

APPENDIX B

Environmental Analysis Memorandum

DRAFT MEMORANDUM

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To: Jennifer Saugen, PE
From: Christina Wollman, AICP CFM
Date: September 20, 2021
Re: Environmental Review Memo – SR 28 Corridor Study

PURPOSE

This memo was prepared as part of a larger corridor study to inform the selection of a preferred scenario for improvements to the SR 28 corridor between East Wenatchee and Rock Island. The memo provides basic environmental considerations based upon a desktop review of conceptual scenarios.

SCENARIOS

This memo is based upon review of three scenarios prepared by Perteet dated August 16, 2021. Currently, SR 28 is a two-lane road with wide shoulders and turning lanes at some intersections. Rock Island Road is currently a two-lane road with narrow shoulders. There is a gap in Rock Island Road that forces vehicles to share the highway for about one mile.

The Urban scenario includes adding a center turn lane, single-lane roundabouts or turning lanes at some intersections, and planting strips separating an 8-foot sidewalk on one side of the highway and a 12-foot shared use path on the other. There are no shoulders.

The Rural 2 scenario includes adding a center dividing median, single-lane roundabouts or turning lanes at some intersections, extending the Apple Capital Loop Trail to Rock Island Drive, constructing a new frontage road to connect the gap in Rock Island Road, and keeping wide shoulders.

The Rural 4 scenario includes adding an additional lane in each direction for a total of four-lanes, a center dividing median, multi-lane roundabouts at some intersections, extending the Apple Capital Loop Trail to Rock Island Drive, constructing a new frontage road to connect the gap in Rock Island Road, and keeping wide shoulders. This scenario has the greatest change in road prism.

Each scenario also includes adding a center turn lane and sidewalks to Rock Island Road and may require relocating a portion of the existing trail that is currently adjacent to the highway shoulder.

REGULATORY CONTEXT

Federal Determinations/Permits

- **NEPA** – If this project receives Federal Highway Administration (FHWA) funding NEPA will be required following the Washington State Department of Transportation (WSDOT) NEPA procedures.

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- **404 Permit** – If any project activities occur within the Waters of the US (the lakes, river, or wetlands), the project applicant agency may be required to obtain a Clean Water Act Section 404 permit from the US Army Corps of Engineers (Corps) along with impact and mitigation identification for any work in Waters of the US. A Section 404 permit is a federal permit nexus triggering Section 106 and Section 7 consultations
- **Section 106 NHPA Consultation** – If there is a federal project or permit nexus, 106 National Historic Preservation Act (NHPA) review would occur under NEPA evaluation and could be applied to other federal permits as needed (e.g., Corps 404). The Corps would coordinate Section 106 review if occurring for a 404 permit outside of NEPA.
- **Section 7 ESA Consultation** – If there is a federal project or permit nexus, Section 7 Endangered Species Act review would occur under NEPA evaluation and could be applied to other federal permits as needed (e.g., Corps 404). The Corps would coordinate Section 7 consultation if occurring for a 404 permit outside of NEPA.

State Permits

- **Hydrologic Project Approval** – Work within, above, or below the waterbody or near the ordinary high water mark of a State Water must be permitted by the Washington Department of Fish and Wildlife (WDFW) through the Hydraulic Project Approval (HPA) process. WDFW HPA occurs after local SEPA determination.
- **NPDES** – Construction Stormwater General Permit Notice of Intent is assumed to be required for construction activities.
- **401 Certification** – If triggered under Section 404 Permit, Corps can require Ecology to certify under 404 regional general conditions. Requires separate JARPA submittal to Ecology similar to 404 permit and coordinated with both the Corps and Ecology under 404 permit evaluation.

Local Determinations/Permits

- **SEPA** – Project action is assumed to require evaluation under the Washington State Environmental Policy Act (SEPA) under Douglas County jurisdiction.
- **Shoreline Management Program (SMP)** – A portion of the site falls within the jurisdiction of the Douglas County and City of Rock Island SMP. The Columbia River and all of the lakes at Rock Island are under SMP jurisdiction. The project sites fall within several shoreline designations: Shoreline Residential, Urban Conservancy, Rural Conservancy, and High Intensity. Roads and trails are considered to be Transportation and Essential Public Facilities and are a permitted use within all designations, but expansion of the roadway prism and trail will require a Shoreline Substantial Development Permit (SSDP) from both Douglas County and the City of Rock Island. The project must also demonstrate compliance with all of the policies and regulations related to transportation facilities, grading and filling, all of the general policies and regulations, and other relevant activities. There do not appear to be setback requirements for roads or trails, but critical area buffers do apply. The County's 2021 SMP update changed the permitting requirement for Essential Public Facilities from a Conditional Use Permit (CUP) to a SSDP, but the update also includes language that the SSDP may be taken through the quasi-judicial process at the determination of the administrator.

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- **Critical Areas** – Critical areas will be regulated either by the agency’s Critical Areas Ordinance or SMP depending on the location. All wetland and riparian critical areas appear to be under the jurisdiction of the SMP, Appendix H.

ENVIRONMENTAL REVIEW

Due to the conceptual level of the design scenarios, it is not possible to determine exact impacts to the surrounding areas. There are certain areas that will require expansion towards water bodies but the level of impact or need for fill is unknown at this point. There may be opportunities to reduce impacts during project design. The potential areas of environmental impact include:

- Station 150+00 – The existing trail is adjacent to the shoulder and may need to move closer to the river to accommodate road widening.
- Station 510+00 to 545+00 – The highway crosses between lakes and is adjacent to the river. The roadway will be closer to the lakes and river when it is expanded. Some filling of the lakes may be required to accommodate road widening.
- Road Island Road near SR 28 station 400+00 – The roadway may move closer to the lake when it is expanded. Some filling of the lakes may be required to accommodate road widening.
- [Add general cultural resource impact area if applicable]

Wetlands

The US Fish and Wildlife Service National Wetlands Inventory (NWI) identifies the Columbia River as a Lacustrine wetland due to its permanently flooded deepwater habitat. All of the lakes around Rock Island, except for Blue Heron Lake (the westernmost lake at station 510+00), are also identified as Lacustrine wetlands. Blue Heron Lake is identified as a Palustrine wetland. The road and trail are located within the wetland buffers pursuant to Appendix H of the SMP.

Habitat

The lakes at Rock Island are considered riparian habitat within the Fish and Wildlife Habitat Conservation Areas critical areas regulations. The road and trail are located within the buffers pursuant to Appendix H of the SMP.

