### **ATTACHMENT B**

Draft August 8, 2025

F/ETCA AGREEMENT NO
OCTA AGREEMENT NO
RCTC AGREEMENT NO.

### BY AND AMONG

FOOTHILL/EASTERN TRANSPORTATION CORRIDOR AGENCY,

AND

ORANGE COUNTY TRANSPORTATION AUTHORITY,

**AND** 

RIVERSIDE COUNTY TRANSPORTATION COMMISSION,

FOR

THE OPERATION OF THE 241/91 EXPRESS CONNECTOR

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F/ETCA AGREEMENT NO.	
OCTA AGREEMENT NO	
RCTC AGREEMENT NO.	

### BY AND AMONG

### FOOTHILL/EASTERN TRANSPORTATION CORRIDOR AGENCY,

AND

### ORANGE COUNTY TRANSPORTATION AUTHORITY,

**AND** 

### RIVERSIDE COUNTY TRANSPORTATION COMMISSION

This Agreement is effective this \_\_\_\_ day of \_\_\_\_\_\_\_, 2025 (the "Effective Date") by and among the Foothill/Eastern Transportation Corridor Agency, a California joint powers authority (hereinafter referred to as "F/ETCA"); the Orange County Transportation Authority, a public entity of the State of California (hereinafter referred to as "OCTA"); and the Riverside County Transportation Commission, a public entity of the State of California (hereinafter referred to as "RCTC"). F/ETCA, OCTA and RCTC may individually be referred to herein as a "Party" or collectively as the "Parties."

### **RECITALS**

**WHEREAS**, F/ETCA constructed and operates a tolled highway facility on State Route (SR) 241 between Oso Parkway and SR-91 in Orange County; and

**WHEREAS**, OCTA operates a toll collection facility on SR-91 between SR-55 and the Orange County/Riverside County line ("OCTA 91 Express Lanes"); and

WHEREAS, RCTC operates a toll collection facility on SR-91 between Interstate 15 (I-15) and the Orange County/Riverside County Line, including express lane connectors between -91 Express Lanes and 15 Express Lanes ("RCTC 91 Express Lanes"); and

**WHEREAS**, the OCTA 91 Express Lanes and RCTC 91 Express Lanes are referred to, collectively, in this Agreement as the 91 Express Lanes; and

WHEREAS, OCTA and RCTC have entered into various agreements for joint implementation, operation, and maintenance of the 91 Express Lanes; and

WHEREAS, the Parties desire to develop, construct and operate a direct, tolled connector linking the northbound SR-241 toll road to the eastbound 91 Express Lanes and the westbound 91 Express Lanes to the southbound SR-241 toll road and related corridor improvements to improve throughput between Riverside and Orange Counties, relieve traffic congestion, enhance

connectivity between the two tolled systems, improve air quality along the corridor, and promote safety for the traveling public, in a manner that does not negatively impact or compromise the operations of SR-241 or the 91 Express Lanes; and

**WHEREAS**, the Parties desire to optimize system performance along the corridor between the SR-241 and the SR-91 and adjacent general purpose lanes; and

WHEREAS, the Parties desire to utilize available 91 Express Lanes capacities without negatively impacting the operations of the 91 Express Lanes beyond established capacity thresholds; and

**WHEREAS**, the State of California, Department of Transportation ("Caltrans") owns the right-of-way ("ROW") on which the Project will be constructed as well as the SR-241 Toll Road and 91 Express Lanes ROW and has agreed to cooperate with the Parties regarding the planning, design, construction and operation of the Project; and

WHEREAS, coordination among the Parties prior to and during planning, development, construction, and operation of the 241/91 EC is crucial to enable the integration of the toll collection and traffic management systems; mitigate potential impacts that construction and operations may have on the SR-241, 91 Express Lanes, and SR-91; and to ultimately provide for the seamless operation of the 241/91 EC into the SR-241 and the 91 Express Lanes in both Riverside and Orange Counties; and

WHEREAS, the Parties, along with Caltrans, entered into an agreement effective that sets forth the roles and responsibilities of the Parties and Caltrans regarding the development, construction, operation and maintenance of the Project (the "Master Agreement"); and

WHEREAS, it is the intent of the Parties in entering into this Agreement to more fully establish the obligations of the Parties with respect to the operation and maintenance of the Project toll systems.

WHEREAS, F/ETCA authorized this Agreement on	
WHEREAS, OCTA authorized this Agreement on	
WHEREAS, RCTC authorized this Agreement on	

**NOW, THEREFORE**, it is mutually understood and agreed by the Parties as follows:

### **AGREEMENT**

### ARTICLE I DEFINITIONS

The following terms as used in this Agreement are capitalized and shall have the meaning as provided herein:

- "91 Express Lanes" means the toll collection facility located on SR-91 extending between SR-55 to the west and I-15 to the east and the express connectors from the 91 Express Lanes to the 15 Express Lanes. The 91 Express Lanes consist of the OCTA 91 Express Lanes and the RCTC 91 Express Lanes, collectively. "91 Express Lanes" may also refer to OCTA and RCTC acting collectively as the 91 Express Lanes.
- "Accessory Lanes" means (a) the lane in the westbound direction of the 91 Express Lanes, beginning at the opening of the leftmost paved approach lane to the EC, and extending approximately 4950 feet to a diverge point; and (b) the lane in the eastbound direction of the 91 Express Lanes, beginning at the EC touch down point for the leftmost paved lane and extending approximately 3910 feet to the end of the merge point. For the avoidance of doubt, the Accessory Lanes do not include the inside shoulder or the roadside infrastructure.
- "Alternative Dispute Resolution" has the meaning set forth in Section 19.01(c).
- "Bus/Registered Vanpool" is a mode of 241/91 EC operation whereby only buses and vanpools registered with F/ETCA are permitted to use the 241/91 EC.
- "Caltrans" means the State of California Department of Transportation.
- "CHP" means the California Highway Patrol.
- "Claims" has the meaning set forth in Article XVII.
- "Closure" means any restriction of use of the 241/91 EC, or 91 Express Lanes resulting from the construction, operation and/or maintenance of the 241/91 EC.
- "Closure Fees" means the fees and liquidated damages paid by F/ETCA to OCTA, RCTC, and F/ETCA for any Closure, including lane reductions of the 91 Express Lanes and the SR 241 toll road, including from construction, operation, and/or maintenance of the 241/91 EC.
- "Critical Zones" means the portion of the 91 Express Lanes where traffic from both the 91 Express Lanes and the 241/91 EC share the same roadway, and is the focus of density measurement for the purpose of managing Dynamic Pricing and Progressive Demand Management strategy. In the eastbound direction, this zone extends from the touchdown point of the 241/91 EC to the Orange County and Riverside County county line exit. In the westbound direction, it spans from the county line entrance to the location where the connector diverges from the mainline roadway.
- "Cure Activities" has the meaning set forth in Section 19.03(a).
- "Cure Schedule" has the meaning set forth in Section 19.03(a).
- "Disclosing Party" has the meaning set forth in Article IX.
- "Dispute" has the meaning set forth in Section 19.01.
- "Dynamic Pricing" means the setting of a toll price in real-time based on level of traffic congestion and other factors.

- "Dynamic Pricing Algorithm" means a technological capability of the ETC System that calculates toll pricing in real-time within set parameters, based on real-time inputs/factors such as traffic demand, flow rates, speeds, density, with a goal to achieve a particular objective such as free-flow conditions.
- "Dynamic Pricing Input Values" shall mean the input factors to the Dynamic Pricing Algorithm.
- "EC" means the Express Connector.
- "Emergency" means a circumstance that poses an immediate and grave threat to life or safety, or a serious environmental hazard that cannot be abated except by closure of the 241/91 EC. Closures of or traffic on the general purpose lanes that cause an inconvenience to the public shall not be considered, on their own, an emergency, as used herein.
- "ETC" means the electronic toll collection.
- "ETC Data" means all data generated by or accumulated in connection with the operation of the ETC System, including but not limited to traffic volumes, and violation data.
- "ETC Equipment" means automated vehicle identification systems, video, or other surveillance equipment and enforcement equipment (for Toll Connector Meter, occupancy detection, HOV-Only and Bus/Registered Vanpool enforcement), communications equipment and all other hardware necessary for ETC.
- "ETC Facilities" means the signs, gantries, and utility connections related to the ETC System.
- "ETC System" means the ETC Equipment and software, which monitors, controls, or executes the ETC Equipment.
- "Facility Information" has the meaning set forth in Article IX.
- "FasTrak TM" means the trademarked electronic toll system that allows motorists to prepay to use any toll road, bridge, or express lane in California.
- "F/ETCA" means the Foothill/Eastern Transportation Corridor Agency.
- "HOV" means a High Occupancy Vehicle.
- "HOV ONLY" means a mode of 241/91 EC operation whereby only vehicles with a minimum number of occupants, as self-declared by their switchable transponder, are permitted to use the 241/91 EC.
- "Incident Management Plan" means a plan for identifying and responding to impacts to SR-241, SR-91, or the 241/91 EC that have the potential to impact operation of the 241/91 EC and/or the 91 Express Lanes as a result of an incident on the 241/91 EC.
- "Indemnified Parties" has the meaning set forth in Article XVII.
- "Indemnifying Party" has the meaning set forth in Article XVII.

- "OCTA" means the Orange County Transportation Authority.
- "OCTA 91 Express Lanes" has the meaning set forth in the Recitals.
- "Progressive Demand Management" or "PDM" means operational control strategies that will be applied to the 241/91 EC to effectively manage demand such that the expected performance metrics are achieved. Strategies to be applied include Dynamic Pricing, Toll Collector Meter, HOV-only mode, and Bus/Registered Vanpool mode. In the west-to-south direction, the initial strategy will be Dynamic Pricing only. Additional PDM strategies in the west-to-south direction may require additional infrastructure components not included in the initial construction of the Project.
- "Project" or "241/91 EC" has the meaning set forth in Article III.
- "RCTC" means the Riverside County Transportation Commission.
- "RCTC 91 Express Lanes" has the meaning set forth in the Recitals.
- "Receiving Party" has the meaning set forth in Article IX.
- "Revenues" means toll revenues received from the Project, violation revenues from the Project, and interest earnings on balances from Project bank accounts.
- "Term" has the meaning set forth in Article XIV.
- "Toll Connector Meter" (or "TCM") means a traffic control device controlled by the ETC System that regulates the flow of traffic from the 241 EC to the 91 Express Lanes in the north to east direction.
- "Toll Facility" means the elements comprising the 241/91 EC required for tolled operation, as generally depicted in Exhibit A. Any updates to the Toll Facility, if approved, in writing, by each agency's respective authorized designee, as described in <u>Article XXV</u>, shall be automatically incorporated into Exhibit A of this Agreement without formal amendment.
- "Tolling Infrastructure" means the ETC Equipment, ETC Facilities, Toll Connector Meter, and all appurtenances necessary for the operation of the 241/91 EC toll collection facility.
- "Traffic Operations Center" means the facility located in Anaheim, California operated by OCTA and RCTC for the purposes of monitoring traffic and roadway facilities and services on the 91 Express Lanes.
- "Traffic Operations Metrics" means a set of metrics agreed to by the Parties as a means to measure the performance of the 241/91 EC and 91 Express Lanes traffic conditions. Section 7.03(d) includes the individual metrics. The Dynamic Pricing Algorithm, Progressive Demand Management System and operating policies of the 241/91 EC will be adjusted to meet these Traffic Operations Metrics.

### ARTICLE II PURPOSE

The purpose of this Agreement is to define the responsibilities and obligations of the Parties with regard to the operation, maintenance, and approach to tolling of the 241/91 EC.

### ARTICLE III PROJECT DESCRIPTION

The project shall include the planning, design, construction, operation, and maintenance of the direct, tolled connector linking the northbound SR-241 toll road to the eastbound 91 Express Lanes and the westbound 91 Express Lanes to the southbound SR-241 toll road and related corridor improvements, consistent with the Build Alternative described in the Supplemental Final EIR/EIS and any changes that result from any environmental revalidations or informed by the traffic analysis agreement by the Parties ("241/91 EC" or the "Project").

# ARTICLE IV COMPONENTS OF AGREEMENT AND INTERPRETATION

Section 4.01 Entire Agreement; Severability; Interpretation of Terms. This Agreement and Exhibits hereto constitute the expression of the Parties' intent and understanding with respect to the terms discussed herein and supersede all prior representations, understandings, and communications relating to the terms discussed herein. The invalidity in whole or in part of any term or condition of this Agreement shall not affect the validity of other terms or conditions. Terms capitalized herein shall, unless otherwise defined herein, have the same meaning as set forth in Article I, Definitions. Where this Agreement uses the term "including" it shall mean including but not limited to, unless otherwise specifically indicated.

### Section 4.02 Agreement Interpretation.

- (a) This Agreement and each of the exhibits are all an essential part of the Parties' agreement and should be interpreted in a manner that harmonizes their provisions. However, if an actual conflict exists, the following descending order of precedence shall apply:
  - (i) Agreement Amendments adopted in accordance with this Agreement;
    - (ii) The terms of this Agreement, excluding any exhibits;
    - (iii) All Exhibits attached hereto;

Section 4.03 No Waiver. A Party's failure to insist in any one or more instances upon any other Party's performance of any terms or conditions of this Agreement shall not be construed as a waiver or relinquishment of that Party's right to such performance by the defaulting Party or to future performance of such terms or conditions, and the defaulting Party's obligation in respect thereto shall continue in full force and effect. This Agreement may be amended or modified only by mutual written agreement of the Parties.

### ARTICLE V RELATIONSHIP TO OTHER AGREEMENTS

Unless otherwise provided for in this Agreement, this Agreement is separate from and does not directly, or by implication, modify or replace any other cooperative agreement or memorandum of understanding among the Parties regarding the Project or any of the adjacent or connected facilities described herein. If there is a conflict between this Agreement and any prior understanding related to the operation and maintenance of the Project, the terms of this Agreement shall prevail. [Notwithstanding, if there is a conflict between this Agreement and the Master Agreement, then the Master Agreement prevails.]

### ARTICLE VI COOPERATION AMONG PARTIES

Each Party hereto will cooperate with the other Parties and, among other actions and consistent with their role and appropriate exercise of discretion, will promptly consider, execute, and deliver such additional reviews, approvals, agreements, assignments, endorsements, and other documents as the other Parties hereto may reasonably request to carry out the full intents and purposes of this Agreement.

### ARTICLE VII OPERATING GUIDELINES

### Section 7.01 **Toll Facilities**.

- (a) F/ETCA will procure and install the ETC System and ETC Facilities necessary to operate the Project. The location of the ETC System and Facilities will be as listed in Exhibit A and diagrammed in Exhibit B.
- (b) All Parties will provide input into the design of the signage, traffic measurement/monitoring locations, Dynamic Pricing Algorithm, Progressive Demand Management configuration, and considerations for ETC Data. OCTA and RCTC will have final approval of the Dynamic Pricing Algorithm and Progressive Demand Management configuration.

### Section 7.02 **Operating Rules**.

- (a) F/ETCA will operate and maintain the 241/91 EC 24-hours a day, 7 days a week, including holidays.
- (b) F/ETCA will be responsible for processing toll and violation transactions, ensuring enforcement services are provided (see Section 7.06) and establishing customer accounts, providing customer service and collecting the associated revenue.
- (c) A valid transponder will be required to use the 241/91 EC. A customer who uses the 241/91 EC without a valid transponder or FasTrak account will be issued a toll violation evasion notice and are not eligible for F/ETCA's five (5) day grace toll payment program.

### Section 7.03 Tolling and Demand Management Approach.

- (a) A Progressive Demand Management strategy will be utilized on the 241/91 EC to control traffic density on the connector and into the eastbound and westbound Critical Zones. The strategy incorporates multiple levels of connector control that are described in Exhibit D.
- (b) Dynamic Pricing with no maximum toll rate and Progressive Demand Management will be used on the 241/91 EC to preserve congestion-free conditions on the 241/91 EC and the 91 Express Lanes. Exhibit D "Progressive Demand Management" and Exhibit E "Policies and Operating Rules" provide further detail on these tools and their use.
- (c) 91 Express Lanes operating policies shall govern where there is a conflict with other F/ETCA's operating policies.
- (d) The following Traffic Operations Metrics have been established to ensure the 91 Express Lanes is not negatively impacted by the 241/91 EC:
  - (i) maintaining minimum speeds of 60 mph in the 91 Express Lanes eastbound and westbound Critical Zones,
    - (ii) no more than 1500 vehicles per hour on the 241/91 EC,
  - (iii) no more than 200 vehicles per hour egressing from the eastbound Critical Zone, and
    - (iv) no more than 100 vehicles in queue on the 241/91 EC.
- (e) For the 91 Express Lanes, it is a goal to utilize available capacity without negatively impacting 91 Express Lanes operations and toll rates beyond established capacity thresholds.
- (f) The Dynamic Pricing Algorithm and Progressive Demand Management system shall be developed in partnership with the Parties. F/ETCA shall operate and control the Dynamic Pricing Algorithm and Progressive Demand Management system, while OCTA and RCTC shall have final approval for both.
- (g) The Parties shall work jointly to calibrate the Dynamic Pricing Algorithm and Progressive Demand Management system and related policies. The governance process as described in Exhibit F shall guide any changes to the Dynamic Pricing Algorithm and Progressive Demand Management system. F/ETCA shall have the right to propose changes, and OCTA and RCTC have final approval for any proposed changes and shall reasonably assess a request and respond to F/ETCA in accordance with Exhibit F.

### Section 7.04 Toll Rate Setting.

F/ETCA will be responsible for adoption and implementation of a toll rate policy for the 241/91 EC, consistent with Exhibit E, Attachment 1.

### Section 7.05 **Traffic Operations Metrics Monitoring and Governance**.

- (a) The Parties agree to collaborate on monitoring conformance with performance metrics on the 241/91 EC and 91 Express Lanes and work together to optimize performance. Performance will be measured against the Traffic Operation Metrics and adjustments to the Dynamic Pricing Algorithm and Progressive Demand Management system will be made as needed to accomplish this goal. A Traffic Operations Metrics Monitoring and Governance Plan is described in Exhibit F.
- (b) Upon commencement of live 241/91 EC operations, operational and performance data will be periodically reviewed by the Parties in accordance with <u>Exhibit F</u>. The frequency of review may be adjusted upon agreement of the Parties.
- (c) F/ETCA shall make available operational and performance data for the 241/91 EC, while OCTA and RCTC will make available data for their respective portions of the 91 Express Lanes. The Parties shall agree to the format and frequency of the required data and to facilitate the necessary reviews.
- (d) F/ETCA shall reimburse OCTA and RCTC for contractor, consultant and staff costs related to the production of data, analyzing of data and management of the 241/91 EC operation through the term of this Agreement. F/ETCA agrees to pay invoices within 30 days of receipt.

### Section 7.06 Enforcement Approach.

- (a) In order to maximize the effectiveness of the Progressive Demand Management strategy described in Section 7.03, F/ETCA agrees to pursue implementation of a hybrid approach to enforcement, wherein traditional enforcement activities by California Highway Patrol (CHP) are augmented by the use of automated technologies that create additional deterrents.
- (b) California Highway Patrol. F/ETCA shall be responsible for entering into agreements with California Highway Patrol (CHP) for 241/91 EC related enforcement. The Parties will agree to the hours and level of enforcement required to ensure proper enforcement of the traffic control meter and occupancy policies.
- (c) **Toll Connector Meter**. F/ETCA shall confirm the technical feasibility of augmenting the ETC System as needed to detect motorists who proceed past the limit line when the Toll Connector Meter displays a red signal. If technical feasibility is confirmed, F/ETCA will implement the ETC System with this augmentation so that motorists who proceed past a red signal will be charged a higher toll. If technical feasibility is not confirmed, F/ETCA will identify the amount of additional CHP enforcement that will be needed to meet the performance metrics identified in Section 7.03(d).
- (d) **HOV-Occupancy**. F/ETCA shall implement an automated system to detect HOV violators whose declared occupancy exceeds actual occupancy. Non-compliant vehicles will be charged a higher toll.
- (e) **HOV-Only Mode**. F/ETCA shall augment the ETC System as needed to detect vehicles that proceed onto the 241/91 EC while the 241/91 EC is in HOV-only mode and do not meet the occupancy requirement. F/ETCA will implement the ETC System with this augmentation

so that motorists who proceed onto the 241-91 EC while it is in HOV- only mode will be charged a higher toll.

(f) **Bus/Registered Vanpool Mode**. F/ETCA shall augment the ETC System as needed to detect ineligible vehicles that proceed onto the 241/91 EC while the 241/91 EC is in Bus/Registered Vanpool mode. F/ETCA will implement the ETC System with this augmentation so that ineligible motorists who proceed onto the 241-91 EC while it is in Bus/Registered Vanpool will be charged a higher toll.

### Section 7.07 **Emergencies**.

- (a) The Parties agree to share resources in cases of Emergencies in the area of the 241/91 EC, and to provide mutual aid as needed. The parties agree to coordinate the suspension of tolling when the safety of the motoring public is at risk and the Parties' respective policies allow for such suspension.
- (b) Closures due to Emergencies shall be limited to the shortest reasonable time to address the emergency situation and each Party shall act with all due diligence to address such emergency.

### Section 7.08 Incident Management.

- (a) The Parties agree to cooperate on the timely, safe, and effective management and response to vehicle collisions and other incidents occurring on the 241/91 EC or affecting the Tolling Infrastructure. Roles, responsibilities, and procedures will be documented in an Incident Management Plan that will be agreed to by the Parties.
- (b) F/ETCA shall be responsible for entering into an agreement for freeway service patrol (FSP) services for the 241/91 EC, which may be accomplished by F/ETCA being added to OCTA's FSP agreement with its FSP provider.

### Section 7.09 Additional Operational Agreements.

The Parties agree to meet and confer and enter into additional operating agreements related to the operational support of the 241/91 EC. Operating agreements and a high-level scope of work identified and agreed upon as needed are as follows. Additional operating agreements other than those identified in this section may be necessary, which the Parties will agree to add. F/ETCA agrees to reimburse OCTA and RCTC for consultant and staff costs related to the management of such operating agreements.

### (a) Traffic Operations Center

(i) The Parties agree to enter into a Traffic Operations Center Services Agreement whereby the 91 Express Lanes Traffic Operations Center observes the 241/91 EC traffic and coordinates incident response and closures, monitors the 241/91 EC variable signage for accuracy of information, and retains logs of incidents and closures and the 91 Express Lanes Traffic Operations Center System is upgraded to include the 241/91 EC data.

- (ii) F/ETCA agrees that these services will be performed by the contractor(s) that performs the services for the 91 Express Lanes and that the scope of services, performance measures and reporting requirements will be consistent with those in the existing OCTA/RCTC contract(s). Any damages paid by the contractor directly related to the 241/91 EC will be remitted to F/ECTA.
- (iii) F/ETCA agrees that OCTA and RCTC will negotiate the cost of these services with their existing and future contractor and provide F/ETCA with a proposal for their review and comment.
- (iv) F/ETCA agrees to reimburse OCTA and RCTC when invoiced for all one-time costs incurred to incorporate the 241/91 EC into the Traffic Operations Center. Costs are anticipated to include the configuration of the 241/91 ELC signs, cameras, and other hardware costs to manage these components. These costs include, but are not limited to, updating training, hardware purchases, and software changes. F/ETCA agrees to pay invoices within 30 days of receipt.
- (v) F/ETCA agrees to reimburse OCTA and RCTC when invoiced for any ongoing incremental costs due to the inclusion of the 241/91 EC. Incremental costs are expected to manage the additional responsibilities and incorporate the additional cameras and data feeds from the 241/91 EC. If the existing contractor(s) are replaced at any time in the future, F/ETCA agrees to pay additional costs when invoiced for the inclusion of the 241/91 EC in the new contracts. The methodology for calculating additional costs will be provided by the contractor(s) or agreed upon by the Parties. F/ETCA agrees to pay invoices within 30 days of receipt.
- (vi) F/ETCA agrees that OCTA and RCTC will manage the TOC services and that any requests or direction to the contractors should be made through OCTA and RCTC.

### (b) Freeway Service Patrol

- (i) OCTA and F/ETCA agree to enter into an agreement whereby Freeway Service Patrol is provided for the 241/91 ELC under OCTA Freeway Service Patrol Contracts.
- (ii) OCTA agrees to incorporate the Freeway Service Patrol for the 241/91 EC in its current and future 91 Express Lanes Freeway Service Patrol Contracts.
- (iii) F/ETCA agrees that the Freeway Service Patrol will be overseen and managed by the OCTA and California Highway Patrol and that all FSP service will be deployed using standard FSP program methodologies and operating guidelines.
- (iv) OCTA, F/ETCA, and California Highway Patrol program managers will work together to determine the best option for expanding the OCTA Freeway Services Patrol to include the 241/91 EC. OCTA and California Highway Patrol reserve the right to modify FSP deployment plans as necessary to ensure adequate coverage.

- (v) F/ETCA agrees to reimburse OCTA for the hourly cost of FSP tow trucks added to service the 241/91 EC as well as ongoing expenses related to the expanded services for the 241/91 EC. Ongoing expenses include the procurement, installation, and maintenance of vehicle tracking, data collection, and communications hardware, as well as associated monthly and periodic costs (e.g., cellular data, voice services, and equipment repairs). All expenses will be billed at OCTA-contracted or approved rates for equipment and services.
- (vi) F/ETCA agrees to pay OCTA invoices for FSP services within 30 days of receipt.

### (c) Shared Costs Reimbursement

- (i) OCTA agrees to allow F/ETCA to utilize a portion of the OCTA 91 westbound price sign located west of Green River Road to display the 241/91 EC price. OCTA shall be responsible for providing maintenance and electrical power to the sign. F/ETCA shall reimburse OCTA for 50% of the cost of these services.
- (ii) OCTA will make its best efforts to minimize any malfunctions and outages by performing routine maintenance and taking appropriate action to conduct repairs. All maintenance and outages for the 91 westbound price sign will be communicated to F/ETCA promptly.
- (iii) F/ETCA agrees that OCTA is not responsible for any damages or lost toll revenue due to the 91 westbound price sign being unavailable or malfunctioning.

(iv)

F/ETCA shall be responsible for the OCTA 91 westbound price sign controller and any fiber feeds related to the 241/91 EC.

- (v) OCTA agrees to maintain a contractor to provide oversight of the Express Lanes roadside services. F/ETCA agrees to reimburse OCTA for any costs associated with the oversight of the 241/91 ELC incurred by the roadside contractor.
- (vi) F/ETCA agrees to reimburse OCTA for half of the cost to replace the shared westbound changeable message sign. The sign will be replaced by OCTA at its discretion along with the other 91 Express Lanes signs.
- (vii) The methodology for calculating additional costs related to the 241/91 EC will be provided by the contractor(s) or agreed upon by the Parties.
- (viii) F/ETCA agrees to reimburse OCTA for any shared maintenance and incremental infrastructure costs as defined in this Section 7.09 and in [Section 7.01(a)(xx) of] the Master Agreement.

### **Section 7.10 Facility Maintenance, Improvements, and Projects.**

- (a) F/ETCA will collaborate with Caltrans on maintaining the 241/91 EC roadway and will coordinate maintenance activities with OCTA and RCTC as needed.
- (b) F/ETCA will maintain ETC Equipment and ETC Facilities for the Project in a state of good repair and will coordinate with OCTA and RCTC as needed.
- (c) All Toll Facility related maintenance activities and responsibilities are described in the 241/91 Express Connector Maintenance Plan in Exhibit H.
- (d) Each Party will perform maintenance related activities and future improvements in a manner which minimizes disruption to the toll facilities. The Parties agree to follow the advance communication processes outlined in Exhibit H.
  - (e) F/ETCA agrees to adhere to the permitted closure windows provided in Exhibit H.
- (f) In all instances of F/ETCA requested and approved closures, F/ETCA agrees to reimburse OCTA and RCTC for lost toll revenue related to closures that require a closure of the 91 Express Lanes or otherwise reduce the capacity of the 91 Express Lanes. OCTA and RCTC will not reimburse F/ETCA for lost toll revenue related to closures of the 91 Express Lanes which impact the 241/91 EC. OCTA and RCTC will provide F/ETCA with toll revenue amounts for reimbursement based on historical gross potential toll revenue for the same day and time period, as described in Exhibit H.

### Section 7.11 Customer Messaging.

- (a) The Parties agree to coordinate on-road messages, customer communication and marketing messages to ensure clear and consistent messaging to motorists.
- (b) **Signage**. F/ETCA shall provide and maintain on-road signage on northbound SR241 approaching the 241/91 EC that clearly indicates availability and pricing for the northbound to eastbound 241/91 EC. OCTA agrees to share its existing on-road Changeable Messaging Sign (CMS) west of Green River Road with F/ETCA for purposes of displaying availability and pricing information for the westbound to southbound 241/91 EC. Any costs necessary to modify and maintain the existing CMS to serve that purpose will be paid by F/ETCA.
- (c) **Website**. F/ETCA will provide information on its website regarding the 241/91 EC and contact information for resolving any matters related to the 241/91 EC. F/ETCA will provide RCTC and OCTA with agreed upon web ready information for inclusion on the 91 Express Lanes website.
- (d) **Marketing and Public Education**. F/ETCA shall be responsible for the marketing and public education and will coordinate marketing content and activities with OCTA and RCTC. Six months prior to commencement of revenue service, F/ETCA will draft a Marketing and Public Education plan that includes information such as:
  - How the 241/91 EC works, with details on Progressive Demand Management
  - How to use the express connector during super-peak periods (HOV only

- and Bus/Registered Vanpool modes)
- The difference between HOV only access versus the HOV discount
- What happens if customers do not comply with the different progressive demand management modes, including the toll connector meter, HOV only mode, and Bus/Registered Vanpool mode.
- FAQs about 241/91 EC Operations and why the 241/91 EC is restricted to HOV/carpools only during the super-peak

Materials shall be provided for review and comment by OCTA and RCTC, and F/ETCA shall resolve comments in good faith and in a timely manner. F/ETCA shall provide 30 days advance notice of marketing efforts so that OCTA and RCTC can prepare their customer service staff to address any inquiries related to the marketing and public education campaign.

(e) 91 Express Lanes Customer Service Impact. OCTA and RCTC shall provide F/ETCA with aggregated de-identified data regarding customer inquiries and issues related to the 241/91 EC in compliance with SHC § 31490. F/ETCA will evaluate such data and prepare additional public education to address any issues or confusion due to the 241/91 EC. F/ETCA agrees to compensate the 91 Express Lanes for documented increases in effort within the 91 Express Lanes customer service center due to the 241/91 EC up to one year following the opening of the 241/91 EC.

# ARTICLE VIII PAYMENTS

### Section 8.01 Closure Fees.

- (a) F/ETCA agrees to Closure periods and to pay Closure Fees to OCTA and RCTC, in the month that the Closure occurs, for any Closure, including lane reductions, and/or maintenance of the 241/91 EC. During and related to construction, the schedules for such Closure Fees are attached as <a href="Exhibit I">Exhibit I</a>. Any updates to the methodology, if approved, in writing, by each agency's respective authorized designee, as described in <a href="Article XXV">Article XXV</a>, shall be automatically incorporated into <a href="Exhibit I">Exhibit I</a> of this Agreement without formal amendment. During and related to operations and maintenance, the methodologies for such compensation during operation are in <a href="Exhibit H">Exhibit H</a>. F/ETCA will also pay Closure Fees to itself for any Closure of the SR 241 toll road, including connectors, resulting from the construction, operation, and/or maintenance of the 241/91 EC. F/ETCA shall seek no Closure Fees from OCTA, RCTC or Caltrans for Closure of the 241/91 EC due to Closure of the 91 Express Lanes or SR 241 toll road.
- (b) Should repairs to the 91 Express Lanes be needed during and after construction and maintenance activities, F/ETCA shall reimburse OCTA and/or RCTC for all applicable costs, other than direct staff costs, including Closure Fees, during the time that the 91 Express Lanes facility is not fully available for use or affecting operations.
- (c) Closure Fees shall be included in the calculation of costs for reimbursement of project development as specified in the Master Agreement; provided that estimated Closure Fees

are not subject to the ninety (90) day advance notice requirement in Section 9.03(a) of the Master Agreement

- (d) Reserves set aside for the development, maintenance, repair, rehabilitation, improvement, reconstruction, administration and operation of the 241/91 EC shall include Closure Fees.
- (e) Prior to dissolution of F/ETCA pursuant to Section 15.02 of the Master Agreement and if Caltrans is designated as the successor operator, F/ETCA shall pay a lump sum amount to OCTA and RCTC for Closure Fees for the period between F/ETCA's dissolution and the end of the Term. The amount shall be calculated by averaging the annual Closure Fees incurred from Closure of the 241/91 EC for the three years prior to the year the meet and confer described in Section 16.02 of the Master Agreement occurs to determine the expected Closure Fees for the period from F/ETCA's dissolution to the end of the Term. For the avoidance of doubt, this lump sum amount shall be funded from the excess operating expenditure reserve described in Section 16.02(b) of the Master Agreement at the time of F/ETCA's dissolution and paid to OCTA and RCTC prior to the successor operator's use of the excess operating expenditure reserve to pay operating expenses and repay Project debt pursuant to Section 16.02(b) of the Master Agreement.

Section 8.02 **Payment Agreement**. The parties will enter into a reciprocal agreement whereby the mechanism and approval for payment of costs attributable to this Agreement and complimentary agreements is approved by each of the Parties. In January of each year the Parties will establish the annual budget for reimbursement under this Agreement.

# ARTICLE IX INFORMATION AND DATA SHARING

The Parties understand and agree that certain information and data related to each Party's respective toll facilities (i.e., OCTA 91 Express Lanes, RCTA 91 Express Lanes, and SR-241), including data listed in <a href="Exhibit H">Exhibit H</a> (hereinafter referred to as "Facility Information"), may be shared with the other Parties for purposes consistent with this Agreement. A Party that receives Facility Information related to another Party's toll facilities (the "Receiving Party") agrees to use said Facility Information only for purposes specified in this Agreement, which may include sharing Facility Information with employees, agents, and/or consultants who require access for a purpose specified in this Agreement and who agree not to use or disclose the information other than for such purpose.

If a Receiving Party receives a request to disclose another party's ("Disclosing Party") Facility Information, pursuant to the California Public Records Act (CPRA) or otherwise, the Receiving Party shall promptly notify the Disclosing Party within five (5) days of receiving the request. If the Disclosing Party promptly notifies the Receiving Party of its intent to seek legal relief to protect its Facility Information from disclosure, then the Receiving Party will afford the Disclosing Party a reasonable opportunity to seek appropriate legal relief, at the Disclosing Party's sole cost and expense, to protect its Facility Information, unless the Receiving Party believes, in good faith, that it must disclose the Facility Information to comply with the CPRA or applicable law.

Notwithstanding the above, the Parties agree to comply with Streets and Highways Code Section 31490 as it relates to the disclosure of personally identifiable information.

# ARTICLE X WRITTEN AMENDMENTS

Any changes in the character, agreement, terms and/or responsibilities of the Parties must be enacted through an amendment in writing and executed by the Parties.

# ARTICLE XI OWNERSHIP OF DOCUMENTS, MAINTENANCE OF, AND ACCESS TO RECORDS

Each Party shall maintain records associated with its responsibilities under this Agreement. Upon reasonable notice, each Party shall permit the authorized representatives of the other Parties and the State of California such access to the Party's accounting books, records, payroll documents and facilities of the Party which are directly pertinent to this Agreement for the purposes of examining, auditing and inspecting them in connection with the Party's performance of this Agreement. The Parties shall make available the books and records of their subcontractors and consultants which are directly pertinent to this Agreement for audit and inspection upon the request of another Party. Each Party shall maintain such books, records, data, and documents in accordance with generally accepted accounting principles and shall clearly identify and make such items readily accessible to such parties during the Party's performance hereunder and for a period of four (4) years from their date of creation, except in the event of litigation or settlement of claims arising from the performance of this Agreement, in which case the Party agrees to maintain same until the disposal of all such litigation, appeals, claims, or other exceptions related thereto. Each Party shall permit any of the foregoing parties to reproduce documents by any means whatsoever or to copy excerpts and transcriptions as reasonably necessary. Each Party agrees to include these requirements in all subcontracts at any tier.

# ARTICLE XII FINANCIAL ACCOUNTING, REPORTING, AND AUDITING

F/ETCA shall have overall responsibility for financial accounting, reporting, and auditing of all Project activities. F/ETCA shall maintain accounting records such that financial information for the 241/91 EC is identifiable separately from other F/ETCA facilities. OCTA and RCTC shall have responsibility for financial accounting, reporting, and auditing as may be required under separate agreement(s) with F/ETCA.

# ARTICLE XIII COMMUNICATIONS AND NOTICES

All Notices hereunder and communications regarding the interpretation of the terms of this Agreement, or changes thereto, shall be effected by delivery of said Notices (a) in person or by courier; (b) by depositing said Notices in the U.S. mail, registered or certified mail, returned receipt requested, postage prepaid; or (c) sent by electronic mail, provided that the recipient of the electronic Notice acknowledges receipt of such transmission by electronic mail. Personal or courier delivery shall be deemed given upon actual delivery to the intended recipient at the designated address. Mailed Notices shall be deemed given upon the date of the actual receipt as

evidenced by the return receipt. Electronic mail Notice shall be deemed given upon the date the email is acknowledged as received by the recipient; provided that if acknowledgement is received after 5 p.m., Pacific Time, delivery shall be deemed received as of 8 a.m., Pacific Time, the following business day. Any Notice shall be sent, transmitted, or delivered, as applicable, to the applicable Party or Parties at the following addresses:

To: Orange County	To: Riverside County	To: Foothill/Eastern
Transportation Authority	Transportation Commission	Transportation Corridor
		Agency
550 South Main Street	4080 Lemon Street	125 Pacifica
P.O. Box 14184	P.O. Box 12008	Irvine, CA 92618
Orange, CA 92863-1584	Riverside, CA 92502	
ATTENTION:	ATTENTION:	ATTENTION:
Kirk Avila,	David Thomas,	Stephanie Blanco,
General Manager of Express	Toll Project Delivery	Chief Capital Programs
Lanes Programs	Director	Officer
Phone: (714) 560-5674	Phone: (951) 787-7141	Phone: (949) 754-3454
Email: Kavila@octa.net	Email: dthomas@rctc.org	Email:
		sblanco@thetollroads.com

# ARTICLE XIV TERM OF AGREEMENT

The term of this Agreement ("Term") shall begin on the Effective Date and end upon termination of the Master Agreement.

### ARTICLE XV ASSIGNMENT

Section 15.01 Successors and Permitted Assigns. The provisions of this Agreement shall be binding upon and inure to the benefit of the Parties and their successors and permitted assigns; provided, that no Party may assign, delegate or otherwise transfer any of its rights or obligations under this Agreement without prior written consent of all non-assigning parties. Any purported assignment in violation of this Article XV shall be treated as invalid from the outset.

