Pepin Creek Subarea Plan

Planning Commission Draft | City of Lynden | November 2019

Prepared for:

Planning & Community Development Department
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Table of Contents

Table of Exhibits

Introduction

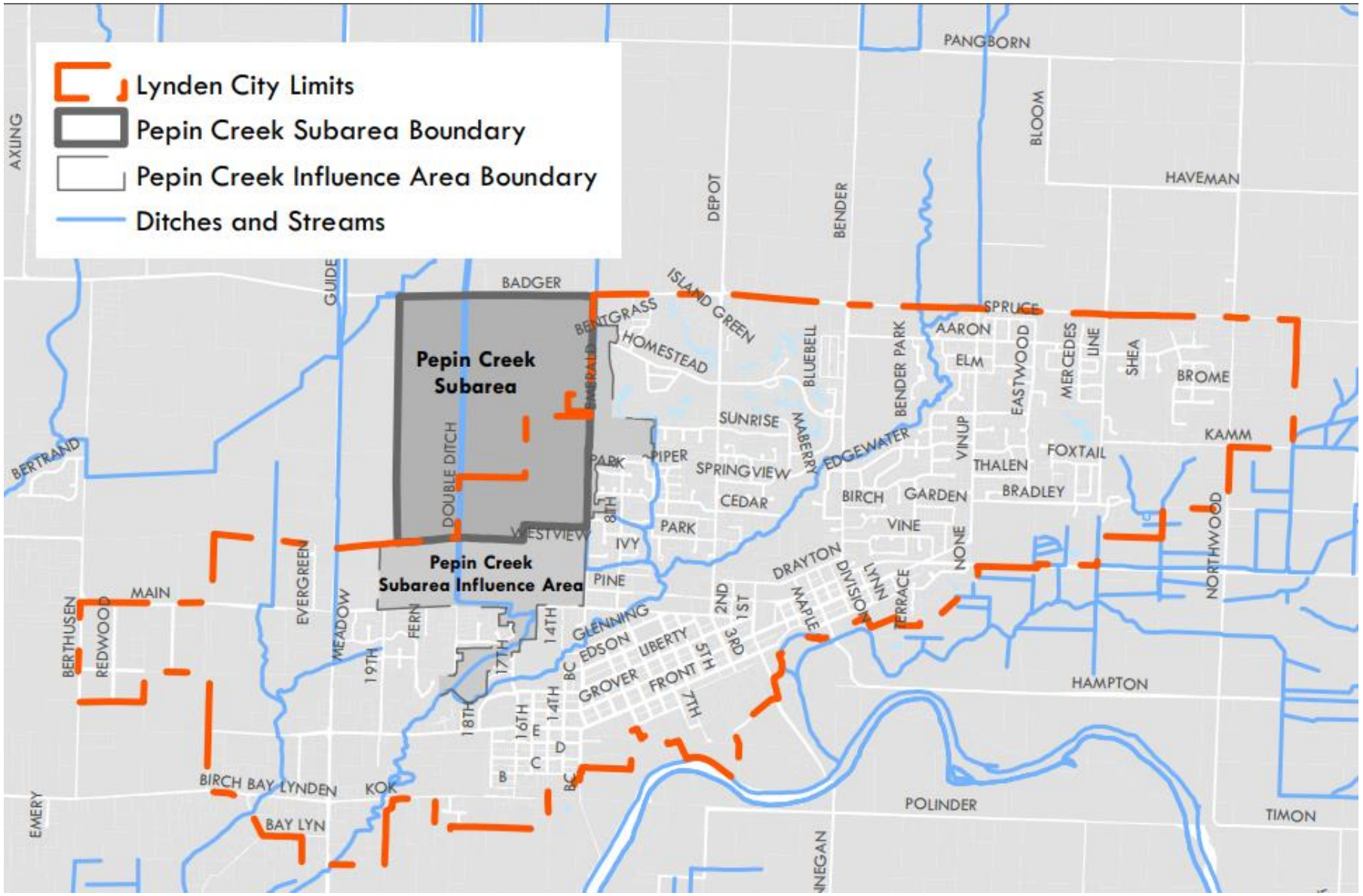
THE PEPIN CREEK SUBAREA PLAN

The Pepin Creek Subarea Plan is a 20-year plan for growth and development in the City of Lynden, identified as part of Lynden's 2016 Comprehensive Plan. Development here helps achieve multiple goals of the City, including providing a diversity of housing types to meet the needs of everyday Lynden households, promoting a small-town community character, fostering an active lifestyle with recreation amenities, and improving environmental sustainability. The subarea is the site for the restoration of Pepin Creek which involves the realignment of the creek from drainage channels along Double Ditch Road and Benson Road into a more natural channel that provides better wildlife habitat, flood control, and a recreational amenity. While future development can be accomplished in the subarea without the Pepin Creek Realignment project, subarea development in tandem with the Pepin Creek realignment provides the opportunity to create a distinctive, amenity rich neighborhood that adds greater value to the city.

THE PEPIN CREEK SUBAREA

The Pepin Creek Subarea (PCSA) is approximately 460 acres and includes the northwestern Lynden city limits and urban growth area (UGA). Approximately 110 acres is currently within city limits and the remaining 350 acres are in the UGA as shown in Exhibit 1. This Exhibit shows the PCSA and its influence area in relation to Lynden city limits and the surrounding unincorporated area.

Exhibit 1. The Pepin Creek Subarea in Context



Source: BERK, 2018.

The PCSA was added to Lynden's UGA as part of the Whatcom County Comprehensive Plan Update and the City's Comprehensive Plan Update adopted in 2016. Lynden is projected to grow by about 6,403 new residents between 2013 and 2036 (Whatcom County, 2016). Although there is capacity for some growth in other parts of the city, the PCSA has been identified as a primary area for future residential development over the next 20 years.

The PCSA has areas of high-water table and has experienced flooding. In the late 1800s and early 1900s, settlers rerouted the original Pepin Creek to allow farming in this area. Remnants of the historic creek were moved into the "ditches" along Double Ditch Road and Benson Road. They also collected stormwater from adjacent farmlands and an upstream tributary area in Whatcom County and Canada. During periods of heavy rain, these waterways would overflow onto the adjacent roads and land. This resulted in property impacts, safety problems, and road closures. The presence of fish, including salmon spawning grounds, constrain the roads under normal conditions, preventing roadway improvements on Benson Road and Double Ditch Road. In reaction to these conditions, the City of Lynden initiated the Pepin Creek Realignment project to restore Pepin Creek and modify the ditches. The Pepin Creek Realignment Project was also anticipated to prevent downstream flooding impacts in the Pepin Creek Subarea Influence Area.

Additional information about the PCSA can be found in the Existing Conditions report in Appendix A

Frequently Used Terms

- **Pepin Creek Subarea Plan.** This document, which establishes goals and policies for the development of the subarea.
- **Pepin Creek Subarea.** The geography that is included in the Pepin Creek Subarea Plan.
- **Pepin Creek Realignment Project.** The engineering and environmental project that is moving the East and West ditches on Double Ditch Road into a consolidated Pepin Creek.
- **Pepin Creek Subarea Area of Influence.** The area downstream of Main Street that is influenced by the hydrology changes associated with the Pepin Creek Realignment Project.
- **Pepin Creek Project.** All the work to address environmental and land use considerations related to Pepin Creek. It includes the Pepin Creek Subarea Plan and the Pepin Creek Realignment Project.

Vision and Guiding Principles

VISION

The Pepin Creek Subarea allows Lynden to grow sustainably while preserving the community spirit, small town atmosphere, and connection to its agricultural roots that make Lynden unique.

GUIDING PRINCIPLES

Downtown Lynden. *Photo: Bill Kreager*

Pangborn Raspberry Farm. *Photo Credit: Whatcom Business Alliance website*

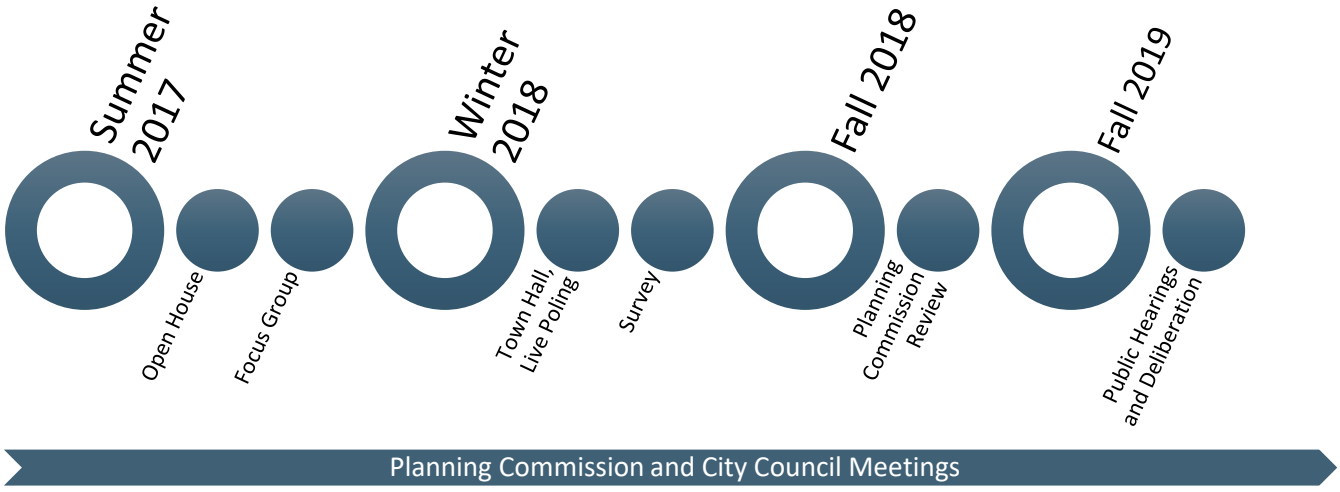
- **Small-Town Character**. Planning for growth in the PCSA, means Lynden can preserve the character of its existing neighborhoods and ensure that development within the subarea is designed to maintain community character.
- **Connection to Agriculture.** Lynden's history, social networks, and economy have connections to farming and agriculture. Coordinated growth within Lynden's city limits and UGA helps to prevent the conversion of farmland in the rural area and maintain the community's connections to an agricultural lifestyle.
- **Housing for the Whole Family.** As a multi-generational community, Lynden needs housing that meets the needs of the whole family. PCSA provides housing that meets the needs of people throughout their lifecycle, including housing that is affordable to those who work in Lynden.
- **Sustainable**. The restoration of Pepin Creek provides an enhanced, natural habitat for the fish and wildlife that live in this area. It also safely and effectively manages flooding and surface water impacts that affect property in the PCSA and its influence area.
- **Healthy.** Residents enjoy healthy lifestyles with plenty of access to open space and the ability to walk and bike safely throughout the PCSA.
- **Financially Feasible.** Development is an attractive investment for private developers and helps offset the costs of the Pepin Creek Restoration for the City. Ongoing maintenance associated with new development in the PCSA pays for itself.

Public Input and Outreach

The PCSA plan was developed with input from the community. Outreach efforts were designed to get a broad range of responses, including from those who may not regularly engage in civic decision-making, and to hear from people who may be uniquely affected by the decisions made in the PCSA. This approach resulted in a large volume of input that represented many different viewpoints in the community.

Town Hall Meeting, January 2018.

Broad engagement consisted of a town hall meeting and an online survey, both taking place in January 2018. Approximately 80 people attended the town hall meeting where planners gave a short presentation on the PCSA and the policies of the Comprehensive Plan. Attendees participated in a live polling exercise that reviewed housing types and densities under consideration in the PCSA and allowed them to express whether they liked or disliked various concepts. There was also opportunity to make comments and ask questions in an open format. The online survey reached approximately 640 people, about 90% of whom live in Lynden and included those who work, go to school, or attend church or social groups in town. Similar to the live polling exercise, the survey asked people about housing types and densities, and asked what people value about living in Lynden and what they might like to see changed.



Resident and Property Owner Open House, July 2017.

Targeted engagement was aimed at reaching those that may be particularly affected by the changes in the PCSA. This includes nearby residents and the development community, including developers, builders, and real estate brokers. A meeting with 35 nearby residents and property owners was held in July 2017 at the start of the planning process. This was an open house where planners presented on existing conditions and the purpose of the PCSA planning process and offered opportunity for comments and questions. To get the perspectives of the development community that might invest in the PCSA, City staff held focus groups and interviews and offered an online survey. Approximately 23 professionals participated in these engagements. These groups were asked about their preferences for investing in the PCSA and for information about the local housing market.

City Council and the Planning Commission also conducted a series of open public meetings where they received briefings, workshopped ideas, or provided direction for the PCSA. This series of meetings included sessions in July 2017, November 2017, and April 2018. At the November 2017 workshop, Council and Planning Commission participated in a live polling exercise that guided the development of the Plan, the results of the polling can be found in Appendix B. The direction of City Council and input from the public engagements drove the development of the concepts, vision, guiding principles, and policies of the PCSA plan.

Subarea Plan Concepts

LAND USE

Citywide Future Land Use

The City of Lynden Comprehensive Plan identifies the PCSA for urban growth. Whatcom County expects approximately 6,400 new people to live in Lynden and its UGA by 2036, which would grow the city to a total population of about 19,725. With an average of about 2.57 persons per household according to the Lynden Comprehensive Plan, the City needs to plan for nearly 2,500 new homes.

To meet this need, the Comprehensive Plan targets an average residential density of five units per acre within the city and UGA. In order to achieve that citywide average, new development areas need to be developed at a slightly higher density, averaging approximately seven units per acre. This is consistent with Goal 2P of the Whatcom County Comprehensive Plan that encourages an average density of 6-10 units per acre in Lynden. A mix of single-family and smaller-scale multi-family uses in the PCSA will meet this target density and help to preserve community character within existing neighborhoods in Lynden. It is estimated that development in the Pepin Creek Subarea could accommodate approximately 1,200 to 2,000 new homes. This allows most of Lynden to keep its Low Density Residential land use as shown in Exhibit 2~~Exhibit 2~~. In addition, the provision of new housing within the UGA helps prevent the expansion of residential development into rural lands, helping to preserve the social, economic, and historical connections to agriculture that are important to Lynden's character and community values.

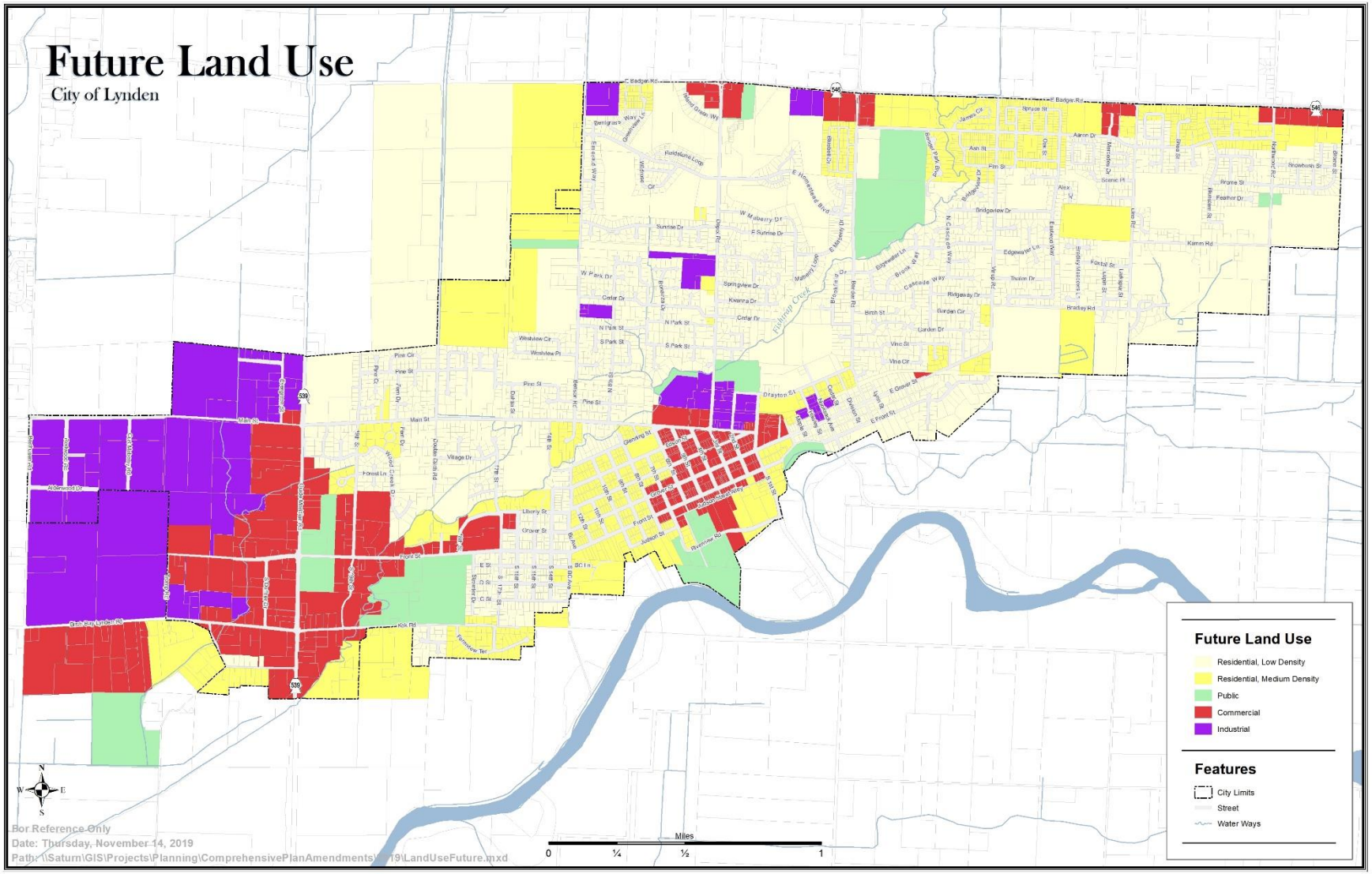
Pepin Creek Subarea Future Land Use

The PCSA is primarily a residential environment that supports Lynden families throughout their lifetime. Whether someone is starting out in life, building a family, or enjoying retirement, Pepin Creek residents can find a home that matches their needs in a community that maintains its small-town character with plenty of green spaces, fresh air, and in developments built to encourage social interactions between neighbors. The residential area is separated into two main categories: Low Density Residential land use and Medium Density land use as shown in Exhibit 3.