The WDFW Priority Habitat and Species (PHS) on the Web map identifies the lakes at Rock Island as aquatic habitat. The notes state: “Ponds with cattail/bullrush fringe marshes utilized by nesting and wintering waterfowl, rails, and nongame birds. Also used by furbearers including muskrats and nesting and foraging raptors. Mitigation land for Rock Island Dam.”

The WDFW PHS on the Web map identifies the Columbia River as supporting the following State Priority species:

- Rainbow Trout
- Spring and Summer Chinook
- Sockeye
- White Sturgeon

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- Dolly Varden/Bull Trout (Federal EFH species)
- Summer Steelhead
- Kokanee
- Coho

According to the WDFW SalmonScape map, the Columbia River is home to the following Endangered Species Act (ESA) listed fish species:

- Upper Columbia River Summer and Fall Chinook Salmon
- Upper Columbia River Summer and Winter Steelhead

The WDFW PHS on the Web map also identifies the area as masked for Golden Eagle. WDFW Research Scientist Jim Watson stated that this project is not likely to have impacts on the Golden Eagles due to the distance to the nests and the existing traffic and human activity in the area (Pentico, 2021). No other upland habitat is identified as a critical area.

Aquifer Recharge Area

A portion of the site is located within the Wellhead Protection Area C, the Kentucky Street Wellfield, as identified by Douglas County Code 19.18E.0130. With provisions for appropriate stormwater control, the project will not be considered a risk to groundwater resources.

Frequently Flooded Areas

Based upon the FEMA Flood Insurance Rate Maps, no portion of the project is within the floodplain.

Geohazards

Some areas of geohazard exist within the project site according to the Critical Soils layer on the Douglas County Interactive Web Map. These areas are described as “Slopes Greater than 40%.” Some areas of severe erosion hazard exist within the project area as identified on the Web Soil Survey. These geohazards can be managed by using best practices and engineering incorporated into the project design based on the recommendations of a geotechnical report.

Cultural Resources

For all proposed scenarios, the entire project area is classified as Very High Risk (Survey Highly Advised) in the DAHP’s predictive model for cultural resources. Although near surface soils and sediments have likely been disturbed by road construction and modern infrastructure improvements, deeper excavations with the potential to encounter native soils may have potential to impact buried archaeological sites due to the project location in a high sensitivity area.

There are no recorded cultural resources within the proposed roadway areas but both pre- and post-contact period archaeological sites and historic properties are adjacent to the potential project area. Three archaeological sites are within approximately 100 feet of the proposed improvement areas. Most of the sites are

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within the Kirby Billingsley Hydro Park on the south side of SR 28. Archaeological site 45 DOI274 is a historic debris concentration less than 100 feet south of SR 28. It was determined ineligible for listing in the NRHP in 2019. Site 45DO474 is a precontact period site identified in an eroding bank in 1985. Subsequent subsurface testing identified a rock cluster feature within 40cm of the ground surface. If project ground disturbance cannot avoid these sites, an excavation permit from the DAHP may be required. The subject section of SR 28 was constructed as the Wenatchee-Quincy highway in 1926 and later designated as Primary State highway 10 in 1937 when full paving was complete. Historic maps also show Rock Island Road completed by 1932 (Metsker 1932). If remnants of the old road and other infrastructure are present below the surface of the modern roadway, they may constitute an archaeological site and require recording by a professional archaeologist.

The cultural resources review process will depend on project funding. If the project becomes a federal undertaking through federal funding or permitting, cultural resources review will be required under NEPA and Section 106 of the NRHP including consultation with the DAHP, federal agencies, and affected Tribes and survey to identify effects or impacts on cultural resources. If project uses state but not federal funding, it will be subject to Governor's Executive Order 21-02 which also requires consultation with the DAHP and affected Tribes and would likely require cultural resources survey. If the project will buildings over 40 years old, such buildings may need to be recorded on Historic Property Inventory Forms.

SUMMARY

- Project design should focus, to the extent possible, on minimizing impacts to the lakes and river adjacent to the project. By minimizing impacts, the project may be able to avoid more intensive state and federal permitting processes or, if impacts are unavoidable, minimize mitigation requirements.
- The project will require a Shoreline Substantial Development Permit from Douglas County and the City of Rock Island and compliance with the SMP.
- There are geohazards and an area of critical aquifer recharge within the project area. Impacts to these critical areas will be avoided or minimized through standard stormwater design and geotechnical review processes.
- Project design should minimize ground disturbance in the vicinity of Kirby Billingsley Hydro Park to reduce potential for adverse impacts to known archaeological sites.
- Cultural resources field investigations may be required for regulatory compliance. Such investigations should focus on areas where significant project disturbance will occur outside the existing road prism.

DATA SOURCES

Department of Archaeology and Historic Preservation, Washington Information System for Architectural and Archaeological Records Data (WISAARD). Accessed at <https://wisaard.dahp.wa.gov/>.

Douglas County Code. Accessed at <https://www.codepublishing.com/WA/DouglasCounty/>.

Douglas County Interactive Web Map. Provided wellhead and geohazard data. Accessed through <https://gis.douglascountywa.net/portal/apps/webappviewer/index.html?id=0fe80ac77b224f0c980d4052e946be03>.

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Douglas County Regional Shoreline Master Program. Updated program in Ordinance TLS: 21-15-45B and Resolution TLS: 21-45B, and effective program dated October 23, 2015. Accessed through <https://www.douglascountysmp.com/>.

FEMA Flood Insurance Rate Maps. Provided by Department of Ecology as Q3 Data through ArcGIS Online.

Pentico, Eric. WDFW Regional Biologist. Personal Communication on September 13, 2021.

US Department of Agriculture Web Soil Survey. Accessed through <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.

US Fish and Wildlife Service National Wetlands Inventory. Accessed through ArcGIS Online USA Wetlands data hosted by ESRI and <https://www.fws.gov/wetlands/data/mapper.html>.

Washington Department of Fish and Wildlife SalmonScape Map. Accessed through <https://apps.wdfw.wa.gov/salmonscape/>.

Washington Department of Fish and Wildlife Priority Habitat Species on the Web Map. Accessed through <https://geodataservices.wdfw.wa.gov/hp/phs/>.

