Transportation Assessment – Introduction

1/19/2023
The attached *City Heights Phases 2 and 3 Transportation Assessment* prepared by Heffron Transportation Inc. dated May 20, 2021 evaluated trips generated by proposed lots in Phases 1 to 3 which, at the time, included 178 residential lots. Since then, the phase lines between Phases 2 and 3 has been revised and the overall unit count has been reduced as follows:

Phase 1 = 59 residential lots (per approved Phase 1 Final Plat)
Phase 2 = 65 residential lots (per pending Phase 2 Final Plat)
Phase 3 = 19 residential units (per proposed Phase 3 Preliminary Plat)
Total = 143 residential lots

Since the current lot count of 143 is less than the previously evaluated lot count of 178 the attached assessment is still valid for the purposes of analyzing Phase 3.

TECHNICAL MEMORANDUM

Project: **City Heights**
Phases 2 and 3

Subject: Transportation Assessment

Date: May 20, 2021

Authors: Marni C. Heffron, P.E., P.T.O.E.
Michelle M. Brown, Senior Transportation Engineer

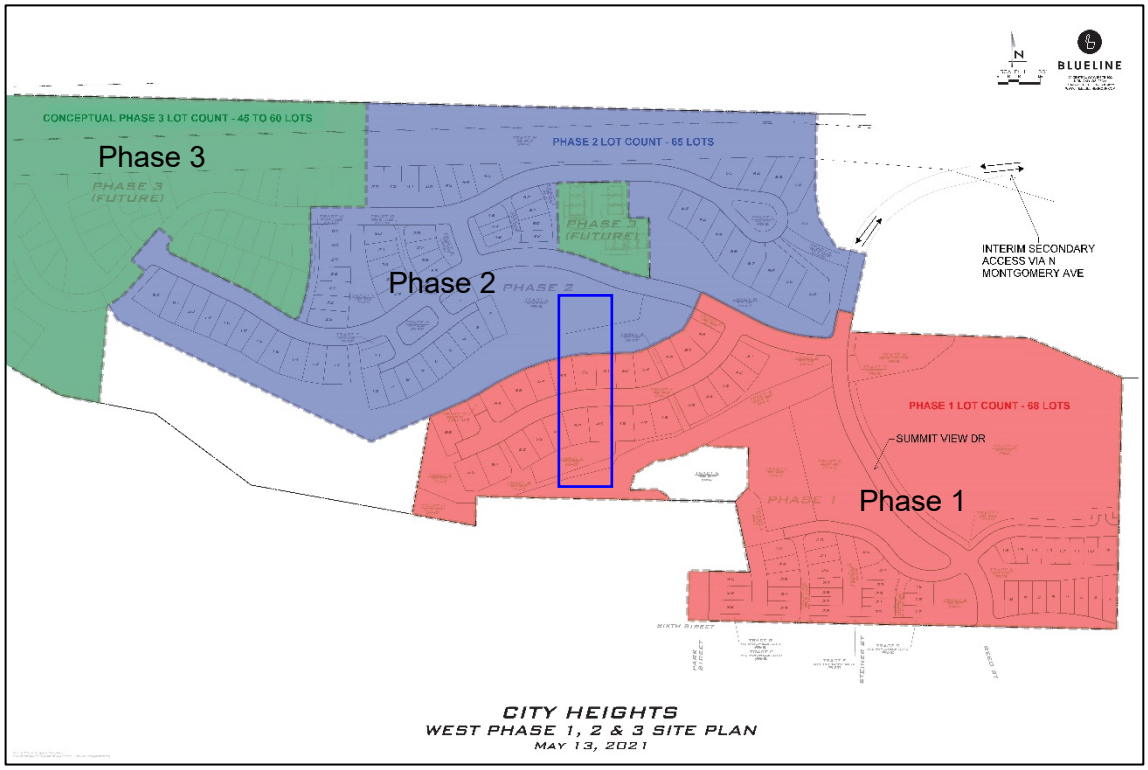
In November 2011, the Cle Elum City Council approved a Master Site Plan, an Annexation and Development Agreement, and a Planned Action Ordinance for City Heights. This planned mixed-use development proposed up to 962 dwelling units on 358 acres in the City of Cle Elum, generally located north of W 6th Street.[1] Transportation impacts for the full City Heights development were evaluated in the *City Heights Planned Mixed-Use Development Draft and Final Environmental Impact Statements.*[2]

