

13. Noise and Vibration

NOISE — Would the project result in:	Significant Project Impact (Peculiar to the Project or Parcel)	Project Impact not Identified by GPU FEIR	Off-Site or Cumulative Impact not Identified by GPU FEIR	Substantial New Information Resulting in More Severe Adverse Impact than Identified in the GPU FEIR
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	No	No	No	No
b) Generation of excessive groundborne vibration or groundborne noise levels?	No	No	No	No
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	No	No	No	No

Discussion

a) GPU Operational Traffic Noise

Impacts related to permanent increases in noise from vehicle traffic that would result from implementation of the GPU were evaluated under Impact 3.11-1 on pages 3.11-20 to 3.11-30 of the GPU DEIR. The analysis determined that upon full buildout of the GPU and with implementation of the noise- and traffic-related policies and reduction measures contained in the GPU, the impact of localized noise increases within the city's roadways would be significant and unavoidable as the result of increases exceeding 1.5 A-weighted decibels (dBA) along roadways where the existing noise levels already exceed 65 dBA, Ldn.¹⁸

Project Operational Traffic Noise

The intersection level of service assessment prepared for the proposed project (Fehr & Peers, 2024) determined that the proposed project would be expected to generate approximately 39 trips during the peak hour. These trips would reasonably be expected to use Sebastopol Avenue (SR-12) to access the project site, and this roadway would experience the greatest increase in traffic volumes compared to all other roadways.

The intersection level of service assessment indicates that SR-12 has an existing peak-hour volume of 1,624 cars and trucks. Using algorithms of the Federal Highway Administration's 108 Traffic Noise Model, it was determined that the addition of 39 additional peak-hour trips to the existing traffic volume on SR-12 would increase noise levels by 0.1 dBA and would not result in a significant traffic noise impact.

¹⁸ Ldn – The Day/Night Average Sound Level is the 24-hour day and night A-weighted noise exposure level, which accounts for the greater sensitivity of most people to nighttime noise by weighting noise levels at night. Noise between 10:00 p.m. and 7:00 a.m. is weighted (penalized) by adding 10 dBA to take into account the greater annoyance from nighttime noise (also referred to as "DNL").

GPU Operational Stationary Source Noise

Impacts related to permanent increases in noise from stationary noise sources¹⁹ that would result from implementation of the GPU were evaluated under Impact 3.11-2 on pages 3.1-30 to 3.11-35 of the GPU DEIR. The analysis determined that upon full buildout of the GPU and with implementation of the noise-related policies and actions contained in the GPU, the impact of stationary source noise would be less than significant. Policies and actions that would contribute to this less than significant finding include policies N 1-1, N 1-3, N 1-4, N 1-5, N 1-6, N 1-7, N 1-11, N-13, N 1-14, N-15, N-16, N-17, N-18, N 2-1, N 2-3 and Actions N-1a, N-1b, N-1c, N-1d, N-2a, and N-2b.

Project Operational Stationary Source Noise

Stationary noise sources that would be associated with the proposed project would include heating, ventilation, and air conditioning (HVAC) systems, and non-amplified music and human voices from the rooftop outdoor bar of the hotel.

