

Suggested Ideas for Incorporating Alternative Fuel and Clean Corridor Concepts into State Freight Plans

Comparing MAP-21 and the FAST Act

The Moving Ahead for Progress in the 21st Century Act (MAP-21), signed in 2012, directed the Secretary of Transportation to “encourage States to develop freight plans that are comprehensive and that include both immediate and long-term freight planning activities and investments.” Interim guidance developed by the U.S. Department of Transportation (DOT) indicated which elements were required in state freight plans, and also included additional recommended elements and a suggested structure for the plan.

Three years later, the Fixing America’s Surface Transportation (FAST) Act was signed into law, resulting in new requirements and guidance for state freight plans. State freight plans in relation to both laws are compared below.

MAP-21 (2012)	FAST Act (2015) ¹
State freight plans – optional or required?	
Encouraged	Required for each State that receives funding under the National Highway Freight Program
Deadline for completion of state freight plan	
N/A	December 4, 2017 (multimodal elements of the plan may be incomplete and still obligate NHFP funds)
Update cycle	
N/A	Every five years
State Freight Advisory Committee	
Encouraged	Strongly encouraged
Required elements	
<ol style="list-style-type: none"> 1. An identification of significant freight system trends, needs, and issues with respect to the State; 2. A description of the freight policies, strategies, and performance measures that will guide the freight-related transportation investment decisions of the State; 	<ol style="list-style-type: none"> 1. An identification of significant freight system trends, needs, and issues with respect to the State; (<i>jump to Vision and Guiding Principles for ideas to borrow from California’s Sustainable Freight Action Plan</i>) 2. A description of the freight policies, strategies, and performance measures that will guide the

¹ FAST Act Guidance on State Freight Plans - <https://www.gpo.gov/fdsys/pkg/FR-2016-10-14/pdf/2016-24862.pdf>

MAP-21 (2012)	FAST Act (2015) ¹
<ol style="list-style-type: none"> 3. A description of how the plan will improve the ability of the State to meet the national freight goals established under section 167 of title 23, United States Code; 4. Evidence of consideration of innovative technologies and operational strategies, including intelligent transportation systems, that improve the safety and efficiency of freight movement; 5. In the case of routes on which travel by heavy vehicles (including mining, agricultural, energy cargo or equipment, and timber vehicles) is projected to substantially deteriorate the condition of roadways, a description of improvements that may be required to reduce or impede the deterioration; and 6. An inventory of facilities with freight mobility issues, such as truck bottlenecks, within the State, and a description of the strategies the State is employing to address those freight mobility issues. 	<p>freight-related transportation investment decisions of the State; <i>(jump to Freight Targets for ideas to borrow from California’s Sustainable Freight Action Plan)</i></p> <ol style="list-style-type: none"> 3. When applicable, a listing of— <ol style="list-style-type: none"> a. multimodal critical rural freight facilities and corridors designated within the State under section 70103 of title 49 (National Multimodal Freight Network); b. critical rural and urban freight corridors designated within the State under section 167 of title 23 (National Highway Freight Program); <i>(jump to Alternative Fuel Corridor Designations for ideas on how to link alternative fuels with this required element)</i> 4. A description of how the plan will improve the ability of the State to meet the national multimodal freight policy goals described in section 70101(b) of title 49, United States Code and the national highway freight program goals described in section 167 of title 23; <i>(jump to Alternative Fuel Corridor Designations for ideas on how to link alternative fuels with this required element)</i> 5. A description of how innovative technologies and operational strategies, including freight intelligent transportation systems, that improve the safety and efficiency of the freight movement, were considered; <i>(jump to Innovative Technologies for ideas on how to link alternative fuels with this required element)</i> 6. In the case of roadways on which travel by heavy vehicles (including mining, agricultural, energy cargo or equipment, and timber vehicles) is projected to substantially deteriorate the condition of the roadways, a description of improvements that may be required to reduce or impede the deterioration; 7. An inventory of facilities with freight mobility issues, such as bottlenecks, within the State, and for those facilities that are State owned or operated, a description of the strategies the State is employing to address those freight mobility issues; 8. Consideration of any significant congestion or delay caused by freight movements and any strategies to mitigate that congestion or delay;

MAP-21 (2012)	FAST Act (2015) ¹
	9. A freight investment plan that, subject to 49 U.S.C. 70202(c), includes a list of priority projects and describes how funds made available to carry out 23 U.S.C. 167 would be invested and matched; (<i>jump to Pilot Projects for ideas to borrow from California’s Sustainable Freight Action Plan</i>) and 10. Consultation with the State Freight Advisory Committee, if applicable (<i>jump to State Freight Advisory Committee for ideas on how to link alternative fuels with this required element</i>).
<i>Suggested state freight plan structure</i>	
<ol style="list-style-type: none"> 1. Strategic Goals 2. The Economic Context of Freight Transportation Planning 3. Freight Policies, Strategies, and Institutions 4. State Freight Transportation Assets 5. The Conditions and Performance of the State's Freight Transportation System 6. Freight Forecast 7. Overview of Trends, Needs, and Issues 8. Strengths and Problems of the State's Freight Transportation System 9. The State's Decision-Making Process 10. The State's Freight Improvement Strategy 11. Implementation Plan 	<ol style="list-style-type: none"> 1. Identification and Inventory of Freight System 2. Consideration of any significant congestion or delay caused by freight movements and any strategies to mitigate that congestion or delay 3. Description of Policies, Goals and Strategies 4. A freight investment plan that, subject to 49 U.S.C. 70202(c), includes a list of priority projects and describes how funds made available to carry out 23 U.S.C. 167 would be invested and matched 5. Demonstration of consultation with the State Freight Advisory Committee, if applicable

