

Acknowledgements

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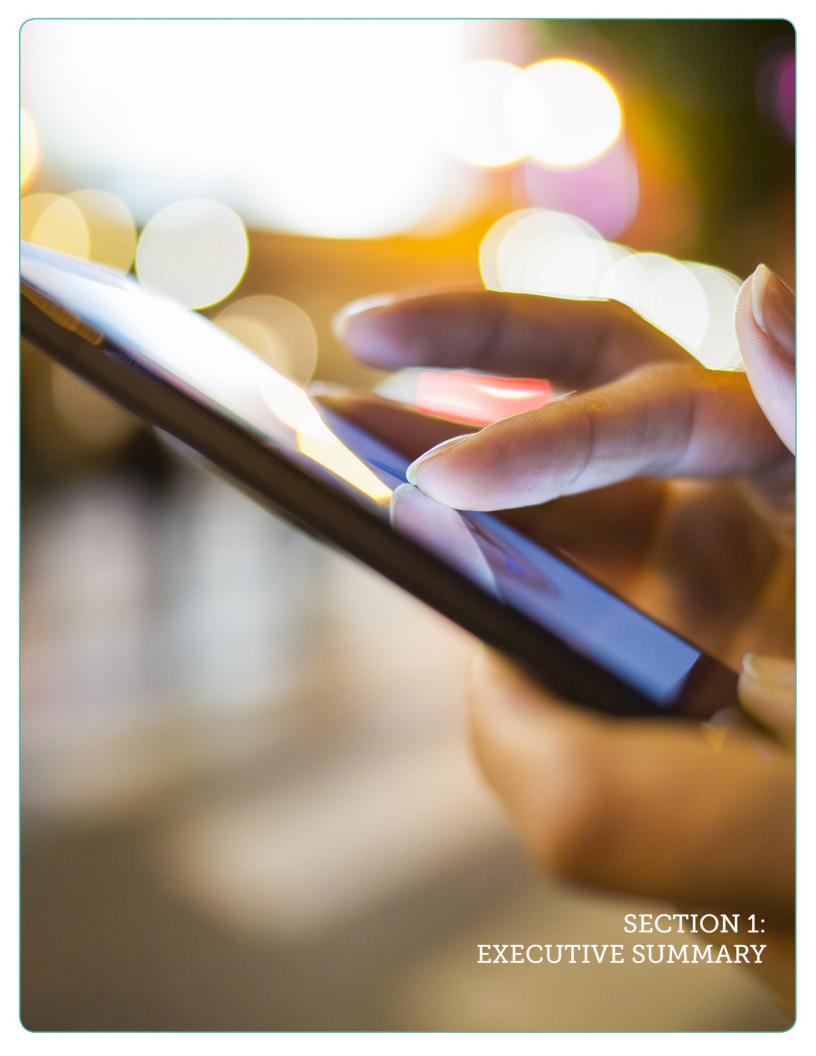
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SECTION 1: EXECUTIVE SUMMARY

1.1 Introduction

"All politics is local." The research for *Benefits of Transportation: Telling America's Transportation and Environment Story* began by using this simple, yet powerful, quote from former Speaker of the U.S. House of Representatives Tip O'Neill as a guidepost. What was discovered through examining tens of thousands of tweets from state and national transportation officials is that transportation messaging is very localized and for good reason: local information is what customers want and need.

Transportation agencies across the country work hard to communicate with their customers and respond to their state's unique needs. With tight budgets, agencies are trying to do more with less. Turning to social media to communicate is smart, effective and reflective of customers' expectations. This relatively new platform also provides an opportunity to see which messages move the public to action and what state departments of transportation (DOTs) and other transportation agencies can do to effectively target their communications.

We live in a time of instant information. If an accident occurs ahead on a major thoroughfare, drivers now expect their state DOT to advise them of the delay. DOTs are working diligently to provide a high level of customer service. There is much they can learn from one another. This white paper looks to share lessons and best practices for communicating and connecting transportation and environmental topics across various communication platforms, with a particular focus on social media; because data can be gathered cost effectively.

1.2 Research Purpose

In many cases, the state DOT is on the front line of much of the environmental work that is happening within a state. Environmental and planning staff regularly engage the public in National Environmental Policy Act (NEPA) and other pre-project processes to monitor and help mitigate the environmental impacts of projects during construction, and put plans in place to improve and protect the natural environment for the future. These actions do more than limit the impact a transportation project has on the environment; they add value to the project and community.

Sometimes the connection between transportation and the environment is framed narrowly as regulatory compliance; however, that frame can be and often is expanded to underscore the positive results transportation projects have on the environment and citizens' quality of life. The Center for Environmental Excellence by AASHTO (CEE) set forth a goal for this research to examine existing messaging and help state DOTs tell the story of the contributions transportation makes to communities and the environment.

Based on that goal, two primary objectives for this research were established:

Examine the national transportation conversation from multiple vantage points and assess
what is being said about environmental issues and how messages resonate with the general
public.

2. Develop recommendations to expand and improve message delivery.

Transportation agencies broadly engage with the public through myriad platforms and tools that include public meetings and open houses, stakeholder meetings, webinars, websites, blogs, email, text messages, press releases, traditional media interaction, published reports, signage for drivers and social media. The research associated with this project focused primarily on social media (specifically, Twitter) because it provides a relatively inexpensive, data-rich window into the landscape of the national conversation.

1.3 Methodology and Results

To evaluate environmental messages in the context of transportation-related conversations, the research team utilized social media analytics and expert interviews. Messages were examined from three perspectives: from the states, from Capitol Hill, and through social media.

The view from the states' communications and environmental experts: The view from the states was analyzed through discussions with the panel of DOT communicators and environmental professionals convened to guide the research. The project panel shared their experiences and thoughts on effective environmental messaging, advice on best practices, how to address negative or inaccurate information, and the use of various communication channels.

Panel members noted that there are opportunities to expand message content and delivery regarding the environmental benefits of transportation projects. States can learn from each other, and internal information exchanges between environmental staff and communications staff can be strengthened regarding environmental stories to be communicated, and ways to communicate those stories. A summary of project panel input gathered via conference calls is presented in Appendix A.

• The view from Capitol Hill: A face-to-face conversation was held with 12 former congressional communications directors. They were asked for their broad assessment of current transportation messaging, advice for improvements, and what topics resonated with congressional members and their constituents. A survey was administered to quantify the conversation, and results of that survey are presented in Appendix B.

While the communications directors' perspective was that the focus of the national transportation conversation is on funding rather than environmental benefits, they were open to and appreciated messages regarding the environmental benefits of transportation. The discussion highlights a potential opportunity to expand environmental messaging. Information about the environmental benefits associated with a specific project or across investments could be shared with congressional staff — and by extension, congressional staff could then share that information with constituents at home.

 A view through social media: The research team gathered and reviewed Twitter data using a three step process.

First, the team examined the national conversation where transportation and the environment were linked in Twitter messages. That research was conducted by searching for tweets that contained at least one environment-related term (Figure 1.3.2) and one transportation-related term (Figure 1.3.3) from December 2013 through December 2014. A total of 12,470 tweets were identified that contained both terms (Figure 1.3.1).

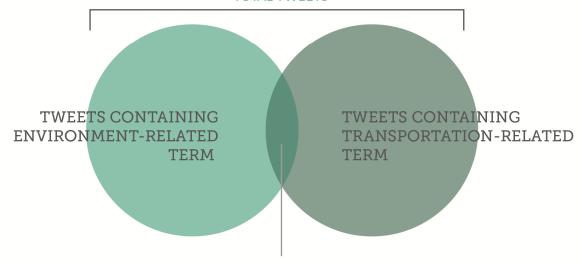
Next, the research team examined the DOT conversation around environmental topics. The team used a Twitter analytics tool to capture every tweet generated by a DOT that mentioned one of the environment-related terms during the course of the year. A total of 755 tweets were identified as being generated by DOTs and containing at least one environmental term.

Twitter accounts were analyzed for three message types:

- All tweets in the last year that mentioned both an environmentrelated term and a transportation-related term
- 2) Every tweet from every DOT that referenced any of the environment-related terms
- 3) The top 10 tweets from each DOT, regardless of subject

Lastly, the research team examined the DOT conversation occurring across Twitter by examining the top 10 tweets of each state DOT, regardless of content. This analysis was based on the number of "retweets" and "favorites" the tweet received from followers of the DOT. The intent was to capture a snapshot of what DOTs talk about and what creates a response from the public. The list of the top 10 tweets from each agency can be found in Appendix C.

DOTs across the country are demonstrating interesting and effective uses of Twitter to convey often complex messages. Using Twitter to communicate the benefits transportation projects can have on the environment represents a relatively small portion of the conversation. There are opportunities to advance the good work being done at DOTs by broadening the reach and frequency of environment-related messages.



TWEETS CONTAINING **BOTH TERMS** (12,470 TOTAL)

figure 1.3.2

environment

figure 1.3.3

ENVIRONMENT-RELATED TERMS

and

TRANSPORTATION-RELATED TERMS

activism biodiesel bioenergy PV biofuels biomass renewable biopower carbon carbonprice cleanenergy cleantech climate climateaction climatechange conservation

CSR ecofriendly eco-friendly ecomarkets emissions energy environment

ethanol

EV

fuelcell gas globalwarming gogreen greencity greenisgood greentravel hydrogen innovation methane natgas

NREL offsets peakoil publictransit

renewableenergy renewables responsibletravel smartgrowth sustainable sustainability urbanism urbanplanning

waste TMDL erosion sediment congestion airquality

constructionerosion

mitigation cleanwater waterquality stormwater cleanwateract raingarden bioswale treatmentbmps infrastructure construction road work work zone transportation travel

traveler AASHTO road street lane freeway highway Hwy interstate bridge overpass underpass transit tunnel ramp exit

interchange automobile car vehicle bus plow snowplow plowing truck tractor trailer rail railroad

trollev

streetcar

1.4 Caveats

Although the research generated a large amount of data, a few caveats should be noted:

- The information gathered as the view from the states and Capitol Hill are based on a narrow sample size.
- While the use of social media by DOTs as a communication tool is increasing, transportation agencies broadly engage with the public through myriad platforms and tools. Thus, this research provides a deep examination of one communication tool (Twitter) but not a broad or inclusive view across all platforms.
- Interviews with state officials and Capitol Hill staff, as well as a review of social media data, provide a snapshot in time rather than a comprehensive study. This report cannot document all the time, energy, innovation and effort state DOT communications practitioners, environmental and planning staff, and others throughout transportation agencies make to inform the public. DOT staff work long, odd hours and have to communicate sometimes difficult information. This research underscores the dedication of DOT staff across the nation, and it highlights an opportunity to support and supplement that work.

