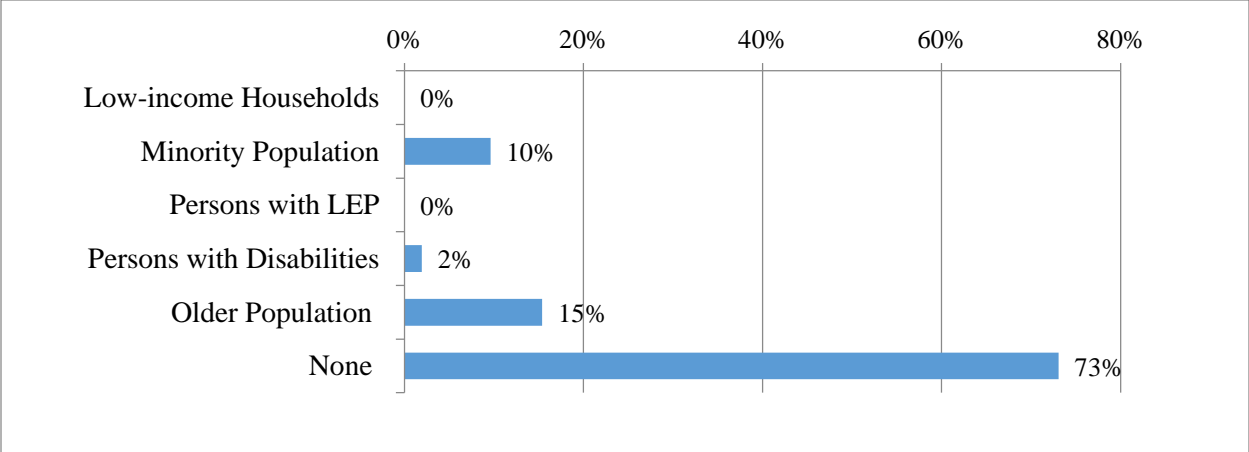
Figure 5-4: Special Population Groups

5.2.3 Involvement in Public Meetings

Public Involvement and Preferences

Most of the participants have some level of involvement with their community. As can be observed from Figure 5-5, about 38% of the survey respondents indicated that they are at least moderately involved with their communities. Only 4% of the respondents stated that they are not involved at all, implying that the public meeting attendees are usually those who are generally involved with their communities. Nonetheless, efforts have to be taken to encourage the public who are not currently involved with their communities to get more involved and actively participate in public meetings.
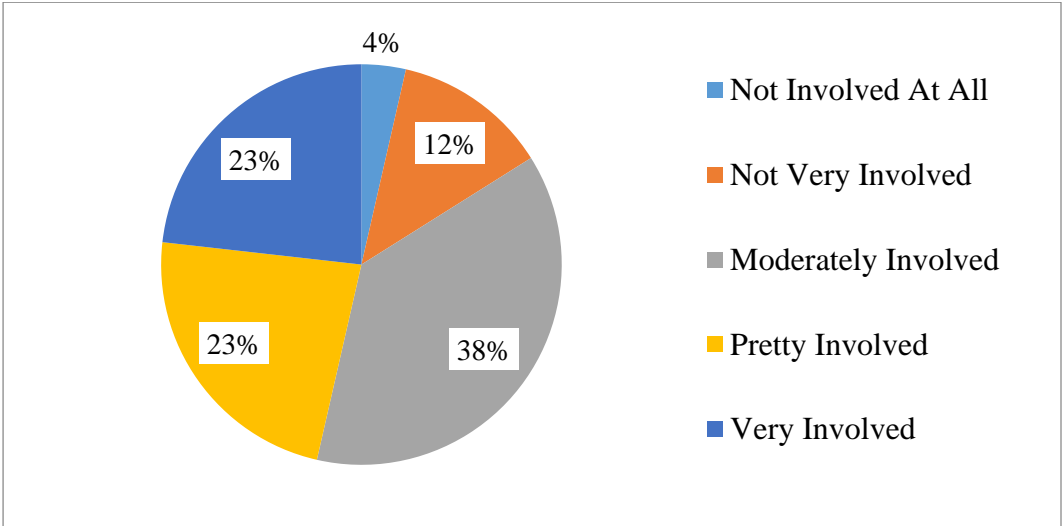
Figure 5-5: Involvement in the Community

When asked about the best time to conduct public meetings, an overwhelming 87% of the survey respondents stated that they prefer evenings. Weekdays were preferred to weekends; lunch time on weekdays was not a popular option. As expected, the most popular time is weekday-evening. Figure 5-6 summarizes these responses.
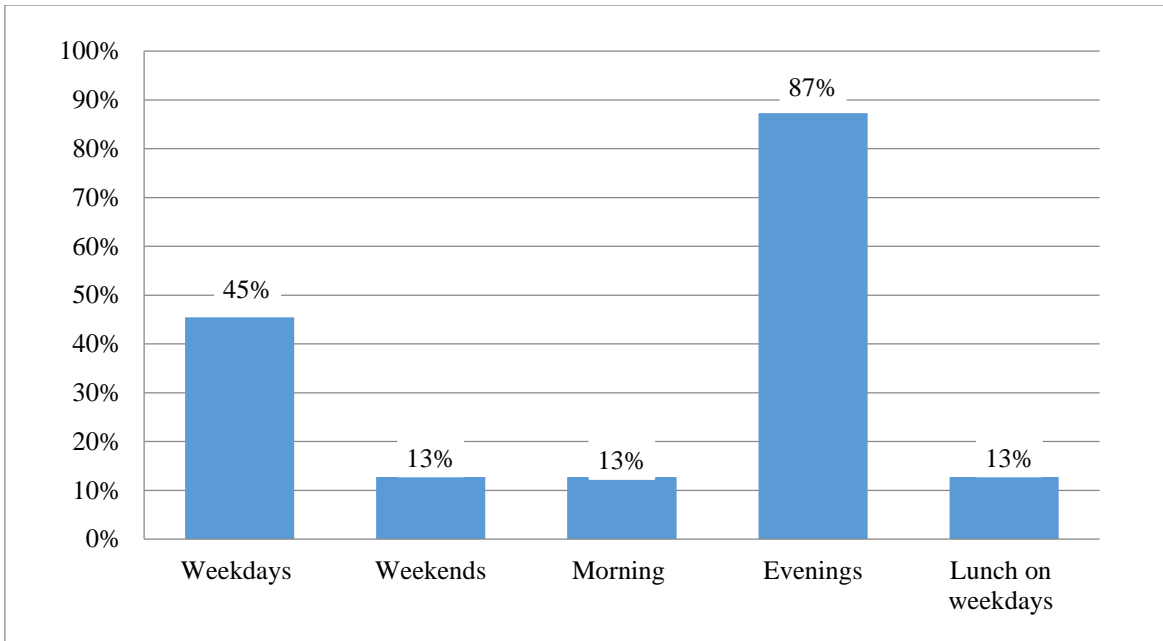
Figure 5-6: Preferred Day and Time for Public Involvement Activities

The survey respondents identified workshops and meeting in small groups as the most popular formats. These formats provide more opportunities to directly interact with the representatives overseeing the meeting, and the meetings tend to be shorter. As can be observed from Figure 5-7, other meeting options were also preferred. Respondents that chose the "other" category preferred to have at least one meeting in the homeowner association. Note that very few (7%) respondents were unsure about the best format for the meetings.
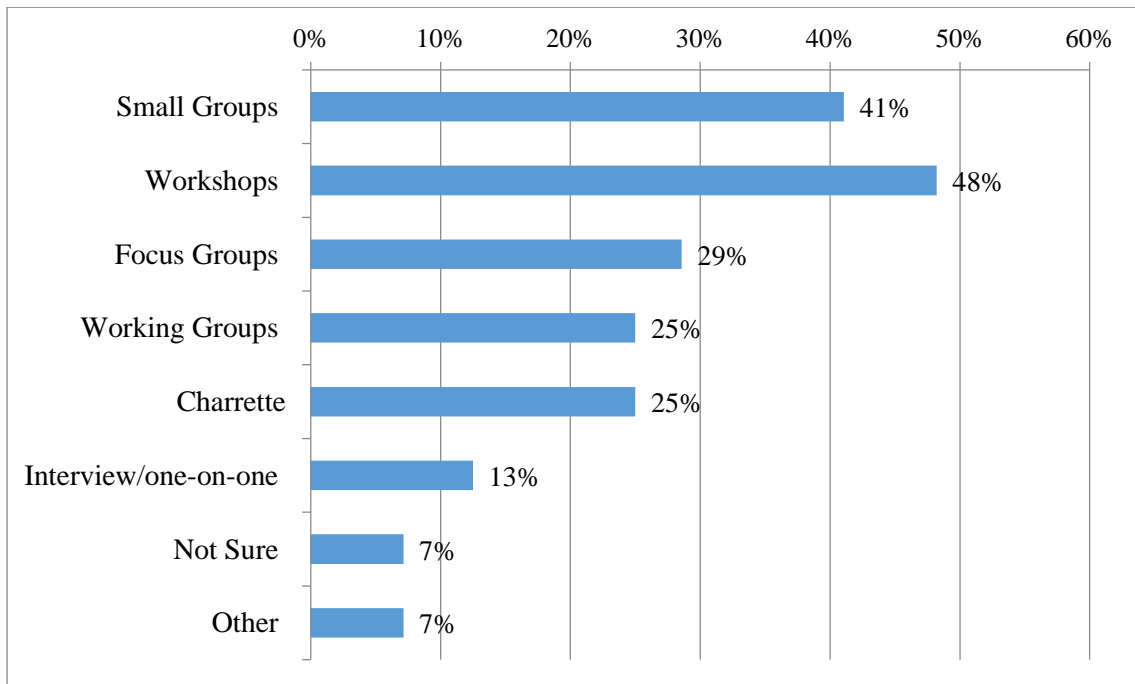
Figure 5-7: Preferred Format for Public Meetings

When asked about the specific public meeting that they were attending at the time of the survey, 50% responded that they received notification for the public meeting via written communication such as printed flyer (27%), press release (16%), or newspaper (13%). On the other hand, 23% and 14% of the responding public obtained this information from website and social media, respectively. Note that 30% of the respondents stated that they were notified by other methods, such as by email or by friends and neighbors. Figure 5-8 summarizes these results.
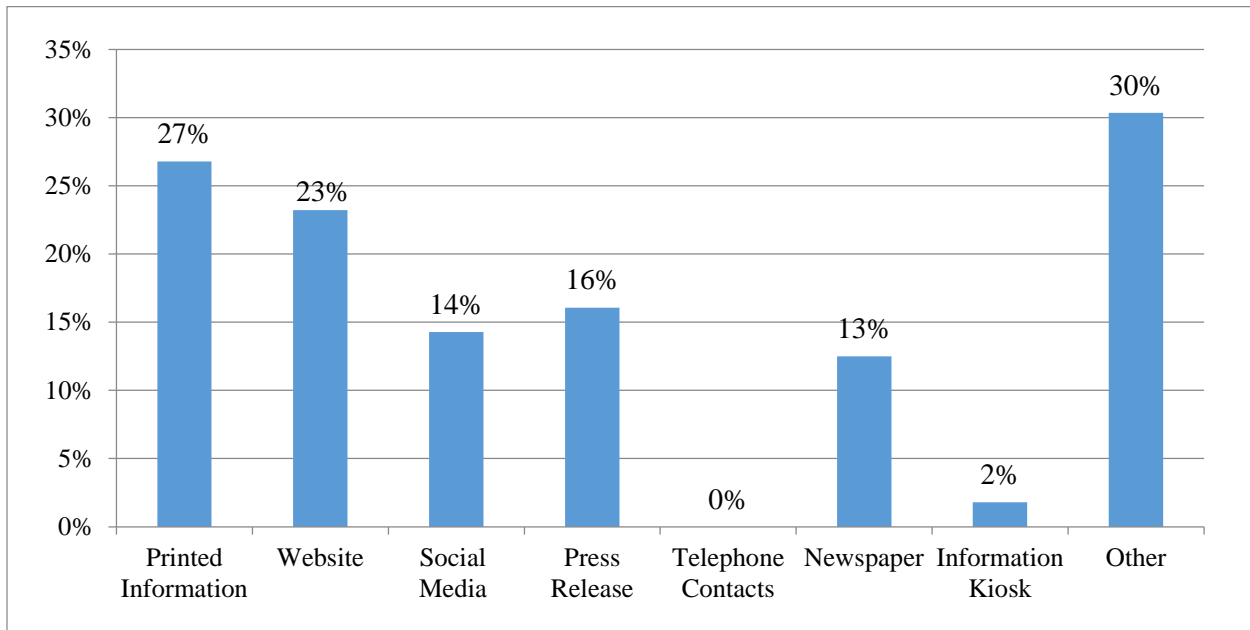
Figure 5-8: Avenues to Receive Public Meeting Notices

An overwhelming 96% of the respondents agreed that the public meeting that they were attending was held at a convenient time and location. They also agreed that they received ample notice about the meeting. As for special accommodations, the majority of attendees responded that they did not request any special accommodation. Those that had requested special accommodation responded that their requests were met. The participants also responded that ADA accessible features at the meeting locations were satisfactory.

Use of Technologies and Internet

One of the survey questions focused on the respondents' opinions regarding the role of Internet and technology in day-to-day activities. Figure 5-9 summarizes the responses. More than 70% of the responding public were found to be receptive to the idea that Internet and other electronic technologies help bring communities together. It enforces the idea that technology-based tools provide greater opportunities for the public to get involved with their communities.
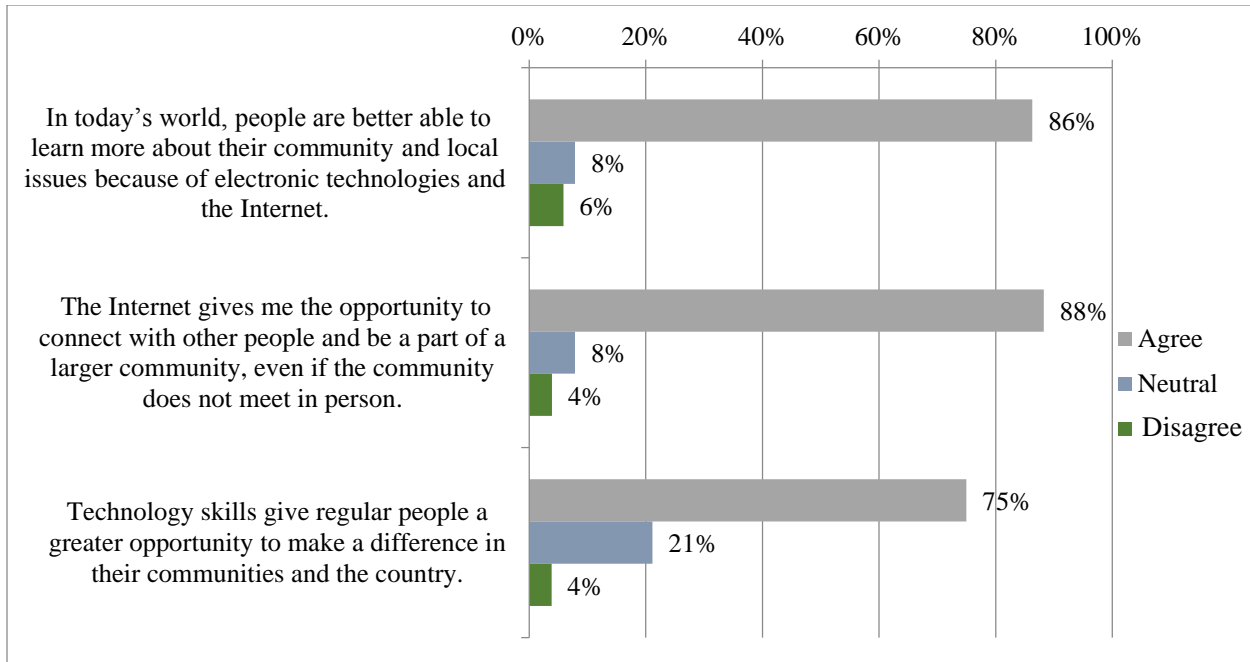
Figure 5-9: Public Perception on Technology

Public often uses Internet to know about their communities, events, or activities. About 76% of the responding public stated that they use Internet to obtain information, 14% use occasionally, and about 10% never use Internet to know about their communities.

The survey respondents were also asked how likely they would be able to participate in public meetings if FDOT provided more opportunities to attend remotely instead of attending in-person. About 65% responded that they are either likely or very likely to participate remotely. On the other hand, about 35% stated that they are either unlikely or extremely unlikely to participate remotely. A probable reason that respondents are non-receptive to participating remotely could be their unfamiliarity with the available communication tools.

One of the deciding factors in determining if the public could consider using communication technologies is their accessibility to these technologies. The majority of the attendees were found to have access to common technologies such as Internet, voice call, and camera. Home was found to be the most popular location to access these technologies; 88% of the respondents stated that they have access to a computer with Internet at home; 88% stated that they have access to a cell phone with Internet access, and 90% with voice and text. Surprisingly, only 16% of the respondents stated that they have access to computer with Internet at work. In general, using technology-based tools such as websites, mobile-based surveys, smartphone applications, etc. that help to communicate remotely are accessible to a majority of the public. Figure 5-10 summarizes these results.
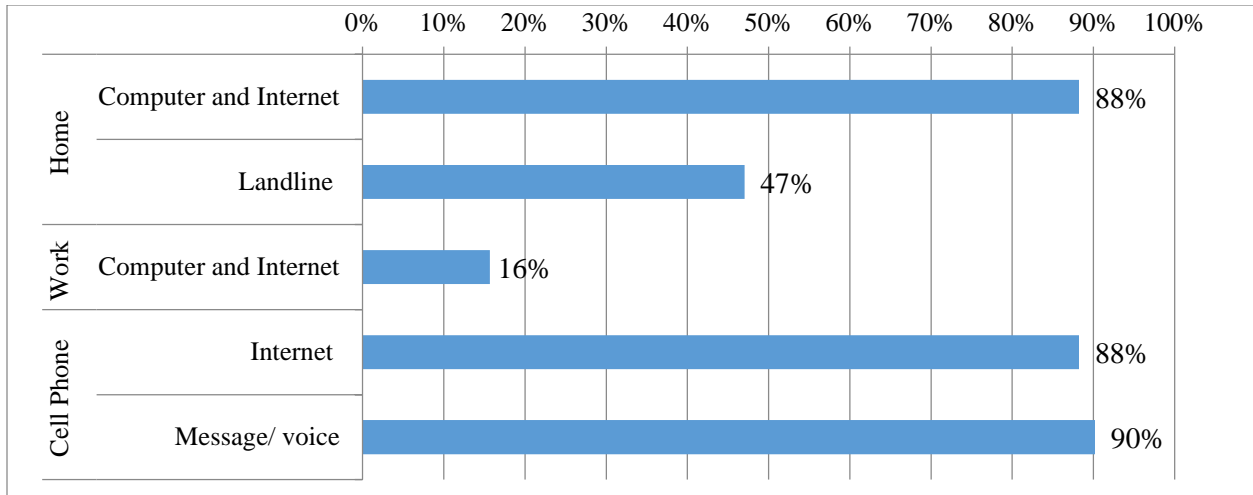
Figure 5-10: Accessibility to Essential Technologies

5.2.4 Technology-based Tools

Several technology-based communication tools are available for the agencies to adopt for their public involvement activities. As such, several survey questions focused on how familiar the respondents are with the current technologies, how often they use these technologies in their day-to-day life, and how likely they would want to use them if the technologies are adopted by agencies to conduct public meetings. The technologies are divided into the following three broad categories:

- Tools to disseminate information
- Tools facilitating two-way remote communication
- Tools assisting participation at public meetings

Tools to Disseminate Information

Some technologies are suitable for one-way communication where the public may get notified about transportation projects and upcoming public meetings. Information about projects and public meetings such as time, location, etc., are published, updated, and announced through these media. These technologies include:

- Micro-blogs (e.g., Twitter)
- Blogs (e.g., Blogger)
- Web Feeds/Pushed Content (e.g., Really Simple Syndication (RSS) Feeds)
- Broadcast Forums on Government Channel

Figures 5-11(a) through 5-11(c) illustrate the survey respondents' familiarity, usage, and likeliness of using these technologies. A significant percentage of the responding public was found to be unfamiliar with these tools. Furthermore, none of these tools are popular among the survey respondents; over 40% of the respondents stated that they never used any of these tools in their day-to-day activities. A majority of the respondents stated that they are unlikely to use any of these technologies to participate in public meetings.
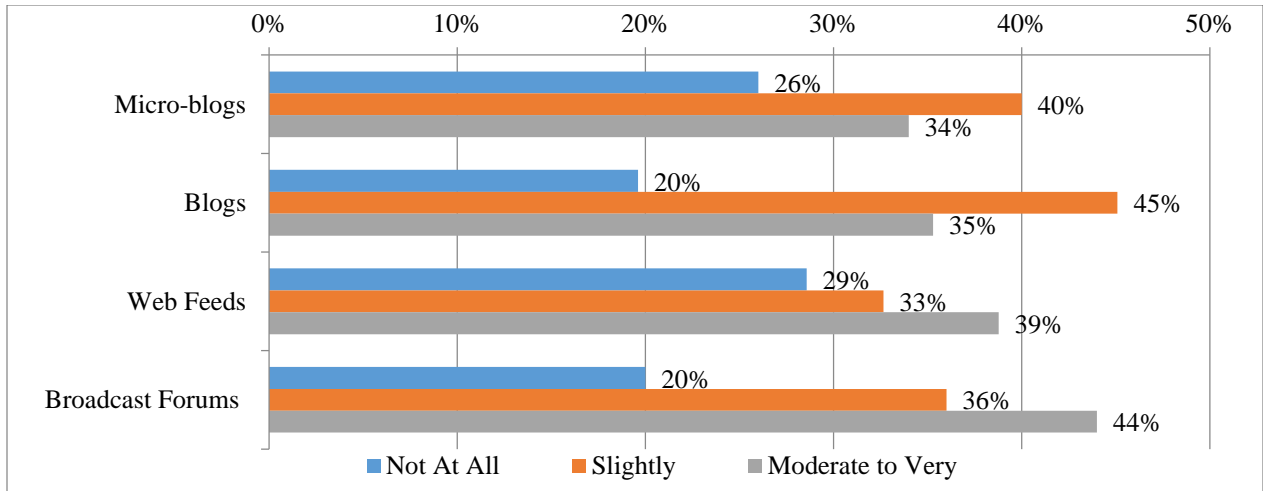
(a) Familiarity
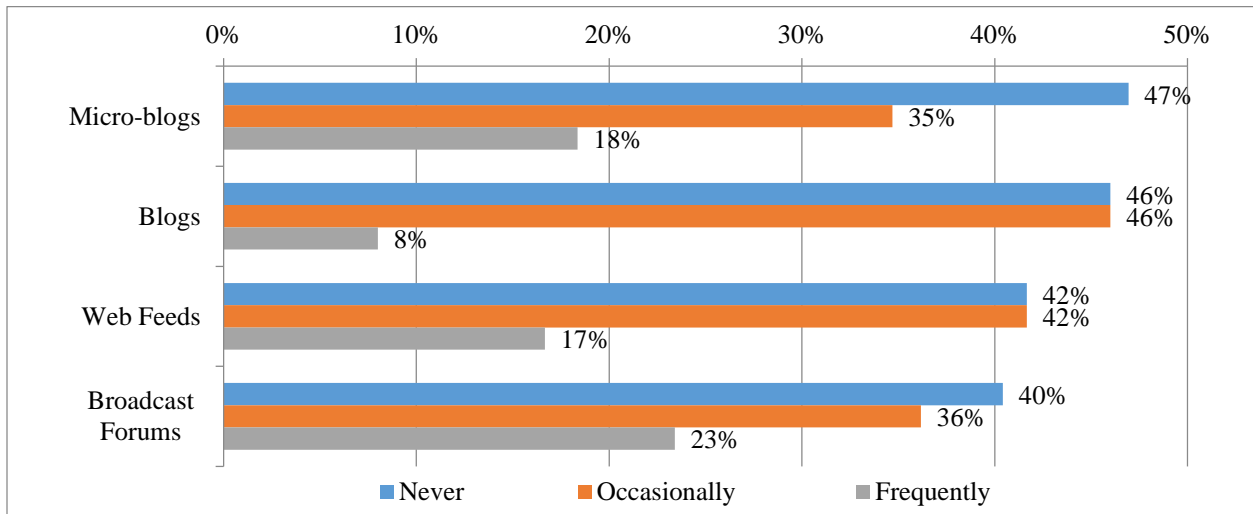
(b) Day-to-day Use
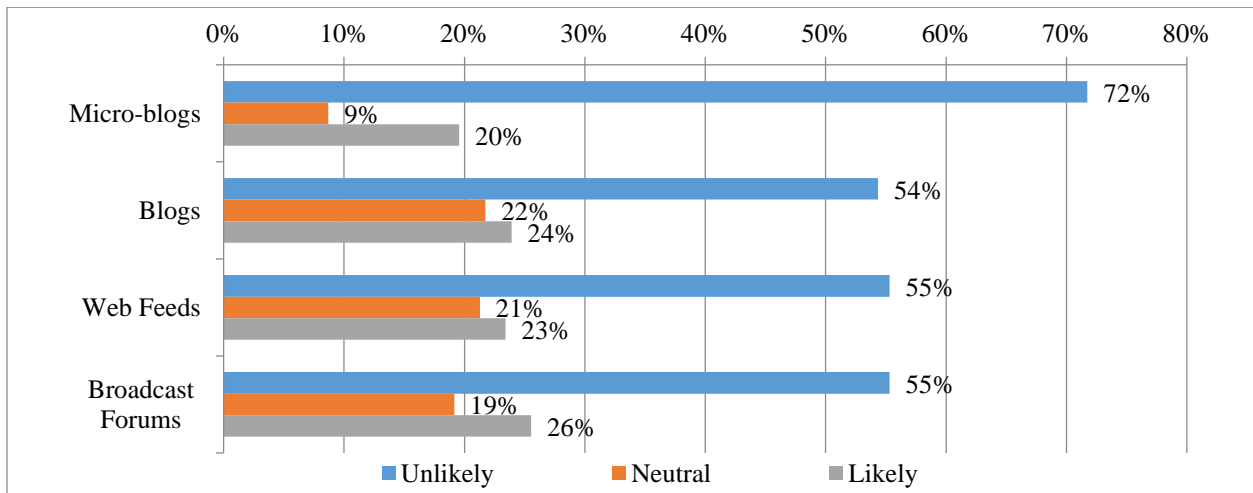
(c) Likeliness

Figure 5-11: Public Perception on Tools to Disseminate Information

Tools Facilitating Two-way Remote Communication

The general public can use some technology-based tools to remotely participate in public meetings. These tools could be used for two-way communication between the agencies and the public. These technologies will facilitate obtaining information and providing feedback in real time. Some of these technologies include the following.

