210 East Fourth Street
La Center, Washington 98629
T/360.263.7665

PRE-APPLICATION CONFERENCE NOTES
Sasse Flats Subdivision (2023-032-PAC)
Meeting conducted on Wednesday, November 1, 2023– 2:00 P.M.

PROJECT INFORMATION

Site Address	1518 Northeast Lockwood Creek Road, La Center, WA 98629 Parcel Nos.: 209083000 and 209044000
Legal Description	#64 SEC 2 T4N R1EWM 3A and SEC 2 T4N R1EWM 2.17A
Applicant	Luke Sasse 360.499.0099 luke@timerlandinc.com 9321 Northeast 72nd Avenue, C7, Vancouver, WA 98665
Applicant's Representative	Travis Johnson PLS Engineering 360.944.6519 pm@plsengineering.com 604 W Evergreen Boulevard, Vancouver, WA 98660
Property Owner(s)	Carl Lawson CJ Dens Property Management, LLC lawsoncarl461@gmail.com P.O. Box 2239, Kalama, WA 98625
Proposal	The applicant proposes to subdivide the property into 34 lots for single-family detached residences in the MDR-16 zone. The existing single-family home and its access will be demolished for the development. Prior to subdivision, the applicant proposes to complete a boundary line adjustment (BLA) between Parcel Nos 209083000 and 209044000. The site would be accessed from the south at Northeast Lockwood Creek Road from East 16th Place. An east to west street will be provided to the north of the property, East 6th Street, and will be stubbed for future access to the east and west property lines.
Date of Issue	November 8, 2023

SUMMARY

The applicant is proposing to subdivide the site to create 34 fee-simple lots with single-family detached residences. The site is designated Urban Residential (UR) on the City's Comprehensive Plan map and is zoned Medium Density Residential (MDR-16) on the City's adopted zoning map. Prior to subdivision, the applicant proposes to complete a BLA between Parcel Nos 209083000 and 209044000.

The site would be served by a public road, East 16th Place, north from Northeast Lockwood Creek Road. East 16th Place will create a "T" intersection with East 6th Street in the northern portion of the project

site. East 6th Street will be stubbed to the east and west property lines from its intersection with East 16th Place for future ROW connectivity.

The site is mapped as within a category 2 critical aquifer recharge area (CARA) by Clark County Maps Online, as is most of the City of La Center. There are no specific requirements for residential development located within category 2 CARAs. The site also contains a two mapped geologically hazard areas: landslide hazards and seismic hazards. Critical areas will require confirmation of their presence by a qualified professional and, if they are present, a critical areas report and critical areas permit to impact them. See Chapter 18.300 below for further discussion.

Based on a review of aerial photos, there appear to be a significant number of trees throughout the northern half of the site. If trees exceeding five inches in diameter at breast height are proposed to be removed, a type II tree cutting permit is required under LCMC 18.350 "Tree Protection." As part of the tree cutting permit, the applicant is required to demonstrate that there are no reasonable alternatives to removing the trees. The type II tree cutting permit can be reviewed concurrently with type III preliminary plat application. A mitigation plan is required for trees 10 inches or greater in diameter that are removed. Washington Department of Fish and Wildlife's (WDFW) PHS on the Web platform does not indicate any Oregon white oak on the property site. However, if any Oregon white oak trees are found on the project site when the tree survey is performed and these trees meet the threshold for being considered priority habitat, these trees are designated as fish and wildlife habitat conservation areas (FWHCAs) and are subject to a critical areas permit if impacted.

The site has moderate-high and high risk of encountering archaeological resources. An archaeological predetermination report will be required for development in these areas as per Table 18.360.020-1.

PRELIMINARY REVIEW

Development Standards

Subsequent application(s) shall address the following development standards. Failure of the City to cite specific requirements of the La Center Municipal Code (LCMC) in this report does not relieve the applicant of the responsibility to meet all applicable criteria. If the proposal changes from what was presented in the pre-application conference, it may trigger other review standards and processes than what is identified in this report.

Applicable Criteria: The application will be reviewed for compliance with the La Center Municipal Code (LCMC): 3.35 Impact Fees; Title 12, Streets, Sidewalks & Public Ways; Title 13, Public Utilities; Title 18, Development Code Chapters: 18.30 Procedures; 18.140, Medium Density Residential (MDR-16); 18.147, Parks and Open Spaces; 18.210, Subdivision Provisions; 18.220, Boundary Line Adjustments; 18.225, Legal Lot Determinations; 18.240, Mitigation of Adverse Impact; 18.245, Supplementary Development Standards; 18.260, Variances; Temporary Sales Offices, 18.270.040; 18.280, Off-Street Parking Requirements; 18.282, Outdoor Lighting; 18.300, Critical Areas; 18.310, Environmental Policy; 18.320, Stormwater and Erosion Control; 18.340, Native Plant List; 18.350, Tree Protection; and 18.360, Archaeological Resource Protection.

Public Works and Engineering Analysis

Chapter 3.35 Impact Fees

Per LCMC 3.35, impact fees will be collected for traffic, sewer, park and schools.

These fees will be imposed at the time when building permits are issued.

Chapter 12.10 Public and Private Road Standards
City of La Center Engineering Standards for Construction shall apply to all public road improvements unless modified by the director. LCMC 12.10.040.

General roadway and right-of-way standards shall apply and provide for the continuation or appropriate projection of existing principal streets in the surrounding area and on adjacent parcels; LCMC 12.10.090. In addition to the half street improvements, street lights, street trees on Lockwood Creek Road are required consistent with LCMC 12.10.190.

Comments

Streets and Circulation

The preliminary site plan shows a roadway access onto the north side of Lockwood Creek Road. According to LCMC 12.10.190, "half-width road improvements shall be constructed to applicable standards set out in the chapter…" Please provide half width improvements along the frontage of the proposed improvements, including curb, gutter, sidewalk improvements and any stormwater, street lights improvements and trees as necessary to accommodate the widening.

In 2019, the CFP was updated, and Lockwood Creek Road is classified as a Rural Major Collector per the federal function classification. However, the Capital Facility Plan Update recommended that Lockwood Creek Road be classified as a Minor Arterial. The city has designated this as a Minor Arterial "A". A Minor Arterial "A" classification may require a center turn lane be added to the street section. Attached is a Minor Arterial "A" consists of two 12-feet wide travel lanes and 6' bike lanes. Half Street improvements using this standard will have to be implemented. A center lane may be necessary, to prevent impact to the through travel lane in Lockwood Creek Road. The Traffic Consultant will need to provide analysis to determine if a center turn lane is justified.

Provide a pedestrian circulation ADA plan showing how to access the public sidewalk on the south side of Lockwood Creek Road from the proposed development. Since there is no sidewalk on the north side of Lockwood Creek Road, the applicant shall provide improvement plans showing how pedestrians will cross Lockwood Creek Road to access the existing sidewalk on the south side of Lockwood Creek Road. The traffic study must reflect the number of pedestrians accessing the public sidewalk and support the pedestrian access crossing from the development.

The minimum spacing of streets for Minor Arterials is 600 feet, per the CFP. The CFP recommends a north south street extension be placed from John Storm Road to 339th Street, to allow connectivity between Lockwood Creek Road and 339th Street. According to the CFP, this connection road is classified as a Minor Collector. The schematic map, shown in the CFP, shows a connection at a diagonal angle through the site to provide access to 339th Street. Another option is to install a north-south connection from John Storm Road, at the applicant's east property line, to the north property line for future connection to 339th Street. The applicant has proposed connection to Lockwood Creek Road approximately 465-feet east of John Storm Road. Since that spacing of the connection does not meet the intersection requirements, the city recommends placing the road connection at the east property boundary, or on the property to the east of the parcel, instead of the access shown, to allow a more circuitous route than show on the plans. The applicant will need to include a circulation to show how the property to east, west and north will be

connected and served by this connection to Lockwood Creek Road. The applicant will only need to install half street improvements if the connection is built at the east property line. A minimum of 25-feet paved width is required with half street improvements.

The applicant's site plan shows 90-degree curves for a turnaround at the north terminus of the site access. The minimum centerline radius for neighborhood and local access is 150-feet at 25 mph. In the past, the city has allowed 90-degree curves for certain situations for local access roads. However, this access road to the site is a minor collector street, which needs to be designed at a 150-foot radius for horizontal curves at minimum per 2.08 Horizontal Alignment in the Engineering Standards.

Grading

A grading and erosion control permit is required as part of the improvement plans. As part of the grading plans, show finished floor elevations for the buildings. In addition to grading quantities the plan shall show retaining walls necessary.

The City Erosion Control Standards require that any activity disturbance over 500 SF must comply with the City standards. As part of these standards a construction stormwater permit is required from the Department of Ecology and an SWPPP will be necessary as part of the plan submittal to the city.

Chapter 13.10 Sewer System Rules and Regulations

Connection to public sewer is required. LCMC 13.10. All work is to be performed by a duly licensed contractor in the City of La Center. LCMC 13.10.230. Work will be performed using an open trench method unless otherwise approved. LCMC 13.10.200. All costs associated with installing the side sewer shall be borne by the applicant. LCMC 13.10.110. The Applicant's Engineer proposes to connect to the newly constructed 8-inch sewer system in Lockwood Creek Road with 30 new multi-family housing units. This connection from the houses will impact the capacity of the existing pump station #2 adjacent to Stonecreek Drive

During the Heritage Country Estates Development, a basin map and was completed to support the construction of the 8-inch sewer along Lockwood Creek Road. The basin analysis shows the tributary area flowing to this new 8-inch gravity sewer and the existing pump station #2 that was upgraded for per the basin analysis. The basin map assumed that the proposed site would be zoned LDR-7.5 in the future. This Multi-family development could add more density and potentially slightly more flow than anticipated for future development. There will likely be capacity in the Lockwood Creek Road 8-inch diameter sewer, however, the applicant will need to verify the capacity of the existing downstream sewer system, and pump station, for the added development of this multi-family development to verify there is enough capacity.

Connections shall be made at the pipe stub provided at the manhole in the newly constructed Lockwood Creek Road gravity sewer system. Connection to the manhole, sewer main open-trench installation in Lockwood Creek Road shall be constructed per City Engineering Standards. A back water valve is required, if the lots are lower than the street, on each sewer connection from the lots and will be located at the property line within the applicant's property. A cleanout is required at the property line. LCMC 13.10.110. *La Center Engineering Standards for Construction* are also applicable.

Existing septic system must be abandoned or removed as necessary per Clark County Environmental Health permitting.

Chapter 18.10 Development Code General Provisions

Geotechnical Study.
A complete application will include a geotechnical study and report, prepared by a geotechnical engineer or geologist, licensed in the state of Washington. The report shall include at a minimum, testing to support the structural section of the roadway, site building construction, grading, retaining wall design, as applicable, and subsurface drainage. LCMC 18.212.050.

Traffic Impact Analysis
A compete application will require a traffic impact analysis and circulation plan which considers adjacent land parcels, topography, natural features, sensitive lands, existing improvements, and existing streets together with their potential alignments in relation to this site. The impact analysis shall analyze at a minimum the following intersections:

- Lockwood Creek Road and John Storm Road
- Highland Road, and East 4th Street
- Aspen Avenue and East 4th Street
- Pacific Highway, and Aspen Avenue.
- La Center Road and Timmen Road
- La Center Road and Paradise Park Road

The report shall include average daily traffic and peak hour traffic for intersections and streets as noted above. LCMC 18.212.050(n).

