

Appendix D

Background Land use information

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Green Infrastructure Mapping

Following is a draft Green Infrastructure map developed by DnA Design of Homer as part of an independent project with the local Soil & Water Conservation District. The map was developed as a way to define lands viable for future development while considering the need to protect drainage, open space and other environmental features that would complement development. The project defines incentives for developers to consider landscape systems in their projects while maintaining or enhancing their bottom line. The green infrastructure elements are determined by overlaying scientific, ecological and economic values to provide not only an ecological benefit, but also quantifiable economic and quality of life benefits. Since Green Infrastructure (GI) looks at larger scale landscape systems, the map extends beyond the boundaries of the city to include entire watersheds and other key features that cross the political boundary of the city limit. The map legend categories are defined more precisely as follows:

Highly Developable/Developed (white)—Areas that are well suited for development or are already developed.

Some Green Infrastructure Elements (yellow)—Areas that are well suited for development with consideration of larger landscape systems, such as storm water management, upland-wetland complexes, poor soils, unstable slopes, trails, habitat, etc. These areas will likely have associated incentives to maintain environmental systems while enhancing land values.

Important Green Infrastructure Elements (light green)—Development in these areas should consider the specific Green Infrastructure characteristics present. These are not critical natural areas. However, if development in these areas is not careful, it will negatively impact larger landscape systems. Construction costs in these areas will probably be higher if the natural characteristics are not considered. These are areas where the public and property owners should be made aware that there is some important characteristic that they should consider protecting (such as steep slope, valuable wildlife habitat, adjacent creeks, trails or wetlands). Carefully planned development that preserves or enhances Green Infrastructure elements can add value to real estate, for example, by retaining natural features and wildlife. These are areas that would benefit from clear development guidelines to preserve landscape systems, and would be eligible for special development or restoration incentives.

Critical green infrastructure (dark green)—These areas have sensitive or critical landscape systems, processes, or connections and are most appropriate for conservation. They are predominantly areas with steep slopes, critical wetlands, poor soils or other sensitive landscape features. These areas would likely be very difficult and expensive to develop, and are limited by existing federal regulation. Development in these areas will cause significant impacts on natural systems, neighboring properties and possibly view sheds, and will increase the risk and associated costs due to natural hazards. These

areas should be considered amenities for the city and its residents because of their value for storm water management, habitat protection, view shed protection open space and trails. Options for preserving these lands should be explored, for example, through conservation easements, land or development trades, or other creative incentives, particularly for areas held in private ownership.

This Green Infrastructure map is generated from spatially explicit GIS base maps including and considering:

- Soils
- Creeks and drainages
- Slopes
- Bluff erosion
- Construction costs (essentially development costs due to slope, road access, soils, wetlands, open water and drainages)
- Trails and public amenities
- Storm water management
- Wetlands
- Vegetation habitat
- Wildlife habitat
- Accessible lands—lands already served by road and water and sewer (basically a weighted buffer by infrastructure construction costs)
- Views and view sheds

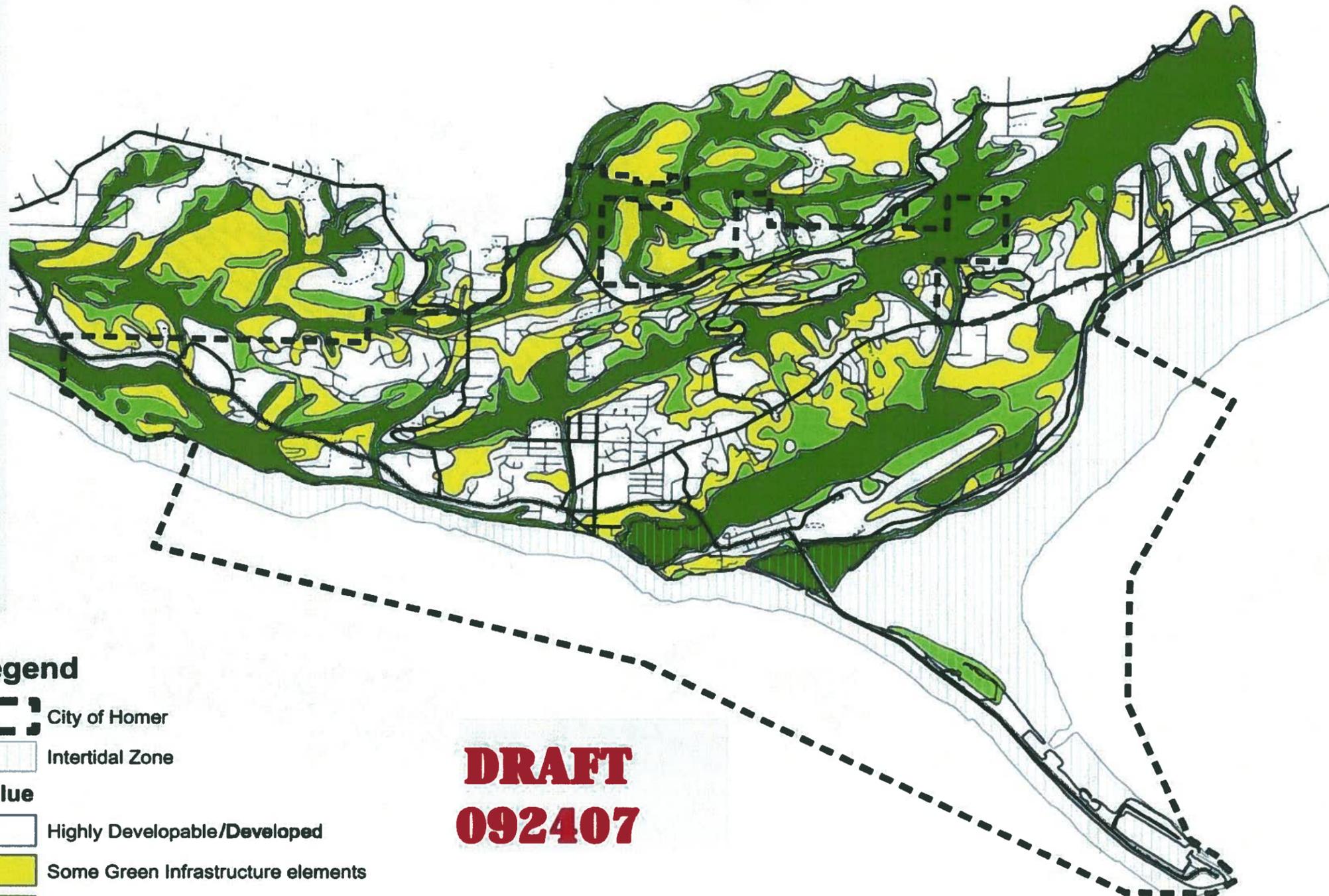
More information on the background data and methods behind the Green Infrastructure map as well as possible incentives can be found by going to www.suitabilitymap.org