Section 15.02 F/ETCA Dissolution. In the event the authority of F/ETCA to operate the SR 241 toll road or the authority of OCTA or RCTC to operate the 91 Express Lanes expires or the entity authorized to operate such toll roads changes, the other Parties will amend this Agreement to reflect such changes. Any resulting agreement shall ensure the continued operation of the 241/91 EC in accordance with the terms of this Agreement.]

### ARTICLE XVI CONFLICTS OF INTEREST

Each Party agrees to avoid organizational conflicts of interest. An organizational conflict of interest means that due to other activities, relationships, or contracts, the Party is unable, or potentially unable, to render impartial assistance or advice to another Party(ies) or the Party's objectivity in performing the work required herein is or might be otherwise impaired. Operation of the 91 Express Lanes, or F/ETCA tolled facilities, or operation or construction of any other project specifically identified in this Agreement, shall not be considered an organizational conflict of interest under this section.

# ARTICLE XVII INDEMNIFICATION

General Indemnification. To the fullest extent permitted by law, Section 17.01 each Party (the "Indemnifying Party") shall defend (at the Indemnifying Party's sole cost and expense with legal counsel reasonably acceptable to the other Parties), indemnify, protect, and hold harmless the other Parties, their officers, directors, employees, and agents (collectively the "Indemnified Parties"), from and against any and all liabilities, actions, suits, claims, demands, losses, costs, judgments, arbitration awards, settlements, damages, demands, orders, penalties, and expenses, including legal costs and attorney fees (collectively, the "Claims"), including Claims arising from injuries to or death of persons (Indemnifying Party's employees included), for damage to property, including inverse condemnation or for property owned by any of the Indemnified Parties arising from any violation of federal, state, or local law or ordinance or the negligent acts, omissions, or willful misconduct of the Indemnifying Party, its officers, directors, employees, agents, consultants, or contractors arising out of the performance of this Agreement. Any dispute relating to this Article XVII or concerning any indemnification obligation described in this Agreement shall be subject to the dispute resolution process set forth in <u>Section 19.01</u> of this Agreement.

Section 17.02 Additional Indemnification. In addition to the above, F/ETCA agrees to indemnify, defend, and hold harmless OCTA and RCTC from any Claims arising out of or related to F/ETCA's obligations under this Agreement, including operations and maintenance of the 241/91 EC. This includes Claims made by customers while traveling on the 241/91 EC or the Accessory Lanes within the 91 Express Lanes; provided that any such customer Claims arising out of OCTA's or RCTC's failure to maintain their respective portions of the 91 Express Lanes shall be the responsibility of OCTA or RCTC, as applicable, in accordance with existing agreements. F/ETCA shall promptly respond to all Claims arising out of or related to F/ETCA's obligations under this Agreement according to its procedures and resolve all liabilities related to such Claims.

# ARTICLE XVIII RESOLUTION OF CLAIMS WHEN ONE OR MORE PARTY ARE NAMED AS JOINT DEFENDANTS

If one or more Parties are named joint defendants pursuant to a Claim arising under or related to this Agreement, the legal issues between the plaintiff(s) bringing forth such claim and

the joint defendants shall be resolved first without consideration as to the allocation or apportionment of liability or damages between the defendant Parties, if any liability or damages can be allocated or apportioned between them. A determination regarding allocation or apportionment of liability or damages between the defendant Parties shall be made following final resolution of the Claim. Any Party that is not a named defendant shall have the right, at its sole cost and expense, to intervene in the action and to participate in the defense and resolution of the Claim. Any dispute relating to this <u>Article XVIII</u> or concerning allocation or apportionment of liability or damages between Parties for a Claim shall be subject to the dispute resolution process set forth in of this Agreement.

# ARTICLE XIX DISPUTE RESOLUTION, DEFAULT, REMEDIES, AND TERMINATION

Section 19.01 <u>Dispute Resolution</u>. Unless otherwise specified herein, the Parties shall comply with the following procedures in the case of a dispute, claim, or controversy arising under or in relation to this Agreement including, without limitation, the enforcement of any provision of this Agreement, or the existence, validity, interpretation, performance or breach of this Agreement (a "Dispute").

- (a) <u>1st Level Review: Submission to Agency Representatives</u>. It is the parties' intent to resolve disputes at the lowest level and as early as possible. Within ten (10) business days after a Party has notified any other Party of the existence of a Dispute pursuant to the Notice procedure provided in <u>Section 19.03</u>, each party shall designate an agency representative to review the Dispute. Within ten (10) business days after each party has designated their agency representative, the designated agency representatives shall meet to resolve the Dispute. The Parties may mutually agree to extend the timeframes.
- (b) 2nd Level Review: Submission to Executive Director, District Director, and Chief Executive Officers (CEO's). If the Dispute is unable to be resolved at the agency representative level, such Dispute shall be referred for negotiation to the Executive Director of RCTC, and the respective CEO's of F/ETCA and OCTA. These individuals agree to undertake good faith attempts to resolve said Dispute within ten (10) business days, or other agreed-upon timeframe, after the receipt of written notice from the Party alleging that a Dispute exists. The Parties additionally agree to cooperate with the other Party in the scheduling of negotiation sessions. However, if the Dispute is not resolved within thirty (30) calendar days after conducting the first negotiating session, any Party may then request that the matter be submitted to further dispute resolution procedures, as may be agreed upon by the Parties.
- (c) <u>Alternative Dispute Resolution</u>. If a Dispute is not resolved at the 2nd Level Review, the parties may agree to submit the Dispute to non-binding arbitration, or other form of alternative dispute resolution ("Alternative Dispute Resolution"). Each party to bear its own attorney fees and costs. The costs of any Alternative Dispute Resolution to be shared equally among the parties participating in the Alternative Dispute Resolution process.
- (d) <u>Remaining Legal Remedies</u>. If the parties do not agree to submit a Dispute for Alternative Dispute Resolution, or the Dispute remains unresolved following Alternative Dispute Resolution, any party may seek any other legal remedies available, including but without

limitation, injunctive relief, equitable relief, specific performance, and/or termination (in whole or in part).

- (e) Preliminary Injunctive Relief Pending Dispute Resolution. During the pendency of Alternative Dispute Resolution, pursuant to Section 19.01(c), any Party may bring a proceeding seeking only preliminary injunctive relief in any state court located in San Diego County, California until the Dispute is resolved. [A Party may seek preliminary injunctive relief on an expedited basis prior to the pendency of Alternative Dispute Resolution if (i) the Party seeking the preliminary injunctive relief first provides written notice to the other Parties of its intent to seek preliminary injunctive relief, and (ii) 48 hours have passed since the other Parties have received such written notice, such that the Parties may have an opportunity to discuss resolving the underlying reason for seeking preliminary injunctive relief.]
  - Section 19.02 Default. Subject to the extensions of time set forth in this Agreement and/or any extensions agreed upon by the Parties, failure by any Party to perform any material term or provision of this Agreement constitutes a default under this Agreement. Except as otherwise expressly provided in this Agreement, any failures or delays by any Party in asserting any of its rights or remedies with respect to a default shall not operate as a waiver of any default or of any such rights or remedies. Delays by any Party in asserting any of its rights and remedies shall not deprive any Party of its right to institute and maintain any actions or proceedings which it may deem necessary to protect, assert, or enforce any such rights or remedies.
  - Section 19.03 Notice of Default. A non-defaulting Party shall give written notice of any alleged default to the Party in default, specifying the alleged default. The defaulting Party shall attempt to cure the default within sixty (60) calendar days following written notice of default. If the alleged default is not reasonably capable of cure within the sixty (60) day period specified above, then:
- (a) The defaulting Party shall, within sixty (60) calendar days following receipt of the notice of default, provide a written response to the non-defaulting Parties that (i) identifies the actions to be undertaken to cure the default (the "Cure Activities") and (ii) identifies a schedule of performance for implementation and completion of the Cure Activities (the "Cure Schedule");
- (b) The non-defaulting Parties shall review the proposed Cure Activities and Schedule for purposes of confirming the reasonableness thereof;
- (c) At the request of the non-defaulting Party, representatives of the Parties shall meet and confer for purposes of addressing any questions or concerns with respect to the Cure Activities and the Schedule; and
- (d) Provided that the defaulting Party is diligently pursuing implementation of the Cure Activities in accordance with the Schedule, the defaulting Party may request reasonable extensions of the Schedule, and the non-defaulting Parties shall not unreasonably withhold their consent to such requests.
  - Section 19.04 Failure to Cure. In the event that the defaulting Party fails to complete the cure or remedy of a default within sixty (60) calendar days following receipt of

written notice, or within such time as the non-defaulting Parties otherwise agree to in writing, the non-defaulting parties may pursue a Termination for Cause pursuant to Section 19.05.

Section 19.05 [Termination for Cause. If the default is not timely cured in accordance with Section 19.03, the non-defaulting party may terminate this Agreement through a written notice of termination, the effective date of which shall be no less than sixty (60) days from the date of the notice; provided that such termination has first been authorized by a majority vote of the respective board of directors of the non-defaulting party.]

Section 19.06 Rights and Remedies. In the event of a default that is not timely cured, the non-defaulting Parties may exercise the right to seek damages, specific performance, or injunctive, or equitable relief. The exercise of a Party's rights and remedies shall be cumulative with the exercise of other rights and remedies. No Party shall be liable for special, punitive, indirect, incidental or consequential damages arising out of this Agreement or the exercise of its rights hereunder.

Section 19.07 Cooperation Prior to Termination. Prior to the effective date of a termination for cause, the Parties shall cooperate in good faith to facilitate the transfer of services, agreements, materials, software, excluding any computer software or hardware for which a license may be required, equipment, and information as necessary for modification to the Project as needed so as not to impede the operation of the SR-241 toll road and 91 Express Lanes in the event the 241/91 EC is no longer operating.

### ARTICLE XX SEVERABILITY

In the event that any one or more of the phrases, sentences, clauses, paragraphs, or sections contained in this Agreement shall be declared invalid or unenforceable by a valid judgment or decree of a court of competent jurisdiction, such invalidity or unenforceability shall not affect any of the remaining phrases, sentences, clauses, paragraphs, or sections of this Agreement, which shall be interpreted to carry out the intent of the Parties hereunder.

# ARTICLE XXI INTERPRETATION, GOVERNING LAW, AND COMPLIANCE WITH LAWS

Each Party warrants that, in the performance of this Agreement, it shall comply with all applicable federal, state, and local laws, statutes, and ordinances and all lawful orders, rules, and regulations promulgated thereunder.

This Agreement shall be construed and interpreted both as to validity and to performance in accordance with the laws of the State of California. Legal actions arising out of or in relation to this Agreement, subject to the Parties first exhausting the dispute resolution procedures in <u>Article XIX</u>, shall be instituted in the Superior Court of the County of San Diego, State of California, and the Parties covenant and agree to submit to the personal jurisdiction of the court in the event of any action.

# ARTICLE XXII AUTHORITY TO ENTER INTO AGREEMENT

Each Party hereto consents that it is authorized to execute this Agreement on behalf of said Party and that, by so executing this Agreement, the Parties hereto are formally bound to the provisions of this Agreement.

### ARTICLE XXIII NO THIRD-PARTY BENEFICIARIES

This Agreement is for the benefit of the Parties only. No third-party beneficiary is intended.

# ARTICLE XXIV DRAFTING AMBIGUITIES

The Parties agree that they are aware that they have the right to be advised by counsel with respect to the negotiations, terms, and conditions of this Agreement, and the decision of whether or not to seek advice of counsel with respect to this Agreement is a decision which is the sole responsibility of each Party. This Agreement shall not be construed in favor of or against either Party by reason of the extent to which each Party participated in the drafting of the Agreement.

### ARTICLE XXV AUTHORIZED DESIGNEES

The Chief Executive Officer of F/ETCA, or designee, shall have the authority to act for and exercise any of the rights of F/ETCA under this Agreement.

The Chief Executive Officer of OCTA, or designee, shall have the authority to act for and exercise any of the rights of OCTA under this Agreement.

The Executive Director of RCTC, or designee, shall have the authority to act for and exercise any of the rights of RCTC under this Agreement.

# ARTICLE XXVI COORDINATION WITH OTHER CONTRACTORS

During the course of this Agreement, the Parties, collectively or individually, may undertake or award other agreements for additional work, including separate agreements with different contractors. It is critical that close coordination with interfacing contractors occurs throughout the Term. Each Party shall fully cooperate with the other Parties and their contractors and take reasonable measures to coordinate its own work with said contractors. Should problems in coordination with other contractor(s) occur, Parties shall be made aware of these problems immediately and shall take steps to address the problems and mitigate any delays or additional costs. Parties shall cooperate with other contractors or forces performing construction or work of any other nature within or adjacent to sites specified in order to avoid any delay or hindrance to such other contractors or forces. Parties reserve the right to perform other or additional work at or near the Project site (including material sources) at any time, by the use of other forces.

### ARTICLE XXVII FORCE MAJEURE

Any Party shall be excused from performing its obligations under this Agreement during the time and to the extent that it is prevented from performing by an unforeseeable cause that is beyond its control, including: any incidence of fire, flood, or other acts of God; labor strikes, commandeering of material, products, plants or facilities by the federal, state or local government; national fuel shortage; pandemic; or a material act or omission by another Party; when satisfactory evidence of such cause is presented to the other Party; and provided further that such nonperformance is unforeseeable, beyond the control and is not due in part, or in whole, to the fault or negligence of the Party not performing and could not have been avoided or limited in the exercise of due diligence by such Party.

# ARTICLE XXVIII COUNTERPARTS OF AGREEMENT

This Agreement may be executed and delivered in any number of counterparts, each of which, when executed and delivered shall be deemed an original and all of which together shall constitute the same agreement. Facsimile signatures will be permitted. This Agreement may be signed using an electronic signature. A validly executed copy of this Agreement delivered by facsimile, e-mail or other means of electronic transmission shall be deemed to have the same legal effect as delivery of an original validly executed copy of this Agreement.

[signatures next page]

**IN WITNESS WHEREOF,** the PARTIES hereto have caused this Agreement to be executed on the date first written above.

FOOTHILL/EASTERN TRANSPORTATION CORRIDOR AGENCY	RIVERSIDE TRANSPORTATION COMMISSION
By:	By:  Aaron Hake Executive Director  APPROVED AS TO FORM:
By:Ben Rubin, Nossaman General Counsel  Dated:	By: [Name] [Title]  Dated:
ORANGE COUNTY TRANSPORTATION AUTHORITY  By: Darrell E. Johnson Chief Executive Officer  APPROVED AS TO FORM:  By: [Name] [Title]	
Dated:	

# EXHIBIT A 241/91 EXPRESS CONNECTOR TOLL FACILITIES



Exhibit A includes all the facilities that will be installed and maintained throughout operations of the 241/91 Express Connector.

Refer to Exhibit B for visual depiction of facilities listed in table below. Notes:

- 1. All equipment is owned, operated, and maintained by F/ETCA unless otherwise noted.
- 2. Responsibility Assignment Legend
  - P Primary Responsibility
  - C Coordination Responsibility Only
  - N No Responsibility

Element/Task/Component / Sub-system (Approximate Location)	RCTC	ОСТА	F/ETC A	Comments Other Responsibility/Information	RCTC 91 EL Closur e	OCTA 91 EL Closur e	F/ETC A EC Closur e
BI-DIRECTIONAL TOLL	POINT (	"EC" LII	NE STAT	ION 38+25)			
Overhead Lane Equipment - NB/EB	N	N	P		No	No	Yes
In Pavement Loop System - NB/EB	N	N	P		No	No	Yes
Overhead Lane Equipment - WB/SB	N	N	P		No	No	Yes
In Pavement Loop System - WB/SB	N	N	P		No	No	Yes
Roadside Cabinet and Controller	N	N	P		No	No	No
Network Communication Equipment	N	N	P		No	No	No
Backup Generator and Enclosure	N	N	P		No	No	No
Gantry Structure and Foundation	N	N	P		No	No	Yes
Maintenance Vehicle Path and Pad	N	N	P	Maintained by Caltrans, refer to the ECMA.	No	No	No

Element/Task/Component / Sub-system (Approximate Location)	RCTC	ОСТА	F/ETC A	Comments Other Responsibility/Information	RCTC 91 EL Closur e	OCTA 91 EL Closur e	F/ETC A EC Closur e
TOLL COLLECTION OV MOVEMENT)	ERHEAD	ELECT!	RONIC S	IGNS (NORTH-TO-EAST			
Changeable Message Sign (CMS) ("B" Line Station 730+80)	N	N	P		No	No	No
Overhead Electronic     Sign and Static Border							
Roadside Cabinet and Sign Controller					•		
Electrical Transformer and Electrical Sub-Panel							
<ul><li>Network</li><li>Communication</li><li>Equipment</li></ul>		1					
Sign Structure and Foundation							
Variable Toll Message Sign (VTMS) ("B" Line Station 749+00)	N	N	P		No	No	No
- Overhead Static Sign							
Electronic Insert (toll rate display)							
Lower CMS Panel (mode display one line)							
Roadside Cabinet and Sign Controller							
Electrical Transformer and Electrical Sub- Panel							
- Network Communication Equipment							
<ul><li>Sign Structure and Foundation</li></ul>							

Element/Task/Component / Sub-system (Approximate Location)	RCTC	ОСТА	F/ETC A	Comments Other Responsibility/Information	RCTC 91 EL Closur e	OCTA 91 EL Closur e	F/ETC A EC Closur e
Lane Operational Sign (LOS) #1 (CMS Panel under static guide sign) ("B" Line Station 866+80)	N	N	P	Co-located on Caltrans-owned and maintained overhead sign structure.	No	No	No
- Electronic Insert							
Roadside Cabinet and     Sign Controller							
<ul> <li>Electrical Transformer and Electrical Sub- Panel</li> </ul>					•		
- Network Communication							
- Equipment							
Lane Operational Sign (LOS) #2 (Enforcement "X" / arrow) ("B" Line Station 892+80)	N	N	P	Co-located on Caltrans-owned and maintained overhead sign structure.	No	No	No
Overhead Static Sign with Electronic Insert							
Roadside Cabinet and Sign Controller							
Electrical Transformer     and Electrical Sub- Panel							
<ul><li>Network</li><li>Communication</li><li>Equipment</li></ul>							
- Sign Structure and Foundation							
TOLL COLLECTION OV MOVEMENT) OCTA ELE							
Sign Structure and Foundation	N	P	C	Refer to Ops Agreement for shared financial responsibility.	Yes	Yes	Yes
Electrical Power Service and Feed	N	P	C	Refer to Ops Agreement for shared financial responsibility.	Yes	Yes	Yes
Replacement Parts	N	P	C	Refer to Ops Agreement for shared financial responsibility.	Yes	Yes	Yes

Element/Task/Component / Sub-system (Approximate Location)	RCTC	ОСТА	F/ETC A	Comments Other Responsibility/Information	RCTC 91 EL Closur e	OCTA 91 EL Closur e	F/ETC A EC Closur e
Sign Warranty	N	P	C	Existing Warranty and Daktronics support through OCTA.	Yes	Yes	Yes
				Refer to Ops Agreement for shared financial responsibility.			
F/ETCA Sign Controller	N	С	P	Daktronics provided and installed F/ETCA Controller, Light Sensor and VCB board will be maintained by F/ETCA for the F/ETCA portion of the sign	Yes	Yes	Yes
OCTA Sign Controller	N	P	C	Daktronics provided and installed OCTA Controller, Light Sensor and VCB board will be maintained by OCTA for the OCTA portion of the sign.	Yes	Yes	Yes
F/ETCA Network Communication Equipment	N	C	P		Yes	Yes	Yes
TOLL CONNECTOR MET MOVEMENT)	TER (TC	M) ("EC"	LINE ST	ΓΑΤΙΟΝ 37+50, NORTH-TO-EAST			
Roadside Cabinet and Controller	N	N	P		No	No	Yes
Overhead Signal, Enforcement Signal and Pole	c	C	P	The 91 TOC may identify equipment that is not functioning properly for repair by F/ETCA.	No	No	Yes
Roadside Signal and Pole	C	C	P	The 91 TOC may identify equipment that is not functioning properly for repair by F/ETCA.	No	No	Yes
Toll Connector Meter Camera Detection System	N	N	P	Used to Augment CHP Enforcement	No	No	Yes
Occupancy Detection System	N	N	P	Used to Augment CHP Enforcement	No	No	Yes
In-Pavement Loops	N	N	P		No	No	Yes

Element/Task/Component / Sub-system (Approximate Location)	RCTC	ОСТА	F/ETC A	Comments Other Responsibility/Information	RCTC 91 EL Closur e	OCTA 91 EL Closur e	F/ETC A EC Closur e
Roadside Metering Signage	N	N	P		No	No	Yes
Network Communication Equipment	N	N	P		No	No	Yes
TCM SIGNS (QTY 5) ("EC" "B" Line Station 884+80 an			50 and 23	3+00, "EC1" Line Station 22+20,			
Overhead Flashing Beacons	N	N	P		No	No	Yes
Overhead Blank-Out Sign	N	N	P		No	No	Yes
Overhead Sign Structure	N	N	P		No	No	Yes
Electrical Transformer and Electrical Sub-Power	N	N	P		No	No	Yes
Roadside Cabinet and Controller	N	N	P		No	No	Yes
Network Communication to TCM Controller	N	N	P		No	No	Yes
TCM QUEUE DETECTIO Line Station 892+80)	N LOOP	S (QTY 3)	) ("EC" L	ine Station 33+00 and 22+20, "B"			
In-Pavement Loops	N	N	P		No	No	Yes
Network Communication to TCM Controller	N	N	P		No	No	Yes
ELECTRICAL SERVICE							
EC and TCM ("SAC" Line Station 445+30)	N	N	P	Repairs of electrical service do not require closures due to back up power options.	No	No	No
TDS Locations ("E91" Line Station TBD)	N	N	P	Repairs of electrical service do not require closures due to back up power options.	No	No	No

Element/Task/Component / Sub-system (Approximate Location)	RCTC	ОСТА	F/ETC A	Comments Other Responsibility/Information	RCTC 91 EL Closur e	OCTA 91 EL Closur e	F/ETC A EC Closur e
CLOSED CIRCUIT TELE 748+00, 865+50, 874+00, AI LINE 498+00 AND 534+50							
Pole Mounted Camera Equipment with Pan-Tilt- Zoom (PZT) functionality	C	C	P	The 91 TOC may identify cameras that are not functioning properly for repair by F/ETCA.	No	Yes	No
Cabling Equipment	N	N	P		No	Yes	No
Pole Mounted Cabinet	N	N	P	CCTV #1-6, #8-9.	No	Yes	No
EC Gantry Mounted Cabinet	N	N	P	CCTV #7.	No	No	No
Network Communication Equipment	N	N	P		No	Yes	No
Vehicle Detection System (VDS) Pole and Foundation	N	N	P	CCTV #8 shared pole with TDS #4 and #5. CCTV #9 shared pole with TDS #10.	No	Yes	No
TOLL DETECTION SYST  - NORTH-TO-EAST M 509+00, AND 522+00)  - WEST-TO-SOUTH M 522+00, AND 534+50)							
Structure Mounted Microwave Detectors	N	N	P	TDS #1.	No	Yes	Yes
Ground Mounted Cabinet	N	N	P	TDS #1.	No	No	No
Pole Mounted Microwave Detector	N	N	P	TDS #2 and #3 shared pole.  TDS #4 and #5 shared with CCTV #8.  TDS #6 and #7 shared pole.  TDS #8 and #9 shared pole.  TDS #10 shared pole with CCTV #9.	No	Yes	Yes

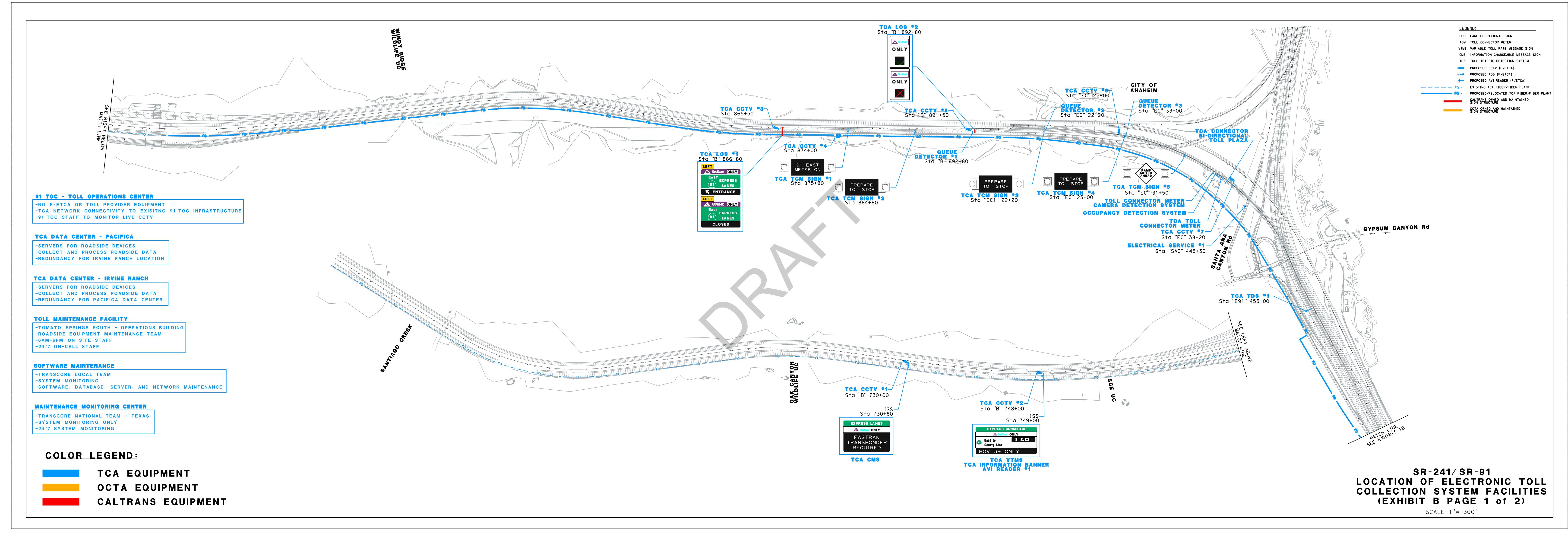
Element/Task/Component / Sub-system (Approximate Location)	RCTC	ОСТА	F/ETC A	Comments Other Responsibility/Information	RCTC 91 EL Closur e	OCTA 91 EL Closur e	F/ETC A EC Closur e
Vehicle Detection System (VDS) Pole and Foundation	N	N	P	TDS #2 and #3 shared pole.  TDS #4 and #5 shared with CCTV #8.  TDS #6 and #7 shared pole.  TDS #8 and #9 shared pole.  TDS #10 shared pole with CCTV #9.	No	Yes	Yes
Network Communication Equipment	N	N	P		No	Yes	Yes
AUTOMATED VEHICLE							
AVI Reader #1 – NB 241 ("B" Line Station 749+00)	N	N	P	Co-located with F/ETCA VTMS.	No	No	Yes
AVI Reader # 2 – EB Egress ("E91" Line Station 523+90)	C	C	P	Co-located on Caltrans-owned and maintained overhead sign structure.	No	Yes	Yes
DATA AND COMMUNICA	ATIONS						
Pacifica Location Data Center  - Data Servers  - Communication Equipment  - Equipment Software Configurations	N	N	P		No	No	No
Irvine Ranch Location Data Center  - Servers  - Communication Equipment  - Equipment Software Configurations	N	N	P		No	No	No

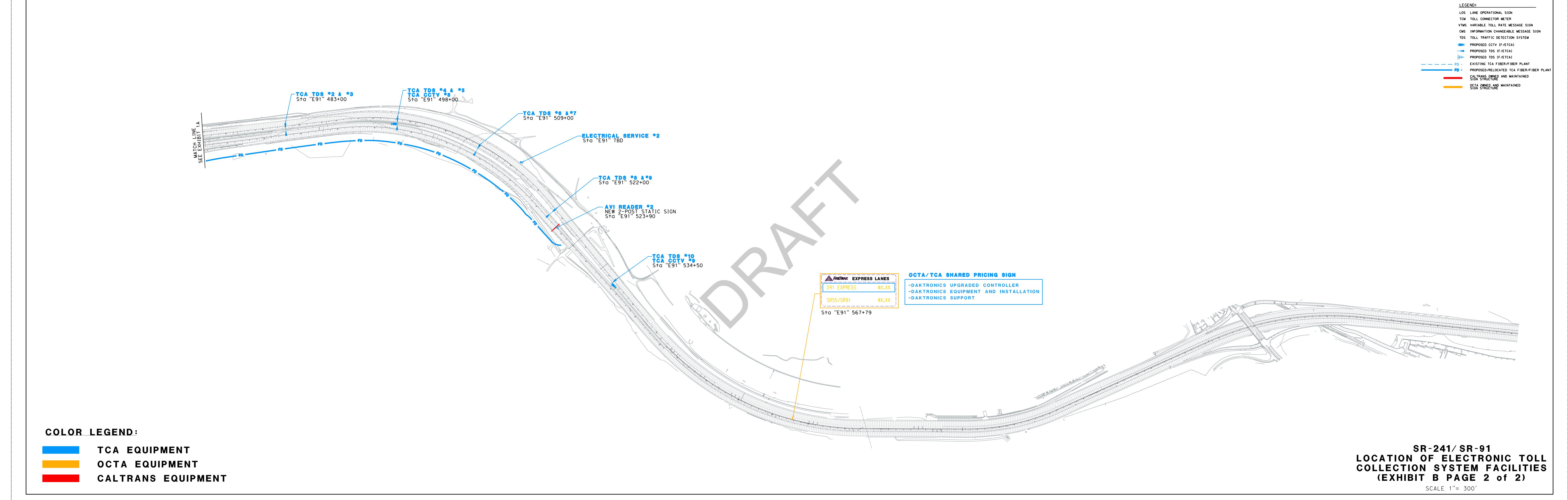
Element/Task/Component / Sub-system (Approximate Location)	RCTC	ОСТА	F/ETC A	Comments Other Responsibility/Information	RCTC 91 EL Closur e	OCTA 91 EL Closur e	F/ETC A EC Closur e
Texas Monitoring Center  - 24/7 System Monitoring	N	N	P		No	No	No
Fiber Plant Infrastructure NB 241 from "B" Line 783+50 to "B" Line 897+50  - Fiber Cable, splice enclosures and, fiber distribution units.  - Network Communication equipment	N	N	P		No	No	No
Fiber Plant Infrastructure NB to EB 241 from "CNW" Line 97+50 to "CNW" Line 103+00  - Fiber Cable, Splice Enclosures and, Fiber Distribution Units.  - Network Communication Equipment	N	N	P		No	No	No
Fiber Plant Infrastructure NB to EB 241 from "CNE" Line 103+00 to "CNE" Line 171+00  - Fiber Cable, Splice Enclosures and, Fiber Distribution Units.  - Network Communication Equipment	N	N	P		No	No	No

Element/Task/Component / Sub-system (Approximate Location)	RCTC	OCTA	F/ETC A	Comments Other Responsibility/Information	RCTC 91 EL Closur e	OCTA 91 EL Closur e	F/ETC A EC Closur e
Fiber Plant Infrastructure EB 91 from "E91" Line 477+00 to "E91" Line 527+00  - Fiber Cable, Splice Enclosures and, Fiber Distribution Units.  - Network Communication Equipment	N	N	P		No	No	No
91 EXPRESS LANES TOL 91 EL TOC Advanced Traffic Management System (ATMS) Software and Configuration System Updates.	P-Joint Operat ion with OCTA	P-Joint Operat ion with RCTC	N	Data Sharing Configurations between 91 TOC Advanced Traffic Management System (ATMS) and F/ETCA Toll Service Provider.	No	No	No
F/ETCA System Software and Configuration	C	С	P	Data Sharing Configurations between 91 TOC Advanced Traffic Management System (ATMS) and F/ETCA Toll Service Provider.	No	No	No
91 EL TOC Hardware. Switches, network communication equipment, Computers, Video Wall, etc.	P-Joint Operat ion with OCTA	P-Joint Operat ion with RCTC	P	F/ETCA will provide requirements as additions to the existing ViaPlus contract for the purposes of the 241/91 Express Connector.  All three agencies have primary responsibility, F/ETCA will be responsible for payment of additional hardware required for the 241/91 EC.	No	No	No
91 EL TOC Labor and Personnel	P-Joint Operat ion with OCTA	P-Joint Operat ion with RCTC	P	F/ETCA will provide requirements as additions to the existing ViaPlus contract for the purposes of the 241/91 Express Connector.  All three agencies have primary responsibility, F/ETCA will be responsible for payment monthly expenses of personnel as it relates to monitoring the 241/91 EC.	No	No	No

# EXHIBIT B 241/91 EXPRESS CONNECTOR LOCATION OF ELECTRONIC TOLL COLLECTION SYSTEM FACILITIES







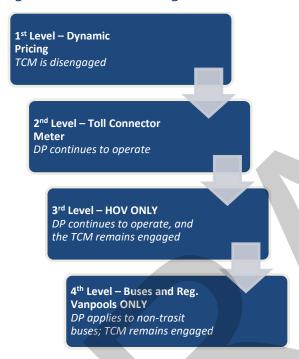
# EXHIBIT D PROGRESSIVE DEMAND MANAGEMENT PROCESS

This exhibit will lay out, at a conceptual level, how progressive demand management (PDM) will be structured on the Express Connector. Section 1 will discuss how PDM will be applied to the NB-to-EB Express Connector, while Section 2 will focus on the WB-to-SB Connector.

### Progressive Demand Management on the Northbound-to-Eastbound Connector

The NB-to-EB Express Connector will employ four levels of PDM. These levels are summarized Figure 1.

Figure 1 - Four Levels of Progressive Demand Management on the NB-to-EB Express Connector



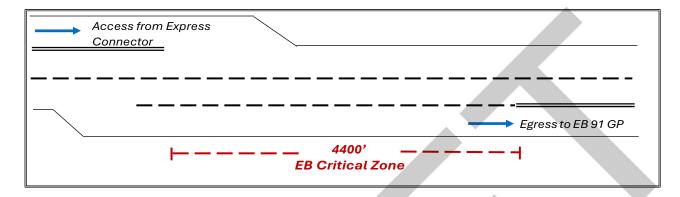
This section will provide a detailed description of the PDM approach for the NB-to-EB Express Connector. It will provide an overview of the approach, followed by details regarding how this approach will be implemented.

### 1.1. NB-to-EB Approach Overview

In general terms, the proposed PDM approach for the NB-to-EB Express Connector can be described as follows:

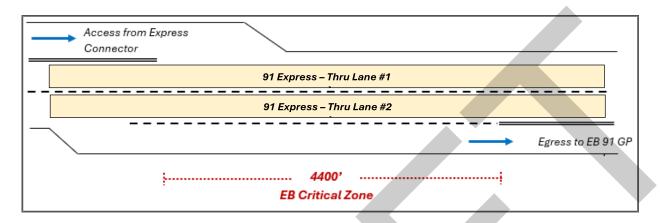
• The PDM approach will be primarily oriented toward operations on the 4400' EB critical zone depicted in Figure 2. The goal of progressive demand management is to ensure that this segment of roadway operates at or better than agreed-to performance metrics. A detailed discussion of performance metrics is presented in Exhibit F of the Operating Agreement (Traffic Operations Metrics Monitoring and Governance).





- The primary goal for PDM should be to maintain conditions such that they are at or below a configurable density level in the EB critical zone. Density is a comprehensive metric that incorporates traffic flow (in vehicles per hour) and speed (in miles per hour). High densities can be caused by high traffic volumes, by traffic incidents, and by high volumes of traffic changing lanes. A high value of density almost always indicates congested traffic conditions. By contrast, neither speed nor volume on their own necessarily indicate adverse traffic conditions. Low speeds don't always indicate congestion; they could be the result of inclement weather or police activity. Neither do high volumes always indicate congestion; sometimes, freeway lanes serving local drivers can serve a high volume of traffic very efficiently.
- The price to use the NB-to-EB Express Connector shall be directly related to the density observed in the EB critical zone. Density shall be calculated by taking the flow rate in the EB critical zone (measured in terms of vehicles per hour) and dividing by the average speed in the EB critical zone (in miles per hour). This value shall then be divided by the number of lanes to yield a density expressed as vehicles per lane per mile (vplpm).
- The calculation of density in the EB critical zone will focus on data collected from the two thru lanes that continuously serve the 91 Express lanes. These are illustrated by the shaded lanes depicted in Figure 3. The calculation of density will not consider speeds and volumes collected from the egress lane to the 91 General Purpose lanes, nor will it consider speeds and volumes collected from the access lane from the Express Connector prior to its merge onto the 91 Express Lanes.

Figure 3 - Designated Lanes for Measuring Density in the EB Critical Zone



Traffic conditions should be monitored, densities calculated, and prices adjusted at frequent intervals. The intervals should be no shorter than two minutes in length and no longer than fifteen minutes in length. The duration of the interval should be configurable; the initial assumed interval length is [5] minutes.

### 1.2. Formula Governing Density-Price Relationship

The graphic depicted in Figure 4 illustrates the proposed relationship between density and price for the NB- to-EB Express Connector. The graphic is followed by a description of each of its components, including a discussion of the formula governing the relationship between density and price.

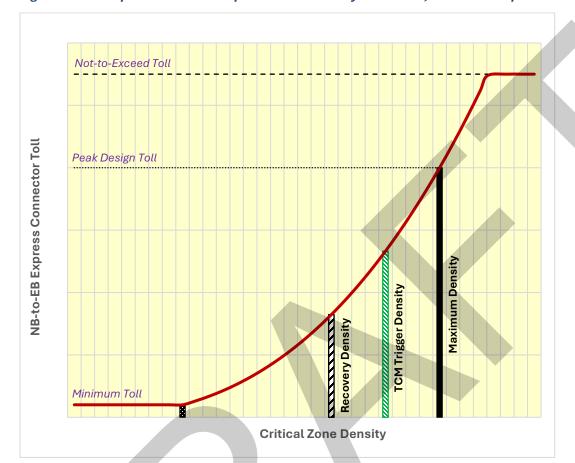


Figure 4 – Conceptual Relationship Between Density and Price, NB-to-EB Express Connector

Figure 4 depicts four distinct density levels, each of which is defined below:

- Minimum Density. This is the density level in the critical zone above which the toll rate begins
  to rise. If the density in the critical zone is at or below this level, the minimum toll will apply.
  Stated another way, the "minimum density" represents the highest density level at which the
  minimum toll will apply.
- TCM Trigger Density. This is the density level that triggers the initiation of the TCM. When the density in the EB critical zone exceeds the TCM Trigger Density for [3] consecutive intervals, the TCM will be engaged.
- Maximum Density. This represents the maximum density that would be considered acceptable
  in the EB critical zone. The toll rate corresponding to this density is known as the peak design
  toll. Surpassing this density level will be a trigger to enacting successive levels of progressive
  demand management.
- Recovery Density. This represents the density level that will trigger an unraveling of progressive demand management. It is relevant only if the TCM has been engaged. Once the TCM has been engaged (and any other progressive demand management strategies, such as HOV ONLY, have been employed), it will remain engaged until the density in the EB critical zone has fallen below the recovery density for [3] consecutive intervals.

