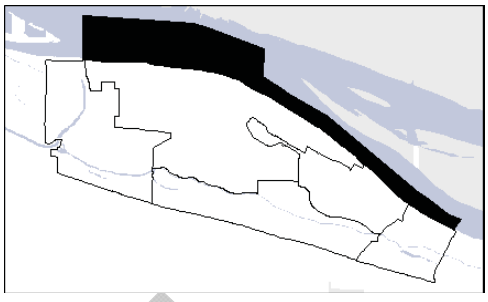
INVENTORY SITE CS3: Central Columbia River



Summary Information

Watershed: Columbia Slough and Columbia River

Neighborhood: East Columbia, Parkrose

USGS quadrangle and quarter section maps: 1N1E01, 1N1E02, 1N2E04, 1N2E05, 1N2E06, 1N2E08, 1N2E09, 1N2E10, 1N2E14, 1N2E15, 2N1E35, 2N1E36 and 2N2E31

River Mile: 108-114

Site Size: 1,430 acres

Previous Inventories: Inventory and Analysis of Wetlands, Water Bodies and Wildlife Habitat Areas for the Columbia Corridor: Industrial/Environmental Mapping Project (City of Portland January 1989)

Zoning: General Industrial 2 (IG2)
General Commercial (CG)
Single Dwelling Residential (RF)
Open Space (OS)
Aircraft Landing height overlay (h)
Airport Noise overlay (x)
Environmental Conservation overlay (c)
Scenic Overlay (s)

Existing Land Use: open space; residential; marina; levee; transportation

General Description: This site is primarily the Columbia River and its bank. A flood control levee that was built in 1919 by the USACE and MCDD separates the river from the historic floodplain. Marine Drive is located on top of the levee. The majority of the river bank is undeveloped and owned by the Port of Portland. There is a private marina and a public boat launch, Gleason Boat Ramp, located in the western section of the site. To the east of the Gleason Boat Ramp is Broughton Beach. The Columbia River is a migration channel for anadromous salmonids and is on the Pacific Flyway for migratory birds. Parts of the river are dredged to maintain a navigation channel for movement of goods.

Resource Features: river and shallow water areas; beach

Functional Values: microclimate and shade; stream flow moderation and water storage; bank function, and sediment, pollution and nutrient control; large wood and channel dynamics; organic inputs, food web and nutrient cycling; wildlife habitat; habitat connectivity/ movement corridor

Special Habitat Area(s):

- *C1: Columbia River/Beaches* - area critical to sensitive species including NOAA designated Critical Habitat (S) and connectivity corridor (C)

Special Status Species:

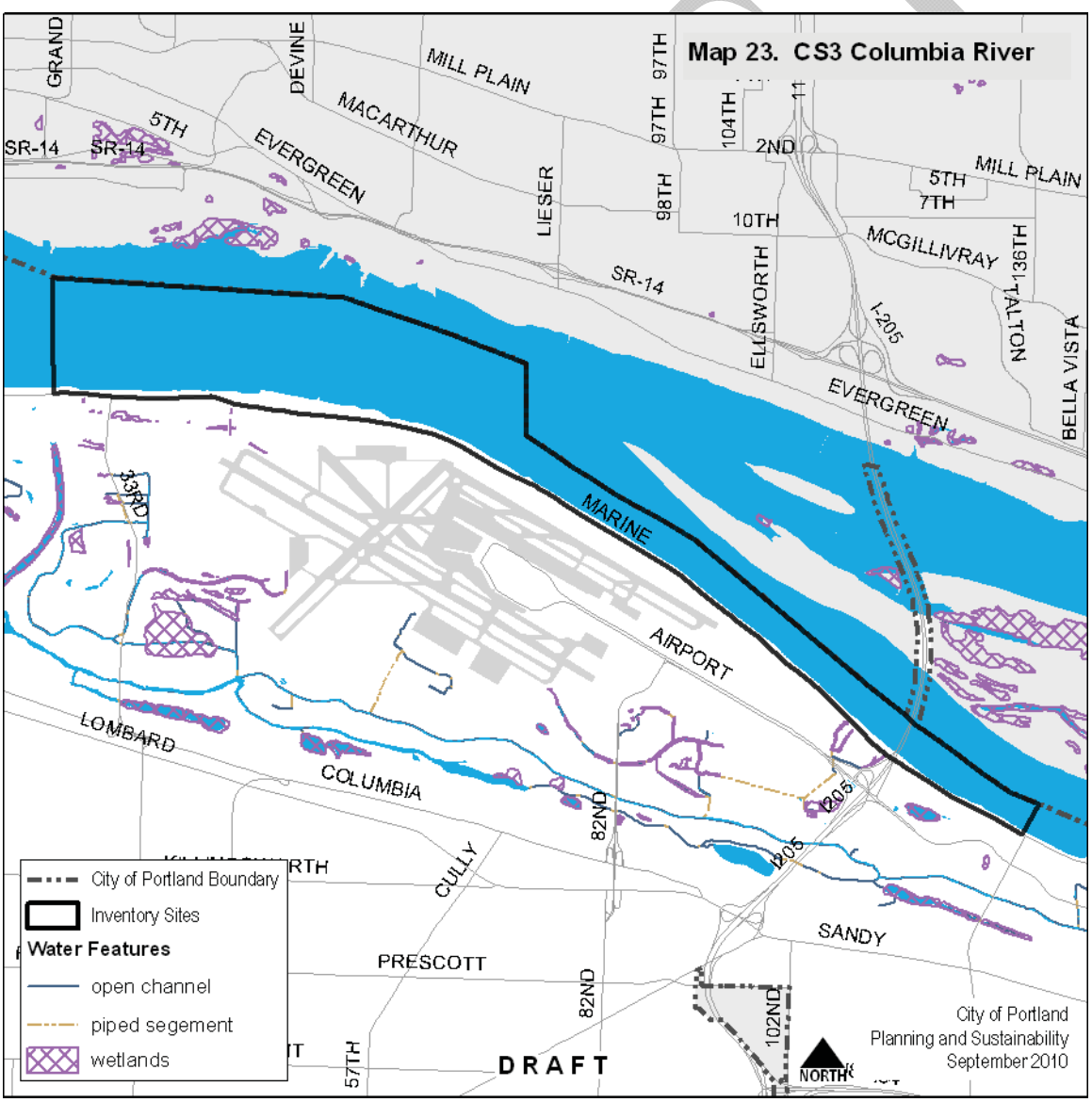
- *Birds*: bald Eagle, bufflehead, Dunlin, great blue heron, merlin, Peregrine falcon, purple martin, red-necked grebe, short-eared owl, streaked horned lark, Thayer's gull, western meadowlark, western sandpiper
- *Mammals*: American beaver, northern river otter
- *Fish*: coho, chum, Chinook, steelhead, sockeye salmon, lamprey

Natural Hazards: flood area

Contamination: Yes

Site Description

The Columbia River inventory site is 1,430 acres in size, 128 acres of which is terrestrial and the remaining 1,302 acres is the Columbia River. The inventory site boundaries are formed by Marine Drive to the south, the city limits to the north, approximately NE 122nd Avenue to the east and the western boundary is an extension of the Peninsula Canal levee to the city limits (Map 23). The majority of the river bank is undeveloped, except for a private marina and public boat launch (Gleason Boat Ramp). The river bank function is constrained by the levee along Marine Drive. The site contains approximately 62 acres of impervious area, including 4.6 miles of roads, located the site. Site CS3 Map 1 shows an aerial view of the inventory site.



The 1,425-acre flood area includes 1,321 acres of open water, 62 acres of vegetated flood area and 42 acres of non-vegetated flood area (CS3 Map 2).

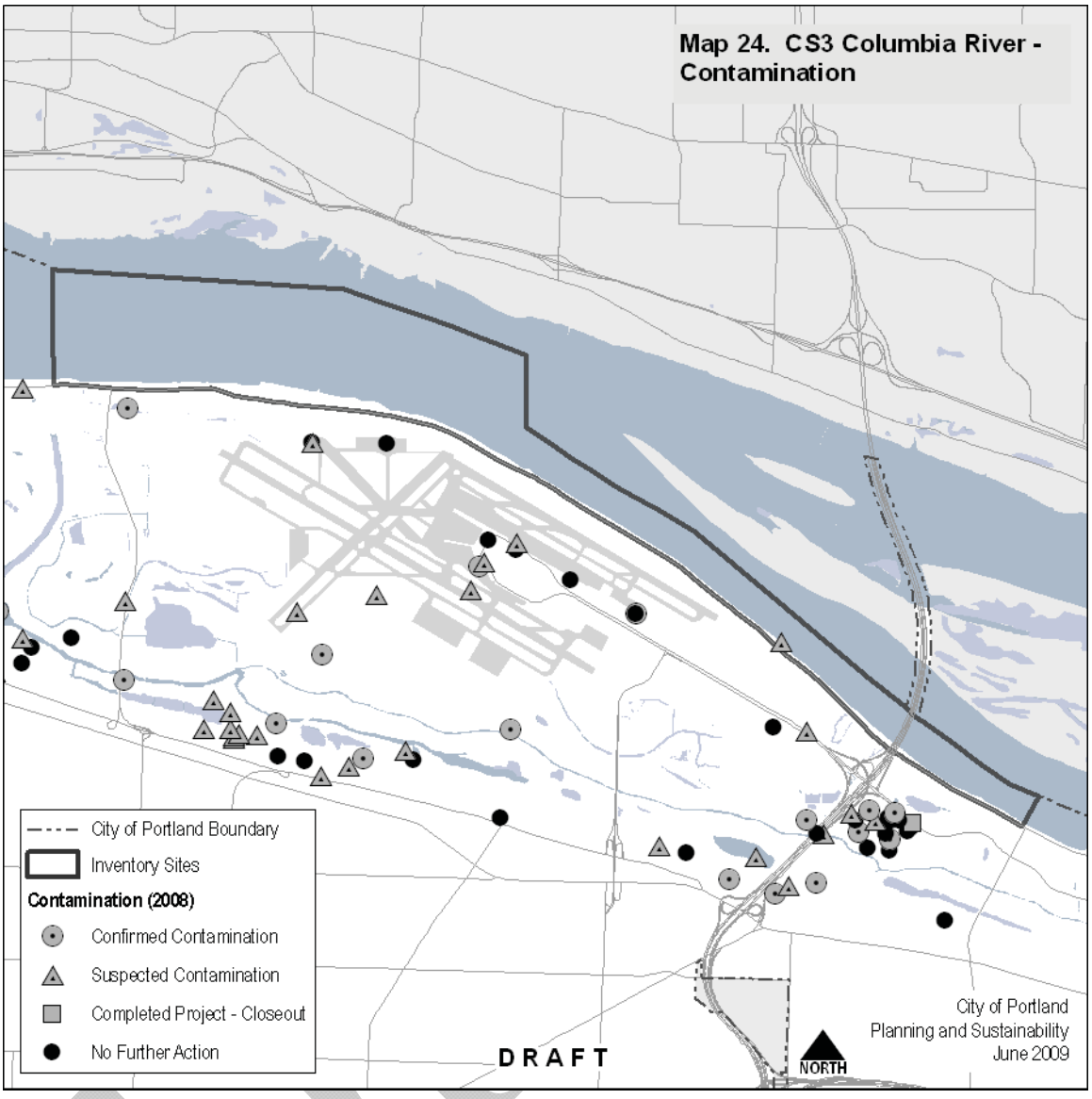
Vegetated areas at least ½ acre include approximately 1 acre of forest or dense tree canopy, 1 acre of shrubland and 68 acres of herbaceous cover (CS3 Map 3).

