

Appendix D

Alaska Department of Environmental Conservation



SFY 2018 Alaska Clean Water Actions Waterbody Specific Actions Solicited Work

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Introduction

Appendix D contains the waterbody specific actions for this year's ACWA grant solicitation. The nearest community is in parentheses next to the waterbody names for reference. For waterbody specific actions, only project proposals addressing the actions on the waters listed in the table below will be reviewed and scored.

Appendix D also contains actions for DEC-identified marine beaches. To be considered for BEACH program funding, proposals MUST demonstrate local government support and involvement. Match for BEACH waterbody actions is not required. The table below lists the priority of funding for beach projects:

Funding Priority	Beach Area
1	Nome
2	Kenai
3	Ketchikan

Use the links below to navigate directly to a specific water. Alternatively, you may scroll through the pages to the water of interest or follow the links from the table of contents. Note that the solicited action(s) for some waters may continue onto additional pages.

Waterbody Specific Actions	
Anchor River (Anchor Point)	Kenai River (Soldotna - Kenai)
Campbell Creek (Anchorage)	Ketchikan Creeks (Ketchikan)
Chena River (Fairbanks)	Lake Lucille (Wasilla)
Cottonwood Creek (Wasilla)	Nome Area Streams : Anvil Creek, Dry Creek, Glacier Creek, Nome River and Snake River (Nome)
Deshka River (tributary to Susitna River)	Noyes Slough (Fairbanks)
Beaches	
Kenai River Beaches (Kenai)	Rotary Beach Park and Settlers Cove State Recreation Site Beaches (Ketchikan)
Middle and East Beaches (Nome)	

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Waterbody Specific Actions

Waterbody: Anchor River (Anchor Point)

DEC Contact: Jeanne Swartz, jeanne.swartz@alaska.gov or (907) 269-7523

Water Quality Goal

To protect the Anchor River which is at risk from land use activities.

Water Quality Concern and Background Information: Land Use Activities

Anchor River is in the Protect and Maintain Waterbodies at Risk Track with water quality and aquatic habitat being primary concerns. In FY05, a DEC ACWA grant funded an assessment of stream bank condition on the lower Anchor River within the Anchor River State Recreation Area. Contact DEC for more information on the findings from this project. In short, the plan found a number of locations in need of restoration including Picnic Hole and 90 Hole. Picnic Hole showed sloughing and erosion on the right streambank due to foot traffic; 90 Hole showed sloughing on the left streambank which is both natural and human-caused, with increasing streambank loss continuing to occur.

Alaska Department of Natural Resources, Division of Parks and Outdoor Recreation (DNR-P&OR) plan new restoration activities on the Anchor River, adjacent to the location of the Picnic Hole and 90 Hole sites, but the DNR-P&OR activities will not address the restoration needs identified at Picnic Hole and 90 Hole.

Solicited Action to Help Reach Goal

The grantee will design a streambank restoration plan for Picnic Hole and 90 Hole on the Lower Anchor River. Proposals should allocate time and budget funding for the following:

- The grantee will prepare a design plan use appropriate restoration techniques, and include a plan for an alternate path for anglers and other visitors to access the Anchor River without damaging the streambanks. The revised site plan must be developed in conjunction with the Alaska State Parks Capital Project described above. As such, the grantee is expected to coordinate with the other project partners in both site design and construction. All permits required for site construction must be obtained by the grantee and submitted to DEC.
- During the design phase, the grantee will conduct outreach campaign to local property owners.
- The grantee will implement the planned streambank restoration activities during the second year of the project and follow up during the remainder of the grant period by making sure the vegetation is watered. The grantee will document implementation of the project by video and photographs.
- The final project summary will include a video documentary of the restoration project.

To be eligible, this action must demonstrate at a minimum, local government (Kenai Borough, Anchor Point Community) and DNR-DPOR support and involvement.

This project is eligible to apply for two year funding. The project continuation in state fiscal year 2019 is contingent upon DEC approval.

Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>. Use the templates to prepare separate work plans for each State fiscal year [FY 2018 (July 1, 2017-June 30, 2018); and FY 2019 (July 1, 2018 – June 30, 2019)].

