Appendix A. Special Status Plants and Animals in Quads within 5-Mile Radius of Planning Area

Scientific Name	*Common Name*	*Status*
Animals		
Amphibians		
Ambystoma californiense pop. 1	California tiger salamander - central California DPS	FT, ST, WL
Dicamptodon ensatus	California giant salamander	SSC
Rana boylii pop. 1	foothill yellow-legged frog - north coast DPS	SSC
Rana draytonii	California red-legged frog	FT, SSC
Birds		
Accipiter cooperii	Cooper's hawk	WL
Asio flammeus	short-eared owl	SSC
Athene cunicularia	burrowing owl	SSC
Circus hudsonius	northern harrier	SSC
Coturnicops noveboracensis	yellow rail	SSC
Elanus leucurus	white-tailed kite	FP
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	SSC
Laterallus jamaicensis coturniculus	California black rail	ST, FP
Melospiza melodia pusillula	Alameda song sparrow	SSC
Melospiza melodia samuelis	San Pablo song sparrow	SSC
Nannopterum auritum	double-crested cormorant	WL
Rallus obsoletus obsoletus	California Ridgway's rail	FE, SE, FP
Riparia riparia	bank swallow	ST
Sternula antillarum browni	California least tern	FE, SE, FP
Xanthocephalus xanthocephalus	yellow-headed blackbird	SSC
Fish		
Acipenser medirostris pop. 1	green sturgeon - southern DPS	FT
Archoplites interruptus	Sacramento perch	SSC
Eucyclogobius newberryi	tidewater goby	FE
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	FE, SE
Spirinchus thaleichthys	longfin smelt	FC, ST
Thaleichthys pacificus	eulachon	FT
Mammals		
Antrozous pallidus	pallid bat	SSC
Corynorhinus townsendii	Townsend's big-eared bat	SSC

Appendix A. Special Status Plants and Animals in Quads within 5-Mile Radius of Planning Area

Enhydra lutris nereis	southern sea otter	FT, FP
Lasiurus frantzii	western red bat	SSC
Microtus californicus sanpabloensis	San Pablo vole	SSC
Nyctinomops macrotis	big free-tailed bat	SSC
Reithrodontomys raviventris	salt-marsh harvest mouse	FE, SE, FP
Scapanus latimanus parvus	Alameda Island mole	SSC
Sorex vagrans halicoetes	salt-marsh wandering shrew	SSC
Taxidea taxus	American badger	SSC
Zapus trinotatus orarius	Point Reyes jumping mouse	SSC
Reptiles		
Emys marmorata	western pond turtle	SSC
Masticophis lateralis euryxanthus	Alameda whipsnake	FT, ST
Thamnophis sirtalis tetrataenia	San Francisco gartersnake	FE, SE, FP
Insects		
Bombus crotchii	Crotch bumble bee	SC
Bombus occidentalis	western bumble bee	SC
Danaus plexippus plexippus pop. 1	monarch - California overwintering population	FC
Euphydryas editha bayensis	Bay checkerspot butterfly	FT
Icaricia icarioides missionensis	Mission blue butterfly	FE
Speyeria callippe callippe	callippe silverspot butterfly	FE
Plants		
Amorpha californica var. napensis	Napa false indigo	CRPR
Amsinckia lunaris	bent-flowered fiddleneck	CRPR
Aphyllon robbinsii	Robbins' broomrape	CRPR
Arctostaphylos franciscana	Franciscan manzanita	FE, CRPR
Arctostaphylos montana ssp. montana	Mt. Tamalpais manzanita	CRPR
Arctostaphylos montana ssp. ravenii	Presidio manzanita	FE, SE, CRPR
Arctostaphylos pallida	pallid manzanita	FT, SE, CRPR
Arctostaphylos virgata	Marin manzanita	CRPR
Arenaria paludicola	marsh sandwort	FE, SE, CRPR
Astragalus tener var. tener	alkali milk-vetch	CRPR

Appendix A. Special Status Plants and Animals in Quads within 5-Mile Radius of Planning Area

Calamagrostis crassiglumis	Thurber's reed grass	CRPR
Calochortus tiburonensis	Tiburon mariposa-lily	FT, ST, CRPR
Calystegia purpurata ssp. saxicola	coastal bluff morning-glory	CRPR
Carex comosa	bristly sedge	CRPR
Carex praticola	northern meadow sedge	CRPR
Castilleja affinis var. neglecta	Tiburon paintbrush	FE, ST, CRPR
Chloropyron maritimum ssp. palustre	Point Reyes salty bird's-beak	CRPR
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	CRPR
Chorizanthe robusta var. robusta	robust spineflower	FE, CRPR
Cirsium andrewsii	Franciscan thistle	CRPR
Cirsium hydrophilum var. vaseyi	Mt. Tamalpais thistle	CRPR
Clarkia franciscana	Presidio clarkia	FE, SE, CRPR
Collinsia corymbosa	round-headed collinsia	CRPR
Collinsia multicolor	San Francisco collinsia	CRPR
Dermatocarpon meiophyllizum	silverskin lichen	CRPR
Dirca occidentalis	western leatherwood	CRPR
Eriogonum luteolum var. caninum	Tiburon buckwheat	CRPR
Extriplex joaquinana	San Joaquin spearscale	CRPR
Fissidens pauperculus	minute pocket moss	CRPR
Fritillaria lanceolata var. tristulis	Marin checker lily	CRPR
Fritillaria liliacea	fragrant fritillary	CRPR
Gilia capitata ssp. chamissonis	blue coast gilia	CRPR
Grindelia hirsutula var. maritima	San Francisco gumplant	CRPR
Helianthella castanea	Diablo helianthella	CRPR
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	CRPR
Hesperolinon congestum	Marin western flax	FT, ST, CRPR
Heteranthera dubia	water star-grass	CRPR
Hoita strobilina	Loma Prieta hoita	CRPR
Holocarpha macradenia	Santa Cruz tarplant	FT, SE, CRPR
Horkelia cuneata var. sericea	Kellogg's horkelia	CRPR

Appendix A. Special Status Plants and Animals in Quads within 5-Mile Radius of Planning Area

Horkelia marinensis	Point Reyes horkelia	CRPR
Horkelia tenuiloba	thin-lobed horkelia	CRPR
Hypogymnia schizidiata	island tube lichen	CRPR
Kopsiopsis hookeri	small groundcone	CRPR
Layia carnosa	beach layia	FT, SE, CRPR
Leptosiphon rosaceus	rose leptosiphon	CRPR
Lessingia germanorum	San Francisco lessingia	FE, SE, CRPR
Lessingia micradenia var. micradenia	Tamalpais lessingia	CRPR
Microseris paludosa	marsh microseris	CRPR
Navarretia rosulata	Marin County navarretia	CRPR
Pentachaeta bellidiflora	white-rayed pentachaeta	FE, SE, CRPR
Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	CRPR
Plagiobothrys diffusus	San Francisco popcornflower	SE, CRPR
Plagiobothrys glaber	hairless popcornflower	CRPR
Pleuropogon hooverianus	North Coast semaphore grass	ST, CRPR
Polemonium carneum	Oregon polemonium	CRPR
Polygonum marinense	Marin knotweed	CRPR
Quercus parvula var. tamalpaisensis	Tamalpais oak	CRPR
Sanicula maritima	adobe sanicle	SR*, CRPR
Sidalcea calycosa ssp. rhizomata	Point Reyes checkerbloom	CRPR
Silene scouleri ssp. scouleri	Scouler's catchfly	CRPR
Silene verecunda ssp. verecunda	San Francisco campion	CRPR
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	CRPR
Stebbinsoseris decipiens	Santa Cruz microseris	CRPR
Streptanthus batrachopus	Tamalpais jewelflower	CRPR
Streptanthus glandulosus ssp. niger	Tiburon jewelflower	FE, SE, CRPR
Streptanthus glandulosus ssp. pulchellus	Mt. Tamalpais bristly jewelflower	CRPR
Suaeda californica	California seablite	FE, CRPR

Appendix A. Special Status Plants and Animals in Quads within 5-Mile Radius of Planning Area

Symphyotrichum lentum	Suisun Marsh aster	CRPR
Trifolium amoenum	two-fork clover	FE, CRPR
Trifolium hydrophilum	saline clover	CRPR
Triphysaria floribunda	San Francisco owl's-clover	CRPR
Triquetrella californica	coastal triquetrella	CRPR
Viburnum ellipticum	oval-leaved viburnum	CRPR

FE = federally listed as endangered under the Endangered Species Act (ESA)
FT = federally listed as threatened under ESA
FC = a candidate for listing under ESA

SE = state listed as endangered under CESA
ST = state listed as threatened under CESA
SC = a candidate for listing under CESA
SR = state listed as Rare pursuant to Native Plant Protection Act of 1977

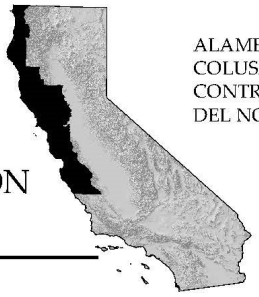
CRPR = California Rare Plant

FP = state Fully Protected under Fish and Game Code
SSC = state Species of Special Concern
WL = state Watch List

Source: CNDDB GIS Data, California Department of Fish and Wildlife, 11/04/2023

Appendix B

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM



ALAMEDA	HUMBOLDT	SAN FRANCISCO
COLUSA	LAKE	SAN MATEO
CONTRA COSTA	MARIN	SANTA CLARA
DEL NORTE	MENDOCINO	SANTA CRUZ
	MONTEREY	SOLANO
	NAPA	SONOMA
	SAN BENITO	YOLO

Northwest Information Center
Sonoma State University
1400 Valley House Drive, Suite 210
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
https://nwic.sonoma.edu

ACCESS AGREEMENT SHORT FORM

File Number: 23-0476

I, the the undersigned, have been granted access to historical resources information on file at the Northwest Information Center of the Califronia Historical Resources Information System.

I understand that any CHRIS Confidential Information I receive shall not be disclosed to individuals who do not qualify for access to such information, as specified in Section III(A-E) of the CHRIS Information Center Rules of Operation Manual, or in publicly distributed documents without written consent of the Information Center Coordinator.

I agree to submit historical Resource Records and Reports based in part on the CHRIS information released under this Access Agreement to the Information Center within sixy (60) calendar days of completion.

I agree to pay for CHRIS services provided under this Access Agreement within sixty (60) calendar days of receipt of billing.

I understand that failure to comply with this Access Agreement shall be grounds for denial of access to CHRIS Information.

Print Name: Claire Villegas Date:

Signature:

Affiliation: Dyett & Bhatia

Address: City/State/ZIP:

Billing Address (if different from above):

Special Billing Information

Telephone: Email: claire@dyettandbhatia.com

Purpose of Access:

Reference (project name or number, title of study, and street address if applicable):

Data Search for City of Belvedere Housing Element Update

County: MRN USGS 7.5' Quad: San Quentin & San Francisco North

This is not an invoice. Sonoma State University will send separate Invoice

CALIFORNIA HISTORICAL RESOURCES INFORMATION SYSTEM

ALAMEDA
COLUSA
CONTRA COSTA
DEL NORTE
HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO
SAN FRANCISCO
SAN MATEO
SANTA CLATA
SANTA CRUZ
SOLANO
SONOMA
YOLO

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November 20, 2023 NWIC File No.: 23-0476

Claire Villegas
Dyett & Bhatia
Urban and Regional Planners
4001 Howe Street
Oakland, CA 94611

Re: Record search results for the proposed City of Belvedere Housing Element Update.

Dear Claire Villegas:

Per your request received by our office on the 13th of November, 2023, a records search was conducted for the above referenced project by reviewing pertinent Northwest Information Center (NWIC) base maps that reference cultural resources records and reports, historic-period maps, and literature for Marin County. The maps provided depicting the city limits will be used as the project area for this request. Please note that use of the term cultural resources includes both archaeological resources and historical buildings and/or structures.

Belvedere is a small residential community located in Marin County approximately ten miles north of the Golden Gate Bridge. The City is known for its rich history, natural beauty, tranquility, and strong sense of community. One of the oldest cities in California, Belvedere has a population of approximately 2,120 and a total area of 2.42 square miles, including 0.54 square miles of land and 1.89 square miles of water. The City is surrounded by water and comprises two islands and an artificial lagoon. Regional access is provided via Tiburon Boulevard (California Route 131), that connects Belvedere to U.S. Route 101, and via ferry service from San Francisco to the Ferry Terminal in Tiburon, less than a mile to the southeast of Belvedere.

The proposed project involves a comprehensive update to goals, policies, and programs in the Housing Element of the City's General Plan as well as related zoning amendments needed to accommodate Belvedere's assessed share of the regional housing need. Amid the ongoing housing crisis in California, Belvedere is required to plan for at least 160 new housing units between 2023 and 2031, including 49 Very Low Income units, 28 Low Income units, 23 Moderate income units, and 60 Above Moderate units. Development of the new housing would primarily involve redevelopment of existing properties, including The Boardwalk Shopping Center and some underutilized multifamily residential properties.

Review of this information indicates that there have been thirty-six cultural resource studies that cover portions of the City of Belvedere Housing Element Update project area. See attached Report List. The City of Belvedere Housing Element Update project area contains seven recorded Native American archaeological resources and two historic-period archaeological resources. See table below:

Primary #	Trinomial #	Resource Name	ResType	Age
P-21-000066	CA-MRN-000035	Nelson No. 35	Site	Prehistoric, Historic
P-21-000070	CA-MRN-000039	Nelson No. 39	Site	Prehistoric
P-21-000071	CA-MRN-000040	Nelson No. 40	Site	Prehistoric
P-21-000267	CA-MRN-000281	Reed School prehistoric archaeological site	Site	Prehistoric, Historic
P-21-000564	CA-MRN-000041	Nelson No. 41	Site	Prehistoric
P-21-000683	CA-MRN-000649	Madrona Midden	Site	Prehistoric
P-21-002909	CA-MRN-000735	Belvedere-01	Site	Prehistoric

The State Office of Historic Preservation Built Environment Resources Directory (OHP BERD), which includes listings of the California Register of Historical Resources, California State Historical Landmarks, California State Points of Historical Interest, and the National Register of Historic Places, lists forty-eight recorded buildings or structures within the proposed City of Belvedere Housing Element Update project area (see attached OHP BERD table). For more information on the eligibility of each resource, based on the information in the 'Evaluation Info' field, see attached California Historical Resource Status Codes.

In addition to these inventories, the NWIC base maps show three recorded buildings or structures within the proposed City of Belvedere Housing Element Update project area. Please note some of these resources overlap with previous listings. See table below:

Primary #	Trinomial #	Resource Name	ResType	Age
P-21-001055		The China Cabin- from the Pacific Mail Steamship China	Structure	Historic
P-21-001060		Victorian House	Building	Historic
P-21-002962		6 Eucalyptus Ave	Building	Historic

At the time of Euroamerican contact, the Native Americans that lived in the area were speakers of the Coast Miwok language, part of the California Penutian language family (Kelly 1978:414). Using Milliken's study of various mission records, the proposed project area is located within the lands of the *Huimens* tribe, whose territory held the vicinity of Richardson Bay on the southern tip of the Marin Peninsula (Milliken 1995: 244).

Based on an evaluation of the environmental setting and features associated with known sites, Native American resources in this part of Marin County have been found in areas marginal to the San Francisco Bayshore, and inland on ridges, midslope benches, in valleys, near intermittent and perennial watercourses and near areas populated by oak, buckeye, manzanita, and pine, as well as near a variety of plant and animal resources. The City of Belvedere Housing Element Update project area is located in Marin County between the cities of Tiburon and Sausalito, along the southern side of Tiburon Peninsula, surrounded by Richardson Bay and Raccoon Strait, and includes Belvedere, Corinthian Island, Cone Rock, Peninsula Point, Belvedere Cove and Lagoon. Aerial maps show many roads and buildings and structures, piers, and trees and vegetation. Given the similarity of these environmental factors and the ethnographic and archaeological sensitivity of the project area, there is a high potential for unrecorded Native American resources to be within the proposed City of Belvedere Housing Element Update project area.

