Schedule 25

HPTE Snow and Ice Control Service Requirements

Colorado High Performance Transportation Enterprise - US 36 Managed Lanes Project – Toll Concession Project
Schedule 25
Snow and Ice Control Services

1.0 Snow and Ice Control Services

The Concessionaire is responsible for the services necessary to provide snow and ice control ("Snow and Ice Control Services") and shall provide all necessary resources and equipment including service vehicles and loaders required to complete the work associated with this performance requirement. The Concessionaire will perform the Snow and Ice Control Services according to this Schedule 25, the Concessionaire's Snow and Ice Services Proposals and the plan submitted by the Concessionaire demonstrating how they will provide the Snow and Ice Control Services (the "Snow and Ice Control Operations Plan" requirements are further detailed in Section 4.0). All dollar amounts referred to in this Schedule are Indexed.

1.1 Precipitation Events

A Precipitation Event includes heavy rains, snow, ice, or other severe weather events including those that cause the Managed Lanes and General Purpose Lanes (collectively or individually, as the context requires, "Travel Way") to accumulate snow and ice. For purposes of this Schedule 25 and all requirements herein, blowing snow, as well as melting snow runoff, is considered a Precipitation Event if it places snow and/or ice on the roadway surface such that snow removal or ice control is necessary to meet the Bare Pavement requirements. The end of a Precipitation Event is defined as a "cessation of precipitation for two hours with clearing skies."

The primary objective of the Snow and Ice Control Services is to maintain the Traveled Way free from snow and ice and maintain traffic flows on the Managed Lanes and General Purpose Lanes during and after any Precipitation Event". The requirements in this Schedule 25 are both for timely response at the beginning and during Precipitation Events as well as the time to reinstitute a Travel Way free of snow and/or ice.

2.0 Snow and Ice Control Services Responsibilities of the Concessionaire

2.1 Description of the Snow and Ice Control Services

The Concessionaire is responsible for the services necessary to provide the Snow and Ice Control Services and shall provide all necessary resources and equipment required to complete the work associated with this performance requirement. The Snow and Ice Control Services, including the decision of when to mobilize and initiate work for a Precipitation Event, shall be under the direction of the Concessionaire.

The Snow and Ice Control Services include, but are not limited to, loading materials on trucks, snow plowing and the application of traction aids (sand, salt, etc.) and liquid de-icers within the Snow and Ice Control Limits as shown in Figures 25-1 through 25-11. Figures 25.1 through 25.3 depict typical sections of US36 and I-25 and the limits between the General Purpose Lanes and Managed Lanes. Figures 25.4 through 25.9 depict the maintenance limits for US36 starting at the West end of the corridor at Foothills Parkway to the East end at I-25. Figures 25.10 and 25.11 depict the limits for the I-25 Managed Lanes starting at the North end at US36 to the South end at 19th/20th Streets. Additional lanes, ramps and overpasses to be included in the Snow & Ice control limits are indicated on Figures 25.3 through 25.11, as "Additional General Purpose Lanes Maintenance Limits".

The Concessionaire will also be responsible for all post-storm clean up including touch up work to remove snow that could cause freeze-thaw or traffic hazards and sweeping as required by the Denver Regional Council of Governments. The requirements for Snow and Ice Control equipment ("Equipment") including service vehicles, loaders and trucks are performance-based specifications allowing the Concessionaire maximum flexibility to utilize the Equipment the Concessionaire deems best suited to performance of the work. The Concessionaire must place necessary Equipment in service and react to changing weather and roadway conditions as quickly as possible; at a minimum to meet the Response Times defined in 3.3.1.

Concessionaire shall take all necessary actions to achieve the following:

a. Provide all Snow and Ice Control for the I-25 Managed Lanes and the US36 Corridor as defined under the Concession Agreement,

b. Provide all resources necessary for the performance of Snow and Ice Control Services including required maintenance yard(s) with all necessary facilities,

c. Minimize delay and inconvenience to Customers,

d. Identify and correct all defects and damages which the Concessionaire might cause in the delivery of the Snow and Ice Control,

e. Monitor and observe weather and weather forecasts to proactively deploy resources to minimize delays and safety hazards due to Precipitation Events,

f. Minimize the risk of damage, disturbance, or destruction of third-party property during the performance of Snow and Ice Control Removal Services,

g. Coordinate with and enable HPTE, CDOT and others with statutory duties or functions in relation to the Snow and Ice Control Services,

h. Provide all necessary post-Precipitation Event sweeping to meet all requirements

i. Provide oversight and inspection to assure that the Snow and Ice Control Services are being conducted in accordance with the provisions of Snow and Ice Control Operations Plan and in accordance with the Safety Plan delivered as part of Schedule 6, and

j. Actively participate in meetings scheduled by HPTE and CDOT to plan for all forecast Precipitation Events and for debriefing after all Precipitation Events and to include RTD in all such planning and debriefing events.