Project Schedule:

- July 1, 2017-June 30, 2018: outreach to stakeholders on the Lower Anchor River and planning and design for the streambank restoration activities at Picnic Hole and 90 Hole.
- July 1, 2017-June 30, 2019: implementation of the planned streambank restoration project, watering vegetation on the restored sites.

Waterbody: Campbell Creek (Anchorage)

DEC Contact: Jeanne Swartz, jeanne.swartz@alaska.gov or (907) 269-7523

Water Quality Goal

To implement best management practices (BMP's) to reduce enterococci and/or fecal coliform bacteria pollution.

Water Quality Concern and Background Information

Campbell Creek is in the Waterbody Recovery Track with water quality being the primary concern due to fecal coliform bacteria pollution. The DEC originally listed the waterbody as impaired in 1990 for fecal coliform bacteria and identified urban runoff as the expected pollutant source. It was unclear at the time if the entire creek or just the urban portion of the creek was impaired. Sampling conducted in 2005 narrowed the impaired portion of the creek to just the urban area. A Total Maximum Daily Load (TMDL) was completed for both Campbell Creek and Campbell Lake in 2006.

The Alaska Department of Natural Resources (DNR) - Division of Forestry (DOF) received a grant (A Fish Needs a Forest) from the US Forest Service to restore the Campbell Creek Greenbelt by creating low-impact, sustainable public access. Partners on the grant include: the Departments of Environmental Conservation (DEC) and Fish and Game (DF&G), the Municipality of Anchorage (MOA), the U.S. Fish and Wildlife Service, and the Anchorage Park Foundation (Youth Employment in Parks and Schools on Trails programs). DEC agreed to support the project proposal by providing funding for construction of green infrastructure (GI) at two sites within the Campbell Creek watershed. The outfall at Dimond Blvd and C Street has been identified as a possible location. Other locations may be more cost-effective for managing stormwater.

In addition to the work being conducted by the DNR DOF partnership, the Municipality of Anchorage (MOA) is developing a watershed protection plan for Campbell Creek. To the extent feasible, the work being conducted under this project should complement MOA activity.

Solicited Action to Help Reach Goal

The successful grantee will become a part of the DNR lead project partnership by constructing green infrastructure at two sites within the watershed. The DEC Contact listed above can provide a copy of the DNR grant proposal. Proposals should allocate time and budget funding for the following:

- The grantee will propose to the DNR project partnership at least two sites within the Campbell Creek watershed for GI applications. The GI site proposal should include evaluation of the Dimond Blvd and C Street site as well as other potential site locations. The proposal should contain information on the proposed GI application, the volume of stormwater that may be diverted, a cost/benefit analysis, and concurrence from the landowner that the property may be used for GI.
- Once the grantee and DNR project partnership agree on project sites, the grantee will provide 80% design drawings. The design should include a detailed construction schedule, the contractor expertise needed, and the expected maintenance requirements for the sites. This more detailed analysis should enable DEC to determine if one or more sites could be constructed based on available funding.

- Further analysis should include refinement of the volume of estimated diverted water, cost estimate, and a comprehensive list of permitting requirements. It should also include a conceptual drawing for each site. The grantee will provide an overview to the DNR led collaborative on the findings at each site. If total project costs exceed \$50,000/project the grantee will develop a list of possible funding sources, including the State Revolving Fund, which could be used for the project(s).
- Once the design for the site(s) has been completed, the grantee will construct approved green infrastructure on the selected site(s).

This project is eligible to apply for two year funding. The project continuation in state fiscal year 2019 is contingent upon DEC approval.

Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>. Use the templates to prepare separate work plans for each State fiscal year [FY 2018 (July 1, 2017-June 30, 2018); and FY 2019 (July 1, 2018 – June 30, 2019)].

Project Schedule:

- July 1, 2017-June 30, 2018: selection of suitable sites for a GI installation close to the Campbell Creek greenbelt. In conjunction with the project partners, the grantee should provide a detailed cost/benefit analysis for each feasible site and provide 80% design drawings for the agreed-upon project(s).
- July 1, 2018-June 30, 2019: implementation of the planned GI project(s)

Waterbody: Chena River (Fairbanks)

DEC Contact: Chandra McGee, chandra.mcgee@alaska.gov or (907) 451-2140

Water Quality Goal

To conduct baseline monitoring of metals and other parameters commonly found in stormwater runoff, and evaluate if the Chena River is meeting water quality standards.

