Federal-Aid Highway Program Guidance on High Occupancy Vehicle (HOV) Lanes (September 2016)

Glossary of Terms

Alternate fuel vehicle - A vehicle that is operating on (1) methanol, denatured ethanol, or other alcohol; (2) a mixture containing at least 85 percent of methanol, denatured ethanol, and other alcohols by volume with gasoline or other fuel; (3) natural gas; (4) liquefied petroleum gas; (5) hydrogen; (6) coal derived liquid fuels; (7) fuels (except alcohol) derived from biological materials; (8) electricity (including solar energy) or (9) any other fuel that the Secretary prescribes by regulation that is not substantially petroleum and that would yield substantial energy security and environmental benefits, including fuels regulated under 10 CFR 490.

Auxiliary Lane – FHWA deems this term to have the same meaning as in the American Association of State Highways and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets, 2001 (commonly, the “Green Book”) as the portion of roadway adjoining the traveled way, and designated for speed change, turning, storage for turning, weaving, truck climbing, and other purposes supplementary to through-traffic movement.

High Occupancy Vehicle (HOV) – Federal law defines a “high occupancy vehicle” or “HOV” to mean a vehicle with no fewer than two persons.

HOT lane - "High Occupancy/Toll" lane means any HOV lane that allows vehicles not meeting minimum occupancy requirement to use the lane by paying a toll.

HOV facility – “High Occupancy Vehicle” facility; One that gives priority treatment to buses, vanpools, carpools and high-occupancy vehicles, including the HOV lanes, the park-and-ride lots, and other support facilities or elements.

HOV lane - Any preferential lane designated for exclusive use by vehicles with 2 or more occupants for all or part of a day, including a designated lane on a freeway, other highway or a street, or independent roadway on a separate right-of-way.

HOV system - Any coordinated region wide network of integrated HOV facilities.

Initial Construction – Federal law defines "initial construction" as the construction of a highway, bridge, tunnel, or other facility before it is open to traffic. Conversely, and intentionally, the definition excludes any improvement to a highway, bridge, tunnel or other facility after it is open to traffic.

Inherently Low Emission Vehicles (ILEV) - Any kind of vehicle which, because of the inherent properties of the fuel system design will not have significant evaporative emissions, even if its evaporative emission control system has failed. These vehicles are certified by the Environmental Protection Agency pursuant to 40 CFR 88.311-93 and labeled pursuant to 40 CFR 88.312.93.

Low Emission & Energy-Efficient Vehicles - A vehicle that has been certified as meeting the Tier II emission level under section 202(i) of the Clean Air Act (42 U.S.C. 7521 (i)) for that make and model year and is certified by EPA to have achieved not less than a 50-percent increase in city fuel economy or not less than a 25 percent increase in combined city-highway fuel economy relative to a comparable vehicle that is an internal combustion gasoline fueled vehicle; or is an alternative fuel vehicle; or is an alternative fuel vehicle.

Occupancy requirement - Any restriction that specifies a minimum number of persons in a vehicle. For example, HOV lanes are often 2+ (the driver plus one or more passengers) or 3+ (the driver plus two or more passengers) to use that lane. For purposes of this definition, fetuses in the womb do not constitute an occupant in the vehicle.

Public Authority – Federal law defines "public authority" as a State, interstate compact of States, or public entity designated by a State.

Public transportation vehicle - A vehicle that that (1) provides designated public transportation as defined in Section 221 of the Americans with Disabilities Act of 1990 (42 U.S.C. 12141) or provides public school transportation (i.e. to and from public or private primary, secondary, or tertiary schools); and (2) is owned or operated by a public agency entity; or is operated under a contract with a public agency entity; or is operated pursuant to a license by the Secretary or a State agency to provide motorbus or school vehicle transportation services to the public. For purposes of HOV and HOT travel, this would include said vehicles that are deadheading (i.e., no passengers, only a driver) and would not otherwise be subject to occupancy minimums.

Reconstruction – major work necessary to bring a facility up to (i.e., to improve to) an acceptable level of service. Such work may include, but is not limited to, the replacement of the pavement structural section, modernization of interchanges, adding interchanges, upgrading structural safety features, replacement of bridge decks and bridge parapets, adjustments to vertical and horizontal alignment, adding full-width and/ or full-depth shoulders, grade separations, and strengthening bridges to accommodate greater loads.

Single Occupancy Vehicle (SOV) – Any motor vehicle not meeting the established occupancy requirement of a HOV lane. While it is possible for a vehicle with more than one occupant to not meet the occupancy requirement if the standard is established at more than two persons, the term SOV is used to encompass all such vehicles not meeting the occupancy requirement.

Tier II Emission - The Tier II emission level established in regulations prescribed by the Environmental Protection Agency under section 202(i) of the Clean Air Act for that vehicle's make, model, and model year. The Tier II emission standards are based on a system of emission bins in which light-duty vehicles and light-duty trucks are certified in one of the eight bins; Bin 1 represents the cleanest or lowest emitting vehicles, and Bin 8 represents the highest emitting vehicles of the Tier II bins.

Toll Facility – Federal law defines “toll facility” as a toll highway, bridge, or tunnel, or approaches to same, that are constructed under 23 U.S.C. 129(a).

Chapter I Introduction

This program guidance provides the concepts, history, precepts, and purpose of high occupancy vehicle (HOV) lanes, as well as to explain what authority is delegated to “public authorities” over HOV lanes. (The term “public authorities” is defined in Chapter III.) The authority is based on legacy legislation originally set forth in Title 23 Section 166 “HOV Facilities” and most recently amended by the legislation ”Fixing America’s Surface Transportation Act” (FAST Act) signed into law on December 4, 2015 by President Barack Obama.

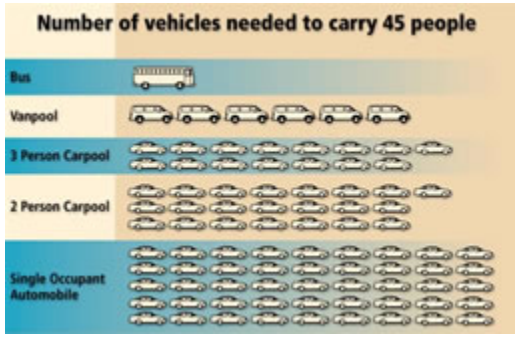

(Picture showing a 2-lane dedicated HOV facility in the median of a highway.)

The purpose of this document is to provide information useful to States as they plan, design, operate, and manage HOV and HOT facilities. It is intended to be non-binding and should not be construed as a rule of general applicability. This document provides examples for States to follow in evaluating proposed significant changes to the operation of an HOV lane, to include conversion of an HOV lane to a High Occupancy Toll (HOT) lane.

The FHWA supports HOV lanes as a cost-effective and environmentally friendly option to help move people along congested urban and suburban routes. As such, FHWA regulations at 23 C.F.R. 810.102 specifically provide that HOV lanes are eligible for Federal-aid participation. In locations where existing or anticipated excess HOV lane capacity is available, conversion to a HOT lane facility is encouraged as a way to increase throughput and to provide additional travel options for drivers. As part of an overall approach to respond to increased travel demand and address traffic congestion, HOV and HOT lanes can be a practical alternative to adding more general-purpose travel lanes. The FHWA encourages the implementation of HOV or HOT lanes as an important part of an area-wide

approach to help metropolitan areas address their requirements for improved mobility, safety, and productivity, while also being sensitive to environmental and quality of life issues.

Chapter II Concept, Background, and History



(Graphic showing that one bus, or six vanpools, or 15 3+ carpools, or 22 2+ carpools, or 45 single-occupant vehicles, are necessary to transport 45 people)

Concept

The primary purpose of an HOV lane is to increase the total number of people moved through a congested corridor by offering two kinds of incentives: a savings in travel time and a reliable and predictable travel time. (Note: hereafter, the term “HOV lane” is intended to cover both HOV and HOT situations, primarily due to the fact that HOT lanes inherently include an element of HOV use for qualifying vehicles. The term “HOT lane” may be called out for particular emphasis when the specific description of that facility is necessary.) Because HOV lanes carry vehicles with a higher number of occupants, they may move significantly more people during congested periods, even when the number of vehicles that use the HOV lane is lower than on the adjoining general-purpose lanes. In general, carpoolers, vanpoolers, transit users, and single-occupant users paying to use HOT lanes, are the direct beneficiaries of HOV and HOT lanes, whereas, motorists and passengers in the adjacent general purpose lanes are indirect beneficiaries, due to the reduction of vehicles in those lanes necessary to move said motorists and passengers in the HOV lanes.

HOV facilities have proven to be effective enhancements to the transportation system in many metropolitan areas. These facilities are most appropriate and are most needed in corridors with high levels of travel demand and traffic congestion. In these situations, HOV facilities can provide the travel times saving and improved travel time reliability necessary to encourage commuters to change from driving alone to using transit services, vanpools, and carpools. HOV lanes work best where significant roadway congestion during the

peak periods occurs and HOV support facilities such as park and ride lots are provided. Experience with HOV lanes from around the country has shown a positive relationship between ridership and travel time savings, suggesting that, as congestion grows, the travelers' willingness to carpool or ride on a bus that uses an HOV lane also grows.

HOT Facilities in the U.S.

In locations where HOV lanes are underutilized or where excess capacity on the HOV facility exists, conversion to HOT lanes is suggested as a way to increase use and to provide more choice to drivers. HOT lanes allow single-occupancy vehicles (SOVs) or lower-occupancy vehicles (LOVs), that is, vehicles with a number of occupants lower than the posted vehicle occupancy restrictions, to use an HOV lane for a fee, while maintaining free travel for qualifying HOVs.