Application for the first subdivision under that Master Site Plan was submitted in September 2020. This "Phase 1" plan proposed 68 residential lots plus a small amenity space, the location of which is shown on Figure 1. The Phase 1 subdivision also plans to improve Summit View Road, construct several local streets and alleys, construct trails and a park, and implement water, sewer and stormwater improvements, as well as private amenities for the residents of the subdivision.[1] A *Transportation Assessment Technical Memorandum*[3] completed for the Phase 1 development detailed the project trip generation, how traffic conditions have changed since the EIS was prepared, and evaluated specific mitigation measures that should be implemented based on the *City Heights Annexation and Development Agreement.*[4]

This *Technical Memorandum* provides information to support City Heights Phase 2 and Phase 3, which are also shown on Figure 1. The information supplements (and as appropriate, duplicates) the Phase 1 *Transportation Assessment* with trip generation estimates, site access considerations, and mitigation needed to accommodate Phases 2 and 3, and all three phases collectively. This *Technical Memorandum* also introduces a process to track cumulative trips and mitigation requirements identified in the Development Agreement. Over time, the cumulative trip generation and mitigation tracking matrix will be updated to reflect the actual number of permitted residential units and mitigation fee paid, which could vary slightly from the estimated units evaluated during preliminary planning.

1 Per City of Cle Elem website, http://cityofcleelum.com/city-services/planning/city-heights/, accessed October 4, 2020.
2 City of Cle Elum, Draft EIS, April 2010; Final EIS, November 2010.
3 *City Heights Phase 1 Transportation Assessment,* Heffron Transportation, Inc., March 9, 2021.
4 City of Cle Elum Ordinance No. 1355, November 8, 2011.

Figure 1. City Heights Phases 1, 2, and 3



Source: GCH and BlueLine, May 2020. Preliminary Site Plan.

1. Trip Generation

1.1. Trips for City Heights Full Build (Evaluated in EIS)

Trip generation for full build-out of the City Heights Master Plan was estimated in the *City Heights EIS.* That analysis applied trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 8th Edition.*[5] The program for the EIS's Preferred Alternative (Alternative 1) assumed about 985 residential units, with a mix of approximately 30 percent attached and 70 percent detached dwelling units. It was also assumed that about 10 percent would be occupied by seasonal residents as second homes or vacation homes per input from the City. The Preferred Alternative also assumed construction of two 10,000-square foot neighborhood commercial centers, for a total of approximately 20,000 square feet (sf) of commercial development. The resulting trip generation for this full-build condition is summarized in Table 1. It was expected to generate an estimated 8,650 vehicle trips per day (4,325 trips in and 4,325 trips out) with about 840 trips in the PM peak hour.

5 Institute of Transportation Engineers, 2008.

Table 1. Trip Generation for Full-Build City Heights (Preferred Alternative in EIS)

Land Use Type (ITE Land Use Code)	Size	Daily Trips	AM Peak Hour Trips [a]			PM Peak Hour Trips [b]		
			In	Out	Total	In	Out	Total
Single Family Residential (210)	515 Units	4,930	97	290	387	328	194	522
Multifamily Residential (220)	374 Units	2,520	43	150	193	151	81	232
Recreational Home (260)	100 Units	310	11	2	13	7	24	31
Neighborhood Commercial (814)	20,000 sf	890	9	5	14	24	30	54
Total Trips for Full-Build		**8,650**	**160**	**447**	**607**	**510**	**329**	**839**

Source: Heffron Transportation, Inc. August 2009. As derived for the City Heights Planned Mixed-Use Development Draft Environmental Impact Statement (Table 3.6-7), April 2010.