Water Quality Concern and Background Information: Urbanization

Chena River is in the Waterbody Recovery Track, with water quality being the primary concern due to urban run-off pollutants including sediment, petroleum, metals, and fecal coliform bacteria. Previous monitoring projects funded through the ACWA program have collected data that show that the water quality of the Chena River is meeting water quality standards for petroleum products and sediment. The Chena River has not been evaluated for metals associated with urban runoff. The current MS4 permit does not require this collection.

The City of Fairbanks and co-permittees (University of Alaska, Department of Transportation, and City of North Pole) have a Municipal Separate Storm Sewer System (MS4) permit from DEC to discharge stormwater into the Chena River. The Fairbanks North Star Borough (FNSB) also has an MS4 permit from DEC. The FNSB, City of Fairbanks, and co-permittees collaborate as part of the Fairbanks Stormwater Advisory Committee to meet permit requirements.

In 2014-2015 a multi-agency workgroup, Engaging Salcha and Chena Area Partners on Ecosystems (ESCAPE) developed the Chena River Watershed Resource Action Plan (WRAP).

See: <http://www.escapewrap.com/>. One of the actions in the plan is to “assess loading of runoff (sediment and other pollutants) from state highways, borough and city roads, and private lanes.”

Solicited Action to Help Reach Goal

The grantee will prepare a Quality Assurance Project Plan (QAPP) and Sampling Plan and implement a monitoring program for metals associated with urban runoff in the lower Chena River. The DEC Contact listed above can provide a QAPP/Sampling Plan template and examples of recently approved plans.

Proposals should allocate time and budget funding to address the following:

- As part of the QAPP/Sampling Plan Development, the grantee will be required to:
 - Research the city’s storm drain system, the existing road network, and evaluate outfall monitoring data (available from the DEC Contact) to choose in-stream sampling locations with the greatest stormwater impacts. In addition to the in-stream locations in the urban area, a control site (un-impacted upstream site) and at least two outfalls are required as part of the sampling design.
 - Create a Geographic Information System (GIS) geodatabase demonstrating spatial relationship between the storm drain system, road system, topographic contours, surface water hydrology, potential on-site pollution sources, and other factors and monitoring data; provide the data in NAD83/Alaska Albers. Deliverables include an ArcGIS geodatabase and map.
- Analyses for the following parameters will be required:
 - Surface water and outfalls: Laboratory analyses: Nitrate+nitrite-N, ammonia-N, total-phosphorous, dissolved organic carbon, sulfide, alkalinity and hardness, major

aquatic cations (Ca²⁺, Mg²⁺, Na⁺, and K⁺), major aquatic anions (Cl⁻ and SO₄²⁻), and dissolved metals (using ICP/MS analysis for the following metals: silver, aluminum, arsenic, barium, beryllium, cadmium, cobalt, chromium, copper, manganese, molybdenum, nickel, lead, antimony, selenium, thallium, vanadium, and zinc). Field measurements in situ: pH, specific conductivity, dissolved oxygen, temperature, and turbidity.

- Sediment: Mercury, methyl-mercury, copper, lead, arsenic, zinc and cadmium.
- Samples must be collected during base flow, median flow, and high flow events. Sampling must include spring snowmelt and fall storm events.
- Data Entry:
 - Review and enter data into a DEC-provided Excel spreadsheet template. DEC can provide guidance on how to use the data template.
- Required report:
 - A draft and final report are required. The report will include background information, and the project need, objectives, and approach taken to meet the project objectives. The report will evaluate and describe project accomplishments, the environmental benefit, and suggest future actions. Water quality results will be compared to the WQS and NOAA sediment screening levels, and use narrative and tabular/graphical formats to evaluate the monitoring results. The report will include a quality assurance review describing the integrity of the reported analytical results as presented in the QAPP and data quality objectives. Appendices will incorporate all project data, and appropriate references.

The grantee must collaborate with and include the Fairbanks Stormwater Advisory Committee as partners on the project.

This project is eligible to apply for two year funding. The project continuation in state fiscal year 2019 is contingent upon DEC approval.

Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>. Use the templates to prepare separate work plans for each State fiscal year [FY 2018 (July 1, 2017-June 30, 2018); and FY 2019 (July 1, 2018 – June 30, 2019)].