ACRONYMS

Corps	US Army Corps of Engineers
DAHP	Department of Archaeology and Historic Preservation
DNR	Washington Department of Natural Resources
EFH	Essential Fish Habitat
ESA	Endangered Species Act
HPA	Hydraulic Project Approval process
NWI	National Wetland Inventory
PHS	Priority Habitat Species
SMP	Douglas County Shoreline Management Program
USFW	US Fish and Wildlife Service
WDFW	Washington Department of Fish and Wildlife
WSDOT	Washington State Department of Transportation

Figure 34. Proposed Industrial Development by Type

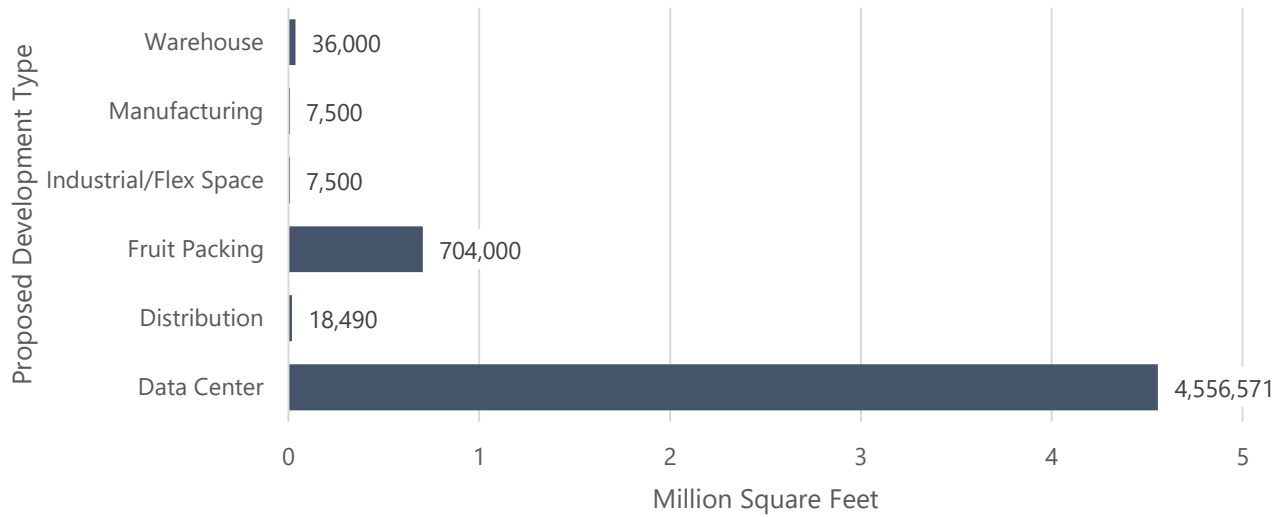


Table 11. Proposed Industrial Development Projects

Type	Project Name	City	Location	Sq. Ft.	Proposed Start
Data Center	Microsoft Corporation	Wenatchee	Malaga	250,000	2025
Data Center	CyrusOne	Quincy	NW Quincy	920,000	2023
Data Center	Environmental Systems Design	Quincy	NW Quincy	950,000	2023
Data Center	Microsoft Corporation	Quincy	NW Quincy	15,600	2023
Data Center	Sabey Corporation	Quincy	NE Quincy	190,971	2023
Data Center	Sabey Corporation	Quincy	NE Quincy	250,000	2023
Data Center	Vantage DC	Quincy	NE Quincy	396,000	2023
Data Center	H5 Data Centers	Quincy	NE Quincy	240,000	2023
Data Center	Sabey Corporation	Quincy	NE Quincy	450,000	2025
Data Center	Sabey Corporation	East Wenatchee	Pangborn	560,000	2023
Data Center	Microsoft Corporation	East Wenatchee	Pangborn	90,000	2023
Data Center	Microsoft Corporation	East Wenatchee	Pangborn	244,000	2023
Distribution	Unknown	East Wenatchee	Pangporn	18,490	2023
Flex Space	Unknown	East Wenatchee	Pangborn	7,500	2023
Manufacturing	Unknown	East Wenatchee	Pangporn	7,500	2023
Warehouse	L.E. Wilson Expansion	East Wenatchee	Pangborn	36,000	2023
Fruit Packing	Northern Fruit	East Wenatchee	N. of City	704,000	2023

Source: CoStar, SEPA, CDTC, Leland Consulting Group

Notable takeaways from the table and chart above are listed below.

- Of the 4.6 million square feet of proposed data centers in the region, 3.4 million square are in Quincy, continuing the regional concentration.

- The Microsoft data center proposal in the Malaga area, as well as other as yet unknown development in the area, will increase industrial development in the Wenatchee area.
- The Pangborn Industrial Service Area is likely to see a major uptick in development activity based on the active development proposals in the area. Almost 1.0 million square feet are proposed. At a floor area ratio of 0.20 (in keeping with other developments), this would account for about 115 acres of land or more and generate about 1,000 permanent jobs.
- Elsewhere in East Wenatchee, the only significant known industrial proposal is the Northern Fruit packing facility in Baker Flats. Stakeholders interviewed for this project indicate about 1,500 jobs would be created.

