Urban Mobility Workshop: Public-Private Collaboration and Data Sharing

Held on June 19, 2014 at SPUR, 654 Mission Street, San Francisco

To view the list of participants, video, and slides, visit the web page: http://www.agrion.org/sessions/agrion-en-Urban_Mobility_Workshop_Public_Private_Collaboration_and_Data_Sharing.htm

Co-Sponsors:

Speakers:

Susan Shaheen—UC Berkeley, Co-Director, TSRC & Adjunct Professor
Gerry Tierney—Perkins + Will, Senior Associate
Ken Kirkey—Metropolitan Transportation Commission, Planning Director
Eric Womeldorff—Fehr & Peers, Senior Transportation Engineer
Zabe Bent—Nelson\Nygaard, Principal
Timothy Papandreou—SFMTA, Director, Strategic Planning & Policy

Speaker Presentations:

This workshop followed-up the March 27, 2014, workshop, in which a consensus was reached regarding the critical need for public-private collaboration and data sharing in order to achieve the refinements in data modeling essential to an optimal transportation system for the San Francisco Bay area. Gerry Tierney noted that this system should provide seamless, convenient, and cost-effective transportation with ubiquitous access and multimodality, while minimizing greenhouse gas (GHG) emissions, throughout the Bay area.

Susan Shaheen reviewed the primary focus points resulting from the March 27th workshop, and explained that this workshop would take the next steps in focusing on data sharing between the public and private sectors so that the public sector can develop the optimal transportation policies to maximize social and environmental benefits. She asked the group to consider the best means for creating uniform and consistent data sets. She further probed into the data requirements of transportation modelers and emphasized that the models need to encompass shared-use mobility and multimodal mobility, as well as emerging autonomous vehicle technology. The underlying theme was that understanding and providing data that modelers need is vital for effective transportation planning.

She concluded with a review of the recent Shared-Use Mobility Summit in Washington, D.C. (June 10-11, 2014; see: http://sharedusemobilitycenter.org/summits/innovations-in-mobility-summit-2014/), noting a similar concern about the role of the private sector and the risks inherent in sharing data. She also highlighted other key points raised at the Summit regarding data including the need for:

1) Uniformity in system data/metrics to inform policy, so we can show continuous improvement;
2) Metrics that capture economic, environmental, and health impacts;
3) Uniformity in metrics across modes;
4) Wide use of APIs (applications programming interfaces) to enable better data access among programmers and other data users; and
5) Data sharing incentives.

Ken Kirkey next talked about the MTC's Bay Area Plan, which aligns transportation investments, housing growth, and land use planning, all while meeting housing requirements at all income levels, and meeting state GHG reduction targets. The Bay Area Plan was not required by law to tie funding to housing, but the MTC decided to do so with the One Bay Area Grant program.
Policy objectives include:

- Fix it First Policy: maintain the city core and build around it
- Transit-Oriented Development: identified regional transit expansion priorities, supporting with transit grants (first region to do so)
- FOCUS Initiative: priority development areas and priority conservation areas

The MTC is directing funding towards urban infill areas, as a viable alternative to urban sprawl. In urban counties, 70% of funding must be spent on infill and transit-oriented growth. Furthermore, California's state legislation, SB 375, calls for all regions to focus on land use development which reduces vehicle miles travelled (VMT) and GHGs.

New initiatives and incentives for mitigating climate change being promulgated by MTC include:

- Commuter Benefit Ordinance: Bay Area Air Quality Management District enacted this law, which goes into effect this year (companies with more than 50 employees must offer them commuter benefits)
- Expand Vanpool Programs
- Car Sharing Expansion: increased funding, and expanded area of coverage

- Regional Electric Vehicle Charger Network: seeking to implement public charging stations throughout the Bay area
- Bay Area Bike Share

The Bay Area Plan will be updated in 2017, with planning already underway with a series of implementation activities. A Core Capacity Transit Study will review the growth of various neighborhoods, and identify the sub-regions that require growth in transit access. The Transbay corridor and Muni-Metro corridor will be the primary focus, as the MTC will partner with AC Transit, BART, SFMTA, and SFCTA to analyze short-, medium-, and long-term strategies for reducing transit crowding. First and last mile issues will receive special attention.

To achieve these ambitious, forward-looking policies, the importance of accessing the public and private data related to all modes and locations of Bay area transportation alternatives can not be overstated.