To maximize the congestion-reducing benefits of an HOT lane facility, the toll charged should vary by time of day and/or level of congestion. Tolls can be varied by time of day, monthly, or quarterly based on historical highway use, or can vary dynamically over the course of the day based on real-time traffic conditions. The use of real-time or historically based variable tolling on HOT lanes may have a significant positive effect on traffic flow. For example, the MnPASS HOT lanes in Minneapolis vary the toll rates using real-time pricing, with the rates being updated every three minutes to reflect the amount of traffic on the road.

(Picture of MnPass facility in Minnesota stating “Car pools, buses and motorcycles (are) Free” while displaying toll rates for non-exempt vehicles.)

Effective management of an HOV lane involves developing and using an HOV operation and enforcement plan, along with a performance-monitoring program. Accurate and possibly real-time information about the performance of the HOV lanes, the general-purpose freeway lanes, and other supporting services and facilities is particularly useful. The information provided through an HOV

monitoring program is also critical for assessing the impact of possible changes in vehicle-eligibility requirements, vehicle-occupancy levels, and operating hours.

Background

The development of HOV facilities has evolved since the early 1970s. The bus-only lane on the Shirley Highway in Northern Virginia/Washington, D.C. and the contraflow bus lane on the approach to New York-New Jersey's Lincoln Tunnel pioneered the freeway HOV application in this country. Many of the initial HOV lanes were bus-only applications or allowed buses and vanpools. In an effort to maximize use, carpools became the dominant use group on most projects during the 1970s and 1980s. The vehicle-occupancy requirements for carpools have also evolved over time. A 3+ occupancy level was initially used on many projects, but most current facilities use a two-person per vehicle (2+) carpool designation. Today, there are close to two dozen states and Puerto Rico that have some permutation of HOV, HOT, or “Express Lanes”, et al

Congestion is recognized to be a growing problem, particularly in American urban areas. The U.S. has close to four million miles of roads, bridges, and highways to support a wide variety of economic and social activity. However, over time the demands on this infrastructure have outstripped its capacity. While the miles of urban roadways built have increased by nearly 65 percent since 1980, vehicle miles traveled on urban roadways increased by about 150 percent. As a result, traffic in most metropolitan areas has become increasingly congested, costing both time and fuel.

(Picture showing “FastTrak” toll of $1.50, and indicating a “no cash” (i.e., all electronic) collection method)

To address the continued growth of congestion, cities and States have shown a growing interest in managing travel demand by setting prices for road use during peak periods. Among the various pricing schemes, HOT lanes have proven to be of particular interest

because they not only address congestion in the short run, but they also demonstrate the benefits of more aggressive pricing strategies. And, they offer the customer travel time savings and a guaranteed level of service. HOT lanes are part of a broader managed lanes concept that employs market forces to help optimize use of the facilities.

Many of the HOT lanes implemented in the U.S. were piloted under the Value Pricing Pilot Program (VPPP). Prior to the passage of MAP-21's precursor, SAFETEA-LU, the VPPP was the only program under which HOT lanes could be implemented. In general, the VPPP allowed up to fifteen States to evaluate the feasibility and deployment of innovative pricing strategies, including HOT lanes as experimental pilot projects on the Interstate System. However, the SAFETEA-LU law of 2005 mainstreamed the authority to create HOT lanes and since then all States are allowed to create HOT facilities, although as noted further above, no more than approximately two dozen have these facilities. This concept continued in MAP-21, and again, in the FAST Act, wherein, States are now able to implement HOT lanes under 23 U.S.C. 166. However, under certain circumstances (typically grandfathered clauses), FHWA may grant a State authority to toll HOV lanes under the VPPP. Although this document addresses the conversion of HOV lanes to HOT lanes, States can also create HOT lanes by building new lanes where no conversion would be required.

Chapter III Overview of Statutory Provisions

The purpose of this chapter is to inform the reader of the statutory provisions covering high occupancy vehicle (HOV) facilities, but also to advise FHWA Division Office staff and the public on guidance relating to the administration and application of these provisions of law.

Statutory Basis

Section 166 of title 23, United States Code (U.S.C.) contains the HOV provisions. Section 1411 of the Fixing America's Surface Transportation (FAST) Act (Pub. L. 114-94), signed into law on December 4, 2015, included the most recent amendments to the prior HOV provisions. A copy of section 166, as amended by the FAST Act is provided in Appendix A. A copy of 23 U.S.C. 129 as amended by the FAST Act is provided for informational purposes as well in Appendix B.

Program Feature

"Public authorities" that have jurisdiction over the operation of an HOV facility on a Federal-aid highway manage day-to-day HOV

facility operations subject to the requirements in 23 U.S.C. 166 and 23 CFR Part 656. A public authority is defined for these purposes as a State, interstate compact of States, public entity designated by a State, or local government having jurisdiction over the operation of the facility. The term “authority” is also used as shorthand below in some cases.

Occupancy Requirement - 23 U.S.C. 166(a)

A public authority that has jurisdiction over the operation of an HOV facility has authority to establish the occupancy requirements of vehicles operating on the facility except that the minimum number of occupants required to use an HOV lane is “no fewer than two,” except for certain exemptions explained in the following section.

Allowable Exceptions - 23 U.S.C. 166(b)(1)

Subject to various requirements specified in the statute, 23 U.S.C. 166 authorizes five specific vehicle classes to travel on HOV facilities under an exemption from the “no fewer than two” vehicle occupancy requirement: (1) motorcycles and bicycles (with qualifications); (2) public transportation vehicles and over-the-road buses; (3) high occupancy tolled (HOT) vehicles; (4) low emission and energy-efficient vehicles (defined therein, but essentially alternative fuel vehicles) until Sept. 30, 2025; and (5) other low emission and energy efficient vehicles identified under EPA-certified qualifications through Sept. 30, 2019.

Motorcycles and Bicycles - 23 U.S.C. 166(b)(2)

Motorcycles and bicycles **shall** be allowed to use the HOV facility unless the public authority certifies that such use would create a safety hazard and the Secretary of Transportation accepts the certification after publishing notice of the certification and providing an opportunity for public comment. Some public authorities may require toll transponders not to effect payment, as these vehicles are noted to be exempt, but as a means to identify these vehicles as part and parcel of all tracked vehicles in the subject lanes. In the case of three-wheeled open cockpit vehicles and other non-traditional vehicles, the State’s definition of “motorcycle” prevails to determine any qualifications for exemption.

Public Transportation Vehicles and Over-the-Road Buses - 23 U.S.C. 166(b)(3)

Public transportation vehicles and over-the-road buses **may** be allowed to use the HOV facility, even with only one occupant (i.e., the driver), providing conditions in the statute are satisfied. The public authority must establish procedures for how these vehicles will be clearly identified and for enforcement of restrictions on the use of the HOV facility by the vehicles. Public transportation vehicles are defined in 23 U.S.C. 166(f)(6) as those providing designated public transportation as defined in the Americans with Disabilities Act of

1990 (42 U.S.C. 12141) or providing public school transportation, and that are owned or operated by a public entity, operated under contract with a public entity, or operated pursuant to a license issued by the Secretary or a public authority to provide motorbus or school vehicle transportation services to the public. Under 23 U.S.C. 166(b)(3)(C) and 23 U.S.C. 166(b)(4)(C)(iii), the public authority must provide and ensure equal access under the same rates, terms, and conditions for all public transportation vehicles and over-the-road buses serving the public. An over-the-road bus is defined in 23 U.S.C. 166(f)(4) as a bus as defined in section 301 of the Americans with Disabilities Act of 1990 (42 U.S.C. 12181) ["a bus characterized by an elevated passenger deck located over a baggage compartment"].

High Occupancy Toll Vehicles - 23 U.S.C. 166(b)(4)

Public authorities **may** allow vehicles not otherwise exempt to use the HOV facility if the vehicle operator pays a toll (i.e., high occupancy toll, or "HOT" vehicles). Typically, this involves vehicles not meeting the occupancy requirements for the HOV facility, such as single occupant vehicles on an HOV2 facility. If a public authority decides to allow HOT vehicles to use an HOV lane, the public authority must: (1) establish programs addressing how operators of HOT vehicles can enroll and participate in the toll program; (2) develop, manage, and maintain a system that will automatically collect the toll; and (3) establish policies and procedures to manage the demand to use the facility by such vehicles by varying the toll amount, and to enforce violations of use of the facility. Single-occupant (i.e., driver only) public transportation buses and over-the-road buses exempted by the public authority under conditions meeting the tenets of "same rates, terms and conditions" described elsewhere would already be exempted by class, so in those cases, the issue of whether or not there is a single driver is moot. However, any single driver buses, et al, that are *not* otherwise afforded exemption by class by the public authority would not be accorded exemption from tolls.

Low Emission and Energy-Efficient Vehicles (Including Alternative Fuel Vehicles and Vehicles Described in Section 30D(d)(1) of the Internal Revenue Code of 1986) - 23 U.S.C. 166(b)(5)

Certain low emission and energy efficient vehicles (as described further below) **may** be allowed to use the HOV facility with only one occupant (i.e., the driver) provided the public authority establishes procedures to enforce the restrictions on the use of the HOV facility by these vehicles. Typically, this authorization is done via permit, sticker, or transponder. These vehicles **may** be charged no toll or a toll that is less than tolls charged to HOTs.