Stormwater and Erosion Control
Section 18.320.120 (1) LCMC states that ground-disturbing activities of more than 500 square feet are subject to the requirements of *City of La Center Erosion Control Guidelines*. Section 18.320.120 (2)(a) LCMC states that the creation of more than 2,000 square feet of impervious surface is subject to stormwater regulation.

The applicant proposes to create new impervious area for public streets to the site as well as widening Lockwood Creek Road abutting the site. Per LCMC 18.320.210, treatment BMPs shall be sized to the treat the water quality design storm, defined as the six-month, 24-hour storm runoff volume.

The applicant proposes to treat stormwater from pollution generating surfaces (impervious) with a stormwater pond, or other approved BMP's. The treatment will need to meet the City of La Center and 1992 Puget Sound Manual which requires compliance with the Water Pollution Control Act and the Water Resources Act.

Stormwater runoff must be detained meeting the requirements of Chapter 18.320 LCMC and then discharged into the existing low point on the site. Clark County Soil Groups or USDA may be used to determine the hydrology of the site. Isopluvials shall be used to determine the design storm frequency (attached). Per the City Ordinance, a forested condition must be used for the pre-developed surface

condition. The HEC-1 flood hydrograph package or HEC HMS may be used for hydrologic computation of site quantity control.

The collection system shall be designed by the rational method using HEC-12 1984 edition standards for gutter and storm pipe capacity. As an alternate, WSDOT Hydraulics Manual can be used for inlet capacity design. The 100-year rainfall intensity must be used for pipe capacity design using the rational method. Attached is the city rainfall intensity chart.

Per LCMC 14.10.140, a preliminary stormwater plan and preliminary stormwater report shall be submitted for review as part of the land use application. The stormwater report must also address stormwater how energy dissipation will be accomplished so that the downstream ditch along Lockwood Creek Road is not impacted by stormwater.

Downspouts connections from the houses must connect directly into the site stormwater system. A Technical Information Report (TIR) is required along with the development plans for approval of the stormwater system.

Maintenance of Stormwater Facility
The applicant proposes to place a stormwater facility on their site. The stormwater outfall will likely drain to the roadside ditch in Lockwood Creek Road. The owner will need to maintain the private stormwater facility and provide the city with maintenance records. The storm water quantity and quality treatment of Lockwood Creek Road added impervious area may need to be done in public right of way. If stormwater treatment and disposal facility is within public Right of Way, the applicant shall maintain the facility for two years after development. An operations manual must be submitted for City review approval for the maintenance of the facility in all cases. Adequate bonding is required to guarantee maintenance of the facility for a period of two years following construction approval.

Potable Water
Water system connections are regulated by Clark Public Utility (CPU) and a permit and plan approval will be required for City plan approval. You were provided with a copy of the CPU Water Availability report at the meeting. Provide proof that the on-site well was properly abandoned.

Street Lighting
Street light design and installation is reviewed by the City in public right of way. Street lighting is be required along the Frontage of Lockwood Creek Road. LID for street lighting is required a specified in the Engineering Standards.

Land Use Analysis

Chapter 8.60 Sign Requirements
If proposed, signs must comply with this chapter including the general requirements (8.60) and requirements for signs in residential zones (8.60.060). One illuminated freestanding sign is permitted at the project entrance provided it is no larger than 32 square feet and no taller than five feet above average grade. Free standing signs must meet the dimensional and configuration requirements of the allowed sign types (monument, single pedestal, dual pedestal, single pylon, dual pylon).

Chapter 18.30.100 Type III procedure

The project would require the following applications: preliminary plat approval, legal lot determination, critical areas permit, a BLA, variance, and a tree cutting permit. Preliminary plats are subject to a Type III review process. Critical areas permits and tree cutting permits are subject to a Type II review process. The legal lot determination, variance, and BLA is subject to a Type I review. All applications (except BLA and variance) would be grouped under one review process as permitted under LCMC 18.30.030 and reviewed under the highest order review process. The BLA and variance would follow a Type I review process and must either be reviewed under a separate application from the preliminary plat with a decision issued prior to the preliminary plat approval or be reviewed concurrently with the preliminary plat application.

The Type III process would include the following timelines:

- Completeness Review: following submittal of the application, the City will review the application to determine if it contains all required information. Projects which undergo pre-application conference reviews are subject to a 14-day completeness review.
- Notice period: Once deemed complete, the City has 14 days to issue a notice of application with a combined notice of State Environmental Policy Act (SEPA) review. The notice period runs for an additional 14 days after issued.
- Type III review period: Once deemed complete, the City has 78 days to schedule a hearing. The hearing examiner issues a decision on subdivision applications within 14 days following the hearing.
- Appeal: After issuance of a decision, there is a 14-day appeal period.

Further information regarding the Type III review process is contained in LCMC 18.30.100

Chapter 18.140 Medium Density Residential

The site is zoned MDR-16, Medium Density Residential. Single-family detached are a permitted use within the zoning district. The development must meet a minimum density of eight units per net acre. Detached single-family has a maximum density of 12 units per net acre. Net acre is defined as gross area minus area for public rights-of-way, private streets, utility easements, public parks, and undeveloped critical areas and buffers. The gross site area is 5.17 acres, which the subdivision would be reduced to 4.81 acres once the 0.36 acres are removed from the lot created from the BLA. The applicant is proposing 34 units but did not deduct the dedicated right-of-way area or other deductions, such as the stormwater pond or separate lot adjusted from the BLA, from the gross area to find the net area to calculate net density. Based on staff's rough calculations, the required minimum net density of the site is 23 units with a maximum net density is 34 units. Therefore, as proposed, the subdivision meets density requirements.

At the time of formal application, the applicant should provide density calculations in conformance with the definition of "net density" in LCMC 18.40 excluding public right-of-way, private streets, and public utility easements, public parks, and undeveloped critical areas and required buffers, if any, and be at least 8 units per net acre but no greater than 12 units per net acre. On October 25, 2023, City staff approved a code update to the MDR-16 code that allows maximum net density of no greater than 14 units per net acre for single-family detached through a critical areas density transfer. The applicant could opt to use such transfer when fully protecting occurring critical areas on the project site in accordance with LCMC 18.300.130.

For single-family detached lots, the minimum lot area is 3,000 square feet and maximum lot area is 15,000 square feet. The proposed conceptual plan shows lots ranging in size from 3,000 to 3,230 square feet,

therefore, meeting the minimum and maximum lot size requirements. An open space tract of roughly 21,562 square feet in the southern area of the site is to remain in its natural state due to steep, topographic slopes that are not suitable for development and may be a landslide hazard. The property adjacent to the east of the project site is zoned Low Density Residential (LDR-7.5), therefore, any lots in the project directly adjacent to this zone must comply with the lot beveling requirements when an MDR-16 project is adjacent to LDR-7.5 land unless a variance is approved – see further discussion below.

Detached single-family lots in the MDR-16 zone are also required to be a minimum of 30 feet wide and 60 feet deep. Lot width is measured at the building setbacks and must average 30 feet at the front and building setback lines. It appears all lots are meeting lot width and depth standards.

Setbacks are required as shown in Table 1, which varies with product type in the MDR-16 zone. Maximum building lot coverage shall not exceed 60 percent surface area.

See Table 1 for lot dimensional and setback standards.

Table 1. MDR-16 Dimension and Setback Requirements

Standard	Single-Family Detached
Net Density[1]	8 -12
Minimum Project Area	2.5 acres
Minimum Lot Width	30 feet
Minimum Lot Depth	60 feet
Minimum Area	3,000 square feet
Maximum Area	15,000 s.f.
Maximum Lot Coverage	60%
Maximum Height[6]	35 feet
Setbacks[2]	
Minimum Front Setback	10 feet
Minimum Garage Setback from Property Line	20 feet
Minimum Garage Setback from Alley	3 feet
Minimum Side Setback	4 feet
Minimum Street Side Setback	10 feet
Minimum Rear Setback	10 feet

[1]In a phased project, each phase of the project shall meet the density requirements.

[2]Setbacks and building envelopes shall be identified for each lot on the face of the plat or binding site plan.

[6]The maximum height of a dwelling is depicted in this table; the maximum height of a garage or accessory building is 20 feet.

LCMC 18.140.030(2) requires new lots used for medium density residential purposes to employ a "beveling" technique at the perimeter of the project. New MDR-16 lots abutting the LDR-7.5 zone to the east shall be no less than 90 percent of the total lot area of the minimum lot size of the abutting LDR-7.5 district. Setbacks from the property lines of abutting LDR-7.5 zone shall be no less than 80% of the setback requirement of the abutting LDR-7.5 district. Under the beveling requirement, lots 1 – 8, 11 and 12 shall not have lot sizes less than 6,750 square feet. However, the applicant is providing a 20-foot-wide landscape buffer between these lots and the abutting LDR-7.5 zone. Sites that are subject to the beveling

requirement are permitted to transfer lost density to the interior of the site under LCMC 18.140.030(2) with density lost on the boundaries of the project permitted to be transferred to the interior with a limitation of no more than 16 units per net acre. During the pre-application conference, it was discussed that the narrow east-west dimension of the site makes it difficult or impossible to take advantage of the density transfer provision, likely resulting in a loss of lots for this project. Staff suggested that the applicant review the variance criteria in LCMC 18.260 to see if they have an unusual circumstance and the basis for requesting a variance. See further discussion in response to LCMC 18.260.

Please see sections 18.140.040 and 18.140.070 which contains design standards and requirements for single-family detached housing. Notable requirements include:

- Must be a unifying design theme across units
- Avoid repetitive building massing and facades
- Avoid monotonous rooflines
- Landscaping:
    - A minimum of 15 percent of the site area must be landscaped with permanent underground irrigation. Setbacks must also be landscaped and maintained.
    - If required by the director of Public Works, street trees are required on all street frontages at a minimum of two feet from the curb and at no greater than 30 feet spacing.
    - Outdoor trash and recycling containers must be screened by a six-foot solid fence, if proposed.
    - Landscaping must also meet the requirements of 18.245.060 (see below).
- Required parking shall be provided on the same lot as the building or in shared parking areas located primarily to the rear of or beneath the units.
- Garages must be setback a minimum of 20 feet. No more than 40 percent of the wall facing a public right-of-way may be a garage door and 25 percent of the garage wall must be windows or doors.
    - For *single-family detached* housing, the garage door cannot extend beyond the front plane of the primary façade. Garages facing an alley shall be set back a minimum of three feet from the rear property line. Garage doors shall have a minimum 50 percent of their area be decorated with glazing, relief panels, or similar ornamentation.
- Parking lots or driveways to individual dwelling units shall connect directly to a local access street that has direct access to an arterial or collector street. This requirement is met as each unit has a garage and driveway connecting to a local access street which provides access to the local roadway network and directly accessing an arterial street, Northeast Lockwood Creek Road.
- *Single-family detached* housing must comply with roofline, rain protection, finish surfaces on facades, and color requirements listed in LCMC 18.140.070(2).
- Pedestrian access must be provided from the front door of the units to the public sidewalk. Public sidewalks are required and must be constructed according to the City's road standards.

Chapter 18.147 Parks and Open Spaces

LCMC 18.147 requires any residential development in the MDR-16 zone of 35 units or more to provide publicly accessible park space at a ratio of 0.25 acres per 35 dwelling units. Based on the 34 lots proposed, the applicant is not required to provide park space and the applicant is not proposing any park spaces with the subdivision.

