

## **VI. CAPITAL FACILITIES & UTILITIES**

---

### **PURPOSE**

---

The Capital Facilities and Utilities Element is intended to address the capital facilities and utilities needs in Castle Rock and its urban growth area and represents the community's policy plan for the next 20 years. This element is integrated with all other plan elements to ensure consistency throughout the comprehensive plan.

The elements of a community that are necessary for its citizens' health, safety, welfare and education, or that provide recreational opportunity, are called

public facilities and services. Usually the provisions of these facilities and services are the responsibility of government. Additionally, some services that can be provided by private enterprise, such as solid waste collection and disposal, are also considered a public service. The following pages of the plan discuss these elements, including water services, sewer services, solid waste disposal, police and fire protection, educational services and recreational facilities.

### **CITY FACILITIES**

---

The following services are provided in the City of Castle Rock and are discussed in this section:

- Schools
- City Facilities and Services
  - Fire Protection and Emergency Medical services
  - Police Protection
  - Library
- City Utilities
  - Water
  - Sewer
  - Water and Sewer policies
  - Storm Water Drainage
  - Solid Waste Disposal

- Other utilities
  - Electric
  - Natural Gas
  - Telecommunications
- Capital Facility Goals and Policies

Castle Rock also provides streets and parks and recreational services; these are discussed separately in the Transportation and Park, Recreation & Open Space Elements. Most of these services are provided only within the Castle Rock city limits and a few of these services have specific plans for serving the entire study area at this time.

### **CASTLE ROCK SCHOOL DISTRICT**

---

The Castle Rock School District has had a decrease in class size over the last couple of years. As seen in Table 6-1, the population between the ages of 0-34 has decreased rapidly over the last 20 years. This has an effect on classroom

size. The average size is 125 cohorts in grades 8-12, 100 in grades 3-7, and 80 in grades K-2.

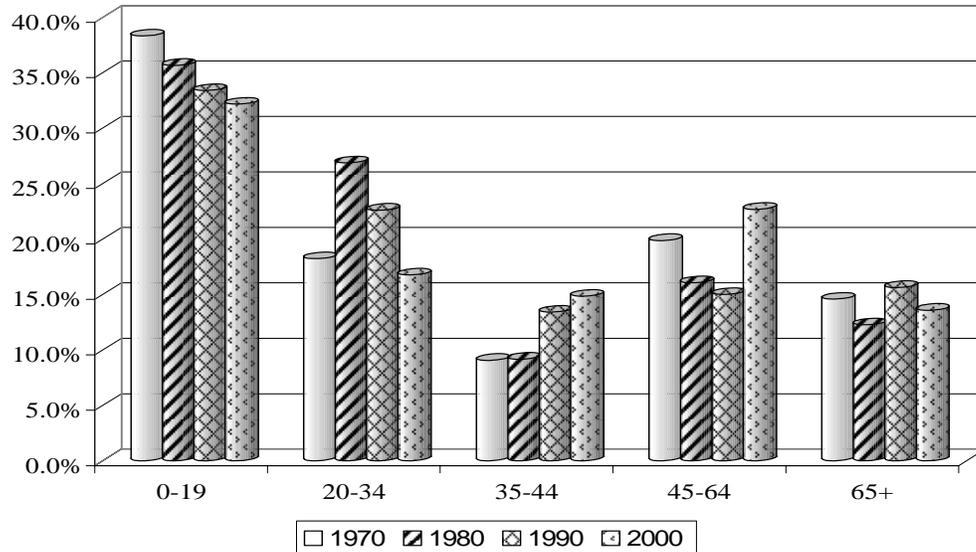
Permits for subdivided property within the city and in the school district

boundary could result in an increase of students.

A State Study and Survey was conducted for the Castle Rock School District No.401 in November of 1994. The study covers information on existing school facilities, area analysis, long

range plans, demographic data, capital funds, racial imbalance, modernization, maintenance, and other useful information needed for future planning of the school district and its facilities.

**Figure 6-1: Age Distribution of Castle Rock Residences**



Source: Castle Rock Community Action Plan

**CITY SERVICES**

This section describes the city’s emergency services such as fire and

police, as well as library and administrative services.