Alternative Fuel Vehicles and Electric Plug-in Vehicles

The FAST Act extended the existing opportunity for a public authority to exempt alternative fuel vehicles (hydrogen, ethanol, methanol, non-petroleum, et al, as described in "definitions" of this provision) and new qualified electric plug-in vehicles (as defined in section 30(D)(d)(1) of the Internal Revenue Code of 1986) through September 29, 2025. After that date, the public authority must discontinue allowing the use of such vehicle in HOV lanes unless such vehicle has the required number of occupants or Congress extends this provision. "Alternative fuel vehicles" are vehicles that operate *solely* on: methanol or other alcohols; a mixture of at least 85 percent methanol or other alcohols by volume with gasoline or other fuels; natural gas; liquefied petroleum gas; hydrogen; coal derived liquid fuels; fuels (except alcohol) derived from biological materials; electricity; or any other fuel that the Secretary prescribes by regulation that is not substantially petroleum and that would yield substantial energy security and environmental benefits. 23 U.S.C. 166(f)(1).

Other Low Emission and Energy-Efficient Vehicles

The FAST Act extended the opportunity for a public authority to exempt other low emission and energy-efficient vehicles (certified to meet Tier II, Clean Air Act, et al, as fully described in "definitions" of this provision) through September 29, 2019. After that date, the public authority must discontinue allowing use of such vehicle in HOV lanes unless the vehicle has the required number of occupants or Congress extends this provision.

23 U.S.C. 166(f)(3) defines "low emission and energy-efficient vehicles" as those that have been: (1) certified by the EPA as meeting the Tier II emission level established pursuant to section 202(i) of the Clean Air Act (42 U.S.C. 7521(i)) for a given make and model year; (2) certified by the EPA as achieving not less than a 50 percent increase in city fuel economy or not less than a 25 percent increase in combined city-highway fuel economy relative to a comparable vehicle that is an internal combustion gasoline fueled vehicle (other than a vehicle that has propulsion energy from on-board hybrid sources). The EPA is responsible to issue the rules that establish the certification and labeling requirements for low emission and energy-efficient vehicles.

23 U.S.C. 166(d)(2)(C) permits public authorities to implement a more stringent definition of low emission and energy-efficient vehicles in order to better manage the performance of their HOV lanes when used by these vehicles. For example, the public authority may choose to allow only low emission and energy-efficient vehicles that can demonstrate an 85 percent increase in city fuel economy and a 25 percent increase in city-highway fuel economy, or a 45 percent increase in combined city/highway fuel economy and a 50 percent increase in city fuel economy (or increase both percentages) to travel as single occupant vehicles (SOVs). Authorities may also implement other requirements to restrict the use of their HOV facilities by low emission and energy-efficient vehicles, such as caps on the number of eligible vehicles or vehicle class or weight restrictions. However, authorities may not implement non-percentage-based standards, such as a miles-per-gallon (MPG) standard, because the statute permits only percentage-based adjustments and an MPG adjustment would conflict with the statute (23 U.S.C. 166(d)(2)(C)).

HOV Facility Management, Operation, Monitoring, and Enforcement - 23 U.S.C. 166(d)

HOV lanes were created to promote carpooling, reduce congestion, emissions, and delay, and generally provide a more reliable trip than one that may occur in the general purpose lanes. In the absence of a performance metric, the functional integrity of HOV and HOT lanes is at risk if the facility fails to provide that performance. Congress has established a performance metric for HOV lanes that allow exempt vehicles to access the HOV facility. The qualifying facility must meet minimum lane efficiency standards or be required to undertake actions that would return the facility to threshold sufficiency, including removing the exempted vehicles that may be causing the degradation in performance.

Annual Report and Certification - 23 U.S.C. 166(d)(1)

A public authority that allows vehicles to use an HOV facility under 23 U.S.C. 166(b)(4) ("HOT vehicles") or (b)(5) ("low emission and energy-efficient vehicles") of subsection (b) **must** submit a report annually to FHWA showing the HOV facility is not already degraded (or if degraded, that remedial actions are being taken), and that the presence of the vehicles will not cause the facility to become degraded. (Note: this would include any proposed HOV to HOT conversions.) The public authority also **must** certify to FHWA that the authority will: establish, manage, and support means to report annually on the impacts of said vehicles on the operation of the facility and adjacent highways; establish, manage, and support an enforcement program that ensures the operation of the facility in accordance with the requirements in 23 U.S.C. 166; and limit or discontinue use of the facilities by the subject vehicles if the operation of the facility is degraded. For administrative purposes, FHWA refers to this annual requirement as the public authority's annual certification.

The certifications may be in the form of official correspondence attesting that the public agency is "duly filing" (or similar), state the public authority has tested the facility against the performance criteria, and certify the facility either meets the criteria or is developing a plan for maintenance of performance as required under section 166(d)(1)(D). If the facility is degraded, the certification should state the date on which the public authority made the degradation determination. The certification should include direct (e.g., attachment) or indirect—by reference prepared reports or other data—supportive evidence (e.g., website with citations) detailing aspects of lanes, lane mileage, facility identification, respective speeds, and performance data conclusions, which serve to represent lane sufficiency or degradation. Data pertaining to enforcement rates, violations, toll structure, revenue, etc., are neither requested nor required for purposes of certification and therefore need not be inclusive. Annual certification shall be delivered to the respective FHWA Division Office, which shall act as repository for the annual reports. The Division Offices will concurrently notify FHWA Headquarters of receipt and of the status of the facility. No annual due date is stipulated in the statutory provisions; therefore, the cover- or title-page date-of-submittal should constitute the anniversary date for the following years' reports. *Example: Report for 2015 (Named) Facility Sufficiency is*

submitted on March 1, 2016. That date prevails thereafter and March 1, 2017, becomes the target date for submitting 2016 sufficiency.

Degraded Facility - 23 U.S.C. 166(d)(2)

A degraded facility is defined as one that does not meet minimum average operating speed of: 45 miles per hour (MPH) for 90 percent of the time over a 180-day monitoring period during morning and evening weekday peak hours (or both), in the case of a HOV facility with a speed limit of 50 MPH or greater; or not more than 10 MPH below the speed limit in the case of a facility with a speed limit of less than 50 MPH. The legislation does not stipulate that public authorities use a specific procedure or methodology in determining if the operational performance of an HOV facility is degraded. The FHWA recognizes that this is because (1) each qualifying HOV facility has different characteristics, and (2) each public authority has different resources to collect and analyze data. Nevertheless, the FHWA Division Office should be satisfied that a suitable methodology is being employed to make the degradation determination.

Nominal occurrences of precipitation, lane enforcement in the HOT lane, or minor (e.g., fender bender) crashes in the adjacent general purpose lanes, are understood to occasionally temporarily slow the facility, if only due to rubbernecking in the latter case. It is impractical to expect that a consecutive 180-day reporting period would be entirely free of all such events. Therefore, even if occurring during the reporting periods, nominal events are part of normal operations and cannot be excluded from data. However, if the public authority can document *uniquely* impacting events that were of *such magnitude and duration* that they constitute abnormal impact, then they can be identified to the FHWA Division Office and, upon the Division Office's agreement, excluded from the performance measure data for that reporting period.

If the operation of an HOV facility that allows HOTs or low emission and energy-efficient vehicles becomes degraded, authorities **must** take necessary actions, such as limiting or discontinuing the use of HOV facilities by the subject vehicles, or increasing the price paid by non-exempt vehicles for access to HOV lanes. *Note: an HOV-only facility (i.e., no SOVs, no low emission and energy-efficient vehicles) is not mandated to meet the performance criteria in section 166(d)(2); however, under section 166(d)(1), other vehicles cannot be allowed in an HOV lane if the HOV lane is already degraded.*

Not later than 180 days after a facility is determined to be degraded in accordance with 23 U.S.C. 166(d)(2)(B), the public authority with jurisdiction over the facility shall submit to FHWA for approval a remediation plan that details the actions the public authority will take to make "significant progress" toward bringing the facility into compliance with the minimum average operating speed performance standard through changes to the facility's operation, including: (1) increasing the occupancy requirement for HOV lanes; (2) varying the toll charged to vehicles under 23 U.S.C. 166(b) to reduce demand; (3) discontinuing allowing non-HOV vehicles to use the HOV lanes under section 166(b); or (4) increasing the available capacity of the HOV facility. 23 U.S.C. 166(d)(1)(D). Section 166(d)(1)(E) prescribes that if the public authority fails to bring a facility into compliance, FHWA shall subject the public authority (and

possibly State, if the State has oversight responsibility) to appropriate program sanctions under 23 CFR 1.36 until the HOV facility performance is no longer degraded.

No later than 60 days following receipt of the remediation plan describe above, FHWA shall provide the public authority written notice indicating whether the plan has been approved or disapproved based upon a determination of whether plan implementation will make significant progress toward bringing the HOV facility into compliance with the minimum average operating speed performance standard. 23 U.S.C. 166(d)(1)(D).

To avoid the need for potential corrective action, authorities should work closely with the FHWA Division Office before allowing SOV, HOT, or low emission and energy-efficient vehicles to use HOV facilities.

Waiver – 23 U.S.C. 166(d)(1)(F)

Public authorities **may** request a waiver from sanctions in certain situations; provided the Secretary determines that: (1) the waiver is in the best interest of the travelling public; (2) the public authority is meeting the requirements under section 166(d)(1)(D) to bring the HOV facility into compliance; and (3) the public authority has made a good faith effort to improve the performance of the HOV facility. The Secretary **may** require, as a condition of waiver, that the public authority undertake additional actions as determined by the Secretary to maximize facility performance, even if such performance remains below the sufficiency threshold.

Summary of Annual Certification, Remediation, or Waiver

A *basic* timeline for certification is provided here for illustrative purposes only. Specific questions should be directed to the FHWA's Office of Operations HOV program manager.