Low Density Residential Land Use

The purpose of the Low Density Residential land use district is to maintain "*stable, low density, largely single-family neighborhoods, while providing a range of housing types and prices*," as described in the Comprehensive Plan. Low Density Residential land use makes up the majority of the study area. It is expected that within the PCSA Low Density Residential land use district there will be a mix of traditional large lot single-family homes as well as smaller lot single-family homes. Smaller lot single-family homes should be located near public green space, such as the Pepin Creek corridor, to give a feeling of openness. Small lot developments in this zone may also be designed in a clustered pattern to create shared green space. It is implemented by the RS-72 and RMD zones in the Pepin Creek Subarea.

Exhibit 2. Future Land Use in Lynden and its Urban Growth Area*



Source: Lynden GIS, 2019 *Shows land use designations reflecting the proposed adoption of the Pepin Creek Subarea Plan

Medium Density Land Use

Medium Density Residential land use "*provides higher density housing options and a range of housing types to accommodate future growth,*" according to the Comprehensive Plan. This designation is placed near public open spaces to support residential styles that need less individual open space. Cottage housing, townhomes, and zero lot line housing is built at higher densities than single-family housing by producing smaller units on smaller lots and efficiently providing shared open spaces such as pocket parks and courtyards. This type of housing is often attractive to first time homebuyers, young adults just starting out, and seniors. It is located along the Pepin Creek corridor and adjacent to areas of the future City Park to maximize access to public open space. In areas where the Medium Density district abuts a lower intensity residential district, a transition area will be provided. The Medium Density Land Use Designation is implemented by RM-PC and RM-3 zones in the Pepin Creek Subarea. Small neighborhood commercial nodes may be allowed as secondary uses.

Public Use

There are about five acres of land set aside for Public Use for the airport runway protection area.

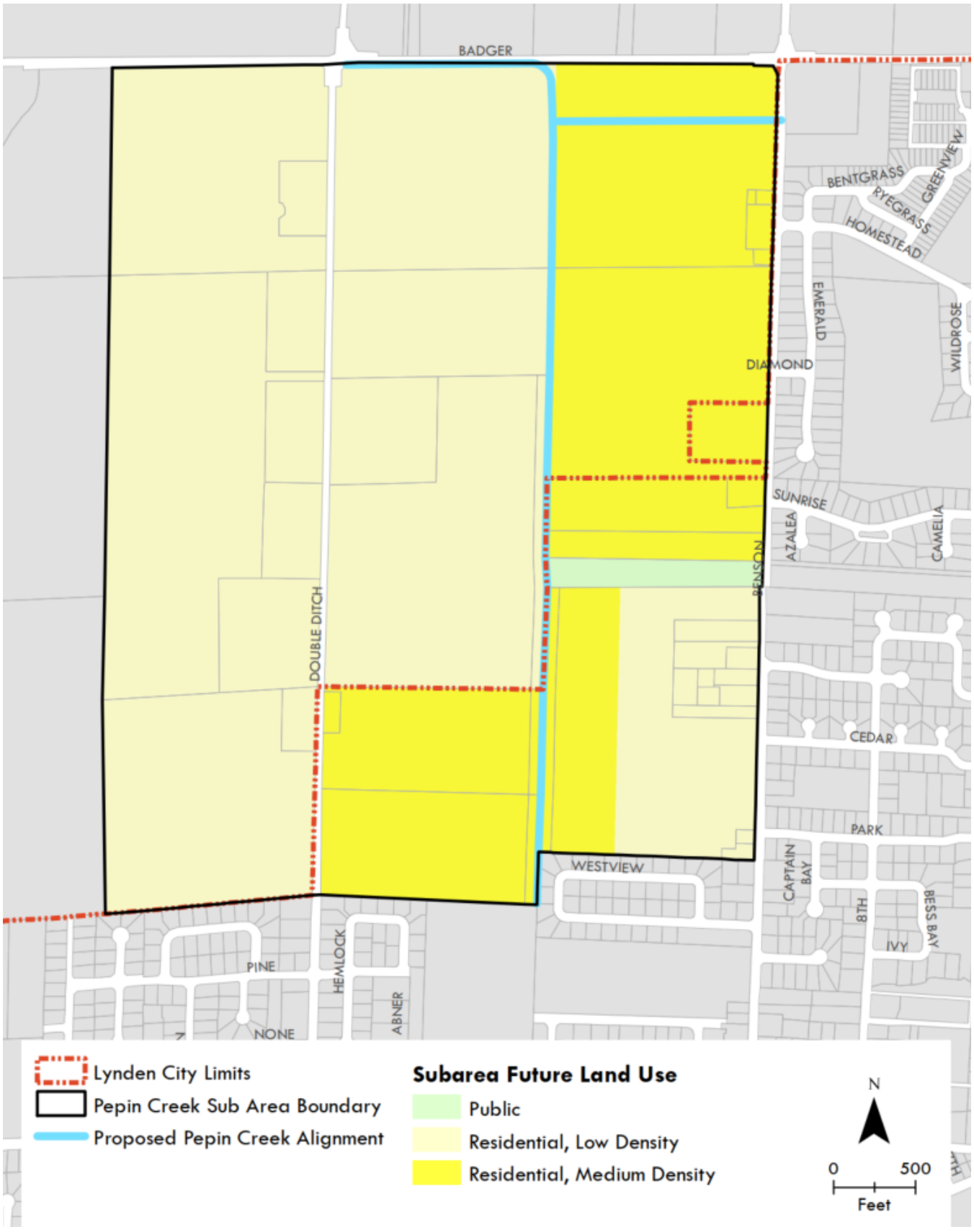
Airport Compatible Land Use

Lynden Municipal Airport, also called Jansen Field, sits on about 12 acres outside the PCSA to the east. There is small strip of land (approximately five acres) in the PCSA that the City purchased as a safety area and to prevent future development that might interfere with airport operations. This strip of land will be preserved as open space and will not be developed. Activity at the airport is generally limited to the smallest class of aircraft weighing less than 12,500 pounds with wingspans less than 49 feet. With a runway of only 2,425 feet, Jansen Field can accommodate approximately 70% of the smallest class of aircraft. The airport accommodates recreational flying and some business aircraft operations. (Airside, 2008).

Land use around the airport includes a mix of uses, including residential use as shown in Exhibit 3. Residences and the Homestead development lie to the north and a mix of residences, churches, commercial, and industrial areas lie to the south. To date, airport compatibility has not been a problem. New residential development in the PCSA may increase the potential for land use conflicts or compatibility issues. More frequent use of the Airport, as other local airstrips shutdown or limit small craft operations, could also increase the potential for land use compatibility issues.

Lynden does not have an airport compatibility land use plan. The Comprehensive Plan briefly mentions the airport as a regional transportation facility. Whatcom County's Comprehensive Plan includes policies for compatibility. Lynden does have an Airport Overlay zoning district that protects the area adjacent to the runway from hazards and allows some aviation-related uses. The Airport Overlay is extended to include the five-acre safety area in the PCSA as shown in Exhibit 3. In addition, the City should require new residential development in the PCSA to sign a covenant that acknowledges the potential for noise and other impacts related to airport operations as part of its platting process.

Exhibit 3. Future Land Use in the Pepin Creek Subarea



Source: BERK, 2019.

ENVIRONMENT

The PCSA lies within the Nooksack River Water Resources Inventory Area 1. The PCSA and most of the city are outside the mapped Nooksack River's FEMA 100-year floodplain. Existing surface water resources in the PCSA include Pepin Creek, which is conveyed by Double Ditch East and Double Ditch West within the PCSA, Benson Ditch, and several lateral ditches (as shown in Exhibit 4~~Exhibit 4~~). Pepin Creek drains to Fishtrap Creek, a tributary of the Nooksack River.

As part of the Pepin Creek Realignment Project, the City is planning to reconstruct the creek corridor through the subarea to reduce flooding. The creek realignment work is occurring separately from the planning for this subarea. To date, work has already begun on the Pepin Creek Realignment project:

- A local engineering firm, Reichhardt & Ebe Engineering, Inc. (R&E), has been working on the preliminary investigation and design of the new creek corridor that runs north-south at the mid-point between Double Ditch Road and Benson Road. Two significant design scenarios for the new Pepin Creek corridor have been analyzed. Additional environmental review and collaboration with outside agencies is expected to begin in early 2020.
    - Realignment: One design is anticipated to accommodate the existing water in the roadside ditches both at ordinary and flood stages. This design includes provisions to reinforce creek shorelines in the downstream reach south of Main Street where highly erosive soils and high stream flows threaten existing development. This design is expected to provide flood protection, improve water quality and fish habitat, provide a recreational amenity, and function as the downstream receiving water body for managed stormwater in the subarea.
    - Stormwater By-Pass: The second design scenario anticipates that the new creek corridor will accommodate creek flows adequate for fish habitat while higher capacity flows, including flood stages, would be by-passed into a stormwater (pipe) system and discharged into Fishtrap Creek. This system reduces the risk to the downstream reach of Pepin Creek, south of Main Street, by re-directing high water flows rather than physical reinforcement of shorelines. A sophisticated fish exclusion system is included in this scenario to ensure fish are kept within the creek channel and not swept into the by-pass system. The by-pass pipes would be located within the Double Ditch right-of-way corridor.
- The City has acquired most of the land needed for a 75 to 150-foot-wide creek corridor, and acquired another 40 acres, a portion of which will be used for new city park land in the subarea. Preliminary site investigation and design work have been completed. The engineering team has also begun design a new Main Street Bridge which is needed in both the realignment and by-pass scenarios. BERK Consulting is supporting financial tools, which aim to collect development's contribution to the creek realignment project.

The PCSA is relatively flat, subject to wintertime flooding, and has seasonal high groundwater. Drainage in the PCSA is provided primarily by the roadside ditches along Benson Road and Double Ditch Road. Both ditches originate north of the City of Lynden and drain areas of Whatcom County north of Lynden and into Canada. Both ditches discharge to Fishtrap Creek and the subject of planned reroute project that is currently in the design and permitting process.

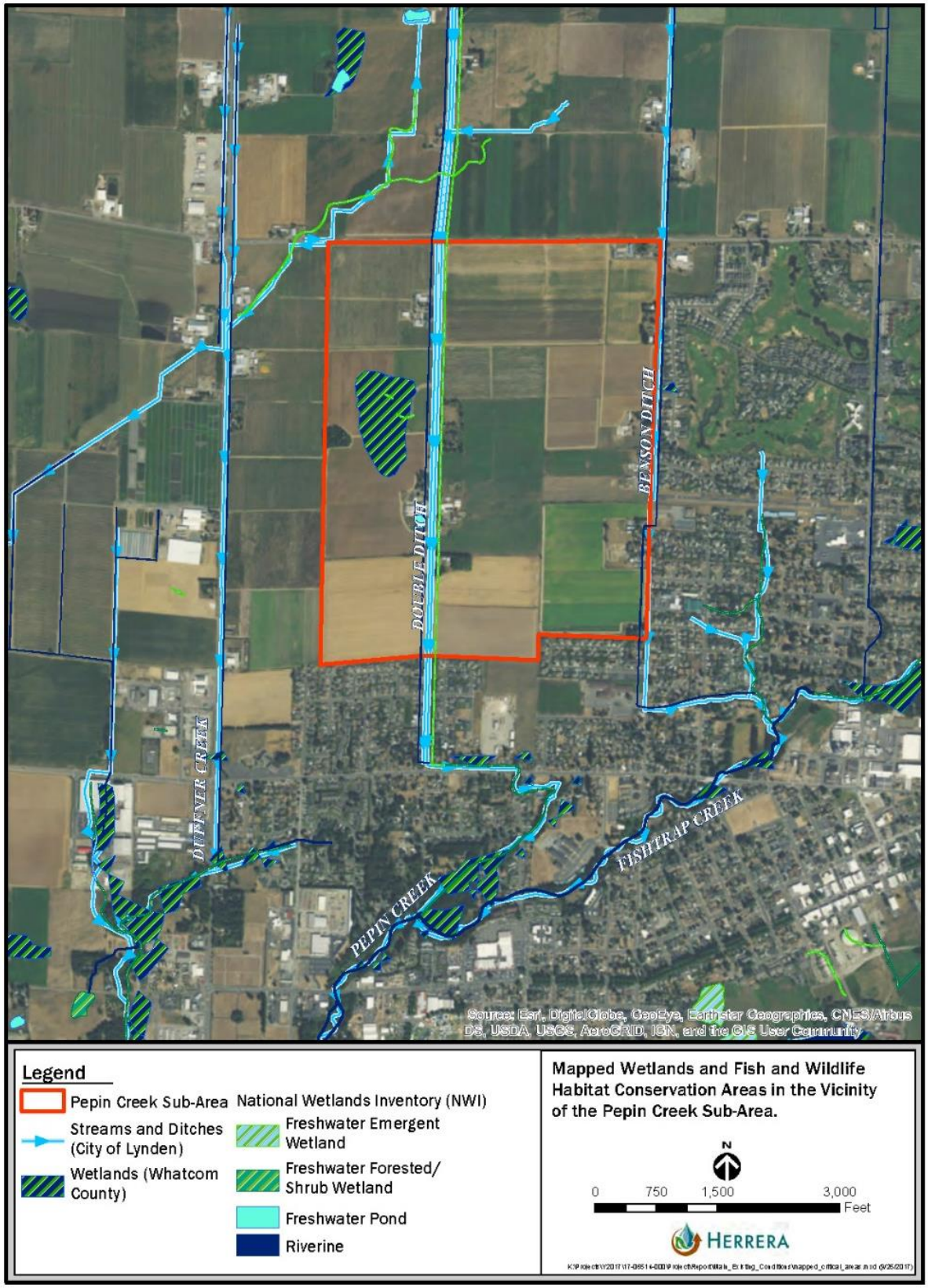
The PCSA is actively farmed and ditches on private property, beyond the roadway right-of-way, are present throughout. Within the agricultural portion of the PCSA there is an informal network of drain tile

and ditches which provide drainage to the agricultural fields. There are reports of extensive forested wetlands historically occurring in the area. However, soil survey maps show the soils as drained, indicating that they may not support wetlands today.

The Fish and Wildlife Habitat Conservation Areas within the PCSA include the Double Ditch Road and Benson Road ditch systems. They are Washington Department of Fish and Wildlife priority habitats for federal and state listed salmonid species and documented habitat for locally important species (WDFW 2017a). Fish and Wildlife Habitat Conservation Areas are subject to the standard buffer widths established in the Lynden Municipal Code (LMC 16.16.380).

Wetlands within the PSCA are subject to the wetland requirements established in the Lynden Municipal Code as well (LMC 16.16.260 through 16.16.320). The terrestrial habitats in the study area consist of agriculture, grassland, and pasture. They provide habitat for a variety of bird species but are not documented Washington Department of Fish and Wildlife Priority Habitats or habitats for species of local importance, therefore they are not designated as Fish and Wildlife Habitat Conservation Areas.

Exhibit 4. Water Resources in the Pepin Creek Subarea and Vicinity



Source: Herrera, 2017.

As the subarea develops, formal critical area delineations and adherence to required buffers and setbacks will be necessary, including an evaluation of potential impacts and required mitigation. Stormwater management will also be required to meet City codes and to ensure consistency with the current Ecology stormwater manual for Western Washington. Ideally, there will be opportunities to integrate low impact development stormwater management into other subarea plan features and roads.