With those caveats in mind, the research yielded solid information that creates a snapshot of what is being communicated about the nexus of transportation and environmental issues. The snapshot has been augmented with the communication experience of the research team. Throughout this report, generalizations have been made and recommendations developed through the lens of that experience.

1.5 Recommendations

To enhance America's transportation story with a focus on environmental benefits, the recommendations contained in this report fall broadly into three categories: expand environmental benefits messaging and connect those messages more closely with improved quality of life; establish a national community of practice; and use social media best practices. Additional recommendations are provided, representing cross-cutting, high-level action items.

1. Expand environmental benefits messaging and connect those messages more closely with improved quality of life.

The research suggested that Twitter messages from the state DOTs generally fit into the following categories:

- Traffic-related updates
- Safety or weather-related messages
- Current events/community interaction

Messaging regarding environmental benefits of transportation work in social media can be expanded. Of the thousands of tweets generated by DOTs over the year of study, only 755 contained one of the environment-related search terms.

Several DOTs and national organizations are effectively conveying positive messages that connect transportation projects to improving the environment. Across the country, communications and

environmental professionals are sharing stories on Twitter about the work they are doing to clean up streams, preserve wildlife, reduce environmental impacts, and invest in clean energy. One relatively easy and inexpensive way to help generate ideas for positive environmental messaging is for communicators or environmental/planning staff at DOTs to follow each other on Twitter. In essence, this is an instant peer exchange of ideas. The Twitter handles for all 50 states can be found in Appendix C.

2. Establish a national community of practice.

While all politics—and most transportation messaging—is local, not all idea generation has to be. Issues that are common between DOTs could be evaluated on a broader scale by the CCE, American Association of State Highway and Transportation Officials (AASHTO) and Federal Highway Administration (FHWA), and good examples of successful environmental messages could be shared. That assistance would make it easier for DOTs to:

- Increase the number and reach of environmental messages about the positive impacts DOTs have on the environment.
- Improve connections to national stories, especially if ways to localize national messages are suggested.
- Share and adopt messaging best practices.

3. Use social media best practices.

Increasing the effectiveness of social media generally will allow better environmental communication for these reasons:

- Social media is most effective when it represents a two-way conversation. Despite its digital
 nature, interactions that incorporate a direct, conversational tone are most effective.
 Likewise, the public responds better to messages when they are part of a constant dialog
 rather than isolated message points.
- Interactions can be expanded by combining topics. For example, during a snow weather event, a message about the use of environmentally friendly beetroot road treatment can combine and extend the message.
- A message is noticed more readily if it connects with what customers are already talking about. Monitoring social media channels is a good first step, and the reach of a DOT can be expanded by engaging environmental and planning staff to serve as additional eyes and ears for the communications department. While communications departments often serve as a hub of cross-department connections, insights into environmental topics often come from across the agency and can help DOTs better connect with customers.

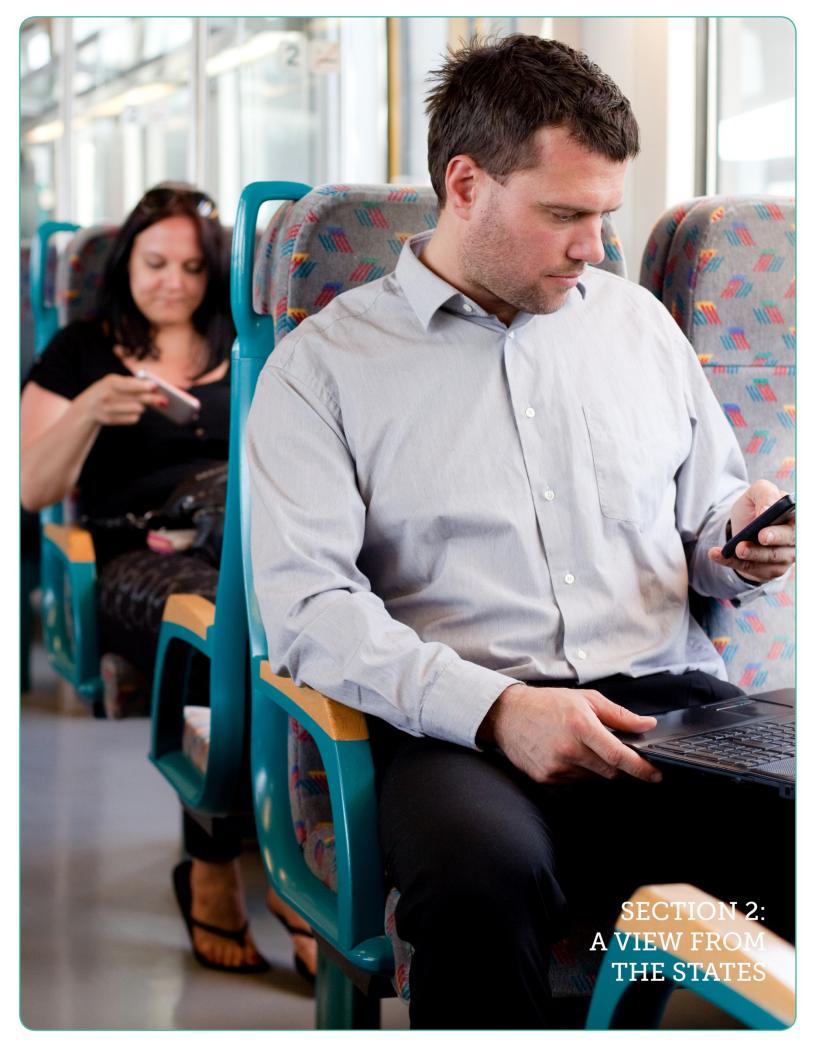
1.6 Roadmap

Roadmaps show a driver where they have been, where they are, and a course for moving forward. This section describes how the research team looked across multiple national agencies that shape transportation policy and contribute to the national conversation. This brief review helps to understand current national messages regarding the connection between transportation and the environment. The research team placed these current messages in the context of what messages have been used in the past and proposes more aspirational messages for state DOTs with linkages to the environment in the future.

1.7 Next Steps

There are opportunities to build an understanding of the contributions transportation makes to communities and the environment. The results of this research suggest that transportation agencies have an opportunity to expand environmental messaging and increase stakeholder and public understanding of how transportation projects can contribute positively to communities and the environment. In addition to the recommendations outlined in previous sections, transportation agencies at the state or national level could consider:

- Analyzing traditional media coverage to round out the social media research conducted under this project. By combining the traditional and social media views, the national and/or state conversations regarding transportation and the environment can be better understood.
- Testing messages via focus groups or surveys. Using information from social media and traditional media analyses, it would be helpful to test various environmental messages to determine which messages, delivery mechanisms and spokespeople are most effective with which audiences and why. This research could help focus limited outreach or education funds on efforts that are most likely to succeed.



SECTION 2: A VIEW FROM THE STATES

2.1 Introduction

Although the research associated with this project focused primarily on social media (specifically, Twitter) because it provides a relatively inexpensive, data-rich window into the landscape of the national conversation, state DOTs broadly engage with the public through myriad platforms and tools that include public meetings and open houses, stakeholder meetings, webinars, websites, blogs, email, text messages, press releases, traditional media interaction, published reports, signage for drivers and social media. Thus, it was important to also hear from communication, environmental and planning practitioners who work across the spectrum of communication platforms. The project panel made up of communication, environmental and planning professionals from DOTs representing states across the country was convened to discuss public outreach and provide examples of successful communications strategies with the public generally, as well as a specific discussion of communications around environmental issues.

The following sections highlight key points from the panel discussions and are augmented with social media data and examples where relevant. See Appendix A for a summary of the panel meetings via conference calls.

2.2 What DOTs are Saying about Environmental Topics

AASHTO conducted a survey of state DOTs regarding environmental communication in 2014. Survey data from 22 state DOTs identified 11 common topics for environmental communications, including litter, wildlife crossings, project mitigations, resources use, recycling/stewardship, archeology, animal composting, transit/alternative transportation, clean air initiatives, quality of life and water quality.

Respondents also identified the following as frequently used environmental messages:

- Meeting permit/funding requirements
- Innovation reduces costs and benefits the environment
- It takes all of us to improve the environment
- Benefits to environment (trash clean up) also benefit the system
- We're doing our part to protect roadsides, air, water, wildlife, quality of life

2.3 Refining the Message

Based on discussions with the project panel, it appears there is opportunity to refine the messages DOTs use when talking about environmental issues. There is no one-size-fits-all message that will be effective with the range of audiences and issues across the country, but there is an opportunity to address *how* DOTs approach environmental messaging.

The research shows that state DOT messaging about environmental activities often originates from a compliance perspective. While the public should be helped to understand the reasons behind regulations and their critical role in shaping environmental outcomes, shifting to a benefit-focused tone

may significantly improve the way a message is perceived by its audience. As an example, in a recent British Petroleum (BP) advertisement, the company discusses their Gulf Coast mitigation efforts:

Words matter. Instead of talking about environmental mitigation as a compliance measure, DOTs can talk about how those actions improve the environment so that people can live healthier and better lives.

"We are helping economic and environmental restoration efforts in the Gulf Coast as part of our ongoing commitment to the region following the Deepwater Horizon accident in 2010."

That BP is engaged in these efforts because of a lawsuit and the resulting compliance requirements imposed by the

Environmental Protection Agency is never mentioned. This type of communication contains several messages, the most important of which is that the company is committed to improving residents' quality of life. Similarly, environmental mitigation is not just about meeting a requirement. Rather, the purpose of regulations is to protect the natural environment and ensure the safety of both humans and wildlife. More specifically, it is about preserving and improving the environment so that people can live healthier and better lives.

Why does it matter?

While there are significant differences between public agencies and private enterprise in terms of mission and resources available for communication, there are some messaging lessons that can be adapted by the public sector.





Compare the two images at left. The first comes from a public agency, and the second comes from the same BP communication referenced above. Both represent a similar message: "We are working hard to protect and improve our natural environment."

The public agency at top presents the message literally. The group of DOT environmental remediation specialists is working to protect a population of crawfish by relocating them away from a construction project. To the average citizen, this is important work, but the before and after photos of this project will look identical. From a visual standpoint, the message of working to improve and protect our natural environment is not immediately evident. However, if a problem (or potential problem) in the stream can be depicted, workers are shown addressing the problem and the resulting improvement is shown, then the outcome of the work can be seen.

The private industry photo at bottom is less literal and far more aspirational. A scenic beach stretches out ready to enjoy. The image is referencing a major natural disaster, but the message is focused on outcomes.

Key takeaways...