1. An annual certification is submitted to the FHWA Division Office, which acknowledges receipt of same for documentation purposes. If degradation exists, the Division Office confirms the submittal includes information on the required remedial plan. (Example: A "year 1" report for 2015 submitted on March 1, 2016.) If for some reason the certification is not accepted (e.g., does not meet satisfactions for "establishing, managing, supporting" and reporting vis-à-vis an acceptable oversight program, or is not of sufficient reporting length, etc.), the public authority must correct and resubmit. Assuming the annual certification is duly recognized . . .
2. The submittal date (and *not* the Division Office acceptance or recognition of submittal) becomes that facility's defacto annual anniversary for certification.
3. If the facility is determined to be degraded in accordance with 23 U.S.C. 166(d)(2)(B), a remediation plan must be submitted to

FHWA for approval. However, even if the 180 days has not elapsed by the certification due date, given that degradation has been identified, and a remediation plan is imminent, the public authority should consider including a remediation plan (e.g., also dated March 1, 2016) when submitting an annual report that identifies degradation.

4. Within 60 days after receiving the remediation plan, FHWA, acting on behalf of the Secretary, under authority delegated by regulation, will provide the public authority with written notice either approving or disapproving the plan.
5. The "year-2" following certification (e.g., "2016" submitted on the now established anniversary date of March 1, 2017) shall contain the 2016 report, but will also serve as de facto comparison to the 2015 report to describe how/if progress has been made. The report should include *specific* discussion on how successful were the prior years' remediation efforts.
6. Should FHWA find the public authority has failed to bring a facility into compliance, program sanctions will be imposed pursuant to 23 CFR 1.36.
7. The public authority may request a waiver of sanctions and FHWA may grant the waiver upon a determination of qualifying justification. The FHWA may require, as a condition of waiver, prescribed remedial actions.
8. The facility shall be considered to remain not-in-compliance (and subsequent reports must continue to report on progress of remedial efforts) until such time as a subsequent report clears its status, or a waiver is granted.

Consultation of Metropolitan Planning Organization (MPO) - 23 U.S.C. 166(g)

Beginning with the FAST Act in 2015, public authorities that charge tolls on an HOV facility under only 23 U.S.C. 166(b)(4) (HOT vehicles) or (b)(5) (low emission and energy-efficient vehicles) on an Interstate System located within a metropolitan planning area established under 23 U.S.C. 134 **must** consult with the relevant MPO(s) concerning the placement and amount of tolls on the facility.

Definitions - 23 U.S.C. 166(f)

Section 166(f) contains many of the definitions used in the implementation of HOV facilities, including: "alternative fuel vehicles," "HOV facility," "low emission and energy-efficient vehicles," "over-the-road bus," "public authority," and "public transportation vehicle." Please refer to Appendix A for the text of 23 U.S.C. 166, as amended by the FAST Act.

Applicability of the National Environmental Policy Act (NEPA)

Public authorities with jurisdiction over HOV facilities hold the sole authority to set occupancy requirements and to implement any of the HOV occupancy exceptions under 23 U.S.C. 166(b). There is no discretionary decision or any approval action to be made by FHWA in these areas, except where a State wishes to exclude motorcycles or bicycles from an HOV lane under 23 U.S.C. 166(b)(2)(B). As such, State actions in setting the occupancy requirements or implementing any of the HOV occupancy exceptions, including

converting HOV lanes into HOT lanes under 23 U.S.C. 166(b)(4), do not involve a major Federal action that is subject to NEPA. Only when other factors, such as Federal-aid funding or a need to amend previous commitments, give rise to an FHWA approval must FHWA perform a NEPA evaluation. States are encouraged to coordinate with their FHWA Division Office in the early planning phase to determine whether the implementation of any exception, such as the conversion of a HOV lane into a HOT lane, will be part of a Federal-aid project or whether any previous commitments made in prior NEPA decisions or Federal-aid project agreements require any FHWA actions or approvals that would trigger a NEPA review. Note that even if the project is a "pure" section 166 action and may not involve any discretionary Federal action, certain conformity requirements must be met under 40 CFR 93.121 if it is a regionally significant project within an air quality nonattainment or maintenance area. This applies to projects that require adoption or approval by any State, regional, or local agencies that routinely receive title 23, U.S.C., or Federal Transit Administration funds, as defined in 40 CFR 93.101.

Chapter IV Implementation

Establishing an HOV facility requires implementation of specific occupancy requirements, and involves various activities and the coordination of a variety of agencies and groups. Taking a comprehensive and systematic approach to the implementation process will help ensure that the HOV facility is constructed, designed, and operated in a safe and efficient manner. For example, the development of a concept of operations and application of a systems engineering process will assist States in addressing system lifecycle costs from concept thru design, installation, testing, operations, and maintenance. Such coordination also will help identify applicable regulatory requirements and any needed approvals, such as design approval for change of Interstate System access and Intelligent Transportation System architecture final rule compliance. In this section the terms "States" and "public authorities" are used interchangeably to identify the authority that manages the lane because in some cases State legislation affects the management of HOV lanes.

Examples of significant operational changes:

- A significant change to the minimum occupancy requirement (e.g., a change from 2+ to 3+ or higher);
- Switching from 24-hour HOV lane operation to operation during only a portion of the day or week; or
- Allowing any exceptions to vehicle minimum occupancy requirement permitted in 23 U.S.C. 166(b), such as HOT vehicles or low emission and energy-efficient vehicles.

In the course of managing HOV facilities, some minor or significant physical or operational modifications may be needed to meet changing conditions. States are encouraged to work with their local FHWA Division Office if significant operational changes, relevant to the annual certification or original project commitments, are proposed. In this way, agencies can ensure that all Federal statutory requirements and original project commitments are met.

Original project commitments and/or the source of Federal funds used for implementation of the HOV lanes may preclude certain changes to such facilities. For example, based upon restrictions or requirements associated with the use of Federal-aid highway funds, States are not authorized to convert an HOV lane to a general-purpose lane if funds to construct the facility were made available under the Congestion Mitigation and Air Quality Improvement or the Interstate Maintenance Programs. Other Federal funding sources may have similar requirements that limit the ability of operating agencies to change HOV/HOT lanes to general-purpose lanes or to establish a minimum occupancy requirement of four or more for an HOV facility where practically no or minimal HOV users exist.

Agencies that own and operate HOV lanes are encouraged to involve the FHWA Division Office in the development of programs and initiatives to monitor how well the lanes are functioning, to assess their effectiveness with regard to improving the efficient of travel, to identify new strategies to improve performance, or to analyze the impacts of any significant changes on either the transportation system (including how it is operated), regional HOV system, or both.

Performance Monitoring, Evaluating, and Reporting Program

Establishing a program to a monitor and evaluate program for the performance of an HOV-only lane can help determine if the facility is meeting its goals and objectives. The results of the performance evaluation provide the basis for making revisions to improve the operation of the HOV system or specific lanes. Note: annual lane certification is mandatory under 23 U.S.C. 166(d)(1) when the public authority with jurisdiction over the HOV facility allows exempted vehicles to access the HOV lane; it is not mandatory for HOV-only facilities, but there is nothing wrong with applying the former precepts against the latter conditions, if only for a qualitative test.

Evaluating HOV lanes is similar to evaluating other highway facilities where safety, vehicle volumes, and level of service are examined. However, HOV evaluations also examine facility impacts on the movement of people (how many people, as opposed to how many vehicles, use the lane); modal shifts (how many people changed their travel behavior to take advantage of the HOV lane); reliability; and travel-time savings. These are all important indicators of HOV lane performance.

The process for assessing possible HOV operating strategies should be similar to the one used to plan a project and should emerge from an established monitoring program. Information on vehicle and passenger volumes, travel speeds, travel-time savings, violation

rates, and crashes should form the basis of an ongoing monitoring and evaluation program. This information can be used to identify possible problems and potential changes in the operation of an HOV facility.

Technical guidance and recommended practices on performance monitoring and evaluation of HOV systems can be found in the National Cooperative Highway Research Program Report 414: "HOV Systems Manual." For additional resources, refer to Chapter VI in this Program Guidance or visit the FHWA HOV Program Web site at http://www.ops.fhwa.dot.gov/freewaymgmt/hov.htm.

Example: Determining Operational Performance

The Situation

A 20-mile HOV facility (that allows low emission and energy-efficient SOVs) has a speed limit of 55 MPH and a one-mile long bottleneck with an average operating speed of 20 MPH and a 50 MPH average operating speed for the remainder of the facility. Does the performance of this facility meet the Federal requirement (under 23 U.S.C. 166(d)(2)) of a 45 MPH average operating speed?

Although the average operating speed for the entire facility in this example is 46.5 MPH, the facility may be considered degraded based on the predominant usage pattern and the impact of delays at the bottleneck.

If the predominant usage pattern consists of relatively short trips (5 or 10 miles) that pass through the bottleneck location, the average operating speed for these trips will be well under 45 MPH and the facility would be considered degraded.

If the predominant usage pattern consists of longer trips that traverse most or all of the facility, including the bottleneck, the facility would not be considered degraded simply because of the relatively short bottleneck.

For "HOV+" facilities (i.e., ones that combine HOV with SOVs or low emission or energy-efficient vehicles) the minimum average operating speed is defined in section 166(d)(2)(A) as 45 MPH with a speed limit of 50 MPH or greater, and not more than 10 MPH below the speed limit for a facility with a speed limit of less than 50 MPH. *This standard could be considered a de facto test for HOV-only facilities but is not mandated as such.* Section 166(d)(2)(B) further provides that an HOV facility is considered degraded if it fails to maintain a minimum average operating speed 90 percent of the time over a consecutive 180-day period during morning or evening weekday peak hour periods (or both for a reversible facility). It is noted that a facility may have one or more locations where this operating speed is routinely not met, but still be able to maintain the minimum average operating speed over the length of the entire facility or segment. The impact of bottleneck delay on an HOV facility is dependent on the length of the bottleneck and the

predominant usage pattern of the HOV facility. A minor bottleneck on a long facility may not be a problem, whereas a bottleneck on a short facility or on a critical segment could have a greater impact and lead to a degraded condition. See sidebar to left for example.