Flood Hazard Mitigation

The City is considering the implementation of a~~The~~ Flood Hazard Mitigation Overlay. The overlay would be ~~is~~ applicable to the entire PCSA and recognizes~~s~~ the hazards associated with surface flow flooding, ground water, drainage, and downstream constraints within the subarea. Overlay requirements would~~ill~~ be included in an implementing ordinance. The requirements would~~ill~~ ensure that development in the subarea is designed and mitigated to prevent cumulative negative impacts to the surrounding community to avoid flooding of residential neighborhoods, life safety issues associated with road closures, and significant property damage.

TRANSPORTATION

Road System Capacity

Successfully accommodating new growth and development in the PCSA requires attention to the circulation system that connects the subarea to the rest of Lynden and the surrounding region, as well as the connections within the subarea itself. As identified in the Existing Conditions Report in Appendix A, there are few roads serving the PCSA because of its current agricultural, low intensity development pattern. The Lynden Comprehensive Plan anticipates the need for transportation improvements in the PCSA due to growth. The Transportation Element forecasts growth of up to 1,096 households in the subarea, which will require roadway improvements that support cars, bicycles, and pedestrians. Some of these road improvements are currently listed in Lynden's Transportation Improvement Plan. Lynden's Transportation Element is focused on intersection operations though adequate road extensions and design are also considered.

As part of the 2016 Comprehensive Plan update process, Whatcom County studied different growth scenarios for the PCSA ranging from 578-1,433 new households and published an Environmental Impact Statement (EIS) with the results, see the details in Appendix C (Whatcom County, 2015). The analysis was based on a transportation model developed by the Whatcom Council of Governments (WCOG) that focused on the volume and capacity of roadways at a countywide scale. The model showed that traffic would be within adopted level of service standards for roadways per Whatcom County standards, except in two areas. Guide Meridian Road between the existing city limits and East Badger Road would likely experience some slowdowns in afternoon peak traffic and there would be additional delays on East Badger Road between Guide Meridian Road and the existing city limits.

Once the City began more focused planning for the PCSA, the City asked the WCOG to apply its model to study the effect of a greater number of households on traffic. The WCOG tested the effect of 1,559 households in the PCSA. It assumed development of Pepin Parkway as an extension of Homestead Boulevard, connecting to Double Ditch Road as shown in Exhibit 5~~Exhibit 5~~. Overall, the study found that traffic impacts would be consistent with the projected results from the County's 2015 EIS. Predictably, the presence of the Pepin Parkway reduces traffic flows on Benson road south of Homestead Boulevard and

increases traffic on Double Ditch Road south of the parkway to Main. Despite the difference in traffic flow, this indicates that the Pepin Creek road system should be able to handle the transportation needs that accompany growth, although modifications to the Transportation Improvement Program are needed to account for the changes in traffic flow related to Pepin Parkway.

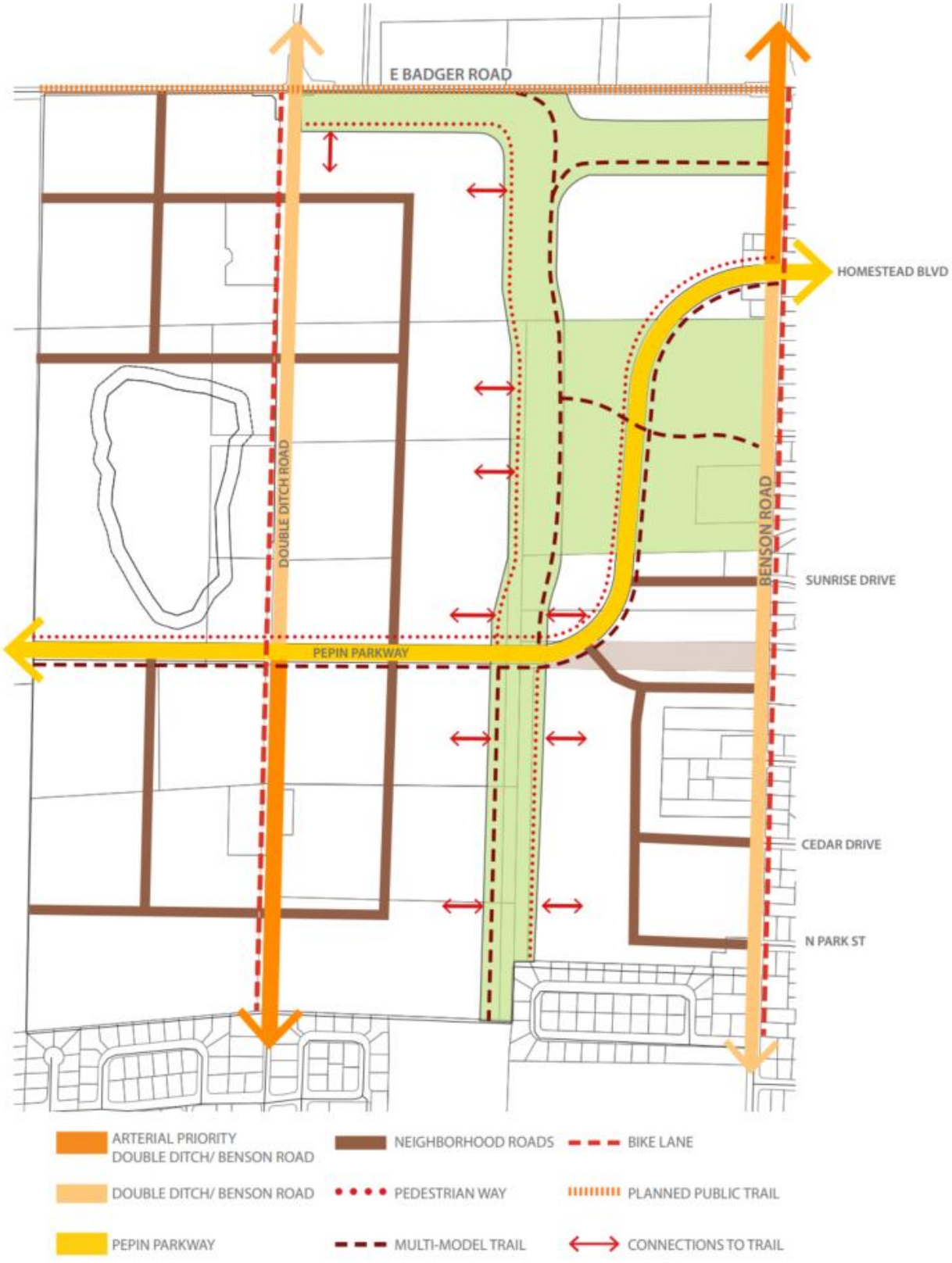
Circulation

The road system in the PCSA creates a hierarchy of streets that maximizes connectivity within the subarea and within the individual neighborhoods as shown in Exhibit 5~~Exhibit 5~~. This hierarchy is designed to provide connectivity between the neighborhoods and the surrounding City of Lynden and incorporates low impact development practices into the street design to allow for sustainable drainage techniques. To make this system work, there are a variety of streets and alleyways that accommodate a full range of development types and road functions. These roadways are designed to provide a safe and inviting environment for pedestrians with sidewalks and curbs along all new streets. This type of circulation system is easily navigated and encourages physical activity throughout the community.

In addition to the road system, the PCSA vision includes a network of connected trails and pathways throughout the community that are separated from the vehicle network, including a regional multi-modal trail along the Pepin Creek realignment corridor. These trails and pathways will safely accommodate a variety of users and provide connections between homes, local amenities, and regional destinations such as: neighborhood retail, schools, parks, natural and open spaces, and downtown Lynden. By connecting trails and pathways to the road system at key points and along Pepin Parkway, the non-motorized circulation system shown in Exhibit 6~~Exhibit 6~~ encourages safe and healthy transportation and recreational activities such as walking, running and biking.

City engineering standards will be updated to reflect the planned cross-sections. The City may implement its desired cross section with its land use and environmental permit authorities, consistent with Policy PC 6.6, until city standards are amended.

Exhibit 5. Circulation in the Pepin Creek Subarea



Source: Communita, 2019.

Exhibit 6. Non-motorized Circulation

Source: Communita, 2019.

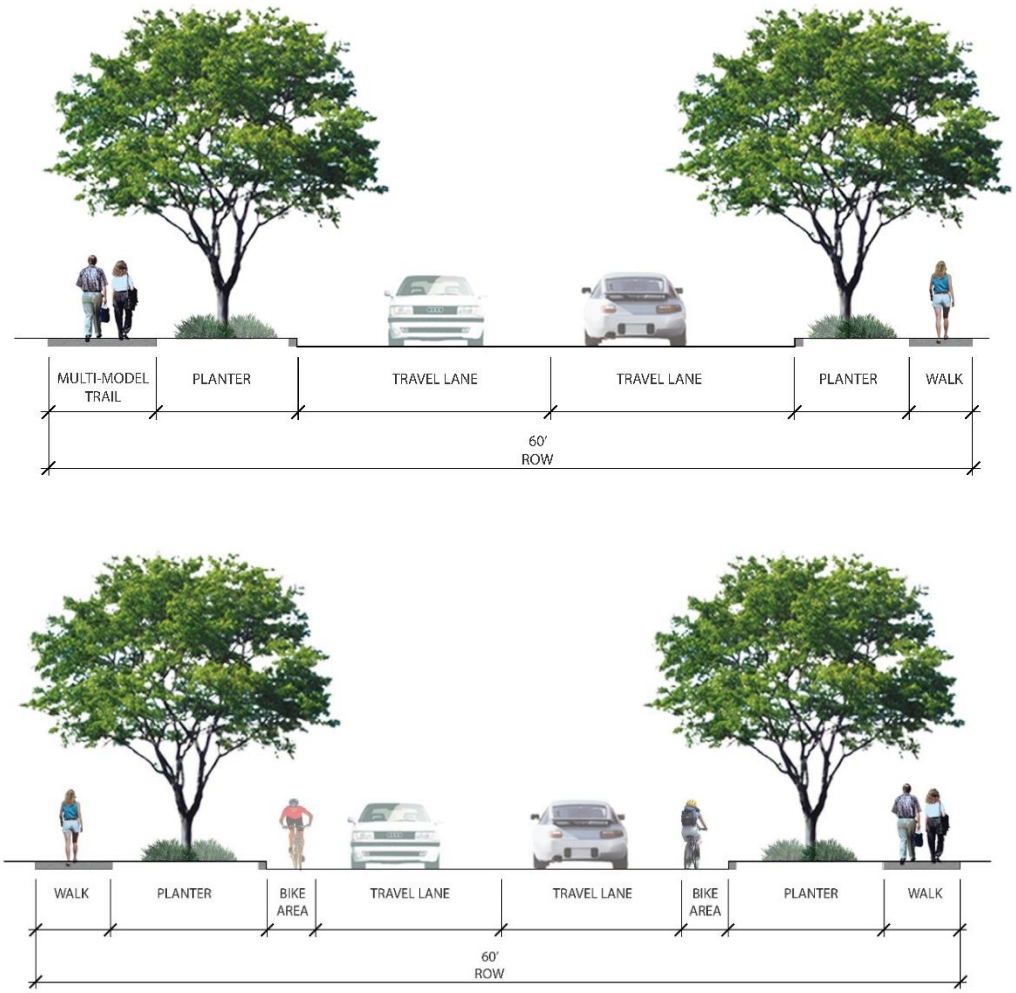
Benson Road and Double Ditch Road

Currently, three existing public roads serve the PCSA and connect it to downtown Lynden and surrounding areas as show in Exhibit 5~~Exhibit 5~~. East Badger Road runs along the northern edge of the PCSA. Benson Road and Double Ditch Road run north-south through the subarea with Benson Road located along the eastern edge of the PCSA and Double Ditch in the western half of the subarea. Double Ditch includes the channels that currently contain the waters of Pepin Creek. Likewise, Benson Road includes a ditch containing a fish bearing waterway and stormwater damage. The waters of Pepin Creek and potentially the Benson Road ditch will be redirected toward the new channel through the realignment process. This process, as well as the anticipated growth in the PCSA, will require that the roadway network is redesigned and improved.

Benson and Double Ditch roads will likely be improved in phases while the construction of Pepin Parkway will become a priority to facilitate regional traffic and accommodate growth. Pepin Parkway represents a safer transportation corridor than the existing conditions on Benson and Double Ditch roads. Pepin Parkway will have limited intersections, no driveway access, and no parking. There will be a sidewalk and a wide planting strip provided on each side of the street between the curb and the sidewalk to provide a safe pedestrian environment. The roads will also include either a dedicated bike lane on the shoulder of the vehicular travel lane, or a combined bike and pedestrian travel lane that is wide enough to safely accommodate both modes. Traffic calming strategies should be included in the final design of these roads to ensure safety and reduce speeds along these straight roads. Benson and Double Ditch Road will be improved to an alternate standard which could include the concepts illustrated in

Exhibit 7~~Exhibit 7~~.

Exhibit 7. Conceptual Benson and Double Ditch Roads Cross Sections



Source: Herrera and Communita, 2018.

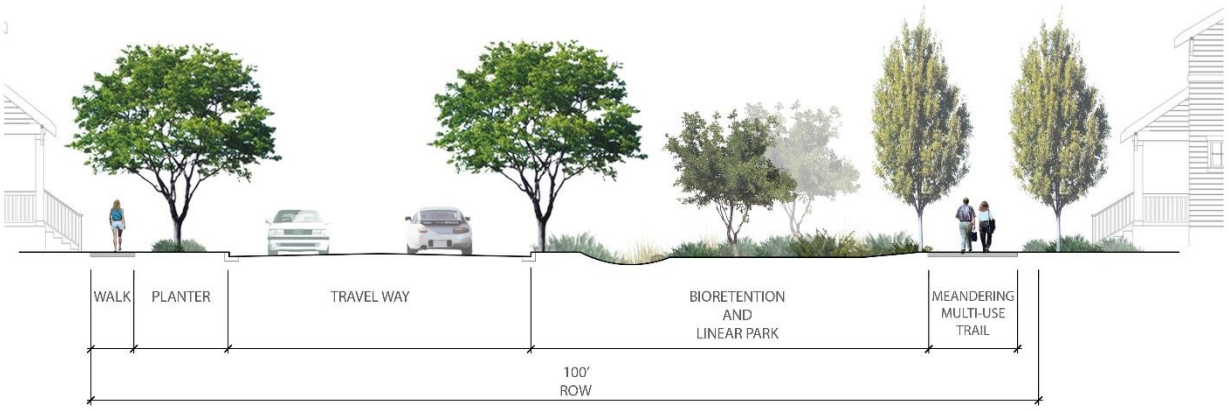
Pepin Parkway

Pepin Parkway will run diagonally through the subarea. Stretching from the northeast corner of the subarea near the intersection of Benson Road and Badger Road it will serve as an extension of Homestead Blvd. Running through the City owned Benson Park property, the Parkway will provide a safer park entrance than could be provided on Benson Road. Crossing the creek channel at the end of the airport safety zone, the proposed path of the Parkway once again takes advantage of property already owned by the City. On the west side of the new creek channel Pepin Parkway will connect to future city roads. Pepin Parkway will include a sidewalk and a large planting strip on both sides of the road that can accommodate large trees. A multi-modal trail will be on one side, separated from the vehicles by a wide landscaped area. Parking may be provided in parking pockets where needed. The parkway should act as part of the neighborhoods rather than a barrier.

Pepin Parkway will serve as a linear park that integrates different housing developments into a neighborhood by limiting intersections and incorporating a multi-modal trail that meanders through a park-like setting. Where feasible, the parkway will include bio-retention and natural drainage, which will

help with stormwater control and provide landscaping to enhance the feeling of comfort for pedestrians. Ideally, homes will front or side onto Pepin Parkway. When this is not possible, a heavy landscape buffer will be provided.

Exhibit 8. Conceptual Pepin Parkway Cross Section

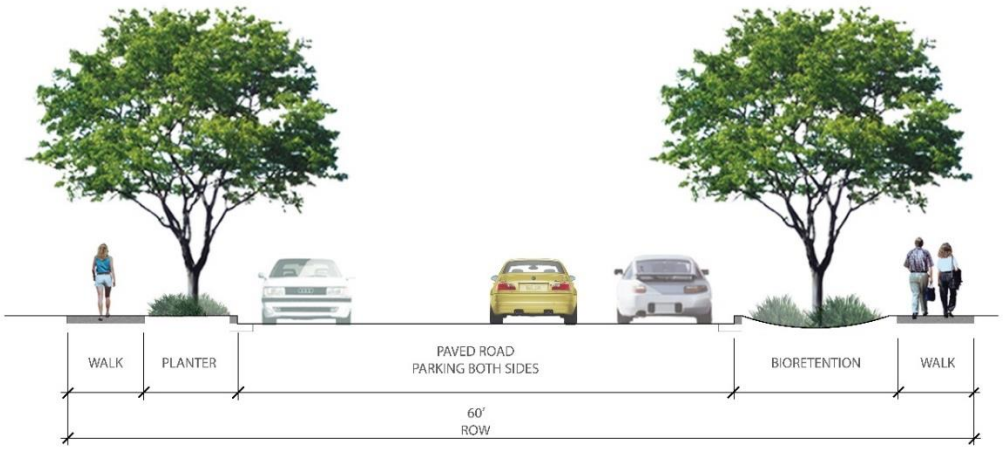


Source: Herrera and Communita, 2018.