Project Schedule:

- Summer and Fall 2017: QAPP/Sampling Plan development and DEC approval
- Spring, Summer, and Fall, 2018: monitoring program
- December 2018: draft report
- June 2019: final report. The second year of the project is contingent upon DEC approval.

Waterbody: Cottonwood Creek (Wasilla)

DEC Contact: Laura Eldred, laura.eldred@alaska.gov or (907) 376-1855

Water Quality Goal

To conduct activities to support the removal of Cottonwood Creek from the state's list of impaired waterbodies and reduce other pollutants that could degrade water quality.

Water Quality Concern and Background Information: Urbanization and Stormwater Runoff

Cottonwood Creek is in the Waterbody Recovery Track with bacteria and stormwater being the primary concerns. The DEC has several years of fecal coliform bacteria data for Cottonwood Creek. In 2010, DEC listed Cottonwood Creek on the Clean Water Act Section 303(d) list as an impaired water for fecal coliform bacteria. DEC also completed a microbial source tracking project, "*Fecal Coliform Bacteria Source Assessment in the waters of Cottonwood Creek, Wasilla and Little Campbell Creek, Anchorage, November 2010*", which identified some of the bacteria in the creek from dog, horse, and human sources. Bacteria levels tended to increase during periods of stormwater runoff. A Total Maximum Daily Load (TMDL), or water quality recovery plan, was approved in 2015 that calculated how much bacteria Cottonwood Creek can receive and still meet state water quality standards, and suggested ways to achieve this goal.

In 2011-2012 DEC sampling of the stormwater runoff entering Cottonwood Creek identified increases in other typical urban pollutants such as sediment, specific conductivity, copper, lead and zinc.

Solicited Action to Help Reach Goal

The grantee will develop a Geographic Information System (GIS) geodatabase for the Cottonwood Creek corridor demonstrating the spatial relationship between residential/commercial waste treatment/septic, topographical contours, surface water hydrology and septic documentation to construct information using DEC's guidelines for providing geospatial data (NAD83/Alaska Albers). The grantee will digitize DEC's hard copy, on-site septic disposal system (OSDS) information for the Cottonwood Creek corridor and create a geospatial map.

This project will entail several steps in order to research, organize and map OSDS information:

- The first step will be searching the Matanuska-Susitna Borough's (MSB) parcel viewer online maps (<http://www.matsugov.us/>) along the Cottonwood Creek corridor to examine the MSB's Real Property Detail sheet.
 - If the Real Property Detail sheet shows a building on the parcel and it is not part of the City of Wasilla sewer system, then it may be assumed to have an OSDS.
- The next step is to cross-reference parcels in DEC's online Septic Tracking System (SEPTS), <http://dec.alaska.gov/Applications/Water/Septs/> for each developed parcel along the Cottonwood Creek corridor (estimated between 1,000 – 2,000 records) to obtain the documentation to construct records.
- If the record is not in the SEPTS system, the grantee will physically search the hard copy files at the DEC's Wasilla office to find the record or make a notation of no record found.
- Using the documentation to construct records, the grantee will develop a geo-referenced database for the parcels adjacent to the Cottonwood Creek corridor. This database will include, but not be limited to: parcel legal description, development status, year OSDS

installed, who installed it, type of on-site system, depth, bedfill type, distance to water, location of the tank and leach field on the parcel and, if available, the percolation test results and a link to the parcel as-built.

- A set of GIS map layers will be produced from the research conducted; (e.g. undeveloped parcels, developed parcels with documented OSDS, developed parcels with no documentation). Other readily available GIS data layers such as the Natural Resource Conservation Service soils data, the U.S. Geologic Survey's National Hydrography Dataset, the Matanuska-Susitna Borough's 2011 LiDAR data, or if available the 2017 aerial photographs, and other existing geographic datasets will be added to help better understand the relationship between OSDS and Cottonwood Creek water quality.

Overall, the project create an interactive GIS geospatial layer with parcel information for the Cottonwood Creek corridor that displays information specific to the OSDS located on that parcel, including the as-built, if available. This project is not requesting field verification on private properties. Deliverables include an ArcGIS geodatabase, maps, GIS shapefiles, metadata and other pertinent information to the DEC who will make the map layer publically available online. A project letter of support from the Matanuska-Susitna Borough is encouraged.