Table 18: Summary of Natural Resource Features in CS3: Columbia River

	Study Area (1,430 acres)
Columbia River (miles/acres)	(6.2/1,302)
Wetlands (acres)	0
Flood Area (acres)*	1,425
Vegetated (acres)	62
Non-vegetated (acres)	42
Open Water** (acres)	1,321
Vegetated Areas >= ½ acre (acres)+	70
Forest (acres)	1
Woodland (acres)	0
Shrubland (acres)	1
Herbaceous (acres)	68
Impervious Surfaces (acres)	62

* The flood area includes the FEMA 100-year floodplain plus the adjusted 1996 flood inundation area.
** Open Water includes portions of the Columbia River within the site.
+ The vegetation classifications are applied in accordance with the National Vegetation Classification System specifications developed by The Nature Conservancy. The data within the primary study area and within 300 feet of all open water bodies in Portland is draft and is currently being updated based 2006 aerial photography.

The Oregon Department of Environmental Quality (DEQ) has identified one area of suspected contamination (Map 24). In December 2005, hundreds of rusty drums were located on the river bottom. In 2007, sediment samples were taken and found elevated concentrations of mercury, selenimum, zine, 4-methylphenol, bis(2-ethylhexyl)phalate and actophenone. In 2008, a "No Future Action' determination was made by the Environmental Protection Agency. For more information regarding contamination, visit the DEQ website at http://www.deq.state.or.us/lq/ecsi/ecsi.htm.


Map 24. CS3 Columbia River - Contamination
City of Portland Boundary
Inventory Sites
Contamination (2008)
Confirmed Contamination
Suspected Contamination
Completed Project - Closeout
No Further Action
DRAFT
NORTH
City of Portland
Planning and Sustainability
June 2009

Natural Resource Description


Columbia River

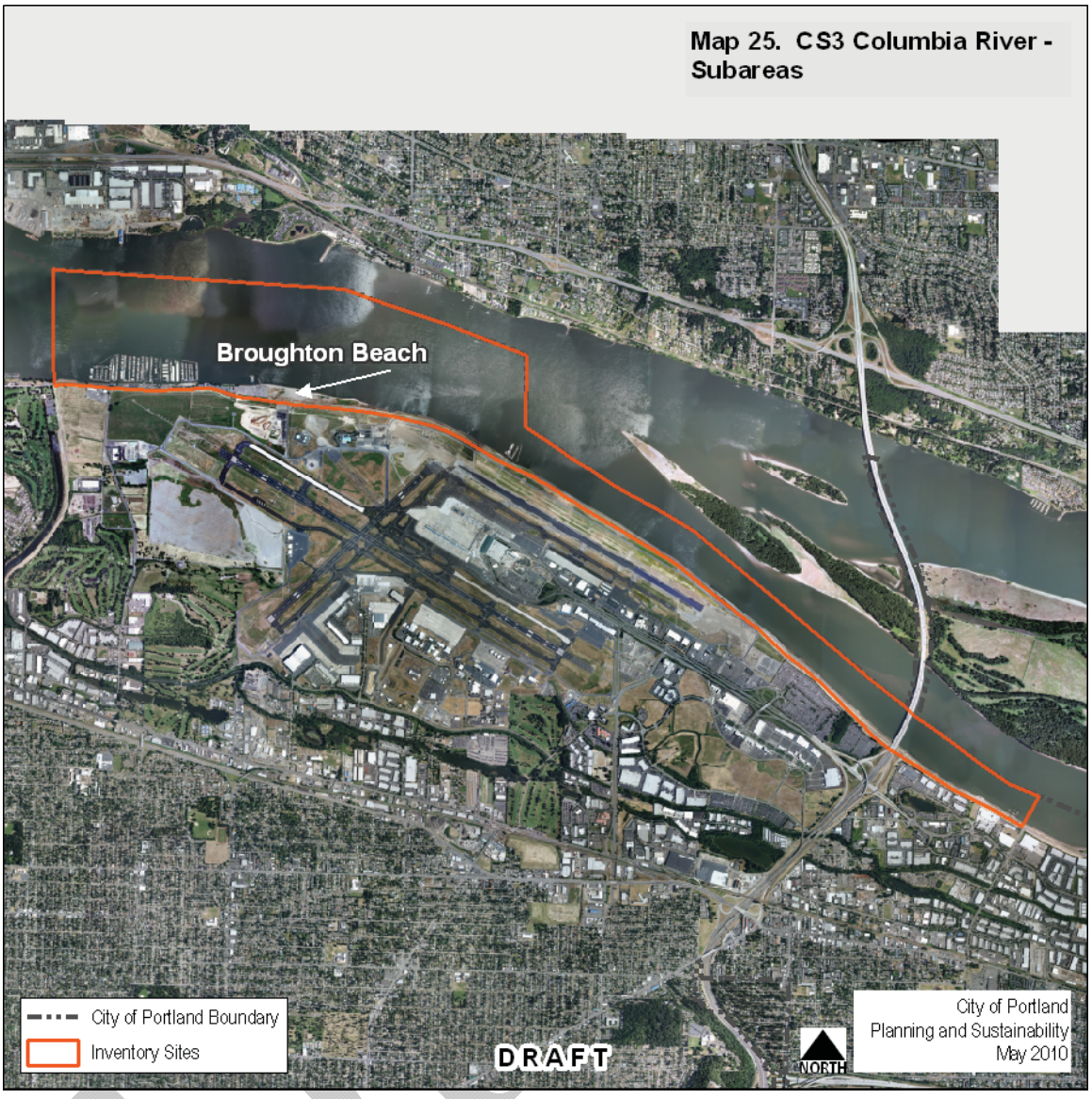
The majority of the site, 1,302 acres, contains the Columbia River. The Columbia River is a 1,200 mile long river that drains a 259,000 square mile basin that includes territory in seven states (Oregon, Washington, Idaho, Montana, Nevada, Wyoming, and Utah) and portions of British Columbia in Canada.

The Columbia River in this site is part of the upstream component of the Columbia tidal freshwater estuary. Columbia River flow is dominated by outflow from Bonneville Dam. Flows fluctuate, reflecting daily peaks in power generation. There is little tidal effect (less than one foot during low flows). The site contains are large islands, such as Government Island, which is crossed by the I-205 Bridge, Hayden Island, and smaller islands such as Lemon Island. The Sandy and Washougal Rivers directly upstream provide the major riverine inputs to the Columbia River estuary in this area.

The Lower Columbia River is currently on Oregon's Clean Water Act 303(d) list because it does not meet water quality standards for temperature, PCBs, PAHs, DDT metabolites (DDE), and arsenic. In addition, the Environmental Protection Agency has established Total Maximum Daily Loads (TMDLs) for the Columbia River for dioxin and dissolved gas. The volume of water in the Lower Columbia and the variety of pollution sources make it difficult to establish cause and affect relationships between pollution sources and general water quality. Columbia River flows also contain high levels of organic matter, the sources of which include: wastewater treatment plants, faulty septic systems, agricultural run-off, and fertilizer application.

The river is a migration channel for anadromous salmonids including Chinook, Coho, chum, sockeye, and steelhead. Near shore, shallow water areas and areas of sandy substrate, such as Broughton Beach which is located just east of the Metro boat launch, are utilized by juvenile salmonids during migration to the Pacific Ocean (Map 25). The Columbia River is designated by NOAA Fisheries as Critical Habitat for listed salmonids. The near-shore, shallow-water areas with sandy substrate are also important for lamprey.

The Columbia River is part of the Pacific Flyway, which is a significant corridor for migratory birds. Broughton Beach is used by shore birds, songbirds and migratory birds. Pisciverous diving birds use the near shore water for foraging: horned grebe, eared grebe, western grebe and common loon. The sandy beach provides habitat for migratory shorebirds and songbirds. Streaked Horned Lark, a candidate under the Endangered Species Act, uses the beach as a transient and wintering habitat. It may also use the area for breeding. Successful breeding by this species has been documented nearby on Portland International Airport. Other sub-species of horned sark (*merrilli* and possibly *alpina*, *arcticola*, and *lamprochroma*) also use the site for winter and migratory stop-over habitat. Other Special Status Species using the site include red-necked grebe in shallow water, short-eared Owls that hunt and roost in the vegetation above the beach, and western meadowlarks.



The Columbia River and its beaches are designated a Special Habitat Area because the waterway and flood area has been designated by NOAA Fisheries as Critical Habitat for listed salmonids and it is an important wildlife corridor for migratory species including special status bird species.

The river bank is influenced by the location of the levee, which was built in 1919 to protect agricultural and residential uses located in the floodplain. In 1932, Marine Drive was built on top of the levee. A multiuse recreation path that is utilized by bikers and pedestrians is also located on top of the levee. Vegetation on the levee and at the toe of the levee is restricted to low structure species that will not compromise the structure of the levee. As a result the banks of the Columbia in this site are vegetated with grasses.