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

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

1.2. Trips for Phases 1, 2 and 3

Preliminary plat layouts for City Heights estimate that Phase 2 would have 65 residential units and Phase 3 would add 45 residential units. As with the Phase 1 assessment (proposed 68 residential units), a worst-case condition for trip generation was assumed, with all homes estimated to be first homes (not vacation homes), and all are assumed to be single-family units even though some could be duplexes. In the decade since the *City Heights EIS* was completed, two new editions of ITE's *Trip Generation Manual* have been published. The current (10th Edition) manual has slightly lower trip rates for a single-family residential use than had been listed in the 8th Edition.[6] However, to provide a consistent comparison, the previous rates were applied to all three phases. The trip generation for each of the proposed phases to date are shown in Table 2, along with the cumulative trip generation. Collectively, Phases 1, 2, and 3 would generate an estimated 180 PM peak hour trips, reflecting about 21% of the City Heights full-build trips.

Table 2. Trip Generation for City Heights Phases 1, 2, and 3

Single Family Residential (ITE Land Use Code 210)	Size	Daily Trips	AM Peak Hour Trips [a]			PM Peak Hour Trips [b]		
			In	Out	Total	In	Out	Total
Phase 1 (*previously evaluated*) [c]	68 Units	650	13	38	51	43	26	69
Phase 2	65 units	620	12	37	49	41	25	66
Phase 3	45 units	430	8	26	34	28	17	45
(Phase 1 + Phase 2 + Phase 3)	**178 units**	**1,700**	**33**	**101**	**134**	**112**	**68**	**180**

Source: Heffron Transportation, Inc. May 2021. Derived using rates from Trip Generation Manual, 8th Edition (Institute of Transportation Engineers, 2008) to be consistent with analysis in the City Heights Planned Mixed-Use Development Draft Environmental Impact Statement (Table 3.6-7), April 2010.

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

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

c. City Heights Phase 1 Transportation Assessment, Heffron Transportation, Inc., March 9, 2021.

[6] Trip generation rates for a Single-Family Residence are 0.99 trips/unit in the 10th Edition *Trip Generation Manual (ITE, September 2017)* compared to 1.01 trips/unit in the 8th Edition *Trip Generation Manual (ITE, 2008).*

2. Changes in Traffic Conditions since City Heights EIS

2.1. Traffic Volumes and Forecasts in EIS

The *City Heights EIS* had performed detailed traffic analysis of 13 intersections for the weekday PM peak hour during the summer peak. Traffic volumes for those intersections had originally been compiled for the year 2009 from several sources including new counts, counts from other studies, and traffic volumes from the City of Cle Elum's *Draft Transportation Plan.*[7] Future traffic volume forecasts were then developed for the Year 2022 without any development on the City Heights site assuming planned growth associated with other development projects. At the time of analysis, development was booming in Cle Elum, and it was estimated that 2,000 residential units (not including City Heights), 644,000 square feet of industrial use, and 220,000 sf of commercial (retail) use would have been constructed between 2009 and 2022. Tables 3.16-2 and 3.16-3 from the EIS itemized the expected background development projects and change in PM peak hour trips.