This is a one year project. Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>.

Project Schedule:

Project will start July 1, 2017 and end June 30, 2018.

Waterbody: Deshka River (tributary to Susitna River)

DEC Contact: Laura Eldred, laura.eldred@alaska.gov or (907) 376-1855

Water Quality Goal

To determine if the Deshka River meets water quality standards (WQS) for total aromatic hydrocarbons (TAH) using DEC's guidance: *Listing Methodology for Determining Water Quality Impairments from Petroleum Hydrocarbons, Oils, and Grease*.

Water Quality Concern and Background Information: Petroleum Hydrocarbons

Deshka River is in the Protect and Maintain Track with water quality and aquatic habitat being primary concerns. The Deshka River receives intensive motorized boat use (especially the lower 3 miles) during summer fisheries. The river also serves as a transportation corridor for boats traveling to cabins or other nearby rivers. Impacts from these activities to water quality and aquatic habitat are unknown but of concern for maintaining a healthy aquatic system.

In 2014 DEC conducted screening level water quality sampling for petroleum hydrocarbons. Results documented seasonal and localized petroleum water quality standard exceedances from motorized watercraft. Based on the screening level sampling results, more extensive water quality sampling is warranted. The previous study report is available here: <http://dec.alaska.gov/water/wqsar/pdfs/Reports/Deshka-River-2014-SamplingFinalReport-ADEC.pdf>.

Solicited Action to Help Reach Goal

The grantee will develop a Sample Plan and Quality Assurance Project Plan (QAPP) which must be approved by DEC. The DEC Contact (listed above) has recent examples that may be used with appropriate editing. The sampling plan must be designed so the data objectives and assessment results meet the requirements in DEC's *Listing Methodology for Determining Water Quality Impairments from Petroleum Hydrocarbons, Oil & Grease* <http://dec.alaska.gov/water/wqsar/waterbody/integratedreport.htm>.

The grantee will then collect water samples monitoring for petroleum hydrocarbons (total aromatic hydrocarbons to be laboratory analyzed using EPA method 624) in the lower 1 mile of the Deshka River. Monitoring sites must be the same as sites previously sampled (contact DEC for more details) or if the grantee proposes different sites, clear rationale will be provided and approved by DEC in the QAPP. The sampling plan will include 4-day (96 hour) sampling events from June to early July during the king salmon fishery and during the month of August for the silver salmon fishery. Sampling will be conducted during heavy boat traffic period(s). During each sampling event, a minimum of 20 samples will be collected at each sampling location and the sample results averaged for each day and for the entire 4-day period.

A minimum of 3 sampling locations should be proposed; sample collection will be temporally spaced to be representative of motorized boat use patterns. Sampling events will also include a visual examination for sheen. Sampling must be designed to determine whether water quality standards are being exceeded. Cost savings or project match may include in-kind services, such as partnering with ADF&G for use of their staff or equipment (e.g. motorized boat) to complete the sampling or boat surveys. Other partnerships are also encouraged and may be used as match.

Sampling events must also include data collection for: water depth, velocity, stream width, number of motorized boats, motor type, and horsepower in order to determine hydrocarbon loading for volume of water. The grantee may propose additional parameters such as stream temperature, turbidity or habitat measurements.

Following each sampling event the grantee will submit to DEC a brief sampling event summary report, a copy of the completed chain of custody forms, and a copy of the field data sheets within 48 hours of each sampling event. After each sampling event, the grantee will submit laboratory reports to DEC as soon as available.

The grantee is responsible for either directly entering their project data into the Environmental Protection Agency's (EPA) water quality database (STORET) or ensuring data collected is provided in a format that can be easily transferred to DEC's water quality database (AWQMS). The DEC Contact (listed above) will provide the grantee with the data templates and guidance on how to use the templates for this project. The grantee should budget time to become proficient in the use of the reporting data template.

The grantee will analyze all samples, evaluate results and prepare a draft and final report of findings and conclusions. The draft report will be submitted to DEC for review and comment allowing time for the grantee to incorporate requested changes and finalize the report. The report will include background information, the project need, objectives, and approach taken to meet the project objectives. The report will include a quality assurance review describing the integrity of the reported analytical results as presented in the QAPP and data quality objectives. Water quality results will be compared to the state water quality criteria for petroleum hydrocarbons, and use narrative and tabular/graphical formats to evaluate the monitoring results. Appendices will incorporate all project data, calculations used, select project photos, and appropriate references/literature cited.