Chapter 18.210 Subdivision Provisions
Submittal Requirements (LCMC 18.210.030)

A completed application form and the following materials will be required, prior to a determination of technical completeness:

1. The information listed in LCMC 18.210.010(2), provided an environmental checklist is required for a technically complete application unless categorically exempt.
2. Written authorization to file the application signed by the owner of the property that is the subject of the application, if the applicant is not the same as the owner as listed by the Clark County assessor.
3. Proof of ownership document, such as copies of deeds and/or a policy or satisfactory commitment for title insurance.
4. A legal description of the property proposed to be divided.
5. If a subdivision contains large lots or tracts which at some future time are likely to be re-subdivided, the application shall include a master plan of all land under common ownership in order to provide for extension and opening of streets at intervals which will permit a subsequent division of each divisible parcel into lots of smaller size.
6. A copy of the pre-application conference summary and all information required to address issues, comments, and concerns in the summary.
7. A written description of how the proposed preliminary plat does or can comply with each applicable approval criterion for the preliminary plat, and basic facts and other substantial evidence that support the description. See applicable subdivision review criteria below.
8. The names and addresses of owners of land within a radius of 300 feet of the site. Owner names and addresses shall be printed on mailing labels.
    a. The applicant shall submit a statement by the assessor's office or a title company certifying that the list is complete and accurate, based on the records of the Clark County assessor within 30 days of when the list is submitted.
    b. If the applicant owns property adjoining or across a right-of-way or easement from the property that is the subject of the application, then notice shall be mailed to owners of property within a 300-foot radius, as provided above, of the edge of the property owned by the applicant adjoining or across a right-of-way or easement from the property that is the subject of the application.
9. Applications associated with the preliminary plat, such as exceptions, adjustments or variances to dimensional requirements of the base or overlay zones or for modifications to the road standards in Chapter 12.10 LCMC that are required to approve the preliminary plat application as proposed.
10. A boundary line adjustment application is required The BLA shall be completed prior to or concurrent with the issuance of a decision on the preliminary subdivision application.
11. A geotechnical study is required, since the site has mapped landslide and seismic hazard areas.
12. A tree protection plan is required and to be prepared by a certified arborist or landscape architect in accordance with LCMC 18.350.060(2). The plan shall include an inventory of all trees on-site, their health or hazard condition, and recommendations for treatment of each tree. The plan shall be drawn to scale and include the requirements as listed in LCMC 18.350.060(2)(a through j). A mitigation plan shall be required for trees that are 10-inches in diameter or greater in accordance with LCMC 18.350.050.
13. Preliminary grading, erosion control and drainage plans, which may be a single plan, consistent with applicable provisions of Chapter 18.320 LCMC.

14. Evidence that potable water will be provided to each lot from a public water system, and that each lot will be connected to public sewer.
15. A phasing plan, if proposed.
16. Conceptual elevation plans to indicate compliance with the MDR-16 design requirements (LCMC 18.140.040), specific requirements for single-family attached (LCMC 18.140.050) and single-family detached (LCMC 18.140.070).
17. An archaeological predetermination report in accordance with LCMC 18.360.
18. Additional information:
    a. A traffic study (please consult with the City Engineer regarding intersections to be studied.)
    b. A completed SEPA environmental review checklist.
    c. A signed *Agreement to Pay Outside Professional Review Expenses Related to Land Use Application*. (Provided during the meeting.)
19. A preliminary stormwater report in conformance with LCMC 18.320.

Vesting: Applications are vested in the current version of the code on the date the City deems the application to be technically complete.

Subdivision Approval criteria (LCMC 18.210.040[1]): The applicant carries the burden of proof to demonstrate that the proposal complies with the following City regulations and standards:

- Chapter 12.05 LCMC, Sidewalks;
- Chapter 12.10 LCMC, Public and Private Road Standards;
- Chapter 15.05 LCMC, Building Code and Specialty Codes;
- Chapter 15.35 LCMC, Impact Fees;
- Chapter 18.245 LCMC, Supplemental Development Standards;
- Chapter 18.300 LCMC, Critical Areas;
- Chapter 18.310 LCMC, Environmental Policy;
- Chapter 18.320 LCMC, Stormwater and Erosion Control;
- The subdivision must make appropriate provision for parks, trails, potable water supplies and disposal of sanitary wastes; and
- The subdivision complies with Chapter 58.17 RCW.

Subdivision General Issues:

1. To approve the preliminary plat, the Hearing Examiner must make an affirmative finding that "appropriate provision for potable water supplies and for the disposal of sanitary wastes, sidewalks and pathways provide safe routes for pedestrians and to schools, adequate protections and mitigations for critical areas, roadways are design for safe and efficient vehicle access, stormwater and erosion control is adequately addressed, and building and development codes are being met".
2. All existing wells and septic systems must be properly decommissioned prior to final plat.
3. The City may refuse bonds in lieu of improvements at the time of final platting if such bonding has not been previously discussed and documented.
4. The preliminary plat shall expire five years from the date of the Final Order. RCW 17.58.140(3)(a).
5. Phasing is permitted. All phases must be identified on the preliminary plat and be consistent with the lot number sequencing.

Chapter 18.220 Boundary Line Adjustment

The applicant has indicated in the site plan that a BLA is to be completed to leave a separate lot that is approximately 0.36 acres (15,566 square feet) at the southwest corner of the site. The remaining 4.93 acres resulting from the BLA will be developed into the proposed subdivision. The BLA must be completed prior to or concurrent with issuance of a decision on the subdivision application. LCMC 18.220.010(3) includes the following submittal requirements:

1. A completed application form
2. Appropriate Fee
3. Sales history since 1969 for each parcel to include required copies of additional information as listed in LCMC 18.220.010(3)(c).
4. A site plan showing current conditions, including items as listed in LCMC 18.220.010(3)(d).
5. A site plan showing proposed conditions, including items as listed in LCMC 18.220.010(3)(e).

The applicant shall demonstrate compliance with the following approval criteria pursuant LCMC 18.220.010(4):

1. No additional lots are created that do not meet current zoning of the property.
2. Lots must meet current size requirements including minimum width and depth requirements.
3. Lots must be buildable.

The resulting lot resulting from the BLA has a lot size of 0.36 acres (15,566 square feet), which exceeds the maximum lot size of 15,000 square feet in the MDR-16 zone. Therefore, the applicant shall apply for a variance application with the proposed BLA. Please see "Chapter 18.260 Variances" discussion located further below in this document.

Chapter 18.225 Legal Lot Determinations

Staff will complete a legal lot determination concurrent with the review of the consolidated land use application. Please provide information required by this Chapter (see LCMC 18.225.010[4]) including any prior city/county short plant, subdivision, or legal lot determinations; a sales or transfer deed history dating back to 1969; prior segregation request, if any; prior recorded survey, if any; and any other information regarding the legality of the lot.

Chapter 18.240 Mitigation of Adverse Impacts

The applicant will need to respond to this code section in their narrative as part of the type III preliminary plat application, type II critical areas, urban holding overlay removal, tree permit, and variance applications, and type I legal lot determination.

Chapter 18.245 Supplementary Development Standards

<u>18.245.020 Height of fences and hedges</u>

If fences are proposed, they must meet the requirements of this section including that:

- They are not more than 6 feet in height in the side yard, street side yard, or rear lot lines and cannot extend into the front yard. Site distance requirements must be met.
- Prohibited materials include fiberglass or plastic sheeting, barbed wire, razor ribbon or other similar temporary material.

<u>18.245.040 Lighting</u>

Lighting must meet the requirements of 18.282 Outdoor Lighting (i.e., be dark sky compliant) and must not cause more than one foot-candle measured at any property line.

18.245.060 Landscaping

Landscape screening is required around the entire proposed development. Landscaping requirements are as follows and shown in Table 2 below:

- An L1, 5-foot-wide screen is required on an MDR-16 zoned site when abutting LDR-7.5 zoning or separated by a street. The applicant is proposing a 20-foot landscape buffer between the site and the LDR-7.5 zoned property directly east of the site, exceeding the landscape buffer requirement. There are LDR-7.5 zoned properties to the south and southeast of the site, across Northeast Lockwood Creek Road, therefore, a L1, 5-foot-wide screen is required directly across these lots on site.
    - The L1 standard, when less than 10 feet deep, must provide one tree per 30 linear feet of landscaped area. Groundcover plants or shrubs must fully cover the remainder of the landscape area. The L1 buffer can be contained within the private properties behind fence lines.
- Abutting west and directly southwest across Northeast Lockwood Creek Road from the site are Residential Professional (RP) zoned properties. The RP zone is not included in Table 1 below and LCMC 18.245.040 list the development standards for this zone. Single-family residential, which is the land use on the property south and southwest of the site, are subject to the LDR-7.5 standards. Therefore, the project site must provide an L1, 5-foot-wide screen.
- The RP property to the southwest is the La Center United States Post Office, which is a permitted use (public buildings) in the Mixed-Use (MX) zone or a conditional use in the C-1 zone that are referenced into the RP zone. An L2, 5-foot-wide screen is required directly across from this property. This would apply to the resulting lot from the BLA.
    - The L2 standard requires low shrubs to form a continuous screen three feet high and 95 percent opaque year-round vegetation. One tree is required per 30 lineal feet of landscape area and groundcover must fully cover the remainder of the landscape area. A three-foot-high masonry wall or fence at an F2 standard or a berm may be substituted for the shrubs. When applied along street lot lines, the screen or wall is to be placed along the interior side of the landscape area.
    - An F2 fence is a fully sight-obscuring fence or wall that shall be 6-feet-high and be made of wood, metal, bricks, masonry, or other permanent materials.
- Abutting directly north of the project site is the La Center High School, which is in the Urban Public Facilities (UP) zone, therefore, an L4, 10-foot screen is required along the northern project site boundary. Please note that the La Center High School softball field is located directly north of the property. The potential exists for softballs to clear the outfield fence and strike buildings or land in yards. The applicant may want to consider how they would address this situation including working with the school district to place a screen or leaving mature trees to eliminate or reduce the chance that softballs damage buildings or people.
    - The L4 standard requires a six-foot-high wall that complies with the F2 standard and shall abut the property line. One tree and four high shrubs are required per 30 lineal feet of wall. Groundcover plants must fully cover the remainder of the landscaped area.

Table 2: Table 18.245.060 – Landscaping and screening standards

	Zoning of the abutting site							
	LDR		MDR-16		C-1, C-3, MX		JP, UP	
Zoning of the site	Separated by a street	Not separated by a street	Separated by a street	Not separated by a street	Separated by a street	Not separated by a street	Separated by a street	Not separated by a street
LDR	None	None	L2 5 feet	L3 5 feet	L3 10 feet	L4 10 feet	L4 10 feet	L5 20 feet
MDR-16	L1 5 feet	L1 5 feet	L1 5 feet	L1 5 feet	L2 5 feet	L3 5 feet	L3 10 feet	L4 10 feet
C-1, C-3, MX	L1 5 feet	L2 5 feet	L1 5 feet	L2 5 feet	None	None	None	None
JP, UP	L2 5 feet	L3 5 feet	L2 5 feet	L3 5 feet	L2 5 feet	L3 5 feet	L1 5 feet	L1 5 feet

- The City has the ability to approve the use of existing vegetation on-site to satisfy landscaping requirements. The existing trees and other vegetation along the southern boundary of the site might be able to substitute for the L1 screening requirements in conjunction with meeting the City's tree preservation requirements in LCMC 18.350.
- All landscaped areas must meet the landscape standards of 18.245 including:
    - Landscaped stormwater areas may satisfy landscaping area requirements.
    - Rooftop and ground-level exterior equipment shall be screened to an F2 or L3 standard.
    - Landscaping must meet size requirements in 18.245.060(11-14).
    - Permanent built-in irrigation is required or a statement from a landscape architect is required to have a temporary irrigation system during establishment. Alternatively, no irrigation system is required if plantings will survive by rainwater as certified by a landscape architect and plants must be monitored for replacement of plants that don't survive.

