

ATTACHMENT #2 – PREVENTATIVE MAINTENANCE CHECKLIST & DESCRIPTIONS

These maintenance matrices in conjunction with these maintenance task descriptions are given as a general guideline to establish a minimum quality of service for each activity. A description is not provided for all routine/preventive maintenance items. Also refer to the manufacturer's product literature and maintenance requirements for specific procedures and schedules for many of these items noted below.

A. Parking Garages

1. Structural

a) Structural System

- *Observe structural systems* – Note any observed concrete or structural steel deterioration. Items to look for include failing concrete patches, delamination, spalls, cracks, leaking, leaching, ponding, rusting, and scaling steel. Review the bearing pads located below each of the double tee stems to see if any are displaced or bulging. These tend to “walk” out of position over time, especially on the top level double tees due to thermal swings of those members. Water penetration of slabs or structural elements is indicated by staining, leaking, leaching, and peeling paint. Observe any precast connections which appear to have distress, cracking, or rusting. These should all be noted in an ongoing observation list and communicated to the County.

b) Roofing / Waterproofing

- *Check roofing* – Roofing materials above the stair and elevator towers shall be inspected for damage, deterioration, and leaks.
- *Check joint sealants* – Inspect joint sealants for cracks, deterioration, bonding failures, and leaks. Sealants to be reviewed include floor sealants at control and construction joints as well as architectural sealants at masonry, doors, windows, storefronts, glazing, and façade.
 - Caulk joints are typical between double tee beams and should be monitored from above and below for deterioration or leaking. Welded rod connections can be observed from underneath. Any damage to these connections should be noted. Backer rod material is evident in these open joints and is typically installed during initial construction. Removal of this backer material when it is hanging out of the joint will not affect joint sealant performance unless joints are greater than ½ inch wide.

- Note that rain events, washdowns, and thawing of accumulated snow are good opportunities to locate leaks from the underside of the parking levels.
- *Inspect expansion joints* – Inspect expansion joints for leakage, damage and trash buildup. Check for leakage on the underside by noting stains left by fluid passing through the expansion joint. Note, repairs of these expansion joints should be completed by a certified representative of the manufacturer due to the installation requirements and warranties.
- *Inspect traffic bearing membranes* – Inspect areas for physical damage, peeling, bubbling, debonding, discoloration, tearing, or cracking in the membranes. These membranes are typically located above rooms or other occupied spaces. Traffic bearing membranes located in areas with turning movements (such as end bays, top and bottom of ramps, entry exits) are more susceptible to damage and should be observed closely.

2. Operational

a) Cleaning

- *Sweeping* – Removal of sand and grit buildup on driving aisles by hand sweeping, especially in turns, will minimize the wear and tear on slab surfaces. Daily sweeping of high pedestrian traffic areas alleviates safety concerns and enhances level of service. Note any excessive oil spots, spills or dirt buildups and remove them. Sweeping of upper floors and stairways can minimize creation of dust as compared to using a leaf blower, which should be used on vehicular access points, lower levels, or during off-hours. Dirt and debris should be kept away from drains to avoid clogging.
- *Trash removal* – Trash/litter removal maintains a good overall appearance of the garage and tends to discourage further littering. Trash receptacles should be emptied prior to becoming 2/3 full. Stairwells are especially prone to litter and trash buildup creating safety concerns and encouraging pest infestation. Remove any hazards such as glass bottles. Ensure that stairwells have a clean, fresh smell.
- *Clean elevators* – Routine cleaning of elevators is critical to long term service as well as ongoing patron experience. Doors and call buttons should regularly be wiped down. Floors and windows shall be clear of trash and cleaned routinely. The elevator door track (both in the cab sill and the landing sill) must be kept clean through vacuuming or air pressure spraying to ensure the grooves are clear. Note that cleaning any windows from within

the elevator shaft requires certain safety precautions and may require a qualified elevator technician.

