2. Description of the Proposed Action and Alternatives

2.1 Project Proponent

The proponent of the City Heights Planned Mixed-Use Development is Northland Resources, LLC, doing business as Sapphire Skies in Cle Elum, Washington. Three entities own the property that is the subject of this application: Green Canyon, LLC; Cooper Pass, LLC; and Highmark Resources, LLC. Northland Resources, LLC is the manager of these three entities, and has submitted an application to the City of Cle Elum for annexation, rezone, and entering into a Development Agreement. These actions would authorize annexation to the City and development of 330 acres currently in the City's Urban Growth Area and development of an additional 28 acres already within the City limits. The applicant desires to develop the entire 358-acre project under the provisions of the City's Planned Mixed-Use (PMU) District (Cle Elum Municipal Code Chapter 17.45).

2.2 Purpose and Objectives of the Proposal

The purpose and objectives of the City Heights Planned Mixed-Use development are to:

- Develop homes in an economically-viable manner, in desirable residential neighborhoods within a master planned community.
- Achieve urban residential densities to comply with Washington State Growth Management Act (GMA) policies, in order to respond to Washington State Office of Financial Management population projections for the City of Cle Elum and its Urban Growth Area.
- Develop a mix of dwelling unit types, including single-family detached and attached homes for permanent residents, as well as detached and attached homes and fractional-ownership homes to serve the recreational housing market.
- Invigorate the downtown commercial area by increasing the population within the service area.
- Develop up to approximately 5 percent of the developable area of the site with commercial space for neighborhood services. Provide for uses that would not compete with downtown core businesses.
- Design the development to be responsive to site-specific characteristics: include significant open space and recreational amenities to preserve unique features of the site.
- Provide an interconnecting trail system to enhance the ability of the public to travel east-west through the Cle Elum area on trails through open space rather than on roads shared with vehicles.
- Provide connections to existing developed areas within the City for residents to enjoy the public amenities provided within the development, and to facilitate access to the services provided in the City's commercial core.
- Construct a stormwater management system compliant with the Washington Department of Ecology 2004 *Stormwater Management Manual for Eastern Washington*.
- Implement site improvements over a period of approximately 6 to 12 years, or in response to market demand.
- Comply with City of Cle Elum Comprehensive Plan policies, zoning regulations, and development standards through the provisions of a Development Agreement between the project proponent and the City to guide the character of the project.

2.3 Location

The City Heights property is situated north of and adjacent to the City of Cle Elum within the southwest one-quarter of Section 25, northwest one-quarter of Section 25, north one-half of Section 26, and north one-half of Section 27, all within Township 20 North, Range 15 East, Willamette Meridian, Kittitas County, Washington (see Figure 2.3-1). A portion of two of the parcels (Tax Parcel 493935 and Tax Parcel 19165, approximately 28 acres total) are already within the City limits. Other parcels within the proposed development area are identified in Table 2.3-1 below. Parcels currently outside the City limits are within the City of Cle Elum Urban Growth Area (UGA).

Table 2.3-1. Land parcels that comprise the City Heights proposed development area.

Tax Parcel Numbers	Map Numbers	Approximate Acreage
952904	20-15-25064-0001	20.66
952905	20-15-25064-0002	16.76
952906	20-15-25064-0003	21.45
952903	20-15-25064-0004	3.24
12528 that portion of Columbia St	20-15-25032-0002	0.25
19165	20-15-26057-0003	89.26
952818	20-15-26061-0001	20.00
952819	20-15-26061-0002	20.00
952820	20-15-26061-0003	20.00
952183	20-15-26060-0001	12.04
952184	20-15-26060-0002	12.00
493935 (Reeds Addition)	20-15-27051-0701	5.15
083835	20-15-27010-0001	70.18
593835	20-15-27020-0001	25.73
943835	20-15-27020-0007	21.52
Total:		**358.24 acres**

The property is approximately 2.4 miles long by about 0.2 to 0.5 mile wide, on the south face of Cle Elum Ridge. It spans nearly the entire length of the existing City limits. The property is accessed by several roads, including Stafford Street/Summit View Road, Montgomery Avenue/Deer Creek Road, and Columbia Avenue/Creekside Road. Bonneville Power Administration (BPA) and Puget Sound Energy (PSE) electrical transmission line easements pass through the entire east-west length of the property.

2.4 History and Background

Historically, the project site area was used for coal mining. It is underlain in most places by underground coal mine workings 0 to 700 feet below ground surface. Mining began in the early 1890s and continued for approximately 60 years. During this period, at least three coal mines operated on portions of the project site, and approximately 19 million tons of coal was mined from a single coal seam approximately 4 to 6 feet thick.

Insert Figure 2.3-1. Location Map (11 x 17-inch color)

In recent times, the project site has been idle, with periodic commercial timber harvest activities. A *Coal Mine Hazards Risk Assessment* was prepared for the site (SubTerra, Inc., October 2009). This technical report describes potential risks associated with abandoned mine features in each proposed Development Area of the site, and provides recommendations to guide proposed development.

2.5 Planned Mixed-Use Development Review and Approval Process

The Preferred Alternative (City Heights Alternative 1) is to annex to Cle Elum 330 acres of the property not currently within the City limits, and to rezone and develop the site under a Development Agreement with the City in accordance with the provisions of the City's Planned Mixed-Use (PMU) District (Cle Elum Municipal Code [CEMC], Chapter 17.45). Alternative 2 could also achieve this objective, though at a lower residential density and therefore with fewer amenities (see Section 2.6 below). The Mixed-Use Approval required under CEMC 17.45.020 is subject to a final plan approved by the City pursuant to the process established in the PMU Code. It is the intention of the PMU Code to encourage development proposals not constrained by fixed development standards, and toward that end, deviation from development standards may be authorized by the City Council when the Council finds, with the advice of the Planning Commission, that such deviation would advance the achievement of the stated purposes and objectives of the PMU District. Customized development standards can be specified in the Development Agreement to be negotiated between the City and the applicant. The relationship of the proposal to the purpose and objectives of the PMU District is described in Draft EIS Section 3.7.2.

The Development Agreement application will be processed as a City of Cle Elum Type IV review and decision procedure, described in CEMC 17.100.100 and 17.140. Following completion of the EIS process, the City planner will prepare and issue a staff report describing the project, its consistency with City standards, and a recommendation to approve, approve with conditions, or deny the application. The staff report will be sent to the applicant and City Planning Commission, and made available for public review. The Planning Commission will consider the application, and will prepare a recommendation to the City Council. A Planning Commission public hearing will be held during the formulation of their recommendation during which public comments will be received. The Council will have the final decision-making authority. The Council may adopt the Planning Commission recommendation, modify the recommendation, or remand the project application for reconsideration of a specific aspect. The public hearing during the City Council's decision will be a "closed record" hearing during which no additional information from the applicant and no additional public comment will be received.

If Alternative 3A or 3B is selected for implementation, the development approval process would be subject to Kittitas County land use policies, regulations, and development standards – likely under the County's Planned Unit Development (PUD) or Performance-Based Cluster Platting codes. The relationship of the proposal to the Kittitas County Comprehensive Plan and Zoning Code is described in Draft EIS Section 3.7.4.

2.6 Description of the Proposed Action and Alternatives

Five conceptual land use alternatives are evaluated in this Environmental Impact Statement (EIS): four build alternatives and No Action. There are two development scenarios within the City of Cle Elum that would be consistent with the request for annexation, rezone, and urban development within the City's Urban Growth Area. If for any reason the annexation action does not occur, the EIS also evaluates two development scenarios within unincorporated Kittitas County. Although each of the four development alternatives has a somewhat different allocation of uses, the most likely to be implemented (Alternatives 1, 2, or 3A) would include:

- Residential neighborhoods with a mix of single-family detached homes, single-family attached dwelling units, and multi-family dwelling units. Structures would comply with the three story (or 35 feet, whichever is lower) maximum building height provision of the PMU District.
- Neighborhood commercial areas.
- Parks and/or open space.
- Trails.
- Wetland areas and riparian corridors to be preserved.
- Roads and other possible public service sites.
- A developed stormwater management system.
- Utility infrastructure, including water, sewer, and franchise utilities.

Alternative 3B is envisioned to include all single-family detached homes; no commercial development; no improved parks, trails or open space; and rural utilities.

A more detailed description of each alternative is provided in the subsections below. Conceptual illustrations of the proposed development are provided in Draft EIS Section 3.13: Aesthetics.

2.6.1 Alternative 1: The Preferred Alternative

The Alternative 1 conceptual land use plan is the applicant's Preferred Alternative for development of the City Heights project. Key features of this alternative include:

- Approximately 985 dwelling units of which approximately 70 percent would be single-family detached homes and 30 percent would be single-family attached units.
- Approximately 20,000 square feet (sf) of neighborhood commercial development in two 10,000 sf locations on the site. For the purpose of the *Fiscal Analysis*, it was assumed that approximately 10,000 sf of neighborhood commercial use would be convenience retail, and approximately 10,000 sf would be professional office use.
- Approximately 155 acres of parks, open space, and public amenities, walking paths, hiking trails, and multi-use path/bike access.
- On-site provisions for public utilities, including water supply, wastewater collection, stormwater management facilities, electrical power, natural gas and communications.

The total estimated population of at full build-out of Alternative 1 would be approximately 2,207 persons if all units were permanently occupied. The project proponent estimates that 65 percent (approximately 640 d.u.) would be permanently occupied and 35 percent would be considered seasonal or second homes, with peak occupancy anticipated during summer (Memorial Day through Labor Day) and during winter breaks (for any alternative). However, for the purpose of environmental review and impact analysis, it is assumed that 90 percent of all dwelling units in any conceptual land use alternative would be permanently

occupied, and 10 percent would be seasonal or second homes.[1] At 90 percent occupancy, the Alternative 1 resident population would be approximately 1,987 persons, and the student population would be approximately 228 (see Draft EIS Section 3.17.5 for additional information regarding student population projections by grade level).

Four points of primary access are proposed to serve Alternative 1. The west access from SR 903 is proposed across property owned by Cle Elum Pines West, LLC and Teanaway Ridge, LLC, referred to in the EIS as the "Deneen property." Existing streets and roads that would serve the site include Stafford Avenue/Summit View Road, Montgomery Avenue, and Columbia Avenue (see Figure 2.6-1 and additional information in Draft EIS Section 2.9.4 regarding the Transportation System proposal). The Deneen property access route would involve an elevated bridge crossing of Crystal Creek and the Coal Mines Trail (see Figure 2.9-1).

Development standards and mitigation requirements would be specified in a Development Agreement to be negotiated with the City. There would be one consistent set of Covenants, Conditions and Restrictions (CC&Rs) to be enforced by a Homeowner's Association.

2.6.2 Alternative 2: Reduced Residential Density

The conceptual land use plan for the Reduced Residential Density Alternative includes the following principal features:

- Approximately 875 dwelling units of which approximately 60 percent would be single-family detached and 40 percent would be single–family attached units.
- Approximately 40,000 square feet (sf) of neighborhood commercial development in two 20,000 sf locations on the site. For the purpose of the *Fiscal Analysis*, it was assumed that approximately 10,000 sf of convenience retail uses would be provided, and approximately 30,000 sf of professional office use.
- Approximately 161 acres of open space to be preserved.
- One multi-use path.
- On-site provisions public utilities: City water supply and wastewater collection, stormwater management facilities, electrical power and communications.

There would be limited or no public amenities in the Alternative 2 development concept due to reduced resources compared to Alternative 1. The total estimated population at full build-out if all units were permanently occupied would be approximately 1,943 persons. The project proponent estimates that approximately 50 percent of homes in this alternative (approximately 440 d.u.) would be permanently occupied, and 50 percent would be considered second homes (though for the purpose of impact analysis, it is assumed that the development would be 90 percent occupied by permanent residents and 10 percent occupied by seasonal residents). At 90 percent occupancy, the Alternative 2 resident population would be approximately 1,749 persons, and the student population would be approximately 199.

[1] For the purpose of environmental review and impact analysis, the percentage of primary homes is higher (90 percent) than the project proponent's estimate described for each alternative in this section, due to the City's preference to anticipate the development of permanent-resident neighborhoods within City Heights.

Insert Figure 2.6-1. Alternative 1 Conceptual Land Use Plan (11 x 17-inch color)

Primary access to serve Alternative 2 would be provided from Alliance Road (to the west end of the development from SR 903), Stafford Avenue/Summit View Road, Sixth Street, and Columbia Avenue (see Figure 2.6-2 and additional information in Draft EIS Section 2.9.4.1). Alliance Road would be constructed to the standards of a Collector Road (described in Draft EIS Section 2.9.4.3), and would require widening and improving an existing at-grade crossing of the Coal Mines Trail and an overcrossing of Crystal Creek. Montgomery Avenue (east end) would be used for emergency vehicle access only under Alternative 2, with entrances at or near the power line easements. Development standards and mitigation requirements would be specified in a Development Agreement to be negotiated with the City. Similar to Alternative 1, there would be one consistent set of Covenants, Conditions and Restrictions (CC&Rs) to be enforced by a Homeowner's Association.

2.6.3 Alternative 3A: No Annexation, Development within the County under Single Ownership

The conceptual land use plan for Alternative 3A would be essentially the same as Alternative 2, with approximately 875 dwelling units (d.u.) based on the 4 to 5 dwelling units per acre criteria in the Kittitas County Planned Unit Development (PUD) provisions (see Figure 2.6-3). As with Alternative 2, Alternative 3A assumes approximately 60 percent single-family detached and 40 percent single–family attached units, and approximately 40,000 square feet (sf) of neighborhood commercial development in two 20,000 sf locations on the site. All open space (approximately 161 acres) would be unimproved in Alternative 3A, with no public amenities. There would be on-site provisions for public utilities (e.g., water supply, wastewater collection, stormwater management facilities, electrical power and communications); however, the City may or may not choose to provide City water and sewer service outside the City limits to serve the project under this alternative. Therefore, some on-site utilities may be privately-owned and operated within this alternative. See additional information regarding water and sewer service options in Draft EIS Sections 2.9.2 and 2.9.3, below.

The total estimated population of the full build-out condition of Alternative 3A would be approximately 1,943 if all units were fully occupied. At 90 percent occupancy, the resident population would be approximately 1,749 persons, and the student population would be approximately 199. The project proponent's estimate of permanent and seasonal occupancy with Alternative 3A is 50 / 50, although for the purpose of the impact analysis, it is assumed that 90 percent of the dwelling units would be permanently occupied and 10 percent would be seasonal or second homes.

As with Alternative 2, primary access to Alternative 3A would be provided from Alliance Road (to the west end of the development from SR 903), Stafford Avenue/Summit View Road, Sixth Street, and Columbia Avenue. The Alliance Road route would be constructed to the standards of a Collector Road, and would require widening and improvements to the existing at-grade crossing of the Coal Mines Trail and the overcrossing of Crystal Creek. Montgomery Avenue (east end) would be used for emergency vehicle access only with Alternative 3A, with entrances at or near the power line easements. Development would be regulated by Kittitas County land use policies and development regulations. Conditions of approval and mitigation requirements would be specified through the County's PUD (or similar) procedures. Given that Alternative 3A would also be developed under single ownership (like Alternative 1 or Alternative 2), there would be one consistent set of Covenants, Conditions and Restrictions (CC&Rs) to be enforced by a Homeowner's Association.

Insert Figure 2.6-2. Alternative 2 Conceptual Land Use Plan (11 x 17-inch color)

Insert Figure 2.6-3. Alternative 3A Conceptual Land Use Plan (11 x 17-inch color)

2.6.4 Alternative 3B: No Annexation, Development within the County under Multiple Ownerships

Under Alternative 3B, the property would be sold and developed in up to 17 individual parcels (see Figure 2.6-4). For the acreage located within the UGA, there would be a possible rezone prior to sale to facilitate higher residential density than under existing County zoning. Alternatively, some or most parcels within the UGA would likely be developed under Kittitas County Planned Unit Development (PUD) regulations or Performance-Based Cluster Plat criteria. Acreage already within the Cle Elum City limits would be developed in accordance with City zoning and development standards. It is estimated that the residential density under Alternative 3B would be approximately 500 lots, and that all homes to be constructed on the site would be single-family detached. This alternative would not meet the objectives of the proposal or the urban residential density standards of the Washington State Growth Management Act.

Development would likely occur in a discontinuous pattern over a longer period of time if Alternative 3B were selected for implementation (although there is no time-certain for phased implementation of any of the conceptual land use alternatives). Separate Covenants, Conditions and Restrictions (CC&Rs) might be developed for each parcel or group of parcels; however, it is possible that there would be no CC&Rs for some or any of parcels. The rezone of Tax Parcels 19165 or 493935 proposed under Alternative 1 or Alternative 2 would not be anticipated with Alternative 3B.

Little or no open space would be provided with development of multiple parcels under multiple ownerships. There would be no trail system or public amenities, and no commercial development.

The total estimated population with Alternative 3B would be approximately 1,150 at full build-out if all units were permanently occupied. The project proponent's estimate of permanent and seasonal occupancy with Alternative 3B is 50/50, although for the purpose of the impact analysis, it is assumed that 90 percent of the dwelling units would be permanently occupied, and 10 percent would be second homes. At 90 percent occupancy, the total estimated resident population would be approximately 1,035 persons, and the total student population would be approximately 121.

There would be no assurance that a coordinated road system would be built to serve the site under Alternative 3B. Road access or easements would be required to serve each parcel. Utilities would likely consist of on-site wells and on-site sewage disposal systems. Water would be provided through independent Group A community water systems with a new water right, or by individual water right permit-exempt wells (subject to compliance with Ecology's emergency rule, Chapter 173-539A WAC). There would be no coordinated stormwater management system with Alternative 3B.

