The CSO Project Unearths Seattle's Past

continued from page 4

constructed using tunneling methods. The third pipeline needs to be closer to the surface because it will be used to drain stored flows from the tunnel to the Elliott Bay Interceptor (EBI), and therefore needs to be above the elevation of the EBI.

In order to avoid disruption of the Burlington Northern Santa Fe mainline tracks and the grain terminal tracks, the shallow pipeline will also be constructed by tunneling methods. However, geotechnical investigations during the design phase determined that tunneling this 72-inch pipeline would be very challenging, if not impossible, because of two buried seawalls in the area where the tunneling will occur.

Tunnel machines of this size are not able to handle the large riprap boulders and timber piles that are located under the railroad tracks. One solution to this type of problem is to dig a hole and remove the obstruction when it is encountered by the tunnel machine. Of course, this is not practical with an operating railroad. Therefore, the project team discussed the problem with BNSF and Cargill staffs to identify a method to remove the seawalls so that the tunneling could occur successfully and the impacts to rail and grain terminal operations would be minimized. Because of the timing of grain shipments, Cargill suggested that the least disruptive times for them would be late summer and early fall.

Elliott Avenue at West Mercer Place looking south. Note the railroad tracks laid along the beach. (Photo dated August 3, 1921. Courtesy of Seattle Municipal Archives Photograph Collection.)

The railroad crossing pipelines would be likely to be constructed in spring 2000. However, according to Cargill, spring is one of the busiest times of year for the grain terminal operations. In order to accommodate this schedule, King County decided to issue a separate contract to accomplish this work early.

In August, a contract was awarded to R.L. Alia, Inc. to remove the abandoned seawalls and replace them with a concrete-fill material that would be soft enough to tunnel through. This work required significant coordination with BNSF and Cargill to schedule the removal and replacement of the railroad tracks so that the work could proceed. As agreed with BNSF and Cargill, the work needed to be completed within seven days—from the time the tracks were removed until they were back in service.

In early October, Cargill's schedule of grain trains and ships showed an opening, and Alia began the work of removing four sets of Cargill tracks, excavating the old seawall and backfilling the area with concrete fill. As soon as that work was completed, BNSF removed one set of its tracks, and the seawall under it was removed. Finally, the tracks were replaced, and Cargill's operations were able to resume. All work was carefully coordinated with BNSF so that train traffic could continue as normal on the mainline tracks.

The seawall removal project is a small piece of construction work in the context of the entire project, but it is a good example of the County's emphasis on minimizing risk of major problems during construction and working with the community to lessen impacts. Having taken care of the seawalls ahead of time allowed King County to minimize the potential of an unanticipated shutdown of the rail operations during Cargill's busiest season.