Specific steps to establish a system of green infrastructure include those outlined below; the diagram provides a simplified illustration of this approach:

1. Identify and map individual environmental features and processes – erosion areas, wetlands, steep slopes, aquifer recharge areas, shoreline access points, critical view sheds, etc.
2. Identify open space and recreation areas – trails, parks and recreation use areas, view sheds and other features that are best protected by allowing the land to remain largely undeveloped.
3. Overlay mapped environmental features with open space and recreation areas to create an integrated “green infrastructure” network map. This should identify features such as stream corridors and trails that cross multiple properties. Also identify areas that may be able to support development, but will require special standards to maintain environmental quality (e.g., steep slope areas).
4. Limit areas included in the green infrastructure map to those of highest value or greatest constraint. For example, the map should identify the most important trails, the most important wetlands and streams, the steepest slopes.
5. Formally adopt the map, recognizing that site-specific developments may lead to changes in the features that need protection for particular development projects.
6. Establish a formal process that balances the long term communitywide benefits of the green infrastructure concept with short-term impacts on individual private landowners.

HOMER SUITABILITY MAPPING

GREEN INFRASTRUCTURE

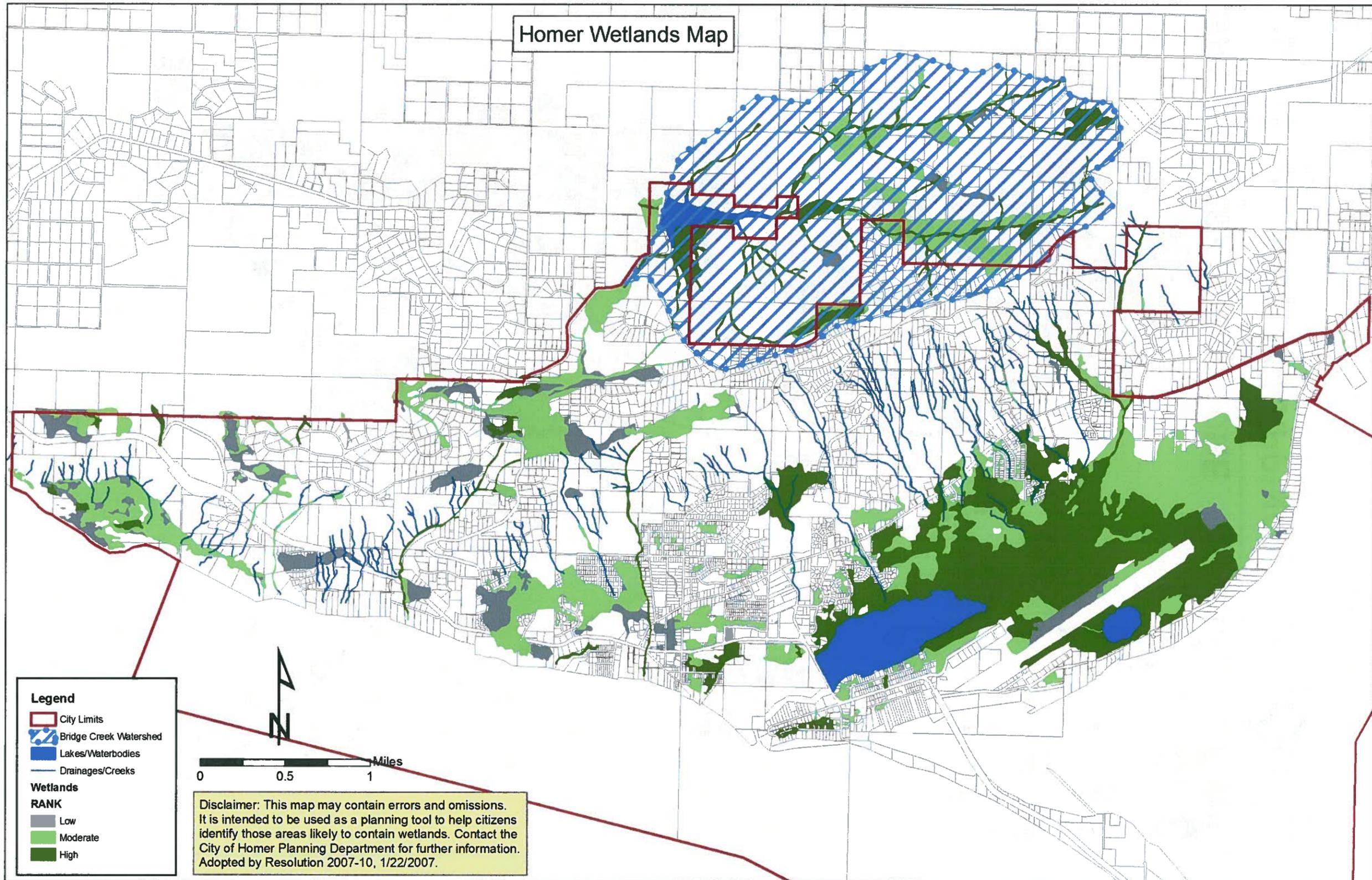


Legend

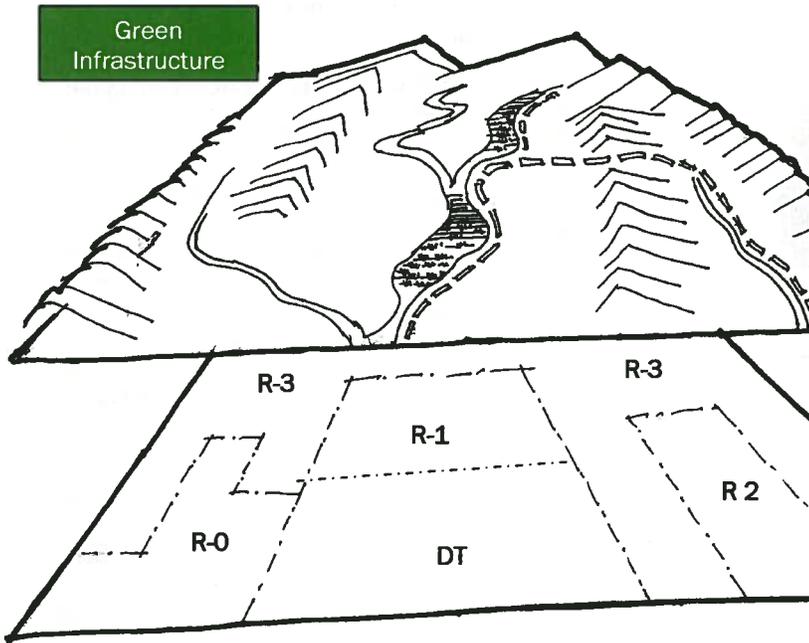
- City of Homer
- Intertidal Zone
- Value**
- Highly Developable/Developed
- Some Green Infrastructure elements
- Important Green Infrastructure elements
- Critical Green Infrastructure

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Note: The map shown on this page is provided only as an illustration. It was developed by the Homer Soil and Water Conservation District and is included in this document for descriptive purposes only. While illustrating the general objectives for green infrastructure that are endorsed by this plan, this draft map will not be adopted as part of this comprehensive plan. For more information on this project go to www.suitabilitymap.org



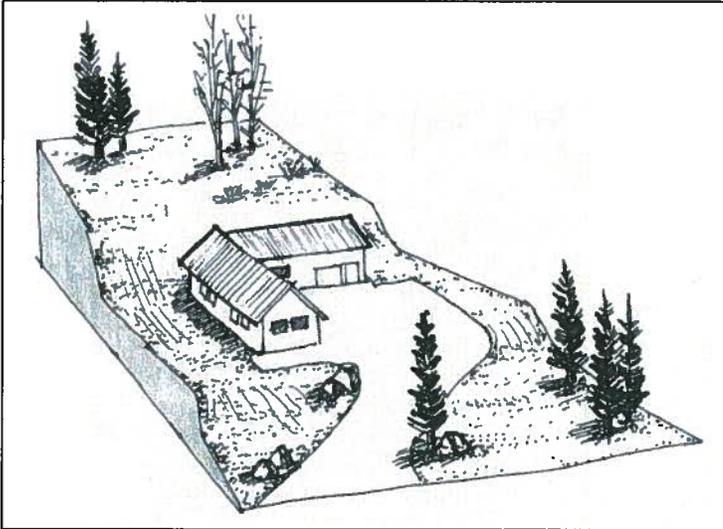
Site Development Practices



GREEN INFRASTRUCTURE OVERLAY PROCESS

1. Map individual environmental values:
 - Functional & hazard areas: e.g., streams, and wetlands, aquifer recharge areas; steep slopes
 - Open space and recreation resources – trails, recreation use areas, access points.
2. Integrate resource information to identify a system of priority “green infrastructure”
3. Overlay the green infrastructure map on the zoning map - define areas where natural resource functions and open space values should be maintained. Be flexible about the specific mechanisms used to protect green infrastructure values