Chapter 18.260 Variances

The resulting lot from the proposed BLA has an approximate lot size of 15,566 square feet, which exceeds the MDR-16 maximum lot size requirement by 4%, which requires a Type I variance application that shall be applied for concurrently with the BLA application.

During the pre-application meeting, there was a discussion regarding the beveling requirements of LCMC 18.140.030(2 and 3). See further discussion in response to 18.140. Due to the narrow east-west dimension of the site and the inability to transfer lost density to the interior of the site, staff recommended that the applicant review the variance criteria in LCMC 18.260 to see if they could be met. Should the applicant choose to pursue a variance for the beveling requirement, a Type II variance would likely be required to reduce lot sizes more than 10 percent from the 6,750 square feet required by the beveling standard.

If applying for one or more variances discussed above, the applicant must respond to the variance criteria in LCMC 18.260.040. The variance criteria require that there be un unusual circumstance such as site size or shape and that the circumstance is not a result of actions taken by the applicant. It may be possible to reduce density on the subdivision site and comply with all the City's requirements. This should be explored

prior to applying for a variance. The variance application should address why it is not possible to comply with the MDR-16 lot dimensional standards for the lot which would exceed 15,000 square feet.

Chapter 18.270.040 Temporary sales offices/model homes

Sales offices are subject to type I review. The temporary use shall be within the boundaries of an approved subdivision. It shall not be permanently approved for temporary use and will not be materially detrimental to public health, safety, or welfare, nor injurious to property or improvements in the immediate vicinity. It should meet the setbacks and vision clearance required of Chapter 18 and building and fire codes. The hours of operations should be specified. The use shall cease and convert to a permitted use within a year of approval. The applicant can reapply for the permit if an additional year of the use is necessary. Adequate utilities and parking should be available to serve the temporary use, and the use should not use required off-street parking areas for adjacent or nearby uses. This application is typically completed after final plat approval and recordation and at the time of building permit for the temporary sales office.
The required materials for submittal are:

- Land Use Application
- Authorization from property owner.
- A legal description of the site
- Preliminary plan/site plan
- Written description (narrative) of how the application complies with code

Chapter 18.280 Off-Street Parking and Loading

18.280.010 Off-Street Parking Requirements

Off-street parking requirements apply. Two spaces per dwelling unit for single-family detached are required which can be either in garages or in driveways or a combination.

Chapter 18.282 Outdoor Lighting

The City adopted new outdoor lighting requirements in 2019 to reduce light pollution and in compliance with dark sky guidelines. The code contains specifications for lighting spectrum and luminance limits. These standards apply to exterior residential lights such as front and rear porch lighting. Please review these requirements before selecting lighting fixtures.

Chapter 18.300 Critical Areas

There are three critical areas mapped on the project site by Clark County MapsOnline and the Washington Department of Natural Resources (DNR) Geologic Information Portal. These include a Type II Critical Aquifer Recharge Area (CARA) and two geologically hazardous areas. The geologically hazardous areas include an area of potential instability (landslide hazard) and National Earthquake Hazard Reduction Program (NEHRP) Seismic Site Class D seismic hazard for ground shaking amplification (seismic hazard).

LCMC 18.300.090(1) Critical Aquifer Recharge Areas

The site and all of La Center is mapped as a Category II (CARA). However, La Center's code does not contain any requirements for Category II CARAs. A critical areas permit is not required for development within a Category II CARA.

LCMC 18.400.090(4) Geologically Hazardous Areas

Landslide Hazard Area

Because onsite slopes are steep with areas of potential instability as shown in Figure 1, the applicant is required to provide a geotechnical report assessing the potential for landslide hazards. If a landslide hazard exists, the applicant's report should address LCMC 18.300.090(4) including alterations to geologically hazardous areas (b) general design standards for landslide and erosion hazard areas (c) and design standards for landslide hazards (d). If landslide hazards do indeed exist on site, the applicant shall comply with the buffer requirements from all edges of landslide hazard areas pursuant LCMC 18.300.090(4)(d)(i). The minimum buffer shall be 50 feet from the edge of the landslide hazard area or can be reduced to a minimum of 25 feet when a qualified professional demonstrates the reduction will provide adequate protection for the proposed development, adjacent development and uses, and the subject critical area.

The applicant must provide a geotechnical engineering report documenting whether the landslide hazard area exists (and the seismic hazard as discussed below) and proposing mitigations to ensure that the development meet the requirements of LCMC 18.300.090(4)(b)(i) including that:

- It will not increase the threat of geologic hazard to adjacent properties;
- Will not impact other critical areas adversely;
- Is designed so that the hazard is eliminated or mitigated to a level equal to or less than predevelopment conditions, and;
- Are recommended by a qualified professional in a stamped geotechnical engineering report.

Figure 1: Areas of Potential Instability

Seismic Hazard Area
The Washington Department of Natural Resources (DNR) Geologic Information Portal maps NEHRP Site Class D seismic hazard for ground shaking amplification (Figure 2). The applicant must provide a geotechnical engineering report for the seismic hazard area as discussed above in the landslide hazard area.

No wetlands, floodplain zones, category I CARAs, protected wellheads, fish and wildlife habitat conservation areas, or other geologically hazardous areas are mapped for the site.

Figure 2: Site Class D Seismic Hazard for Ground Shaking Amplification

Chapter 18.310 Environmental Policy
The proposed development which includes provision of more than four residential dwelling unit exceeds the City's SEPA exemptions. The applicant must provide an environmental checklist along with the subdivision application. The City will issue a SEPA determination during the application review period and at least 15 days prior to the public hearing. The City will run the SEPA comment and land use comment period concurrently and will not make a decision on the land use application until after the close of the SEPA comment period.

Chapter 18.350 Tree Protection
If any tree greater than 5" diameter at breast height (DBH) is proposed to be removed, a tree cutting permit and mitigation plan will be required. A tree protection plan will also be required in accordance with LCMC 18.350.060. The tree protection plan must depict all trees on the site, their health or hazard condition, and recommendations for the treatment of each tree. The tree protection plan must be

prepared by an arborist or a landscape architect. The tree protection plan must show planting of new trees to replace the trees to be removed.

Mitigation may consist of replanting on or off-site or payment in lieu of planting. LCMC 18.350.050. For each tree that is greater than 10 inches in diameter, one, two-inch deciduous tree or a six to eight-foot evergreen tree is required to be planted. Tree removal is subject to the approval criteria of LCMC 18.350.080, and the applicant is required to review ways to preserve the existing trees on site and demonstrate that there are no reasonable alternatives to removing the trees.

Chapter 18.360 Archaeological Resource Protection

Per the Washington State Department of Archaeology and Historic Preservation (DAHP) WISAARD mapping tool, the site is identified as having a moderate-high to high risk of containing archaeological resources (see Figure 3) and must file an archaeological predetermination report as per Table 18.360.020-1. Predetermination reports must contain the information in 18.360.080(4). Based on the findings of the predetermination report, further archaeological work or a full archaeological survey may be required.

Figure 3: DAHP WISAARD Mapping

Application Fees

Based upon the information provided to date, we estimate that the land use application fees will include:

- Preliminary long plat: $3,000 + $125 per lot + cost recovery*
- Boundary Line Adjustment: $425 + $75 per lot + cost recovery*
- SEPA: $510 + cost recovery*
- Legal lot determination: $425 + $75/lot (> or = to 2 lots) + cost recovery*
- Variance: Type I & Type II: $180 + cost recovery*
- Tree cutting permit: $60 + cost recovery*
- Final long plat: $920 + $60 per lot + cost recovery*

*Cost recovery (requires a reimbursement agreement); actual cost of staff, consultants, and/or hearing examiner plus 10 percent. This fee is applicable as part of a land use action or development review (i.e., traffic study, preliminary/final plat review).

CCFR Analysis

- Subdivisions with 30 lots or more require two access points or homes to be build with residential fire sprinklers.
- Max road grade is 10%. May be able to go to 12% with a variance. With the ladder truck, CCFR is restricted to grade and curvature.
- Identify location and distance to fire hydrants; and if buildings are to be sprinklered.
- Roadways must be constructed before buildings go vertical.
- Please see CCFR notes for additional information.

Attachments

- Public Works Attachments (18 pages)

November 1, 2023 – Attendees

Name	Organization Name	Email Address	Phone Number
Bryan Kast	City of La Center	bkast@ci.lacenter.wa.us	360-263-5189
Tony Cooper	City of La Center	acooper@ci.lacenter.wa.us	360-263-7665
Jamie Viveiros	City of La Center	jviveiros@ci.lacenter.wa.us	360-263-7664
Ethan Spoo	WSP	ethan.spoo@wsp.com	360-823-6138
Mike Lackey	Clark Cowlitz Fire & Rescue	Mike.lackey@clarkfr.org	
Luke Sasse	Timberland Inc.	luke@timberlandinc.com	503-888-2597
Travis Johnson	PLS Engineering	pm@plsengineering.com	360-499-0099
Nicolle Sicilia	PLS Engineering	nicolle@plsengineering.com	

Located in the NW 1/4,S02,T4N,R1E
La Center, Washington

E 6TH STREET

E 16TH PL

LANDSCAPE BUFFER

LANDSCAPE BUFFER

STORMWATER FACILITY

PARCEL NO. 209083000
& 209044000
5.12 ACRES

465 FEET

APPLICANT:
Timberland Inc.
Contact: Luke Sasse
9321 NE 74th Ave, Cl
Vancouver, WA 9866
luke@timberlandinc.c

OWNER:
CJ Dens Property Ma
PO Box 239
La Center, WA 98625

GENERAL NOTES

LAND USE:

The applicant is pro
5.17-acre parcel into
MDR-16 zone.

The site is identifie
209044000. There
parcel, 209083000, p
The site is serviced b
NE Lockwood Creek
times on acreage to
exist.

TRANSPORTATION:
The proposed develo
providing a new non
Road. The road will
location of La Cente
proposed that will
circulation. No direct
Creek Avenue.