- ▶ It is best practice to humanize a story, but sometimes limited attention spans and competing messages mean placing a priority on conveying important messages in a simple, straightforward and powerful way. A **focus on aspirational** rather than more narrow and literal messaging, as in the BP example above, can be effective.
- When it comes to encouraging environmental protection, photos of scenic sites valued by the public can quickly demonstrate the importance of conservation. Transportation infrastructure is made of roads, but it is not about roads.
- ▶ There are underused messages about **connecting transportation and our environment**. For example state roads and highways literally connect people to the parks, rivers, lakes, streams and natural beauty they enjoy. Americans highly value our national parks, and every state has a national park. Those parks are accessible by roads maintained by state DOTs. America's interstate highway system and national parks are literally and figuratively connected.

2.4 Pushing Back on Negative or Inaccurate Information

The panel members noted that when agencies build relationships with stakeholders and the public, those audiences tend to assist in pushing back on negative or unfair comments on behalf of the DOT. One panelist noted that following an active safety campaign encouraging motorists to drive carefully in winter, the state had an icy storm and many cars slid off the road. The social media response was largely people criticizing their fellow motorists for driving too fast. This example is less about how to avoid criticism than it is about how DOTs work to develop relationships. Audiences are more likely to show understanding in a given situation when they are informed and familiar with it.

The panel recognized that negative comments are a part of life on social media. As public agencies, it is important to offer many channels for public feedback. Likewise, there are some excellent examples where DOTs have used social media to correct the record or provide information about a misconception.

The Michigan Department of Transportation's <u>series of myth-busting videos</u> is a prime example. The agency took comments from the public and responded to the comments in very plain, direct language as a way to address several misconceptions. One person asked why Ohio's highways are better than Michigan's, and the agency spokesperson explained that the situation was "painfully" true. The spokesperson further explained that Ohio spends about a billion dollars more than Michigan each year on its roads. "Maybe there's a lesson in that," the spokesperson concluded.

▶ Why does it matter?

The public is particularly responsive to agencies that are willing to be forthcoming and acknowledge that they don't always get it right. Michigan acknowledging that Ohio has "better" highways is an excellent example. They "disarmed" the complaint that Ohio's roads are in better condition by "painfully" acknowledging that it was true. The public more easily understands and appreciates direct language.

This aspect of public perception leads to an overarching recommendation for both traditional and social media, particularly important when dealing with negative information: Be honest and forthright when negative news stories emerge.

Key takeaways...

- ▶ Build relationships. When something goes wrong, or a negative story emerges, the public is much more likely to give the DOT the benefit of the doubt if they feel like they have been part of an ongoing relationship. Start building relationships now so they are in place when negative news emerges.
- ▶ To err is human. Everyone makes mistakes we are all human. When the public can interact with an agency (particularly on social media) and feel like they are engaging another human being, they are far more likely to forgive a mistake.
- Connection yields understanding. It is easier to be upset at a faceless agency devoid of personality. Social media can be an effective tool in humanizing the agency and the hardworking men and women they employ.

2.5 Recommendations and Best Practices

environmental issues.

Transportation agencies across the country operate as separate and independent voices. While all politics is local, not all idea generation has to be. Issues that are common between DOTs can be evaluated on a broader scale by the CEE, AASHTO, FHWA and others for consistent communication and sharing best practices including developing a community of practice for communicating

While communication may need to be local, generating ideas doesn't have to be.

- Traffic updates, safety campaigns and project updates come naturally to most DOTs and their followers. Research shows that connecting environmental issues with transportation, at least in the social media arena, is done less frequently. Providing ready-made content, pre-packaged tweets and effective messaging in a regular update via a community of practice could generate content across the country. There is an opportunity to communicate environmental messages related to transportation through DOTs.
- DOT professional environmental staff working with DOT communications staff may be able to educate each other on the important topics to be communicated, and the ways to communicate them.



SECTION 3: A VIEW FROM THE HILL

3.1 The Current Climate in Washington

In February 2014, Tom Donohue, President and CEO of the U.S. Chamber of Commerce and Richard Trumka, President of the AFL-CIO, joined then AASHTO President Mike Hancock to testify to the Senate Environment and Public Works Committee, then chaired by Senator Barbara Boxer (CA). This alliance of business and labor spoke in support of reauthorizing the bill funding federal transportation investments. Their testimony during the hearing, quoted below, is an example of the urgent nature of the lobbying that Congress is receiving on this critical funding issue.

Tom Donahue, U.S. Chamber of Commerce: "First, let's start by having some courage and showing some leadership. For once, let's do what's right, not what's politically expedient. Second, let's educate the public and your fellow lawmakers."

Richard Trumka, AFL-CIO: "If business and labor can come before you united on this issue -- and we are united on this issue despite our sharp disagreements on a variety of other matters -- I think that should tell everybody something and tell it very loudly."

Trumka estimated that for every billion dollars we spend on transportation infrastructure, we could create 35,000 jobs across the country.

This hearing highlights another element of the climate in Washington: competing priorities and finite resources. The underlying bill the Committee hearing was about was Senate Bill 2322, The MAP-21 Reauthorization Act. After the hearing, the Act won unanimous and bipartisan passage from the Committee. Despite the alliance of some of the most powerful business and labor groups, however, the bill was never taken up for debate by either the full Senate or House of Representatives. It died when the 113th Congress adjourned at the close of 2014.

3.2 A Conversation with Former Congressional Communicators

On December 16, 2014, the research team convened a group of 12 former Congressional communications directors to discuss transportation and environmental messaging. Many members of the group now work in the private and non-profit sectors. To maintain an open discussion, the group was assured that their names would not be used in this report. However, their former offices and party affiliations are noted below:

- Sen. Lincoln (D-AR)
- Sen. Hagan (D-NC), Sen. Landrieu (D-LA)
- Sen. Stevens (R-AK), Sen. Landrieu (D-LA)
- Sen. Lott (R-MS) Senate Finance Committee
- Senate Appropriations Committee
- Sen. Snowe (R-ME), Rep. Blunt (R-MO) (Senate and House)
- Sen. Isakson (R-GA)
- Sen. Hatch (R-UT), Rep. Lee (R-UT) (Senate and House)
- Rep. Herger (R-CA), Rep. Ryan (R-WI)

- Sen. Johanns (R-NE), Senate Republican Conference, Rep. Blunt (R-MO) (Senate and House)
- Sen. Bond (R-MO)
- Rep. Cleaver (D-MO)

The conversation was initiated by asking the group to share their views on the connection between environmental concerns and transportation, but it became clear to the research team that the group's focus was funding. This focus is understandable considering the large portion of time Congress spends on the funding and budget process. It also reflects the fact that a majority of the assembled group served on the staffs of members who served on Appropriations Committees.

The conversation quickly moved to a discussion of a recently aired television segment that most of the group had seen.

In November 2014, 60 Minutes aired a segment, Falling Apart: America's Neglected Infrastructure. The former staffers identified this type of message – "America's Neglected Infrastructure" – as the recurring message of public agencies. They noted the way in which then-Governor Ed Rendell of Pennsylvania talked about I-95, the nation's busiest stretch of highway during the show:

It's the nation's number one highway. Twenty-two miles of it goes through the city of Philadelphia. There are 15 structurally deficient bridges in that 22-mile stretch. And to fix them would cost seven billion dollars -- to fix all the roads and the structurally deficient bridges in that 22-mile stretch.

The group talked at length about the message presented in the program, and highlighted one brief conversation between the *60 Minutes* reporter and former Department of Transportation Secretary Ray LaHood during the program. When asked why the transportation infrastructure is falling apart, Secretary LaHood said that it is "because we haven't made the investments. We haven't got the money. The last time we raised the gas tax, which is how we built the interstate system, was 1993." When asked what the resistance has been, Secretary LaHood replied that "politicians in Washington don't have the political courage to say, 'This is what we have to do.' That's what it takes." He clarified his point, noting that politicians "don't want to spend the money. They don't want to raise the taxes. They don't really have a vision of America the way that other Congresses have had a vision of America."

The group of former congressional staffers indicated that Secretary LaHood's sentiment represents much of the thinking on Capitol Hill. Politicians sense that there is a clear and overwhelming national need for infrastructure investment, but there is little agreement in Congress on how to best fund that need.

Although the message about "America's Neglected Infrastructure" that was conveyed on *60 Minutes* represents the most commonly used messaging about infrastructure investment, the group of former staffers questioned the show's effectiveness. Certainly calling attention to infrastructure investment needs through a TV show elevates awareness among the general public. But the group noted that there have been wake-up calls after tragic events before, such as the collapse of the I-35 Bridge in Minnesota in 2007, which killed 13 drivers. Despite heightened awareness after this tragic incident, little has changed in national infrastructure investments.

Why does it matter?

While the conversation with former Hill communications professionals was a small sample, their advice that the "danger of lack of investment" message lacks punch is born out in the fact that it has not been overly effective. The group felt the public largely sees transportation funding as a "Chicken Little" issue: even when there is tragic evidence that the nation's infrastructure is failing, the public sees the message as public officials claiming the sky is falling.

The public sees an element of self-interest when transportation agencies advocate for more resources. Few people have actually experienced a failure in public infrastructure. With little direct experience, it is hard for them to believe that the transportation system could face a massive, system-wide failure. Unfortunately, if an issue does not directly affect people, it is unlikely to encourage action.

The lesson for communicating about the environment is to make it matter to the public. People may not react to a broad-stroke comment about the "environment," but poor local air quality or ensuring a local green space may garner attention.

Key takeaways:

- ▶ The massive amount of spending required to repair the nation's infrastructure is hard to relate to for the average person. However, people understand that if they allow their home to fall into disrepair, the longer it is ignored the more expensive fixing the problem becomes. Repairs, on any scale, never get cheaper.
- ▶ Make the message about people, not things. Increased jobs, improved safety, decreased congestion and better mobility are more than concepts they are messages that can be associated with faces.
- ▶ There is no one-size-fits-all message. Issues surrounding increased investment or environmental protection can be polarizing, so understanding audiences and tailoring messages is critical to effectiveness. Union households may value messages about jobs more. Rural areas may value messages about bringing goods to market.
- ▶ Successful messages may target audiences, but they also build coalitions, often from opposite sides. Listen to what groups need and try to find a middle ground.
- Using data and objective third-party research helps to insulate transportation agencies from charges of bias or self-serving motives.

3.3 Review of Survey Results from Former Congressional Communicators

The former Hill communications professionals were also asked to answer ten questions regarding constituent views related to transportation and the environment. Additionally, at the recommendation of the project panel, the former Hill communications professionals were asked to rank a set of ten message points to create a "heat-map" of effective message points. The full survey results are provided in Appendix B, and the most significant findings are presented below.

My constituents generally connect transportation and environmental sustainability.

0%	Disagree completely	
87.5%	Disagree mostly	
12.5%	Neither agree nor disagree	
0%	Agree mostly	
0%	Agree completely	

This response strongly indicates that the public (as it is perceived on the Hill) does not readily connect transportation and environmental issues.