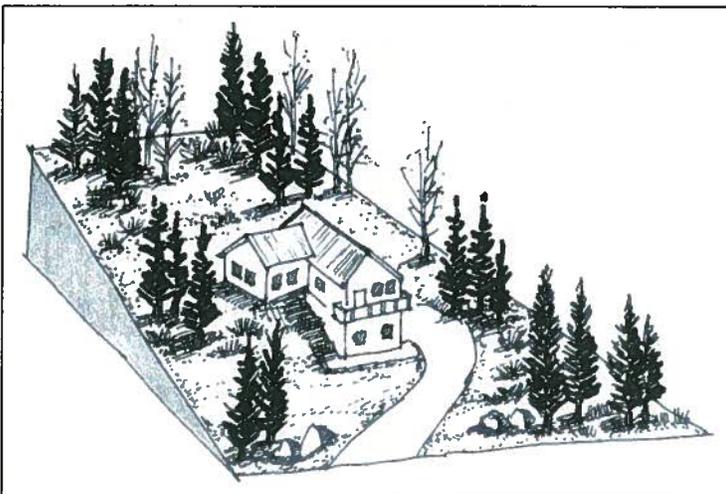
Site Development Practices



Site Development Practices – Option A

- Large building footprint (and therefore large impervious area relative to building square footage)
- Large impervious area, including large driveway, paved walkway
- Large lawn, majority of original vegetation removed
- Substantial cut and fill of original grade to create housing pad
- No provisions for roof run off, on site infiltration
- Relatively high winter and summer maintenance costs for yard care and snow removal

Potential Neighborhood Effects – relatively greater odds of increased drainage & glaciation issues, greater change in character



Site Development Practices – Option B

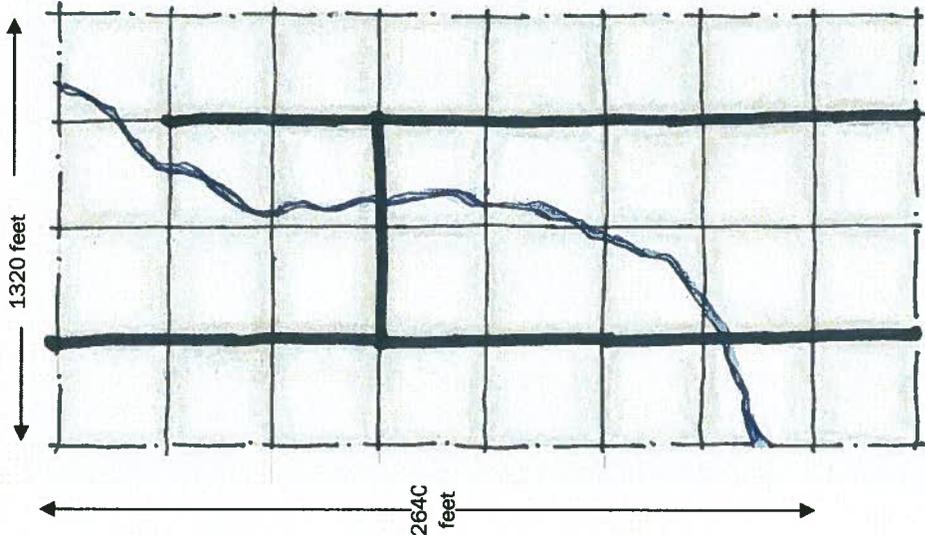
- Small footprint building (relative to building square footage)
- Limited impervious surfaces –stepping stones, narrow permeable surface driveway
- Majority of original natural vegetation retained, with exception of trees near house (for fire safety)
- Building set at two levels to retain existing topography and minimize need for grading
- “Rain gardens” used to trap, infiltrate roof runoff

Potential Neighborhood Effects – Reduced impact on natural drainage, reduced off-site runoff; sense of privacy and rural character retained, less yard care and less snow removal costs

Subdivision Options

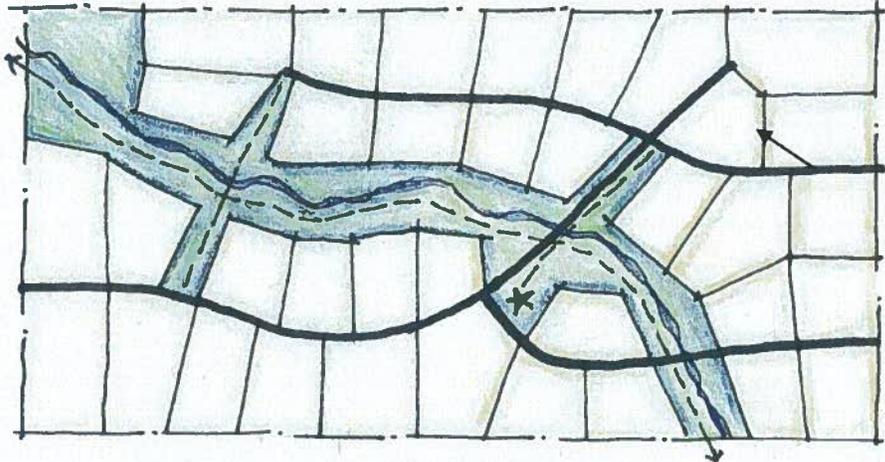
Three Illustrative Alternatives – Based on a Hypothetical 80 acre Parcel