Neighborhood Roads

Neighborhood Roads are a secondary system of roads that provide connectivity between individual developments and the PCSA as shown in Exhibit 5~~Exhibit 5~~. They connect developments to the Pepin Parkway, Benson Road, Double Ditch Roads and E. Badger Road. Homes will feature porches and stoops that front or side on Neighborhood Roads to create a feeling of community. Trees and sidewalks will be provided on both sides of the street to enhance the pedestrian-friendly streetscape. Natural drainage systems may be integrated into the planting strip to carry stormwater to the Pepin Parkway drainage system. Parking will be provided on both sides of the street to allow space for residents and the guests, as well as to calm traffic moving through the area (see Exhibit 9~~Exhibit 9~~).

Exhibit 9. Conceptual Neighborhood Roads Cross Section

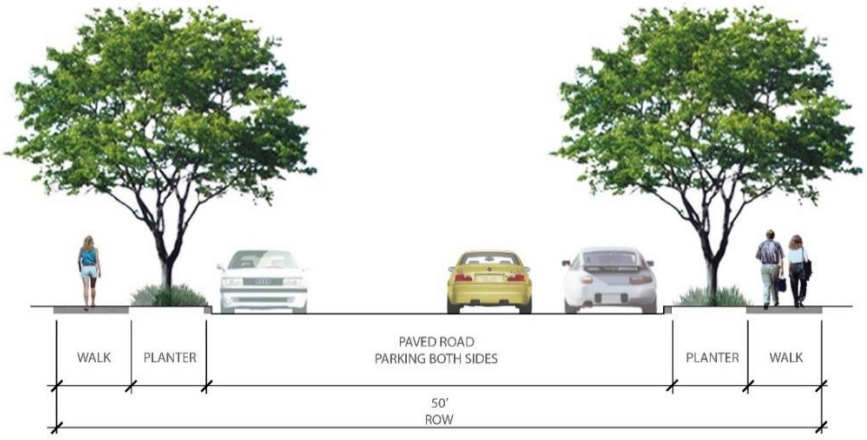


Source: Herrera and Communita, 2018.

Village or Cluster Access

Village and Cluster Access streets are intended to be public streets with a right-of-way width of only 50 feet (see Exhibit 10~~Exhibit 10~~). This street type is intended to provide vehicular access to a maximum of eight units. It will also provide pedestrian connectivity with a planting strip and sidewalk on both sides of the street. The access roads include parking on both sides of the street for residents and guests and where possible, front porches will face the street to encourage social interaction amongst residents.

Exhibit 10. Conceptual Village or Cluster Access Street Cross Section

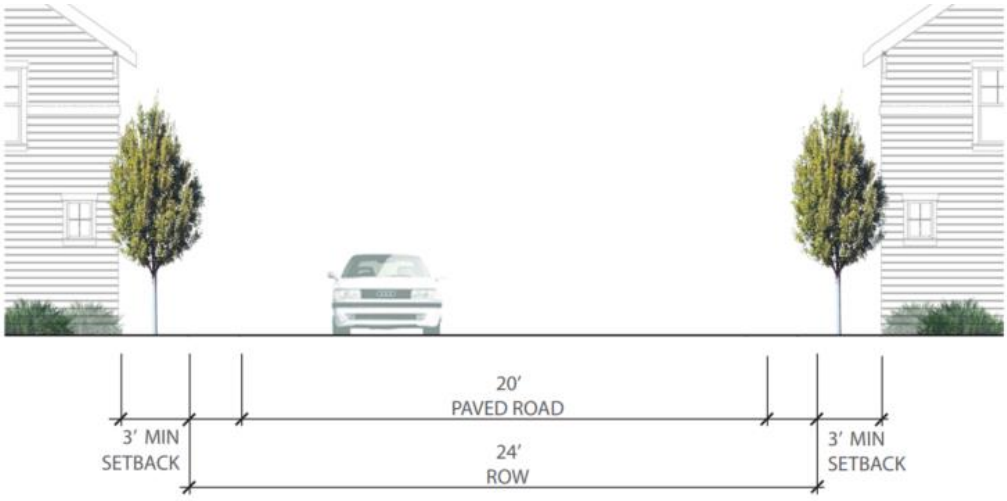


Source: Herrera and Communita, 2018.

Alleys

The use of private alleys in the PCSA is permitted. Alleys can be used to create a pedestrian friendly streetscape and eliminate pedestrian and vehicular conflicts. The use of alleys also minimizes curb cuts and allows for better social interaction and encourages walking and health in a safe pedestrian environment. Alleys in the PCSA will be 24' ROW in which 20' will be paved (see Exhibit 11~~Exhibit 11~~).

Exhibit 11. Conceptual Alley Cross Section

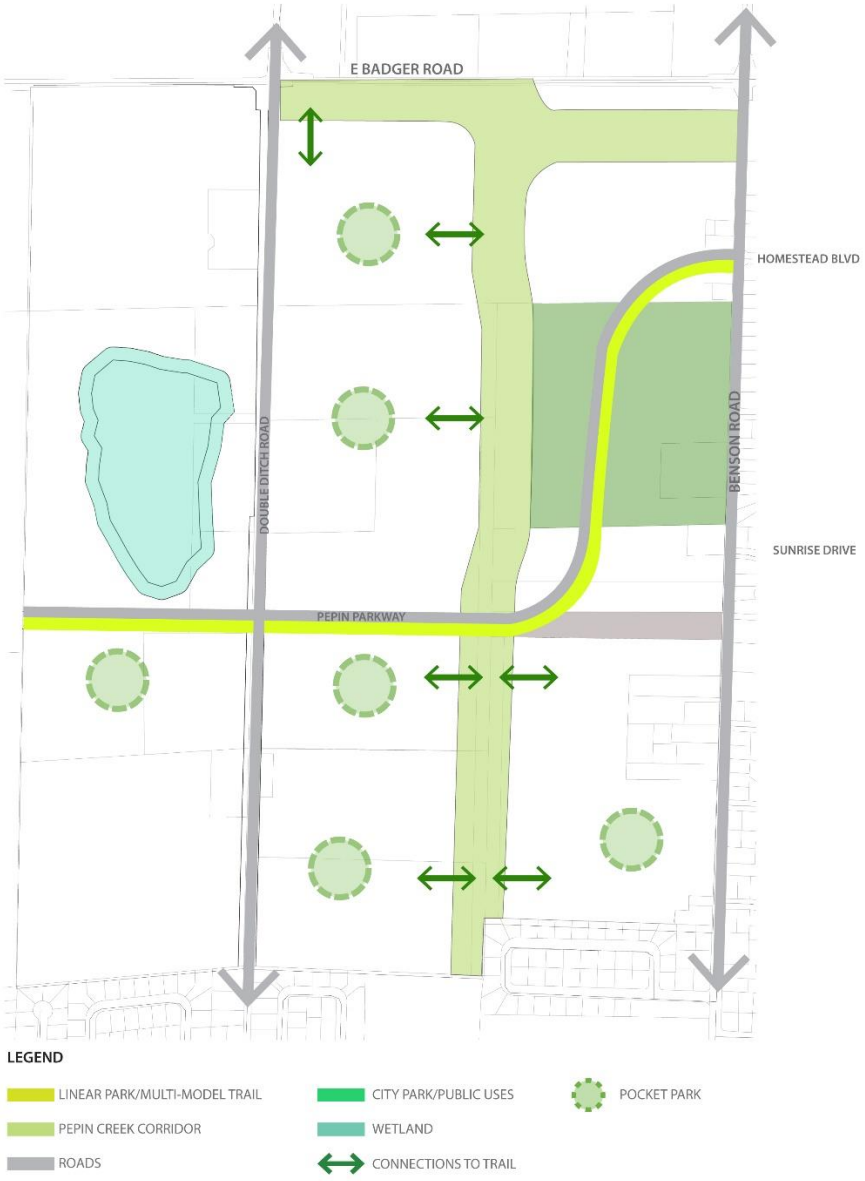


Source: Herrera and Communita, 2019.

OPEN SPACE

Open space in the PCSA includes a diversity of parks and an interconnected trail system to meet a wide variety of recreational needs and encourage healthy activity. This framework of parks, open spaces, and trails is shown in Exhibit 12~~Exhibit 12~~. Parks facilities range from a large city park to smaller pocket parks and open spaces. All parks are in close proximity to residents and connected through a network of trails and sidewalks. Parks serve several functions in the PCSA: to provide community space, to support a sense of neighborhood identity, to minimize the impacts of density, and to create a sense of place. Public streets will be located at the edges of parks and open spaces in the PCSA to help keep them feeling open and safe. Rear yards and privacy fences as borders to parks and open spaces should be avoided.

Exhibit 12. Conceptual Parks and Open Space Framework



Source: Communita, 2019.

City Park

~~In~~ An approximately 15-20 ~~years~~ acre ~~, a~~ city park is planned in the PCSA on the City-owned property along Benson Road where it will be easily accessible to all Lynden residents. Two conceptual layouts are shown in Exhibit 13~~Exhibit 13~~. An existing barn on the property is proposed to remain as a community gathering place and to host community events. Restoration of the barn meets one of the PCSA Guiding Principles by reflecting Lynden's agricultural connections and history. The park will include both active uses such as sports fields, as well as passive uses such as picnic tables and trails. A trailhead will provide easy access to the trail system throughout the PCSA, which provides access for nearby residents to get to the park, and allows visitors to experience the Pepin Creek corridor. Parking could be shared with other uses on the site.

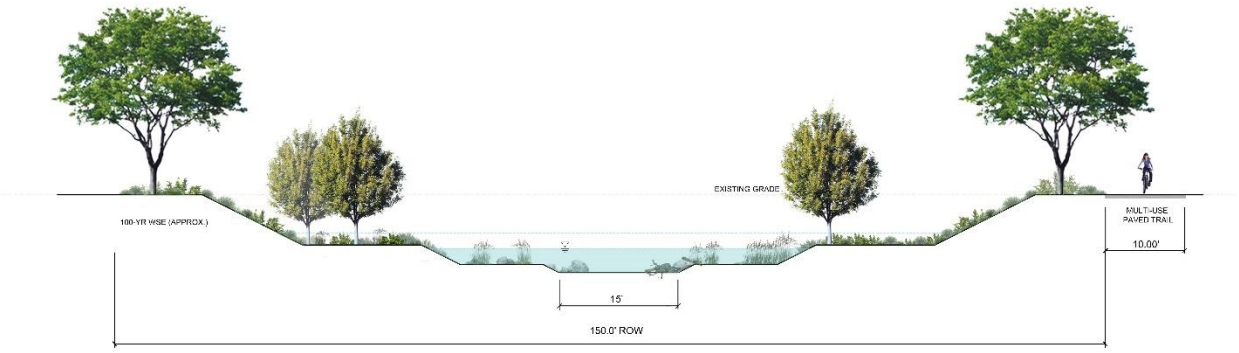
Exhibit 13. Conceptual City Park Layouts

Source: Communita, 2019.

Pepin Creek Corridor

The Pepin Creek Corridor provides a linear open space through the site that connects to the city park and to the roadway network where it intersects with Pepin Parkway. This open space corridor will range from 75 feet to 150 feet wide. A multi-modal trail will sit on one side of the creek and a pedestrian trail on the other side of the creek as shown in Exhibit 14~~Exhibit 14~~. Trail connections from adjacent developments will link to the Pepin Creek corridor. Restoration of Pepin Creek will provide an enhanced, more natural habitat for fish and wildlife as well as a recreational amenity for residents. It will also mitigate the impacts of local flooding by accommodating Pepin Creek during high water conditions.

Exhibit 14. Conceptual Pepin Creek Corridor Cross Section



Source: Herrera and Communita, 2018.

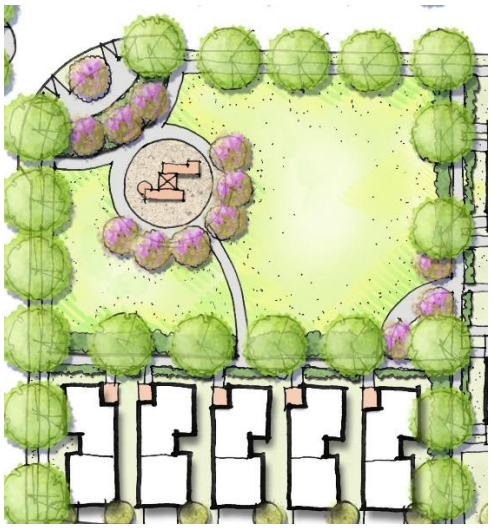
Integrated stormwater and pathway create a park-like atmosphere.

In addition to the linear park created by the realigned creek corridor, Pepin Parkway is also designed as a linear park and will provide a multi-modal trail in a park like setting on one side of the road and a sidewalk on the other side as shown in Exhibit 8~~Exhibit 8~~. Pepin Parkway provides opportunities for transportation and recreation for bikers and pedestrians. Limited intersections on Pepin Parkway will reinforce the park like atmosphere and will be used to pull the developments in the PCSA into a cohesive neighborhood. The Parkway and the creek corridor intersect at the center of the Sub-Area.

Neighborhood Parks

Neighborhood parks are encouraged in residential areas and provide active play areas for residents within a half mile walking distance. These parks may also be used passively as open space and to provide outdoor recreation space for denser housing. Larger than a pocket park, neighborhood parks are a hub for resident gatherings and provide neighborhood identity. All neighborhood parks are easily accessible from a public street and connected to the trail and sidewalk network of the community (see Exhibit 15~~Exhibit 15~~).

Exhibit 15. Conceptual Drawing of a Neighborhood Park



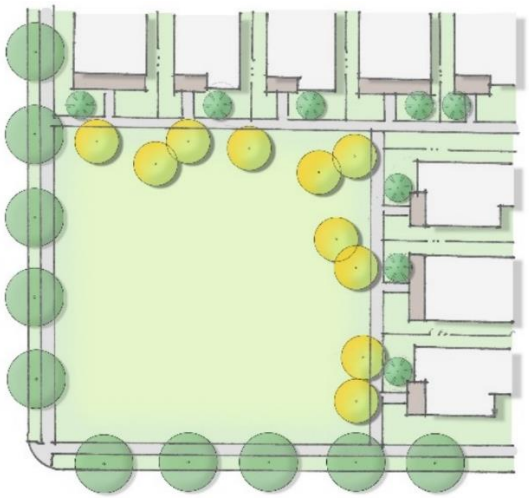
Source: Communita, 2018.

Example of a Neighborhood Park with small play structure.

Pocket Parks

Pocket parks are small parks that are less than half an acre in size and provide a community focal point for adjacent homes that front on the park and nearby homes within walking distance. Typically maintained by the surrounding homeowner's association, they are especially important in denser residential areas where adjacent residents rely on them as outdoor living spaces that serve as flexible play areas, recreational activity space, and community gathering places. Pocket parks can provide a safe place for kids to play in areas where private yard space is limited. Pocket Parks are highly visible, connected to the network of community trails and sidewalks, and accessible from a public street. They also provide access to homes that are oriented with the front doors facing the pocket park (see Exhibit 16~~Exhibit 16~~.)

Exhibit 16. Conceptual Drawing of a Pocket Park



Source: Communita, 2018

Example of homes fronting on a pocket park.

HOUSING

The Housing Element of the Comprehensive Plan presents a demographic profile of Lynden compared to Whatcom County and Washington state. Lynden's household size is 2.57 persons per household, slightly higher than Whatcom County at 2.5 and Washington state at 2.54. The Census Bureau estimates that in 2016 the population of Lynden had a median income of $61,828, which is about 14% higher than the median income of $54,207 for Whatcom County. Median home value in Lynden was $287,200, slightly above that of Whatcom County at $283,000. In Lynden, 69% of homes are owner-occupied, compared to 63% in the county and the state.[1]

Compared to the other geographies Lynden has a higher median age and larger population of residents over age 65. A relatively high percentage of households, 17% are people age 65 and older who live alone, compared to under 10% in the other geographies. Census information shows that approximately one third of Lynden's population is under age 18, compared to about a quarter of the population in Whatcom County.