A minimum average operating speed can ideally be obtained by collecting data at multiple locations. Data collection points can either be spaced uniformly at equal distance apart from one another or at strategic locations. The monitoring should be conducted, at a minimum, during peak periods. A State should evaluate this regular monitoring information to develop an understanding of the operating and usage characteristics of the facility in order to assess whether overall incentives to use the HOV facility are adversely impacted by the bottleneck location(s).

The FHWA does not require use of a specific procedure or methodology for States to use in determining if the operational performance of an HOV facility is degraded. This is because each HOV facility has different characteristics and each State agency has different resources to collect and analyze data. The appropriate frequency of data collection should be determined based on the type of HOV facility, number and location of entrance and exit points, traffic patterns, etc. States are encouraged to create monthly reports as a means to continually monitor and evaluate the HOV facilities. A public authority or State DOT is encouraged to work with the local FHWA Division Office to develop a detailed performance-monitoring program that outlines the methodology it will use to determine whether the particular HOV facility meets applicable Federal operational performance requirements.

Examples of Performance Monitoring Programs:

- I-394 MnPass HOT Lanes
- CA Statewide Hybrid Vehicle Program
- Long Island Expressway Clean Pass Pilot Program
- Washington State HOV System HERO Program

If the public authority allows HOT or low emission and energy-efficient vehicles to use an HOV lane, and the lane becomes degraded, section 166(d)(1)(C) requires the State to limit or discontinue the use of the lane by the number of HOT vehicles and/or low emission and energy-efficient vehicles necessary to bring the facility back to compliance or to take other actions that will quickly bring the operational performance up to the Federal standard. Data showing that the HOT and low emission and energy-efficient vehicles caused the degradation is not required. The State has discretion in deciding which vehicles to limit or discontinue as well as the manner and means through which to do it. For example, the State may utilize a variety of options for improving the operation of its HOV facilities, such as improving enforcement, increasing the fuel economy percentages, increasing the occupancy requirements, establishing tolls, or varying the tolls by time of day or actual traffic conditions. The State's remedial plan, including its choice of

options, is subject to an FHWA determination whether the plan will make significant progress toward bringing the facility into compliance with the minimum average operating speed performance standard.

HOV Facility Management, Operation, and Monitoring (Arterials) - 23 U.S.C. 166(d)

Arterial street HOV facilities are found within a wide range of settings and environments in an urban area, for example, in downtown/central business districts, suburban activity centers, neighborhood commercial areas, and major commuter travel corridors. Arterial streets are typically designed to operate at travel speeds of 25 to 50 MPH. Hence, the minimum average operating speed must not be more than 10 MPH below the speed limit for an arterial street facility, in accordance to 23 U.S.C. 166(d)(2)(A)(ii).

The operating environment for an HOV facility on an arterial street is much different from the operating environment on freeways. Examples of considerations used to determine the average operating speed for arterial facilities are: delays due to signalized intersections, driveway access, turning movements, on-street parking, and buses stopping to drop off and pick up passengers, etc. A State may derive an average operating speed based on the average travel time using these considerations.

Enforcement Program

Enforcement is critical to the successful operation of an HOV facility. The role of an HOV enforcement program is to protect the integrity of the facility by deterring possible violators and promote the safe and efficient use of the HOV lanes. If a State allows HOT or low emission and energy-efficient vehicles to use an HOV lane, the operating agency must establish, manage, and support an enforcement program that ensures the facility is being operated in accordance with the requirements of section 166, including the performance standards stated in 23 U.S.C. 166(d).

(Picture showing a generic highway patrol vehicle)

Chapter V Strategies to Reduce Congestion and Improve Air Quality

Highway congestion has increased dramatically over the past two decades. At its most fundamental level, highway congestion is caused by the lack of a mechanism to efficiently manage use of existing capacity. Economists have long advocated that pricing the costs of congestion directly is the most viable means to address this problem and reduce overall congestion costs. As stated in the 2007 Economic Report of the President, small changes in the number of cars using a particular roadway at a given time can result in significant impacts – for good or bad -- in the flow of traffic. For instance, the addition of just a few school buses makes traffic flow noticeably worse on the first day of school, while traffic flow is noticeably better on some State holidays when only a small number of residents stay home from work. Congestion pricing dampens demand for roads during peak hours and spreads usage over a longer time period. Differentiating the price of a good by the time of day effectively allocates limited capacity during periods of higher demand.

Effectiveness of HOV Facilities

As travel and congestion continue to increase, HOV/HOT lanes and other travel demand management techniques will be found to be increasingly valuable as strategies to reduce congestion and improve air quality. An investment in HOV and HOT lanes demonstrates a region's long-term commitment to plan for and make cost-effective investment decisions that reduce congestion and positively influence the mobility, safety and productivity of multi modal facilities, corridors and metropolitan transportation systems. In locations where HOV lanes are underutilized or where anticipated excess capacity on the HOV facility exists, conversion to HOT lanes is suggested as a way to increase use and to provide more choice to drivers.

The FAST Act amends 23 U.S.C. Section 166 to provide States more flexibility to manage the operational performance of HOV lanes by allowing certain vehicle exceptions when existing or anticipated excess capacity exists. A key to ensuring the effectiveness of HOV/HOT facilities is to continuously monitor and evaluate their operational performance and then make necessary adjustments. Enforcement is also critical to the successful operation of an HOV/HOT facility. The role of an HOV enforcement program is to protect the integrity of the facility by deterring possible violators, thus promoting the safe and efficient use of the HOV lanes. Some of the typical indicators of efficient HOV/HOT lane performance are: high vehicle and people throughputs, reliable travel time and transit services, and low violation rates. In locations where HOV lanes are underutilized or overcrowded, States may apply one or a combination of the following operational strategies to optimize the HOV lanes performance.

- Pricing
- Occupancy Requirement (increase or decrease)
- Vehicle Eligibility

The following sections will explain how these operational strategies can potentially enhance the performance of HOV facilities.

Pricing

Many HOV lanes do not make full use of their capacity. Consequently, more SOV/LOV traffic than necessary is forced to use congested general-purpose lanes. Congestion can be reduced, and the overall throughput of the highway corridor can be increased, if an HOV lane is converted to a HOT lane, allowing vehicles that do not meet the established minimum occupancy requirement to use the HOV lane on payment of a toll. The “trade off” benefit to paying to use an HOV lane is an increase in trip reliability, as the HOV lane is required to be monitored for compliance to maintain speeds. Ideally, the HOV lane-user will proceed at a fairly uninterrupted pace while the adjacent general-purpose lanes may clog during peak hours. Outside of peak hours, the G-P lanes may clear and a tolled trip in the HOV lane may be unnecessary.

(Picture showing the left lane is for free HOV 2+ and the right lane is for tolled traffic.)

The U.S. Department of Transportation strongly endorses the use of HOT lanes as an effective strategy to address congestion. The toll should be varied in accordance with travel conditions and should be set at a high enough level that the performance of the HOV lane is not degraded. This optimizes the vehicle throughput of the HOT lane and reduces congestion in the general-purpose lanes by drawing off some of the SOV traffic that would otherwise be forced to use those lanes. So HOVs are no worse off, and vehicles that do not meet the vehicle occupancy requirement, whether they use the HOT lane or the general-purpose lanes, are better off.

The FHWA encourages States to take advantage of the use of the HOT lane option provided in 23 U.S.C. 166, so long as the performance of the HOV lane is continuously monitored and continues to meet specified performance standards. States should consider converting HOV lanes to HOT lanes whenever the capacity of the HOV lanes is underutilized and congestion occurs in the general-purpose lanes. It is, of course, important that States be prepared to comply with the statutory criteria for establishing a HOT lane - automatic tolling, dynamic tolls that vary with the level of congestion, adequate enforcement, and ongoing performance monitoring, evaluation, and reporting and modification of operations when approaching degraded conditions. The toll amount should be varied based on historical highway use and/or real-time traffic conditions. Chapter IV provides the definition of a degraded HOV lane.

(Picture displaying overhead sign reading “Express Lanes Carpools Only Second Exit”)

In instances where the State wants to implement a HOT lane, but does not yet have a program addressing how motorists can enroll and participate in the program, an automatic toll collection system, or policies and procedures to vary the toll amount and enforce violations, the FHWA has determined that the State can proceed to implement its HOT lane so long as the State is committed to full implementation per each of the section 166(b) and (c) provisions. If the State cannot fully implement these provisions within the stipulated time, then the State's toll authority may be revoked.

Despite their potential benefits, HOT lanes are often portrayed as "Lexus Lanes" in the media. The contention is that only higher income drivers (i.e., only ones that can afford Toyota Lexus-priced vehicles) can take advantage of these facilities, while lower income drivers must continue to be stuck in traffic. In the 2007 Economic Report of the President, one study found that drivers with higher incomes may indeed tend to use HOT lanes more often than lower income drivers, but that lower income drivers certainly rely on toll lanes when on-time arrival at their destination is important. Other more recent surveys found that support for, or opposition to, HOT lanes is more related to time savings, and less related to income. It is the position of the U.S. DOT that HOT lanes provide

direct choices and direct benefits to the subject users, and indirect benefits to non-users, e.g., by removing vehicles from the G-P lanes and using excess capacity in the HOV lanes

The HOV/T goal is to encourage the use of carpooling, vanpooling, and transit services, and to allow toll-paying customers to fill excess capacity and enjoy a more reliable trip, all without overloading the capacity of the HOV lane.

Additional factors to be considered in connection with HOV to HOT conversion include public acceptance, toll schedule/structures, the cost of the tolling infrastructure and operating strategies, use of revenues generated from the project, identifying qualifying vehicles, and methods to restrict use.