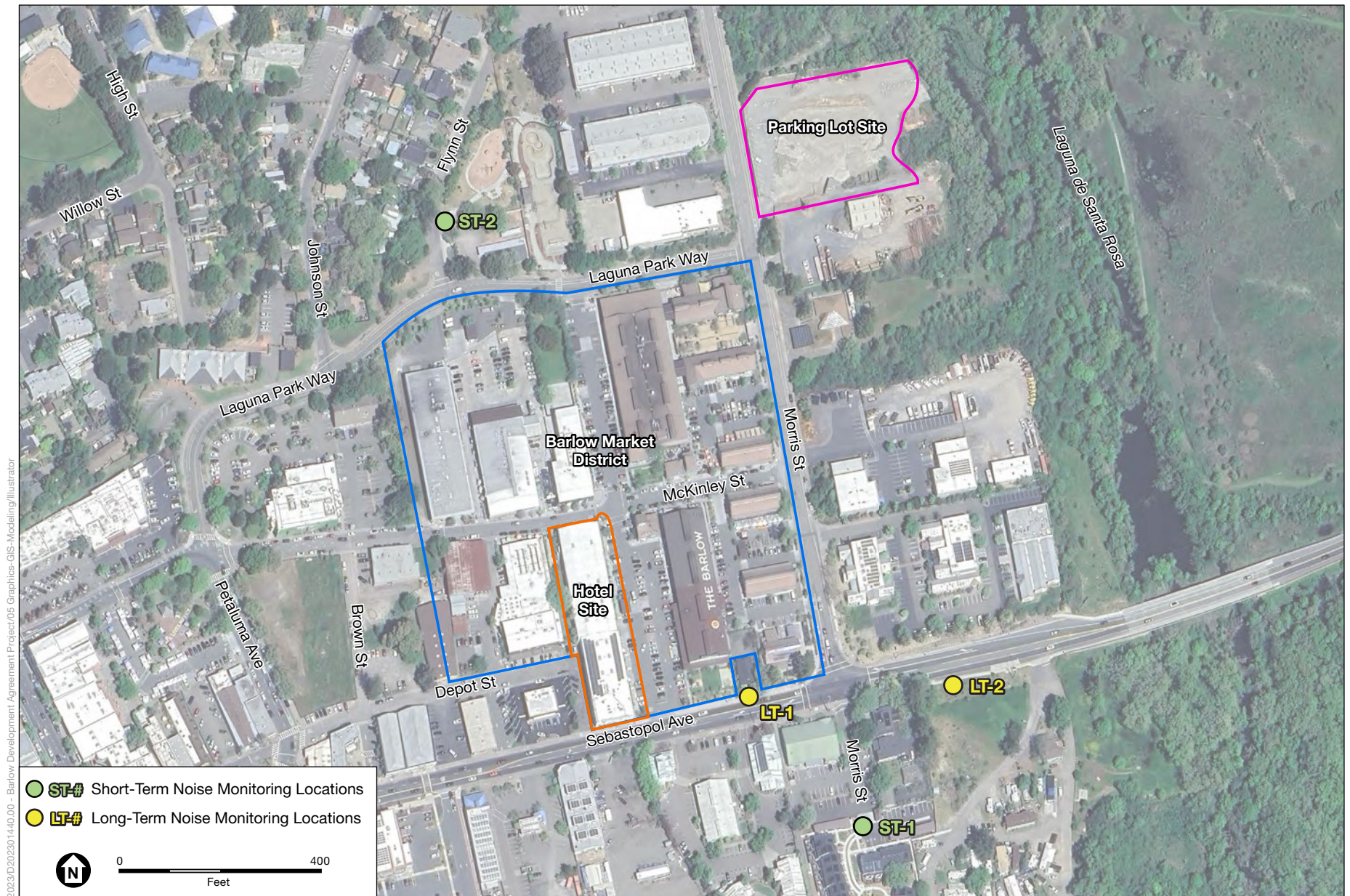
With respect to stationary noise sources, Policy N 1-7 states that a significant impact will occur if a project results in an exceedance of the noise level standards contained in the GPU noise element, or the project will result in an increase in ambient noise levels by more than 3 dB, whichever is greater. The analysis determined that compliance with the requirements outlined in Action N1-d shall be sufficient to reduce noise impacts to a less than significant level.

Action N1-d requires acoustical studies for all new discretionary projects, including those related to development and transportation, which have the potential to generate noise impacts which exceed the standards identified in the noise element. The studies shall include representative noise measurements, estimates of existing and projected noise levels, and mitigation measures necessary to ensure compliance with this element and relevant noise standards in the Sebastopol Municipal Code.

Table N-2 of the GPU as well as Section 8.25.060 of the Municipal Code establish a daytime (7 a.m. to 10 p.m.) noise standard of 55 dBA, Leq at residential uses and a nighttime standard (10 p.m. to 7 a.m.) of 45 dBA, Leq. These standards are to be reduced by 5 dBA for sources consisting of speech or music. However, the GPU clarifies that in no case shall mitigation be required to a level that is less than existing ambient noise levels, as determined through measurements conducted during the same operational period as the subject noise source.

The existing noise level in the project site vicinity was measured at two locations over a 24-hour period and two additional short-term measurements were collected at the nearest residential areas (**Figure NOI-1**). The noise measurement data is presented in **Tables NOI-1** and **NOI-2** below. Based on these data, the noise level in the immediate vicinity of the project site already exceeds the standards of Table N-2 of the GPU as well as Section 8.25.060 of the Municipal Code, and the applicable noise impact standard is a 3 dBA increase above existing levels, consistent with Policy N 1-7.

