Utilities in the waterfront reflect the changing city and economy over the last century. Today, they comprise a dense and complex web of facilities not uncommon in the urban environment. Systems have evolved with the changing needs of waterfront businesses and as codes and laws dictated improvements. Electrical transmission, high pressure gas, and communications trunk lines have been located in the extra wide corridor out of convenience. Other utilities are there by virtue of gravity — combined sewers in the waterfront collect drainage from up hill basins and convey it to a deep tunnel [the Elliott Bay Interceptor or EBI] for treatment, or in overflow conditions, to outfalls to the bay. These systems are integral to the functionality of waterfront business and the central business district. Many facilities, while functional, are well beyond their normal design life.

Renewal of the waterfront presents both a major challenge and a rare opportunity to replace and update aging facilities and make needed improvements. Seattle City Light has already undertaken replacement of two vulnerable electrical transmission lines that provide a significant portion of power to the downtown grid. Seattle Public Utilities is considering system improvement in the waterfront as part of a comprehensive plan to reduce combined sewer overflows. Privately owned utilities have similar issues with aging infrastructure and inefficiently organized systems. Communications providers will be asked to consolidate facilities into common duct banks to reduce space requirements, vulnerabilities and improve access. Consideration will also be given to a common utility corridor for multiple utility systems.

Utility systems in the core project area will be impacted by each of the major projects affecting the waterfront, including the WSDOT State Route 99 Bored Tunnel project, the Elliott Bay Seawall replacement project, and the Waterfront Seattle project. Developing a comprehensive plan that coordinates all three projects is essential to maintain service and minimizing cost and impacts to traffic and business disruption. Consideration should also be given to proposed non-core project elements and potential private development opportunities to ensure utility systems will have the capacity and capability to expand and extend service.
**Considerations**

Many features in the conceptual plan will introduce constraints on utility locations. Utility locations will need to be coordinated to minimize conflicts with landscape, GSI, sculpture and structural features. For example, manhole covers and drainage inlets are potential hazards to bicyclists when placed in bike paths and lanes. If a street car were proposed in Alaskan Way it would potentially inhibit access to underground facilities and would introduce the need for cathodic protection to mitigate the effects of stray electric current.

Utility services to piers will need to be accessible and ideally consolidated at driveways for efficient use of space and to have the least impact on surface features.

Connections to the downtown utility grid at each cross street will need to be maintained. Utility relocations are time consuming and are often highly disruptive, particularly in the waterfront where there are significant underground obstructions, a complex web of utilities, poor ground conditions, and a high water table. Developing a plan to minimize temporary relocations and where possible, avoid the need for relocations, will be essential to avoid construction impacts, minimize cost, and maintain the project schedule.