- *Clean stairs* – In addition to sweeping and trash removal, handrails should be wiped down, ideally when completing the sweeping operations for efficiency. The windows shall also be kept clean on a regular basis which also allows for review of the seals and joint sealants noted above.
- *Clean expansion joints* – Dirt and debris should be swept or blown off of the expansion joints (including the grooves on top of the joints) to allow proper function and avoid premature deterioration. Trash buildup on expansion joints can quickly void the warranties. Do not use high pressure water blasting to clean joints.
- *Power sweep* – Floors should be swept with mechanized sweepers designed for parking garages on a routine basis to supplement localized hand sweeping. Take care when going over expansion joints. Ideally, this is a two-person operation with one person operating the equipment and the other using a broom or blower to get debris out of corners and areas which cannot be directly accessed by the vehicle.
 - Note – sweepers used inside a parking garage must be suited for the height and weight restrictions in a parking garage. Coordinate with an engineer on the load restrictions of these vehicles.
- *Washing* – Washing, including low pressure rinsing (hoses), medium pressure power washing (<4,000psi), and high pressure washing (>4,000 psi) is intended to protect the structure by removing sand/salts and grease/oil buildup while increasing safety for vehicles and pedestrians. It will also provide for more visible parking and traffic markings.
 - Frequent wash downs will go a long way in removing much of the chloride buildup on the slab surface from road salts. Garden sized hoses are not large enough to accomplish this task. However, extreme care must be taken using medium and high pressure washing, especially on joints and coatings, as this pressure can damage components. It is recommended to coordinate the power washing and especially the wash-downs with the drain system flushing and checks.
 - High volume washing should be done in the spring (after sweeping operations) to help remove sand and salts that may have accumulated from winter de-icing agents.
 - Discharge from power washing efforts must be coordinated with the local jurisdiction. Reclaiming the oily runoff may be required in lieu of discharging to storm or sanitary sewers.
 - During washing operations, protect the deck drains using burlap and site drains with either burlap or haybales to filter

the water and keep sand out of the drains. Remove protection immediately after washing.

- Spot removal of oil and grease may require chemical detergents be used. Ensure that chemicals are nontoxic and biodegradable. Where there are membrane coatings, review the manufacturers literature to ensure that the cleaning products used are acceptable so as not to harm the membrane.
- *Remove ponded water* – Ponded water should be removed by squeegee or broom as it can quickly deteriorate concrete slabs, precast connections, and become a patron nuisance. Ponded water that is allowed to evaporate can leave behind high concentrations of salts and chlorides that then soak into the concrete to the reinforcing steel which will begin to corrode. The rust products produced are roughly three times the size of the original steel and will eventually crack and spall the concrete; exponentially increasing the rate of deterioration.
- *Clean parking equipment and Electric Vehicle (EV) charging stations* – Parking access control equipment as well as EV charging stations should be kept clean by regular wiping down of the exterior surfaces to remove dust and dirt. Note and report any physical damage.
- Refer to the maintenance matrix for additional cleaning items such as: restrooms, lobbies and offices, door frames, cobwebs and infestations, graffiti, and exterior façade.

b) Doors and Hardware

- *Check doors* – Doors and hardware shall be inspected for damage, vandalism, and proper operations (close and latch properly). Ensure all doors are operational, paying special attention to any panic hardware. This includes latches, closures, sweeps, hinges, locks, and any tracks.
- *Lubricate doors & other door hardware* – Moving parts, such as latches, hinges, bearings, locks, tracks, and door closures, shall be lubricated in accordance with manufacturer recommendations throughout the garage.

c) Electrical System

- *Check light fixtures* – Fixtures should be checked for cleanliness, damage, and deterioration. Note and replace any lamps or fixture electronics that are dimly lit or completely out. Also note any dark areas that may require additional light fixtures.
 - Light fixture controls (e.g. time clocks, photocells, and/or occupancy sensors) shall be checked, cleaned, and

calibrated to ensure proper operation in accordance with the manufacturer's recommendations. Ensure that any timeclocks are reset, as needed, to account for seasonal time changes.

- Light fixture / component (driver, LED board, etc) replacement program should be performed when fixtures reach approximately 80% of design life or degrade in light output below minimum standards. In addition, any lenses or reflectors should be cleaned and replaced at that time as well.
- In similar fashion, observe the lighting system on the pedestrian bridge.
- *Check exposed conduits* - Any exposed conduit should be inspected for damage, deterioration, or signs of water infiltration. In addition, electrical outlets, junction boxes, cover plates, transformers and any other electrical components should be inspected for damage, deterioration, corrosion, exposed wires, and proper operations.
- *Check emergency egress lights* – Emergency light fixtures should be tested in accordance with the lighting manufacturer's recommendations.
- *Check EXIT signs* - Emergency exit signs should be inspected for damage, alignment, and illumination. Any battery packs should be tested according the manufacturer's instructions. These signs should be visible from a distance and not be obstructed by signage, lighting, or structure.
- *Check generator for proper operation* – Inspect and test the generator to confirm it is in proper working order in accordance with the manufacturer's service recommendations.
- *Check distribution panels* – Electrical distribution panels shall be inspected for breaker alignment, loose or deteriorated connections, exposed wires, damage, and overall cleanliness to ensure proper operation.
- Refer to the maintenance matrix for additional electrical items such as: lightning rods, ground fault circuit interrupter (GFCI) circuits/breakers, and EV charging stations.