2.6.5 Alternative 4: No Action

If the City Heights Planned Mixed-Use Development did not proceed, there would be no alteration to the site at this time. Northland Resources, L.L.C. would have the discretion to decide whether to maintain ownership of the property, pursue some other use, or delay and reapply for development at some future time. The property could be sold to others for development. Based on the fact that the site is within a designated Urban Growth Area, it is presumed that it would undergo urban development sometime within the current City/County 20-year planning period (2005−2025). However, for the purpose of this analysis, it is assumed that under Alternative 4, there would be no change to the existing conditions of the property (see Figure 2.6-5).

Insert Figure 2.6-4. Alternative 3B Conceptual Land Use Plan (11 x 17-inch color)

Insert Figure 2.6-5. Alternative 4: No Action Alternative (11 x 17-inch black-and-white)

2.7 Phased Development

Northland Resources, LLC proposes to build-out the City Heights Planned Mixed-Use Development over a period of 6 to 12 years, or in response to market demand, and in response to the availability of public services and infrastructure required to accommodate this growth in the community. It is estimated that construction of the first phase could commence in 2011 with the first occupancy likely in 2012. At this rate, approximately 70 to 165 residential units per year would be built and made available for occupancy depending on the development alternative selected for implementation. The final determination of the phasing layout had not been conceptualized at the time of this writing. Full build-out is expected to be complete in the timeframe between 2018 and 2024.

Phases will be defined in the Development Agreement to be prepared between the project proponent and the City for the purpose of correlating mitigation requirements to each phase of construction and occupancy of the project. These conditions would be transferrable to the purchasers of large tracts.

2.8 Clearing, Grading and Construction Proposal

In order to complete development of the City Heights Planned Mixed-Use Development, significant clearing of vegetation and grading would be required in all areas not designated as critical areas, sensitive areas, protected habitat, or permanent open space. It can be expected that approximately 25 to 125 acres of land will be cleared and graded at any given time for development purposes. As each of these areas is stabilized with either permanent or temporary methods, another 25 to 125 acres would be cleared, up to the total estimated in Table 2.8-1.

Table 2.8-1. Clearing estimates for the City Heights conceptual land use alternatives.

Conceptual Land Use Alternative	Estimated Clearing (in acres)	Percentage of the Site to be Cleared
Alternative 1	204.3	57%
Alternative 2	171.9	48%
Alternative 3A	171.9	48%
Alternative 3B	107.4	30%

Buffers would be established for protected areas (wetlands, streams, steep slopes), and guidelines would be created for work that could occur in buffers at road and utility crossings, for example − subject to restoration and/or enhancement requirements.

Large volumes of earthwork are anticipated due to large areas where clearing and grading will be required. Table 2.8-2 shows approximate earthwork volumes for each conceptual land use alternative, and percentages of export and import that would be anticipated. It is expected that most of the excavated on-site soils could be utilized for engineered fill. Based on the *Preliminary Geology and Geotechnical Evaluation* prepared for the project (Aspect Consulting, October 2009), some of the materials found on-site may not be usable as structural fill due to their predominantly fine-grained and organic composition. Other materials may be acceptable as structural fill under favorable weather conditions and assuming appropriate workmanship is utilized by the contractor. More detailed geotechnical recommendations with

regard to structural fill and utilization of on-site excavated soils will be provided during the design phase of the project.

Table 2.8-2. Estimated earthwork quantities for the City Heights conceptual land use alternatives.

Conceptual Land Use Alternative	Estimated Earthwork Quantities				
	Total Earthwork (in cubic yards)	Cut (% of Total)	Fill (% of Total)	Import (% of Fill)	Export (% of Cut)
Alternative 1	2,106,800 cy	90%	10%	25%	12%
Alternative 2	1,917,200 cy	91%	9%	20%	11%
Alternative 3A	1,917,200 cy	91%	9%	20%	11%
Alternative 3B	1,538,000 cy	75%	25%	10%	7%

The clearing and grading activities would essentially be the same for site development of conceptual land use Alternatives 1, 2 or 3A. The clearing and grading activities for Alternative 3B would most likely be an uncoordinated effort.

Stumps, branches and other vegetative materials will be stockpiled for possible wood chipping, saved for use in landscaping, or disposed off-site. Excavators, stump pullers, bulldozers and off-road trucks are the types of machinery needed for this activity. Although it is difficult to assess with any certainty the approximate quantities of material given the varying conditions and number of trees throughout the property, it is likely that multiple stockpiles of wood debris approximately 30 feet high and 100 feet in diameter will be temporarily created in each area cleared. Once each phase of the development site is completely cleared, the material will be chipped or hauled away. The franchise solid waste collection contractor for the area (Waste Management of Ellensburg) could provide containers upon request for landclearing debris to be transported to the company's processing facility in Woodinville, Washington (personal communication with J.R. Lesure, District Manager, October 22, 2009).

Topsoil will also be stockpiled during clearing and grading activities. Once clearing and vegetation removal has occurred, it can be assumed that roughly 6- to 12- inches of topsoil material may be scraped off the surface for future use. For each 1 acre area cleared, approximately 800 to 1,600 cubic yards of topsoil could be scraped from the site. This material can be reused in areas to be landscaped, moved to open space, or sold for off-site use by others. Temporary topsoil stockpiles could be as large as 30 feet high and 60 feet in diameter. Land scrapers, bulldozers and off-road trucks are the types of equipment typically used for this activity.

It will likely be necessary during earthwork activities on the site to import select fill material for the construction of roads and utilities. Bulldozers, other earth-moving equipment and off-road trucks are the types of equipment that may be used on-site for this activity.

Dust and noise will be generated during clearing and grading activities. Runoff from areas under construction will be controlled through a temporary stormwater management system, as described below in Section 2.9.1.

All clearing and grading activities, including stockpiling, would be conducted in compliance with applicable State and local regulations, including but not necessarily limited to the Washington Department of Natural Resources (Forest Practices permit), City of Cle Elum or Kittitas County regulations (depending on the alternative selected for implementation). Best Management Practices (BMPs) for erosion/sedimentation control and construction stormwater management would be implemented consistent with the Department of Ecology 2004 *Stormwater Manual for Eastern Washington* (SWMEW), or more current regulations adopted by the local jurisdiction at the time of each phased development application. Prior to any construction activity on the project site, a National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit will be obtained and a Stormwater Pollution Prevention Plan (SWPPP) will be prepared.

The applicant estimates that there may be between 25 and 100 single-family detached homes under construction at any one time, and possibly 25 to 50 attached units also simultaneously being built. Commercial development would likely be constructed in increments of 10,000 sf to 20,000 sf (personal communication with Dave Blanchard, President, Northland Resources, LLC, September 24, 2009).

2.9 Infrastructure

Infrastructure planning requires projecting the needs of the City Heights Planned Mixed-Use Development over the 6- to 12-year development timeframe. The infrastructure needs of phased development within the project must be compared to City of Cle Elum comprehensive Water, Sewer, and Transportation Plan models if Alternative 1 or 2 is selected for implementation to coordinate capital improvements in each system, and to determine the development's proportionate-share responsibility for system improvements.

2.9.1 Stormwater Management Proposal

Based on analysis of an aerial topographic map of the site, Encompass Engineering & Surveying delineated five site-specific drainage basins.[2] Preliminary runoff modeling for the proposed City Heights Planned Mixed-Use Development was done using the King County Hydrograph Program (Santa Barbara Hydrograph method) version 4.21B accepted by the Washington Department of Ecology (Ecology). As required by Ecology's 2004 *Stormwater Management Manual for Eastern Washington* (SWMMEW), the run-off analysis was performed for the 2-year and 25-year events. Due to existing flooding issues downstream of the project site, the 100-year storm event was also analyzed. The drainage analysis classifies the site soil conditions by Hydrologic Soil Group as "C" – Moderately High Runoff Potential, and "D" – High Runoff Potential. Infiltration capabilities of the project site soils will be more specifically characterized prior to the design phase, to confirm the most suitable locations and pond size requirements for temporary and permanent infiltration facilities.

Construction Stormwater Management. Temporary erosion/sedimentation control (ESC) facilities will be installed on the City Heights site during construction. ESC measures will minimize soil erosion once the natural vegetative cover has been removed, and will minimize the occurrence of sediment from those same areas migrating into water bodies (streams and wetlands). Construction Best Management Practices (BMPs) will be implemented to convey, collect, treat and release construction stormwater

[2] The level of detail utilized for delineation of the site-specific drainage basins is appropriate for the preliminary storm drainage calculation and analysis for the project site. A more detailed analysis will be performed prior to design and construction.

runoff. These include, but are not limited to: installing fencing to delineate the limits of work/construction, utilizing vegetated or rip-rapped roadside ditches and check dams for conveyance, creating sedimentation ponds and or sediment traps for collection and treatment of stormwater runoff prior to release from the site, installing silt fences or straw wattles for treatment, and installing proper piping and outfall protection inside the limit of work areas for release of construction stormwater runoff.

Prior to any construction activity on-site, a National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit will be obtained from Ecology. This permit will notify the appropriate regulatory agencies of construction activities that have the potential to discharge sediment-laden water to waters of the State, so representatives of these agencies can observe such activities to make sure no such discharge occurs, and work with the contractor to implement effective in-place ESC measures.

Also before construction is permitted, a Stormwater Pollution Prevention Plan (SWPPP) will be prepared that provides guidance to the contractor on how to deal with varying degrees and types of runoff problems to prevent sediment-laden water and wind-blown particles from leaving the target area, as well as how to manage spills and accidents in the event that a spill were to occur. The target area would be the specific area under construction at any given time; therefore, multiple SWPPPs will be prepared over time as the site is developed. The SWPPPs will also address protection of abutting properties (developed sites, wetlands, steep slopes, drainage systems, etc.) from areas undergoing development, or areas being used to support construction, including but not limited to vehicle staging areas and stockpile areas.

Developed-Condition Stormwater Quantity Control. The developed-condition stormwater management system would include properly designed and constructed drainage conveyance systems (storm drainage pipes, catch basins and manholes, sediment filters, vegetative and/or rip-rapped swales and check dams), detention/retention facilities, control structures with oil-water separators, infiltration facilities, properly designed culverts at stream crossings, and proper pipe outfall/runoff discharge protection and energy dissipation. To protect stream morphology, detention facilities are proposed throughout the project site, based on separate basin areas, to detain the post-development runoff associated with proposed site improvements. Table 2.9-1 shows the approximate post-development impervious areas of the four conceptual land use alternatives. Note that for the purpose of analysis, the property was divided into five existing basins where stormwater naturally flows or accumulates (Basins A through E in the table below). Final site design will identify smaller sub-basins, including off-site areas. For the purpose of estimating impacts, these calculations are based on approximate typical land cover as determined by the project proponent, the *Geotechnical Evaluation* prepared for the project (Aspect Consulting, October 2009), and State and local standards.

Table 2.9-1. Projected impervious cover with the City Heights conceptual land use alternatives (Encompass Engineering & Surveying 2010).

Basin	Total Area (acres)	Projected Impervious Cover (in acres)		
		Alternative 1 (Preferred)	Alternative 2 or 3A	Alternative 3B
A	84.64	33.28	30.41	71.60
B	57.53	17.11	15.77	
C	179.76	55.61	50.84	
D	29.78	10.67	9.95	
E	6.29	2.80	2.5	
Total	**358.00**	**119.47**	**109.47**	**71.60**

Where development patterns and topography allow small, localized drainage facilities would be provided rather than fewer large facilities with large conveyance networks. This "low impact development" approach to stormwater management will be utilized in order to more closely mimic the pre-development hydrology of the site. Techniques that retain natural land cover, minimize impervious surfaces, and maximize infiltration of stormwater will be used to the extent practicable.

Drainage calculations were performed for each basin to determine both the total stormwater runoff for the pre-development and the post-development condition, and the required stormwater facility detention volume. Infiltration analysis will be performed in the design phase of the project. However, it was confirmed that adequate stormwater management improvements can be located on the project site (Encompass Engineering & Surveying 2010). This analysis assumes no infiltration for a conservative approach. The results of these calculations are shown below in Tables 2.9-2 and 2.9-3. While large detention facilities will most likely not be used as the primary means of stormwater management within the development, the analysis of the area required for these types of facilities is easier to quantify and gives a general analysis of stormwater detention requirements for a specific basin. During detailed design, sub-basins within these larger basins will dictate the number and actual size of stormwater quantity control facilities required.

Table 2.9-2. Estimated unmitigated stormwater runoff from each City Heights conceptual land use alternative (Encompass Engineering and Surveying 2010).

Basin	Estimated Unmitigated Stormwater Runoff 100-Year Event (in cubic feet per second)[a]				
	Alternative 1 (Preferred) [a]	Alternative 2 or 3A[b]	Alternative 3B[b]		No Action[c]
			Proposed	Existing	
A	94.77 cfs	93.26 cfs	**Proposed**	**Existing**	71.81 cfs
B	61.51 cfs	60.80 cfs	373.55 cfs	289.38 cfs	52.49 cfs
C	197.31 cfs	194.94 cfs			150.58 cfs
D	34.02 cfs	33.69 cfs			29.08 cfs
E	7.33 cfs	7.18 cfs			6.14 cfs
Total	**394.94 cfs**	**389.87 cfs**	**373.55 cfs**	**289.38 cfs**	**310.10 cfs**

[a] Refer to Appendix D of the *Grading, Drainage and Utilities Technical Engineering Report* (Encompass Engineering & Surveying, November 2009) for detailed calculations for this and other storm events.

[b] Post-Development Runoff for shown storm event. The developed condition within each basin is not known so a total figure is provided instead of by basin.

[c] Pre-Development Runoff ("existing conditions") for shown storm event.

Table 2.9-3. Estimated required detention volume by City Heights conceptual land use alternative (Encompass Engineering and Surveying 2010).

Basin	Total Area (in acres)	Estimated Required Detention Volume (in cubic feet) [a,b]		
		Alternative 1	Alternative 2 or 3A	Alternative 3B
A	84.64	246,901 cf	222,531 cf	756,831 cf
B	57.53	114,550 cf	102,654 cf	
C	179.76	321,144 cf	314,573 cf	
D	29.78	66,742 cf	66,643 cf	
E	6.29	14,525 cf	14,314 cf	
Total	**358.00**	**763,862 cf**	**720,715 cf**	**756,831 cf**

[a] Refer to Appendix D of the *Grading, Drainage and Utilities Technical Engineering Report* (Encompass Engineering & Surveying 2010) for detailed calculations for this and other storm events.

[b] Volumes shown are for the 100-year storm event.

Developed-Condition Stormwater Quality Control. Ecology's 2004 *Stormwater Management Manual for Eastern Washington (SWMMEW)* requires stormwater quality treatment measures to reduce pollutant loads and concentrations in stormwater runoff using physical, biological, and chemical removal mechanisms for the protection of water quality and beneficial uses of receiving waters. The most effective basic treatment Best Management Practices (BMPs) remove about 80 percent of total suspended solids from treated runoff, and a much smaller percentage of dissolved pollutants. It may be necessary to

provide additional treatment to remove oil, metals, and/or phosphorus from stormwater runoff from "pollutant-generating" surfaces (i.e., roads and parking areas) in the completed condition of the project.

Water quality treatment facilities are selected based on the types of treatment required, terrain configuration, and site layout. Based on these characteristics of the City Heights Planned Mixed-Use Development, Biofiltration Treatment Facilities are the primary means selected for stormwater quality treatment.

The preliminary engineering analysis indicates that the entire basin area runoff would require treatment measures in the developed condition of the site for any conceptual land use alternative selected for implementation. Single facility sizes for water quality treatment offer a convenient method for comparing differences between the alternatives in Table 2.9-4 below; however in practice, multiple smaller facilities would be implemented across the on-site drainage basins. Pre-treatment facilities sizing will also be determined in the design phase of the project based on the water quality design flow rate.

Table 2.9-4. Estimated required runoff volume for water quality treatment by City Heights conceptual land use alternative (Encompass Engineering and Surveying 2010).

Basin	**Total Area (acres)**	**Estimated Required Volume for water quality treatment (in cubic feet)**[a]		
		Alternative 1	Alternative 2 or 3A	Alternative 3B
A	84.64	131,248 cf	119,797 cf	419,479 cf
B	57.53	74,172 cf	74,172 cf	
C	179.76	254,427 cf	254,427 cf	
D	29.78	46,179 cf	46,179 cf	
E	6.29	10,667 cf	10,667 cf	
Total	**358.00**	**516,693 cf**	**505,242 cf**	**419,479 cf**

[a] Volume for water quality treatment based on 0.5 inches of runoff over the impervious surface approach.

The impact analysis of the stormwater management proposal during construction and in the developed condition of the conceptual land use alternatives is presented in Draft EIS Section 3.18.3.

2.9.2 Water Supply Proposal

The City of Cle Elum and the Town of South Cle Elum have an integrated water system. Cle Elum, and therefore this system, also provides water to the Suncadia Master Planned Resort (MPR) that lies outside the City boundaries. There are several agreements between Cle Elum, South Cle Elum, and/or Trendwest (Suncadia) that affect management of the water system and the allocation of water and costs. Among the agreements are the Water Supply System Project Development Agreement, the Agreement Relating to Water Delivery to Mountainstar Resort (now Suncadia Resort), and the Agreement relating to Water Supply for Bullfrog Flats Urban Growth Area (UGA) − all dated June 19, 2001 (the "Water Agreements").

