Megaregions: Surfing the Wave of the Future (2016 TRB Workshop / Session 161)

Background
The concept of megaregions has gained increasing prominence in the transportation sector in the past decade, with formal recognition through the Transportation Research Board (TRB) resulting in the establishment of a Megaregions Subcommittee (ADA20(1)). The subcommittee and FHWA sponsored a workshop on Sunday, January 10, from 1:30 p.m. to 4:30 p.m. at the Washington Convention Center. The workshop presented emerging research and practitioner perspectives on megaregions. Participants discussed the political, economic, and technical issues that must be overcome to address transportation at a megaregions scale.

Summary of Presentations
Fred Ducca, from the University of Maryland and chair of the subcommittee, presided over the workshop. Ken Petty and James Garland presented an overview of recent megaregions work from the Federal Highway Administration (FHWA) Office of Planning, Environment, and Realty. In 2015, FHWA convened an internal working group to discuss how to address megaregions throughout the agency. In 2016, FHWA plans to take action on a megaregions implementation plan; update the FHWA megaregions website (http://fhwa.dot.gov/planning/megaregions); and facilitate a series of specific meetings between transportation executives in several megaregions. Each meeting will be tailored to specific needs within individual megaregions, and will focus on one or more of the five key themes that emerged from the working group: Economic Vitality, Environment/Air Quality, Freight, Infrastructure/Congestion, and Safety.

Four panelists presented research and experience on megaregions (see Table 1).

https://annualmeeting.mytrb.org/InteractiveProgram/Details/2459

Table 1: Summary of Panel Presentations

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<th>Panelist Information</th>
<th>Summary</th>
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<tr>
<td>Catherine Ross</td>
<td>• Megaregions are major economic engines that help explain the</td>
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<td>Georgia Institute of</td>
<td>economic success of the United States.</td>
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<td>Technology</td>
<td>• Leaders should encourage flexibility in defining megaregions</td>
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<td>“Megaregions: Leaning</td>
<td>based on the problems needed to be addressed.</td>
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<td>Forward”</td>
<td>• Network economies create new opportunities through sub-centers.</td>
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<td>LINK TO SLIDES</td>
<td>• Key megaregions needs: analysis tools to scale from</td>
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<td>megaregion to city/local scale; States to facilitate local</td>
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<td>engagement; plan for infrastructure at megaregions scale</td>
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<td>where growth will occur.</td>
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<td>Yanyan Chen</td>
<td>• The “Jing-Jin-Ji” megaregion is one of China’s top development</td>
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The participants broke out into three groups to discuss political, economic, and technical issues facing megaregions. The following are summaries of discussions from each group.

**Political**

In articulating the political considerations in developing a megaregions framework, participants emphasized the importance of **buy-in from a diverse and comprehensive stakeholder group**. This group must include all levels of government, private sector, and academia, and stakeholders must work across disciplines to address megaregions-scale challenges. All sectors bring crucial connections to funding mechanisms and potential leaders.

The next consideration is an **organizational structure to support megaregions**, which would cover strategic, operational, and technical coordination. These stakeholders could convene via an interdisciplinary megaregions governing board, which would establish the leadership and multi-sector support for megaregions activities. A governing board would ensure continuity in leadership, institutional knowledge, and activities, even as elected officials change. The process for inclusion on a governing board may need to vary by megaregion, but the process should be transparent and ensure a diverse board with strong interests in the region. Planning in the megaregion cannot supersede the members’ planning decisions and processes. It is recommended that any megaregions board allow all members to be comfortable with the process and outcomes.
When convening such a board, there may need to be a central purpose or some type of “trigger” to gather participants. These issues will vary by region but may include key concerns such as severe congestion, or a water shortage. In any case, participants felt that the “trigger” must be an issue that is specific enough to establish buy-in among regional stakeholders, but it may align with national goals. Megaregions may organize before triggers arise.