A. Traditional Subdivision
 32 lots, 2.5 acre per lot
 No reserved open space



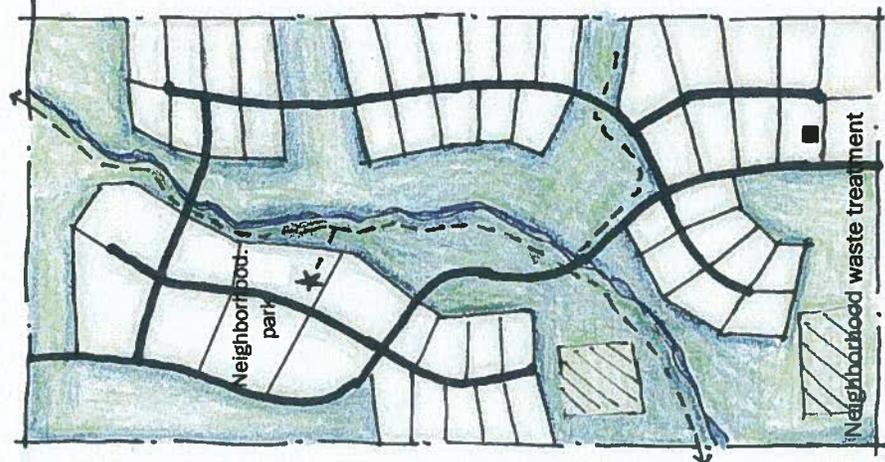
Lots 330' x 330'

B. Open Space Subdivision
 36 lots, 1.5-2.5 acres per lot
 Approximately 15 acres open space



Typical Lot 250' x 360'

C. Open Space Subdivision
 50 lots, about .50-1.0 ac/lot (20-30,000 SF)
 Approximately 35 acres open space

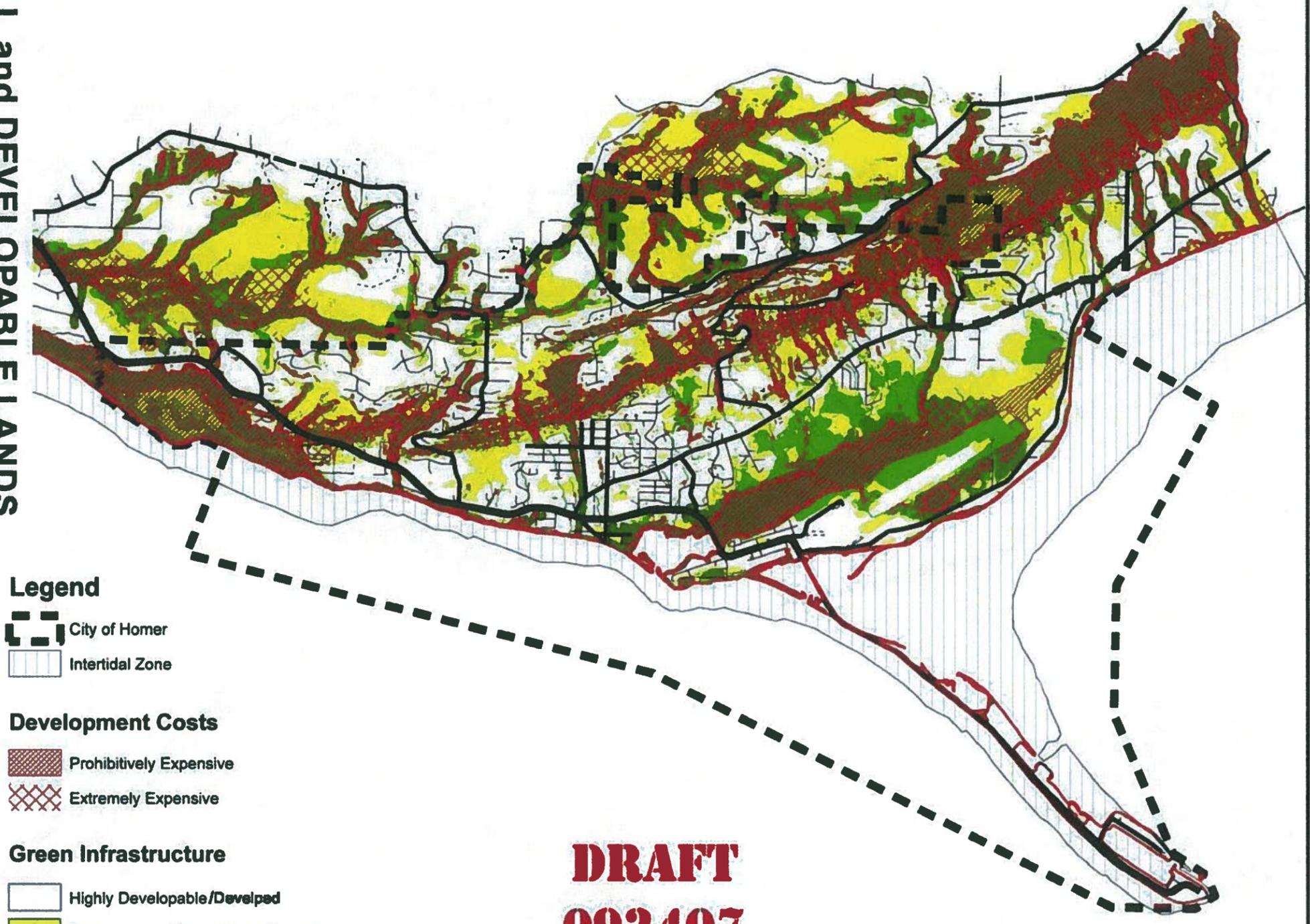


Typical Lot – about 125' x 200'
 ■ Indicates 50' x 50' footprint, 2500 square feet