My constituents believe if government is forced to spend a lot of money on environmental protection, it won't be able to invest in new roads or keeping our roads in good repair.

0%	Disagree completely
0%	Disagree mostly
12.5%	Neither agree nor disagree
62.5%	Agree mostly
25%	Agree completely

This response seems to point to a perceived conflict between investing in new roads or road repair and investing a significant amount of money in environmental protection.

My constituents believe the department of transportation should be conscious of and study the environmental effects of new road projects.

12.5%	Disagree completely	
25%	Disagree mostly	
25%	Neither agree nor disagree	
37.5%	Agree mostly	
0%	Agree completely	

Additionally, there is skepticism about whether the DOTs should be studying the effects that a new transportation project will have on the environment.

My constituents believe the department of transportation should take actions to decrease air pollution.

0%	Disagree completely	
37.5%	Disagree mostly	
12.5%	Neither agree nor disagree	
50%	Agree mostly	
0%	Agree completely	

In contrast, this response indicates there is some recognition by the general public that there is a connection between air quality and transportation issues.

Overall, the survey indicates some skepticism of the role of transportation in protecting the environment, especially if it increases cost. While respondents noted that constituents acknowledge there is some interplay between transportation and environmental protection needs, they pointed out during the discussion that there is disagreement on how best to pay for actions to address those needs.

The research team also asked the former Hill communications staff to rank a list of ten messages in order of importance to their constituents. In this list, "1" represents the most important and "10" the least important. In rank order, the results of the survey were as follows:

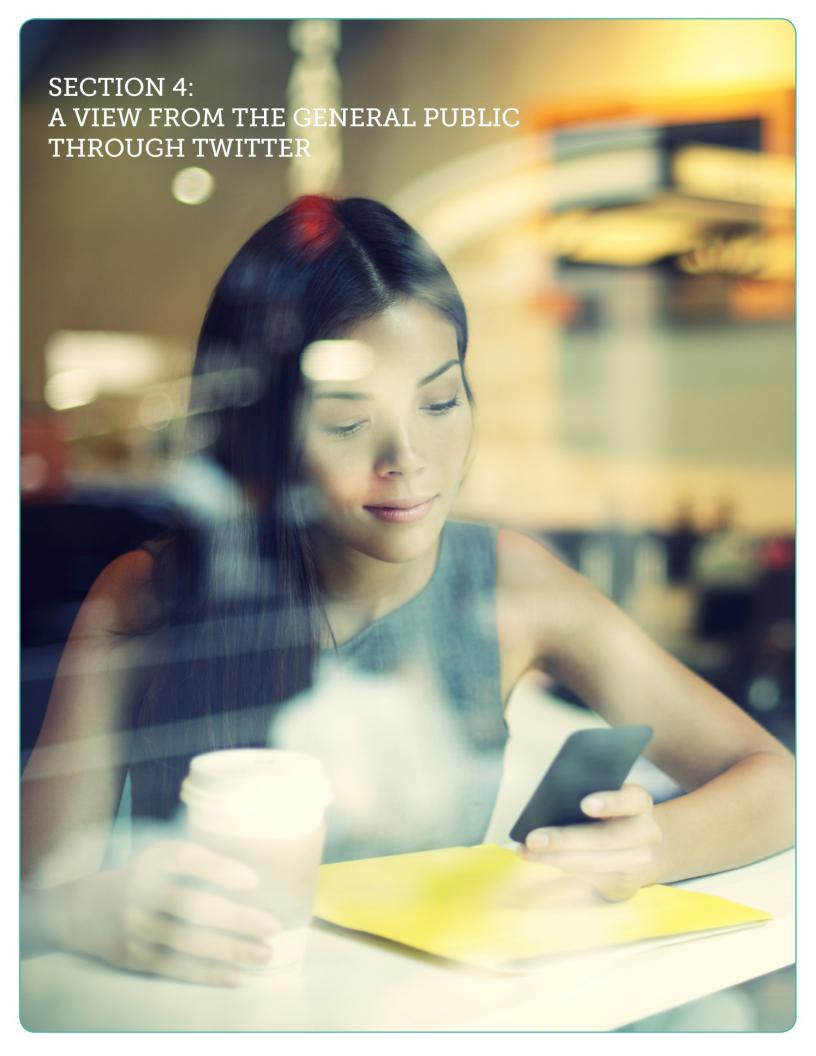
- 1. Reducing dependence on foreign oil
- 2. Modal choices
- 3. Fast and easy commutes
- 4. Reducing dependence on carbon-based fuels
- 5. Increasing livability through transit-oriented development
- 6. Reducing health impacts on children and the elderly
- 7. Increasing recreational bike and walking opportunities
- 8. Protecting animal and plant eco-systems and habitats
- 9. Reducing impact on global warming
- 10. Protecting natural resources

3.4 Recommendations and Best Practices

 Whether trying to pass a multi-billion dollar transportation authorization bill or site a new stretch of highway, competing interests and politics are usually involved and should be acknowledged.

The perspective from the nation's capital confirmed transportation's connection to environmental issues is complicated.

- It is critical to communicate to the public that transportation and environmental issues go hand in glove. More importantly, communities and the environment are often *improved* by transportation projects, and those benefits should be highlighted as such. For example, fast and easy commutes are good for both drivers and air quality.
- While the communication directors' perspective is that the focus of the national transportation
 conversation is on funding rather than environmental benefits, they were open to and
 appreciated messages regarding the environmental benefits of transportation. The discussion
 highlighted a potential opportunity to expand environmental messaging. Information about the
 environmental benefits associated with a specific project or across investments could be shared
 with congressional staff and by extension, congressional staff could then share that
 information with constituents at home.



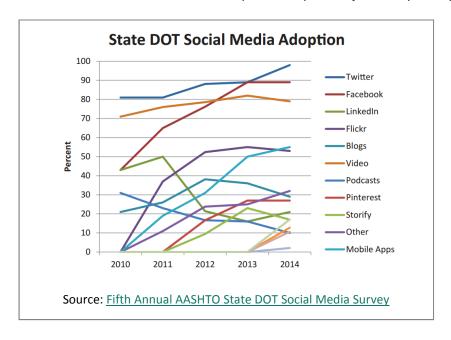
SECTION 4: THE VIEW FROM SOCIAL MEDIA (TWITTER)

4.1 Introduction

According to the 2014 Pew Internet Project, 74 percent of all Internet users use social media. While Facebook continues to dominate market share, Twitter is growing in use. For the purposes of this study, a year's worth of Facebook data was both cost-prohibitive and difficult to aggregate in a way that would be informative to this paper.

However, Twitter data is relatively cost-effective. According to the Pew Internet Project, on any given day, 100 million people use Twitter. Eighty-percent of world leaders use Twitter. And, perhaps more important for the purposes of this research, 44 percent of Americans hear about tweets through other media. In other words, Twitter "mentions" are an effective gauge of the awareness of a story or message.

Additionally, according to the <u>Fifth Annual AASHTO State DOT Social Media Survey</u>, Twitter is actively used by 98 percent of all state DOTs. Twitter use was up from 82 percent just four years ago.



As social media has expanded, so has the attention DOTs have paid to its use. Twenty-two state DOTs have staff dedicated to social media. Whether dedicated full-time to managing social media accounts or not, DOT staff members know that a well-placed tweet or comment can reach thousands of constituents. However, it is how a news story, release or post carries across social media that demonstrates its potential reach and impact. Unlike some of the other ways DOTs communicate, this medium is a two-way street. Press releases and news stories are generally "pushed" out by the agency and are "received" by customers. Social media may begin with a push, but its value lies in the fact that others can easily pass along the message. When other social media users pass along a tweet or post from a DOT, they can take the form of an endorser of the DOT message.

A note about the demographics of users across all social media platforms

The 2014 Pew Internet Project makes another interesting point about social media use. Just a few years ago, social media was primarily used by younger Americans. But as social media has grown, its user base has expanded significantly. In fact, almost half of all Americans over age 65 use social media.

Social Media Users		
Men	72%	
Women	76%	
18-29	89%	
30-49	82%	
50-64	65%	
65+	49%	

4.2 A Snapshot of What DOTs are Generally Communicating via Twitter

Regardless of whether communication takes the form of an informational website, a press release, a traffic update or a photograph, social media provides a platform to expand the reach of that communication. As the <u>Fifth Annual AASHTO State DOT Social Media Survey</u> demonstrated, a growing number of states are turning to social media to engage the public.

The AASHTO Social Media Survey indicates that Twitter is the most broadly used social media platform for DOTs, with nearly every state and the District of Columbia having a presence on Twitter. The growth of Twitter's popularity among the public is part of a trend toward mobile communication. The public is turning to mobile resources – including smart phones and tablets – to access both social media, and a multitude of helpful apps have been created to inform the public about relevant information instantaneously.

One of the DOTs' primary jobs regarding social media engagement is to provide accurate and timely information when something is out of the ordinary. States see a spike in public interaction when there is a major traffic event or hazardous weather. In fact, weather events represent an opportunity to both serve the public and grow the DOTs' reach. States often attract followers simply by tweeting out a "follow us for up-to-date information" before or during weather events.

DOTs are embracing opportunities across multiple social media channels to provide content, and as a result they are expanding their interaction with the broader public on environmental issues.

To examine the hundreds of thousands of DOT messages across Twitter, this project tracked the Twitter accounts for each state's department of transportation and examined the "top ten" messages for each DOT. In the language of Twitter, that means the research team looked at the most "favorited" and "retweeted" messages for every state. A full list of the top ten tweets from each state can be found in Appendix C.

The research team categorized the top tweets of each state DOT and three broad categories of tweets emerged. Some states use Twitter as a tool for communicating traffic issues, while others provide those basic services along with everything from humor to professional photography. Messages from the states generally fit into three categories:

65%	Traffic-related updates
20%	Safety or weather-hazard related messages
15%	Current events/Community interaction

Although Twitter is only one communication tool, the Twitter accounts show a representative sampling of the messages DOTs are using to engage the public. The Twitter examination of each state highlighted a challenge for issues such as environmental concerns: it can be difficult to create content that engages the public on issues that may be secondary to the traffic and weather information many followers rely on from the DOT.

It may be a challenge for DOTs to create or distribute content on issues like the environment when their current followers expect traffic and weather information.

4.3 Effectively Reaching the Public

Social Media in general, and Twitter specifically, are powerful tools because they can 1) provide information directly to those who request to "follow" the DOT, and 2) significantly expand the reach of a message when a "follower" of the DOT passes the message along to their respective "followers." These "retweets" can multiply the number of message views by thousands. A DOT-generated

States with the largest reach attract followers beyond those typically interested in safety and traffic information.

tweet sent to 50,000 followers can easily be seen by millions if "retweeted."