Under City Heights Alternative 1 or 2, water supply for the proposed development would be provided through the City of Cle Elum water system and as discussed below, significantly all of the water rights

needed to supply water would be transferred to the City in accordance with its current water policy. Since some of the City Heights property (approximately 28 acres) is already within the City limits, the City is required to provide water for the number of equivalent residential units (ERUs) that could be developed in that area. The number of ERUs allowable within this area (based on the minimum residential density allowed within the City limits of 4 dwelling units per acre) is 112. This number of ERUs is just an estimate; the actual number of ERUs for this area will be determined at a later time. Under any of the conceptual land use alternatives, any areas of the City Heights project within the City limits (approximately 28 acres) would be provided water by the City from its existing water system and supply.

The City Heights project under Alternative 1 or 2 would connect into and utilize water distribution system infrastructure owned by the City of Cle Elum. Water could be provided from the existing City of Cle Elum sources, or from new groundwater wells on or near the City Heights site. If Alternative 3A or 3B is selected for implementation, the City of Cle Elum would provide water for that portion of the City Heights project already within the City limits (28 acres), but would not provide water service to the portion of the City Heights project that would remain in unincorporated Kittitas County (330 acres). For these alternatives, water would be supplied through an independent Group A water system(s).

Based on current water usage and projected water usage for the City Heights project, the City's existing water treatment facility could be capable of serving the water needs of the City Heights project through development of the first 300 to 400 ERUs. In the event that a treatment capacity trigger point is reached prior to that, it is the responsibility of the City of Cle Elum to construct an expansion to the water treatment plant.

Northland Resources has applied to the City of Cle Elum to annex the remaining approximately 330 acres of the City Heights site into the City. To address the increased demand on the City's water supply system from that portion of the project being annexed, the City's water policy allows for two options. The developer has the right to either contribute water to the City in sufficient quantity to serve the ERUs in the annexed area, or to purchase water from the City's excess supply at the rate of $3,500 per ERU. Northland Resources could procure and transfer new water rights to the City sufficient to meet the expected annual demand for up to 875 Equivalent Residential Units (ERUs) within the development, and is in the process of seeking approvals from the Washington Department of Ecology (Ecology) for such a transfer (as described below). Water required to service up to 110 additional ERUs under Alternative 1 (for a total of 985) would be provided from the City's existing water rights related to the property already within the City limits. Any shortfall in the amount of water rights that Northland Resources can transfer would need to be purchased by Northland from the City. Northland Resources anticipates that it may need to purchase water from the City to serve up to 250 ERUs. Final amounts, to be determined after negotiations conclude with Ecology, will be included in the terms of a Development Agreement to be negotiated with the City.

Northland Resources is in the process of securing a new water right to serve the City Heights project and has filed the necessary applications with Ecology. In order to accomplish this, Northland Resources proposes to place pre-1905 adjudicated irrigation water rights into a Trust Water Rights Program (in association with Washington Rivers Conservancy), and form a water bank with those water rights in accordance with Chapter 90.42 of the Revised Code of Washington (RCW). Once these rights are placed in the water bank, the bank will possess an approved quantity of consumptive acre-feet of water per year. This amount of water will be utilized to provide mitigation for a new water right application (as provided for under Chapters 90.03, 90.44 or 90.54 RCW) to serve the City Heights project. If required by Ecology, a specified quantity of water will be stored in summer months and would be released during the non-irrigation season to mitigate for the change in the time of use to winter months. Therefore, based on the mitigation supplied, the new water right is "water budget neutral"; that is, it will result in no net increase in the amount of water used, and no net loss of water in the basin.

To best integrate into the existing City of Cle Elum/Town of South Cle Elum water system, the new water right will likely specify the City's existing surface water intake on the Yakima River or the groundwater rights along the Cle Elum River as the points of diversion, although use of multiple new groundwater supply wells to be developed on-site or nearby by the developer and to be operated by the City, may also be considered.

Once approved by Ecology, the new right brought by Northland Resources will for Alternatives 1 or 2 be transferred to the City of Cle Elum, and will serve as the transfer of water rights required by the City's Water Policy or, for Alternatives 3A or 3B, would be utilized to supply one or more new Group A water systems to serve the project. Additional detail regarding water service options and the impacts of constructing and operating a water system to serve the conceptual land use alternatives in the context of Alternative 1 or 2 being annexed to the City, or Alternative 3A or 3B remaining within unincorporated Kittitas County, are described in the *Grading, Drainage and Utilities Technical Engineering Report* (Encompass Engineering & Surveying 2010), and summarized in Draft EIS Section 3.18.1.

Encompass Engineering & Surveying used an average daily demand (ADD) of 254 gallons per day per residential connection to estimate the water supply requirements of the City Heights Planned Mixed-Use Development. This average daily demand is based upon actual usage within the City of Cle Elum between 2001 and 2005 as shown in the 2006 *Water Plan*. In addition, this average daily demand was used to forecast future demand and available equivalent residential units (ERUs) for the water system to the year 2026. Commercial water usage was calculated in the 2006 *Water Plan* based on an ERU value of 6.2 for restaurants and 1.2 ERUs for general commercial.[3] Based on these factors, the water supply average daily demand to serve the City Heights project would range from 0.28 million gallons per day (mgd) with Alternative 1, to 0.175 mgd with Alternative 3B.

Fire flow demands will be based upon the required flow to a building in gallons per minute and duration in hours for commercial buildings. The maximum fire flow requirement in the City of Cle Elum is 480,000 gallons for a demand of 4,000 gallons per minute for a 2-hour duration. Residential fire flow requirements are 120,000 gallons for a demand of 1,000 gallons per minute for a 2-hour duration. Depending upon how development is phased and connected into the existing system, the City Heights Planned Mixed-Use Development may utilize the City's existing water storage facilities to meet fire flow requirements. Fire flow storage would be provided at the start of vertical construction of any residential or commercial structure, under any conceptual land use alternative. Additional facilities for fire flow may be required.

The 2006 *Water Plan* uses a factor of 20 gallons per ERU to project operational storage requirements. Based on this factor, the operational storage requirements of the conceptual land use alternatives would range from 20,500 gallons with Alternative 1, to 19,080 gallons with Alternative 2 or 3A. Under Alternative 3B (and 3A if not served by the City water system), the fire flow demands and operational storage requirements of Group A water systems would be calculated on a project-by-project basis. Depending on the requirements of the County, fire flow may not be required to serve Alternative 3A or 3B. If it is required, additional storage requirements would depend on the capacity of the source(s) for the individual systems. If a source were developed to meet the peak hour demand for each individual system,

[3] The *Cle Elum City Heights Fiscal Analysis* (Property Counselors, November 2009) assumes convenience retail and professional office uses in the Neighborhood Commercial centers within the development. Restaurants and general commercial uses were used to calculate a conservatively high estimate the water supply requirements, as these uses would exert a higher demand for water than convenience retail and professional office tenants.

additional storage would not be required in accordance with Department of Health requirements (Encompass Engineering & Surveying 2010).

It is typical that as developments occur within local communities, developers are responsible for the initial capital investment costs of infrastructure improvements to mitigate their impacts as part of project approval conditions. It is anticipated that an agreement will be created between the City of Cle Elum and the applicant for the City Heights Planned Mixed-Use development to provide that the costs of improvements required within the City of Cle Elum water system to serve City Heights and all on-site improvements required to supply water to City Heights will be paid by the project proponent and not directly by the City of Cle Elum. Payment could take the form of direct payment by the project proponent, through some form of City-sponsored financing such as a Local Improvement District sponsored by Cle Elum (completely paid for by the project proponent, not with City funds), or through grant money secured by the City of Cle Elum (with the costs of application and procurement funded by the project proponent and not the City).

2.9.3 Sewage Collection, Treatment, and Discharge Proposal

The *Grading, Drainage and Utilities Technical Engineering Report* (Encompass Engineering & Surveying 2010) describes an off-site wastewater collection and treatment system analysis, and an on-site analysis of the needs of the City Heights development for sewage disposal and treatment. The off-site analysis performed by ESM Consulting Engineers (ESM) reviews the City's existing sewage collection, treatment and discharge system as identified in the *City of Cle Elum Regional Sewerage Facilities Plan* (EarthTech, September 2002). The off-site analysis calculates the existing system use data, estimates the proposed wastewater collection and treatment requirements based on the City Heights conceptual land use alternatives, and describes impacts and mitigation measures for the potential effects of the City Heights development on the off-site wastewater collection and treatment system. An on-site sanitary sewer analysis was prepared by Encompass Engineering & Surveying (EES) to calculate estimated sewage flows for each of the City Heights conceptual land use alternatives, and to describe sewer system requirements to connect to the City of Cle Elum system. The on-site analysis also describes sewage treatment options: possible construction of a Membrane Bioreactor Plant on the City Heights site, and possible use of on-site sewage disposal systems (OSDS) to serve Alternative 3A and 3B which would be developed in unincorporated Kittitas County.

The 2002 *Facilities Plan* was based on project-specific growth projections at the time that Plan was prepared. It allocated capacity to the City of Cle Elum (which includes the Bullfrog Urban Growth Area [UGA] properties), the Town of South Cle Elum, the City of Roslyln, and the Suncadia Resort (the "Sewer Parties"). It referenced future population growth and projected wastewater flows within a Regional Service Area that did not include the north Urban Growth Area in which the City Heights site is located (since this area had not yet been designated UGA at that time), but did include the portions of the site lying within the City limits (approximately 28 acres). Within those allocations, the *Facilities Plan* identified, along with existing customers in Cle Elum, approximately 215 residential units for unspecified future growth within the City of Cle Elum: however, the number of connections allocated to each of the four Sewer Parties have been verified and it now appears that Cle Elum has fully-committed its wastewater treatment plant capacity.

The existing sewage collection and treatment capacity situation is complicated by the allocation of capacity to anticipated development within the Bullfrog Urban Growth Area and the Suncadia Resort that has not occurred in the timeframe anticipated, and by capacity allocated to the Sewer Parties to handle significant infiltration/inflow during winter months. On January 6, 2010, the City authorized a study of infiltration/inflow in the existing sewage collection system. It is anticipated that this study will be completed by late April or early May 2010. A detailed description of the current situation is provided in

the *Grading, Drainage and Utilities Technical Engineering Report* (Encompass Engineering & Surveying 2010), and summarized in Draft EIS Section 3.18.2. The text below describes the sewer service options being considered to serve City Heights. Selection of the option to be implemented will occur during Development Agreement negotiations between the City of Cle Elum and the City Heights applicant. The impact analysis of the sewer options and of the conceptual land use alternatives is presented in Draft EIS Section 3.18.2.

There are three potential methods of physically handling wastewater from the City Heights project. With any of the build alternatives, wastewater from City Heights could be incorporated into the existing Cle Elum wastewater collection and treatment system (the "Public System" option described below); however, for Alternatives 3A or 3B, the City would need to agree to provide sewer service to a project in the UGA but outside the City limits (except for the 28 acres of the City Heights property already within the City limits).[4] For Alternatives 1, 2 or 3A, wastewater could be treated with an on-site Membrane Bioreactor (MBR) plant, with the treated effluent potentially utilized for seasonal on-site irrigation, and the remainder discharged to the Yakima River (the "MBR System" option described below). For Alternatives 3A or 3B, an additional option could be to treat wastewater in on-site sewage disposal systems constructed on the site (the "On-Site Sewage Disposal Systems" option discussed below).

Public System. There are six possibilities for delivering project wastewater to the Cle Elum wastewater treatment plant and treating the wastewater generated by the project. The first three options rely on utilization of the existing Cle Elum sewer trunk line in Second Street, while the others discuss alternative sewer trunk line locations. The most efficient points of connection and means of serving the City Heights project from the existing Cle Elum wastewater collection and treatment system would be determined during final site design.

- *The Borrow Option.* The City Heights project could be allowed to utilize the excess capacity in the sewer trunk line along Second Street and in the existing wastewater treatment facility during the early stages of development, after which one of the other options listed below would be implemented.

- *The Purchase Option.* Capacity within the existing collection system and wastewater treatment facility could be purchased from a party to the Sewer Agreement that would allow the existing trunk line along Second Street to be utilized.

- *The Infiltration/Inflow Option.* Capacity within the existing collection system and wastewater treatment facility could be secured from a party to the Sewer Agreement by reducing the amount of actual infiltration/inflow attributed to that party, thereby reducing flows that would create capacity to transport wastewater from the City Heights project within the Second Street trunk line.

- *The On-Site Option.* A sewer trunk line could be constructed on the City Heights site that would collect wastewater, exit the site from the east end (in or near Columbia Avenue), and independently tie into the existing wastewater treatment plant. This trunk line would require design, construction, and authorization to extend to the wastewater trunk line beneath SR 970 (a WSDOT right-of-way), the BNSF railroad line, Younger Ditch, and the City of Cle Elum Second Street storm drainage ditch. This option would also require making improvements to the treatment plant to increase capacity.

[4] Until such time as the City adopts a capital facilities element of its Comprehensive Plan, a Capital Improvements Plan, and/or phasing policies that specify when and where urban services (such as water and sewer) will be available within the UGA, it cannot be assumed that the City could or would provide urban services to the 330 acres of City Heights as long as this area remains outside the City limits. For this reason, the EIS assumes that Alternative 3A or 3B would be served by septic systems and wells.

- *The Third Street Option.* A sewer trunk line could be constructed within the Third Street right-of-way to create additional collection capacity. This sewer trunk line would also extend to the existing treatment plant beneath SR 970 (a WSDOT right-of-way), the BNSF railroad line, Younger Ditch, and the City of Cle Elum Second Street storm drainage ditch. This option would also require making improvements to increase the treatment plant capacity.

- Some combination of the above options could be selected.

MBR System. In the case of a MBR System to serve Alternatives 1, 2 or 3A, one or more MBR facilities would be constructed on the City Heights site. A collection system would transport the sewage from individual homes to a central processing plant on-site where the sewage would be filtered and treated. Effluent from that plant would then be transported either to on-site landscape irrigation uses or off-site to a point of discharge into the Yakima River (subject to obtaining all required permits and approvals for a new outfall to the river). When used to treat domestic wastewater, the MBR process produces effluent that meets Class A water quality standards, suitable for reuse in irrigation or other applications, or for discharge into waterways. Basically, sewage is transported to a bioreactor where bacteria remove much of the toxic elements and then the liquid is passed through a membrane. The resulting effluent is then suitable for various reuse applications, or suitable for discharge as with any other treatment facility. MBR effluent discharge would be at least seasonally necessary during winter months when landscape irrigation is not possible.

On-Site Sewage Disposal Systems. In the case of on-site sewage disposal systems (OSDS) to serve Alternative 3A or 3B, either individual (3B only) or community OSDS would be constructed. These systems are self-contained and would not require any off-site improvements. They are regulated by theWashington Department of Health and the Washington Department of Ecology. Sewage would be transported to a filtering tank (or other means of filtering such as a sand pit) where the sewage would be treated. The effluent would then be transported to a drainfield, in which it would be discharged into the ground. In community systems, a collection system of pipes would carry the effluent to a large drainfield, either via gravity or through a series of lift stations. The drainfield would consist of several distribution pipes, and would include a reserve field. Community on-site sewage disposal systems to serve Alternative 3A would require perpetual maintenance and management under the responsibility of a management system approved by Kittitas County.

Table 2.9-5 shows the developed-condition sanitary sewer peak flows of the four City Heights conceptual land use alternatives. The entire City Heights site is segregated into seven on-site sanitary sewer basins that may be combined by the use of on-site lift stations. Water demands in Table 2.9-5 are consistent with the water demands of the project calculated in Section 2.9.2 (above), and are used as a basis for calculating sewer demand.

Table 2.9-5. Estimated City Heights project peak hour sewage flows by conceptual land use alternative.

	Estimated Peak Hour Flows (in gallons per day)			
	Alternative 1	**Alternative 2**	**Alternative 3A**	**Alternative 3B**
Winter Peak Flows	931,148 gpd	843,649 gpd	843,649 gpd	453,942 gpd
Summer Peak Flows	856,656 gpd	776,157 gpd	776,157 gpd	417,627 gpd

The Upper Kittitas County Regional Wastewater Treatment Facilities Project Agreement, Development Agreement and Service Agreement, as amended (the Service Agreement), guides the construction, use and operation of the Cle Elum wastewater collection and treatment system. In accordance with the Service Agreement, a Capital Recovery Charge is currently charged by the City of Cle Elum to all new ERUs utilizing the existing system. These funds are remitted to Suncadia. As noted above, the City of Cle Elum does not have any existing wastewater system capacity to allocate to the needs of the City Heights project; therefore, it is presently unclear how the project could be served by the City's wastewater collection system. Any costs associated with allocating existing capacity in the wastewater collection and treatment system to the City Heights project would be imposed through the Development Agreement requiring the City Heights project to reimburse costs as lots were developed and "hooked up" to the City's infrastructure.

If the *Borrow*, *Purchase*, or *Infiltration/Inflow* collection system option were selected, existing capacity would be rented or purchased and the compensation would be negotiated between the parties.

In the event that collection and treatment system capacity could not be secured on a permanent basis under the *Purchase* or *Infiltration/Inflow Options*, the developer would be responsible for the initial capital investment costs of infrastructure improvements to mitigate City Heights impacts as part of project approval conditions. It is anticipated that an agreement will be created between the City of Cle Elum and the applicant providing that the cost of improvements required within the City's sewer system to serve the City Heights project and all on-site improvements required to supply service to City Heights will be paid for by the project proponent and not directly by the City of Cle Elum. Payment could take the form of direct payment by the project proponent, through some form of City-sponsored financing such as a Local Improvement District (completely paid for by the project proponent, not with City funds), or through grant money secured by the City of Cle Elum (with the costs of application and procurement funded by the project proponent, not the City). Under no circumstance would costs to provide sewer and water service to the project be borne directly by the City of Cle Elum or its citizens. If Alternative 3A or 3B is selected for implementation, and if on-site sewage disposal systems are constructed on the site, all costs associated with design, construction, and maintenance of these systems would be borne by the developer.