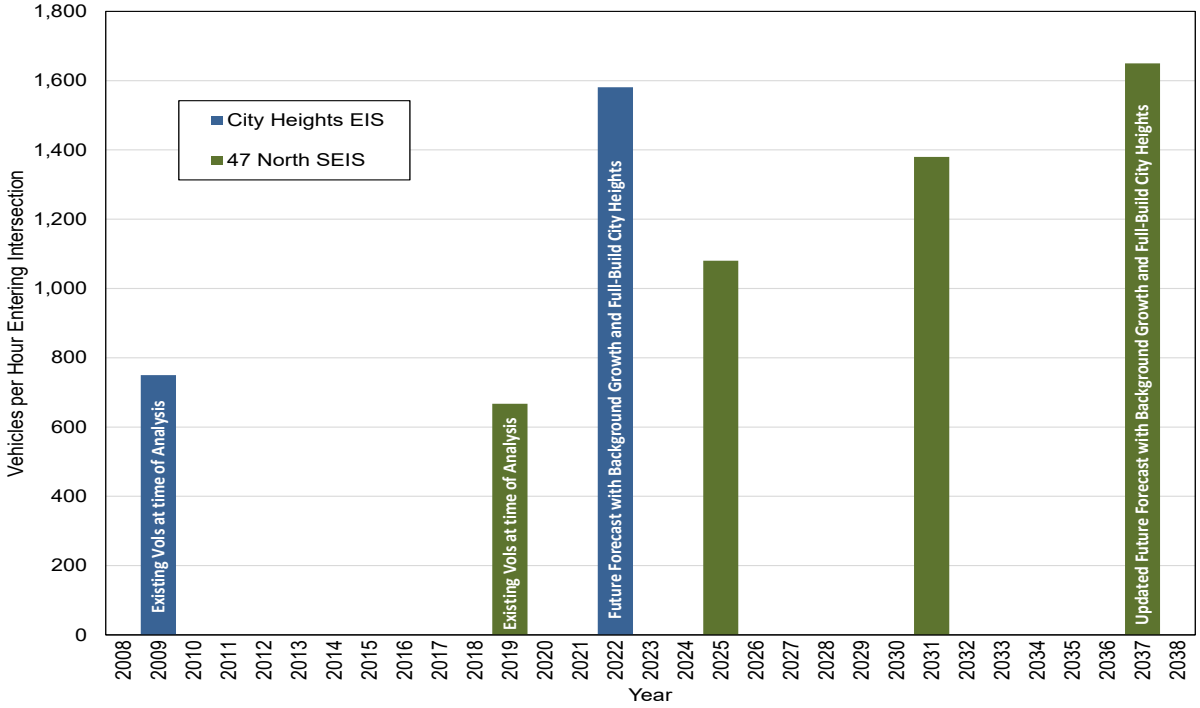
2.2. Updated Conditions and Future Forecasts

The "Great Recession" between 2008 and 2010 substantially slowed growth compared to what had previously been forecast. New traffic volume forecasts were prepared for the *47° North Draft SEIS Transportation Analysis*[8] which built upon more recent traffic models developed for Kittitas County and the City of Cle Elum.[9] To show how growth has changed since the *City Heights EIS* was prepared, PM peak hour traffic volumes for the W 2nd Street (State Route 903)/N Stafford Avenue intersection were compiled from both documents. This intersection would be the primary access connection to and from the state highway for the Phases 1, 2, and 3 of the City Heights development. The total traffic entering that intersection (sum of all movements) is shown on Figure 2.

The traffic volume comparison shows that the Year 2019 traffic volumes (reflecting pre-COVID-19 conditions) were slightly lower at the W 2nd Street/N Stafford Avenue intersection than they were in 2009. The *City Heights EIS* had forecast that traffic entering this intersection would more than double by the year 2022. The new forecasts from the 47° North project now show that the anticipated traffic volumes will not meet those levels until the year 2037. Those growth forecasts appear to include nearly the full-build condition for City Heights.

7 City of Cle Elum, May 2009.
8 Transportation Engineering Northwest, September 2020.
9 Fehr & Peers, July 2, 2020.

Figure 2. Comparison of PM Peak Hour Traffic Volume Forecasts
Total Traffic Entering W 2nd Street / N Stafford Avenue Intersection



Sources: Traffic volumes in blue are from the City Heights EIS (City of Cle Elum, Draft EIS, April 2010). Traffic volumes in green are from the 47° North Draft SEIS Transportation Analysis (TENW, September 2020). Both reflect the weekday PM peak hour conditions during the summer peak.