- Social media (e.g., Facebook Live, YouTube Live, etc.)
- Video conferencing (e.g., Skype, GoTo Meeting, etc.)
- Online surveys
- Emails
- Texts

Figures 5-12(a) through 5-12(c) illustrate the survey respondents' familiarity, usage, and likeliness of using these two-way remote communication technologies. More than 60% of the survey respondents stated that they are at least moderately familiar with these tools. Only a small percentage of the survey respondents stated that they are not familiar with these tools. Among the tools surveyed, respondents are most familiar with emails and text messaging applications. This is expected since email and texting have become a common means of communication. About 76% of the respondents stated that they are familiar with social media, and 64% of the respondents stated that are familiar with video conferencing applications. Online surveys are also quite familiar with the survey respondents. This is an encouraging result since online surveys are a common avenue to gauge public interests.

A majority of the responding public indicated that they frequently use emails (92%) and text messages (67%) to communicate with others. Social media and video conferencing tools were also popular. However, about 22% of the respondents stated that they never use social media for day-to-day activities. It is interesting to note that the responding public are familiar with social media, video conferencing tools, and online surveys; however, familiarity is not correlated with the extent of use. In other words, even though a majority of respondents are familiar with these applications, only few respondents stated that they are using these tools for their day-to-day activities.

A high 89% of the respondents stated that they are likely to use emails for public meetings. This is followed by texting applications at 57%. Approximately 47% of the respondents preferred the remaining three two-way remote communication tools (i.e., social media, video conferencing, and online surveys). The survey results indicate that all of the two-way remote communication tools except emails are not very popular; about one-third of the respondents stated that they are unlikely to use these tools to participate in public meetings. Email appears to be the most desirable option from two-way remote communication to be used as a facilitating tool in public meetings.

(a) Familiarity

(b) Day-to-day Use

(c) Likeliness
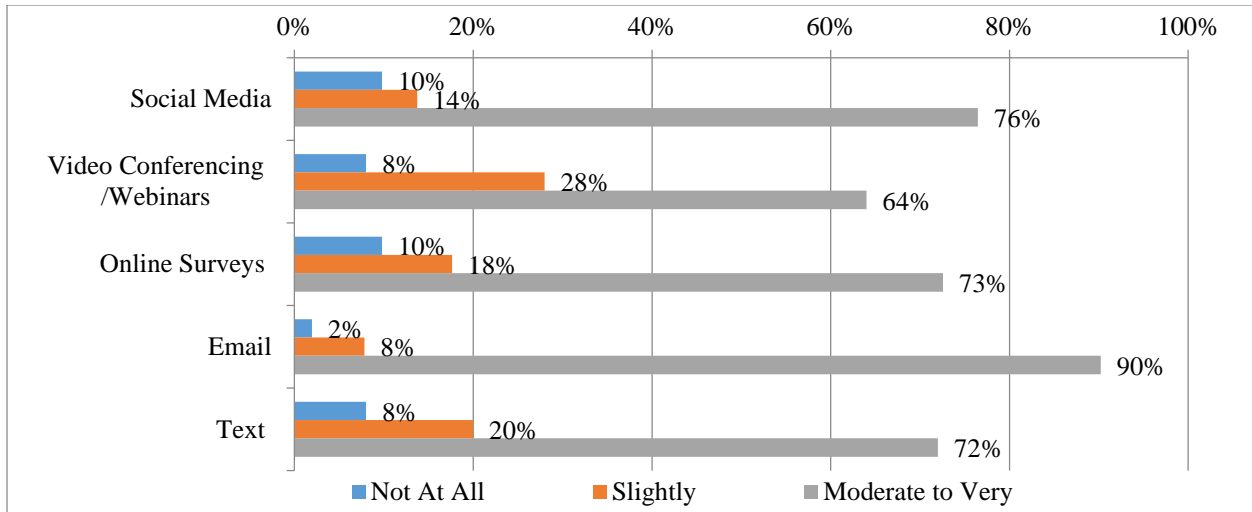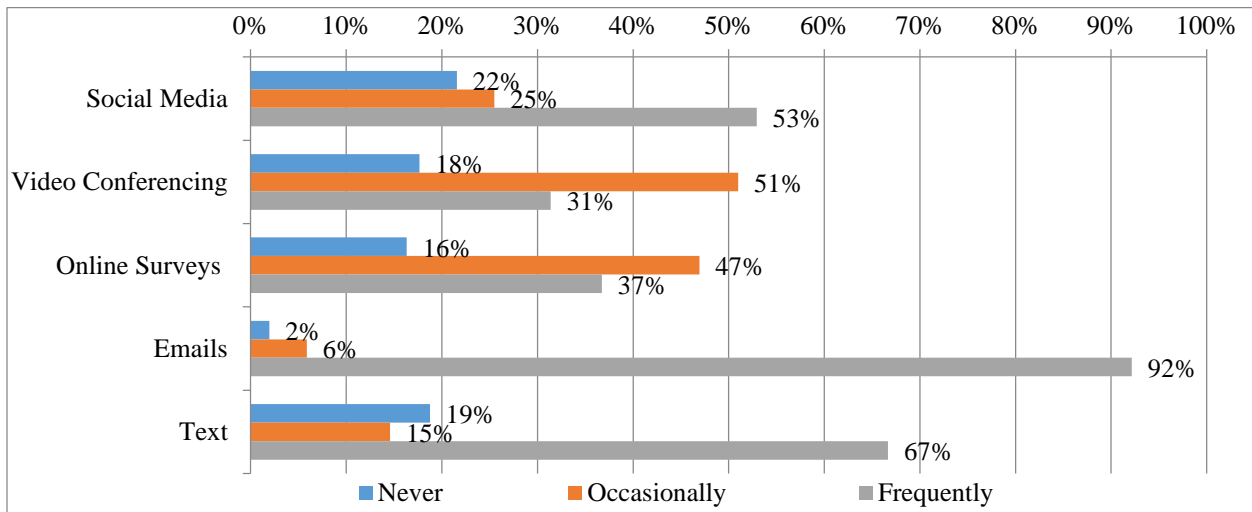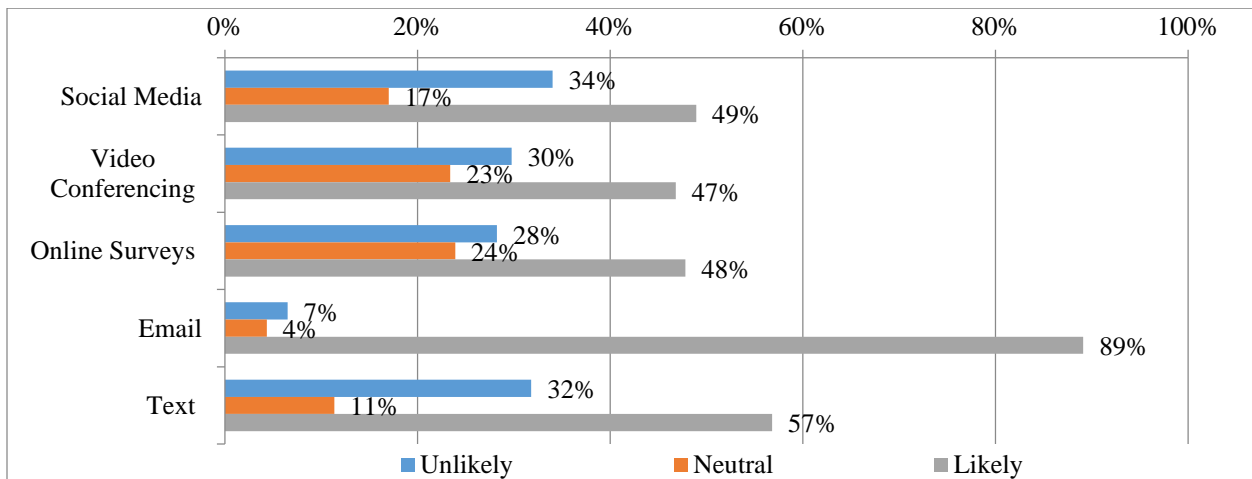
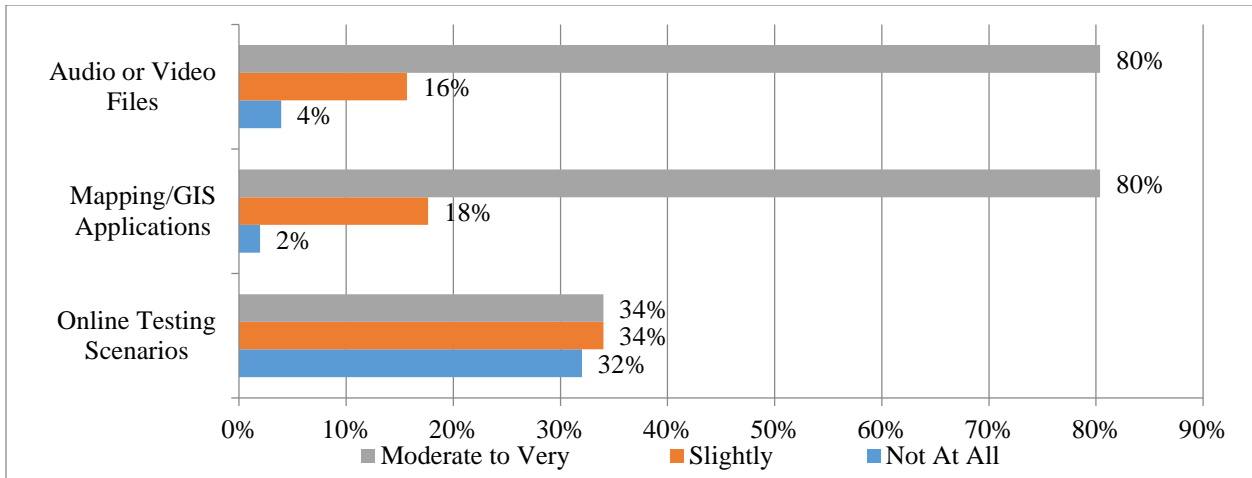**Figure 5-12: Public Perception on Tools That Facilitate Two-way Remote Communication**

Tools Assisting Participation at Public Meetings

These technology-based tools help meeting attendees to engage more in public meetings and hearings. The following are some technology-based tools that fall into this category, and are used by many state DOTs:

- Mapping/GIS applications (e.g., Google Maps, Google Earth)
- Audio or video files (e.g., YouTube, Podcasts)
- Online testing scenarios (e.g., Metro Quest)

Figures 5-13(a) through 5-13(c) show the respondents' familiarity, usage, and likeliness of using these technologies. About 80% of the responding public are familiar with audio/video files and Mapping/GIS applications. About two-thirds stated that frequently use mapping/GIS applications, and about 60% stated that they will likely use these applications at public meetings/hearings. Similar trends are observed for audio/video files as well.

The responding public are not familiar with the online testing scenarios; about one-third stated that they are *Not At All* familiar with these tools. Furthermore, as expected, 56% of the respondents stated that they have never used online testing scenarios in their day-to-day activities. As such, about two-thirds of the respondents are unlikely to use online testing scenarios while participating in public meetings and hearings. However, lack of familiarity about these tools is the main barrier; extensive and targeted education efforts could change this perception among the public.

(a) Familiarity

(b) Day-to-day Use

(c) Likeliness
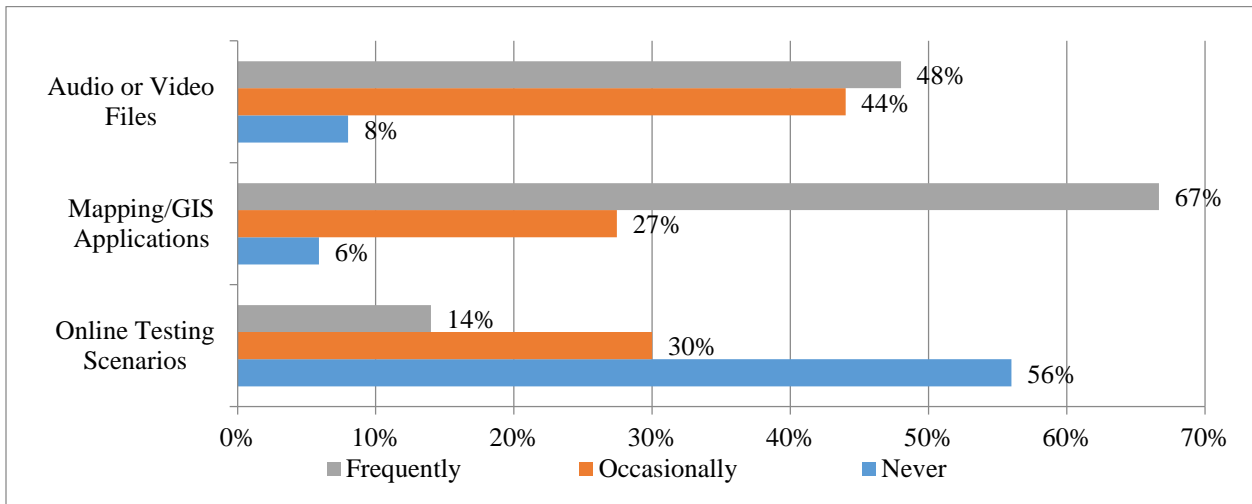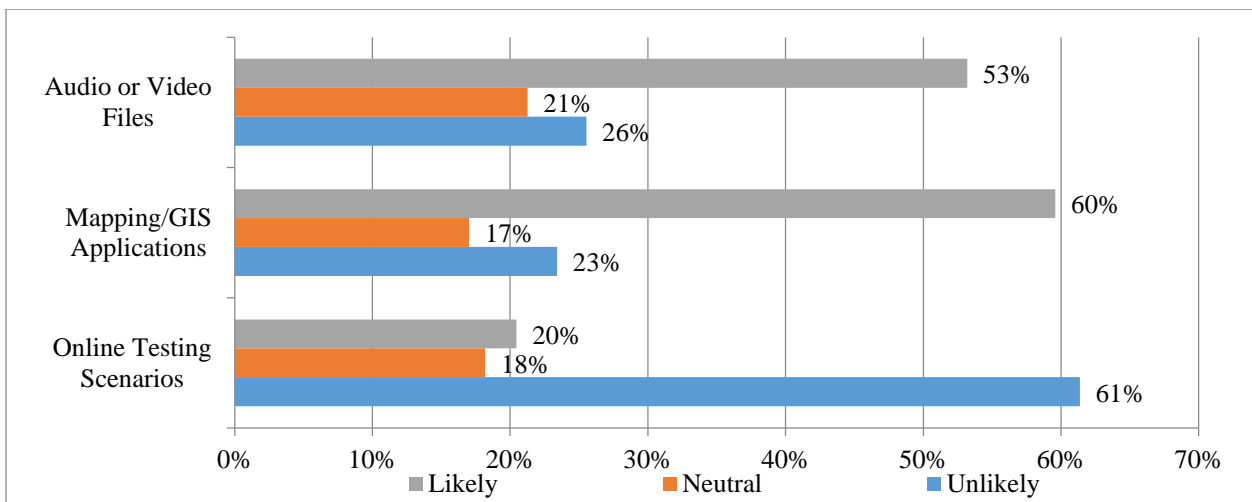
Figure 5-13: Public Perception on Tools That Assist with Participation at Public Meetings

5.2.5 Public Opinion

The survey respondents were asked if they have any suggestions for improving how FDOT interacts with the public, and how FDOT could improve opportunities for the public to get more involved. The main goal for asking these questions was to get the public opinion and advice on improving public involvement. The respondents' comments and suggestions gave valuable insights on how to increase public participation in public meetings.

Several attendees stated that FDOT is doing a great job with the public meetings. The public meeting locations are considered to be convenient and accessible. Some attendees stated that multiple public meetings/hearings are warranted, especially in large cities. Having more meetings at ADA-accessible locations with easy availability of parking and easy access via transit are recommended. Furthermore, more meetings on weekdays and in the evenings, and at more neutral/central locations are preferred.

Social media including Facebook and YouTube are the best ways to reach some of the attendees. One of the attendees suggested purchasing sponsored advertisements on Facebook. The respondent also acknowledged that fewer people are attending the public meetings in person, and further stated that Internet could be used to get more people involved with their communities. Another attendee stated that "*FDOT should convert to using digital platforms to provide information, take surveys, and stream meetings*".

Even though the pulse of the attendees has been to use more social media, some attendees stated that they prefer to be contacted via newspaper, newsletters, postal mails, and printed flyers. Furthermore, advertising in local news media and radio channels is recommended. Attendees also suggested posting signs at the homeowner association and building complexes a week or two prior to the meeting. A few suggested that emails work well for them. In general, agencies have to strive to be in constant communication with the public.

It was observed that some of the attendees are very interested in looking at the detailed plans and reports, and they suggested providing this information on the website for people to review and comment. Regarding the meeting content, more real dialogue with the public and more workshops are recommended. An attendee suggested that FDOT officials should "*listen*" to the public.

5.3 Summary

A survey questionnaire was developed to explore the perception of public meeting/hearing attendees in using communication technologies for public involvement. The questionnaire was distributed among the public meeting attendees in four different locations across Florida. A total of 57 responses were collected. The demographics and socioeconomic characteristics of the survey sample include:

- The male-female ratio of the survey respondents was 53%-47%.
- About 35% of the respondents were 60 years or older, and 17% were retired.
- English was the primary language for a majority of the responding attendees; all of the respondents stated that they are fluent in English.
- A majority of the respondents were from urban and suburban areas.

- About 72% were white Americans, followed by Latino Americans (11%).
- A majority of the respondents are well educated; over 68% hold at least a bachelor's degree.
- About 88% reported that they earn over $50,000 annually, greater than the median household income in Florida.
- Only a few respondents identified themselves as persons with disabilities, minority population, or older population. None of the respondents identified themselves as persons with Limited English Proficiency or low-income households.

Some of the key findings include:

- Less than 20% of the respondents stated that they are not at all involved with their communities.
- Meetings in the evenings during weekdays were preferred the most; while meetings during lunch time on weekdays were preferred the least.
- Meetings in small group and workshop settings were preferred the most, while one-on-one meetings and interview type meetings were preferred the least.
- The survey respondents were found to generally agree on the idea that Internet and other electronic communication technologies help bring communities together.
- The survey respondents were found to be generally receptive to the idea of using communication technologies to participate in public meetings; if FDOT provides more opportunities to attend remotely instead of attending in-person, more people are likely to attend the meetings.
- Some of the respondents were found to be non-receptive to participating remotely using new communication tools because of their unfamiliarity with these new technologies.
- Almost all the respondents were found to have access to essential technologies and Internet, such as a computer or cellphone with Internet access, etc.
- The responding public were found to be generally familiar with one-way communication tools that could be used to disseminate information (micro-blogs, blogs, Web feeds/pushed content, etc.). However, these one-way communication tools are not frequently used by the respondents.
- The survey respondents were found to be very familiar with several two-way communication tools such as social media, email, text messaging applications, etc.
- Among the tools that could assist public in participating at public meetings, online testing scenarios were not popular among the survey respondents.
- The responding public who are familiar with new technologies were found to be more receptive to use these technologies to increase participation in public involvement activities.
- Extensive and targeted education efforts could change the public's reservations in using communication technologies for public involvement activities.

CHAPTER 6
APPROPRIATE PLATFORMS FOR DIFFERENT POPULATION GROUPS

This chapter focuses on identifying appropriate technology-based communication platforms that can increase the participation of the following underrepresented population groups in public involvement activities:
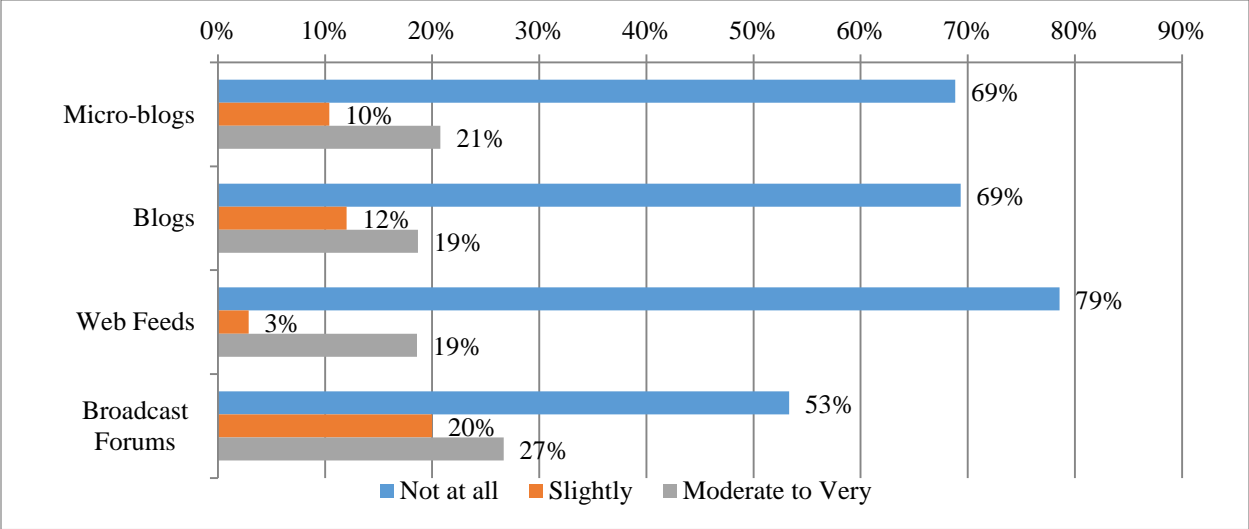
- Older population
- Minority population
- Low-income households
- People with limited English proficiency (LEP)
- People with disabilities

6.1 Older Population

Florida is home to 5.1 million residents aged 60 and older, constituting 25.7% of total population. Older residents might not have the means to attend public meetings in person and, therefore, may not actively engage in the public involvement process. However, their active participation is critical to the success of the transportation projects. As such, efforts must be undertaken to communicate and disseminate information to older residents to encourage their participation in public meetings.

Although the older population is considered to be willing to use technology-based tools for public involvement activities, agencies must continue to use traditional methods to disseminate information as the older public may not have access to a computer or Internet, and is more likely to be unfamiliar with new and advanced communication tools. Figures 6-1(a) through 1(c) illustrate the older population's familiarity, usage, and likeliness of using communication technologies to receive information. Similarly, Figures 6-2 and 6-3 provide the perception of older population on communication tools that facilitate two-way remote communication and tools that assist in active engagement during public meetings, respectively. Note that the results are based on the survey responses from 85 older respondents. Please refer to Chapters 4 and 5 for more details about the surveys.