2.9.4 Transportation System Proposal

Draft EIS Section 3.16 provides a detailed description and analysis of the existing transportation system within the study area, future traffic volumes anticipated with and without the City Heights project, and transportation system improvements needed to serve both background growth in the community and traffic that would be generated by this project.

Trip generation estimates were prepared for each of the conceptual land use alternatives based on the Institute of Transportation Engineers (ITE) *Trip Generation* manual (ITE, 8th Edition, 2008). These are summarized in Table 2.9-6, below.

Table 2.9-6. Trip generation estimates for the City Heights conceptual land use alternatives, based on 90 percent permanent occupancy.[5]

Conceptual Land Use Alternative	Vehicle Trips per Day	AM Peak Hour Trips[a]	PM Peak Hour Trips[b]
Alternative 1	8,650	607	839
Alternative 2	8,520	547	783
Alternative 3A	8,520	547	783
Alternative 3B	4,470	346	468

[a] AM peak hour trips are defined as the highest volumes during a one-hour period between 7:00 AM and 9:00 AM on weekdays.
[b] PM peak hour trips are defined as the highest volumes during a one-hour period between 4:00 PM and 6:00 PM on weekdays.

New internal roadways and intersections at access points to serve Alternative 1 or 2 would be constructed to City of Cle Elum standards, or standards negotiated as part of the Development Agreement with the City (see Section 2.9.4.3 below). Internal roadways would be designed to meet Fire Marshal requirements, emergency access requirements, access for school buses, and snow storage. Proportionate-share mitigation for project impacts to the transportation system would be negotiated as an element of the Development Agreement between the developer and the City. New internal roadways and intersections at access points to serve Alternative 3A or 3B would be constructed to Kittitas County standards. Proportionate-share mitigation for project impacts to the transportation system would be negotiated between the Alternative 3A developer and the County. With Alternative 3B, there would be no coordinated internal road system plan, and it is unlikely that a coordinated approach to transportation system mitigation could be achieved.

2.9.4.1 Points of Connection to Existing Roadway Network

The internal roadway system of the City Heights development under any conceptual land use alternative would connect the site to existing City of Cle Elum streets, as well as to the regional roadway network (SR 903, I-90, SR 970). Haul routes for construction traffic will be addressed with the Public Works Director prior to the initiation of any construction activity. Access points to serve each conceptual land use alternative are described below.

Alternative 1: Preferred. Most proposed Development Areas within Alternative 1 would be connected to at least one other development area of the site through an internal roadway network (see Figure 2.6-1). Although the City's *Draft Transportation Plan* discussed a future North Hills connector road to provide additional east-west general capacity, the volumes of the Preferred Alternative and the potential diverted volumes from other City streets would not be sufficient to require this route through the City Heights development.

Some of the proposed access points would provide regional connections that do not require circulation through the downtown core of Cle Elum; others would provide direct connection into the established areas of the City, providing circulation between the project site and commercial, recreational and civic activities within the City. Pedestrian connections between existing Cle Elum streets and the project site would provide clear visual connections and direct community access to and through the site.

[5] For the purpose of environmental review and impact analysis, the City requested that it be assumed 90 percent of homes to be constructed under any alternative would be permanently occupied (as opposed to the applicant's projection that more than 10 percent may be seasonal or second homes).

Alternative 1 has four proposed access points. One would be a new intersection leg; the other three would make use of existing roadways, with some improvements. Proposed Alternative 1 access points are described below, from west to east.

West Access to SR 903 through Deneen Property. This access point would require constructing the north leg of the intersection to create a four-legged intersection with the future Bullfrog Commercial UGA access proposed on SR 903 (east of Alliance Road). The rights to utilize this access route are currently under negotiation with the existing landowner. City Heights drivers destined for or arriving from I-90 or other areas to the north and west would likely use SR 903 west to Bullfrog Road to access I-90. Traffic volumes would not warrant a signal at this location until development occurs in the Bullfrog commercial area (see analysis in Draft EIS Section 3.16). This west access would require an elevated bridge crossing of the Coal Mines Trail and Crystal Creek (see Figure 2.9-1).

Stafford Avenue/Summit View Access. This west-central access point would make use of the existing section of Summit View Road north of W 6th Street. At W 6th Street, Summit View traffic is controlled by a stop sign. From this intersection, drivers would continue to the south and east along any of the existing roadways (primarily Stafford Street, but also via W 5th Street, W 6th Street, Billings Avenue or Oakes Avenue). The proposal includes reconstructing the substandard curve east of the Summit View/W 6th Street intersection to improve sight distance and roadway width.

Montgomery Avenue Access. This access would use Montgomery Avenue north from E 1st Street, E 2nd Street, or E 3rd Street. The existing road is paved, although there are sections that would require widening or other improvements for two-way travel. Montgomery Avenue traffic is controlled by stop signs at its existing intersections with 1st, 2nd and 3rd Streets E.

Columbia Avenue Access. The east sector of the City Heights site would connect to the City street system via Columbia Avenue. North of E 4th Street, Columbia Avenue is unpaved. Columbia Avenue would need to be paved and improved to provide access to any of the proposed future developments that would use this road for access, including City Heights. Due to steep slopes, the Alternative 1 lots that would be served by Columbia Avenue would not connect internally to the remainder of the development to the west. Emergency vehicle access would be provided from Montgomery Avenue.

Alternative 2 − Reduced Residential Density. Alternative 2 would also have four access points. The western site access would connect to existing Alliance Road that intersects SR 903 across from the Cle Elum-Roslyn School Complex driveway. The north leg of this intersection has one southbound left/through lane, and one right-turn lane.

The west-central access to the City Heights site via Stafford Avenue/Summit View would be the same as in Alternative 1. Access to the central part of the Alternative 2 conceptual land use plan would be constructed along the general alignment of W 6th Street, beginning at about Oakes Avenue or Pennsylvania Avenue (see Figure 2.6-2). This road would be constructed to City of Cle Elum standards.

Montgomery Avenue would remain in its current alignment under Alternative 2, but would not be improved beyond its existing condition. It would be utilized for emergency vehicle access only. The Columbia Avenue access would be the same in Alternative 2 as that described above with Alternative 1.

Insert Figure 2.9-1. Elevated Bridge Concept for Possible Crossing of the Coal Mines Trail and Crystal Creek (11 x 17-inch color)

Alternative 3A – No Annexation, Development within the County under Single Ownership. Under Alternative 3A, the City Heights site would not be annexed to the City of Cle Elum, and would remain under the jurisdiction of Kittitas County. Therefore, major project roadways would be built to Kittitas County standards, rather than to City standards. The roadway access network would otherwise be the same as described above for Alternative 2.

Alternative 3B – No Annexation, Development within the County under Multiple Ownerships. Under Alternative 3B, lots would be sold in 17 parcels, and development by individual entities would likely occur in an uncoordinated manner. There would be no coordinated internal roadway system in the City Heights area, although roads between parcels would likely be constructed. While some of the same main access routes would be utilized, individual development owners would construct site-specific access points. This could result in the need for road maintenance agreements between developments, and cross-access agreements. The City Heights site would not be annexed to the City of Cle Elum, and would remain under the jurisdiction of Kittitas County. Therefore, project roadways would be built to Kittitas County standards.

2.9.4.2 Public Service and Emergency Vehicle Access

Internal roadways, particularly the Main Access Roads described below in Section 2.9.4.3, would be designed to accommodate Cle Elum School District buses with student bus stops at appropriate locations. Because of low forecast traffic volumes on internal roadways, bus pullouts would not be needed since it is safer to have the buses stop in-lane and hold all approaching or following traffic while students embark or disembark the bus. Cul-de-sac turn-arounds designed for fire equipment would also accommodate the turn-around needs of school buses. Accommodations for school bus access would be the same with any action alternative, since the Cle Elum-Roslyn School District would serve the City Heights site regardless of the City or County jurisdiction in which the site is developed.

Emergency vehicle access during construction and in the as-built condition would be provided along the Main Access Roads to each proposed Development Area, and would be enhanced by the connectivity provided by project roads to be improved within the power line easement.

Within the power line easement, roads would be designed to comply with City of Cle Elum (or Kittitas County standards, depending on the alternative selected for implementation) and Fire Marshal requirements.

Snow removal would be the responsibility of the entity that owns the roads (i.e., private, City or County). Snow removal on private roads within the development would be performed by the City Heights Homeowner's Association; snow removal on public roads would be the responsibility of the City or County (depending on the alternative selected for implementation). Roads and building setbacks will be designed to provide sufficient snow storage areas so that snow piles would not block intersection sight lines. Snow plowing policies would be defined in the Development Agreement and enforced to provide for emergency vehicle access in winter months.

During construction, fire hydrants and provisions for emergency vehicle access would be provided as required by the City Fire Department and/or County Fire Marshal (depending on the alternative selected), including maintenance of clear roadways to support the weight of heavy fire apparatus and tenders. In addition, signage would be installed to indicate routes to various locations within the project, and up-to-date maps would be provided to emergency service providers.

Alternative 1 – Preferred. Internal roadways would be designed to meet the emergency access requirements of the City, local fire districts and Medic One, including standards for roadway width, maximum grade, and turn-arounds at dead-end streets.

Alternative 2 – Reduced Residential Density. Although Alternative 2 would have fewer dwelling units and fewer project trips compared to Alternative 1, provisions for public service access would be made in a similar manner as those described above with Alternative 1. In Alternative 2, however, Montgomery Avenue would be used for emergency access only. The east/west Collector Road across the site (described below in Section 2.9.4.3) would be gated at Montgomery Avenue with a keyed access for emergency vehicles only. Other properties that use Montgomery Avenue/Deer Creek Road for access to the north would not be affected by the gate.

Alternative 3A – No Annexation, Development within the County under Single Ownership. Alternative 3A would be developed in accordance with Kittitas County standards, rather than City of Cle Elum. Where fire or emergency vehicle access requirements differ for Kittitas County compared to the City, the public service access design within the City Heights development may differ as well. As with Alternative 2, Montgomery Avenue would serve the City Heights site only for emergency vehicle access. Snow removal on public roads internal to the site would be the responsibility of the County.

Alternative 3B – No Annexation, Development within the County under Multiple Ownerships. Although this alternative would result in fewer residential units than Alternative 1, 2 or 3A, the County would still require designing public service access into overall site development. However, the multiple ownership development plan could result in less efficient provision of public services access.

2.9.4.3 Road Standards

The proposed City Heights project has six potential points of access to and from the surrounding area that would constitute Major Access Roads. These roads would include access through the Cle Elum Pines (Deneen) property, Alliance Road, Summit View Drive, access via W 6th Street, Montgomery Avenue, and Columbia Avenue**.** Each of these roads will connect to either the City of Cle Elum public road system downtown, or to SR 903 at the west end of the City. Some of these roads will continue north through the City Heights site and terminate offsite (e.g., Summit View Drive, Montgomery Avenue and/or Columbia Avenue), and some will terminate within the site (e.g., access through the Deneen property, the Alliance Road extension, and/or access from W 6th Street). Traffic related to the City Heights project will use several potential travel routes within the existing grid system for access to Main Access Roads.

Main Access Roads to serve Alternative 1 or 2 will be designed and constructed in accordance with City of Cle Elum Road Standards and Fire Marshal requirements (60-foot right-of-way with 10-foot wide travel lanes and 8-foot wide parking lanes on each side), with some modifications to be negotiated with the City through the Development Agreement (see Figure 2.9-2). It is anticipated that these modifications might include two travel lanes 11 to 12 feet wide, a 6- to 8-foot wide parking lane on one side, with sidewalks limited to one side or none (see Figure 2.9-2). Surface water runoff from project roads will be designed to drain toward a collection ditch or bio-filtration swale adjacent to the edge of pavement. If Alternative 3A or 3B is selected for implementation, design and construction of roads outside the City limits would comply with Kittitas County standards.

One of the main access roads will be an east/west Collector Road through the site. This will not traverse the entire length of the property due to topographical constraints. It will be designed and constructed in accordance with City of Cle Elum Road Standards and Fire Marshal requirements, with some modifications to be negotiated with the City through the Development Agreement. It is anticipated that the east/west collector will have 11 to 12-ft wide travel lanes, 2- to 4-ft wide shoulders on each side, with

surface water runoff directed toward a drainage ditch or bio-filtration swale (see Figure 2.9-3). In some areas near neighborhood commercial development or public spaces, there may be an 8-foot wide parking lane on one side of the street. In these and/or other locations, a 5-foot wide sidewalk may be included on one side of the street. The typical cross-section for the east/west Collector Road is shown on Figure 2.9-3). If the site is developed under Alternative 3A, standards for design and construction of the east/west Collector Road may differ somewhat. Under Alternative 3B, an east/west Collector Road might not be constructed through the site.

Residential Access Roads will be designed for local access within developed areas of the site. Under Alternative 1 or 2, these roads will comply with City of Cle Elum Road Standards and Fire Marshal requirements (58-foot wide right-of-way with 10-foot wide traffic lanes and a 6-foot wide parking lane on each side), with some modifications to be negotiated with the City through the Development Agreement (see Figure 2.9-3). It is anticipated that these modifications might include a 6- to 8-foot wide parking lane on one side only, and would limit sidewalks to one side or none (see Figure 2.9-4). In addition, an alley design might be utilized (see Figure 2.9-5). Residential Access Roads will be designed to drain toward a collection ditch or bio-filtration swale adjacent to the edge of pavement. Residential Access Roads within neighborhoods could include a cul-de-sac design or have an alley design to access garages behind some homes. Either of these road sections would be likely to include a bio-filtration swale to collect and treat surface water runoff. If the site is developed under Alternative 3A or 3B, Residential Access Roads would be designed and constructed in accordance with Kittitas County standards.

Insert Figure 2.9-2. Possible Road Standards (8½ x 11-inch black-and-white)

Access Road Typical Section:
60-ft Right-of-Way with On-Street Parking and Sidewalks

Access Road Typical Section: 50-ft Right-of-Way with No On-Street Parking
(for areas with no residential or public amenity frontage)

(two figures per page)

Insert Figure 2.9-3. Possible Road Standards (8½ x 11-inch black-and-white)

Access Road or Collector Road Typical Section:
50-ft Right-of-Way with Parking on One Side (adjacent to public amenities)

Residential Access Road Typical Section:
58-ft Right-of-Way with On-Street Parking and Sidewalks

(two figures per page)

Insert Figure 2.9-4. Possible Road Standards (8½ x 11-inch black-and-white)

Residential Access Road Typical Section:
40-ft Right-of-Way with On-Street Parking One Side, No Sidewalks

Residential Access Road Typical Section:
48-ft Right-of-Way with On-Street Parking Both Sides, Sidewalk One Side Only

(two figures per page)

Insert Figure 2.9-5. Possible Road Standards (8½ x 11-inch black-and-white)

Residential Road with Alley Typical Section:
37-ft Right-of-Way with Parking and Sidewalk One Side Only

Residential Road with Alley Typical Section:
37-ft Right-of-Way with Parking One Side, No Sidewalk

(two figures per page)

2.9.4.4 Proportionate-Share Transportation System Improvements

Proportionate-share roadway, intersection, and traffic signal improvements to be required of the City Heights project, and the relative timing for these improvements, will be negotiated between the City (or County, depending on the alternative selected) and the applicant during the Development Agreement process. The City Heights proportionate share would be calculated by dividing project traffic volumes by the sum of project traffic plus background traffic volumes. Off-site improvements identified by the project traffic consultant to mitigate the PM peak hour trips and level of service impacts of the City Heights project are identified in this section to facilitate those negotiations.

Alternative 1 – Preferred. The project proponent should contribute to future roundabouts or traffic signals at four intersections if and when such improvements are warranted (e.g., an intersection must meet minimum volume thresholds before a traffic signal is installed). These intersections would operate at poor levels of service[6] in the future without the City Heights development, and have been identified as needed improvements in the City of Cle Elum *Draft Transportation Plan* (May 2009). These intersections include:

- W Cemetery Road/W 1st Street. Traffic generated by Alternative 1 of the City Heights project would represent about 10 percent of total traffic through this intersection in the year 2022.
- Oakes Avenue/W 2nd Street. Traffic generated by Alternative 1 of the City Heights project would represent about 30 percent of total traffic through this intersection in the year 2022.
- N Stafford Avenue/W 2nd Street (SR 903). Traffic generated by Alternative 1 of the City Heights project would represent about 29 percent of total traffic through this intersection in the year 2022.
- E 1st Street /Columbia Avenue. Traffic generated by Alternative 1 of the City Heights project would represent about 20 percent of total traffic through this intersection in the year 2022.

In addition, the substandard curve east of the Summit View/W 6th Street intersection should be reconstructed to improve sight distance and roadway width.

Alternative 2 – Reduced Residential Density. The same off-site improvements as those identified to mitigate the impacts of Alternative 1 would be needed to achieve acceptable levels of service at study area intersections with full build-out and occupancy of Alternative 2. However, the proportionate share of the improvements would be less, except at the intersection of Oakes Avenue/W 2nd Street where the project share could increase up to 50 percent.

Alternative 3A – No Annexation, Development within the County under Single Ownership. The same improvements listed for Alternative 2 would be needed if Alternative 3A were selected for implementation.