**Fire Protection**

Cowlitz County Fire District #6 is an all hazards agency that operates from a single fire station located at 146 A Street SW. The district responds to over 1200 fire, rescue, and emergency medical incidents annually in its first response area of approximately 12,000 residents and 100 square miles in Northern Cowlitz County and the City of Castle Rock.



Castle Rock Fire Station

The district is staffed by three career, 11 part-time, and 64 volunteer personnel.

standards that meet or surpass State standards and/or certifications for

firefighting, rescue, technical rescue, and emergency medical services. The district's fleet of apparatus consists of three fire engines, one heavy rescue truck, one water tender, three ambulances and two support/utility vehicles.

The district provides several essential services to the community including fire suppression, fire investigation, fire prevention activities, fire code inspection/plan review, vehicle/entrapment rescue, high angle rope rescue, water rescue, EMT (basic life support) and Paramedic (advanced life support) first response and transport. The district also provides paramedic services to Cowlitz County Fire District #3 (Toutle), the Mt. St. Helens National Volcanic Monument

and has other signed automatic mutual aid agreements for cooperative response with seven other area fire districts.

The district will engage in a strategic planning process during the 2006 operating year to reassess service levels required by the community and the resources currently available to the district to provide service at those levels. Major challenges to be addressed in the planning process include staffing levels, volunteer recruitment and retention, training, equipment replacement, facilities replacement and funding.

The goal of the district is to provide high quality, timely service to the community.

### ***Police Protection***

---



*Castle Rock City Hall – Police Station*

The City of Castle Rock and occasionally nearby adjacent unincorporated areas, due to the proximity, are served by a five officer and one clerk police force. There are 10 reserve officers who individually commit at least ten hours of service per month. The police station is part of the City Hall Building located at 141 'A' Street SW.

The City provides vehicles for all five officers which allow the capability of immediate full emergency response if needed. The City's budget is adequate in funding the Police Department's needs to respond and proactively address crime issues.

The City's status as a high crime rating in 2003 was dropped due to a 50% drop in violent crime and a 59% reduction in property crime in 2004. The City's number one crime problem is related to methamphetamine use, resulting in various crimes.

The major concerns for the police department is addressing substance abuse issues regarding drugs and alcohol in all age groups, competitive wages for officers to insure retention of

experienced employees, and fulfilling the needs to provide community oriented

policing for the southwest neighborhoods and schools.

### ***Castle Rock Public Library***

---

The Castle Rock Library is located in a city-owned building at 309 West Cowlitz Street. Its hours of operation are Monday and Wednesdays 12-7 p.m., Tuesday 10a.m.-5p.m, Closed on Thursday, Friday 10a.m.-5 p.m., Saturday and Sunday 12 p.m.-4 p.m. The library which employs 2 part time employees, houses over 17,000 books. There is no schedule for the purchase of new books each year; they are bought at the end of the year depending on budget, but the majority of the books coming are donated. Books are loaned to Castle

Rock residents without charge and to people who live outside the city limits for \$25 per year or \$15 for 6 months.

The library budget was provided by the City of Castle Rock until 2000. Now the library posts an excess tax levy on the ballot each year for funding.

Staff is in the process of writing a grant to finish the back portion of the library building to extend library space, and add a computer center and community meeting space.

## **CITY UTILITIES**

---

### ***Water System***

---

The City's water system is described in a report titled the *City of Castle Rock Regional Water System, Comprehensive Water System Plan*. This report replaces the 1999 Castle Rock/Toutle Regional Water system plan. The report describes the existing water supply and distribution system as well as proposed improvements necessary for serving the land within the city and urban service area.

fire hydrants, main line valves, and approximately 938 metered services. The regional water source is six wells and one surface source, the Cowlitz River which runs north to south through the city. The wells are clustered around the Interstate-5 interchange and Huntington Avenue North (SR 504), and are approximately 115-120 feet deep.

#### ***Description of the system***

The City of Castle Rock water utility is a regional system within the State of Washington, which serves approximately 1,564 customers. The system is made up of approximately 16 miles (87,000 feet) of 2-inch to 16-inch water distribution mains with associated

The Castle Rock/Toutle Regional Water System is made up of three separate systems: the regional water system, which consists of raw water intake, water treatment plant (WTP), main transmission lines, well facilities, and the SR 504 reservoir; the City's water distribution system which consists of the Bond Road reservoir and the

distribution system primarily within the city limits (east of the Cowlitz River) which provides 238 gallons per capita per day; and finally the Cowlitz County distribution system, comprised of two distribution systems; one system west of Castle Rock (west of Cowlitz River) provides 340 gallons per capita per day, and second the distribution system to the Toutle Community Regional Water System yields 192 gallons per capita per day.