d) Elevators

- *Inspect elevators* – Inspect elevators for proper operation and ensure that all lights and indicators are working. Check elevator certificate and inspection dates and verify that the elevator's inspection is current.
 - In addition to observing the condition and general cleaning of the doors, interior, and tracks, replacing light bulbs and possibly reattaching a loose panel or handle connection is all

that is anticipated to be handled through routine housekeeping.

- Preventive maintenance, beyond very minor repairs or lamp replacement, will require a specialized elevator technician following procedures outlined by the elevator manufacturer. Any repairs that require removal of panels or access to the interior of the elevator shaft must be performed by a specialized elevator technician. A regularly scheduled maintenance program, by a specialized elevator technician, is recommended.

e) HVAC System

- *Inspect for proper operation* – Ductless split systems, electric unit heaters, and ventilation units in the accessory rooms and enclosed spaces shall be inspected for proper operations in accordance with the manufacturer's recommendations. Also, confirm that louvers are clear of obstructions. The roof mounted air outlet in the stair towers should be checked to confirm they are clear of obstructions and fastened properly. Noisy operations can indicate clogged filters, needed belt adjustments, required lubrication, and should be repaired as needed. Observe condensation lines to ensure they are discharging to the appropriate drains and not in a walking pathway.
- *Clean and replace filters* – When filter types allow, clean and reuse filters for the HVAC equipment. Replace HVAC filters when dirty or as required.
- *Preventive Maintenance* – A regularly scheduled maintenance program is recommended and likely requires a specialized HVAC technician.

f) Plumbing and Fire Protection Systems

- *Check/clean floor drains* – Floor area drain grates and piping shall be kept clear of dirt, sediment, and debris.
 - In addition, misaligned, broken, and/or missing grates shall be repaired or replaced.
 - Water leaks at connections and piping shall be noted and repaired.
 - Floor drains should be flushed regularly with a high volume of water. At least one flush should be performed in early springtime to wash out any sand or salts that were used during wintertime ice/snow control. Drains should be protected with burlap or other means to prevent clogging from any sand buildup.
- *Check sump pump for proper operation* – Elevator sump pumps shall be checked for cleanliness and proper positioning in the

sump pit. Operations of sump pump shall be inspected in accordance with manufacturer's recommendations.

- *Check oil/grit interceptor for proper operation* – Observe the oil/grit interceptor compartments for clogs, debris, trash buildup, and water flow. Also determine next recommended cleaning in accordance with manufacturer recommendations.
- *Check the fire protection system* – Fire alarm pull stations, horn strobes, alarm, central dialer, fire extinguishers, standpipe lines, fire pump, and hose connections shall be inspected and tested for proper operation in accordance with local fire code requirements and NFPA 25 “Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems” or NFPA 72 “National Fire Alarm Code”, accordingly. In addition, piping and equipment shall be checked for damage and/or deterioration of the units and connections. Standpipe connections and threads should be checked for damage.
- *Check fire extinguishers* – Check for damage and vandalism. Check the charge on fire extinguishers and that the inspection is current.
- *Check smoke/heat detectors* – Inspect and test smoke/heat detectors for damage and proper function in accordance with manufacturer's recommendations.
- *Observe and clean piping* – Garage drainage piping should be observed for obvious damage, leaking, corrosion, and insulation. Insulation should be intact without any tears or other deterioration. Piping should be clean and well supported. Dirt, exhaust and dust should be cleaned off regularly and not allowed to build up on drainage pipes or supports. Check pipe hangers and sleeves for signs of rust, loose fittings, or general deterioration.
- *Winterize piping* – Drainage, fire protection, and water supply lines shall be cleared of water prior to the winter months unless protected from freezing within rooms or with heat tracing tape. Hose bibs and water lines designed with insulation and heat tracing elements shall be inspected for damage and proper operations.
- Refer to the maintenance matrix for additional plumbing and fire protection items such as: sanitary facilities, sanitary sewage ejector duplex system, electric water heater (flush annually), backflow preventer, and drainage system.

g) Parking Guidance System Equipment

- *Check and Calibrate Parking Guidance System* – All hardware should be maintained in accordance with manufacturer recommendations. Check that signs are operational. Check

overhead parking sensors for damage or dirt/debris which may impact operations. Calibrate the system regularly.