Occupancy Requirement

HOV facilities offer States the ability to match vehicle eligibility criteria and vehicle occupancy requirements to the demand for the lane. Under 23 U.S.C. 166 (a), the States retain the authority to establish the minimum occupancy requirements of their HOV lanes, so long as the minimum occupancy is no less than two. The goal is to set the occupancy requirement at a level that will encourage the use of carpooling, vanpooling, and transit services without overloading the capacity of the HOV lane.

(Picture displaying a sign reading “HOVs – 3+ Restriction Now In Effect on HOV Lane”)

Changes in the designated vehicle-occupancy restrictions may be needed over the life of an HOV facility. For example, some HOV lanes using a 2+ requirement have experienced congestion resulting in reductions in trip time reliability and slower travel times. This situation happened on both the I-10 West and U.S. 290 HOV lanes in Houston. To address this problem, the vehicle-occupancy

requirements were increased to 3+ during the morning and afternoon peak-hours. States are strongly encouraged to increase vehicle-occupancy levels in the event that facility performance becomes degraded. In locations where HOV lanes are overcrowded, States may combine pricing and occupancy requirement modification strategies to improve performance.

States should set an occupancy requirement that reasonably facilitates the use and operation of carpools. In other words, States should establish the occupancy requirement at a level related to the performance of HOVs on the facility. For example, it is highly unlikely that many private vehicles that are used for carpools will be able to meet a 10+ occupancy requirement. Currently, the FHWA does not know of any HOV lane with an occupancy requirement above four. Therefore, a rebuttable presumption is created where the FHWA will presume that any HOV occupancy requirement over four bears no relationship to the performance of the HOV lane.

Vehicle Eligibility

Hybrid Vehicles Pilot Programs

A number of factors may need to be considered in assessing possible changes in vehicle-eligibility requirements for an HOV facility. The exact factors and issues will vary by metropolitan area and by the type of change in the vehicle-eligibility requirements being considered. Typical factors include HOV project goals and objectives, facility type and length, design treatments, congestion levels in the HOV lane and the general-purpose freeway lanes, bus operations, system connectivity, and supporting services and facilities. Other important factors to consider include safety, enforcement, and perceptions of HOV lane users, non-users, and policy makers.

(Picture of car with “Clean Pass Vehicle” sticker on the bumper.)

One option to use excess HOV lane capacity is to allow environmentally friendly vehicles that do not meet the occupancy requirement to use HOV lanes for free or for a fee. The concept is that this benefit (i.e., free travel in HOV lanes) may stir buyers to purchase

environmentally friendly vehicles. However, it is assumed that over time “eco” vehicles may become more common. As stated elsewhere, this benefit may be sunset unless it is extended or continued by Congress. As stated in 23 U.S.C. 166, States are authorized to permit ILEV and/or qualified low emission and energy-efficient vehicles (i.e., hybrid and alternative fuel vehicles) to use HOV lanes without meeting minimum occupancy requirements. States may also allow eligible public transportation vehicles that do not meet minimum occupancy requirement, such as out-of-service or deadheading transit vehicles as defined in 23 U.S.C. 166(b)(3), to travel on HOV lanes free of charge.

In addition to the pricing, occupancy requirement, and vehicle eligibility operational strategies, other travel demand management strategies can also be used to improve HOV system performance on both a region-wide and facility-specific basis include: guaranteed ride home programs; telecommuting and alternate work schedules; growth management, land use policies, and zoning ordinances; parking management; trip reduction ordinances; and traveler information systems.

Chapter VI Resources

FHWA/FTA Offices

- FHWA Field Offices: http://www.fhwa.dot.gov/field.html - fieldsites
- FHWA Office of Transportation Management: http://www.ops.fhwa.dot.gov/freewaymgmt/hov/index.htm
- FTA Regional Offices: http://www.fta.dot.gov/about/12926.html
- HOV Pooled Fund Study The goal of the HOV Pooled-Fund Study (HOV PFS) (Study Number TPF-5 (029)) is to assemble regional, State, and local agencies, and the Federal Highway Administration (FHWA) to (1) identify HOV-related issues that are common among agencies; (2) suggest projects and initiatives; (3) select and initiate projects intended to address identified issues; (4) disseminate results; and (5) assist in solution deployment. Please visit the Web site at http://hovpfs.ops.fhwa.dot.gov/overview.cfm for more information.

Transportation Research Board Committees on HOV Systems and on Congestion Pricing

The Transportation Research Board standing committees on HOV Systems is concerned with priority measures for HOVs, including guidelines for planning, designing, operating, and evaluating HOV priority facilities and the development, validation, and dissemination of theoretical, experimental and applied research related to HOV priority facilities. The objectives of the committee

include assisting in enhancing the performance, safety, and efficiency of HOV facilities and establishing preferential HOV improvements as an integral element of the urban transportation system.

For more information, visit the committee homepage at http://www.hovworld.com.

The TRB Congestion Pricing Committee fosters research to gain a better understanding of the technological, operational, business, administrative, political and institutional aspects of innovative congestion pricing of systems and services for all modes of transportation. Strategies include integrated transit, variable pricing, aviation pricing, parking pricing, parking "cash-out," and other mechanisms that seek to affect transportation demand and use. The Committee seeks to develop a comprehensive understanding of the effects of congestion pricing on the transportation system, addressing passenger and freight mobility, transit and highway interdependence, and interoperability of systems. For more information, visit the committee homepage at www.trb-pricing.org.

Publications

- Priced Managed Lane Guide 2012 FHWA-HOP-13-007
- HOV Systems Manual, National Cooperative Highway Research Program Report 414
- A Guide for HOT Lane Development, Publication Number FHWA-OP-03-009
- Congestion Pricing: A Primer, Publication Number FHWA-HOP-07-04
- AASHTO Guide for Park-and-Ride Facilities, November 2004, Pub. Code: GPRF-2
- AASHTO Guide for High-Occupancy Vehicle Facilities, November 2004, Pub. Code: GHOV-3
- Houston Managed Lanes Case Study: The Evolution of the Houston HOV System
- New Jersey I-80 & I-287 HOV Lane Case Study: Executive Edition, EDL No. 13157
- New Jersey I-80 & I-287 HOV Lane Case Study, EDL No. 12963
- Effects of Changing HOV Lane Occupancy Requirements: El Monte Busway Case Study, FHWA-OP-03-002, EDL No. 13692
- Executive Report: Effects of Changing HOV Lane Occupancy Requirements: El Monte Busway Case Study, FHWA-OP-03-001, EDL No. 13679
- An Assessment of HOV Facilities in America, August 1992
- HOV Marketing Manual, April 1994
- Operational Design Guidelines for HOV Lanes in Arterial Roadways, November 1994
- Predicting HOV Lane Demand, August 1996
- Use of Videotape in HOV Lane Surveillance and Enforcement, March 1990
- HOV Lane Violation Study, January 1990
- HOV System Development in the U.S., December 1990

- Proceedings of the 11th International Conference on High-Occupancy Vehicle Systems, October 2002, FHWA-OP-03-100, EDL No. 13810

Appendix A

The following excerpt is Section 166 of Title 23 U.S.C. inclusive of the amendments (deletions, insertions and additions) prescribed by FAST Act Section 1411 “HOV FACILITIES”.

§166 23 U.S.C. -- HOV facilities

(a) In general—

(1) Authority of public authorities.—A public authority that has jurisdiction over the operation of a HOV facility shall establish the occupancy requirements of vehicles operating on the facility.

(2) Occupancy Requirement.—Except as otherwise provided by this section, no fewer than two occupants per vehicle may be required for use of a HOV facility.

(b) Exceptions—

(1) In general—Notwithstanding the occupancy requirement of subsection (a)(2), the exceptions in paragraphs (2) through (5) shall apply with respect to a public authority operating a HOV facility.

(2) Motorcycles and Bicycles—

(A) In general—Subject to subparagraph (B), the public authority shall allow motorcycles and bicycles to use the HOV facility.

(B) Safety exception —

(i) In general.—A public authority may restrict
use of the HOV facility by motorcycles or bicycles (or both) if the authority certifies to the Secretary that such use would create a safety hazard and the Secretary accepts the certification.

(ii) Acceptance of Certification—The Secretary may accept a certification under this subparagraph only after the Secretary publishes notice of the certification in the Federal Register and provides an opportunity for public comment.

(3) Public Transportation Vehicles—The public authority may allow public transportation vehicles to use the HOV facility if the authority—

(A) establishes requirements for clearly identifying the vehicles;

(B) establishes procedures for enforcing the restrictions on the use of the facility by the vehicles; and

(C) provides equal access under the same rates, terms, and conditions for all public transportation vehicles and over-the-road buses serving the public.

(4) High Occupancy Toll Vehicles—The public authority may allow vehicles not otherwise exempt pursuant to this subsection to use the HOV facility if the operators of the vehicles pay a toll charged by the authority for use of the facility and the agency—

(A) establishes a program that addresses how motorists can enroll and participate in the toll program;

(B) develops, manages, and maintains a system that will automatically collect the toll; and

(C) establishes policies and procedures to—

(i) manage the demand to use the facility by varying the toll amount that is charged;

(ii) enforce violations of use of the facility; and

(iii) ensure that over-the-road buses serving the public are provided access to the facility under the same rates, terms, and conditions as public transportation buses.

(5) Low emission and energy-efficient vehicles—

(A) Special Rule – Before September 30, 2025, if a public authority establishes procedures for enforcing the restrictions on the use of a HOV facility by vehicles described in clauses (i) and (ii), the public authority may allow the use of the HOV facility by –

(i) alternative fuel vehicles; and

(ii) any motor vehicle described in section 30(D)(1) of the Internal Revenue Code of 1986.