Funding was discussed, and may be a barrier in organizing or governing megaregions. Participants suggested funding for megaregions should be:

- Flexible and easy to distribute;
- Equitably distributed, using data where available; and
- Balanced in supply versus demand for economic development opportunities throughout the megaregion.

**Governance and political boundaries** play a role in funding structures. For example, MPOs work within State and regional frameworks for their transportation projects. Also, non-metropolitan areas do not receive direct funding (in the same manner that MPOs do), but they feed resources into megaregions. A megaregions governing board or advisory committee could help determine which projects are funded or compare projects across sectors. An advisory committee that makes funding decisions should be strong and include public, technical, non-traditional and expert partners. A challenge with funding is that megaregions-scale issues need to be solved over time, but it is difficult to organize long-term funding schemes. One funding recommendation was to consider using Federal planning funds, which are distributed based on population.

**Analytical capacity** is another need for megaregions activities. There is no one resource to do all data collection and analysis across a megaregion. Academia can provide research and thought leadership; government agencies can help collect data and provide political leadership; and the private sector can facilitate implementation.

Finally, the group discussed if megaregions should be **led by the Federal government (top-down) or from the regional level (bottom-up)**. The leadership of a megaregions group may wait for an event or a key issue to “trigger” the group to convene or take action. If Federal agencies lead megaregions efforts, it is recommended that they engage local and regional stakeholders to give the megaregions group greater legitimacy and recognition. MPOs offer an opportunity for leadership in that their mandates allow them to straddle between Federal, State, and local levels of government. They can use their long-range transportation plans (LRTPs) to generate Federal funding for megaregions-scale projects as they arise.

Participants noted several existing examples of megaregions that have self-organized to address megaregions-scale issues, but which now offer ongoing and continuous megaregions planning. The I-95 Corridor Coalition was mentioned, as was the San Diego Association of Governments (SANDAG). Both examples, among many others, illustrate how an MPO vision for transcending traditional responsibilities can lead to megaregions-scale leadership. In all of these, implementation plans are important to achieve results.
Participants also introduced the role of legal structures in supporting megaregions governance but did not discuss details of this support.

Economic

The first economic issue in planning for megaregions is that economic competition between jurisdictions could intensify. To be successful, megaregions leaders need to encourage jurisdictions to cooperate rather than compete. There is a role for the Federal government to encourage and support collaboration across jurisdictions, including funding incentives. If multiple jurisdictions within a defined megaregion collaborated with each other, they could have higher economic and political clout.

If there is funding offered for megaregions activities, especially from the Federal Government, there could be a challenge in perceived fairness across projects, as well as across regions, cities, and rural areas. Often shared infrastructure projects get stalled due to disagreement over the allocation of costs, benefits, and impacts from projects. Similarly, within our existing system/structure, conflicts between big cities, secondary cities, and rural areas can be a challenge. Megaregions activities and projects should address concerns of smaller jurisdictions, and not just focus on cities or large metropolitan areas.

Additionally, jurisdictions may face challenges in collaboration due to the following issues:

- Local business groups are often myopic, looking at small timeframes and geographic scales.
- Participants felt that States often don’t collaborate with each other well.
- It is difficult for jurisdictions to think about megaregions when they have pressing local needs (e.g., “fix my own system/agency first”).

Participants offered ideas for funding megaregions planning and projects. Suggested ideas include pooled funding sources (such as user fees) separate from existing jurisdictions’ tax structures to more equitably fund activities; and engaging additional stakeholders for funding support, such as regional economic development agencies, workforce development agencies, or chambers of commerce.

Next, the group discussed that stakeholders may place different emphasis on the movement of freight versus passengers. The tech sector, business services, and universities often act at the megaregion scale and want access to larger labor markets and therefore having the potential to improve passenger movement. However, passenger highway and rail networks often compete for the same road or rail space. Investing in freight infrastructure may help reduce freight/passenger congestion and reduce these conflicts.