¹⁹ Stationary noise sources may include commercial area loading docks, equipment operations at industrial or agricultural uses, HVAC equipment, car washes, operations at auto repair facilities, as well as noises generated by recreational uses.



SOURCE: Aldridge Development, 2024; ESA, 2024; Google Earth, 2024

Barlow Hotel Project

Figure NOI-1
Noise Measurement Locations

**TABLE NOI-1
LONG-TERM AMBIENT NOISE LEVELS IN THE PROJECT SITE VICINITY**

Measurement Location	Day-Night Noise level (L _{dn})	Noise Levels in dBA	
		Daytime hourly average, L _{eq}	Nighttime hourly average, L _{eq}
LT-1 North side of Sebastopol Avenue at 6742 Sebastopol	76	71	69
LT-2 South side of Sebastopol Avenue at 6681 Sebastopol	73	73	65

NOTE: See Figure NOI-1 for noise measurement locations.
SOURCE: Environmental Science Associates, 2024

**TABLE NOI-2
SHORT-TERM AMBIENT NOISE LEVELS IN THE PROJECT SITE VICINITY**

Measurement Location	Time	Noise Levels in dBA	
		L _{eq}	L _{max}
ST-1 6737 Sebastopol Avenue Multi-family residences (275 feet south of Sebastopol Avenue)	9:16 a.m.	56	85
LT-1 (Comparison data point on Sebastopol Avenue)	9:00 a.m.	70	89
ST-2 Flynn Street Residences	9:43 p.m.	52	82

NOTES: See Figure NOI-1 for noise measurement locations.
L_{eq} represents the constant sound level; L_{max} is the maximum noise level.
SOURCE: Environmental Science Associates, 2024

Additionally, comparison of simultaneous noise monitoring data at locations LT-1 and ST-1 indicates that existing intervening commercial structures provide substantial noise attenuation of over 10 dBA between the noise sensitive receptors to the southeast and traffic on SR-12.

With respect to noise from HVAC equipment, such equipment commonly is provided in packaged units that are located on the rooftop of hotels. Such equipment operates at a noise level of 72–78 dBA at 30 feet without acoustical treatments (Trane, 2002). The nearest noise sensitive receptor to the hotel are multifamily residences located approximately 450 feet to the southeast and approximately 700 feet from the screened mechanical area on the rooftop. At this distance and assuming a conservative 5 dBA reduction for rooftop parapets, HVAC noise would be attenuated to 46 dBA which would be below the existing ambient nighttime noise levels shown in Table NOI-1 and, therefore, less than significant.

With respect to noise from non-amplified music from the rooftop bar, this bar would be located approximately 300 feet from the southern property line of the proposed project and approximately 750 feet from the nearest residences to the southeast. As stated earlier, noise monitoring indicates that existing structures provide substantial noise attenuation (more than 10 dBA) between the noise sensitive receptors to the southeast and traffic on SR-12.

It is noted that live amplified music performances are an existing regular occurrence at the Barlow. Therefore, non-amplified music from the rooftop bar would not represent a new source

of amplified noise that could combine with existing sources. As discussed in the Project Description, the rooftop bar would likely be open seven days a week from 12 p.m. up to 10 p.m., and non-amplified music at the rooftop bar would be limited to these hours daily.

As discussed above, pursuant to Section 8.25.060 of the Municipal Code, the applicable noise impact standard is a 3 dBA increase above existing levels. Given the intervening presence of traffic noise on SR-12 between the proposed bar and the nearest sensitive receptors, as well as the presence of intervening structures and given that human voices already occur during live music performances at the existing Barlow, it is reasonable to expect that noise from patron voices at the rooftop bar would not result in a significant noise impact which, as found by the court, should not be regulated under CEQA.

Construction Noise - GPU

Impacts related to temporary increases in noise that would result from construction activities from development under the GPU were evaluated under Impact 3.11-3 on pages 3.11-33 to 3.11-34 of the GPU DEIR. The analysis determined that upon full buildout of the GPU and with implementation of the noise-related policies and actions contained in the GPU, the impact of construction noise would be less than significant.