UTILITIES:
All lots will be serv
Utilities and public sa
with connection point

Stormwater will be di
be treated and detain

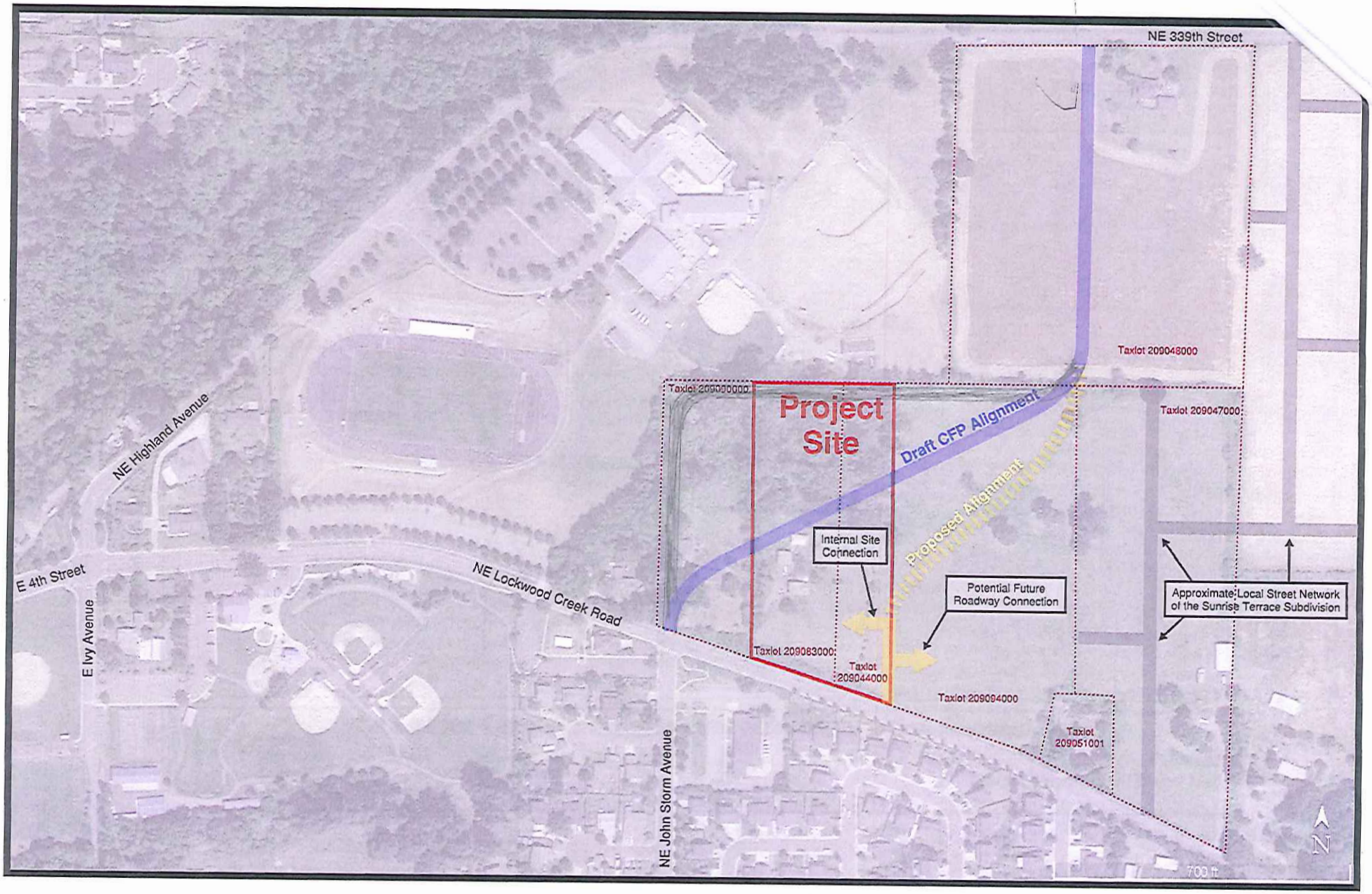
CRITICAL AREAS:
Clark County GIS m
and slopes ranging
mapped on site.

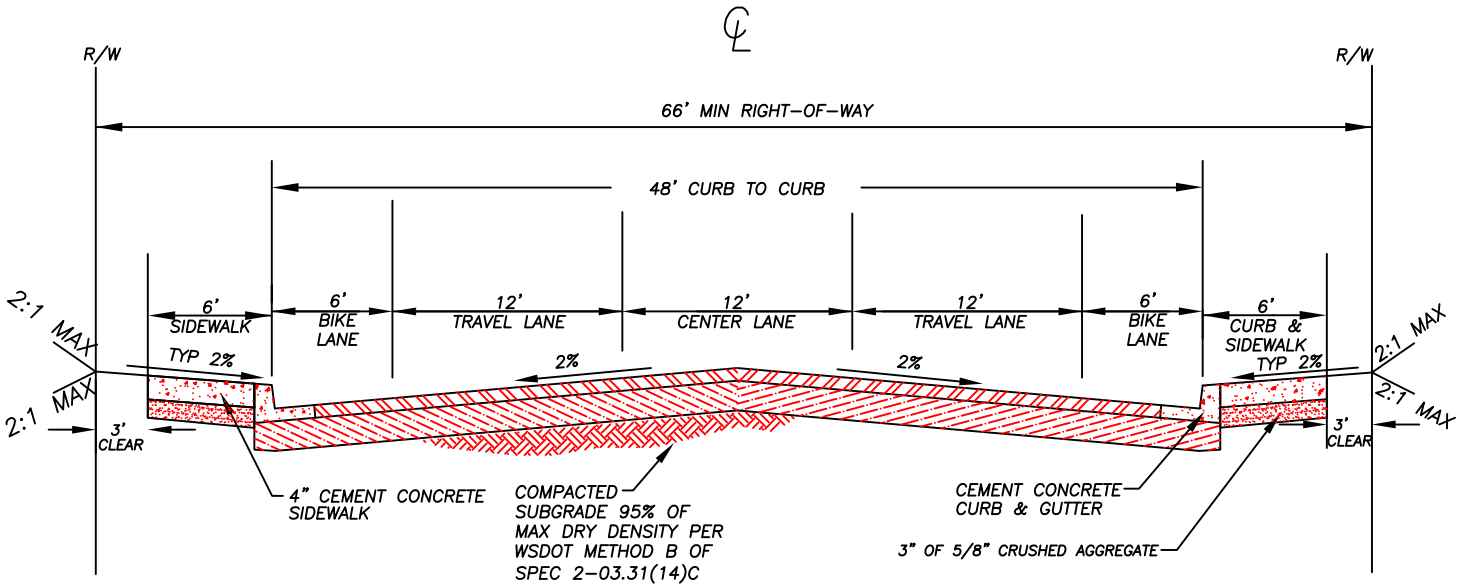
Scale

01. Conc

Proposed Aspha

Proposed Conc


NE 339th Street
Taxlot 209048000
Taxlot 209090000
Project Site
Draft CFP Alignment
Proposed Alignment
Taxlot 209047000
NE Highland Avenue
Internal Site Connection
Potential Future Roadway Connection
Approximate Local Street Network of the Sunrise Terrace Subdivision
E 4th Street
NE Lockwood Creek Road
E Ivy Avenue
Taxlot 209083000
Taxlot 209044000
Taxlot 209094000
Taxlot 209051001
NE John Storm Avenue
N
700 ft



CONVENTIONAL CONSTRUCTION

AASHTO SOIL TYPE	ASPHALT THICKNESS	BASE ROCK THICKNESS
A-1	0.45'	0.45'
A-2	0.45'	0.45'
A-3	0.45'	0.55'
A-4	0.45'	0.85'
A-5	0.45'	1.15'
A-6	0.45'	1.55'
A-7	0.50'	2.00'
OTHER	NO SECTION	ESTIMATED

THICK ASPHALT CONSTRUCTION

AASHTO SOIL TYPE	ASPHALT THICKNESS	BASE ROCK THICKNESS
A-1	0.52'	0.25'
A-2	0.52'	0.25'
A-3	0.55'	0.25'
A-4	0.62'	0.25'
A-5	0.72'	0.25'
A-6	0.82'	0.25'
A-7	1.00'	0.25'
OTHER	NO SECTION	ESTIMATED

NOTES:

1. WIDER SIDEWALKS MAY BE REQUIRED BY REVIEWING AUTHORITY UNDER CERTAIN CIRCUMSTANCES.
2. SUBGRADE REINFORCEMENT GEOTEXTILES SHALL BE INSTALLED OVER A-6 AND A-7 SOILS PRIOR TO CONSTRUCTING THE BASE AND SURFACING.
3. ASPHALT SURFACE FOR ALL ROADS SHALL BE CLASS ½" PG 64-22 HMA PER WSDOT STANDARD SPECIFICATIONS.
4. THE PAVEMENT STRUCTURE THICKNESSES IDENTIFIED FOR THESE SOIL TYPES ARE REQUIRED UNLESS A SITE SPECIFIC PAVEMENT DESIGN IS DONE. THE TOTAL PAVEMENT STRUCTURE SHALL NOT EXCEED 2.5 FEET.
4. EITHER CONVENTIONAL OR THICK ASPHALT CONSTRUCTION IS ALLOWED.
5. BASE ROCK SECTION SHALL BE TWO (2) INCHES OF 5/8"- 0" TOP COURSE, OVER REMAINING DEPTH OF BASE COURSE PER WSDOT STANDARD SPECIFICATION SECTION 9-03.9(3). TOTAL BASE ROCK SECTION THICKNESS AS INDICATED IN THE TABLES.

MINOR ARTERIAL "A"

PLAN #

CITY OF LA CENTER APPROVED

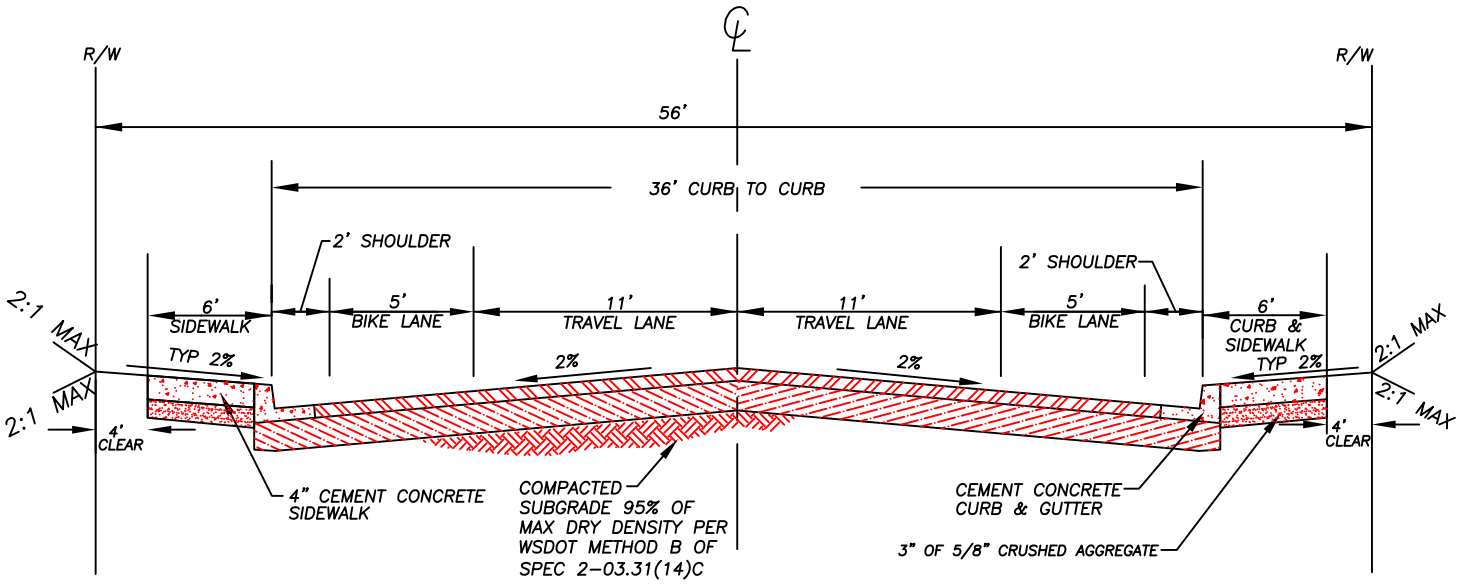
8/23/16

CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	8/23/16	ALC	ALC

ST-12A

FOR LEFT TURN BAYS TO ACCOMODATE ADJACENT STREET ACCESS, "ARTERIAL ROAD SECTION" SHALL BE USED



CONVENTIONAL CONSTRUCTION

AASHTO SOIL TYPE	ASPHALT THICKNESS	BASE ROCK THICKNESS
A-1	0.35'	0.50'
A-2	0.35'	0.50'
A-3	0.35'	0.50'
A-4	0.35'	0.60'
A-5	0.35'	0.90'
A-6	0.35'	1.20'
A-7	0.40'	1.60'
OTHER	NO SECTION	ESTIMATED