Natural Resource Evaluation

The natural resources located within this site have been evaluated for relative riparian and wildlife habitat quality. Relative quality is presented in the form of relative functional value ranks for riparian corridors, wildlife habitat, and riparian/wildlife habitat value combined (Table #). The relative ranks are produced using GIS models and information on Special Habitat Areas. The model criteria are not sensitive to the species of vegetation present or whether vegetation is native or non-native. However, the model criteria do assign different riparian functional values to cultivated, heavily manicured and managed landscapes and semi-natural and natural vegetation. The approach used to generate the relative ranks is summarized in the introduction to the inventory sites. Additional detail is provided in the Methodology Overview section of this report and the *Natural Resource Inventory Update: Riparian Corridors and Wildlife Habitat* (City of Portland, 2008).

All of the ranked resource areas provide at least some important riparian and habitat value, recognizing that current condition and function levels may vary considerably. The relative ranks can inform planning programs, design of development or redevelopment projects, mitigation and restoration activities.

Riparian Corridors

The riparian corridor in this site contains portions of the Columbia River, vegetated and non-vegetated flood area, and other vegetated areas, as detailed in the natural resource description. These landscape features provide one or more of the following riparian functions:

- Microclimate and shade
- Stream flow moderation and water storage
- Bank stability, and sediment, pollution and nutrient control
- Large wood and channel dynamics
- Organic inputs, food web and nutrient cycling
- Riparian wildlife movement corridor

In general high relative functional ranks are assigned to the Columbia River, beaches and forested areas along the river bank. Medium and low ranks are assigned to lower structure riparian vegetation and to non-vegetated land within 50 feet of the river. Other areas are assigned a high, medium or low relative rank depending on the proximity and extent of vegetation relative to the water body (CS3 Map 4).

Wildlife Habitat

A wildlife habitat patch is, for purposes of the inventory model, defined as forest and/or wetland areas, 2 acres in size or greater, plus adjacent woodland vegetation (note Special Habitat Areas may be smaller and may contain different types of vegetation or other resource features). There are no forested or wetland areas 2 acres in size or greater in this inventory site.

Special Habitat Areas (SHA) descriptions

SHAs contain unique features and provide critical wildlife habitat as described in the Natural Resources Description section above. SHAs receive a high relative rank for wildlife habitat. The SHA rank supersedes lower ranks generated by the GIS model. Therefore, all SHAs within the site rank high for wildlife habitat (CS3 Map 5).

The Columbia River channel and associated beaches are designated Special Habitat Areas (SHA). SHAs contain unique features and provide critical wildlife habitat for listed salmonids, as described in the Natural Resources Description section above. The Columbia River meets following SHA criteria: area critical to sensitive species including NOAA designated Critical Habitat (S) and connectivity corridor (C). SHAs receive a high relative rank for wildlife habitat.

Combined Relative Riparian/Wildlife Habitat Ranking

Where areas that are mapped as riparian corridors and wildlife habitat overlap, and their relative ranks differ, the combined relative rank will be the higher of the two ranks. For example, an area that ranks medium for riparian function and low for wildlife habitat will receive a medium combined relative rank (CS3 Map 6).

Table 19: Summary of Ranked Resources in CS3: Columbia River				
Total Inventory Site	= 1,430 acres			
Terrestrial*	= 88 acres			
Columbia River	= 1,302 acres			
	High	**Medium**	**Low**	**Total**
Riparian Resources*				
acres	1,322	49	20	1,391
percent total inventory site area	92	3	1	96
Wildlife Habitat				
Wildlife Habitat*				
acres	0	0	0	0
percent total inventory site area	0	0	0	0
Special Habitat Areas*				
acres	1,325			
percent total inventory site area	93			
Wildlife Habitat - adjusted by Special Habitat Areas **				
acres	1,325	0	0	1,325
percent total inventory site area	93	0	0	93
Combined Total**				
acres	1,329	44	19	1,391
percent total inventory site area	93	3	1	97

* High-ranked riparian resources, Special Habitat Areas, and wildlife habitat includes the Willamette River

** Special Habitat Areas rank high for wildlife habitat

+ Because riparian resources, Special Habitat Areas, and wildlife habitat overlap, the results cannot be added together to determine the combined results.