Figure 4 also highlights three distinct pricing levels:

- **Minimum Toll**. This represents the lowest toll that would ever be charged for the Express Connector. It applies whenever the density in the EB critical zone is at or below the minimum density.
- **Peak Design Toll**. This represents the highest toll rate that F/ETCA would normally desire to charge its customers to use the Express Connector. This toll rate would apply when the density in the EB critical zone reaches the maximum density.
- **Not-to-Exceed Toll.** This represents the maximum toll rate that would be charged. A Not-to Exceed Toll may be used to prevent the dynamic pricing system from producing an unexpectedly high toll rate, but is not permitted to be used as a price cap. The Parties will establish a Not-to-Exceed Toll for purposes of controlling and monitoring the dynamic pricing algorithm.

The basic formula (governing the curved portion of the density-price graph above) is as follows:

$$Toll = k * (\theta * D)^{\beta}$$

Where:

k = minimum toll

D = density in the EB critical zone

 $\Theta$  = multiplier, calibrated such that " $\Theta$  \* D" = 1.0 at the point of minimum density (as defined above)

 $\beta$  = rate escalation factor

- To ensure that tolls escalate at an ever-increasing rate as density increases, β should be set at a value greater than 1.0
- The value of β should be calibrated such that the toll rate reaches the <u>peak design</u> toll when density reaches the <u>maximum density</u> level described above

To illustrate, consider the following hypothetical situation in which the following parameters are defined:

- The minimum toll rate is \$2.00
- The minimum toll rate applies to all densities up to 9 vplpm
- The peak design toll is\$40
- The maximum density is 30vplpm
- The not-to-exceed toll is \$75

The formula in this instance would be:

where D = density in the EB critical zone

subject to a minimum toll of \$2.00 and a not-to-exceed toll of \$75.00

The formula described above translates density into price in the following manner:

- When the density in the EB critical zone is <u>at or below the minimum density</u>, the toll is equal to the minimum toll.
- When the density in the EB critical zone is <u>at the maximum density</u>, the toll is equal to the peak design toll.
- When the toll reaches the not-to-exceed toll, the price holds regardless of the recorded density. Under the parameters of the formula noted above, the not-to-exceed toll of \$75 is reached when the density in the critical zone is roughly 39 vehicles per lane per mile (vplpm). Any density

- above that level would still trigger a toll of \$75.
- All values should be configurable to enable an appropriate pricing response to actual conditions. The values to be deployed when the system goes live will be informed by simulation modeling and testing.

Figure 5 depicts the density-price curve corresponding to the parameters identified above. To help reveal how this alternative tolling approach will work, Figure 5 includes illustrative values for all components previously identified in Figure 4. This includes a vertical bar designating the **TCM trigger density** (which in this example will be set at 26 vplpm) as well as a vertical bar designating the **Recovery density** (which in this example will be set at 22 vplpm). All values are provided for illustrative purposes only.

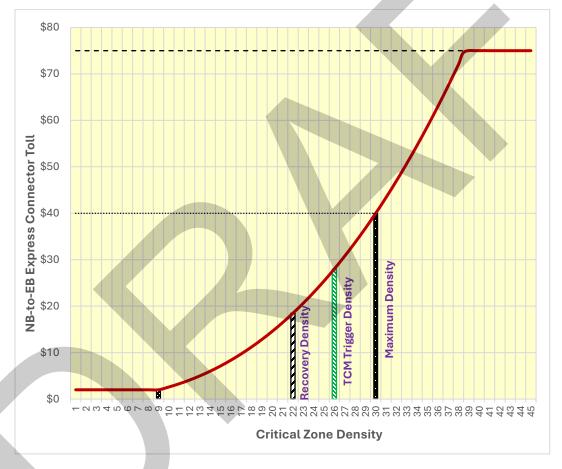


Figure 5 – Illustrative Example of Possible Density-Price Curve, NB-to-EB Express Connector

It is important to note that the formula described above (Toll =  $k * (\Theta * D)^8$ ) governs the *real-time* adjustments to the toll rate. However, the process outlined by Exhibit F (Traffic Operations Metrics Monitoring and Governance) outlines a process by which operational conditions in two select areas are monitored on a regular basis. In doing so, it facilitates periodic adjustments to the variables in the formula based on regular reviews of operational data. The conditions to be regularly reviewed in the **NB-to-EB** direction include:

- Weaving through the EB criticalzone.
- Eastbound traffic operations (including the toll rate) at the East End of the RCTC Express Lanes.

Based on the operational review at these areas, the parameters governing the rate-setting process can be adjusted to manage the demand more efficiently.

## 1.3. Progressive Demand Management Framework, NB-to-EB Express Connector

The proposed pricing framework for the NB-to-EB Express Connector encompasses four possible levels of control, known collectively as "progressive demand management" (PDM). This framework is discussed in more detail below.

### 1st Level of Control - Price

- The first and primary level of control is price. Unless manually overridden in special circumstances, the price to use the NB-to-EB Express Connector will be tethered to the density in the EB critical zone. The relationship between density and price is governed by the density-price curve depicted in Figure 4. Note that density is on the x-axis. Price, which is a function of density, is on the y-axis.
- Below a configurable minimum density (initial recommended value: **9 vplpm**), a configurable minimum toll for the Express Connectorapplies.
- Once the density in the EB critical zone exceeds the minimum density, then the price increases above the minimum toll. The increase should be modest at low densities and should increase more dramatically as density increases. Note that the shape of the demand-price curve is consistent with the way speeds on a roadway respond to growing levels of traffic. At low levels of traffic, an increase in traffic volume has a minimal impact on prevailing speeds. However, as traffic volumes approach capacity, prevailing speeds tend to decline much more rapidly. The price will continue to rise as the density increases until the price reaches the "not-to-exceed toll."
- If the density in the EB critical zone exceeds the TCM trigger density for [3] consecutive intervals (configurable), then the Toll Connector Meter (TCM) will be engaged.
- Please note that, even after the TCM is engaged, the posted price for the Express Connector will continue to change as the density in the EB critical zone changes.

### 2nd Level of Control - Toll Connector Meter + Pricing

- When the maximum density has been reached or exceeded for [3] consecutive intervals (configurable), the algorithm advances to the second level of control. For the NB-to-EB Express Connector, the second level of control is the engagement of the TCM. The requirement to meet or exceed the maximum density for multiple consecutive intervals is intended to serve as a safeguard against triggering the TCM prematurely in response to a temporary (as opposed to a sustained) surge in traffic.
- Once conditions are met for the TCM to be engaged, the following sequence should be followed:
  - Advanced signage south of the decision point on SR-241 will immediately be used to inform drivers that the meter is ON.
  - Speeds on the roadway between the advanced signage and the TCM will be monitored to provide a reasonable estimate of the current travel time between the advanced signage and the TCM. Travel times may be monitored directly by tracking transponder transactions. A running comparison of transponder reads at Windy Ridge (or from the

- readers at the SR-241 VTMS) and at the Express Connector toll point can provide current travel time information in the corridor.
- The engagement of the TCM will be delayed until this "travel time" lag has passed. The purpose is to avoid a situation in which the TCM stops drivers who passed the CMS before the "METER ON" message was posted. To illustrate, let's assume that, at 4:00:00pm, the conditions are met for the TCM to be engaged. And let's assume that, based on speed data monitored in the corridor, the current travel time from the last advanced sign to the TCM is 4:05. That means that the TCM should be engaged no earlier than 4:04:05pm. If a 20% buffer is incorporated to ensure that slower-than-average drivers aren't surprised by the activation of the meter, then the TCM should be engaged at 4:04:54pm.
- The TCM will employ a variable discharge rate to govern the hourly flow rate at which vehicles pass through the TCM. This variable discharge rate will be employed for as long as the TCM is engaged. The general principle is that as density in the EB critical zone increases, the discharge rate will decrease. The discharge rate should be configurable. An initial set of guidelines for the TCM discharge rate is presented in Table 1.

Table 1 – Relationship between Critical Zone Density and TCM Discharge Rate

Density of EB Critical Zone (vehicles/lane/mile)	TCM Discharge Rate (vehicles/hour)
<27 vplpm	900 (1 green per 4 sec.)
27.0 – 28.9 vplpm	800 (1 green per 4.5 sec.)
29.0 – 30.9 vplpm	720 (1 green per 5 sec.)
31 – 32.9 vplpm	600 (1 green per 6 sec.)
33 – 35.9 vplpm	450 (1 green per 8 sec.)
36 – 39.9 vplpm	400 (1 green per 9 sec.)
40+ vplpm	360 (1 green per 10 sec.)

- Once the TCM is engaged, this 2<sup>nd</sup> level of control (TCM + Pricing) will remain in effect <u>until one of the following conditions is met:</u>
  - Condition #1: The density in the EB critical zone reaches or exceeds the maximum density for [3] consecutive intervals (configurable). If this condition occurs, it suggests that the TCM has not been successful at restraining the density such that it stays at or below the maximum acceptable level. Therefore, it will be necessary to further manage demand by advancing to the 3<sup>rd</sup> level of control (e.g., HOV3+ ONLY).
  - o **Condition #2**: The queue at the TCM reaches or exceeds [3400 feet]<sup>1</sup> (configurable). If this condition occurs, it suggests that the demand for the Express Connector is exceeding the ability of the TCM to adequately handle it. As a result, it will be necessary to restrict access to the Express Connector by advancing to the 3<sup>rd</sup> level of control (e.g., HOV3+ ONLY).
  - Condition #3: The density in the EB critical zone dips below the recovery density for [3] consecutive intervals (configurable). If this condition occurs, it suggests that the TCM has successfully managed demand and thereby reduced the density in the EB critical zone. As a result, it will be appropriate to shift to the recovery phase.
- Until one of the three above-listed conditions is met, the TCM will remain engaged, and the price

<sup>&</sup>lt;sup>1</sup> Alternatively, this could be expressed in terms of vehicles (e.g., "The queue at the TCM does not exceed [100] vehicles").

for the Express Connector will continue to rise or fall in response to the density in the EB critical zone.

### 3rd Level of Control – Pricing + TCM + HOV ONLY

- When the 3rd level of control is activated, the controls from the first two levels (pricing and engagement of the TCM) continue to operate. In addition, access to the Express Connector is restricted to HOVs.
- The third level of control is designed to engage when one of two conditions has been met after the 2nd level of control (Pricing + TCM) has been engaged:
  - The density in the EB critical zone has exceeded maximum density for [3] consecutive intervals; or,
  - o The queue at the TCM has met or exceeded its configurable threshold length.
- When HOV ONLY is in effect, a message will be posted in two places: (1) at the CMS located 0.6
  miles prior to the decision point, and (2) on the LED banner positioned on the VTMS located 0.26
  miles from the decision point.
- Whenever HOV ONLY messaging is posted, its enforcement will be delayed so that enforcement
  is only applied to drivers who would have seen the message on the advanced signing. If a nonHOV vehicle passed the advanced signage before the "HOV ONLY" message was posted, then
  no enforcement action should be taken if it were to continue onto the Express Connector. This
  will require that average speeds between the advanced signing and the Express Connector be
  monitored.
- When HOV ONLY is in effect, the TCM will continue to be engaged with a discharge rate that is tied to the density in the critical zone (see Table 1). The price to be posted on advanced signage will be as follows:
  - During peak periods (as defined for periods of HOV pricing), HOVs are required to pay
    the same rate as all other vehicles. 2 Therefore, the posted price will be determined by
    the density in the EB critical zone, using the density-price curve described in Figure 4.
     The posted price may rise or fall during the time in which HOV ONLY is in effect.
  - During off-peak periods (that is, all time periods not otherwise designated as "peak period"), HOV3+ vehicles are allowed to travel for free. Therefore, no price will be posted.
- The Express Connector will continue to operate as HOV ONLY for a minimum of [3] intervals (configurable). During this time, the queue at the TCM will continue to be monitored, and the density in the EB critical zone will continue to be measured. HOV ONLY mode will continue until one of the following occurs:
  - Condition #1: The density in the EB critical zone exceeds the maximum density for [3] consecutive intervals (configurable). This condition would indicate that HOV ONLY was not successful in restricting density within an acceptable range. Therefore, it would be necessary to further reduce demand by advancing to the 4th level of control (e.g., BUS/REGISTERED VANPOOLS ONLY).
  - Condition #2: The queue at the TCM exceeds [3400 feet] (configurable). This condition would suggest that, even with an HOV ONLY restriction in place, the demand for the Express Connector was still too high for the TCM to adequately handle. As a result, it would be necessary to restrict access to the Express Connector by advancing to the 4th

<sup>&</sup>lt;sup>2</sup> Eastbound peak periods defined for HOV pricing are Mon-Thu, 2pm-6pm; and Friday, 1pm-7pm. Westbound peak periods defined for HOV pricing are Mon-Thu, 5-9am. On Fridays in the WB direction, HOV3+ vehicles can travel toll-free all day.

- level of control (e.g., BUS/REGISTERED VANPOOLS ONLY).
- Condition #3: The density in the EB critical zone dips below the recovery density for [3] consecutive intervals (configurable). If this condition occurs, it suggests that the HOV ONLY restriction has successfully managed demand and thereby reduced the density in the EB critical zone. As a result, it will be appropriate to shift to the recovery phase.

### 4th Level of Control – TCM + Bus/Registered Vanpools Only

- The fourth level of control is designed to engage when congestion in the EB critical zone (as measured in terms of density) remains stubbornly high (that is, above the maximum density level for [3] consecutive intervals) despite the imposition of pricing, metering, and a restriction to HOV ONLY.
- This is the most restrictive and final level of control to be imposed on the NB-to-EB Express Connector. No additional means of restricting traffic on the Express Connector is available.
- When the BUS/REGISTERED VANPOOLS ONLY stage is reached, prices will continue to be
  posted. However, only non-transit buses will be assessed a toll. Transit buses and registered
  vanpools may travel for free at any time, even during periods in which progressive demand
  management is engaged.<sup>3</sup>
- The TCM will continue to be engaged with a discharge rate that is tied to the density in the critical zone (see Table 1).
- Once engaged, the BUS/REGISTERED VANPOOLS ONLY stage will remain in effect for a minimum of [3] consecutive intervals. During this time, the density in the EB critical zone will continue to be monitored.
- The message of BUS/REGISTERED VANPOOLS ONLY will be communicated to drivers in the same manner (on the same signs) as the message of HOV ONLY. Those signs are (1) at the CMS located 0.6 miles prior to the decision point, and (2) on the LED banner positioned on the VTMS located 0.26 miles from the decision point.
- Whenever BUS/REGISTERED VANPOOLS ONLY messaging is posted, its enforcement will account for the travel time lag from the advanced signage to the toll point. This will ensure that enforcement is only applied to drivers who would have seen the message on the advanced signage. If a qualified HOV passed the advanced signage before the "BUS/REGISTERED VANPOOLS ONLY" message was posted, then no enforcement action should be taken if it were to continue onto the Express Connector. To incorporate an appropriate time lag, average speeds between the advanced signing and the Express Connector will need to be monitored.
- After the minimum duration of the BUS/REGISTERED VANPOOLS ONLY stage has been fulfilled, conditions in the EB critical zone will be reviewed.
- When the density in the EB critical zone dips below the recovery density for [3] consecutive
  intervals, then the pricing framework will shift to the recovery phase. Otherwise, the
  BUS/REGISTERED VANPOOLS ONLY stage will remain ineffect.

<sup>&</sup>lt;sup>3</sup> To qualify for toll-free travel on the Express Connector, vanpools must be registered with RCTC and/or OCTA and must be carrying three or more occupants. If a vanpool is not (a) registered with RCTC and/or OCTA, and (b) carrying 3+ occupants, it will not have access to the Express Connector during the BUS/REGISTERED VANPOOLS ONLY stage.

<sup>&</sup>lt;sup>4</sup> Please note that the actual messages to be posted on advanced signage are still being refined. The concurrence of all parties will be obtained as the messages are finalized.

<sup>&</sup>lt;sup>5</sup> The TRANSIT & REGISTERED VANPOOLS ONLY level of control will be preceded by HOV ONLY. Therefore, if an HOV is caught between the advanced signage and the entry to the Express Connector when the "BUS/REGISTERED VANPOOLS ONLY" message is posted, then that HOV should not be subject to enforcement. However, all other non-HOVs should still be subject to enforcement.

### Recovery Phase

- The recovery phase represents the gradual transition back to the first level of control, in which demand is managed by price alone. The recovery phase is triggered when the density in the EB critical zone remains below the recovery density for a duration of [3] consecutive intervals (configurable). The trigger is consistent regardless of which level of progressive demand management is currently in place.
- In the recovery phase, all restrictions are lifted in reverse order of implementation.
- If progressive demand management has only advanced to **Level 2 (TCM)**, then the recovery phase simply consists of disengaging the TCM. Advanced signage will be changed to eliminate all warnings of "METER ON." Normal Level 1 operations will resume.
- If progressive demand management has advanced to **Level 3 (TCM + HOV ONLY)**, then the recovery phase will have two stages. The recovery phase will proceed as follows:
  - Stage 1 All advanced signage indicating the HOV ONLY restriction will be removed, and all vehicles will be permitted to use the Express Connector. Meanwhile, the TCM will remain engaged. This stage will remain in effect until one of the following conditions are met:
    - Condition #1: The density in the EB critical zone rises and exceeds the maximum density for [3] consecutive intervals (configurable). This would indicate that congestion remains a problem. Consequently, the HOV ONLY restriction would be restored, and the 3<sup>rd</sup> level of control would be reinstated.
    - Condition #2: The queue at the TCM exceeds [3400 feet] or [100 vehicles] (both values of which are configurable). This would indicate that the TCM is not yet able to handle the demand resulting from the lifting of the HOV ONLY restriction. As a result, the HOV ONLY restriction would be restored, and the 3<sup>rd</sup> level of control would be reinstated.
    - Condition #3: The density in the EB critical zone stays below the recovery density for [3] consecutive intervals. This would indicate that conditions continue to be acceptable despite the removal of the restriction. As a result, the recovery phase would advance to Stage 2.
  - Stage 2 The second stage in recovery is to disengage the TCM. Advanced signage will be changed to eliminate all warnings of "METER ON," and normal Level 1 operations will resume.
- If progressive demand management has advanced to **Level 4 (TCM + BUS/REGISTERED VANPOOLS ONLY)**, then the recovery phase will have three stages, proceeding as follows:
  - Stage 1 All advanced signage indicating the BUS/REGISTERED VANPOOLS ONLY restriction will be removed and replaced with HOV ONLY. All HOVs will be permitted to use the Express Connector. The TCM will remain engaged. Stage 1 will remain in effect until one of the following conditions are met:
    - Condition #1: The density in the EB critical zone rises and exceeds the maximum density for [3] consecutive intervals (configurable). This would indicate that congestion remains a problem. Consequently, the BUS/REGISTERED VANPOOLS ONLY restriction would be restored, and the 4<sup>th</sup> level of control would be reinstated.
    - Condition #2: The queue at the TCM exceeds [3400 feet] or [100 vehicles] (both values of which are configurable). This would indicate that the TCM is not yet able to handle the demand resulting from the lifting of the restriction. As a

- result, the BUS/REGISTERED VANPOOLS ONLY restriction would be restored, and the 4<sup>th</sup> level of control would be reinstated.
- Condition #3: The density in the EB critical zone stays below the recovery density for [3] consecutive intervals. This would indicate that conditions continue to be acceptable despite the removal of the restriction. As a result, the recovery phase would advance to Stage 2.
- Stage 2 If conditions remain acceptable at the end of Stage 1, then stage 2 will consist of removing the HOV ONLY restriction from all advanced signage. During this stage, all vehicles will be permitted to use the Express Connector. Meanwhile, the TCM will remain engaged. This stage will remain in effect until one of the following conditions are met:
  - Condition #1: The density in the EB critical zone rises and exceeds the
    maximum density for [3] consecutive intervals (configurable). This would
    indicate that congestion is threatening to return. Consequently, the HOV ONLY
    restriction would be re-imposed, and the 3<sup>rd</sup> level of control would be reinstated.
  - Condition #2: The queue at the TCM exceeds [3400 feet] or [100 vehicles] (both values of which are configurable). This would indicate that the TCM is not able to handle the demand resulting from the lifting of the HOV ONLY restriction. To relieve the queuing problem, the HOV ONLY restriction would be restored, and the 3<sup>rd</sup> level of control would be reinstated.
  - Condition #3: The density in the EB critical zone stays below the recovery density for [3] consecutive intervals. This would indicate that conditions continue to be acceptable despite the lifting of the HOV ONLY restriction. As a result, the recovery phase would advance to Stage 3.
- Stage 3 The third stage in recovery is to disengage the TCM. Advanced signage will be changed to eliminate all warnings of "METER ON," and normal Level 1 operations will resume.

In short, the recovery phase represents the gradual return, in stages, to level 1 (pricing only) operations. During each stage, traffic conditions are monitored to ensure that unraveling the restrictions doesn't result in a deterioration of conditions to unacceptable levels.

### 1.4. Toll Connector Meter

As noted in the previous section, the toll connector meter (TCM) is a critical component of the proposed pricing framework. Whenever the density in the EB critical zone is operating at an unacceptable level, the TCM may be engaged to better manage demand and to control access to the 91 Express Lanes.

The TCM is located 0.65 miles beyond the point at which the Express Connector diverges from SR-241. This positions the TCM about 0.93 miles before the point at which the Express Connector connects to the 91 Express Lanes. The TCM will provide access for a single lane of traffic. Unlike some ramp meters, the TCM will not include a separate lane for High Occupancy Vehicles (HOVs).

Whenever the TCM is engaged, it is important to monitor the queue length upstream of the meter. To perform this function, three queue detectors (labeled in bold blue font on the diagram) will be positioned at approximately 1000' intervals between the TCM signal and the point at which the NB-to-EB Express Connector diverges from SR-241. An excerpt from the plans is depicted in Figure 6 below.

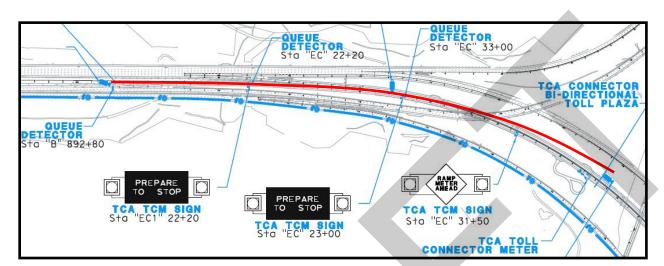


Figure 6 – Layout of TCM and associated Queue Detectors

The bold, red line in Figure 6 depicts the maximum length of the queue at the TCM—currently set at approximately 3400' (0.65 miles). This space can accommodate approximately 95-115 vehicles, depending on vehicle length and car-following behavior. If the queue detectors determine that the queue has exceeded its maximum length, then the next level of PDM will be engaged. This could mean converting to HOV ONLY (if the Express Connector is currently open to all vehicles), or it could mean converting to BUS/REGISTERED VANPOOLS ONLY (if the Express Connector is currently operating as HOV ONLY).

Because of the integral role that these queue detectors will play in managing demand as part of progressive demand management, and because of their relationship to dynamic pricing, it will be critical that the toll system integrator regularly maintain them.

### 1.5. Summary

To summarize, the proposed tolling concept for the NB-to-EB Express Connector employs four progressive levels of demand management. The intent of these levels is to introduce increasingly aggressive strategies for restricting the flow of traffic on the Express Connector as a means of supporting congestion-free conditions on the 91 Express Lanes.

Throughout the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> levels of demand management, the queue at the TCM and the density in the EB critical zone are both monitored. The framework continually escalates to higher levels of demand management when either (a) the density in the EB critical zone remains stubbornly high (i.e., at or above maximum density), or (b) the queue at the TCM becomes excessively long. The framework gradually transitions back to the 1<sup>st</sup> level of demand management once the density in the EB critical zone consistently operates below the recovery density. The reversion to the 1<sup>st</sup> level of demand management occurs in the reverse order of the way the restrictions were imposed.

Appendix B depicts how the corridor's electronic signs in the NB-to-EB corridor will be configured to support the various levels of progressive demand management. The graphics in Appendix B show the following:

- How the signs will be arrayed (1) under normal (free-flow conditions), (2) when the TCM is engaged, (3) when the facility converts to HOV ONLY, and (4) when the facility converts to Bus/Registered Vanpool Only (see Figure 11 through Figure 17).
- How the signs will be arrayed if the NB-to-EB Express Connector needs to be closed because of an incident or due to maintenance activity (see Figure 18).

### 1.6. Dynamic Pricing Day 1 Plan

The progressive demand management framework presented in the preceding subsections (1.1 through 1.5) represents the baseline approach for ensuring efficient traffic operations in the NB-to-EB direction It provides an overview of the array of tools available for enabling the Express Connector to meet its operational goals. In short, it presents the "full toolbox" at the disposal of the facility operator.

Stantec applied this toolbox to its traffic modeling efforts to help anticipate how traffic operations would respond in the opening year. Stantec made the following key observations:

- For the first part of the week (**Mon-Wed**), an Express Connector toll of \$9 or less would be sufficient to manage demand in the EB critical zone. No additional PDM measures would be necessary to appropriately manage either the EB critical zone or conditions on the East End.
- However, Thursdays and Fridays would be more problematic. To manage conditions at the East End, the Express Connector toll would need to be in the \$20-\$30 range, and the discharge rate at the TCM would need to be lowered to 240 vehicles per hour (one vehicle every 15 seconds). F/ETCA considered this to be an unsustainably low discharge rate that would likely trigger many violations.
- **Weekends** were not modeled but Stantec's expectation was that demand would generally be less than the first part of the week (Mon-Wed).

In short, the application of the "full toolbox" on Thursdays and Fridays would likely create a situation

requiring the engagement of the TCM at a very low discharge rate. This, in turn, would lead to either a significant number of violations (potentially compromising conditions at the East End) or an extensive building of queues (which would inevitably lead to HOV ONLY mode).

As a means of avoiding operational disruptions on Thursday and Friday afternoons, it was decided to modify the approach to PDM. This approach would take the following two steps during "Peak Density periods" on Thursday and Friday afternoons:<sup>6</sup>

- Skip the 2<sup>nd</sup> level of control (TCM) entirely, since it will be ineffective during periods of extremely high demand.
- Preemptively implement the 3<sup>rd</sup> level of control, HOV ONLY, at the front end of the peak travel time. As an option, the TCM can be implemented concurrently with HOV ONLY mode to break up platooning and help with enforcement. This approach will help avert operational problems in the EB critical zone and at the East End.

The preemptive implementation of HOV ONLY would best be done on a *scheduled* basis, based on regularly- observed travel patterns in the corridor. This will introduce a degree of predictability to demand management, making it easier for regular drivers through the corridor to adjust their travel accordingly.

Stantec's modeling of the above approach indicated the following:

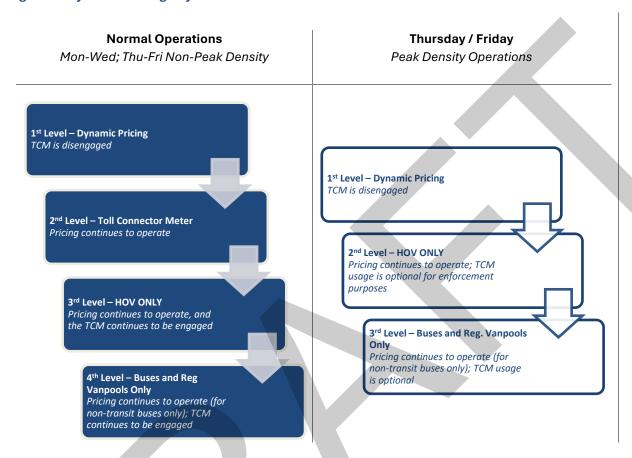
- A \$20 toll on the Express Connector, accompanied by an access restriction lasting 2 hours and 15 minutes, would be sufficient to manage demand in both the EB critical zone and the East End.
- A \$30 toll on the Express Connector, accompanied by an access restriction lasting 1 hour and 15 minutes, would be sufficient to manage demand in both the EB critical zone and the East End.

In other words, skipping the TCM level and preemptively implementing HOV ONLY should provide a consistent and effective strategy for managing demand during Peak Density periods on Thursdays and Fridays. During the remainder of the week, the normal progression presented graphically in Figure 1 will apply.

The basic framework for the Dynamic Pricing Day 1 Plan is presented in Figure 7.

<sup>&</sup>lt;sup>6</sup> The term "Peak Density period" is used in the Exhibit to refer to a period of extremely high demand. Peak Density periods are a subset of peak periods, and they are only observed in the eastbound direction. A detailed review of traffic data has indicated that Peak Density periods occur on Thursday afternoons (2-3pm) and Friday afternoons (1-3pm). Traffic modeling has indicated that, outside of Peak Density periods, pricing alone should be sufficient to manage demand on the Express Connector. However, during Peak Density periods, the additional measures provided by the progressive demand management (PDM) framework will likely be necessary. The strategy presented in Section 1.6 outlines a unique application of PDM to be deployed during Thursday and Friday Peak Density periods in the initial (Day 1) stages of dynamic pricing.

Figure 7 – Dynamic Pricing Day 1 Plan



For a detailed summary of the results of Stantec's traffic modeling of the NB-to-EB Express Connector, please see the matrix in Appendix A.<sup>7</sup>

### 1.7. Flexible Deployment of Progressive Demand Management

The previous section laid out an alternative implementation of progressive demand management (PDM), to be deployed during Thursday and Friday Peak Density periods. This alternative differs from the "Full Toolbox" approach to PDM in two important ways:

- First, one level of PDM—the "Toll Connector Meter" level—is avoided entirely.
- Second, the second level of PDM is triggered by a <u>schedule</u> rather than by <u>operational</u> <u>conditions</u>.

This variation of PDM in the context of Thursday and Friday Peak Density periods highlights an important point: Final implementation of dynamic pricing on the NB-to-EB approach should support flexible alterations of the progressive demand management structure initially presented in Figure 1.

<sup>&</sup>lt;sup>7</sup> The framework developed for Normal Operations and for Peak Density Operations was based on information available at the time of this Agreement. Please note that framework will be re-evaluated (and adjusted if needed) prior to opening as more recent data becomes available.

Specifically, any final implementation of dynamic pricing should be able to accommodate the following:

- Enabling the various levels of PDM to be engaged in a different order. This would include, for
  example, the ability to engage the HOV-related access restrictions <u>before</u> engaging the toll
  connector meter.
- **Enabling various levels of PDM to be bypassed entirely**. This would include, for example, the ability to completely skip the Toll Connector Meter.
- Facilitating the option to use either HOV2+ ONLY and HOV3+ ONLY. There is considerable uncertainty regarding the relative volume of traffic that would use the Express Connector under an HOV2+ restriction as compared to an HOV3+ restriction. It would be helpful to have the flexibility to enable a less-onerous HOV2+ restriction prior to any subsequent restrictions. In other words, in the ultimate implementation of PDM, it would be helpful if Level 3 (HOV ONLY) were subdivided into Level 3a (HOV2+ ONLY) and Level 3b (HOV3+ ONLY). Moreover, the PDM framework should have the flexibility to prefer one over the other, or alternatively to deploy both in sequence.
- Supporting multiple methods of transition from one level of PDM to another. The "Full Toolbox" approach to PDM, as outlined in Sections 1.1 through 1.5, presented a detailed plan for moving from one level of PDM to another in an automated fashion, based on evolving traffic conditions. However, the ultimate implementation of PDM should also support both scheduled and manual transitions between levels. For example, the success of the Dynamic Pricing Day 1 plan depends on the ability to preempt the normal functioning of dynamic pricing by scheduling a transition to HOV ONLY.

Another feature of the "flexible deployment" approach to PDM would be the ability to use the toll connector meter as a traffic control device. For example, consider the "Thursday/Friday Operations" framework depicted in Figure 7. During the period in which the HOV ONLY restriction is engaged, the TCM will not be operating as a meter. However, it may be helpful to have the TCM activated, with short cycle lengths, during the HOV ONLY restriction. Its effect would be to slow traffic and break up platoons, which in turn could support HOV enforcement efforts.

The process of implementing alterations to the baseline PDM framework is discussed in Section 5.2 of Exhibit F (*Traffic Operations Metrics Monitoring and Governance*).

# 2. Progress Demand Management on the Westbound-to-Southbound Connector

The proposed approach for the WB-to-SB Express Connector will focus on managing demand through price alone. There are at least three obstacles to effective implementation of the full "progressive demand management toolbox" (as laid out in Section 1) in the WB-to-SB direction:

- First, since the Express Connector lies <u>downstream</u> of the WB critical zone, there is no way to effectively implement a tollconnector meter.
- Second, the existing signage is insufficient to support the implementation of progressive demand management (PDM). An entirely new array of signs would be required to communicate restrictions such as HOV ONLY or BUS/REGISTERED VANPOOLS ONLY.
- Third, even if signage were available, the implementation of PDM would have tremendous
  potential to confuse drivers. To illustrate, consider a situation in which F/ETCA sought to
  impose an HOV ONLY restriction on the WB-to-SB Express Connector. To do so, F/ETCA would

need to post an HOV ONLY message prior to the entrance to the WB Express Lanes. This sign would necessarily be placed in view of **all** drivers accessing the OCTA 91 Express Lanes in the WB direction. Therefore, the sign would need to clearly communicate that the <u>restriction only applied to drivers destined for the WB-to-SB Express Connector</u>. There would be a high risk that OCTA customers who were planning to travel the full length of the 91 Express Lanes could be confused and therefore avoid using the Express Lanes, when in fact the HOV restriction did not apply to them.

For these reasons, it has been determined that demand for the WB-to-SB Express Connector will be managed through Level 1 (price alone). Subsequent levels may be implemented in the future as traffic volumes increase and density rises.

### 2.1. WB-to-SB Approach Overview

In general terms, the proposed tolling approach for the WB-to-SB Express Connector can be described as follows:

• The tolling approach will focus on the 1.55-mile WB critical zone depicted in Figure 8. Tolling operations will be designed to ensure that this segment of roadway operates at or above agreed-to performance metrics. Please see Exhibit F of the Operating Agreement for a detailed discussion of traffic operations metrics.

Start of WB critical zone Length = 1.55 miles

Start of WB critical zone – OCTA Express
Lanes begin

End of WB critical zone – start of
WB-to-SB Express Connector

2 lanes continue west

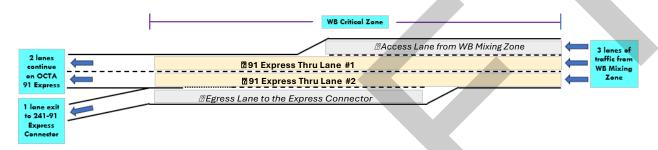
1 lane exits via left-hand ramp

Figure 8 – WB Critical Zone of the 91 Express Lanes

- The goal for tolling operations should be to maintain conditions such that they are at or below a configurable density level in the WB critical zone. The desired density level for the WB critical zone need not be identical to the desired density level for the EB critical zone.
- The price to use the WB-to-SB Express Connector shall be related to the density observed in the WB critical zone. The calculation of density in the WB critical zone will focus on data collected

from the two thru lanes that continuously serve the 91 Express lanes. These are illustrated by the shaded lanes depicted in Figure 9. The calculation of density will not consider speeds and volumes collected from the egress lane to the Express Connector, nor will it consider speeds and volumes collected from the access lane from the WB mixing zone prior to its merge onto the 91 Express Lanes. The purpose of this restriction is to ensure that traffic being served by the 91 Express Lanes receives congestion-free service, regardless of what is going on in the adjoining lanes.





 As noted in the discussion of the EB critical zone, traffic conditions in the WB critical zone will be monitored, densities calculated, and prices adjusted at frequent intervals. The intervals should be no shorter than two minutes in length and no longer than fifteen minutes in length, with a recommended duration of [5] minutes. The duration of the interval should be configurable and should be the same in eachdirection.

### 2.2. Formula Governing Density-Price Relationship

The graphic depicted in Figure 10 illustrates the proposed relationship between density and price for the WB- to-SB Express Connector. The basic parameters of the graphic are similar to those that were presented for the NB-to-EB Express Connector. However, the actual values underlying the graphic may differ in each direction.

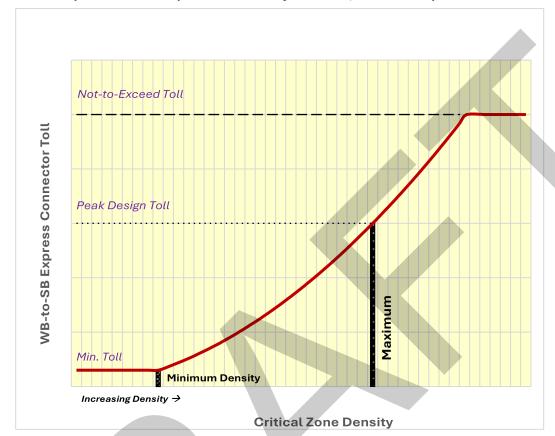


Figure 10 - Conceptual Relationship between Density and Price, WB-to-SB Express Connector

The components of Figure 10 are very similar to those of Figure 4. They are defined below.

- **Minimum Density**. This is the density level in the critical zone above which the toll rate begins to rise. If the density in the critical zone is at or below this level, the minimum toll will apply. Stated another way, the "minimum density" represents the highest density level at which the minimum toll will apply.
- **Minimum Toll**. This is the toll rate that would be assessed whenever the density in the WB critical zone is at or below the "minimum density" level. It is the lowest toll that would be charged for the Express Connector.
- Maximum Density. This represents the maximum density that would be considered acceptable
  in the WB critical zone. Toll rates would escalate very quickly when the density exceeds this
  level.
- **Peak Design Toll**. This represents the highest toll rate that would normally be charged to customers to use the Express Connector. This toll rate would apply when the density in the EB critical zone reaches the maximum density.
- **Not-to-Exceed Toll.** This represents the maximum toll rate that would be charged. A Not-to Exceed Toll may be used to prevent the dynamic pricing system from producing an unexpectedly high toll rate, but is not permitted to be used as a price cap. The Parties will establish a Non-to-Exceed Toll for purposes of controlling and monitoring the dynamic pricing algorithm.