As can be observed from Figure 6-1, older survey respondents were found to be unfamiliar with the communication platforms that help disseminate information, i.e., micro-blogs, blogs, Web-feeds, and broadcast forums on Government channels. Older respondents were found very rarely to use these tools and also are unlikely to use them in the future. Older survey respondents were found to be quite familiar with the following communication technologies that facilitate two-way communication between the agency and the public: social media, video conferencing, online surveys, emails, and text messages. The respondents were also found quite frequently to use, and are likely to use these technologies to communicate with the agencies. GoToMeeting, Facebook, YouTube, and WhatsApp could be used to facilitate two-way communication between the agency and the older population.
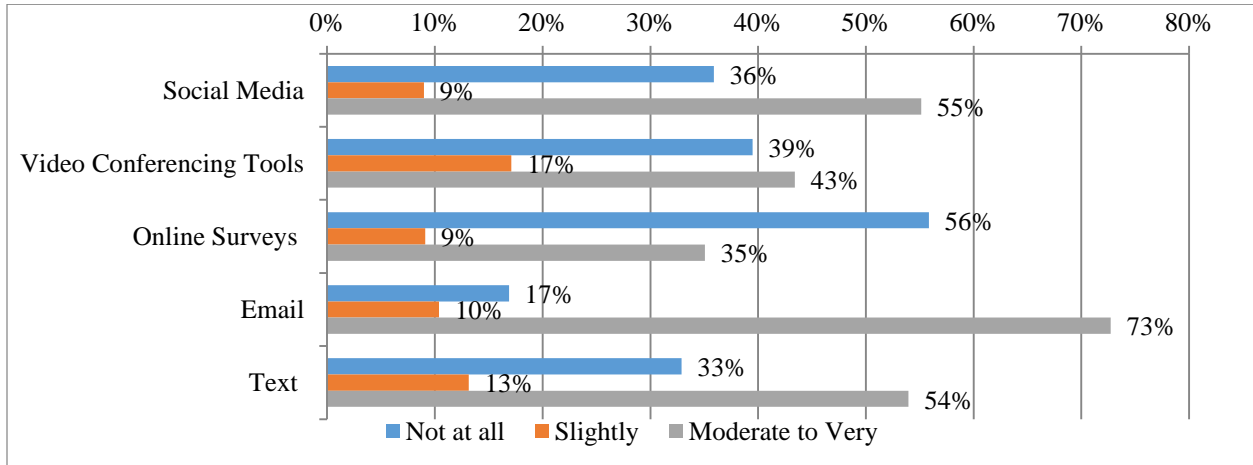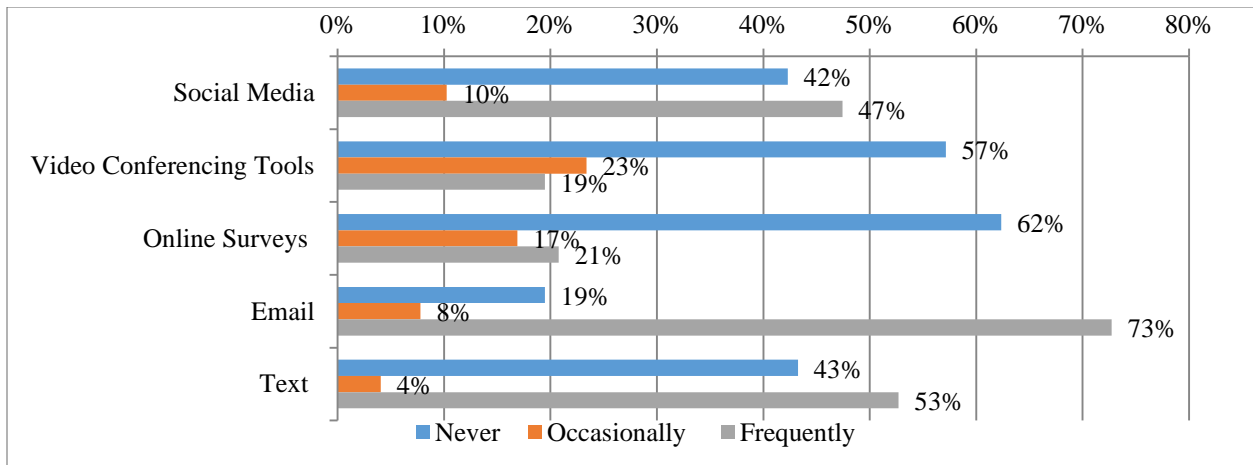
(a) Familiarity
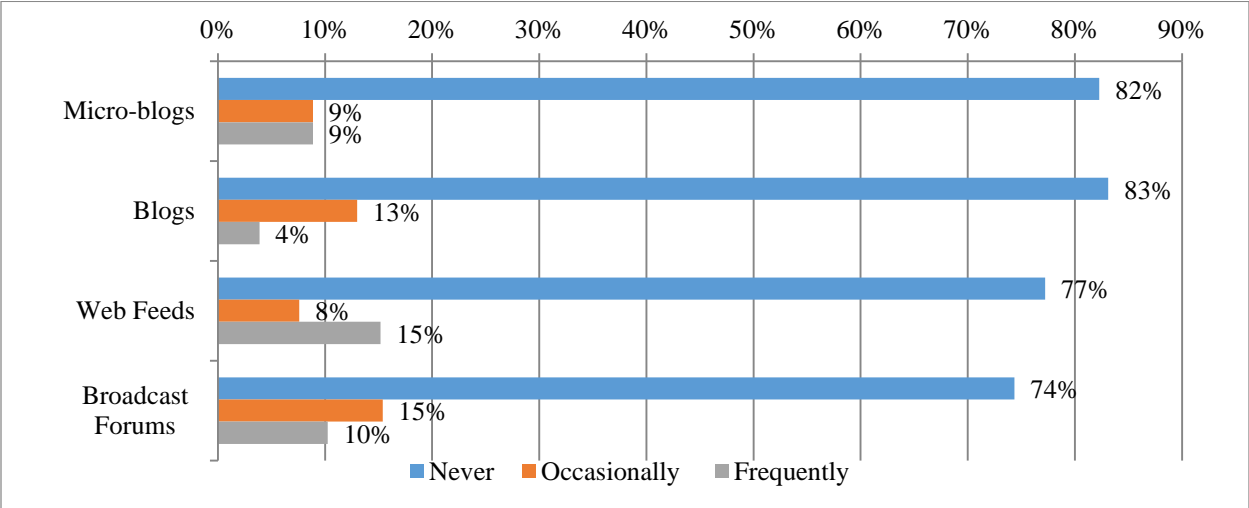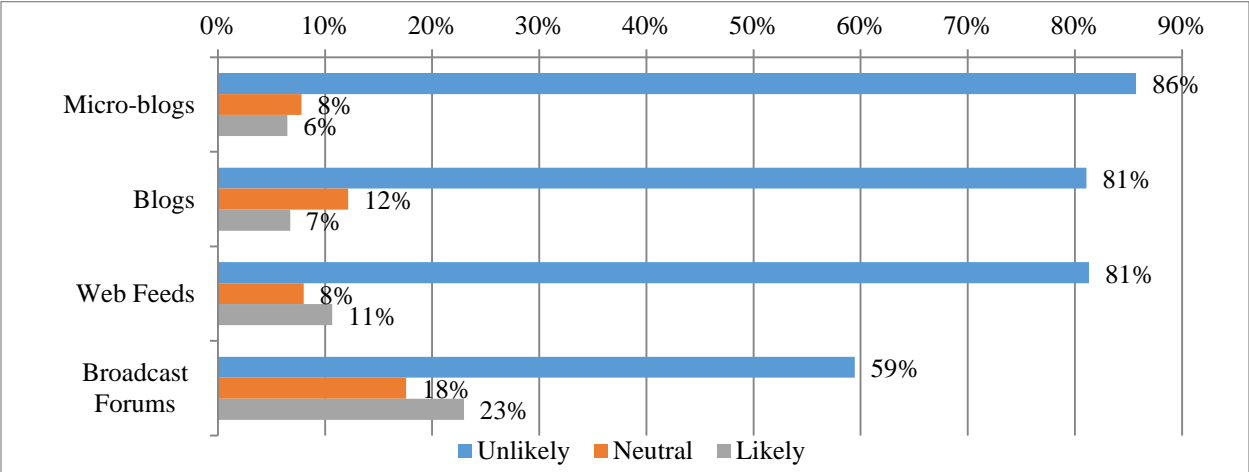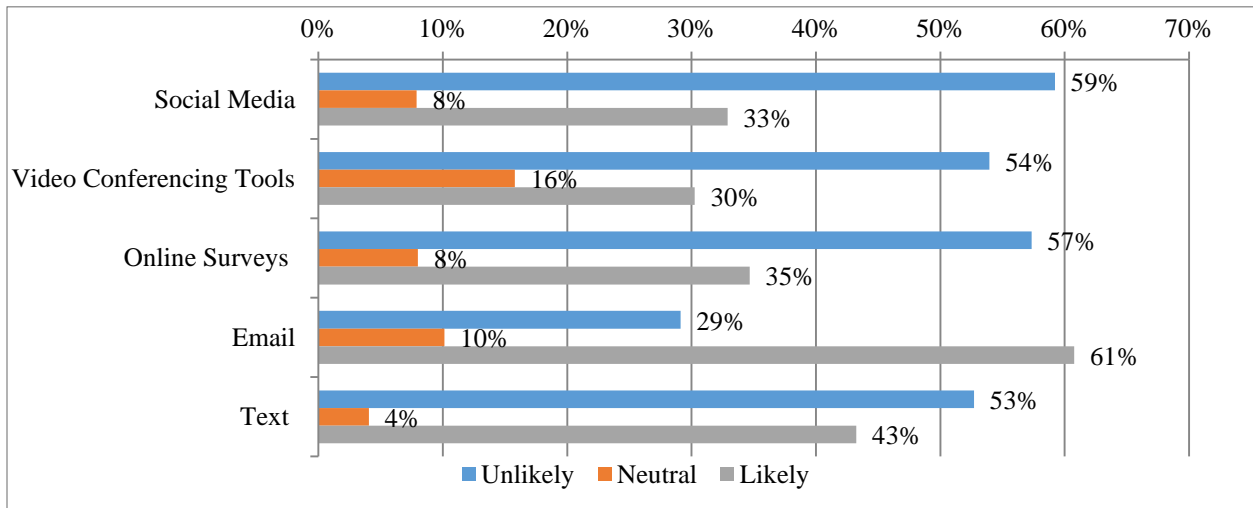

(b) Day-to-Day Use

(c) Likeliness

Figure 6-1: Perception of Older Population on Tools to Disseminate Information
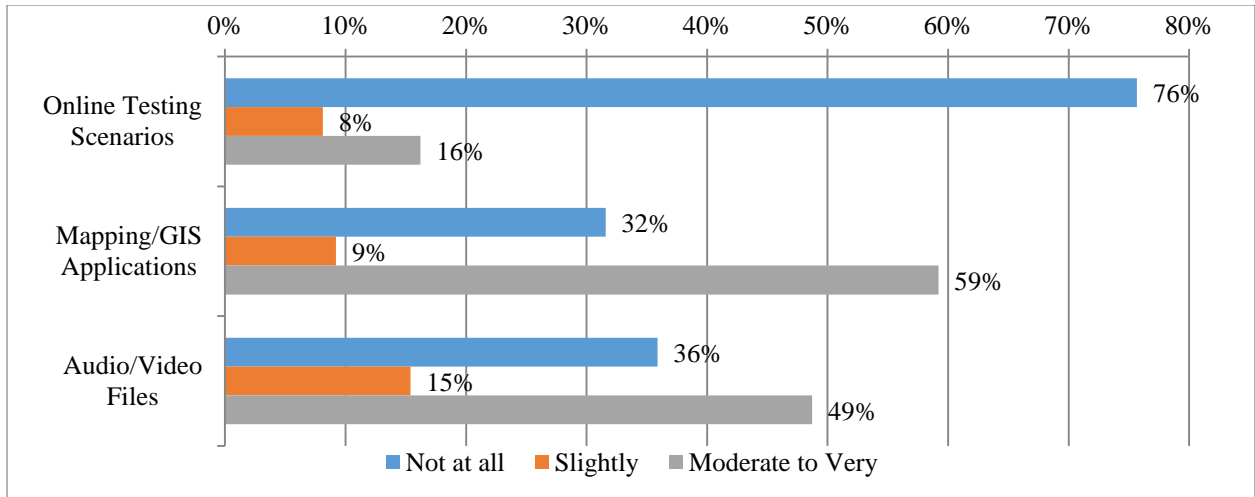
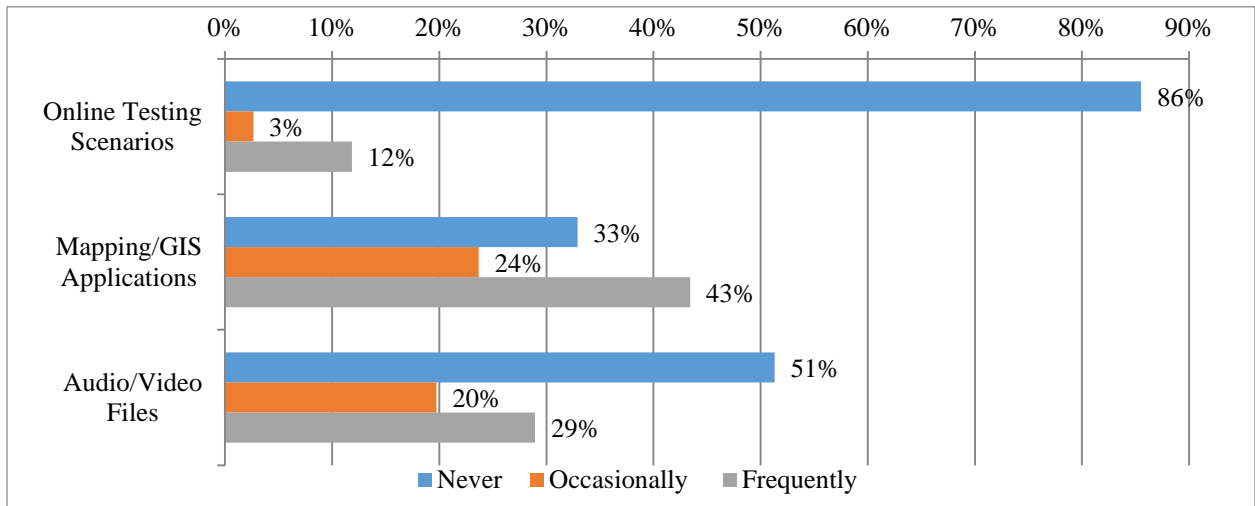**(a) Familiarity**
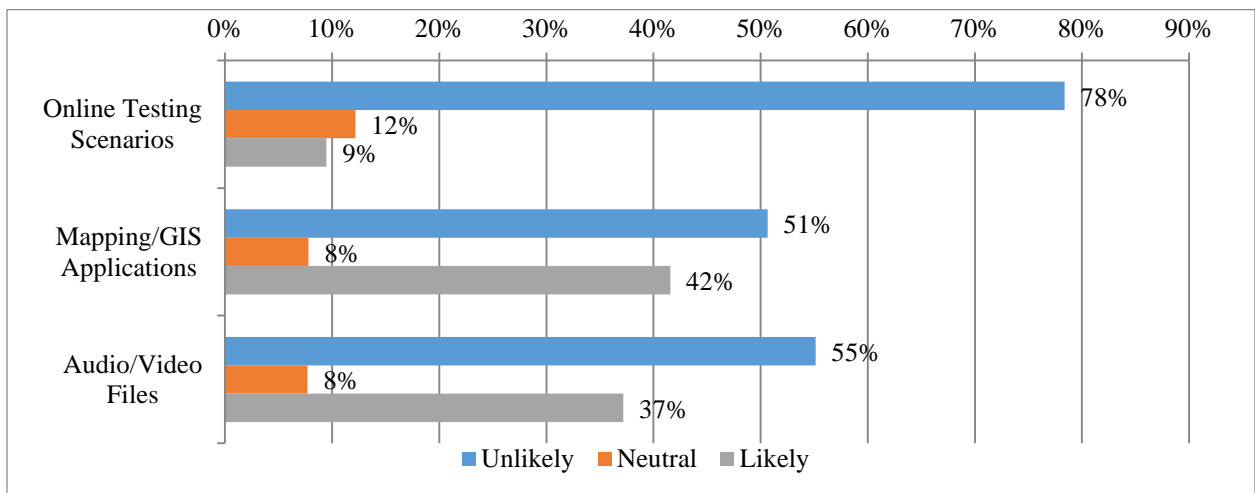

(b) Day-to-Day Use

(c) Likeliness

Figure 6-2: Perception of Older Population on Tools Facilitating Two-way Remote Communication

(a) Familiarity

(b) Day-to-Day Use

(c) Likeliness

Figure 6-3: Perception of Older Population on Tools Assisting Participation in Public Meetings

Older residents were found to be unfamiliar with the technologies that encourage participation during public meetings such as online testing scenarios. About one-third of the responding older public stated that they are unfamiliar with GIS mapping tools and audio/video files. However, based on the FDOT personnel's experience in using these tools in public meetings, the GIS mapping tools displayed on the Smart Board and audio/video files (i.e., pre-recorded voice-over presentations) are found to usually be well received by the overall meeting attendees and internet reviewers.

Table 6-1 provides specific recommendations to increase the involvement of older population in public meetings. The recommended communication media are discussed below:

Communication Tools to Disseminate Information

- **Email-Blasts:** Emailing services could be used to disseminate information to large audience and provide continuous updates on projects and public involvement activities. A majority of the older survey respondents stated that they are familiar with emailing services, and are likely to read emails pertaining to public meetings. Almost all emailing services have special features such as text translation and spoken descriptions that could further assist older population. However, obtaining email addresses of the public could be a major hurdle in using Email-blasts to reach out to the public.

- **Mass Text Messaging Services**: Mass text messaging services have the potential to reach out to target audience. Textedly (or any other mass text messaging service) is recommended since it allows to send text messages directly to people's phones, increasing the chances for people to read the incoming messages. Most smartphones have integrated accessibility features that allow older people to have a better experience with text messages (e.g., text translation, spoken descriptions, etc.). However, as with the case with email addresses, the difficulty in obtaining phone numbers of the affected and interested population could limit the use of mass text messaging tools in disseminating information.

Communication Tools to Facilitate Two-way Communication

- **Social Media (e.g., Facebook):** A majority of the public are familiar with social media. Facebook is the most popular social media, and a relatively higher percentage of older adults use this platform. Facebook could be used to facilitate the dissemination of information of public meetings (such as time, location, etc.), and to provide two-way communication to obtain feedback from the public. It also allows to reach a huge audience in a short time, and is another means of transmitting videos, photos, and audio files.

- **Video Conferencing Tools (e.g., GoToMeeting):** GoToMeeting could increase the two-way remote participation of older population who are not tech savvy and are unfamiliar with advanced technology. GoToMeeting user interface is relatively easier to use compared to other similar video conferencing applications. Moreover, participants do not need to register or have an account to access an online video meeting. Participants can join meetings by clicking the meeting URL link, which can be posted on social media, micro-blogs, or even sent through regular text messages, messaging applications, or emails. This

software is free for participants. FDOT currently has statewide license for using GoToMeeting.

- **Audio & Video Files (e.g., YouTube):** Pre-recorded audio and video files were found to be among the most useful and successful tools during public involvement meetings. They provide information during meetings, and allow participants to watch/hear the recorded presentations or descriptive videos/audios in case they cannot attend the meetings. However, audio files may not be as effective as other communication media that use visual aids.

Communication Tools to Assist in Engaging Attendees during Public Meetings

- **GIS/Mapping Services (e.g., Google Maps):** These applications have been widely used by several agencies. Several DOTs have successfully used Google Maps/Google Earth during public involvement meetings. These types of tools provide ease of use and accessibility for people of all ages, regardless of whether or not they are tech savvy.

Table 6-1: Comparison of the Communication Media to Assist Older Population

Communication Media		Perception of Older Population				Recommendation for General Public
		Familiarity	Day-to-Day Use	Likeliness	Recommendation for Older Population	
Disseminate Information	Twitter	Low	Low	Low	Low	High
	Feeder	Low	Low	Low	Low	Low
	RapidFeeds	Low	Low	Low	Low	Low
	Blogger	Low	Low	Low	Low	Low
	Broadcast Forums	Low	Low	Low	Low	Low
	Email-Blasts	High	High	High	High	High
	Textedly	High	High	High	High	High
Facilitate Two-way Communication	Skype	High	Low	Intermediate	Intermediate	Intermediate
	GoToMeeting	High	Low	Intermediate	High	High
	Adobe Connect Meetings	High	Low	Intermediate	Intermediate	Intermediate
	Facebook	High	Intermediate	Intermediate	High	High
	YouTube	High	Intermediate	Intermediate	High	High
	SurveyMonkey	Intermediate	Low	Intermediate	Intermediate	Intermediate
	WhatsApp	High	High	High	High*	High*
Assist in Participation	Google Maps	High	High	Intermediate	High	High
	MetroQuest	Low	Low	Low	Low	Intermediate
	Podcasts	High	Intermediate	Intermediate	Intermediate	High

* Not recommended because of privacy issues.

6.2 Minority Population

As mentioned in the earlier chapters, public involvement process requires active participation from people from all backgrounds and cultures to ensure that all points of view are taken into consideration. Underserved population groups such as minorities, low-income households, or people with limited English proficiency (LEP) should be given special attention as they bring fresh prospective, provide feedback about community specific issues, etc. As such, agencies need to make special efforts to make sure that the underrepresented residents actively participate in public meetings. This section focuses on identifying communication media to encourage participation of minority residents in public meetings.

Figures 6-4 through 6-6 illustrate the perception of minority population on communication platforms that disseminate information, facilitate two-way remote communication, and assist in active engagement during public meetings, respectively. Note that the results are based on the responses from 15 survey respondents who identified themselves as minority population. Please refer to Chapters 4 and 5 for more details about the surveys.

Minorities were found to be unfamiliar with the communication tools that help disseminate information, i.e., micro-blogs, blogs, Web-feeds, and broadcast forums on Government channels. They were found very rarely to use these tools, and also are unlikely to use them in the future. Minorities were found to be quite familiar with the following communication technologies that facilitate two-way communication between the agency and the public: emails, social media, video conferencing tools, and text messages. They were also found to quite frequently use emails, social media, and text messages, and are more likely to use these technologies to communicate with the agencies. Minorities were found to be familiar with and are more likely to use audio/video files and GIS mapping tools during public meetings. Table 6-2 provides specific recommendations to increase the involvement of minorities in public meetings. The recommended communication media are discussed below:

Communication Tools to Disseminate Information

- **Email-Blasts:** As mentioned earlier, emailing services allow agencies to disseminate information to large audience and provide continuous updates on projects and public involvement activities.

Communication Tools to Facilitate Two-way Communication

- **Social Media (e.g., Facebook):** Facebook could be used to facilitate the dissemination of information about public meetings, and to provide two-way communication to obtain feedback from the public. Facebook also allows to reach a wide cross-section of audience in a short time, and is another means of transmitting videos, photos, and audio files.

- **Video Conferencing Tools (e.g., GoToMeeting):** GoToMeeting could increase the two-way remote participation of minority population who are not tech savvy and are unfamiliar with advanced technology.

- **Audio & Video Files (e.g., YouTube):** Pre-recorded audios and videos provide information during meetings, and allow participants to watch/hear the recorded presentations or descriptive videos/audios in case they cannot attend the meetings.

Communication Tools to Assist in Engaging Attendees during Public Meetings

- **GIS/Mapping Services (e.g., Google Maps):** These types of tools provide ease of use and accessibility for people of all ages, regardless of whether or not they are tech savvy.

- **Podcasts:** These audio files are easy to access and download, and are available in multiple platforms. These are user-friendly, easy to use, and could be shared across social networks. However, these might be less effective compared to other communication media that use visual aids.

Table 6-2: Comparison of the Communication Media to Assist Minority Population

Communication Media		Perception of Minority Population				Recommendation for General Public
		Familiarity	Day-to-Day Use	Likeliness	Recommendation for Minority Population	
Disseminate Information	Twitter	Low	Low	Low	Low	High
	Feeder	Low	Low	Intermediate	Low	Low
	RapidFeeds	Low	Low	Intermediate	Low	Low
	Blogger	Low	Low	Intermediate	Low	Low
	Broadcast Forum	Intermediate	Low	Low	Low	Low
	Email-Blasts	High	High	High	High	High
	Textedly	Intermediate	Intermediate	Intermediate	Intermediate	High
Facilitate Two-way Communication	Skype	High	Intermediate	Intermediate	Intermediate	Intermediate
	GoToMeeting	High	Intermediate	Intermediate	High	High
	Adobe Connect Meetings	High	Intermediate	Intermediate	Intermediate	Intermediate
	Facebook	High	High	High	High	High
	YouTube	High	High	High	High	High
	SurveyMonkey	Intermediate	Low	Intermediate	Intermediate	Intermediate
	WhatsApp	High	High	High	High*	High*
Assist in Participation	Google Maps	High	High	High	High	High
	MetroQuest	Low	Low	Low	Low	Intermediate
	Podcasts	High	High	High	High	High

* Not recommended because of privacy issues.
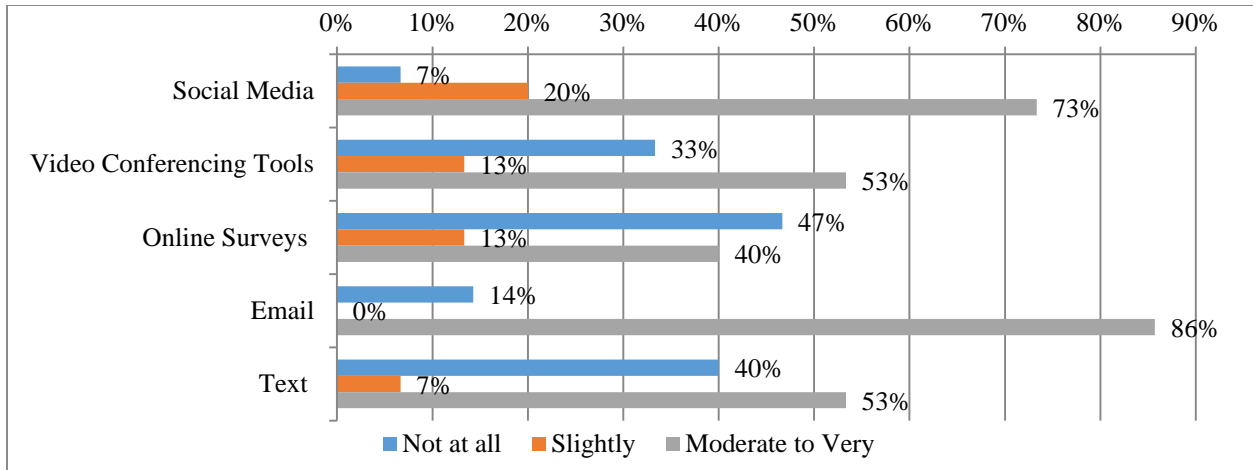
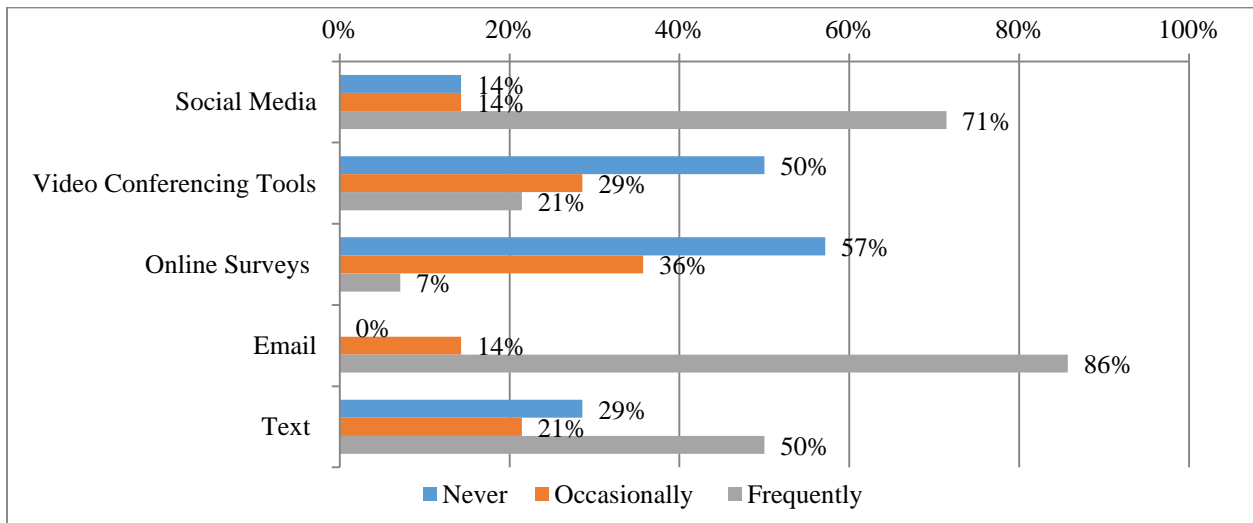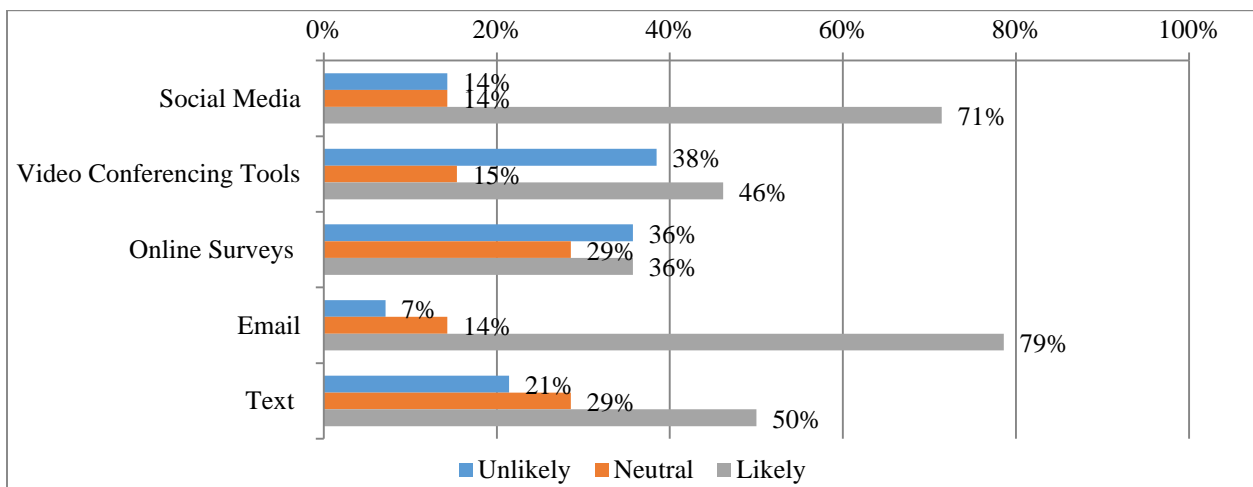**(a) Familiarity**