Columbia River
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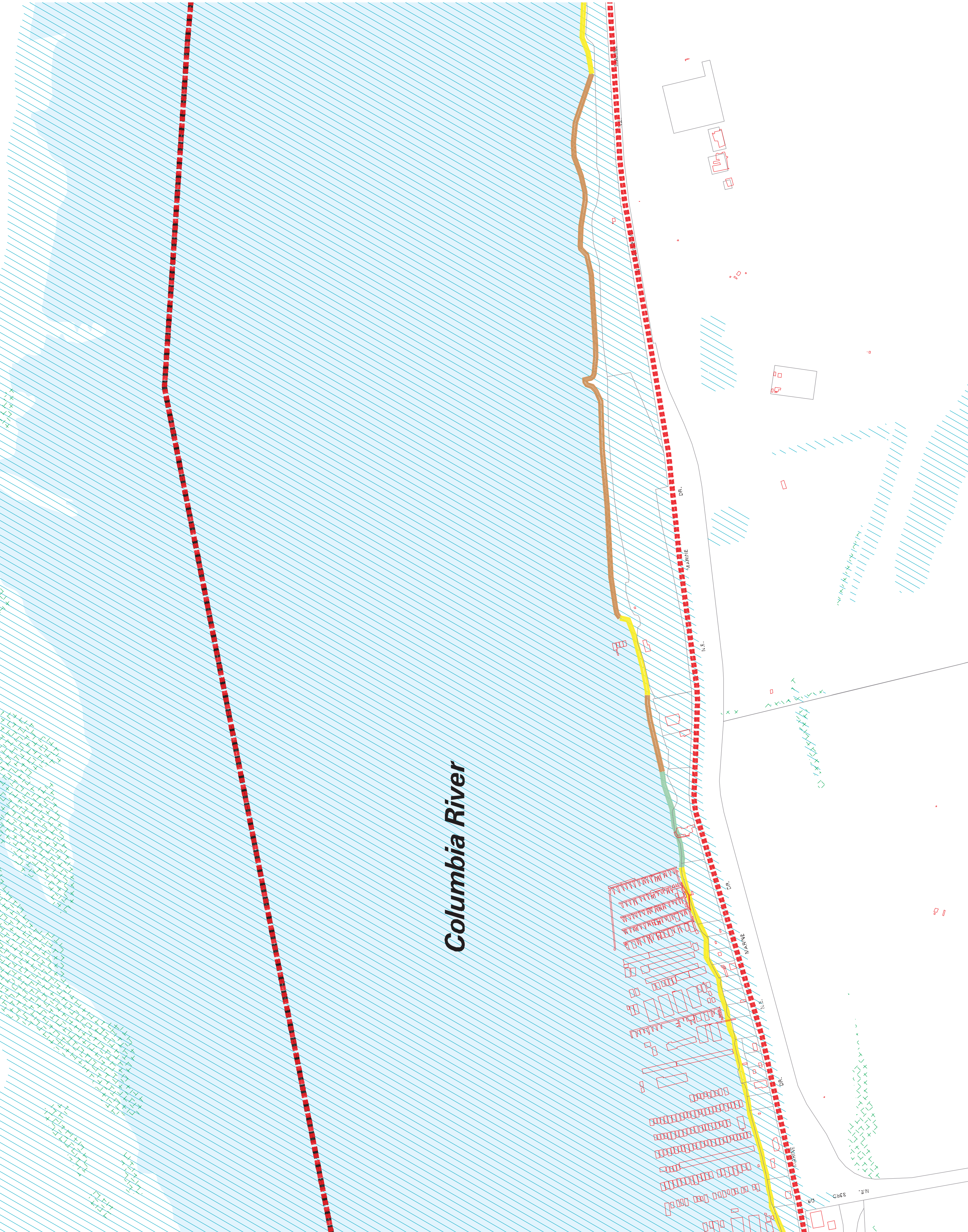
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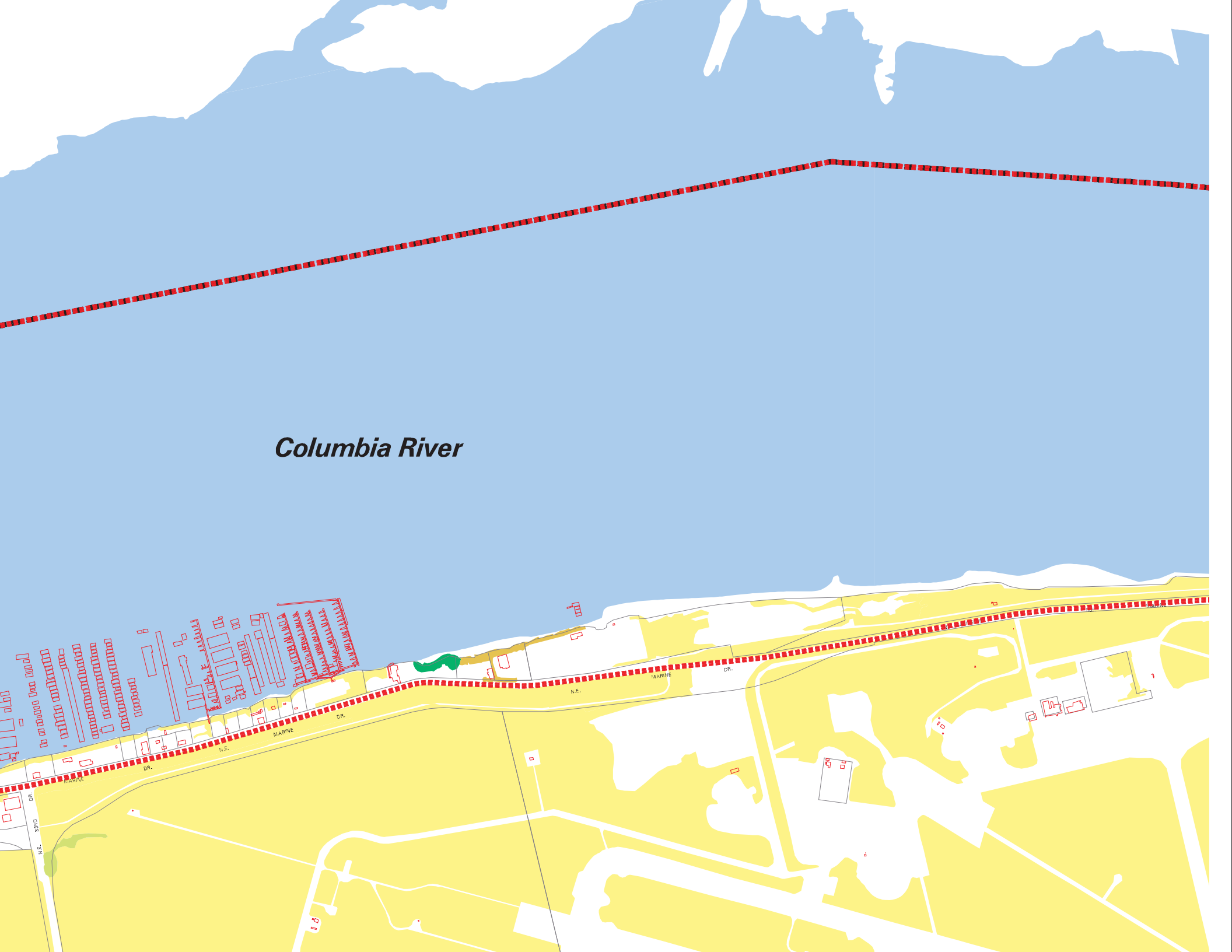
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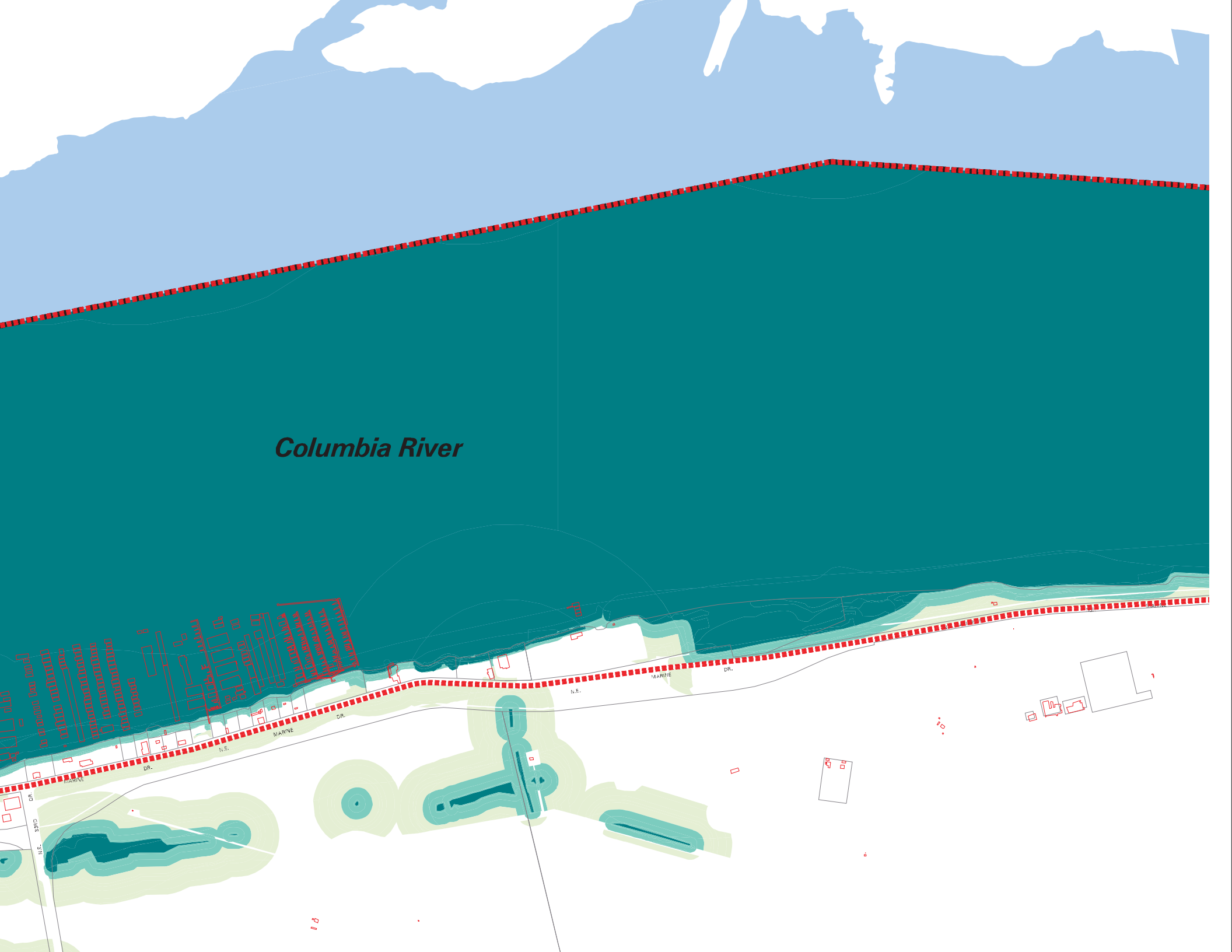