The states with the largest reach on social media often attract followers beyond the audiences that would typically be interested in safety and traffic information.





For many states, the messages that garnered the most attention – and helped build a following – were humorous or lighthearted. For example, in Massachusetts, the most popular tweet was a picture of an electronic highway sign that read: "Use yah blinkah." The message was a humorous nod to the unique accent associated with the region. In Colorado, the most popular tweet was released days before the 2014 NFL Super Bowl and featured a picture of a snow plow with the caption: "We are ready to intercept this storm just like the #Broncos will intercept @DangeRussWilson Sunday!"

There are two important things to note about each of these messages:

- **1. They were creative and entertaining.** They give the audience a reason to pay attention and an incentive to share the message with a broader audience.
- **2. They connected to the community.** Whether it is humorous safety for Massachusetts conveyed in a Boston accent, or preparedness for Colorado connected to a Super Bowl appearance, the message feels like a part of the community it reaches.

Images are another powerful tool for building a relationship with the public, and they are particularly effective for communicating environmental issues. Members of the project panel noted that images captured by cameras at wildlife crossings have been instrumental in overcoming public skepticism about whether animals would use the crossings.

Many state DOT employees spend time in the remote areas of their states and work in beautiful settings. Many also employ staff photographers. Washington State maintains a Flickr site and features its own photos, as well as those of the public. Other states use Instagram to post and share photos across social media. These strategies have applications for communicating about environmental issues.

Using innovative approaches like images from their wildlife crossings, the Washington State DOT has garnered the largest Twitter following of any state, which at the time of this research reached nearly 84,000 followers.

The conclusion here is not that DOTs should make more jokes on Twitter or post more scenic photos. The point is that social media is an opportunity to communicate with the public, and it requires two-way participation. Without active participation from a DOT's "followers", there will be a smaller audience when there is an important message to convey. As demonstrated by states across the country,

It is not about making more jokes. Rather, to effectively use social media you have to actively participate in conversations, which requires a huge shift in tone for many state DOTs.

contributing a little humor or creativity to the ongoing conversation is an effective way to extend a DOT's reach—regardless of message.

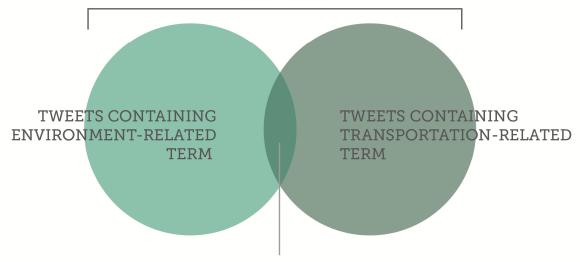
4.4 A Snapshot of Environment-related Transportation Messages Across Twitter

For the purposes of this study, the conversation on Twitter needed to be narrowed from millions of tweets to a manageable number to be analyzed. The research team examined two separate groups of tweets (Figure 4.4.1):

- 1. **Group 1: General Environment/Transportation Conversation** For the first group, the research team focused on tweets during 2014 that contained both an environmental term *and* a transportation term (Figure 4.4.2).
- 2. **Group 2: DOT Conversation** For the second group, the research team searched all tweets generated by state DOTs in 2014 that contained an environmental term (Figure 4.4.3).

In the first group, the analysis identified 12,470 tweets out of more than 132 million that contained both a transportation term and an environmental term. From the second group, the search identified 755 tweets out of several hundred thousand in which a DOT tweeted about an environmental topic. Figure 4.4.2 and 4.4.3 on the following page lists the terms used to narrow the investigation.

132 Million + TOTAL TWEETS



TWEETS CONTAINING BOTH TERMS (12,470 TOTAL)

figure 4.4.2

environment

activism

figure 4.4.3

ENVIRONMENT-RELATED TERMS

and

TRANSPORTATION-RELATED TERMS

biodiesel
bioenergy
biofuels
biomass
biopower
carbon
carbonprice
cleanenergy
cleantech
climate
climateaction
climatechange
conservation

conservation
CSR
ecofriendly
eco-friendly
ecomarkets
emissions
energy
environment
ethanol

EV

fuelcell
gas
globalwarming
gogreen
greencity
greenisgood
greentravel
hydrogen
innovation
methane
natgas

NREL offsets peakoil publictransit

PV

renewable
renewables
responsibletravel
smartgrowth
sustainable
sustainability
urbanism
urbanplanning

waste TMDL erosion sediment congestion airquality

constructionerosion

mitigation cleanwater waterquality stormwater cleanwateract raingarden bioswale treatmentbmps infrastructure construction road work work zone transportation travel

traveler AASHTO road street lane freeway highway Hwy interstate bridge overpass underpass transit tunnel ramp exit interchange

automobile
car
vehicle
bus
plow
snowplow
plowing
truck
tractor trailer
rail
railroad
trolley

streetcar

Why does it matter?

There are far more conversations happening outside of transportation agencies where a transportation term and an environmental term are connected. In fact, in this search there were millions of more tweets in the general Twitter conversation related to environmental topics than to transportation topics. This is not to say that environmental messages need to supplant the current messages that DOTs carry on social media. However, there is a significant opportunity to supplement current Twitter messages with messages related to the environment.

Key takeaways...

- **Extend the message.** When a traffic or weather-related message can be combined with another message, it extends the reach of the message.
- ▶ Make connections. DOTs could connect their conversations to related messages, both locally and nationally. In doing so, the DOTs' voices are amplified.
- ▶ **Connect with each other.** Following other state DOTs and connecting to their hashtags and campaigns will extend each DOT's reach.
- ▶ **Take part in the conversation.** Monitor relevant social media channels to be aware of nationally trending hashtags and conversations, and provide meaningful input when appropriate.
- ▶ Participate when appropriate. It is important to temper involvement in issues outside those that would be considered a DOT's normal purview. However, as the Colorado DOT's tweet both promoting their message and supporting the local Super Bowl bound team illustrates, there are unique and creative ways to add the DOT voice to a more general community conversation.

4.5 Demographic Analysis

Twitter users are not required to make public their name, age or gender. Where demographics could be ascertained under this research, the general environment/transportation conversation tends to skew slightly younger than the DOT conversation.

When comparing the split between male and female users across the two conversation streams, the results varied slightly:

- For the general environment/transportation conversation, there was a male-to-female ratio of 63 percent to 37 percent, respectively.
- For the DOT conversation, there was a male-to-female ratio of 69 percent to 31 percent, respectively.

Although the DOT-focused conversation skews further male than the general environment/transportation conversation, the major takeaway is that both conversation streams feature an approximate two-thirds male-to-female ratio.

▶ Why does it matter?

While historically males have done more of the driving than women, that is no longer the case. According to the University of Michigan's Transportation Research Institute, there are now slightly more women drivers than men. Based on 2010 data from the FHWA and the U.S. Census Bureau, more than 105.7 million women were licensed to drive in the U.S., compared with 104.3 million men.

While DOTs are providing information that their current followers desire, the skew in the male/female demographic matters for several reasons:

- The current audience is not representative of the driving population.
- There is a significant opportunity to increase the audience by understanding what other demographic groups are interested in and adding those items to the messaging strategy.

Understanding what environmental/transportation messages are more likely to appeal to any particular demographic is beyond the scope of this paper, but is an important next step.

4.6 Twitter Content and Examples

From December 2013 to December 2014, thousands of tweets were tracked that made the connection between transportation and the environment. In any given quarter, only a few of those tweets were from DOTs themselves, but several came from the general public mentioning DOTs.

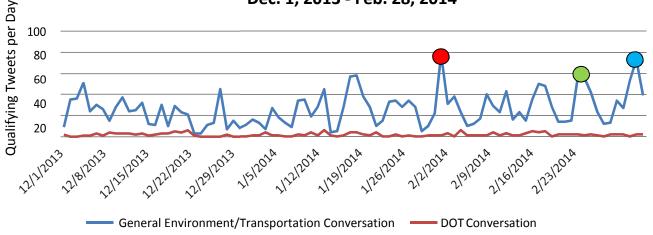
Quarter 1: December 1, 2013 – February 28, 2014

The chart below is a quarter-by-quarter analysis of the Twitter traffic divided into two categories:

- **Group 1 (the blue line)** represents the general environment/transportation conversation. See Figure 4.4.2 and 4.4.3 for the terms used to identify this group of tweets.
- **Group 2 (the red line)** represents tweets from DOTs that had some environmental content. See Figure 4.4.3 for the terms used to identify this group of tweets.

The highest spikes in traffic have been identified with colored dots and correlated to the particular news item or current event that drove the particular increase. In each event, the research team has cited and summarized the associated twitter traffic-driving news item or event in an effort to provide context and identify trends for the increased conversation.

General Environment/Transportation Conversation vs. DOT Conversation Dec. 1, 2013 - Feb. 28, 2014



Notable Stories

State of the Union Address – President Barack Obama

On January 28, 2014, President Obama delivered his annual State of the Union address. This led to a spike in Twitter activity discussing infrastructure, transportation and sustainability. Especially prevalent was the call for a new high-speed rail infrastructure that would create jobs and reduce the nation's dependence on petroleum.

CapitalNewYork.com: Energy secretary: U.S. infrastructure unready for rail-crude boom

U.S. Energy Secretary Ernest Moniz said the country does not yet have the infrastructure to support the dramatic increase in crude oil now being transported by rail. Moniz said pipelines are the best way to address the nation's growing production of oil and gas, largely through fracking. At the time, the Obama administration was weighing an approval of the Keystone XL pipeline, which would run from Canada to the Gulf of Mexico.

▶ Why does it matter?

The general transportation conversation spiked during the State of the Union address. While it may be inappropriate for DOTs to get involved in a conversation about the State of the Union, other less political national conversations may be good places to expand the DOTs' message reach.

▶ Why does it matter?

The U.S. Energy Secretary demonstrates how to make news.

Inhabitat.com: Snow-melting road salt wreacks havoc on the environment, infrastructure

According to a report on Treehugger.com, salt adversely impacts wildlife, plants, water and soil when it inevitably finds its way into the groundwater, rivers and streams. Road salt can also contain chemicals, such assodium ferrocyanide and ferric ferrocyanide. It is also corrosive and speeds up the deterioration of infrastructure—every dollar spent on salt costs an estimated four dollars in repairs to roads and bridges.

▶ Why does it matter?