(b) Day-to-Day Use

(c) Likeliness
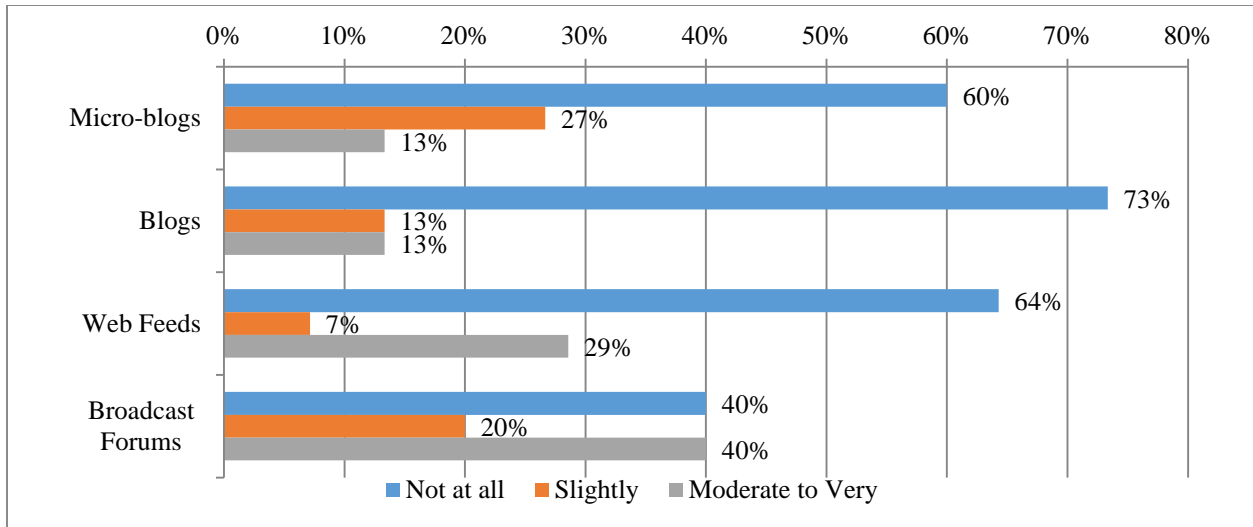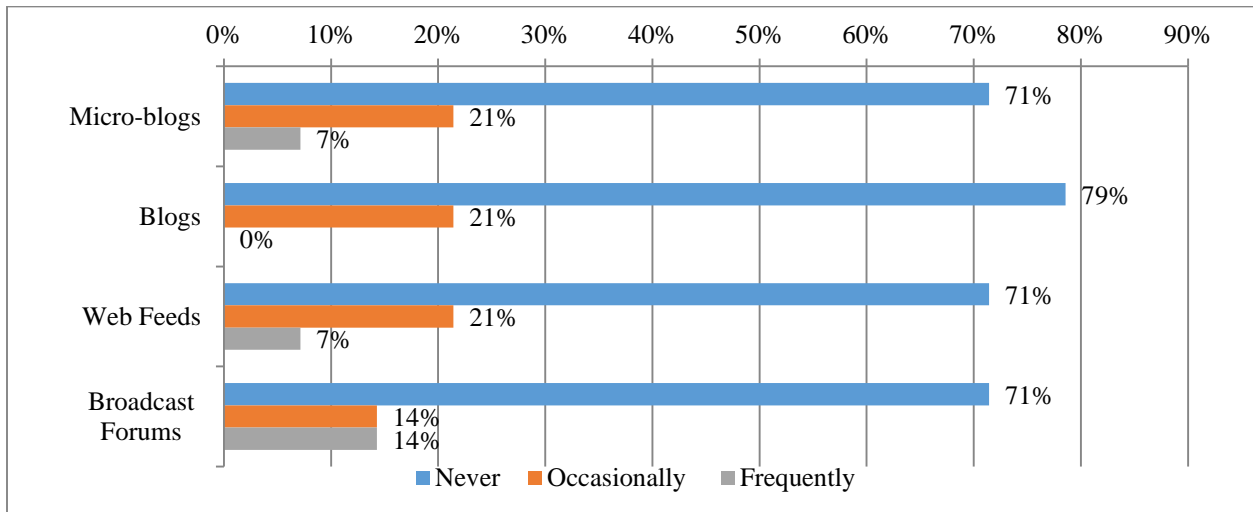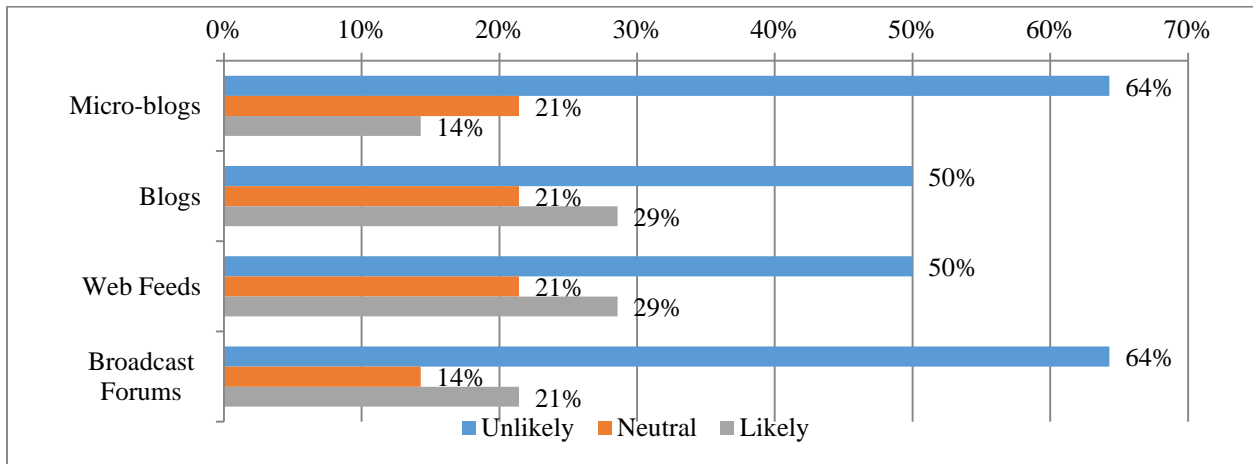
Figure 6-4: Perception of Minority Population on Tools to Disseminate Information
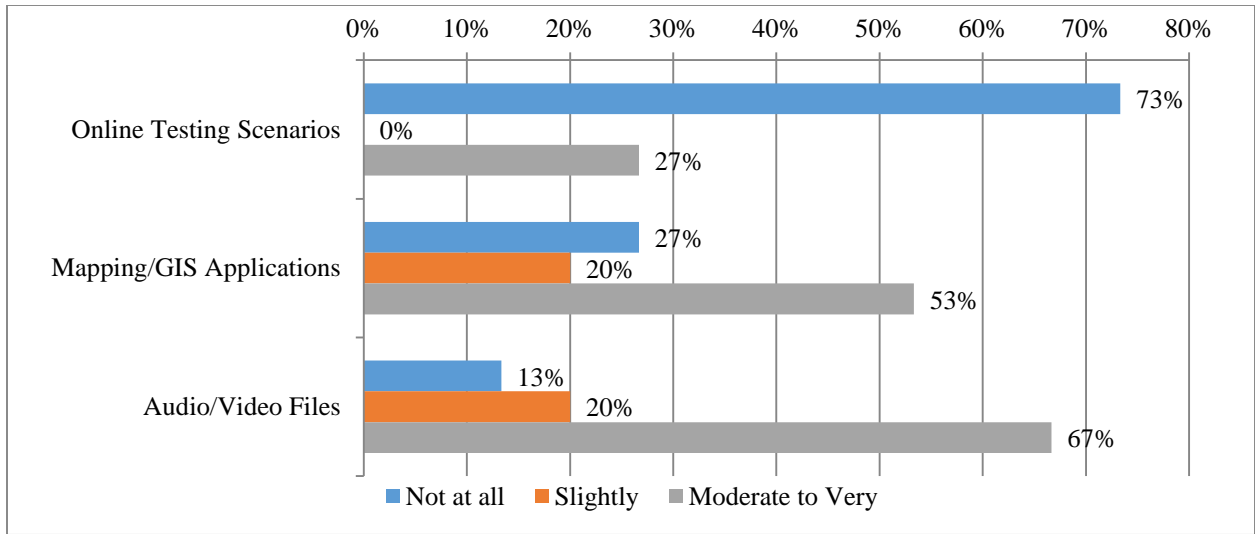
(a) Familiarity

(b) Day-to-Day Use

(c) Likeliness

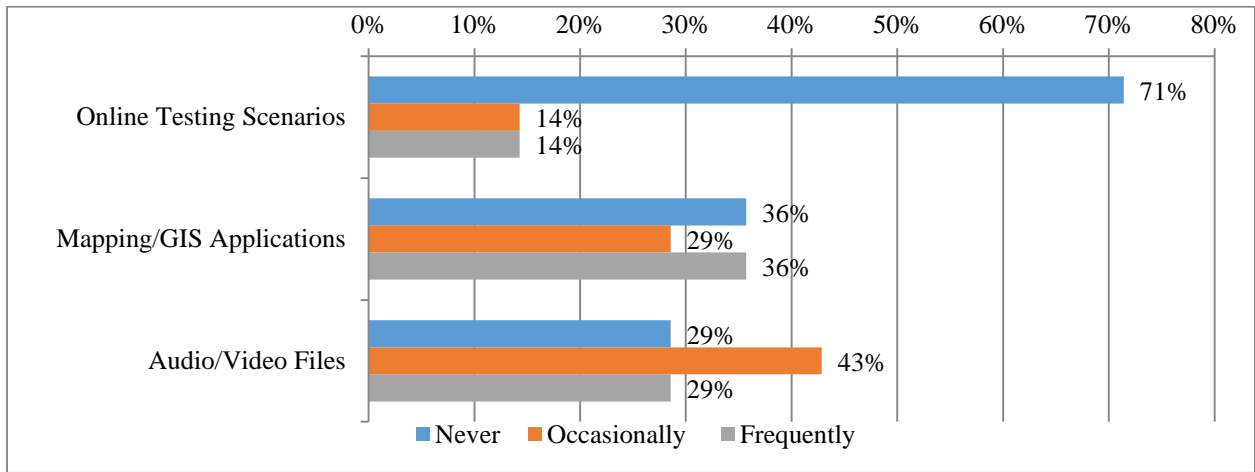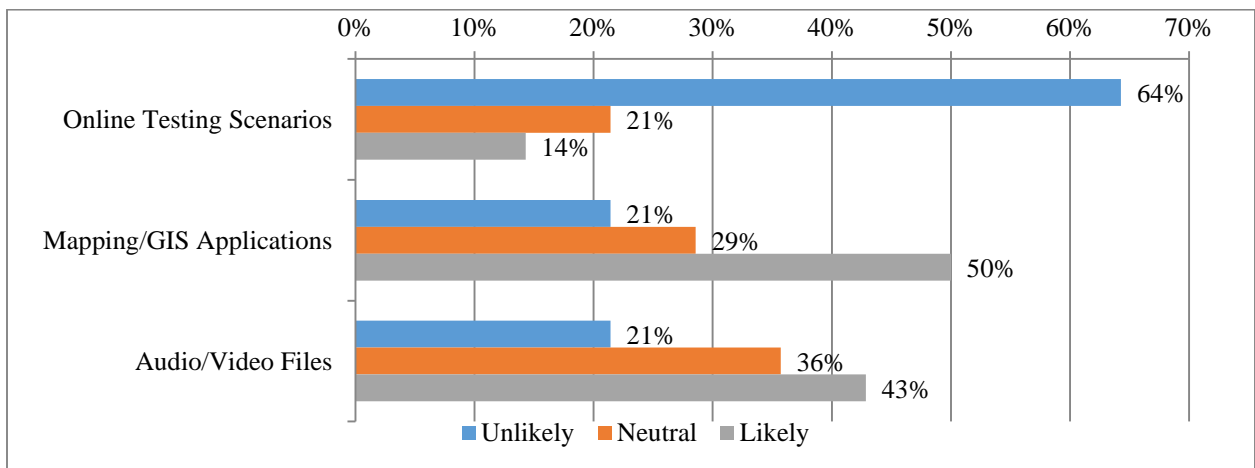**Figure 6-5: Perception of Minority Population on Tools Facilitating Two-way Remote Communication**

107

(a) Familiarity

(b) Day-to-Day Use
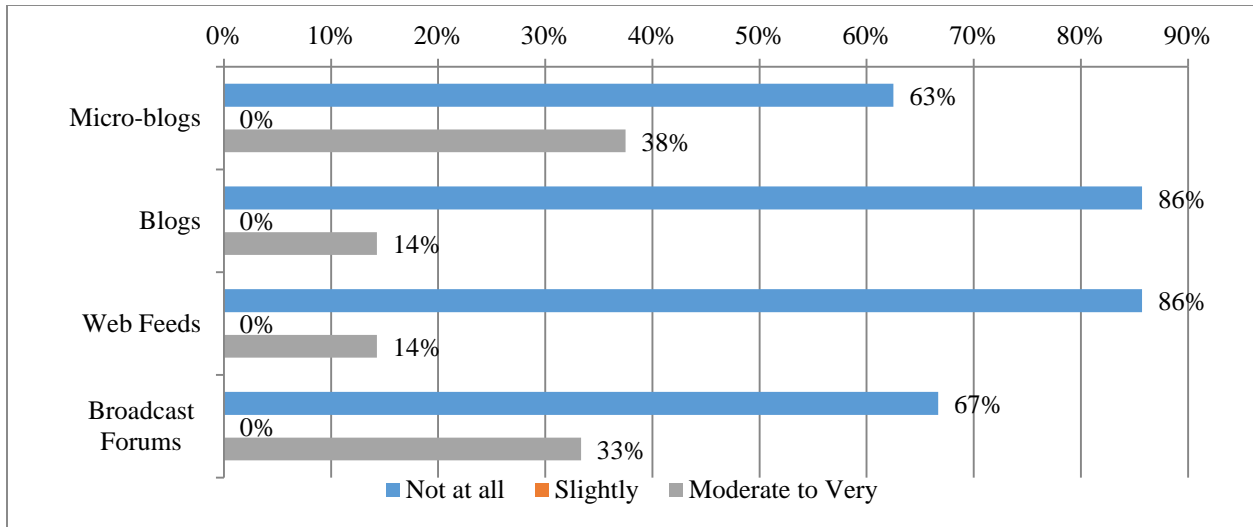

(c) Likeliness

Figure 6-6: Perception of Minority Population on Tools Assisting Participation in Public Meetings

6.3 Low-Income Households

Engaging the public from low-income households in transportation decision-making processes is crucial to the success of the transportation projects. People from low-income households may often do multiple jobs, and may not have the time and/or resources to attend public meetings. As such, special efforts need to be undertaken to facilitate their active participation in public involvement activities. A study conducted by the Pew Research Center (Anderson, 2017) showed that nearly half of low-income mobile users go online mostly on their cell phones. The study also identified that 20% of the adults living in households earning less than $30,000 a year were "smartphone-only" internet users, meaning they owned a smartphone but did not have broadband internet at home. It can be inferred from the study results that low-income households are more likely to use mobile applications, and may be more inclined to use free social networking (e.g., Facebook, Twitter), free email and text messaging applications (e.g., Gmail, WhatsApp), and free video streaming applications (e.g., YouTube).

Figures 6-7 through 6-9 illustrate the perception of low-income households on communication tools that disseminate information, facilitate two-way remote communication, and assist in active engagement during public meetings, respectively. Note that the results are based on the responses from only eight respondents who identified themselves as low-income households. Please refer to Chapters 4 and 5 for more details about the surveys.

Respondents from low-income households were found to be unfamiliar with the communication platforms that help disseminate information, i.e., micro-blogs, blogs, Web-feeds, and broadcast forums on Government channels. The respondents were found very rarely to use these tools, and also are unlikely to use them in the future. Regarding the communication technologies that facilitate two-way communication between the agency and the public, only social media and emails were found to be used frequently by the people from low-income households. Facebook and emails could be used to facilitate two-way communication between the agency and the low-income households. People from low-income households were found to be familiar with and are more likely to use audio/video files and GIS mapping tools during public meetings.
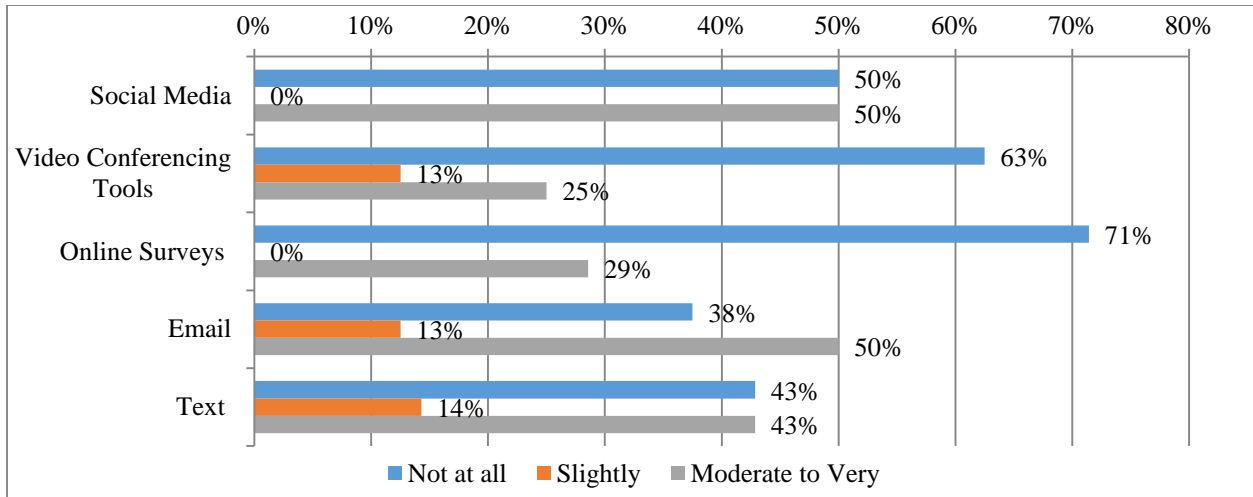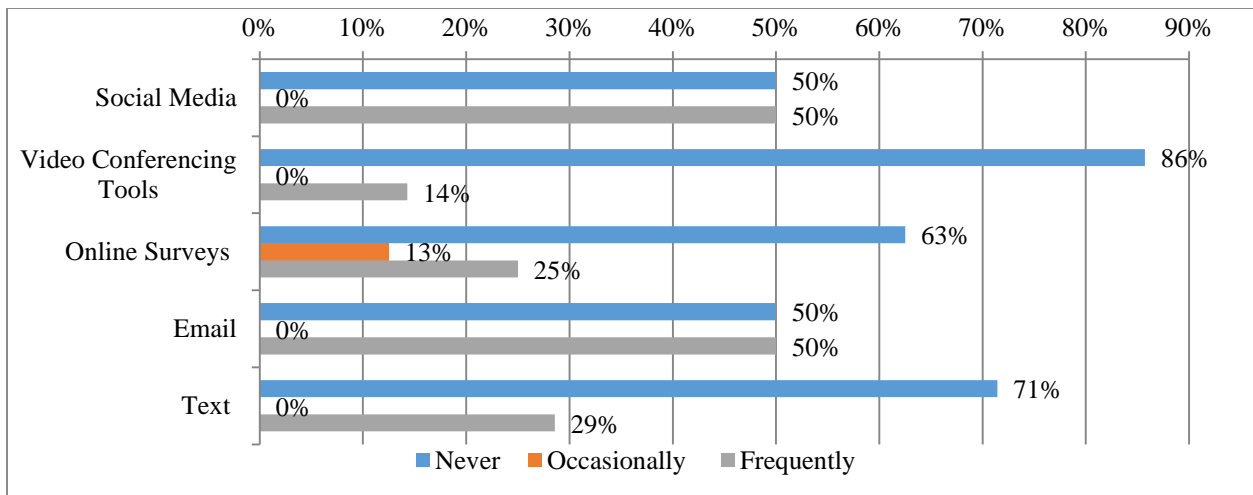
(a) Familiarity
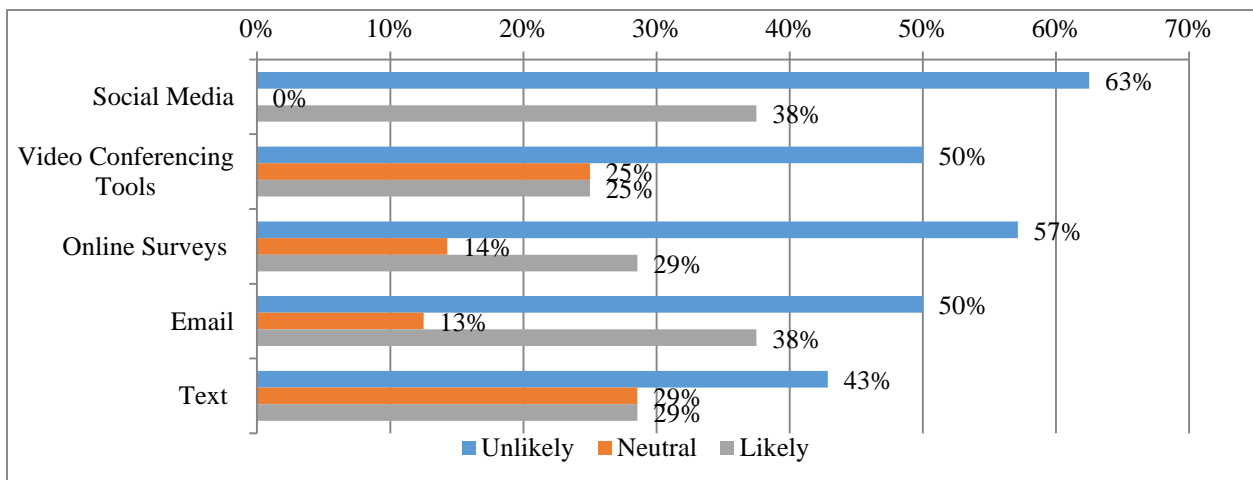