- *Preventive Maintenance* – A regularly scheduled maintenance program is recommended and likely requires a specialized Parking Controls technician.

h) Safety

- *Check handrails* – Handrails and guardrails should be inspected for deterioration and rigidity. Loose railings should be repaired promptly.
- *Check stair nosings* – Stair nosings should be intact, firm, slip resistant, and of contrasting color to the remainder of the tread. Ensure stair nosings do not pose any tripping hazards.
- *Check fencing* – Fencing within the interior walls should be inspected for loose and deteriorated sections and connections.
- *Check bollards and pipe protection* – Bollards and pipe protection should be checked for damage and repaired as needed. If these items are painted, touch up paint on a regular basis.
- *Eliminate tripping hazards* – During walks of the facility, look for potential tripping hazards and seek to remove them. Typical tripping hazards are present where there is a change in level of more than ½". This can occur at curbs, wheelstops, or other floor mounted obstructions. If the item cannot be removed, such as at a curb, ensure that the face and top 6" are painted a contrasting color to increase the visibility of the element.

i) Security

- *Check CCTV cameras and hardware* – Camera alignment, communications, cleanliness, and mounting hardware shall be checked. Cameras and wires should be checked for damage, vandalism, and/or deterioration.
- *Inspect elevator cab communications and alarms* – Elevator cab call and alarm buttons should be cleaned, have the illumination checked, and tested for proper operations.
- *Test emergency call station (panic button)* – Observe station for damage, deterioration, vandalism, and alignment. Inspect and test panic buttons per manufacturer recommendations to ensure proper performance. Inspect blue lights associated with panic buttons for proper operation.
- *Check gates at pedestrian bridge* – Confirm that the gates open, close, latch, and lock properly at the ends of the pedestrian bridge. Review the gates for damage, vandalism, and deterioration. Lubricate parts as needed.

- Refer to the maintenance matrix for additional security items such as: emergency responder radio system.

j) Wayfinding and Graphics

- *Check signage* – Inspect plate metal signs and painted signs for secure fastening, cleanliness, corrosion, correctness, placement, legibility, and overall appearance. Ensure that the paint/graphics are not sun bleached or deteriorating in any way. Ensure accessible parking spaces are properly marked and that permit or any other reserved parking spaces are clearly marked and easily differentiated from parking available to all patrons. Signage should provide clear directions from the exterior to the interior, to parking, back to the exit, and from the exit safely back into traffic.
- *Check headache bars* – Inspect overhead headache bars for placement, legibility, height and damage. Evaluate if any additional headache bars are needed inside the parking garage and install them.
- *Check striping* – Inspect pavement markings for legibility and overall appearance. Routine cleaning will promote the appearance of the striping, arrows, and other pavement markings. Touch up paint in areas where it has deteriorated.
 - In addition, re-striping will be required after sealers are installed, traffic membranes are replaced, or other concrete repairs are completed on the floor surfaces.

k) Snow/ice control

- *De-icers* – There are multiple deicers on the market today. It is recommended to minimize the use of salts to protect the concrete slab, reinforcing steel, and landscaping. Salts include sodium chloride and calcium chloride both of which can be harmful to structural steel and concrete.
 - Take extra care using sand and chemicals on traffic coatings. Refer to manufacturer's literature for acceptable snow removal procedures.
 - Sand, in combination with deicing salts, can provide an effective solution. The use of heated sand can also improve deicing operations. Application prior to the weather event, or as soon as possible, is recommended. Drains should be protected so that sand does not wash directly into them. Then, prompt removal and flushing of the drain lines at the end of the winter season is required.
 - Calcium Magnesium Acetate (CMA) also does not harm concrete but is more effective on ice than snow. It is slower acting than salt and will perform at temperatures down to approximately 20-deg F. It turns ice to mush which can then

be removed. However, it is more expensive than a sand/salt mixture.