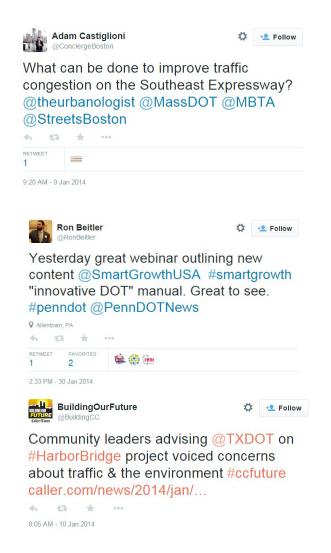
Advocacy agencies and media outlets often take over a social media news cycle. Being aware of what is being said on these sites through social media can help DOTs both promote themselves and protect themselves. In the case of this article, no DOTs participated in this conversation.

Examples from DOT Conversation

Below are examples of tweets from the first quarter of 2014 that mention DOTs while tweeting about an environmental topic. Many of the DOTs used these inquiries or comments to engage with the public in positive ways.

▶ Why does it matter?

Social media is often a nonthreatening place the public looks for answers from government agencies.





1:10 PM - 11 Feb 2014

Examples from General Transportation Conversation

Below are examples of tweets from the first quarter of 2014 that came from the public at large. These messages connected transportation and environmental topics. Note Minnesota Governor Mark Dayton's excellent use of the #BetterMN hashtag.

▶ Why does it matter?

The tweet on the top right is a good example of connecting road-building materials to the environment. The hashtag #news is too broad to bring attention to this tweet from an environmental perspective. A hashtag like #GreenRoads would work better.









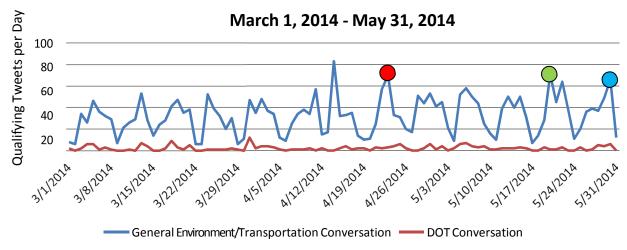




Quarter 2: March 1, 2014 - May 31, 2014

Below are examples of tweets from the second quarter of 2014 that mention DOTs while tweeting about an environmental topic.

General Environment/Transportation Conversation vs. DOT Conversation



Notable Stories

Jeffrey D. Sachs: Wall Street Journal again displays contempt for environment. Defends Keystone for 2,000 construction jobs. US labor force = 156 million.

Jeffrey Sachs is the director of the Earth Institute and the Sustainable Development Solutions Network. His response on Twitter to a Wall Street Journal article published in April received a significant spike in retweets and debate focused on the infrastructure challenges and opportunities of the Keystone XL pipeline.

Clean Technica: Severe issues with fuel cell vehicle GHG emissions claims and hydrogen refueling infrastructure grants

One of Clean Technica's readers sent this letter to the grants and loans officer at the California Energy Commission. The author outlines the discrepancies between the rationale for awarding hydrogen refueling infrastructure funds and provides independently verifiable facts. The document provides an interesting examination of the future of California's transportation network.

▶ Why does it matter?

While Jeffrey Sachs's tweet may be too controversial to retweet, being aware of stories that are trending may help DOTs understand their audience's attitudes better.

Why does it matter?

A story like this may be an opportunity to help the public understand what is being said. In this case, social media may have alerted the DOT to an issue gaining attention and in need of addressing.

U.S. Department of Energy: How four NETL-managed

projects are improving the nation's electric vehicle charging infrastructure

Four smart grid projects managed by the National Energy Technology Laboratory (NETL) are improving the infrastructure needed for charging electric vehicles—work that will reduce petroleum dependence, enhance environmental stewardship, and improve economic growth through job creation. Because electric vehicles represent a key pathway for reaching transportation sustainability and economic goals, the U.S. Department of Energy's Office of Electricity Delivery and Energy Reliability directed its Smart Grid Research and Development Program to aggressively pursue projects to reduce the cost of the electric-vehicle charging infrastructure and enable smart charging of electric vehicles.

▶ Why does it matter?

The Department of Energy got significant traction on social media with what began as a simple press release. Not only did this release garner the third highest traffic among tweets related to transportation and the environment, it produced several news stories on the subject.

Examples from DOT Conversation

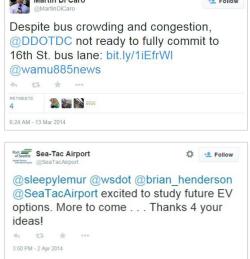
Below are examples of tweets from the second quarter of 2014 from the public at large that mention DOTs while connecting transportation and environmental topics.

Some of these are good examples of the different types of tweets DOTs could associate themselves with by joining the conversation initiated by their own state's elected officials.

Why does it matter?

All stakeholders can be new audiences and partners in message-sharing.







Examples from General Transportation Conversation

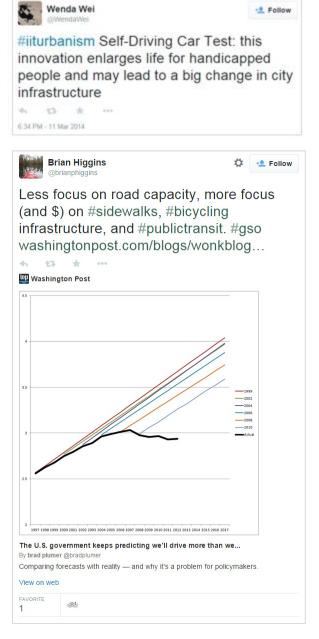
Below are examples of tweets from the second quarter of 2014 from the public at large that connected transportation and environment-related topics.

These tweets represent several potential areas for engagement that involve technology, such as hydrogen fuel cells and self-driving cars.

▶ Why does it matter?

Connecting to third-party media validators like the Washington Post story (lower right) can help start a conversation, in this case about infrastructure spending.

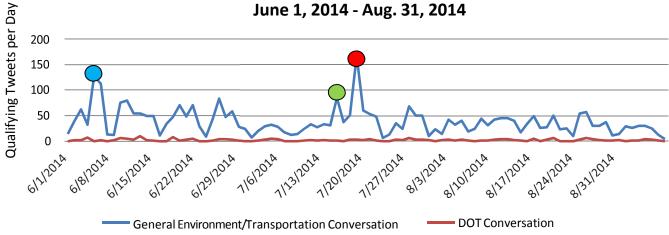




Quarter 3: June 1, 2014 - August 31, 2014

Below are examples of tweets from the third quarter of 2014 that mention DOTs while tweeting about an environment-related topic.

General Environment/Transportation Conversation vs. DOT Conversation



Notable Stories

Vice President Joe Biden (@VP): Good infrastructure
has a ripple effect: Job creation ✓ Less road congestion ✓

More reliable travel times ✓
Vice President Biden created the largest impact on social media during this time frame due to his tweet about the

media during this time frame due to his tweet about the benefits of investing in American infrastructure. This is part of a larger initiative, Rebuild America, which focuses on rebuilding roads and bridges through increased investment and program reform.

Why does it matter?

The Vice President's tweet signaled the administration's national push for infrastructure investment.

Fast Company: These easy-to-install solar car chargers can create EV infrastructure where we need it

Electric car sales doubled last year, but it still isn't easy to find a place to plug them in. Part of the problem is the way the typical electric vehicle charging station is designed: since it has to hook up with the grid on someone's property, it usually involves a messy and long process of permitting and

▶ Why does it matter?

This is another good example of a conversation DOTs may want to be aware of fueled by a traditional media story.

digging trenches. A San Diego company wants to take another approach, using mobile, solar-powered charging stations that can be installed anywhere in a couple of minutes.

The New York Times: This road work made possible by

underfunding pensions

The Federal Highway Trust Fund was expected to run out of money in August 2014. Although funding was extended through May 2015, the article at the time argues against one of the proposed solutions: if you change corporate pension funding rules to let companies set aside less money today to pay for future benefits, they will report higher taxable profits. And if they have higher taxable profits, they will pay more in taxes over the 10-year budget window that Congress uses to write laws. Those added taxes can be diverted to the Federal Highway Trust Fund. But, this will also result in corporations paying less in taxes in later years, when they have to make up for the pension payments they are missing now.

▶ Why does it matter?

What matters about this news article and the social media attention it attracted is that it is a very complex issue. Most people do not think about the Highway Trust Fund on a daily basis, but a story in *The New York Times* attracts attention that could be used to convene a more localized conversation about funding infrastructure.

Examples from DOT Conversation

Below are examples of tweets from the third quarter of 2014 from the public at large that mention DOTs while connecting transportation and environmental topics. Texas DOT is the subject of conflicting social media posts below, which highlights how opposing viewpoints can find a home on Twitter.

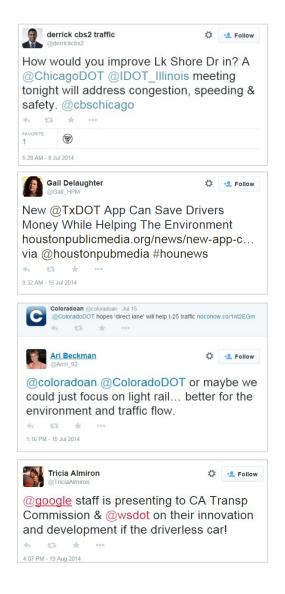
Texas DOT is both praised for a new app that helps save money and the environment, while being criticized for poor signage that the customer believes is not environmentally friendly. Engagement can help head off larger concerns or reactions before

🌣 😃 Follow

▶ Why does it matter?

they catch fire.

Joshua Segall





Examples from General Transportation Conversation

Below are examples of tweets from the third quarter of 2014 from the public at large that connected transportation and environmental topics.

▶ Why does it matter?

Note the use of pictures on both the Vice President's and the charging station's tweets.

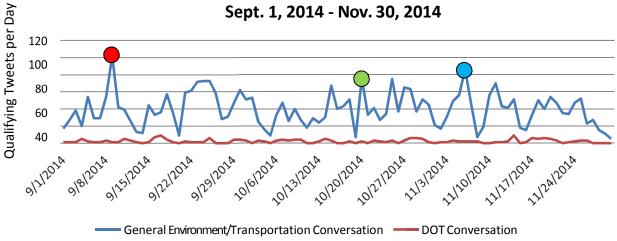




Quarter 4: Sept 1, 2014 - November 30, 2014

Below are examples of tweets from the fourth quarter of 2014 that mention DOTs while tweeting about an environmental topic.

General Environment/Transportation Conversation vs. DOT Conversation



Notable Stories

New York Gubernatorial Democratic Primary candidate

Zephyr Treachout (@ZephyrTreachout): We have sun & wind & water for a renewable future. With fair bank taxes we have enough for the best public schools, infrastructure, transit and I believe in 21st Century tech policy, public transit, infrastructure, and sustainable agriculture. Cuomo believes in trickle down.

On the day before the Democratic primary between incumbent Governor Andrew Cuomo and challenger Zephyr Treachout, Treachout generated enormous social media interest with her two tweets containing the tenants of her campaign, which included infrastructure and public transit.