Alternative 3B – No Annexation, Development within the County under Multiple Ownerships. If Alternative 3B were selected, individual developers of the 17 parcels should be required to contribute proportionate-share costs to future signalization at four intersections:

- W Cemetery Road/W 1st Street

[6] "Poor levels of service" in the context indicated above would be below Level of Service (LOS) D, adopted by the City of Cle Elum in January 2010 as the City's acceptable level of service for intersection operations. The concept of level of service is defined in Draft EIS Section 3.16: Transportation, Subsection 3.16.5.

- Oakes Avenue/W 2nd Street
- N Stafford Avenue/W 2nd Street (SR 903)
- E 1st Street/Columbia Avenue.

Because the site would be in the County under Alternative 3B, and the intersections would be in the City, the mechanism for requiring proportionate-share would likely be SEPA mitigation.

2.9.5 Parks, Recreation and Open Space Proposal

The objectives of the City Heights proposal include several priorities for retaining significant open space on the site, both to preserve unique features of the property, and to provide recreational opportunities for residents of the project and the community as a whole. Trail corridors to be identified in an early phase of site planning are envisioned to connect parks, open spaces and public amenities both on-site and off-site so that people can flow through the development and have different experiences in different locations. The degree of improvements and amenities in these spaces will be a function of the resources available from the conceptual land use alternative selected for implementation, as described below. Some parks and trails within the development may be dedicated to the City, to be negotiated through the Development Agreement.

Alternative 1 – Preferred. The Alternative 1 conceptual land use plan includes the most diversity in parks, open space and trails (see Figure 2.6-1). Approximately 155 acres (43 percent of the site) would be retained in open space in the form of buffer areas surrounding "pods" of development, neighborhood parks, and seven public amenity areas (approximately 0.4 acre each, approximately 2.8 acres total). Neighborhood parks (approximately 1 acre in size) are proposed to serve residents in adjacent pods of development. These would be interconnected by the on-site trail system. The neighborhood parks may be "theme" parks with improvements such as children's play equipment; gathering areas for families and friends; multi-use sports courts or bicycle play areas; large open lawn areas for picnics and family play areas; or areas of trees and undergrowth to explore. The larger park near the neighborhood commercial area may become a neighborhood gathering area with more formal improvements, like a water feature or an amphitheater. This park would meet the City's criteria for a community park.

Two additional parks are planned around unique features on the site: the "Red Rock" area (approximately 1.5 acres), and the "Slick Rock" area (approximately 0.6 acre). The Red Rock area was created during coal mining activities on the site in the early- to mid-1900s. There is an existing system of trails through mounds of red rock and trees, presently used informally for recreation by persons on mountain bikes and all-terrain vehicles. This area would be preserved in the proposed Red Rock Park in Alternative 1 or 2, though uses of the area would diversify. The proposed Slick Rock park area is a bedrock outcrop along the south boundary of the site, with expansive views across the valley and of the neighborhood below. An access path to the Slick Rock Park is proposed from Pennsylvania Avenue (see Figure 2.6-1). The total land area of parks shown on the Alternative 1 conceptual land use plan is approximately 7.8 acres.

Three types of paths are shown on the Alternative 1 conceptual land use plan: multi-use path/bike access, walking paths, and hiking trails (see Figure 2.6-1). The multi-use path is envisioned to be the "arterial" of the on-site trail system, extending the full east-west length of the property (approximately 3.2 miles). It would have a paved surface, parallel to the on-site road system in places, and through the power line easement. Trail users with higher levels of physical fitness and an interest in more diverse experiences could leave the multi-use path to use walking paths or hiking trails through wooded open space areas and buffers. The walking paths (approximately 3.4 miles) would be soft-surface trails, wide enough for joint use by bicycles and pedestrians. Hiking trails (approximately 2.5 miles) would be single-track earthen trails with more topographical variation. Some of these would be designated for bike use

only, some for hiking only. The total length of trails shown on the Alternative 1 conceptual land use plan (if fully implemented) would be approximately 9 miles.

Alternative 2 – Reduced Residential Density. The Alternative 2 conceptual land use plan includes approximately 161 acres (45 percent of the site) in open space, buffers, areas of recreation, and neighborhood parks (see Figure 2.6-2). As with Alternative 1, the total land area of neighborhood parks would be approximately 7.8 acres. Since less revenue would be generated by the reduced residential density in this alternative, the trail system would include only the 3.2-mile multi-use path and limited or no public amenities.

Alternative 3A – No Annexation, Development within the County under Single Ownership. Alternative 3A would preserve the same amount of open space and buffers on the site as Alternative 2 (approximately 161 acres); however, under this alternative, no improvements to open space to create parks or public amenities are proposed. If a trail system were developed, it would be dependent upon user groups providing the funding for trail improvements. The Alternative 3A concept would have to be evaluated in relation to the open space requirements of the County's Performance-Based Cluster Platting approach (KCC Chapter 16.09) if these development regulations were used. Alternatively, if the Alternative 3A conceptual land use plan were developed under the County's Planned Unit Development provisions (KCC Chapter 17.36), the amount of open space to be retained on the site would likely seem generous given that there is no specific quantitative requirement for open space under the PUD provisions.

Alternative 3B – No Annexation, Development within the County under Multiple Ownerships. Under Alternative 3B, no open space, public amenities or trail system is proposed. It would be more difficult for the County to require or obtain a coordinated system on the site through negotiations with the individual property owners of up to 17 parcels. There would, however, be open space requirements under this alternative if the Kittitas County Performance-Based Cluster Platting or Planned Unit Development provisions were utilized by any or all of the individual parcel owners.

2.9.6 Maintenance and Operations Proposal

Maintenance and operations responsibilities for roads, utilities infrastructure, parks and trails within the City Heights development would run with the ownership of these improvements. To the extent that the City or County agrees to accept these improvements as public facilities (depending on the alternative selected), the City or County would be responsible for maintaining and operating them.

Stormwater management facilities within City Heights would be owned and/or maintained either by the City or the Homeowner's Association (HOA) after construction is complete and lots are legally platted. Prior to that time, the property owner/developer would be responsible for maintenance of these facilities. Each stormwater management facility would need to be periodically observed and maintained to ensure design performance. The HOA would need to create a procedure for this observation and maintenance.

Development Agreement negotiations between the City and the applicant regarding Alternative 1 or 2 will determine whether any parks, trails, or roadways will become public facilities to be owned and maintained by the City. If Alternative 3A or 3B is selected for implementation, similar negotiations would occur with Kittitas County.

It is anticipated that the City will supply water from its existing sources to any public space within the City Heights development that it owns or agrees to serve in the future, such as parks, street landscaping, open space and public amenities. Any private parks or amenities to be used only by City Heights residents

would be separately metered and provided with water through the water transferred or purchased by Northland Resources. It is unlikely that Kittitas County has (or will develop) a public water supply in the vicinity of the City Heights site; therefore, it is doubtful that the County would accept facilities in Alternative 3A or 3B that would require irrigation.

The *Cle Elum City Heights Fiscal Analysis* (Property Counselors, November 2009) summarized in Draft EIS Section 3.19 addresses operational costs and revenues. As demonstrated therein, increased operating and maintenance costs accrued by the City related to its water and sewer systems would be recoverable through utility rates paid by the actual users.

2.10 Comparison of the Environmental Impacts of the Alternatives

Table 2.10-1 compares the potential developed-condition impacts of the conceptual land use alternatives. Any of these site plan alternatives would basically implement the principle features of the proposed City Heights Mixed-Use Development. Where it is possible to estimate quantitative differences between the alternatives, to determine which would have greater or lesser impacts, these quantitative comparisons are made in Table 2.10-1.