- Potassium acetate is used in the liquid form and is effective to -15°F .
- Prilled Urea does not damage concrete but is fairly expensive when compared to a sand/salt mixture. Its effectiveness is limited in low temperatures.
- Ethylene Glycol is commonly used at airports and does not damage concrete but is more expensive than Urea.
- Never use ammonium nitrate or ammonium sulfate which can deteriorate concrete by direct chemical attack on concrete reinforcement. Also, never use potassium chloride as it is highly corrosive.
- Refer to other sections regarding washing the floors off after the winter season.
- *Physical removal* – Attempt to remove snow before vehicles pack it down to reduce the potential for ice patches. A rotary broom can be effective to remove light snow or early in the weather event. Ensure the removal vehicle height and axle weight is appropriate for the interior of the parking garage. Take proper precaution that the blade and equipment does not damage the concrete, joint sealants, traffic coatings, or expansion joints. This can be done by using a heavy rubber blade edge, plow shoes, or casters that will maintain a minimum $\frac{1}{2}$ " clearance above the parking surface.
 - Take special care on expansion joints and traffic membranes with any equipment. Clearly mark expansion joints and other items above slab level to indicate their presence to equipment operators. Attempt to remove snow and ice parallel to or away from the expansion joints to avoid damaging them. Snow removal using hand tools is recommended around equipment at the parking garage entrances and exits.
 - Using sand with any deicing chemicals can improve traction. Drains should be protected from sand and sediments with temporary burlap, or equivalent, filters.
 - On the top level of the parking garages, snow and ice can be piled up only in specific locations as noted on the plans. However, extreme caution should be used whenever piling snow and ice, even if noted within design documents, and removed as soon as possible. For removal from the top level, a small frontend loader will need to be used to lift the snow over the parapet and dump it to the site below as shown on the drawings. Take care not to damage the parapet walls. In addition, a snow blower may be useful on the top level.

3. Aesthetic

a) Finishes

- *Check flooring and ceilings* – Flooring tiles and acoustical ceiling tiles located within enclosed rooms and spaces shall be checked for damage, deterioration, water spots, and overall appearance.

b) Painting

- *Exterior/Interior* – Inspect for failing or deteriorated paint on all surfaces. Remove, prime and refinish affected surfaces. Interior walls, columns, ceilings, railings, doors, stairs, rails, pipe guards, piping supports and miscellaneous metals which are painted throughout the parking garage should be reviewed.
 - Note any damaged or deteriorating galvanized surfaces. These will often require cold-galvanizing repair paint or high-performance coatings as opposed to standard exterior paint.
 - Paint should be “breathable” due to the structural system being exposed. Also, use low VOC paints in compliance with local laws.
 - Anti-graffiti paints/coatings have been shown to be effective and should be considered if graffiti is noted as being an issue.

B. Associated Facilities

1. Structural / Hardscape

a) Bridge Structures

- *Observe structural systems* – Note any observed concrete or structural steel deterioration. Items to look for include failing concrete patches, delamination, spalls, cracks, leaking, leaching, ponding, rusting, and scaling steel. Items should be noted and marked for further review during annual walk-through.
- *Inspect expansion joints* – Inspect expansion joints for leakage, damage and trash buildup at the ends of the bridge structures. Note, repairs of these expansion joints should be completed by a certified representative of the manufacturer due to the installation requirements and warranties.

b) Pavement

- *Observe pavements (asphalt and concrete)* – Note any observed concrete or asphalt pavement deterioration. This could include spalls, delamination, cracking, potholes, rutting, or general wear and tear. Type of cracking (block cracking,

longitudinal cracking, transverse cracking, alligator cracking) all can point to different deterioration mechanisms. Confirm there is not any buildup of vegetation, dirt, or debris.

- *Observe sidewalks, curbs, and ramps* – Note any deterioration in the sidewalks, curbs, and ramps. Specifically, note and repair any potential tripping hazards. Small (<1”) variations in the sidewalk, such as at construction and control joints, can often be ground down to provide a smooth transition.

2. Operational

a) Cleaning

- Refer to the parking garage description above and the maintenance matrix for cleaning items such as: sweeping, trash removal, power sweeping, removing ponding water, and graffiti removal.
 - Backpack blowers, walk-behind blowers, and truck mounted blowers can be effective in removing leaves and trash from large areas and the swept up and discarded.
 - Care should be exercised in the sweeping operations. Mechanical sweeping should not be excessive as it can abrade the surface and cause unnecessary wear and tear. Confirm the equipment is in proper working order so as not to damage the pavement.

b) Site Furnishings

- *Check Site Furnishings* – The various site furnishings, such as bike racks, bike lockers, bus shelters, and wind screens, must be checked for general cleanliness, ease of access / removal of obstructions, and any damages should be noted.