### ***Surface Water***

The surface water supply is the Cowlitz River, approximately 2.5 miles upstream from the confluence with the Toutle River and 4.5 miles from the water treatment plant at River Mile 22.4. The Cowlitz River watershed above the city water intake has a drainage estimated at 1,400 square miles.

Water is withdrawn from the Cowlitz River through a 24-inch pipe with 1/8 inch slots. The intake structure is protected by a berm, located just upstream of the structure. The water runs by gravity into a raw water pumping station and then is pumped to the water treatment plant through approximately 25,000 feet of 18-inch ductile iron water main.

The water treatment plant is a direct filtration plant, meaning that it does not use a sedimentation process. Treatment of the surface water consists of chemical addition, static mixers, flocculation

basins, four rapid sand filters, clear well, and finished water pumping.

### ***Ground Water Wells***

The City currently operates six groundwater wells. Wells number 141 is located near Cowlitz View Dr. and pumps 80 gpm; Well 142 is located on the north side of SR 504 west of I-5 near the southbound I-5 off ramp and pumps 70 gpm; Well 144 is located near Papa Pete's and pumps 110-120 gpm; Well 145 is located on Pioneer Avenue and pumps 100 gpm; Well 146 is located southwest of the I-5-SR504 interchange and pumps 45 gpm; and well 147 is located on Cowlitz View Drive and pumps 40 gpm. Wells 146 and 147 are used for emergency purposes only.

### ***Level of service criteria***

The Castle Rock Regional Water System Plan update, along with other adopted guidelines and standards, are used in the design and construction of the water system. For specific design or system standards, refer to the 2005 Comprehensive Water System Plan.

### ***Current Deficiencies/Excess Capacity***

The current water system of Castle Rock meets or exceeds the level of service set forth in the 2005 Comprehensive Water System Plan, with limited exceptions. Replacement of some water lines would help improve flow, pumping and filtration, and reduce leaking

to allow for higher capacity in the future.

System improvements are scheduled to maintain current level of service. The city will undertake an update of the 2005 Comprehensive Water System Plan every 6 years per Department of Health regulations. All facility requirements and funding sources to accomplish the plan are contained in the 20-year Capital Facilities Plan.

### ***Finance***

The water system is financially tested based on four criteria;

revenues minus expenses, operating cash reserve, emergency reserve, and rates. Currently, the water utility is projected to generate sufficient revenues to cover expenses from 2006-2011. With proposed system improvements and rate increases, the city's water utility operating cash reserve will remain above 1/8 of operating expenses in the planning period. The city's reserve fund is viable enough to replace the most vulnerable facility, the water main and water treatment plant. With the city's rate of 1.5% of monthly household income, they meet the fourth and final test of financial viability.

### ***Sewer System***

---



*Wastewater Treatment Plant*

The City's sewer system is described in the *City of Castle Rock Regional Wastewater Service Area, Comprehensive Sewer/Facility Plan*. The report describes the existing collection and treatment plant facilities as well as proposed improvements necessary for serving the land within the city and urban service area.

### ***Description of the system***

The Regional sewer system contains approximately 63,700 linear feet of sanitary sewer main

pipe, approximately 240 manholes, and 3 lift stations.

The Regional Wastewater System is made up of three separate systems: (1) the wastewater treatment plant (WWTP) and the main trunk line from the WWTP up to the intersection of Third Ave and A St SW along with all the associated manholes and cleanouts, (2) the collection system within the city limits east of the Cowlitz River. This system extends from Salmon Creek to Lions Pride Park, and includes all associated manholes, cleanouts, service laterals and pump stations, And (3) The Cowlitz County Wastewater System, which consists of the collection system west of Castle Rock (west of the Cowlitz River). This system serves Green Acres, the high school and a portion of

## Chapter VI

PH10/SR 411, this includes all associated manholes, cleanouts, service laterals and pump stations.