Review of historical literature and maps indicated historic-period activity within the City of Belvedere Housing Element Update project area. Early Rancho Corte Madera Del Presidio maps indicate the project area was formerly called Peninsular Island, and included Kaskan's house and wharf, two granite monuments, an unnamed house on the mainland, and a large Indian Mound (1859, 1883). The 1895 San Francisco USGS 15-minute topographic quadrangle depicts several buildings and structures within the City of Belvedere Housing Element Update project area, including a portion of the North Coast Pacific Railroad along the mainland portion. The 1915 San Francisco USGS 15-minute topographic quadrangle depicts more buildings, and structures, including a few docks or piers. With this in mind, there is a high potential for unrecorded historic-period archaeological resources to be within the proposed City of Belvedere Housing Element Update project area.

The 1942 San Francisco USGS 15-minute topographic quadrangle depicts numerous buildings and structures within the City of Belvedere Housing Element Update project area. If present, any unrecorded buildings or structures meet the Office of Historic Preservation's minimum age standard that buildings, structures, and objects 45 years or older may be of historical value.

RECOMMENDATIONS:

1) There are seven recorded archaeological resources in the proposed City of Belvedere Housing Element Update project area. There have been thirty-six cultural resource studies that cover portions of the City of Belvedere Housing Element Update project area. According to our research, there is a high potential of identifying Native American archaeological resources and a high potential of identifying historic-period archaeological resources in unsurveyed portions of the project area.

Given that the proposed City of Belvedere Housing Element Update project area covers such a large area with known sensitivity, and the proposed improvements will guide future projects, it is recommended that these future projects be considered on an individual basis under the Northwest Information Center's Project Review Program. This Program is organized to aid cities and counties in meeting their CEQA obligations on a project-by-project basis. These reviews result in project specific information and recommendations. Please contact the NWIC Coordinator at 707/588-8455 for additional information.

2) If archaeological resources are encountered during construction, work should be temporarily halted in the vicinity of the discovered materials and workers should avoid altering the materials and their context until a qualified professional archaeologist has evaluated the situation and provided appropriate recommendations. Project personnel should not collect cultural resources. Native American resources include chert or obsidian flakes, projectile points, mortars, and pestles; and dark friable soil containing shell and bone dietary debris, heat-affected rock, or human burials. Historic-period resources include stone or adobe foundations or walls; structures and remains with square nails; and refuse deposits or bottle dumps, often located in old wells or privies.

3) It is recommended that any identified cultural resources be recorded on DPR 523 historic resource recordation forms, available online from the Office of Historic Preservation's website: https://ohp.parks.ca.gov/?page_id=28351

4) We recommend the lead agency contact the local Native American tribe(s) regarding traditional, cultural, and religious heritage values. For a complete listing of tribes in the vicinity of the project, please contact the Native American Heritage Commission at 916/373-3710.

5) Our research indicates that there are forty-eight buildings and structures included in the OHP BERD within the City of Belvedere Housing Element Update project area. NWIC base maps show three recorded buildings or structures within the proposed City of Belvedere Housing Element Update project area. Additionally, the project area has the potential to contain other unrecorded buildings or structures that meet the minimum age requirement.

Therefore, prior to commencement of project specific activities, it is recommended that the above listed resources, and any other ones that have yet to be inventoried, be assessed by a professional familiar with the architecture and history of Marin County. Please refer to the list of consultants who meet the Secretary of Interior's Standards at http://www.chrisinfo.org.

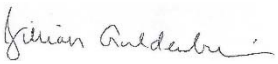
6) Review for possible historic-period buildings or structures has included only those sources listed in the attached bibliography and should not be considered comprehensive.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the California Historical Resources Information System (CHRIS) Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

The California Office of Historic Preservation (OHP) contracts with the California Historical Resources Information System's (CHRIS) regional Information Centers (ICs) to maintain information in the CHRIS inventory and make it available to local, state, and federal agencies, cultural resource professionals, Native American tribes, researchers, and the public. Recommendations made by IC coordinators or their staff regarding the interpretation and application of this information are advisory only. Such recommendations do not necessarily represent the evaluation or opinion of the State Historic Preservation Officer in carrying out the OHP's regulatory authority under federal and state law.

Thank you for using our services. Please contact this office if you have any questions, (707) 588-8455.

Sincerely,



Jillian Guldenbrein
Researcher

LITERATURE REVIEWED

In addition to archaeological maps and site records on file at the Northwest Information Center of the Historical Resources File System, the following literature was reviewed:

Barrett, S.A.
1908 *The Ethno-Geography of the Pomo and Neighboring Indians*. In American Archaeology and Ethnology, vol. 6, edited by Frederic Ward Putnam, pp. 1-332, maps 1-2. University of California Publications, Berkeley. (Reprint by Kraus Reprint Corporation, New York, 1964).

General Land Office
1859, 1883 Survey Plat for Rancho Corte Madera Del Presidio, Township 1 South/Ranges 5 & 6 West.

Helley, E.J., K.R. Lajoie, W.E. Spangle, and M.L. Blair
1979 *Flatland Deposits of the San Francisco Bay Region - Their Geology and Engineering Properties, and Their Importance to Comprehensive Planning*. Geological Survey Professional Paper 943. United States Geological Survey and Department of Housing and Urban Development.

Hope, Andrew
2005 *Caltrans Statewide Historic Bridge Inventory Update*. Caltrans, Division of Environmental Analysis, Sacramento, CA.

Kelly, Isabel
1978 Coast Miwok. In *California*, edited by Robert F. Heizer, pp. 414-425. Handbook of North American Indians, vol. 8, William C. Sturtevant, general editor. Smithsonian Institution, Washington, D.C.

Kroeber, A.L.
1925 *Handbook of the Indians of California*. Bureau of American Ethnology, Bulletin 78, Smithsonian Institution, Washington, D.C. (Reprint by Dover Publications, Inc., New York, 1976).

Milliken, Randall
1995 *A Time of Little Choice: The Disintegration of Tribal Culture in the San Francisco Bay Area 1769-1810*. Ballena Press Anthropological Papers No. 43, Menlo Park, CA.

Nelson, N.C.
1909 *Shellmounds of the San Francisco Bay Region*. University of California Publications in American Archaeology and Ethnology 7(4):309-356. Berkeley. (Reprint by Kraus Reprint Corporation, New York, 1964).

Nichols, Donald R., and Nancy A. Wright
1971 Preliminary Map of Historic Margins of Marshland, San Francisco Bay, California. U.S. Geological Survey Open File Map. U.S. Department of the Interior, Geological Survey in cooperation with the U.S. Department of Housing and Urban Development, Washington, D.C.

State of California Department of Parks and Recreation
1976 *California Inventory of Historic Resources*. State of California Department of Parks and Recreation, Sacramento.

State of California Department of Parks and Recreation and Office of Historic Preservation
1988 *Five Views: An Ethnic Sites Survey for California*. State of California Department of Parks and Recreation and Office of Historic Preservation, Sacramento.

State of California Office of Historic Preservation **
2022 *Built Environment Resources Directory*. Listing by City (through September 23, 2022). State of California Office of Historic Preservation, Sacramento.

**Note that the Office of Historic Preservation's *Historic Properties Directory* includes National Register, State Registered Landmarks, California Points of Historical Interest, and the California Register of Historical Resources as well as Certified Local Government surveys that have undergone Section 106 review.

Report List

NWIC File # 23-0476 City of Belvedere Housing Element Update

Report No.	Other IDs	Year	Author(s)	Title	Affiliation
S-000453		1977	William Roop and Teresa Miller	Permit No. 4764791159, 04-Mrn-3.09/3.23, Tiburon Blvd. at San Rafael Avenue, GM 71125, PG&E Job # G-80713 (letter report)	Archaeological Resource Service
S-012945	Voided - S-13069	1957	Adan E. Treganza	The Examination of Indian Shell mounds Within San Francisco Bay with Reference to the Possible 1579 Landfall of Sir Francis Drake	San Francisco State College
S-012945a		1958	Adan E. Treganza	The Examination of Indian Shellmounds Within San Francisco Bay With Reference to the Possible 1579 Landfall of Sir Francis Drake: Second Season	San Francisco State College
S-027423		2003		Results of an Archaeological Monitoring Program at the Property Located at 4 North Point Circle, Belvedere, Marin County, California (APN 060-111-03).	Archaeological Resource Service
S-027676		1999	William Roop	A Historic Properties Evaluation of the Parcel at One Madrona Avenue, Belvedere, Marin County, California	Archaeological Resource Service
S-027787	Submitter - A.R.S. Project 99-16	1999	Katherine Flynn	A Cultural Resources Evaluation of the Berry Property at 10 North Point Circle, Belvedere, Marin County	Archaeological Resource Service
S-028914		1998	Laura Eklund	The China Cabin: Maritime Resource from the Victorian Age, a Nomination to the National Register of Historic Places	
S-030451		2005	William Roop, Cassandra Chattan, Sally Evans, Lisa Pesnichak, Kristel Daunell, and Amy Schilling	Results of an Archaeological Monitoring Program at 10 North Point Circle, on the Site of CA-MRN-39, Belvedere, Marin County, California. (Volumes 1 and 2)	Archaeological Resource Service
S-031616		2005	Cassandra Chattan	A Cultural Resources Evaluation of 3 North Point Circle, Belvedere, Marin County, California	Archaeological Resource Service
S-034981	Submitter - ARS Project 08-025	2008	Cassandra Chattan	A Cultural Resources Evaluation of 6 San Rafael Drive, Belvedere, Marin County, California	Archaeological Resource Service
S-034982	Other - ARS Project 08-026	2008	Cassandra Chattan	A Cultural Resources Evaluation of 41 West Shore Road, Belvedere, Marin County, California	Archaeological Resource Service

Report List

NWIC File # 23-0476 City of Belvedere Housing Element Update

Report No.	Other IDs	Year	Author(s)	Title	Affiliation
S-035215	Caltrans - EA 1E5601	2008	Stephen Bryne	Historical Resources Compliance Report for MRN-131 Tiburon Boulevard Resurfacing, Marin Country, State Route 131 PM 0.0/4.0, EA 1E5601	Caltrans District 4
S-036575		2009	Vicki Beard	A Cultural Resources Survey for the Belvedere-Tiburon Library Expansion, Tiburon, Marin County, California	Tom Origer and Associates
S-037402	Submitter - ARS Project No. 08-070	2009	William Roop and Sally Evans	An Evaluation of Cultural Resources and a Legislative Overview for the City of Belvedere General Plan Update, Marin County, California	Archaeological Resource Service
S-038653		2011	David Bieling	An Archaeological Investigation at 34 San Rafael Avenue, Belvedere, Marin County, California	Holman & Associates
S-038976		2012	David G. Bieling	Archaeological Investigations of CA-MRN-35, at 34 & 40 San Rafael Avenue, Belvedere, Marin County, California	Holman & Associates
S-042788		2013	Vicki R. Beard	Historical Evaluation of the Property at 172 Bella Vista Avenue, Marin County, California	Tom Origer & Associates
S-046273	Submitter - ASC Project QC206 32/13	2013	Michael Newland	A Subsurface Archaeological Study of CA-MRN-35, 44 San Rafael Avenue, City of Belvedere, Marin County, California	Anthropological Studies Center, Sonoma State University
S-047511	Submitter - 30949968	2013	Beatrice Cox and Matthew A. Russell	Cultural Resources Constraints Report, Gas Main San Rafael Avenue, Belvedere, Marin County, PM Number: 30949968	Garcia and Associates
S-047511a		2015	Esme A. Hammerle	Archaeological Monitoring Summary Report for 30949968 Gas Main San Rafael Avenue Belvedere, Marin County (letter report)	Garcia and Associates
S-047544	Submitter - D160186	2016	Heidi Koenig	Cultural Resources Study for the 200 Golden Gate Project (ESA Project #D160186)	Environmental Science Associates
S-047546	Submitter - ASC Project NT235 ASC1521	2016	Michael Newland	An Archaeological Resources Study for the Construction of a Proposed Second Story at 144 Bella Vista Ave., City of Belvedere, Marin County, California	Anthropological Studies Center, Sonoma State University
S-048145	Submitter - ASC Project NT235 ASC1531	2016	Michael Newland	Archaeological Resources Study for the Construction of a Proposed Fence Line and Landscaping, 412 Golden Gate Ave., City of Belvedere, Marin County, California	Anthropological Studies Center, Sonoma State University
S-048268		2016	Megan Webb	Archaeological Survey Report, 147 Beach Road, City of Belvedere	ECORP Consulting, Inc.

Report List

NWIC File # 23-0476 City of Belvedere Housing Element Update

Report No.	Other IDs	Year	Author(s)	Title	Affiliation
S-048700	Submitter - 161006	2017	Heidi Koenig	226 Belvedere Project, Belvedere, Marin County, California, Cultural Resources Survey Report	Environmental Science Associates
S-048974	Other - E-FIS #0416-6US1442	2017	Sharon A. Waechter	Historical Resources Compliance Report for Pacific Gas & Electric Company Pole Replacement ALTO 1123 Distribution Line, Tiburon, Marin County, State Route 131, Post Mile 3.34 E-FIS Project Number 0416-6US1442	Far Western Anthropological Research Group, Inc.
S-048974a		2017	Sharon A. Waechter	Archaeological Monitoring and Inadvertent Discovery Plan for the Pacific Gas & Electric Company Pole Replacement Alto 1123 Distribution Line, Tiburon, Marin County, State Route 131, Post Mile 3.34, FIS Project Number 0416-6US1442	Far Western Anthropological Research Group, Inc.
S-049201	Submitter - J-2016-06-A2-0052	2016	Sally Evans	Results of an Archaeological Survey of the Property At 19 Belvedere Avenue, Belvedere, Marin County, California	Evans & De Shazo, LLC
S-049784		1982	David Chavez	Archaeological Investigations at CA-MRN-35, Marin County, California; Studies Resulting from the Sewerage Agency of Southern Marin Pipeline Construction	
S-049784a		1982	Thomas M. Origer	Hydration Analysis of Materials from CA-MRN-35, Marin County, California	Obsidian Hydration Laboratory, Cultural Resources Facility/ Sonoma State University
S-050099		2017	Alex DeGeorgey	Archaeological Survey Report of 6 Eucalyptus Avenue City of Belvedere, Marin County, Califronia	ALTA Archaeological Consulting
S-051887	Submitter - 2018-221	2018	Megan Webb	Archaeological Survey Report, 12 Crest Road, City of Belvedere, Marin County, California	ECORP Consulting, Inc.
S-053109		2018	Taylor Alshuth and Tom Origer	Cultural Resources Study of the Property at 345 Golden Gate Avenue, Belvedere, Marin County, California	Tom Origer & Associates
S-053906	Submitter - J-2018-04-A1-0266	2018	Sally Evans	Results of an Archaeological Resources Study of the Property at 431 Golden Gate Avenue, Belvedere, Marin County, California (APN 006-023-207)	Evans & De Shazo

Report List

NWIC File # 23-0476 City of Belvedere Housing Element Update

Report No.	Other IDs	Year	Author(s)	Title	Affiliation
S-054030		2019	Safiya Bal	Archaeological Resources Report for 5 North Point Circle (APN 060-111-12), Belvedere, Marin County, California (letter report)	Garcia and Associates (GANDA)
S-054239		2020	Robin Hoffman	2 Cliff Road Waterfront Improvements Project, Belvedere, Marin County, California: Cultural Resources Records Search Results Summary (letter report)	WRA, Inc.
S-054362		1974	Betty Goerke and Frances Davidson	Historical and Archaeological Report on Sequoia Pacific Property, Tiburon, California	
S-055087	Submitter - Q0050 4119	2021	Scott McGaughey	Archaeological Monitoring Report For The Belvedere Tiburon Library Expansion Project, Belvedere Tiburon, Marin County, California	Anthropological Studies Center, Sonoma State University
S-055848		2020	Taylor Alshuth and Tom Origer	Cultural Resources Study of the Property at 107 Acacia Avenue, Belvedere, Marin County, California	Tom Origer & Associates
S-056805		2022	Daniel Shoup, Ward Hill, and Jennifer Ho	Cultural Resources Evaluation Report 30 San Rafael Avenue Belvedere, Marin County, California	Archaeological/Historical Consultants
S-056805A		2022	Daniel Shoup, Ward Hill, and Jennifer Ho	Cultural Resources Survey Report 30 San Rafael Avenue Belvedere, Marin County, California	Archaeological/Historical Consultants