c) Utilities

- *Check/clean area drains, curb inlets, and catch basins* – Site drainage elements shall be kept clear of dirt, sediment, and debris.
 - In addition, misaligned, broken, and/or missing grates shall be repaired or replaced as these can become tripping hazards.
 - During heavy rains, make note of any blockages or backups observed in the drainage system. Flush as required.
 - Similarly, confirm that no manhole covers are displaced.
- *Maintain Stormwater BMPs* – The stormwater ponds and bioretention areas should be kept clean of trash. These areas

should be included in the landscaping and mowing program to ensure they continue to operate correctly and remain in good, visual appearance. Goose control may become an issue around standing water and minimizing their presence should be part of the ongoing housekeeping.

- In addition to ongoing routine maintenance, the BMPs will require annual inspections as part of the permitting program. Ensure that these inspections are being completed and properly documented.
- *Observe Site Lighting* – Site lighting (both pedestrian level lighting as well as street lighting fixtures) should be observed for proper operation. Fixtures should be checked for cleanliness, damage, and deterioration. Note and replace any lamps or fixture electronics that are dimly lit or completely out. Also note any dark areas that may require additional light fixtures.
- *Check EXIT signs* - Emergency exit signs on the pedestrian bridge should be inspected for damage, alignment, and illumination. Any battery packs should be tested according the manufacturer's instructions. These signs should be visible from a distance and not be obstructed by signage, lighting, or structure.
- *Check Bridge Drainage System* - Floor area drain grates and piping shall be kept clear of dirt, sediment, and debris.
 - In addition, misaligned, broken, and/or missing grates shall be repaired or replaced.
 - Water leaks at connections and piping shall be noted and repaired.
 - Ensure that splash blocks at the bottom of downspouts are correctly positioned.
- Refer to the maintenance matrix for additional utility items such as: sanitary facilities and stormwater vaults.

d) Parking Equipment

- *Check wheel stops* – If any wheel stops are added on the site (or garage), ensure that they are firmly affixed, are correctly positioned, and are not in the primary pedestrian path. In addition, ensure that they are highly visible and contrast against the pavement. Wheel stops present a tripping hazard but are sometimes unavoidable on a given site. Ideally, other parking control methods, such as bollards, should be used in lieu of wheel stops.

e) Safety

- Refer to the parking garage description above and the maintenance matrix for safety items such as: railings, stair nosings, fencing, bollards/guards, and tripping hazards.

f) Security

- Refer to the parking garage description above and the maintenance matrix for security items such as: closed circuit television (CCTV) cameras and gates at the pedestrian bridges.

g) Wayfinding and Graphics

- Refer to the parking garage description above and the maintenance matrix for wayfinding and graphics items such as: signs, graphics, and striping/pavement markings.
 - In addition, ensure that landscaping is trimmed back to ensure that site signage is visible.

h) Snow/Ice Control

- Refer to the parking garage description above and the maintenance matrix for snow/ice control items such as: deicing and snow/ice removal.
 - It is noted that heavier equipment is required for site and roadway elements which are not appropriate for the garage operations noted above.
 - Care must be taken during snow and ice removal operations to not damage site elements. Curb and gutter is often damaged during these events. Reflectorized “sticks” can be added to the curbs during the winter season to help demarcate their limits to direct trucks away from these edges. At the end of the season, thoroughly observe all curbs and site elements to look for potential damaged areas.

3. Aesthetic

a) Landscaping

- Refer to the maintenance matrix for additional landscaping items such as: trash removal, mowing, trimming, weeding, pruning, fertilizing, planting materials, and mulching.

b) Painting

- Refer to the parking garage description and the maintenance matrix for additional painting items such as: curb painting (if required) and striping/pavement markings.