This project is eligible to apply for two year funding. The project continuation in state fiscal year 2019 is contingent upon DEC approval.

Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>. Use the templates to prepare separate work plans for each State fiscal year [FY 2018 (July 1, 2017-June 30, 2018); and FY 2019 (July 1, 2018 – June 30, 2019)].

Project Schedule:

- Summer 2017 – revise QAPP and update sampling plan; receive DEC approval on QAPP
- Fall/Winter 2017 – prepare for sampling
- Spring/Summer/Fall 2018 – conduct sampling
- Fall 2018/Winter 2019 – analyze results and prepare draft reports for DEC review; conduct data entry
- Spring 2019 – finalize project report and data for submittal

Waterbody: Kenai River (Soldotna - Kenai)

DEC Contact: Jeanne Swartz, jeanne.swartz@alaska.gov or (907) 269-7523

Water Quality Goal

To meet water quality standard designated uses in July for primary water recreation, secondary water recreation and aquatic life for the Lower Kenai River, River Mile (RM) 15 to RM 5.0 due to turbidity caused by motorized boat activity.

Water Quality Concern and Background Information: Turbidity

The Lower Kenai River is in the Data Collection and Monitoring Track with water quality concerns about increased turbidity caused by motorized boat activity. The Kenai River is of great cultural and economic importance to Alaska. Several studies of the river's health have been conducted.

Beginning in 2007, a DEC-funded study ([Kenai River 2007 Petroleum Assessment](#)) included petroleum sampling and a count of boats present in the Lower Kenai River. The US Army Corps of Engineers (ACoE) also conducted a study evaluating boat-wave-induced bank erosion ([Boat-wave-induced bank erosion on the Kenai River, Alaska, 2008](#)). The ACoE study concluded "in areas of high boat traffic, such as that observed between RM 10 and 12, boat wakes are estimated to contribute the majority of computed shoreline streamflow energy during a 30-minute high-traffic window." As a result of the initial two studies, several other investigations were conducted on the level of turbidity in the Kenai River. The results of these investigations were published in a peer-reviewed report ([Turbidity Monitoring on the Lower Kenai River, 2008-2010](#)).

In 2012, the king (Chinook) salmon fishery declined and the Alaska Department of Fish and Game (ADF&G) implemented fishing closures for king salmon during the month of July in the Kenai River. Subsequently, the personal use fishery for red (Sockeye) salmon in the Lower Kenai River became more popular and motorized boat traffic patterns changed. While the fishing practices and target fish species are different since the 2007 boat count study, overall motorized boat activity does not appear to have declined. However, there is conflicting information about the numbers, types, and frequencies of travel by boats in the Lower Kenai River in July in recent years.

Solicited Action to Help Reach Goal

The grantee will design a plan to survey the number of boats on the Lower Kenai River, in the section between Eagle Rock (RM 11) and the Pillars (RM 12.6), between July 4 and 31, from a vantage point above the river. Grantees are encouraged to develop a proposal that uses both eyewitness accounts and equipment capable of recording boat activity in real time (e. g., Go-Pros® or aerial drones). The proposals should collect information in a format that is usable for later evaluation. The grantee will use eyewitness accounts and/or recordings to complete DEC-approved boat information survey forms. Boat surveys should include data necessary to evaluate boat-induced erosion such as boat design, size and numbers, motor size and type, boat traffic patterns, and boat wake impacts on the riverbank. After the surveys have been conducted, survey and recording data will be analyzed.

A draft and final report summarizing the boat count data should be provided. The report should contain an analysis of data collected during the summer 2017 and previous data. In addition boat wake data should be analyzed, if possible. The report could also contain a list of recommended actions that could reduce boat-induced erosion.

All necessary permits will be obtained by the grantee. The grantee will work with the Kenai Peninsula Borough, the Alaska Department of Fish & Game (ADF&G), the Alaska Department of Natural Resources (DNR)-State Parks and Outdoor Recreation and other partners, as necessary.

This is a one year project. Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>.