2.3. Site Access Impacts

The City Heights development for Phases 2 and 3 (and previously evaluated Phase 1) are proposed with access to and from downtown Cle Elum and the state highway via N Stafford Avenue. The *47° North Draft SEIS* assessed intersection operations at many intersections, including the intersection at W 2nd Street / N Stafford Avenue, which is estimated to experience operational decline in the future. This intersection, which is controlled by stop signs on the side streets was identified to operates at LOS C (16.6 seconds of delay) for the northbound left-turn movement during the weekday PM peak hour (in 2019, pre-COVID-19). This reflects the peak summer season. By the year 2025, weekday PM peak hour operations are expected to degrade this movement to LOS E (46.7 seconds of day) without the 47° North project and to LOS F (> 100 seconds) with the 47° North project. The degradation in intersection operations is primary due to a substantial increase in volume for the northbound left turn movement; a movement that would not be influenced by the City Heights Phases 1, 2 and 3. The original Development Agreement for the 47° North project (known as the "Bullfrog UGA")[10] had included signalizing the W 2nd Street / N Stafford Avenue intersection when warranted. The SEIS now recommends that the 47° North project pay a proportionate share of that signal, estimated at about a 20% share.

City Heights Phases 2 and 3 would have a relatively small impact to the intersection at W 2nd Street/N Stafford Avenue—it would not add traffic to the critical northbound left turn movement described previously. The addition of the City Heights Phases 2 and 3 (in addition to Phase 1) is not expected to

[10] October 30, 2002.

degrade intersection operations below standards or trigger traffic signal warrants. As described in the next section, the *City Heights Development Agreement* included a $750 per unit traffic impact fee instead of proportionate share values of individual intersection improvements. Based on the Preliminary Plat layouts, the Phase 2 fee would be $48,750, and the Phase 3 fee would be $33,750, in addition to the Phase 1 fee of $51,000, of which the City of Cle Elum could allocate as it deems necessary. As previously noted, fees will be paid on the final approved Plats for each phase.

The City has indicated that a second access (besides the N Stafford Avenue - Summit View Road access) may be required to serve City Heights Phases 1, 2, and 3. The project proposes a temporary gravel road to be used for emergency access and/or emergency vehicles only. The roadway would connect to the downtown area via N Montgomery Avenue. The *City Heights Planned Mixed-Use Development Draft and Final Environmental Impact Statements* included analysis of this access, and three unsignalized intersections along N Montgomery Avenue at E 1st Street, E 2nd Street, and E 3rd Street. That analysis concluded that each of these intersections would continue to operate at acceptable levels in the future with the full development of City Heights and the estimated future background traffic volume growth, without need for mitigation. That analysis assumed that at full build out of City Heights, a total of 361 (221 inbound and 140 outbound) project trips would use the N Montgomery Avenue access during the PM peak hour.

The first three phases of City Heights are located well west of N Montgomery Avenue, and even if a full access (rather than emergency access) is provided, it is expected to be used by less than 15% of the trips for these phases. It is estimated that about 27 PM peak hour trips may use this second access, which is not expected to affected operations on this street. The intersections along N Montgomery Avenue, and the W 2nd Street / N Stafford Avenue are estimated to continue operating at acceptable levels with either a single access via N Stafford Avenue, and/or with a secondary access via N Montgomery Avenue with the collective development of Phases 1, 2, and 3.

3. City Heights Mitigation

Specific mitigation requirements for City Heights were detailed in the *City Heights Annexation and Development Agreement, Appendix I – Transportation Standards and Improvements.*[11] These are summarized in the attached Table 3 as a mechanism to track those requirements and applicability to each of the proposed phases. Table 4 provides detail information to track the cumulative plat applications, trip generation, and transportation mitigation fee estimates. Over time, the cumulative trip generation and mitigation tracking matrix will be updated to reflect the actual number of permitted residential units and mitigation fee paid, which could vary slightly from the estimated units evaluated during preliminary planning.