2.1.1 Maintenance Facilities

The Concessionaire will not be permitted to use any existing HPTE equipment or facilities except for the infrastructure at the CDOT 70th Avenue Maintenance Facility that are currently in use on the I-25 Managed Lanes for storing equipment and materials.

The Concessionaire shall be responsible for providing the location for the maintenance yard(s) as well as all necessary facilities which may include items such as patrol sheds, bays, offices, de-icer and traction aid storage.

The infrastructure provided at the CDOT 70th Avenue Maintenance Facility includes a 50 x 65 foot storage facility with an impermeable concrete floor, a 20,000 gallon storage tank for liquid de-icer and a concrete containment vault capable of storing the entire 20,000 gallon volume. The Concessionaire must provide any and all maintenance necessary to stay compliant with CDOT's Facility Runoff Control Plan and ensure there are no environmental risks or hazards. All manpower, equipment and materials required to maintain the infrastructure in current condition or replace (as needed) will be provided by the Concessionaire.

The Concessionaire is only allowed to use the CDOT 70th Avenue Maintenance Facility and the associated infrastructure described for Snow and Ice Control Services on the I-25 Managed Lanes.

2.1.2 Snow and Ice Control Equipment

The Concessionaire shall determine the Snow and Ice Control Equipment that is required to carry out the Services. Each piece of Equipment used by the Concessionaire in the conduct of the Snow and Ice Services shall have the necessary valid registrations, permits, licenses, insurance and certifications. The Concessionaire shall maintain each piece of Equipment to the minimum standard established by commercial vehicle inspection as enforced by the Colorado State Patrol Motor Carrier Safety Section who is charged with ensuring the safe operation of all commercial vehicles and operators within Colorado. The Federal Motor Carrier Safety

Regulations have been adopted by the State of Colorado

If, in the opinion of the HPTE representative, any piece of Equipment is not in a safe condition, then it shall be removed from the worksite and immediately replaced with a piece of Equipment that meets all requirements of this Schedule 25. Any such piece of Equipment cannot be returned to service until the necessary repairs or modifications have been made.

Each piece of Equipment engaged in the work shall be assigned a unique number that is prominently displayed on either side of the Equipment, while performing work on the Traveled Way.

2.2 Snow and Ice Control Limits

Schedule 6 Service Requirements, Figures 6-1 through 6-11 provides a graphical representation of the snow and ice control limits of the project ("Snow and Ice Control Limits"). Typical sections describing the limits of the Managed Lanes and General Purpose lanes are also presented on these figures.

2.3 Snow Removal Restrictions

Snow removal operations in the lanes closed to traffic and behind all temporary barriers shall be done in a way to avoid placing snow back into open lanes of traffic. Snow must be removed far enough from the edge of the applicable Travel Way that runoff from melting snow will not enter into the Travel Way. The Concessionaire will not create windrows or snow piles that may block ramps, intersections or adjoining local roads. Nor shall the Concessionaire leave any windrow or snow piles that may become hazards after a snow storm. The Concessionaire shall not cast snow onto the general purposes lanes of I-25 from the I-25 Managed Lanes or onto any lanes of US
36 or the roads beneath US 36 when working on bridges or overpasses. The Concessionaire will not cast snow onto private property in a way that would cause damage to that property. The Concessionaire shall not cast snow onto RTD bus facilities near or adjacent to the highway including, but not limited to, slip ramps, queue jumps, exclusive bus ramps, or obstruct RTD's access to its facilities. The Concessionaire will be required to self-report using forms that contain at least the minimum information in Exhibit 25-1. HPTE may also survey the travel lanes during and after each Precipitation Event. The Concessionaire shall coordinate with CDOT, HPTE and RTD through the meetings referenced in section 2.1.j to debrief after each precipitation event to make plan modifications for continual process improvement.