More descriptive presentations of the potential impacts of proposed development, and mitigation measures to avoid or minimize these impacts, are provided in Table 1.4-1 in Chapter 1 (Summary), and throughout Draft EIS Chapter 3. Readers are referred to those locations in the document for a more comprehensive context regarding the comparative impacts summarized below.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Earth	Grading to construct roads, utilities, 985 building sites, and approximately 20,000 sf of neighborhood commercial development would result in earthwork on the order of 2,106,800 cubic yards (cy). It will be possible to redistribute approximately 90% of this material.	Grading to construct roads, utilities, 875 building sites, and approximately 40,000 sf of neighborhood commercial development would result in earthwork on the order of 1,917,200 cy.	Earthwork requirements would be approximately equivalent to Alternative 2.	Grading to construct roads, utilities, and 500 building sites would result in earthwork on the order of 1,538,000 cy.	There would be no grading activity on the site under the No Action Alternative; however, use of undeveloped dirt roads on the property by off-road vehicles would continue to result in minor modifications to topography.
	The estimated quantity of material to be exported from the site with Alternative 1 would be approximately 252,816 cy.	The estimated quantity of material to be exported from the site with Alternative 2 would be approximately 210,892 cy.	Approximately the same as Alternative 2.	The estimated quantity of material to be exported from the site with Alternative 3B would be approximately 107,660 cy.	No soil material would be exported from the site with the No Action Alternative.
	The estimated quantity of select fill to be imported to the site with Alternative 1 would be approximately 526,700 cy.	The estimated quantity of select fill to be imported to the site with Alternative 2 would be approximately 383,440 cy.	Approximately the same as Alternative 2.	The estimated quantity of select fill to be imported to the site with Alternative 3B would be approximately 153,800 cy.	No select fill would be imported to the site.
	If the coal waste pile in Area A is removed to facilitate development in Area A, the local topography would be modified by up to 20 feet in grade in this area.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	Grading requirements to construct a reduced number of dwelling units with Alternative 3B would lessen the likelihood that marginal areas with steep slopes or coal waste piles would be disturbed.	Environmental processes that currently cause instability in the former coal waste washing area (Area A) would likely continue to cause erosion and minor landslides in these waste piles under the No Action Alternative.
	No development is proposed under any alternative in the lower portion of Balmers Canyon where unconsolidated soils resulted in a recent landslide.	Same as Alternative 1.	Same as Alternative 1 or 2.	Same as Alternative 3A.	Erosion and gullying of the land surface and potential debris flows would likely continue with the No Action Alternative, with resulting minor modifications to topography in drainage courses.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Earth, *continued*	The Alternative 1 open space proposal would preserve unique physical features of the site (Slick Rock and Red Rock) in neighborhood parks.	Similar to Alternative 1, except that with Alternative 2 no public amenities would be created in neighborhood parks.	Unique physical features of the site would be preserved in unimproved open space with Alternative 3A.	Similar to Alternative 3A.	Environmental processes that currently cause instability in the red rock coal waste rock pile (north of Area D2) would likely continue to cause erosion and minor landslides in this material with the No Action Alternative.
	Seismic events could impact the structural integrity of residential and commercial structures, roadways and utilities in the Alternative 1 land use concept, and could destabilize slopes; however, the risk of surficial ground rupture and liquefaction is considered low due to the distance to known active faults and the long recurrence intervals for earthquakes on these faults.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	Similar to Alternative 3A, though lower density development would be subject to this potential effect.	Steep slopes in existing uncontrolled fills on the site (coal waste and waste rock deposited during former mining activities on the site) could fail during a seismic event, potentially presenting a hazard to public safety under the No Action Alternative.
	If stripped of vegetation, surface soils on the site are considered to have moderate to severe erosion hazard under any alternative.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	Similar to Alternative 3A, though lower density development would likely require less clearing.	There would be no clearing or grading with the No Action Alternative, and therefore no change in existing conditions of erosion that occur on the property.
	Stabilization of site soils and construction of a coordinated stormwater management system with Alternative 1 would eliminate areas where erosion presently occurs on the property.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	A less coordinated stormwater management system would likely result from site development under 17 separate ownerships with Alternative 3B.	In the absence of a stormwater management system on the site under the No Action Alternative, areas currently being eroded would likely continue to experience substantial erosion during periods of seasonal runoff and flood events.
	The Alternative 1 proposal to construct a multi-use trail would stabilize soils on existing unimproved dirt roads within power line easements on the property.	Similar to Alternative 1.	No trail improvements within power line easements are proposed with Alternative 3A.	No trail improvements within power line easements are proposed with Alternative 3B.	No improvements would occur on the site with the No Action Alternative to stabilize soils within power line easements or to discourage use of these areas by off-road vehicles.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Earth, *continued*	Construction activities under any alternative near abandoned mine openings and in the vicinity of shallow mine workings could be impacted by voids.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	Similar to Alternative 3A, though lower density development would likely avoid these areas to a greater extent, rather than mitigate them.	There would be no change to the existing condition of abandoned mine workings on the site with the No Action Alternative.
	Development constraints identified in the former coal washing waste rock of Area A may be addressed under Alternative 1 to make this area suitable for the construction of roads, utilities, and structures.	Potentially similar to Alternative 1.	Potentially similar to Alternative 1 or 2.	It is unlikely that Alternative 3B development would address constraints in Area A, with the result that coal waste indicating a potential risk for direct human contact with carcinogenic polycyclic aromatic hydrocarbons (cPAHs) would remain in this area of the site.	Similar to Alternative 3B.
Air Quality	Site development under any alternative could result in temporary, localized increases in particulate concentrations (i.e., dust), vehicle emissions and odors due to construction-related sources. There is little or no risk that such emissions would result in pollutant concentrations that would exceed an applicable ambient air quality standard.	Similar to Alternative 1.	Similar to Alternative 1 or 2. No difference in applicable regulations.	Similar to Alternative 3A, though potentially of lesser magnitude due to lower density development. Construction-related air quality effects may occur over a longer period of time due to a less coordinated site development effort.	No construction activities would occur on the site with the No Action Alternative; therefore, there would be no change in existing conditions of dust, odors, or other air quality parameters on the site.
	Proposed covenants, conditions, and restrictions (CC&Rs), plat restrictions, and/or building permit restrictions will prohibit residential wood burning in the developed condition of the project.	Same as Alternative 1.	Same as Alternative 1 or 2.	Site development by multiple parties would be less likely to prohibit residential wood burning, with the result that significant air quality impacts could occur near clusters of homes using wood heat or aesthetic wood burning.	There would be no residential wood burning on the site under the No Action Alternative.
	Commercial development that may emit pollutants to the air (such as a dry cleaner), or odors (such as a restaurant) would be subject to regulation under State rules and local codes.	Similar to Alternative 1, though twice as much commercial development is contemplated under Alternative 2 (40,000 sf compared to 20,000 sf with Alternative 1).	Similar to Alternative 2.	No commercial development is proposed with Alternative 3B; therefore, air quality effects would likely be more similar to Alternative 4 if development were less coordinated and occurred over a longer period of time.	Existing informal recreation activities would likely continue on the site, with the result that odors generated by all-terrain vehicles may continue to occur. These do not rise to the level of requiring regulation.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Air Quality, *continued*	Cumulative estimated greenhouse gas emissions over the useful life of proposed homes and commercial buildings (58 to 80 years) is 1,761,307 metric tons of CO_2-equivalent gases ($MTCO_2e$). There are, as yet, no specific emission reduction requirements or targets in Washington State that apply to land use projects. Data are being compiled for later discussions of this issue at the State government level.	Cumulative estimated greenhouse gas emissions over the useful life of proposed homes and commercial buildings (58 to 80 years) in Alternative 2 is 1,574,309 $MTCO_2e$.	Approximately the same as Alternative 2.	Cumulative estimated greenhouse gas emissions over the useful life of proposed single-family detached homes (58 years) in Alternative 3B is 923,238 $MTCO_2e$.	No additional greenhouse gas emissions would be generated on the site under the No Action Alternative.
Water Resources	Groundwater quality could potentially be impacted by accidental releases of pollutants from construction equipment, infiltration of potentially contaminated construction stormwater, and/or as a result of short-term dewatering during trenching for the installation of utilities. These risks would be addressed under any alternative by proposed stormwater management measures and permit conditions.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	Similar to Alternative 3A, though potentially to a lesser extent due to lower density development.	There would be no change in potential impacts to groundwater quality over existing conditions on the site with the No Action Alternative.
	Residential development within the 28 acres of the City Heights site presently within the Cle Elum City limits would be served by the City's water supply.	Same as Alternative 1.	Same as Alternative 1 or 2.	Same as Alternative 1 or 2.	In the absence of a development application for the 28 acres presently within the City limits, no City water service would be provided to this portion of the site under the No Action Alternative.
	Northland Resources proposes to transfer to the City of Cle Elum senior water rights in sufficient quantity to serve up to 875 equivalent residential units (ERUs) within the development (subject to Ecology's "water-budget-neutral" mitigation requirements). Under the City's water policy, Northland Resources may also purchase water from the City's excess supply at a rate of $3,500 per ERU to serve any shortfall in the amount of water rights transferable to the City.	Similar to Alternative 1, though less water would likely be purchased from the City's excess supply.	Water supply would likely be provided through independent Group A community water systems using the Northland Resources water right permits (subject to Ecology's "water-budget-neutral" mitigation requirements). It is anticipated that multiple wells completed throughout the site would be required to serve Alternative 3A.	Water supply could be provided through Group A community water systems or individual water right permit-exempt wells. Due to Ecology's emergency rule (Chapter 173-539A WAC) imposing a temporary moratorium on new permit-exempt wells in upper Kittitas County, this alternative would also require a "water-budget-neutral" mitigation proposal acceptable to Ecology.	There would be no water supply requirements for the site under the No Action Alternative.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Water Resources, *continued*	Options are being investigated to serve Alternative 1 development with the City of Cle Elum wastewater collection and treatment system. If this service can be provided, there would be no wastewater disposal effects to groundwater.	Similar to Alternative 1.	A Membrane Bioreactor (MBR) plant or community on-site sewage disposal systems (OSDS) would be used to serve Alternative 3A. The City's Comprehensive Plan Capital Facilities Element currently has no adopted policy re: extending utilities within the UGA if the 330 acres remain outside the City limits. OSDS could have groundwater quantity and quality impacts if not properly installed and maintained. Kittitas County Code would require perpetual maintenance and management of community OSDS under a management system approved by the County.	Alternative 3A would likely be served by individual OSDS, resulting in a higher risk of potential groundwater quantity and quality impacts if individual systems were not properly installed and maintained over time.	There would be no wastewater discharge to the ground with the No Action Alternative. Minor unintentional discharges of petroleum products from all-terrain vehicle use of the site may occasionally occur, and could reach groundwater as a result of infiltration.
	The introduction of impervious surfaces in the form of roads, parking areas, sidewalks and structures (approximately 119.47 acres) would generate an increased volume of stormwater runoff which, if not infiltrated, could impact groundwater quantity. Runoff from pollutant-generating surfaces (used by vehicles) could contain petroleum product residues. The proposal includes complying with Ecology's 2004 *Stormwater Management Manual for Eastern Washington* (SWMMEW) under any alternative to mitigate water quantity and water quality effects.	Similar to Alternative 1, though with less impervious cover (approximately 109.47 acres).	Same as Alternative 2.	Similar to Alternative 3A, though with less impervious cover (approximately 71.6 acres). Implementation of several uncoordinated rural utility systems on the site under this alternative may receive less maintenance and therefore could result in potential adverse impacts to groundwater quality over time.	There would be no new impervious surfaces introduced on the site with the No Action Alternative, and therefore no change in the quantity or quality of stormwater infiltration.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Wetlands and Streams	Potential construction impacts to wetlands under any alternative could include the operation of machinery in and around wetlands, compaction of soils within wetlands, and/or erosion of soil and sediment deposition in wetlands. Clearing in and around wetlands could result in changes in the hydroperiod or hydrologic regime of wetlands. Construction Best Management Practices (BMPs) will be implemented to avoid adverse impacts to wetlands in accordance with applicable local, State and Federal regulations.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	Similar to Alternative 3A, though with site development occurring under 17 separate ownerships, there would likely be a less coordinated approach to implementing construction BMPs.	With the No Action Alternative, there would be no construction disturbance on the site, and therefore no risk of intrusion, compaction, or change in sediment discharge to wetlands compared to existing conditions.
	A total of approximately 2,000 to 6,000 sf of wetland fill may occur if road crossings are constructed as shown on the Alternative 1 conceptual land use plan. The proposal includes locating road crossings in a manner that will minimize the need for wetland fill, and complying with compensatory mitigation requirements.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	It is less certain where road construction would occur to serve site development under 17 separate ownerships; therefore, Alternative 3B may or may not result in less wetland fill than Alternative 1, 2, or 3A. Any wetland fill proposed would be subject to applicable regulations and mitigation requirements.	No wetland fill would be anticipated with the No Action Alternative, although some conditions of sedimentation in wetlands does occur under existing conditions.
	There would be a potential for increased human intrusion into wetlands in the developed condition of the site under Alternative 1, which could diminish the wildlife habitat values of wetlands.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	The smaller resident population on the site under Alternative 3B may reduce the number of persons who would intrude on wetlands; on the other hand, in the more rural character of this development scenario, informal outdoor recreation in unimproved open space (that may include wetlands) may be more prevalent.	There would be no resident population on the site under the No Action Alternative. Therefore, the occurrence of human intrusion into wetlands would not change from existing conditions. At the present time, off-road vehicle riding and "mudding" was observed to occur in Wetlands B, C, and E.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Wetlands and Streams, *continued*	No potential nutrient input to wetlands would be expected with connection to the City's wastewater collection and treatment system to serve Alternative 1 development.	Same as Alternative 1.	If community OSDS are used to serve Alternative 3A, and if these systems were poorly maintained or fail over time, it is possible that nutrient discharges to wetlands could occur as a result of migration through soils and groundwater. Kittitas County Code would require perpetual maintenance and management of community OSDS under a management system approved by the County.	Similar to Alternative 3A, except that OSDS would likely be individual systems with no formal management.	There would be no change in potential nutrient inputs to on-site wetlands under the No Action Alternative.
	Potential construction impacts to streams under any alternative could include the operation of machinery in and around stream channels, disturbance of gravels and stream bed materials, erosion of soil and sediment transport, or accidental discharge of machinery fluids into a stream. Construction Best Management Practices (BMPs) will be implemented to avoid adverse impacts to streams in accordance with applicable local, State and Federal regulations.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	Similar to Alternative 3A, though with site development occurring under 17 separate ownerships, there would likely be a less coordinated approach to implementing construction BMPs.	With the No Action Alternative, there would be no construction disturbance on the site, and therefore no change in conditions of stream channel intrusion or sediment transport in streams compared to existing conditions.
	Proposed road crossings identified on the Alternative 1 site plan would result in temporary impacts to Streams A, B, C, and D. The proposal includes complying with all applicable local, State and Federal regulations, including Washington Department of Fish & Wildlife Hydraulic Project Approval (HPA).	Similar to Alternative 1.	Similar to Alternative 1 or 2.	Alternative 3B could potentially have the most significant construction impact to streams due to development of a less coordinated road system, potentially resulting in a larger number of stream crossings.	There would be no new or modified road crossings of streams with the No Action Alternative.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Wetlands and Streams, *continued*	If access from the west end of the site to SR 903 is constructed through the Cle Elum Pines property as shown on the Alternative 1 site plan, there could be stream buffer and shading impacts to Crystal Creek due to the proposal to construct an elevated bridge crossing to avoid direct impacts to the channel. Bridge construction would comply with the permit conditions of WDFW HPA and others, as applicable.	West access to Alternative 2 would utilize the existing Alliance Road crossing of Crystal Creek. Road widening that may be required at this location would comply with all applicable State and local regulations and permit conditions.	Same as Alternative 2.	A west access connection to SR 903 (if any) to serve Alternative 3B is uncertain at the time of this writing (none is shown on the conceptual land use plan); therefore, this alternative may or may not have similar effects on Crystal Creek compared to other conceptual land use alternatives.	No alteration to existing crossings of Crystal Creek would occur with the No Action Alternative.
	Stormwater runoff from impervious surfaces introduced on the site with any alternative could increase the quantity of water conveyed by streams, and could affect stream water quality. The proposal includes implementing BMPs to comply with Ecology's SWMMEW to mitigate water quantity and water quality effects.	Same as Alternative 1.	Same as Alternative 1 or 2.	Similar to Alternative 3A, though with development of 17 separate parcels, there would likely be a less coordinated approach to implementing BMPs to mitigate stormwater quantity and quality discharges to streams.	There would be no change with the No Action Alternative in the quantity or quality of surface water runoff conveyed by seasonal streams that pass through the site.
Wildlife and Habitats	The Alternative 1 construction phasing proposal includes clearing and grading approximately 25 to 125 acres of the site for development at any one time, which would result in transitional loss of habitat from the site over the 6- to 12-year projected development period. The site does not contain habitats of local importance as defined in the Cle Elum Municipal Code, Priority Habitats or Species as defined by the Washington Department of Fish & Wildlife, or Federally-listed Threatened or Endangered Species or critical habitat.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	It is likely that less area would be cleared at any one time with Alternative 3B, and potentially over a longer period of time, to construct homes on 17 separate parcels on the property.	Under the No Action Alternative, the site would not be cleared at this time; therefore, existing characteristics of wildlife habitat would remain.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Wildlife and Habitats, *continued*	A total of approximately 205 acres (57%) of the site would be cleared to develop Alternative 1. Vegetation removal would eliminate forage, browse, and cover sources for wildlife species, thereby displacing these species into adjacent habitat to the north (subject to available carrying capacity). Some individuals would likely perish. The proposal includes retaining riparian corridors associated with seasonal streams through the site to preserve highly-valued habitat areas.	A total of approximately 195 acres (48%) of the site would be cleared to develop Alternative 2, with similar effects on wildlife and wildlife habitat to those described for Alternative 1.	Approximately the same as Alternative 2.	A total of approximately 108 acres (30%) of the site would be cleared to develop Alternative 3B. This estimate could be higher due to the less coordinated approach to site planning and development of 17 separate parcels. It is uncertain (but less likely) that riparian corridors would be retained in an undisturbed or restored condition under Alternative 3B.	Under the No Action Alternative, the site would not be cleared at this time; therefore, existing characteristics of wildlife use of the site would continue.
	Introduction of a resident human population on the site would be a significant deterrent to wildlife use, particularly for less common and/or less abundant species. Common species likely to move into the completed condition of the project would habituate to a persistent, non-threatening human presence.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	Similar to Alternative 3A, although with a resident population approximately 40% less than the other alternatives, it is possible that some additional wildlife species would habituate to the developed condition of the site under Alternative 3B.	With the No Action Alternative, there would be no change in conditions of wildlife disturbance on the site, which presently occur as a result of informal recreational use of the property on a daily basis.
	It is likely that human-animal encounters would increase with the introduction of residential development into areas presently used by wildlife. These encounters could be potentially dangerous with large mammals (like elk and bear) and predatory species (like cougar and bobcat).	Similar to Alternative 1.	Similar to Alternative 1 or 2.	Similar to Alternative 3A, although with a resident population approximately 40% less than the other alternatives, it is possible that the intrusion of large mammals into the development could occur even more frequently.	There would be no change with the No Action Alternative in the occurrence of human-animal encounters that presently occur on the site.
Relationship to Plans and Policies	The 330 acres of the City Heights property presently outside the City limits, within the City's Urban Growth Area (UGA), would be annexed to Cle Elum with a land use and zoning designation of Planned Mixed-Use (PMU) development. This property has been within the City's UGA since 2004.	Same as Alternative 1.	Annexation would not occur with Alternative 3B. The site may or may not remain within the City's designated Urban Growth Area. Site development would occur under the Kittitas County Comprehensive Plan and land use regulations.	Similar to Alternative 3A.	Annexation would not occur with the No Action Alternative. The site may or may not remain within the City's designated Urban Growth Area.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Relationship to Plans and Policies, *continued*	Site development would occur at urban densities (5 to 9 dwelling units per net acre, with an overall average of 5.8 du/acre), and would be provided with urban governmental services, consistent with Washington State Growth Management Act (GMA) policies for UGAs.	Similar to Alternative 1 though with a somewhat lower development density (4 to 9 dwelling units per net acre, with an overall average of 5.2 du/acre).	The Alternative 3A residential density would be similar to Alternative 2 (4 to 9 dwelling units per net acre, with an overall average of 5.2 dwelling units per acre). Kittitas County Code (KCC 17.11.050) specifies a minimum density of 4 du/net acre within designated Urban Growth Areas. The Kittitas County Code would provide for urban densities if development were to occur under the Performance-Based Cluster Platting code or in a Planned Unit Development (PUD) zone.	Alternative 3B development could occur under existing County zoning designations that allow 3- to 20-acre lots: R-3, R-5, and Forest and Range. Alternatively, the owner could choose to rezone the site for a somewhat higher suburban residential density prior to the sale of 17 parcels for development by multiple owners. Development of 500 single-family detached homes under Alternative 3B would likely irreversibly commit the site to this lower development density, inconsistent with the intent of GMA policies for UGAs.	The No Action Alternative would reserve site development for some future time. If develop-ment were postponed significantly beyond the 6- to 12-year horizon of City Heights, the north UGA would not be used to meet the City's population and housing needs projected for 2025, likely requiring that other areas be designated to accommodate the future growth projections for the City and County.
	In compliance with the PMU land use and zoning designation, Alternative 1 development would create attractive pedestrian-oriented neighborhoods; use architectural design and building materials harmonious with the rural, small town mountain character of Cle Elum; incorporate a variety of street standards; provide on-site employment opportunities; provide neighborhood commercial uses that would not compete with downtown core businesses; and preserve a substantial percentage of open space on the site.	Similar to Alternative 1.	Under Alternative 3A, the site would receive no City services, and the City would have little or no influence over development standards for the project.[7] Rural services may include on-site sewage disposal systems and independent Group A community water systems. The site would continue to be served by the Kittitas County Sheriff's Department and Kittitas County Fire Protection District #7.	Under Alternative 3B, the site would receive no City services, and the City would have little or no influence over development standards for the project. Rural services would be similar to those described for Alternative 3A. There would be no neighborhood commercial development under Alternative 3B, and therefore no direct employment opportunities created on the site.	No structures would be built on the site for which development standards would be needed, and no employment opportunities would be created by the No Action Alternative. No utilities would be extended to or through the site, and the property would continue to be served by rural Kittitas County services with low demand, due to the absence of development or a resident population.

[7] There is no interlocal agreement at the time of this writing between the City of Cle Elum and Kittitas County with respect to coordinating standards for development, providing infrastructure, or other issues within the City's UGA, for an area within the County not annexed to the City.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Land Use	Mixed residential and commercial development would occur on the site with Alternative 1: approximately 985 dwelling units (5 to 9 du/net acre) and 20,000 square feet (sf) of neighborhood commercial uses. Higher density housing would be grouped around neighborhood commercial centers.	Alternative 2 would also introduce mixed residential and commercial development, though at a reduced residential density: approximately 875 dwelling units (4 to 9 du/net acre). In contrast, a larger amount of neighborhood commercial development would occur: approximately 40,000 sf. Lower density single-family detached homes would be developed along the south edge of the property adjacent to established residential neighborhoods.	Similar to Alternative 2, though development would occur within the County with little or no City control over development standards or mitigation requirements.	The lowest residential density would occur with Alternative 3B (approximately 500 single family detached homes) and no neighborhood commercial development. Multiple ownership of 17 parcels to be developed within the County would likely result in no cohesive neighborhood character, the least opportunity for buffering established neighborhoods, and little or no City input to development standards and mitigation requirements.	Under the No Action Alternative, the site would be left in its present condition.
	Alternative 1 development would change the character of the City of Cle Elum by creating an additional large population center north of the existing, established community and extending urban development further north in proximity to rural lands that border the incorporated area.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	Similar to Alternative 3A, though at a lower residential density and with less continuity in the overall character of development on the site.	There would be no change in the character of the existing community if the No Action Alternative were selected for the site.
Noise	Alternative 1 mixed-use residential/commercial development of the site would result in no notable sources of noise on the property. Types of noise characteristic of residential neighborhoods would include vehicles traveling on local streets, yard maintenance equipment, recreational equipment, children at play, and other voices.	Similar to Alternative 1, though at a somewhat reduced overall residential density.	Similar to Alternative 2.	The lower residential density of Alternative 3B, unimproved open space, no developed trail system, and a less coordinated road system would likely result in somewhat lower noise levels in the developed condition of the property than the more urban development alternatives.	There would be no change in the types of noise presently generated on the site. At times, this includes relatively noisy use by all-terrain vehicles.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Population	The projected resident population of 1,987 persons (at full build-out, assuming 90% permanent occupancy) would constitute approximately 24% of total projected population growth within the City of Cle Elum during the current 20-year planning period (2005−2025).	The projected resident population of 1,749 persons (at full build-out, assuming 90% permanent occupancy) would constitute approximately 21% of total projected population growth within the City of Cle Elum during the current 20-year planning period.	The projected resident population of 1,749 persons (at full build-out, assuming 90% permanent occupancy) would constitute approximately 12% of total projected population growth within Kittitas County during the current 20-year planning period (2005−2025).	The projected resident population of 1,035 persons (at full build-out, assuming 90% permanent occupancy) would constitute approximately 7% of total projected population growth within Kittitas County during the current 20-year planning period.	Under the No Action Alternative, no resident population would be introduced on the site.
Housing	The 985 dwelling units in the Alternative 1 concept would constitute 28% of the total projected number of additional housing units needed within the City of Cle Elum during the current 20-year planning period (2005−2025).	The 875 dwelling units in the Alternative 2 concept would constitute 25% of the total projected number of additional housing units needed within the City of Cle Elum during the current 20-year planning period.	The 875 dwelling units in the Alternative 3A concept would constitute 13.5% of the total projected number of additional housing units needed within Kittitas County during the current 20-year planning period.	The 500 single-family detached homes in the Alternative 3B concept would constitute 7.7% of the total projected number of additional housing units needed within Kittitas County during the current 20-year planning period.	With the No Action Alternative, no housing units would be provided on the City Heights property.
Light and Glare	Sources of lighting will be significantly increased on the site associated with new residences, neighborhood commercial areas, street lights, the lights of vehicles traveling on roads within the development, and pedestrian-oriented lighting along sidewalks and in public amenity areas. Potential sources of glare at certain times of the day may include windows and vehicle windshields.	Similar to Alternative 1, though with potentially somewhat less light and glare due to the reduced residential density with Alternative 2.	Similar to Alternative 2.	Alternative 3B would result in somewhat less intensive lighting on the site due to residential density approximately 50% less than Alternative 1 and no commercial development, or approximately 40% less than Alternative 2 or 3A.	There would be no new sources of light or glare introduced on the site with the No Action Alternative. Existing sources include lights and potential reflection from all-terrain vehicles that use the property for recreation, and from electrical transmission line maintenance vehicles.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Aesthetics	Alternative 1 development would alter the character of the site as a result of clearing, grading, and the construction of a residential neighborhood. The proposal includes land use planning to locate the highest density development on the upper plateau least visible to the existing town, and to retain buffers and locate lower density single-family detached homes along the southern edge of the project adjacent to established neighborhoods. The City would impose development standards through the PMU zone and Development Agreement to assure that a desirable community character would be achieved.	Similar to Alternative 1, though with reduced overall residential density, and lower single-family home density along the south edge of the development adjacent to established neighborhoods.	Similar to Alternative 2, except that the City would have little or no input to development standards for a project proposed and implemented under the County's jurisdiction.	Similar to Alternative 3A, though with a higher potential for discontinuous development over a longer period of time, and no consistent development standards due to implementation by separate owners of 17 parcels.	The existing character of the site would not be altered by the No Action Alternative. Areas of unauthorized dumping on the property were cleaned up and removed by the project proponent in July 2009. If there were no development activity on the property for an extended period of time, events of unauthorized dumping could recur.
Parks, Recreation and Open Space	Alternative 1 includes the most diversity in parks, open space, and trails. About 155 acres (43%) of the site would be retained in open space: buffers, neighborhood parks, public amenities and trails.	Alternative 2 would preserve approximately 161 acres (45% of the site) in open space, including buffers, areas for recreation, and neighborhood parks.	Alternative 3A would also preserve approximately 161 acres (45% of the site) in open space; however, little or no budget is anticipated for improvements in these areas.	There is no specific proposal for open space, public amenities or trails for the Alternative 3B concept in which 17 parcels would be developed by multiple owners under Kittitas County regulations. There would likely be open space requirements for each parcel, but no coordinated system of recreational amenities.	Under the No Action Alternative, the site would remain vacant and undeveloped. There would be no permanent open space preserved on the property. While the vacant site is frequently used for informal recreation at this time, it is private property, not publicly available for this use.
	Approximately 7.8 acres of active-use parks are proposed with Alternative 1, which exceeds the project's proportionate share of the City's objective for additional parks to serve the forecasted total resident population of the City by the year 2025.	Similar to Alternative 1, Alternative 2 would provide approximately 7.8 acres of active-use parks, though potentially with fewer improvements due to reduced revenue generated by this alternative.	The parks and open space proposal under Alternative 3A would be subject to Kittitas County requirements under the Performance-Based Cluster Platting regulations or Planned Unit Development zone.	No active use parks would be anticipated with Alternative 3B.	There would be no active use parks provided on the property under the No Action Alternative.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Parks, Recreation and Open Space, *continued*	Approximately 9 miles of trails are proposed with Alternative 1, which would exceed the project's proportionate share of the City's objective for additional tracks, trails and connections to serve the forecasted total resident population of the City by the year 2025.	Only the 3.2-mile multi-use trail is proposed with Alternative 2. This would constitute approximately one-half of the project's proportionate share of the City-wide goal for additional tracks, trails and connections to serve the forecasted 2025 total resident population of the City.	The Alternative 3A conceptual land use plan does not include trail improvements within the development. If a trail system were developed, it would be dependent upon user groups providing the labor and funding.	No interconnected trail system would be anticipated with Alternative 3B.	Informal (unauthorized) use of the property by two-wheel and four-wheel all-terrain vehicles, mountain bikes, and snow mobiles in winter would likely continue under the No Action Alternative.
Historic and Cultural Resources	A thorough visual reconnaissance and limited shovel test-probe investigation of the site was conducted by an archaeological and cultural resources consultant. While no evidence of features of significance was found, the potential exists for buried or otherwise hidden cultural features to be encountered during the course of construction under any alternative.	Similar to Alternative 1.	Similar to Alternative 1 or 2.	Similar to Alternative 1, 2, or 3A.	Under the No Action Alternative, shallow ground disturbance would likely continue to occur as a result of ATV use of the property, but no deep excavations would be expected that could have the potential to encounter possible unknown cultural resources on the site.
	The Alternative 1 conceptual land use plan shows main access road construction and residential development at 7 dwelling units per acre through proposed Development Area A. While this area contains coal waste piles from historical mining activities, it is unlikely that important information could be derived from the slag; therefore, construction effects on the mining debris is not considered by the archaeological and cultural resources consultant to be detrimental to this resource.	The Alternative 2 conceptual land use plan shows termination of the east-west collector road in proposed Development Area A and residential development at 4 dwelling units per acre. While this would be a less intensive development concept for Area A, the degree of surface disturbance would be approximately comparable to Alternative 1.	Similar to Alternative 2.	The Alternative 3B conceptual land use plan shows the east-west collector road through the site terminating at the east boundary of proposed Development Area A, for access to this parcel but not through it. This alternative has the potential to have less impact on the coal waste piles, though there is no specific development concept to evaluate under this alternative.	Under the No Action Alternative, there would be no change to current effects on the coal slag piles in Area A, which presently include informal use of these areas by all-terrain vehicles (ATVs).