Construction Noise - Proposed Project

Construction of the proposed project would occur over a period of approximately 18 months starting in 2025. Project construction would result in temporary increases in ambient noise levels. Onsite construction activities would require the use of heavy construction equipment (e.g., excavator, loader, crane) that would generate varying noise levels. Offsite construction noise sources would consist of passing trucks and other construction-related vehicles.

Table NOI-3 shows typical noise levels produced by various types of construction equipment that would operate during the construction of the proposed project.

TABLE NOI-3
TYPICAL MAXIMUM NOISE LEVELS FROM CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level (dBA, L_{max} at 50 feet)
Backhoe	78
Excavator	81
Compactor	83
Air Compressor	78
Dozer	82
Grader	85
Paver	77
Roller	80
Front-End Loader	79
Truck	76

NOTES: dBA = A-weighted decibels; L_{max} = maximum, instantaneous noise level experienced during a given period of time
 These are maximum field measured values at 50 feet as reported from multiple samples.
 SOURCE: Federal Highway Administration, *Roadway Construction Noise Model User Guide*, 2006.

Consistent with the general assessment methodology of the FTA, the two noisiest pieces of construction equipment (grader and compactor) listed in Table NOI-3 were assumed to operate simultaneously. Using the Roadway Construction Noise Model of the Federal Highway Administration, the resultant noise level at the nearest campus receptor at a distance of 450 feet from the project site would be 64 dBA.

Section 8.25.060 of City's Noise Control Ordinance (Sebastopol Municipal Code, Title 8, Health and Safety, Chapter 8.25) provides an exemption for construction equipment which is operated during daytime hours, defined as from 7:00 a.m. to 8:00 p.m. Monday through Friday, 8:00 a.m. to 5:00 p.m. on Saturdays, and from 8:00 a.m. to 5:00 p.m. on Sundays. Project construction would be conducted during these daytime hours and would, therefore, be exempt from the restrictions of the noise ordinance. Additionally, pursuant to Action N-1f of the GPU, the project would implement the following construction-related noise control measures:

- Noise-generating construction activities, including truck traffic coming to and from the construction site for any purpose, shall be limited as specified in the Noise Ordinance.
- All equipment driven by internal combustion engines shall be equipped with mufflers, which are in good condition and appropriate for the equipment.
- The construction contractor shall utilize "quiet" models of air compressors and other stationary noise sources where technology exists.
- At all times during project grading and construction, stationary noise-generating equipment shall be located as far as practicable from sensitive receptors and placed so that emitted noise is directed away from residences.
- Unnecessary idling of internal combustion engines shall be prohibited.
- Construction staging areas shall be established at locations that will create the greatest distance between the construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction activities, to the extent feasible.

In light of the Sebastopol Noise Ordinance exemption for daytime construction noise and the construction-related noise control measures required by Action N-1f of the GPU, and consistent with the findings of the 2016 GPU FEIR, the construction-related noise impacts of the proposed project would be less than significant.

- b) Impacts related to generation of vibration that would result from construction activities from development under the GPU were evaluated under Impact 3.11-4 on pages 3.11-35 to 3.11-36 of the GPU DEIR. The analysis determined that upon full buildout of the GPU and with implementation of the noise-related policies and actions contained in the GPU, the impact of construction vibration would be less than significant.

Construction activities could occur under the proposed project which could have the potential to expose sensitive land uses within the city to groundborne vibration. Construction activities would occur which may require activities or use of off-road equipment known to generate some degree of vibration. Activities that would potentially generate excessive vibration, such as blasting or impact pile driving, would not be expected to occur from the proposed project. Receptors sensitive to vibration include structures (especially older masonry structures), people, and

equipment (e.g., magnetic resonance imaging equipment, high resolution lithographic, optical and electron microscopes). Regarding the potential effects of groundborne vibration to people, except for long-term occupational exposure, vibration levels rarely affect human health.

The primary vibration-generating activities associated with the proposed project would occur during grading, placement of underground utilities, and construction of foundations.

Table NOI-4 shows the typical vibration levels produced by construction equipment at various distances. The most substantial source of groundborne vibrations associated with commercial development construction would be the use of drill rigs for foundation piers, if required.

