LIGHTING

SPRING 2022

The lighting plan for the new proposed drydocks and work pontoon has been designed to address three important criteria: to be **dark-sky friendly**, to minimize glare in the marine environment and towards the shoreline and to meet all necessary requirements for safe operations.

Dark Sky Friendly Certified Lighting

To be considered dark-sky friendly, lighting designs need to meet the International Dark-Sky Association recommendations to minimize light pollution. Specifically, lighting should:

- Only be used when needed (photocell and dimmer controlled).
- Only illuminate the areas needed (dark sky friendly).
- Be no brighter than necessary (illuminated to appropriate code requirements for safety and operation).
- Minimize blue light emissions (by using 3000degK (warm) colour temperature rather than 4000degK (cool) colour temperature).
- Be fully shielded.

Drydock Lighting

The two proposed new drydocks will have lighting to support work being carried out on vessels in the drydocks, with lights positioned to face inward and down to only illuminate the interior of the drydocks. Once the proposed drydocks are onsite at Vancouver Drydock, the lighting systems will be assessed and if need be, retrofitted to minimize light spill and be dark-sky friendly.

Work Pontoon Lighting

On the work pontoon, lighting has been designed to eliminate light outside of the required circulation and work areas. Seven 7.5-metre tall light poles will be installed along the north edge of the pontoon. Each pole will have two fixed-position lights, one area light on the south side and one floodlight on the north side.

To address light spread, the south-facing area lights will point directly down to illuminate the pontoon and the access ramps to the drydocks. These lights will be controlled by photocells for on/off control and will be fitted with a motion sensor to dim when no motion is detected. Because the lights are installed horizontally, light fall-off is reduced, which means there will be no light pollution to the sky, nor glare to passing vessels or to people on shore.

The north floodlights will be tilted 30-degrees up from horizontal, with manual on/off controls and motion sensors. These lights will be used when there is a vessel moored to the north side of the new work pontoon, to support vessel berthing and installation of access walkways to vessels. When a vessel is moored, it will act as a shield to further block lights from the shoreline.

seaspan SHIPYARDS

House Side Shields

House side shields are covers built into or attached to lighting to further reduce light spread. As the example below shows, a house side shield has been used to reduce light spread towards the home.

House side shields will be used on the north, shore-side of the work pontoon light fixtures. With shields added, the lighting spread will be reduced to zero at 11m/35ft from the work pontoon (as opposed to 28m/92ft without a shield).

Example of how a house side shield works

Existing Operations Retrofit

While existing operations are outside the of the scope of this proposed project application, Seaspan has initiated design work to retrofit existing light pole and building mounted lights across the entire Vancouver Drydock site with dark-sky friendly lighting, and to incorporate house side shields, where appropriate.