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Transportation System	Approximately 18 to 36 truck trips per day are projected to occur with Alternative 1 for the export and import of select material over the 6- to 12-year construction period. The construction season for earthwork is estimated to be 6 months per year. Haul routes will depend on the location of disposal sites for excess material, and the location of quarry sources of fill to be imported.	Approximately 9% less earthwork is estimated to implement Alternative 2, with the result that truck trips for the export and import of select material are estimated to range from 16 to 32 trips per day during 6-month construction periods over the course of 6 to 12 years.	Similar to Alternative 2.	The amount and continuity of development under Alternative 3B is unknown; however, it is likely that the number of earth-moving truck trips in a given year would be no more than half the number projected for Alternative 1, 2, of 3A; i.e., in the range of approximately 8 to 18 trips per day during 6-month construction periods.	Under the No Action Alternative, no construction truck trips would be generated to/from the site.
	Four points of connection to the existing roadway network are proposed to serve the Alternative 1 conceptual land use plan: west access to SR 903 through the Cle Elum Pines property; Stafford Avenue/Summit View; Montgomery Avenue; and Columbia Avenue.	Four points of access to the existing roadway network are also proposed with the Alternative 2 conceptual land use plan: west access to SR 903 using Alliance Road; Stafford Avenue/Summit View; W 6th Street, and Columbia Avenue.	Four points of access to serve Alternative 3B would be the same as those described for Alternative 2.	There would be no coordinated internal roadway system with development of 17 separate parcels by multiple owners.	No roadway or intersection improvements would be constructed under the No Action Alternative.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Transportation System, *continued*	Roadway and intersection improvements proposed with Alternative 1 include: constructing an elevated bridge across Crystal Creek and the Coal Mines trail, and constructing the north leg of a four-legged intersection with the future Bullfrog Commercial UGA access; reconstructing the substandard curve east of the Summit View/W 6th Street intersection; widening and improving Montgomery Avenue; improving and paving Columbia Avenue.	Roadway and intersection improvements that would be required with Alternative 2 include: constructing Alliance Road to the standards of a Collector Road with some widening and improvements at the existing at-grade crossing of Crystal Creek and the Coal Mines Trail; reconstructing the substandard curve east of the Summit View/W 6th Street intersection; constructing a new City street along the general alignment of E 6th Street beginning at about Oakes or Pennsylvania Avenue; improving and paving Columbia Avenue. Montgomery Avenue would be used for emergency vehicle access only.	Roadway and intersection improvements would be essentially the same as described for Alternative 2, except that where these roadways and/or intersections occur within the unincorporated area, they would be designed and constructed to Kittitas County standards rather than to City standards.	Individual development owners would construct site-specific access points, some of which would include the main access routes described for other alternatives.	Same as above.
	A total of approximately 839 PM peak hour trips (between 4:00 and 6:00 PM) would be generated by Alternative 1 at full build-out and 90% occupancy: about 510 inbound to the site and 329 outbound.	A total of approximately 783 PM peak hour trips would be generated by Alternative 2 at full build-out and 90% occupancy.	Same as Alternative 2.	A total of approximately 468 PM peak hour trips would be generated by Alternative 3B at full build-out and 90% occupancy.	No traffic would be generated by the City Heights site under the No Action Alternative.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Transportation System, *continued*	The traffic operations analysis determined that all of the signalized intersections within the Transportation study area would operate at LOS B or better with full build-out and 90% occupancy of City Heights Alternative 1 (assuming future without-project improvements identified in the City's *Draft Transportation Plan*).	Overall trip generation for Alternative 2 would be less than with Alternative 1; therefore, all study area signalized intersections would operate at the same of better levels of service than with Alternative 1.	Same as Alternative 2.	Traffic operation levels of service with Alternative 3B would be approximately the same or less than those described for Alternative 2 or 3A due to fewer residential units proposed in Alternative 3B.	Under the No Action Alternative, all study area intersections would operate at LOS D or better in 2022 without the City Heights project, assuming some improvements to the roadway system and traffic control as described in the City of Cle Elum *Draft Transportation Plan* (May 2009).
	Most of the unsignalized intersections would continue to operate at LOS D or better in 2022 with Alternative 1 traffic, with the exception of the southbound approach to SR 903 at the new City Heights west access through Cle Elum Pines, and the southbound approach to SR 903 at Alliance Road. Project traffic at these locations would not delay traffic on SR 903, and therefore would not warrant a signal at either of these intersections.	As with Alternative 1, the volume of City Heights Alternative 2 traffic in the north leg of the SR 903/Alliance Road intersection would cause the southbound movement to operate below LOS D. As with Alternative 1, this would not delay traffic on SR 903; therefore, no mitigation is recommended for this location.	Same as Alternative 2.	Same as above.	Same as above.
	Alternative 1 traffic would also adversely affect the southbound approach of the E 1st Street/Columbia Avenue intersection, causing this movement to degrade from LOS D to LOS F.	If all of the trips assigned to Montgomery Avenue under Alternative 1 were to use the Alternative 2 new access to the middle portion of the site via E 6th Street/Oakes Avenue, traffic operations would continue to operate at LOS A and LOS B at the Oakes Avenue intersections with W 1st Street and W 2nd Street, respectively.	Same as Alternative 2.	Same as above.	Same as above.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Transportation System, *continued*	The internal roadway system to be constructed within City Heights would be designed and built to City of Cle Elum standards, including standards for emergency vehicle access and school bus requirements.	Same as Alternative 1, except that the east/west collector road across the site would be gated at Montgomery Avenue with a keyed access for emergency vehicles only.	The internal roadway system to be constructed within the development under Alternative 3A would be designed and built to Kittitas County standards, including standards for emergency vehicle access and school bus requirements.	Similar to Alternative 3A, except that site development under multiple ownerships could result in less efficient provisions for emergency service access.	Under the No Action Alternative, public service access to the site would not be altered from the present system of unimproved dirt trails on the property.
	Alternative 1 would provide on-site parking for residential units, neighborhood commercial uses, and for parks and public amenity areas in accordance with City of Cle Elum requirements.	Same as Alternative 1.	Alternative 3A would provide on-site parking for for residential units and neighborhood commercial areas in accordance with Kittitas County requirements.	Similar to Alternative 3A, except that no neighborhood commercial development is contemplated in Alternative 3B.	No on-site parking would be provided with the No Action Alternative.
	The Alternative 1 conceptual land use plan includes approximately 9 miles of walking paths, hiking trails, and a multi-use path with bike access. The provision of sidewalks in the internal road system options ranges from sidewalks on one side to no sidewalks (see Figures 2.9-2 through 2.9-5 in Draft EIS Chapter 2).	With Alternative 2, the on-site trail proposal includes only the 3.2-mile multi-use path with bike access. As with Alternative 1, internal road system options include sidewalks along one side or no sidewalks.	With Alternative 3A, no paths or trails are proposed. Under Kittitas County road design standards, the internal road system may or may not include sidewalks.	No paths or trails are proposed with Alternative 3B, and it is likely that no sidewalks would be provided.	No non-motorized transportation improvements would be made on the site under the No Action Alternative.
Public Services	At full build-out and 90% occupancy, the projected resident population of the Alternative 1 concept (1,987 persons) could approximately double the existing population of the City of Cle Elum, and therefore significantly increase the demand for public services ranging from the provision of utilities and preparation of utility bills, to street maintenance, fire protection and emergency medical aid, law enforcement, and schools.	Similar to Alternative 1, except that the full build-out, 90% occupancy resident population of Alternative 2 is projected to be approximately 1,749 persons.	Similar to Alternative 2, except that the majority of the resident population would be within Kittitas County, and the County would be responsible for public services.	Similar to Alternative 3A, except that the full build-out, 90% occupancy resident population of Alternative 3B is projected to be approximately 1,035 persons, the majority of which would reside within Kittitas County.	There would be no change in the present demand for public services to serve the site, the majority of which (330 acres of 358 acres total) is presently within Kittitas County.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Public Services, *continued*	During construction and in the developed condition of the site under the Alternative 1 concept, the Cle Elum Fire Department would be responsible for first response to incidents on the City Heights site. Due to mutual aid agreements with Kittitas County Fire Protection District (KCFPD) #7 and Upper Kittitas County Medic One, these agencies would also respond if needed.	Same as Alternative 1.	During construction and in the developed condition of the site under Alternative 3A, KCFPD #7 and Upper Kittitas County Medic One would be responsible for first response to incidents on the City Heights site. Due to mutual aid agreements with the CleElum Fire Department, the City's Fire Department may also respond to the site as needed under this alternative.	Same as Alternative 3B.	Under the No Action Alternative, the Cle Elum Fire Department would continue to be responsible for first response to the 28 acres of the site within the City limits, and KCFPD#7 and Upper Kittitas County Medic One would be responsible for first response to the 330 acres presently within the unincorporated area of the County. There site presently generates a low level of calls for wildland fires and emergency medical aid.
	If 2009 ratios for overall call volume per 1,000 population are used, the Alternative 1 City Heights project at full build-out and 90% permanent occupancy could generate an annual call volume of approximately 370 calls for fire protection and emergency medical aid within the Cle Elum Fire Department service area by the year 2022.	If 2009 ratios for overall call volume per 1,000 population are used, the Alternative 2 City Heights project at full build-out and 90% permanent occupancy could generate an annual call volume of approximately 325 calls for fire protection and emergency medical aid within the Cle Elum Fire Department service area by 2022.	If 2009 ratios for overall call volume per 1,000 population are used, the Alternative 3A City Heights project at full build-out and 90% permanent occupancy could generate an annual call volume of approximately 171 calls for fire protection and emergency medical aid within the KCFPD #7 and Upper Kittitas County Medic One service area by 2022. This is considerably higher than the estimate of the District Administrative Chief (30 calls per year).	If 2009 ratios for overall call volume per 1,000 population are used, the Alternative 3B City Heights project at full build-out and 90% permanent occupancy could generate an annual call volume of approximately 101 calls for fire protection and emergency medical aid within the KCFPD #7 and Upper Kittitas County Medic One service area by 2022.	Same as above.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Public Services, *continued*	Upper Kittitas County Medic One anticipates an increase in calls for emergency medical aid from the developed condition of City Heights at a ratio of approximately 70 calls per 1,000 population. At this ratio, the Alternative 1 resident population (assuming 90% permanent occupancy in 2022) may generate approximately 140 calls per year.	Alternative 2 may generate an annual call volume for emergency medical aid services on the order of approximately 123 calls by the year 2022, assuming full build-out and 90% permanent occupancy.	Same as Alternative 2.	Alternative 3B may generate an annual call volume for emergency medical aid services on the order of approximately 73 calls per year by the year 2022, assuming full build-out and 90% permanent occupancy. The most significant concern with Alternative 3B would be constraints to emergency vehicle access, particularly to the west end of the site where no through connection to SR 903 is indicated on the conceptual land use plan.	Same as above.
	The Cle Elum/Roslyn/South Cle Elum Police Department would anticipate an increase in call volume for law enforcement services during construction and in the developed condition of the site. At the 2008 ratio of 1,111 calls per 1,000 population,[8] the Alternative 1 development scenario may generate up to an additional 2,205 calls per year at full build-out and 90% permanent occupancy in 2022.	Similar to Alternative 1, except that the estimated call volume attributable to the site at full build-out and 90% permanent occupancy in 2022 may be up to approximately 1,943 calls per year.	The Kittitas County Sheriff's Department would anticipate an increase in call volume for law enforcement services during construction of Alternative 3A and in the developed condition of the site under this alternative. At the present ratio of 1,240 calls per 1,000 population, the City Heights development may generate up to an additional 2,169 calls per year at full building-out and 90% permanent occupancy in 2022.	Similar to Alternative 3A, except that the estimated call volume attributable to the site at full build-out and 90% permanent occupancy in 2022 may be up to approximately 1,283 calls per year.	Under the No Action Alternative, there would be no change in the demand for law enforcement services related to the property compared to existing conditions. At the present time, the site generates occasional "attractive nuisance" calls.