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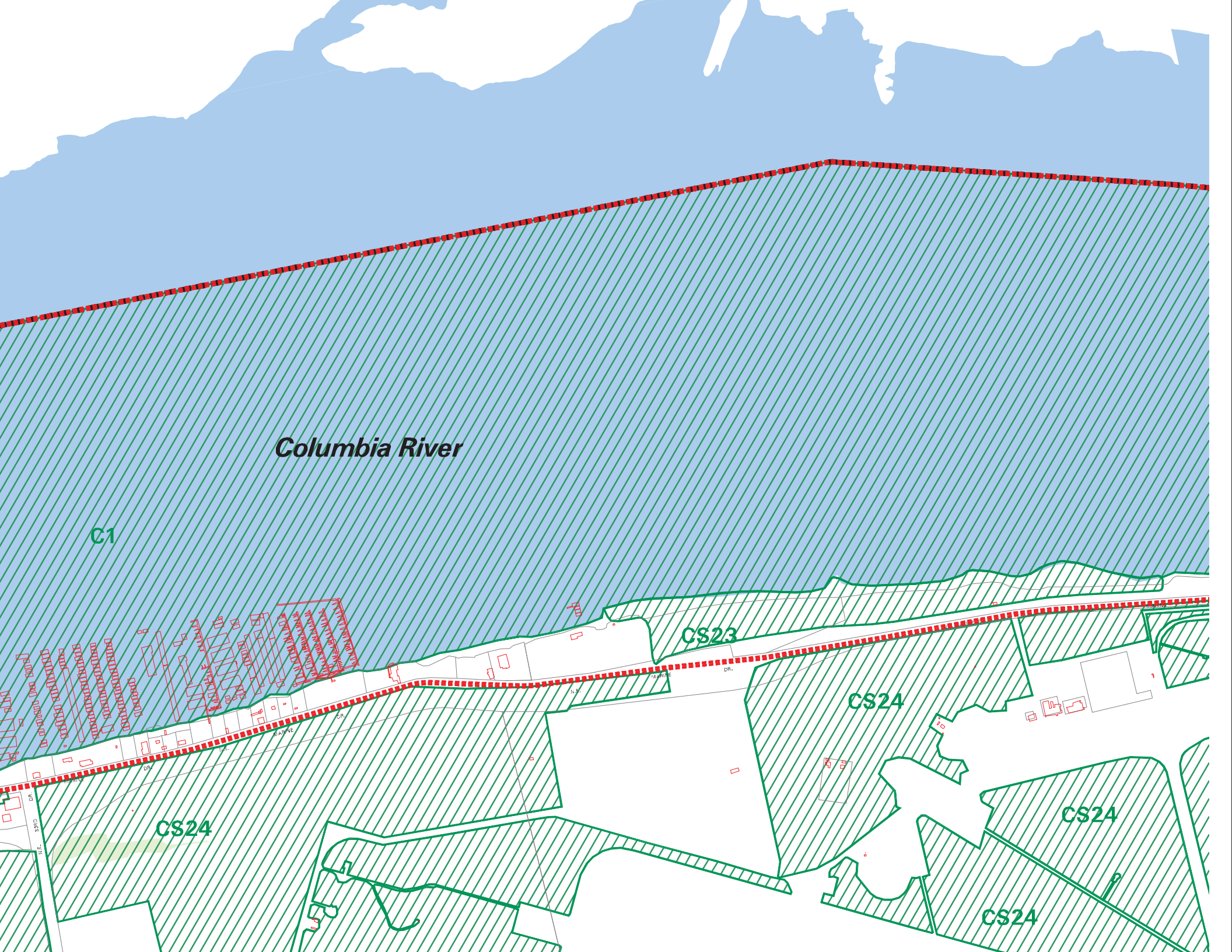
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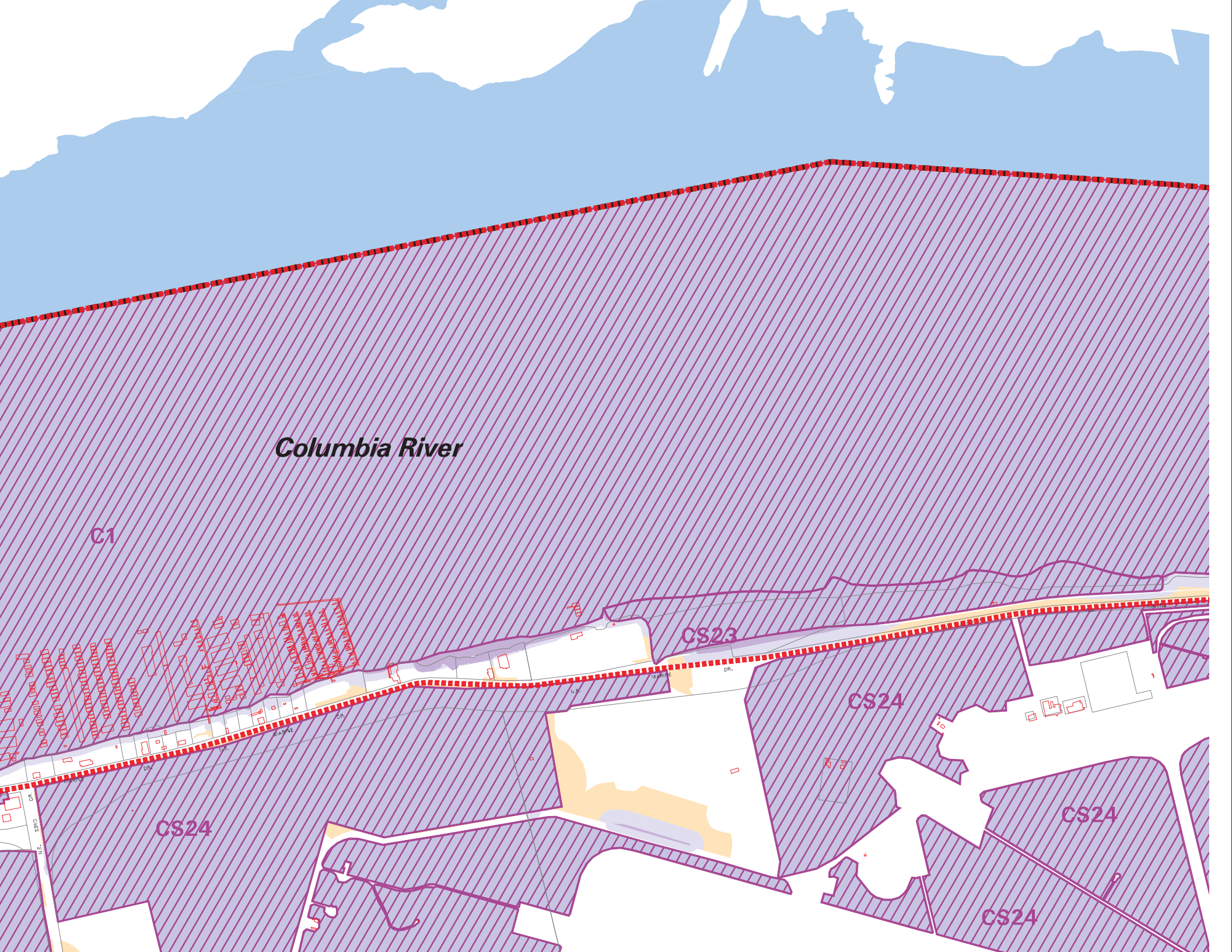
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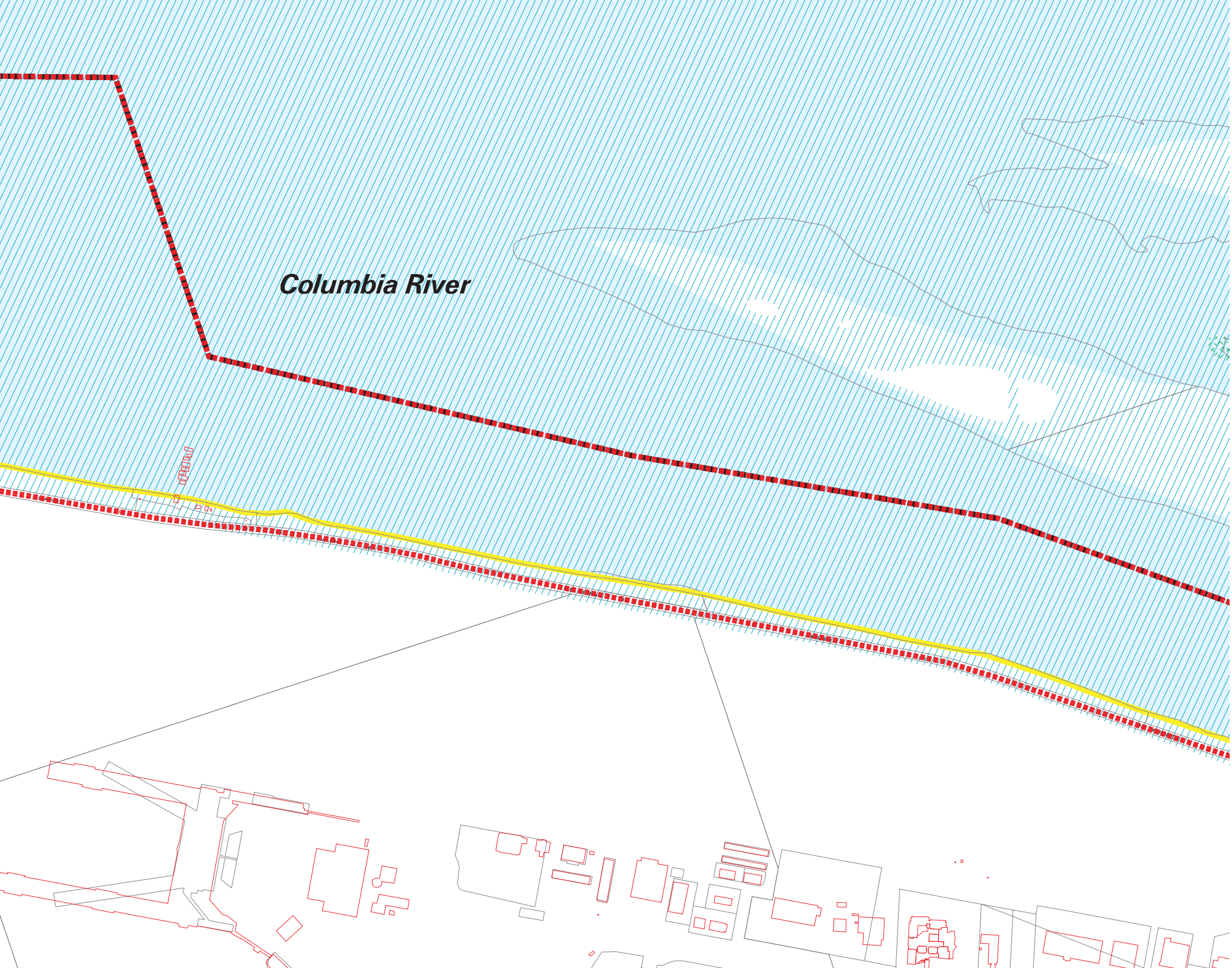