2.4 De-icing and Anti-icing Chemicals

All de-icing and anti-icing chemical materials introduced into the environment by the Concessionaire will meet or exceed Pacific Northwest Snow Fighters (PNS) criteria (http://www.wsdot.wa.gov/partners/pns/default.htm). All de-icing and anti-icing chemical materials will be found on the PNS approved products list (available at http://www.wsdot.wa.gov/partners/pns/pdf/PNSQPL.pdf) and not have any known adverse reactions when used with CDOT anti-icing and de-icing materials

3.0 Service Level for Achievement of Bare Pavement

3.1 Service Level Requirements

(1) Managed Lanes. The Managed Lane facilities are to be maintained at a minimum level of service "A" which is a standard of condition Category 1 (as defined below) for a minimum 95% bare pavement in this Travel Way at the end of any Precipitation Event.

(2) General Purpose Lanes. The General Purpose Lanes are to achieve a minimum level of service B which is a standard of condition Category 1 (as defined below) for a minimum 95% bare pavement in this Travel Way no less than two hours after the end of any Precipitation Event.

In all cases the work shall be consistent with CDOT Standard Operating Guide for Winter Maintenance and Operations, revised August 2010 or as subsequently updated, (the "SOG") as well as Policy Directive 1055.0 regarding Snow Removal on State Highways and Procedural Directive 1055.2 regarding Priorities and Level of Service for Snow and Ice Control.

> Category 1 is defined as "Maintain wet (bare), tractive surface through proactive anti-icing prior to Precipitation Event and de-icing and application of abrasives during and after the Precipitation Event. Objective is to keep a wet road surface as much as possible during Precipitation Event. When this is met, traffic moves smoothly at a speed consistent with wet pavement and weather condition allow. (Note: anti-icing and de-icing are used predominately in non-windy areas.)

3.2 Service Level Scoring

For scoring purposes, to meet the Service Level requires a minimum score of 5 be achieved for all areas of the Snow and Ice Control Limits – the "Service Level Score." The Concessionaire will be responsible to provide reporting after each Precipitation Event addressing achievement of these Service Level requirements.

The scoring of each event is as follows:

a. A maximum score of 5 is achieved when the Service Level Requirements are met as prescribed in 3.1,

b. A score of 4 is achieved if it takes 1 hour or less additional time to achieve the Service Level Requirements as prescribed in 3.1,

c. A score of 3 is assigned when it takes more than 1 but no more than 2 hours additional time to achieve the Service Level Requirements as prescribed in 3.1,

d. Score of 2 is assigned when it takes more than 2 but no more than 3 hours additional time to achieve the Service Level Requirements as prescribed in 3.1, and

e. Score of 1 is assigned when it takes more than 3 hours additional time to achieve the Service Level Requirements as prescribed in 3.1

f. Score of 0 is assigned when the road is closed due to accumulated snow and ice unless closed by HPTE for reasons other than the Concessionaire's performance.

The Concessionaire shall be required to report on Service Levels achieved at the end of each Precipitation Event. Noncompliance points will be assigned as provided in Schedule 10 for failure to meet the required standards in the Managed Lanes. For the General Purpose Lanes, the following price reductions shall be assessed if the minimum score of 5 is not achieved.

General Purpose Lane Price Reductions for Failure to Meet Service Level Score (Service Level Score assessment is per Precipitation Event, accumulations will be calculated on a calendar year basis and apply across all Service Levels.)			
Service Level Achieved	**Maximum Reduction for 1st Instance**	**Maximum Reduction for 2nd Instance**	**Maximum Reduction for all additional instances**
4	$ 1,000	$ 5,000	$7,500
3	$ 2,000	$10,000	$15,00
2	$ 5,000	$15,000	$25,000
1	$15,000	$25,000	$35,000
0	$25,000	$35,000	$50,000

Example, if the first failure to meet the Service Level is achievement of Service Level 2 the Price Reduction shall be $5,000. If the second failure to meet the Service Level is achievement of Service Level 3 the Price Reduction shall be $10,000.

3.2.1 Remedies

If there is a failure to meet the Service Levels for consecutive Precipitation Events the following remedies shall be available to HPTE.