OHP BERD for the City of Belvedere dated September 23, 2022

Primary Number	OTIS ID	Name	St Number	St Name	City	County	Evaluation Info	Construction Year(s)	Date Modified	Export Date
21-001041	403963		11	ACADIA AVE	BELVEDERE	MARIN	7R, , 4920-0003-0000	1903	4/5/2018	9/23/2022
21-001042	403964		38	ACADIA AVE	BELVEDERE	MARIN	7R, , 4920-0004-0000	1909	4/5/2018	9/23/2022
21-001079	404001	TOWER HOUSE	47	ALCATRAZ AVE	BELVEDERE	MARIN	7R, , 4920-0041-0000	1910	4/5/2018	9/23/2022
21-001045	403967	McLEAN HOUSE	140	BAYVIEW AVE	BELVEDERE	MARIN	7R, , 4920-0007-0000	1894	4/5/2018	9/23/2022
21-001044	403966	McLEAN HOUSE	144	BAYVIEW AVE	BELVEDERE	MARIN	7R, , 4920-0006-0000	1894	4/5/2018	9/23/2022
21-001043	403965	PAGODA HOUSE	160	BAYVIEW AVE	BELVEDERE	MARIN	7R, , 4920-0005-0000		4/5/2018	9/23/2022
21-001076	403998	FELTON RESIDENCE	201	BAYVIEW AVE	BELVEDERE	MARIN	7R, , 4920-0038-0000	1897	4/5/2018	9/23/2022
21-001080	404002		260	BAYVIEW AVE	BELVEDERE	MARIN	7R, , 4920-0042-0000	1906	4/5/2018	9/23/2022
21-001052	403974		100	BEACH RD	BELVEDERE	MARIN	7R, , 4920-0014-0000	1916	4/5/2018	9/23/2022
21-001051	403973	COOK HOUSE	172	BEACH RD	BELVEDERE	MARIN	7R, , 4920-0013-0000	1893	4/5/2018	9/23/2022
21-001050	403972		180	BEACH RD	BELVEDERE	MARIN	7R, , 4920-0012-0000	1884	4/5/2018	9/23/2022
21-001087	404009		190	BEACH RD	BELVEDERE	MARIN	5S2, , 4920-0049-0000	1890	4/5/2018	9/23/2022
21-001049	403971	LONGVIEW	270	BEACH RD	BELVEDERE	MARIN	7R, , 4920-0011-0000	1894	4/5/2018	9/23/2022
21-001048	403970	LOG CABIN	281	BEACH RD	BELVEDERE	MARIN	7R, , 4920-0010-0000	1890	4/5/2018	9/23/2022
21-001047	403969	LANDFALL	296	BEACH RD	BELVEDERE	MARIN	7R, , 4920-0009-0000	1891	4/5/2018	9/23/2022
21-002433	500769	MOTOR BOAT BUILDING, PACIFIC MOTOR BOAT CLUB AND C	30	BEACH RD	BELVEDERE	MARIN	2S3, 05/31/2005, 537.9-21-0010	1912	4/5/2018	9/23/2022
21-001077	403999	THE ARK	5	BEACH RD	BELVEDERE	MARIN	7R, , 4920-0039-0000		4/5/2018	9/23/2022
21-001055	403977	CHINA, CHINA CABIN	54	BEACH RD	BELVEDERE	MARIN	7R, , 4920-0017-0000 | 7W, , 21-	1866	4/5/2018	9/23/2022
21-001053	403975	FARR COTTAGES	80	BEACH RD	BELVEDERE	MARIN	7J, 05/07/1997, 537.9-21-0011 |	1906	4/5/2018	9/23/2022
21-001054	403976	BELVEDERE LAND COMPANY	83	BEACH RD	BELVEDERE	MARIN	7J, 05/05/1997, 537.9-21-0012 |	1905	4/5/2018	9/23/2022
21-001062	403984	EVANS HOUSE	118	BELLA VISTA AVE	BELVEDERE	MARIN	7R, , 4920-0024-0000	1880	4/5/2018	9/23/2022
21-001083	404005	LONE PINE HOUSE, ALLEN HOUSE	130	BELLA VISTA AVE	BELVEDERE	MARIN	7R, , 4920-0045-0000	1894	4/5/2018	9/23/2022
21-001061	403983	THE CROW'S NEST	166	BELLA VISTA AVE	BELVEDERE	MARIN	7R, , 4920-0023-0000	1880	4/5/2018	9/23/2022
21-001060	403982	VICTORIAN HOUSE	172	BELLA VISTA AVE	BELVEDERE	MARIN	7R, , 4920-0022-0000	1892	4/5/2018	9/23/2022
21-001082	404004	180 BELLA VISTA AVE	180	BELLA VISTA AVE	BELVEDERE	MARIN	7R, , 4920-0044-0000	1892	4/5/2018	9/23/2022
21-001059	403981	MATOON HOUSE, MATTON HOUSE	206	BELLA VISTA AVE	BELVEDERE	MARIN	7R, , 4920-0021-0000	1898	4/5/2018	9/23/2022
21-001058	403980		350	BELLA VISTA AVE	BELVEDERE	MARIN	7R, , 4920-0020-0000	1893	4/5/2018	9/23/2022
21-001057	403979	PAGE RESIDENCE	400	BELLA VISTA AVE	BELVEDERE	MARIN	7R, , 4920-0019-0000	1895	4/5/2018	9/23/2022
21-001081	404003		450	BELLA VISTA AVE	BELVEDERE	MARIN	7R, , 4920-0043-0000	1893	4/5/2018	9/23/2022
21-001046	403968		460	BELLA VISTA AVE	BELVEDERE	MARIN	7R, , 4920-0008-0000	1893	4/5/2018	9/23/2022
21-001056	403978	BEKINS HOUSE	85	BELLEVUE AVE	BELVEDERE	MARIN	7R, , 4920-0018-0000	1908	4/5/2018	9/23/2022
21-001065	403987	BLANDING BARN CARRAIGE HOUSE	333	BELVEDERE AVE	BELVEDERE	MARIN	7R, , 4920-0027-0000	1905	4/5/2018	9/23/2022
21-001064	403986	THE GARDNER'S HOUSE	343	BELVEDERE AVE	BELVEDERE	MARIN	7R, , 4920-0026-0000	1905	4/5/2018	9/23/2022
21-001063	403985	THE BUNGALOW	450	BELVEDERE AVE	BELVEDERE	MARIN	7R, , 4920-0025-0000	1900	4/5/2018	9/23/2022
21-001078	404000	CORINTHIAN YACHT CLUB		CORINTHIAN ISLAND	BELVEDERE	MARIN	7R, , 4920-0040-0000	1912	4/5/2018	9/23/2022
21-001074	403996	THE CLUB HOUSE	29	GOLDEN GATE AVE	BELVEDERE	MARIN	7R, , 4920-0036-0000	1908	4/5/2018	9/23/2022
21-001084	404006	DREYFOUS PROPERTY	332	GOLDEN GATE AVE	BELVEDERE	MARIN	7R, , 4920-0046-0000	1902	4/5/2018	9/23/2022
21-001073	403995		334	GOLDEN GATE AVE	BELVEDERE	MARIN	7R, , 4920-0035-0000	1904	4/5/2018	9/23/2022
21-001072	403994		340	GOLDEN GATE AVE	BELVEDERE	MARIN	7R, , 4920-0034-0000	1905	4/5/2018	9/23/2022
21-001085	404007	HOUSE OF SEVEN GABLES	416	GOLDEN GATE AVE	BELVEDERE	MARIN	7R, , 4920-0047-0000	1895	4/5/2018	9/23/2022
21-001071	403993	WEE DUNNOTTAR	417	GOLDEN GATE AVE	BELVEDERE	MARIN	7R, , 4920-0033-0000	1908	4/5/2018	9/23/2022
21-001070	403992	HOUSE OF THE MOON GATE	420	GOLDEN GATE AVE	BELVEDERE	MARIN	7R, , 4920-0032-0000	1909	4/5/2018	9/23/2022
21-001069	403991	VALENTINE REY HOUSE	428	GOLDEN GATE AVE	BELVEDERE	Marin	1S, 04/22/1982, 4920-0031-0000 NPS-82002203-0000 | 1S,	1893	11/8/2019	9/23/2022
21-001068	403990	THE ORGAN HOUSE	433	GOLDEN GATE AVE	BELVEDERE	MARIN	7R, , 4920-0030-0000	1895	4/5/2018	9/23/2022
21-001067	403989	BLANDING BEDROOM HOUSE, BLANDING ESTATE	440	GOLDEN GATE AVE	BELVEDERE	MARIN	7R, , 4920-0029-0000	1895	4/5/2018	9/23/2022
21-001086	404008	KASHOW'S ORCHARD		SAN RAFAEL AVE	BELVEDERE	MARIN	7R, , 4920-0048-0000	1855	4/5/2018	9/23/2022
21-001039	403961	BELVEDERE PRESBYTERIAN CHURCH, BELVEDERE COMMUNITY	450	SAN RAFAEL AVE	BELVEDERE	MARIN	7R, , 4920-0001-0000	1896	4/5/2018	9/23/2022
21-001040	403962	MOFFIT MANSION	8	W SHORE RD	BELVEDERE	MARIN	7R, , 4920-0002-0000	1900	4/5/2018	9/23/2022

CALIFORNIA HISTORICAL RESOURCE STATUS CODES
(effective 5/1/2017)

1	**Listed in the National Register (NR) or the California Register (CR)**
1D	Contributor to a multi-component resource like a district listed in the NR by the Keeper. Listed in the CR.
1S	Individually listed in the NR by the Keeper. Listed in the CR.
1CD	Contributor to a multi-component resource listed in the CR by the SHRC.
1CS	Individually listed in the CR by the SHRC.
1CL	State Historical Landmarks (CHL) numbered 770 and above, or SHRC reevaluated CHLs that also meet CR criteria. Listed in the CR.
1CP	State Points of Historical Interest (CPHI) nominated after December 1997 and recommended for listing by the SHRC or SHRC reevaluated CPHIs that also meet CR criteria. Listed in the CR.
2	**Determined eligible for listing in the National Register (NR) or the California Register (CR)**
2B	Determined eligible for the NR both individually and as a contributor to a NR eligible multi-component resource like a district in a federal regulatory process. Listed in the CR.
2D	Contributor to a multi-component resource determined eligible for the NR by the Keeper. Listed in the CR.
2D2	Contributor to a multi-component resource determined eligible for NR by consensus through Section 106 process. Listed in the CR.
2D3	Contributor to a multi-component resource determined eligible for NR by Part I Tax Certification. Listed in the CR.
2D4	Contributor to a multi-component resource determined eligible for NR pursuant to Section 106 without review by SHPO. Listed in the CR.
2S	Individually determined eligible for NR by the Keeper. Listed in the CR.
2S2	Individually determined eligible for NR by consensus through Section 106 process. Listed in the CR.
2S3	Individually determined eligible for NR by Part I Tax Certification. Listed in the CR.
2S4	Individually determined eligible for NR pursuant to Section 106 without review by SHPO. Listed in the CR.
2CB	Determined eligible for CR both individually and as a contributor to a CR eligible multi-component resource by the SHRC.
2CD	Contributor to a multi-component resource determined eligible for CR by the SHRC.
2CS	Individually determined eligible for CR by the SHRC.
3	**Appears eligible for National Register (NR) or California Register (CR).**
3B	Appears eligible for NR both individually and as a contributor to a NR eligible multi-component resource like a district through survey evaluation.
3D	Appears eligible for NR as a contributor to a NR eligible multi-component resource through survey evaluation.
3S	Appears eligible for NR individually through survey evaluation.
3CB	Appears eligible for CR both individually and as a contributor to a CR eligible multi-component resource through survey evaluation.
3CD	Appears eligible for CR as a contributor to a CR eligible multi-component resource through survey evaluation.
3CS	Appears eligible for CR individually through survey evaluation.
4	**Appears eligible for National Register (NR) or State Historical Landmark (CHL) through PRC§ 5024**
4CM	State agency owned resource added to Master List - appears to meet NR and/or CHL criterion.
5	**Recognized as Historically Significant by Local Government**
5B	Locally significant both individually (listed, eligible, or appears eligible) and as contributor to a multi-component resource like a district that is locally listed, designated, determined eligible, or appears eligible through survey evaluation.
5D1	Contributor to a multi-component resource that is listed or designated locally.
5D2	Contributor to a multi-component resource that is eligible for local listing or designation.
5D3	Appears to be a contributor to a multi-component resource that appears eligible for local listing or designation.
5S1	Individually listed or designated locally.
5S2	Individually eligible for local listing or designation.
5S3	Appears to be individually eligible for local listing or designation through survey evaluation.
6	**Not Eligible for Listing or Designation as specified**
6C	Determined ineligible for or removed from California Register (CR) by the SHRC.
6CD	Determined ineligible for or removed from CR by the SHRC as a component of a CR listed multi-component resource. [Code to differentiate a resource that has more than one CR evaluation. Example, a resource that is on the CR as both contributor to a district and individually would still be on the CR if the district was removed/determined ineligible. This code would convey the change of a specific evaluation rather than the resource's CR status.]
6J	State Historic Landmarks (CHL) or State Points of Historical Interest (SPHI) determined ineligible for or removed as a CHL or SPHI by the SHRC.
6L	Determined ineligible for local listing or designation through local government review process; may warrant special consideration in local planning.
6T	Determined ineligible for NR through Part I Tax Certification process.
6U	Determined ineligible for NR pursuant to Section 106 without review by SHPO.
6W	Removed from NR by the Keeper.
6X	Determined ineligible for NR by the SHRC or the Keeper.
6Y	Determined ineligible for NR by consensus through Section 106 process – Not evaluated for CR or local listing.
6Z	Found ineligible for NR, CR or local designation through survey evaluation.
6WM	Removed from Master List because no longer state owned.
6XM	Removed from Master List because of historic feature loss or further evaluation.
6YM	State agency owned resource determined ineligible for Master List.
7	**Not Evaluated for National Register (NR) or California Register (CR) or Needs Re-evaluation**
7E	Treated as eligible for the purpose of OHP review.
7J	Received by OHP for evaluation or action but not yet evaluated.
7K	Submitted to OHP for action but not reevaluated.
7L	State Historical Landmarks 1-769 – that do not meet CR criteria.
7M	Submitted to OHP but not evaluated - referred to NPS.
7N	Needs to be reevaluated - formerly coded as may become NR eligible with specific conditions.
7N1	Needs to be reevaluated (former status code 4) - may become NR eligible with restoration or other specific conditions.
7P	State Point of Historical Interests that do not meet CR criteria.
7R	Identified in Reconnaissance Level Survey or in an Area of Potential Effect (APE): Not evaluated.
7W	Submitted to OHP for action – withdrawn or inactive.