(b) Day-to-Day Use

(c) Likeliness
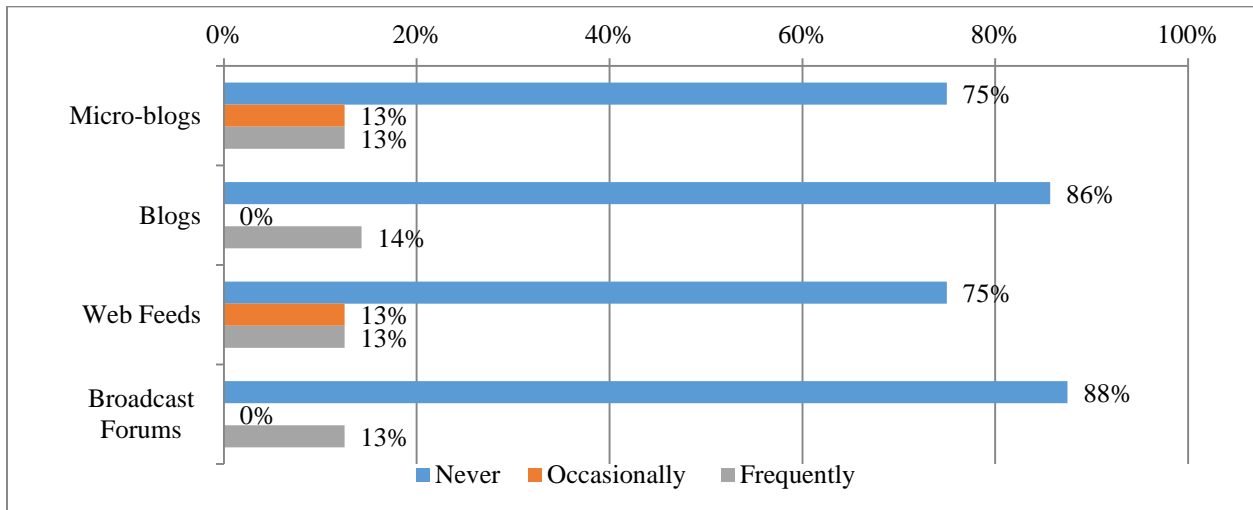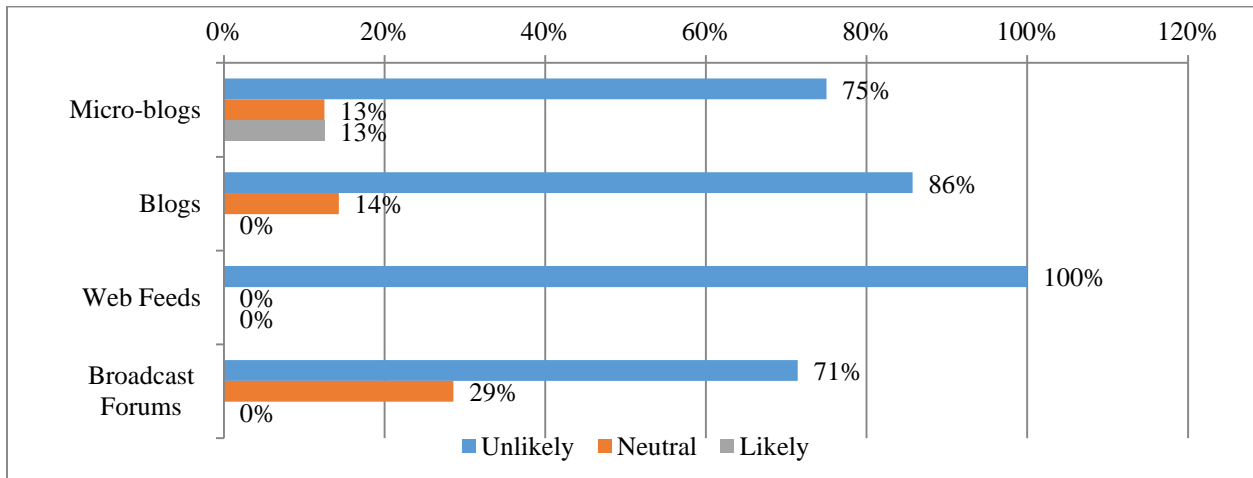
Figure 6-7: Perception of Low-income Population on Tools to Disseminate Information
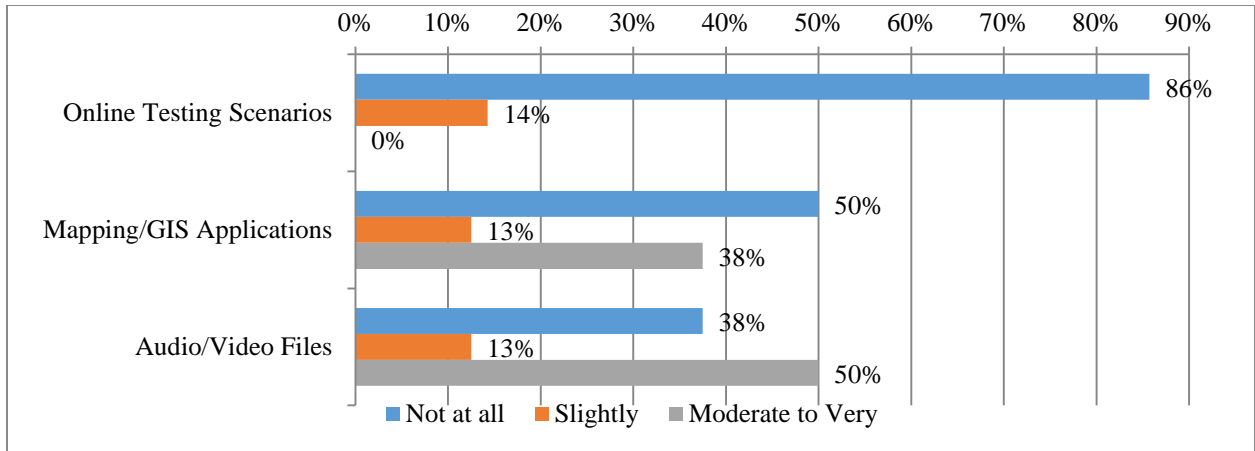
(a) Familiarity
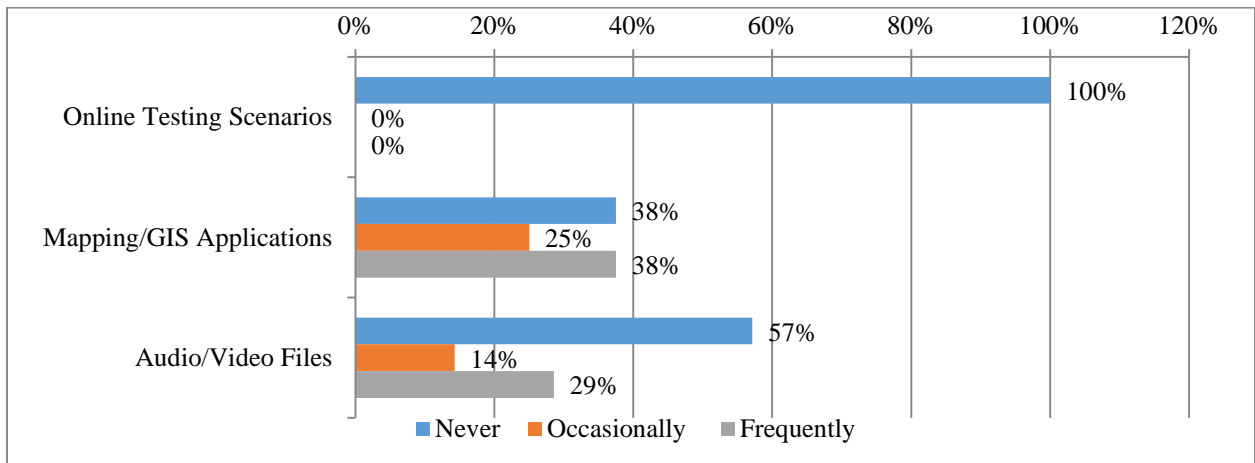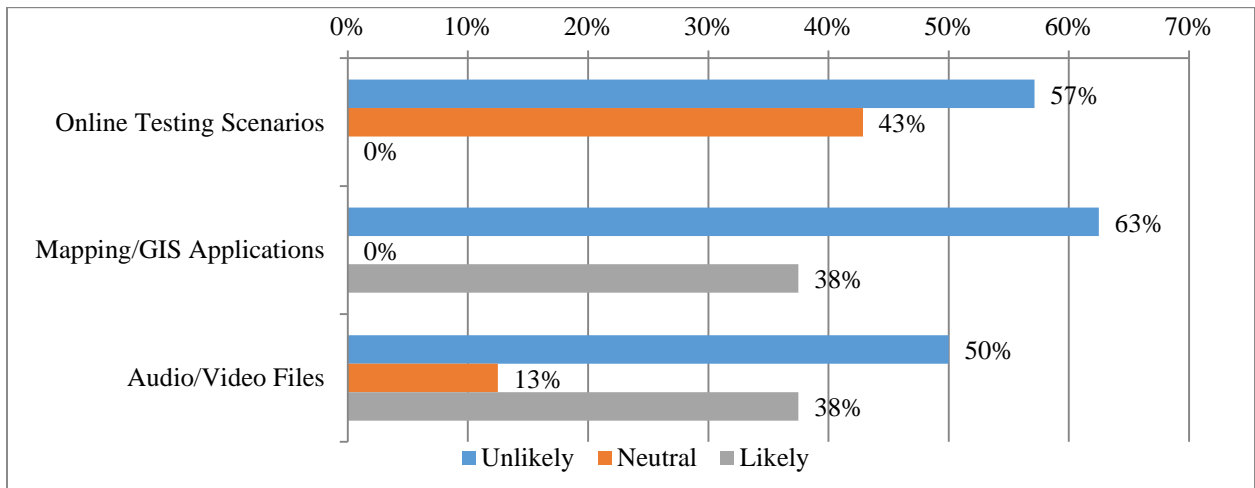

(b) Day-to-Day Use

(c) Likeliness

Figure 6-8: Perception of Low-income Population on Tools Facilitating Two-way Remote Communication

111

(a) Familiarity

(b) Day-to-Day Use

(c) Likeliness

Figure 6-9: Perception of Low-income Population on Tools Assisting Participation in Public Meetings

Table 6-3 provides specific recommendations to increase the involvement of low-income households in public meetings. The recommended communication media are discussed below:

Communication Tools to Disseminate Information

- **Email-Blasts:** As mentioned earlier, emailing services allow agencies to disseminate information to large audience and provide continuous updates on projects and public involvement activities.

Communication Tools to Facilitate Two-way Communication

- **Social Media (e.g., Facebook):** Facebook could be used to facilitate the dissemination of information about public meetings, and to provide two-way communication to obtain feedback from the public. Facebook also allows to reach a huge audience in a short amount of time, and is another means of transmitting videos, photos, and audio files.

- **Audio & Video Files (e.g., YouTube):** Pre-recorded audios and videos provide information during meetings, and allow participants to watch/hear the recorded presentations or descriptive videos/audios in case they cannot attend the meetings. However, audio files may not be as effective as other communication media that use visual aids.

Communication Tools to Assist in Engaging Attendees during Public Meetings

- **Podcasts:** These audio files are easy to access and download, and are available in multiple platforms. These are user-friendly, easy to use, and could be shared across social networks. However, since these are just audio files, agencies might find it difficult to convey the message to the public.

Table 6-3: Comparison of the Communication Media to Assist Low-income Households

Communication Media		Perception of Low-income Population				Recommendation for General Public
		Familiarity	Day-to-Day Use	Likeliness	Recommendation for Low-income Population	
Disseminate Information	Twitter	Intermediate	Low	Low	Low	High
	Feeder	Low	Low	Low	Low	Low
	RapidFeeds	Low	Low	Low	Low	Low
	Blogger	Low	Low	Low	Low	Low
	Broadcast Forums	Intermediate	Low	Low	Low	Low
	Email-Blasts	High	Intermediate	Intermediate	High	High
	Textedly	Intermediate	Low	Intermediate	Intermediate	High
Facilitate Two-way Communication	Skype	Low	Low	Intermediate	Intermediate	Intermediate
	GoToMeeting	Low	Low	Intermediate	Intermediate	High
	Adobe Connect Meetings	Low	Low	Intermediate	Intermediate	Intermediate
	Facebook	Intermediate	Intermediate	Low	High	High
	YouTube	High	Intermediate	Intermediate	High	High
	SurveyMonkey	Low	Low	Intermediate	Low	Intermediate
	WhatsApp	Intermediate	Low	Intermediate	High*	High*
Assist in Participation	Google Maps	Intermediate	Intermediate	Intermediate	Intermediate	High
	MetroQuest	Low	Low	Low	Low	Intermediate
	Podcasts	High	Intermediate	Intermediate	High	High

* Not recommended because of privacy issues.

6.4 People with Limited English Proficiency (LEP)

Agencies often find it difficult to engage people with limited English proficiency (LEP) in public involvement activities. In addition to providing translators at the public meetings, agencies need to explore other avenues to encourage low literacy people and people with LEP to actively participate in public meetings. Technologies that can provide real-time translation are considered to help increase the participation of people with LEP. The recommended communication media to increase the involvement of people with LEP in public meetings are discussed below.

Communication Tools to Disseminate Information

- **Email-Blasts:** As mentioned earlier, emailing services allow agencies to disseminate information to large audience and provide continuous updates on projects and public involvement activities.

- **Micro-Blogs (e.g., Twitter):** Even though Twitter is not the most popular communication media among state DOTs, it is one of the fastest ways to disseminate information for free. Also, Twitter information can be shared and linked to other networking sites, emails, and text messaging apps. Since this communication media is free and the content is easy to

create and publish, it can be used to disseminate information in multiple languages, and can reach people with LEP. Note that Twitter can be used to disseminate information to target audience in specific geographic area using Twitter advertisements and campaigns.

- **Mass Text Messaging Services**: Mass text messages can be sent in multiple languages, giving people with LEP the opportunity to participate in public involvement activities. However, as mentioned earlier, the difficulty in obtaining phone numbers of the affected and interested population could limit the use of mass text messaging tools to disseminate information.

Communication Tools to Facilitate Two-way Communication

- **Text Messaging Apps (e.g., WhatsApp):** WhatsApp is also a text messaging application that can send messages in different languages with no additional costs, allowing to reach people with LEP. However, WhatsApp is not recommended as the profile pictures and phone numbers of the public who subscribe to the WhatsApp group are visible to everyone in the group, causing privacy issues.

- **Audio & Video Files (e.g., YouTube):** This platform can be used to create educational audios and videos in different languages to help people with LEP to understand and learn quickly about specific topics. The literature review found out that educational videos made by Sound Transit in Seattle, Washington resulted in successful implementation, and provided a way for people with LEP to access the meeting information. These videos can be easily hosted on an FDOT website or a YouTube Channel.

- **SurveyMonkey:** SurveyMonkey facilitates sharing surveys with large numbers of people quickly and easily, and also provides ready-made tools to help design surveys and translate them to multiple languages, potentially reaching out to people with LEP. A major limitation of using SurveyMonkey is with the difficulty in reaching target audience and encouraging them to visit the survey URL to complete the survey. As such, the difficulty in obtaining email addresses of the target population could limit the reach of this tool.

Communication Tools to Assist in Engaging Attendees during Public Meetings

- **GIS/Mapping Services (e.g., Google Maps):** These types of tools provide ease of use and accessibility for people of all ages, regardless of whether or not they are tech savvy. These tools are particularly helpful for the people with LEP since they are visually intuitive.

6.5 People with Disabilities

People with disabilities (i.e., physically challenged, hearing- and vision- impaired people, etc.) need special technology-based communication platforms to be able to actively participate in public involvement activities.

There are many barriers that prevent visually impaired users from fully engaging with online social networks. Smartphone developers and social networking sites have been developing accessibility features that allow visually challenged people to navigate their phones and interact with the website and other people. Some of the technology-based tools that could assist visually impaired public in actively participating in public involvement activities are discussed below.

Communication Tools to Disseminate Information

- **Micro-Blogs (e.g., Twitter):** This platform offers same accessibility features as Facebook. The Alternative Automatic Text feature describes photos and reads tweets aloud for visually impaired people.

- **Email-Blasts**: Some of the Web browsers offer screen readers which read aloud the text in the emails. Computers and smartphones also offer similar features that allow visually impaired people to write and send emails.

Communication Tools to Facilitate Two-way Communication

- **Social Media (e.g., Facebook):** Facebook provides advanced features such as Automatic Alternative Text, a face and object recognition feature that allows to describe photos for visually impaired people. Facebook also offers Voiceover, which reads aloud the text on Facebook website; this feature allows visually impaired people to create posts themselves.

- **YouTube:** YouTube also offers a screen reader which is already integrated with the website and can be activated using the keyboard shortcuts.

- **Skype:** Skype provides assistive features that help people with disabilities navigate and control their device as well as get better access to online content. Skype offers features such as:

  o Narrator screen reader that reads text on the screen aloud.
  o High-contrast settings that benefit low vision users and users with little or no color perception.
  o Magnifier that helps low vision users by enlarging the screen and making text easier to read and images easier.

- **SurveyMonkey:** SurveyMonkey can be used to create accessible surveys that are designed to be completed by people of varying abilities. Some of its features that help visually impaired people include:

  o Screen magnifier that helps low vision users.
  o Screen reader with a text-to-speech (TTS) system that helps blind users.
  o Surveys that could be completed using voice command and control software.

- **GIS/Mapping Services (e.g., Google Maps):** These applications provide ease of use and accessibility features that could help both visually impaired people to have better experience with geographical information provided during and after meetings. Google Maps offers additional features such as screen readers and keyboard shortcuts.

- **Podcasts:** Podcast can be used to allow visually impaired people to listen to information provided during meetings or listen to educational pre-recorded audios related to transportation projects.

6.5.2 People with Hearing Impairment

There are many barriers that prevent deaf and hard-of-hearing people from fully engaging with online social networks. Smartphone developers and social networking sites have been developing accessibility features that allow people with hearing loss to navigate their phones and interact with the website and other people. Some of the technology-based tools that could assist people with hearing loss in actively participating in public involvement activities are discussed below.

Communication Tools to Disseminate Information

- **Email-Blasts:** Emailing services could potentially increase participation in public involvement activities. People with hearing impairment will not face any issues with receiving information via emails.

- **Mass Text Messaging Services**: Mass text messaging services have the potential to reach out to target audience, including deaf and hard-of-hearing people.

Communication Tools to Facilitate Two-way Communication

- **Social Media (e.g., Facebook):** Facebook provides advanced features such as closed captioning to videos including Facebook Live sessions to accommodate deaf and hard-of-hearing users.

- **YouTube:** YouTube is convenient for hearing-impaired people since people with hearing difficulties could activate the video transcription and read what is being told in the videos.

- **Skype:** Skype provides assistive features that help people with disabilities navigate and control their device as well as get better access to online content. Skype has an application that allows deaf people to converse with a hearing person who does not know the sign language. The Skype Translator can convert the speech into instant text.

- **GIS/Mapping Services (e.g., Google Maps):** These applications provide ease of use and accessibility features that could help hearing-impaired people to have better experience with geographical information provided during and after meetings.

6.5.3 People with Physical Impairment

People with physical disabilities usually do not have the same opportunities as the general public to attend regular meetings because of logistic challenges and constraints with transportation access. It is therefore important to use communication media that are proved to be effective to encourage them to actively participate in public involvement activities.

6.6 Recommendations

Public involvement process requires active participation from a wide cross-section of people to ensure that all points of view are taken into consideration. As such, agencies often make special efforts to make sure that the following underrepresented residents actively participate in public meetings:

- Older population
- Minority population
- Low-income households
- People with limited English proficiency (LEP)
- People with disabilities
  - People with vision impairment
  - People with hearing impairment
  - People with physical impairment

Table 6-4 summarizes the recommended types of communication media for the aforementioned population groups. As can be inferred from the table, there is not a single communication medium, or set of media, that caters to all the underrepresented population groups. The strengths and limitations of each type of communication media need to be taken into consideration prior to their adoption. As such, different types of communication technologies were found to be suitable to assist different underrepresented population groups. However, in general, there are a few communication media that could potentially assist all population groups. Email and texting applications were found to be the most suitable types of communication media to disseminate information about public meetings and transportation projects.

Among the available communication technologies that can facilitate two-way remote communication between the agency and the public, YouTube is the most suitable media. Social media including Facebook is recommended for all except for visually challenged people. Video conferencing tools are also recommended; however, Skype is considered to be more suitable for hearing- and vision- impaired people, while GoToMeeting is recommended for the other underrepresented population groups. WhatsApp, although the most popular texting application, is

not recommended because of privacy concerns; the profile pictures and phone numbers of the public who subscribe to the WhatsApp group are visible to everyone in the group.

Among the communication technologies that can assist public participation during public meetings, GIS applications (i.e., Google Maps and Google Earth) are highly recommended. Podcasts are also recommended; however, since podcasts are only audio files, they may not be as effective as other communication media that use visual aids.

Table 6-4: Summary of Recommended Communication Media

Communication Media		General Public & People with Physical Impairment	Older Population	Minority Population	Low-income Population	People with LEP	Hearing-Impaired People	Vision-Impaired People
Disseminate Information	Twitter	Yes	No	No	No	Yes	Yes	Yes
	Feeder	No	No	No	No	No	No	No
	RapidFeeds	No	No	No	No	No	No	No
	Blogger	No	No	No	No	No	No	No
	Broadcast Forums	No	No	No	No	No	No	No
	Email-Blasts	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Textedly	Yes	Yes	May be	May be	Yes	Yes	No
Facilitate Two-way Communication	Skype	May be	May be	May be	May be	No	Yes	Yes
	GoToMeeting	Yes	Yes	Yes	May be	No	No	No
	Adobe Connect Meetings	May be	May be	May be	May be	No	No	No
	Facebook	Yes	Yes	Yes	Yes	May be	Yes	Yes
	YouTube	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	SurveyMonkey	May be	May be	May be	No	Yes	Yes	Yes
	WhatsApp	No[1]	No[1]	No[1]	No[1]	No[1]	No[1]	No[1]
Assist in Participation	Google Maps	Yes	Yes	Yes	May be	Yes	Yes	Yes
	MetroQuest	Yes	No	No	No	No	No	No
	Podcasts	Yes	May be	Yes	Yes	No	May be[2]	Yes

[1] Not recommended because of privacy issues; [2] Only if podcast transcripts are available.

CHAPTER 7
POLICIES AND GUIDELINES FOR DEPLOYING COMMUNICATION MEDIA

This chapter briefly discusses the existing FDOT policies on using technology and data confidentiality. It then provides specific guidelines for deploying the communication media recommended in Chapter 6.

7.1 FDOT Policies in Using Communication Media

FDOT's existing policy is "*to treat information and information technology resources as strategic assets and to protect those assets from misuse, abuse, and loss through the management of a comprehensive information technology resources security program*" (FDOT, 2015). The Department has strict policy with respect to using emails, social media, and maintaining data and information confidentiality, and the specific policies relevant to this project are briefly discussed in the following sections. The general requirements pertaining to the security and use of information technology resources are presented below:

> ### 1. GENERAL REQUIREMENTS
>
> **1.4** Each individual accessing Department information technology resources is expected to use good judgment and common sense to avoid abuse and inappropriate use of resources. For example, it is inappropriate to use any resource in a manner which will interfere with the timely performance of an individual's normal work duties, adversely impact the performance of the resource or unnecessarily increases the cost of the resource, cast disrespect or adverse reflection upon the Department, reduce public confidence, support a personal business, support political or religious activities, or detract from the Department's routine functions.
>
> Furthermore, employees shall not access, send, store, create, or display inappropriate materials including, but not limited to, gambling; illegal activity; sexually oriented materials; nudity; or materials that include profane, obscene, inappropriate, or discriminatory language.

7.1.1 E-mail

The Department restricts the use of non-departmental email system. However, exceptions could be provided. Section 3.1.3 of the FDOT Policy # 001-325-060-g outlines this policy, and is presented below:

> ### 3.1 ELECTRONIC MAIL (E-MAIL)
>
> **3.1.3** Use of a non-departmental e-mail system (i.e., Gmail, AOL, MSN, Yahoo-mail) through the Department's network is prohibited unless it is specifically approved with an Information Resource Request in accordance with Chapter 7 of the Information Technology Resource User's Manual, Topic No.: 325-000-002.

7.1.2 Social Media

The policy, usage, and restrictions in using social media by the Department personnel is outlined in Section 3.3 of the FDOT Policy # 001-325-060-g. The relevant policies are presented below:

> **3.3 SOCIAL MEDIA SITES**
>
> **3.3.1** The Department's Public Information Office is responsible for administering the Department's social media outreach program and establishing the Department's social media accounts.
>
> **3.3.2** Access to social media sites such as YouTube, Facebook, and Twitter is provided for business purposes. Members of the Department's workforce shall not post content related to Department business, except through Department approved accounts and subscription logon credentials.

7.1.3 Data Confidentiality

The Department's policy in handling confidential information and confidential data is outlined in Section 2 of the FDOT Policy # 001-325-060-g. The relevant policies are presented below:

> **2. CONFIDENTIALITY OF INFORMATION AND DATA**
>
> **2.2** Data marked confidential should not be publicly released prior to consultation with the Office of the General Counsel.
>
> **2.4** Confidential data or confidential information must be encrypted before being transmitted over a network. Currently, the Department's internal e-mail communication is encrypted.
>
> Communication via e-mail to recipients outside the Department is not encrypted. Users handling confidential data and information shall not transmit confidential data or information to external recipients through the e-mail system. Users transmitting confidential data or information to external recipients shall use an appropriate and approved encrypted technology. Additionally, strong encryption, as defined in Chapter 71A-1, F.A.C, must be enabled on information technology resources that store or transport confidential data, or confidential information, or both.

7.1.4 Summary

The existing FDOT policies on using emails and social media and the current protocols for handling confidential information are considered to be adequate for the initial deployment of communication platforms to facilitate remote participation in public meetings and hearings. As the next steps, FDOT could consider adopting the communication platforms recommended in this report to reach out to diverse population, especially underrepresented population groups including older residents, minorities, and people with limited English-speaking skills. The following sections provide general and project-specific guidelines for adopting communication media.

7.2 General Guidelines at the Department Level

A *Communication Policy* with the primary goal of citizen engagement and a cohesive vision for the larger organization is required at the Department level. The *Policy* ensures that the approach is strategic, efficient, and coordinated. The *Policy* must include a policy statement; specific objectives of public involvement; strategies and guidelines for both internal and external communication; roles and responsibilities of the agency staff; relevant policies, procedures, and guidelines; and equality and human rights considerations, among other aspects.

The *Communication Policy* should also focus on the following (EPA, 2003):

- *Training:* disseminating information about available training and support materials across the agency, developing necessary new training materials, providing train-the-trainers courses, and continuing to support trainers and trainees with necessary materials.

- *Information sharing:* creating and managing both internal and external communication network; and developing an electronic database and toolkit to improve dissemination of helpful resource materials and manuals.

- *Evaluation:* developing measures and survey tools to evaluate the agencies' public involvement activities.

At the Department level, the *Communications Team* will provide support and advice to the Department staff across Florida. The team will assist with the following:

- Prepare a Communications Strategy for the Department.
- Assist the specific project's Communications Team with information dissemination and public involvement strategies.
- Develop procedures and protocols to:
  - create and maintain the project website;
  - create and maintain the listserv of the public interested in the project;
  - develop the content and materials, including but not limited to text, photos and maps, to be posted on the project website, Facebook, Twitter, YouTube, and other social media accounts; and
  - respond to comments in general, and to negative comments in particular.

7.3 Project-specific Guidelines

The following are specific procedures that FDOT could take to ensure increased public participation in public meetings and hearings. Note that these procedures are general, and they may have to be tweaked to accommodate the unique nature of each project.

Step 1: Set up Project Website

A project website is the most important avenue to disseminate information, to garner public interest about the project, to keep the stakeholders informed, to engage the public, and to collect the interested public's personal contact information. The website serves the following main purposes:

- Provide regular updates, relevant historical documents, task deliverables (including fact sheet), meeting announcements and materials, and graphics. It is the FDOT's responsibility to ensure that all materials posted to the website are Section 508 compliant.
- Include online comment form and email and text distribution list sign-up forms.
- Include information about all the public involvement activities pertaining to the project, including meeting announcements and meeting minutes, links to virtual meetings and the recordings of the virtual meetings, etc.
- Provide translation tool to allow users to translate the content into Spanish and other languages.

Step 2: Identify the Project Scope

A clear project description and the geographic scope of the project is required to lay the foundation for a successful and achievable public participation process within the constraints of the available resources (i.e., timeline, geographic area, staff and budget limitations).

Step 3: Identify Stakeholders

Identifying and engaging relevant stakeholders is the most critical step in developing a successful public involvement strategy. Some of the stakeholders include:

- property owners within the primary study area,
- business community within the primary study area,
- elected and local officials,
- community groups,
- media,
- planning commissions,
- industry organizations,
- agency departments,
- community organizations, and
- any other key stakeholders including newspapers and online forums.

