



City of Homer

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Memorandum

TO: Mayor Castner and Homer City Council
THROUGH: Rob Dumouchel, City Manager
FROM: Janette Keiser, PE, Director of Public Works
DATE: March 8, 2021
SUBJECT: Ground Water Study

Issue: The impacts of groundwater are all around us. The City's only water source, the Bridge Creek Reservoir, collects surface and ground water. Groundwater exacerbates the City's drainage challenges. Yet, the sources, volumes and locations of groundwater is not well understood. We have a unique opportunity to learn more about how groundwater affects our community and in so doing, be in a better position to manage it; that is to mitigate against damaging impacts (drainage issues) and protect positive attributes (water supply). We seek an appropriation to fund research by an expert team to do this.

Background: The Kachemak Bay National Estuarine Research Reserve ("KBNEER"), and its partners at the University of South Florida, recently concluded groundwater research on lands to the north of the Bridge Creek Reservoir. Their purpose was to better understand how groundwater affects fish streams. They used sophisticated GIS tools to map ground water aquifers. This technology and the methodology of analysis would be equally effective in mapping ground water sources for other purposes; for example, to help understand the impact of groundwater on drainage or water supply. Further, we recently issued a Term Contract to Coble Geophysical, who, among other things, provides expertise in groundwater analysis.

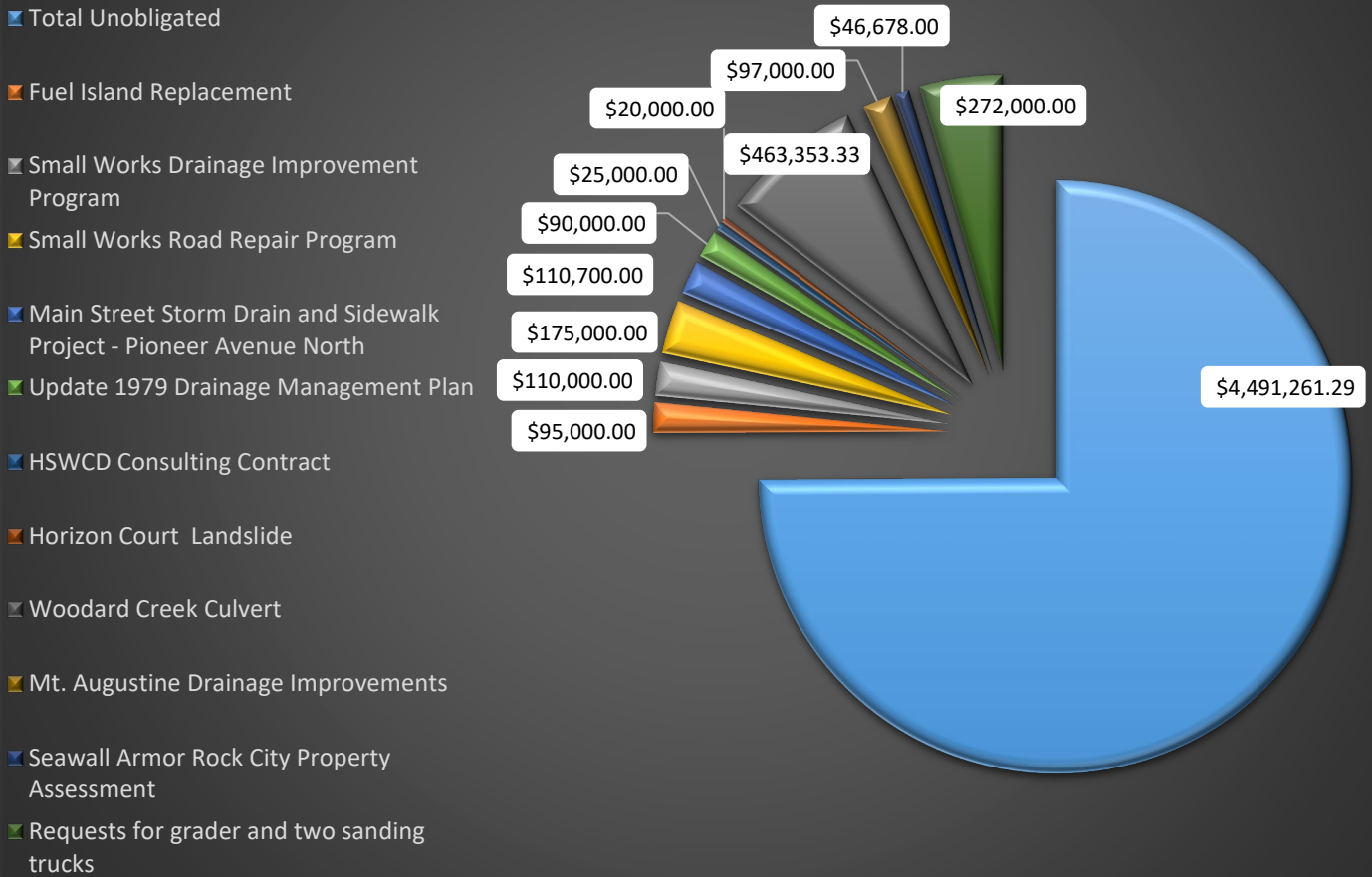
We plan to form a collaboration to conduct research about local groundwater conditions. This work will involve collecting/analyzing water well logs from as many sources as we can find, using the methodology for groundwater mapping developed by KBNEER and its affiliates, as well as the combined scientific expertise of all parties to synthesize the data and develop findings that would lead to sensible policies and implementation strategies.

We seek an appropriation of \$100,000 for this research, which would be distributed between KBNEER and Coble Geophysical as their specific scopes of work are finalized and negotiated. Since the outcomes of this work would benefit the road/drainage works as well as its water works, we propose to split the costs equally between the HART-Road Fund and the Water CARMA Fund.

Recommendations:

That \$50,000 be appropriated from the Water CARMA Fund and \$50,000 be appropriated from the HART Road Fund to fund Ground Water Research within the City Limits and Bridge Creek Reservoir Watershed.

HART Roads Obligated



Water CARMA Fund Obligated

- Total Unobligated
- Utility Financial Management
- Retrofit High Energy Light
- Design Aeration System for Skyline Water Tank
- Design Raw Water Treatment Line
- Tesoro Water Vault Upgrade
- Pressure Reducing Valve Replacement, West Truck Water Line