Maintenance Matrix
Parking Garages

	DAILY	WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY	AS REQ'D	NOTES
STRUCTURAL ITEMS								
STRUCTURAL SYSTEM:								
Note any observed concrete deterioration / cracking				X				
Note any observed structural steel deterioration				X				
Note any displaced or bulging bearing pads						X		
Note water leakage through cracks and joints				X				
Note precast connection cracks or deterioration or rust				X				
Detailed walk-through inspections						X		
Materials Testing for Chlorides						X		
ROOFING / WATERPROOFING:								
Check stair roof membrane for leaks			X					
Check joint sealant in floors			X					
Inspect windows/doors/walls/seals			X					
Inspect expansion joints			X					
Inspect traffic membranes for wear and deterioration			X					
OPERATIONAL ITEMS								
CLEANING:								
Sweep and pick up trash localized areas	X							
Sweep and/or use Leaf blower at main vehicular and pedestrian access points	X							
Sweep and pick up trash all areas		X						
Empty trash receptacles	X							
Clean restroom floors/fixtures	X							
Clean restroom walls		X						
Wipe down doors and call buttons (inside and outside)	X							
Clean elevator floors		X						
Polish stainless steel elevator doors		X						
Clean elevator door tracks in the floor sill			X					
Clean elevator walls/windows (interior)			X					
Clean elevator walls/windows (exterior)					X			
Sweep stairway floors and wipe down handrails	X							
Clean stairway windows			X					
Clean lobby/office floors	X							
Clean lobby/office windows		X						
Clean door frames			X					
Clean expansion joints			X					
Power sweep parking-area floors		X						
Remove grease and oil drippings				X				
Power wash parking/wash down- high use areas				X				
Power wash parking/wash down- all areas of floors					X			
Remove cobwebs, infestations		X						
Check for graffiti	X							
Remove graffiti							X	
Remove ponded water (squeegee to floor drain or vacuum up)	X							
Clean exterior façade						X		
Clean parking-control equipment and EV charging stations		X						
DOORS AND HARDWARE:								
Check doors close latch and lock properly	X							
Check hardware on doors, including any panic hardware (if present)	X							
Lubricate doors and other door hardware			X					
ELECTRICAL SYSTEM:								
Check parking area and stair tower light fixtures	X							
Check exposed conduit and outlets and cover plates		X						
Check and clean photocells and occupancy sensors on lighting fixtures			X					
Check office / room lighting operations	X							
Relamp lighting fixtures							X	
Check illuminated emergency lighting system and fixtures	X							
Check illuminated EXIT signage	X							
Check generator for proper operation			X					NOTE 1
Check lightning rods			X					
Test GFCI circuits					X			
Check distribution panels					X			
Check EV charging stations for proper operations		X						
ELEVATORS:								
Inspect for proper operation	X							
Check cab panels and handrails	X							
Check indicators and other lights (overhead, call buttons, etc)	X							
Perform preventive maintenance			X					NOTE 1
HVAC SYSTEM:								
Inspect ductless split systems for proper operation (each room and space)	X							
Inspect electric unit heaters for proper operation (each room and space)	X							
Check ventilation and fan operations (each room)		X						
Check roof mounted air outlet in stair and elevator towers			X					
Confirm louvers are operational			X					
Clean Filters			X					
Replace Filters				X				
Perform preventive maintenance				X				

1 For regular preventive maintenance, emergency service and inspections, item will be under service contract held by the County. Operator shall coordinate with the Contract Administrator to required service.

Maintenance Matrix
Parking Garages

	DAILY	WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY	AS REQ'D	NOTES
PLUMBING AND FIRE PROTECTION SYSTEMS:								
Inspect sanitary facilities for proper operation	X							
Check sanitary sewage ejector duplex system for proper operation			X					
Check/clean floor drains and covers	X							
Check elevator sump pump for proper operation			X					
Check oil/grit interceptor for proper operation			X					
Check electric water heater for proper operation			X					
Observe backflow preventor for proper operation			X					
Observe fire protection system for proper operation			X					
Observe fire pump for proper operation			X					
Test the fire protection system					X			NOTE 1
Inspect charge on fire extinguishers			X					
Check operation of smoke and heat sensors			X					
Clean garage sprinkler and drainage pipes of dirt/exhaust buildup					X			
Flush drainage system						X		
Check drainage system for leaks or blockages					X			
Check insulation on piping						X		
Winterize drain systems (flush and drain)						X		
Winterize water supply systems (flush and drain as appropriate)						X		
PARKING EQUIPMENT:								
Inspect parking guidance system for proper operation	X							
Calibrate the space count detection system		X						
Perform preventive maintenance on parking guidance system					X			NOTE 1
SAFETY:								
Check handrails/guardrails for looseness	X							
Check stair nosings for visibility/contrast and soundness	X							
Check fencing for damage		X						
Check bollards and pipe guards for damage		X						
Eliminate tripping hazards	X							
SECURITY:								
Check CCTV cameras and hardware are operational	X							NOTE 1
Check Emergency Responder Radio Antenna/Repeater System	X							
Confirm that elevator cab communications and alarms are operational	X							
Check panic buttons (blue light phones) for proper operation	X							
Test panic buttons (blue light phones)		X						
Check gates at pedestrian bridges for proper closing and latching	X							
WAYFINDING AND GRAPHICS:								
Check sign placement			X					
Clean signs and graphics					X			
Check sign legibility				X				
Check sign illumination	X							
Check entry clearance bars				X				
Inspect striping appearance					X			
SNOW/ICE CONTROL:								
Check for icy spots							X	
Deicing operations							X	
Remove snow and ice							X	
AESTHETIC ITEMS								
SITE / LANDSCAPING:								
Refer to Associated Facilities								
FINISHES:								
Note any damaged ceiling tiles in rooms			X					
Note any damaged flooring or tiles or carpet in rooms			X					
PAINTING:								
Search for rust on doors/door frames				X				
Search for rust on handrails/guardrails				X				
Search for rust on exposed pipes/conduit				X				
Search for rust/failing paint on any surfaces				X				
Check wall paint appearance in offices and rooms			X					
Check curb paint appearance			X					
Touch up paint			X					
Repaint							X	