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HOMER SUITABILITY MAPPING

G.I. and DEVELOPABLE LANDS



Legend

- City of Homer
- Intertidal Zone

Development Costs

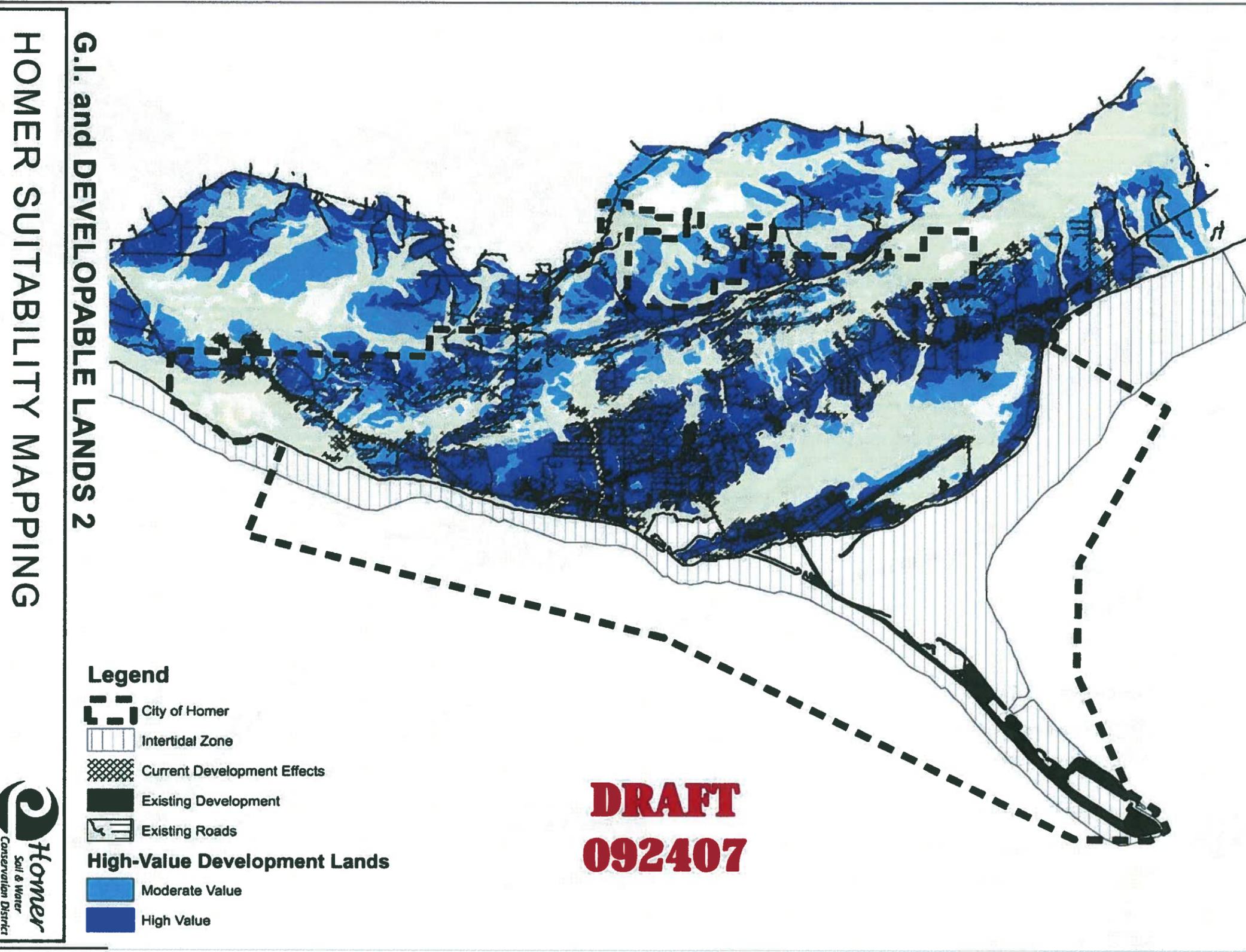
- Prohibitively Expensive
- Extremely Expensive

Green Infrastructure

- Highly Developable/Developed
- Some Green Infrastructure Elements
- Important Green Infrastructure Elements
- Critical Green Infrastructure Elements