TABLE NOI-4
VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT

Equipment	PPV (in/sec) ^a	
	At 25 Feet (Reference)	At 50 feet
Large Bulldozer	0.089	0.042
Auger Drill Rig	0.089	0.042
Loaded Trucks	0.076	0.035
Jackhammer	0.035	0.016

NOTES:

- a. Vibration amplitudes for construction equipment assume normal propagation conditions and were calculated using the following formula: $PPV (equip) = PPV (ref) \times (25/D)^{1.1}$ where:
 PPV (equip) = the peak particle velocity in in/sec of the equipment adjusted for the distance
 PPV (ref) = the reference vibration level in in/sec from pp. 31–33 and Table 18 of the Caltrans Vibration Guidance Manual, as well as Table 12-2 of the FTA's Noise and Vibration Guidance Manual
 D = the distance from the equipment to the receiver

SOURCES: Caltrans, 2020. Transportation and Construction Vibration Guidance Manual, April 2020; U.S. Department of Transportation (U.S. DOT), 2018. Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual, September 2018. Accessed May 6, 2024

According to the Caltrans Transportation and Construction Vibration Guidance Manual, the building damage threshold for historic and some older buildings is 0.25 PPV (in/sec) (Caltrans, 2020). As indicated in Table NOI-4, construction activities at distances of 25 feet or further from the nearest existing buildings would be well below the threshold of 0.25 PPV to avoid structural damage to historic and older buildings. For these reasons, project-related construction and operational groundborne vibration impacts would be less than significant.

- c) Impacts related to exposure of people to excessive noise levels from airports or private air strips were not evaluated in the GPU DEIR because the city is not located within an airport land use plan or within two miles of a public airport or public use airport. Therefore, similar to the findings of the GPU FEIR, this criterion is not applicable to the proposed project which would have no impact with regard to noise exposure from airports.

Conclusion

As discussed above, the proposed project would not result in effects related to noise and vibration that are peculiar to the project or the parcels on which the project would be located and were not analyzed as significant effects in the GPU FEIR; would not result in potentially significant off-site impacts or cumulative impacts that were not discussed in the GPU FEIR; and would not result in previously

identified significant effects which, as a result of substantial new information that was not known at the time the GPU FEIR was certified, are determined to have a more severe adverse impact than discussed in the GPU FEIR.

References

California Department of Transportation (Caltrans), 2013. Technical Noise Supplement to the Traffic Noise Analysis Protocol, September 2013.

Caltrans, 2020. Transportation and Construction Vibration Guidance Manual, April 2020, pp. 29–34. Available at: <http://www.dot.ca.gov/hq/env/noise/publications.htm>. Accessed May 6, 2024.

Federal Highway Administration, 2006. Roadway Construction Noise Model User Guide.

Fehr & Peers, 2024. Intersection Level of Service Assessment for Barlow Hotel Project, May 2024.

Trane. 2002. Engineering Bulletin, Sound Data and Application Guide for New and Quieter Air-Cooled Series R Chiller.

U.S. Department of Transportation (U.S. DOT), 2018. Federal Transit Administration (FTA), Transit Noise and Vibration Impact Assessment Manual, September 2018.

14. Population and Housing

	<i>Significant Project Impact (Peculiar to the Project or Parcel)</i>	<i>Project Impact not Identified by GPU FEIR</i>	<i>Off-Site or Cumulative Impact not Identified by GPU FEIR</i>	<i>Substantial New Information Resulting in More Severe Adverse Impact than Identified in the GPU FEIR</i>
POPULATION AND HOUSING — Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	No	No	No	No
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	No	No	No	No

Discussion

- a) Impacts related to population growth that would result from implementation of the GPU were evaluated under Impact 3.10-3 on pages 3.10-14 to 3.10-16 of the GPU DEIR. The analysis determined that the GPU accommodates future growth in Sebastopol, including new businesses, expansion of existing businesses, and new residential uses. Infrastructure and services would need to be extended to accommodate future growth. Specifically, the analysis determined that buildout of the GPU could yield up to 750 new residential units, 341,159 square feet of new commercial space, 59,959 square feet of new industrial space, and 137,375 square feet of new office space within the city limits. The analysis determined that this new growth would increase the City’s population by approximately 1,658 residents. The analysis determined that the full development of the new commercial, office, and industrial uses would increase the employment opportunities in Sebastopol by approximately 1,545 employees.