Step 4: Identify Target Underrepresented Population Groups

Agencies often make special efforts to make sure that the following underrepresented population groups are actively engaged in the public involvement process:

- Older population
- Minority population
- Low-income households
- People with limited English proficiency (LEP)
- People with disabilities

GIS spatial analysis tools and the latest census data from the Florida Geographic Data Library (FGDL) could be used to identify the underrepresented population within the geographic limits of

the project who could potentially be impacted by the project. This information is crucial in developing an effective *Public Involvement Strategy* that is geared toward engaging these underrepresented population groups. Table 7-1 lists the potential variables that could be used to identify underrepresented population groups from the census data. This information on the target underrepresented groups affected by the project could be used to identify the appropriate communication tools to disseminate information, to facilitate two-way communication, and to assist in engaging attendees during public meetings. More discussion on the specific guidelines for adopting communication tools is provided in Section 7.4.

Table 7-1: Relevant Demographic Variables in Florida Geographic Data Library

GROUP	POTENTIAL VARIABLE	VARIABLE DESCRIPTION
Older Population	AGE_65_UP	Population 65+ Yrs of age
	AGE_85_UP	Population 85+ Yrs of age
	MED_AGE	Median age for population
Minority Population	MINORITY	Population that lists their racial status as a race other than white alone and-or lists their ethnicity as Hispanic or Latino
Low-income Households	HBELOW_POV	Households with income in the past 12 months below poverty level
	BELOW_POV	Population with income in the past 12 months below poverty level
People with Limited English Proficiency (LEP)	S_NOTWELL	Ability to Speak English for the Population 5+ Yrs Speak English 'not well'
	S_NOTATALL	Ability to Speak English for the Population 5+ Yrs Speak English 'not at all'
	S_SPANISH	Ability to Speak English for the Population 5+ Yrs Speak Spanish
	S_EUROPE	Ability to Speak English for the Population 5+ Yrs Speak other Indo-European languages
	S_ASIAN	Ability to Speak English for the Population 5+ Yrs Speak Asian and Pacific Island languages
	S_OTHER	Ability to Speak English for the Population 5+ Yrs Speak other languages
	PCT_NOTWEL	Percent Ability to Speak English for the Population 5+ Yrs Speak English 'not well'
	PCT_NOTATA	Percent Ability to Speak English for the Population 5+ Yrs Speak English 'not at all'
People with Disabilities	DIS_TOTAL	Population by Poverty Status in the Past 12 Months by Disability Status by Employment Status for the Population 20 to 64 Years Total
	DIS_2064	Population 20 to 64 Years with Income in the past 12 months below and above poverty level with a disability
	PCT_DIS20	Percent Population 20 To 64 Years With a disability

Source: FGDL, 2018.

Step 5: Have a Communications Team

The project's *Communications Team*, in collaboration with the Department's *Communications Team*, will work on the following tasks:

- Prepare a project-specific *Communications Strategy*.
- Assist in developing and maintaining the project website.
- Develop Email-blast content as needed, including meeting announcements.
- Maintain the listserv of the public interested in the project.

- Provide the content and materials, including but not limited to text, photos and maps, to be posted on the project website, Facebook, Twitter, YouTube, and other social media accounts.
- Devise a plan to respond to comments in general and negative comments in particular.
- Establish evaluation criteria.

7.4 Specific Guidelines for Adopting Communication Media

All the communication technologies that could potentially be adopted to enhance public involvement could be divided into the following broad categories:

- Social Media
- Virtual Meetings
- Email-blasts and Mass Text Messaging Services
- Pre-recorded Audio/Video Files

7.4.1 Social Media

Social media (e.g., Facebook, Twitter, etc.) is one of the most effective and efficient communication media that has a potential to reach broader audience, especially underrepresented groups including older population, minority population, etc. However, agencies need to be cautious while adopting social media. Some of the aspects to be taken into consideration while adopting social media include:

- Maintain standards of ethical conduct while participating online.
- Ensure the content in social media is compliant with accessibility standards based on Section 508 of the Rehabilitation Act of 1973.
- Protect privacy of the public. Note that the statutes, regulations and policies that govern privacy, the collection of personal information and the protection of a user's personally identifiable information still apply when using social media.
- Consider security, IT infrastructure, and architecture requirements.
- Follow established procedures, standards, and guidance for specific tools or processes.
- Maintain records. Note that the laws, regulations, and policies that govern proper records management (i.e., creation, maintenance/use and disposition) still apply when using social media.

The specific procedures to be followed while adopting social media include the following steps:

- Create and maintain the project website.
- Identify project scope, stakeholders, and target underrepresented population groups.
- Devise the communication strategy, and finalize the content to be disseminated.
- Identify a designated personnel within the agency to set up and maintain all the social media platforms. The roles of the designated personnel will be to:

  o Monitor all the social media accounts for the project.

- Devise a strategy to address negative comments on social media.
- Have access to all the information and to the responsible authorities to be able to respond to the comments factually and in a realistic timeframe (i.e., within 1-2 business days).
- Maintain records of all the online communications and meetings.

If social media is to be used to host social/virtual town halls, an effective strategy would be to have tailored live sessions where the department staff can interact directly with the public. The sessions could start with a series of 5-7 questions posted ahead on the social media to allow the public and the FDOT staff start the conversation and to address the comments they receive online in real-time. Some of the specific tips for hosting social town halls are (Eidam, 2016):

- Build a social media following in advance.
- Leverage leadership, various departments and the media to promote community engagement.
- Carefully develop topic questions and provide meaningful replies to participants.
- Be prepared for controversy and handle it appropriately.

7.4.2 Virtual Meetings

Conducting virtual meetings using video conferencing tools provides opportunity for the public to participate in the meetings without having the need to travel to a specific location. As such, virtual meetings increase public participation. Since the strategies for conducting effective face-to-face and virtual meetings are different, it is recommended to not have in-person public meetings and the virtual meetings at the same time.

A successful adoption of video conferencing tools requires overcoming two major hurdles: (1) disseminating the information about the virtual meetings to the public; and (2) making sure that the public attend the virtual meetings.

To inform the target population about the virtual public meetings, FDOT needs to have the contact information (i.e., physical addresses, email addresses, and mobile phone numbers) of the target public. While the physical addresses are easier to obtain, the main challenge is with obtaining the email addresses and phone numbers of the public. This information could be requested on the project website and the social media pages by asking the public to sign-up for email and text alerts. When the information about virtual meetings and video conferencing applications is provided in postal mail, it is difficult for the public to access long URLs. Hence, an efficient approach would be to have a short link to the virtual meetings so that public can easily type the URL and attend the meeting. Once the email addresses and the phone numbers of the public are collected, the project *Communications Team* could send Email-blasts and mass text messages to the public informing about the virtual meetings. When Twitter, Email-blasts, and mass texting applications are used, care needs to be taken about the frequency at which the information is being disseminated to the public. It may be ideal to communicate the information four times; a couple of weeks before the meeting, a week before the meeting, a day before the meeting, and finally, an hour before the start of the virtual meeting.

FDOT is recommended to take the following steps while conducting virtual public meetings using video conferencing applications:

- Create and maintain the project website.
- Finalize the date, time, and agenda for the public meetings.
- Create the link in the video conferencing application.
- Identify all the stakeholders.
- Work with the *Communications Team* to develop the content of the information to be disseminated.
- Disseminate the information through the following avenues:
  - Project website
  - FDOT public involvement website
  - Social media (Facebook, Twitter, etc.)
  - Email-blasts to the stakeholders with a calendar invite and a link to the virtual meeting.
  - Mass text messages to the stakeholders with information about the virtual meeting.
  - Include the link to the virtual public meeting (preferably a short URL) in the project information to be mailed to the public affected by the proposed project.

The following steps are recommended during the virtual meeting:

- Make the presentation interesting and relevant to the audience.
- Record the meeting and upload the entire meeting on the project website and the social media accounts.
- Take detailed meeting minutes and make them accessible to the public.
- Keep track of the comments and respond to as many comments as possible. If cannot respond immediately to the comments, follow-up.
- Ask for the public's feedback on how to improve the experience.

7.4.3 Email-blasts and Mass Text Messaging Services

The main purpose of Email-blasts and mass text messaging applications is to disseminate information about the project. The main limitation with using technologies to disseminate the information is unavailability of the email addresses and mobile phone numbers of the target population. Hence, a major effort would be to collect and maintain the database of all the stakeholders involved in the project. An effective strategy would be to request people to sign-up to receive information on the project website and on social media. Information on sign-in options could also be included in the mail out forms. Once the listserv is prepared, the next major task would be to develop the Email-blast and the text messaging content. As mentioned earlier, it is important to monitor not only the content of the email (or, text message), but also the frequency at which the emails (or, text messages) are to be sent.

7.4.4 Pre-recorded Audio/Video Files

The audio/video files pertaining to the project that are pre-recorded by the agency staff could be used to inform the public about the progress of the project. Note that the presentation has to be interesting and relevant to the audience. The presentation, once recorded, could be uploaded onto

the project website and social media. Again, all the avenues need to be closely monitored and the comments need to be addressed in a timely manner.

7.5 Conclusions

Several communication tools, including social media, virtual meetings, email and mass text messaging applications, are considered to increase public participation. Nonetheless, a multi-pronged approach involving both digital engagement and traditional in-person meetings is most effective. Using communication media to engage the public remotely is well-suited to collecting opinions and educating the public at large in a short timeframe and to reach out to a broader demographic. On the other hand, traditional public meetings are more suitable to work with a smaller group of people to create solutions. Moreover, the results from virtual meetings and online communications could be used to tailor the traditional public meetings. Therefore, an effective public involvement strategy is to combine online engagement tools with traditional public meetings.

CHAPTER 8
SUMMARY AND CONCLUSIONS

Public involvement, especially during the Project Development and Environment (PD&E) phase, is key to developing projects that meet the community needs and desires and reduce the risks of litigation that could result in costly project delays. Under FDOT Public Involvement Policy Topic No. 000-525-050 (FDOT, 2017),

> "*The Department recognizes the importance of involving the public in information exchange when providing transportation facilities and services to best meet the State's transportation needs. Therefore, it is the policy of the Florida Department of Transportation to promote public involvement opportunities and information exchange activities in all functional areas using various techniques adapted to the audience, local area conditions, and project requirements.*"

The policy recognizes the importance of broad-based opportunities for public involvement and encourages the use of different techniques to achieve it.

To avoid potential conflicts in the later phases of a project, public involvement during the PD&E phase must strive to include all populations who may be affected by the project. However, there are often people who want to participate but are unable to because of work schedule conflicts or logistic challenges such as physical disability and transportation inaccessibility. While multiple meetings at different times of day could be conducted with additional cost to accommodate people with non-traditional work schedules, efforts to help those with logistic difficulties to participate in public meetings have been a challenge to design and implement. Fortunately, the increasing availability of today's communication technologies offers an opportunity not only to help those with logistic challenges to participate in public meetings, but also to provide an alternative to those who may wish to participate remotely.

The main objective of this project was to increase participation in public involvement activities by making effective use of today's increasingly available communication media. The objective was achieved through the following tasks:

1. Explore and evaluate the different communication technologies that could potentially be used to increase public involvement.
2. Review the states' current practices in using communication technologies at public meetings.
3. Survey the general public and the public meeting attendees to document the public perspective in using communication technologies for public involvement activities.
4. Identify appropriate technology-based communication platforms for different underrepresented population groups such as older population, minority population, people with limited English-speaking skills, etc.
5. Develop detailed procedures and guidelines for deploying the recommended communication media.

8.1 Available Communication Media

The available communication media are divided into the following three broad categories:

- Tools to Disseminate Information
- Tools Facilitating Two-way Remote Communication
- Tools Assisting Participation at Public Meetings

8.1.1 Tools to Disseminate Information

Some technologies are apt for one-way communication where public can get notified about the transportation projects and upcoming public meetings. Information about the projects and public meetings (such as time, location, etc.) can be published, updated, and announced through these media. These technologies include:

- Micro-blogs
- Blogs
- Web-feeds
- Broadcast Forums on Government Channel
- Emails
- Text Messages

8.1.2 Tools Facilitating Two-way Remote Communication

The public can use some technology-based tools to remotely participate in public meetings/hearings. These tools could be used for two-way communication between the agencies and the public. These technologies will facilitate obtaining information and providing feedback in real time. These technologies include:

- Video Conferencing Tools
- Social Media
- Online Surveys

8.1.3 Tools Assisting Participation at Public Meetings

These technology-based tools help meeting participants to engage more in meetings and hearings. The following are a few technology-based tools that fall in this category:

- Mapping/GIS Applications
- Online Testing Scenarios
- Audio/Video Files

The 2015 Public Involvement Techniques for Transportation Decision-making Guide discusses several technological tools for better public engagement in project planning and decision making (FHWA, 2015). Some of the most prominent tools include:

- Telephone Calls
- Computer Presentations and Simulations
- Visual Preference Surveys
- Electronic Voting
- Interactive Video Display and Kiosks
- Interactive Broadcasts

8.2 States' Current Practices

States have been using different communication platforms to reach out to the public. States were found to frequently use social media, audio/video files, mapping/GIS applications, and micro-blogs. These tools were also found to be quite successful in engaging the public. The most beneficial outcomes of using Web-based communications were found to be:

- *access to a broad audience for participation,* and
- *more involvement from the public.*

On the other hand, the top three barriers for states to adopt new communication technologies were found to be:

- *inexperience with/lack of skill in using these communication media*,
- *cost*, and
- *IT upgrades required for their adoption.*

Students and the younger generation, followed by professionals and agency stakeholders, were found to be likely to engage in public involvement activities using technology-based tools. The top three deciding factors for states to adopt new communication technologies were found to be:

- *the ability to reach new or hard to contact population groups*,
- *the perceived utility of input to the public involvement process*, and
- *affordability*.

States have undertaken special efforts to engage a wide cross-section of people, including minorities, people with disabilities, and people with limited English-speaking skills. Some states have used GIS applications to identify underrepresented population groups potentially affected by project, and devise a plan to reach out to these groups. Visualization tools, educational videos, devices, easily accessible websites, etc. are some of the strategies states have adopted to reach out to the underrepresented population groups. Several states were found to have difficulty in engaging minority population and low-income households in public involvement processes. In general, states were found to often use a combination of traditional and new strategies to reach out to the public.

8.3 Public Perception

The perception of the general public in using communication technologies for public involvement activities was documented using two surveys: a mail-out survey targeting the general public, and an in-person survey targeting the public meeting attendees at four public meetings across Florida. A survey questionnaire was mailed out to 4,000 randomly selected households in Florida. A total of 128 completed survey responses were received. A total of 57 public meeting attendees were surveyed to obtain their perception of using communication tools for enhancing public involvement. Both surveys attempted to gather information about the general public accessibility and frequency of use of technology-based communication tools and their opinion on usefulness of these tools in their day-to-day life.

The specific recommendations to increase participation in public involvement activities are:

- Provide early and frequent notifications about the public meetings/hearings. Use multiple media, especially text, email, social media, etc. in addition to the traditional media such as newspaper, flyer, and postal mail.
- If social media such as Facebook are used, consider creating a separate project page for the target public.
- Consider scheduling the meetings either in the evenings on weekdays or at suitable time on weekends.
- Consider conducting meetings in the communities of the target public, at common public places such as libraries, churches, schools, etc., and/or near project area.
- Consider having the meetings in small group settings.
- The meeting instructor should be knowledgeable and well trained. In addition to responding immediately, consider collecting the attendees' questions or concerns and uploading the responses on the website and sending the responses via email or text message.
- There are many technologies that could be used to communicate effectively and efficiently. However, the main concern is not the availability of the communication technologies; their unfamiliarity is a serious limitation. Therefore, consider adopting popular technologies, at least in the initial phases.

8.4 Appropriate Platforms for Involving Different Population Groups

Agencies often make special efforts to make sure that the following underrepresented residents actively participate in public meetings:

- Older population
- Minority population
- Low-income households
- People with limited English proficiency (LEP)
- People with disabilities
  - People with vision impairment
  - People with hearing impairment
  - People with physical impairment

Table 8-1 summarizes the recommended communication media for the aforementioned population groups. As can be inferred from the table, there is not a single communication medium, or set of media, that caters to all the underrepresented population groups. The strengths and limitations of each type of communication media need to be taken into consideration prior to their adoption. As such, different types of communication technologies were found to be suitable to assist different underrepresented population groups. However, in general, there are a few communication media that could potentially assist all population groups. Email and texting applications are the most suitable types of communication media to disseminate information about public meetings and transportation projects.

Table 8-1: Recommended Communication Media

	Communication Media	General Public & People with Physical Impairment	Older Population	Minority Population	Low-income Population	People with LEP	Hearing-Impaired People	Vision-Impaired People
Disseminate Information	Twitter	Yes	No	No	No	Yes	Yes	Yes
	Feeder	No	No	No	No	No	No	No
	RapidFeeds	No	No	No	No	No	No	No
	Blogger	No	No	No	No	No	No	No
	Broadcast Forums	No	No	No	No	No	No	No
	Email-Blasts	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Textedly	Yes	Yes	May be	May be	Yes	Yes	No
Facilitate Two-way Communication	Skype	May be	May be	May be	May be	No	Yes	Yes
	GoToMeeting	Yes	Yes	Yes	May be	No	No	No
	Adobe Connect Meetings	May be	May be	May be	May be	No	No	No
	Facebook	Yes	Yes	Yes	Yes	May be	Yes	Yes
	YouTube	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	SurveyMonkey	May be	May be	May be	No	Yes	Yes	Yes
	WhatsApp	No[1]	No[1]	No[1]	No[1]	No[1]	No[1]	No[1]
Assist in Participation	Google Maps	Yes	Yes	Yes	May be	Yes	Yes	Yes
	MetroQuest	Yes	No	No	No	No	No	No
	Podcasts	Yes	May be	Yes	Yes	No	May be[2]	Yes

[1] Not recommended because of privacy issues; [2] Only if podcast transcripts are available.

Among the available communication technologies that can facilitate two-way remote communication between the agency and the public, YouTube is the most suitable media. Social media including Facebook is recommended for all except for visually challenged people. Video conferencing tools are also recommended; however, Skype is considered to be more suitable for hearing- and vision- impaired people, while GoToMeeting is recommended for the other underrepresented population groups. WhatsApp, although the most popular texting application, is not recommended because of privacy concerns; the profile pictures and phone numbers of the public who subscribe to the WhatsApp group are visible to everyone in the group.

Among the communication technologies that can assist public participation during public meetings, GIS applications (i.e., Google Maps and Google Earth) are highly recommended. Podcasts are also recommended; however, since podcasts are only audio files, they may not be as effective as other communication media that use visual aids.

8.5 Guidelines for Deploying Communication Media

The existing FDOT policies on using emails and social media and the current protocols for handling confidential information are considered to be adequate for the initial deployment of communication platforms to facilitate remote participation in public meetings and hearings. However, specific guidelines at the Department level as well as project-specific guidelines for deploying communication media are required to streamline the adoption procedures and to achieve consistency in using technology-based communication tools.

In summary, several communication tools, including social media, virtual meetings, email and mass text messaging applications, are considered to increase public participation. Nonetheless, a multi-pronged approach involving both digital engagement and traditional in-person meetings is most effective. Using communication media to engage the public remotely is well-suited to collecting opinions and educating the public at large in a short timeframe and to reach out to a broader demographic. On the other hand, traditional public meetings are more suitable to work with a smaller group of people to create solutions. Moreover, the results from virtual meetings and online communications could be used to tailor the traditional public meetings. Therefore, an effective public involvement strategy is to combine online engagement tools with traditional public meetings.

REFERENCES

1. Adobe. (2018). *Adobe Connect Meetings*. Retrieved February 17, 2018 from https://www.adobe.com/products/adobeconnect.html, Accessed March 01, 2018.

2. Aimen, D., and Morris, A. (2012). *Practical Approaches for Involving Traditionally Underserved Populations in Transportation Decision-making*. National Cooperative Highway Research Program (NCHRP) Report No. 710, Transportation Research Board, Washington, D.C.

3. Americans with Disabilities Act. (2009). American Disabilities Act of 1990 – As Amended. Retrieved May 23, 2017 from https://www.ada.gov/pubs/ada.htm, Accessed May 30, 2018.

4. Anderson, M. (2017). Digital divide persists even as lower-income Americans make gains in tech adoption. *Fact Tank - Pew Research Center*. Retrieved from http://www.pewresearch.org/fact-tank/2017/03/22/digital-divide-persists-even-as-lower-income-americans-make-gains-in-tech-adoption/, Accessed April 23, 2018.

5. Arizona Department of Transportation. (2017*). Public Involvement Plan.* Retrieved May 21, 2017 from http://www.azdot.gov/docs/default-source/planning/public-involvement-plan888dce78c8006c57b531ff0000a35efc.pdf?sfvrsn=2, Accessed May 30, 2018.

6. Blogger. (2018). *Home Page*. Retrieved February 10, 2018 from https://www.blogger.com/about/?r=1-null_user, Accessed May 01, 2018.

7. Brody, S.D., Godschalk, D.R., and Burby, R.J. (2003). "Mandating Citizen Participation in Plan Making: Six Strategic Planning Choices", *Journal of the American Planning Association*, *69*(3), pp. 245-65.

8. Caltrans. (2011). *Public Participation Outreach Projects* Final Project Summary Report. Retrieved May 20, 2017 from http://dot.ca.gov/hq/tpp/offices/ocp/public_participation/pp_files/pp_documents/MIG_2006-11_FINAL_REPORT.pdf, Caltrans, Sacramento, CA, Accessed May 30, 2018.

9. Caltrans. (2013). *Public Participation Plan*. Retrieved May 20, 2017 from http://www.dot.ca.gov/hq/tpp/offices/osp/ppp_files/CTPE_PPP_Final_052913_dg_29.pdf#zoom=75, Accessed May 30, 2018.

10. Caltrans. (2017). *Limited English Proficiency (LEP)*. Retrieved May 26, 2017, from http://www.dot.ca.gov/hq/bep/title_vi/LEP/, Accessed May 30, 2018.

11. Colorado Department of Transportation. (2015). *A Guide to the Transportation Planning and Programming Public Involvement Process*. Retrieved May 20, 2017 from https://www.codot.gov/programs/planning/documents/planning-process/PubInvolvementGuide2015.pdf, Accessed May 30, 2018.

12. Colorado Department of Transportation. (2010). *Innovative Public Involvement Technology Research and Implementation Study.* Retrieved May 23, 2017 from https://www.codot.gov/programs/planning/documents/planning-process/InnovativePublicInvolvementTech.pdf, Accessed May 30, 2018.

13. Eidam, E. (2016). Using social media to engage constituents where, when it matters. *Government Technology*. Retrieved from

http://www.govtech.com/social/Using-Social-Media-to-Engage-Constituents-Where-When-It-Matters.html Accessed April 15, 2018.

14. Environmental Protection Agency (EPA) (2003). *Framework for implementing EPA's public involvement policy* (EPA 233-F-03-001). Retrieved from https://nepis.epa.gov/Exe/ZyPDF.cgi/40000PHY.PDF?Dockey=40000PHY.pdf, Accessed April 15, 2018.

15. Facebook. (2018). *Facebook Help Center.* Retrieved January 23, 2018 from https://www.facebook.com/help/, Accessed February 01, 2018.

16. Federal Highway Administration. (2006). *How to Engage Low-Literacy and Limited-English Proficiency Populations.* Retrieved May 22, 2017 from https://www.fhwa.dot.gov/planning/publications/low_limited/webbook.pdf, Accessed May 30, 2018.

17. Federal Highway Administration. (2015). *Public Involvement Techniques for Transportation Decision-making.* Retrieved May 20, 2017 from https://www.fhwa.dot.gov/planning/public_involvement/publications/pi_techniques/fhwahep15044.pdf, Accessed May 30, 2018.

18. Feeder. (2018). *Overview*. Retrieved February 8, 2018 from https://feeder.co/product/overview, Accessed March 01, 2018.

19. Florida Department of Transportation. (2014) *FDOT Public Involvement Handbook.* Retrieved May 17, 2017 from http://www.fdot.gov/environment/pubs/public_involvement/PI%20Handbook_December%2011%202014%20(2).pdf, Accessed May 30, 2017.

20. Florida Department of Transportation. (2015). Security and Use of Information Technology Resources. Policy Topic: 001-325-060-g. Florida Department of Transportation, Tallahassee, Florida. Retrieved from http://www.fdot.gov/cybersecurity/PDF/SecurityandUseofInformationTechnologyResources.pdf, Accessed April 01, 2018.

21. Florida Department of Transportation. (2017). *Efficient Transportation Decision Making Website*. Retrieved May 13, 2017 from http://etdmpub.fla-etat.org/est, Accessed May 30, 2017.

22. Florida Geographic Data Library. (2018). *2015 Census Block Groups in Florida (With Selected Fields from the 2011-2015 American Community Survey) (FGDC) / Cenacs_2015 (ISO)*. Retrieved from https://www.fgdl.org/metadataexplorer/full_metadata.jsp?docId=%7B7261C8B7-BC1D-4C78-ACFF-E9D5D0C7B372%7D&loggedIn=false, Accessed April 15, 2018.

23. Georgia Department of Transportation. (2016). *Public Involvement Plan for NEPA Projects*. Retrieved May 20, 2017 from http://www.dot.ga.gov/PartnerSmart/DesignManuals/Environmental/Public%20Involvement%20Plan/PublicInvolvementPlan.pdf, Accessed May 30, 2017.

24. Google. (2018a). *Gmail Help.* Retrieved January 24, 2018 from https://support.google.com/mail/?hl=en#topic=7065107, Accessed January 30, 2018.

25. Google. (2018b). *Google Maps Help.* Retrieved January 23, 2018 from https://support.google.com/maps/, Accessed January 30, 2018.

26. Google. (2018c). *YouTube Help.* Retrieved January 24, 2018 from
    https://support.google.com/youtube/?hl=en#topic=7505892, Accessed January 30, 2018.

27. GoToMeeting. (2018). *GoToMeeting Customer Support.* Retrieved January 25, 2018 from
    https://support.logmeininc.com/gotomeeting, Accessed January 30, 2018.