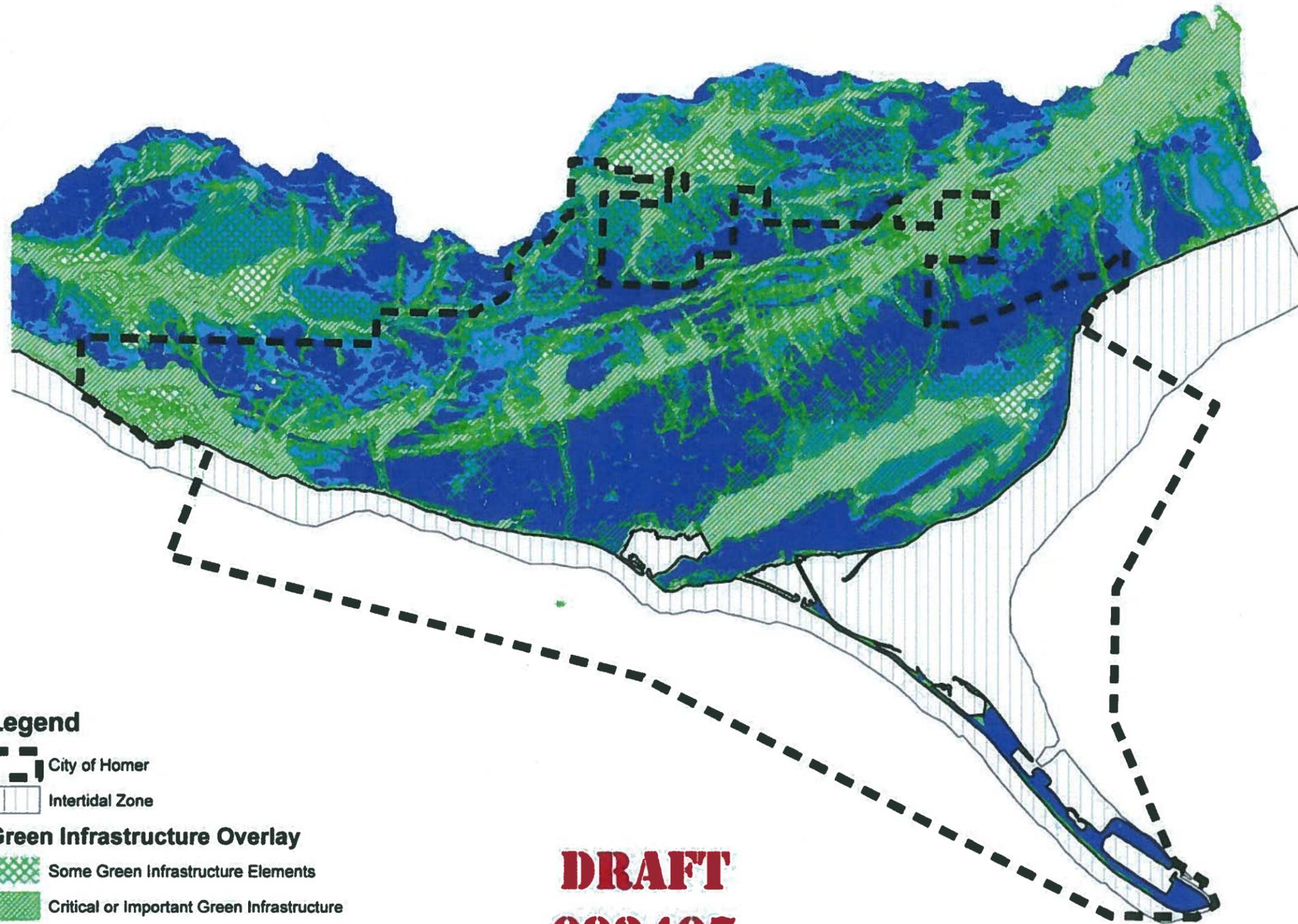
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HOMER SUITABILITY MAPPING

G.I. and DEVELOPABLE LANDS 3



Legend

- City of Homer
- Intertidal Zone

Green Infrastructure Overlay

- Some Green Infrastructure Elements
- Critical or Important Green Infrastructure