This demographic profile aids in understanding the type of housing that might be needed in the PCSA. Based on the age profile, housing is needed for families and older adults. Older adults may be looking to move to smaller housing units with less yard space to maintain as their children establish their own families or after the loss of a spouse. These needs may range from smaller single-family homes to cottage units to senior apartments. Families with children need housing that they can afford with ample places for children to play, whether it is in private yards or nearby parks and open space. The size and type of housing needed varies by family. Young families starting out often need smaller "starter homes" that provide entry into the housing market.

Housing affordability is also an issue for families looking to buy a home. With a median income of $61,828, new single-family homes are out of reach for many.[2] People working in healthcare, retail, or as teachers make about 70% of the area median income, or about $43,000. The purchase of a new single-family home requires an income of approximately $75,000 or more, or approximately 120% of the area median income. This would likely be a home on a lot under 6,000 square feet for entry level buyers, which could include a smaller single-family home, a townhome, a cottage, or other more compact housing type. Providing a range of unit types provides alternatives for homeownership at a variety of price points in the market.

COMMUNITY CHARACTER

The PSCA will become a new neighborhood designed to preserve essential elements of Lynden's character, including its connection to its agricultural roots, its small-town atmosphere, and its community spirit. The network of parks, trails, open spaces, streets and sidewalks work together to create a community feeling. Homes with porches and stoops facing this network encourage community interaction.

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[1] See the Lynden Comprehensive Plan Housing Element, Table 1 for the comparison between Lynden, Whatcom County, and Washington state. Census information comparing Lynden and Whatcom County can be found at: https://www.census.gov/quickfacts/fact/table/whatcomcountywashington,lyndencitywashington/PST045217.

[2] Housing affordability was analyzed by looking at both a 5% and 10% down mortgage and looking at the cost of new single-family home comparables in Homestead.

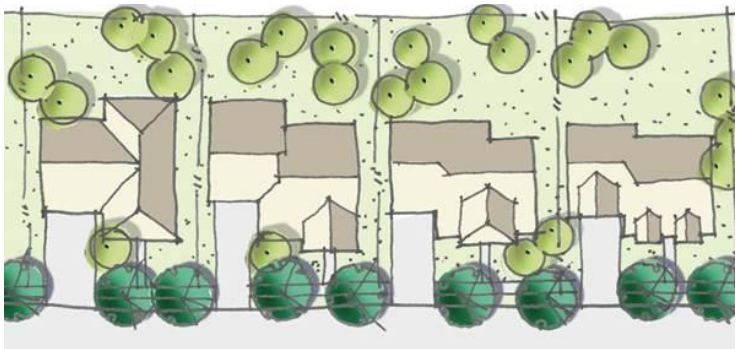
Ample gathering spaces help a community thrive by giving places for formal and informal get togethers. The availability of recreational amenities encourages healthy lifestyles and makes it easy for people to get around the subarea to visit with neighbors and participate in civic life. Lynden also strives to provide housing for family members in all stages of life. The planned land use and zoning in the PCSA hopes to achieve these goals by allowing a variety of home types to be built in the subarea such as: large single-family lots, small lots, attached homes, cottages, and senior housing.

The Design Standards created for residential areas of the city help guide the new community in preserving Lynden's community character and reflect its heritage as a small, agricultural town. This is accomplished through guidance on site planning and layout, architectural design, and landscaping. Standards help avoid a monotonous neighborhood by requiring quality materials and a variety of architectural styles. Required parks and open spaces in the medium density areas maintain an uncrowded feeling of a small town and are particularly important in areas of higher density. The necessary elements of design for each of the housing types are shown below.

Standard Lots

Standard lots are allowed throughout the PCSA. This housing type primarily serves established families and professionals. The lots are larger ranging in size from 7,200-12,000 square feet. The homes are also larger ranging from 3,000-4,200 square feet. All standard lots are detached homes and will reflect the character of existing Lynden homes. These lots have larger yards for children and pets. The design of the homes will meet the community needs and the design of the neighborhoods and homes will be controlled by the City's Residential Design Standards. The City's Residential Design Standards require that the homes have obvious front entries, garage doors that are less than 50% of the façade of the home, and not more than 12 feet forward of the living space. These standards help create a pedestrian friendly streetscape. The site plan in Exhibit 17~~Exhibit 17~~ shows how standard lots may be laid out on a site. The architectural design shall be a variety of styles and have an illuminated front porch or stoop.

Exhibit 17. Conceptual Standard Lot Site Plan



Source: Communita, 2018.

Standard, or "large lot" single-family home.

Small Lots

The small lots serve the market needs of first-time homebuyers, young professionals, and young families and are allowed throughout the PCSA. Homes in this category are detached and sit on lots ranging from 4,000-7,200 square feet. These are typically 3-4 bedrooms homes between 2,000-3,000 square feet. Smaller lots can work well with front or alley access. Each home has a back yard for children and pets and a front porch that faces the street or a common open space. Homes with alley access can be situated on a park or open space, providing extra amenity, as shown in Exhibit 18~~Exhibit 18~~. Design standards emphasize variations in materials and styles to prevent a monotonous appearance. The front porch of each home could also face a landscaped street or pocket park as shown in Exhibit 18~~Exhibit 18~~ and Exhibit 19~~Exhibit 19~~.

Small-lot single family home.

Exhibit 18. Conceptual Small Lot Site Plan with Alley Access

Source: Communita, 2018.

Above: Small-lot single-family home with alley access that fronts on a park.

Below: Small-lot single-family home with front access.

Exhibit 19. Conceptual Small Lot Site Plan with Front Access

Source: Communita, 2018.

Cottages

Cottages meet the market needs of active seniors, first time homebuyers, professional couples and empty nesters. These homes may be attached or detached, are typically clustered around pocket parks, and would be allowed in medium density areas. Each home has a smaller private open space but will share a common open space with the other homes in the neighborhood. Cottage residents do not need to maintain a larger yard. The City's Residential Design Standards and Zoning Code will control how much common open space is required and the location of it. The minimum lot size of a detached cottage is 4,000 square feet. The minimum lot size of an attached cottage is 3,000 square feet. Cottage homes can be accessed from an alley, shared auto court, or a street. The homes will be 1,400-2,400 square feet with 2-3 bedrooms. All homes have a front porch or stoop facing the street or a pocket park to encourage social interaction. The City Residential Design Standards will provide guidance on the design of the homes and require high quality materials and provide variety of architectural character (see Exhibit 20~~Exhibit 20~~ for a conceptual plan).

Cottage housing fronting on a street.

Exhibit 20. Conceptual Cottage Site Plan

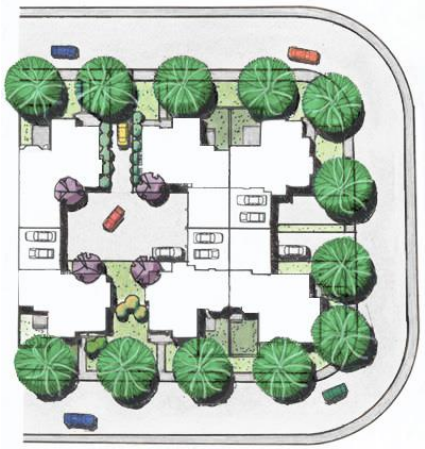
Source: Communita, 2019.

Attached Cluster Homes

Cluster homes are a style of single-family home that are attached at the garage or in the rear of the lot for efficient site planning (see Exhibit 21~~Exhibit 21~~). This efficiency lowers the cost of the home. Attached cluster housing meets the market needs of empty nesters, professional couples, and households that are downsizing Each of the cluster homes are located on their own lots and can be as small as 3,000 square

feet. There is a small private yard on each lot. The Zoning Code and the City's Residential Design Standards will require a common open space. The homes will be 2-3 bedrooms and range from 1,600-2,400 square feet. High quality architectural design will be controlled by the City's Residential Design Standards which includes standards that require a variety of architectural styles and materials. Attached cluster homes would be allowed in RM-PC zone.

Exhibit 21. Conceptual Attached Cluster Home Site Plan



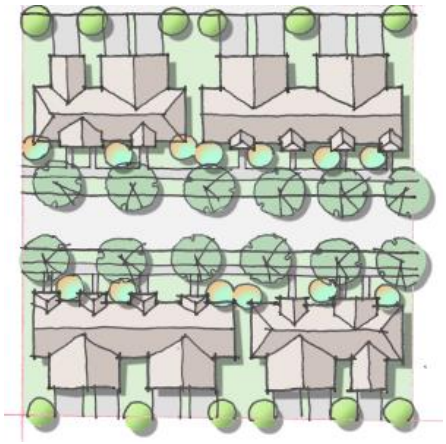
Source: Communita, 2018.

Attached single-family home clusters.

Townhomes

Townhomes are attached single-family homes that serve the market for first time homebuyers, young professionals, and young families. Each townhome is on its own fee simple lot, meaning that the owners have complete ownership of the land and the home, but are subject to a maintenance agreement or association covenants. Lots will range from 1,600-2,100 square feet and each will have a small private courtyard or small yard in addition to shared common open space. Whether townhomes take their access from the alley or the front, each unit will have a front porch or stoop facing a common open space or the street (see Exhibit 22~~Exhibit 22~~). The City's Residential Design Standards and Zoning require that common open space be provided. The townhomes will be 2-3 bedrooms and range in size from 1,200-2,000 square feet. The City's Residential Design Standards provide for variety in the elevations, materials, colors, and styles to prevent a monotonous appearance and create a high-quality streetscape. Townhomes would be allowed in medium density areas.

Exhibit 22. Conceptual Site Plan - Townhomes Built with Pocket Parks



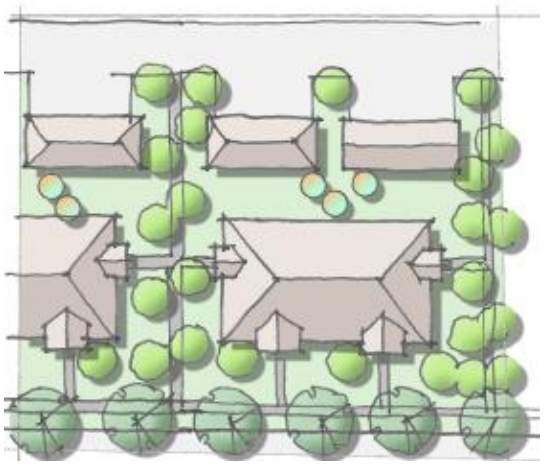
Source: Communita, 2019

Townhomes with garages on an alley.

Multi-family Housing

Multi-family housing is allowed in the PCSA in the RM-PC and the RM-3 zones and will serve the rental market. This housing will include a maximum of 12 units in small multi-family buildings. Developments will reflect the character of the surrounding neighborhood, while providing housing for a variety of residents. Units will range from studio units up to three-bedroom units and approximately 500-1,400 square feet. Common open space will be integrated into each site as well as private open space for each unit. Parking shall be located behind or to the side with main entries facing the street or common open spaces and create a pedestrian friendly streetscape. The City's Residential Design Standards require variations in materials and modulation of the building which helps integrate the larger building into the surrounding neighborhood.

Exhibit 23. Conceptual Site Plan - Multi-family Housing



Source: Communita, 2019.

Multi-family Housing.

Goals and Policies

LAND USE AND HOUSING

PC-1: New growth in the PCSA supports the character, development pattern, and densities in and around Lynden.

PC 1.1 Accommodate most of Lynden's 20-year growth projection in the Pepin Creek Subarea to use land efficiently and avoid future conversion of designated agricultural lands to urban residential uses.

PC 1.2 Plan development in the PCSA at an overall net density of at least seven units per acre to allow continued low density residential development in the rest of Lynden.

PC 1.3 Develop moderate density housing near public parks and open spaces to give a feeling of openness.

PC-2: The housing choices in the PCSA meet the needs of people in different stages of life.

PC 2.1 Allow a variety of lot sizes for single-family housing to accommodate families with different needs and preferences.

PC 2.2 Encourage a variety of unit types at moderate densities to provide housing that meets the needs of younger adults, older adults, singles, and couples.

PC 2.3 Provide opportunities for assisted living in the PCSA.

PC 2.4 Provide opportunities for homeownership by supporting housing that is affordable to households at a variety of incomes and with a variety of needs.

PC-3: Land use in the PCSA is compatible with adjacent uses.

PC 3.1 Ensure land use compatibility by applying a transition area to the Residential Medium Density district where it is adjacent to a Low Density Residential district.

PC 3.2 Allow for neighborhood commercial uses where Pepin Parkway intersects Benson Road.

PC 3.3 Recognize the Lynden Municipal Airport as an essential public facility by requiring new development to sign a covenant acknowledging noise and other potential impacts related to normal airport operations.

ENVIRONMENT

PC-4: The Pepin Creek realignment reduces flooding, improves habitat, and serves as a community amenity for the residents of Lynden.

PC 4.1 Provide fish and wildlife habitat within the Pepin Creek corridor.

PC 4.2 Increase drainage functionality and reduce flooding in the subarea.

PC 4.3 Serve as a recreational amenity by including a trail.

PC-5: Environmental stewardship is integrated into the landscape of the PCSA.

PC 5.1 Protect wetlands in accordance with the City's critical area regulations.

PC 5.2 Identify opportunities to enhance wetlands as part of the environmental restoration of the PCSA.

PC 5.3 Require natural stormwater management that is integrated with or mimics natural systems.

PC 5.4 Regulate development design and location in the Flood Hazard Mitigation Overlay to prevent cumulative negative impacts to the surrounding community and avoid flooding of residential neighborhoods, life safety issues associated with road closures, and significant property damage.

CIRCULATION

PC-6: The PCSA connects seamlessly with motorized and non-motorized transportation networks.

PC 6.1 Apply a hierarchy of streets that safely accommodate cars, bicycles, and pedestrians at each level.

PC 6.2 Encourage streets with the least amount of paved area for their class and function to help calm traffic, lower construction and maintenance costs, and provide environmental benefits.

PC 6.3 Efficiently address motorized circulation by ensuring that the road network is well connected to downtown Lynden.

PC 6.4 Plan for future roadway connections on arterial and collector roads to ensure the completion of an efficient and effective road network.

PC 6.5 Develop a network of multi-use trails, sidewalks, and bike lanes to ensure that people can travel safely by foot and by bicycle.

PC 6.6 Ensure that individual developments within the PCSA are linked by roadways and multi-use trails. Require developments to provide street and trail extensions and frontage improvements to be designed consistent with Subarea Plan cross sections and city standards.

PC 6.7 Accommodate changes to the runway and taxi area at Lynden Municipal Airport with improvements to Benson Road.

OPEN SPACE

PC-7: All developments in the PCSA are connected to a network of open spaces.

PC 7.1 Utilize the Pepin Creek corridor as a recreational amenity.

PC 7.2 Ensure that all housing units have easy access to open space whether the space is a private yard; shared park, courtyard, or green space; or public park or open space.

PC 7.3 Require development to provide plentiful green space to give a feeling of openness.

PC 7.4 Ensure safe and healthy places for children to play in all residential developments.

COMMUNITY CHARACTER

PC-8: The PCSA maintains Lynden's small-town character and feeling of community.

PC 8.1 Design residential areas to welcome community interaction by providing porches, stoops, and other semi-private space along landscaped street frontages.

PC 8.2 Scale single-family housing in proportion to its lot to avoid a feeling of overcrowding.

PC 8.3 Apply size restrictions to moderate density housing to ensure it is developed at a scale that feels consistent with small-town character.

PC 8.4 Apply design standards that encourage housing that looks distinctive and attractive and avoids the repetition of housing forms that give a mass-produced look.

PUBLIC FACILITIES AND INFRASTRUCTURE

PC-9: The PCSA is efficiently served by public services and infrastructure.

PC 9.1 Require development to pay its fair share of costs toward infrastructure and public services.

PC 9.2 Ensure that costs to the City associated with the development of the PCSA and the Pepin Creek Corridor are recovered by the City over a reasonable time.

PC 9.3 Balance the timing and scale of public investment with private investments to ensure that the PCSA is a feasible opportunity for new development.

PC 9.4 Update City Water, Sewer, & Stormwater comprehensive plans to include the PCSA and ensure that primary public infrastructure is well planned and can be built incrementally if needed.

Implementation

ZONING

Zoning in the Pepin Creek Subarea is established to produce an average of approximately seven dwelling units per acre using a variety of housing types to meet the needs of families throughout their life. Exhibit 24~~Exhibit 24~~ shows the zoning classifications for the Pepin Creek Subarea. Uses are primarily residential with allowances for related and compatible uses such as schools, parks, daycares, churches, and limited neighborhood-serving commercial development in the Commercial Overlay areas. Design standards are applied to create a safe, attractive community, with a high quality of life.

Residential Single Family – 72 (RS-72) Zone

The RS-72 zone is the lowest density zone in the Pepin Creek Subarea, allowing 2-4 units per acre and requiring a minimum lot size of 7,200 square feet. This allows for large lot single-family housing and can be found throughout the city. In the Pepin Creek Subarea, the RS-72 is subject to the City's Residential Design Standards.