3.2.1.1 Increased Monitoring

After the second Precipitation Event where the Service Level is not met, HPTE shall institute additional monitoring. The additional monitoring may consist of HPTE taking reasonable steps (including engaging additional personnel or external consultants) to increase its monitoring of the Concessionaire's performance of the Services. Until the Service Levels are met on the two consecutive Precipitation Events the additional monitoring will continue. The Concessionaire shall compensate HPTE for its direct costs of such increased monitoring plus an additional 10%

in relation to HPTE's increased overheads. HPTE may submit invoices no more frequently than once in each month in relation to such costs and overheads.

3.2.1.2 Remedial Plan

After failure to achieve the Service Level on three consecutive Precipitation Events in addition to increased monitoring, HPTE may require the Concessionaire to prepare and submit a plan to resolve the cause of the failure to meet the Service Levels (the "Remedial Plan") for HPTE's approval. The Remedial Plan shall be delivered to HPTE within 25 days of its request. The Remedial Plan shall describe specific actions the Concessionaire will undertake to improve its performance as demonstrated by achieving the required Service Levels on three consecutive Precipitation Events. Such actions may include but are not limited to

improvements to Concessionaire's quality management practices,
changes to plans and procedures;
changes in its organizational and management structures;
increased monitoring and inspections by the Concessionaire;
changes in key personnel; and
the replacement of subcontractors.

HPTE may reject a proposed Remedial Plan and require it to be resubmitted if HPTE forms the reasonable opinion that:

the actions described in the Remedial Plan do not give a high level of confidence that the performance of the Concessionaire will be improved in relation to the occurrence of failure to meet Service Levels; or
that the time period to implement the Remedial Plan is not as short as is reasonably practicable for a competent Concessionaire giving top priority to the rectification of its failures to perform.

3.2.1.3 Default

If the Concessionaire

fails to deliver to HPTE the Remedial Plan within 25 days of HPTE's request; or
fails to comply with the course of action described in the Remedial Plan;
then that shall be deemed to be breach of Contract which is within paragraph (a) of the definition of Concessionaire Default and Section 51 of the Contract shall apply accordingly.

3.3 Response Times

3.3.1 Response Time Requirements

In addition to the achievement of the Service Level Requirements for Snow and Ice Control Services it is necessary that the following initial response time requirements listed below must be met. Also, it is required that after initial response that there is a diligent prosecution of the work throughout the Precipitation Event

3.3.1.1 For any predicted/forecasted Precipitation Event:

a. The required maximum response time (Response Time) to complete the manning and loading of spreading vehicles for an event is 0.5 hours from the time precipitation has started.
b. The required maximum Response Time from departure loading point to treatment completion and return to loading point is 1.0 hour or such longer time as agreed in the Snow and Ice Control Operations Plan.
c. The maximum Response Time for snow and ice clearance vehicles to depart from base is 1.0 hour.

3.3.1.2 For any unpredicted/unforecast Precipitation Event:

a. Add 0.5 hours to the above times.

The Concessionaire will be responsible to provide reporting after each Precipitation Event addressing achievement of these Response Time requirements.

3.3.2 Price Reduction for Failure to Meet Response Times

Failure to meet the above response times, by the Concessionaire will be considered an incident and the Concessionaire will be assessed a reduction in the prices paid by HPTE ("Price Reduction") as described below. To meet a response time requires the timely deployment of the Equipment as prescribed in the Snow and Ice Control Plan (for both the Managed Lanes and General Purpose Lanes).

a. An incident is an occasion when of there is a failure to meet a response time by up to 15 minutes ("Incident"). Each subsequent 15 minutes delay in meeting a response time or part thereof will be considered as an additional Incident.
b. A Price Reduction will be assessed for each successive Incident. Failure to accurately report Incidents will result in a doubling of the Price Reductions. The price reduction for each Incident will increase at a progressive rate starting with $300 for the first Incident and increasing up to $1,500 for the 4th and subsequent Incidents in accordance with the Incident Price Reduction schedule below.
c. The number of Incident charges will be cumulative through the duration of a single weather event.

Example, if a set of Equipment has a delayed response of 45 minutes that would represent three Incidents and a price reduction of $1,800.