Land Capacity Analysis

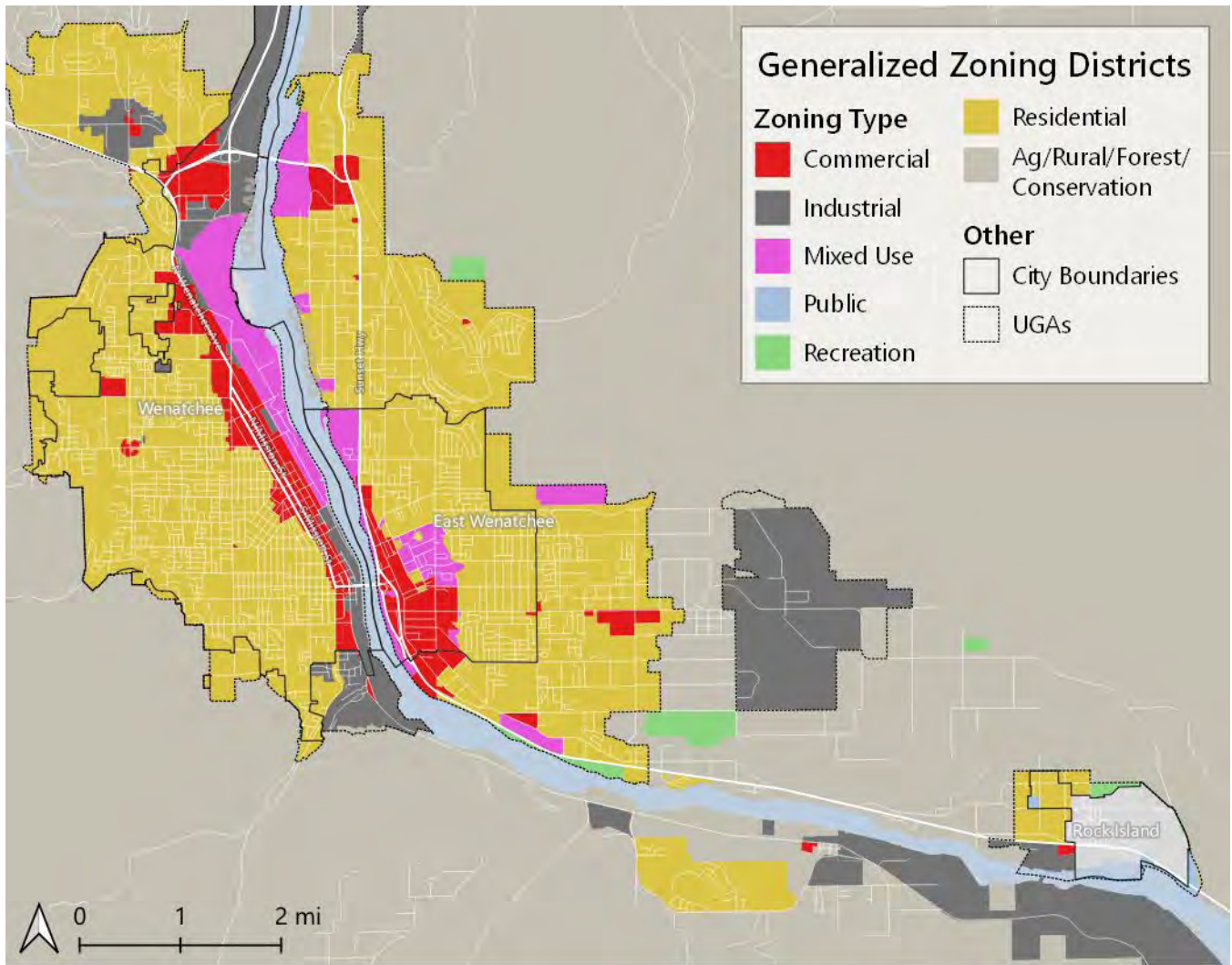
While there is a strong market for residential and industrial uses that will likely drive development activity in the region for the foreseeable future, land in the Wenatchee Valley is highly constrained, primarily due to topography. Significantly more land is available near Quincy (accessed via the SR 28 corridor), which is largely getting developed as housing and industrial (primarily data centers) development.

An important element of a development forecast is land carrying capacity. Single-family homes and industrial development are generally built on vacant land, while the economics of some commercial and multifamily developments may support infill or redevelopment. Construction trends will typically slow as an area nears its land carrying capacity until market dynamics support densification and redevelopment. LCG expects there to be limited future examples of the redevelopment of existing properties in the market area outside of downtown Wenatchee. With adequate residential land capacity in the region, as discussed below, any redevelopment and infill in downtown Wenatchee would have the effect of increasing capacity overall.

Land capacity and availability depend on several factors, including regulatory conditions (e.g., zoning, UGAs, etc.) and environmental conditions (e.g., the presence of wetlands, steep slopes, etc.). This land capacity analysis considers land within existing urban growth areas for development and also includes areas outside existing UGAs if development activity is already occurring.

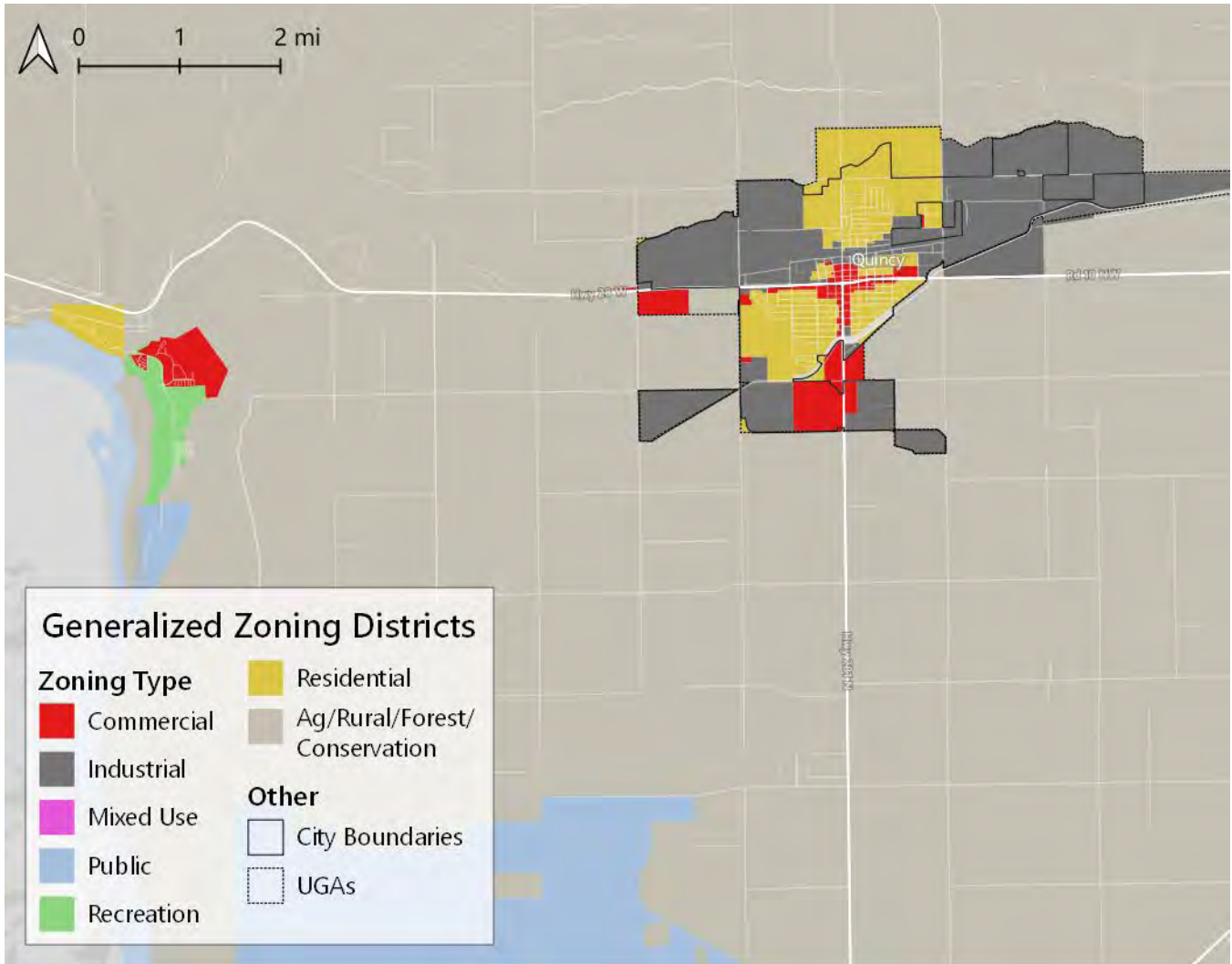
The following information provides an overview of the “carrying capacity” of the market area for new development.