Tina Matei: Why cities should invest in two-wheeled transit infrastructure

Twitter user Tina Matei, a faculty member for McMaster University, tweeted a graphic outlining transport energy efficiency statistics that received significant engagement through social media.

Why does it matter?

While DOTs need to steer clear of political campaigns, it is important to remain aware of what candidates are saying and how that may shape the way a DOT is perceived.

▶ Why does it matter?

The general public responds well to graphics that explain stories in more simple terms.

USA Today: Send gas tax money to states: Opposing views

Chris Chocola, president of the Club for Growth, argues that the Highway Trust Fund is a politician's dream because it transfers power to Washington and away from states, where important decisions need to be made. He advocates for the Transportation Empowerment Act, which would devolve the gas tax to the states.

▶ Why does it matter?

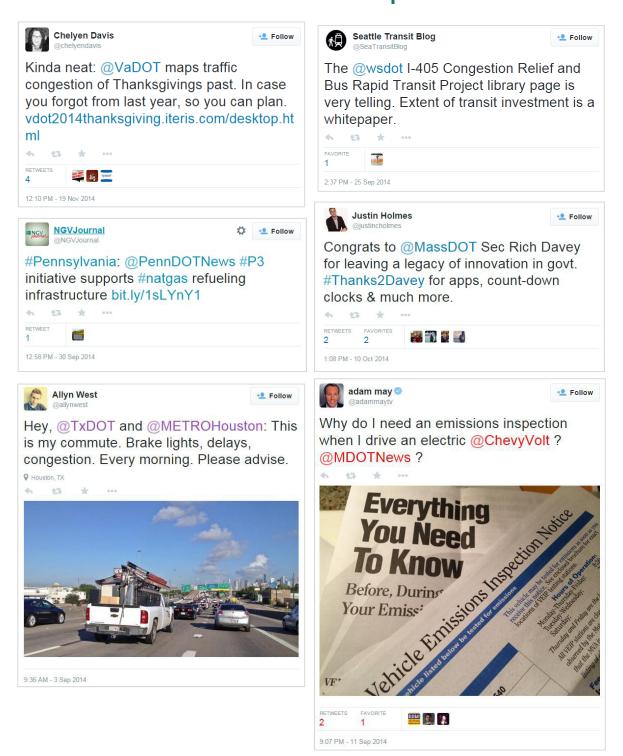
While DOTs cannot engage in political editorials, they do shape how the public understands issues like the Highway Trust Fund. Social media is a very helpful way to stay abreast of important national conversations.

Examples from DOT Conversation

Below are examples of tweets from the fourth quarter of 2014 from the public at large that mention DOTs while connecting transportation and environmental topics.

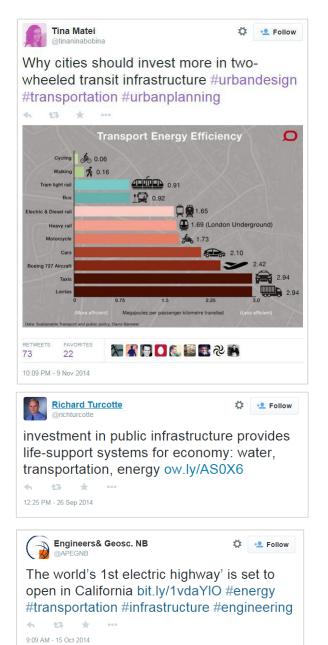
▶ Why does it matter?

Many of the tweets below illustrate something innovative that a state DOT is doing. Following DOT peers on Twitter is a good way to learn and share.



Examples from General Transportation Conversation

Below are examples of tweets from the fourth quarter of 2014 from the public at large that connected transportation and environmental topics.



▶ Why does it matter?

Note the first tweet on the left. This tweet found national reach as it explains the energy use for each mode of transportation. There is a growing audience for this kind of information, and using an information graphic helps convey a large amount of information in a single tweet.





OpportunitySpace



4.7 Recommendations and Best Practices

On any given day last year, DOTs created an average of three tweets that related to both transportation and the environment. Across the country, there averaged 10 to 20 times that amount in the general transportation/environmental conversation. Rarely did the general transportation/environmental and DOT conversations connect.

Many state DOTs utilize Twitter for traffic-related updates. Providing additional messages to that function, environmental or other, could extend a state DOT's reach and help them gain "followers." The general public uses Twitter to talk about current events. National figures use Twitter to create current



Outside of current events driven by political stories, well-crafted tweets joining a larger community conversation (like the Super Bowl) can help DOTs share their message.

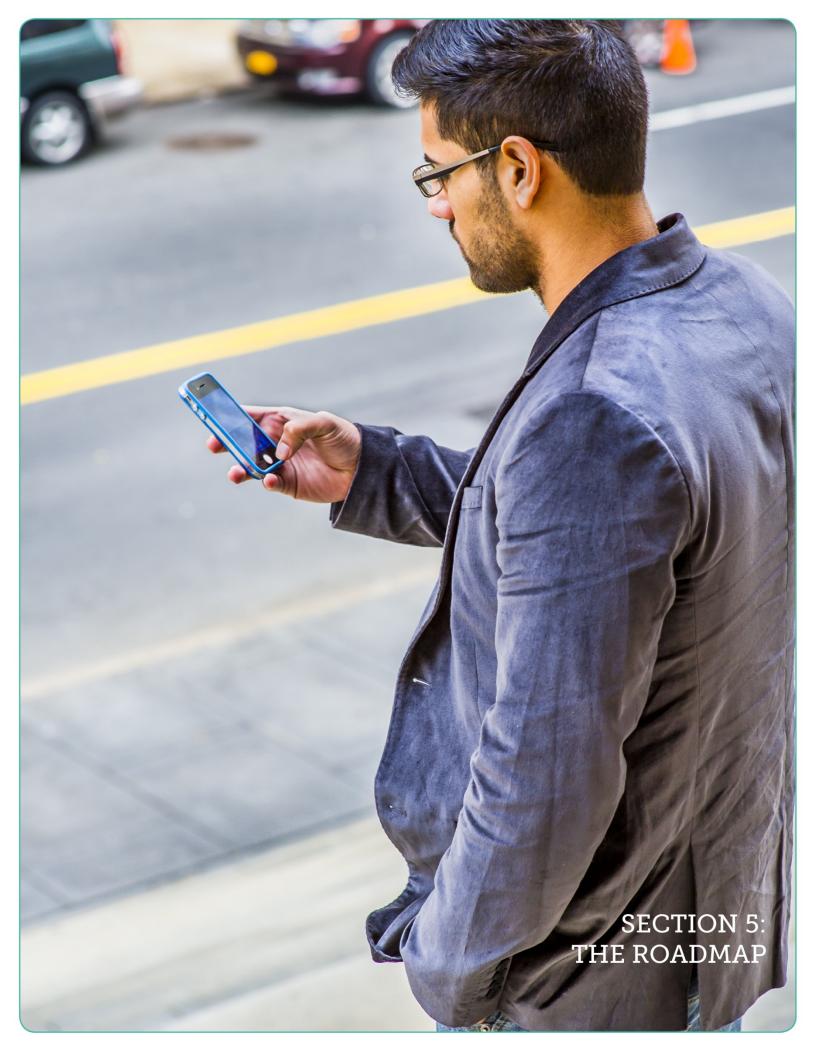
events and make news themselves. AASHTO and the CEE may be able to help states connect to those conversations.

Outside of current events driven by politics, well-crafted tweets joining a larger community conversation can help DOTs share their message. It may also help DOTs make their Twitter presence a part of a community dialog and relate to the public Twitter voice.

Within the transportation and environmental conversations, there are dozens of highly engaged interest groups, as well as advocacy and non-profit organizations. Many have followers who may be interested in the thoughts of state DOTs and can help amplify their message. States DOTs are a resource for unbiased information, as they answer questions and listen to the conversation with interest.

One of the issues identified by participants of the <u>Fifth Annual AASHTO</u> <u>State DOT Social Media Survey</u> highlighted a challenge nearly all public-sector communicators have faced at one time or another: the difficulties of navigating internal information flows and message approvals in the fast-paced world of social media. While it is beyond the

scope of this project to address the vetting and approval process, the research team acknowledges that challenge can be difficult to overcome, especially regarding sensitive environmental issues.



SECTION 5: THE ROADMAP

This section provides a brief review of messaging from a sample of national transportation organizations, with a focus on the environmental messaging or policies of those organizations. It is not intended to be an all-inclusive review, and the messages presented are largely in the organizations' own words.

This snapshot shows that messages tend to focus on the need for additional investment, the state of our crumbling infrastructure, and the resulting negative economic consequences of poor transportation. Or, in a more positive frame, the focus is on the economic benefits of adequate transportation funding and the positive impacts that funding will have on economic competitiveness.

It should be noted that even hard-hitting environmental messages are not made in isolation. They generally still relate to the economic arena. For example, messages about the impacts of congestion, including lost time for travelers and freight shipments, may take a tone of environmental responsibility. But the issues ultimately relate to the question of "How does the environment fit into a consideration of the full set of costs and benefits?"

When environmental messages are put forth, they are generally referenced in terms of regulatory compliance or quality of life, livability or sustainability. DOTs could emphasize a constructive, consistent and persistent message relating to the environment when they talk about the reasons a project is being undertaken. After all, building and operating infrastructure can be as much about the built, natural and human environment as it is about movement. Instead of allowing detractors to define transportation as the anti-environment issue, integrated messaging could support a strategy that proactively defines more than a standalone campaign that says "we are good for the environment." Rather, it could be an integrated campaign that moves the industry toward more aspirational messages. By combining the review of national messaging with the recommendations from the previous sections, a roadmap depicting elements that could reframe the national conversation is presented as Figure 5.1.

5.1 National Messaging

The research team looked across multiple national agencies that shape transportation policy for connections to environmental messaging. The results of this brief survey highlight current national messages regarding the connection between transportation and the environment.

FHWA

Two of many FHWA resources regarding environmental issues include:

- A newsletter entitled Success in Stewardship, which
 highlights current environmental streamlining practices. For example, the November 2014
 newsletter highlighted Road Diets to Advance Healthy, Safe Communities, with a focus on
 improving safety, livability and economy.
- Every Day Counts is FHWA's state-based model to identify and rapidly deploy innovations that shorten project delivery processes, enhance safety, reduce congestion and improve environmental sustainability. One recent publication highlighting environmental sustainability featured topics such as warm-mix asphalt and adaptive signal control technology.

AASHTO

- AASHTO's recently adopted Strategic Management Plan mentions quality of life several times.
- AASHTO manages the Center for Environmental Excellence, which serves as a one-stop source of environmental information for transportation professionals. Most of the resources are technical in nature and are targeted to practitioners.