Incident Price Reduction Schedule (cumulative through a single Precipitation Event, Price Reductions shown are as accurately reported, failure to report Incidents results in doubling of all Price Reductions)		
Incident	**Incident Rate**	**Total Price Reduction**
1st	$ 300	$ 300
2nd	$ 600	$ 900
3rd	$ 900	$1,800
4th	$1,500	$3,300
5th and all subsequent	$1,500 each	$4,800+$1,500 for ea. subsequent incident

3.4 Post Precipitation Event Sweeping

A major source of the PM10 emissions in the Denver area is derived from driving over and crushing sand on the streets that was applied during snow storms in the winter. The winter street sanding causes between 40 and 60 percent of PM10 emissions, and it is the single largest contributor to PM10 emissions.

Therefore, it is a requirement that in all portions of the Snow and Ice Control Services area that after a Precipitation Event all sand or other materials than could result in PM10 particles will be swept from the Travel Way within 72 hours. In addition to Noncompliance Points which may be assessed for either failures in the Managed Lanes or the General Purpose Lanes, if the Concessionaire fails to meet this requirement they will be responsible for any penalties or fines which are imposed as a result.

4.0 Snow and Ice Control Operations Plan

The preliminary Snow and Ice Control Operations Plan submitted with the Proposal must be completed to meet all requirements of this Schedule 25, and consistent with the Concessionaire's Snow and Ice Service Proposals, and submitted to HPTE for review. The requirement is to have a final Snow and Ice Control Operations Plan Accepted by HPTE at least 30 days prior to commencement of the Snow and Ice Control Services or August 1 of the initial year whichever is sooner. After the submission of the draft of the complete Snow and Ice Control Operations Plan, the Concessionaire and HPTE will meet and discuss the submitted Snow and Ice Control Operations Plan. Based on that meeting and any written feedback, the Concessionaire will make any required modifications which are necessary to be reasonably confident that the plan will achieve the requirements of this Schedule 25 in a manner which is consistent with the Concessionaire's Snow and Ice Service Proposals and submit a revised Snow and Ice Control Operations Plan for final review and Acceptance. The Snow and Ice Control Operations Plan, when Accepted, shall be the basis for delivering the Snow and Ice Control Services.

The Snow and Ice Control Operations Plan and all subsequent updates will address all details on operations, management, proposed equipment, maintenance yards, materials, staffing and all other items necessary to deliver the Level of Service and Response Times specified in Schedule 25 in a manner consistent with the Concessionaire's Snow and Ice Service Proposals. An annual update to the Snow and Ice Control Operations Plan shall be submitted each year by June 1 and be approved by August 1.

The Snow and Ice Control Operations Plan must outline procedures that will be implemented to maintain Travel Way free from snow and ice in a manner that will meet the Service Level Requirements including location of maintenance yards, procedures for snow and ice clearance plans to maintain traffic flows during and after snowfall, how weather forecast information is obtained and assessed, how Response Times will be met, sweeping requirements and the appropriate treatments necessary to prevent ice forming on the Travel Way. Any variations in approach for the Managed Lanes and General Purpose Lanes must be clearly delineated. After Acceptance of the initial Snow and Ice Control Operations Plan, an updated plan will be submitted for review and approval of the HPTE annually by September 1st of each year. For the Snow and Ice Control Operations Plan updates, the Concessionaire and HPTE shall meet and discuss any proposed changes and assure that it is compliant with minimum guidelines in this Schedule 25.

The Snow and Ice Control Operations Plan and all updates shall at a minimum contain the following:

a. Purpose,
b. Introduction,
c. Management and administration,
d. Safety approach and compliance with Safety Plan (per Schedule 6)

e. Quality approach and compliance with Quality Plan (per Schedule 6),
f. Compliance with Concession Agreement,
g. Facilities that will be used for staging including locations,
h. Monitoring and oversight approach,
i. Weather forecasting systems, processes and procedures,
j. Equipment, number, size and type,
k. Materials and chemicals,
l. Snow routes,
m. Patrol size and philosophy of plowing including shift and shift change times,
n. Call out procedures including personnel, contact lists,
o. Details on how response times will be addressed,
p. Application procedures for traction devices including tire chains,
q. Application procedures for liquid and/or solid de-icers,
r. Application of traction sand/grit,
s. Calibration of spreaders and liquid de-icer equipment,
t. Training plan,
u. Precipitation event reporting and documentation,
v. Post-storm clean-up work,
w. Sweeping,
x. Meeting Denver Regional Council of Governments air quality requirements after Precipitation Events,
y. Reporting including Service Levels and Response Times, and
z. Pre- and Post event meetings.