Figure 35. Zoning (Wenatchee)



Source: County Assessor, Leland Consulting Group

Figure 36. Zoning (Quincy Area)



Source: County Assessor, Leland Consulting Group

LCG's land capacity analysis is generally focused on areas within existing urban growth areas, except for unique situations like the Microsoft expansion in the Malaga area of Chelan County and the unincorporated area between the East Wenatchee UGA and the Pangborn UGA. LCG expects significantly lower density development patterns to occur in land outside of the UGAs.

The following table shows the amount of vacant land (in total acres) by zoning (standardized for an apples-to-apples comparison) and location. LCG expects land within existing city limits to develop more quickly than land within the urban growth areas of each county. Land outside of these UGAs is not expected to develop at any density of significance and was excluded from this analysis except where noted in the table.

It is important to note that this analysis was done at a high level and did not account for major development impediments like wetlands, challenging topography, or infrastructure constraints. Wherever possible, LCG filtered out parcels occupied by transportation, recreational uses, and other natural features that are unlikely to be privately developed in the future.

Table 12. Vacant Land Acreage by Zoning and Location

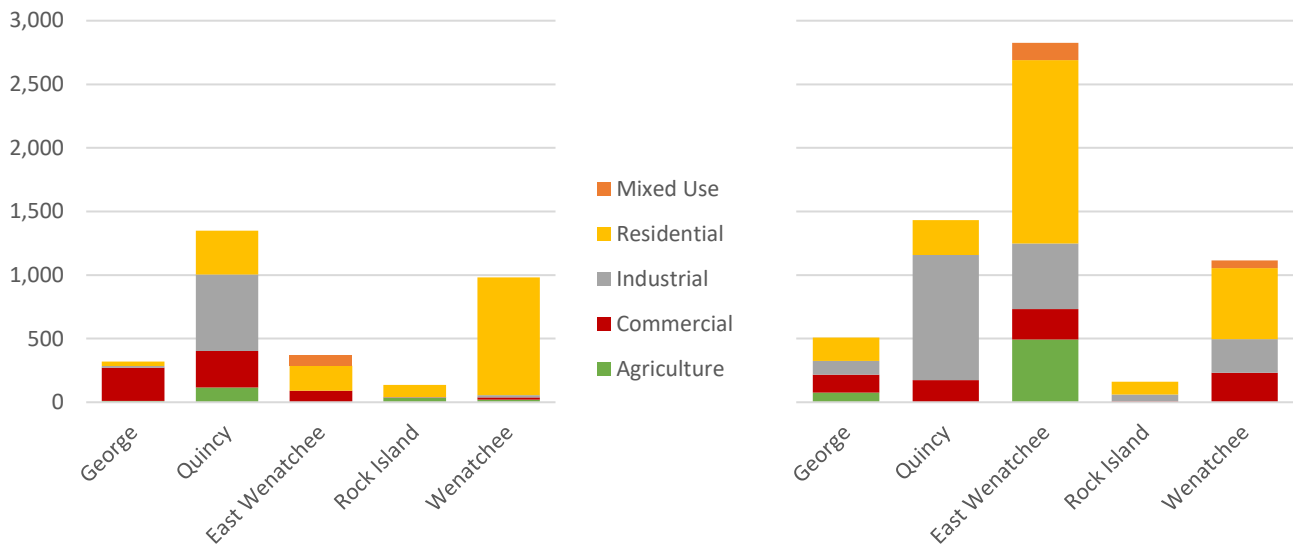
Location	Agriculture	Commercial	Industrial	Residential	Mixed-Use	Total
George						
City Limits	10	264	11	36		285
Unincorporated UGA	75	141	110	184		546
Quincy						
City Limits	116	289	600	345		1,349
Unincorporated UGA		174	982	275		1,432
East Wenatchee						
City		90		198	85	372
Pangborn UGA	84		515			599
Unincorporated UGA	410	238		1,444	136	2,228
Other Unincorp.	3,769			16		3,785
Rock Island						
	36	8	58	196		298
City	36	1	5	95		137
Unincorporated UGA		7	53	101		161
Wenatchee						
City	20	19	17	901		981
Unincorporated UGA		232	264	517	58	1,114
Total	4,519	1,454	2,558	4,110	279	12,988
City	181	662	633	1,574	85	3,124
Unincorporated UGA	569	792	1,924	2,520	194	6,079
Other	3,769	0	0	16	0	3,785

Source: County Assessor Zoning and Parcel Datasets, LCG

The following chart shows this same data but focuses on city versus unincorporated UGA land for each city. Despite being one of the smallest cities, Quincy has the most vacant acreage, particularly for industrially-zoned land. Wenatchee also has a significant amount of vacant land, primarily for residential.

Each unincorporated UGA has significant opportunities for new development. These areas are more likely to lack the major infrastructure to support new development and will be annexed in phases throughout the next two decades and beyond.

Figure 37. Vacant Land by Zoning and Location, Existing City Limits (left), Unincorporated UGA (right)



To calculate estimates of net acreage, LCG assumes about 50 percent of gross acreage will be used for transportation (streets, circulation, parking) and open space and densities and FARs consistent with recent development patterns.