Project Schedule:

- Summer 2017 – data collection
- Fall 2017 – data analysis
- Winter 2017/2018 – Draft report
- Spring 2018 – Final

Waterbody: Ketchikan Creeks (Ketchikan)

DEC Contact: Gretchen Pikul, gretchen.pikul@alaska.gov or (907) 465-5023

Water Quality Goal

To conduct a second year of water quality monitoring and optional biotic community to assess stream health and evaluate potential trends.

Water Quality Concern and Background Information

Carlanna, Hoadley and Ketchikan Creeks are in the Data Collection and Monitoring Track with water quality and habitat being primary concerns. The waterbody is in the 2012 Integrated Report as Category 3 - data or information is insufficient to determine whether the Water Quality Standards (WQS) for any designated uses are attained. The waterbody has numerous outfalls, surface runoff, and stream bank and flow modifications. The baseline assessment titled (*Ketchikan Creeks: Stormwater Quality Assessment* (August 2014) <http://dec.alaska.gov/water/wqsar/reports.html>) concluded that ammonia and fecal coliform concentrations exist above WQS, suggesting a wastewater source. Metal concentrations of copper, zinc, and lead in the water column exceeded WQS. Copper and cadmium in creek sediments exceeded acute and chronic toxicity screening levels from the National Oceanic and Atmospheric Administration (NOAA) Screening Quick Reference Tables (SQuiRT). Data show a decreasing trend in stream health. In addition, Juvenile Coho salmon were found with atypical parr markings (cause undetermined).

Solicited Action to Help Reach Goal

The grantee will update the Quality Assurance Project Plan (QAPP)/Sampling Plan using the first year baseline study results and DEC's Listing Methodology for Determining Water Quality Impairments from Pathogens (<http://dec.alaska.gov/water/wqsar/waterbody/integratedreport.htm>). In order to complete a monitoring plan within one field season (during the same calendar year), the sampling plan should include sampling events in spring, summer and fall 2018. At minimum, the monitoring must capture all of the components included in the first year baseline study with the following changes: no polyaromatic hydrocarbon sediment analytical tests are required, *Escherichia coli* (E.coli) water analytical tests must be conducted in addition to fecal coliform testing, and the sediment monitoring must be designed to evaluate sediment concentrations in creek segments with and without storm drain sediment basins. Sample locations must mirror the locations from the baseline assessment (total of 7-10 creek samples, 3-5 outfall samples and 3 background references) and capture all flow regimes (spring flow, summer base flow and fall storm event).

In addition, the grantee must include sampling and analysis for all the parameters necessary for the EPA's Biotic Ligand Model <https://www.epa.gov/wqs-tech/copper-biotic-ligand-model>, such as temperature, major aquatic cations (Ca^{2+} , Mg^{2+} , Na^+ , and K^+), major aquatic anions (Cl^- and SO_4^{2-}), sulfide, pH, alkalinity, and dissolved organic carbon. The grantee must use laboratory analytical method 1603 for *E. coli* in water by membrane filtration using modified mTEC (Standard Methods for Water and Wastewater, 21st or online edition).

Proposals may include biotic assessments to document stream health and determine if parr marks on Coho salmon fry are abnormal or a normal variation. A separate budget should be prepared for the biotic assessment work.

- The grantee will prepare a draft and final report evaluating results against state water quality standards and NOAA sediment screening levels. The report should include potential pollutant sources, data evaluation, QA review, conclusions and recommendations to address any parameters that exceed water quality standards or NOAA screening levels. The grantee will also provide narrative and tabular/graphical formats to evaluate the monitoring results. Incorporate all project data and appropriate references in the report appendices.
- The grantee will review the analytical data and enter the data into a DEC-provided Excel spreadsheet template.
- The grantee will also develop a Geographic Information System (GIS) geodatabase demonstrating spatial relationship between residential/public waste treatment and septic, topographic contours, surface water hydrology, potential on-site pollution sources, and beach survey data; provide the data in NAD83/Alaska Albers.

The grantee will conduct meetings and/or teleconferences with the community, Ketchikan Indian Association, City of Ketchikan, and Ketchikan Gateway Borough before and after sampling to discuss the sampling plan and results. A letter of project support must be provided from the City of Ketchikan and Ketchikan Gateway Borough. All necessary permits will be obtained by the grantee.