The general formula governing the curved portion of the density-price graph is essentially the same as

the formula governing the NB-to-EB Express Connector. The formula is described below.

$$Toll = k * (\theta * D)^{\beta}$$

Where:

k = minimum toll

D = density in the EB critical zone

 $\Theta$  = multiplier, calibrated such that " $\Theta$  \* D" = 1.0 at the point of minimum density

 $\beta$  = rate escalation factor

- To ensure that tolls escalate at an ever-increasing rate as density increases, β should be set at a value greater than 1.0
- The value of ß should be calibrated such that the toll rate reaches the <u>peak design toll</u> when density reaches the <u>maximum density</u> level described above

To illustrate, consider the following hypothetical situation in which the following parameters are defined:

- The minimum toll rate is\$3.00
- The minimum toll rate applies to all densities up to 9 vplpm
- The peak design toll is\$30
- The maximum density is 30vplpm
- The not-to-exceed toll is \$50

The formula in this instance would be:

Toll = \$3.00 \* (0.1111 \* D)<sup>1.9125</sup>

where D = density in the WB critical zone subject to a minimum toll of \$3.00 and a not-to-exceed toll of \$50.00

The formula described above translates density into price in the following manner:

- When the density in the WB critical zone is <u>at or below the minimum density</u> of 9 vplpm, the toll is equal to the minimum toll of \$3.00.
- When the density in the WB critical zone is <u>at the maximum density</u> of 30 vplpm, the toll is equal to the peak design toll.
- When the toll reaches the not-to-exceed toll, the price holds regardless of the recorded density. Under the parameters of the formula noted above, the not-to-exceed toll of \$50 is reached when the density in the critical zone is nearly 39 vehicles per lane per mile (vplpm). Any density above that level would still trigger a toll of \$50.
- All values should be configurable to enable an appropriate pricing response to actual
  conditions. The values to be deployed when the system goes live will be determined in
  consultation with all Partner agencies. This process will be informed by simulation modeling and
  testing.

As noted earlier, the key parameters (e.g., minimum toll rate, minimum density, peak design toll rate, maximum density) may be different in each direction. The process of determining these key parameters will be informed by simulation modeling and testing. The values to be deployed when the system goes live will be determined in consultation with all Partner agencies.

### 2.3. Benefits and Risks of Demand Management by Price Alone

The proposed pricing framework for the WB-to-SB Express Connector implicitly assumes that <u>price</u> <u>alone</u> will be sufficient to both (a) manage demand for the Express Connector, and (b) maintain acceptable conditions within the WB critical zone. No additional control measures will be employed in the WB-to-SB direction. This approach, which contrasts with the "progressive demand management" approach recommended for the NB- to-EB direction, carries both benefits and risks.

- Benefits of the "Price Alone" approach
  - Simplicity. The price to use the Express Connector is a function of density, with no other layers of control required.
  - o Clarity. This approach avoids potential confusion for OCTA customers.
  - Cost. This approach is cheaper to implement (by avoiding the need for new signage) and operate (less TOC support required).
- Risks of the "Price Alone" approach
  - Acceptable cost. This approach requires that a price that is lower than the "not-to-exceed toll" will be sufficient to manage conditions in the WB critical zone.
  - **Fewer tools**. If price alone fails to manage the demand in the WB critical zone, there is no backstop (such as a meter or an access restriction).

Initial traffic modeling has indicated that peak-period conditions in the WB critical zone can be sustained with an Express Connector toll of \$11. In other words, traffic modeling to date does <u>not</u> support the need for progressive demand management (PDM); pricing alone should be sufficient to sustain acceptable traffic operations. However, in the future, the governance team (discussed in Exhibit F of the Operating Agreement), through continuous operational monitoring and oversight, will have the opportunity to incorporate additional PDM tools beyond price (as needed) to satisfy the corridor's performance metrics.

### Appendix A. Stantec Modeling Summary

Stantec modeled six scenarios as part of its detailed analysis of progressive demand management for the NB-to-EB Express Connector. These scenarios are described below:

- Scenario 0 Baseline. This scenario assesses the no-build condition.
- Scenario 1 Dynamic Pricing Only. This scenario considers the toll rate that would need to be charged on the Express Connector if *pricing alone* were required to satisfy the performance metrics. The key outcome of this scenario was that the EC price would need to be very high to manage demand by itself.
- Scenario 2 Dynamic Pricing + TCM. This scenario considers how the toll connector meter (TCM) would need to operate (in terms of discharge rate and length of operation) if it were engaged once the Express Connector toll hit a certain level. The key outcome of this scenario was that, if the EC toll were held to a reasonable level, then the discharge rate would need to be extremely (and perhaps unmanageably) low to manage demandappropriately.
- Scenario 3 Dynamic Pricing + TCM + HOV3+ Only. This scenario considers the combined implementation of dynamic pricing (held to \$20 or less), the TCM (held to a discharge rate of no less than 600 vehicles per hour), and HOV ONLY (defined as 3 or more occupants). The key outcome of this scenario was that the TCM would need to be engaged for 2 hours and 45 minutes during Friday peak periods. For most of that time (2:15), the HOV ONLY restriction would also need to be engaged.
- Scenario 4 Dynamic Pricing + HOV3+ Only. This scenario considers bypassing the TCM stage and going directly from "Dynamic Pricing Only" to "Dynamic Pricing + HOV ONLY." The rationale is that bypassing the TCM eliminates a very short-lived stage of PDM and, in doing so, avoids any potential queuing issues at the TCM. The key outcome of this scenario is the discovery that this strategy, coupled with a toll rate of \$30 at the Express Connector, yields a situation in which access restrictions are only required for 1:15 of the peak period on Friday afternoons.
- Scenario 5 Dynamic Pricing + HOV2+ Only. This scenario is nearly identical to Scenario 4, except that the HOV restriction is 2+ instead of 3+. The analysis indicates a very similar result to Scenario 4. A toll rate of \$30, coupled with an HOV2+ restriction of 1:15 during peak periods, is sufficient to manage the demand.

Table 2 (on the following page) provides a detailed summary of the modeling results.

Table 2 – Summary Results of Stantec's Modeling of the NB-to-EB Corridor

EB 2028 EC Scenarios & Results Peak Hour (2-3pm)		Toll Rates		Toll Connector Meter			HOV	FLO		EC vs GP			
		RC 91 EL	241/91 EC	Activ e Time	b/t Queue Delay		Activ e Time	ELC Volume	241 GP queue	Time Savings (*No Build shows GP TT*)	Comments / Additional Information		
0. 2028 No Build	Fri 0	\$10	Not Appli	icable						6.4 mi	*63 min*	Expect 241 GP to worsen over next several years	
M-W 1a Thurs 1a 1. Dynamic Pricing Only Fri 1a Fri 1b	M-W 1a		\$9					700	<1.0 mi	~2 min	Demand requires high tolls on Thurs for 1 hr. and Fri for 1 h		
	\$10	\$46						460	1.6 mi	14 min	hrs. Not required Mon-Wed.  • EC tolls of \$10 or less using Dynamic Pricing is sufficient		
	Fri 1a		\$59	Not Triggered					255	2.1 mi 21 min	to manage Critical Zone, but elevated tolls are needed to manage the East End 91 EL within 3000 vph.		
	Fri 1b	\$12	\$53						325	20 1111		<ul> <li>A higher RC 91 EL toll reduces the ELC toll</li> <li>Using other PDM tools may reduce high EC tolls to</li> </ul>	
	Fri 1c	\$15	\$43			1	1	_	435	1.8 mi	16 min	help manage east end	
	Thurs 2a		\$20	1:30	8 sec	0.3 mi	5 min		505	1.5 mi	8 min	TCM queues within storage limit for <3 hours. Max of 15	
2. Trigger Toll	Fri 2a	\$10		2:30	15 sec	0.3 mi	11 min		295	1.8 mi	6 min	sec b/t green signals (avg hourly)  • \$30 vs \$20 trigger results in shorter TCM queues and	
Connector Meter at	Fri 2b			1:45	15 sec	0.3 mi	9 min	Not Triggered	300	1.9 mi	9 min	less activation time but does not reduce time b/t green signals.	
\$20 or \$30	Fri 2c	\$12	\$30	1:15	12 sec	0.2 mi	6 min		370	1.7 mi	9 min	Changes in RC 91 EL tolls may reduce TCM queue, reduce	
	Fri 2d	\$15		1:00	9 sec	0.2 mi	4 min		460	1.6 mi	10 min	<ul> <li>time b/t green signals, and reduce the duration the TCN active.</li> <li>Metering during peak periods with long wait times may result in customer frustration and unwanted driver behavior.</li> </ul>	
3. TCM at \$20 limited to 6s, HOV 3+ Only	Fri 3a	\$10	\$20	2:45	6 sec	0.3 mi	2 min	2:15	550	3.8 mi	50 min	Limiting time b/t green signals to 6 sec requires HOV 3+ Only mode to reduce EC demand. TCM queues are shorter, but GP queues are longer.	
	Fri 4a	\$10						2:15		3.5 mi	43 min	HOV 3+ Only mode reduces EC demand and eliminat	
1. Trigger	Fri 4b	\$12	\$20	Assumes T active in m dema				1:15	1:15 150-160 vph	2.0 mi	19 min	TCM queues. EC demand may shrink more than needed to manage Critical Zone and East End.	
HOV 3+ Only at \$20 or \$30	Fri 4c	\$15						1:00	VPII	1.8 mi	17 min	241 GP queues are longer since demand is pushed f     EC to GP connector.	
	Fri 4d	\$10		Activa	ting TCM wh	hen in HO	V ONLY	1:15		2.2 mi	21 min	Higher RC 91 EL tolls allows for less HOV Only active time	
assumes	Fri 4e	\$12	\$30	help manage demand. vph 91 EL toll and less GP c		/ enforcement to		1:15		2.1 mi	20 min	• \$30 vs \$20 trigger results in less HOV Only time at \$10 RC	
25% HOV3+)	Fri 4f	\$15				91 EL toll and less GP queues. Otherwise, \$30 vs \$20 trigger reduces EC demand and extends GP queues							
10 (0.)	Fri 5a	\$10						2:15		1.8 mi	17 min	More EC demand and shorter GP queues versus	
5. Trigger	Fri 5b	\$12	\$20	Assumes TCM not			1:15	370-380	0.9 mi	8 min	HOV3+ scenarios • \$30 vs \$20 trigger results in less HOV Only time at \$10 RC		
HOV 2+ Only at \$20 or \$30	Fri 5c	\$15			active in r			1:00	vph	0.6 mi	5 min	91 EL toll and less GP queues. Otherwise, \$30 vs \$20 trigger reduces EC demand and extends GP queues	
	Fri 5d	\$10		1:15 1.5 mi 13		13 min	Higher RC 91 EL tolls allows for less HOV Only active t						
assumes 60%	Fri 5e	\$12	\$30	Activating TCM when in HOV ON may improve HOV enforcement	nent to	1:15	320-330	1.3 mi	11 min	and decreases GP queues.  • In scenarios with \$10 or \$12 RC 91 EL toll, east end			
HOV2+) Fri 5f		\$15	1		help manag	ge aemand	1.	1:00	vph	1.0 mi	8 min	<ul> <li>volume exceeds 3000 vph at 60% HOV Share, so improved</li> <li>HOV enforcement and/or other PDM tools needed.</li> </ul>	

### Appendix B. Electronic Signage Scenarios

The nine graphics in this appendix depict how the corridor's electronic signs will be configured to support the various levels of progressive demand management. The graphics are laid out in the following order:

- Figure 11 (off-peak) and Figure 12 (peak) depict the array of signage that supports normal operations on the NB-to-EB Express Connector.
- Figure 13 (off-peak) and Figure 14 (peak) depict the array of signage that supports operations when the **TCM** is **engaged** on the NB-to-EB Express Connector.
- Figure 15 (off-peak) and Figure 16 (peak) depict the array of signage that supports operations when the NB-to-EB Express Connector transitions to **HOV ONLY** mode.
- Figure 17 depicts the array of signage that supports operations when the NB-to-EB Express Connector transitions to Transit and Vanpool Only mode.
- Figure 18 depicts the array of signage informing the public if the NB-to-EB Express Connector is **closed** (e.g., because of an incident or due to maintenance requirements).
- Lastly, Figure 19 depicts the array of signage that supports traffic operations for the WB-to-SB Express Connector.

Figure 11 – NB-to-EB Sign Configuration, Dynamic Pricing in Free-Flow Conditions (Off-Peak)

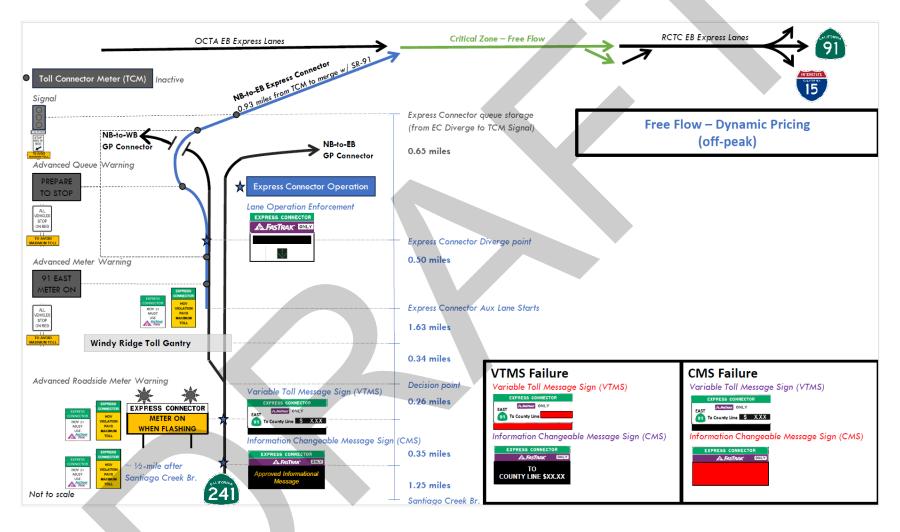


Figure 12 – NB-to-EB Sign Configuration, Dynamic Pricing in Free-Flow Conditions (Peak)

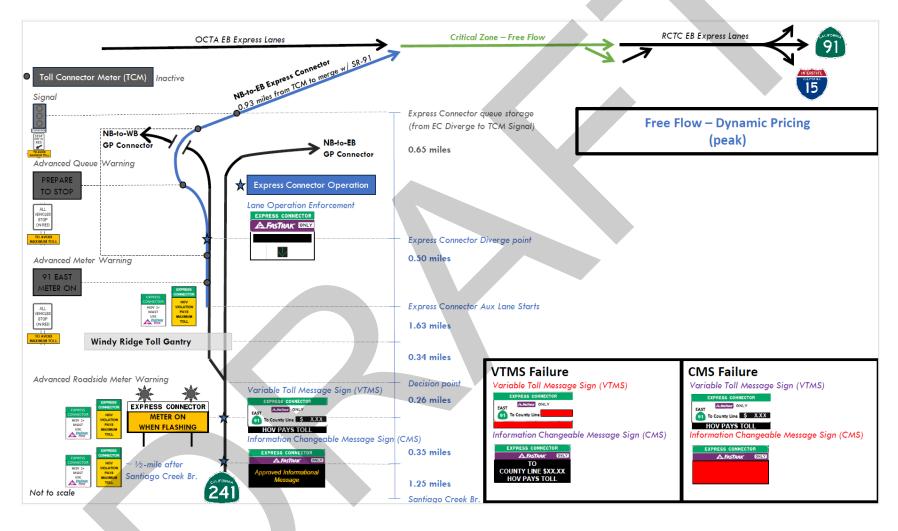


Figure 13 – NB-to-EB Sign Configuration, TCM Engaged (Off-Peak)

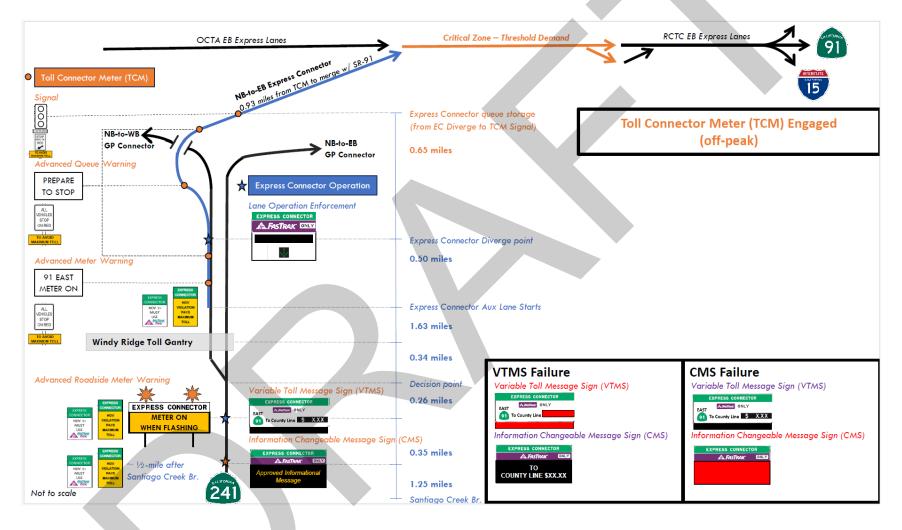


Figure 14 – NB-to-EB Sign Configuration, TCM Engaged (Peak)

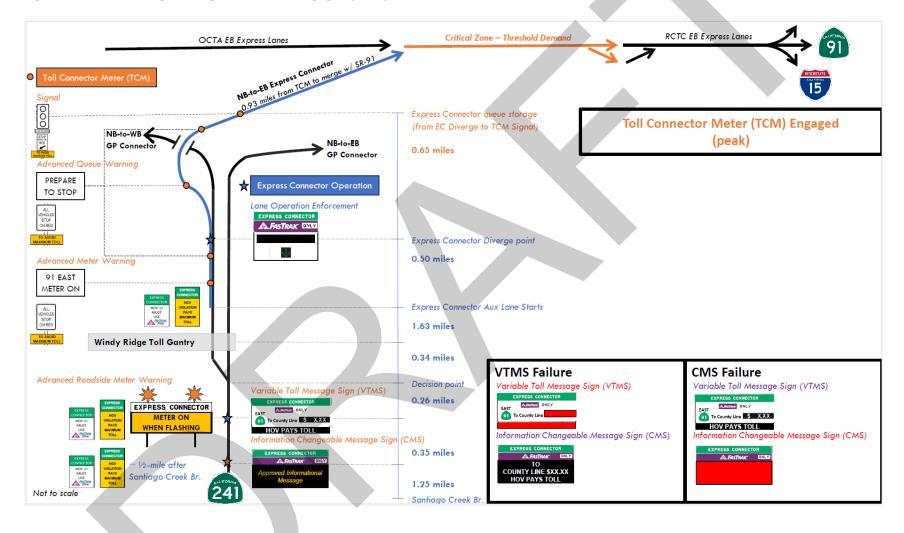


Figure 15 – NB-to-EB Sign Configuration, HOV ONLY Mode (Off-Peak)

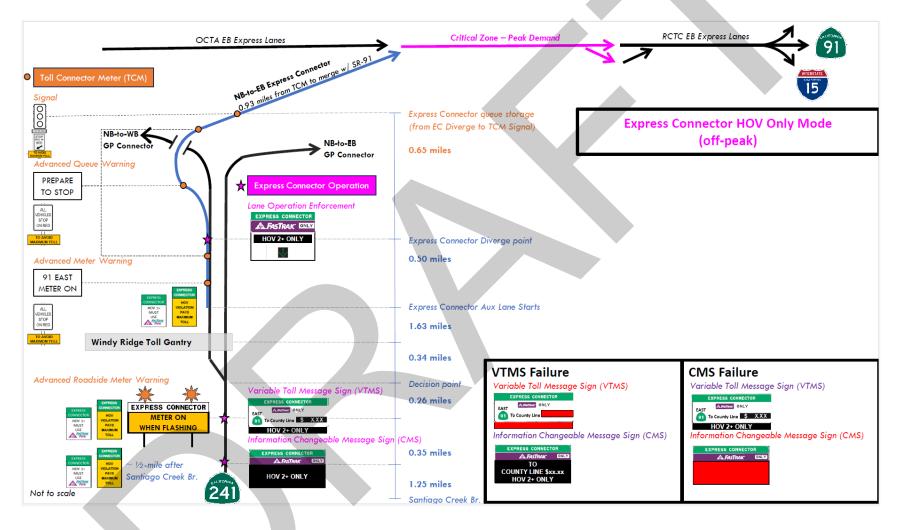


Figure 16 – NB -to-EB Sign Configuration, HOV ONLY Mode (Peak)

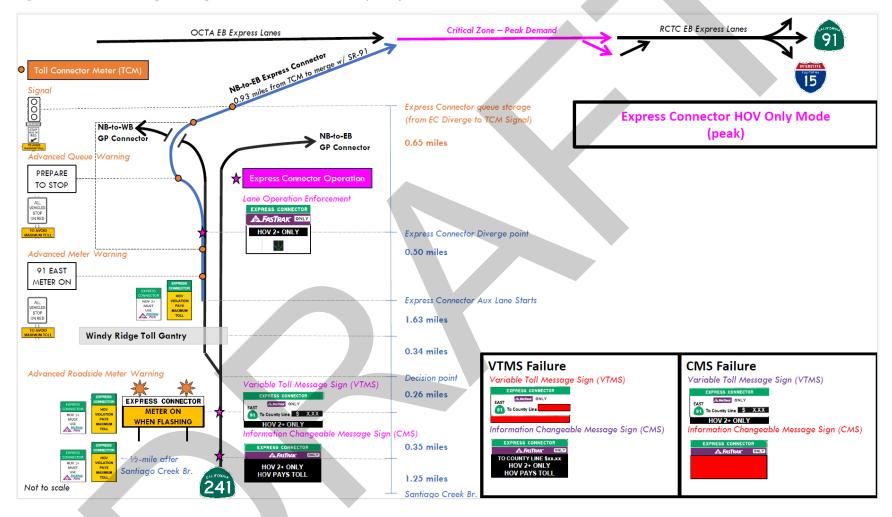


Figure 17 – NB-to-EB Sign Configuration, BUS/REGISTERED VANPOOLS ONLY Mode

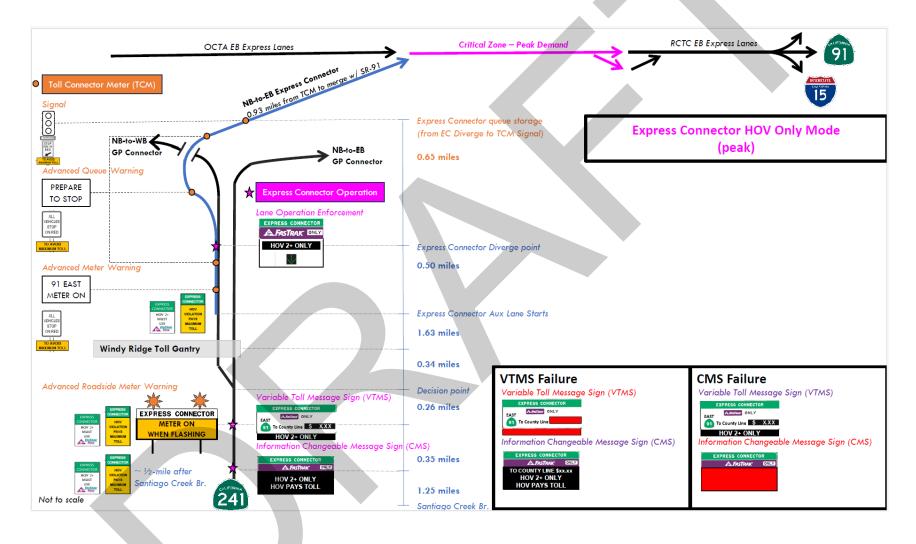


Figure 18 – NB-to-EB Sign Configuration, CLOSED Mode

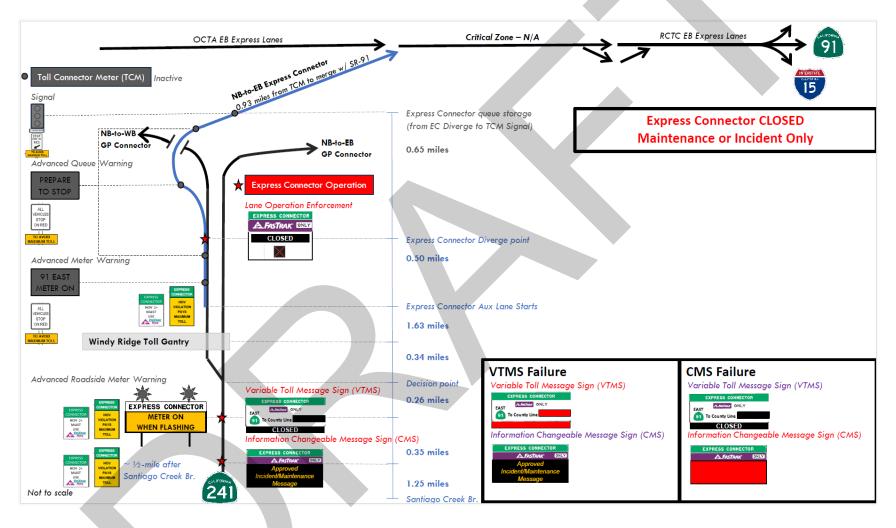


Figure 19 – WB-to-SB Sign Configuration



# EXHIBIT E POLICIES AND OPERATING RULES

### 1. Background

F/ETCA currently operates toll collection systems on SR-133, SR-241, and SR-261, commonly referred to as The Toll Roads. The Toll Roads operate under common policies and operating rules. The 241/91 Express Connector (Express Connector" or "241/91 EC" is a unique facility in that it directly connects to the 91 Express Lanes, and therefore, it requires its own set of policies and operating rules that may differ from the existing Toll Roads.

This exhibit provides the details of the policies and operating rules to be used for the operation of 241/91 EC and sets forth the policies that require adoption by the F/ETCA through the required public process.

### 2. Goals

Establish policies and operating rules for the 241/91 EC to provide alignment between the 241/91 EC and 91 Express Lanes where possible, to avoid motorist confusion, comply with project requirements of the State, and to achieve the established performance metrics.

### 3. Hours of Operations

The Express Connector is a 24-hour, seven day per week tolled facility.

### 4. Eligibility

Eligible users include two-axle vehicles, motorcycles, buses, and vanpools with valid FasTrak® transponder accounts. All vehicles must weigh under 10,000 pounds.

All two-axle vehicles are eligible to access the Express Connector, but vehicles with 3-or-more axles (excluding buses) and vehicles towing a trailer are prohibited from the Express Connector.

Note that eligible users are subject to Express Connector access restrictions that may be in effect as described in Section 6.2 (Progressive Demand Management). Applicable toll discounts are described in Section 7 (Toll Discounts).

### 5. Toll Collection

Automated toll collection is performed by utilizing All-Electronic Tolling (AET) technology that assesses tolls through RFID transponders and license plates associated with a valid FasTrak account. Express Connector users with a valid FasTrak account with any California toll agency can pay their toll by deducting the amount due from their FasTrak account.

The Toll Roads FasTrak Account customers must comply with The Toll Roads

FasTrak Terms and Conditions. The Toll Roads FasTrak Account customers must register their vehicle's license plate to their account and properly mount their transponder to their vehicle's windshield. If a transponder is not read, the license plate is used to charge the toll to the customer's account. Express Connector users are required to have a properly mounted transponder

New FasTrak Accounts established with The Toll Roads are issued ISO-18000 6C protocol transponders. FasTrak customers can obtain transponders from The Toll Roads Customer Service Center in person or through the mail and at participating retailers. Transponders obtained from participating retailers must be registered to the customer's Toll Roads FasTrak Account.

F/ETCA's Pay Toll Now feature, which enables non-accountholders to pay their TCA tolls online, will not be available for paying Express Connector tolls.

### 6. Dynamic Pricing and Progressive Demand Management

Dynamic Pricing and Progressive Demand Management will be used on the 241/91 EC to achieve the agreed upon performance metrics. Details regarding the design of Dynamic Pricing and Progressive Demand Management are included in Exhibit D of this agreement.

The Parties will work together to achieve the agreed-upon metrics by making necessary changes to the Dynamic Pricing and Progressive Demand as outlined in the governance process ("Governance Process described in Exhibit F (Traffic Operations Metrics Monitoring and Governance). If the Governance Process does not result in unanimous agreement for a change to Dynamic Pricing or Progressive Demand Management OCTA and RCTC will have final approval as described in Exhibit F.

### 6.1 Dynamic Pricing

Toll rates will be set by a dynamic pricing algorithm. The toll rates will increase or decrease based on real-time traffic data to influence traffic demand on the Express Connector itself and the portion of the 91 Express Lanes immediately east of the Express Connector. Toll pricing may also be periodically adjusted to reflect conditions on the east end of the 91 Express Lanes (McKinley St) in Riverside County. The toll rates can adjust as frequently as every three minutes. The toll rate increases and decreases will be limited to \$5 every three minutes.

Initially, the minimum toll will be \$2.00 and will be increased annually based on the F/ETCA approved CPI rate.

The minimum toll, frequency of price change, maximum amount of a single price change, and annual CPI increase will be adopted by F/ETCA and will require board authorization to change. A draft toll policy is attached to this Exhibit as Attachment 1.

The dynamic toll is displayed on Variable Toll Message Signs (VTMS) prior to the location where the traveler decides to use the Express Connector.

### 6.2 Progressive Demand Management

The toll collection system uses Progressive Demand Management strategies in response to changes in traffic conditions on the Express Connector and on the 91 Express Lanes. Express Connector traffic operations are controlled by the following strategies, which are enabled in the following sequence:

- Level 1 Pricing: The Express Connector is open to all eligible users. Congestion is managed using pricing that is dynamically calculated based on real-time traffic data ("Dynamic Pricing").
- Level 2 Toll Connector Meter (northbound only): The Express Connector is open to all eligible users; however, a traffic signal meters the rate at which vehicles may access the Express Connector when congested conditions are detected on the eastbound SR-91 Express Lanes. Express Connector users receive prior notification via signage about the Toll Connector Meter operation.
- Level 3 High Occupancy Vehicles (HOV) Only (Northbound only): The Express Connector is only open to eligible vehicles carrying the number of occupants posted (either HOV 2+ or HOV 3+), including transit vehicles and registered vanpools. Express Connector users are informed by signage that HOV Only mode is in operation.
- Level 4 Bus/Registered Vanpool Only (Northbound only): The Express Connector is only open to buses (with FasTrak accounts) and F/ETCA registered vanpools. Express Connector users receive signage notification about Bus/Registered Vanpool Only mode.

This sequence can vary depending on the performance metrics and the governance team's evaluation. The functionality of dynamic pricing and progressive demand management and their relationship to the performance metrics is found in Exhibit D (Progressive Demand Management) and the governance process for changing dynamic pricing and progressive demand management is found in Exhibit F.

### 7. Peak Periods and Super Peak Periods

The establishment of Peak Periods and Super Peak Periods is critical to the implementation of the HOV discount policy and progressive demand management. The establishment and modification of the Peak and Super Peak periods will be performed through the process set forth in the governance process in Exhibit F.

### 7.1 Peak Periods

During Peak Periods, HOV customers will be charged the full toll. During the non-peak periods, HOV 3+ customers will receive a 100% discount. It is also during Peak Periods that the Progressive Demand Management systems will likely be in use.

The peak periods will be established 6 months prior to the opening of the 241/91 EC. Through the Governance Process, volumes on the 91 Express Lanes will dictate the peak periods. Based on the results of traffic studies, Peak Periods are initially defined as the following hours:

- Eastbound Monday through Thursday, 2-6 PM and Friday 1-7 PM.
- Westbound Monday through Thursday, 5-9 AM.

### 7.2 Super Peak Periods

The Super-Peak periods are a window within the Peak Periods when the 91 Express Lanes are at, or near capacity and can no longer meet the performance metrics defined in Exhibit F. During the Super-Peak Periods, the 241/91 EC will likely be in HOV Only Mode. The HOV Only Mode occupancy level will be set through the governance process.

The Super-Peak Periods will be established 6 months prior to the opening of the 241/91 EC. Through the governance process, volumes on the 91 Express Lanes will dictate the Super-Peak Periods. Super-Peak Periods are currently defined as the following hours:

 Eastbound direction only Thursday from 2 to 3 pm and Friday from 1 to 3 pm.

### 8. Toll Discounts

The following vehicles are permitted use of the Express Connector free or at a discounted toll as defined below:

- **High-Occupancy Vehicles 3+ Non- Peak Periods**: Vehicles with three or more occupants and a valid switchable FasTrak Flex transponder set to 3+ will receive a 100% discount.
- Veterans: Vehicles with Disabled Veteran and related special recognition license plates issued by the California Department of Motor Vehicles with a valid FasTrak account are permitted free travel on the Express Connector at all times, in accordance with California Vehicle Code Section 23301.3.
- Transit vehicles and registered vanpools: Transit vehicles and

registered vanpools are municipal transit buses and public/private vanpools. Eligible vehicles with a valid FasTrak account registered to F/ETCA are permitted free travel on the Express Connector at all times.

Toll discounts will be set by the F/ETCA Board with the adoption of their toll policy resolution.

### 9. Toll Exemptions

Eligible non-revenue vehicles are established at the discretion of F/ETCA in coordination with the Operating Partners. Vehicles with non-revenue status are always eligible for free entrance or use of the Express Connector. Non-revenue usage of the Express Connector is governed partially by California statute and partially by F/ETCA's rules. F/ETCA provides non-revenue usage to emergency providers as required by California Vehicle Code §23301.5. Additionally, F/ETCA may permit non-revenue usage for certain vehicles providing maintenance, safety, and other public services associated with the Express Connector and the 91 Express Lanes. Note that non-revenue vehicles established by F/ETCA do not get free usage of the 91 Express Lanes without the approval of OCTA and RCTC.

### **10**. Toll Evasion Violations

Express Connector users who fail to pay the toll through a FasTrak account are subject to the toll evasion violations process under the California Vehicle Code, Division 17, Chapter 1, Article 4. The California Vehicle Code requires notification of the violation to the registered owner of the subject vehicle; unpaid tolls and violation fees can escalate to collections, vehicle registration holds, and other permitted measures.

F/ETCA enforces the payment of tolls using toll industry best practices and in accordance with the California Vehicle Code and other applicable statutes. F/ETCA makes all reasonable attempts to encourage the payment of tolls by all patrons to promote equitable cost sharing among all users of F/ETCA's facilities. F/ETCA will be amending their existing Toll Enforcement Ordinance to include the 241/91 EC. A draft of the Toll Enforcement Ordinance is attached to this Exhibit as Attachment 2.

Additionally, F/ETCA incorporates a hybrid approach to enforcing violations, consisting of traditional California Highway Patrol enforcement, augmented by technology to create additional deterrents. Express Connector users who violate must pay the following tolls, fees, and penalties depending on the progressive demand management strategies in operation at the time of the violation:

Scenario	Eligible Express	Compliance	Non-	CHP CVC
	Connector Users		Compliance Deterrent	Section
				Enforced

	1			
Normal Mode – HOV Occupancy Violation	Express Connector open to all travelers meeting vehicle eligibility with a valid FasTrak account.  Travelers with 3 or more vehicle occupants and FasTrak Flex transponder set to 3+ are eligible for applicable discount	Customer has 3+ occupants pays Dynamic toll displayed on sign, less applicable discount, as defined in Section 7 (Toll Discounts).	Vehicles not meeting occupancy requirement  pay an elevated Non- compliant Toll (Fixed at \$40).	CVC 23302(a)(1)
Toll Connector Meter (TCM) On	Express Connector open to all travelers meeting vehicle eligibility requirements with a valid FasTrak account; meter limiting access to Express Connector.	Customer pays Dynamic toll displayed on the sign Minus any applicable discounts after stopping at the red TCM signal and proceeding after the signal turns green.	Customers proceeding past a red TCM signal get charged an elevated Non-Compliance Toll (Fixed at \$40).	CVC 21453
HOV-Only Mode	Express Connector open only to all HOV 2+/3+, buses, and Vanpool travelers meeting vehicle eligibility with valid FasTrak accounts and with FasTrak Flex transponders set to 2+/3+; meter limiting access to Express Connector; signage displaying HOV requirement.	HOV 2+/3+ carpools pay Dynamic toll displayed on sign, less applicable discount (offpeak).  Transit and Registered Vanpools are free.	HOV Only Mode Violators (# of occupants < 2, or occupancy designation set to 1) get charged an elevated Non- compliance Toll (fixed at \$40).	CVC 21655.5
Buses and Registered Vanpool Mode	Express Connector open only to Buses and Registered Vanpool travelers with FasTrak account; meter limiting access to Express Connector; signage displaying transit/registered vanpool vehicle requirement	Buses and Registered Vanpools travel free.  Non-transit buses can access connector but must pay full toll during peak hours.	Non-eligible vehicles charged an elevated Noncompliance Toll (fixed at \$40).	TBD  CVC 21655.1(d)  CVC 40240(g)
Closed Connector (Maintenance and Incident Management)	Express Connector closed to all traffic except maintenance vehicles.	Customer Vehicle does not enter Express Connector when it is closed, no toll is charged.	Customers proceeding onto closed connector are subject to CHP Enforcement only, no automated deterrent.	CVC 2818

In addition to the above deterrents, non-compliance with this toll policy is also subject to receiving citations from California Highway Patrol (CHP). If a motorist is found to be non-compliant with more than one of the elements above, they will only be charged one non-compliant toll per transaction. In the event that a single event (for example, proceeding past a red TCM signal) results in both a CHP citation and an automated deterrent, F/ETCA will waive the automated deterrent if contacted by the customer.

In order to create higher value deterrents that do not involve posting elevated tolls to customer FasTrak accounts, F/ETCA may also pursue changes to the California Vehicle Code as needed, such that TCM, HOV Occupancy, and HOV-Only mode related non-compliance could result in a violation similar in nature to a Notice of Toll Evasion.

### 11. Definitions

Acronym/Term	Definition
·	
91 Express Lanes	The express lanes jointly operated by OCTA and RCTC between SR-55 and McKinley Street.
Business Rules	Rules that define all decision points and processes
Dusiness Rules	necessary to execute the operation of F/ETCA's Roadway
	Toll Collection System and Back Office System in
	accordance with the Toll Policy.
California Toll	A collaborative organization composed of California's toll
<b>Operators Committee</b>	facility operators/owners, of which F/ETCA is a member.
(CTOC)	CTOC is the primary resource for interoperability and
	coordination among tolling facilities, and education and
	advocacy regarding tolling in California.
California Vehicle Code	The set of statutes that regulate the operation, registration and
	ownership of motor vehicles, bicycles, and other devices used
	to move people, animals and goods along the state's roadways.
Caltrans	California Department of Transportation is an executive
Caltians	department of the state of California that manages
	transportation functions. Caltrans is responsible for the
	design, construction, maintenance, and operation of the
	California State Highway System and the Interstate
	Highway System within the state's borders.
<b>Customer Service Center</b>	The F/ETCA entity responsible for providing customer
	services, including call center, billing, payment
	processing, and other related services.
<b>Express Connector</b>	The express connector operated by F/ETCA between SR-241
	and 91 Express Lanes.
F/ETCA Board of Directors	F/ETCA members:
	Anaheim, Dana Point, Irvine, Lake Forest, Mission Viejo,
	Orange, Rancho Santa Margarita, San Juan Capistrano, Santa Ana, Tustin, Yorba Linda and the County of Orange.
E/ETCA D D. l'	
F/ETCA Privacy Policy	A policy that defines the personal data collected by F/ETCA
FasTrak®	and how it is used, retained, and shared.
r as 1 rak®	Trademarked electronic toll system that allows motorists to prepay to use any toll road, bridge, or express lane in
	California and thus not need to stop to pay at a read point.
FasTrak Flex	Also known as FasTrak switchable transponder, is a device
газ г гак г ех	with a switch that allows the user to indicate the occupancy of
	the vehicle between 1, 2 and 3+, and become eligible for
	discounts based on occupancy.
Foothill/Eastern Transportation	The Foothill/Eastern Transportation Corridor Agency
Corridor Agency (F/ETCA)	(F/ETCA) manages the 133, 241 and 261 Toll Roads, which
g, (,	link the 91 freeway near the Orange County/Riverside County
	border to Interstate 5 in Irvine and to communities in South
	Orange County.