Columbia River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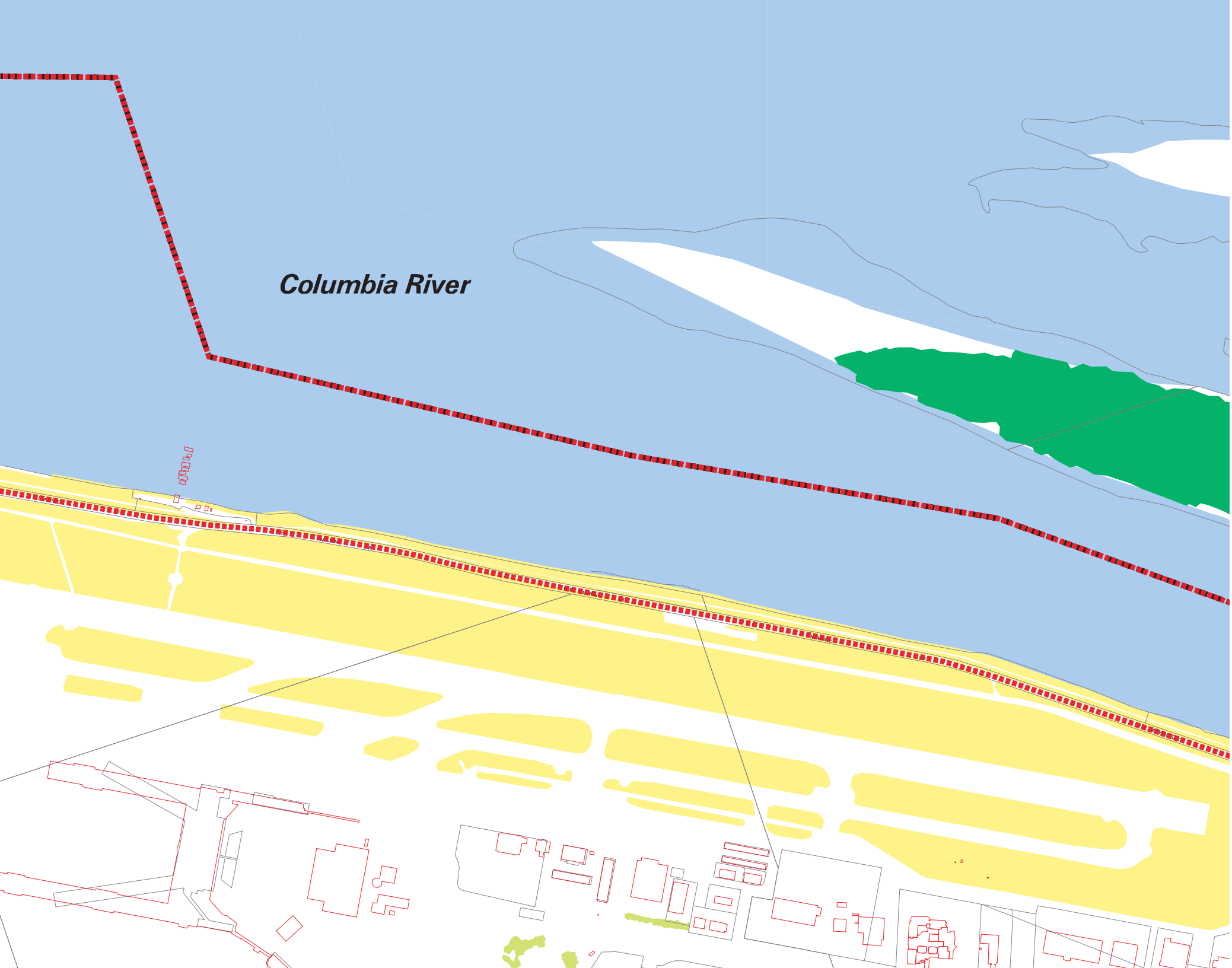
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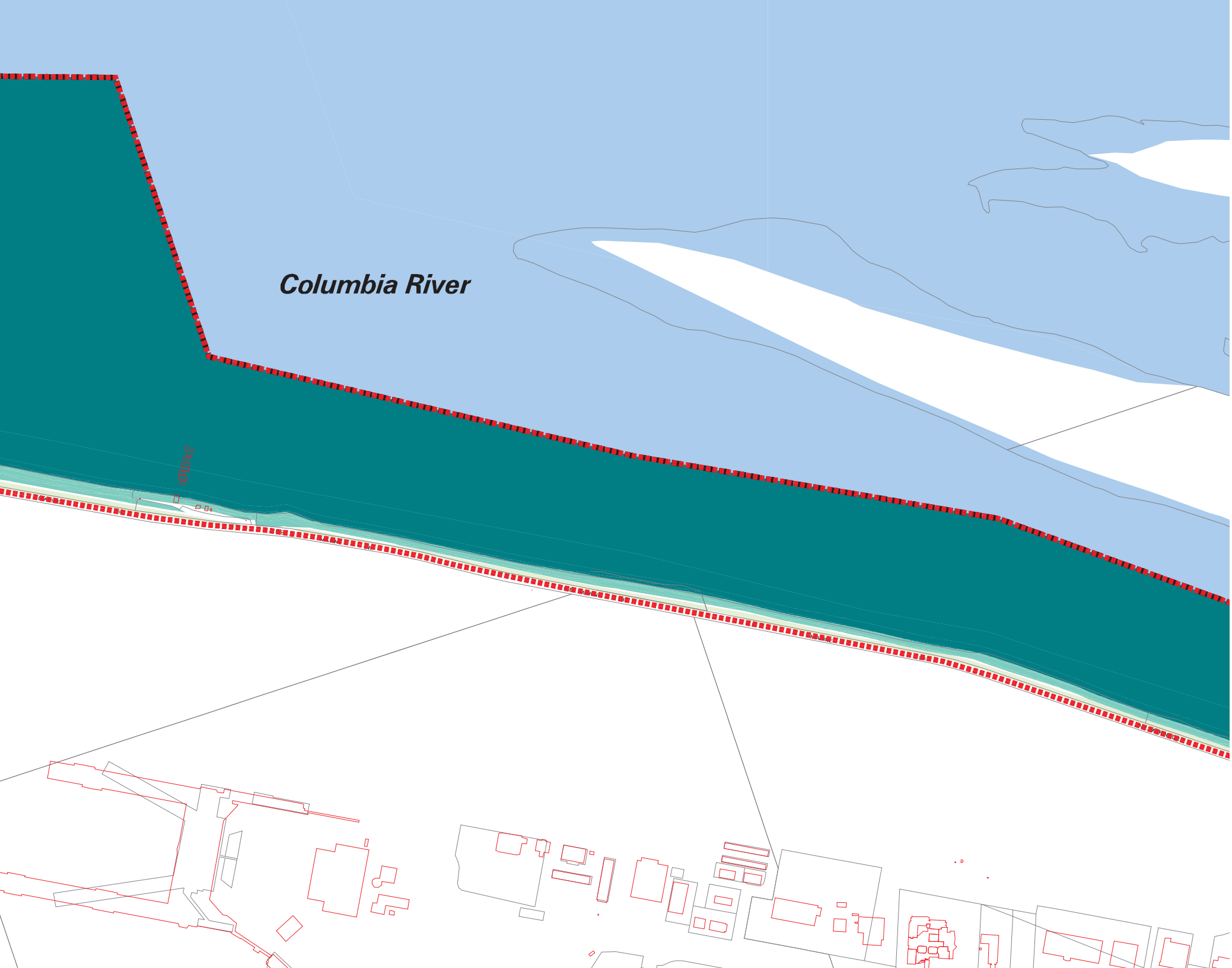
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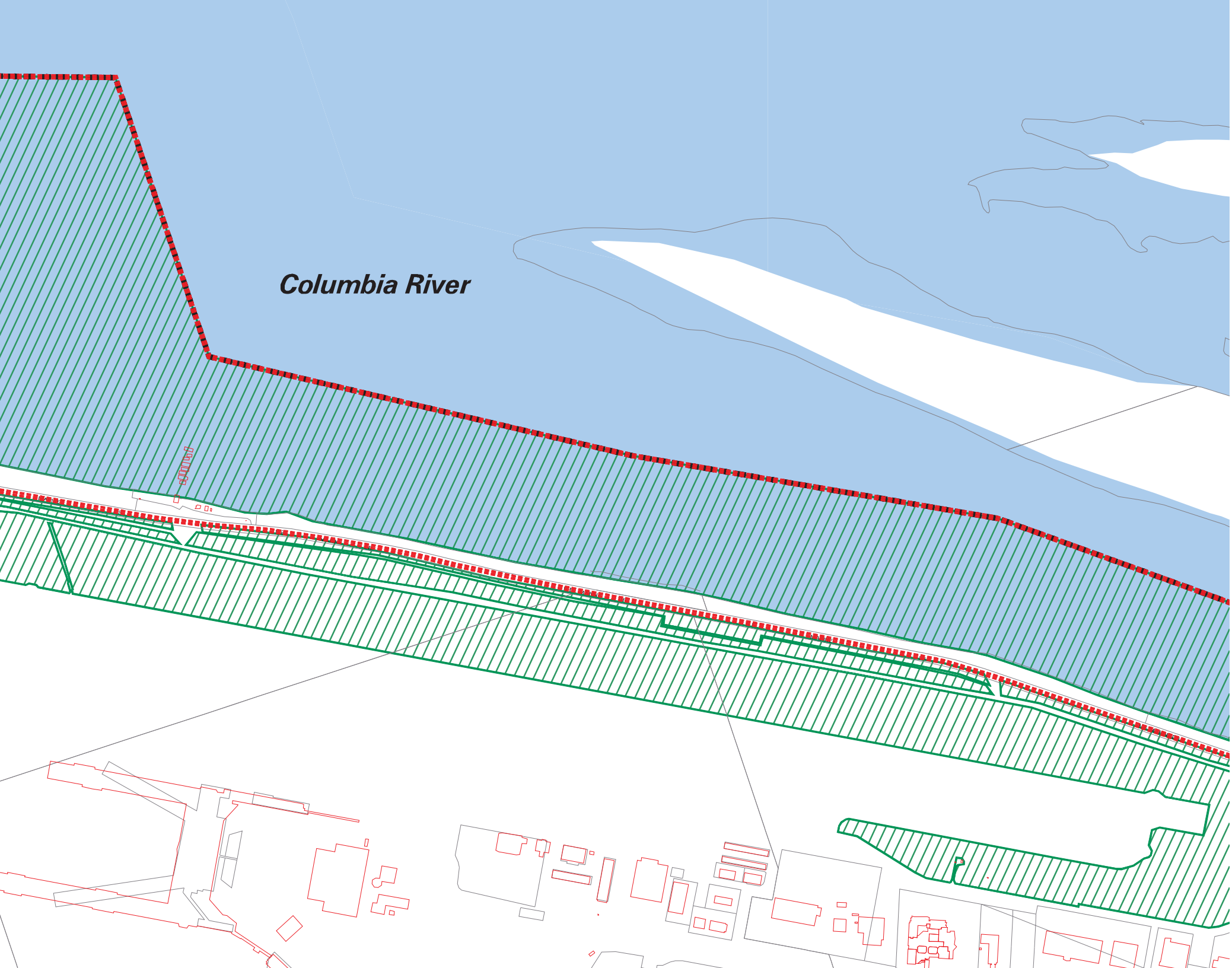