Residential Medium Density (RMD) Zone

The RMD zone allows for low density housing at densities of up to 4-8 units per acre. A minimum lot size of 6,000 square feet is permitted for detached homes and 4,000 square feet per unit for attached homes are permitted. This zone is used elsewhere within the city and promotes a creative mix of single-family and duplex housing types. Development in this zone is subject to the City's Residential Design Standards.

Residential Medium Density – Pepin Creek (RM-PC) Zone

At densities up to 8-12 units per acre, the RM-PC zone allows a variety of housing types, some of which are unique to the Pepin Creek Subarea. The RM-PC allows small lot single-family homes and cottages, with a minimum lot size of 4,000 square feet for detached units. It also allows single-family attached units such as townhouses, duplexes, units attached at the garage, or other housing types with fee-simple ownership and small multi-family buildings. Single-family attached homes are units located on their own lot, which is a minimum of 3,000 square feet. Where the RM-PC zone is adjacent to single-family zoning a transition area will be established to limit height and limit uses to single-family residences.

Residential Medium Density – Three (RM-3) Zone

The RM-3 zone allows for medium density residential development with a variety of housing types up to 16 dwelling units per acre. This zone sets a minimum lot size of 7,200 square feet and allows, with appropriate square footage, up to 12 units per building. This zone is located near park and trail features which will~~-~~ offer a feeling of openness and provide access to those amenities.~~.~~

Public Use Zone

The Public Use zone is a citywide zone in Lynden that provides for civic amenities and uses. In the PCSA, the Public Use zone is applied to City-owned property that will be used for a park and potentially another civic use, such as a school. The Public Use zone follows the uses and standards of its zone, not those created especially for the Pepin Creek Subarea. The airport safety area is publicly owned in part and regulatory in part and addressed in overlays below.

Zoning Overlays

There are three zoning overlays present in the Pepin Creek Subarea. Every zoning overlay has an underlying zoning designation that establishes the base uses and standards that are in place. The overlay adds additional standards or bonuses that are applied as well.

Neighborhood Commercial Overlay

Although future land use in the PCSA is mostly residential, the Neighborhood Commercial Overlay provides opportunities for commercial development at the intersection of Pepin Parkway and Benson Road. If there is a market for small, neighborhood-scale commercial development such as a convenience store or coffee shop, the commercial overlay shows where it could be allowed. Neighborhood commercial allows residents to avoid a trip into town for some basic goods and services, which is convenient for residents and prevents road congestion. If the market does not support commercial development in the Pepin Creek Subarea, the area with the Neighborhood Commercial Overlay can be developed according to the underlying residential land use.

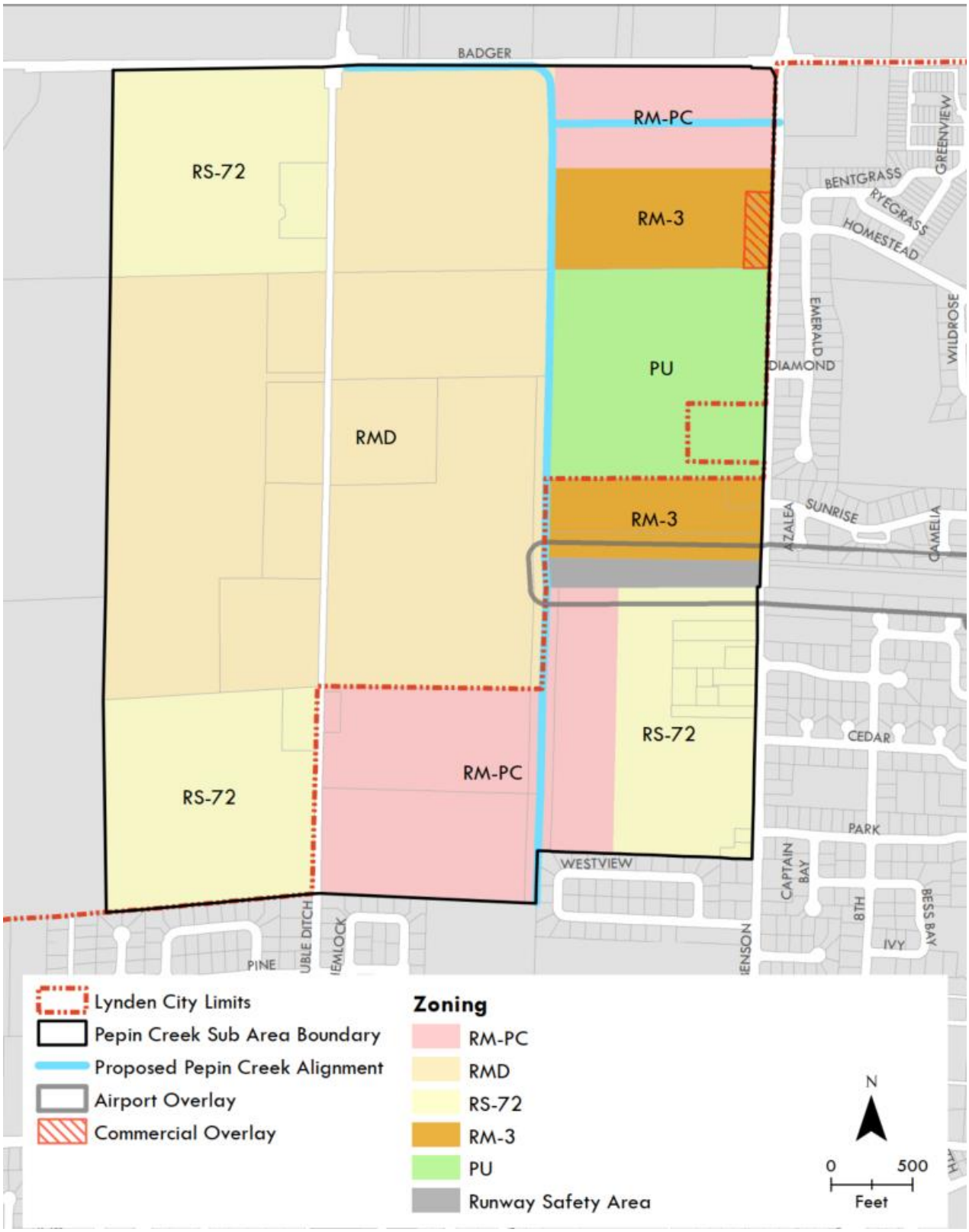
Airport Overlay

The Airport Overlay is a special designation on property located adjacent to the airport. The runway and primary facilities of the airport are just outside the PCSA boundary, but the PCSA includes part of the runway safety area. The primary purpose of the Airport Overlay is to prevent airway obstructions and ensure the safety of both airfield users and nearby property owners. The Airport Overlay also allows a few airport-related uses, such as airplane hangars, which are not allowed elsewhere in the underlying zone.

Flood Hazard Mitigation Overlay

The Flood Hazard Mitigation Overlay includes the entire PCSA. It primarily recognizes the hazards associated with surface flow flooding, ground water, drainage, and downstream constraints within the subarea. It also recognizes that development in the subarea must be designed and mitigated to prevent cumulative negative impacts to the surrounding community and that development without proper mitigation could result in the flooding of residential neighborhoods, life safety issues associated with road closures, and significant property damage. Additional information about existing flood hazard conditions and flood hazard mitigation can be found in Appendix E. Subsequent study will be needed to further define mitigation strategies and will be conducted along with the finalization of the channel realignment design.

Exhibit 24. Zoning in the Pepin Creek Subarea



Source: BERK, 2019.

Land Capacity Analysis

The zoning is designed to meet the growth targets established for the City of Lynden and the PCSA at full buildout. This was determined by looking at the theoretical minimum and maximum development potential and identifying two midpoints that are more likely to represent future development. The theoretical limits apply the minimum and maximum densities allowed under the zoning to the developable acreage resulting in 0 to 2,489 units as the minimum and maximum range for development. In practice, development typically occurs somewhere in the middle. The Analysis midpoint of 1,363 is the average of the theoretical minimum and theoretical maximum. The analytical maximum presents a higher limit of 1,874 is set at a development level of 75% of the theoretical maximum for the zoning. For planning and analysis purposes, the range of 1,363 to 1,874 units was used to estimate likely development in the PCSA (see Exhibit 25~~Exhibit 25~~).

Exhibit 25. Land Capacity Ranges in the Pepin Creek Subarea

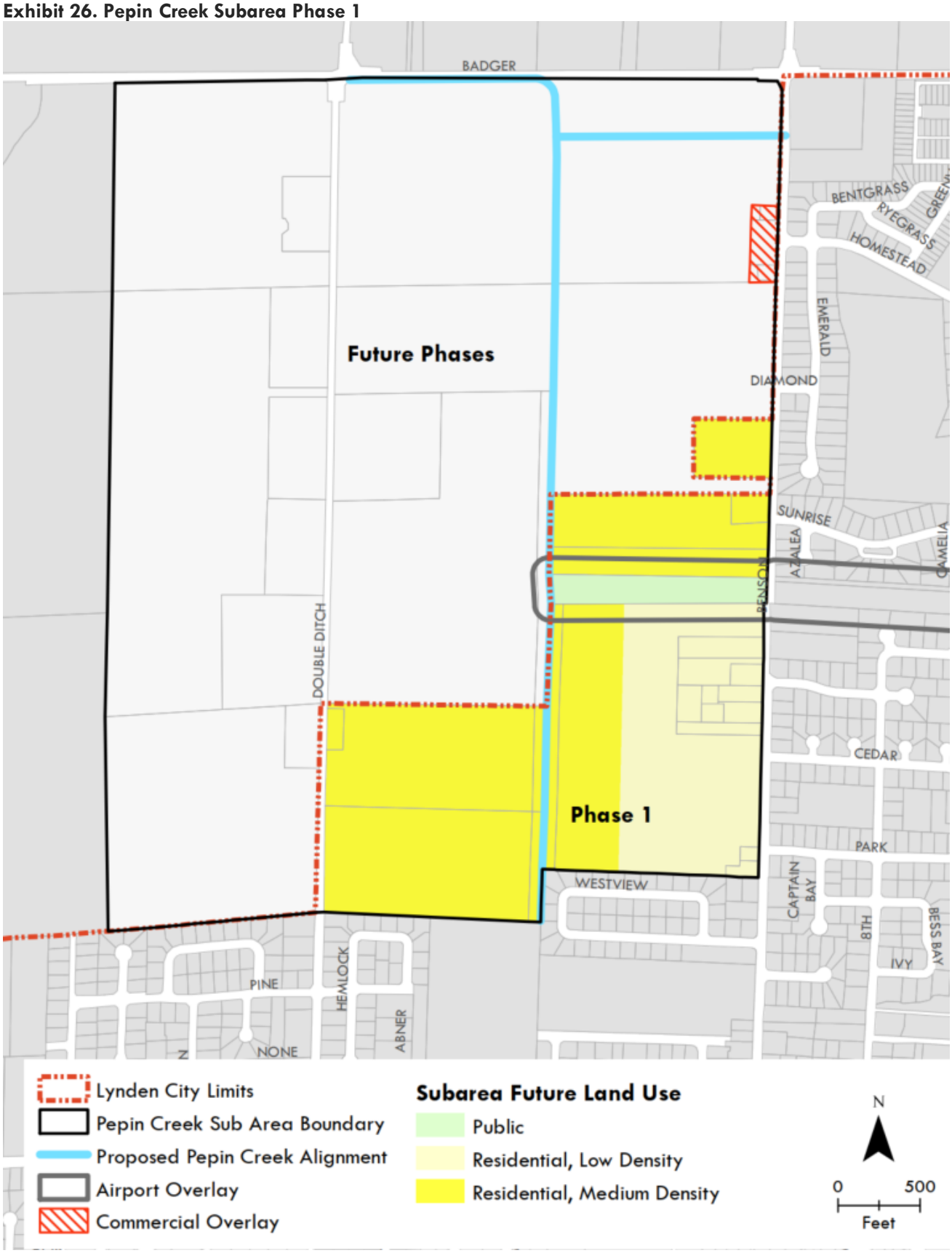
Zone/Overlay	Theoretical Minimum	Theoretical Maximum	Analysis Midpoint	Analysis Maximum
TOTAL units	**0**	**2,489**	**1,363**	**1,874**
Commercial Overlay Assumption	Commercial use in the overlay.	Residential use in the overlay.	Commercial use in the overlay.	Commercial use in the overlay.

PHASING

Only about 20% of the PCSA is currently within city limits; the majority is part of Lynden's UGA. Until the land within the UGA is annexed it will be subject to Whatcom County's adopted land use and zoning, which classifies this land for agricultural use. Subarea Plan implementation will occur within city limits during its first phase, as shown in Exhibit 26~~Exhibit 26~~.

Ideally Pepin Creek Subarea plan phasing will match the progress of the Pepin Creek Realignment Project. An initial phase, known as the intercept ditch, was constructed in 2018 and extended at the end of 2019. The intercept ditch functions as a flood protection measure for existing infrastructure and housing developments by interrupting overland flow of flood waters. The design of the realignment project will be subject to additional environmental review, anticipated in early 2020. Once a specific design is selected the first phase could begin as soon as 2022 in association with planned culvert improvements along Badger Road by the Washington State Department of Transportation. However, this timeline does not account for any significant delays that may be encountered during the design, financing, or construction of these improvements. Phase 1 subarea development will likely occur ahead or in tandem with the development of the first parts of the channel if financial participation in the channel realignment project can be assured.

Exhibit 26. Pepin Creek Subarea Phase 1



Source: BERK, 2019.

Development that gets ahead of the realignment project will need to accommodate space for the future development on the Pepin Creek channel and meet buffer requirements and setbacks from the existing Pepin Creek channel in Benson Road and Double Ditch Road. Until the Pepin Creek Realignment project is completed, the channels on Benson and Double Ditch are unavailable for integration into low impact development stormwater systems. These inefficiencies may limit the development potential of lands that redevelop prior to the completion of the Pepin Creek realignment and are more likely to affect Phase 1 development.

Phase 2 likely occurs when the UGA is annexed and services are extended. Earlier development may occur in the Southwest and Northeast portions of the UGA where road infrastructure is present and proposed for improvement and funding with application of impact fees, e.g. Benson Road and Main Street.

Phase 3 is likely to include areas to the West and Northwest that are currently being farmed, have had recent investments in agricultural production, or where there are more constraints like the wetland/pond. There may be a greater willingness to monitor the Pepin Creek realignment progress, as well as the timing of new or improved roads in these areas, while continuing current agricultural activities.

Annexation of the UGA should consider the ability to implement the PCSA plan. The City has more control over the timing of development in the UGA because it can control annexation in future phases. Annexation and development that occurs prior to realignment of the channel should have a plan for addressing potential development inefficiencies with creative site planning or project phasing.

CAPITAL FACILITIES PLAN

Development on the PCSA will require substantial investments in infrastructure and capital facilities. Exhibit 27~~Exhibit 27~~ shows the total costs, by category, of the improvements needed to allow for development in the subarea. It is important to note that these are point-in-time costs that assume this project is completed all at one time, in 2019 dollars. As the work on the infrastructure is phased and completed, cost estimates will need to be updated to reflect inflation and the carrying costs based on the phasing.

The majority of capital facilities expected in the PCSA are related to new development. New development is expected to provide for these capital facilities through direct infrastructure construction and the payment of related fees and charges. The development of new capital facilities and infrastructure will be guided by City of Lynden plans, policies, and regulations as shown in the sections below.

Transportation

The City of Lynden maintains a Transportation Improvement Plan (TIP) that lists local transportation projects. Each year an updated TIP is submitted to the Whatcom Council of Governments and the Washington State Department of Transportation (WSDOT) to ensure that projects eligible for federal and state funding can compete for funds. Projects listed on the TIP include motorized, non-motorized improvements, on-going maintenance projects, and projects to served new growth. In the most recent TIP (2019-2024) three projects appear on the list for the PCSA. These projects include:

- Pepin Creek – bridges, multi-modal trail, and changes to roads and road drainage associated with the realignment of Pepin Creek.

- Benson Road – safety and capacity improvements.
- SR 546 Intersection with City Arterials – capacity improvements that will be led by WSDOT.

In addition to the TIP, the Comprehensive Plan lists additional projects that will be needed to meet the needs of growth by 2036. These include the extension of safe bicycle connections from Homestead Boulevard and the creation of a multi-modal network of trails, pathways, and sidewalks in the PCSA.

Some of the transportation facilities needed in the PCSA will be constructed by the developer. Title 12 of the Lynden Municipal Code (LMC) specifies the standards and minimum requirements for the construction of streets and sidewalks. It specifically adopts the WSDOT manual for application, design, and construction of improvements. It also applies City of Lynden Engineering Design and Development Standards in LMC 13.24 and Titles 16-19 and the Washington Department of Ecology stormwater manual. The City of Lynden intends to use its established traffic impact fees in place at the time of application as the mechanism to collect a fair share from development for the construction of the regional arterial streets. More information is available in the finance section of this plan.