Acronym/Term	Definition
High Occupancy Vehicles 3+ (HOV3+)	A motor vehicle carrying three (3) or more people.
High Occupancy vehicles 2+ (HOV2+)	A motor vehicle carrying two (2) or more people
Interoperable Agency	Agencies, including members of CTOC, that manages toll accounts that are permitted for use on the Express Connector, in accordance with applicable state statues.
Master Agreement	Agreement between F/ETCA, OCTA, RCTC, and Caltrans for the development and operations of the SR-241/91 Express Lanes Connector.
Operating Partners	An advisory and administrative body made up of representatives of F/ETCA, OCTA, and RCTC who collaborate on decision making regarding the Express Connector as it relates to the 91 Express Lanes.
Orange County Transportation Authority (OCTA)	The Orange County Transportation Authority is the county transportation planning commission, responsible for funding and implementing transit and capital projects for a balanced and sustainable transportation system. OCTA operates the 91 Express Lanes and I-405 Express Lanes in Orange County.
Riverside County Transportation Commission (RCTC)	The Riverside County Transportation Commission is the County Transportation Commission for Riverside County, California. It is an association of local governments in the county and is the funding and operating agency of the 91 Express Lanes and the I-15 Express Lanes.
Roadway Toll Collection System	The hardware, software, and other equipment that supports vehicle transaction creation and processing functions required to toll vehicles accessing the Express Connector.
The Toll Roads	The Toll Roads® logo along with the FasTrak branding are registered trademarks of the Transportation Corridor Agencies. The branding extends to public communications on social media platforms (including Facebook, X, and Instagram), mobile applications for iOS and Android platforms and in communications with the public from the agencies.
The Toll Roads FasTrak Account	An account that is linked to a FasTrak transponder or other means of identification of a vehicle in order to pay a toll to F/ETCA by automatic debit.
Toll Connector Meter	A toll connector meter (TCM) is a traffic signal that controls the rate at which vehicles enter a freeway from a connector to reduce congestion.
Toll Policy	A document that defines the key controlling aspects of the Express Connector toll setting, toll enforcement, and toll operations.
Variable Toll Message Sign (VTMS)	The signs installed before all entrances to Express Connector that display the toll rate information.

## ATTACHMENT 1 DRAFT F/ETCA TOLL POLICY



### F2028-01

### RESOLUTION OF THE BOARD OF DIRECTORS OF THE FOOTHILL/EASTERN TRANSPORTATION CORRIDOR AGENCY ESTABLISHING TOLL POLICY AND TOLL SCHEDULE FOR THE 241/91 EXPRESS CONNECTOR

On motion of Director \_\_\_\_\_\_the following Resolution was adopted:

WHEREAS, the Foothill/Eastern Transportation Corridor Agency (the "Agency") is authorized, pursuant to California Government Code Section 66484.3(f) and California Streets and Highways Code Section 31121, to fix the rate of tolls and other charges to be collected from users of the Foothill and Eastern Transportation Corridors, designated State Routes 133, 241 and 261 (the "Corridor"); and
WHEREAS, the Agency received separate additional authorization from the California Transportation Commission on XX/XX/XX in accordance with section 149.7 of the California Streets and Highways code to fix the rate of tolls and other charges to be collected for a new express connector (the "241/91 Express Connector") that connects the northern portion of State Route 241 directly to the 91 Express Lanes; and
WHEREAS, on November 14, 2019, the Agency adopted a toll rate policy via Resolution F2019-06 establishing a toll rate policy for the Corridor;
WHEREAS, the Agency desires to establish a separate toll rate policy that will apply exclusively to the 241/91 Express Connector, as the Agency desires to provide for the implementation of dynamic toll pricing and a progressive form of traffic demand management for the 241/91 Express Connector; and
NOW, THEREFORE, be it resolved, determined and ordered by the Board of Directors of the Foothill/Eastern Transportation Corridor Agency as follows:
Section 1. The Agency approves the toll rate policy and toll schedule for the 241/9 Express Connector attached as Exhibit A.
Section 2. This Resolution shall become effective immediately upon adoption.
ADOPTED BY THE FOOTHILL/EASTERN TRANSPORTATION CORRIDOR AGENCY ON XXXXXXXXXX.
Chairman Foothill/Eastern Transportation Corridor Agency
ATTEST:

Clerk of the Board Foothill/Eastern Transportation Corridor Agency



I,, Clerk of the Board of	of the Foothill/Eastern Transportation
Corridor Agency, hereby certify that the for	regoing Resolution No. F2028-01 was
adopted on, 2028, by the Boar	d of Directors of the Foothill/Eastern
Transportation Corridor Agency by the follow	wing vote:
Yes:	
No:	
Absent:	
Abstain:	
	VVVVVV Clarka file Danid
	XXXXXX, Clerk of the Board
	Foothill/Eastern Transportation
	Corridor Agency

### **EXHIBIT A**

### **Definitions**

The following terms shall have the meaning as set forth below for purposes of this toll rate policy.

- (a) "241/91 Express Connector" shall mean the tolled roadway connecting the northern portion of State Route 241 directly to the express lanes of State Route 91.
- (b) "Abnormal Traffic Conditions" shall mean when traffic volumes vary from those of a prior period due to a holiday, incident, construction, or other atypical occurrence.
- (c) "Bus/Registered Vanpool Mode" shall mean a demand management tool which will restrict the use of the 241/91 Express Connector to municipal transit buses and public/private vanpools with a properly mounted transponder associated with a valid FasTrak account registered with the Toll Roads.
- (d) "Dynamic Pricing" shall mean the setting of a toll in real-time based on level of traffic congestion and other factors.
- (e) "Dynamic Pricing Algorithm" shall mean the methodology by which tolls are set that aims to manage demand for the 241/91 Express Connector by adjusting tolls using real-time and historic traffic data.
- (f) "Emergency" shall mean a circumstance that poses an immediate and grave threat to life or safety, or a serious environmental hazard that cannot be abated except by closure of the 241/91 Express Connector. Closures of or traffic on the General Purpose Lanes that cause an inconvenience to the public shall not be considered, on their own, an emergency, as used herein.
- (g) "HOV Only Mode" shall mean a demand management tool which will restrict the use of the 241/91 Express Connector to Vehicles which meet the posted occupancy requirement with a valid switchable transponder set to the appropriate setting.
- (h) "Inflation Factor" shall mean the U.S. Bureau of Labor Statistics Consumer Price Index adjuster for the Los Angeles-Long Beach-Anaheim area from January to December of the previous calendar year that will be applied annually to the Minimum Toll Rate.
- (i) "Minimum Toll Rate" shall mean the lowest toll per Trip that the Pricing Algorithm can assign.
- (j) "Non-Peak Period" shall mean a period of time each day when the 241/91 Express Connector and 91 Express Lanes have low traffic volumes allowing for Vehicles with three or more occupants and a switchable transponder properly mounted and set to the appropriate setting.
- (k) "Performance Metrics" shall mean a set of criteria, established through an agreement with 241/91 Express Connector partner agencies, aimed at preventing unsafe traffic conditions on the 241/91 Express Connector and/or State Route 91 and ensuring the traffic volumes from the 241/91 Express Connector do not have a substantial negative impact on the 91 Express Lanes
- (l) "Progressive Demand Management" shall mean operational control strategies that will be applied in the north-to-east direction of the 241/91 Express Connector to effectively manage demand such that the expected performance metrics are achieved. Strategies to be applied include dynamic pricing, toll connector meter, HOV-only mode, and Bus/Registered Vanpool mode.
- (m) "Toll Connector Meter" shall mean a meter installed on the Northbound 241/91 Express Connector which will operate during high traffic volume periods to slow the number of Vehicles entering the 91 Express Lanes.
- (n) "Trip" shall mean a Vehicle's unique passage through or attempted use of the 241/91 Express

Connector.

(o) "Vehicle" shall mean any vehicle as defined in California Vehicle Code Section 670.

### **Dynamic Pricing Principles**

- (a) The 241/91 Express Connector will use Dynamic Pricing to set toll rates with the goal of optimizing Vehicle throughput while meeting the established Performance Metrics.
- (b) A Dynamic Pricing Algorithm which considers traffic volume, density, travel speed, travel time, flow of traffic, and historical traffic patterns to achieve compliance with established Performance Metrics will be used to determine the toll rate.
- (c) The Dynamic Pricing Algorithm will establish a toll rate for each Trip through the 241/91 Express Connector.
- (d) The toll rate will change as frequently as needed to maintain desired traffic conditions, but not more frequently than every three minutes; and
- (e) The toll rate could change in increments of up to \$5.00.

### Minimum Toll Rate

The initial Minimum Toll Rate for the 241/91 Express Connector will be set at \$2.00. The Minimum Toll Rate will be increased annually, effective each July 1, increased by the Inflation Factor and rounded to the nearest 5 cents. When a toll rate is in effect, it shall never be less than the Minimum Toll Rate. Changes to the Minimum Toll Rate will be made as part of the annual toll rate update process and communicated to customers each July 1 through the Toll Roads customer website or as otherwise required by law.

### **Toll Rates**

Toll rates will be determined in real-time based on the level of traffic congestion and other factors consistent with Dynamic Pricing. There is no maximum toll rate. The goals of this 241/91 Express Connector Toll Policy and Toll Schedule are to optimize person throughput in the corridor while meeting established Performance Metrics.

### **Displaying Toll Rates**

- 1. Toll rates will be posted on overhead signs in advance of the 241/91 Express Connector in both directions.
- 2. The customer will be charged the toll posted at the time they passed the toll rate sign.
- 3. Should the toll rate sign not be able to display tolls for any reason, then a historical toll rate for the same time period will be charged to the customer.

### **Abnormal Traffic Conditions or Emergencies and Suspension of Tolling**

A temporary toll schedule may be implemented, which may include the suspension of tolling, during Abnormal Traffic Conditions or Emergencies.

### **Progressive Demand Management**

Traffic volumes on the 241/91 Express Connector will be controlled through a strategy of Progressive

Demand Management. This strategy incorporates Dynamic Pricing and additional controls such as the Toll Connector Meter, HOV Only Mode and/or Bus/Registered Vanpool Mode to limit traffic on the 241/91 Express Connector as needed to optimize Vehicle throughput while achieving established Performance Metrics.

### **Discounts**

The following discounts will be offered on the 241/91 Express Connector during the specified time periods and subject to satisfying all applicable eligibility requirements:

- <u>High-Occupancy Vehicles 3+</u>: Vehicles with three or more occupants and a valid and properly mounted switchable FasTrak Flex transponder set to 3+ will receive a 100% discount during Non-Peak periods.
- <u>Veterans</u>: A Vehicle registered to a veteran and displaying one of the license plates set forth in Vehicle Code Section 23301.3(b)(2)(A)-(F) that was issued by the California Department of Motor Vehicles and associated with a valid FasTrak account will receive a 100% discount at all times.
- <u>Transit vehicles and registered vanpools:</u> Municipal transit buses and public/private vanpools with a properly mounted transponder and valid FasTrak account registered with the Toll Roads will receive a 100% discount during at all times.

### **Toll Rate in Specific Circumstances**

A Vehicle will be charged a \$40.00 toll as opposed to the displayed toll rate in all of the following circumstances:

- The Vehicle fails to stop at the Toll Connector Meter when it is operational.
- A Vehicle does not have the proper occupancy designation set on the FasTrak Flex transponder.
- A Vehicle enters onto or travels through the 241/91 Express Connector during HOV Only Mode, but the number of occupants in the Vehicle does not meet or exceed the posted occupancy requirement.
- A Vehicle uses the 241/91 Express Connector during Bus/Registered Vanpool Mode, but the Vehicle is not a bus or public/private vanpool that has a properly mounted transponder associated with a valid FasTrak account registered with the Toll Roads.

# ATTACHMENT 2 DRAFT TOLL ENFORCEMENT ORDINANCE

TOLL ENFORCEMENT ORDINANCE ADOPTION NO. FE2028-01 AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE FOOTHILL/EASTERN TRANSPORTATION CORRIDOR AGENCY RELATING TO THE ADMINISTRATION OF TOLLS AND THE ENFORCEMENT OF TOLL VIOLATIONS ON THE FOOTHILL AND EASTERN TRANSPORTATION CORRIDORS

WHEREAS, the Foothill/Eastern Transportation Corridor Agency (the "Agency") is authorized, pursuant to California Government Code Section 66484.3(f) and California Streets and Highways Code Section 31121, to fix the rate of tolls and other charges to be collected from users of the Foothill and Eastern Transportation Corridors, designated State Routes 133, 241 and 261 (the "Corridor") and to do such acts as are necessary or desirable in connection with the duties and powers conferred on it, including the establishment of penalties for violations of the toll requirements; and

WHEREAS the Agency received separate additional authorization from the California Transportation Commission on XX/XX/XX in accordance with section 149.7 of the California Streets and Highways code to fix the rate of tolls and other charges to be collected for a new express connector (the "241/91 Express Connector") that connects the northern portion of State Route 241 directly to the 91 Express Lanes; and

WHEREAS, Section 23302.5 of the California Vehicle Code ("Code") provides that it is unlawful for a person to evade or attempt to evade the payment of tolls or other charges on any vehicular crossing or toll highway, and provides that such acts are subject to civil penalties; and

WHEREAS, subpart (d) of Section 23302 of the Code provides that for toll highways where the issuing agency, as defined in Section 40250, permits pay-by-plate payment of tolls and other charges in accordance with the policies adopted by the issuing agency, and where electronic toll collection is the only other method of paying tolls or other charges, it is prima facie evidence of a violation of Section 23302 for a driver to drive a vehicle onto the toll highway without either a transponder or other electronic toll payment device associated with a valid Automatic Vehicle Identification Account with a balance sufficient to pay those tolls or valid vehicle license plates properly attached to the vehicle, and pursuant to subpart (e) of Section 23302 of the Code, "pay-by-plate toll payment" means an issuing agency's use of on-road vehicle license plate identification policies adopted by the issuing agency; and

WHEREAS, subpart (b) of Section 23302 of the Code provides that for toll highways where the issuing agency, as defined in Section 40250 uses electronic toll collection as the only method of paying tolls or other charges, it is prima facie evidence of a violation of this section for a driver to drive a vehicle onto the toll highway without a transponder or other electronic toll payment device associated with a valid Automatic Vehicle Identification account with a balance sufficient to pay those tolls; and

WHEREAS, subpart (d) of Section 23302 of the Code applies to all vehicular crossings and toll highways within the Corridor except for the 241/91 Express Connector; and

WHEREAS, subpart (b) of Section 23302 of the Code applies to the 241/91 Express Connector; and

WHEREAS, Sections 40250, et seq. of Chapter 1 of Division 17 of the Code provide for Page 18

enforcement of civil penalties for violation of a statute, regulation, or ordinance governing the evasion of tolls under the Code, including Code Section 23302.5 and under a federal or state statute or regulation, and under an ordinance enacted by a local authority including a joint powers authority in accordance with administrative procedures set forth in Article 4 of Chapter 1 of Division 17 of the Code; and

WHEREAS, on August 8, 1996 the Agency adopted ordinance F96-01 making the passing through a Corridor toll collection facility without payment of the proper toll a civil violation, and establishing Penalties for such violation and the procedures for issuance of violation notices and enforcement to be consistent with the new provisions of the code; and

WHEREAS, the Agency's Toll Enforcement Ordinance was subsequently amended by the adoption of Ordinance FE2013-01 to adjust Agency's policies and procedures for administration of tolls along with the Toll Evasion Penalty and the Delinquent Toll Evasion

Penalty in the Schedule of Penalties, Schedule A; and

WHEREAS, the availability of new technologies made it necessary and desirable for the Agency to amend Ordinance FE2013-01 to reflect the Agency's deployment of such new and improved technologies and business practices; and

WHEREAS, the enactment of AB 2594 (2022) introduced changes to Chapter 13 of Division 11 and Chapter 1 of Division 17, modifying procedures for toll evasion violations starting July 1, 2024, making it necessary and desirable for the Agency to amend Ordinance FE2018-01 to maintain its alignment with the Code; and

NOW, THEREFORE, THE BOARD OF DIRECTORS OF THE AGENCY DOES HEREBY ORDAIN THAT ORDINANCE FE2014-01 AS ADOPTED MAY 9, 2024 RELATING TO ADMINISTRATION OF TOLLS AND THE ENFORCEMENT OF TOLL VIOLATIONS FOR THE FOOTHILL AND EASTERN TRANSPORTATION CORRIDORS IS REPLACED IN ITS ENTIRETY ON XXXXXXXX at 11:59 p.m. by the following:

Section 1. Definitions. The following terms shall have the meanings as set forth below:

- (a) "Account" shall mean an Automatic Vehicle Identification Account established with Agency.
- (b) "Agency" shall mean the Foothill/Eastern Transportation Corridor Agency.
- (c) "Automatic Vehicle Identification Account" shall mean an account for the electronic payment of tolls incurred by vehicles registered to this account and automatically identified by the Agency's electronic toll collection system, that is established by the patron with Agency, or that is established by the patron with another operator of a toll facility who has an agreement with Agency for the interoperable processing of tolls incurred by their customers with registered accounts for the payment of tolls.
- (d) "Code" shall mean the California Vehicle Code.

- (e) "Corridor" shall mean the Foothill and Eastern Transportation Corridors, except for the 241/91 Express Connector.
- (f) "Department" shall mean the California Department of Motor Vehicles.
- (g) "Electronic Toll Collection" shall mean with respect to the Corridor the collection of tolls through the use of a valid Automatic Vehicle Identification account or an online toll pre- payment or post-payment, as provided in Section 2, below. With respect to the 241/91 Express Connector, "Electronic Toll Collection" shall mean the collection of tolls through the use of a valid Automatic Vehicle Identification account associated with a properly mounted transponder that is located in the vehicle using the 241/91 Express Connector.
- (h) "241/91 Express Connector" shall mean the tolled roadway that connects the northern portion of State Route 241 to the express lanes of State Route 91.
- (i) "Motorist" shall mean the registered owner, rentee, lessee and/or driver of a Vehicle.
- (j) "Notice of Violation" shall mean the notice of toll evasion issued by Agency if a Violation is detected by any means (including automated device, video image, visual observation, or otherwise) and the subject Vehicle is not stopped.
- (k) "Toll Enforcement Officer" shall mean any member of the California Highway Patrol or any employee or contractor of Agency whose duty is to enforce the payment of tolls.
- (l) "Vehicle" shall mean any vehicle as defined in California Vehicle Code Section 670.
- (m) Violation" means the commission of an activity proscribed in Section 3(a) through 3(d) hereof.
- (n) "Toll Evasion Penalty" or "Penalty" shall have the same meaning as set forth in Vehicle Code Section 40252 subdivision (b).
- (o) "Toll Payment Procedures" means the written procedures for implementing Electronic Toll Collection issued by the Agency's Chief Toll Operations Officer as set forth in the Agency's Business Rules and/or Standard Operating Procedures.

Section 2. <u>Electronic Toll Collection</u>. The Chief Toll Operations Officer is authorized to issue written procedures for implementing the system for Electronic Toll Collection for the payment of Corridor tolls and 241/91 Express Connector tolls consistent with this Ordinance and such Board direction as may be given from time to time. The Toll Payment Procedures shall establish the methods by which Corridor toll payment can be made automatically via a valid Automatic Vehicle

Identification Account, including the types of registered electronic toll payment accounts and options available to Motorists through the Agency. The Toll Payment Procedures shall also establish the method by which 241/91 Express Connector toll payments can be made automatically via a valid Automatic Vehicle Identification Account.

Additionally, with respect to the Corridor (not the 241/91 Express Connector), Motorists may make toll pre-payments or post-payments in order to avoid receiving a Notice of Violation pursuant to Section 4(c) of this Ordinance.

- (a) FasTrak Account. To establish an Account with Agency, a Motorist must register for a FasTrak Account prior to traveling the Corridor or 241/91 Express Connector. An applicant for an Account shall execute an application and License Agreement providing for the terms and conditions of use of the Account and establishing a customer credit, cash or invoice Account with the Agency. The Account holder will be supplied a sticker tag/transponder and must properly mount the sticker tag/transponder on the Vehicle in order for tolls to be deducted from the Account when passing through a toll point. Account holders will have the option to purchase a switchable transponder for use in declaring occupancy counts on applicable facilities.
- (b) <u>Account Payment Types</u>. FasTrak Accounts include the following three methods of toll payment:
  - (i) Prepaid Payment Method. The Prepaid Account customer must make a credit card, cash or check payment to open and replenish the Prepaid Account. The payment and replenishment rules for such accounts, including opening balance, replenishment threshold and replenishment amount shall be set forth in the Toll Payment Procedures.
  - (ii) Charge Payment Method. The Charge Account customer is not required to have a prepaid balance but is required to maintain a valid credit card or bank account number on file with the Agency. The Agency will regularly charge the credit card account or debit the bank account as toll trips are taken in accordance with the Toll Payment Procedures.
  - (iii) Invoice Account Method. The Invoice Account customer is not required to have prepaid balance nor a credit card or bank account on file with the Agency. The Agency will invoice the holder of an Invoice Account periodically for all tolls incurred during the invoice period. Invoices are due immediately upon receipt and are past due if not paid within the time period set forth in the Toll Payment Procedures.
- (c) <u>Toll Pre-payment Post-payment</u>. A customer who enters the Corridor

without a valid Automatic Vehicle Identification Account may avoid a Violation by making a pre-payment of the toll amount in accordance with the Toll Payment Procedures up to five days before incurring the toll. This pre-payment option is not available on the 241/91 Express Connector. A customer who enters the Corridor without a valid Automatic Vehicle Identification Account may cure a Violation by making payment within a five-day grace period after incurring a toll by contacting the Agency and making a payment, in accordance with the Toll Payment Procedures. There is no similar grace period for curing a Violation associated with the 241/91 Express Connector. Establishment of an Automatic Vehicle Identification Account is not required to make pre- payment or post- payments for use of the Corridor; however, establishment of an Automatic Vehicle Identification Account and a properly mounted transponder are required to use the 241/91 Express Connector.

### Section 3. Liability for Failure to Pay Toll or Meet Minimum Occupancy Requirements.

- (a) No person shall cause a Vehicle to pass through or attempt to pass through a Corridor toll collection facility or toll point without payment of the proper toll for the Vehicle.
- (b) No person shall cause a Vehicle to pass through or attempt to pass through the 241/91 Express Connector toll collection facility or toll point without a valid Automatic Vehicle Identification account associated with a properly mounted transponder that is located in the vehicle using the 241/91 Express Connector.
- (c) No person shall cause a Vehicle to pass through or attempt to pass through the 241/91 Express Connector toll collection facility or toll point with a transponder declared occupancy that is equal to or greater than the minimum occupancy requirements established for declaring a Vehicle on the 241/91 Express Connector a High Occupancy Vehicle at that particular date and time when the number of occupants within the Vehicle does not meet or exceed the minimum occupancy requirements established for declaring a Vehicle on the 241/91 Express Connector a High Occupancy Vehicle.
- (d) If the payment method for a toll incurred by an Account holder fails (cash balance is overdrawn, credit card declines, bank account debit is not honored, or invoice is past-due), the Account shall be suspended and outstanding transactions will, at the Agency's discretion, escalate to Violations. Subsequent transactions after the account is suspended will immediately escalate to Violations. If an invoice issued to an Invoice Account holder is past-due, all transactions billed on the past-due invoice may be identified in a single Violation Notice, with each separate transaction carrying its own Violation penalty pursuant to Section 4 of this

### Ordinance.

- (e) Except as provided herein, the registered owner(s) and the driver, rentee or lessee of a Vehicle which is the subject of any Violation shall be jointly and severally liable for the Penalties imposed under this Ordinance, unless the registered owner can demonstrate, as provided in Section 5 hereof, that the Vehicle was used without the express or implied consent of the registered owner. A registered owner who pays any Penalty pursuant to this Ordinance shall have the right to recover the same from the driver, rentee or lessee.
- (f) A Motorist who is not the owner of the Vehicle may contest the Notice of Violation in accordance with this Ordinance.
- (g) Any Motorist assessed a Penalty for a Violation shall be deemed to be charged with a non-criminal civil violation.

### Section 4. Penalties and Enforcement of Violations.

- (a) The Penalties for a Violation of this Ordinance shall be the amounts set forth in the Schedule of Penalties, attached hereto as Schedule A and incorporated by reference herein. The Schedule of Penalties may, in the discretion of the Agency's Chief Executive Officer, be amended, from time to time by the Agency, but may not be greater than the amounts established under Code Section 40258 as the maximum Penalties for civil toll evasion violations. Subject to the limitations stated above, the Agency's Board of Directors may establish late payment Penalties and other related charges for Violations, except in the event the driver is arrested pursuant to Article 1 (commencing with Section 40300) of Chapter 2 of the Code, in which case the civil procedure for enforcement of violations that is established by this Ordinance shall not apply. Penalties assessed and paid pursuant to this subsection shall be remitted to the Agency.
- (b) The Agency may designate certain of its employees or contractors as Toll Enforcement Officers. Training and qualifications of the employees or contractors for such designation shall be determined by the Agency. Designation as a Toll Enforcement Officer does not provide the Toll Enforcement Officer with the power of arrest. Any member of the California Highway Patrol patrolling the Corridor shall be deemed to be a Toll Enforcement Officer for purposes of enforcing the payment of tolls.
- (c) If a Violation is detected by any means (including automated device, video image, visual observation, or otherwise) and the subject Vehicle is not stopped, a notice of toll violation shall be forwarded to the registered owner within 21 days, unless accurate information concerning the identity and address of the registered owner is not available within 21 days or the registered owner is a "repeat violator" as that term is defined in Section 40254(a) of the Code. If accurate information concerning the identity and address of the registered owner is not available within 21 days of the

violation, the Agency shall have up to 66 days to forward the notice of toll violation. If the registered owner is a repeat violator, the Agency shall have up to 90 days to forward the notice of toll violation.

- (d) In the case of joint ownership of a Vehicle, the Notice of Violation shall be issued to the first name appearing in the registration. If a Notice of Violation is issued in person to the driver of a Vehicle, the driver of the Vehicle shall be deemed the agent of the registered owner for purposes of delivery of the Notice of Violation. The Notice of Violation shall contain:
  - (i) The date and time of issuance.
  - (ii) The name and address of the person to whom the Notice of Violation is issued.
  - (iii) The date, time and location of the alleged Violation.
  - (iv) The alphanumeric designation of the license plate on the Vehicle that was used in the alleged Violation(s) and, if applicable, the registration expiration date and the make of the Vehicle.
  - (v) The Section of the California Vehicle Code alleged to have been violated.
  - (vi) The procedure and deadline for the Motorist to follow in order to pay the penalty or to contest the Notice of Violation (and to appeal an adverse decision), including the time and place for appearance by the registered owner.
  - (vii) The amount of the applicable Penalty for the Violation and the further Penalty to be paid in the event the Penalty imposed with the Notice of Violation is not paid timely.
  - (viii) A statement that there will be additional costs and fees incurred by the Motorist according to the local jurisdiction rules if collection is pursued through court action.

Additional information may be included in the Notice of Violation in the discretion of the Chief Executive Officer of the Agency.

(e) If the description of the Vehicle in the Notice of Violation does not match the corresponding information on the registration card for that Vehicle, the

Agency may, on written request of the Motorist, cancel the Notice of Violation without the necessity of appearance by that person.

- (f) If after a copy of the Notice of Violation has been sent to the Motorist, the Agency determines that, in the interest of justice, the Notice of Violation should be dismissed, the Agency shall dismiss the charges and so notify the Motorist.
- (g) If the full amount of the Penalty is received by the person authorized to receive the deposit of the Penalty and there is no contest as to that Violation, proceedings under this Ordinance shall terminate.

### Section 5. Failure to Pay Toll Evasion Penalties.

- (a) If the payment of a Penalty is not received by the Agency as specified in the Notice of Violation by the time and date fixed on the Notice of Violation under Section 4, above, the Agency shall deliver by personal service or first-class mail to the registered owner of the Vehicle a Notice of Delinquent Violation.
- (b) The Agency shall establish a procedure for providing, upon request, a photo static copy of the original Notice of Violation or an electronically produced facsimile of the original Notice of Violation. The Agency may charge a fee sufficient to recover the actual cost of providing the copy, to be established by the Chief Executive Officer, not to exceed two dollars (\$2).
- (c) The Notice of Delinquent Violation shall contain the information required to be contained in the original Notice of Violation and, additionally shall contain a notice to the registered owner that, unless the registered owner pays the Penalties or contests the citation pursuant to the procedure set forth in the Notice of Violation within 30 days after mailing of the Notice of Delinquent Toll Violation, or completes and files an Affidavit of Nonliability in compliance with this Section and Section 4(d), the Violation shall be considered to be a debt due and owing the Agency, and the Agency may seek recovery in any lawful manner, including non-renewal action against the Vehicle's registration.
- (d) The Notice of Delinquent Violation shall contain, or be accompanied with, an Affidavit of Non-liability and information regarding what constitutes non-liability, information as to the effect of executing the Affidavit, and instructions for returning the Affidavit to the Agency. If the Affidavit of Non-liability is returned to the Agency within 30 days of the mailing of the Notice of Violation or Notice of Delinquent Toll Violation together with proof that either (i) the driver at the time of the Violation did not possess express or implied authority to drive the Vehicle, or (ii) the registered owner

served has made a bona fide sale or transfer of the Vehicle and has delivered possession thereof to the purchaser prior to the date of the alleged Violation in compliance with Section 5602 of the Code, and the Agency is satisfied with such proof, the Agency may terminate proceedings against the originally served Motorist and proceed against the unauthorized driver at the time of the Violation, or the new owner of the Vehicle. To establish the defense enumerated in clause (i), above, the registered owner may provide a stolen vehicle police report or other evidence which the Agency will evaluate and in its discretion determine whether the defense has been established.

### Section 6. Payment After Notice of Delinquent Violation.

(a) If a Motorist, or agent of a Motorist who was served with a Notice of Delinquent Violation pursuant to Section 5, deposits the demanded Penalties with the Agency, after the Notice of Delinquent Violation is issued for delivery, the Agency shall follow the procedures set forth in Section 40266 of the Code.

### Section 7. Contest of Notice of Violation or Delinquent Violation.

- (a) Any Motorist who wishes to contest a Notice of Violation or Notice of Delinquent Violation may do so without having to deposit the toll or Penalty. If a Motorist timely contests a Notice of Violation or Notice of Delinquent Violation, the Agency shall conduct an administrative investigation, which shall consist of reviewing the evidence on which the alleged violation was based, including any photographs of the alleged violation, reviewing the Department's registered owner information, and confirming that a full and complete payment was not timely made. The results of the administrative investigation shall be mailed or emailed to the Motorist.
- (b) The Agency shall establish a fair and impartial administrative review procedure for any Motorist who wishes to timely contest a Notice of Violation or a Notice of Delinquent Violation after receiving the results of an administrative investigation. Such procedure shall be in accordance with Section 40255 of the Code, including with respect to the deposit requirement, although the Agency may require a reduced deposit under circumstances approved by the Chief Executive Officer. The procedure shall be implemented by the Agency's Chief Executive Officer who shall have the authority to update and revise such procedure from time to time as the Agency's Chief Executive Officer deems necessary.
- (c) Any Motorist who wishes to timely contest a Notice of Violation or Notice of Delinquent Violation after receiving the results of an administrative investigation shall be provided with a copy of the administrative review procedure and invited to request a hearing. A properly requested hearing

shall be held within 90 calendar days following the receipt of a request for administrative hearing, excluding any time tolled pursuant to Article 4 of Chapter 1 of Division 17 of the Code. In the event a hold has been placed on the renewal of a Motorist's Vehicle registration under Section 4770 of the Code, then the hearing shall be held within 30 days following a proper request, provided the Motorist requesting the hearing cooperates in its scheduling. Prior to filing any request to intercept monies due to the Motorist from the Franchise Tax Board in accordance with Government Code Sections 12419.5 et seq. the Agency shall provide 45 days' advance written notice, and the hearing on the review shall be scheduled prior to the filing of the request to intercept.

Section 8. <u>Payment Plans</u>. The Agency's Chief Toll Operations Officer shall establish a payment plan policy for offering payment plans to qualified Motorists for purposes of resolving Penalties. The policy shall comply with the requirements set forth in Section 40269.5 of the Code. The Agency's Chief Toll Operations officer may also authorize payment plans or other reasonable terms for resolution of outstanding Penalties on terms that the officer deems reasonable even if the Motorist does not qualify under Section 40269.5 of the Code.

Section 9. <u>Collection of Unpaid Penalties</u>. Except as otherwise provided in Sections 40268 and 40269 of the Code, the Agency shall be authorized to proceed under one or more of the following options for the collection of unpaid Penalties:

- (a) The Agency may file an itemization of unpaid Penalties (including administrative and service fees) with the Department for collection with the registration of the Vehicle pursuant to Section 4770.
- (b) If more than four hundred dollars (\$400) in unpaid Penalties and other charges have been accrued by any Motorist or registered owner, the Agency may file proof of that fact with the court with the same effect as a civil judgment. Execution may be levied, and other measures may be taken for the collection of the judgment as are authorized for the collection of any unpaid civil judgment entered against a defendant in an action on a debtor. The court may assess costs against a judgment debtor to be paid upon satisfaction of the judgment. Prior to seeking entry of judgment, the Agency shall send a notice by first-class mail (and by e-mail, if known) to the Motorist or registered owner indicating that a judgment shall be entered for the unpaid Penalties and that after 30 days from the date of the mailing of the notice, the judgment shall have the same effect as an entry of judgment against a judgment debtor. The notice shall include all information required by Section 40267 of the Code and shall also advise the Motorist of the Motorist's right to request an administrative review. The filing fee and any costs of collection shall be added to the judgment amount.
- (c) If the registration of the Vehicle has not been renewed for 60 days beyond the renewal date, and the notice has not been collected by the Department pursuant to Section 4770 of the Code, the Agency may file proof of unpaid Penalties with the court with the same effect as a civil judgment as provided in subdivision (b), except that if the amount of the unpaid Penalties is not

more than four hundred dollars (\$400), the filing fee shall be collectible by the court from the debtor.

- (d) The Agency may file a request to intercept a Motorist's tax refund from the Franchise Tax Board in accordance with Government Code Sections 12419.5 et seq.
- (e) The Agency may contract with a collection agency to collect unpaid Penalties and other charges.
- Section 10. <u>Termination of Proceedings.</u> The Agency shall terminate proceedings on the Notice of Delinquent Violations upon the occurrence of the circumstances specified in Section 40269 of the Code.
- Section 11. Other Notices. Nothing herein shall prohibit the Agency from establishing informal methods of notifying Motorists of Violations and from collecting Penalties for Violations through such means.
- Section 12. <u>Implementation.</u> The Chief Executive Officer of the Agency is hereby authorized and directed to develop such procedures, forms, documents and directives which may be necessary to implement the terms of this Ordinance.
- Section 13. <u>Severability</u>. If any provision of this Ordinance is determined to be void or invalid by any administrative or judicial tribunal, said provision shall be deemed severable and such invalidation shall not invalidate the entirety of this Ordinance or any other provision hereof.

ADOPTED BY THE FOOTHILL/EASTERN TRAXXXXXXXX.

## TOLL ENFORCEMENT ORDINANCE ADOPTION NO. FE2028-01 AN ORDINANCE OF THE BOARD OF DIRECTORS OF THE FOOTHILL/EASTERN TRANSPORTATION CORRIDOR AGENCY RELATING TO THE ADMINISTRATION OF TOLLS AND THE ENFORCEMENT OF TOLL VIOLATIONS ON THE FOOTHILL AND EASTERN TRANSPORTATION CORRIDORS

### ATTEST:

I, Sarah Lighthipe, Clerk of the Board of the Foothill/Eastern Transportation Corridor Agency hereby certify that the foregoing Ordinance FE2028-01 was duly adopted on XXXXXX, by the Board of Directors of the Foothill/Eastern Transportation Corridor Agency by the following vote:

Yes: XXXX

XXXX

None Farrah

No: Absent:

Khan None

Abstain:

Sarah Lighthipe, Clerk of

Foothill/Eastern Transportation Corridor Agency

Schedule "A"

Schedule of Penalties
Toll Evasion Penalty
Delinquent Toll Evasion Penalty



## EXHIBIT F TRAFFIC OPERATIONS METRICS MONITORING & GOVERNANCE



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# 1 Introduction

This exhibit will address three main topics:

- Section 2 will discuss the key performance metrics whose performance will be continually monitored once the Express Connector is opened.
- Section 3 will discuss the conditions under which traffic volumes on the Express Connector may need to be further constrained to preserve operations at the East End of the eastbound 91 Express Lanes.
- Section 4 will identify the data that will need to be collected to support the evaluation of the key performance metrics.
- Section 5 will outline the governance structure that will be responsible for reviewing the key performance metrics and for making subsequent adjustments to the dynamic pricing and progressive demand management systems.

The ultimate purpose of this exhibit is to establish a framework by which existing operations are continually evaluated and operational parameters are adjusted, as necessary, in the pursuit of more effective and efficient traffic operations in the corridor.

# 2 Key Performance Metrics

The effectiveness of the operation of the Express Connector will be determined by the extent to which the key performance metrics are satisfied during peak travel periods. Four performance metrics have been identified by the Parties as being foundational to successful operations in the corridor.

The four key metrics, along with the direction in which they will be applied, are summarized in Table 1.

Table 1 – Key Metric Summary

Metric	Applicability o	Method of	
	NB-to-EB Direction	WB-to-SB Direction	Measurement
Express Connector Volumes not to exceed 1500 vehicles per hour	Yes	Yes	Automated
Maintain Speeds > 60 mph in EB and WB Critical Zones	Yes	Yes	Automated
EB County Line Egress volumes < 200 vph	Yes	No	Manually
Toll connector meter queue < 100 vehicles or 3,400 ft.	Yes	No	Automated

The metrics measured by automated means are incorporated into the dynamic pricing and/or progressive demand management systems. These systems will rely on traffic detection devices to provide information regarding traffic speed, volumes, density, and queue length. The dynamic pricing and progressive demand management systems incorporated into the F/ETCA toll system (or "TCA Toll System") will respond to the data inputs to enact changes in pricing or the various progressive demand management strategies.