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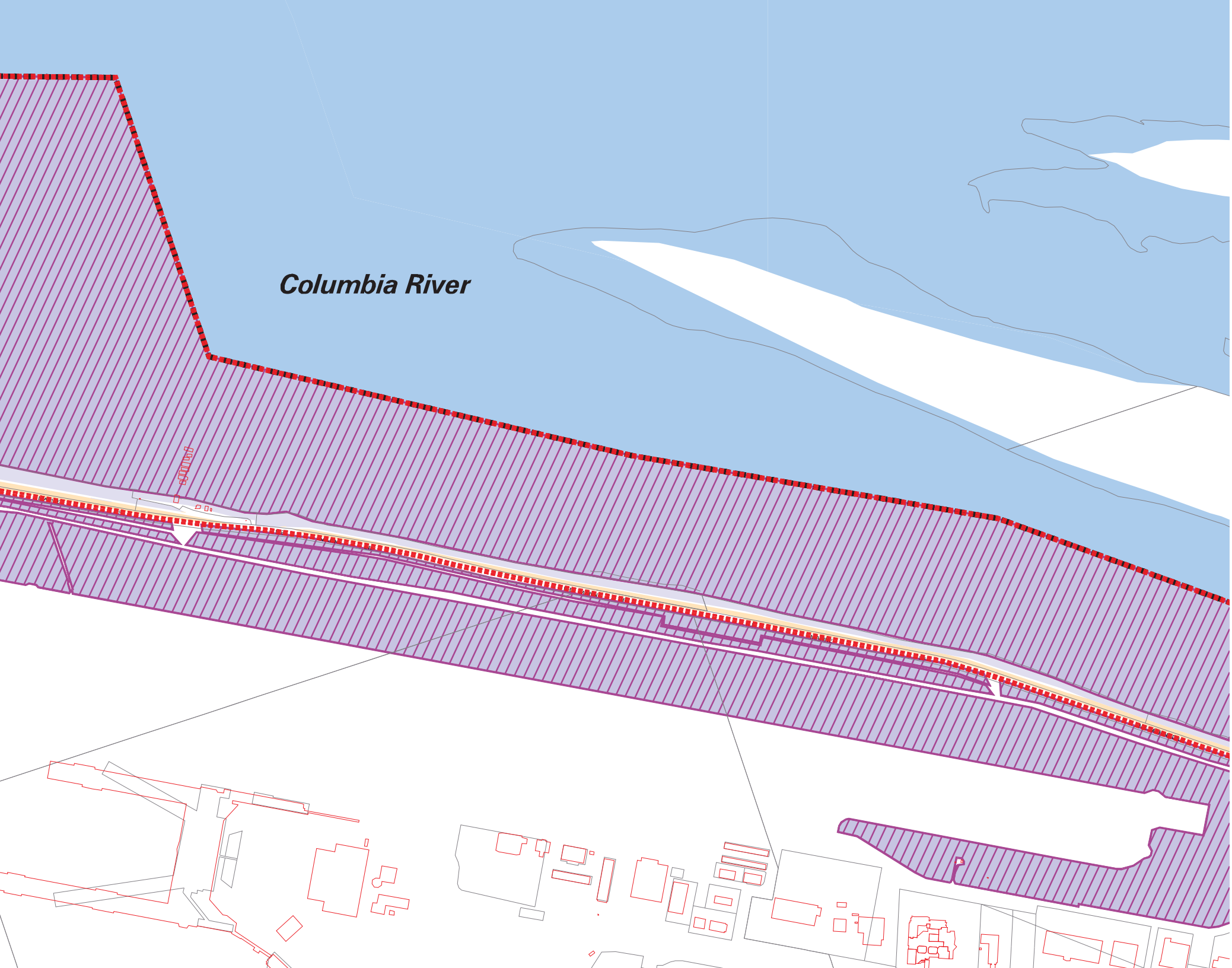
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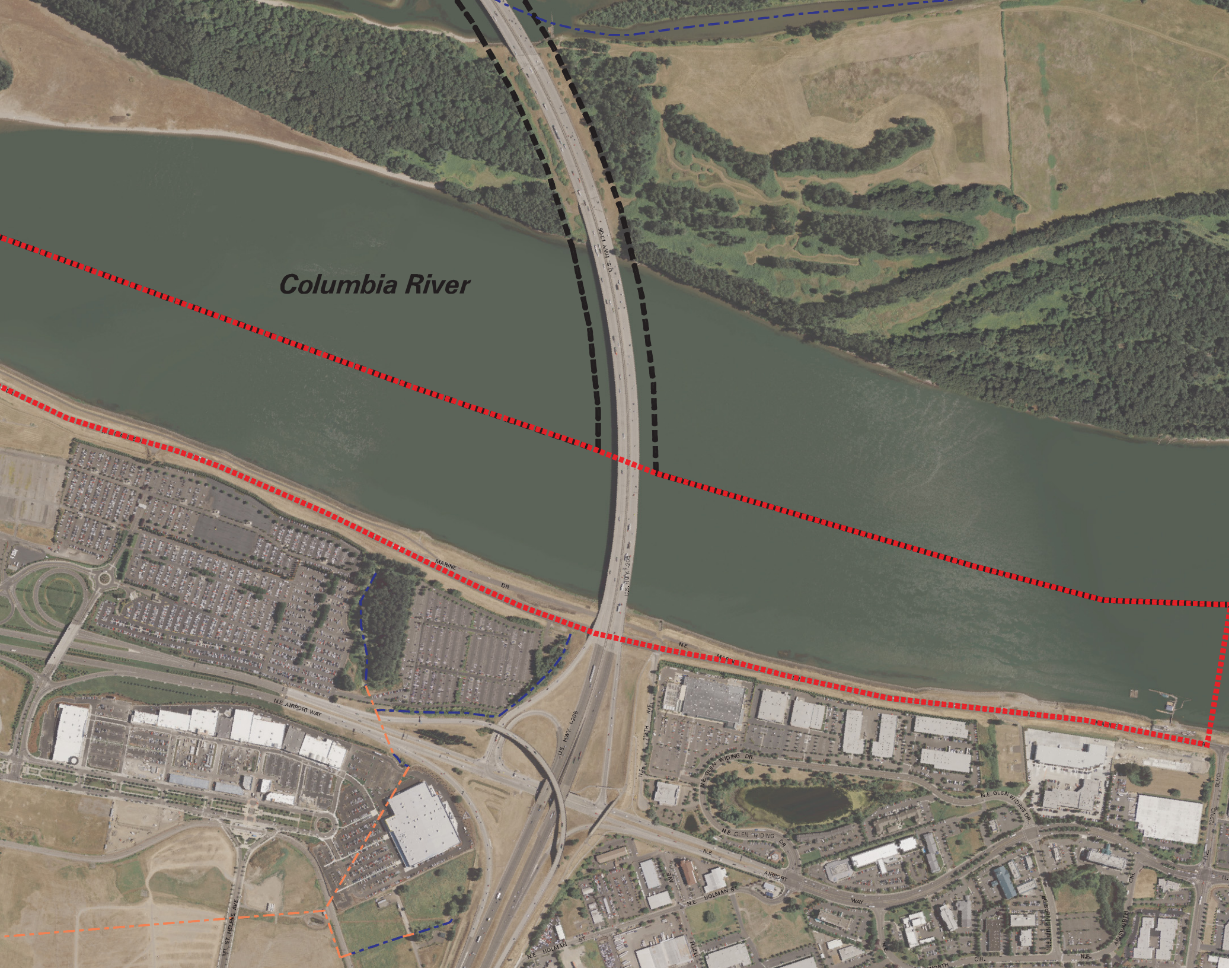
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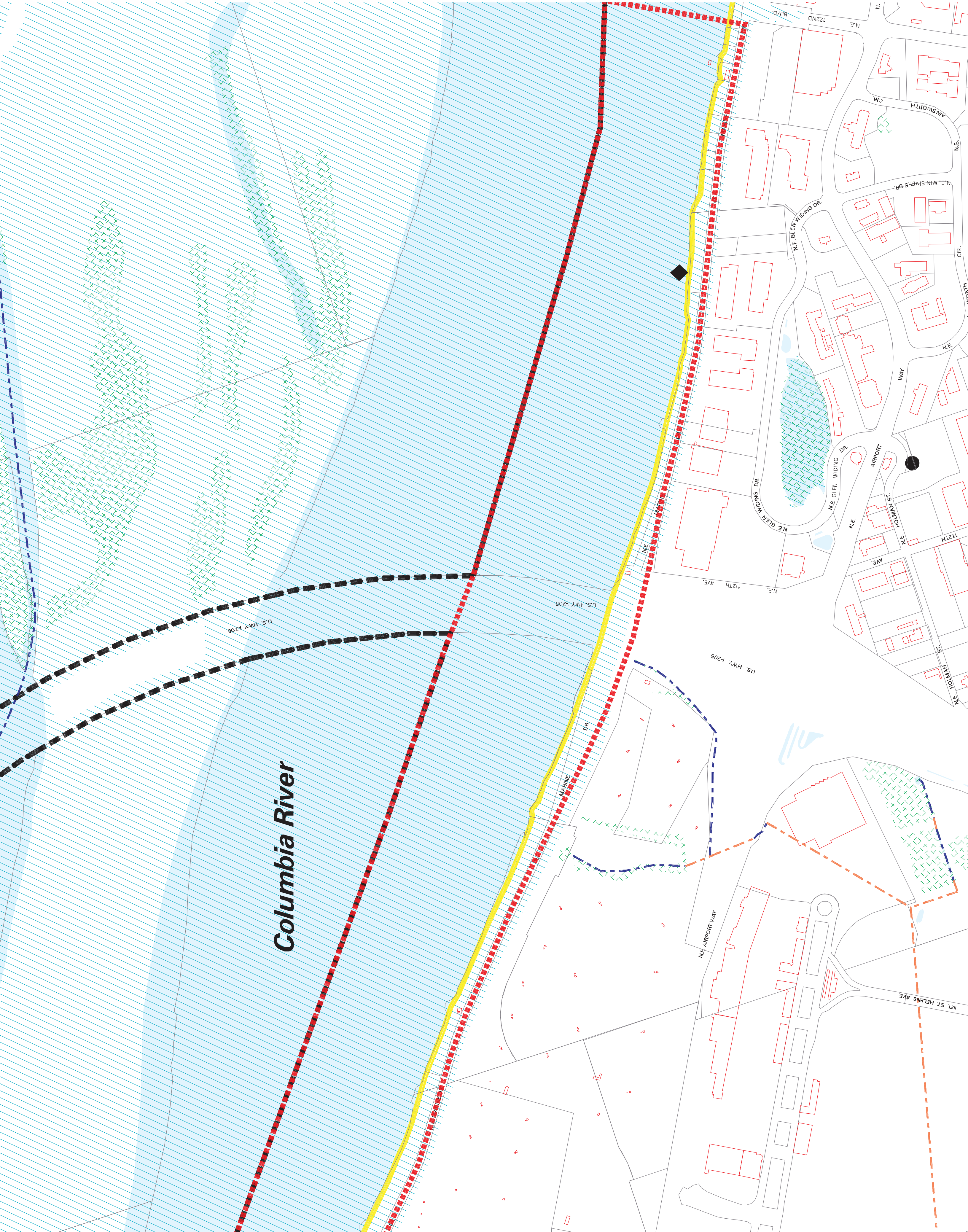