Following the MTC overview, Eric Womeldorff noted how San Francisco had uniquely and resiliently responded to the recent great recession, with tech firms hiring and generally thriving. Transportation modeling can be challenging, as travel behavior is often unpredictable, including forecasting 20-25 years ahead, but the models are vital for long term planning and environmental planning. Near-term tools such as ridership models, trip generation models, and VMT models can be very useful. To enhance their planning efforts, the 9 Bay area counties purchased a large and complex "chain model".

Regarding data and transportation modeling, the basis for planning begins with land use, social-geographic and demographic information, and transportation systems. For instance, in the Bay area, two leading factors have been the growth of tech and research firms, along with the impact of Millennials (generally those born between 1980 to the mid 90s), whom are less interested in home and car ownership. The "sharing economy" is widely favored by many Millennials, calling for shuttles in congested areas and encouraging ride sharing and car sharing.

But the lifeblood of transportation models is data, and transportation models often require sensitive data from companies, including:

- Expansion Plans
- Strategies
- Timelines for Expansion
- Hiring
- Employment Patterns
- Travel Behavior

Many companies in the Bay area are focused on being extremely flexible and ready to "pivot" as required, making planning for their transportation needs problematic.

Zabe Bent continued the focus on the sensitivity and privacy of private data, but highlighted nuances in contrasting public versus private sector. Many large companies with employee shuttle services (e.g. Genentech; Google; LinkedIn) have extensive privacy considerations, but these requirements can vary substantially by employer. On the public side, the public

agencies don't have competitors, and are competing within to reduce costs, but do not have to worry about revealing data which could aid their competitors.

Within this perspective, planners must ask what types of data are interesting to the transportation modeler? Also, which types of data are most useful and which type of analysis? How can the data be effectively shared while maintaining the requisite privacy of individuals and companies is challenging. We need to look for innovative tools for sharing the data, with the nuances between public and private sectors in mind.

Timothy Papandreou next emphasized the critical need for all types of transportation data to optimize transportation systems. Public planners need to know how many trips are being served in different modes in different corridors, with the corresponding weekly, or at least monthly, data on actual usage. There could be corridors not adequately identified. With Bay area transportation agencies working towards modeling transportation requirements through 2040, much more detailed data is required from the private sector. Public planners can't currently decipher whether the "new transportation providers" are supplying between 1-20% of the total transportation system requirements. For example, Uber and Lyft are heavily used, but there is no idea of their scale. Sharing that data with the public agencies, imperative in return for the right to "play in the city", will much improve the transportation options for all.

The SFMTA has encountered much reluctance from the private sector to sharing relevant data, as privacy and competitive factors prevail. SFMTA is waiting for greater openness and sharing, and assures that only the aggregate data would be used, while not shared with others. Timothy Papandreou called for a third-party transportation repository, to which a workshop participant noted that NREL's Transportation Secure Data Center could potentially fulfill this requirement.

Open Group Discussion

The open group discussion stimulated many interesting questions and comments as the whole group engaged in a collaborative effort to address the challenges for transportation modeling in the Bay area. Gerry Tierney pointed out that, when summing the number of corporate shuttles, they collectively would be the fourth largest transit provider in the Bay area. Effective planning is just not feasible without this data.

There is not a public sector bus service which can do what the corporate shuttles are doing: door-to-door service. Ken Kirkey credited these corporate shuttles for filling a "hole" in the public transit network, which the currently balkanized system (e.g. SFMTA's jurisdiction ends abruptly at Daly City) is not fulfilling. Transportation planning needs to occur at the regional level, without the counterproductive balkanization. Some of the areas for focus include first-last mile issues for accessing Caltrain, and express lane refinements on Route 101.

Zabe Bent further qualified the benefits of the corporate shuttles beyond their competitiveness in possibly reducing overall travel time. For example, the shuttles typically offer free WiFi and the capability to make confidential conference calls.

SPUR cautioned that public transit agencies probably can't cost-effectively connect all the sub-regions with transit service: there need to be opportunities to use multi-modes from both public and private sectors.