THICK ASPHALT CONSTRUCTION

AASHTO SOIL TYPE	ASPHALT THICKNESS	BASE ROCK THICKNESS
A-1	0.42'	0.25'
A-2	0.42'	0.25'
A-3	0.42'	0.25'
A-4	0.45'	0.25'
A-5	0.55'	0.25'
A-6	0.62'	0.25'
A-7	0.80'	0.25'
OTHER	NO SECTION	ESTIMATED

NOTES:

1. WIDER SIDEWALKS MAY BE REQUIRED BY REVIEWING AUTHORITY UNDER CERTAIN CIRCUMSTANCES.
2. SUBGRADE REINFORCEMENT GEOTEXTILES SHALL BE INSTALLED OVER A-6 AND A-7 SOILS PRIOR TO CONSTRUCTING THE BASE AND SURFACING.
3. ASPHALT SURFACE FOR ALL ROADS SHALL BE CLASS ½" PG 64-22 HMA PER WSDOT STANDARD SPECIFICATIONS.
4. THE PAVEMENT STRUCTURE THICKNESSES IDENTIFIED FOR THESE SOIL TYPES ARE REQUIRED UNLESS A SITE SPECIFIC PAVEMENT DESIGN IS DONE. THE TOTAL PAVEMENT STRUCTURE SHALL NOT EXCEED 2.5 FEET.
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NOTE: DETAIL ONLY FOR ADT UP TO 2000
A TRAFFIC STUDY MAY BE REQUIRED TO JUSTIFY THIS DESIGN

RURAL MINOR COLLECTOR

PLAN #

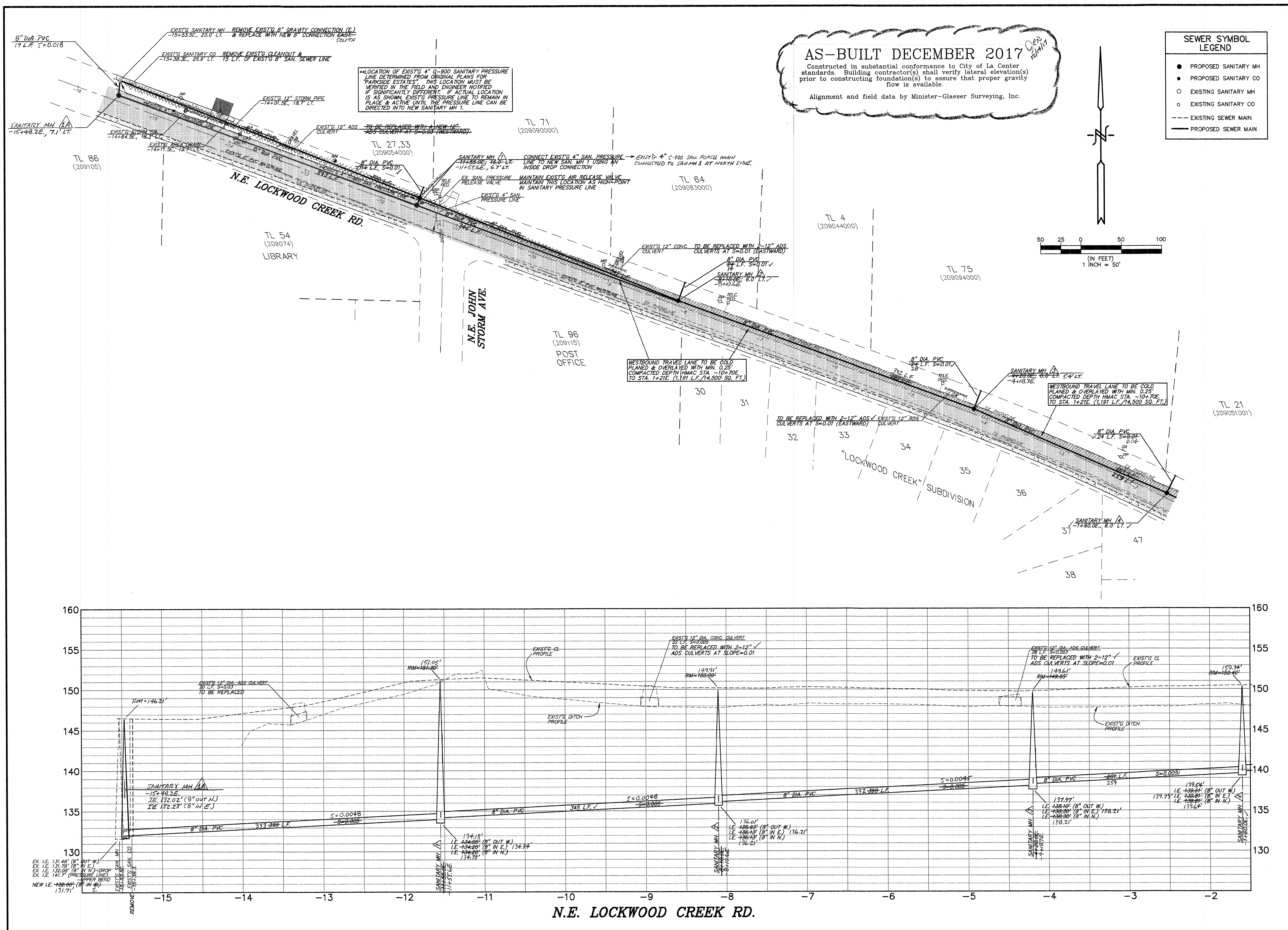
CITY OF LA CENTER APPROVED

Anthony Lee Cooper 12/9/14

CITY ENGINEER DATE

REVISIONS:	DATE:	DRAWN:	DESIGNED:
1	12/9/14	ALC	ALC

ST-13B



AS-BUILT DECEMBER 2017
Constructed in substantial conformance to City of La Center standards. Building contractor(s) shall verify lateral elevation(s) prior to constructing foundation(s) to assure that proper gravity flow is available.
Alignment and field data by Minister-Glaeser Surveying, Inc.
SEWER SYMBOL LEGEND
PROPOSED SANITARY MH
PROPOSED SANITARY CO
EXISTING SANITARY MH
EXISTING SANITARY CO
EXISTING SEWER MAIN
PROPOSED SEWER MAIN
(IN FEET)
1 INCH = 50'
N.E. LOCKWOOD CREEK RD.
N.E. JOHN STORM AVE.
TL 86 (209105)
TL 54 (209074) LIBRARY
TL 27,33 (209054000)
TL 71 (209090000)
TL 64 (209083000)
TL 4 (209044000)
TL 75 (209094000)
TL 96 (209115) POST OFFICE
TL 21 (209051001)
"LOCKWOOD CREEK" SUBDIVISION
SANITARY MH 1A -15+48.2E., 7.1' LT.
WESTBOUND TRAVEL LANE TO BE COLD PLANED & OVERLAYED WITH MIN. 0.25' COMPACTED DEPTH HMAC STA. -10+70E. TO STA. 1+21E. (1,191 L.F./14,500 SQ. FT.)
TO BE REPLACED WITH 2-12" ADS CULVERTS AT S=0.01 (EASTWARD)
SANITARY MH 4 -1+80.0E., 6.0' LT.
EXIST'G CL PROFILE
EXIST'G DITCH PROFILE
8" DIA. PVC
S=0.0048
S=0.0045
S=0.0051
N.E. LOCKWOOD CREEK RD.

THE WOLFE GROUP, L.L.C.
Land Planning, Consulting & Civil Engineering
2401 W. Main Street, Suite 210
Battle Ground, WA 98604
(360) 687-2699

AS-BUILT DEC. 2017

SUNRISE TERRACE

A Residential Subdivision in the N.E. 1/4 of Section 2 T.4N., R.1E., W.M. in the City of La Center, Clark County, WA

PLAN & PROFILE: OFFSITE SANITARY SEWER

JOB #: 15-05
DESIGNED: JEW
DRAWN: JEW
APPROVED: JEW
DATE: JANUARY 2017
SCALE: HORIZ.: 1"=50' VERT.: 1"=5'
SHEET 22 / 42

RECORD DRAWING

Harper
Houf Peterson
Righellis Inc.

Sunrise Terrace

GRR-01

Sewer Basin Capacity Analysis

May 26, 2015

Prepared For:

Ed Greer
8002 NE Hwy 99 #546
Vancouver WA 98665
ed@ed-greer.net

Prepared By:

Harper Houf Peterson Righellis Inc.
1104 Main Street, Suite 100
Vancouver, WA 98660
P: 360-750-1131 F: 360-750-1141

Rob VanderZanden, P.E.

HHPR

ENGINEERS ◆ PLANNERS
LANDSCAPE ARCHITECTS ◆ SURVEYORS

SUNRISE TERRACE May 26, 2015
SEWER BASIN CAPACITY ANALYSIS

BACKGROUND

Ed Greer, Consultant, has submitted an application entitled Sunrise Terrace to the City of La Center on behalf of RK Land Development. The proposal is to subdivide approximately 35 acres in the LDR-7.5 zone into 121 residential lots. The city has requested that a sewer basin analysis be prepared to evaluate the impact of this proposal on the existing collection system and to establish what the future capacity requirements will be for the sewer collection system serving the project area. In particular the city has requested the analysis to address system capacity required to accommodate build out in sewer sub-basins D2 and D3 as identified in the La Center General Sewer Plan dated July 2006, hereinafter "GSP".