Table 13. Vacant Land Capacity to Support Housing Units and Development Square Feet, Incorporated Cities

City	Agriculture (Hsg. Units)	Commercial Square Feet	Industrial Square Feet	Residential (Hsg. Units)	Mixed Use (Hsg. Units)
George	5	1,148,067	49,179	126	0
Quincy	58	1,256,967	2,614,428	1,207	0
East Wenatchee	0	391,125	0	692	850
Rock Island	18	4,966	20,473	334	0
Wenatchee	10	82,198	74,793	3,154	0
Total	91	2,883,324	2,758,873	5,512	850

Table 14. Vacant Land Capacity to Support Housing Units and Development Square Feet, Urban Growth Areas

Unincorporated UGA	Agriculture (Hsg. Units)	Commercial Square Feet	Industrial Square Feet	Residential (Hsg. Units)	Mixed Use (Hsg. Units)
George	38	612,628	479,639	367	0
Quincy	0	758,902	4,278,812	551	0
East Wenatchee	247	1,038,122	2,243,340	2,887	1,359
Rock Island	0	30,928	232,175	202	0
Wenatchee	0	1,008,741	1,148,242	1,034	583
Total	285	3,449,321	8,382,207	5,041	1,942

Source: Leland Consulting Group

Based on the vacant land within existing city limits, there is enough land to support about 6,360 new housing units, which is enough to accommodate the market-based growth projections. Additionally, there is enough land to support 2.9 million square feet of commercial space and 2.8 million square feet of industrial space. While there is technically enough land to accommodate the residential growth, some sites may have environmental, policy, and code constraints that make it infeasible for developers to build on all sites, which would drive some growth to unincorporated UGAs. The unincorporated UGA areas have significant growth potential for all land uses, and could potentially support an additional approximately 7,000 new housing units, 3.5 million square feet of commercial development, and 8.4 million square feet of industrial.

There are 5.3 million square feet of industrial proposed in the market area (both city and unincorporated UGA land). This exceeds LCG's estimate of available vacant industrial land within city limits. As unincorporated UGA land continues to develop with industrial uses, the region's public decision-makers will need to identify expansion areas or rezone existing land for industrial uses. There is likely a significant excess of commercially zoned land currently.

Appendix: Market Based Projections by TAZ

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
100	234	307	0	0	73	0
101	1	1	5	5	0	0
102	131	354	31	314	223	283
103	397	646	31	314	249	283
104	174	377	0	0	203	0
105	395	642	0	0	247	0
106	126	228	0	0	102	0
107	92	177	5	5	85	0
108	203	274	11	11	71	0
109	345	345	6	6	0	0
110	117	117	47	50	0	3
111	2	2	81	82	0	1
112	6	6	107	107	0	0
113	118	118	4	5	0	1
114	13	13	122	136	0	14
115	11	11	51	141	0	90
116	194	194	23	303	0	280
117	0	0	118	118	0	0
118	0	0	144	145	0	1
119	0	0	15	104	0	89
120	0	0	106	243	0	137
130	167	167	13	13	0	0
131	319	417	0	0	98	0
132	834	972	31	91	138	60
133	186	343	62	314	157	252
134	673	745	32	35	72	3
135	1181	1421	632	634	240	2
136	323	349	4	4	26	0
137	611	646	15	23	35	8
138	536	575	0	0	39	0
140	2	2	127	127	0	0
141	9	42	278	338	33	60
142	631	656	25	25	25	0
143	133	158	140	142	25	2
144	156	171	174	175	15	1
145	43	43	376	376	0	0
146	159	169	272	314	10	42
147	514	561	78	78	47	0
148	12	12	125	125	0	0

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
149	109	87	277	280	-22	3
160	0	0	138	148	0	10
161	240	294	178	188	54	10
162	41	41	313	315	0	2
163	31	31	114	114	0	0
164	21	21	454	454	0	0
165	149	199	535	535	50	0
166	36	36	267	269	0	2
167	62	62	138	138	0	0
168	0	0	167	172	0	5
180	40	40	146	150	0	4
181	9	9	343	343	0	0
182	603	603	303	303	0	0
183	22	22	220	222	0	2
184	209	209	220	219	0	-1
200	323	363	54	54	40	0
201	1357	1418	23	86	61	63
202	203	222	63	125	19	62
203	1260	1337	127	192	77	65
204	351	415	5	494	64	489
205	327	360	16	80	33	64
206	369	378	95	97	9	2
207	179	325	124	125	146	1
208	135	163	36	36	28	0
220	43	43	304	308	0	4
221	143	143	73	74	0	1
222	336	402	0	0	66	0
223	119	138	6	6	19	0
224	72	166	21	27	94	6
225	8	8	105	115	0	10
226	24	24	184	231	0	47
227	75	75	165	212	0	47
228	0	0	155	155	0	0
229	90	90	230	230	0	0
230	280	280	284	285	0	1
231	45	45	168	182	0	14
232	57	57	235	235	0	0
233	90	90	129	159	0	30
234	164	164	16	16	0	0
235	3	3	130	170	0	40
236	34	34	157	157	0	0

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
240	2276	2594	35	35	318	0
241	7	7	137	295	0	158
242	87	87	253	257	0	4
243	23	23	157	273	0	116
244	107	128	249	249	21	0
245	124	174	128	128	50	0
246	166	195	5	5	29	0
247	171	193	252	252	22	0
248	59	59	106	160	0	54
249	16	16	60	73	0	13
250	19	19	114	182	0	68
251	100	121	0	0	21	0
260	33	33	250	250	0	0
261	219	284	133	134	65	1
262	19	19	300	425	0	125
263	26	31	246	247	5	1
264	36	38	245	252	2	7
265	2	2	31	37	0	6
266	47	47	11	26	0	15
267	0	0	251	251	0	0
280	19	19	204	211	0	7
281	144	153	182	359	9	177
282	157	182	167	195	25	28
283	84	84	348	648	0	300
284	0	0	42	42	0	0
285	0	0	0	0	0	0
286	9	9	151	163	0	12
287	0	0	328	397	0	69
300	304	326	0	0	22	0
301	1219	1378	4	4	159	0
302	509	569	0	0	60	0
303	783	1338	2	2	555	0
304	401	642	0	0	241	0
305	51	151	0	0	100	0
306	34	34	0	0	0	0
307	44	44	155	156	0	1
308	167	243	110	331	76	221
309	4	39	105	361	35	256
310	25	25	62	75	0	13
311	288	369	0	0	81	0
312	475	679	0	0	204	0