Alternative Fuel Corridor Designations

In 2016, FHWA designated the first set of [alternative fuel corridors](#), thus establishing a national network of alternative fueling and charging infrastructure along national highway system corridors. The initial designation provided a list of “signage-ready” and “signage-pending” corridors or segments of corridors for one or more of the following fuels: electricity, natural gas, propane, and hydrogen. These designations provide a unique opportunity to incorporate alternative fuel considerations into state freight plans.

State freight plans under the FAST Act are required to provide a description of how the plan will improve the ability of the state to meet the national multimodal freight policy goals and the national highway freight program goals. A common goal under each of these is “to reduce the environmental impacts of freight movement” on the National Highway Freight Network (NHFN) and National Multimodal Freight Network (NMFN), respectively. Maps and tables for the NHFN can be found on the FHWA Freight Management and Operations [website](#). More information about the Interim National Multimodal Freight Network, including a map, is available on the Office of the Assistant Secretary for Transportation Policy [website](#).

As part of the rationale of how states will meet the goal of reducing the environmental impacts of freight movement, states could leverage any designations of “signage-ready” and “signage-pending” corridors that were made on the NHFN or NMFN to discuss why the corridor or segments of corridors were nominated for designation, and how the state is moving forward to establish alternative fueling and charging infrastructure along those routes.

Another relevant national multimodal freight policy goal to keep in mind is the goal “to improve the economic efficiency and productivity of the National Multimodal Freight Network.” The NMFN encompasses the NHFN, therefore a discussion related to how alternative fuel use in freight can contribute to economic efficiency would be appropriate here. While the cost parity between alternative and traditional fuels will continue shift over time, some fuels such as natural gas or electricity are already more cost efficient than diesel in certain applications. Furthermore, any discussions of lower maintenance costs associated with alternative fuels could contribute to an explanation of how this goal will be met. And inasmuch as keeping fuel production domestically can be interpreted as being “economically efficient,” alternative fuels often have an advantage in this arena compared to traditional fuels.

In addition, states must identify critical rural and urban freight corridors (CRFCs and CUFCs) designated within the state under section 167 of title 23 (National Highway Freight Program). The definitions of CRFCs and CUFCs, as well as how they are designated, are provided in the FAST Act, Section 1116 National Highway Freight Program (NHFP) [Guidance](#). Where there is overlap between the alternative fuel corridors and the CRFCs and CUFCs, states may want to think if there are ways to utilize funds to implement their vision for developing the alternative fuel corridors. As explained in the FAST Act, Section 1116 Guidance, “CRFCs and CUFCs are important freight corridors that provide critical connectivity to the NHFN. By designating these important corridors, States can strategically direct resources toward improved system performance and efficient movement of freight on the NHFN. The designation of CRFCs and CUFCs will increase the State’s NHFN, allowing expanded use of NHFP formula funds and FASTLANE Grant Program funds for eligible projects that support national goals identified in 23 U.S.C. 167(b) and 23 U.S.C. 117(a)(2).” As referenced above, one of the goals identified in 23 U.S.C. 167(b) is “to reduce the environmental impacts of freight movement on the National Highway Freight Network.” Likewise, one of the goals in 23 U.S.C. 117(a)(2) is to “enhance the resiliency of critical highway infrastructure and help protect the environment.”

[California’s Sustainable Freight Action Plan](#)

In July 2015, California Governor Jerry Brown issued Executive Order B-32-15, which provided a vision for California’s transition to a more efficient, more economically competitive, and less polluting freight transport system. The Order directed several of California’s state agencies to collaborate on the development of a California Sustainable Freight Action Plan by July 2016. California’s Sustainable Freight Action Plan 2016 was completed and is now available for download at <http://www.dot.ca.gov/casustainablefreight/theplan.html>.

While this effort was separate from California’s [state freight plan](#), it provides some valuable takeaways that states can incorporate into updates of their state freight plans.

Vision and Guiding Principles

While the contents of a state freight plan ostensibly present the vision for a freight system, states may want to consider explicitly including a vision statement and guiding principles, as California’s Sustainable Freight Action Plan does. California’s plan indicates that “the intent of the Vision and Guiding Principles is to inform ongoing and future planning documents, project selection, and investment processes as they relate to the sustainability of the freight transport system.” While California’s plan focuses on freight system sustainability exclusively, states could develop a vision which frames how the freight transport system would look like in their state, integrating system sustainability as one component. Likewise, states could parallel what California did with its plan’s guiding principles, which list the freight system trends and achievements to strive for in order for the vision to become reality.