Appendix C

Belvedere Existing Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Belvedere Existing
Operational Year	2031
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	34.8
Location	Belvedere, CA, USA
County	Marin
City	Belvedere
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	930
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Government (Civic Center)	248	1000sqft	5.70	248,300	0.00	—	—	—

City Park	15.1	Acre	15.1	0.00	0.00	0.00	—	—
Strip Mall	1,098	1000sqft	25.2	1,097,700	0.00	—	—	—
Apartments Low Rise	109	Dwelling Unit	6.81	115,540	0.00	—	262	—
Single Family Housing	813	Dwelling Unit	264	1,585,350	9,522,553	—	1,951	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Energy	E-11	Procure Electricity from Lower Carbon Intensity Power Supply

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	25.3	98.3	21.2	180	0.26	1.44	16.5	17.9	1.41	4.18	5.58	1,942	48,376	50,318	199	1.58	54.2	55,814
Mit.	25.3	98.3	21.2	180	0.26	1.44	16.5	17.9	1.41	4.18	5.58	1,942	48,376	50,318	199	1.58	54.2	55,814
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	9.85	84.0	21.0	65.9	0.25	1.32	16.5	17.8	1.31	4.18	5.49	1,942	47,097	49,039	199	1.64	20.5	54,520
Mit.	9.85	84.0	21.0	65.9	0.25	1.32	16.5	17.8	1.31	4.18	5.49	1,942	47,097	49,039	199	1.64	20.5	54,520

% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	16.6	90.4	17.4	115	0.22	1.08	15.6	16.7	1.06	3.96	5.02	1,942	42,190	44,131	199	1.59	34.1	49,609
Mit.	16.6	90.4	17.4	115	0.22	1.08	15.6	16.7	1.06	3.96	5.02	1,942	42,190	44,131	199	1.59	34.1	49,609
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.02	16.5	3.17	21.1	0.04	0.20	2.85	3.05	0.19	0.72	0.92	321	6,985	7,306	32.9	0.26	5.65	8,213
Mit.	3.02	16.5	3.17	21.1	0.04	0.20	2.85	3.05	0.19	0.72	0.92	321	6,985	7,306	32.9	0.26	5.65	8,213
% Reduced	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	8.28	7.69	4.76	60.5	0.16	0.09	16.5	16.6	0.08	4.18	4.26	—	16,411	16,411	0.60	0.56	34.6	16,627
Area	15.6	90.0	4.75	113	0.03	0.43	—	0.43	0.40	—	0.40	0.00	5,170	5,170	0.11	0.01	—	5,176
Energy	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	25,958	25,958	3.14	0.25	—	26,111
Water	—	—	—	—	—	—	—	—	—	—	—	304	838	1,142	31.3	0.76	—	2,149
Waste	—	—	—	—	—	—	—	—	—	—	—	1,638	0.00	1,638	164	0.00	—	5,731
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Total	25.3	98.3	21.2	180	0.26	1.44	16.5	17.9	1.41	4.18	5.58	1,942	48,376	50,318	199	1.58	54.2	55,814

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	8.07	7.45	5.63	57.9	0.15	0.09	16.5	16.6	0.08	4.18	4.26	—	15,513	15,513	0.67	0.62	0.90	15,715
Area	0.44	75.8	3.77	1.61	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,789	4,789	0.09	0.01	—	4,794
Energy	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	25,958	25,958	3.14	0.25	—	26,111
Water	—	—	—	—	—	—	—	—	—	—	—	304	838	1,142	31.3	0.76	—	2,149
Waste	—	—	—	—	—	—	—	—	—	—	—	1,638	0.00	1,638	164	0.00	—	5,731
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Total	9.85	84.0	21.0	65.9	0.25	1.32	16.5	17.8	1.31	4.18	5.49	1,942	47,097	49,039	199	1.64	20.5	54,520
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	7.72	7.12	5.16	54.3	0.15	0.08	15.6	15.7	0.08	3.96	4.04	—	15,088	15,088	0.63	0.58	14.5	15,292
Area	7.51	82.6	0.58	54.8	< 0.005	0.07	—	0.07	0.06	—	0.06	0.00	306	306	0.01	< 0.005	—	307
Energy	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	25,958	25,958	3.14	0.25	—	26,111
Water	—	—	—	—	—	—	—	—	—	—	—	304	838	1,142	31.3	0.76	—	2,149
Waste	—	—	—	—	—	—	—	—	—	—	—	1,638	0.00	1,638	164	0.00	—	5,731
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Total	16.6	90.4	17.4	115	0.22	1.08	15.6	16.7	1.06	3.96	5.02	1,942	42,190	44,131	199	1.59	34.1	49,609
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.41	1.30	0.94	9.90	0.03	0.02	2.85	2.87	0.01	0.72	0.74	—	2,498	2,498	0.10	0.10	2.40	2,532
Area	1.37	15.1	0.11	10.0	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	50.6	50.6	< 0.005	< 0.005	—	50.8
Energy	0.24	0.12	2.12	1.16	0.01	0.17	—	0.17	0.17	—	0.17	—	4,298	4,298	0.52	0.04	—	4,323
Water	—	—	—	—	—	—	—	—	—	—	—	50.3	139	189	5.18	0.13	—	356
Waste	—	—	—	—	—	—	—	—	—	—	—	271	0.00	271	27.1	0.00	—	949
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.25	3.25
Total	3.02	16.5	3.17	21.1	0.04	0.20	2.85	3.05	0.19	0.72	0.92	321	6,985	7,306	32.9	0.26	5.65	8,213

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	8.28	7.69	4.76	60.5	0.16	0.09	16.5	16.6	0.08	4.18	4.26	—	16,411	16,411	0.60	0.56	34.6	16,627
Area	15.6	90.0	4.75	113	0.03	0.43	—	0.43	0.40	—	0.40	0.00	5,170	5,170	0.11	0.01	—	5,176
Energy	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	25,958	25,958	3.14	0.25	—	26,111
Water	—	—	—	—	—	—	—	—	—	—	—	304	838	1,142	31.3	0.76	—	2,149
Waste	—	—	—	—	—	—	—	—	—	—	—	1,638	0.00	1,638	164	0.00	—	5,731
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Total	25.3	98.3	21.2	180	0.26	1.44	16.5	17.9	1.41	4.18	5.58	1,942	48,376	50,318	199	1.58	54.2	55,814
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	8.07	7.45	5.63	57.9	0.15	0.09	16.5	16.6	0.08	4.18	4.26	—	15,513	15,513	0.67	0.62	0.90	15,715
Area	0.44	75.8	3.77	1.61	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,789	4,789	0.09	0.01	—	4,794
Energy	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	25,958	25,958	3.14	0.25	—	26,111
Water	—	—	—	—	—	—	—	—	—	—	—	304	838	1,142	31.3	0.76	—	2,149
Waste	—	—	—	—	—	—	—	—	—	—	—	1,638	0.00	1,638	164	0.00	—	5,731
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Total	9.85	84.0	21.0	65.9	0.25	1.32	16.5	17.8	1.31	4.18	5.49	1,942	47,097	49,039	199	1.64	20.5	54,520
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	7.72	7.12	5.16	54.3	0.15	0.08	15.6	15.7	0.08	3.96	4.04	—	15,088	15,088	0.63	0.58	14.5	15,292
Area	7.51	82.6	0.58	54.8	< 0.005	0.07	—	0.07	0.06	—	0.06	0.00	306	306	0.01	< 0.005	—	307
Energy	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	25,958	25,958	3.14	0.25	—	26,111
Water	—	—	—	—	—	—	—	—	—	—	—	304	838	1,142	31.3	0.76	—	2,149

Waste	—	—	—	—	—	—	—	—	—	—	—	1,638	0.00	1,638	164	0.00	—	5,731
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Total	16.6	90.4	17.4	115	0.22	1.08	15.6	16.7	1.06	3.96	5.02	1,942	42,190	44,131	199	1.59	34.1	49,609
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.41	1.30	0.94	9.90	0.03	0.02	2.85	2.87	0.01	0.72	0.74	—	2,498	2,498	0.10	0.10	2.40	2,532
Area	1.37	15.1	0.11	10.0	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	50.6	50.6	< 0.005	< 0.005	—	50.8
Energy	0.24	0.12	2.12	1.16	0.01	0.17	—	0.17	0.17	—	0.17	—	4,298	4,298	0.52	0.04	—	4,323
Water	—	—	—	—	—	—	—	—	—	—	—	50.3	139	189	5.18	0.13	—	356
Waste	—	—	—	—	—	—	—	—	—	—	—	271	0.00	271	27.1	0.00	—	949
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.25	3.25
Total	3.02	16.5	3.17	21.1	0.04	0.20	2.85	3.05	0.19	0.72	0.92	321	6,985	7,306	32.9	0.26	5.65	8,213

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

Apartments	0.85	0.79	0.49	6.20	0.02	0.01	1.69	1.70	0.01	0.43	0.44	—	1,683	1,683	0.06	0.06	3.55	1,705
Single Family Housing	7.43	6.90	4.27	54.3	0.14	0.08	14.8	14.9	0.07	3.75	3.82	—	14,728	14,728	0.54	0.50	31.0	14,922
Total	8.28	7.69	4.76	60.5	0.16	0.09	16.5	16.6	0.08	4.18	4.26	—	16,411	16,411	0.60	0.56	34.6	16,627
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	0.83	0.76	0.58	5.94	0.02	0.01	1.69	1.70	0.01	0.43	0.44	—	1,591	1,591	0.07	0.06	0.09	1,612
Single Family Housing	7.25	6.69	5.05	52.0	0.14	0.08	14.8	14.9	0.07	3.75	3.82	—	13,922	13,922	0.61	0.56	0.80	14,104
Total	8.07	7.45	5.63	57.9	0.15	0.09	16.5	16.6	0.08	4.18	4.26	—	15,513	15,513	0.67	0.62	0.90	15,715
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	0.13	0.12	0.09	0.94	< 0.005	< 0.005	0.27	0.27	< 0.005	0.07	0.07	—	237	237	0.01	0.01	0.23	240
Single Family Housing	1.28	1.18	0.85	8.96	0.02	0.01	2.58	2.60	0.01	0.65	0.67	—	2,261	2,261	0.09	0.09	2.17	2,292

Total	1.41	1.30	0.94	9.90	0.03	0.02	2.85	2.87	0.01	0.72	0.74	—	2,498	2,498	0.10	0.10	2.40	2,532

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	0.85	0.79	0.49	6.20	0.02	0.01	1.69	1.70	0.01	0.43	0.44	—	1,683	1,683	0.06	0.06	3.55	1,705
Single Family Housing	7.43	6.90	4.27	54.3	0.14	0.08	14.8	14.9	0.07	3.75	3.82	—	14,728	14,728	0.54	0.50	31.0	14,922
Total	8.28	7.69	4.76	60.5	0.16	0.09	16.5	16.6	0.08	4.18	4.26	—	16,411	16,411	0.60	0.56	34.6	16,627
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	0.83	0.76	0.58	5.94	0.02	0.01	1.69	1.70	0.01	0.43	0.44	—	1,591	1,591	0.07	0.06	0.09	1,612

Single Family Housing	7.25	6.69	5.05	52.0	0.14	0.08	14.8	14.9	0.07	3.75	3.82	—	13,922	13,922	0.61	0.56	0.80	14,104
Total	8.07	7.45	5.63	57.9	0.15	0.09	16.5	16.6	0.08	4.18	4.26	—	15,513	15,513	0.67	0.62	0.90	15,715
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	0.13	0.12	0.09	0.94	< 0.005	< 0.005	0.27	0.27	< 0.005	0.07	0.07	—	237	237	0.01	0.01	0.23	240
Single Family Housing	1.28	1.18	0.85	8.96	0.02	0.01	2.58	2.60	0.01	0.65	0.67	—	2,261	2,261	0.09	0.09	2.17	2,292
Total	1.41	1.30	0.94	9.90	0.03	0.02	2.85	2.87	0.01	0.72	0.74	—	2,498	2,498	0.10	0.10	2.40	2,532

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	2,925	2,925	0.47	0.06	—	2,953
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	5,121	5,121	0.83	0.10	—	5,172
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	209	209	0.03	< 0.005	—	211
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	3,193	3,193	0.52	0.06	—	3,225
Total	—	—	—	—	—	—	—	—	—	—	—	—	11,448	11,448	1.85	0.22	—	11,562
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	2,925	2,925	0.47	0.06	—	2,953
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	5,121	5,121	0.83	0.10	—	5,172
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	209	209	0.03	< 0.005	—	211
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	3,193	3,193	0.52	0.06	—	3,225
Total	—	—	—	—	—	—	—	—	—	—	—	—	11,448	11,448	1.85	0.22	—	11,562
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	484	484	0.08	0.01	—	489
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	848	848	0.14	0.02	—	856
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	34.6	34.6	0.01	< 0.005	—	34.9

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	529	529	0.09	0.01	—	534
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,895	1,895	0.31	0.04	—	1,914

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	2,925	2,925	0.47	0.06	—	2,953
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	5,121	5,121	0.83	0.10	—	5,172
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	209	209	0.03	< 0.005	—	211
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	3,193	3,193	0.52	0.06	—	3,225
Total	—	—	—	—	—	—	—	—	—	—	—	—	11,448	11,448	1.85	0.22	—	11,562
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	2,925	2,925	0.47	0.06	—	2,953
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	5,121	5,121	0.83	0.10	—	5,172

Apartme Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	209	209	0.03	< 0.005	—	211
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	3,193	3,193	0.52	0.06	—	3,225
Total	—	—	—	—	—	—	—	—	—	—	—	—	11,448	11,448	1.85	0.22	—	11,562
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Governm ent (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	484	484	0.08	0.01	—	489
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	848	848	0.14	0.02	—	856
Apartme nts Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	34.6	34.6	0.01	< 0.005	—	34.9
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	529	529	0.09	0.01	—	534
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,895	1,895	0.31	0.04	—	1,914

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Governm ent (Civic Center)	0.17	0.09	1.55	1.31	0.01	0.12	—	0.12	0.12	—	0.12	—	1,855	1,855	0.16	< 0.005	—	1,860
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00

Strip Mall	0.21	0.10	1.89	1.59	0.01	0.14	—	0.14	0.14	—	0.14	—	2,261	2,261	0.20	< 0.005	—	2,267
Apartments Low Rise	0.05	0.03	0.44	0.19	< 0.005	0.04	—	0.04	0.04	—	0.04	—	563	563	0.05	< 0.005	—	565
Single Family Housing	0.91	0.45	7.74	3.30	0.05	0.63	—	0.63	0.63	—	0.63	—	9,831	9,831	0.87	0.02	—	9,858
Total	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	14,509	14,509	1.28	0.03	—	14,550
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.17	0.09	1.55	1.31	0.01	0.12	—	0.12	0.12	—	0.12	—	1,855	1,855	0.16	< 0.005	—	1,860
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	0.21	0.10	1.89	1.59	0.01	0.14	—	0.14	0.14	—	0.14	—	2,261	2,261	0.20	< 0.005	—	2,267
Apartments Low Rise	0.05	0.03	0.44	0.19	< 0.005	0.04	—	0.04	0.04	—	0.04	—	563	563	0.05	< 0.005	—	565
Single Family Housing	0.91	0.45	7.74	3.30	0.05	0.63	—	0.63	0.63	—	0.63	—	9,831	9,831	0.87	0.02	—	9,858
Total	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	14,509	14,509	1.28	0.03	—	14,550
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.03	0.02	0.28	0.24	< 0.005	0.02	—	0.02	0.02	—	0.02	—	307	307	0.03	< 0.005	—	308
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	0.04	0.02	0.35	0.29	< 0.005	0.03	—	0.03	0.03	—	0.03	—	374	374	0.03	< 0.005	—	375
Apartments Low Rise	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	93.2	93.2	0.01	< 0.005	—	93.5

Single Family Housing	0.17	0.08	1.41	0.60	0.01	0.11	—	0.11	0.11	—	0.11	—	1,628	1,628	0.14	< 0.005	—	1,632
Total	0.24	0.12	2.12	1.16	0.01	0.17	—	0.17	0.17	—	0.17	—	2,402	2,402	0.21	< 0.005	—	2,409

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.17	0.09	1.55	1.31	0.01	0.12	—	0.12	0.12	—	0.12	—	1,855	1,855	0.16	< 0.005	—	1,860
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	0.21	0.10	1.89	1.59	0.01	0.14	—	0.14	0.14	—	0.14	—	2,261	2,261	0.20	< 0.005	—	2,267
Apartments Low Rise	0.05	0.03	0.44	0.19	< 0.005	0.04	—	0.04	0.04	—	0.04	—	563	563	0.05	< 0.005	—	565
Single Family Housing	0.91	0.45	7.74	3.30	0.05	0.63	—	0.63	0.63	—	0.63	—	9,831	9,831	0.87	0.02	—	9,858
Total	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	14,509	14,509	1.28	0.03	—	14,550
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.17	0.09	1.55	1.31	0.01	0.12	—	0.12	0.12	—	0.12	—	1,855	1,855	0.16	< 0.005	—	1,860
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	0.21	0.10	1.89	1.59	0.01	0.14	—	0.14	0.14	—	0.14	—	2,261	2,261	0.20	< 0.005	—	2,267

Apartme Low Rise	0.05	0.03	0.44	0.19	< 0.005	0.04	—	0.04	0.04	—	0.04	—	563	563	0.05	< 0.005	—	565
Single Family Housing	0.91	0.45	7.74	3.30	0.05	0.63	—	0.63	0.63	—	0.63	—	9,831	9,831	0.87	0.02	—	9,858
Total	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	14,509	14,509	1.28	0.03	—	14,550
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Governm ent (Civic Center)	0.03	0.02	0.28	0.24	< 0.005	0.02	—	0.02	0.02	—	0.02	—	307	307	0.03	< 0.005	—	308
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	0.04	0.02	0.35	0.29	< 0.005	0.03	—	0.03	0.03	—	0.03	—	374	374	0.03	< 0.005	—	375
Apartme nts Low Rise	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	93.2	93.2	0.01	< 0.005	—	93.5
Single Family Housing	0.17	0.08	1.41	0.60	0.01	0.11	—	0.11	0.11	—	0.11	—	1,628	1,628	0.14	< 0.005	—	1,632
Total	0.24	0.12	2.12	1.16	0.01	0.17	—	0.17	0.17	—	0.17	—	2,402	2,402	0.21	< 0.005	—	2,409