[8] The ratio of law enforcement calls per 1,000 population in the Cle Elum/Roslyn/South Cle Elum service area includes traffic offenses and the affect of recreational visitors and passing motorists on I-90.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Public Services, *continued*	Student population projections for the Alternative 1 land use concept based on 90% permanent occupancy at full build-out in 2022 include approximately 92 elementary school students, 55 middle school students, and 81 high school students (228 students, total). If permanent occupancy within the development is less than 90%, student population projections would likely also be less (for any alternative).	Student population projections for the Alternative 2 land use concept based on 90% permanent occupancy at full build-out in 2022 include approximately 81 elementary school students, 48 middle school students, and 70 high school students (199 students, total).	Same as Alternative 2.	Student population projections for the Alternative 3B land use concept based on 90% permanent occupancy at full build-out in 2022 include approximately 49 elementary school students, 29 middle school students, and 43 high school students (121 students, total).	There would be no student population on the City Heights site under the No Action Alternative.
	Based on the student population projection factors described above, Alternative 1 could require up to 20.5% of the capacity of an elementary school; 15.7% of the capacity of a middle school; and 16.1% of the capacity of a high school.	Based on the student population projection factors described above, Alternative 2 could require up to 17.9% of the capacity of an elementary school, 13.7% of the capacity of a middle school, and 14.1% of the capacity of a high school.	Same as Alternative 2.	Based on the student population projection factors described above, Alternative 3B could require up to 10.9% of the capacity of an elementary school, 8.3% of the capacity of a middle school, and 8.6% of the capacity of a high school.	The No Action Alternative would generate no demand for school building capacity.
Utilities	The water supply average daily demand of City Heights Alternative 1 (including a 7.5% contingency) is estimated to be approximately 0.28 million gallons per day (mgd). The development would be served by new water rights brought to the City by Northland Resources. In accordance with City water policy, any shortfall could be supplemented with water purchased from the City at a rate of $3,500 per ERU.	The water supply average daily demand of City Heights Alternative 2 (including a 7.5% contingency) is estimated to be approximately 0.26 mgd. Similar to Alternative 1, the Alternative 2 land use concept would be served by new water rights brought to the City by Northland Resources. Any shortfall could be supplemented with water purchased from the City at a rate of $3,500 per ERU.	Alternative 3A would have the same estimated average daily demand for water supply as that calculated for Alternative 2 (approximately 0.26 mgd); however, development within the County would be served by a Group A community water system (with Northland Resources water rights), rather than the City of Cle Elum water system.	Development of 17 individual parcels under Alternative 3B would generate an average daily water demand of approximately 0.175 mgd. Multiple Group a community water systems using Northland Resources water rights, and/or water right permit-exempt wells would serve the project under this alternative (subject to all applicable State and County regulations).	There would be no water supply demand generated by the site under the No Action Alternative.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Utilities, *continued*	The Alternative 1 development concept would generate a total average daily wastewater flow of approximately 212,834 gallons per day (gpd). Several options are currently being evaluated for how to serve the project with the City of Cle Elum wastewater collection and treatment system.	Similar to Alternative 1, except that the total average daily wastewater flow is estimated to be approximately 192,834 gpd.	The Alternative 3A calculation of total average daily wastewater flow is the same as Alternative 2; however, development in the County would require that Alternative 3A utilize on-site sewage disposal systems or an independent Membrane Bioreactor (MBR) plant for wastewater treatment.	Similar to Alternative 3A, except that the total average daily wastewater flow is estimated to be approximately 103,758 gpd.	Under the No Action Alternative, no wastewater would be generated on the site.
	The calculation of 100-year storm event "unmitigated" stormwater runoff (i.e., with no detention or infiltration) from the developed condition of the Alternative 1 conceptual land use plan is 394.94 cubic feet per second (cfs). The proposal includes managing stormwater runoff from the site under any alternative in compliance with Ecology's 2004 *Stormwater Management Manual for Eastern Washington* (SWMMEW).	The calculation of 100-year storm event "unmitigated" stormwater runoff from the developed condition of the Alternative 2 conceptual land use plan is 389.87 cfs.	Same as Alternative 2. Development within the County would also be required to comply with Ecology's 2004 *Stormwater Management Manual for Eastern Washington*.	The calculation of 100-year storm event"unmitigated" stormwater runoff from the developed condition of the Alternative 3B conceptual land use plan is 373.55 cfs.	Under the No Action Alternative, unmitigated stormwater runoff from the undeveloped condition of the site as a result of a 100-year storm event is presently calculated to be approximately 310.10 cfs. No stormwater controls would be implemented on the site with the No Action Alternative.
	The calculation of approximate stormwater detention volume required for the Alternative 1 conceptual land use plan is 763,862 cubic feet (cf).	The calculation of approximate stormwater detention volume required for the Alternative 2 conceptual land use plan is 720,715 cf.	Same as Alternative 2.	The calculation of approximate stormwater detention volume required for the Alternative 3B conceptual land use plan is 756,831 cf.	No stormwater detention would be provided on the site with the No Action Alternative.
	The calculation of the approximate volume of stormwater that would require water quality treatment with the Alternative 1 development concept is 516,693 cf.	The calculation of the approximate volume of stormwater that would require water quality treatment with the Alternative 2 development concept is 505,242 cf.	Same as Alternative 2.	The calculation of the approximate volume of stormwater that would require water quality treatment with the Alternative 3B development concept is 419,479 cf.	No stormwater water quality treatment would be provided on the site with the No Action Alternative.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Utilities, *continued*	The total estimated electrical demand of the Alternative 1 development concept is 5,080 kW based on a 60% diversity factor to account for loads peaking at different times, and assuming that some homes and businesses would use natural gas for heat and hot water (rather than all electric). If all homes and businesses were to use natural gas for heat and hot water, these electrical demand estimates would be reduced.	The total estimated electrical demand of the Alternative 2 development concept (based on the same factors as those described for Alternative 1) is 4,728 kW.	Same as Alternative 2.	The total estimated electrical demand of the Alternative 3B development concept (based on the same factors as those described for Alternative 1) is 2,750 kW.	There would be no electrical demand generated on the site by the No Action Alternative.
	If all homes and businesses within the development were to use natural gas for heat and hot water, the total natural gas load demand estimate for Alternative 1 would be 100.1 million cubic feet/year (cf/yr).	The natural gas load demand estimate for Alternative 2 would be 90.8 million cf/yr.	Same as Alternative 2.	The natural gas load demand estimate for Alternative 3B would 50 million cf/yr.	There would be no demand for natural gas on the site under the No Action Alternative.
	Any of the conceptual land use alternatives would exert an approximately equivalent demand for telecommunications service, with the greatest variable being service to commercial development.	Alternative 2 could exert approximately the same or slightly greater demand for telecommunications service compared to Alternative 1 due to twice the amount of neighborhood development (40,000 sf compared to 20,000 sf with Alternative 1).	Same as Alternative 2.	The Alternative 3B demand for telecommunications service would be less than other alternatives due a land use concept that includes only about half the number of dwelling units and no neighborhood commercial development.	There would be no demand for telecommunications service on the site under the No Action Alternative.
	The Alternative 1 development concept would approximately double the number of existing solid waste collection accounts within the City of Cle Elum at full build-out over 6 to 12 years. This is within the range of anticipated growth within the service area of Waste Management of Ellensburg.	Similar to Alternative 1.	Similar to Alternative 2.	Alternative 3B would result in approximately half the number of new solid waste collection accounts compared to Alternative 1, 2, or 3A. Less compact and less orderly development would be less efficient to serve.	There would be no need for solid waste collection service on the site with the No Action Alternative.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Fiscal Impacts	Alternative 1 would generate the largest increase in tax base as a result of having the most housing units and population. Taxable measures would include the assessed value of property, retail sales, utilities charges, property sales, and taxable construction value (see Draft EIS Table 3.19-7).	Alternative 2 would generate approximately 15% less in tax base compared to Alternative 1 due to the reduced residential density.	Alternative 3A would generate approximately the same tax base as Alternative 2, except that this alternative would generate tax revenues for the County.	Alternative 3B would generate approximately 30% less tax base than Alternative 3A, and would also generate tax revenues within the County rather than the City.	There would be no change in the tax base of the undeveloped property under the No Action Alternative. At this time, 92% of the site (330 acres) is within the County, and 8% of the site (28 acres) is within the City.
	Property tax revenues tend to lag development by an average of 18 months. At the mid-point of an assumed 10-year construction period, the Alternative 1 estimated operating deficit for the City would be approximately $140,000 per year (in $2009).	At the mid-point of an assumed 10-year construction period, the Alternative 2 estimated operating deficit for the City would be approximately $130,000 per year (in $2009).	Alternative 3A would generate an operating surplus of approximately $390,000 per year (in $2009) for the County during the assumed 10-year construction period (see Draft EIS Table 3.19-13).	Alternative 3B would generate an operating surplus of approximately $270,000 per year (in $2009) for the County during the assumed 10-year construction period (see Draft EIS Table 3.19-13).	There would be no construction period need for services on the site with the No Action Alternative.
	One-time tax revenues (in $2009) generated during construction of the Alternative 1 conceptual land use plan in the amount of approximately $3.5 million (to average approximately $350,000 per year over a 10-year construction period) are reasonably calculated to offset the 18-month property tax shortfall during this period (see Draft EIS Table 3.19-11).	One-time tax revenues (in $2009) generated during construction of the Alternative 2 conceptual land use plan in the amount of approximately $2.9 million (to average approximately $294,000 per year over a 10-year construction period) are reasonably calculated to offset the 18-month property tax shortfall during this period (see Draft EIS Table 3.19-11).	Alternative 3A is estimated to generate approximately $3.9 million in one-time tax revenues (in $2009) to be paid to Kittitas County during the assumed 10-year construction period (see Draft EIS Table 3.19-13).	Alternative 3B is estimated to generate approximately $2.7 million in one-time tax revenues (in $2009) to be paid to Kittitas County during the assumed 10-year construction period (see Draft EIS Table 3.19-13).	There would be no one-time construction tax revenues generated by the site under the No Action Alternative.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Fiscal Impacts, *continued*	The largest recurring revenues would be property taxes, intergovernmental revenue, recurring real estate excise taxes (from resales), and utility taxes. Recurring annual tax revenues with Alternative 1 (in $2009) are projected in the amount of approximately $1.25 million, compared to an estimate of City operating expenses to serve this alternative in the amount of approximately $1.2 million. A net surplus of approximately $29,000 per year is reasonably calculated (see Draft EIS Table 3.19-11).	Recurring annual tax revenues with Alternative 2 (in $2009) are projected in the amount of approximately $1.1 million, compared to an estimate of City operating expenses to serve this alternative in the amount of approximately $1 million. A net surplus of approximately $4,600 per year is reasonably calculated (see Draft EIS Table 3.19-11).	Recurring annual tax revenues with Alternative 3A (in $2009) are projected in the amount of approximately $1.6 million, compared to an estimate of County operating expenses to serve this alternative in the amount of approximately $1.4 million. A net surplus of approximately $210,000 per year is reasonably calculated (see Draft EIS Table 3.19-13).	Recurring annual tax revenues with Alternative 3B (in $2009) are projected in the amount of approximately $1 million, compared to an estimate of County operating expenses to serve this alternative in the amount of approximately $847,000. A net surplus of approximately $200,000 per year is reasonably calculated (see Draft EIS Table 3.19-13).	There would be no change with the No Action Alternative to tax revenues presently paid to the City and County for the undeveloped property.
	The City Heights development would generate a larger tax base over which to spread the fixed cost of Cle Elum-Roslyn School District bond repayment. The Alternative 1 estimated annual contribution to the bond (in $2009) is $190,600 at current tax rates (see Draft EIS Table 3.19-14).	The Alternative 2 estimated annual contribution to School District bond repayment (in $2009) is $161,400 at current tax rates (see Draft EIS Table 3.19-14).	Same as Alternative 2.	The Alternative 3B estimated annual contribution to School District bond repayment (in $2009) is $113,200 at current tax rates (see Draft EIS Table 3.91-14).	There would be no increase in the undeveloped property tax contribution of the site to the School District bond repayment with the No Action Alternative.
	City Heights development under Alternative 1 would not generate any additional revenue to Kittitas County Fire Protection District #7. Mutual aid services would continue to be provided under existing agreements.	Same as Alternative 1.	Alternative 3A would generate property tax revenues in the amount of approximately $141,000 (in $2009) to be allocated to Kittitas County Fire Protection District (KCFPD) #7. Compared to the development's proportionate share cost of the District's operating expense. A net surplus of approximately $1,400 is reasonably calculated with Alternative 3A (see Draft EIS Table 3.19-15).	Alternative 3B would generate property tax revenues in the amount of approximately $99,000 (in $2009) to be allocated to KCFPD #7. Compared to the development's proportionate share cost of the District's operating expense, a net surplus of approximately $16,000 is reasonably calculated with Alternative 3B (see Draft EIS Table 3.19-15).	There would be no change in property tax revenues generated for KCFPD #7 or proportionate-share operating costs associated with the undeveloped condition of the site under the No Action Alternative.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Fiscal Impacts, *continued*	Alternative 1 is reasonably calculated to generate property tax revenue and ambulance revenue in the amount of approximately $196,000 per year in proportion to an estimated $122,000 in EMS and transport service costs that may be required by the development. A net annual surplus of approximately $74,000 is estimated in relation to the project's proportionate share cost of Kittitas County Hospital District 2 operations (see Draft EIS Table 3.19-6).	Alternative 2 is reasonably calculated to generate property tax revenue and ambulance revenue in the amount of approximately $169,000 per year in proportion to an estimated $107,000 in EMS and transport service costs that may be required by the development. A net annual surplus of approximately $62,000 is estimated in relation to the project's proportionate share cost of Kittitas County Hospital District 2 operations (see Draft EIs Table 3.19-6).	Alternative 3A is reasonably calculated to generate property tax revenue and ambulance revenue in the amount of approximately $171,000 per year in proportion to an estimated $110,000 in EMS and transport service costs that may be required by the development. A net annual surplus of approximately $61,000 is estimated in relation to the project's proportionate share cost of Kittitas County Hospital District 2 operations (see Draft EIS Table 3.19-6).	Alternative 3B is reasonably calculated to generate property tax revenue and ambulance revenue in the amount of approximately $112,000 per year in proportion to an estimated $67,000 in EMS and transport service costs that may be required by the development. A net annual surplus of approximately $45,000 is estimated in relation to the project's proportionate share cost of Kittitas County Hospital District 2 operations (see Draft EIS Table 3.19-6).	There would be no change in property tax revenue generated by the undeveloped site for Kittitas County Hospital District 2, and likely no ambulance revenue with the No Action Alternative.
	The City Heights student population may create the need for additional school capacity over time. If needed, classrooms and support facilities could be provided through the construction of new facilities, the expansion of existing facilities, or utilization of modular facilities. The lower cost options would result in an Alternative 1 proportionate-share capital cost of approximately $2.1 million in $2009 (see Draft EIS Table 3.19-18).	The Alternative 2 proportionate-share capital cost of adding classrooms to existing school facilities or utilizing modular units to accommodate expansion would be approximately $1.8 million in $2009 (see Draft EIS Table 3.19-18).	Same as Alternative 2.	The Alternative 3B proportionate-share capital cost of adding classrooms to existing school facilities or utilizing modular units to accommodate expansion would be approximately $1.1 million in $2009 (see Draft EIS Table 3.19-18).	There would be no increase in student enrollment and thus no additional school building or classroom capacity required with the No Action Alternative.
	If the Cle Elum-Roslyn School District pursues implementation of its Capital Facilities Plan and seeks voter approval of construction bonds for a new high school campus, the City Heights Alternative 1 proportionate-share capital cost of new facilities may be approximately $7.7 million in $2009 (see Draft EIS Table 3.19-17).	The City Heights Alternative 2 proportionate-share capital cost of new school facilities may be approximately $6.7 million in $2009 (see Draft EIS Table 3.19-17).	Same as Alternative 2.	The City Heights Alternative 3B proportionate-share capital cost of new school facilities may be approximately $4.1 million in $2009 (see Draft EIS Table 3.19-17).	Same as above.

Element of the Environment	Alternative 1: Preferred	Alternative 2: Reduced Residential Density	Alternative 3A: No Annexation Single Ownership	Alternative 3B: No Annexation Multiple Ownerships	Alternative 4: No Action
Fiscal Impacts, *continued*	The Alternative 1 proportionate-share capital cost of additional school buses to transport City Heights students may be as much as approximately $298,000 in $2009 (see Draft EIS Tables 3.19-17 and 3.19-18).	The Alternative 2 proportionate-share capital cost of additional school buses to transport City Heights students may be as much as approximately $261,000 in $2009 (see Draft EIS Tables 3.19-17 and 3.19-18).	Same as Alternative 2	The Alternative 3B proportionate-share capital cost of additional school buses to transport City Heights students may be as much as approximately $159,000 in $2009 (see Draft EIS Tables 3.19-17 and 3.19-18).	There would be no increase in student enrollment and thus no additional school bus capacity required with the No Action Alternative.

Table 2.10-1. Comparison of the environmental impacts of the City Heights conceptual land use alternatives, *continued*.

2.11 Benefits and Disadvantages of Reserving Project Implementation to Some Future Time

The SEPA Guidelines encourage applicants and permitting agencies to view each generation as a trustee for succeeding generations. With this perspective, environmental review is encouraged to consider whether approving a proposal at this time would foreclose future options (WAC 197-11-440[5][c][vii]).

In the short-term, leaving the City Heights property undeveloped until some future time would result in implementing the No Action Alternative. The No Action Alternative is discussed throughout Draft EIS Chapter 3, in the context of each element of the environment. Perceived benefits of leaving the City Heights site undeveloped may include: no loss of forest cover from the site, maintaining the "greenbelt" and "open space" on Cle Elum Ridge (though this is private land), no alteration of wildlife habitat or wildlife populations on the site, no added human population or traffic increase attributable to this site, no change in the appearance of the property or introduction of artificial light sources (and thus nighttime "sky glow"), and no requirement for public services and utilities to serve a significant addition to the community.

There would also be some significant disadvantages of reserving project implementation to some future time. The City Heights property is within the Cle Elum Urban Growth Area, and therefore it is currently factored into the City's buildable lands analysis which helps identify whether the City can provide for the anticipated urban growth it is required by the Washington State Office of Financial Management to accommodate over the current 20-year planning horizon (2005−2025). If this property were unavailable for development in the long-term, there may be no comparable quantity of available, undeveloped land adjacent to the existing City limits on which an equivalent amount of residential development could take place. If the City Heights site is not annexed to Cle Elum and developed under the City's regulations at this time, Alternative 3A or 3B would likely be pursued by the applicant, in which case the property would be developed at an urban or lower density within unincorporated Kittitas County. The City would experience many of the same impacts while receiving and controlling considerably less of the property tax and mitigation benefits of this development on its northern border. As a small community of approximately 1,835 persons, Cle Elum is currently experiencing some budget constraints that could be partially offset by increasing the population base to increase tax revenues. An increased population would spread the cost of desired community projects, services, and improvements. An increased population base could also have the secondary benefit of attracting additional economic development to the community (businesses and services), that would further increase tax revenues, create jobs, and increase the vitality of the community.

These and other factors will be considered by City decision makers when evaluating the City Heights application.