Stormwater

The City of Lynden operates its Municipal Separate Stormwater System under a National Pollutant Discharge and Elimination System Phase II permit. Stormwater management is regulated through Chapter 13.24 of the LMC (Lynden Municipal Code). This code section sets forth the minimum requirements for new development and redevelopment, including the use of the 2014 Stormwater Management Manual for Western Washington by the Washington State Department of Ecology. The City operates its Municipal Separate Stormwater System as a stormwater utility.

The City's Stormwater Comprehensive Plan is currently being updated and has not been issued. This subarea was the subject of a 2009 amendment to the current 1992 Stormwater comprehensive plan which described the need for what became the Pepin Creek realignment project (Reichart & Ebe, 2009).

Pepin Parkway is planned to have a continuous open vegetated channel between the proposed roadway and the proposed multi-use trail. This area is sized to provide water quality treatment and detention flow control storage for the public roadway. There are no other planned stormwater facilities and it is assumed that each development project would provide meet its own stormwater management within the project per the current City of Lynden Code.

Exhibit 27. Improvements Needed to Support Development in the PCSA

	Total Cost	Existing Developer Commitment	Existing Public Commitment		Unaccounted Funds
			General City Funds	Grants	
Regional Road Improvements	$15,826,000	$2,877,293	$12,948,707		$0
Road Improvements (planned)	$11,607,000	$2,877,293	$8,729,707		$0
Road Improvements (additional)*	$4,219,000		$4,219,000		$0
Local Roads (Developer Constructed)	$9,251,000	$9,251,000			$0
Roads & Bridges	$4,900,000				$4,900,000
Pepin Parkway	$3,400,000				$3,400,000
Pepin Parkway Bridge	$1,500,000				$1,500,000
Water/Sewer Improvements	$17,645,000	$17,645,000			$0
Water Improvements	$5,299,000	$5,299,000			$0
Sewer Improvements	$12,346,000	$12,346,000			$0
Stormwater Improvements (onsite)	$5,452,000	$5,452,000			$0
Wetland Mitigation	$600,000				$600,000
Creek Realignment and Downstream	$43,983,000			$3,900,000	$40,083,000
Utility Connection Fees (Water/Sewer/Storm)		$16,875,303			$0
TOTAL	**$97,657,000**	**$52,100,596**	**$12,948,707**	**$3,900,000**	**$45,583,000**
DEVELOPER CONTRIBUTION ASSUMING EXISTING CITY COMMITMENTS	**$97,683,596**				

Source: City of Lynden, 2019; Herrera, 2019; and BERK Consulting, 2019.

Water

The City of Lynden owns and operates a municipal water system that serves retail customers within the city limits and the UGA and provides wholesale supply to several adjacent water associations. An existing 12 inch City of Lynden water main runs along the eastern boundary of the PCSA in Benson Road, and the existing developments within the existing city limits portion of the PCSA are served by City water mains. However, the interior of the PCSA currently in agricultural use is not served by public water mains. These agricultural uses appear to be served by six wells located within the PCSA.

The City of Lynden's Water System Plan (Gray & Osborne, 2009) projects growth in the city overall but does not address the growth of the PCSA specifically; in the next Water System Plan Update, the PCSA should be addressed. The Water System Plan identifies one CIP in Benson Road to upgrade 660 linear feet of 4 inch pipe with 12 inch pipe. To meet the projected demand, it will be necessary to run a new primary water main loop from Main Street Up Double Ditch to Badger Road and then east on Badger Road to Benson Road. Other smaller water mains would be extended into the PCSA as part of land development projects. This new 9,250 linear feet primary loop is assumed to be 12 inch diameter, however, the design of this loop needs to be verified by modelling.

Wastewater

The City owns, operates, and manages wastewater collection and treatment facilities serving 2,879 acres. The City of Lynden General Sewer Plan Update (BHC, 2016) estimates the City of Lynden's population will grow to 19,000 people by 2036 and expand to serve total of 4,204 acres. The sewer plan does not provide specific plans for serving the PCSA, which is identified as sewer basins "F" and "UGA" in the plan. The plan anticipates that these basins will be upgraded by developer extensions. The existing sewer collection system was modelled at the 20-year planning horizon and three gravity sewer deficiencies were identified. There were no pump station or force main deficiencies identified.

To serve the proposed development in the PCSA a new network of new gravity sewers, pump stations, and force mains will be necessary to collect and convey wastewater from the PCSA to the existing sanitary sewer collection network. The northern edge of the PCSA at Benson Road is approximately 10 feet higher than the southern boundary of the PCSA. It is expected that the northern portion of the PCS will be filled to facilitate the development; and that one large or several smaller new sanitary sewer pump stations located in the mid to southern portion of the PCSA will be necessary to provide wastewater collection. A new gravity sewer within the PCSA will convey wastewater to the new pump station(s) and discharge via force main(s) to the existing sanitary sewer collection system.

The 20-year full buildout of the PCSA is expected to include about 1,373 units maximum of 1,874 units corresponding to a population of 3,831 to 5,228 residents. Per the sewer plan, the residential wastewater production rate in Lynden for residential is 45 gallons per day per capita. Therefore, the expected wastewater flows range from 172,395 to 235,260 gallons per day. This results in a required total pump station capacity of to 400 to 600 gpm (gallons per minute) in one or more pump stations.

FINANCE

At this time, the City of Lynden assumes that the infrastructure investments needed to make the overall Pepin Creek Subarea developable (excluding the cost of utility hookups at the parcel-level) will be $97,657,000, as shown in Exhibit 27~~Exhibit 27~~. Of these infrastructure costs, the City has committed to paying $16,848,707. For development to be feasible, the City asserts that developers will be responsible for the remaining cost of all improvements needed to support development of the subarea.

The future subarea developer(s) are already committed to paying for $35,225,293 of these costs as they will make the improvements (including regional road improvements, construction of local roads and Pepin Parkway, and water, sewer, and stormwater improvements) directly. They are also committed to paying utility connection fees for water, sewer, and stormwater, for a total existing commitment of $52,100,596.

We completed a financial feasibility analysis, provided in full in Appendix D for two scenarios:

- Threshold Feasibility. Developers can buy the land and pay their existing commitments, for a total cost of between $74,096,000 and $76,540,000.
- Full Feasibility. Developers can buy the land and pay the total infrastructure costs less the existing city commitment, for a total cost of between $119,679,000 and $122,123,000.

This analysis shows that the Pepin Creek Subarea developable land value is within the values of comparable developments. It is important to remember that the cost of the land and value of the land are not the same thing, as the former does not account for the developer's profit. For this project to be feasible the future value of the land must be within the values of comparable developments. Profit is not factored into this because developer's expectations for profit for this kind of development are not known.

Funding and Financing Tools for Subarea Development

The City has committed $16,848,707 to this effort. $3,900,000 of that value is grant funded, however the City will need to come up with the remaining $12,948,707. The City may also fund and finance improvements that are the obligation of developers upfront and recover funds from developers to refund that investment later.

This plan identifies funding and financing mechanisms that can be used to generate City revenues to fund and finance the improvements, either in total or just upfront, and, where developers are responsible for costs.

Funding and Financing Mechanisms (Beyond Existing Tools) to Support Expected City Contributions and Upfront Funding of Improvements

- **Sales Tax generated on development.** Sales tax is generated from the taxable sales of goods occurring within the city's boundaries. Sales tax impacts from potential site development will be generated in two ways:
  - The initial construction of the development will generate sales tax for the full cost of supplies, material, and labor used in construction.
  - Additional residents added to the development will generate ongoing sales and use tax revenues for purchases made in the city limits.

Funding and Financing Mechanisms to Recover Funds from Development

- **State Environmental Policy Act Mitatgation Fees.** SEPA grants wide-ranging authority to impose mitigating conditions relating to a project's environmental impacts. A local government's authority under SEPA to mitigate environmental impacts includes the authority to impose impact fees on a developer to pay for the mitigation of impacts on public facilities and services. In this case, the public facility or service being paid for would be the Pepin Creek downstream stabilization and creek realignment.
- **Property Owner and Developer Contributions.** In cases of large developments, the City may work with a developer to enter into a development agreement governing the development. This agreement can include obligations for the developer to pay for infrastructure necessary to support the devleopment.
- **Local Improvement District/Utility Local Improvement District.** Local Improvement Districts (LIDs) are a financing tool used to require benefiting properties to finance needed capital improvements through the formation of special assessment districts. Special assessment districts permit improvements to be financed and paid for over time through assessments on the benefiting properties. Utility Local Improvement Districts (ULIDs) have the additional characteristic of allowing for utility revenue to be pledged to the repayment of the ULID debt in support of the issuance of bonds.

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Whatcom County. 2015. Whatcom County 2016 Comprehensive Plan and Development Regulations Update and Urban Growth Areas Review Final EIS. November 2015.

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Appendix A – Existing Conditions Report

Please note that the information in the Existing Conditions Report presents the best information available at the time it was issued in October 2017. Since that time some details may have changed as additional information became known. For example, the Pepin Creek Area of Influence was modified after further study. In the few areas of inconsistency, the Subarea Plan presents the best and most up-to-date information as of the time of its issuance.

Appendix B – Council Workshop

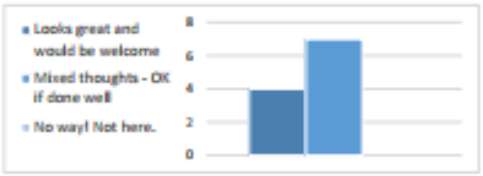
Session Name: New Session 11-30-2017 8-54 PM
Date Created: 11/30/2017 6:48:42 PM

Active Participants: 12 of 12
Questions: 7

Results by Question

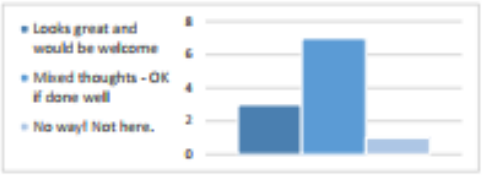
1. Small Lot Housing (Multiple Choice)

	Responses Percent	Count
Looks great and would be welcome	36%	4
Mixed thoughts - OK if done well	64%	7
No way! Not here.	0%	0
Totals	100%	11



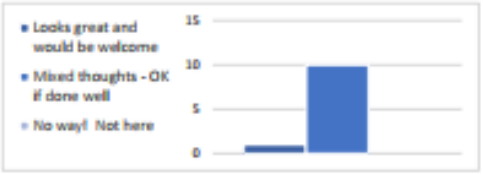
2. Detached Cottage Lots (Multiple Choice)

	Responses Percent	Count
Looks great and would be welcome	27%	3
Mixed thoughts - OK if done well	64%	7
No way! Not here.	9%	1
Totals	100%	11



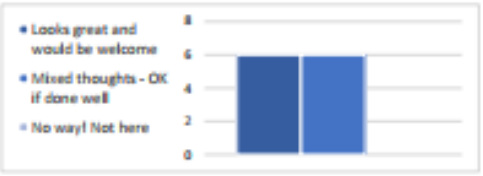
3. Townhome Lots (Multiple Choice)

	Responses Percent	Count
Looks great and would be welcome	9%	1
Mixed thoughts - OK if done well	91%	10
No way! Not here	0%	0
Totals	100%	11



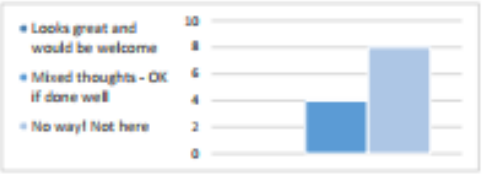
4. Attached / Clustered (Multiple Choice)

	Responses Percent	Count
Looks great and would be welcome	50%	6
Mixed thoughts - OK if done well	50%	6
No way! Not here	0%	0
Totals	100%	12



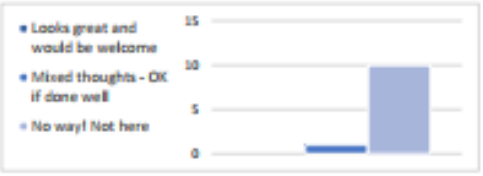
5. Mixed Housing with Density (Multiple Choice)

	Responses Percent	Count
Looks great and would be welcome	0%	0
Mixed thoughts - OK if done well	33%	4
No way! Not here	67%	8
Totals	100%	12



6. Stacked Units (Multiple Choice)

	Responses Percent	Count
Looks great and would be welcome	0%	0
Mixed thoughts - OK if done well	9%	1
No way! Not here	91%	10
Totals	100%	11



7. What unit count should be our goal in Pepin Creek? (Multiple Choice)

	Responses Percent	Count
1,100 - 1,300	0%	0
1,300 - 1,700	8%	1
1,700 - 2,000	92%	11
Totals	100%	12

Appendix C – Transportation Analysis

As identified in the Existing Conditions Report in Appendix A, there are few roads serving the study area given its low intensity and agricultural development pattern. The Lynden Comprehensive Plan anticipates the need for transportation improvements in the PCSA. The Transportation Element forecasts growth of up to 1,096 households in the Subarea, which will require roadway improvements that support cars, bicycles, and pedestrians. Lynden's Transportation Element is focused on intersection operations though adequate road extensions and design are also considered.

The County and cities tested different growth in the PCSA to support Comprehensive Plan Updates in 2016 with results included in an Environmental Impact Statement (EIS). Assumptions of different plans and studies regarding future growth are noted below.

Pepin Creek Growth Assumptions – Transportation Modeling

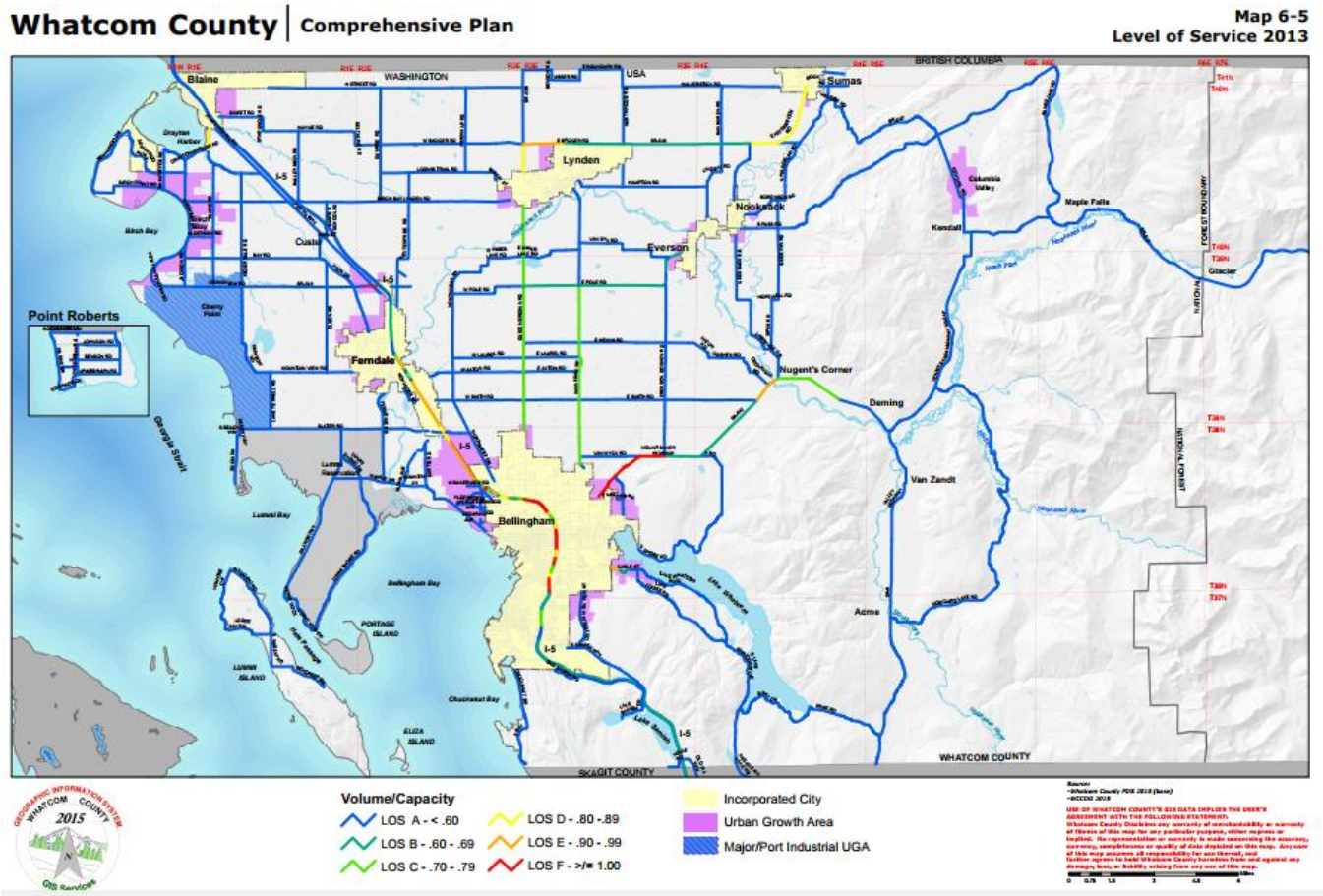
Scenario	Households
Whatcom County Alternative 1: 2013 No Action 2016	578
Whatcom County Alternative 2: Historic Shares 2016	727
Lynden Transportation Element 2016 Whatcom County Alternative 3: Multi-Jurisdictional Resolution 2016	1,096
Whatcom County Alternative 4 Targeted Land Use Change 2016	1,433
Whatcom County Preferred Alternative 2016	927
Pepin Creek Subarea Evaluation (WCOG) 2019	1,559

Source: Whatcom County Land Capacity Analysis and Transportation Analysis Zone Assumptions, 2016; Lynden Transportation Element, 2016; WCOG, 2019.