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.44	0.22	3.77	1.61	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,789	4,789	0.09	0.01	—	4,794
Consum er Products	—	65.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architect Coatings	—	10.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	15.2	14.1	0.98	111	0.01	0.13	—	0.13	0.10	—	0.10	—	381	381	0.02	< 0.005	—	382
Total	15.6	90.0	4.75	113	0.03	0.43	—	0.43	0.40	—	0.40	0.00	5,170	5,170	0.11	0.01	—	5,176
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.44	0.22	3.77	1.61	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,789	4,789	0.09	0.01	—	4,794
Consumer Products	—	65.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	10.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.44	75.8	3.77	1.61	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,789	4,789	0.09	0.01	—	4,794
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	19.6	19.6	< 0.005	< 0.005	—	19.6
Consumer Products	—	11.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	1.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.37	1.27	0.09	10.00	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Total	1.37	15.1	0.11	10.0	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	50.6	50.6	< 0.005	< 0.005	—	50.8

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.44	0.22	3.77	1.61	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,789	4,789	0.09	0.01	—	4,794
Consumer Products	—	65.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	10.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	15.2	14.1	0.98	111	0.01	0.13	—	0.13	0.10	—	0.10	—	381	381	0.02	< 0.005	—	382
Total	15.6	90.0	4.75	113	0.03	0.43	—	0.43	0.40	—	0.40	0.00	5,170	5,170	0.11	0.01	—	5,176
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.44	0.22	3.77	1.61	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,789	4,789	0.09	0.01	—	4,794
Consumer Products	—	65.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	10.4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.44	75.8	3.77	1.61	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,789	4,789	0.09	0.01	—	4,794
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	19.6	19.6	< 0.005	< 0.005	—	19.6
Consumer Products	—	11.9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Architectural Coatings	—	1.90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.37	1.27	0.09	10.00	< 0.005	0.01	—	0.01	0.01	—	0.01	—	31.1	31.1	< 0.005	< 0.005	—	31.2
Total	1.37	15.1	0.11	10.0	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	50.6	50.6	< 0.005	< 0.005	—	50.8

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	94.5	179	273	9.72	0.23	—	586
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	156	294	450	16.0	0.39	—	966
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	6.31	11.9	18.2	0.65	0.02	—	39.1
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	47.1	353	400	4.88	0.12	—	559
Total	—	—	—	—	—	—	—	—	—	—	—	304	838	1,142	31.3	0.76	—	2,149
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Governm (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	94.5	179	273	9.72	0.23	—	586
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	156	294	450	16.0	0.39	—	966
Apartme nts Low Rise	—	—	—	—	—	—	—	—	—	—	—	6.31	11.9	18.2	0.65	0.02	—	39.1
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	47.1	353	400	4.88	0.12	—	559
Total	—	—	—	—	—	—	—	—	—	—	—	304	838	1,142	31.3	0.76	—	2,149
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Governm ent (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	15.6	29.6	45.2	1.61	0.04	—	97.0
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	25.8	48.7	74.5	2.65	0.06	—	160
Apartme nts Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.05	1.97	3.02	0.11	< 0.005	—	6.48
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.80	58.5	66.3	0.81	0.02	—	92.5
Total	—	—	—	—	—	—	—	—	—	—	—	50.3	139	189	5.18	0.13	—	356

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	94.5	179	273	9.72	0.23	—	586
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	156	294	450	16.0	0.39	—	966
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	6.31	11.9	18.2	0.65	0.02	—	39.1
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	47.1	353	400	4.88	0.12	—	559
Total	—	—	—	—	—	—	—	—	—	—	—	304	838	1,142	31.3	0.76	—	2,149
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	94.5	179	273	9.72	0.23	—	586
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	156	294	450	16.0	0.39	—	966
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	6.31	11.9	18.2	0.65	0.02	—	39.1
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	47.1	353	400	4.88	0.12	—	559
Total	—	—	—	—	—	—	—	—	—	—	—	304	838	1,142	31.3	0.76	—	2,149
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	15.6	29.6	45.2	1.61	0.04	—	97.0
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	25.8	48.7	74.5	2.65	0.06	—	160
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.05	1.97	3.02	0.11	< 0.005	—	6.48
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.80	58.5	66.3	0.81	0.02	—	92.5
Total	—	—	—	—	—	—	—	—	—	—	—	50.3	139	189	5.18	0.13	—	356

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	763	0.00	763	76.2	0.00	—	2,669
City Park	—	—	—	—	—	—	—	—	—	—	—	0.70	0.00	0.70	0.07	0.00	—	2.45
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	621	0.00	621	62.1	0.00	—	2,173
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	43.5	0.00	43.5	4.35	0.00	—	152

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	210	0.00	210	21.0	0.00	—	734
Total	—	—	—	—	—	—	—	—	—	—	—	1,638	0.00	1,638	164	0.00	—	5,731
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	763	0.00	763	76.2	0.00	—	2,669
City Park	—	—	—	—	—	—	—	—	—	—	—	0.70	0.00	0.70	0.07	0.00	—	2.45
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	621	0.00	621	62.1	0.00	—	2,173
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	43.5	0.00	43.5	4.35	0.00	—	152
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	210	0.00	210	21.0	0.00	—	734
Total	—	—	—	—	—	—	—	—	—	—	—	1,638	0.00	1,638	164	0.00	—	5,731
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	126	0.00	126	12.6	0.00	—	442
City Park	—	—	—	—	—	—	—	—	—	—	—	0.12	0.00	0.12	0.01	0.00	—	0.41
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	360
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	7.20	0.00	7.20	0.72	0.00	—	25.2
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	34.7	0.00	34.7	3.47	0.00	—	122
Total	—	—	—	—	—	—	—	—	—	—	—	271	0.00	271	27.1	0.00	—	949

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	763	0.00	763	76.2	0.00	—	2,669
City Park	—	—	—	—	—	—	—	—	—	—	—	0.70	0.00	0.70	0.07	0.00	—	2.45
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	621	0.00	621	62.1	0.00	—	2,173
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	43.5	0.00	43.5	4.35	0.00	—	152
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	210	0.00	210	21.0	0.00	—	734
Total	—	—	—	—	—	—	—	—	—	—	—	1,638	0.00	1,638	164	0.00	—	5,731
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	763	0.00	763	76.2	0.00	—	2,669
City Park	—	—	—	—	—	—	—	—	—	—	—	0.70	0.00	0.70	0.07	0.00	—	2.45
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	621	0.00	621	62.1	0.00	—	2,173
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	43.5	0.00	43.5	4.35	0.00	—	152

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	210	0.00	210	21.0	0.00	—	734
Total	—	—	—	—	—	—	—	—	—	—	—	1,638	0.00	1,638	164	0.00	—	5,731
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	126	0.00	126	12.6	0.00	—	442
City Park	—	—	—	—	—	—	—	—	—	—	—	0.12	0.00	0.12	0.01	0.00	—	0.41
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	360
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	7.20	0.00	7.20	0.72	0.00	—	25.2
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	34.7	0.00	34.7	3.47	0.00	—	122
Total	—	—	—	—	—	—	—	—	—	—	—	271	0.00	271	27.1	0.00	—	949

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00

Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.84	6.84
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	11.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.84	6.84
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	11.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.13	1.13
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.88	1.88
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.25	3.25

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.84	6.84
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	11.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.84	6.84

Apartme Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	11.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Governm ent (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.13	1.13
Apartme nts Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.88	1.88
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.25	3.25

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipme nt Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Sequest	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	243	270	209	88,380	2,163	2,406	1,863	786,578
Single Family Housing	2,341	2,366	2,122	844,451	20,839	21,056	18,885	7,515,618

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	243	270	209	88,380	2,163	2,406	1,863	786,578
Single Family Housing	2,341	2,366	2,122	844,451	20,839	21,056	18,885	7,515,618

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	56
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	53
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Single Family Housing	—

Wood Fireplaces	0
Gas Fireplaces	163
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	650
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	56
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	53
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	163
Propane Fireplaces	0
Electric Fireplaces	0

No Fireplaces	650
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
3444302.25	1,148,101	2,019,000	673,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Government (Civic Center)	5,233,142	204	0.0330	0.0040	5,788,306

City Park	0.00	204	0.0330	0.0040	0.00
Strip Mall	9,163,894	204	0.0330	0.0040	7,053,490
Apartments Low Rise	373,900	204	0.0330	0.0040	1,756,950
Single Family Housing	5,714,286	204	0.0330	0.0040	30,674,592

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Government (Civic Center)	5,233,142	204	0.0330	0.0040	5,788,306
City Park	0.00	204	0.0330	0.0040	0.00
Strip Mall	9,163,894	204	0.0330	0.0040	7,053,490
Apartments Low Rise	373,900	204	0.0330	0.0040	1,756,950
Single Family Housing	5,714,286	204	0.0330	0.0040	30,674,592

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Government (Civic Center)	49,327,200	0.00
City Park	0.00	0.00
Strip Mall	81,309,407	0.00
Apartments Low Rise	3,294,198	0.00
Single Family Housing	24,570,486	95,819,813

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Government (Civic Center)	49,327,200	0.00

City Park	0.00	0.00
Strip Mall	81,309,407	0.00
Apartments Low Rise	3,294,198	0.00
Single Family Housing	24,570,486	95,819,813

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Government (Civic Center)	1,415	—
City Park	1.30	—
Strip Mall	1,153	—
Apartments Low Rise	80.7	—
Single Family Housing	389	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Government (Civic Center)	1,415	—
City Park	1.30	—
Strip Mall	1,153	—
Apartments Low Rise	80.7	—
Single Family Housing	389	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced

Government (Civic Center)	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Government (Civic Center)	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Government (Civic Center)	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Government (Civic Center)	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0

City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	7.19	annual days of extreme heat
Extreme Precipitation	8.75	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	6.01	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters

Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	3	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	3	1	1	3
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A

Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	3.83
AQ-PM	29.0
AQ-DPM	54.2
Drinking Water	7.43
Lead Risk Housing	50.4
Pesticides	0.00
Toxic Releases	61.6
Traffic	15.5
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	87.0
Solid Waste	43.9

Sensitive Population	—
Asthma	8.55
Cardio-vascular	11.4
Low Birth Weights	95.2
Socioeconomic Factor Indicators	—
Education	0.00
Housing	39.2
Linguistic	2.81
Poverty	1.75
Unemployment	14.4

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	95.7141024
Employed	9.713845759
Median HI	98.92210959
Education	—
Bachelor's or higher	98.98626973
High school enrollment	100
Preschool enrollment	45.54087001
Transportation	—
Auto Access	64.27563198
Active commuting	92.13396638
Social	—
2-parent households	35.30091107

Voting	99.74335943
Neighborhood	—
Alcohol availability	51.99538047
Park access	60.04106249
Retail density	32.45220069
Supermarket access	57.89811369
Tree canopy	97.40793019
Housing	—
Homeownership	80.81611703
Housing habitability	60.90080842
Low-inc homeowner severe housing cost burden	15.37277044
Low-inc renter severe housing cost burden	28.7052483
Uncrowded housing	96.93314513
Health Outcomes	—
Insured adults	95.73976646
Arthritis	0.0
Asthma ER Admissions	94.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	89.1
Cognitively Disabled	52.2
Physically Disabled	45.1
Heart Attack ER Admissions	83.4

Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	15.3
Children	86.0
Elderly	1.6
English Speaking	89.6
Foreign-born	21.7
Outdoor Workers	87.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	82.5
Traffic Density	18.0
Traffic Access	23.0
Other Indices	—
Hardship	0.5
Other Decision Support	—
2016 Voting	98.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	11.0
Healthy Places Index Score for Project Location (b)	96.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Operations: Vehicle Data	Traffic data provided by Project transportation engineers (Fehr and Peers) on 12/8/2023. Data analysis was conducted for only home-based VMT.

Belvedere Proposed Detailed Report

Table of Contents

1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Belvedere Proposed
Operational Year	2031
Lead Agency	—
Land Use Scale	Plan/community
Analysis Level for Defaults	County
Windspeed (m/s)	3.90
Precipitation (days)	34.8
Location	Belvedere, CA, USA
County	Marin
City	Belvedere
Air District	Bay Area AQMD
Air Basin	San Francisco Bay Area
TAZ	930
EDFZ	2
Electric Utility	Pacific Gas & Electric Company
Gas Utility	Pacific Gas & Electric
App Version	2022.1.1.21

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Government (Civic Center)	248	1000sqft	5.70	248,300	0.00	—	653	—

City Park	15.1	Acre	15.1	0.00	0.00	0.00	2,086	—
Strip Mall	1,098	1000sqft	25.2	1,097,700	0.00	—	—	—
Apartments Low Rise	109	Dwelling Unit	6.81	115,540	0.00	—	262	—
Single Family Housing	813	Dwelling Unit	264	1,585,350	9,522,553	—	1,951	—
User Defined Residential	163	Dwelling Unit	6.80	115,540	0.00	—	391	—
User Defined Residential	56.0	Dwelling Unit	264	1,585,350	9,522,551	—	134	—

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Transportation	T-4	Integrate A ordable and Below Market Rate Housing
Energy	E-2	Require Energy Efficient Appliances
Energy	E-11	Procure Electricity from Lower Carbon Intensity Power Supply
Energy	E-12-A	Install Alternative Type of Water Heater in Place of Gas Storage Tank Heater in Residences
Energy	E-12-B	Install Electric Space Heater in Place of Natural Gas Heaters in Residences
Energy	E-13	Install Electric Ranges in Place of Gas Ranges
Energy	E-15	Require All-Electric Development
Water	W-2	Use Grey Water
Water	W-4	Require Low-Flow Water Fixtures
Water	W-5	Design Water-Efficient Landscapes
Waste	S-1/S-2	Implement Waste Reduction Plan
Waste	S-4*	Recycle Demolished Construction Material
Area Sources	E-14	Limit Wood Burning Devices and Natural Gas/Propane Fireplaces in Residential Development

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.4. Operations Emissions Compared Against Thresholds

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Un/Mit.	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	28.4	144	23.9	198	0.29	1.63	17.1	18.7	1.59	4.33	5.92	2,034	52,149	54,183	208	1.68	55.5	59,945
Mit.	28.1	144	21.8	197	0.27	1.45	17.1	18.6	1.42	4.33	5.75	2,023	49,378	51,401	207	1.66	55.5	57,129
% Reduced	1%	< 0.5%	9%	< 0.5%	5%	11%	—	1%	11%	—	3%	1%	5%	5%	1%	1%	—	5%
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	11.8	129	23.8	73.0	0.27	1.50	17.1	18.6	1.49	4.33	5.82	2,034	50,806	52,840	208	1.74	20.6	58,588
Mit.	11.5	129	21.6	72.0	0.26	1.32	17.1	18.4	1.31	4.33	5.65	2,023	48,035	50,058	207	1.73	20.6	55,772
% Reduced	2%	< 0.5%	9%	1%	5%	12%	—	1%	12%	—	3%	1%	5%	5%	1%	1%	—	5%
Average Daily (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	18.6	135	18.0	126	0.23	1.09	16.0	17.1	1.07	4.06	5.13	2,034	43,042	45,076	208	1.68	34.5	50,814
Mit.	18.6	135	17.9	126	0.23	1.08	16.0	17.1	1.06	4.06	5.13	2,023	42,948	44,970	207	1.67	34.5	50,678
% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	—	< 0.5%	—	< 0.5%	< 0.5%	—	< 0.5%	1%	< 0.5%	< 0.5%	1%	1%	—	< 0.5%
Annual (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unmit.	3.40	24.7	3.28	23.1	0.04	0.20	2.93	3.13	0.19	0.74	0.94	337	7,126	7,463	34.5	0.28	5.71	8,413
Mit.	3.40	24.7	3.27	23.1	0.04	0.20	2.93	3.13	0.19	0.74	0.94	335	7,110	7,445	34.3	0.28	5.71	8,390