The vision and guiding principles could be integrated as part of the required FAST Act state freight plan element of “a description of the freight policies, strategies, and performance measures that will guide the freight-related transportation investment decisions of the State.”

Freight Targets

California’s Sustainable Freight Action Plan establishes targets to improve freight system efficiency, transition to zero emission technologies, and increase the competitiveness of their freight system. The plan indicates that “the Targets are not mandates, but rather aspirational measures of progress toward sustainability for the State to meet and try to exceed. The State agencies will measure and report progress on the following statewide Targets, and will evaluate the Targets to determine necessary adjustments in 2019.”

State freight plans under the FAST Act are required to include “performance measures that will guide the freight-related transportation investment decisions of the State.” One or more of these performance measures could include a reduction in emissions or an increase in availability of alternative fuel infrastructure. U.S. DOT guidance indicates that while these measurements may be qualitative, they would preferably be quantifiable. Having quantifiable, time bound performance measurements will help states assess progress over time. For example, one of the targets California included in their Sustainable Freight Action Plan was to “[i]mprove freight system efficiency 25 percent by increasing the value of goods and services produced from the freight sector, relative to the amount of carbon that it produces by 2030.”

Pilot Projects

Three pilot projects were identified in California’s Sustainable Freight Action Plan. The purpose of the pilot projects, as indicated in the plan, is “to demonstrate on-the-ground progress toward a sustainable freight transport system in the near future. Successful demonstrations will serve as launching points for much broader application with the potential to address significant barriers and yield multiple benefits to California’s freight transport system.”

States should note that the pilot projects in California’s Sustainable Freight Action Plan did not have designated funding associated with them when they were included in the plan. Conversely, the freight investment plan component of state freight plans is subject to 49 U.S.C. 70202(c), which states that “the freight investment plan component of a freight plan shall include a project, or an identified phase of a project, only if funding for completion of the project can reasonably be anticipated to be available for the project within the time period identified in the

freight investment plan.” U.S. DOT guidance does indicate that “States may opt to extend the period of their Freight Investment Plans to longer intervals, including 20-year periods that correspond to the Statewide and metropolitan long-range plans, if this would help them for freight-planning purposes.”

The freight investment plan must “include a list of priority projects and describes how funds made available to carry out section 167 of title 23 would be invested and matched.” Section 167 of title 23 indicates that eligible projects may include “[e]fforts to reduce the environmental impacts of freight movement,” “[e]nvironmental and community mitigation for freight movement,” or “carrying out diesel retrofit or alternative fuel projects under section 149 for class 8 vehicles.” States could therefore use the freight investment plan portions of their state freight plans to identify projects with alternative fuel components.

State Freight Advisory Committee

DOT guidance on state freight plans and state freight advisory committees strongly encourages states to establish state freight advisory committees in the development of their state freight plans. The guidance provides a list of public and private sector freight stakeholders that could be included on the committee, though the list is not exhaustive:

- Ports;
- Freight railroads;
- Shippers, freight forwarders;
- Carriers, including carriers operating on their own infrastructure (such as railroads and pipelines) and carriers operating on publicly-owned infrastructure (such as airlines, railroads, trucking companies, ocean carriers, and barge companies);
- Freight-related associations;
- Third-party logistics providers;
- Freight industry workforce;
- The transportation department of the State;
- MPOs, councils of government, regional councils, organizations representing multi-State transportation corridors, tribal governments, and local governments, and regional planning organizations;
- Federal agencies;
- Independent transportation authorities, such as maritime port and airport authorities of varying sizes, toll highway authorities, and bridge and tunnel authorities;
- Safety partners and advocates
- State and local environmental and economic development agencies;
- Other private infrastructure owners, such as pipelines;
- Hazardous material transportation providers;
- Representatives of environmental justice populations potentially affected by freight movement;
- University Transportation Centers and other institutions of higher education with experience in freight.

The state freight advisory committee could provide an opportunity for state agencies to foster partnerships involved in the development of clean freight corridors. For example, involving

organizations such as air quality associations, environmental advocacy groups, and carriers with alternative fuel initiatives on the advisory committee can facilitate relationships and spark ideas that could be useful when the time comes for state agencies to be involved in building out alternative fuel infrastructure for freight.

Innovative Technologies

The FAST Act requires state freight plans to include “a description of how innovative technologies and operational strategies, including freight intelligent transportation systems, that improve the safety and efficiency of the freight movement, were considered.” While the types of technologies and strategies to include in the description are not explicitly stated (other than intelligent transportation systems), states could use this requirement as an opportunity to discuss alternative fuel or fuel reduction technologies that would also result in improved safety and efficiency of freight movement. Intelligent transportation system (ITS) technologies that allow for truck platooning, truck parking availability or route optimization can both reduce fuel use and increase the efficiency of freight movement, for example. The [Intelligent Transportation Systems Joint Program Office](#) within the U.S. DOT can serve as a good resource for states looking to learn more about the latest research and training on ITS.