4. Summary

Transportation impacts for the full City Heights development were evaluated in the *City Heights Planned Mixed-Use Development Draft and Final Environmental Impact Statements*, and the transportation-related mitigation was then detailed in the *City Heights Annexation and Development Agreement.*

Although nearly a decade has passed since the *City Heights EIS* was completed, traffic volumes have changed very little, and at key locations have decreased. Future traffic volume forecasts in that EIS are not expected to be reached until about the year 2037, 15 years beyond when the EIS anticipated the growth to occur.

[11] City of Cle Elum Ordinance No. 1355, November 8, 2011.

Phase 2 is planned to have 65 residential units. It is estimated to generate 620 vehicle trips per day (310 trips in and 310 trips out) with 49 trips during the AM peak hour and 66 trips during the PM peak hour. The Phase 2 PM peak hour trips reflect less than 8% of the full-build trips for all of City Heights.

Phase 3 is planned to have up to 45 residential units. It is estimated to generate 430 vehicle trips per day (215 trips in and 215 trips out) with 34 trips during the AM peak hour and 45 trips during the PM peak hour. The Phase 3 PM peak hour trips reflect about 5% of the full-build trips for all of City Heights. Cumulatively, Phases, 1, 2 and 3 would reflect about 21% of the full-build trips.

City Heights proposes full site access via N Stafford Avenue for Phases 1, 2, and 3. A secondary emergency-use only access is proposed with a gravel road via N Montgomery Avenue. If the City requires the second access to be a full-use paved roadway; the analysis indicates no mitigation would be required to accommodate this option. The roadway network could support City Heights Phases 1, 2, and 3 with either one access via N Stafford Avenue, or with a second access via N Montgomery Avenue.

Phase 1 of the City Heights development would implement many of the mitigation measures detailed in the Development Agreement, including front-loading improvements to N Stafford Avenue to upgrade the corner and pavement near W 4th Street that will serve this phase and future phases. The Phase 1 Development Mitigation Fee is estimated to be $51,000. Phases 2 and 3 would not require any specific mitigation measures except the Development Mitigation Fee, which is estimated to be $48,750 for Phase 2 and $38,750 for Phase 3. The actual fees will be adjusted to match the number of units in each phases final approved Plat. Table 3 tracks the mitigation obligations from the Developer Agreement; Table 4 summarizes the cumulative trips and mitigation for plat applications to date.

It is noted, as listed for Improvement Measure #7 in the attached Table 3; a traffic analysis will be required at the SR 903 / SR 970 intersection when the building permit is issued for the 100th ERU (Equivalent Residential Unit) within City Heights. Phases 2 and 3 would push the total ERUs above this threshold. The traffic analysis would entail performing new traffic counts at the SR 903/SR 907 intersection. However, because the COVID-19 pandemic has closed or limited activities across the state, it is recommended that the updated traffic analysis be deferred until late summer or fall 2021 when it is hoped that more normal travel conditions will resume. The timing of this analysis will be set in consultation with City of Cle Elum staff.

MCH/mmb

Attachments: Table 3 - City Heights Transportation Mitigation Requirements - Phases 2 & 3
Table 4 - City Heights Cumulative Project / Phase List as of May 2021
Exhibit A – Internal and Collector Roads Phases 2 and 3 (May 2021)
Exhibit B - City Heights Master Site Plan (June 2011)