1 For regular preventive maintenance, emergency service and inspections, item will be under service contract held by the County. Operator shall coordinate with the Contract Administrator to required service.

Maintenance Matrix
Associated Facilities

	DAILY	WEEKLY	MONTHLY	QUARTERLY	SEMI-ANNUALLY	ANNUALLY	AS REQ'D	NOTES
STRUCTURAL / HARDSCAPE ITEMS								
BRIDGE STRUCTURES:								
Note any observed concrete deterioration / cracking				X				
Note any observed structural steel or metal decking deterioration				X				
Inspect expansion joints			X					
Detailed walk-through inspections						X		
PAVEMENT:								
Note any observed concrete deterioration / cracking / potholes				X				
Note any observed asphalt deterioration / cracking / potholes				X				
Note any observed settlement or delaminations on sidewalks or curbs or ramps				X				
Detailed site inspections						X		
OPERATIONAL ITEMS								
CLEANING:								
Sweep and pick up trash localized areas	X							
Use Leaf blower at main vehicular and pedestrian access points	X							
Sweep and pick up trash all areas		X						
Empty trash receptacles	X							
Power sweep roadways and parking lots				X				
Remove ponding water	X							
Check for graffiti	X							
Remove graffiti							X	
SITE FURNISHINGS								
Check bike racks to ensure affixed appropriately and are not damaged	X							
Check bike lockers for cleanliness and damage and access	X							
Observe bus shelter structures and glazing for damage	X							
Observe wind screens for damage	X							
UTILITIES:								
Inspect sanitary facilities for proper operation	X							
Check/clean area drains and catch basins	X							
Check drainage system for leaks or blockages					X			
Flush site stormwater drains					X			
Observe stormwater BMPs and bioretention areas for proper operations and cleanliness		X						
Ensure BMP inspections are being completed						X		
Observe stormwater vaults		X						
Check site lighting fixtures for proper operation	X							
Check bridge lighting fixtures for proper operation	X							
Check bridge drainage system for leaks or blockages	X							
Check illuminated EXIT signage on bridge	X							
Confirm drainage splash blocks are in place	X							
see Parking Garages for backflow preventor on water supply lines								
PARKING EQUIPMENT:								
Check wheelstops		X						
SAFETY:								
Check railings for looseness		X						
Check stair nosings and curbs for visibility and soundness	X							
Check site fencing for damage		X						
Check bollards and guards for damage		X						
Eliminate tripping hazards	X							
SECURITY:								
Check CCTV cameras and hardware are operational	X							NOTE 1
Check gates at pedestrian bridges for proper closing and latching	X							
WAYFINDING AND GRAPHICS:								
Check sign placement		X						
Clean signs and graphics				X				
Check sign legibility			X					
Check sign illumination	X							
Inspect striping and pavement markings appearance and legibility				X				
SNOW/ICE CONTROL:								
Check for icy spots							X	
Deicing operations							X	
Remove snow and ice							X	
AESTHETIC ITEMS								
LANDSCAPING:								
Remove trash	X							
Mow, trim and weed		X						
Trim shrubs			X					
Prune trees and larger plants						X		
Fertilize / Weed treatments				X				
Update planting materials				X				
Mulch plant bed areas				X				
Ensure landscaping around BMPs are maintained per the standards of that device				X				
PAINTING:								
Check curb paint appearance			X					
Touch up paint			X					
Repaint							X	

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