The metrics measured by manual means will require the collection of data from other sources and will be evaluated. This manual data will be used to adjust the dynamic pricing algorithm or progressive demand management strategies as needed.

# 3 91 Express Lanes East End Performance

RCTC has concerns regarding the operation of the east end of the 91 Express Lanes following the opening of the 241/91 EC. The Parties acknowledge that prior to opening of the 241/91 EC, it is not known if vehicles travelling NB to EB to the 91 Express Lanes will significantly contribute to East End performance issues. The Parties also acknowledge that it is not known if reducing the 241/91 EC volumes will improve the East End performance.

The purpose of this section is to identify the conditions under which usage of the Express Connector may be constrained to protect operations at the east end of the 91 Express Lanes.

# 3.1 Super-peak Condition

The Parties have agreed to evaluate the impact of the 241/91 EC on the East End performance during Super-peak periods. A Super-peak period occurs when the following three conditions are met simultaneously:

- 1. McKinley toll rate is 25% greater than the established baseline toll rate;
- 2. Average speed in the East End zone is <65 mph or queuing at the East End is > 0.5 miles; and
- 3. Traffic density in the East End zone is > 23 vpmpl.

# 3.2 Express Connector Volumes

During Super-peak periods it is agreed that the Express Connector volume will be restricted to 370 vehicles per hour. The 370 vehicle per hour restriction shall be monitored in 30-minute increments. During Super-peak periods (as defined in Section 3.1), the total number of vehicles using the Express Connector in any two consecutive 30-minute intervals must not exceed 370 vehicles. If the volume does exceed 370 vehicles, then changes must be made to the dynamic pricing algorithm and/or the progressive demand management framework to reduce the volumes.

The Express Connector volumes will be reviewed and adjusted according to the governance process outlined in Section 5.

# 4 Data Collection and Analysis Requirements

The accurate evaluation of the above-mentioned key performance metrics requires timely and accurate collection of traffic data. Table 2 summarizes the data that will need to be collected to support the evaluation of the metrics identified in Section 2. The table is structured in the following manner:

- The top part of the table summarizes the data requirements for the NB-to-EB Express Connector;
- The middle part captures East End data requirements; and,
- The lower part summarizes the data requirements for the WB-to-SB Express Connector.

The table also identifies the source of each data requirement.



Table 2 – Data Collection Summary

Dire	ction	Data Required	Data Source
		Speeds in EB critical zone	TCA Toll System
		Volumes in EB critical zone	TCA Toll System
		HOV Only and Bus/Registered Vanpool mode time/duration, traffic volumes and cheater rates	TCA Toll System
	tor	Volumes through Express Connector Toll Point	TCA Toll system
NB-to-EB	<b>Express Connector</b>	Weaving volumes (from Express Connector to County Line egress and from general purpose lanes to Express Lanes ingress)	OCTA/RCTC Toll System + TCA Toll System (Windy Ridge & Express Connector) + TCA FasTrak reader at egress
Z	xpres	Start and end time of all TCM activations	TCA Toll System / Dynamic Pricing Engine
	Ú	Start and end time of all periods in which TCM queue >80 vehicles or 3,200 feet	TCA Toll System / Dynamic Pricing Engine
		Toll Rates on Express Connector	TCA Toll System / Dynamic Pricing Engine
		Identification (including start and end time) of all non-recurring incidents	Traffic Operations Center
		Volumes at RCTC and OCTA mainline	OCTA and RCTC Toll System
	EB)	Toll Rates on RCTC 91 Express Lanes in 5 minute increments for all destinations	RCTC Toll System
RCTC	East End (EB	Volumes and speeds at RCTC East End	RCTC Toll System / "RCTC Traffic Monitoring System"
	Eas	Queue lengths by date, time and duration at RCTC East End	RCTC Traffic Monitoring System
		Identification (including start and end time) of all non-recurring incidents	Traffic Operations Center
		Speeds in WB critical zone	TCA Toll System
	7	Volumes in WB critical zone	TCA Toll System
_	ect	Volumes through Express Connector Toll Point	TCA Toll System
WB-to-SB	Conn	Weaving volumes (from WB RCTC GP lanes to WB-to-SB Express Connector)	RCTC Toll System + TCA Toll System
WB	Express Connecto	Average speed in WB mixing zone (the 0.61-mile open-access portion of the WB 91 Express Lanes between the end of RCTC's barrier-separated facility and the start of OCTA's barrier-separated facility)	TCA Toll System
		Identification (including start and end time) of all non-recurring incidents	Traffic Operations Center

As Table 2 indicates, a significant amount of data will need to be compiled on a regular basis to support a consistent and continual evaluation of the key performance metrics and East End

performance. To somewhat narrow the scope of the data analysis effort, the analysis of data should focus on Super-peak, peak, and shoulder travel periods in each direction. Table 3 summarizes the time periods from which data should be analyzed. These are initial estimates that may be refined once live data from the Express Connector is available to better inform the selection.

Table 3 – Time Periods for Data Analysis

Direction	Weekday Time Period (Mon-Fri)	Weekend Time Period (Sat-Sun)
NB-to-EB Express Connector	Noon – 8 pm	1 pm – 6 pm
WB-to-SB Express Connector	4 am – 11 am	Noon – 8 pm
East End (EB)	Noon – 8pm	2 pm – 6 pm

Once the data is collected, it will be analyzed to determine the extent to which the key performance metrics were satisfied. East End performance data will also be analyzed. The key components of the data analysis are summarized in Table 4. The table summarizes the critical outputs that will be required from the analysis, organized by direction. An important element of toll system design will be to define a series of reports that can be swiftly pulled on a recurring basis to support the analysis.

Please note that the term "interval" in Table 4 refers to the frequency with which prices on the Express Connector are calculated and updated. The duration of these pricing intervals is defined in Table 7 of Appendix A. The initial recommended duration is 5 minutes; the Governance Team will ultimately be responsible for establishing the value.

Table 4 - Data Analysis Requirements

Direct	tion	Data Required	Frequency	
		# of non-conforming intervals (< 60 mph in EB critical zone)	By interval	
		Density of EB critical zone during non-conforming intervals	By interval	
		# of unique 60-minute periods in which NB-to-EB Express Connector volume > 1500 vehicles	By interval	
	tor	# of 30-minute instances during East End super-peak where Express Connector volume > rate of 370 vehicles per hour (185 vehicles per ½ hour)	By occurrence	
NB-to-EB	Express Connector	# of hours with weaving volume (Express Connector to County Line egress) > 200 vehicles; and/or from general purpose lanes to county line ingress	Hourly	
B-t	S	# of intervals with TCM activated	By interval	
Z	ores	# of intervals with HOV ONLY engaged	By interval	
	Ë	# of 60 minute periods in which HOV2+ volume exceeds configurable target value	By occurrence	
		# of 60 minute period in which peak period exceeds xxx vph	By occurrence	
		# of 60 minute periods in which super-peak volumes exceed xxx or queueing or speeds (should discuss)	By occurrence	
		# of intervals in which max queue length is exceeded	By occurrence By occurrence By interval Golden By occurrence	
	# of 5-minute periods the East End (at McKinley) toll rate more) greater than the established baseline toll		By occurrence	
(FR)	(ED)	# 30 minute periods in which the traffic density at East End is greater than 23 vpmpl (vehicles/mile/lane)	By occurrence	
Fact End (FR)		# 30 minute periods in which at least one of the conditions below is observed:  • East End average speed below 65 mph • East End queues longer than 0.5 miles	By interval By interval By occurrence Hourly By interval By occurrence	
		30 minute periods within which the East End Super-peak conditions are met	30 minute time periods	
	or	# of non-conforming intervals (< 60 mph in WB critical zone)	By interval	
	ect	Density of WB critical zone during non-conforming intervals	By interval	
WB-to-SB	Connector	# of unique 60-minute periods in which WB-to-SB Express Connector volume > 1500 vehicles	By interval	
WB-	Express (	# of days in which average speed in WB mixing zone is compromised (10% or more below baseline conditions for speed)	Hourly	
	Ехр	Weaving volumes during compromised hours of the WB mixing zone	Hourly	

One important note is that all data analysis should be restricted to analysis periods not impacted by atypical conditions or incidents within the Express Connector or Express Lanes. This allows the analysis to focus on periods in which the only external variable contributing to traffic operations is change in demand.

The most important output of the Data Analysis process is the identification of **conditions requiring review**. These conditions are summarized in Table 5. If any of these conditions are observed, they will need to be reviewed by the Governance Team (discussed in the next section) for possible action.

Table 5 - Conditions Requiring Review

Direction	Location	Condition
NB-to-EB Express	EB Critical Zone	3 non-conforming intervals (speeds < 60 mph) within any rolling 30-minute window
Connector	Express Connector	Any 30-minute window of time in which the Express Connector volume > 1500 vehicles (flow rate)/ hour
	Express Connector	Any 30-minute window during Super-peak periods in which Express Connector volume > 185 vehicles.
East End (EB)	East End	Super-Peak Period established
WB-to-SB Express	WB Critical Zone	3 non-conforming intervals (speeds < 60 mph) within any 30-minute window
Connector	Express Connector	Any 30-minute window of time in which the Express Connector volume > 1500 vehicles / hour
	WB Mixing Zone	Any 60-minute periods in which the average speed through the WB Mixing Zone is ≥ 10% lower than existing conditions

# 5 Governance Structure

The tasks of monitoring conditions, assessing causes of operational shortcomings, and advancing solutions will be the responsibility of the Governance Team. The Governance Team (GT) will consist of 1-2 designated representatives each from F/ETCA, RCTC, and OCTA. The GT may also consult with traffic and revenue consultants and Caltrans as needed. The purpose of the Governance Team (GT) is to oversee a continuous analytical feedback loop by regularly reviewing operational data and by collectively making appropriate adjustments to the dynamic pricing framework.

This section will be organized as follows:

- Section 5.1 will discuss the functions of the Governance Team (GT) with respect to reviewing and managing operations within the **critical zones** (eastbound and westbound) as well as the **WB mixing zone**.
- Section 5.2 will discuss the responsibilities of the GT with respect to monitoring and managing operations at the East End of RCTC's Express Lanes.

# 5.1 Governance Team - Critical Zones & Mixing Zone

This section will provide an overview of the functioning of the Governance Team as it pertains to managing operations in the EB and WB critical zones as well as in the WB mixing zone. Section 5.1.1 will discuss the manner in which the GT will operate, while Section 5.1.2 will outline the Change Management Process that represents the mechanism by which adjustments may be implemented to support improved operations in the corridor.

# 5.1.1 Governance Team Operations – Critical & Mixing Zones

With respect to both the EB critical zone, the WB critical zone, and the WB mixing zone, the GT is proposed to operate as follows:

- The first task of the GT will be to establish the initial parameters under which the dynamic pricing algorithm will operate. These parameters (along with some initially proposed values) are identified in Appendix A to this exhibit.
- At 6 months prior to go-live, the GT will review the latest available traffic volumes/speeds and update the configurable parameters as needed.
- After go-live, the GT will convene regularly to review data and ongoing operational conditions.
  - o Immediately after the 241/91 EC opens, the GT will meet on a daily basis.
  - Once a measure of operational stability and consistency is observed, the GT will meet on a less frequent (e.g., weekly) basis.
- Ultimately, the frequency of meetings will be made by consensus among the Governance Team members. F/ETCA will be responsible for organizing and scheduling GT meetings.
- The GT meetings will primarily focus on identifying and evaluating conditions requiring review, as described previously in Table 5. Upon identification of the conditions requiring review, the GT will collaboratively perform the following tasks:
  - Assess the causes of the failure(s) to meet the prescribed performance metrics
  - Discuss possible changes to help improve performance
  - Identify appropriate adjustments to configurable parameters and to the PDM strategy.
- It is also envisioned that the GT may periodically perform additional analysis and/or testing beyond conditions requiring review, such as reviewing upstream traffic volumes and general purpose lane weaving in the EB direction. The purpose of this additional analysis would be to identify and/or test potential adjustments to dynamic pricing or progressive demand management strategy, or to potentially change the definition of Super-peak conditions (as described in Section 2.2). As with all functions, the goal of the GT's efforts is to optimize overall performance in the corridor.
- An important component of the routine meetings will be to evaluate the effectiveness of

previous adjustments. It will be important for the GT to learn and understand how traffic operations respond to various changes to configurable parameters.

Systematic analysis will be critical to understanding the root causes of non-conformance to the performance metrics. Table 6 helps identify the appropriate analysis that should follow any instance of non-conformance to the key performance metrics identified in Section 2. Please note that the analysis should focus on non-conforming metrics that occur during periods that are free from non-recurring incidents.

Table 6 – Guidance for Assessing Non-Conformance to Standards

Non-Conforming Metric	Required Analysis
Not maintaining 60+ mph in the critical zone	<ul> <li>Assess densities during non-conforming periods (as well as during the interval prior to and after) to determine the role of traffic volume</li> <li>Assess weave volumes during the non-conforming periods to understand their impact on operations</li> <li>In the NB-to-EB direction, evaluate whether progressive demand management was actively engaged and determine its effectiveness in restoring acceptable conditions</li> <li>If applicable, review HOV-access level and determine if a modification is needed</li> <li>Evaluate toll rates on the EC to determine whether they are sufficiently responsive to increasing congestion</li> <li>Assess HOV2+ volume to determine if the vph is too high and the HOV Only mode needs to be changed to HOV3+</li> <li>Assess non-compliance rate for TCM and HOV Only</li> </ul>
Not keeping Express Connector volumes < 1500 vph	<ul> <li>Evaluate whether EC toll rates are effective at managing demand</li> <li>Consider the extent to which other factors (e.g., conditions in GP lanes) contribute to demand</li> <li>Evaluate whether engagement of TCM (in the NB-to-EB direction) is effective at restricting demand for EC</li> <li>Evaluate PDM strategies to determine if they require changes</li> </ul>
Not keeping TCM queues < 100 vehicles / 3400 feet	<ul> <li>Consider whether a toll connector meter timing adjustment is needed.</li> <li>Ensure that HOV ONLY is appropriately triggered per the algorithm's parameters</li> <li>Assess whether HOV2+ during HOV Only mode produces too many vehicles</li> <li>Assess whether the HOV Only mode is resulting in too many cheaters and enforcement efforts need to be changed</li> <li>Calculate the time required to restore an acceptable queue once HOV ONLY is triggered</li> <li>Assess whether more sensors may be needed to better react to queuing</li> </ul>
Failure to maintain speeds in the WB mixing zone that are within 10% of baseline	<ul> <li>Evaluate the relationship between weave volumes and WB Mixing Zone operations</li> <li>Assess impact to 91 El customers travelling both the RCTC and OCTA segments</li> <li>Assess whether adjusting the EC price would decrease weaving</li> </ul>

In short, any instance of non-conformance identified by the Governance Team should be followed by an inquiry into the extent to which pricing on the Express Connector was related to the non-

conformance. This inquiry will likely involve an evaluation of external factors (such as conditions in the parallel GP lanes), an assessment of internal operations (such as weaving), and a confirmation that PDM is functioning as prescribed.

After conducting the analysis described in Table 6, the Governance Team may find it necessary to adjust one or more of the dynamic pricing algorithm or progressive demand management parameters or policies. The two tables in Appendix B to this exhibit provide initial guidance regarding the effective targeting of adjustments to address operational issues.

To summarize, the role of the Governance Team with respect to the EB and WB critical zones as well as the WB mixing zone will be to (1) establish the initial parameters for the dynamic pricing algorithm and progressive demand management system, (2) review all primary performance metrics on a regular basis, (3) recommend changes to the parameters to enable the facility to meet its operational goals, and (4) evaluate the effectiveness of its proposed changes. This analysis will be critical in the early stages of the opening of the Express Connector. It will also be critical whenever regional improvements (such as ECOP) are implemented, since such improvements will likely affect traffic operations in the corridor.

# 5.1.2 Change Management Process

In support of its mandate to oversee and manage operations in the EB and WB critical zones and in the WB mixing zone, the Governance Team may implement changes to follow up on its analysis. The changes will generally fall into one of three categories: (a) changes to the dynamic pricing algorithm, (b) changes to the progressive demand management strategy, and (c) changes to Express Connector-related policies. Some examples of these potential changes are identified below:

- Changes to dynamic pricing algorithm input values and parameters:
  - Maximum density in the critical zone (the primary trigger for advancing to the next level of PDM)
  - Recovery density in the critical zone (the primary trigger for unraveling each stage of PDM)
  - Peak design toll
  - Not-to-exceed toll amount
  - Maximum queue length
- Changes to progressive demand management (PDM) strategy and related parameters:
  - o TCM activation threshold, timing, involvement during HOV-Only mode
  - HOV Only mode operation at the 2+ or 3+ level, dynamic or pre-scheduled operation
  - Bus/Registered Vanpool trigger density
- Changes to Express Connector related policies. (Note that changes to these policies will likely require F/ETCA Board approval.)
  - o Determining that the Express Connector will be dynamically priced, and related

- principles, including maximum toll price change interval and change amount
- Determining that the Express Connector will utilize a progressive form of traffic demand management
- Determining eligibility for discounts and discount levels
- o Determining a minimum toll rate for the Express Connector
- Determining policy regarding a patron paying a displayed toll price
- Determining a toll rate or penalty for specific circumstances, such as failure to stop at the Toll Connector Meter when it is active

The three agencies (F/ETCA, RCTC, and OCTA) will work jointly to identify needed changes and consider the consistency of policies. Any of the three agencies can propose changes. Proposed changes will be subject to the guidelines that follow.

### 5.1.2.1 Algorithm Changes and PDM Strategy Changes

- 1) Management level reviews the proposed change.
- 2) If all three agencies agree on a proposed change, the change is made, and the effects are monitored.
- 3) If the management level of all three agencies does not unanimously agree on a proposed change, the matter escalates to the executive level:
  - a) If OCTA and RCTC executives agree on a change to the dynamic pricing algorithm or progressive demand management strategy, the change is made, and the effects are monitored.
  - b) If OCTA and RCTC executives do not agree on a change, then no change is made.

### 5.1.2.2 Policy Changes

- 1) Management level reviews the proposed changes to the policy to determine if approval is required by each agency or not
- 2) If approval by each agency is needed, changes to policy must be approved by all three agency executives
- 3) No change is made to a policy requiring the approval of all three agencies until the executives of the agencies agree on the change. Note that changes to policy may require the approval of F/ETCA's Board of Directors.

# 5.2 Governance Team Operations – East End

The Governance Team will also be responsible for overseeing operations on the East End of the RCTC Express Lanes. The GT's responsibilities relative to the East End will include the following:

1. Establishing the baseline toll at go-live;

- 2. Re-establishing the baseline toll when corridor improvements or changes are made;
- 3. Defining Super-peak conditions (as initially laid out in Section 2.2);
- 4. Identifying when the Super-peak conditions have been met, ensuring the Super-peak data is collected for analysis;
- 5. Monitoring Express Connector volumes during Super-peak conditions;
- 6. Identifying all 60-minute windows of time *during Super-peak periods* in which the Express Connector volumes exceed 370 vehicles;
- 7. Evaluating the periodic need for changes to 241/91 EC dynamic pricing, PDM, RCTC dynamic pricing, other policy change;
- 8. Enacting changes to EC toll pricing and/or progressive demand management strategy to bring EC traffic volumes within 370 vph during subsequent super-peak conditions.

  Reasonableness shall be used when determining if the current volume fulfills the intent of the 370 vph limit. As adjustments are not automated it should be understood that it may be unreasonable to demand adjustments of the EC volume is close to 370; and,
- Performing analysis and pilots to determine if the 241/91 EC is materially contributing to east-end performance issues and determining what adjustments can be made to maximize corridor performance.

In anticipating the important role of the Governance Team in monitoring and maintaining acceptable conditions in the East End, it is important to note the following:

- All Parties of this Agreement have agreed that an East End super-peak condition shall not itself represent contractual non-conformance. Rather, non-compliance is defined as the failure of F/ETCA to bring EC volumes under 370 vph during Super-peak conditions.
- Section 5.1.2.1 discusses the RCTC and OCTA final approval provision for dynamic pricing and progressive demand management. However, this provision does not apply to Super-Peak governance. Any Party can propose such changes, but all three Parties must approve.
- The GT may, upon agreement of all GT members, perform additional testing, including temporarily bringing the EC volume under 370 vph during subsequent super-peaks to measure its effect on East End toll price and performance. Any such testing that further lowers EC volumes under 370 will be limited in duration (i.e. 2-3 weeks), after which EC volumes can return to within 370 vph. Such testing may also include temporarily increasing EC traffic volumes over 370 vph during super-peak to measure this effect on East End toll price.
- Should all three GT members (OCTA, RCTC, and TCA) not agree on testing parameters, or
  on changes to related pricing or progressive demand strategy parameters, then the matter
  will be escalated, first to the management level, and then to the executive level. If all three
  parties still do not agree on a proposed change, a mutually agreed independent third party



# Appendix A. Configurable Parameters

A variety of parameters that will be employed in the proposed framework for dynamic pricing and progressive demand management. Table 7 summarizes these parameters and provides some initial possible values. These values need to be modeled, tested, and agreed upon by Governance Team members 6 months prior to deployment. The Governance Team will be primarily responsible for establishing these parameters prior to going live, evaluating these parameters after going live, and updating these parameters as part of the Governance process (see Section 4 of this exhibit).

Table 7 – Summary of Configurable Parameters and Proposed Initial Values

Configurable Parameter	Proposed Valu	ie	Comment
	NB-to-EB	WB-to-SB	
Peak Period	Mon-Thu: 2-6 pm Fri: 1-7 pm	Mon-Thu: 5- 9 am	HOV3+ vehicles required to pay tolls during peak periods
Superpeak Period	Thu: 2-3 pm Fri: 1-3 pm	n/a	Subset of peak periods in which alternative approach to PDM may be used
Minimum discharge rate at the Toll Connector Meter (vph)	360	n/a	
Maximum discharge rate at the TCM (vph)	900		
Interval length (min.)	5	5	Should be in the range of 2 to 15 minutes
Minimum price change per interval	± \$0.25	± \$0.10	
Maximum price change interval			
Minimum toll for Express Connector	\$2.00	\$2.00	These values go
Minimum density (vehicles per mile per lane)	9	9	together. The min. toll is charged when density <= minimum density
TCM trigger density	26	n/a	
Peak design toll rate	\$40	\$30	These values go
Maximum density (vehicles per mile per lane) sustained densities at or above this value will initiate progressive demand management	26	26	together. The peak design toll is charged when actual density = maximum density

Configurable Parameter	Proposed Value		Comment
	NB-to-EB	WB-to-SB	
Not-to-Exceed Toll A configurable value designed to prevent any potentially high toll rates from being posted; to bypass, set to a very high number	\$75	\$50	This is for control of the dynamic pricing and not an approved maximum toll rate
Θ multiplier calibrated such that Θ * minimum density = 1.0	0.111	0.111	These values are not independently
<b>B rate escalation factor</b> governs the rate at which tolls escalate above the min. toll	3.037	1.9125	determined, but are a function of other key parameters
Recovery density (vehicles per mile per lane) Once PDM has been engaged, density must be consistently below this level before the recovery phase can begin	22	n/a	
TCM Engagement Trigger # of consecutive intervals that critical zone density must be above TCM trigger density before TCM engaged	3		The selection of this value should be related (in part) to the interval length
Max queue length (ft.) if the queue at the TCM exceeds this value, transition to HOV ONLY	3400		Alternatively, this could be expressed as # of vehicles
HOV Only Capacity	2		
HOV ONLY Engagement Trigger # of consecutive intervals that critical zone density must be above max density before HOV ONLY restriction is enacted	3		Applied after TCM engaged for NB-to- EB; continuously evaluated for WB- to-SB
Buses & Registered Vanpools Engagement Trigger # of consecutive intervals that critical zone density must be above max density before enacting "Buses & Registered Vanpools ONLY"	3		Not evaluated until HOV ONLY mode has been engaged
Recovery Mode Engagement Trigger # of consecutive intervals the critical zone must remain below recovery density before transition to recovery mode	3		Ensures that conditions are consistently acceptable before recovery mode begins
Recovery Stage Duration # of consecutive intervals the critical zone must remain below recovery density before transitioning to the next stage of recovery	3		Ensured conditions are consistently good before further lifting restrictions

The parameters identified in the table above will be configured primarily to sustain the minimum acceptable average speed in the critical zone. This primary performance metric is **60+ miles per hour** (mph). In other words, the variables underlying the dynamic pricing framework should be

is to identify modifications to these parameters such that this primary performance metric can always be satisfied.

designed (and modified as necessary) to ensure the operation of the Express Connector supports this performance standard. A key purpose of the analytical feedback loop described in this exhibit

# Appendix B. Algorithm Adjustment Guidance

The tables on the following two pages provide guidance regarding making adjustments to the dynamic pricing algorithm's key parameters.

- Table 8 reviews the key parameters, and it provides a high-level discussion on how changes to these parameters could impact operations.
- Table 9 provides some initial guidance on how each of the key parameters relates to the five key metrics identified in Section 1. In reviewing this table, please note the following:
  - A star indicates a strong relationship between the designated parameter and the corresponding performance metric.
  - O A checkmark ( $\sqrt{\ }$ ) indicates an indirect relationship between the designated parameter and the corresponding performance metric.
  - o A blank space suggests that there is little-to-no relationship.



Table 8 – Qualitative Discussion of Possible Parameter Adjustments

Configurable Parameter	NB-to-EB Value	WB-to-SB Value	Comment
Minimum Density (vphpl)	9	9	Reducing minimum density would cause rates to escalate earlier; more effective if coupled with a reduction in the maximum density and/or increase in minimum toll
Minimum Toll	\$2.00	\$2.00	Increasing the minimum toll could suppress off-peak usage and delay the onset of elevated rates. It would have little effect on peak conditions unless coupled with an increased to the peak design toll.
Maximum Density (vphpl)	26	26	A decrease in the maximum density would cause rates to escalate more quickly, assuming the peak design toll stays the same. Its impact is magnified if peak design toll rate is increased.
Peak Design Toll Rate	\$40	\$30	An increase in the peak design toll would cause rates to escalate more quickly, assuming the max density stays the same. Its impact is magnified if maximum density is decreased.
TCM Trigger Density (vphpl)	22	n/a	A decrease in the TCM trigger density would cause the TCM to engage more quickly, initiating PDM more quickly. The risk is an increased likelihood of creating queues that could ultimately lead to HOV ONLY mode.
Max Queue Length (ft.)	3400	n/a	Reducing the max queue length could cause HOV ONLY mode to engage more quickly. This would strengthen demand management but would likely result in more frequent restrictions for single-occupant vehicles.
Max. Price Change per Interval	±\$2.00	± \$1.00	Increasing the maximum price change per interval will provide greater responsiveness if congestion abruptly worsens. This value is interrelated with the interval length: The shorter the interval, the lower your "max price change per interval" can be.
Interval Length	5 min.	5 min.	Reducing the interval length can allow a quicker response to changing traffic conditions.
HOV Only Mode Occupancy	2	0	

Table 9 – Relationship between Parameters and Performance Metrics

Parameter Adjustment	Maintain 60+ mph in Critical Zone	Maintain Express Connector Volumes < 1500 vph	Avoid TCM Queues > 100 vehicles	Sustain Speeds in WB Mixing Zone
Reduce Minimum Density (vphpl)	√	$\sqrt{}$		√
Increase Minimum Toll	$\sqrt{}$	√		<b>√</b>
Decrease Maximum Density (vphpl)	V	√		1
Increase Peak Design Toll Rate	*	*	V	*
Reduce TCM Trigger Density (vphpl)	<b>*</b>	1		
Reduce Max Queue Length (vehicles)	<b>√</b>	V		
Increase Max. Price Change per Interval	1	1		√
Reduce Interval Length	1	J	<b>*</b>	

# Legend √ Indirect relationship between parameter and corresponding performance metric Strong relationship between parameter and corresponding performance metric

# Appendix C. Progressive Demand Management Guidance

Table 10 below provides guidance regarding the adjustment of specific parameters related to Progressive Demand Management (PDM). Each parameter identified in the table will have an impact on how PDM will operate. A qualitative description of this impact is provided in the "Comment" column.

Table 10 – Qualitative Summary of PDM Parameter Adjustments

Configurable Parameter	Proposed Value	Comment
Maximum Density (vphpl)	30	When exceeded for a configurable # of intervals, this value will trigger the next stage of PDM. Therefore, all else being equal, raising this parameter will delay the implementation of subsequent stages of PDM. The tradeoff is that raising this value could also result in elevated levels of congestion in the EB critical zone.
Required # of Intervals	3	This value represents the number of intervals in which certain conditions must be observed prior to advancing to the next stage of PDM. Raising this value will tend to make the system less responsive to changes in traffic conditions and will delay the onset of various stages of PDM. A higher value will also lengthen the time required to return to normal conditions once PDM is engaged.
TCM Trigger Density (vphpl)	26	Engaging the TCM is the first level of PDM. An increase in the TCM trigger density would require higher levels of traffic to engage the TCM, thus delaying the initiation of PDM. The risk of raising this value too much is that the system would be less proactive in warding off congestion before it becomes problematic.
Recovery Density (vphpl)	22	Once PDM is engaged, the recovery process (restoring PDM to Stage 1) doesn't begin until the density in the EB critical zone has been below this level for a configurable number of intervals. Raising this value will tend to accelerate the recovery process; lowering this value will lengthen the time required to return to Stage 1.
Peak Design Toll Rate	\$40	An increase in the peak design toll would cause rates to escalate more quickly, assuming the max density stays the same. Its impact is magnified if maximum density is decreased.
Max Queue Length (ft.)	3400	This is one of the conditions that directly leads to advanced stages of PDM.  Reducing the max queue length would cause HOV ONLY mode (as well as BUS/REGISTERED VANPOOLS ONLY mode) to engage more quickly. This would yield more aggressive demand management and would lower the likelihood that queues could become disruptive. But it would likely result in more frequent restrictions for single-occupant vehicles.
HOV Requirement	HOV3+	Both the effectiveness and the restrictiveness of Stage 3 of PDM (HOV ONLY mode) depend on the HOV requirement. A requirement of HOV3+ will be more effective at managing demand and reducing queues at the TCM. But it will also be much more restrictive, eliminating the option of using the Express Connector for the vast majority of travelers.
Discharge Rate	Range of 360-900 vph	In general, a higher discharge rate will reduce the likelihood of extensive queuing at the TCM and will therefore decrease the likelihood (all else being equal) of advancing to subsequent stages of PDM.

# EXHIBIT H EXPRESS CONNECTOR MAINTENANCE CLOSURE PLAN



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**Table 1 - Abbreviations/Acronyms** 

AET	All Electronic Toll
AVC	Automatic Vehicle Classification
AVI	Automatic Vehicle Identification System
Caltrans	California Department of Transportation
Caltrans D8	Caltrans District 08
Caltrans D12	Caltrans District 12
CCTV	Closed Circuit Television
СНР	California Highway Patrol
CMS	Changeable Message Sign
СРС	Central Processing Center
CRD	Central Repair Depot
DVAS	Digital Video Auditing System
EL	Express Lanes
ECMA	Express Connector Maintenance Agreement
F/ETCA	Foothill/Eastern Transportation Corridor Agency
FCC	Federal Communications Commission
GP	General Purpose
ICS	Image Capture System
IVIS	Intelligent Vehicle Identification System
KPI	Key Performance Indicators

**Table 1 - Abbreviations/Acronyms** 

MOMS	Maintenance On-Line Management System
OCTA	Orange County Transportation Authority
PPS	Plate Processing System
RCTC	Riverside County Transportation Commission
SOP	Standard Operating Procedure
SR	State Route
SR-91 TOC	SR-91 Traffic Operations Center
TCM	Toll Connector Meter
TCS	Toll Collection System
TDS	Traffic Detection System
TMC	Toll Management Console
TSP	Toll System Provider
VCARS	Vehicle Capture and Recognition System
VES	Vehicle Enforcement System
VTMS	Variable Toll Message Sign

## 1 **OVERVIEW**

# 1.1 Express Connector Project Description

The Foothill/Eastern Transportation Corridor Agency (F/ETCA) along with Orange County Transportation Authority (OCTA), and Riverside County Transportation Commission (RCTC) collectively referred to as the Operating Partners, are working together to deliver and operate a direct Express Connector between 241 Toll Road and the 91 Express Lanes. The 241/91 Express Connector Project (Project) will provide improved connectivity between the 91 Express Lanes and the 241 Toll Road and will enhance operations. The project area is shown in Figure 1.

Ultimately, the Project will construct a median-to-median tolled connector that will bring one lane from the median of northbound 241 Toll Road to the eastbound 91 Express Lanes and the reverse movement from the westbound 91 Express Lanes to the median of southbound 241 Toll Road. The Project area is within Caltrans right-of-way and includes improvements on State Route (SR) 241, from Santiago Creek to the SR-241/SR-91 interchange, and on SR-91, from the SR-241/SR-91 interchange to the Coal Canyon Undercrossing.

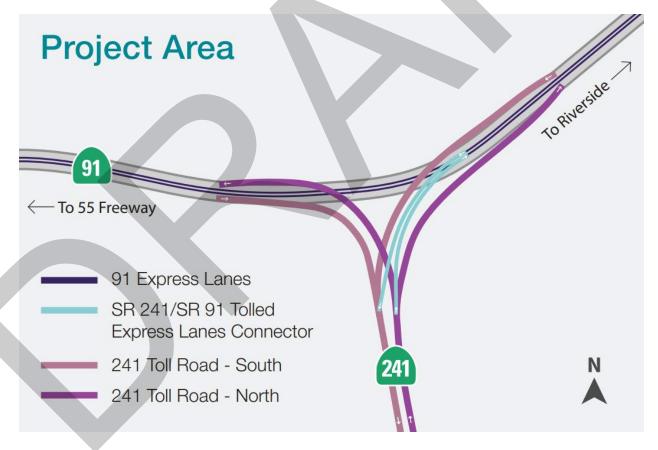


Figure 1 – Project Map

The 241/91 Express Connector will have four access points:

- Northbound SR-241 Ingress to Express Connector
- Southbound SR-241 Egress from Express Connector
- Eastbound 91 Express Lanes Egress from Express Connector
- Westbound 91 Express Lanes Ingress to Express Connector

A new Express Connector toll point will be installed for Express Connector traffic traveling in both the northbound and southbound directions on 241 Toll Road. Several other improvements will also be made, including:

- In the direction of the northbound-to-eastbound connector, a series of static guide signs will communicate the distance to and lane assignment for the Express Connector and the general-purpose connector entrances to SR- 91. A variable toll message sign (VTMS) placed a quarter mile from the decision point will display the toll rates associated with using the 241/91 Express Connector to the Orange-Riverside County line. The VTMS will utilize static destination messaging with a changeable toll rate panel and a 16- character bottom banner for additional information. A full-matrix changeable message sign (CMS) prior to the Windy Ridge toll plaza will also be installed and will display approved traveler information messages and serve as a backup if the toll pricing sign becomes nonfunctional.
- In the direction of the westbound-to-southbound connector, the existing OCTA messaging sign located at the county line will be available to display Express Connector pricing. This sign consists of a full matrix display CMS and will display the 241/91 Express Connector and 91 Express Lanes toll price. Static guide signs will be added in the westbound direction of the SR-91 to inform traffic of the 241/91 Express Connector movement to southbound SR-241.
- A series of traffic detectors will be installed on the 91 Express Lanes collecting live data in both the east and westbound directions. The data will be used for the dynamic pricing algorithm, the toll connector meter operations, and for monitoring performance metrics.
- The project will also implement toll connector metering of the 241/91 Express Connector for the northbound-to-eastbound movement. The CMS prior to the Windy Ridge toll plaza, and a series of five connector meter signs spaced approximately 1,000 feet apart leading up to the toll point and the Toll Connector Meter (TCM) will let drivers know when the toll connector meter is operating.
- Additionally, closed circuit television (CCTV) cameras will be installed at each access point, at the connector meter, and on new toll gantries, CMS and VTMS to ensure complete coverage of the 241/91 Express Connector facilities and throughout the length of the Express Connector.

# **1.2** Express Connector Maintenance Plan Overview

This Maintenance Closure Plan provides an overview of the activities that will be performed to maintain the Express Connector tolling assets as described in Exhibits A and B and to ensure its continued operation in conjunction with the 91 Express Lanes. The plan includes toll collection system infrastructure and associated responsibilities, criteria for maintenance, processes, and closures associated with the activities. F/ETCA and their tolling contractor will be responsible for maintaining the Express Connector Toll Collection System (TCS). F/ETCA will partner with Caltrans to maintain the roadway infrastructure which is covered in detail in the Express Connector Maintenance Agreement (ECMA). The 91 Express Lanes facility is separately maintained by OCTA and RCTC.

# **1.3** Express Connector Maintenance Plan Updates

This Maintenance Plan is a living document and will be revised at appropriate milestones as necessary.

# **1.4** Express Connector Assets

Exhibit B of the Operating Agreement depicts the schematic plans for the Express Connector TCS. Exhibit B is limited to those items which are part of the electronic toll collection system and includes dynamic message signs, cameras, vehicle detectors, and the All-Electronic Toll (AET) collection system. Additionally, Exhibit B shows the Toll Connector Meter and the ancillary equipment required to operate the TCM. The design of the TCM and the toll point gantry will include rear facing signals, and HOV displays to assist CHP officers with enforcement. Figure 2 and Figure 3 are provided only as a reference for Exhibit B. Exhibit B is the official document for the equipment covered in this plan and in the Operating Agreement and will be updated at appropriate milestones as necessary. The official Exhibit B document will take precedence over the figures shown in this Maintenance Plan.