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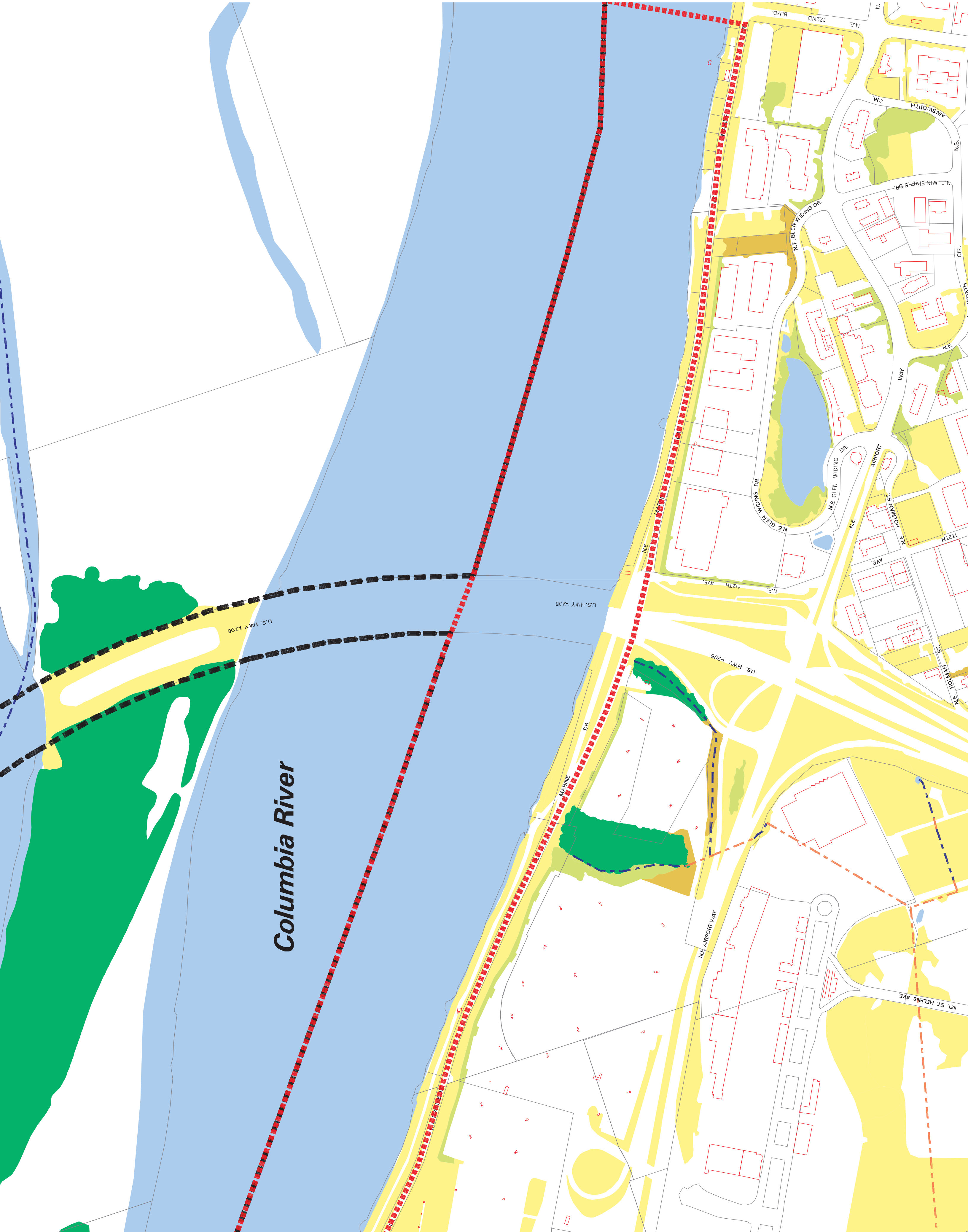
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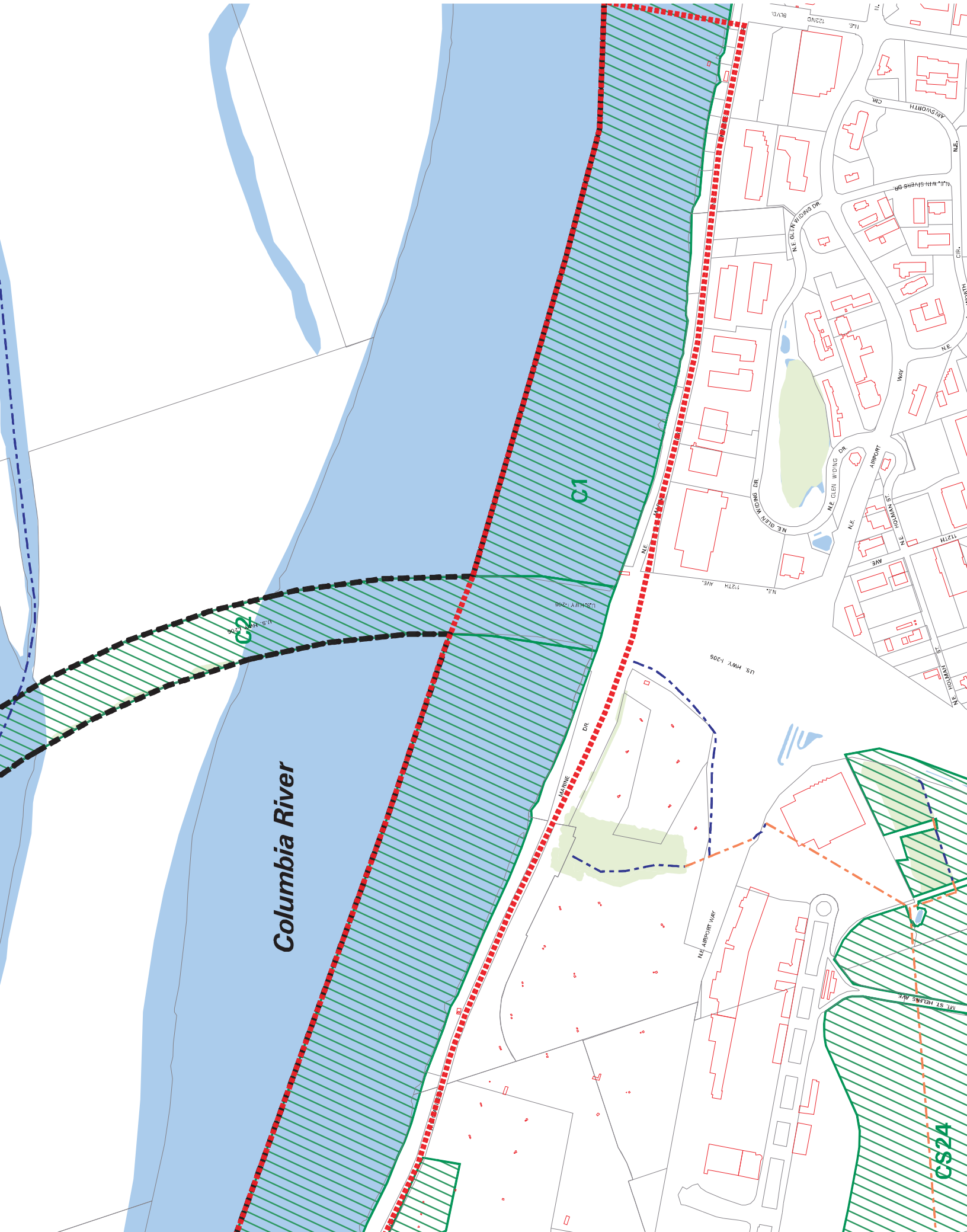
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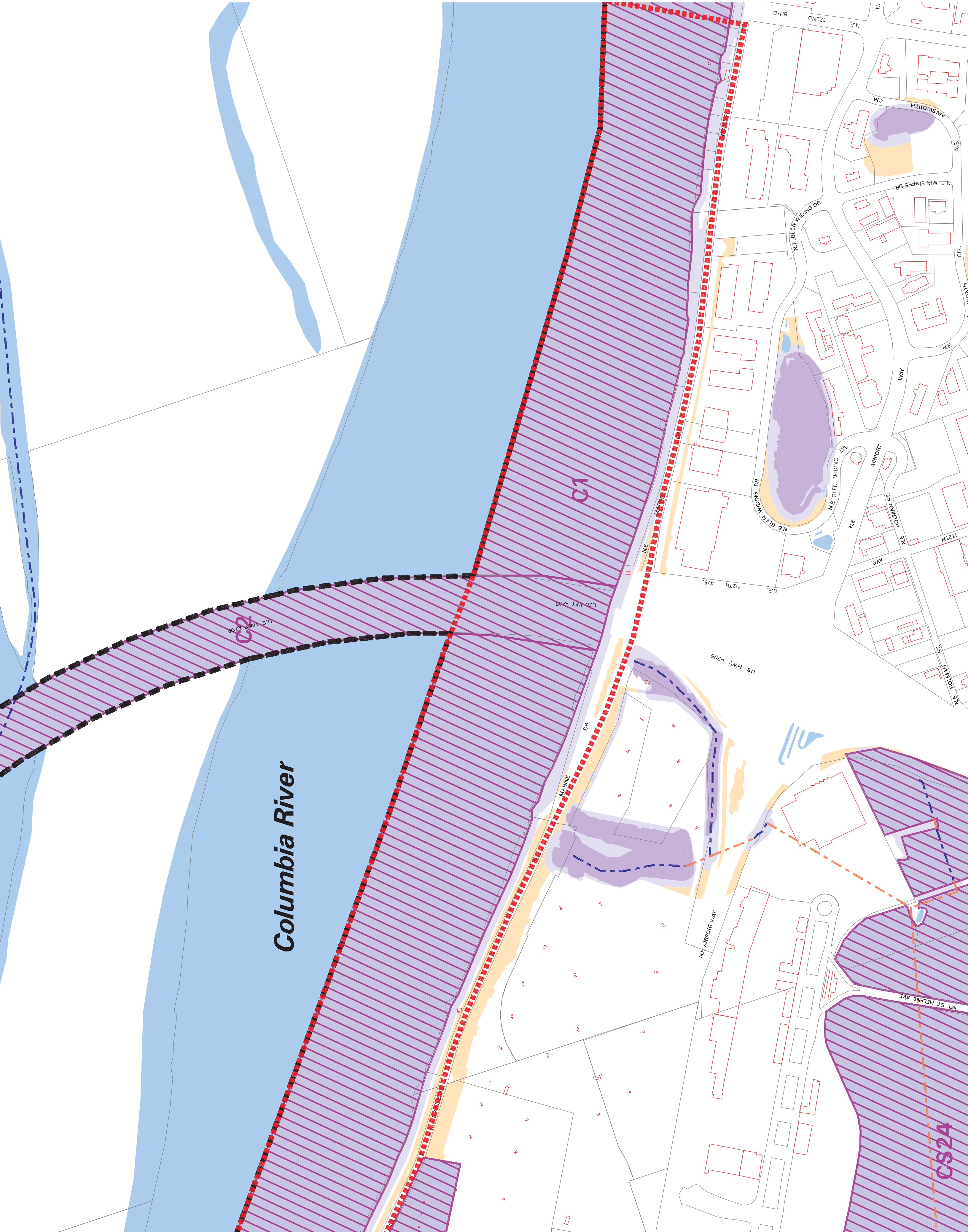

Columbia River
C1
C2
CS24
U.S. HWY I-205
MARINE DR.
N.E. AIRPORT WAY
MT. ST. HELENS AVE
N.E. GLEN WIDING DR.
N.E. HOLMAN ST.
N.E. 112TH AVE.
AINSWORTH
N.E. WIN SIVERS DR.