% Reduced	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	< 0.5%	—	< 0.5%	< 0.5%	—	< 0.5%	1%	< 0.5%	< 0.5%	1%	1%	—	< 0.5%

2.5. Operations Emissions by Sector, Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.00	9.35	5.25	65.4	0.17	0.09	17.1	17.2	0.09	4.33	4.42	—	17,119	17,119	0.69	0.62	35.9	17,355
Area	17.0	134	7.03	126	0.04	0.61	—	0.61	0.58	—	0.58	0.00	7,947	7,947	0.16	0.02	—	7,956
Energy	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	25,958	25,958	3.14	0.25	—	26,111
Water	—	—	—	—	—	—	—	—	—	—	—	316	1,126	1,442	32.6	0.79	—	2,494
Waste	—	—	—	—	—	—	—	—	—	—	—	1,717	0.00	1,717	172	0.00	—	6,008
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Total	28.4	144	23.9	198	0.29	1.63	17.1	18.7	1.59	4.33	5.92	2,034	52,149	54,183	208	1.68	55.5	59,945
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	9.74	9.05	6.21	64.1	0.16	0.09	17.1	17.2	0.09	4.33	4.42	—	16,189	16,189	0.78	0.68	0.93	16,413
Area	0.69	119	5.93	2.53	0.04	0.48	—	0.48	0.48	—	0.48	0.00	7,533	7,533	0.14	0.01	—	7,541
Energy	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	25,958	25,958	3.14	0.25	—	26,111
Water	—	—	—	—	—	—	—	—	—	—	—	316	1,126	1,442	32.6	0.79	—	2,494
Waste	—	—	—	—	—	—	—	—	—	—	—	1,717	0.00	1,717	172	0.00	—	6,008
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Total	11.8	129	23.8	73.0	0.27	1.50	17.1	18.6	1.49	4.33	5.82	2,034	50,806	52,840	208	1.74	20.6	58,588
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	9.20	8.56	5.63	59.0	0.15	0.09	16.0	16.1	0.08	4.06	4.15	—	15,569	15,569	0.72	0.63	14.9	15,790

Area	8.07	126	0.69	61.0	< 0.005	0.08	—	0.08	0.06	—	0.06	0.00	390	390	0.01	< 0.005	—	391
Energy	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	25,958	25,958	3.14	0.25	—	26,111
Water	—	—	—	—	—	—	—	—	—	—	—	316	1,126	1,442	32.6	0.79	—	2,494
Waste	—	—	—	—	—	—	—	—	—	—	—	1,717	0.00	1,717	172	0.00	—	6,008
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Total	18.6	135	18.0	126	0.23	1.09	16.0	17.1	1.07	4.06	5.13	2,034	43,042	45,076	208	1.68	34.5	50,814
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.68	1.56	1.03	10.8	0.03	0.02	2.93	2.94	0.01	0.74	0.76	—	2,578	2,578	0.12	0.10	2.46	2,614
Area	1.47	23.0	0.13	11.1	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	64.5	64.5	< 0.005	< 0.005	—	64.7
Energy	0.24	0.12	2.12	1.16	0.01	0.17	—	0.17	0.17	—	0.17	—	4,298	4,298	0.52	0.04	—	4,323
Water	—	—	—	—	—	—	—	—	—	—	—	52.4	186	239	5.40	0.13	—	413
Waste	—	—	—	—	—	—	—	—	—	—	—	284	0.00	284	28.4	0.00	—	995
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.25	3.25
Total	3.40	24.7	3.28	23.1	0.04	0.20	2.93	3.13	0.19	0.74	0.94	337	7,126	7,463	34.5	0.28	5.71	8,413

2.6. Operations Emissions by Sector, Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Sector	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	10.00	9.35	5.25	65.4	0.17	0.09	17.1	17.2	0.09	4.33	4.42	—	17,119	17,119	0.69	0.62	35.9	17,355
Area	16.8	134	4.87	125	0.03	0.44	—	0.44	0.41	—	0.41	0.00	5,203	5,203	0.11	0.01	—	5,209
Energy	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	25,958	25,958	3.14	0.25	—	26,111
Water	—	—	—	—	—	—	—	—	—	—	—	313	1,099	1,412	32.3	0.78	—	2,453
Waste	—	—	—	—	—	—	—	—	—	—	—	1,709	0.00	1,709	171	0.00	—	5,981
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Total	28.1	144	21.8	197	0.27	1.45	17.1	18.6	1.42	4.33	5.75	2,023	49,378	51,401	207	1.66	55.5	57,129

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	9.74	9.05	6.21	64.1	0.16	0.09	17.1	17.2	0.09	4.33	4.42	—	16,189	16,189	0.78	0.68	0.93	16,413
Area	0.44	119	3.77	1.61	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,789	4,789	0.09	0.01	—	4,794
Energy	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	25,958	25,958	3.14	0.25	—	26,111
Water	—	—	—	—	—	—	—	—	—	—	—	313	1,099	1,412	32.3	0.78	—	2,453
Waste	—	—	—	—	—	—	—	—	—	—	—	1,709	0.00	1,709	171	0.00	—	5,981
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Total	11.5	129	21.6	72.0	0.26	1.32	17.1	18.4	1.31	4.33	5.65	2,023	48,035	50,058	207	1.73	20.6	55,772
Average Daily	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	9.20	8.56	5.63	59.0	0.15	0.09	16.0	16.1	0.08	4.06	4.15	—	15,569	15,569	0.72	0.63	14.9	15,790
Area	8.07	126	0.63	61.0	< 0.005	0.07	—	0.07	0.06	—	0.06	0.00	322	322	0.01	< 0.005	—	323
Energy	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	25,958	25,958	3.14	0.25	—	26,111
Water	—	—	—	—	—	—	—	—	—	—	—	313	1,099	1,412	32.3	0.78	—	2,453
Waste	—	—	—	—	—	—	—	—	—	—	—	1,709	0.00	1,709	171	0.00	—	5,981
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Total	18.6	135	17.9	126	0.23	1.08	16.0	17.1	1.06	4.06	5.13	2,023	42,948	44,970	207	1.67	34.5	50,678
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mobile	1.68	1.56	1.03	10.8	0.03	0.02	2.93	2.94	0.01	0.74	0.76	—	2,578	2,578	0.12	0.10	2.46	2,614
Area	1.47	23.0	0.12	11.1	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	53.3	53.3	< 0.005	< 0.005	—	53.5
Energy	0.24	0.12	2.12	1.16	0.01	0.17	—	0.17	0.17	—	0.17	—	4,298	4,298	0.52	0.04	—	4,323
Water	—	—	—	—	—	—	—	—	—	—	—	51.9	182	234	5.35	0.13	—	406
Waste	—	—	—	—	—	—	—	—	—	—	—	283	0.00	283	28.3	0.00	—	990
Refrig.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.25	3.25
Total	3.40	24.7	3.27	23.1	0.04	0.20	2.93	3.13	0.19	0.74	0.94	335	7,110	7,445	34.3	0.28	5.71	8,390

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	0.84	0.79	0.44	5.52	0.01	0.01	1.44	1.45	0.01	0.37	0.37	—	1,444	1,444	0.06	0.05	3.03	1,464
Single Family Housing	7.39	6.91	3.88	48.3	0.12	0.07	12.6	12.7	0.06	3.20	3.27	—	12,645	12,645	0.51	0.45	26.5	12,820
User Defined Residential	1.77	1.65	0.93	11.6	0.03	0.02	3.03	3.05	0.02	0.77	0.78	—	3,030	3,030	0.12	0.11	6.35	3,072
Total	10.00	9.35	5.25	65.4	0.17	0.09	17.1	17.2	0.09	4.33	4.42	—	17,119	17,119	0.69	0.62	35.9	17,355
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00

City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	0.82	0.76	0.52	5.40	0.01	0.01	1.44	1.45	0.01	0.37	0.37	—	1,365	1,365	0.07	0.06	0.08	1,384
Single Family Housing	7.19	6.69	4.59	47.3	0.12	0.07	12.6	12.7	0.06	3.20	3.27	—	11,959	11,959	0.58	0.51	0.69	12,124
User Defined Residential	1.72	1.60	1.10	11.3	0.03	0.02	3.03	3.05	0.02	0.77	0.78	—	2,865	2,865	0.14	0.12	0.16	2,905
Total	9.74	9.05	6.21	64.1	0.16	0.09	17.1	17.2	0.09	4.33	4.42	—	16,189	16,189	0.78	0.68	0.93	16,413
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	0.13	0.12	0.08	0.85	< 0.005	< 0.005	0.23	0.23	< 0.005	0.06	0.06	—	203	203	0.01	0.01	0.19	206
Single Family Housing	1.26	1.17	0.77	8.09	0.02	0.01	2.20	2.21	0.01	0.56	0.57	—	1,938	1,938	0.09	0.08	1.85	1,965
User Defined Residential	0.28	0.26	0.17	1.83	< 0.005	< 0.005	0.50	0.50	< 0.005	0.13	0.13	—	437	437	0.02	0.02	0.42	443
Total	1.68	1.56	1.03	10.8	0.03	0.02	2.93	2.94	0.01	0.74	0.76	—	2,578	2,578	0.12	0.10	2.46	2,614

4.1.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	0.84	0.79	0.44	5.52	0.01	0.01	1.44	1.45	0.01	0.37	0.37	—	1,444	1,444	0.06	0.05	3.03	1,464
Single Family Housing	7.39	6.91	3.88	48.3	0.12	0.07	12.6	12.7	0.06	3.20	3.27	—	12,645	12,645	0.51	0.45	26.5	12,820
User Defined Residential	1.77	1.65	0.93	11.6	0.03	0.02	3.03	3.05	0.02	0.77	0.78	—	3,030	3,030	0.12	0.11	6.35	3,072
Total	10.00	9.35	5.25	65.4	0.17	0.09	17.1	17.2	0.09	4.33	4.42	—	17,119	17,119	0.69	0.62	35.9	17,355
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	0.82	0.76	0.52	5.40	0.01	0.01	1.44	1.45	0.01	0.37	0.37	—	1,365	1,365	0.07	0.06	0.08	1,384

Single Family Housing	7.19	6.69	4.59	47.3	0.12	0.07	12.6	12.7	0.06	3.20	3.27	—	11,959	11,959	0.58	0.51	0.69	12,124
User Defined Residential	1.72	1.60	1.10	11.3	0.03	0.02	3.03	3.05	0.02	0.77	0.78	—	2,865	2,865	0.14	0.12	0.16	2,905
Total	9.74	9.05	6.21	64.1	0.16	0.09	17.1	17.2	0.09	4.33	4.42	—	16,189	16,189	0.78	0.68	0.93	16,413
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	0.13	0.12	0.08	0.85	< 0.005	< 0.005	0.23	0.23	< 0.005	0.06	0.06	—	203	203	0.01	0.01	0.19	206
Single Family Housing	1.26	1.17	0.77	8.09	0.02	0.01	2.20	2.21	0.01	0.56	0.57	—	1,938	1,938	0.09	0.08	1.85	1,965
User Defined Residential	0.28	0.26	0.17	1.83	< 0.005	< 0.005	0.50	0.50	< 0.005	0.13	0.13	—	437	437	0.02	0.02	0.42	443
Total	1.68	1.56	1.03	10.8	0.03	0.02	2.93	2.94	0.01	0.74	0.76	—	2,578	2,578	0.12	0.10	2.46	2,614

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	2,925	2,925	0.47	0.06	—	2,953
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	5,121	5,121	0.83	0.10	—	5,172
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	209	209	0.03	< 0.005	—	211
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	3,193	3,193	0.52	0.06	—	3,225
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	11,448	11,448	1.85	0.22	—	11,562
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	2,925	2,925	0.47	0.06	—	2,953
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	5,121	5,121	0.83	0.10	—	5,172
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	209	209	0.03	< 0.005	—	211
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	3,193	3,193	0.52	0.06	—	3,225

User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	11,448	11,448	1.85	0.22	—	11,562
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	484	484	0.08	0.01	—	489
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	848	848	0.14	0.02	—	856
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	34.6	34.6	0.01	< 0.005	—	34.9
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	529	529	0.09	0.01	—	534
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,895	1,895	0.31	0.04	—	1,914

4.2.2. Electricity Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	2,925	2,925	0.47	0.06	—	2,953
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00

Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	5,121	5,121	0.83	0.10	—	5,172
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	209	209	0.03	< 0.005	—	211
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	3,193	3,193	0.52	0.06	—	3,225
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	11,448	11,448	1.85	0.22	—	11,562
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	2,925	2,925	0.47	0.06	—	2,953
City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	5,121	5,121	0.83	0.10	—	5,172
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	209	209	0.03	< 0.005	—	211
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	3,193	3,193	0.52	0.06	—	3,225
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	11,448	11,448	1.85	0.22	—	11,562
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	484	484	0.08	0.01	—	489

City Park	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	848	848	0.14	0.02	—	856
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	34.6	34.6	0.01	< 0.005	—	34.9
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	529	529	0.09	0.01	—	534
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	—	0.00
Total	—	—	—	—	—	—	—	—	—	—	—	—	1,895	1,895	0.31	0.04	—	1,914

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.17	0.09	1.55	1.31	0.01	0.12	—	0.12	0.12	—	0.12	—	1,855	1,855	0.16	< 0.005	—	1,860
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	0.21	0.10	1.89	1.59	0.01	0.14	—	0.14	0.14	—	0.14	—	2,261	2,261	0.20	< 0.005	—	2,267
Apartments Low Rise	0.05	0.03	0.44	0.19	< 0.005	0.04	—	0.04	0.04	—	0.04	—	563	563	0.05	< 0.005	—	565
Single Family Housing	0.91	0.45	7.74	3.30	0.05	0.63	—	0.63	0.63	—	0.63	—	9,831	9,831	0.87	0.02	—	9,858

User Defined Residential	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	14,509	14,509	1.28	0.03	—	14,550
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.17	0.09	1.55	1.31	0.01	0.12	—	0.12	0.12	—	0.12	—	1,855	1,855	0.16	< 0.005	—	1,860
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	0.21	0.10	1.89	1.59	0.01	0.14	—	0.14	0.14	—	0.14	—	2,261	2,261	0.20	< 0.005	—	2,267
Apartments Low Rise	0.05	0.03	0.44	0.19	< 0.005	0.04	—	0.04	0.04	—	0.04	—	563	563	0.05	< 0.005	—	565
Single Family Housing	0.91	0.45	7.74	3.30	0.05	0.63	—	0.63	0.63	—	0.63	—	9,831	9,831	0.87	0.02	—	9,858
User Defined Residential	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	14,509	14,509	1.28	0.03	—	14,550
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.03	0.02	0.28	0.24	< 0.005	0.02	—	0.02	0.02	—	0.02	—	307	307	0.03	< 0.005	—	308
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	0.04	0.02	0.35	0.29	< 0.005	0.03	—	0.03	0.03	—	0.03	—	374	374	0.03	< 0.005	—	375
Apartments Low Rise	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	93.2	93.2	0.01	< 0.005	—	93.5

Single Family Housing	0.17	0.08	1.41	0.60	0.01	0.11	—	0.11	0.11	—	0.11	—	1,628	1,628	0.14	< 0.005	—	1,632
User Defined Residential	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.24	0.12	2.12	1.16	0.01	0.17	—	0.17	0.17	—	0.17	—	2,402	2,402	0.21	< 0.005	—	2,409