Figure 2 – Schematic Plan #1

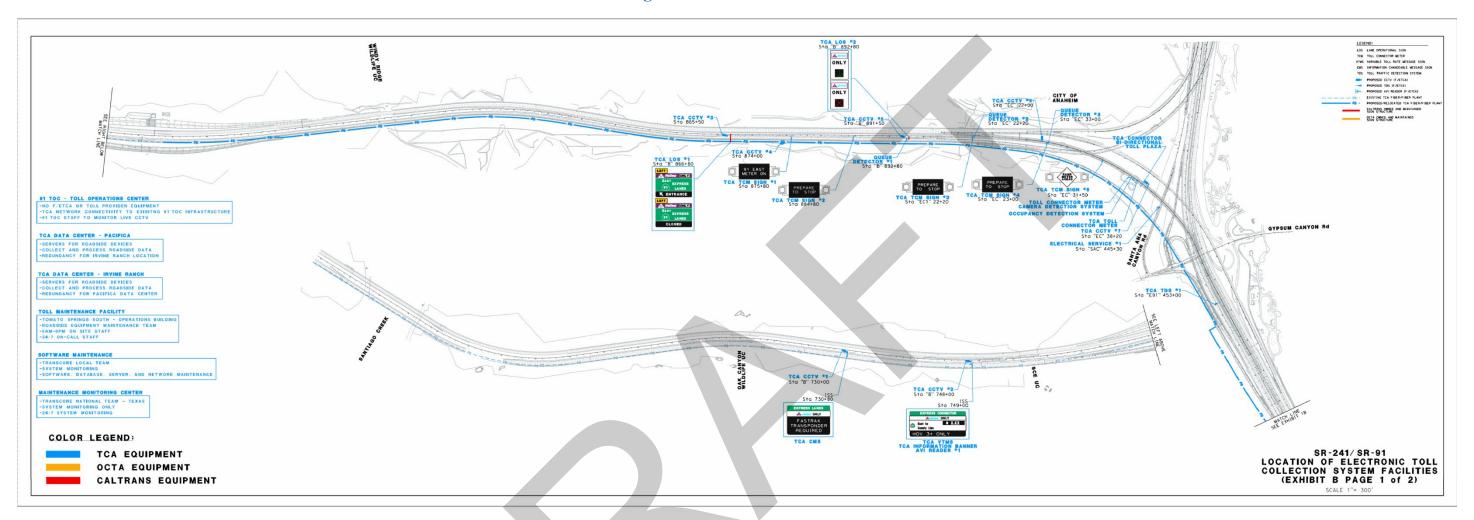
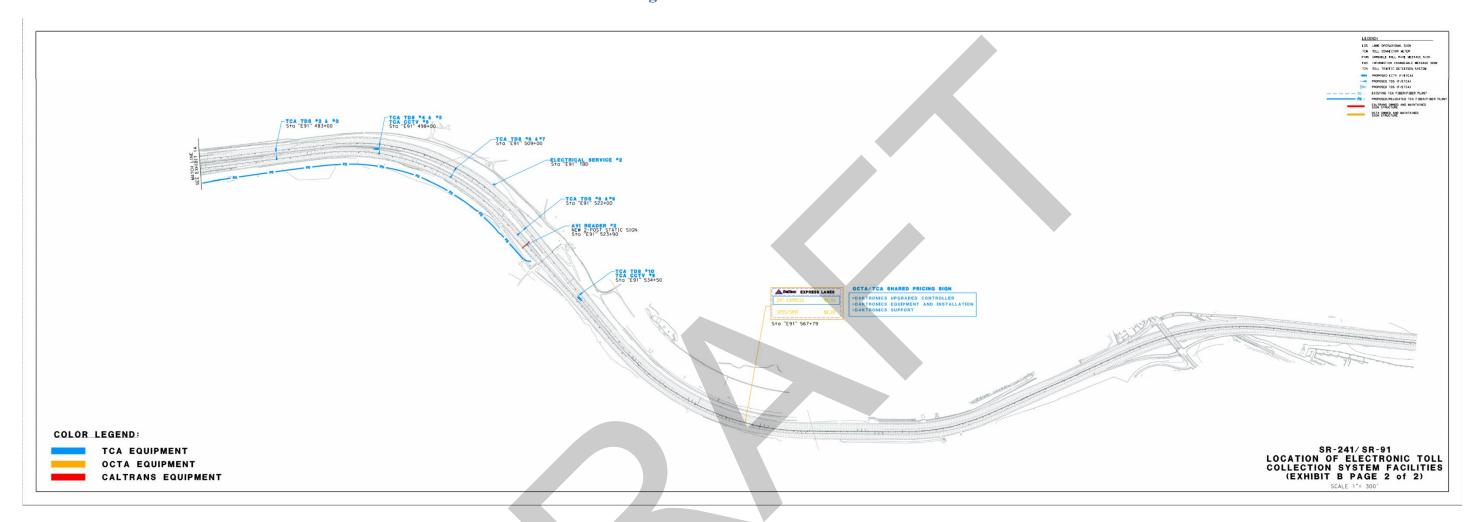


Figure 3 – Schematic Plan #2



# 1.5 Express Connector Maintenance Activities Summary

Maintenance activities are performed on all roadway and toll system assets under various maintenance agreements. Coordination of scheduled maintenance activities among the Operating Partners and their contractors is expected by all Parties.

### Roadway Infrastructure

F/ETCA will establish an Express Connector Maintenance Agreement (ECMA) with Caltrans for the Express Connector roadway infrastructure. The ECMA will cover all highway improvements and related infrastructure constructed as part of the Express Connector (herein referred to as roadway infrastructure). F/ETCA will coordinate all maintenance activities which impact the 91 Express Lanes for review and approval with OCTA and RCTC a minimum of 7 days in advance of planned work. Approvals of emergency maintenance closures that impact the 91 Express Lanes are at the sole discretion of OCTA and RCTC.

OCTA and RCTC each have separate agreements with Caltrans associated with maintaining the 91 Express Lanes. OCTA and RCTC will provide F/ETCA 7 days' advance notification of any planned maintenance closures which impact the Express Connector. OCTA and RCTC will provide F/ETCA with notification of emergency closures but F/ETCA approval is not required.

## SR-91 Traffic Operations Center (SR-91 TOC)

F/ETCA, OCTA, and RCTC will enter a future "Traffic Operations Center Services Agreement" for the work required to be done by the SR-91 TOC. The Traffic Operations Services Agreement will include the 91 Express Lanes TOC operator, TOC facility, 91 Express Lanes TOC system and infrastructure. The Agreements will cover the scope and cost to integrate the 241/91 EC into the 91 Express Lanes TOC from a system and operational standpoint as well as the ongoing management and system maintenance and improvements. Every effort will be made to identify the incremental operational costs related to the 241/91 EC, but where that cannot be done costs will be split amongst the parties.

The agreement will include routine updates/upgrades that will be required and the responsible parties which will perform the updates/upgrades. Cost for upgrades directly attributable to F/ETCA will be paid by F/ETCA. Costs that are for the benefit of all three parties will be shared amongst the parties.

# Freeway Services Patrol (FSP)

F/ETCA will enter into an agreement with OCTA to leverage OCTA's existing FSP services agreement such that the same provider of FSP services for the 91 Express Lanes will also provide services for the 241/91 EC.

### Toll Collection System

F/ETCA will operate and maintain the Toll Collection Systems (TCS) for the Express Connector to ensure system functionality works as intended. Operations and maintenance of the Express Connector TCS is performed by F/ETCA's Toll Systems Provider (TSP) under a toll services

contract with F/ETCA. See Section 4 of this document for detailed information.

OCTA and RCTC each have similar toll services contracts with their own TSPs to maintain the 91 Express Lanes toll collection systems.

# **1.6** Express Connector Maintenance Responsibilities

Exhibit A of the Operating Agreement lists the TCS equipment and the responsibility matrix for the various maintenance activities associated with the Express Connector.

Agencies involved in maintenance activities include the following:

- Foothill/Eastern Transportation Corridor Agency (F/ETCA)
- Orange County Transportation Authority (OCTA)
- Riverside County Transportation Commission (RCTC)

F/ETCA will be responsible for establishing a separate Express Connector Maintenance Agreement (ECMA) with Caltrans for roadway related maintenance on the Express Connector, which is beyond the scope of this document.

The 91 Express Lanes maintenance is included under separate agreements among OCTA, RCTC, and Caltrans. The 91 Express Lanes, OCTA, and RCTC are referenced in this document only to the extent that:

- Express Connector assets are located within the 91 Express Lanes and maintenance of such assets requires coordination between F/ETCA, OCTA, and RCTC
- Maintenance of 91 Express Lanes assets may restrict access to the Express Connector and require coordination between F/ETCA, OCTA, and RCTC.

# 1.7 Express Connector Maintenance Organization

This section describes F/ETCA's maintenance organization and contractual arrangements to administer, verify, and perform maintenance on the Express Connector. F/ETCA's maintenance organization includes:

- Chief Toll Operations Officer: Overall responsible for F/ETCA's tolling operations, maintenance, implementation, and forecasting for the tolling operations. Responsibilities also include management of capital projects related to toll operations.
- Director of Tolling & Customer Information Systems: Maintenance responsibilities include:
  - o Preparation and monitoring of toll collection system maintenance budget.
  - Overseeing operation and maintenance of F/ETCA's toll collection system assets.
  - o Evaluating roadway toll collection equipment performance and determining lifecycle maintenance cycles.
  - o Verifying contractor performance of preventive, predictive, and corrective

maintenance.

- o Performing inspections and testing of F/ETCA toll collection system assets.
- Chief Capital Programs Officer: Overall responsible for the F/ETCA's Engineering, Environmental, and Facilities departments supporting the implementation and maintenance of F/ETCA's Express Connector roadway infrastructure assets within tolling areas. Responsibilities also include management of F/ETCA's Capital Improvement Plan (CIP) related to roadway infrastructure and coordinating roadway infrastructure maintenance with Caltrans according to its ECMA.
- F/ETCA Support Departments
  - Finance
  - o Legal
  - Contracts
  - External Affairs
  - Other participants in the F/ETCA maintenance program include Caltrans, CHP, and TSP Maintenance Manager.

Table 2 identifies the F/ETCA maintenance program members.



**Table 2: F/ETCA Express Connector Maintenance Program Members** 

Role	Name	Contact Info
Chief Toll Operations Officer	Vincent Valdez	vvaldez@thetollroads.com 949-754-3456
Director of Tolling & Customer Information Systems	Myung Park	mpark@thetollroads.com 949-754-3471
Chief Capital Programs Officer	Stephanie Blanco	sblanco@thetollroads.com 949-754-3454

Express Connector maintenance must be coordinated with the operations and maintenance of the connecting facilities, including the 241 Toll Road and the 91 Express Lanes. Table 3 identifies the members who must participate in the planning and execution of maintenance activities that have the potential to impact connecting facilities.

**Table 3: Express Connector Maintenance Program Teams** 

Team	Team Members
Maintenance Management Team	F/ETCA Chief Toll Operations Officer F/ETCA Chief Capital Programs Officer RCTC Director of Toll Operations OCTA Express Lanes General Manager
Toll Collection System Maintenance Team	F/ETCA Chief Toll Operations Officer F/ETCA Director of Tolling & Customer Information Systems F/ETCA TSP Maintenance Manager RCTC Director of Toll Operations OCTA Express Lanes General Manager

## 2 EXPRESS CONNECTOR MAINTENANCE CONTROLS

To ensure that the procedures detailed in this Plan are implemented, F/ETCA has outlined the following controls to be used for Express Connector maintenance.

# **2.1** Express Connector Maintenance Performance Standards

TCS performance standards are outlined in the toll services contracts held by F/ETCA for the Express Connector. F/ETCA's TSP is responsible for performing preventative maintenance that supports the achievement of various system performance standards (Key Performance Indicators, KPI's). Should a toll collection system fail to achieve its KPI's, the TSP will take action to remedy the cause. Refer to Section 4 for additional details related to toll collection system maintenance.

The roadway infrastructure Maintenance Services will be performed to Caltrans Maintenance Standards which are defined in the ECMA as the applicable published Caltrans maintenance schedules and standards, the Maintenance Manual, or any applicable Caltrans guidance of statewide application which is in effect at that time, to the same extent and manner that Caltrans is applying the same manual or guidance to the maintenance of comparable State Highways.

Each year, F/ETCA will develop and approve the annual Work Plan and Budget for the Express Connector, as well as the 10-Year Work Plan and Budget to define preventive, predictive, and corrective roadway infrastructure maintenance. The Maintenance Services also include unplanned and urgent maintenance requirements. Refer to Section 3 for additional details related to roadway infrastructure maintenance.

# 2.2 Express Connector Maintenance Contracting and Purchasing

# 2.2.1 Express Connector Maintenance Contracts Summary

F/ETCA will enter into several contracts with various entities to perform maintenance of the Express Connector assets. Table 4 provides a summary of the maintenance agreements. As needed, F/ETCA may enter into additional maintenance contracts for the Express Connector, following the F/ETCA procurement guidelines.

**Table 4: Express Connector Maintenance Agreements Summary** 

Agreement	Description	Expiration Date
Toll Collection System Agreement	Agreement between F/ETCA and TransCore to provide and maintain a roadway toll collection system on SR-241 Toll Road and Express Connector.	TBD
	TransCore is required to provide "turnkey" maintenance of all tolling systems as required to achieve Key Performance Indicators.	
	Initial O&M Term is XXX years (beginning with Revenue Service Commencement) O&M Options are available to extend the O&M Term up to XXX additional years.	
Back Office System Agreement	Agreement between F/ETCA and BRiC to provide and maintain a back office system and customer service center for the 241 Toll Road and Express Connector	TBD
	BRiC is required to provide "turnkey" maintenance of all tolling systems as required to achieve Key Performance Indicators.	
	Initial O&M Term is XXX years (beginning with Revenue Service Commencement) O&M Options are available to extend the O&M Term up to XXX additional years.	
Express Connector Maintenance Agreement	Agreement between F/ETCA and Caltrans amended annually to establish maintenance work plan and budget for Express Connector roadway infrastructure.	Term of F/ETCA- Caltrans Toll Facility Agreement
	The annual Work Plan and Budget will be developed prior to the beginning of each fiscal year operating period.	
	Scheduled maintenance will be performed as directed by F/ETCA during low volume traffic periods as defined in the annually adopted Work Plan.	
	Urgent maintenance will be performed in accordance with performance standards.	
SR-91 Traffic Operations Center Services Agreement	Agreement between F/ETCA, OCTA and RCTC for the use of 91 Express Lanes TOC services.	TBD
	Includes 91 Express Lanes TOC labor and materials and incident monitoring.	
	Includes the communications and ATMS system	
	Includes the 91 Express Lanes TOC facility.	
Freeway Services Patrol (FSP)	Agreement between F/ETCA and OCTA for the provision of FSP services. F/ETCA will leverage OCTA's existing services agreement with its provider.	TBD

# 2.2.2 Express Connector Material Purchasing

For roadway infrastructure, the F/ETCA contractor will provide labor, materials, equipment, and all other resources required to perform the Maintenance Services in accordance with the annual Work Plan and Budget. Should the work require the procurement and availability of any materials not ordinarily in possession, F/ETCA will develop a plan to procure said inventory so that it is available for deployment or use as needed.

For TCS equipment, TransCore is required to provide turnkey maintenance and replace parts as necessary. TransCore is responsible for purchasing new parts as needed to maintain the TCS KPI Compliance.

Material purchasing responsibilities are summarized in Table 5.

Item Purchaser **Approval** F/ETCA Contractor Any minor roadway maintenance materials F/ETCA approves prior to purchase, per not ordinarily in possession or provided by ECMA. F/ETCA. TransCore All TCS equipment and spare parts (241 TransCore is responsible for turnkey Toll Road and Express Connector) maintenance and will have some spare parts on hand. Additional items will be purchased as necessary.

**Table 5: Express Connector Material Purchasing** 

All materials purchased by F/ETCA will be accounted for in accordance with F/ETCA's current accounting instructions, as specified in vendor contracts, and/or as outlined in the F/ETCA procurement guidelines.

# 2.3 Express Connector Maintenance Funding

All costs for Express Connector maintenance will be funded by the toll revenue generated at the Express Connector toll point.

# 2.3.1 Damage to Assets

#### Insurance

F/ETCA has insurance coverage on a variety of Express Connector assets. Claim processes and filing will depend on the asset and whether it is maintenance or operations related.

#### Damage to F/ETCA Property

In the event there is third-party damage to F/ETCA property, F/ETCA will immediately initiate

repairs if it poses a security or safety issue or impacts operations. F/ETCA staff will contact the Procurement Manager to process a claim with the insurance provider.

# **2.4** Express Connector Permits and Licenses

F/ETCA is authorized to operate and maintain the Express Connector under various permits and licenses. Table 6 provides a summary of current permits and licenses.

**Table 6: Express Connector Permits and Licenses** 

Permit/License	Description	Expiration Date
FCC License	Existing F/ETCA License FRN: 0009739020 Call Sign: WQFX552	10/30/2026  Renewed by F/ETCA Chief Operations Officer as needed
Caltrans Encroachment Permit	Operate, maintain and manage the daily operation of the toll facilities located along the North Leg (SR 241) and East Leg (SR 133) of the Eastern Transportation Corridor with access from the I-5/SR133 (Laguna Canyon Road) interchange, SR241 at Portola Pkwy, and R91/SR241 connectors (in the vicinity of Gypsum Canyon Road), all in accordance with current Caltrans Standard Specifications and Standard Plans, Section 600 (Utilities) of the Caltrans Encroachment Permit Manual, the attached Provisions and Permit Plans dated September 2, 1998.	01/01/2040 Renewed by F/ETCA Chief Capital Programs Officer as needed

# 2.5 Express Connector Maintenance Quality Assurance/Verification

F/ETCA performs quality assurance and verification tasks to ensure its maintenance contractors comply with the terms of their contract. Some examples include:

- F/ETCA reviews TSP performance statistics reported in monthly maintenance reports.
- F/ETCA performs site visits to evaluate roadway conditions and verify roadway maintenance activities have been performed.
- F/ETCA inspects spare parts inventories.

More details on the quality assurance and verification processes for roadway and infrastructure and toll systems can be found in Sections 3.2 and 4.3, respectively.



# 3 Express Connector Roadway Infrastructure

This section briefly describes F/ETCA's maintenance program as it relates to the Express Connector roadway infrastructure. Maintenance activities include inspections and testing, routine maintenance, urgent maintenance, lifecycle maintenance, and monitoring and reporting.

F/ETCA will enter into a separate agreement for the roadway infrastructure in the Express Connector Maintenance Agreement (ECMA), which will outline in detail all of the maintenance activities above. This section is a only a preview of the ECMA for the purposes of the operating agreement.

## 3.1 Maintenance Activities

Roadway infrastructure maintenance includes both routine and lifecycle maintenance activities such as litter/debris removal and sweeping, pavement and barrier repairs, pavement marking, and delineator/channelizer replacement, and signage replacements. Maintenance activities will be coordinated with OCTA and RCTC for review and approval a minimum of 7 days in advance of the scheduled work in order to minimize impacts to users of each facility.

#### 3.1.1 Scheduled Maintenance

Labor, materials, equipment, and all other resources required to perform the Maintenance Services shall be per Caltrans Maintenance Manual Standards, except to the extent that the ECMA or the annual work plan provide higher standards.

The annual work plan will be provided to RCTC and OCTA for review and approval before finalizing. This plan will be updated yearly and will be provided for RCTC and OCTA for review each year.

All Maintenance Services will be performed in accordance with the annual Work Plan, the Maintenance Manual Standards, and in a good, workmanlike and commercially reasonable manner.

Maintenance and repair of the Express Connector will be equivalent to the maintenance and repair of single-lane connectors on State Route (SR) 91, SR-55, Interstate 5, and Interstate 405.

Work will be performed per scheduled maintenance as directed by F/ETCA during low volume periods of traffic to minimize disruption to traffic and loss of revenue.

Maintenance affecting the 91 Express Lanes will be scheduled/performed in coordination with the 91 Express Lanes scheduled closures (approximately every 3 weekends) unless emergency notice is given for a repair. Having this set scheduled will allow all agencies to prepare and plan for the maintenance effort, which will include lane closures, alerting/notifying the driving public, and scheduling of maintenance staff. If the scheduled routine maintenance must be rescheduled, then all agencies will strive to coordinate and agree to the new date. F/ETCA must coordinate with OCTA and RCTC to schedule a new date agreed by all parties. If approved, F/ETCA and OCTA can perform maintenance on a date which does not align with RCTC maintenance closures.

#### 3.1.2 Urgent Maintenance

Urgent Maintenance tasks will be performed as quickly as reasonably possible to minimize safety hazards to the motoring public, risk to property, and adverse impacts on toll collection and operations for the Express Connector. Urgent maintenance tasks are described in the annual Work Plan but may include items such as chemical spills, non-traversable pavement, debris in travel lane, and any other maintenance that disrupts the flow of traffic, or that poses a safety risk.

Emergency notice to OCTA and RCTC is required for urgent maintenance affecting the 91 Express Lanes. Communications and notifications protocols are being developed and will be covered in the Traffic Operations Center Services Agreement, in the Incident Management Plan, and their corresponding Standard Operating Procedures (SOP's)

# 3.1.3 Express Connector Inspections

As part of F/ETCA's Express Connector Maintenance Agreement (ECMA), documentation will be maintained as required by the Maintenance Manual or as reasonably requested by F/ETCA.

If at any time, F/ETCA determines the level, quality or response time of Maintenance Services does not meet its reasonable expectations, F/ETCA will request a meeting to explore avenues to address the deficiencies. F/ETCA will have the right, but not the obligation, to arrange for any item of Maintenance Services to be provided by F/ETCA personnel, or by third parties contracting directly with F/ETCA.



# 4 TOLL COLLECTION SYSTEM

This section describes F/ETCA's maintenance program as it relates to its toll collection systems. Maintenance activities include preventative maintenance, corrective maintenance, lifecycle maintenance, and monitoring and reporting.

# 4.1 Systems and Equipment

F/ETCA is responsible for maintaining the tolling system to ensure safe and efficient operating conditions 24 hours a day, 7 days a week. F/ETCA provides the following Toll System Maintenance Services:

- Field maintenance
- System (hardware/software) maintenance
- Network/communication maintenance

#### 4.1.1 TCS Systems

Components of the Toll Collection System (TCS) include the following:

- **Roadside Controllers** servers located in roadside cabinets and buildings which interface directly with roadside sensors to correlate data together into a transaction.
- **AVI** (Automatic Vehicle Identification) System gantry-mounted radio frequency (RF) readers and antennas which capture transponder data from Title 21 and 6C transponders mounted inside customer vehicles.
- **AVDC** (Automatic Vehicle Detection and Classification) gantry- and pavement-mounted sensors which detect the presence of a vehicle and quantity of axles for each vehicle.
- Image Capture System (ICS) gantry- and pole-mounted cameras which capture license plate images of vehicles traveling through toll zones.
- **DVAS** (Digital Video Auditing System) an independent system of cameras and servers that captures live action video based on motion and still images triggered by software events. DVAS links the images to the associated transactions to support transaction audit and review.
- Automatic License Plate Recognition (ALPR) software system which extracts license plate values from captured image and uses additional logic to identify the correct plate values from multiple images.
- **ODS** (Occupancy detection system) hardware and software which detects the number of passengers inside the vehicle.
- **Host System** a combination of servers, networking equipment, and software which performs final processing on transactions from the roadside controllers, provides maintenance management functionality for the system, and interfaces with the back office system for transmission.

- Uninterruptible Power Supply (UPS) the backup power that keeps the system running during brief utility power loss situations before switching over to generator.
- Maintenance On-Line Management System (MOMS) an integrated maintenance and inventory control system which provides menus, screens, reports, and charts that allow authorized personnel to track equipment problems from the time of failure until they are resolved.
- Toll Connector Meter express lanes metering system that, when necessary, will become active and decrease the flow rate of cars to the connector. Equipment includes the following:
  - o Blank Out Signs indicates the status of metering (e.g., meter on).
  - o Lane operational signs indicates the status of the lane (e.g., open or closed).
  - o Signal equipment metering signal.
  - Automatic enforcement camera captures vehicles disobeying the TCM, (e.g., red light running).
  - o Changeable Message Signs (CMS) Described in detail below. The CMS will be used to inform drivers prior to the decision point that the TCM has been engaged.
- Changeable Message Signs (CMS) CMS provides roadway information to the northbound-to-eastbound direction. The panel message is controlled by the Tolling Site Controllers. Each panel is capable of displaying CA MUTCD-compliant alphanumeric characters, graphical images, and shapes, and is compliant with both American Association of State Highway and Transportation Officials (AASHTO) requirements and NTCP 1203v1. The CMS system allows F/ETCA staff to provide coordinated messaging between the SR-241 and the 91 Express Lanes and with other nearby CMS systems. The message sign that alerts drivers to express lanes requirements (i.e., Fastrak Transponder required)
- Variable Toll Message Signs (VTMS) VTMS provides Express Connector pricing for the northbound-to-eastbound direction. The sign contains price displays with a single-line changeable text display and a 16-character bottom banner for information display. The sign display is controlled by the Tolling Site Controllers. Each variable message panel allows for the required number of 18-inch alphanumeric characters. The variable toll message sign indicates the current toll fee with the corresponding location.
- OCTA Changeable Message Signs (CMS) CMS provides Express Connector pricing for the westbound-to-southbound direction in addition to the Express Lane pricing for the westbound direction. The panel message is controlled by the Tolling Site Controllers. Each panel is capable of displaying CA MUTCD-compliant alphanumeric characters, graphical images, and shapes, and is compliant with both American Association of State Highway and Transportation Officials (AASHTO) requirements and NTCP 1203v1. The CMS system allows SR-91 TOC staff to provide coordinated messaging between the SR-241 and the 91 Express Lanes and with other nearby CMS systems. The variable toll message sign indicates the current toll fee with the corresponding location. Repair to this sign requires access to the RCTC 91 Express Lanes and thus requires coordination with OCTA and RCTC approval to access the OCTA CMS sign. RCTC shall make every effort to grant access, but F/ETCA agrees that access during peak hours or during a time which conflicts

with RCTC projects may not be possible.

- Sign verification CCTV's an independent digital video recording system used to monitor signages. Sign verification CCTV cameras are situated so that the VTMS and CMS displays can be viewed.
- Incident management CCTV's an independent digital video recording system through the current capabilities of the SR-91 TOC ATMS used to monitor traffic along the corridor. Video analytics may be utilized to analyze the CCTV video stream and are used for real-time incident monitoring, including stopped vehicles, objects in the Lane, pedestrians, wrong- way vehicles, slowed traffic, congestion, and deteriorated views.
- Traffic Detection System (TDS) sensors installed along the roadway to provide realtime traffic data measurement and reporting, including volume, speed, vehicle direction, vehicle length, and lane assignment. Data collected by the TDS is used to report on monitored traffic conditions and for the Dynamic Pricing system.

# 4.1.2 Maintenance Equipment and Support Locations

The systems main operations facility is in F/ETCA headquarters at the 125 Pacifica, Irvine, CA building. This facility is centrally located for F/ETCA toll roads and is 25 minutes from the Express Connector and supported by two other nearby facilities in Irvine Ranch and Tomato Springs South. Together, these locations allow for technicians to service the road while meeting response and repair time obligations.

The Tomato Springs South maintenance facility provides a range of support services to ensure that maintenance support is provided in a timely and cost-efficient manner. The CRD is responsible for providing the following services:

- Technical support
- Equipment repair
- Spare parts supply
- Diagnosis and repair of maintenance equipment
- Shipping and Receiving
- Other maintenance related tasks as assigned by F/ETCA

F/ETCA's toll service provider operates the following vehicles for maintenance:

- Bucket Van Used to access equipment mounted out of normal reach, such as gantry mounted components and surveillance cameras.
- Pool Van Used to transport equipment too large for the staff assigned vehicles, for the network team to use when working in the field and when an assigned vehicle is out of service for maintenance.

All maintenance impacting the 91 Express Lanes shall be performed in off-peak hours and with OCTA and RCTC approval. OCTA and RCTC will make every effort to accommodate F/ETCA needs, but the 91 Express Lanes operations take priority over all maintenance.

## **4.2** TCS Maintenance

F/ETCA's TSP is responsible for preventive, corrective, and predictive maintenance of toll system hardware, software, and the communications network. F/ETCA staff and/or subcontractors are responsible for maintaining the fiber infrastructure which supports the toll system.

F/ETCA's TSP will provide a full-time field maintenance team as part of an existing F/ETCA maintenance program for overseeing existing F/ETCA facilities. The field service team will have normal office hours and will be available 24/7 upon receiving alerts generated by the system.

F/ETCA's TSP will also provide a network/communications maintenance team that is responsible for the management and administration of the AET system communications network. The network/communications maintenance team will have normal office hours.

Additionally, 24/7 system monitoring is provided by a national team located in Texas.

#### 4.2.1 TCS Preventative Maintenance

F/ETCA's TSP will perform preventive maintenance on the RTCS and network/communications systems in accordance with its maintenance plan to support continuous operations and high system availability. At planned intervals, the TSP will perform preventative tasks on RTCS systems such as cleaning, alignment, tuning, and proactive replacement of components. For the network/communications system, the TSP will perform system administration activities, including regular system checks, monitoring of security posture, and management and configuration of RTCS-related networking hardware.

## 4.2.2 TCS Corrective Maintenance

An on-call schedule is established by the TSP to provide emergency and corrective maintenance coverage after the standard business hours, seven days a week. The on-call schedule is established monthly. At least one technician is on call after hours, on weekends, and on holidays.

F/ETCA's TSP will perform all necessary corrective maintenance actions to return the tolling system to full functionality and performance within the allotted response and repair time. The RTCS automatically monitors the equipment and generates alerts when failures occur. Alerts are sent in real-time to the MOMS, which notifies maintenance staff and generates a work order, if configured to do so for a particular alert.

MOMS will be configured to send alerts to the on duty or on call technicians. If an alert is not responded to in a configurable amount of time, MOMS will send the alert to other staff based on a configured escalation path. The configuration screen used to establish and review the escalation path is in the MOMS section of the TMC application.

## **Priority Levels**

Corrective maintenance issues are categorized into priority levels according to the severity and nature of the issue. Table 7 provides descriptions and response times based on each priority level.

Any malfunction or fault that will not result in immediate loss of

Any action or event that results in a malfunction or impacts the

system performance and is not a priority 1 or 2 event.

revenue but will/may impact operational performance of the system.

Repair: 4 hours

Repair: 48 hours

Acknowledge: 2 hours

Acknowledge: 24 hours Repair:7 days

Description

Acknowledgment and Repair Times

Any malfunction or fault that will result in the immediate loss of revenue and/or hazard to personnel

Acknowledge: 1 hour

**Table 7: RTCS Maintenance Priority Levels** 

#### **Escalation Paths**

3

**Priority Level** 

Issues will follow an escalation path based on both severity and timeliness of response and repair. The F/ETCA TSP will notify F/ETCA of any issues within the respective acknowledgment time window for the issue's priority level. Unless modification of the escalation path is required due to staffing levels at the time the issue occurs, escalation paths will follow the following steps:

- 1. TSP Maintenance Technician
- 2. TSP Maintenance Supervisor
- 3. TSP Maintenance Manager
- 4. TSP Director of Maintenance
- 5. F/ETCA Director of Tolling and Customer Information Systems

F/ETCA's TSP is responsible for identifying escalation windows within their own team which will enable repairs to be completed successfully within the repair time windows. Escalation will occur any time an issue is not acknowledged in the excepted time or when a notified person deems it necessary to bring in additional support. Upon identifying that any repair will exceed its respective priority's repair window, the TSP will immediately notify F/ETCA's Director of Tolling and Customer Information Systems. At the discretion of F/ETCA's Director of Tolling and Customer Information Systems, additional escalation within the TSP's organization may occur to ensure issue resolution.

# 4.2.3 RTCS Lifecycle Maintenance

F/ETCA's TCS vendor is responsible for turnkey maintenance and for evaluating the equipment performance regularly, and especially towards the end of the typical lifecycles as shown in Table 8. At F/ETCA's and TSP discretion, if it is determined that the equipment has reached its end of life, the TSP is responsible for the lifecycle replacement of TCS equipment during the O&M Term.

Table 8 summarizes the typical TCS lifecycle replacement, but actual lifecycles will be determined

through an evaluation by the TSP. Table 8 also identifies the amount of lead time suggested to plan, procure, and implement the TCS lifecycle replacements (if individually procured). For major technology replacement projects, its assumed procurement duration will be 18 months followed by a 24-month implementation.

**Table 8: TCS Typical Lifecycle Maintenance** 

Maintenance Task	Description	Frequency	Lead Time
TCS System	Procurement of a new TCS	~15 Years	3.5 Years
VTMS	Replace 100% of VTMS	~12 Years	2.5 Years
CMS	Replace 100% of EL CMS	~12 Years	2.5 Years
TCS CCTV	Replace 100% of CCTV cameras	~12 Years	2.5 Years
TDS	Replace 100% of TDS devices	~12 Years	2.5 Years

# **4.3** Configuration Management

F/ETCA's TSP is responsible for notifying F/ETCA of any system changes and performing change management. The TSP will notify F/ETCA when they have identified a need for a potential change to the TCS software or equipment. Following the review of the issue, F/ETCA will provide approval for the TSP to further investigate the issue and develop a proposed solution. Prior to implementing the change, the TSP will submit a Configuration Change Request Form that describes the proposed change in detail including a schedule, potential impacts, pre-deployment test plan, rollback procedures, deployment plan, and system monitoring plan. F/ETCA will review and approve the Configuration Change Request Form before the TSP implements the change on the production systems. The TSP is responsible for requesting F/ETCA approval for any lane closures required to support the implementation and testing of the change.

# 4.4 Maintenance Monitoring, Quality Assurance, and Verification

F/ETCA's TSP is responsible for daily routine monitoring of the TCS performance and determining when maintenance tasks need to be performed. F/ETCA performs routine audits of the TSPs maintenance program, including audits of spare parts inventory and preventative maintenance procedures.

F/ETCA reviews the TSP's monthly maintenance reports and annual renewal test reports. These reports summarize the TCS performance and identify any Key Performance Indicators (KPIs) that were not achieved. F/ETCA will review the supporting documentation, review correction maintenance logs, approve or comment on the KPI results, and assess Liquidated/Stipulated Damages as appropriate under the toll system provider's contract.

F/ETCA regularly monitors system performance and logs any detected events that impact TCS KPIs. For all events that result in an impact to the KPIs or ability to collect toll revenue, F/ETCA will log the following information related to the event:

- Date and description of the incident
- KPIs that have been impacted.
- O&M Priority Level
- Response and repair times
- ROMS ticket details
- Estimate of liquidated damages for the event (if applicable)
- Estimate stipulated damages for events that result in an impact to collecting toll revenue.

# **4.5** Maintenance Responsibility and Communication Between Agencies

# 4.5.1 TCS Responsibility

F/ETCA and its TSP are responsible for all aspects of monitoring and maintenance of the Express Connector TCS. For those elements of the TCS located closer to or interfacing directly with the 91 Express Lanes traffic, there are special considerations for maintenance responsibility and communication. These considerations are outlined in detail in Exhibit B of the operating agreement, but can be summarized in general for TCS elements as follows:

- The SR-91 TOC will have the most immediate indications of failed video feeds for any of the CCTV cameras which provide coverage of the Express Connector. As such, system monitoring activities of cameras by OCTA, RCTC, and F/ETCA can be supplemented by notification of failures to the respective agency.
- The OCTA CMS which has been modified to provide Express Connector pricing will interface with both OCTA's and F/ETCA's toll systems. If either agency detects an issue with the sign that may have an impact on the other agency's messaging to the public, the detecting agency should notify the Parties. The communication infrastructure for the sign is independent for each system, meaning each agency is responsible for their own fiber and network hardware up to the point of the sign controller.
- Issues related to pricing/message displays on Express Connector signs or the operation of the Toll Connector Meter should be communicated to both OCTA and RCTC as soon as the issue has been identified.
- Any time maintenance or lane closures are being performed that might impact traffic flow on 91 Express Lanes, F/ETCA will request approval by OCTA and RCTC.
- Any time maintenance or lane closures are being performed that might impact traffic flow into or out of the Express Connector, F/ETCA must be notified as soon as possible.

# 4.5.2 Back Office Coordination

Both F/ETCA's TCS provider and its back office system (BOS) provider are responsible for monitoring for issues with the interface between the two systems. When an issue with the interface is identified by either party, the identifying party will notify both F/ETCA and the other party of the issue. Depending on the nature of the issue, it may not be immediately obvious which vendor needs to perform corrective action to resolve the issue. For those situations where it is not obvious, both vendors should begin troubleshooting and coordinating with each other to identify the root cause.

# 4.6 Warranty

F/ETCA's TSP is responsible for administrating a warranty program for all RTCS hardware and third-party software. The TSP will maintain warranty records and will review software discrepancies and available patch reports from third parties to determine when RTCS software requires upgrading. RTCS warranties are tracked in the MOMS and an automated message is generated when the warranties approach the expiration date.

# 5 TOLLED FACILITY CLOSURES FOR MAINTENANCE

# **5.1** Closure Diagrams

Maintenance of the Express Connector and adjacent portions of the 91 Express Lanes will require coordination of lane and/or facility closures between F/ETCA, OCTA, and RCTC to minimize impacts to each agency's operations and to the traveling public. Figures 4 through 10 represent the physical lane closure plans anticipated for the maintenance of toll assets supporting the Express Connector. These figures are diagrammatic and only show the tolled lanes to clearly represent the lane closure scenarios.

Lane closures due to maintenance activities will be communicated to travelers using CMS and VTMS which are dynamically controlled by the SR-91 TOC. The messages displayed on these signs will be developed in coordination with Caltrans, OCTA, and RCTC prior to Express Connector opening to traffic.

# 5.1.1 Normal Operating Conditions

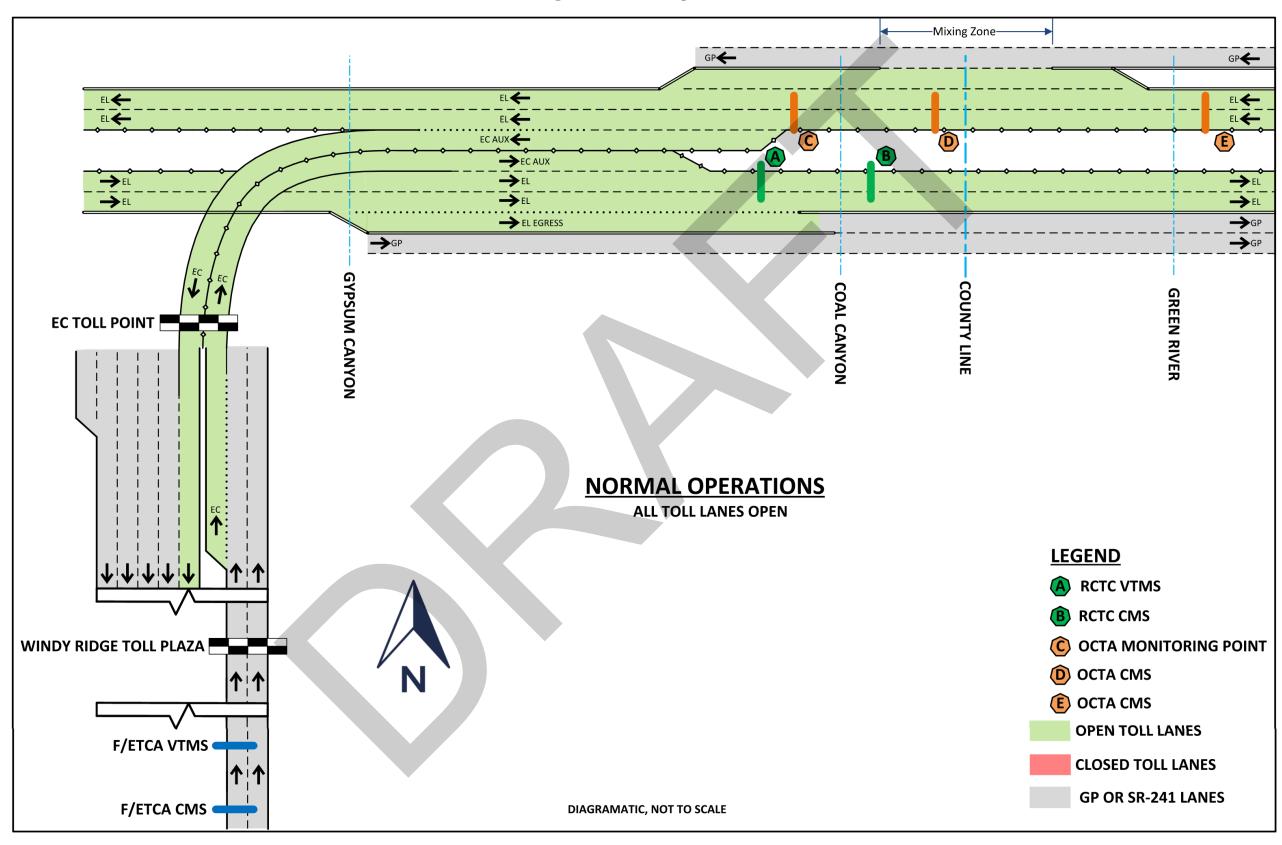
Figure 4 shows normal operating conditions when all toll lanes are open. This is a baseline figure corresponding to this section which shows that no agencies are affected. Refer to section 5.1 for the description of revenue reimbursement to the affected agency. There are no affected agencies during normal operations.