Transportation Research Board

While the Transportation Research Board (TRB) offers considerable research on environmental issues, there appears to be limited research on how to effectively communicate environmental issues. Quotes from a few relevant research projects are highlighted below:



U.S. Department of Transportation

Federal Highway

AMERICAN ASSOCIATION
OF STATE HIGHWAY AND

TRANSPORTATION OFFICIALS

• NCHRP 20-24 (62), "A New Way to Talk About Transportation," and NCHRP 20-24 (62), "Making the Case for Transportation Investment and Revenue" focus primarily on funding. The documents include the following advice regarding communication about the environment:

"There are certainly people who care deeply about the environment, and in areas that have a heavy concentration of these people, this message will be more important. But, by and large, people do not consider roads and highways to be an environmental issue – more so the efficiency of the cars that drive on them. And while more efficient traffic and public transportation can easily be connected to reducing emissions, we found that environmental arguments can sometimes upset as many people as they please. That doesn't mean you should ignore environmental concerns altogether. It just is not a leading message, or even a message that needs to be part of the campaign in every area. More specifically, their research suggests:

1. Use language that makes the environment a personal issue. Your strongest tool when discussing environmental concerns is to explain that more efficient traffic, and more public

transportation, cut down on the pollutants and smog that an area experiences. This is not the same as talking about emissions or greenhouse gases. The difference is in how the audience experiences the words. Pollutants affect people personally. They poison the air around the car as they are sitting in traffic. They smell. Smog is visible, and it hangs like a coffee stain over the skyline. "I'm not a climate change person, but anyone can see smog and pollutants are bad." — Focus Group Participant - Charlotte, NC

- 2. Some people do care about transportation's impact on climate change. There is no doubt that there are regular citizens out there who think about the impact of our transportation system on climate change. They want to hear about things like more public transportation that reduces the overall carbon footprint of a city by taking cars off the road. And while there are a few of them who need to hear about environmental implications before they are willing to support it, most people just do not see the roads and highways primarily as an environmental issue.
- 3. For some people, "emissions" and "greenhouse gas" are politically loaded words. For every person we spoke to who wanted to hear about the impact of any proposed measure on global warming, we spoke to someone else who was not sold on the global warming story. Those who do not buy into climate change are simply opposed to any message that mentions global warming, climate change, emissions or greenhouse gases at all. These words are all automatic red flags to them. "Relieving congestion isn't about the environment." "Reducing emissions? Sounds expensive." Focus Group Participant Charlotte, NC
- 4. DOTs and other agencies should carefully choose how they engage in any discussion of climate change because of its polarizing nature. Here is example language that shouldn't be used: There's no way to talk about climate change without also talking about transportation. But when supporters of the environment and economy square off, they face each other as though they're in a zero-sum game. They shouldn't. We can create living wage jobs and reduce greenhouse gases. Combating climate change and funding transportation are not in conflict."
- NCHRP 20-24(93) series is the first of two projects that focus on communicating about performance. The third research project, which is currently underway, focuses on funding, finance, system performance and economic vitality.
 - B (01) communicating performance management concepts
 - B (02) text and graphics to document lead state practices for system performance
 - C messaging to support AASHTO's efforts to communicate with policy makers and the public on matters of transportation funding, finance, system performance and economic vitality
- **NCHRP 20-99,** "Communications Guidelines for State Departments of Transportation". This project is currently underway.
- NCHRP 14-24 focuses on effectively communicating preservation needs and provides information on how to conduct market research, construct effective messages and select delivery mechanisms

 SHRP2 provides significant research on safety, renewal, reliability and capacity but provides limited information on communicating the benefits of transportation investment to the environment.

American Council of Engineering Companies

One of the key issues for the American Council of Engineering Companies (ACEC) is environment and energy. Conversations from the ACEC website, newsletter and social media feeds indicate that the group is very much concerned with funding for all modes of transportation. Recently, the group also supported legislation concerning:

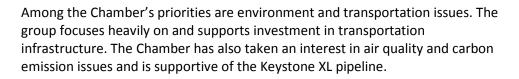


- Funding for the XL pipeline
- Wetlands legislation

Based on a review of the ACEC environment and energy website, it appears there are more links and conversations going on around water issues than surface transportation, with the exception of federal reauthorization.

U.S. Chamber of Commerce

The U.S. Chamber of Commerce is the world's largest business organization, representing the interests of more than 3 million businesses of all sizes, sectors and regions. The Chamber lobbies on behalf of its members, focusing mostly on Congress.





American Road & Transportation Builders Association

The Washington, D.C.-based American Road & Transportation Builders Association (ARTBA) is a federation whose primary goal is to aggressively grow and protect transportation infrastructure investment to meet the public and business demand for safe and efficient travel. Key



to meet the public and business demand for safe and efficient travel. Key issues for ARTBA revolve around increased investment for transportation improvement projects.

The environment policy of ARTBA:

"Transportation construction and environmental stewardship are connected in numerous ways. Every transportation project must undergo environmental review and approval processes before construction is allowed to proceed. This includes, but is not limited to, issues dealing with the federal with the Clean Air Act (CAA), the Clean Water Act (CWA), the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA) and climate change."

Building America's Future Educational Fund

Building America's Future Educational Fund (BAF Ed Fund) is a bipartisan coalition of elected officials dedicated to bringing about a new era of U.S. investment that enhances our nation's prosperity and quality of life.



A key goal of the BAF Ed Fund is to mobilize a coalition of elected officials and like-minded organizations to understand the benefits of increasing our nation's infrastructure investments and reforming national infrastructure policy. Regarding environmental goals, the BAF Ed Fund has a goal to highlight infrastructure policy that is forward-thinking and comprehensive in scope, yet grounded in the need for environmental sustainability, lower carbon emissions and reduced U.S. dependence on foreign oil.

American Public Transportation Association

The American Public Transportation Association (APTA) is a leading force in advancing public transportation. To strengthen and improve public transportation, APTA serves and leads its diverse membership through advocacy, innovation and information-sharing. APTA and its members and staff work to ensure that public transportation is available and accessible for all Americans in communities across the country. In APTA's messaging, public transportation is touted as a way to bring a better quality of life, in terms of the nation's economic, energy and environmental challenges.



Center for Transportation Excellence

The Center for Transportation Excellence (CFTE) is a clearinghouse for information in support of quality transportation choices. CFTE is committed to two main objectives: (1) defending the merits of transit and (2) equipping local leaders with the information they need to be successful with their public transportation initiatives and ballot measures. This organization does not put a specific emphasis on environmental issues. They focus more on funding and support for transit initiatives at the local and state level.



Transportation for America

Transportation for America (T4) is an alliance of elected, business and civic leaders from communities across the country, united to ensure that states and the federal government step up to invest in smart, homegrown, locally-driven transportation solutions — becau



smart, homegrown, locally-driven transportation solutions — because these are the investments that hold the key to our future economic prosperity. T4's top issues include:

- Strengthen the nation's transportation fund
- Spur local initiative through competition and incentives
- Reduce freight bottlenecks
- Leverage innovative financing for taxpayer benefit
- Connect workers with employers
- Improve return on investment and recognize good performance
- Nurture the next generation of innovation

5.2 The Roadmap

The roadmap depicted on the following page combines and summarizes economic conditions, various positive and negative messaging approaches and possible audience reaction across three decades. It also highlights how difficult it is to win over the public on transportation issues in the marketplace of messages.

While many other elements could be added to this roadmap, including environmental regulations and conditions, socio-demographics and technological advances, this roadmap provides a way of examining the evolution of transportation messaging and asks:

- What's next?
- What might be a good balance between positive and negative messaging?
- Will the industry begin to test messages more thoroughly and use the resulting data to refine messages at a local, regional and/or national level?

1990s Economic Condition: Boom Time	ition:	2000s Economic Condition: Recession	2010s Economic Condition: Slow Recovery	0	THE FUTURE WHAT IS NEXT? Economic Condition: Frugality or Progress?
Ĺ	INVESTMENT	STIMULUS	RIGHT-SIZING	<u>~.</u>	ASPIRATIONAL
ROADWAY FOCUSED		JOBS FOCUSED	BUDGET/INTERNAL FOCUSED		PEOPLE FOCUSED
"Completed as promised"		"Invest in job creation."	"We are doing more with less."		"Helping to create a better quality of life for the future."
"You did your job. I do mine everyda	"You did your job. I do mine everyday, too."	"Too much."	"Join the club. We are all doing more with less."		"I'm all for that, but you'll need to show me."
DISREPAIR	VIR	STAGNATION	LAY-OFFS	∼ .	COMPLIANCE
ROADWAY FOCUSED		JOBS FOCUSED	BUDGET/INTERNAL FOCUSED		REGULATION FOCUSED
"Repair our crumbling infrastructure."	· .	"We need to create more jobs."	"Budgets are shrinking. DOTs need funding."		"Mitigating the impacts on our natural environment."
lave . Po e. It truc you	"I have yet to have the roads I use fail. Pot holes are a part of life. It's your fault the infrastructure is crumbling. Do your job."	"No one I know got one of these jobs."	"You always need more money."		"Hard to be against this, but sounds expensive"



SECTION 6: NEXT STEPS

The results of this research suggest transportation agencies have an opportunity to expand environmental messaging and increase stakeholder and public understanding of how transportation contributes to communities and the environment.

In preparing this paper, the research team found several examples of unique ways to connect transportation messaging to environmental benefits. For example, webcams have captured

DOTs have an opportunity to build an understanding of the contributions transportation makes to communities and the environment.



A buck deer passes through an underpass on U.S. Highway 30 in Nugget Canyon in Wyoming.

images of Wyoming DOT's award winning wildlife crossings. While it is clear there is public interest in viewing the animals using the crossings, the extent to which the public values the contribution of this effort to the community or environment is unclear.

This project focused on how frequently environmental and transportation messages are being combined and conveyed via Twitter. Additionally, the research generally examined the messages DOTs are conveying through this social media tool, as well as the smaller pool of environmental messages. A larger study examining traditional media would help to complete the environmental message

picture. And, while the research team was able to make some assumptions about effectiveness, what specific environmental messages resonate with the public is largely an open question.

Taken together, subsequent steps that provide more specific message recommendations for transportation agencies include:

- Analyzing traditional media coverage to round out the social media research conducted under this project. By combining the traditional and social media views, the national and/or state conversations regarding transportation and the environment can be better understood.
- Testing messages via focus groups or surveys. Using information from the social media and
 traditional media analyses, it would be helpful to test various environmental messages to determine
 which messages, delivery mechanisms and spokespeople are most effective with which audiences
 and why. This research could help focus limited outreach or education funds on efforts that are
 most likely to succeed.