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
313	127	257	0	0	130	0
320	523	553	8	8	30	0
321	1403	1431	1	1	28	0
322	152	182	415	459	30	44
323	33	45	145	225	12	80
324	62	62	270	324	0	54
325	285	295	211	228	10	17
326	253	253	4	4	0	0
340	52	58	61	61	6	0
341	44	44	137	160	0	23
342	58	58	64	68	0	4
360	163	163	298	319	0	21
361	55	234	351	418	179	67
362	217	373	267	343	156	76
363	414	658	13	13	244	0
364	344	366	235	252	22	17
400	48	48	174	164	0	-10
401	11	11	270	271	0	1
402	105	190	377	377	85	0
403	273	391	73	73	118	0
404	1	1	162	212	0	50
405	61	61	106	112	0	6
420	540	563	0	0	23	0
421	28	51	44	44	23	0
422	163	338	437	437	175	0
423	53	53	99	99	0	0
424	414	430	0	0	16	0
425	249	249	0	0	0	0
426	272	314	0	0	42	0
427	138	161	31	31	23	0
440	132	161	0	0	29	0
441	249	309	60	62	60	2
442	611	647	50	51	36	1
443	275	342	88	88	67	0
444	171	171	4	5	0	1
445	94	94	26	29	0	3
446	58	58	217	324	0	107
447	181	217	20	20	36	0
460	34	34	330	330	0	0
461	130	130	110	110	0	0
462	111	149	336	336	38	0

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
463	6	69	49	955	63	906
464	11	11	54	874	0	820
465	15	15	291	372	0	81
466	9	9	144	491	0	347
467	10	10	211	210	0	-1
480	418	575	65	89	157	24
481	264	306	53	54	42	1
482	44	44	146	150	0	4
483	35	35	149	152	0	3
484	11	11	84	86	0	2
485	15	15	233	235	0	2
486	50	50	161	278	0	117
487	7	7	4	51	0	47
488	24	24	76	92	0	16
489	15	15	241	241	0	0
490	1	1	97	97	0	0
491	8	8	86	91	0	5
492	143	176	50	68	33	18
493	120	120	65	78	0	13
494	70	70	79	79	0	0
495	18	18	305	307	0	2
496	5	5	162	162	0	0
497	77	77	251	319	0	68
500	181	248	98	127	67	29
501	5	5	66	96	0	30
502	42	52	127	218	10	91
503	23	23	95	151	0	56
504	74	74	124	195	0	71
505	6	6	162	196	0	34
506	1	1	76	96	0	20
507	73	138	122	143	65	21
508	13	13	171	212	0	41
509	35	35	114	184	0	70
510	11	11	214	226	0	12
511	19	19	178	229	0	51
512	0	0	0	0	0	0
513	11	11	238	243	0	5
514	74	74	69	70	0	1
515	25	25	203	217	0	14
520	13	16	22	53	3	31
521	18	238	20	20	220	0

Appendix: Market Based Projections by TAZ

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
100	234	307	0	0	73	0
101	1	1	5	5	0	0
102	131	354	31	314	223	283
103	397	646	31	314	249	283
104	174	377	0	0	203	0
105	395	642	0	0	247	0
106	126	228	0	0	102	0
107	92	177	5	5	85	0
108	203	274	11	11	71	0
109	345	345	6	6	0	0
110	117	117	47	50	0	3
111	2	2	81	82	0	1
112	6	6	107	107	0	0
113	118	118	4	5	0	1
114	13	13	122	136	0	14
115	11	11	51	141	0	90
116	194	194	23	303	0	280
117	0	0	118	118	0	0
118	0	0	144	145	0	1
119	0	0	15	104	0	89
120	0	0	106	243	0	137
130	167	167	13	13	0	0
131	319	417	0	0	98	0
132	834	972	31	91	138	60
133	186	343	62	314	157	252
134	673	745	32	35	72	3
135	1181	1421	632	634	240	2
136	323	349	4	4	26	0
137	611	646	15	23	35	8
138	536	575	0	0	39	0
140	2	2	127	127	0	0
141	9	42	278	338	33	60
142	631	656	25	25	25	0
143	133	158	140	142	25	2
144	156	171	174	175	15	1
145	43	43	376	376	0	0
146	159	169	272	314	10	42
147	514	561	78	78	47	0
148	12	12	125	125	0	0

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
149	109	87	277	280	-22	3
160	0	0	138	148	0	10
161	240	294	178	188	54	10
162	41	41	313	315	0	2
163	31	31	114	114	0	0
164	21	21	454	454	0	0
165	149	199	535	535	50	0
166	36	36	267	269	0	2
167	62	62	138	138	0	0
168	0	0	167	172	0	5
180	40	40	146	150	0	4
181	9	9	343	343	0	0
182	603	603	303	303	0	0
183	22	22	220	222	0	2
184	209	209	220	219	0	-1
200	323	363	54	54	40	0
201	1357	1418	23	86	61	63
202	203	222	63	125	19	62
203	1260	1337	127	192	77	65
204	351	415	5	494	64	489
205	327	360	16	80	33	64
206	369	378	95	97	9	2
207	179	325	124	125	146	1
208	135	163	36	36	28	0
220	43	43	304	308	0	4
221	143	143	73	74	0	1
222	336	402	0	0	66	0
223	119	138	6	6	19	0
224	72	166	21	27	94	6
225	8	8	105	115	0	10
226	24	24	184	231	0	47
227	75	75	165	212	0	47
228	0	0	155	155	0	0
229	90	90	230	230	0	0
230	280	280	284	285	0	1
231	45	45	168	182	0	14
232	57	57	235	235	0	0
233	90	90	129	159	0	30
234	164	164	16	16	0	0
235	3	3	130	170	0	40
236	34	34	157	157	0	0

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
240	2276	2594	35	35	318	0
241	7	7	137	295	0	158
242	87	87	253	257	0	4
243	23	23	157	273	0	116
244	107	128	249	249	21	0
245	124	174	128	128	50	0
246	166	195	5	5	29	0
247	171	193	252	252	22	0
248	59	59	106	160	0	54
249	16	16	60	73	0	13
250	19	19	114	182	0	68
251	100	121	0	0	21	0
260	33	33	250	250	0	0
261	219	284	133	134	65	1
262	19	19	300	425	0	125
263	26	31	246	247	5	1
264	36	38	245	252	2	7
265	2	2	31	37	0	6
266	47	47	11	26	0	15
267	0	0	251	251	0	0
280	19	19	204	211	0	7
281	144	153	182	359	9	177
282	157	182	167	195	25	28
283	84	84	348	648	0	300
284	0	0	42	42	0	0
285	0	0	0	0	0	0
286	9	9	151	163	0	12
287	0	0	328	397	0	69
300	304	326	0	0	22	0
301	1219	1378	4	4	159	0
302	509	569	0	0	60	0
303	783	1338	2	2	555	0
304	401	642	0	0	241	0
305	51	151	0	0	100	0
306	34	34	0	0	0	0
307	44	44	155	156	0	1
308	167	243	110	331	76	221
309	4	39	105	361	35	256
310	25	25	62	75	0	13
311	288	369	0	0	81	0
312	475	679	0	0	204	0