The sewer system uses gravity mains and lift stations to convey the wastewater to the treatment plant located near Dike Road and “The Rock” at 215 Michner St SW. The pipe diameters of the gravity mains range in size from 6 inches up to 18 inches. The most common size is 8 inches in diameter. The majority of the pipe is concrete, with very small amounts of vitrified clay, plastic (PVC), ductile iron, and asbestos-cement pipe. There are three lift stations that are owned, operated, and maintained by the City. In addition to the City lift stations there is one on the west side of the Cowlitz River that is maintained by Cowlitz County, and two more located at the Interstate 5 Toutle River rest area that are owned by Washington State Department of Transportation (WSDOT). The lift stations are used in areas where wastewater is collected at an elevation that is too low to be served by gravity flow. Thus, the wastewater must be pumped uphill to a location where it can continue to flow by gravity toward the treatment plant.

The wastewater treatment plant was upgraded in 2005 to meet future needs of the city and become compliant with Department of Ecology design criteria for effluent quality and process reliability. The general upgrades included new headwork’s, upgraded influent pump station, new secondary treatment (oxidation ditch and



clarifiers), new ultra-violet disinfection, new effluent pump station (for high Cowlitz River levels), new combination sludge thickening and dewatering (with combination gravity belt thickener/belt filter press), and general/civil site improvements (including new standby power for the treatment plant and laboratory building remodel.

### ***Level of Service Criteria***

The sewage disposal system and treatment plant serving the city are designed and regulated in accordance with the *Criteria for Sewage Works Design Manual* prepared by the State of Washington Department of Ecology (DOE). The manual serves as a guide for the design of sewage collection and treatment systems. The 2003 Comprehensive Sewer/Facility Plan is the general sewer plan for the City.

### ***Current Deficiencies/Excess Capacity***

*Collection system*—The City of Castle Rock collection system and lift stations have adequate capacity to serve existing flow rates. Improvements are referred to in the 2003 Comprehensive Sewer/Facility Plan, and consist of replacing damaged pipes, upsizing pipe for future flow, or extending

the system as required to reduce maintenance and liabilities, and to provide for system expansions.

*Waste Water Treatment Plant—*  
The WWTP underwent an extensive upgrade from 2004-2005, expanding the capacity to meet the 2020 population projections. The 2003 Comprehensive Sewer/Facility Plan details the upgrades that have occurred to the plant and future needs as the system expands.

### ***Infiltration/Inflow Analysis***

An infiltration/inflow analysis was conducted in the 2003 plan to identify and prioritize the inflow of ground water into the sewer system. This is an important element to control and reduce hydraulic flows due to rainfall or high ground water. The extra water robs capacity of the treatment plant and makes the influent more difficult to treat. Base flow rates can jump up to six times the dry weather values in response to elevated groundwater, and four times the dry weather peaks due to heavy rainfall. The planned improvements in the 2003 Plan will eliminate these increased levels.

### ***Financing***

Sewer rates are reviewed on an annual basis. The study reviews the sewer system, system revenue requirements, projected expenses, and develops sewer rates based on need. Rate changes are presented to the city council for approval

each year. The most financially conservative scenario is to pay for all improvements using revenue from utility rates and impact fees, and fund major upgrades and additions with loan funds.

The city also has a rate fee for connecting new developments to the system. The fees are divided by single-family, multi-family, and commercial/industrial.

### ***Policies for water and Sewer***

Do work in urban areas to eliminate private water and sewer/septic systems; encourage connection to public water and sewer systems; and discourage construction of new private wells and subsurface sewage disposal sites systems in new development; and minimize the introduction of ground water into the sewer system.

Within the urban service area, citizens are provided urban services. If new development occurs within 200 feet of the sewer system, they are required to connect. If they are required to connect and are outside of the city limits but within the urban service area, they must enter into a “no contest” annexation agreement.

Currently there are private well and septic systems located within the urban service area and a minimal number located within the City limits of Castle Rock.

Public utility services shall be planned so that service provisions

maximize efficiency and cost effectiveness.

If the size of a facility required to serve future development, or other

City needs, is greater than the size required to serve a proposed development, the City will pay the additional cost.

### ***Storm Water Drainage***

---

A system that collects runoff from rain storms or melting snow and carries the water safely around or under developed areas is called a storm drainage or storm sewer system. Such a system is usually comprised of open ditches, catch basins or underground collection pipes, transmission pipes, a water treatment system (seldom), and an outfall or discharge system. Except for a treatment system, the City of Castle Rock uses all of these components to control storm water.