Table 3. City Heights Transportation Mitigation Requirements – Phases 2 & 3

Summary of Improvement Measures	Previously Completed	Applicable to Proposed Plat(s)?	Description of Improvement to be Made with Proposed Project
1. Road Construction – Dedicate Internal and Collector Roads to City.	No	No	Dedication of right-of-way will occur in later phases or when full project complete.
2. Road Standards			
2.1 - Internal Roads	Ongoing	Yes	Project will construct internal roads as shown on Exhibit A (attached).
2.2 - Collector Roads	Ongoing	Yes	Project will construct Collector Roads as shown on Exhibit A (attached).
3. Road Maintenance and Snowplowing	No	Yes	"Ridge Entities" will maintain and plow roads until they are dedicated to the City.
4. N Stafford Avenue - Modify the corner of N Stafford Avenue, just north of W 4th Street, improving the guard rail and resurfacing the pavement.	Yes, to be completed with Phase 1	Complete	
5. N Columbia Avenue – City to negotiate Interlocal Agreement with Kittitas County to maintain and snowplow the portion of that road that lies within the County's jurisdiction.	No	Not Applicable	Project will not require access from N Columbia Avenue.
6. Western Access to/from SR 903 – With assistance from City, negotiate a "common access intersection" on SR 903 that would serve Suncadia/Bullfrog UGA on the west side of SR 903 and City Heights on the east side of SR 903.	No	Not Applicable	Plat will not require west access.
7. Intersection of SR 903 / SR 970 – Perform traffic engineering studies to monitor need for a left-turn lane from SR 970 northbound to westbound SR 903. Monitoring to be performed up to four times upon issuance of building permits for ERU limits of 100, 300, 500 and 700.	No	Yes, but defer due to COVID-19	Proposed cumulative development is above threshold of 100 ERUs. Timing of new traffic counts needed for analysis will be set in consultation with City staff.
8. Haul Routes – Prior to commencement of any construction activity, Ridge Entities shall propose the access route for construction traffic.	Ongoing	Yes	Haul plan to be prepared.
9. Traffic Development Mitigation Fees – Pay $750 per ERU to offset impacts to City roads.	Ongoing	Yes	Preliminary impact fee estimate: [a] Phase 2 = $48,750 for 65 ERUs Phase 3 = $33,750 for 45 ERUs

Source: Summary of improvements required per *City Heights Annexation and Development Agreement, Appendix I – Transportation Standards and Improvements*, November 8, 2011.
Exhibit A - Internal and Collector Roads Map, BlueLine, May 2021 (attached).

a. These are estimated based on Preliminary Plat plans. Actual fees paid will be based on the number of units in approved plats.

Table 4. City Heights Cumulative Projects/Phase List – As of May 2021

Project Name	Development Area[a]	Project Program	ERU Building Permits Issued[b]	Development Mitigation Fees[c]	AM Peak Hour Trips	PM Peak Hour Trips	Daily Trips
Phase 1[d]	Area A	68 units	0	$51,000	51	69	650
Phase 2[e]	Area B	65 units	0	$48,750	49	66	620
Phase 3[e]	Area C	45 units	0	$33,750	34	45	430
Totals		**178 units**	**0**	**$133,500**	**134**	**180**	**1,700**