(B) Other low emission and energy-efficient vehicles—Before September 30, 2019, the public authority may allow vehicles certified as low emission and energy-efficient vehicles under subsection (e), and labeled in accordance with subsection (e), to use the HOV facility if the operators of the vehicles pay a toll charged by the authority for use of the facility and the agency—

(i) establishes a program that addresses the selection of vehicles under this paragraph; and

(ii) establishes procedures for enforcing the restrictions on the use of the facility by the vehicles.

(C) Amount of tolls—Under this paragraph, a public authority may charge no toll or may charge a toll that is less than or equal to tolls charged under paragraph (4).

(c) Requirements applicable to tolls—

(1) In general – Notwithstanding section 301, tolls may be charged under paragraphs (4) and (5) of subsection (b), subject to the requirements of section 129.

(2) Toll Revenue—Toll revenue collected under this section is subject to the requirements of section 129(a)(3).

(d) HOV Facility Management, Operation, Monitoring, and Enforcement—

(1) In general.—A public authority that allows vehicles to use a HOV facility under paragraph (4) or (5) of subsection (b) shall submit to the Secretary a report demonstrating that the facility is not already degraded, and that the presence of the vehicles will not cause the facility to become degraded, and certify to the Secretary that the authority will carry out the following responsibilities with respect to the facility:

(A) Establishing, managing, and supporting a performance monitoring, evaluation, and reporting program for the facility that provides for continuous monitoring, assessment, and reporting on the impacts that the vehicles may have on the operation of the facility and adjacent highways and submitting to the Secretary annual reports of those impacts.

(B) Establishing, managing, and supporting an enforcement program that ensures that the facility is being operated in accordance with the requirements of this section.

(C) Limiting or discontinuing the use of the facility by the vehicles whenever the operation of the facility is degraded.

(D) Maintenance of Operating Performance –

(i) Submission of plan – Not later than 180 days after the date on which a facility is degraded under paragraph (2), the public authority with jurisdiction over the facility shall submit to the Secretary for approval a plan that details the actions the public authority will take to make significant progress toward bringing the facility into compliance with the minimum average operating speed performance standard through changes to the operation of the facility. Including

(I) Increasing the occupancy requirement for HOV lanes;
(II) Varying the toll charged to vehicles under subsection (b) to reduce demand;
(III) Discontinue allowing non-HOV vehicles to use HOV lanes under subsecton (b); or
(IV) Increasing the available capacity of the HOV facility.

(ii) Notice of approval or disapproval – Not later than 60 days after the date of receipt of a plan under clause (i), the Secretary shall provide to the public authority a written notice indicating whether the Secretary has approved or disapproved the plan based on a determination of whether the implementation of the

plan will make significant progress toward bringing the HOV facility into compliance with the minimum average operating speed performance standard.

(iii) Annual progress updates – Until the date on which the Secretary determines that the public authority has brought the HOV facility into compliance with this subsection, the public authority shall submit annual updates that describe –

(I) The actions taken to bring the HOV facility into compliance; and

(II) The progress made by those actions.

(E) Compliance – If the public authority fails to bring a facility into compliance under subparagraph (D), the Secretary shall subject the public authority to appropriate program sanctions under section 1.36 of title 23, Code of Federal Regulations (or successor regulations), until the performance is no longer degraded.

(F) Waiver –

i. In general – Upon the request of a public authority, the Secretary may waive the compliance requirements of subparagraph (E), if the Secretary determines that –

(I) the waiver is in the best interest of the travelling public;

(II) the public authority is meeting the conditions under subparagraph (D); and

(III) the public authority has made a good faith effort to improve the performance of the facility.

ii. Condition – The Secretary may require, as a condition of providing a waiver under this subparagraph, that a public authority take additional actions, as determined by the Secretary, to maximize the operating speed performance of the facility, even if such performance is below the level set under paragraph (2).

(2) Degraded Facility—

(A) Definition of minimum average operating speed—In this paragraph, the term ‘‘minimum average operating speed’’ means—

(i) 45 miles per hour, in the case of a HOV facility with a speed limit of 50 miles per hour or greater; and

(ii) not more than 10 miles per hour below the speed limit, in the case of a HOV facility with a speed limit of less than 50 miles per hour.

(B) Standard for determining a degraded facility—For purposes of paragraph (1), the operation of a HOV facility shall be considered to be degraded if vehicles operating on the facility are failing to maintain a minimum average operating speed 90 percent of the time over a consecutive 180-day period during morning or evening weekday peak hour periods (or both).

(C) Management of low emission and energy-efficient vehicles—In managing the use of HOV lanes by low emission and energy- efficient vehicles that do not meet applicable occupancy requirements, a public authority may increase the percentages described in subsection (f)(3)(B)(i).

(e) Certification of low emission and energy-efficient vehicles—Not later than 180 days after the date of enactment of this section, the Administrator of the Environmental Protection Agency shall—

(1) issue a final rule establishing requirements for certification of vehicles as low emission and energy-efficient vehicles for purposes of this section and requirements for the labeling of the vehicles; and

(2) establish guidelines and procedures for making the vehicle comparisons and performance calculations described in subsection (f)(3)(B), in accordance with section 32908(b) of title 49.

(f) Definitions—In this section, the following definitions apply:

(1) ALTERNATIVE FUEL VEHICLE.—The term ‘‘alternative fuel vehicle’’ means a vehicle that is solely operating on—

(A) methanol, denatured ethanol, or other alcohols;

(B) a mixture containing at least 85 percent of methanol, denatured ethanol, and other alcohols by volume with gasoline or other fuels;

(C) natural gas;

(D) liquefied petroleum gas;

(E) hydrogen;

(F) coal derived liquid fuels;

(G) fuels (except alcohol) derived from biological materials;

(H) electricity (including electricity from solar energy); or

(I) any other fuel that the Secretary prescribes by regulation that is not substantially petroleum and that would yield substantial energy security and environmental benefits, including fuels regulated under section 490 of title 10, Code of Federal Regulations (or successor regulations).

(2) HOV Facility—The term ‘‘HOV facility’’ means a high occupancy vehicle facility.

(3) Low emission and energy-efficient vehicle— The term ‘‘low emission and energy-efficient vehicle’’ means a vehicle that—

(A) has been certified by the Administrator as meeting the Tier II emission level established in regulations prescribed by the Administrator under section 202(i) of the Clean Air Act (42 U.S.C. 7521(i)) for that make and model year vehicle; and

(B)

(i) is certified by the Administrator of the Environmental Protection Agency, in consultation with the manufacturer, to have achieved not less than a 50-percent increase in city fuel economy or not less than a 25-percent increase in combined city-highway fuel economy (or such greater percentage of city or city-highway fuel economy as may be determined by a State under subsection (d)(2)(C)) relative to a comparable vehicle that is an internal combustion gasoline fueled vehicle (other than a vehicle that has propulsion energy from onboard hybrid sources); or

(ii) is an alternative fuel vehicle.

(4) Over-the-road bus – The term ‘over-the-road bus’ has the meaning given the term in section 301 of the Americans with Disabilities Act of 1990** (42 U.S.C. 12181).

**Reference -- The term "over-the-road bus" means a bus characterized by an elevated passenger deck located over a baggage compartment.

(5) Public Authority – The term ‘public authority’ as used with respect to a HOV facility, means a State, interstate compact of States, public entity designated by the State, of local government having jurisdiction over the operation of the facility; and

(6) Public transportation vehicle—The term ‘‘public transportation vehicle’’ means a vehicle that—

(A) provides designated public transportation (as defined in section 221 of the Americans with Disabilities Act of 1990 (42 U.S.C. 12141) or provides public school transportation (to and from public or private primary, secondary, or tertiary schools); and

(B)

(i) is owned or operated by a public entity;

(ii) is operated under a contract with a public entity; or

(iii) is operated pursuant to a license by the Secretary or a public authority to provide motorbus or school vehicle transportation services to the public.

(g) Consultation of MPO – If a HOV facility charging tolls under paragraph (4) or (5) of subsection (b) is on the Interstate System and located in a metropolitan planning area established in accordance with section 134, the public authority shall consult with the metropolitan planning organization for the area concerning the placement and amount of tolls on the facility.

Appendix B

The following excerpt is Section 129 of Title 23 U.S.C. inclusive of the amendments (deletions, insertions and additions) prescribed by FAST Act Section 1411 “TOLLING”.

§129 23 U.S.C.. -- Toll roads, bridges, tunnels, and ferries

(a) Basic Program.—

(1) Authorization for federal participation.— Subject to the provisions of this section, Federal participation shall be permitted on the same basis and in the same manner as construction of toll-free highways is permitted under this chapter in the—

(A) initial construction of a toll highway, bridge, or tunnel or approach to the highway, bridge, or tunnel;

(B) initial construction of 1 or more lanes or other improvements that increase capacity of a highway, bridge, or tunnel (other than a highway on the Interstate System) and conversion of that highway, bridge, or tunnel to a tolled facility, if the number of toll-free lanes, excluding auxiliary lanes, after the construction is not less than the number of toll-free lanes, excluding auxiliary lanes, before the construction;

(C) initial construction of 1 or more lanes or other improvements that increase the capacity of a highway, bridge, or tunnel on the Interstate System and conversion of that highway, bridge, or tunnel to a tolled facility, if the number of toll-free non-HOV lanes, excluding auxiliary lanes, after such construction is not less than the number of toll-free non-HOV lanes, excluding auxiliary lanes, before such construction;

(D) reconstruction, resurfacing, restoration, rehabilitation, or replacement of a toll highway, bridge, or tunnel or approach to the highway, bridge, or tunnel;

(E) reconstruction or replacement of a toll-free bridge or tunnel and conversion of the bridge or tunnel to a toll facility;

(F) reconstruction of a toll-free Federal-aid highway (other than a highway on the Interstate System) and conversion of the highway to a toll facility;

(G) reconstruction, restoration, or rehabilitation of a highway on the Interstate System if the number of toll-free non-HOV lanes, excluding auxiliary lanes, after reconstruction, restoration, or rehabilitation is not less than the number of toll-free non-HOV lanes, excluding auxiliary lanes, before reconstruction, restoration, or rehabilitation;

(H) conversion of a high occupancy vehicle lane on a highway, bridge, or tunnel to a toll facility; and

(I) preliminary studies to determine the feasibility of a toll facility for which Federal participation is authorized under this paragraph;

(2) Ownership.—Each highway, bridge, tunnel, or approach to the highway, bridge, or tunnel constructed under this subsection shall—

(A) be publicly owned, or

(B) be privately owned if the public authority with jurisdiction over the highway, bridge, tunnel, or approach has entered into a contract with one or more private persons to design, finance, construct, and operate the facility and the public authority will be responsible for complying with all applicable requirements of this title with respect to the facility.