Susan Shaheen next facilitated a group discussion, starting with the question: **What do we want to measure?** A variety of responses and discussion ensued, with the following highlighted issues:

--Focusing more on people than vehicles; we are moving people not vehicles.
--Modal shifts.
--Focus on all modes, including telecommunications (i.e. enables tele-commuting).
--Concerns about Census data not capturing full trips—complexity in tripmaking (multimodal activity not measured).
--Need for trip aggregators that can help us plan trips from Point A to B.
--Costs and costs per trip.
--Modal shift: what percent of trip is now going to another mode, if individual gets out of a car.
--Speed and safety of the different modes; comparisons by speeds; bike safety measures.
--Regional 511 program is a massive effort to stay on top given the flux in the system; this presumes that people plan their trips in advance, which is largely untrue.
--Need for dynamic data (on-route real-time data) to reflect real trip-making.
--Corridor modal splits are what SFMTA needs; citywide mode share data are needed too and that's basically all from SFMTA's perspective. SFMTA doing a survey of trip-making (random sample); a "clunky" approach. Survey data not yet available.

Ken Kirkey commented that there are significant transportation and transportation-related trends (e.g. housing costs) in San Francisco, but we need to see if the trends continue, and whether they apply in other parts of the region (e.g. Oakland). While the focus is on free shuttles to reduce the number of employees on the highway and reduce GHGs, often the focus turns to the controversy surrounding rising rents and housing prices due to high income tech employees able to live in San Francisco while taking corporate shuttles between Silicon Valley and San Francisco.

Susan Shaheen then asked the group: **How to manage privacy risk in sharing data?** The resulting discussion included the following comments and questions.

--Central repository for keeping the data (third party) is needed.
--Where is the repository—big issue: regional, state, national level? It would be helpful to have clarity around this; who is going to organize it; how do we access the data? Much of this is a regional problem.
--Some sort of structure exists for holding data.
--Permission of the company and the user needed to access data.
--Sampling algorithm where people can opt in could be used with an agreed upon standard; anonymizing data sharing is important; anonymous data and sharing that could be an option.
--Level of aggregation is important; different issues associated with level of disaggregation.
--Airport has to do long term planning. Airlines will not share passenger data with them. Airlines won't tell the airport what is the load or how many people are on this flight. A lot of algorithms in place to try to forecast this at the airport due to lack of data.

Finally, Susan Shaheen asked the group: **How best to incentivize data sharing?** A spirited discussion followed, with many helpful insights, including:

--Cannot lose focus on the public good and common good. Mostly talking about gathering proprietary data to help policymakers to plan; are we using data to meet social goals and environmental goals/objectives; many players are holding this data back and making statements (without validation of impacts); ultimately there are a lot of people who are lying about impacts of their services; no research to show CO_2 reductions that have been validated, but making these claims nonetheless.
--Google extremely private about their data, but they collect our data via their apps.
--Timothy Papandreou: "You want to be at the table because you want to be on the menu".
--A cultural issue: Germans view data sharing in a very different way. This is viewed very differently in other countries. Cultural aspect is a challenge faced by DriveNow. Key Issue of long-term strategic planning based on short-term data and experience. How do you forecast out based on two or three years of experience? It is important to look at scenarios vs. just extrapolation.
--Many private companies are ready to share data; sharing economy services are being adopted; awareness around the sharing economy; things are changing.
--At the local level having a seat at the table (private company) is extremely important. A notable incentive would include a seat at the table and an opportunity to have a dialogue for some private companies.
--Incentivizing people with gamification and points in Singapore; people are sharing data; civic mindedness is a motivator; RideScout is looking at doing this.
--Data portability is important: data from company and data from the individual are two key levels of data.
--Some possible models from other sectors for sharing data (i.e., framework): Public model-- PG&E: enforceable framework that requires data sharing. The electric utilities have successfully shared private data using the Common Information Model (CIM) and OpenADE (Open Automated Data Exchange) protocol. The lack of a corresponding transportation framework is a key issue. An enforceable framework creates a common market. Perhaps try to get Governor's reaction to this (statewide).
--A private sector model is "Payment grants" (e.g., VISA banking model). This is how they solved the data-sharing problem across banking. Look to both a public and a private sector framework as a possible model.

With that, the workshop concluded, but the conversations continued, and continue. A follow-up Agrion workshop is planned for late September to early October, in which we'll seek to further explore and resolve the challenges to public-private collaboration and data sharing for achieving optimal transportation services in the Bay area: seamless, convenient, and cost-effective transportation with ubiquitous access and multimodality, while minimizing greenhouse gas emissions.