28. Hawaii Department of Transportation. (2012). *Public Involvement Policy*. Retrieved May 21, 2017
    from http://hidot.hawaii.gov/wp-content/uploads/2013/01/dot-public-involvement-policy.pdf,
    Accessed May 30, 2017.

29. Iowa Department of Transportation. (2012*). State Public Participation Process for Transportation
    Planning.* Retrieved May 5, 2017 from
    https://www.iowadot.gov/program_management/StatePublicParticipationProcess.pdf, Accessed May
    30, 2017.

30. Juarez, J. A., and Brown, K. D. (2008). Extracting or Empowering? A Critique of Participatory
    Methods for Marginalized Populations. *Landscape Journal*, *27*(2), pp. 190-204.

31. KeriLynn Engel. (2018). *Who is hosting this.* Retrieved March 15, 2018
    https://www.whoishostingthis.com/hosting-reviews/podbean/, Accessed March 30, 2018.

32. Limited English Proficiency (LEP). (2017). *A Federal Interagency Website*. Retrieved April 26, 2017,
    from https://www.lep.gov/, Accessed April 30, 2017.

33. Maine Department of Transportation. (2015*). Public Involvement in Transportation Decision Makin*g.
    Retrieved May 18, 2017 from
    http://www.maine.gov/mdot/docs/2015/MaineDOTPublicInvolvement1015.pdf, Accessed May 30,
    2017.

34. Massachusetts Department of Transportation. (2014). *Public Participation Plan.* Retrieved May 21,
    2017 from
    https://www.massdot.state.ma.us/Portals/0/docs/CivilRights/TitleVI/FTA/0018_Appendix05-A.pdf,
    Accessed May 30, 2017.

35. Massachusetts Department of Transportation. (2017). *Public Participation Process.* Retrieved May
    21, 2017 from
    https://www.massdot.state.ma.us/planning/Main/StatewidePlans/StateTransportationImprovementPro
    gram/PublicParticipationProcess.aspx, Accessed May 30, 2017.

36. MetroQuest. (2018). *How it Works*. Retrieved February 12, 2018 from http://metroquest.com/how-it-
    works/, Accessed March 30, 2018.

37. New Mexico Department of Transportation. (2014). *Public Involvement Plan.* Retrieved May 20,
    2017 from
    http://dot.state.nm.us/content/dam/nmdot/planning/NMDOT_PIP_MPO_TRPO_Public_Involvement
    _Plan_FINAL.pdf, Accessed May 30, 2017.

38. New York City Department of Transportation. (2015). *Language Access Plan.* Retrieved April 20,
    2017, from http://www.nyc.gov/html/dot/downloads/pdf/language-access-plan.pdf, Accessed April
    30, 2017.

39. New York State Department of Transportation. (2004). *Public Involvement Manual, Project
    Development Manual - Appendix 2.* Retrieved May 20, 2017 from

https://www.dot.ny.gov/divisions/engineering/design/dqab/dqab-repository/pdm-app2.pdf, Accessed May 30, 2017.

40. North Carolina Department of Transportation. (2011). *Unified Public Engagement Process for Public Involvement and Local Official Consultation*. Retrieved May 11, 2017 from https://www.ncdot.gov/download/performance/UPEP.pdf, Accessed May 30, 2017.

41. North Carolina Department of Transportation. (n.d.). *Public Engagement Toolkit.* Retrieved May 22, 2017 from https://connect.ncdot.gov/projects/toolkit/Pages/default.aspx, Accessed May 30, 2017.

42. North Carolina Department of Transportation. (2015). *C.F. Harvey Parkway Extension Local Officials Meeting*. Retrieved May 23, 2017 https://ncdot.gov/projects/CFharveyPkwyExt/download/R5703_EA_Appendix_D.pdf, Accessed May 30, 2017.

43. Oregon Department of Transportation. (n.d.). *Public Involvement.* Retrieved May 12, 2017 from https://www.oregon.gov/ODOT/Pages/involvement.aspx, Accessed May 30, 2017.

44. Pennsylvania Department of Transportation. (2011). *Project Level Public Involvement Handbook, PUB 295 (11-2011)*. Retrieved April 20, 2017 http://www.dot.state.pa.us/public/PubsForms/Publications/PUB%20295.pdf, Accessed May 30, 2017.

45. PodBean. (2018). *PodBean Website*. Retrieved March 15, 2018 from https://www.podbean.com/, Accessed March 30, 2018.

46. RapidFeeds. (2018). *Home Page*. Retrieved February 8, 2018 from http://www.rapidfeeds.com/#list_of_features_sec, Accessed February 20, 2018.

47. Skype. (2018). *Skype Support.* Retrieved January 21, 2018 from https://support.skype.com/en/skype/windows-desktop/, Accessed January 30, 2018.

48. SurveyMonkey. (2018). *How it Works.* Retrieved January 24, 2018 from https://www.surveymonkey.com/mp/take-a-tour/, Accessed January 30, 2018.

49. Textedly. (2018). *Home Page*. Retrieved February 23, 2018 from https://www.textedly.com/, Accessed February 28, 2018.

50. Town of Penfield. (2017). *Government Access TV Channel Operating Policies.* Retrieved February 17, 2018 from http://www.penfield.org/Cable_Government_Access_Policies.php, Accessed February 28, 2018.

51. Twitter. (2018). *Twitter Help Center.* Retrieved January 22, 2018 from https://help.twitter.com/en, Accessed January 30, 2018.

52. Washington State Department of Transportation. (2016). *Community Engagement Plan*. Retrieved April 16, 2017, from https://www.wsdot.wa.gov/sites/default/files/2017/02/28/FinalCEP2016.pdf, Accessed April 30, 2017.

53. Washington State Department of Transportation. (2017). *Stay Connected*. Retrieved April 10, 2017, from http://www.wsdot.wa.gov/, Accessed April 30, 2017.

54. WhatsApp. (2018). *Frequently Asked Questions.* Retrieved January 25, 2018 from https://faq.whatsapp.com/, Accessed January 30, 2018.

APPENDIX A:
STATE DOT STATE-OF-THE-PRACTICE SURVEY QUESTIONNAIRE

Dear Participant:

Thank you for accepting our invitation to complete this survey!

Florida International University (FIU) is currently working on a research project for the Florida Department of Transportation (FDOT) to look into the feasibility of using communication technologies to enhance public involvement in transportation projects (https://rip.trb.org/view/2017/P/1445904). The main objective of this project is to increase participation in public involvement activities by making effective use of today's increasingly available communication media. As the first step of the project, we are documenting state DOTs' existing practices in using communication technologies (e.g., video conferencing) at public meetings.

We have prepared this survey focusing on the following aspects:

- the type of technology-based communication tools currently being used by the agency,
- an assessment of who the agency is reaching through these communication tools with a focus on demographics,
- the agency's experience with these technology-based tools, and
- the agency's evaluation of the benefits and challenges of using the tools.

We estimate that it will take you about 15 minutes to complete this survey. We respectfully appreciate your time and participation in this important study. In case you have any questions, please feel free to contact the FDOT project managers or me:

FDOT Project Managers:

Rusty Ennemoser, Ph.D.
State Public Involvement and Community Resources Coordinator
Florida Department of Transportation
rusty.ennemoser@dot.state.fl.us; (850) 414-5337

and

Rax Jung, Ph.D., P.E.
Project Development Engineer
Florida's Turnpike Enterprise
Florida Department of Transportation
Rax.Jung@dot.state.fl.us; (407) 264-3870

Thank you,

Priyanka Alluri, Ph.D., P.E.
Principal Investigator
Department of Civil and Environmental Engineering
Florida International University
10555 West Flagler Street, EC 3680, Miami, Florida 33174
palluri@fiu.edu; (305) 348-3485

1. Please provide your information below:

   Name: _____

   Title: _____

   Agency: _____

   Address: _____

                      _____

                      _____

   Phone: _____

   Email: _____

2. Have you used technology-based communication tools (such as video conferencing, social media, etc.) to allow public to participate remotely in public meetings and public hearings? *(Yes, No, Not Sure)*
   - One-way communication (e.g., broadcast forums on government channel)
   - Two-way and interactive communication (e.g., Skype, GoTo Meeting)

3. How frequently have you used the following communication technologies in your public meetings?

Communication Tool	Very Frequently	Frequently	Occasionally	Rarely	Never	Not Sure	I am not familiar with this
Micro-blogs (e.g., Twitter)							
Blogs (e.g., Blogger)							
Web Feeds/Pushed Content (e.g., RSS Feeds)							
Social Media (e.g., Facebook)							
Mapping/GIS Applications (e.g., Google Maps, Google Earth)							
Video Conferencing/Webinars (e.g., Skype, GoTo Meeting)							
Broadcast Forums on Government Channel							
Audio or Video Files (e.g., YouTube, Podcasts)							
Online Surveys (e.g., Survey Monkey)							
Online Testing Scenarios (e.g., Metro Quest)							
Others, please specify							

4. Was there any specific reason for adopting any of these tools? Was the tool(s) selected to help reach a specific audience?

   - Micro-blogs (e.g., Twitter):   _____
   - Blogs (e.g., Blogger):   _____
   - Web Feeds/Pushed Content (e.g., RSS Feeds):   _____
   - Social Media (e.g., Facebook):   _____
   - Mapping/GIS Applications (e.g., Google Maps, Google Earth):   _____
   - Video Conferencing/Webinars (e.g., Skype, GoTo Meeting):   _____
   - Broadcast Forums on Government Channel: _____
   - Audio or Video Files (e.g., YouTube, Podcasts): _____
   - Online Surveys (e.g., Survey Monkey):   _____
   - Online Testing Scenarios (e.g., Metro Quest):   _____
   - Others, please specify: _____

5. How successful were these communication technologies?

Communication Tool	Very Successful	Successful	Moderately Successful	Of Little Successful	Unsuccessful	Not Sure	Not Applicable
Micro-blogs (e.g., Twitter)							
Blogs (e.g., Blogger)							
Web Feeds/Pushed Content (e.g., RSS Feeds)							
Social Media (e.g., Facebook)							
Mapping/GIS Applications (e.g., Google Maps, Google Earth)							
Video Conferencing/Webinars (e.g., Skype, GoTo Meeting)							
Broadcast Forums on Government Channel							
Audio or Video Files (e.g., YouTube, Podcasts)							
Online Surveys (e.g., Survey Monkey)							
Online Testing Scenarios (e.g., Metro Quest)							
Others, please specify							

6. When using these technology-based communication tools, did you cut back on traditional public involvement efforts? If yes, please elaborate.

7. What communication technologies have you considered using, but haven't as of yet?

- Micro-blogs (e.g., Twitter)
- Blogs (e.g., Blogger)
- Web Feeds/Pushed Content (e.g., RSS Feeds, Gov Delivery)
- Social Media (e.g., Facebook)
- Mapping/GIS Applications (e.g., Google Maps, Google Earth)
- Video Conferencing/Webinars (e.g., Skype, GoTo Meeting, WebEx Meeting)
- Broadcast Forums on Government Channel
- Audio or Video Files (e.g., YouTube, Podcasts)
- Online Surveys (e.g., Survey Monkey)
- Online Testing Scenarios (e.g., Metro Quest)
- Others, please specify

8. Are there any communication technologies that you had used for public involvement in the past, but are not currently using? What are the reasons for discontinuing these tools?

- Micro-blogs (e.g., Twitter): _____
- Blogs (e.g., Blogger): _____
- Web Feeds/Pushed Content (e.g., RSS Feeds): _____
- Social Media (e.g., Facebook): _____
- Mapping/GIS Applications (e.g., Google Maps, Google Earth): _____
- Video Conferencing/Webinars (e.g., Skype, GoTo Meeting): _____
- Broadcast Forums on Government Channel: _____
- Audio or Video Files (e.g., YouTube, Podcasts): _____
- Online Surveys (e.g., Survey Monkey): _____
- Online Testing Scenarios (e.g., Metro Quest): _____
- Others, please specify: _____

9. What do you see are the top three barriers for the adoption of these communication technologies:
   - Personal lack of experience or knowledge in using these communication media
   - Inexperience with/lack of skill in using these communication media
   - Not sure how to use it as part of public involvement activities
   - Does not seem useful for supporting public involvement activities
   - Management/organizational culture is not supportive
   - Cost
   - Information Technology (IT) upgrades required
   - Staff skills required
   - Concerns about legal issues related to using these communication media
   - Concerns about privacy
   - Concern regarding potential for negative comments
   - Concern about collecting and managing comments
   - Lack of understanding of legal status of comments and information shared over these tools
   - Other, please elaborate

10. What would be the three most important deciding factors in implementing technology-based communication media to encourage people to participate remotely?
    - Affordability
    - Perceived utility of input to the public involvement process
    - Ability to staff appropriately
    - Technical improvements that need to be made at my agency
    - Proof of the effectiveness of the tool to meet my project's needs
    - Ability to reach new or hard to contact population groups
    - Precedence from other projects and state DOTs
    - Federal guidance from EPA, FHWA, or FTA
    - Other, please elaborate

11. How do you measure the effectiveness of the new communication tools? *Please select all that apply*
    - Online Surveys
    - Comment Forms
    - Number of people logged into the system
    - No, we do not measure the effectiveness of the new communication media.
    - Not Sure
    - Other, please specify

12. Do you make special efforts to make sure that underrepresented and minority residents participate in public meetings. If so, what special efforts do you make to involve:
    - Low-income households: _____
    - Minority population: _____
    - Persons with Limited English Proficiency (LEP): _____
    - Persons with disabilities: _____
    - Older population: _____

13. What groups have you not been able to engage in the planning process but wish to?
    - Low-income households
    - Minority population
    - Persons with Limited English Proficiency (LEP)
    - Persons with disabilities
    - Older population
    - Other, please specify

14. Do you have a policy or a set of protocols for using technology-based communication tools?

- Yes
- No
- Not Sure

15. If yes, what is the primary purpose of the policy?
    - To achieve consistency in using technology-based communication tools throughout the agency
    - To protect the agency's brand identity
    - To outline expectations for appropriate conduct while representing the agency using these tools
    - To provide leadership a level of comfort that the technology-based communication tools are used appropriately
    - To provide a protocol for developing content, including approvals and responses when technology-based communication tools are adopted
    - Other, please specify

16. If no, why hasn't the agency developed a set of protocols for using technology-based communication tools?
    - We do not have staff or expertise to develop a policy
    - Agency does not use technology-based communication tools, so a policy is not needed
    - A formal policy might constrain current use of these technology-based tools
    - Technology-based tools are the responsibility of the IT Department, and does not pertain to the rest of the agency
    - Technology-based tools fall under other existing policies regarding use of information technology at our agency
    - Other, please specify

17. Which of the following groups do you think would be likely to engage in public involvement processes using technology-based tools? (check all that apply)
    - Students and younger people
    - Professionals
    - Minorities
    - Persons with Limited English Proficiency (LEP)
    - Persons with disabilities
    - "General" population / average citizen or resident
    - Project supporters
    - Project opponents
    - Agency stakeholders such as local governments, funding partners, consulting agencies and cooperating agencies
    - I do not believe communication tools would improve access to any specific groups
    - I don't know / unsure
    - Others, please specify

18. What potential benefits do you believe Web-based communication might provide transportation projects?
    - Access to a broad audience for public participation
    - More involvement from the general public
    - More involvement from people with disabilities who otherwise do not participate in the public involvement activities
    - Ease of file and data sharing among cooperating agencies or project team members
    - Better sense of project stakeholders' needs and values
    - Better relationship with the project stakeholders
    - Improved community support for the project
    - Better agency image with members of the public
    - I do not believe there are benefits to using technology-based communication tools for public involvement activities
    - Others, please specify

19. Are there any specific type of public meetings that you do not recommend using communication media for meeting remotely? Why?

APPENDIX B:
SURVEY QUESTIONNAIRE OF GENERAL PUBLIC IN ENGLISH

Dear Sir/Madam:

The Florida Department of Transportation (FDOT) is interested in knowing your opinions about using communication tools such as Skype or other social media to increase your participation in public meetings for transportation projects.

We estimate that it will take you about 10 minutes to complete this survey. We appreciate your time and participation in this important study. Please return the completed survey in the enclosed addressed postage prepaid envelope. In case you have any questions, please feel free to contact me or the FDOT project managers:

Priyanka Alluri, Ph.D., P.E.; Principal Investigator; Florida International Univ.; palluri@fiu.edu; (305) 348-3485

Rusty Ennemoser, Ph.D.
State Public Involvement Coordinator
Florida Department of Transportation
rusty.ennemoser@dot.state.fl.us

Rax Jung, Ph.D., P.E.
Project Development Engineer; Florida's Turnpike Enterprise
Florida Department of Transportation
Rax.Jung@dot.state.fl.us

About Yourself:

1. What is your age? _____

2. What is your gender? _____

3. What is your ethnicity? (Select all that apply)
   - ☐ Asian
   - ☐ Black/African American
   - ☐ Hispanic/Latino
   - ☐ Native American/American Indian/Alaskan Native
   - ☐ Native Hawaiian or other Pacific Islander
   - ☐ White
   - ☐ Other _____
   - ☐ I do not want to respond

4. Which best describes your level of education?
   - ☐ Less than high school
   - ☐ High school graduate
   - ☐ Some college completed
   - ☐ Technical / trade school degree
   - ☐ Associate's or other 2-year degree
   - ☐ Bachelor's degree or other college graduate
   - ☐ Some graduate school
   - ☐ Graduate/professional degree

5. What is your employment status?
   - ☐ Employed full-time
   - ☐ Employed part-time
   - ☐ Self-employed
   - ☐ Out of work and looking for work
   - ☐ Not currently looking for work
   - ☐ Student
   - ☐ Retired
   - ☐ Unable to work

6. What is your household income?
   - ☐ Under $20,000
   - ☐ $20,000 - $35,000
   - ☐ $35,000 - $50,000
   - ☐ $50,000 - $75,000
   - ☐ $75,000 - $100,000
   - ☐ Over $100,000

7. Would you identify yourself with any of the below groups?
   - ☐ Low-income households
   - ☐ Minority population
   - ☐ Persons with Limited English Proficiency
   - ☐ Persons with disabilities
   - ☐ Older population
   - ☐ None

8. How fluent are you in English:

	Not at all	Slightly	Somewhat	Moderately	Very
Speaking	○	○	○	○	○
Reading	○	○	○	○	○
Writing	○	○	○	○	○

9. Is English your primary language?
   - ☐ Yes
   - ☐ No. My primary language is _____

10. How would you describe where you live?
    - ☐ Urban/City
    - ☐ Suburban
    - ☐ Rural

11. What is your zip code? _____

About Your Involvement in Public Meetings:

12. In general, how involved are you within your community?
    - ☐ Not involved at all
    - ☐ Moderately involved
    - ☐ Very involved
    - ☐ Not very involved
    - ☐ Pretty involved

13. In the past year, how many public meetings have you attended as part of FDOT's transportation planning process?
    - ☐ None
    - ☐ 1-2
    - ☐ 3-5
    - ☐ >5

14. How do you hear about public meetings and hearings for transportation projects? (Select all that apply)
    - ☐ Printed Information (fact sheets, newsletters)
    - ☐ Website
    - ☐ Social media
    - ☐ Press release
    - ☐ Telephone contacts
    - ☐ Advertisement in the local newspaper
    - ☐ Information kiosks
    - ☐ Others: _____

15. Have you participated in the recent public involvement activities?
    - ☐ Yes
    - ☐ No, reason (Select all that apply):
      - ☐ Meeting location was not convenient
      - ☐ Meeting time was not convenient
      - ☐ Very little time available to clear my schedule
      - ☐ I was not informed about this meeting in advance
      - ☐ Others: _____

16. What is your preferred day and time for public involvement activities? (Select all that apply)
    - ☐ Weekdays
    - ☐ Weekends
    - ☐ Mornings
    - ☐ Evenings
    - ☐ Lunch time on weekdays
    - ☐ Others: _____

17. What are your preferred formats of public involvement activities? (Select all that apply)
    - ☐ Small group meetings
    - ☐ Workshops
    - ☐ Focus groups
    - ☐ Others: _____
    - ☐ Working groups
    - ☐ Charrette
    - ☐ Interview/one-on-one meetings
    - ☐ Not Sure

18. Do you have suggestions for improving how FDOT interacts with the public?

    _____
    _____

19. How could FDOT improve your opportunities for getting involved?

    _____
    _____

Please Go To Next Page

About Your Familiarity with Communication Technologies:

20. Do you agree or disagree with these statements?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
In today's world, people are better able to learn more about their community and local issues because of electronic technologies and the Internet.	○	○	○	○	○
The Internet gives me the opportunity to connect with other people and be a part of a larger community, even if the community does not meet in person.	○	○	○	○	○
Technology skills give regular people a greater opportunity to make a difference in their communities and the country.	○	○	○	○	○

21. If FDOT provided more opportunities to using technology rather than attend public meetings, how likely would you be able to participate?

☐ Extremely unlikely   ☐ Unlikely   ☐ Neutral   ☐ Likely   ☐ Extremely likely

22. How familiar are you with the following communication tools?

Communication Tool	Not At All Familiar	Slightly Familiar	Somewhat Familiar	Moderately Familiar	Very Familiar
Micro-blogs (such as Twitter)	○	○	○	○	○
Blogs (such as Blogger)	○	○	○	○	○
Web Feeds/Pushed Content (such as RSS Feeds)	○	○	○	○	○
Social Media (such as Facebook)	○	○	○	○	○
Mapping/GIS Applications (such as Google Maps)	○	○	○	○	○
Video Conferencing/Webinars (such as Skype)	○	○	○	○	○
Broadcast Forums on Government Channel	○	○	○	○	○
Audio or Video Files (such as YouTube, Podcasts)	○	○	○	○	○
Online Surveys (such as Survey Monkey)	○	○	○	○	○
Online Testing Scenarios (such as Metro Quest)	○	○	○	○	○
Emails (such as Gmail)	○	○	○	○	○
Text Messaging Applications (such as WhatsApp)	○	○	○	○	○
Others, please specify _____	○	○	○	○	○

23. How often do you use the Internet to find out what is happening in your community, and to find events or activities?

☐ Never   ☐ Not often   ☐ Occasionally   ☐ Frequently   ☐ All the time

Please Turn Over

24. How often do you use the following communication tools?

Communication Tool	Never	Not often	Occasionally	Frequently	All the time
Micro-blogs (such as Twitter)	O	O	O	O	O
Blogs (such as Blogger)	O	O	O	O	O
Web Feeds/Pushed Content (such as RSS Feeds)	O	O	O	O	O
Social Media (such as Facebook)	O	O	O	O	O
Mapping/GIS Applications (such as Google Maps)	O	O	O	O	O
Video Conferencing/Webinars (such as Skype)	O	O	O	O	O
Broadcast Forums on Government Channel	O	O	O	O	O
Audio or Video Files (such as YouTube, Podcasts)	O	O	O	O	O
Online Surveys (such as Survey Monkey)	O	O	O	O	O
Online Testing Scenarios (such as Metro Quest)	O	O	O	O	O
Emails (such as Gmail)	O	O	O	O	O
Text Messaging Applications (such as WhatsApp)	O	O	O	O	O
Others, please specify _____	O	O	O	O	O

25. How likely would you use the following communication tools to participate in public meetings and to communicate with the Department of Transportation (DOT)?

Communication Tool	Very unlikely	Unlikely	Neutral	Likely	Very likely
Micro-blogs (such as Twitter)	O	O	O	O	O
Blogs (such as Blogger)	O	O	O	O	O
Web Feeds/Pushed Content (such as RSS Feeds)	O	O	O	O	O
Social Media (such as Facebook)	O	O	O	O	O
Mapping/GIS Applications (such as Google Maps)	O	O	O	O	O
Video Conferencing/Webinars (such as Skype)	O	O	O	O	O
Broadcast Forums on Government Channel	O	O	O	O	O
Audio or Video Files (such as YouTube, Podcasts)	O	O	O	O	O
Online Surveys (such as Survey Monkey)	O	O	O	O	O
Online Testing Scenarios (such as Metro Quest)	O	O	O	O	O
Emails (such as Gmail)	O	O	O	O	O
Text Messaging Applications (such as WhatsApp)	O	O	O	O	O
Others, please specify _____	O	O	O	O	O

26. Do you have access to the following? (Select all that apply)
- ☐ A computer at home
- ☐ A computer at work
- ☐ High-speed internet at home
- ☐ High-speed internet at work
- ☐ A video camera, camcorder, webcam, or cell phone with video recording
- ☐ A land-line telephone at your home
- ☐ A mobile or cell phone for texting or voice calls
- ☐ A mobile or cell phone with Internet access
- ☐ A digital camera or cell-phone camera

Thank you very much for completing this survey! We greatly appreciate your input!
Please return the completed survey in the enclosed addressed postage prepaid envelope.

APPENDIX C:
SURVEY QUESTIONNAIRE OF GENERAL PUBLIC IN SPANISH

Estimado/a Señor/Señora:

El Departamento de Transporte de la Florida (FDOT) está interesado en saber su opinión acerca del uso de herramientas de comunicación tales como Skype y otros medios de comunicación social para incrementar su participación en reuniones públicas relacionadas a proyectos de transporte.

Nosotros estimamos que llenar esta encuesta le tomará solo 10 minutos. Nosotros apreciamos su tiempo y participación en este importante estudio. Por favor devuelva la encuesta llena en el sobre proporcionado. En caso de que tenga alguna pregunta, siéntase en la libertad de contactar conmigo o con los gerentes de proyecto del FDOT.

