



FIGURE 2 Plansheet symbology.

groundwater contamination to develop right-of-way acquisition recommendations, as well as design and construction recommendations to address contaminants that may be encountered during construction. Soil and groundwater data collected during the final phase of investigation are visualized on the plans by line styles showing contaminant plumes for soil and groundwater. These are depicted by skull-and-crossbones symbols along with “S” for soil and “W” for water (see Figure 2, above).

IMPLEMENTATION SUCCESS

Since this procedure has been in place, North Carolina DOT has received many comments from stakeholders who have reviewed the plans, such as the following:

- We were going to install a storm drain in this area and noticed the skull-and-crossbones on the plans. What do we need to know about this site?
- We plan to install a utility pole in the area marked with an Underground Storage Tank symbol. When can you remove this tank so we can install our pole?
- We want to do a wetland mitigation here but see a skull-and-crossbones symbol. Can we still do the mitigation here?
- We were about to make an offer to purchase this property but noticed the skull-and-crossbones. What acquisition recommendations do you have for this property?

These and many similar comments might have been missed without this symbology on the plans. Overall, adding geoenvironmental symbology to plansheets has been successful in providing a better awareness to North Carolina DOT stakeholders regarding geoenvironmental sites of concern.

Innovations in Tech-Enabled Road Pricing

ClearRoad Wins 2019 Six-Minute Pitch Contest

ALEXANDER BIGAZZI

Assistant Professor, Department of Civil Engineering, University of British Columbia, Vancouver, Canada.

ClearRoad, a start-up company facilitating next-generation road pricing strategies, won the Six-Minute Pitch contest at the 2019 TRB Annual Meeting in Washington, D.C. ClearRoad’s financial and data management platform turns road usage data into financial transactions on behalf of roadway operators.

The annual Six-Minute Pitch session at the Annual Meeting offers four entrepreneurs the opportunity to pitch their new transportation technology product or service to a panel of transportation industry entrepreneurs and investors—in

six minutes. Pitch presenters are judged on the commercial feasibility of their proposal and how the proposal contributes to meeting one of today’s critical transportation challenges. Two main questions that the judges often ask are 1) how well the company has proven its concept—including the importance of prototypes, demonstration projects, existing customers and partners, and experience in the industry—and 2) the potential growth for the company and sector.

Paul Salama, ClearRoad COO, pitched to a record-setting audience at the special TRB session. With a background in urban planning and technology consulting, Salama recognized the potential for tech-enabled road pricing to help cities manage traffic and, in particular, to realize the benefits of autonomous vehicles and avoid the risks of increased congestion.

Even though at that point Salama had delivered pitches to dozens of investors, he still prepared and practiced for the Six-Minute Pitch audience. To aspiring pitch participants, he recommends that no amount of practice is too much—especially in front of audiences.

Frederic Charlier, founder and CEO of ClearRoad, has a background in the tolling industry and worked on the pioneering road usage charge program in Oregon.

Several states are planning or developing similar road pricing programs and pilots. ClearRoad is currently expanding its partnership network, engaging with road network managers at the corridor, city, and state levels and seeking innovations in approaches to road pricing as well as incorporating dynamic boundaries, traffic conditions, and vehicle-specific impacts.

At the Annual Meeting session, judge Gabe Klein noted that road pricing is a growing industry with space for many companies to participate in the new ecosystem.

Three other companies also participated in the 2019 Six-Minute Pitch: Commutifi, pitched by Esteban Sanchez; RfNav, pitched by Jim Schoenduve; and Ruut, pitched by Hamish Campbell. Commutifi provides commute scoring and indices to help businesses and cities understand and



Gabe Klein (center) offers feedback to Paul Salama (right). Also pictured (left to right) are judges Kathleen Baireuther, Sean O’Sullivan, and David Zipper.

improve travel options. RfNav is developing new technology for the autonomous vehicle market using advanced radar to achieve the precision of lidar but with better performance in adverse weather and lighting conditions. Ruut is a start-up medium-haul intercity bus service with a focus on quality of experience and traveler well-being.

The winner of the 2018 Six-Minute Pitch was Intelligent Pavement Solutions (ISP), a company that uses innovative data collection and processing methods to provide cities and counties with comprehensive pavement management systems. Since ISP’s win, the company has spent a considerable amount of time in customer validation and began commercial

operations in the second quarter of 2019. According to presenter Ram Reddy: “The Six-Minute Pitch came at a very crucial moment for IPS. It gave us direction as we refine and finalize our product and business model.”

The 2019 Six-Minute Pitch judges included Kathleen Baireuther, Ford Smart Mobility; Gabe Klein, Fontinalis Partners and Cityfi; Sean O’Sullivan, SOSV; and David Zipper, German Marshall Fund.

The Six-Minute Pitch Transportation Start-Up Challenge is sponsored by TRB’s Young Members Council and was moderated by Shana Johnson of Foursquare Integrated Transportation Planning, with assistance from Susan Paulus of Lakeside



2019 Six-Minute Pitch judges, presenters, and organizers (left to right): Sean O’Sullivan, Alex Bigazzi, David Zipper, Jim Schoenduve, Esteban Sanchez, Gabe Klein, Kathleen Baireuther, Paul Salama, Shana Johnson, Hamish Campbell, and Ginger Goodin.

Engineers, Alex Bigazzi of the University of British Columbia, and Ginger Goodin of Texas A&M Transportation Institute.

For details on the Six-Minute Pitch, visit sixminutepitch.com.

Communicating the Challenge of Transportation Resiliency and Sustainability

12th Annual Competition Identifies Best Practices

TERRI H. PARKER

The author is Director, Marketing and Communications, Texas A&M Transportation Institute, College Station.

With strategies ranging from media outreach to an innovative clearinghouse tool to online tutorials, the winners of the 12th Annual Communicating Concepts to John and Jane Q. Public Competition illustrated best practices in communicating transportation resiliency and sustainability.

Members of the public understand that the transportation system is among the most critical systems affected during major disruptions—whether these are security incidents or weather events like hurricanes, wildfires, floods, or mudslides. At the same time, transportation professionals are developing strategies to increase the resiliency and sustainability of the transportation system.

Successful nominees highlighted fresh and unique ways of discussing the strategies, investments, and critical decision-making elements that are part of the transportation planning and response to changing climate conditions and major weather events.

The Colorado Department of Transportation (DOT) received top honors in the competition for its entry, “U.S. 34 Flood Recovery Project.” When devastating floods hit Colorado in 2013, the