APPROACH

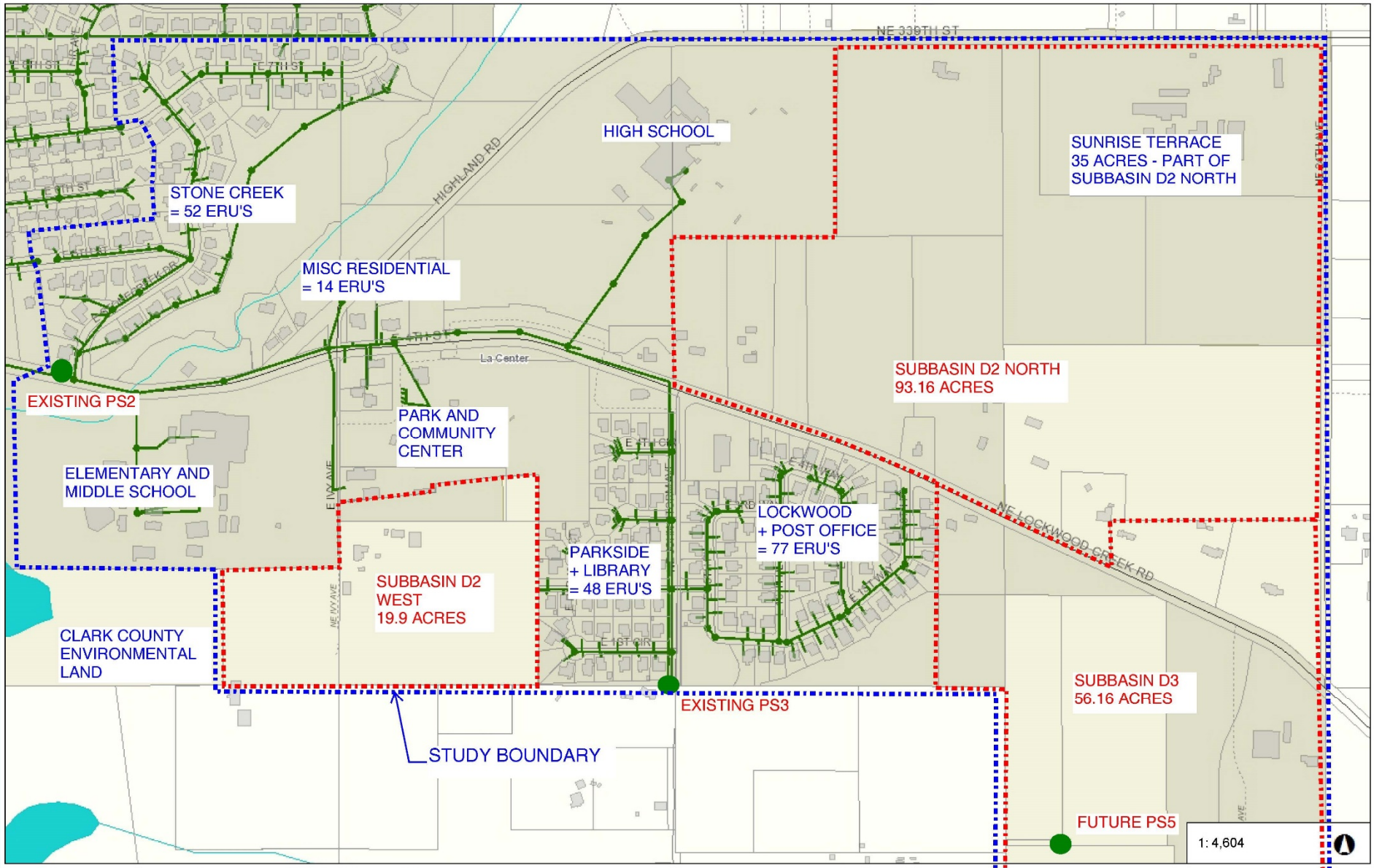
The analysis uses measure basin flows rather than the flows estimated by the GSP. To establish future flows, the current average flow rates were determined using pump station records. City of La Center provided data that was used to evaluate average pump run times and pump capacity. The current "equivalent residential unit" (ERU) flow rate was calculated for residential properties and per capita flows were established for the schools. The future condition is based on estimated residential densities for developable properties and uses the calculated ERU. For the schools, a future condition of 10 percent growth is used with the assumption that growth in excess of 10 percent will require constructing new schools at alternate locations. Required capacities of the various system elements have been determined in accordance with criteria established in the Washington Department of Ecology "Criteria for Sewage Works Design", hereinafter "DOE Design Manual".

BASIN INFORMATION

The study area is shown on Figure 1 and primarily consists of Basin D2 and D3 as defined in the La Center GSP. A portion of Basin C contributes to Pump Station 2 and has been included in the study area in order to evaluated future pumping needs at PS2. As shown on Figure 1, the study area has been divided into 10 sub-basins as follows:

Sub-basin	Approximate Area	Description
D3	56.16 ac	Future LDR 7.5 Residential areas
D2 North	93.16 ac	Future LDR 7.5 includes Sunrise Terrace
Lockwood	24 ac	Existing Residential 77 ERU's
Parkside	13 ac	Existing Residential 48 ERU's
D2 West	19.9 ac	Future LDR 7.5
High School	29.4 ac	High School – Population 602
City of La Center	11.5 ac	Park/Comm Center and Shop
Elem/Mid School	26 ac	Elem/Mid School Population 1150
Misc Residential	+/- 30 ac	14 residences generally on E 4th Street
Stone Creek	+/- 20 ac	52 units in subdivision contribute to PS2

FIGURE 1 LA CENTER SEWER BASIN STUDY AREA



The collection system components are shown on Figure 2. The elements of the system to be evaluated include:

- Lift Station #2 on the downstream end of the basin and the associated force main;
- an existing 8 inch gravity sewer in E 4th Street;
- the 4 inch force main from Lift Station #3 which discharges to the upstream end of the 8 inch gravity sewer;
- Lift Station #3
- A future Lift Station #5 (as designated in the current La Center Sewer Plan) and associated force main.

PUMP STATION DATA

City of La Center provided pump station SCADA records for several one week periods over the past year. Each of the data sets provides minute by minute pump run data (i.e. 1440 lines of data per day). Beginning with the records from February 2015, wetwell liquid level is also include in the data files. The records were used to determine the average annual pumping rate for pump stations #2 and #3. To balance the data, four seasonal averages were calculated and from the seasonal numbers, the annual average pump run time was calculated. A spreadsheet that demonstrates the summary of these calculation is included in Appendix 1. The one-year average run time for the two pump stations from these calculations are:

Pump Station	Average Run Time Minutes/Day
No. 2	374.6
No. 3	353.2

The city conducted drawdown tests at the two pump station to determine the pumping rates for the stations. This information was compared to calculations made from the SCADA records using the wetwell liquid levels. By processing the data for change in liquid level, a weekly in-flow volume was calculated. When divided by pump run time, a pumping rate was calculated: (i.e. gal per week / minutes per week = pumping rate, gpm). The SCADA data generally supported the city's findings from draw down testing and as a result, the following current pumping rates are used:

Pump Station	Average Pump Rate - gpm
No. 2	130
No. 3	58

On the basis of the above data, the one-year average amount pumped each day for each of the pump station is as follows:

Pump Station	Average Daily Pumped Gallons
No. 2	48,697
No. 3	20,484

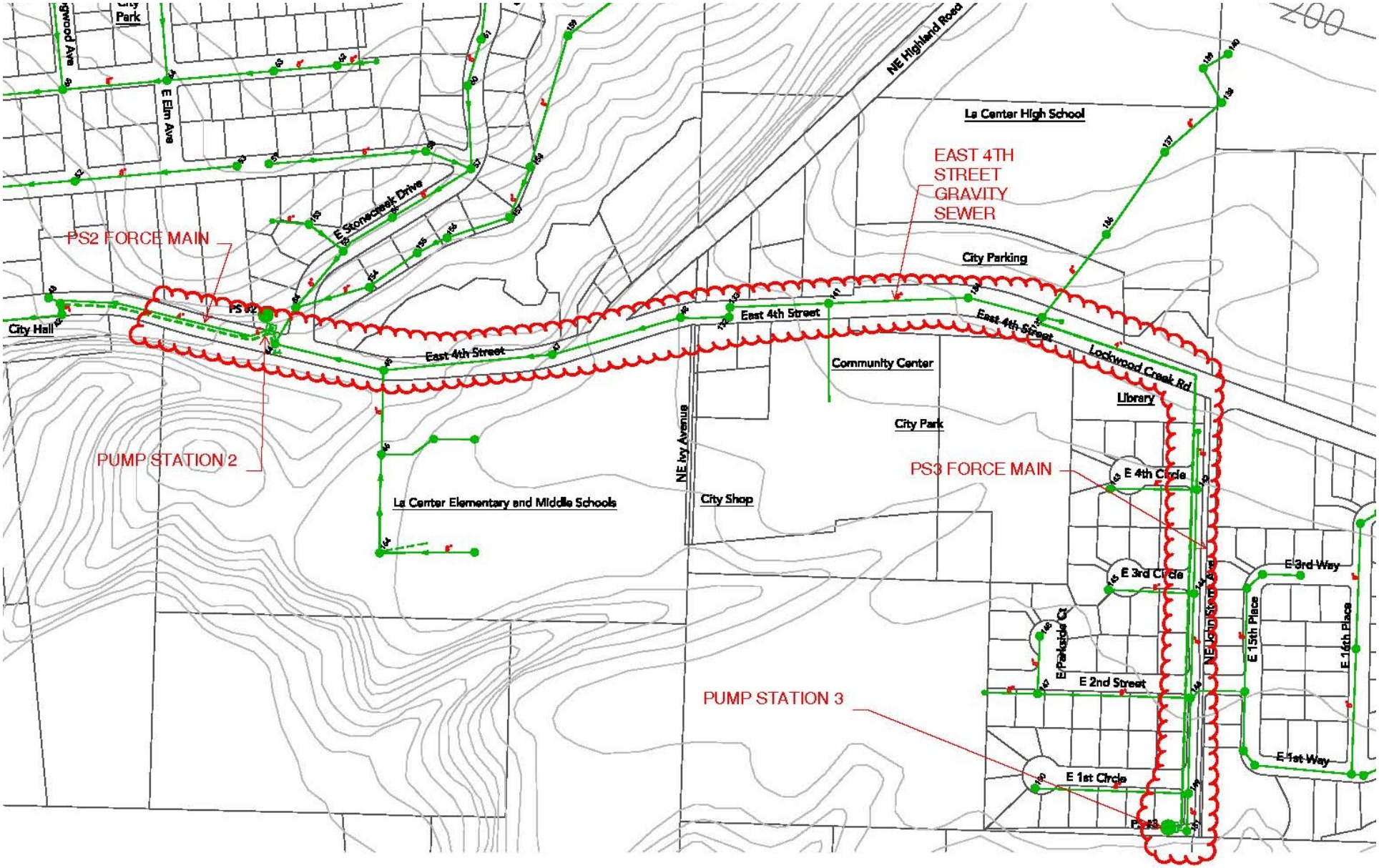


FIGURE 2 – SEWER COLLECTION SYSTEM ELEMENTS

ERU CALCULATION FOR BASIN D

The majority of the development in Basin D consists of newer homes or homes recently connected to sewer. Recently constructed sewer collection systems within the basin are primarily PVC with rubber gasket joints. Because of this, the collection system is tighter and less subject to infiltration and inflow than the city-wide system average. The system-wide ERU flow rate from the GSP is not applicable to this basin.

To establish a specific ERU for Basin D, the average flow rate from pump station No. 3 is divided by the number of contributing units (Parkside and Lockwood) as follows:

ERU = 20,484 gallons per day / 125 units = 164 gpd

At 2.7 person per ERU the per capita flow rate for the basin is: 164 gpd/2.7 = 61 gpcd

SCHOOL DISTRICT FLOWS

Populations for the school facilities were received from the La Center School District office and are included in the sub-basin information shown above. To estimate flows, a per capita flow rate was first estimated from guidelines in the DOE Design Manual (Table G2.1 Design Basis for New Sewage Works). The per capita flow rate was then refined using pump station records in order to arrive at a representative per capita flow from the schools. The High School meets the condition for schools with showers and cafeteria as shown in the DOE Manual. The Elementary/Middle School meets the condition for schools without showers and with cafeteria. The rates from the DOE Manual and the calculated flow rates are as follows:

Campus	DOE Manual gpd/cap	Calculated gpd/cap
High School	16	13
Elem/Mid	10	8

The calculated flow rates were used to estimate future design flows for the basin.

SPLASH PAD

A recreational feature contributes substantial flows to the sewer system from the public park. Information provided by Tony Cooper at City of La Center indicates that the splash pad discharges 9,000 gallons per day over 8 hours or 18.8 gallons per minute. Since the splash pad generally operates when school is not in session, it is appropriate to compare splash pad flows with school district flows including application of the peaking factor. The average day flow from the combined elementary/middle/high school facilities is 17,026 gpd. Using a peaking factor of 3.8, the dedicated share of pump station capacity for the school system is 64,700 gpd or 45 gpm.