(3) Limitations on use of revenues.—

(A) IN GENERAL.—A public authority with jurisdiction over a toll facility shall ensure that all toll revenues received from operation of the toll facility are used only for—

(i) debt service with respect to the projects on or for which the tolls are authorized, including funding of reasonable reserves and debt service on refinancing;

(ii) a reasonable return on investment of any private person financing the project, as determined by the State or interstate compact of States concerned;

(iii) any costs necessary for the improvement and proper operation and maintenance of the toll facility, including reconstruction, resurfacing, restoration, and rehabilitation;

(iv) if the toll facility is subject to a public-private partnership agreement, payments that the party holding the right to toll revenues owes to the other party under the public-private partnership agreement; and

(v) if the public authority certifies annually that the tolled facility is being adequately maintained, any other purpose for which Federal funds may be obligated by a State under this title.

(B) ANNUAL AUDIT.—

(i) IN GENERAL.—A public authority with jurisdiction over a toll facility shall conduct or have an independent auditor conduct an annual audit of toll facility records to verify adequate maintenance and compliance with subparagraph (A), and report the results of the audits to the Secretary.

(ii) RECORDS.—On reasonable notice, the public authority shall make all records of the public authority pertaining to the toll facility available for audit by the Secretary.

(C) NONCOMPLIANCE.—If the Secretary concludes that a public authority has not complied with the limitations on the use of revenues described in subparagraph (A), the Secretary may require the public authority to discontinue collecting tolls until an agreement with the Secretary is reached to achieve compliance with the limitation on the use of revenues described in subparagraph (A).

(4) Special rule for funding.—

(A) IN GENERAL.—In the case of a toll facility under the jurisdiction of a public authority of a State (other than the State transportation department), on request of the State transportation department and subject to such terms and conditions as the department and public authority may agree, the Secretary, working through the State department of transportation, shall reimburse the public authority for the Federal share of the costs of construction of the project carried out on the toll facility under this subsection in the same manner and to the same extent as the department would be reimbursed if the project was being carried out by the department.

(B) SOURCE.—The reimbursement of funds under this paragraph shall be from sums apportioned to the State under this chapter and available for obligations on projects on the Federal-aid highways in the State on which the project is being carried out.

(5) Limitation on federal share.—The Federal share payable for a project described in paragraph (1) shall be a percentage determined by the State but not to exceed 80 percent.

(6) Modifications.—If a public authority (including a State transportation department) with jurisdiction over a toll facility subject to an agreement under this section or section 119(e), as in effect on the day before the effective date of title I of the Intermodal Surface Transportation Efficiency Act of 1991(105 Stat. 1915), requests modification of the agreement, the Secretary shall modify the agreement to allow the continuation of tolls in accordance with paragraph (3) without repayment of Federal funds.

(7) Loans.—

(A) In general.—

(i) LOANS.—Using amounts made available under this title, a State may loan to a public or private entity constructing or proposing to construct under this section a toll facility or non-toll facility with a dedicated revenue source an amount equal to all or part of the Federal share of the cost of the project if the project has a revenue source specifically dedicated to the project.

(ii) DEDICATED REVENUE SOURCES.—Dedicated revenue sources for non-toll facilities include excise taxes, sales taxes, motor vehicle use fees, tax on real property, tax increment financing, and such other dedicated revenue sources as the Secretary determines appropriate.

(B) Compliance with federal laws.—As a condition of receiving a loan under this paragraph, the public or private entity that receives the loan shall ensure that the project will be carried out in accordance with this title and any other applicable Federal law, including any applicable provision of a Federal environmental law.

(C) Subordination of debt.—The amount of any loan received for a project under this paragraph may be subordinated to any other debt financing for the project.

(D) Obligation of funds loaned.—Funds loaned under this paragraph may only be obligated for projects under this paragraph.

(E) Repayment.—The repayment of a loan made under this paragraph shall commence not later than 5 years after date on which the facility that is the subject of the loan is open to traffic.

(F) Term of loan.—The term of a loan made under this paragraph shall not exceed 30 years from the date on which the loan funds are obligated.

(G) Interest.—A loan made under this paragraph shall bear interest at or below market interest rates, as determined by the State, to make the project that is the subject of the loan feasible.

(H) Reuse of funds.—Amounts repaid to a State from a loan made under this paragraph may be obligated—

(i) for any purpose for which the loan funds were available under this title; and

(ii) for the purchase of insurance or for use as a capital reserve for other forms of credit enhancement for project debt in order to improve credit market access or to lower interest rates for projects eligible for assistance under this title.

(I) Guidelines.—The Secretary shall establish procedures and guidelines for making loans under this paragraph.

(8) STATE LAW PERMITTING TOLLING.—If a State does not have a highway, bridge, or tunnel toll facility as of the date of enactment of the MAP–21, before commencing any activity authorized under this section, the State shall have in effect a law that permits tolling on a highway, bridge, or tunnel.

(9) EQUAL ACCESS FOR OVER-THE-ROAD BUSES – An over-the-road bus that serves the public shall be provided access to a toll facility under the same rates, terms, and conditions as public transportation buses.

(10) DEFINITIONS.—In this subsection, the following definitions apply:

(A) HIGH OCCUPANCY VEHICLE; HOV.—The term ‘high occupancy vehicle’ or ‘HOV’ means a vehicle with not fewer than 2 occupants.

(B) INITIAL CONSTRUCTION.—

(i) IN GENERAL.—The term ‘initial construction’ means the construction of a highway, bridge, tunnel, or other facility at any time before it is open to traffic.

(ii) EXCLUSIONS.—The term ‘initial construction’ does not include any improvement to a highway, bridge, tunnel, or other facility after it is open to traffic.

(C) OVER-THE-ROAD BUS – The term over-the-road bus has the meaning given the term in section 301 of the Americans with Disabilities Acto of 1990 (42 U.S.C. 12181).

(D) PUBLIC AUTHORITY.—The term ‘public authority’ means a State, interstate compact of States, or public entity designated by a State.

(E) TOLL FACILITY.—The term ‘toll facility’ means a toll highway, bridge, or tunnel or approach to the highway, bridge, or tunnel constructed under this subsection.

(b) Notwithstanding the provisions of section 301 of this title, the Secretary may permit Federal participation under this title in the construction of a project constituting an approach to a ferry, whether toll or free, the route of which is a public road and has not been designated as a route on the Interstate System. Such ferry may be either publicly or privately owned and operated, but the operating authority and the amount of fares charged for passage shall be under the control of a State agency or official, and all revenues derived from publicly owned or operated ferries shall be applied to payment of the cost of construction or acquisition thereof, including debt service, and to actual and necessary costs of operation, maintenance, repair, and replacement.

(c) Notwithstanding section 301 of this title, the Secretary may permit Federal participation under this title in the construction of ferry boats and ferry terminal facilities, whether toll or free, subject to the following conditions:

(1) It is not feasible to build a bridge, tunnel, combination thereof, or other normal highway structure in lieu of the use of such ferry.

(2) The operation of the ferry shall be on a route classified as a public road within the State and which has not been designated as a route on the Interstate System. Projects under this subsection may be eligible for both ferry boats carrying cars and passengers and ferry boats carrying passengers only.

(3) Such ferry boat or ferry terminal facility shall be publicly owned or operated or majority publicly owned if the Secretary determines with respect to a majority publicly owned ferry or ferry terminal facility that such ferry boat or ferry terminal facility provides substantial public benefits.

(4) The operating authority and the amount of fares charged for passage on such ferry shall be under the control of the State or other public entity, and all revenues derived therefrom shall be applied to actual and necessary costs of operation, maintenance, and 1 repair, debt service, negotiated management fees, and, in the case of a privately operated toll ferry, for a reasonable rate of return.

(5) Such ferry may be operated only within the State (including the islands which comprise the State of Hawaii and the islands which comprise any territory of the United States) or between adjoining States or between a point in a State and a point in the Dominion of Canada. Except with respect to operations between the islands which comprise the State of Hawaii, operations between the islands which comprise any territory of the United States, operations between a point in a State and a point in the Dominion of Canada, and operations between any two points in Alaska and between Alaska and Washington, including stops at appropriate points in the Dominion of Canada, no part of such ferry operation shall be in any foreign or international waters.

(6) No such ferry shall be sold, leased, or otherwise disposed of without the approval of the Secretary. The Federal share of any proceeds from such a disposition shall be credited to the unprogramed balance of Federal-aid highway funds of the same class last apportioned to such State. Any amount so credited shall be in addition to all other funds then apportioned to such State and available for expenditure in accordance with the provisions of this title.