The Castle Rock storm drainage system is in fairly good condition and is upgraded with new development and street repairs.

The City's storm drain outfalls are routed into the Cowlitz River at five locations. The northern outfall, which has a diameter of 12 inches and is gravity fed, is located west of the Front Street and Huntington Avenue intersection. The second outfall is an 18-inch line opposite the water treatment plant north of the Cowlitz River Bridge.

This outfall has a pumping station. The third outfall is 18-inches in diameter and is located opposite "B" Street in the central part of town. The fourth outfall is a 36-inch facility located near the sewage treatment plant in the south part of town. This facility can be pumped or gravity fed. The fifth outfall is located south of Lions Pride Park on Huntington Ave S. This outfall is gravity fed and receives water from the Huntington Ave S area, south of the rock. The Huntington Avenue S entrance feature incorporates low areas which serve as retention/detention ponds to defer the impact of storm water into the Cowlitz River.

The city maintains a storm water management program that follows the Storm water Management Manual for Western Washington. The program helps maintain dikes and levees, build budget for capital improvements, follows rate guidelines for new impervious surfaces, and requires on-site detention for large developments.

### ***Solid Waste***

---

The collection and disposal of residential and commercial solid waste is accomplished either by private collector/hauler or by the home or business owner. On-site collection by private sanitation trucks occurs in Castle Rock under franchise agreement with the

city. Such service is voluntary. Otherwise, it is up to the home and businesses owner to dispose of solid waste at the sanitary landfill operated by Cowlitz County. The landfill is located near Longview southwest of the Harry

Morgan Bridge (SR 432 crossing of the Cowlitz River).

A local committee is in the process of drafting the 2005 Regional Solid Waste Plan for guidelines in collection and transfer of solid waste. The plan states that all local cities and counties should require mandatory service when feasible.

The plan also talks about the future transfer of solid waste once the Cowlitz county landfill reaches capacity.

Currently Waste Control Inc is the largest provider within the City of Castle Rock and its urban service area. There are still some smaller private haulers as well.

### ***Other Utilities***

---

This section discusses privately provided utilities within the urban service area such as electrical lines, telecommunication lines, cable lines, and natural gas lines. It should be noted that the City and utility providers should coordinate future development plans and energy conservation efforts.

#### ***Electrical***

Electrical facilities are provided by Cowlitz County Public Utility District No. 1. The PUD indicates that there is ample capacity to meet existing demand for both the incorporated city limits and urban service area.

#### ***Natural Gas***

Delivery of natural gas to Castle Rock and its surrounding area is provided by Cascade Natural Gas. The delivery of natural gas is

governed by the Federal Emergency Regulatory Commission, the National Office of Pipeline safety, and Washington Utilities and Transportation Commission.

#### ***Telecommunications***

MCI is the largest provider of local telephone services to the City of Castle Rock and its urban service area. Many of the telecommunication facilities, both aerial and underground, are co-located with those of the electrical power provider. There are a number of providers with fiber optic lines in Castle Rock. Sprint and Williams have lines along Dougherty Drive; AT&T has lines along the railroad; and Adelphia and Qwest have lines along A St SW.

## **CAPITAL FACILITY GOALS**

---

**Goal 1:** Maximize efficient use of all public resources and maintain a high standard of sewer and water services, storm drainage, and flood protection in the City.

**Goal 2:** Further citizen participation in city government

**Goal 3:** Balance capital facility service levels with resident's income levels, coordinating the ability to provide services with the citizen's abilities to pay for services.

**CAPITAL FACILITY POLICIES**

---

**Policy 1:** Public facilities and services should be designed and constructed to handle the anticipated growth of the service area, and to minimize future maintenance and repair costs.

**Policy 2:** The ability of the city to maintain public facilities and services adequately should be evaluated in the review of proposed new development.

**Policy 3:** Sewer, water lines and related facilities needed to serve new

development should be the responsibility of the developer or, in some cases, a joint cost between developer and the City.

**Policy 4:** The City should update the Water and Sewer Comprehensive facility plans every five years.

**Policy 5:** The city should apply for all available state and federal grants and other funds to assist development and improvement of capital facilities.