Finally, the group discussed a need for future research and technical documents to make the economic case for megaregion-scale planning. It is recommended that this research could be jointly funded by Federal, industry, and State/MPO organizations. These organizations could first synthesize existing work and then develop a formal research program. Finally, researchers should engage new partners, such as the logistics industry, consumer goods / delivery companies, energy companies, pipelines, and others who work at the megaregion scale. Once the research program is underway, topics may include the effects of high speed rail (such as second-tier cities or linking economic development with
transportation within a megaregion); opportunity costs of not planning for megaregions; and efficiency gains from better megaregions connections.

The participants recommended looking to other Federal / philanthropic initiatives for momentum and models. Examples of current philanthropic initiatives include smart cities, urban waters partnership, resilience, and social equity.

**Technical**

The group discussed analytical issues related to megaregions, starting with boundaries. Maps can quickly communicate what a megaregion is but these boundaries can also create challenges, since the boundaries are not “official” megaregions definitions. There’s a need to stress **flexibility when defining megaregions**, which will help garner support among stakeholders, and that flexibility extends to the use of travel models and data within a megaregion. While participants recognized that there are many different models each operating with a different set of boundaries, they preferred to think beyond boundaries and recognize models that could work across bounded datasets. In fact, the participants liked to define boundaries fluidly, with no “final” map of inclusion/exclusion. In this way, the data sets, models, and boundaries could meet diverse participants and a variety of needs.

One participant cited an example in California of how MPOs use different growth assumptions in their travel models. When the State set a goal for reduced commuting between MPOs to reduce greenhouse gases, the MPOs had trouble reconciling the assumptions in their models.

A second technical challenge arises as **data sets should be consistent across States and even nations (for border regions) for megaregions planning**. Participants suggested that megaregions leaders (either State/Federal leaders or groups of megaregions stakeholders) set minimum data standards that jurisdictions could tailor to their own needs and models. Moving Ahead for Progress in the 21st Century (MAP-21) established common performance measures that all State DOTs and MPOs must follow, which is continued in the new FAST Act. This creates a powerful shared foundation and common threshold for data standards.

On a related note, participants recognized the challenge in getting harmonious datasets across jurisdictions that use different data collection methods. One suggestion is for Federal agencies or trade groups to set data standards, then allowing smaller jurisdictions to pursue innovation amidst these standards. Participants recommended seeking a common threshold for consistency and then allowing creativity and individuality beyond that threshold. Open source and open access models and platforms can allow agencies to adopt models to their own use. Some participants recognized the benefits of **not** having standard models.

In all cases with models and data standardization, the governance body for megaregions makes a difference in setting common thresholds and encouraging innovation.

The **use of emerging technologies**, such as connected vehicles and smart phone-enabled travel, may also have impacts upon megaregional planning and data use. Comfort with and ability to use these technologies (such as due to income disparities or access to technologies) will vary across the
megaregion. Also, technologies may affect travel behavior and either encourage more travel at a megaregions scale (such as if autonomous vehicles reduce the time and cost of intercity travel) or less (such as through an increase in video and teleconferencing).

Participants discussed disproportionate benefits and burdens across megaregions. The public wants immediate results in terms of freight and logistics, but they do not want to see negative externalities. This is where megaregions-scale analysis is important, as impacts are shared across a large region. State DOTs could be a good actor to motivate diverse stakeholders to adopt models and processes that incorporate everyone’s needs.

Participants spent a short time discussing infrastructure issues, raising the following points:

- Each megaregion must take inventory and preserve its current infrastructure.
- Megaregions stakeholders could assess and prioritize infrastructure to replace or remove deficient infrastructure most optimally (considering the full lifecycle cost).
- Pooled infrastructure funds, standard inspection cycles, and use of asset management research all can add value to infrastructure management at a megaregions scale.

Future cities may depend less on current infrastructure (due to disruptive technologies), and megaregions will need to seek new modes and technologies for transportation.