Affected Agency		Affected Roadway
None		None

# Example CMS signing for Normal Operating Conditions

During normal operations, no special maintenance signing will be required for posting on the CMS. All CMS signs will display price and information for normal operations such as "Transponder Required" or Toll Connector Meter On". Refer to Exhibit B and D for normal operation signing.

**Figure 4: Normal Operations** 



# 5.1.2 Maintenance on NB SR-241 Express Connector

Figure 5 shows the maintenance area in the NB direction of F/ETCA SR-241 prior to and within the Express Connector. Assets that require maintenance in this area include roadway infrastructure, toll collection systems associated with the toll connector meter, and the Express Connector toll gantry. This closure is anticipated only when minor maintenance is needed in the aux lane without impact to the express lanes. Users will be notified of the Express Connector closure via the F/ETCA CMS located upstream of the decision point. Physical closure of the NB Express Connector will begin at the opening of the dedicated lane roughly 3,000 feet upstream of the Express Connector toll gantry.

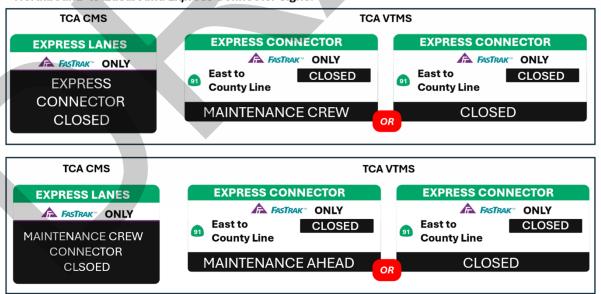
TCA is the only affected party in the Figure 5 scenario.

Affected Agency	Affected Roadway
TCA	NB to EB Express Connector

# Example CMS signing for Maintenance for NB SR-241 Express Connector Closure

This section provides an initial list of pre-approved messages that may posted on the F/ETCA electronic signs. The NB to EB Express Connector closure does not require signs on the SR-91 Express Lanes to be utilized, only those on NB SR-241. Additional messages may be approved as needed. The F/ETCA CMS is a full color matrix sign which allows for virtually any font and message to be displayed. Font and message will conform to MUTCD standards.

#### Northbound-to-Eastbound Express Connector Signs:



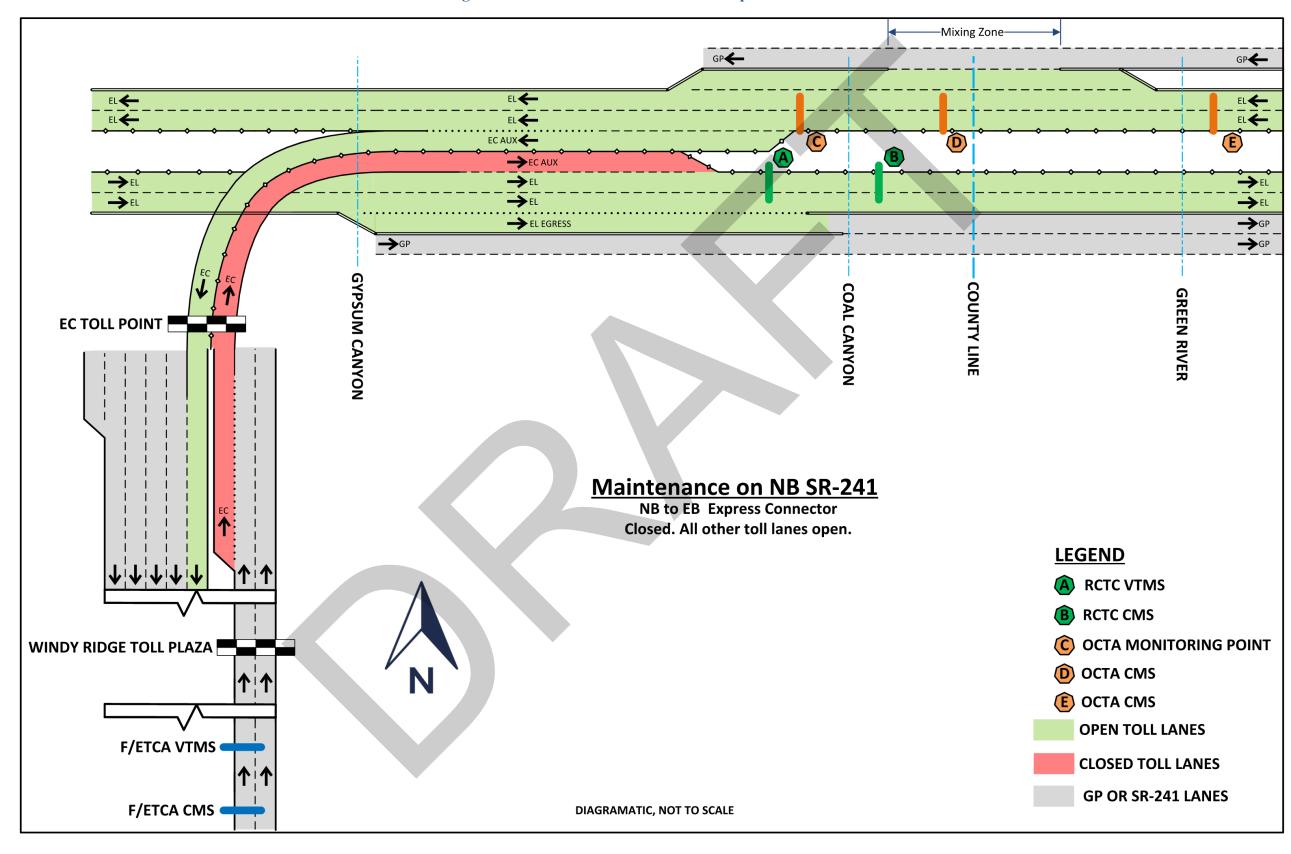


Figure 5: Maintenance on NB SR-241 Express Connector

# 5.1.3 Maintenance on SB SR-241 Express Connector

Figure 6 shows the maintenance area in the SB direction of F/ETCA SR-241 downstream of the Express Connector. Assets that require maintenance in this area include roadway infrastructure and TCS. This closure is anticipated only when minor maintenance is needed in the aux lane without impact to the express lanes. Closure of the SB Express Connector will require messages posted on the OCTA CMS sign upstream of the County Line. Physical closure of the SB Express Connector will begin in the WB 91 Express Lanes location where the SB Express Connector departure lane begins.

TCA is the only affected party in the Figure 6 scenario.

Affected Agency	Affected Roadway
TCA	WB to SB Express Connector

# Example CMS Signing for Maintenance for SB SR-241 Express Connector Closure

This section provides an initial list of pre-approved messages that may posted on the F/ETCA and OCTA electronic signs. Additional messages may be approved as needed.

# Westbound-to-Southbound Express Connector Sign:



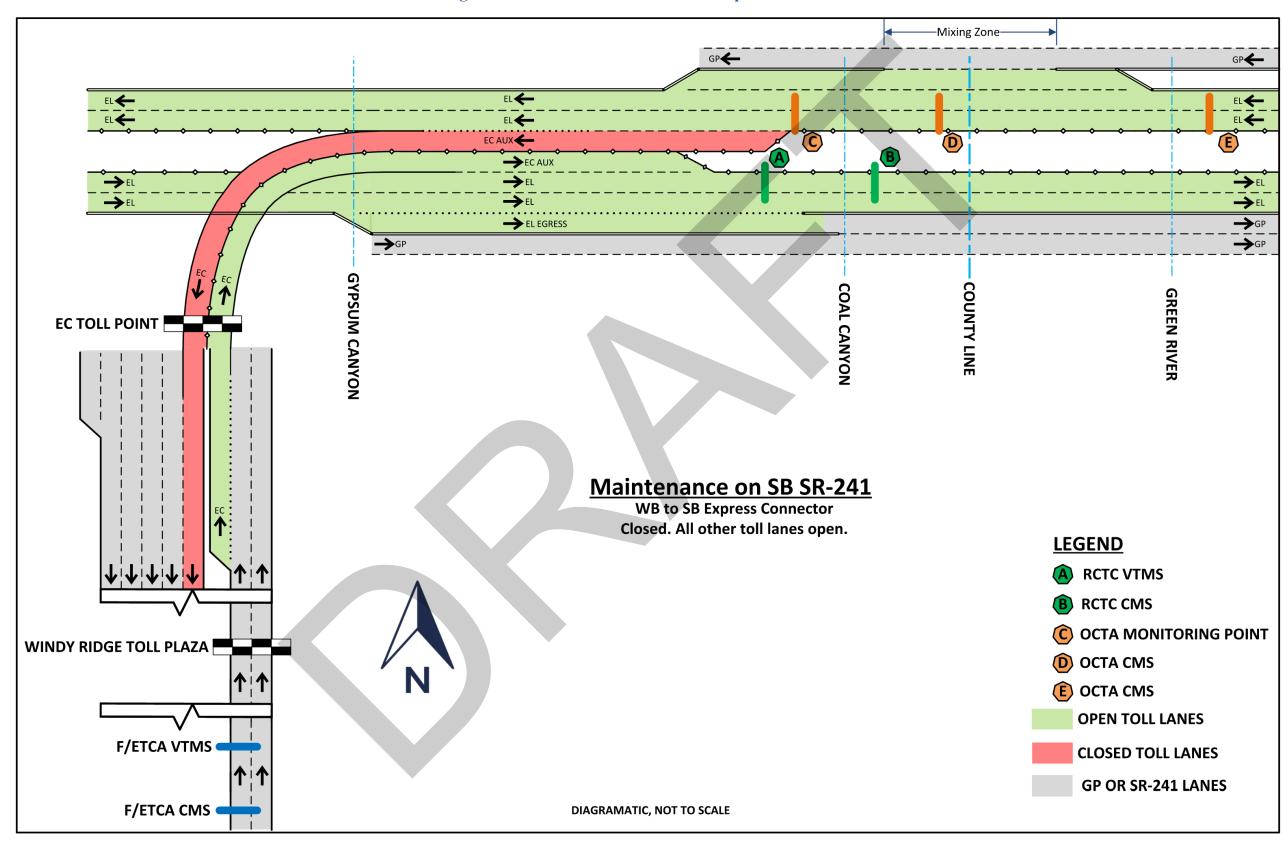


Figure 6: Maintenance on SB SR-241 Express Connector

# 5.1.4 Maintenance on WB SR-91 Express Lanes

Figure 8 shows the closure required when maintenance is performed in the WB 91 Express Lanes. F/ETCA assets that require maintenance in this area include roadway infrastructure and toll collection systems associated with traffic counting and CCTV camera sites. In addition, OCTA and RCTC maintain 91 Express Lanes assets in this location. In this scenario, the ingress/egress to the RCTC 91 Express Lanes may remain open.

Physical closures in this scenario will occur at the County Line ingress/egress location. Shared OCTA-F/ETCA CMS upstream of the closure will be used to inform users of the closure.

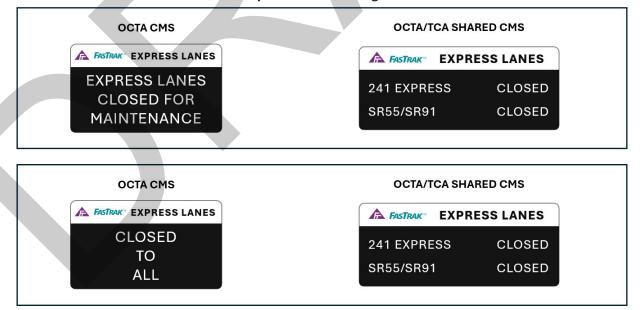
TCA and OCTA are the affected parties in the Figure 7 scenario.

Affected Agency	Affected Roadway
TCA	WB to SB Express Connector
OCTA	WB SR-91 Express Lanes

Example CMS Signing for Maintenance for WB SR-91 Express Lanes and SB Express Connector Closure

This section provides an initial list of pre-approved messages that may posted on the F/ETCA and OCTA electronic signs. Additional messages may be approved as needed.

WB EL & Westbound-to-Southbound Express Connector Signs:



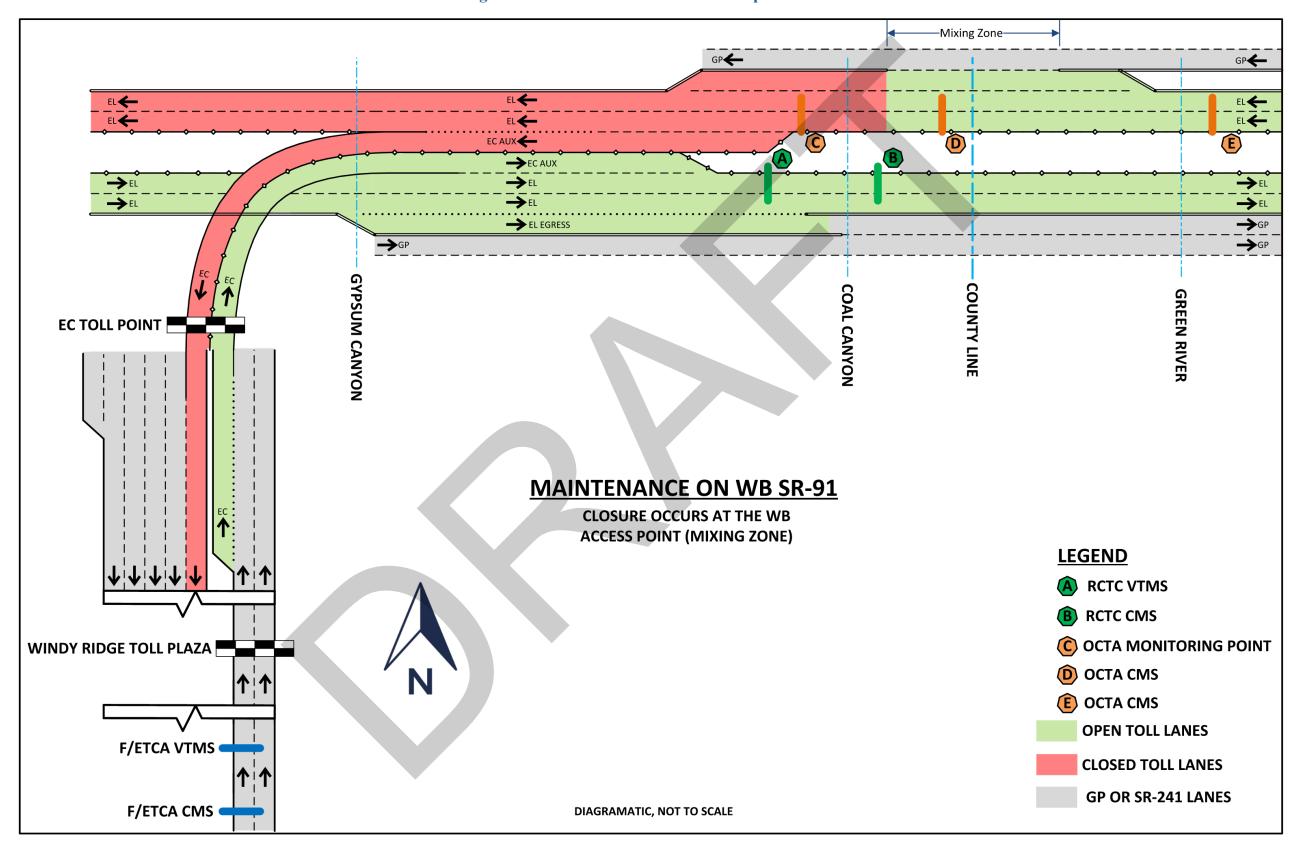


Figure 7: Maintenance on WB SR-91 Express Lanes

# 5.1.5 Maintenance on EB SR-91 Express Lanes

Figure 9 shows the closure required when maintenance is performed in the EB 91 Express Lanes. F/ETCA assets that require maintenance in this area include roadway infrastructure and toll collection systems associated with traffic counting and CCTV camera sites. In addition, OCTA and RCTC maintain 91 Express Lanes assets in this location. In this scenario the ingress/egress to the RCTC 91 Express Lanes may remain open.

Physical closures for this scenario will occur at the beginning of the 91 Express Lanes at the SR-55 and SR-91 interchange ramps. CMS signs upstream of the ingress to the express lanes will notify users of the closer and inform users to use the general-purpose lanes.

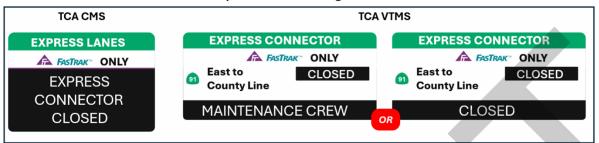
TCA and OCTA are the affected parties in the Figure 8 scenario.

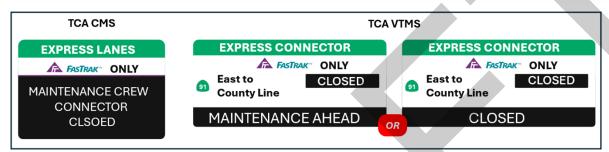
Affected Agency	Affected Roadway
TCA	NB to EB Express Connector
OCTA	EB SR-91 Express Lanes

# Example CMS Signing for Maintenance for EB SR-91 Express Lanes and NB Express Connector Closure

This section provides an initial list of pre-approved messages that may posted on the F/ETCA electronic signs. The NB to EB Express Connector closure does not require signs on the SR-91 Express Lanes to be utilized, only those on NB SR-241. Additional messages may be approved as needed. The F/ETCA CMS is a full color matrix sign which allows for virtually any font and message to be displayed. Font and message will conform to MUTCD standards.

EB EL & Northbound-to-Eastbound Express Connector Signs:







-Mixing Zone-GP← GP← EL← EL← EL← EL 🗲 EC AUX← →EC AUX **→**EL **→**GP → EL EGRESS **→**GP GYPSUM CANYON **COUNTY LINE GREEN RIVER** EC TOLL POINT **MAINTENANCE ON EB SR-91 CLOSURE END AT THE COUNTY** LINE, ALLOWING TRAFFIC TO **LEGEND ENTER EB SR-91** A RCTC VTMS **B** RCTC CMS © OCTA MONITORING POINT WINDY RIDGE TOLL PLAZA OCTA CMS **(E)** OCTA CMS **OPEN TOLL LANES** F/ETCA VTMS **CLOSED TOLL LANES GP OR SR-241 LANES** F/ETCA CMS DIAGRAMATIC, NOT TO SCALE

Figure 8: Maintenance on EB SR-91 Express Lanes

# **5.2** Permitted Closure Periods with Associated Closure Fees and Liquidated Damages

Upon acceptance by Caltrans, F/ETCA, OCTA, and RCTC have agreed to coordinate regularly (e.g., monthly) scheduled closures of the Express Connector and 91 Express Lanes for maintenance activities on these tolled facilities. It is anticipated that no closure fees will be charged when F/ETCA's maintenance work coincides with the OCTA and/or RCTC regularly scheduled closures.

Any other planned or unplanned closures of the Express Connector or 91 Express Lanes due to operations, maintenance, or ensuing improvement projects that cause closures to the Express Connector and/or 91 Express Lanes will be subject to closure fees and liquidated damages for lost toll revenues. F/ETCA agrees to closure periods and to compensate OCTA and RCTC, in the month that the closure occurs, for lost toll revenues due to any closures, including lane reductions, of the 91 Express Lanes. F/ETCA will also reimburse itself from project revenues for lost toll revenues due to any closures of the SR 241, including connectors. OCTA/RCTC will not reimburse F/ETCA for planned or unplanned closures.

#### 5.2.1 Permitted Closures

Permitted closure periods and associated closure fees will be assessed by the affected party/ies to compensate for lost toll revenues and paid by F/ETCA for the permitted closure.

The permitted closure windows are shown in Tables 9, 10 and 11. Any closures outside of these windows are unpermitted and subject to liquidated damages. It is suggested that the Parties rereview the permitted closure windows prior to open to traffic.

Typically closures are not allowed on holidays/special events even if during otherwise permitted windows.

## 5.2.2 Unpermitted Closures

Closures which go beyond the permitted closure periods, and actual closures that are not approved, will be considered unpermitted closures and will be subject to liquidated damages charges paid by F/ETCA.

Liquidated damages will be charged per 10-minute interval beyond the permitted closure window.

#### 5.2.3 Methodology

Closure fees, including liquidated damages, will typically be calculated by averaging the toll revenue in the 5–6-week period before and/or after the closure, excluding outliers (like holidays, special events or other closures) unless the closure is on an outlier event (like a holiday or during a special event). Typically, closures are not allowed on holidays/special events but would be included in the closure fee and liquidated damages calculation if the F/ETCA closure occurs in an outlier window. Each toll operator may make slight adjustments to this methodology when calculating its closure fees and liquidated damages.

Any substantial updates to the methodology should be communicated in writing with the other Parties and documented as a change to this Exhibit H.



**Table 9: Permitted Closure Periods – OCTA Toll Facility** 

Type of facility	Route	Direction and segment	Period
Express Lanes (OCTA)	Lanes Route 91 EB from Route 55 to County Line Ingress		Sunday 23:00 to Monday 5:00
			Monday 23:00 to Tuesday 5:00
			Tuesday 23:00 to Wednesday 5:00
			Wednesday 23:00 to Thursday 5:00
			Friday 23:00 to Saturday 5:00
		,	Saturday 23:00 to Sunday 5:00
Express Lanes (OCTA)	Route 91	WB from County Line Ingress/Egress to Route 55	Sunday 22:00 to Monday 4:00
			Monday 22:00 to Tuesday 4:00
			Tuesday 22:00 to Wednesday 4:00
			Wednesday 22:00 to Thursday 4:00
			Friday 23:00 to Saturday 5:00
			Saturday 22:00 to Sunday 5:00
Express Lanes (OCTA)	Route 91	EB from Route 55 to County Line Ingress	Friday 22:00 to Monday 5:00
Express Lanes (OCTA)	Route 91	WB from County Line Ingress/Egress to Route 55	Friday 21:00 to Monday 4:00

**Table 10: Permitted Closure Periods – RCTC Toll Facility** 

Type of facility	Route	Direction and segment	Period
Express Lanes (RCTC)			Sunday 23:00 to Monday 4:00
			Monday 24:00 to Tuesday 4:00
			Tuesday 24:00 to Wednesday 4:00
			Wednesday 24:00 to Thursday 5:00
			Friday 24:00 to Saturday 4:00
		,	Saturday 23:00 to Sunday 5:00
Express Lanes (RCTC)	Route 91	WB from Route 15 to County Line Ingress/Egress	Sunday 23:00 to Monday 4:00
			Monday 24:00 to Tuesday 4:00
			Tuesday 22:00 to Wednesday 4:00
			Wednesday 24:00 to Thursday 4:00
			Friday 24:00 to Saturday 4:00
			Saturday 23:00 to Sunday 5:00
Express Lanes (RCTC)	Route 91	EB from County Line Egress to Route 15	Friday 24:00 to Monday 4:00
Express Lanes (RCTC)	Route 91	WB from Route 15 to County Line Ingress/Egress	Friday 24:00 to Monday 4:00

**Table 11: Permitted Closure Periods – F/ETCA Toll Facility** 

Type of facility	Route	Direction and segment	Period
Express Connector	Route 241	North-to-East	Sunday 23:00 to Monday 5:00
			Monday 23:00 to Tuesday 5:00
			Tuesday 23:00 to Wednesday 5:00
			Wednesday 23:00 to Thursday 5:00
			Friday 23:00 to Saturday 5:00
		·	Saturday 23:00 to Sunday 5:00
Express Connector	Route 91	West-to-South	Sunday 23:00 to Monday 5:00
			Monday 23:00 to Tuesday 5:00
			Tuesday 23:00 to Wednesday 5:00
		Wednesday 24:00 to Thursday 4:00	
			Friday 23:00 to Saturday 5:00
			Saturday 23:00 to Sunday 5:00
Express Connector	Route 241	North-to-East	Friday 23:00 to Monday 5:00
Express Connector	Route 91	West-to-South	Friday 23:00 to Monday 5:00

# EXHIBIT A 241/91 EXPRESS CONNECTOR TOLL FACILITIES



THE DEVELOPMENT AND OPERATION OF THE 241/91 EXPRESS CONNECTOR

F/ETCA AGREEMENT NO	
OCTA AGREEMENT NO.	
RCTC AGREEMENT NO.	
CALTRANS AGREEMENT NO.	

#### **DRAFT**

# EXHIBIT I – Closure Periods, Closure Fees, & Liquidated Damages During Construction

F/ETCA, OCTA, and RCTC agree to Closure periods and compensation for lost toll revenues due to any Closures, including lane reductions and connectors, of the 241 toll road and 91 Express Lanes during and due to Project construction.

Schedules shown in Tables 1, 2, and 3 are closure fees for the permitted Closures of the toll facilities which are Closures that have been agreed to by OCTA, RCTC, and/or F/ETCA.

Additional Closure windows not shown in these tables (ie 55-hour closures not already identified) may be submitted for consideration by each agency; associated closure fees for requested additional Closure windows will be calculated by averaging the toll revenue in the 5–6-week period before and/or after the Closure, excluding outliers (like holidays, special events or other closures) unless the Closure is on an outlier event (like a holiday or during a special event).

Schedules shown in Tables 4, 5, and 6 are liquidated damages for the unpermitted Closures of the toll facilities that go beyond or are outside of the Closures that have been agreed to by OCTA, RCTC, and/or F/ETCA.

F/ETCA AGREEMENT NO	
OCTA AGREEMENT NO.	
RCTC AGREEMENT NO.	
CALTRANS AGREEMENT NO.	

# **EXHIBIT I – Closure Periods, Closure Fees, & Liquidated Damages During Construction**

# Table 1 Closure Fees for PERMITTED CLOSURES of the OCTA TOLL FACILITY

The following payments are the closure fees required for the PERMITTED CLOSURES of the OCTA TOLL FACILITY.

Type of facility	Route	Direction and segment	Lane Closure Charts	Period	Closure Fees
				Sunday 23:00 to Monday 5:00	\$1,100/night
				Monday 23:00 to Tuesday 5:00	\$1,000/night
F		ED from Doute		Tuesday 23:00 to Wednesday 5:00	\$1,200/night
Express Lanes	Route 91	EB from Route 55 to County	H7	Wednesday 23:00 to Thursday 5:00	\$1,200/night
(OCTA)		Line Ingress		Thursday 23:00 to Friday 5:00	\$1,400/night
				Friday 23:00 to Saturday 5:00	\$2,300/night
				Saturday 23:00 to Sunday 5:00	\$2,500/night
				Sunday 22:00 to Monday 4:00	\$1,200/night
				Monday 22:00 to Tuesday 4:00	\$1,000/night
Express		WB from		Tuesday 22:00 to Wednesday 4:00	\$1,000/night
Lanes (OCTA)	Route 91	County Line Ingress/Egress	H8	Wednesday 22:00 to Thursday 4:00	\$1,000/night
(6611)		to Route 55		Thursday 22:00 to Friday 4:00	\$1,200/night
				Friday 22:00 to Saturday 5:00	\$1,500/night
				Saturday 22:00 to Sunday 5:00	\$1,900/night
Express Lanes (OCTA)	Route 91	WB from County Line Ingress/Egress to Route 55	H9	Friday 21:00 to Monday 4:00	\$166,000/56 hours

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# **EXHIBIT I – Closure Periods, Closure Fees, & Liquidated Damages During Construction**

# Table 2 Closure Fees for PERMITTED CLOSURES of the RCTC TOLL FACILITY

The following payments are the closure fees required for the PERMITTED CLOSURES of the RCTC TOLL FACILITY.

Type of facility	Route	Direction and segment	Lane Closure Charts	Period	Closure Fees			
				Sunday 22:00 to Monday 6:00	\$3,500/night			
				Monday 22:00 to Tuesday 6:00	\$3,200/night			
		EB from		Tuesday 22:00 to Wednesday 6:00	\$4,500/night			
Express Lanes	Route 91	County Line Egress to	H5	Wednesday 22:00 to Thursday 6:00	\$7,500/night			
(RCTC)		Route 15		Thursday 23:00 to Friday 7:00	\$5,000/night			
				Friday 23:00 to Saturday 7:00	\$4,100/night			
				Saturday 23:00 to Sunday 7:00	\$6,500/night			
		WB from Route 15 to County Line Ingress/Egress					Sunday 21:00 to Monday 4:00	\$2,600/night
	Route 91		H6	Monday 21:00 to Tuesday 4:00	\$1,600/night			
Гургана				Tuesday 21:00 to Wednesday 4:00	\$1,400/night			
Express Lanes (RCTC)				Wednesday 21:00 to Thursday 4:00	\$1,600/night			
				Thursday 24:00 to Friday 4:00	\$1,700/night			
				Friday 21:00 to Saturday 6:00	\$3,000/night			
				Saturday 21:00 to Sunday 6:00	\$3,400/night			

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# **EXHIBIT I – Closure Periods, Closure Fees, & Liquidated Damages During Construction**

# Table 3 Closure Fees for PERMITTED CLOSURES of the F/ETCA TOLL FACILITY

The following payments are the closure fees required for the PERMITTED CLOSURES of the F/ETCA TOLL FACILITY.

Type of facility	Route	Direction and segment	Lane Closure Charts	Period	Closure Fees
				Sunday 23:00 to Monday 5:00	\$9,000/night
				Monday 23:00 to Tuesday 5:00	\$9,000/night
				Tuesday 23:00 to Wednesday 5:00	\$9,000/night
Mainline	Route 241	NB	H1 I2	Wednesday 23:00 to Thursday 5:00	\$9,000/night
				Thursday 23:00 to Friday 5:00	\$11,700/night
				Friday 23:00 to Saturday 5:00	\$9,500/night
				Saturday 23:00 to Sunday 5:00	\$9,500/night
Mainline	Route 241	NB	H10	Friday 22:00 to Monday 4:00	\$570,500/56 hours
				Sunday 23:00 to Monday 5:00	\$6,700/night
				Monday 23:00 to Tuesday 5:00	\$6,700/night
		Northbound-to		Tuesday 23:00 to Wednesday 5:00	\$6,700/night
Connector	Route 241	Eastbound Route 91	13	Wednesday 23:00 to Thursday 5:00	\$6,700/night
		Tiodio 01		Thursday 23:00 to Friday 5:00	\$6,700/night
				Friday 23:00 to Saturday 5:00	\$11,800/night
				Saturday 23:00 to Sunday 5:00	\$11,800/night
				Sunday 23:00 to Monday 5:00	\$5,300/night
		Eastbound to		Monday 23:00 to Tuesday 5:00	\$5,300/night
Connector	Route 91	Southbound Route 241	13	Tuesday 23:00 to Wednesday 5:00	\$5,300/night
		Noute 241		Wednesday 23:00 to Thursday 5:00	\$5,300/night
				Thursday 23:00 to Friday 5:00	\$5,300/night

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# **EXHIBIT I – Closure Periods, Closure Fees, & Liquidated Damages During Construction**

Type of facility	Route	Direction and segment	Lane Closure Charts	Period	Closure Fees
				Friday 23:00 to	\$5,000/night
				Saturday 5:00	
				Saturday 23:00 to	\$5,000/night
				Sunday 5:00	
				Sunday 23:00 to	\$600/night
				Monday 5:00	
				Monday 23:00 to	\$600/night
				Tuesday 5:00	_
				Tuesday 23:00 to	\$600/night
		Northbound to		Wednesday 5:00	
Connector	Route 241	Westbound	14	Wednesday 23:00 to	\$600/night
Connector	Roule 241	Route 91	14	Thursday 5:00	_
		Roule 91		Thursday 23:00 to	\$1,200/night
				Friday 5:00	
				Friday 23:00 to	\$1,400/night
				Saturday 5:00	
		\		Saturday 23:00 to	\$1,500/night
				Sunday 5:00	. , 3
				Sunday 23:00 to	\$13,200/night
				Monday 5:00	, , , , , , ,
				Monday 23:00 to	\$13,200/night
				Tuesday 5:00	, , , , , , , , , , , , , , , , , , ,
				Tuesday 23:00 to	\$13,200/night
				Wednesday 5:00	, , , , , , , , , , , , , , , , , , ,
	5.4.54	Westbound to		Wednesday 23:00 to	\$13,200/night
Connector	Route 91	Southbound	14	Thursday 5:00	, , , , , , ,
		Route 241		Thursday 23:00 to	\$10,800/night
				Friday 5:00	. , ,
				Friday 23:00 to	\$12,700/night
				Saturday 5:00	, , , , , ,
				Saturday 23:00 to	\$9,600/night
				Sunday 5:00	. , 3
		Northbound to		Friday 23:00 to	\$72,900/54 hours
Connector	Route 241	Westbound	15	Monday 5:00	. ,
		Route 241		•	
		Westbound to		Saturday 24:00 to	\$473,900/52 hours
Connector	Route 91	Southbound	16	Monday 4:00	
		Route 241		,	
				Sunday 23:00 to	\$500/night
				Monday 5:00	
		N a with he a		Monday 23:00 to	\$500/night
Express	D=141 044	Northbound to	1-7	Tuesday 5:00	
Connector	Route 241	Eastbound	17	Tuesday 23:00 to	\$500/night
		Route 91		Wednesday 5:00	
				Wednesday 23:00 to	\$500/night
				Thursday 5:00	

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**EXHIBIT I – Closure Periods, Closure Fees, & Liquidated Damages During Construction** 

Type of facility	Route	Direction and segment	Lane Closure Charts	Period	Closure Fees					
				Sunday 23:00 to Monday 5:00	\$500/night					
Express	Doute 01	Westbound to						17	Monday 23:00 to Tuesday 5:00	\$500/night
Connector	Route 91	Southbound Route 241	17	Tuesday 23:00 to Wednesday 5:00	\$500/night					
				Wednesday 23:00 to Thursday 5:00	\$500/night					

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# **EXHIBIT I – Closure Periods, Closure Fees, & Liquidated Damages During Construction**

# Table 4 Closure Fees for UNPERMITTED CLOSURES of the OCTA TOLL FACILITY

The following payments are the liquidated damages required for the UNPERMITTED CLOSURES of the OCTA TOLL FACILITY.

Type of facility	Route	Direction or segment	Period	Unpermitted Closure Liquidataed Damages / Interval
Express Lanes (OCTA)	Route 91	EB from Route 55 to County Line Ingress	1st half hour 2nd half hour 2nd hour and beyond	\$14,500/10 minutes \$18,600/10 minutes \$21,000/10 minutes
Express Lanes (OCTA)	Route 91	WB from County Line Ingress/Egress to Route 55	1st half hour 2nd half hour 2nd hour and beyond	\$14,500/10 minutes \$21,200/10 minutes \$24,400/10 minutes

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# **EXHIBIT I – Closure Periods, Closure Fees, & Liquidated Damages During Construction**

# Table 5 Closure Fees for UNPERMITTED CLOSURES of the RCTC TOLL FACILITY

The following payments are the liquidated damages required for the UNPERMITTED CLOSURES of the RCTC TOLL FACILITY.

Type of facility	Route	Direction or segment	Period	Unpermitted Closure Liquidated Damages / Interval
Express Lanes (RCTC)	Route 91	EB from County Line Egress to Route 15	1st half hour 2nd half hour 2nd hour and beyond	\$14,500/10 minutes \$18,600/10 minutes \$21,000/10 minutes
Express Lanes (RCTC)	Route 91	WB from Route 15 to County Line Ingress/Egress	1st half hour 2nd half hour 2nd hour and beyond	\$14,500/10 minutes \$21,200/10 minutes \$24,400/10 minutes

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# **EXHIBIT I – Closure Periods, Closure Fees, & Liquidated Damages During Construction**

# Table 6 Closure Fees for UNPERMITTED CLOSURES of the F/ECTA TOLL FACILITY

The following payments are the liquidated damages required for the UNPERMITTED CLOSURES of the F/ETCA TOLL FACILITY.

Type of facility	Route	Direction or segment	Pariod	
Mainline	Route 241	NB	1st half hour 2nd half hour 2nd hour and beyond	\$2,000/10 minutes \$2,700/10 minutes \$7,700/10 minutes
Mainline	Route 241	SB	1st half hour 2nd half hour 2nd hour and beyond	\$1,900/10 minutes \$2,900/10 minutes \$10,600/10 minutes
Connector	Route 241	Northbound-to Eastbound Route 91	1st half hour 2nd half hour 2nd hour and beyond	\$1,600/10 minutes \$2,100/10 minutes \$4,800/10 minutes
Connector	Route 91	Eastbound to Southbound Route 241	1st half hour 2nd half hour 2nd hour and beyond	\$1,100/10 minutes \$1,400/10 minutes \$2,800/10 minutes
Connector	Route 241	Northbound to Westbound Route 241	1st half hour 2nd half hour 2nd hour and beyond	\$200/10 minutes \$300/10 minutes \$700/10 minutes
Connector	Route 91	Westbound to Southbound Route 241	1st half hour 2nd half hour 2nd hour and beyond	\$2,700/10 minutes \$3,300/10 minutes \$7,100/10 minutes
Express Connector	Route 241	Northbound to Eastbound Route 91	1st half hour 2nd half hour 2nd hour and beyond	\$1,400/10 minutes \$1,600/10 minutes \$2,200/10 minutes
Express Connector  Route 91  Westbound to Southbound Route 241		1st half hour 2nd half hour 2nd hour and beyond	\$1,500/10 minutes \$1,500/10 minutes \$2,200/10 minutes	

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