At a countywide scale, the 2016 analysis focused on the volume/capacity (V/C) ratios of roadways. To calculate the V/C of a road segment, projected weekday afternoon peak-hour traffic volume is divided by the road's hourly carrying capacity. Roadway level of service (LOS) designations range from unrestricted flow of traffic (LOS A) to stop-and-go traffic (LOS F). At LOS C or better, a road segment is less than 80% full (or a V/C less than 0.80). The flow of traffic is generally stable, though individual users are significantly affected by the presence of other vehicles. At LOS D, the volume-to-capacity ratio is greater than or equal to 0.80 but less than 0.90. At LOS D, small increases in flow may cause some delays and decreases in speed during the afternoon peak hour. The adopted level of service is C for rural arterials and collectors, and D for rural primary routes and urban arterials.

Results of the Preferred Alternative tested in 2016 indicated roadway operations at LOS C or better except that Guide Meridian Road functioned at LOS D between the city limits and East Badger Road, and East Badger Road operated at LOS E between Guide Meridian and the city limits as shown below.

Exhibit 28. Whatcom County Transportation Analysis Map



Additional analysis of other alternatives can be found in the 2016 Comprehensive Plan and Development Regulations Update and Urban Growth Area (UGA) Review EIS.

Recognizing the more focused subarea planning effort for the PSCA, the City of Lynden engaged the Whatcom Council of Governments (WCOG) to test greater numbers of households, evaluating about 1,969 households, or 1,042 above the Preferred Alternative evaluated in a 2016 Final Environmental Impact Statement. The households tested represent an occupancy rate of 97% of the 2,020 housing units the upper range considered in fall 2017.

The range of units and trips tested in the 2016 EIS and in 2018 for the Subarea Master Plan is listed below.

Exhibit 29. Housing Units, Households and Trips

Alternative	Housing Units	Households	Trips
Whatcom County Alternative 1 2013 No Action	594	578	75
Whatcom County Alternative 2 Historic Shares	745	727	101
Whatcom County Alternative 3 Multi-Jurisdictional Resolution (Lynden Transportation Element)	1,124	1,096	156
Whatcom County Alternative 4 Targeted Land Use Change	1,470	1,433	206
Whatcom County Preferred Alternative 2016	951	927	132
Pepin Creek Subarea Master Plan (maximum tested)	1,600	1559	224

Source: WCOG, 2019.

In addition to the regional network tested in the 2016 EIS, WCOG added the effect of additional road extensions including the development of Pepin Parkway from Homestead Blvd and extended through the subarea to Double Ditch Road at the point of the bridge anticipated to cross Pepin Creek. The connection of Double Ditch Road to Badger Road is deleted.

Most of the units were added in the northern half of the study area. The results of the 2019 analysis by the WCOG indicated general consistency with the Preferred Alternative results, and:

- Congestion relief on most of Double Ditch Road
- Congestion relief on most of Benson Road
- Slight volume increase on Benson Road between Badger Road and Homestead Blvd.
- Volume increase on Double Ditch Road between the proposed Pepin Parkway and Main Street.

Overall, the WCOG found the model showed sufficient capacity.

Appendix D – Financial Analysis

To understand whether development will be feasible under the assumption that developers will pay the remaining cost of all improvements to support development, BERK completed a development feasibility analysis to estimate the level of City investment, if any, that is needed to make development of the Pepin Creek Subarea feasible. Since development feasibility analysis is by nature speculative, it has been completed to an order-of-magnitude precision, with final values rounded to the nearest 1,000. Where per square foot values are estimated, they are rounded to the nearest 0.10.

The subarea is 460 acres of which we expect approximately 260 acres to be developable. The remaining acreage is undevelopable for two reasons:

- Infrastructure to support new development will consume a portion of the acreage.
- Some of the land is unsuitable for development for environmental reasons.

The remaining acreage still must be purchased by the developer(s), as it is either where the necessary transportation and utility infrastructure for the development will be sited or it is, realistically, to be sold part and parcel with the developable land. Additionally, this land is where the environmental improvements needed to make the subarea developable, like the Pepin Creek downstream stabilization and realignment, will occur.

This share of undevelopable land, coupled with the variation in development allowable based on a midrange land use scenario, which assumes 1,363 new housing units for the development, means that not all the land will have the same value. However, as the developer will ultimately be responsible for all the infrastructure, it is to be expected that they will need to factor the cost of all the land into their feasibility assessment. For this reason, the currently undevelopable land is valued as if it is all created equally on a square footage basis.

The total land value per the Whatcom County Assessor is $9,775,483. The assessor's value for this property is likely to be low for two reasons:

- It is generally accepted that Whatcom County Assessor's property assessments, like all county assessments in Washington state, are conservative. Coupled with the Whatcom County Assessor's assessment, whereby 1/6th of County's properties are annually physically inspected, leading to somewhat stale assessment values, it is expected that the assessment would be modestly below market value.
- Both the City of Lynden's 2016 Comprehensive Plan and the forthcoming Pepin Creek Subarea Plan will signal to the market that the Pepin Creek Subarea is the next logical site for development in the City of Lynden. The subarea's updated zoning, which will allow for more intensive development than elsewhere in the city, increases the development potential of the land and its value.

One of the parcels within the subarea, the Bovenkamp property, recently sold for 133% above market value, confirming that the Whatcom County Assessor's assessments for these properties are likely significantly under market value. To account for this potential undervaluing, we assumed that the land will cost between 125% and 150% more than the Whatcom County Assessor estimates, for a total land value (rounded to the nearest $1,000 of $21,995,000 to $24,439,000).

BERK then added the estimated cost of the infrastructure investments needed to make the land developable. The total infrastructure costs are $97,657,000; developers will also need to contribute up

to $16,875,303 in utility connection fees for water, sewer, and stormwater to support the development. The desire is that developers will bear these costs fully, except for an already-committed contribution of $16,848,707 from the City to support the regional and local road improvements, and the creek realignment and downstream stabilization. Because this feasibility assessment seeks to identify the City of Lynden's contributions to those infrastructure costs, if any, that will be necessary to support the development there are two bounds identified for this analysis:

- Threshold Feasibility. Developers can buy the land and pay their existing commitments, for a total cost of between $74,096,000 and $76,540,000.
- Full Feasibility. Developers can buy the land and pay the total infrastructure costs less the existing city commitment, for a total cost of between $119,679,000 and $122,123,000.

These analytic bounds and the resulting cost per square foot of developable land are shown in Exhibit 30~~Exhibit 30~~.

Exhibit 30. Cost per Square Foot of Developable Land

	Threshold Feasibility (Existing Developer Commitment)		Full Feasibility (Total Infrastructure Costs less Existing City Commitment*)	
	Low	*High*	*Low*	*High*
Total Land Value	$ 21,995,000	$ 24,439,000	$ 21,995,000	$ 24,439,000
Total Infrastructure Costs	$ 52,101,000	$ 52,101,000	$ 97,684,000	$ 97,684,000
TOTAL COST	**$ 74,096,000**	**$ 76,540,000**	**$ 119,679,000**	**$ 122,123,000**
Cost per Square Foot of Developable Land	**$ 6.30**	**$ 6.60**	**$ 10.30**	**$ 10.50**

Source: Whatcom County Assessor's Office, 2018; and BERK Consulting, 2019.

The values above present a range of costs for the developable land. For the project to be feasible under the bounds of the analysis, the value of the land must be greater than its costs, based on the assumption that developers will not pursue a project unless it is profitable. Since the value of the developable land is not known, the analysis compares the cost of the developable land to the value of land in comparable developments. BERK identified six comparable developments for the purposes of this comparison, including:

- Homestead – Lynden, WA
- Pacific Highlands – Ferndale, WA
- Pacific Heights – Ferndale, WA
- Skyview – Ferndale, WA
- Douglas Place – Ferndale, WA
- South Douglas – Ferndale, WA

Whatcom County Assessor's data provides approximate land values for the land in these comparable developments. It is expected that the assessments for these properties also significantly under values the land. Because the land is already developed, it is expected that that undervaluing is not nearly as significant. The Whatcom County Assessor's potential undervaluing of the land is accounted for by adjusting these values upward by a low value of 25% and high of 50%.

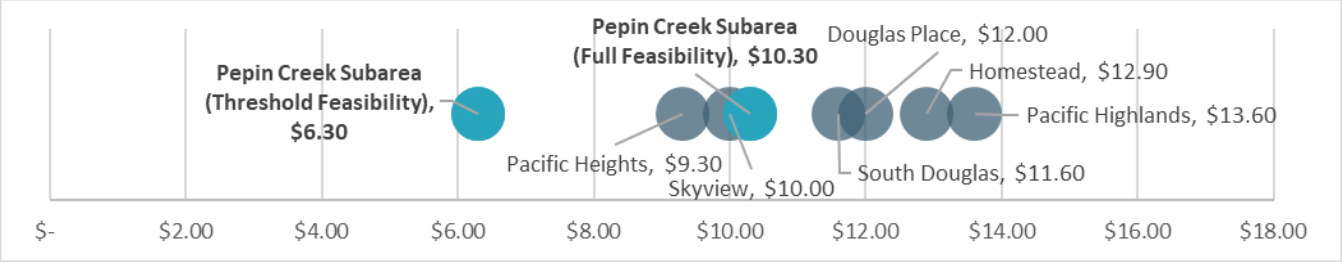
Exhibit 31. Per Square Foot Land Values for Comparable Developments in Whatcom County

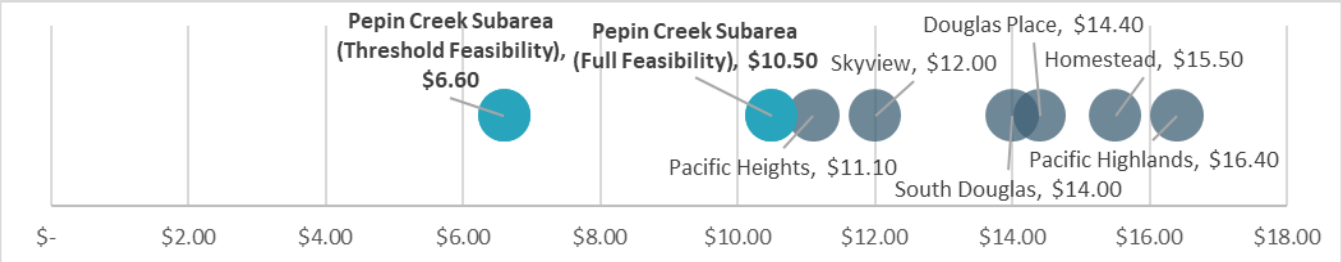
Comparable Develoment	City	Per Square Foot Land Value		
		Assessor	Low	High
Pacific Highlands	Ferndale	$ 10.90	$ 13.60	$ 16.40
Pacific Heights	Ferndale	$ 7.40	$ 9.30	$ 11.10
Skyview	Ferndale	$ 8.00	$ 10.00	$ 12.00
Douglas Place	Ferndale	$ 9.60	$ 12.00	$ 14.40
South Douglas	Ferndale	$ 9.30	$ 11.60	$ 14.00
Homestead	Lynden	$ 10.30	$ 12.90	$ 15.50

Source: Whatcom County Assessor's Office, 2018; and BERK Consulting, 2018.

These potential values can then be compared to the per square foot values estimated for the cost of the Pepin Creek Subarea land, as shown in Exhibit 30~~Exhibit 30~~.

Exhibit 32. Comparison of Pepin Creek Subarea Developable Land Costs to Land Values in Comparable Developments (Low (top), based on 25% adjustment to Assessor's value, and High (bottom), based on 50% adjustment to Assessor's values)





The comparison shows that in both feasibility scenarios (threshold and full feasibility), the Pepin Creek subarea developable land value is on the lower end and within the values of comparable developments. It is important to remember that cost of the land and value of the land are not the same thing, as the former does not account for the developer's profit. It is expected that for this project to be feasible the future value of the land must be within the values of comparable developments. Profit is not factored into this because developer's expectations for profit for this kind of development are not known.

Appendix E – Flood Hazards

This appendix contains additional information to document the existing conditions related to flooding and flood hazards in the PCSA. The PCSA has experienced significant flooding and water inundation events in the past, which have endangered public safety and damaged or destroyed property. The most recent events were in 2009 and 2005. In 2005, the area was flooded as a result of heavy rainfall coupled with snow and ice melt and frozen ground.

North Lynden Flooding (looking south)

North Lynden Flooding (looking north)

Flooded fields in the PCSA

During this 2005 event, beginning north of the city and extending into Canada both Double Ditch and the Benson Road ditch systems were over-topped allowing water to sheet flow across roads an onto private properties. The drainage systems in developed areas which received the discharged water were not designed to handle such extreme conditions. The Homestead development on the east side of Benson Road north of the airport and the Dahlia Street and Pine Street areas were inundated with water. This flooding adversely affected emergency response, local traffic, and access to residences. Many insurance claims were filed based on the flooding, however, the City's insurance carrier denied the claims citing that the City's storm water system was adequate for the expected storm water volume and the storm event was far in excess of an expected or normal storm water condition. This left many city residents frustrated and without recourse for addressing their property damage.

Homestead Area (Emerald Way), Lynden (Four Photos)

During the 2009 flood event, the PCSA also experienced property damage and road closures:

Woodcreek Drive East

Pine Street

Double Ditch Road and Main Street Intersection – Looking South

The Washington State Growth Management Act (GMA) requires cities to adopt policies and development regulations based on the best available science to protect critical areas. One such critical area designation required by GMA is "frequently flooded areas." Lynden regulates frequently flooded areas within the city that are also part of the National Flood Insurance Program or within the 100-year flood plain designations of the Federal Emergency Management Agency. However, based on the known history of flooding in this basin under certain weather conditions, Lynden recognizes the need to address frequently flooded areas not presently captured in Lynden's current flood management scheme. This need would be addressed through adoption of a flood hazard mitigation overlay.

Lynden is required to consider the impacts of flooding and inundations of water prior to subdivision approval and may deny a subdivision application on based on such concerns. Also, the City may go beyond adopted regulations to ensure safety and prevent flood hazards when it is apparent that the regulations are not adequate to deter the type of flooding and inundations of water which occur in the PCSA. Prior to development, landowners within ~~the~~ a Flood Hazard Mitigation Overlay designation or areas determined to be frequently flooded will be required to implement mitigation measures to address potentially adverse environmental impacts to the natural and built environment.

~~A~~If a Flood Hazard Mitigation Overlay is implemented, it is recommended to include the entire PCSA. Its purpose ~~is~~ would be to recognize and manage the flood hazards associated with a combination of surface flows from north of the city, ground water saturation, frozen and impervious soils, drainage limitations, heavy rainfall, and downstream constraints within the subarea. Based on the past history and these more recent flood records, development in the PCSA without proper mitigation will likely result in significant adverse impacts on area land development (housing and related ingress and egress), transportation (street systems, traffic movement, and traffic hazards) and public services and utilities (police, fire, emergency access, communications, and water and sewer).

~~The~~ A Flood Hazard Mitigation Overlay or other flood management planning ~~is~~are intended to assure that development in the subarea is designed and permitted to prevent cumulative negative impacts within the PCSA and the surrounding community. The City has a strong interest in preventing the future flooding of residential neighborhoods, avoiding the life safety concerns associated with flooded public roads and road closures, and protecting public and private property from flood damage, all of which has occurred in past storm events in the PCSA. The City has been working to design infrastructure which would mitigate these flooding events which has been referred to as the "Pepin Creek Realignment Project". Acceptable mitigation strategies for the overlay will be further defined by the City and it is recommended that a subsequent study of potential mitigation for development in the PCSA be completed concurrently with the Pepin Creek Realignment Project design.

~~*Note: A Flood Hazard Mitigation ordinance is likely to be presented for City Council approval concurrently with the Pepin Creek Subarea Plan and will be added to this appendix prior to finalization.*~~