4.2.4. Natural Gas Emissions By Land Use - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	0.17	0.09	1.55	1.31	0.01	0.12	—	0.12	0.12	—	0.12	—	1,855	1,855	0.16	< 0.005	—	1,860
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	0.21	0.10	1.89	1.59	0.01	0.14	—	0.14	0.14	—	0.14	—	2,261	2,261	0.20	< 0.005	—	2,267
Apartments Low Rise	0.05	0.03	0.44	0.19	< 0.005	0.04	—	0.04	0.04	—	0.04	—	563	563	0.05	< 0.005	—	565
Single Family Housing	0.91	0.45	7.74	3.30	0.05	0.63	—	0.63	0.63	—	0.63	—	9,831	9,831	0.87	0.02	—	9,858
User Defined Residential	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	14,509	14,509	1.28	0.03	—	14,550
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Governm (Civic Center)	0.17	0.09	1.55	1.31	0.01	0.12	—	0.12	0.12	—	0.12	—	1,855	1,855	0.16	< 0.005	—	1,860
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	0.21	0.10	1.89	1.59	0.01	0.14	—	0.14	0.14	—	0.14	—	2,261	2,261	0.20	< 0.005	—	2,267
Apartme nts Low Rise	0.05	0.03	0.44	0.19	< 0.005	0.04	—	0.04	0.04	—	0.04	—	563	563	0.05	< 0.005	—	565
Single Family Housing	0.91	0.45	7.74	3.30	0.05	0.63	—	0.63	0.63	—	0.63	—	9,831	9,831	0.87	0.02	—	9,858
User Defined Residential	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	1.34	0.67	11.6	6.38	0.07	0.92	—	0.92	0.92	—	0.92	—	14,509	14,509	1.28	0.03	—	14,550
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Governm ent (Civic Center)	0.03	0.02	0.28	0.24	< 0.005	0.02	—	0.02	0.02	—	0.02	—	307	307	0.03	< 0.005	—	308
City Park	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	0.04	0.02	0.35	0.29	< 0.005	0.03	—	0.03	0.03	—	0.03	—	374	374	0.03	< 0.005	—	375
Apartme nts Low Rise	0.01	< 0.005	0.08	0.03	< 0.005	0.01	—	0.01	0.01	—	0.01	—	93.2	93.2	0.01	< 0.005	—	93.5
Single Family Housing	0.17	0.08	1.41	0.60	0.01	0.11	—	0.11	0.11	—	0.11	—	1,628	1,628	0.14	< 0.005	—	1,632
User Defined Residential	0.00	0.00	0.00	0.00	0.00	0.00	—	0.00	0.00	—	0.00	—	0.00	0.00	0.00	0.00	—	0.00
Total	0.24	0.12	2.12	1.16	0.01	0.17	—	0.17	0.17	—	0.17	—	2,402	2,402	0.21	< 0.005	—	2,409

4.3. Area Emissions by Source

4.3.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.69	0.35	5.93	2.53	0.04	0.48	—	0.48	0.48	—	0.48	0.00	7,533	7,533	0.14	0.01	—	7,541
Consumer Products	—	102	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	17.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	16.3	15.2	1.09	124	0.01	0.13	—	0.13	0.10	—	0.10	—	414	414	0.02	< 0.005	—	415
Total	17.0	134	7.03	126	0.04	0.61	—	0.61	0.58	—	0.58	0.00	7,947	7,947	0.16	0.02	—	7,956
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.69	0.35	5.93	2.53	0.04	0.48	—	0.48	0.48	—	0.48	0.00	7,533	7,533	0.14	0.01	—	7,541
Consumer Products	—	102	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	17.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.69	119	5.93	2.53	0.04	0.48	—	0.48	0.48	—	0.48	0.00	7,533	7,533	0.14	0.01	—	7,541
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	< 0.005	0.03	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	30.8	30.8	< 0.005	< 0.005	—	30.8

Consum Products	—	18.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	3.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landsca pe Equipme nt	1.47	1.37	0.10	11.1	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.8	33.8	< 0.005	< 0.005	—	33.9
Total	1.47	23.0	0.13	11.1	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	64.5	64.5	< 0.005	< 0.005	—	64.7

4.3.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Source	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.44	0.22	3.77	1.61	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,789	4,789	0.09	0.01	—	4,794
Consum er Products	—	102	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architect ural Coatings	—	17.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landsca pe Equipme nt	16.3	15.2	1.09	124	0.01	0.13	—	0.13	0.10	—	0.10	—	414	414	0.02	< 0.005	—	415
Total	16.8	134	4.87	125	0.03	0.44	—	0.44	0.41	—	0.41	0.00	5,203	5,203	0.11	0.01	—	5,209
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	0.44	0.22	3.77	1.61	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,789	4,789	0.09	0.01	—	4,794

Consumer	—	102	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	17.0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	0.44	119	3.77	1.61	0.02	0.31	—	0.31	0.31	—	0.31	0.00	4,789	4,789	0.09	0.01	—	4,794
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hearths	< 0.005	< 0.005	0.02	0.01	< 0.005	< 0.005	—	< 0.005	< 0.005	—	< 0.005	0.00	19.6	19.6	< 0.005	< 0.005	—	19.6
Consumer Products	—	18.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Architectural Coatings	—	3.10	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Landscape Equipment	1.47	1.37	0.10	11.1	< 0.005	0.01	—	0.01	0.01	—	0.01	—	33.8	33.8	< 0.005	< 0.005	—	33.9
Total	1.47	23.0	0.12	11.1	< 0.005	0.01	—	0.01	0.01	—	0.01	0.00	53.3	53.3	< 0.005	< 0.005	—	53.5

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	94.5	179	273	9.72	0.23	—	586

City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	156	294	450	16.0	0.39	—	966
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	6.31	11.9	18.2	0.65	0.02	—	39.1
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	47.1	353	400	4.88	0.12	—	559
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	12.7	288	301	1.35	0.04	—	345
Total	—	—	—	—	—	—	—	—	—	—	—	316	1,126	1,442	32.6	0.79	—	2,494
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	94.5	179	273	9.72	0.23	—	586
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	156	294	450	16.0	0.39	—	966
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	6.31	11.9	18.2	0.65	0.02	—	39.1
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	47.1	353	400	4.88	0.12	—	559
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	12.7	288	301	1.35	0.04	—	345
Total	—	—	—	—	—	—	—	—	—	—	—	316	1,126	1,442	32.6	0.79	—	2,494
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	15.6	29.6	45.2	1.61	0.04	—	97.0
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	25.8	48.7	74.5	2.65	0.06	—	160
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.05	1.97	3.02	0.11	< 0.005	—	6.48
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.80	58.5	66.3	0.81	0.02	—	92.5
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	2.10	47.7	49.8	0.22	0.01	—	57.2
Total	—	—	—	—	—	—	—	—	—	—	—	52.4	186	239	5.40	0.13	—	413

4.4.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	94.5	179	273	9.72	0.23	—	586
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	156	294	450	16.0	0.39	—	966
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	6.31	11.9	18.2	0.65	0.02	—	39.1

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	47.1	353	400	4.88	0.12	—	559
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	9.49	261	270	1.02	0.03	—	304
Total	—	—	—	—	—	—	—	—	—	—	—	313	1,099	1,412	32.3	0.78	—	2,453
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	94.5	179	273	9.72	0.23	—	586
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	156	294	450	16.0	0.39	—	966
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	6.31	11.9	18.2	0.65	0.02	—	39.1
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	47.1	353	400	4.88	0.12	—	559
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	9.49	261	270	1.02	0.03	—	304
Total	—	—	—	—	—	—	—	—	—	—	—	313	1,099	1,412	32.3	0.78	—	2,453
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	15.6	29.6	45.2	1.61	0.04	—	97.0
City Park	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00	0.00	0.00	0.00	—	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	25.8	48.7	74.5	2.65	0.06	—	160

Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	1.05	1.97	3.02	0.11	< 0.005	—	6.48
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	7.80	58.5	66.3	0.81	0.02	—	92.5
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	1.57	43.2	44.8	0.17	< 0.005	—	50.4
Total	—	—	—	—	—	—	—	—	—	—	—	51.9	182	234	5.35	0.13	—	406

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	763	0.00	763	76.2	0.00	—	2,669
City Park	—	—	—	—	—	—	—	—	—	—	—	0.70	0.00	0.70	0.07	0.00	—	2.45
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	621	0.00	621	62.1	0.00	—	2,173
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	43.5	0.00	43.5	4.35	0.00	—	152
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	210	0.00	210	21.0	0.00	—	734

User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	79.3	0.00	79.3	7.93	0.00	—	278
Total	—	—	—	—	—	—	—	—	—	—	—	1,717	0.00	1,717	172	0.00	—	6,008
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	763	0.00	763	76.2	0.00	—	2,669
City Park	—	—	—	—	—	—	—	—	—	—	—	0.70	0.00	0.70	0.07	0.00	—	2.45
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	621	0.00	621	62.1	0.00	—	2,173
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	43.5	0.00	43.5	4.35	0.00	—	152
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	210	0.00	210	21.0	0.00	—	734
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	79.3	0.00	79.3	7.93	0.00	—	278
Total	—	—	—	—	—	—	—	—	—	—	—	1,717	0.00	1,717	172	0.00	—	6,008
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	126	0.00	126	12.6	0.00	—	442
City Park	—	—	—	—	—	—	—	—	—	—	—	0.12	0.00	0.12	0.01	0.00	—	0.41
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	360
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	7.20	0.00	7.20	0.72	0.00	—	25.2

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	34.7	0.00	34.7	3.47	0.00	—	122
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	13.1	0.00	13.1	1.31	0.00	—	46.0
Total	—	—	—	—	—	—	—	—	—	—	—	284	0.00	284	28.4	0.00	—	995

4.5.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	763	0.00	763	76.2	0.00	—	2,669
City Park	—	—	—	—	—	—	—	—	—	—	—	0.70	0.00	0.70	0.07	0.00	—	2.45
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	621	0.00	621	62.1	0.00	—	2,173
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	43.5	0.00	43.5	4.35	0.00	—	152
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	210	0.00	210	21.0	0.00	—	734
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	71.4	0.00	71.4	7.14	0.00	—	250
Total	—	—	—	—	—	—	—	—	—	—	—	1,709	0.00	1,709	171	0.00	—	5,981
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Governm (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	763	0.00	763	76.2	0.00	—	2,669
City Park	—	—	—	—	—	—	—	—	—	—	—	0.70	0.00	0.70	0.07	0.00	—	2.45
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	621	0.00	621	62.1	0.00	—	2,173
Apartme nts Low Rise	—	—	—	—	—	—	—	—	—	—	—	43.5	0.00	43.5	4.35	0.00	—	152
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	210	0.00	210	21.0	0.00	—	734
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	71.4	0.00	71.4	7.14	0.00	—	250
Total	—	—	—	—	—	—	—	—	—	—	—	1,709	0.00	1,709	171	0.00	—	5,981
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Governm ent (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	126	0.00	126	12.6	0.00	—	442
City Park	—	—	—	—	—	—	—	—	—	—	—	0.12	0.00	0.12	0.01	0.00	—	0.41
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	103	0.00	103	10.3	0.00	—	360
Apartme nts Low Rise	—	—	—	—	—	—	—	—	—	—	—	7.20	0.00	7.20	0.72	0.00	—	25.2
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	34.7	0.00	34.7	3.47	0.00	—	122
User Defined Residential	—	—	—	—	—	—	—	—	—	—	—	11.8	0.00	11.8	1.18	0.00	—	41.4
Total	—	—	—	—	—	—	—	—	—	—	—	283	0.00	283	28.3	0.00	—	990

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.84	6.84
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	11.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.84	6.84
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83

Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	11.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.13	1.13
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.88	1.88
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.25	3.25

4.6.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.84	6.84

Apartments	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	11.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.60	0.60
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	6.84	6.84
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.83	0.83
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	11.4	11.4
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	19.6	19.6
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Government (Civic Center)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.10	0.10
City Park	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.00	0.00
Strip Mall	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.13	1.13
Apartments Low Rise	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.14	0.14
Single Family Housing	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1.88	1.88

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3.25	3.25

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.7.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.8.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.9.2. Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Equipment Type	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e

Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.2. Above and Belowground Carbon Accumulation by Land Use Type - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Vegetation	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.5. Above and Belowground Carbon Accumulation by Land Use Type - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Land Use	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

Criteria Pollutants (lb/day for daily, ton/yr for annual) and GHGs (lb/day for daily, MT/yr for annual)

Species	TOG	ROG	NOx	CO	SO2	PM10E	PM10D	PM10T	PM2.5E	PM2.5D	PM2.5T	BCO2	NBCO2	CO2T	CH4	N2O	R	CO2e
Daily, Summer (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Remove	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Annual	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Avoided	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Removed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

5. Activity Data

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	253	281	217	91,903	1,846	2,053	1,583	670,894
Single Family Housing	2,431	2,463	2,203	877,093	17,745	17,983	16,084	6,402,782
User Defined Residential	378	421	324	137,433	2,761	3,070	2,368	1,003,264
User Defined Residential	167	170	152	60,415	1,222	1,239	1,108	441,028

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Government (Civic Center)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
City Park	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Strip Mall	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Apartments Low Rise	253	281	217	91,903	1,846	2,053	1,583	670,894
Single Family Housing	2,431	2,463	2,203	877,093	17,745	17,983	16,084	6,402,782
User Defined Residential	378	421	324	137,433	2,761	3,070	2,368	1,003,264
User Defined Residential	167	170	152	60,415	1,222	1,239	1,108	441,028

5.10. Operational Area Sources

5.10.1. Hearths

5.10.1.1. Unmitigated

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	56
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	53
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	163
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	650
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
User Defined Residential	—

Wood Fireplaces	0
Gas Fireplaces	83
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	80
Wood Fireplaces	0
Gas Fireplaces	29
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	27
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.1.2. Mitigated

Hearth Type	Unmitigated (number)
Apartments Low Rise	—
Wood Fireplaces	0
Gas Fireplaces	56
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	53

Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Single Family Housing	—
Wood Fireplaces	0
Gas Fireplaces	163
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	650
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
User Defined Residential	—
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	80
Wood Fireplaces	0
Gas Fireplaces	0
Propane Fireplaces	0
Electric Fireplaces	0
No Fireplaces	27
Conventional Wood Stoves	0
Catalytic Wood Stoves	0

Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0
Conventional Wood Stoves	0
Catalytic Wood Stoves	0
Non-Catalytic Wood Stoves	0
Pellet Wood Stoves	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
6888604.5	2,296,202	2,019,000	673,000	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	0.00
Summer Days	day/yr	180

5.11. Operational Energy Consumption

5.11.1. Unmitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)

Government (Civic Center)	5,233,142	204	0.0330	0.0040	5,788,306
City Park	0.00	204	0.0330	0.0040	0.00
Strip Mall	9,163,894	204	0.0330	0.0040	7,053,490
Apartments Low Rise	373,900	204	0.0330	0.0040	1,756,950
Single Family Housing	5,714,286	204	0.0330	0.0040	30,674,592
User Defined Residential	0.00	204	0.0330	0.0040	0.00
User Defined Residential	0.00	204	0.0330	0.0040	0.00

5.11.2. Mitigated

Electricity (kWh/yr) and CO2 and CH4 and N2O and Natural Gas (kBTU/yr)

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Government (Civic Center)	5,233,142	204	0.0330	0.0040	5,788,306
City Park	0.00	204	0.0330	0.0040	0.00
Strip Mall	9,163,894	204	0.0330	0.0040	7,053,490
Apartments Low Rise	373,900	204	0.0330	0.0040	1,756,950
Single Family Housing	5,714,286	204	0.0330	0.0040	30,674,592
User Defined Residential	0.00	204	0.0330	0.0040	0.00
User Defined Residential	0.00	204	0.0330	0.0040	0.00

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Government (Civic Center)	49,327,200	0.00
City Park	0.00	0.00
Strip Mall	81,309,407	0.00
Apartments Low Rise	3,294,198	0.00

Single Family Housing	24,570,486	95,819,813
User Defined Residential	4,926,186	0.00
User Defined Residential	1,692,432	95,819,793

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Government (Civic Center)	49,327,200	0.00
City Park	0.00	0.00
Strip Mall	81,309,407	0.00
Apartments Low Rise	3,294,198	0.00
Single Family Housing	24,570,486	95,819,813
User Defined Residential	3,686,265	0.00
User Defined Residential	1,266,447	95,819,793

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Government (Civic Center)	1,415	—
City Park	1.30	—
Strip Mall	1,153	—
Apartments Low Rise	80.7	—
Single Family Housing	389	—
User Defined Residential	120	—
User Defined Residential	26.7	—

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Government (Civic Center)	1,415	—
City Park	1.30	—
Strip Mall	1,153	—
Apartments Low Rise	80.7	—
Single Family Housing	389	—
User Defined Residential	108	—
User Defined Residential	24.1	—

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Government (Civic Center)	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Government (Civic Center)	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0

Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00
Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.14.2. Mitigated

Land Use Type	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Government (Civic Center)	Household refrigerators and/or freezers	R-134a	1,430	0.02	0.60	0.00	1.00
Government (Civic Center)	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
City Park	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Other commercial A/C and heat pumps	R-410A	2,088	< 0.005	4.00	4.00	18.0
Strip Mall	Stand-alone retail refrigerators and freezers	R-134a	1,430	0.04	1.00	0.00	1.00
Strip Mall	Walk-in refrigerators and freezers	R-404A	3,922	< 0.005	7.50	7.50	20.0
Apartments Low Rise	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Apartments Low Rise	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

Single Family Housing	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088	< 0.005	2.50	2.50	10.0
Single Family Housing	Household refrigerators and/or freezers	R-134a	1,430	0.12	0.60	0.00	1.00

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.15.2. Mitigated

Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

Equipment Type	Fuel Type	Number per Day	Hours per Day	Hours per Year	Horsepower	Load Factor

5.16.2. Process Boilers

Equipment Type	Fuel Type	Number	Boiler Rating (MMBtu/hr)	Daily Heat Input (MMBtu/day)	Annual Heat Input (MMBtu/yr)

5.17. User Defined

Equipment Type	Fuel Type

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

5.18.2.2. Mitigated

Tree Type	Number	Electricity Saved (kWh/year)	Natural Gas Saved (btu/year)

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

Cal-Adapt midcentury 2040–2059 average projections for four hazards are reported below for your project location. These are under Representation Concentration Pathway (RCP) 8.5 which assumes GHG emissions will continue to rise strongly through 2050 and then plateau around 2100.