Priyanka Alluri, Ph.D., P.E.; Investigador Principal; Florida International Univ.; palluri@fiu.edu; (305) 348-3485

Rusty Ennemoser, Ph.D.
State Public Involvement Coordinator
Florida Department of Transportation
rusty.ennemoser@dot.state.fl.us

Rax Jung, Ph.D., P.E.
Project Development Engineer; Florida'sTurnpike Enterprise
Florida Department of Transportation
Rax.Jung@dot.state.fl.us

Acerca de usted:

1. Cuál es su edad? _____

2. Cuál es su género? _____

3. Cuál es su raza? (Seleccione todas las que apliquen)
    - ☐ Asiático
    - ☐ Negro/Afroamericano
    - ☐ Hispano/Latino
    - ☐ Nativo Americano/ Indio/ Nativo de Alaska
    - ☐ Nativo de Hawái u otra Isla del Pacifico
    - ☐ Blanco
    - ☐ Otra _____
    - ☐ No deseo responder

4. Cuál de las siguientes opciones describe mejor su nivel educacional?
    - ☐ No terminó escuela preparatoria
    - ☐ Se graduó de la escuela preparatoria
    - ☐ Completó algunos estudios universitarios
    - ☐ Completó estudios técnicos
    - ☐ Grado Asociado u otro programa de 2 años
    - ☐ Graduado Universitario
    - ☐ Algunos estudios de posgrado
    - ☐ Posgrado/Doctorado

5. Cuál es su estado laboral?
    - ☐ Empleado a tiempo completo
    - ☐ Empleado a medio tiempo
    - ☐ Empleado por cuenta propia
    - ☐ No trabaja, pero está buscando
    - ☐ No trabaja y no está buscando trabajo
    - ☐ Estudiante
    - ☐ Retirado/a
    - ☐ Incapacitado para trabajar

6. Cuál es su ingreso familiar?
    - ☐ Menos de $20,000
    - ☐ $20,000 - $35,000
    - ☐ $35,000 - $50,000
    - ☐ $50,000 - $75,000
    - ☐ $75,000 - $100,000
    - ☐ Más de $100,000

7. Se identifica usted con alguno de estos grupos?
    - ☐ Hogares de bajos recursos
    - ☐ Población minoritaria
    - ☐ Personas con dominio limitado del inglés
    - ☐ Personas con discapacidad
    - ☐ Personas de tercera edad
    - ☐ Ninguna

8. Que tan fluido es su inglés?:

	Nada	Algo	Poco	Moderado	Bastante
Hablando	○	○	○	○	○
Leyendo	○	○	○	○	○
Escribiendo	○	○	○	○	○

Por favor gire la página

9. Es el inglés su idioma principal?
   - ☐ Si
   - ☐ No. Mi idioma principal es _____

10. Como usted describe la zona donde vive?
    - ☐ Urbana/Ciudad
    - ☐ Suburbana
    - ☐ Rural

11. Cuál es su código postal? _____

Acerca de su participación en reuniones públicas:

12. En general, cuan involucrado/a esta usted en su comunidad?
    - ☐ No involucrado/a
    - ☐ No muy involucrado/a
    - ☐ Moderadamente involucrado/a
    - ☐ Bastante involucrado/a
    - ☐ Muy involucrado/a

13. En el pasado año, a cuantas reuniones como parte del proceso de planeamiento del transporte del FDOT usted asistió?
    - ☐ Ninguna
    - ☐ 1-2
    - ☐ 3-5
    - ☐ >5

14. Como se entera usted acerca de las reuniones para los proyectos de transportación? (Seleccione todas las que apliquen)
    - ☐ Información impresa (folletos, periódicos)
    - ☐ Sitios web
    - ☐ Redes sociales
    - ☐ Comunicados de prensa
    - ☐ Contactos de teléfono
    - ☐ Publicidad en periódicos locales
    - ☐ Quioscos informativos
    - ☐ Otros: _____

15. Ha usted participado recientemente en alguna actividad pública?
    - ☐ Si
    - ☐ No, Razón (Seleccione todas las que apliquen):
      - ☐ El lugar de la reunión no era conveniente
      - ☐ La hora de la reunión no era conveniente
      - ☐ Muy poco tiempo para ajustar mi horario
      - ☐ No fui informado/a con anticipación
      - ☐ Otras: _____

16. Cuál es el día y la hora más favorable para usted asistir a reuniones públicas? (Seleccione todas la que apliquen)
    - ☐ Días entre semana
    - ☐ Fines de semana
    - ☐ En la mañana
    - ☐ En la tarde
    - ☐ Hora de almuerzo en días laborables
    - ☐ Otras: _____

17. Que formato prefiere en la reuniones públicas? (Seleccione todas las que apliquen)
    - ☐ Grupos pequeños
    - ☐ Talleres
    - ☐ Grupos de enfoque
    - ☐ Otras: _____
    - ☐ Grupos laborales
    - ☐ Grupos interactivos
    - ☐ Entrevistas individuales
    - ☐ No estoy seguro/a

18. Tiene usted alguna sugerencia para mejorar la interacción del FDOT con el público?

    _____

    _____

    _____

19. Como podría el FDOT mejorar sus oportunidades de participar en reuniones públicas?

    _____

    _____

    _____

Por favor vaya a la siguiente página

Acerca de su familiaridad con la tecnología de comunicación

20. Está usted de acuerdo o en desacuerdo con estas afirmaciones?

	Totalmente en desacuerdo	En desacuerdo	Neutral	De acuerdo	Totalmente de acuerdo
Hoy en día, las personas son capaces de informarse mejor acerca de su comunidad y asuntos locales usando el internet y los aparatos electrónicos.	O	O	O	O	O
El internet me da la oportunidad de interactuar con otras personas y ser parte de una comunidad más amplia, aún sin estar presente.	O	O	O	O	O
Las herramientas tecnológicas nos ofrecen más oportunidades de poder hacer la diferencia en nuestra comunidad y en nuestro país.	O	O	O	O	O

21. Si el FDOT ofreciera más oportunidades de usar la tecnología en vez de asistir a las reuniones públicas , que tan probable sería su participación

☐ Extremadamente improbable   ☐ Improbable   ☐ Probable
                   ☐ Neutral   ☐ Muy probable

22. Que tan familiarizado está usted con las siguientes herramientas de comunicación?

Herramienta de comunicación	Nada familiar	Algo Familiar	Poco Familiar	Moderadamente Familiar	Muy Familiar
Micro-blogs (como Twitter)	O	O	O	O	O
Blogs (como Blogger)	O	O	O	O	O
Páginas en línea (como RSS Feeds)	O	O	O	O	O
Redes sociales (como Facebook)	O	O	O	O	O
Aplicaciones cartográficas (como Google Maps)	O	O	O	O	O
Video conferencias/Seminarios en línea (como Skype)	O	O	O	O	O
Debates transmitidos en el canal del Gobierno Local	O	O	O	O	O
Archivos de audio y video (como YouTube, Podcasts)	O	O	O	O	O
Encuestas en línea (como Survey Monkey)	O	O	O	O	O
Exámenes en línea (como Metro Quest)	O	O	O	O	O
Correo electrónico (como Gmail)	O	O	O	O	O
Aplicaciones para mensajes de texto (como WhatsApp)	O	O	O	O	O
Otra, especifique por favor _____	O	O	O	O	O

23. Con que frecuencia utiliza usted el internet para saber lo que está pasando en su comunidad o para informarse acerca de eventos y actividades?

☐ Nunca   ☐ No Frecuentemente   ☐ Ocasionalmente   ☐ Todo el tiempo
                                           ☐ Frecuentemente

Por favor gire la página

24. Con que frecuencia utiliza usted alguna de estas herramientas de comunicación?

Herramienta de comunicación	Nunca	No Frecuente	Occasional	Frecuente	Todo el tiempo
Micro-blogs (como Twitter)	○	○	○	○	○
Blogs (como Blogger)	○	○	○	○	○
Páginas en línea (como RSS Feeds)	○	○	○	○	○
Redes sociales (como Facebook)	○	○	○	○	○
Aplicaciones Cartográficas (como Google Maps)	○	○	○	○	○
Video Conferencias/Seminarios en línea (como Skype)	○	○	○	○	○
Debates transmitidos en el canal del Gobierno Local	○	○	○	○	○
Archivos de audio y video (como YouTube, Podcasts)	○	○	○	○	○
Encuestas en línea (como Survey Monkey)	○	○	○	○	○
Exámenes en línea (como Metro Quest)	○	○	○	○	○
Correos electrónicos (como Gmail)	○	○	○	○	○
Aplicaciones para mensajes de texto (como WhatsApp)	○	○	○	○	○
Otras, especifique por favor _____	○	○	○	○	○

25. Con que probabilidad usaría usted alguna de las siguientes herramientas de comunicación para participar en reuniones públicas y para comunicarse con el Departamento del Transporte (DOT)?

Herramienta de comunicación	Muy Improbable	Improbable	Neutral	Probable	Muy probable
Micro-blogs (como Twitter)	○	○	○	○	○
Blogs (como Blogger)	○	○	○	○	○
Páginas en línea (como RSS Feeds)	○	○	○	○	○
Redes sociales (como Facebook)	○	○	○	○	○
Aplicaciones cartográficas (como Google Maps)	○	○	○	○	○
Video conferencias/Seminarios en línea (como Skype)	○	○	○	○	○
Debates transmitidos en el canal del Gobierno Local	○	○	○	○	○
Archivos de audio y video (como YouTube, Podcasts)	○	○	○	○	○
Encuestas en línea (como Survey Monkey)	○	○	○	○	○
Exámenes en línea (como Metro Quest)	○	○	○	○	○
Correos electrónicos (como Gmail)	○	○	○	○	○
Aplicaciones para mensajes de texto (como WhatsApp)	○	○	○	○	○
Otra, especifique por favor _____	○	○	○	○	○

26. Tiene usted acceso a alguno de los siguientes? (Seleccione todos los que apliquen)
- ☐ Computadora en casa
- ☐ Computadora en el trabajo
- ☐ Internet de alta velocidad en casa
- ☐ Internet de alta velocidad en el trabajo
- ☐ Línea de teléfono fija en casaCámara digital o teléfono móvil con cámara
- ☐ Teléfono móvil con llamada de voz
- ☐ Teléfono móvil con acceso el Internet
- ☐ Cámara de video, cámara web, teléfono móvil con grabación de video

Muchas gracias por completar esta encuesta! Nosotros apreciamos mucho su aporte! Por favor devuelva la encuesta llena en el sobre proporcionado

APPENDIX D:
SURVEY QUESTIONNAIRE OF PUBLIC MEETING ATTENDEES IN ENGLISH

Dear Sir/Madam:

The Florida Department of Transportation (FDOT) is interested in knowing your opinions about using communication tools such as Skype or other social media to increase your participation in public meetings for transportation projects.

We estimate that it will take you about 10 minutes to complete this survey. We appreciate your time and participation in this important study. In case you have any questions, please feel free to contact the principal investigator or the FDOT project managers:

Priyanka Alluri, Ph.D., P.E.; Principal Investigator; Florida International Univ.; palluri@fiu.edu; (305) 348-3485

Rusty Ennemoser, Ph.D.
State Public Involvement Coordinator
Florida Department of Transportation
rusty.ennemoser@dot.state.fl.us

Rax Jung, Ph.D., P.E.
Project Development Engineer; Florida's Turnpike Enterprise
Florida Department of Transportation
Rax.Jung@dot.state.fl.us

About Yourself:

What is your age? _____   What is your gender? _____

What is your ethnicity? (Select all that apply)
Asian
Black/African American
Hispanic/Latino
Native American/American Indian/Alaskan Native

Native Hawaiian or other Pacific Islander
White
Other _____
I do not want to respond

Which best describes your level of education?
Less than high school
High school graduate
Some college completed
Technical / trade school degree

Associate's or other 2-year degree
Bachelor's degree or other college graduate
Some graduate school
Graduate/professional degree

What is your employment status?
Employed full-time
Employed part-time
Self-employed
Out of work and looking for work

Not currently looking for work
Student
Retired
Unable to work

What is your household income?
Under $20,000
$20,000 - $35,000
$35,000 - $50,000

$50,000 - $75,000
$75,000 - $100,000
Over $100,000

Would you identify yourself with any of the below groups?
Low-income households
Minority population
Persons with Limited English Proficiency

Persons with disabilities
Older population
None

How fluent are you in English:	Not at all	Slightly	Somewhat	Moderately	Very
Speaking	O	O	O	O	O
Reading	O	O	O	O	O
Writing	O	O	O	O	O

Is English your primary language?
Yes   No. My primary language is _____

How would you describe where you live?
Urban/City   Suburban   Rural

What is your zip code? _____

About Your Involvement in Public Meetings:

In general, how involved are you within your community?
Not involved at all   Pretty involved
Not very involved   Very involved
Moderately involved

What is your preferred day and time for public involvement activities? (Select all that apply)
Weekdays   Evenings
Weekends   Lunch time on weekdays
Mornings   Others: _____

What are your preferred formats of public involvement activities? (Select all that apply)
Small group meetings   Charrette
Workshops   Interview/one-on-one meetings
Focus groups   Not Sure
Working groups   Others: _____

About This Public Meeting:

How did you hear about this public meeting? (Select all that apply)
Printed Information (fact sheets, newsletters)   Telephone contacts
Website   Advertisement in the local newspaper
Social media   Information kiosks
Press release   Others: _____

Was this meeting held at a convenient time?
Yes   No. Reason _____

Was this meeting held at a convenient location?
Yes   No. Reason _____

Was there ample notice of this meeting?
Yes   No

Have you requested special accommodation?
No   Yes. I requested _____

If you had requested special accommodation, were your expectations met?
Yes   No. Reason _____

Were ADA accessible features at this location satisfactory?
Yes
No. Reason _____
I don't know

About Your Familiarity with Communication Technologies:

Do you agree or disagree with these statements?

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
In today's world, people are better able to learn more about their community and local issues because of electronic technologies and the Internet.	○	○	○	○	○
The Internet gives me the opportunity to connect with other people and be a part of a larger community, even if the community does not meet in person.	○	○	○	○	○
Technology skills give regular people a greater opportunity to make a difference in their communities and the country.	○	○	○	○	○

If FDOT provided more opportunities to using technology rather than attend public meetings, how likely would you be able to participate?

Extremely unlikely   Unlikely   Neutral   Likely   Extremely likely

How familiar are you with the following communication tools?

Communication Tool	Not At All Familiar	Slightly Familiar	Somewhat Familiar	Moderately Familiar	Very Familiar
Micro-blogs (such as Twitter)	○	○	○	○	○
Blogs (such as Blogger)	○	○	○	○	○
Web Feeds/Pushed Content (such as RSS Feeds)	○	○	○	○	○
Social Media (such as Facebook)	○	○	○	○	○
Mapping/GIS Applications (such as Google Maps)	○	○	○	○	○
Video Conferencing/Webinars (such as Skype)	○	○	○	○	○
Broadcast Forums on Government Channel	○	○	○	○	○
Audio or Video Files (such as YouTube, Podcasts)	○	○	○	○	○
Online Surveys (such as Survey Monkey)	○	○	○	○	○
Online Testing Scenarios (such as Metro Quest)	○	○	○	○	○
Emails (such as Gmail)	○	○	○	○	○
Text Messaging Applications (such as WhatsApp)	○	○	○	○	○
Others, please specify _____	○	○	○	○	○

How often do you use the Internet to find out what is happening in your community, and to find events or activities?

Never   Not often   Occasionally   Frequently   All the time

Do you have access to the following? (Select all that apply)

A computer at home   A land-line telephone at your home
A computer at work   A mobile or cell phone for texting or voice calls
High-speed Internet at home   A mobile or cell phone with Internet access
High-speed Internet at work   A digital camera or cell-phone camera
A video camera, camcorder, webcam, or cell phone with video recording

     Please Turn Over

How often do you use the following communication tools?

Communication Tool	Never	Not often	Occasionally	Frequently	All the time
Micro-blogs (such as Twitter)	○	○	○	○	○
Blogs (such as Blogger)	○	○	○	○	○
Web Feeds/Pushed Content (such as RSS Feeds)	○	○	○	○	○
Social Media (such as Facebook)	○	○	○	○	○
Mapping/GIS Applications (such as Google Maps)	○	○	○	○	○
Video Conferencing/Webinars (such as Skype)	○	○	○	○	○
Broadcast Forums on Government Channel	○	○	○	○	○
Audio or Video Files (such as YouTube, Podcasts)	○	○	○	○	○
Online Surveys (such as Survey Monkey)	○	○	○	○	○
Online Testing Scenarios (such as Metro Quest)	○	○	○	○	○
Emails (such as Gmail)	○	○	○	○	○
Text Messaging Applications (such as WhatsApp)	○	○	○	○	○
Others, please specify _____	○	○	○	○	○

How likely would you use the following communication tools to participate in public meetings and to communicate with the Department of Transportation (DOT)?

Communication Tool	Very unlikely	Unlikely	Neutral	Likely	Very likely
Micro-blogs (such as Twitter)	○	○	○	○	○
Blogs (such as Blogger)	○	○	○	○	○
Web Feeds/Pushed Content (such as RSS Feeds)	○	○	○	○	○
Social Media (such as Facebook)	○	○	○	○	○
Mapping/GIS Applications (such as Google Maps)	○	○	○	○	○
Video Conferencing/Webinars (such as Skype)	○	○	○	○	○
Broadcast Forums on Government Channel	○	○	○	○	○
Audio or Video Files (such as YouTube, Podcasts)	○	○	○	○	○
Online Surveys (such as Survey Monkey)	○	○	○	○	○
Online Testing Scenarios (such as Metro Quest)	○	○	○	○	○
Emails (such as Gmail)	○	○	○	○	○
Text Messaging Applications (such as WhatsApp)	○	○	○	○	○
Others, please specify _____	○	○	○	○	○

Do you have suggestions for improving how FDOT interacts with the public?

_____

_____

How could FDOT improve your opportunities for getting involved?

_____

_____

Thank you very much for completing this survey! We greatly appreciate your input!

APPENDIX E:
SURVEY QUESTIONNAIRE OF PUBLIC MEETING ATTENDEES IN SPANISH

Estimado Sr/Sra:

El Departamento de Transportacion de la Florida (FDOT) esta interesado en saber sus opiniones del uso de herramientas de comunicacion tales como Skype u otros medios de comunicacion social para aumentar su participacion en reuniones publicas para proyectos de transportacion.

Nosotros estimamos que le tomará cerca de 10 minutos para completar esta encuesta. Nosotros apreciamos mucho su tiempo y participacion en este importante estudio. En caso de que usted tenga alguna pregunta, por favor sientase en la libertad de contactar al principal investigador or a encargados de proyectos en FDOT

Priyanka Alluri, Ph.D., P.E.; Principal Investigator; Florida International Univ.; palluri@fiu.edu; (305) 348-3485

Rusty Ennemoser, Ph.D.   Rax Jung, Ph.D., P.E.
State Public Involvement Coordinator   Project Development Engineer; Florida's Turnpike Enterprise
Florida Department of Transportation   Florida Department of Transportation
rusty.ennemoser@dot.state.fl.us   Rax.Jung@dot.state.fl.us

Acerca de usted:

Cual es su edad? _____   Cual es su genero? _____

Cual es su raza? (Selecione todas las que apliquen)
Asiatico   Nativo de Hawaii o otra Isla del Pacifico
Negro/Africano Americano   Blaco
Hispano/Latino   Otra _____
Nativo Americano/Indio Americano /Alaska Nativoe   No deseo responder

Cual de los siguientes describe major su nivel educacional?
No terminó la escuela preparatoria   Grado Asociado u otro programa de 2 años
Terminó la escuela preparatoria   Licenciatura u otro título universitario
Completó algunos estudios universitarios   Algunos estudios de posgrado
Completó estudios tecnicos   Graduado/ Licenciado/a profesional

Cúal es su situacion laboral?
Empleado a tiempo completo   No esta buscando trabajo
Empleado a medio tiempo   Estudiante
Empleado por cuenta propia   Retirado/a
No trabaja, pero esta buscando   Incapacitado para trabajar

Cual es su ingreso familiar?
Menos de $20,000 $50,000 - $75,000
$20,000 - $35,000 $75,000 - $100,000
$35,000 - $50,000   Mas de $100,000

Se identifica usted con algunos de estos grupos ?
Hogares de bajos recursos   Personas con incapacidades
Poblacion minoritaria   Poblacion mayor
Personas con dominio limitado del Ingles   Ninguna

Cuan afluente es usted en Ingles:	Nada	Algo	Poco	Moderado	Muy
Hablando	○	○	○	○	○
Leyendo	○	○	○	○	○
Escribiendo	○	○	○	○	○

Es ingles su primera lengua?

Si   No. Mi primera lengua es _____

Como describiria usted la zona donde vive?
Urbana/Ciudad   Suburbana   Rural

Cual es su codigo postal? _____

Acerca de su involucramiento en reuniones publicas:

En general, cuan involucrado/a esta usted en su comunidad?
No involucrado   Bastante involucrado
No muy involucrado   Muy involucrado
Moderadamente involucrado

Cúal es la hora y el dia mas favorable para usted asistir a reuniones públicas? (Selecione las que apliquen)
Dias entre semana   Tardes
Fines de semana   Almuerzo en dias laborales
Mañanas   Otros: _____

14. Cúal confirguratión prefiere en las reuniones públicas ? (Seleccione las que apliquen)
Grupos pequeños   Grupos interactivos
Talleres   Entrevistas individuales
Grupos de enfoque   No estoy seguro/a
Grupos laborales   Otros: _____

Acerca de las reuniones publicas:

Como se entero usted de esta reunion? (Seleccione todas las que appliquen)
Informacion impresa (Boletines, propaganda)   Contactos de telephone
SitioWeb   Publicidad en periodicos locales
Redes sociales   Kioscos Informativos
Prensa   Otros: _____

Ha sido esta reunion a una hora conveniente para usted?
Si   No. Razon _____

Ha sido esta reunion en un lugar conveniente para usted?
Si   No. Razon _____

Fue este meeting anuciado con tiempo en anticipacion?
Si   No

Ha usted solicitado una acomodo especial?
No   Si. Yo solicite_____

Si usted pidio un acomodo especial, fueron sus expectativas cumplidas?
Si   No. Razon _____

Fue ADA accesible una caracteristica disponible en esta locacion?
Si
No. Razon _____
No se

Acerca de su familiaridad con technologia de communicacion:

Esta usted de acuerdo con estas afirmaciones?	Muy en Desacuerdo	Desacuerdo	Neutral	Agree	Muy de Acuerdo
Hoy en dia, las personas son capaces de informarse mas acerca de la comunidad y asuntos locales usando la Internet y la tecnología electronica.	○	○	○	○	○
El Internet me da la posibilidad de interactuar con otras personas y de ser parte de una comunidad mas amplia aún sin estar presente.	○	○	○	○	○
Las herramientas tecnologicas nos ofrecen mas oportunidades de poder hacer la diffrencia en nuestra comunidad y en nuestro país..	○	○	○	○	○

Si el FDOT ofreciera mas oportunidades de usar la tecnología en vez de asistir a las reuniones publicas, que tan probable usted participaría?

Extremadamente improbable	Improbable	Neutral	Problable	Extremadamente probable

Que tan familiar esta usted con las siguientes herramientas de comunicación?

Herramienta de Communication	No muy familiar	Slightly Familiar	Somewhat Familiar	Moderately Familiar	Very Familiar
Micro-blogs (como Twitter)	○	○	○	○	○
Blogs (como Blogger)	○	○	○	○	○
Paginas en linea (como RSS Feeds)	○	○	○	○	○
Redes sociales (como Facebook)	○	○	○	○	○
Aplicaciones Cartograficas (como Google Maps)	○	○	○	○	○
Video Conferencia/Seminarios en linea (como Skype)	○	○	○	○	○
Debates en Government Channel	○	○	○	○	○
Archivos de Audio/Video (como YouTube, Podcasts)	○	○	○	○	○
Encuestas en linea (como Survey Monkey)	○	○	○	○	○
Examenes en linea (como Metro Quest)	○	○	○	○	○
Correo electronico (such as Gmail)	○	○	○	○	○
Aplicaciones para mensajes de texto(comoWhatsApp)	○	○	○	○	○
Others, please specifique _____	○	○	○	○	○

Que tan frecuente usa usted el Internet para saber lo que esta pasando en su comunidad y para saber acerca de eventos o actividades?

Nunca	Not frecuente	Ocacional	Frecuente	Todo el tiempo

Tiene usted acceso a los siguientes? (Selecione todas las que apliquen)

☐ Computadora en casa   ☐ Linea de telefono en casa
☐ Computadora en el trabajo   ☐ Telefono mobil para texto o llamadas de voz
☐ Internet de alta velocidad en casa   ☐ Telefono mobil con acceso al Internet
☐ Internet de alta velocidad en el trabajo   ☐ Camara digital o camara en el mobil
☐ Una cámara de video, cámara web, or telefono móvil con video grabadora

Que tan frecuente usa usted alguna de los siguientes herramientas de communication?

Por favor gire la pagina

Herramienta de Communication	Nunca	No muy seguido	En ocaciones	Con frecuencia	Siempre
Micro-blogs (como Twitter)	○	○	○	○	○
Blogs (como Blogger)	○	○	○	○	○
Paginas en linea (como RSS Feeds)	○	○	○	○	○
Redes sociales (como Facebook)	○	○	○	○	○
Aplicaciones Cartograficas (como Google Maps)	○	○	○	○	○
Video Conferencias (como Skype)	○	○	○	○	○
Debates en Government Channel	○	○	○	○	○
Archivos de audio y video (comoYouTube)	○	○	○	○	○
Encuantas en linea (como Survey Monkey)	○	○	○	○	○
Examenes en linea (como Metro Quest)	○	○	○	○	○
Correo electronico (como Gmail)	○	○	○	○	○
Mensajes de texto (como WhatsApp)	○	○	○	○	○
Otras, especifique por favor _____	○	○	○	○	○

Que tan problable usaria used alguna de estas herramientas tecnologicas en reuniones de transporte o para comunicarse con el Departamento del Transporte (DOT)?

Herramienta de Communication	Muy improbable	Improbable	Neutral	Probable	Muy Probable
Micro-blogs (como Twitter)	○	○	○	○	○
Blogs (como Blogger)	○	○	○	○	○
Paginas en linea (como RSS Feeds)	○	○	○	○	○
Redes sociales (como Facebook)	○	○	○	○	○
Aplicaciones cartograficas (como Google Maps)	○	○	○	○	○
Video Conferencias (como Skype)	○	○	○	○	○
Debates en Government Channel	○	○	○	○	○
Archivos de audio y video (como YouTube, Podcasts)	○	○	○	○	○
Encuestas en linea (como Survey Monkey)	○	○	○	○	○
Examenes en linea (como Metro Quest)	○	○	○	○	○
Emails (como Gmail)	○	○	○	○	○
Applicaciones de mensajeria (como WhatsApp)	○	○	○	○	○
Otras, especifique _____	○	○	○	○	○

Tiene usted alguna sugerencia para mejorar la interaction de el FDOT con el público?

_____

_____

Como podría el FDOT mejorar sus oportinidades de participar en reuniones publicas?

_____

_____

Muchas Gracias por completar esta encuesta! Nosotros apreciamos su aporte.