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
313	127	257	0	0	130	0
320	523	553	8	8	30	0
321	1403	1431	1	1	28	0
322	152	182	415	459	30	44
323	33	45	145	225	12	80
324	62	62	270	324	0	54
325	285	295	211	228	10	17
326	253	253	4	4	0	0
340	52	58	61	61	6	0
341	44	44	137	160	0	23
342	58	58	64	68	0	4
360	163	163	298	319	0	21
361	55	234	351	418	179	67
362	217	373	267	343	156	76
363	414	658	13	13	244	0
364	344	366	235	252	22	17
400	48	48	174	164	0	-10
401	11	11	270	271	0	1
402	105	190	377	377	85	0
403	273	391	73	73	118	0
404	1	1	162	212	0	50
405	61	61	106	112	0	6
420	540	563	0	0	23	0
421	28	51	44	44	23	0
422	163	338	437	437	175	0
423	53	53	99	99	0	0
424	414	430	0	0	16	0
425	249	249	0	0	0	0
426	272	314	0	0	42	0
427	138	161	31	31	23	0
440	132	161	0	0	29	0
441	249	309	60	62	60	2
442	611	647	50	51	36	1
443	275	342	88	88	67	0
444	171	171	4	5	0	1
445	94	94	26	29	0	3
446	58	58	217	324	0	107
447	181	217	20	20	36	0
460	34	34	330	330	0	0
461	130	130	110	110	0	0
462	111	149	336	336	38	0

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
463	6	69	49	955	63	906
464	11	11	54	874	0	820
465	15	15	291	372	0	81
466	9	9	144	491	0	347
467	10	10	211	210	0	-1
480	418	575	65	89	157	24
481	264	306	53	54	42	1
482	44	44	146	150	0	4
483	35	35	149	152	0	3
484	11	11	84	86	0	2
485	15	15	233	235	0	2
486	50	50	161	278	0	117
487	7	7	4	51	0	47
488	24	24	76	92	0	16
489	15	15	241	241	0	0
490	1	1	97	97	0	0
491	8	8	86	91	0	5
492	143	176	50	68	33	18
493	120	120	65	78	0	13
494	70	70	79	79	0	0
495	18	18	305	307	0	2
496	5	5	162	162	0	0
497	77	77	251	319	0	68
500	181	248	98	127	67	29
501	5	5	66	96	0	30
502	42	52	127	218	10	91
503	23	23	95	151	0	56
504	74	74	124	195	0	71
505	6	6	162	196	0	34
506	1	1	76	96	0	20
507	73	138	122	143	65	21
508	13	13	171	212	0	41
509	35	35	114	184	0	70
510	11	11	214	226	0	12
511	19	19	178	229	0	51
512	0	0	0	0	0	0
513	11	11	238	243	0	5
514	74	74	69	70	0	1
515	25	25	203	217	0	14
520	13	16	22	53	3	31
521	18	238	20	20	220	0

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
522	23	153	20	20	130	0
523	11	138	20	20	127	0
524	24	110	49	39	86	-10
525	17	17	129	218	0	89
526	7	101	11	11	94	0
527	19	93	8	17	74	9
528	0	0	24	348	0	324
529	2	0	75	82	-2	7
530	48	2	103	117	-46	14
531	2	48	34	36	46	2
532	2	2	34	36	0	2
540	347	965	82	82	618	0
541	276	328	20	20	52	0
560	31	31	469	549	0	80
561	15	15	255	348	0	93
562	83	83	1	1	0	0
563	0	0	7	7	0	0
580	3	3	127	203	0	76
581	22	22	326	435	0	109
582	76	76	132	259	0	127
583	124	239	10	10	115	0
584	35	646	0	0	611	0
585	13	13	25	35	0	10
586	66	251	7	7	185	0
587	180	183	14	23	3	9
588	99	1147	16	16	1048	0
590	27	27	45	78	0	33
591	2	2	9	32	0	23
592	22	22	198	233	0	35
593	202	244	182	205	42	23
594	137	161	96	113	24	17
595	45	45	18	18	0	0
596	194	194	55	314	0	259
597	34	34	181	345	0	164
600	312	312	88	121	0	33
601	44	103	102	112	59	10
602	0	0	16	39	0	23
603	79	173	161	428	94	267
604	48	79	150	196	31	46
605	5	20	60	203	15	143
606	8	8	34	73	0	39

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
522	23	153	20	20	130	0
523	11	138	20	20	127	0
524	24	110	49	39	86	-10
525	17	17	129	218	0	89
526	7	101	11	11	94	0
527	19	93	8	17	74	9
528	0	0	24	348	0	324
529	2	0	75	82	-2	7
530	48	2	103	117	-46	14
531	2	48	34	36	46	2
532	2	2	34	36	0	2
540	347	965	82	82	618	0
541	276	328	20	20	52	0
560	31	31	469	549	0	80
561	15	15	255	348	0	93
562	83	83	1	1	0	0
563	0	0	7	7	0	0
580	3	3	127	203	0	76
581	22	22	326	435	0	109
582	76	76	132	259	0	127
583	124	239	10	10	115	0
584	35	646	0	0	611	0
585	13	13	25	35	0	10
586	66	251	7	7	185	0
587	180	183	14	23	3	9
588	99	1147	16	16	1048	0
590	27	27	45	78	0	33
591	2	2	9	32	0	23
592	22	22	198	233	0	35
593	202	244	182	205	42	23
594	137	161	96	113	24	17
595	45	45	18	18	0	0
596	194	194	55	314	0	259
597	34	34	181	345	0	164
600	312	312	88	121	0	33
601	44	103	102	112	59	10
602	0	0	16	39	0	23
603	79	173	161	428	94	267
604	48	79	150	196	31	46
605	5	20	60	203	15	143
606	8	8	34	73	0	39

TAZ	2020 Jobs	2045 Jobs	2020 Housing Units	2045 Housing Units	Projected New Jobs	Projected Housing Unit Growth
607	43	135	37	107	92	70
608	51	212	0	0	161	0