



Chapter Seven

SEWER SYSTEM

**Lawson Hills
Master Planned Development**

OVERVIEW

The Lawson Hills main property will result in the addition of approximately 1,528 equivalent residential units (ERUs) (1,250 residential and 278 for the commercial/office and school site) to the existing base served by the City of Black Diamond's water and wastewater systems. On-site and off-site improvements to the City's systems are proposed to serve the proposed MPD and are described below. With the proposed improvements, there will be sufficient capacity in both systems to serve the proposed development.

PROPOSED SEWER SYSTEM

The MPD will be served by an on-site sewer collection system located within the proposed roads and utility tracts on the project site. Sewer mains on site will drain via gravity to the west and connect to a new off-site sewer main extension connecting the site to the Black Diamond Metro Pump Station. The alternative to routing all flows to the Black Diamond Metro Pump Station is the sewer pressure siphon (Route F), which would convey flows to the proposed Metro wastewater storage facility near Lake Sawyer Road. The proposed wastewater system is shown on Figure 7-1. The only additional off-site sewage to be collected or conveyed through the site is from existing residences to the east of the site that are currently served by existing mains crossing the site.

Existing sewer connections from the existing residences on the site to the eight inch main in Botts Drive will be abandoned in-place as the structures are demolished. The Botts Drive main will be upgraded or replaced as necessary and flows will be redirected through the site to the proposed new or upgraded sewer main extension. Service will be maintained for the off-site residences located to the east of the project boundary either through the existing mains or with new mains. Existing sewer mains that cross the site to serve these off-site residences may need to be relocated and or rerouted to maintain service.

OFF-SITE IMPROVEMENTS

There are multiple options possible for the sewer connection between the Lawson Main Property and the Black Diamond Metro Pump Station. These options are dependent on the capacity of the existing Black Diamond sewer system. A sewer capacity analysis will need to be completed to determine the optimal route or routes. The attached Figure 7-1 shows several routes (A through F) which are used in combinations to form the sewer connection options.

The first option would consist of Route A. All sewer for the Lawson Site would drain to the west project boundary adjacent to SR 169, run south in the SR 169 right-of-way, then follow the old railroad grade to the southwest to Railroad Avenue. This main would then continue south in Railroad Avenue before connecting to the Black Diamond Metro Pump Station. Portions of this route require easements to be obtained from private property owners.

A second option would consist of Route B. All sewer for the Lawson Site would drain to the west project boundary adjacent to SR 169, and tie into the existing Black Diamond sewer system with upgrades to the existing system as needed. This route would be within existing City owned or controlled routes.

A third option would consist of a combination of Route B, Route C, Route D, and Route E. The western portion of the Lawson Site (which cannot drain to Route E) would be split between Route B and Route C based on capacity, with parcels L1 and L2 draining to Route B while parcels L3 and L4 would drain to Route C. If capacity is not available in Route C for parcels L3 and L4, then the entire western portion would drain to Route B. The remainder of the Lawson Site would drain to the existing main in Route D or a new main in Route E. Routes B, C and D would be located within existing sewer rights-of-ways. Route E would require easements to be obtained from private property owners.

A fourth option would consist of a combination of Route B, Route C, and Route F. Route F consists of a combination of gravity sewer mains and sewer pressure siphon routed to the west along the proposed future Pipeline Road alignment. This option, if used, would convey flows directly to the storage facility near Lake Sawyer Road SE. A surge valve would be used along Route F to develop pressure in the system to force the sewer to the proposed storage facility. The western portion of the Lawson Site (which would not be able to drain to Route F because of the surge valve) would be split between Route B and Route C based on capacity, with parcels L1 and L2 draining to Route B while parcels L3 and L4 would drain to Route C if required. If capacity is not available in Route C for parcels L3 and L4, then the entire western portion would drain to Route B. The remainder of the Lawson Site would be conveyed along Route F. Routes B and C would be located within existing sewer easements or rights-of-ways. Route F would require easements to be obtained from private property owners for the conveyance system to the Metro storage facility. Impacts to the Black Diamond pump station are greatly reduced with this option compared to other options listed above.

The Black Diamond Pump Station is located within undelineated wetlands or wetland buffers. It is likely that there will be temporary disruption of wetlands or wetland buffers near the pump station site in order to install the new main if required depending on option selected. All disturbed wetland areas will be restored in accordance with Black Diamond Municipal Code after construction.

NORTH TRIANGLE

Sewer service to the North Triangle is shown in the Comprehensive Sewer System Plan. Alternatively, sewer service may be provided by a new sewer main extension from the existing main in SR 169 located south of the site. This extension will likely be a force main and the alignment will likely be within SR 169, but may have an alternate alignment based on City review or other factors. Upgrades to the existing sewer system between the connection point and the Black Diamond Metro Pump Station will occur as necessary to provide

capacity for the site. The North Triangle will be served by gravity lines on site that feed to a new lift station located on Parcel B of The Villages MPD and force main connecting to the existing city system. The on-site system, proposed extension and any necessary downstream upgrades will meet City of Black Diamond standards. The draft City Comprehensive Sewer Plan shows a proposed lift station along the future pipeline road alignment. Depending on ultimate location and elevations of this future lift station the North Triangle may be able to drain to it if easements can be obtained.

SEWER STORAGE

Based on the City's Water and Sewer Comprehensive Plans, there should be sufficient capacity in the Black Diamond Metro Pump Station to accommodate wastewater flows from the Lawson Hills MPD. However, recent pumping data (RH2, 2008, personal communication) indicate that occasionally at peak times the Black Diamond Metro Pump Station exceeds the downstream capacity (Soos Creek Agreement) of the Black Diamond King County Force Main that conveys wastewater to the King County system. King County Metro is currently in the planning and evaluation stage of a proposed wastewater storage facility to regulate flows leaving Black Diamond. One or more wastewater storage facilities may be needed on the Lawson Hills MPD site, on The Villages MPD site, or near the Black Diamond Metro Pump Station in order to moderate peak flows from the Lawson Hills MPD depending on the timing of the Metro storage facility.