For this analysis, the contribution from the splash pad is not included because the total flow rate, and therefore the dedicated pump station capacity required, will be substantially lower during times when school is out.

FUTURE DEVELOPMENT DENSITIES

To determine the required system capacity for the fully developed Basin D, development density was estimated for the currently undeveloped areas within Sub-basins D3, D2 North and D2 West. The zoning

in these areas is LDR 7.5 with a required Minimum Net Density of 4 units per acre (LCMC 18.130.080). Net density by definition is calculated after deducting right-of-way areas. For this analysis, estimated units per gross acre is needed. The existing Parkside Subdivision within the study area has a lot layout that is very close to the maximum possible density. Parkside has an overall density of (47 units / 11.9 acres) 3.95 units per gross acre. Lockwood Creek Subdivision which contains common property and environmental buffers has an overall density of (76 units / 24 acres) 3.17 units per gross acre. In consideration of the impacts to future development due to environmental constraints and shapes of properties, a density for future development of 3.5 units per gross acre has been assumed.

FLOW PROJECTIONS AND CAPACITIES

A spreadsheet file within Appendix 1 contains calculated current and future flows for each sub-basin and for each pump station. Future flows include two sets of calculations: one for capacities required by the addition of Sunrise Terrace to the existing condition and one for future or ultimate full build out capacity. Existing and required pump station capacities are summarized below:

Pump Station Number	Existing Capacity	Current Req'd Capacity	With Sunrise Terrace	Future Req'd Capacity
PS2	130 gpm	129 gpm	177 gpm	370 gpm
PS3	58 gpm	57 gpm	110 gpm	304 gpm
PS5	N/A	0 gpm	0 gpm	88 gpm

The calculations indicate that both PS2 and PS3 are presently very near capacity and there is not significant available pumping capacity to address additional flows. Any new flows will require upgrades to the current pumping capacity.

FORCE MAINS

The DOE Design Manual recommends force mains be sized so that velocities in the force main fall between a minimum of 2 feet per second (fps) which is the fluid velocity required for flushing to an optimum high velocity of 5 fps. The range of velocities results in pipe capacities as follows:

FM Pipe Size	Low (2 fps) Rate	High (5 fps) Rate
4 inch	75 gpm	200 gpm
6 inch	175 gpm	450 gpm
8 inch	310 gpm	790 gpm

Based on the pumping rates indicated above, the existing 4 inch force main from PS3 will be adequate for the build out of the Sunrise Terrace Subdivision but will require upgrading to a 6 inch in the future to accommodate full build out of basin D. The 4 inch force main from PS2 is adequate now but will be very close to capacity with the added flows from Sunrise Terrace. This will impact the ability of PS2 to operate with 2 pumps running. Upgrading the force main to 6 inch should be considered at such time as improvements to the pump station are being implemented. A 4 inch main for the future PS5 will be adequate for full build out of the subbasin.

PUMP STATION WET WELLS

Both PS2 and PS3 are 6 foot diameter wetwells. To determine if the existing pump station wetwells will have adequate capacity for future flows, the available wetwell volume between pump on and pump off levels is compared to the recommended volume in accordance with the DOE Design Manual. For constant speed pumps the manual recommends use of the following formula:

$$V = tQ/4 \qquad \text{(Section C2-1.2.5)}$$

Where V = minimum volume (gallons)
t = minimum time between starts
Q = pump capacity in gpm

Submersible pumps are generally recommended to be limited to not more than 10 starts per hour or one start every 6 minutes. With two pumps alternating the minimum time between starts is 3 minutes. The available wetwell volume for pumping is the capacity from the top limit at 6 inches below the invert elevation of the influent pipe to the bottom limit maintaining 18 inches of liquid above the floor. The available wetwell volume was determined from pump station as-built information provided by the city. The high end of the pump station capacity "Q" for each pump station was calculated with the above formula as follows:

Pump Station	Wetwell Height	Wetwell Volume	Calculated Max Pumping Rate
PS2	3.9 feet	930 gal	1100 gpm
PS3	3.0 feet	635 gal	847 gpm

Based on the above calculations, the existing 6 foot diameter pump station wetwells will be adequate for the future build out of the contributing basins.

CAPACITY OF GRAVITY SEWER

The gravity sewer in East 4th Avenue was evaluated for present and future capacity beginning from manhole 135 on the upstream to manhole 44 on the downstream. Pipe capacities based on existing diameter and slope were used from the GSP where they are shown on Table A-3. The calculations for existing and future conditions are included in Appendix 1. All pipes have adequate capacity for current flows and for flow that includes the additional 121 ERU's from Sunrise Terrace. The downstream gravity pipe segment from manhole 45 to manhole 44 will need to be upgraded for the full build out condition.

SUMMARY AND CONCLUSIONS

- Pump Station No. 5 will be require for the future condition. To meet the full build out of Basin D3 the pump station will require a capacity of 88 gpm and a 4 inch force main.
- Pump Station No. 3 is presently near its pumping capacity. The pump station will need to be upgraded to a capacity of 110 gpm to address the additional flow from Sunrise Terrace. The capacity for the full build out condition is 304 gpm. The wetwell will not need to be upgraded.
- The 4 inch force main from PS3 will be adequate through completion of Sunrise Terrace and will need to be upgraded to a 6 inch to accommodate build out.

- The gravity sewer in East 4th Street has adequate capacity for the completion of Sunrise Terrace. The downstream portion of the gravity sewer will need to be upgraded as the basin approaches build out.
- Pump Station No. 2 is presently near capacity. The pump station will need to be upgraded to a capacity of 177 gpm to address the additional flow from Sunrise Terrace. The capacity for the full build out condition is 370 gpm. The wetwell will not need to be upgraded.
- The 4 inch force main from PS2 will require velocities on the order of 4.5 feet per second to carry the 177 gpm flows after completion of Sunrise Terrace. The ability of the pump station to operate with two pumps running during high flow periods will be greatly restricted with a 4 inch force main. It is recommended that the force main be upgraded to a 6 inch to accommodate the Sunrise Terrace flows.

APPENDIX 1

CALCULATION OF AVERAGE FLOW RATE FROM LA CENTER PUMP STATION RECORDS

WEEK ENDING	RUN TIME MINUTES PER DAY				CALC AVE	CALC	CALC PUMP
DATE	PUMP 2A	PUMP 2B	PUMP 3A	PUMP 3B	DAILY FLOW	INFLOW GPM	RATE GPM
7/12/2014	260.3	229.3					
7/12/2014			65.9	148.3			
10/8/2014	143.1	150.1					
10/8/2014			140.4	208.4			
11/8/2014	196.6	200.9					
11/8/2014			245.7	276.3			
12/8/2014	194.1	210.1					
12/8/2014			253.9	230.6			
1/28/2015	161.0	163.1					
1/28/2015			209.0	114.3			
2/8/2015	200.4	205.1			50223.2	34.9	123.8
2/8/2015			251.6	114.6	31891.6	22.2	87.1
2/12/2015	235.6	240.7			54952.1	38.2	115.4
2/12/2015			283.0	123.1	34984.4	24.3	86.1
5/2/2015	141.4	150.6			40459.7	28.1	138.6
5/2/2015			171.7	240.0	22498.1	15.6	54.6
5/6/2015*	109.7	120.0			46669.8	32.4	139.1
5/6/2015*			142.4	182.1	27274.8	18.9	56.6

FOUR SEASONS FOR ANNUAL AVERAGE MINUTES/DAY		
	PS2	PS3
PS2 SUMMER	489.6	
PS3 SUMMER		214.1
PS2 FALL	345.4	
PS3 FALL		435.4
PS2 WINTER	402.6	
PS3 WINTER		395.0
PS2 SPRING	260.9	
PS3 SPRING		368.1

	PS2	PS3
AVE PS MINUTES/DAY	374.6	353.2
PUMPING RATE (GPM)	130	58
AVERAGE DAILY FLOW (GPD)	48697	20484

* 4 DAY PERIOD

BASIN CALCULATIONS - CURRENT AND FUTURE FLOWS

PUMP STATION CAPACITY REQUIRED

SYSTEM ELEMENT	AREA ACRES	ERU'S PER ACRE	TOTAL ERU'S	TOTAL PERSONS	GPD PER CAP	AVE DAY FLOW PRESENT	EXIST'G WITH SUNRISE TERR.	AVE DAY FLOW FUTURE	PEAKING FACTOR	DESIGN FLOW MGD	PS ERU'S SERVED	AVE DAY GAL	PEAKING FACTOR	DESIGN FLOW GPM
SUBBASIN D3	56.16	3.5	197	532	61	0	0	32452	3.9	0.000				
PS5 CURRENT											N/A	N/A	N/A	N/A
PS5 FUTURE											197	32452	3.9	88
SUBBASIN D2 NORTH	93.16	3.5	326	880	61	0	0	53680	3.8	0.000				
ADD SUNRISE TERRACE			121	327	61	0	19947							
SUBBASIN D2 WEST	19.9	3.5	70	189	61	0	0	11529	4.1	0.000				
PARKSIDE SUB			48	130	61	7930	7930	7930	4.2	0.033				
LOCKWOOD CR SUB			77	208	61	12688	12688	12688	4.1	0.052				
PS3 CURRENT											125	20618	4	57
PS3 WITH SUNRISE TERR.											246	40565	3.9	110
PS3 FUTURE											718	118279	3.7	304
HIGH SCHOOL			48	602	13	7826		8609						
PARK + COMM CENTER			2	5	61	305		305	4.3	0.001				
14 ERU'S ADJACENT			14	38	61	2318		2318	4.3	0.010				
ELEM + MIDDLE SCHOOL			56	1150	8	9200		10120						
STONE CREEK			52	140	61	8540		8540	4.2	0.036				
PS2 CURRENT											297	48807	3.8	129
PS2 WITH SUNRISE TERR.											418	68754	3.7	177
PS2 FUTURE											890	148171	3.6	370

INPUT DATA	
ERU (UNITS) PER ACRE	3.5
RESIDENTIAL ERU GPD/C	61
PERSONS/ERU	2.7
ELEM/MIDDLE SCHOOL GPD/C	8
HIGH SCHOOL GPD/C	13

EAST 4TH STREET GRAVITY SEWER CAPACITY ASSESSMENT

MH/MH	CAPACITY FROM GSP	PRESENT FLOW gpm	PRESENT % OF CAP	FLOW W/ SUNRISE	W/ SUNRISE % OF CAP	FUTURE FLOW gpm	FUTURE % OF CAP	CONTRIBUTING FLOWS
135/134	0.55	0.113	21%	0.189	34%	0.472	86%	PS3 AND HIGH SCHOOL
134/141	1.08	0.113	10%	0.189	18%	0.472	44%	
141/133	1.53	0.124	8%	0.2	13%	0.483	32%	ADDED ERU'S
133/132	2.21	0.124	6%	0.2	9%	0.483	22%	
132/48	1.11	0.124	11%	0.2	18%	0.483	44%	
48/47	1.64	0.124	8%	0.2	12%	0.483	29%	
47/45	1.95	0.124	6%	0.2	10%	0.483	25%	
45/44	0.49	0.161	33%	0.237	48%	0.523	107%	ADD ELEM/MID
44/PS2								
contributions								
PS3		0.082		0.158		0.438		
HIGH SCHOOL		0.031		0.031		0.034		
RES AND PARK ERU'S		0.011		0.011		0.011		
ELEM/MID SCHOOL		0.037		0.037		0.04		