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	7.19	annual days of extreme heat
Extreme Precipitation	8.75	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	6.01	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	3	0	0	N/A
Sea Level Rise	1	0	0	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	0	0	0	N/A

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores do not include implementation of climate risk reduction measures.

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	3	1	1	3
Sea Level Rise	1	1	1	2
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	N/A	N/A	N/A	N/A
Air Quality Degradation	1	1	1	2

The sensitivity score reflects the extent to which a project would be adversely affected by exposure to a climate hazard. Exposure is rated on a scale of 1 to 5, with a score of 5 representing the greatest exposure.
The adaptive capacity of a project refers to its ability to manage and reduce vulnerabilities from projected climate hazards. Adaptive capacity is rated on a scale of 1 to 5, with a score of 5 representing the greatest ability to adapt.
The overall vulnerability scores are calculated based on the potential impacts and adaptive capacity assessments for each hazard. Scores include implementation of climate risk reduction measures.

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	3.83

AQ-PM	29.0
AQ-DPM	54.2
Drinking Water	7.43
Lead Risk Housing	50.4
Pesticides	0.00
Toxic Releases	61.6
Traffic	15.5
Effect Indicators	—
CleanUp Sites	0.00
Groundwater	0.00
Haz Waste Facilities/Generators	16.6
Impaired Water Bodies	87.0
Solid Waste	43.9
Sensitive Population	—
Asthma	8.55
Cardio-vascular	11.4
Low Birth Weights	95.2
Socioeconomic Factor Indicators	—
Education	0.00
Housing	39.2
Linguistic	2.81
Poverty	1.75
Unemployment	14.4

7.2. Healthy Places Index Scores

The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

Indicator	Result for Project Census Tract

Economic	—
Above Poverty	95.7141024
Employed	9.713845759
Median HI	98.92210959
Education	—
Bachelor's or higher	98.98626973
High school enrollment	100
Preschool enrollment	45.54087001
Transportation	—
Auto Access	64.27563198
Active commuting	92.13396638
Social	—
2-parent households	35.30091107
Voting	99.74335943
Neighborhood	—
Alcohol availability	51.99538047
Park access	60.04106249
Retail density	32.45220069
Supermarket access	57.89811369
Tree canopy	97.40793019
Housing	—
Homeownership	80.81611703
Housing habitability	60.90080842
Low-inc homeowner severe housing cost burden	15.37277044
Low-inc renter severe housing cost burden	28.7052483
Uncrowded housing	96.93314513
Health Outcomes	—

Insured adults	95.73976646
Arthritis	0.0
Asthma ER Admissions	94.7
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	89.1
Cognitively Disabled	52.2
Physically Disabled	45.1
Heart Attack ER Admissions	83.4
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	19.6
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	0.0
SLR Inundation Area	15.3
Children	86.0

Elderly	1.6
English Speaking	89.6
Foreign-born	21.7
Outdoor Workers	87.1
Climate Change Adaptive Capacity	—
Impervious Surface Cover	82.5
Traffic Density	18.0
Traffic Access	23.0
Other Indices	—
Hardship	0.5
Other Decision Support	—
2016 Voting	98.3

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	11.0
Healthy Places Index Score for Project Location (b)	96.0
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

a: The maximum CalEnviroScreen score is 100. A high score (i.e., greater than 50) reflects a higher pollution burden compared to other census tracts in the state.
b: The maximum Health Places Index score is 100. A high score (i.e., greater than 50) reflects healthier community conditions compared to other census tracts in the state.

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

Screen	Justification
Operations: Vehicle Data	Traffic data provided by Project transportation engineers (Fehr and Peers) on 12/8/2023. Data analysis was conducted for only home-based VMT.
Land Use	Added housing element units

Appendix D

MEMORANDUM

DATE: 19 December 2023

NAME: Andrew Hill

COMPANY: Dyett & Bhatia

EMAIL: andrew@dyettandbhatia.com

FROM: Jeremy Decker, PE

SUBJECT: City of Belvedere – Housing Element
Noise Measurement Results

PROJECT: 23-0368

As part of the study of existing conditions in the City of Belvedere study area, we performed a short-term noise measurement along Tiburon Blvd between Ned's Way and Lyford Drive (related to the segment between San Rafael Ave. and Mar West St.). On 11 December 2023, the 30-minute measurement was conducted in the evening during high traffic volume. "Normalized" to the typical distance of 50 feet from the roadway centerline, we measured an average noise level of 70 dBA.

City of Belvedere Housing Element Update
Traffic Analysis for Noise Contour Summary
Salter Project #23-0368 (2023-12-19 by J. Decker)

#	Roadway	Segment	Existing Noise Level at 50' (DNL in dB)	Future Noise Level at 50' (DNL in dB)	Projected Increase (dB)	Future: Distance (feet) from Centerline to Noise Contour		
						DNL 70 dB	DNL 65 dB	DNL 60 dB
1	Tiburon Blvd	West of San Rafael Ave	70	70	<1	50	110	240
2	Tiburon Blvd	San Rafael Ave to Mar West Ave.	69	69	<1	<50	90	200
3	Tiburon Blvd	Mar West Ave. to Beach Road	65	65	<1	<50	50	100
4	Tiburon Blvd	East of Beach Road	62	62	<1	<50	<50	70

Definition:

DNL (Day-Night Average Sound Level) – A descriptor for a 24-hour A-weighted average noise level. DNL accounts for the increased acoustical sensitivity of people to noise during the nighttime hours. DNL penalizes sound levels by 10 dB during the hours from 10 PM to 7 AM. For practical purposes, the DNL and CNEL are usually interchangeable. DNL is sometimes written as Ldn.

Comments/Assumptions

1) Traffic volumes are per traffic engineer data received December 2023
2) Peak-hour traffic volume is estimated to be 10% of daily traffic volume
3) DNL is estimated to be equal to the peak hour Leq
4) Truck % are assumed to be 1% to 2%
5) Speeds are estimated per street type/posting
6) Traffic calculations are adjusted using noise measurement results on-site
7) Traffic volumes east of Mar West Ave. are based on proportional traffic data listed in the Belvedere General Plan 2030

Appendix E

FEHR PEERS

Memorandum

Date: December 13, 2023

To: Andrew Hill and Alison Moore, Dyett & Bhatia

From: Bob Grandy, Fehr & Peers

Subject: City of Belvedere Housing Element Update – CEQA Transportation VMT Assessment

SF23-1342

The purpose of this memorandum is to document a CEQA transportation VMT assessment for the purposes of environmental review for the City of Belvedere Housing Element Update. The memo includes a description of the context, the transportation VMT assessment methodology, a VMT impact determination, and mitigation measures needed to address significant impacts.

Context

State Regulations

Senate Bill (SB) 743

With the passage of SB 743 (September 27, 2013) and the subsequent adoption of revised California Environmental Quality Act (CEQA) Guidelines in 2019, level of service (LOS) can no longer be used as a criterion for identifying significant transportation impacts for most projects under CEQA. LOS measures the average amount of delay experienced by vehicle drivers at an intersection during the most congested time of day, while the new CEQA metric (vehicle miles traveled, or VMT) measures the total number of daily miles traveled by vehicles on the roadway network and the impacts on the environment from those miles traveled.

In other words, SB 743 changes the focus of transportation impact analysis in CEQA from measuring impacts to drivers, to measuring the impact of driving. Land use projects with one or more of the following characteristics would have lesser VMT impacts:

- Higher land use densities
- Mix of project uses

- Support of a citywide jobs-housing balance (i.e., provide housing in a job rich area, or vice versa)
- Proximity to the core of a region
- Proximity to high quality transit service
- Located in highly walkable or bikeable areas

This shift in transportation impact criteria is expected to better align transportation impact analysis and mitigation outcomes with the state's goals to reduce GHG emissions, encourage infill development, and improve public health through more active transportation.

The Governor's Office of Planning and Research (OPR) released a Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018) that provides guidance on assessing VMT for CEQA. The advisory contains technical recommendations regarding assessment of VMT, thresholds of significance, and mitigation measures. The advisory indicates that "a lead agency may use models to estimate a project's vehicle miles traveled". "Tour- and trip-based approaches offer the best methods for assessing VMT from residential/office projects and comparing those assessments to VMT thresholds". "When available, tour-based assessment is ideal because it captures travel behavior more comprehensively." OPR recommends that VMT analyses consider a project's long-term effects on VMT and indicates that "a project that falls below an efficiency-based threshold that is aligned with long-term environmental goals would have no cumulative distinct from the project impact" and "accordingly, a finding of less-than-significant project impact would imply a less than significant cumulative impact, and vice versa".

The Transportation Authority of Marin Travel Demand Model (TAMDM) is a tour-based model developed for Marin County that pivots off the 9-county regional tour-based model developed by the Metropolitan Transportation Commission (MTC). The base year for the current version of the TAMDM model is 2015 and the horizon year is 2040. OPR recommends that a forecast of future VMT per capita, which in the case of the TAMDM model would be for 2040 conditions, be compared against estimates of existing VMT per capita using the same model. Existing VMT per capita estimates may be obtained from the TAMDM model for either the model's 2015 base year or a 2019 forecast year that was developed in 2020 for the San Rafael General Plan Update. The 2015 base year does not include SMART rail service that was launched in 2017. The 2019 forecast year does include SMART rail service.

Although OPR provides recommendations for adopting new VMT analysis guidelines, lead agencies have the final say in designing their methodology. Lead agencies must select their preferred method of estimating and forecasting VMT, their preferred significance thresholds for baseline and cumulative conditions, and the mitigation strategies they consider feasible. Lead agencies must prove that their selected analysis methodology aligns with SB 743's goals to promote infill development, reduce GHGs, and reduce VMT.

Methodology

VMT Forecasts

This section describes the methodology for VMT forecasts developed for this transportation assessment and as supporting data for other assessments in the CEQA document including the GHG assessment. The new CEQA Guidelines Section 15064.3(b)(4) establishes that the lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence.

The VMT forecasts generated for this CEQA assessment were produced using the Transportation Authority of Marin Travel Demand Model (TAMDM). As noted earlier, the TAMDM model has a 2015 base year and a 2040 horizon year. As the TAMDM model does not have any interim horizon years, the 258 new housing units are added to the 2040 horizon year. As recommended by OPR for residential land uses, the model was used to forecast future VMT per capita for home-based trip purposes from residential units within Belvedere. This future VMT per capita provides a cumulative assessment of the impact of new housing units on travel to and from all housing in Belvedere on a per capita basis. This future VMT per capita is then compared to existing VMT per capita estimates derived from the TAMDM model 2015 base year to determine whether the future VMT per capita is 15 percent or more less than existing VMT per capita for housing uses in the City of Belvedere.

Housing Element Land Use Forecasts

A breakdown of the number of housing units added with the Belvedere Housing Element Update, by unit type and income range, is provided below in **Table 1**.

Table 1: Added Housing Units

	Resident Income Range			
Unit Type	**Low/Very Low**	**Moderate**	**Above Moderate**	**Total Units**
Single-Family Residential	0	0	9	**9**
Multi-Family Residential	61	14	134	**209**
Accessory Dwelling Units	24	12	4	**40**
Total Units	**85**	**26**	**147**	**258**

Source: Dyett & Bhatia.

Standard of Significance for VMT

For residential projects, OPR indicates that VMT per capita should be used as the metric to determine whether a proposed project may cause a significant transportation impact. OPR identifies the recommended significance threshold for residential projects as the point where a proposed project exceeds a level of 15 percent below existing VMT per capita. Existing VMT per capita may be measured as regional VMT per capita or as city VMT per capita. City of Belvedere staff have indicated that city VMT per capita shall be used as the existing baseline for residential uses.

For land use plans such as the Housing Element, OPR indicates that the same thresholds described above for individual residential projects may be employed. A plan may have a significant impact on transportation if proposed new residential uses would in aggregate exceed the respective thresholds.

For the purposes of this assessment, based on the above OPR and City of Belvedere guidance, VMT impacts would be significant if the aggregate of new residential development would exceed the following threshold:

- Aggregate Future (2040) Home VMT per resident with new housing units exceeds 15% below baseline (2015) Aggregate City VMT per resident

Impact Assessment

The California Air Resources Board, in both its 2030 Scoping Plan and 2018 Progress Report, conclude that reducing VMT is a key objective to meeting California's greenhouse gas (GHG) emission reduction goals. Future potential development under the proposed project would contribute to an increase in VMT in the EIR study area.

On September 27, 2013, Governor Jerry Brown signed SB 743 into law, which initiated a process to change transportation impact analyses completed in support of CEQA documentation. SB 743 eliminated level of service (LOS) as a basis for determining significant transportation impacts under CEQA and provided a new performance metric, vehicle miles traveled (VMT). To help lead agencies with SB 743 implementation, the Governor's Office of Planning and Research (OPR) produced a *Technical Advisory.*[1]

[1] Governor's Office of Planning and Research, *Technical Advisory on Evaluating Transportation Impacts in CEQA*, December 2018.

VMT Impact Assessment

Table 2 provides a summary of the VMT forecasts for all of the added residential elements included in the Housing Element Update. The baseline 2015 City Home-Based VMT per capita as estimated by the Transportation Authority of Marin Demand Model (TAMDM) is 24.9. The City Home-Based VMT per capita for 2040, with the added Housing units, is 16.2. This indicates that 2040 conditions with the added housing units would generate about 35 percent lower VMT per capita than the existing mix of housing units. This is because the multi-family housing (about 80 percent of the new units) and accessory dwelling units (about 15 percent of the new units) generate fewer trips per unit and lower Home-Based VMT per capita than single family homes that make up the majority of the existing housing inventory.

The threshold recommended by OPR for residential uses involves comparing the project VMT per capita to the baseline City VMT per capita. A significant impact would occur if a proposed project VMT per capita exceeds a level of 15% below existing baseline City VMT per capita. The VMT forecasts indicate that the proposed residential uses would result in a 2040 Home-Based VMT per capita that is 35 percent below the baseline 2015 City VMT per capita.

Table 2: Daily Home-Based Vehicle Miles Traveled (VMT) for Residential Uses

Scenario	Home-Based VMT Per Resident
BASELINE CITY VMT METRIC (2015)	24.9
CITY 2040 PLUS NEW HOUSING ELEMENT UNITS	16.2
PERCENT CHANGE – 2040 Plus Project Home VMT per Resident Rate Compared to Baseline Rate for Belvedere 2015	
2040 PLUS NEW HOUSING ELEMENT UNITS	-35%

Notes:
1. The VMT per capita rate shown in the table above is home-based VMT per resident for all residential uses in the project including single family residential, multi-family residential, and accessory dwelling units.

Source: Fehr & Peers.

The cumulative effect of adding 258 housing units on Daily Home-Based VMT per resident for residential uses in the City of Belvedere is considered a **less-than-significant impact**. This is due to the fact that the Aggregate 2040 Home VMT per Resident with the added housing units is more than 15 percent below the Baseline Aggregate 2015 Home VMT per Resident for the City of Belvedere as measured using the Transportation Authority of Marin Demand Model (TAMDM).