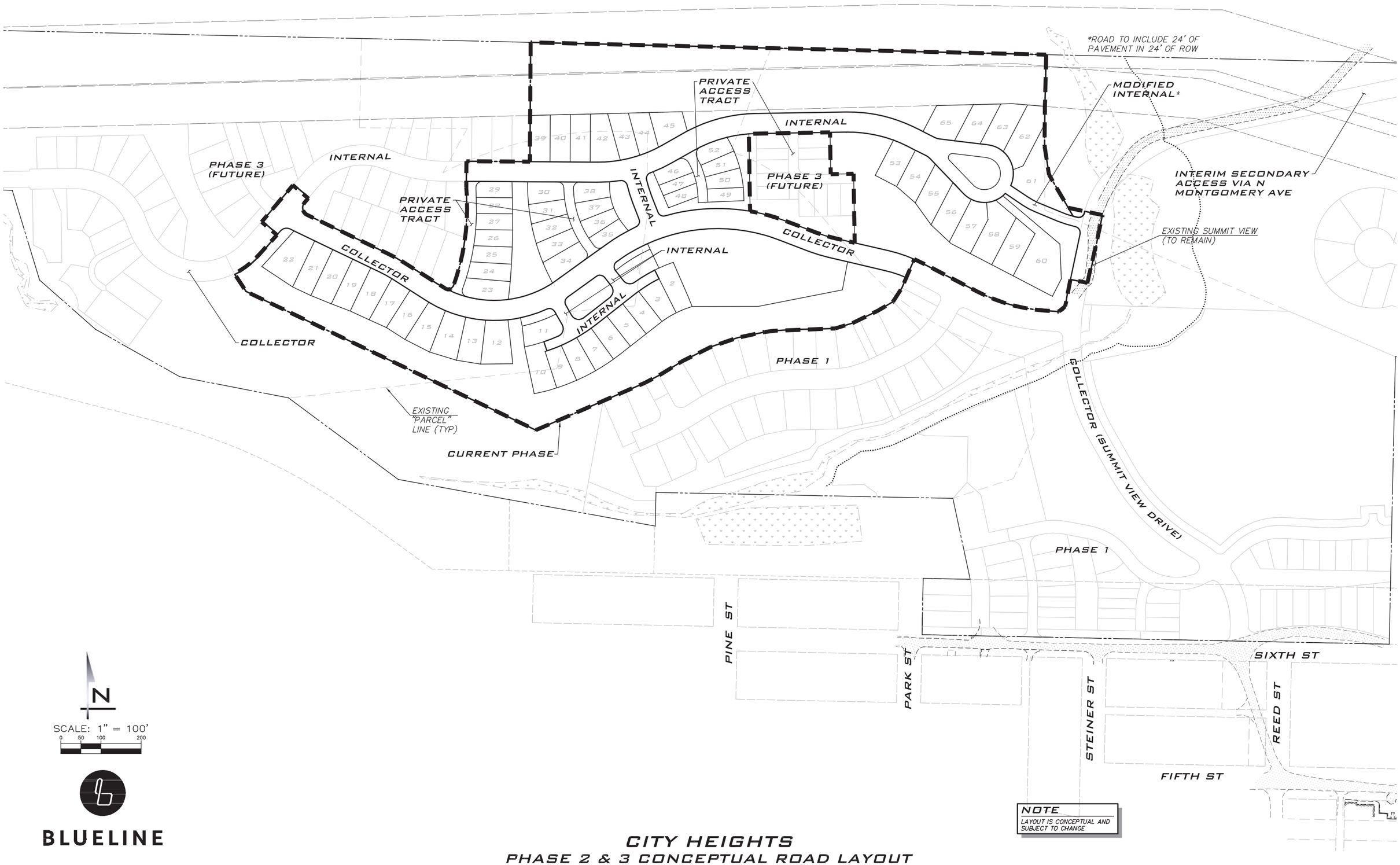
a. *Development Areas A, B, and C and Areas G and H, are tied to Transportation Mitigation Requirements: #4 (N Stafford Avenue) and #5 (N Columbia Avenue), respectively, as listed in Table 3 above per* the City Heights Annexation and Development Agreement, Appendix I – Transportation Standards and Improvements, *November 8, 2011. Development areas are shown on Exhibit B - City Heights Master Plan, June 2011 (attached).*

b. *ERU building permits issued (thresholds at 100, 300, 500 and 700 ERUs) are tied to Transportation Mitigation Requirement #7 (Intersection of SR 903/SR970), as listed in Table 3 above.*

c. Development Mitigation Fees estimated based on Transportation Assessments. Fees will be updated based on final plat approvals.

d. *City Heights Phase 1 Transportation Assessment, Heffron Transportation, Inc. March 9, 2021.*

e. *City Heights Phases 2 and 3 Transportation Assessment, Heffron Transportation, Inc. May 20, 2021.*



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BLUELINE

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CITY HEIGHTS
PHASE 2 & 3 CONCEPTUAL ROAD LAYOUT
MAY 19, 2021

EXHIBIT A

MASTER SITE PLAN

GCH geyer coburn hutchins
planning and landscape architecture

CITY HEIGHTS
CLE ELUM, WASHINGTON

JUNE 2011

EXHIBIT B