High-Value Development Lands

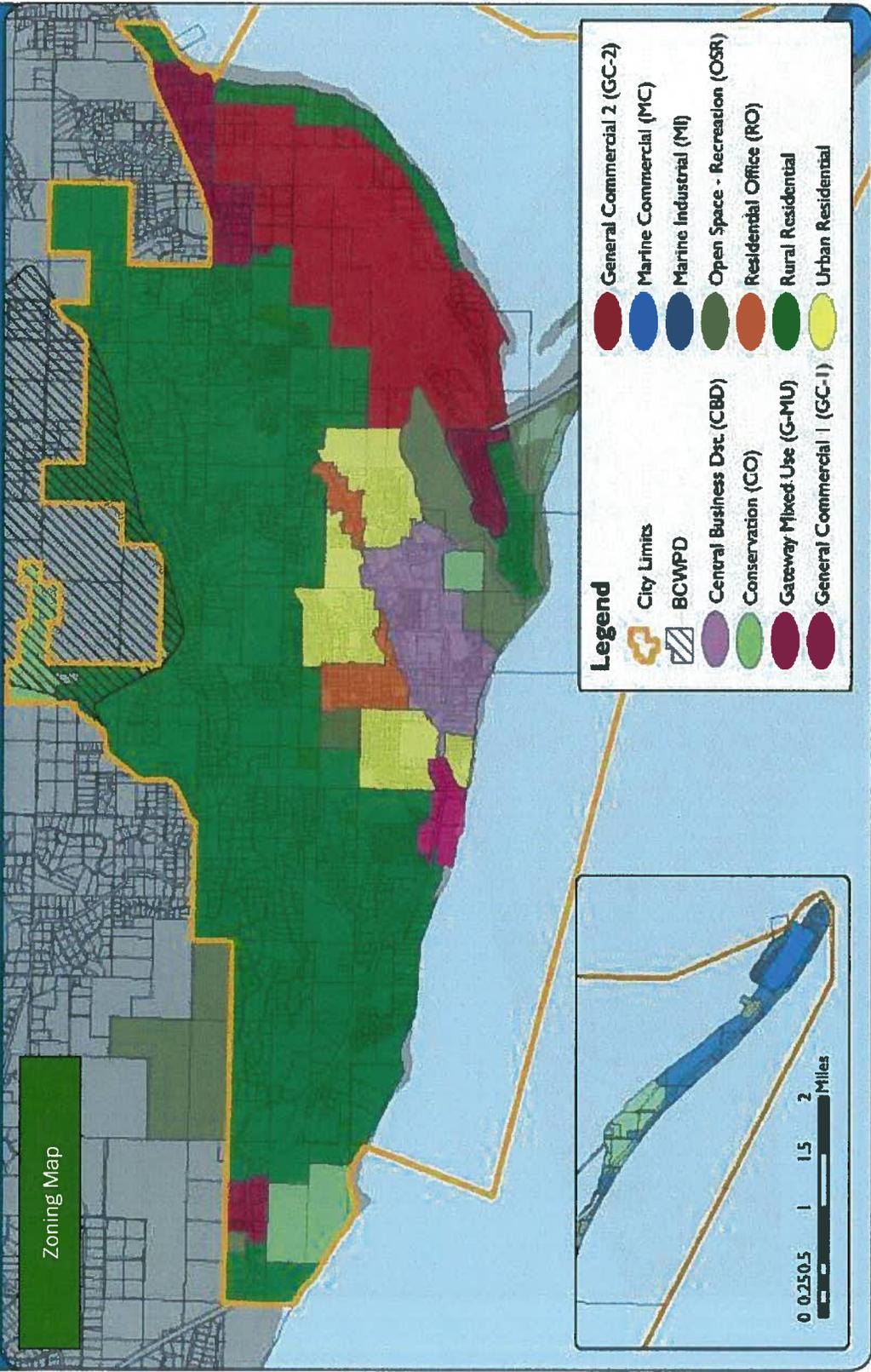
- Moderate Value
- High Value



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Current Zoning, City of Homer



Map by Agnew::Beck.

All data courtesy of City of Homer.

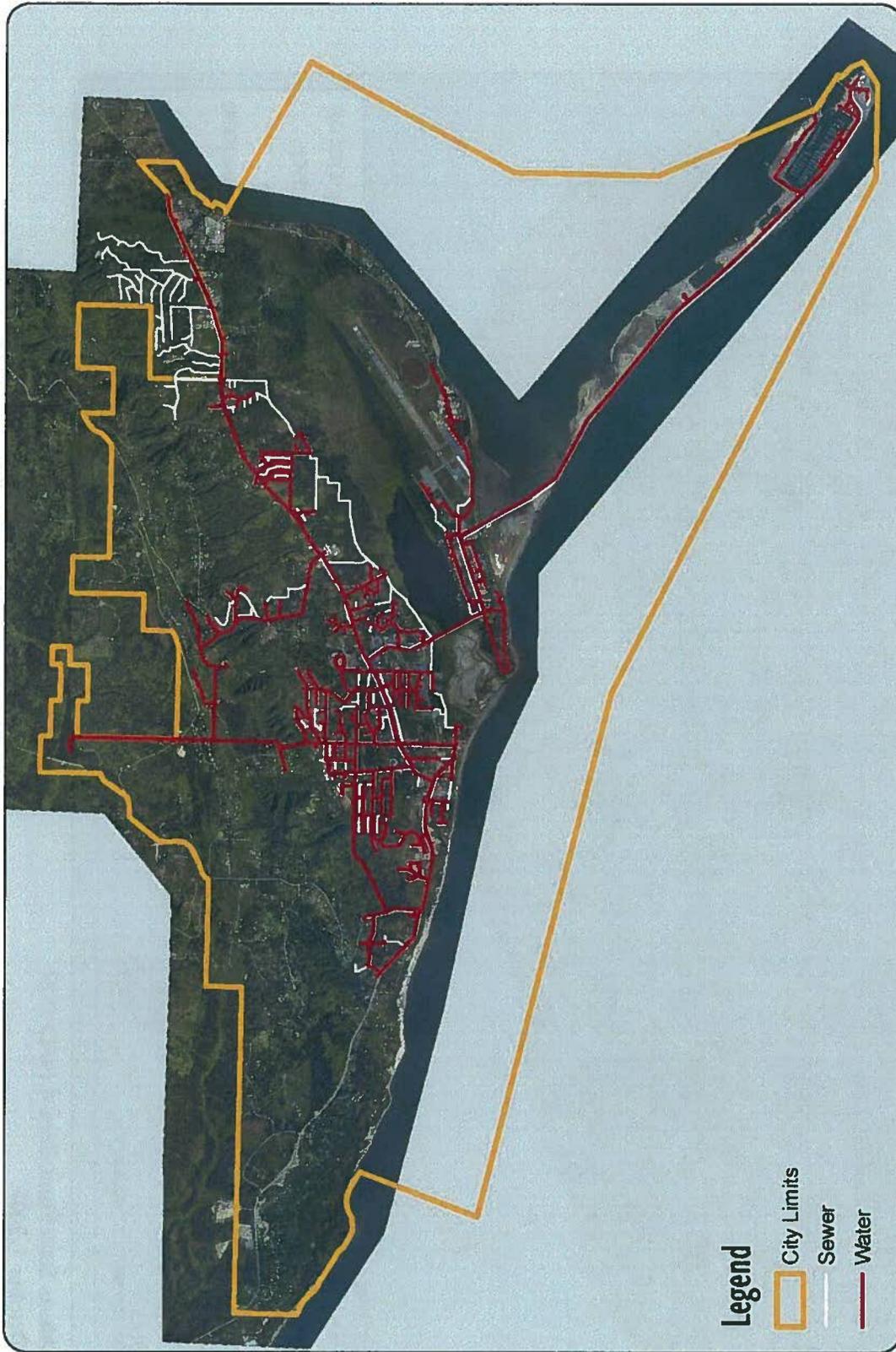


Alaska State Plane, Zone 4, NAD 1927

October 1, 2007

This map was compiled for the City of Homer.





Legend
 City Limits
 Sewer
 Water



Existing Water and Sewer Lines, City of Homer

Alaska State Plane, Zone 4, NAD 1927

March 13, 2007

This map was compiled for the City of Homer.

All data courtesy of City of Homer.