This project is eligible for two year funding. The project continuation in state fiscal year 2019 is contingent upon DEC approval.

Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>. Use the templates to prepare separate work plans for each State fiscal year [FY 2018 (July 1, 2017-June 30, 2018); and FY 2019 (July 1, 2018 – June 30, 2019)].

Project Schedule:

- Fall 2017: QAPP/Sampling Plan
- Spring, Summer, and Fall, 2018: monitoring program
- June 2018: ArcGIS geodatabase and map, and interim project report
- June 2019: final report

Waterbody: Lake Lucille (Wasilla)

DEC Contact: Laura Eldred, laura.eldred@alaska.gov or (907) 376-1855

Water Quality Goal

To meet water quality standards for copper, lead, zinc and polycyclic aromatic hydrocarbons (PAH) in the lake bed sediments at both stormwater outfall discharge areas and to increase the dissolved oxygen levels in the lake water column.

Water Quality Concern and Background Information: Urbanization

Lake Lucille is in the Waterbody Recovery Track with water quality being a primary concern. In 1994 the Department of Environmental Conservation (DEC) listed Lake Lucille on the Clean Water Act Section 303(d) list as impaired for low dissolved oxygen from high amount of nutrients (specifically phosphorous). Increased phosphorus loading has led to a reduction in dissolved oxygen. In 2002, a Total Maximum Daily Load (TMDL), or water quality recovery plan, was completed. The City of Wasilla began using a "weed harvester" in summer of 2016 to reduce aquatic vegetation. This may also help increase the lake's dissolved oxygen level.

In 2004 and 2005 DEC documented seasonal and localized exceedances of water quality standards for petroleum hydrocarbon. One possible pollutant source is motorized watercraft used for recreation in the lake, especially near the public boat launch.

Lake Lucille is also a receiving water for the Alaska Department of Transportation (DOT) and City of Wasilla's stormwater drainage system. There are two active stormwater discharge outfalls into Lake Lucille along the north shore. One is in the east end of the lake and the other in the west end. Stormwater quality studies conducted by DEC in 2011 and 2013 indicate metals (copper, lead and zinc) and PAH pollution in the lake bed sediment are above recommended levels for aquatic life. The areas of concern are at each outfall discharge point and extend several meters across the lake bed.

During storm events, PAH, soils, oils and grease, salts, and metals are washed from parking areas, roads, and yards, to storm drains that discharge into Lake Lucille. These pollutants collect on roadways and parking areas and are then mobilized during times of stormwater runoff. The east outfall is managed by the City of Wasilla and includes pretreatment by piping the first surge of stormwater to the Iditapark infiltration basins to the north until flow exceeds the pipe's capacity; stormwater is then directly discharged to the lake. The west outfall is managed by the DOT and is a direct discharge only. The volume of discharge from the storm drains is unknown.

The metals copper, lead, and zinc, and PAH can deposit into lake bed sediments and over time act as long-term reservoirs of these pollutants. Sources of copper include the wearing of brake linings, combustion of lubricating oils, corrosion of building materials, and wear of bearings and bushings. The main sources of lead are from gas-powered vehicles, gasoline additives, and wearing of vehicle tires. Sources of zinc include wearing of tires, brake pads, and corrosion of building materials and culverts. Sources of PAH include automobile and truck exhaust, lubricating oils and grease, wearing of road surfaces, coal tar and creosote, among others.

Lake Lucille study reports are available on the DEC webpage: <http://dec.alaska.gov/water/wqsar/reports.html>.

Solicited Action to Help Reach Goal

The grantee will develop a Lake Lucille stormwater management plan designed to reduce the amount of metals and PAH being discharged through the two stormwater outfalls into the lake. The Lake Lucille Stormwater management plan will document and evaluate stormwater management options (structural, non-structural and retrofitting) for reducing the pollutants (especially sediment) entering Lake Lucille from stormwater discharges. The management plan will include a discussion of options to restore lake water quality including, for each option:

- a description of the restoration option,
- tasks needed to implement (e.g., field assessments, new ordinances, etc.),
- a cost estimate,
- responsible entities for implementation,
- long-term maintenance needs,
- projected pollutant reductions (load reductions),
- benefits of receiving waters, and
- other environmental and public health benefits including aesthetic appeal of any structural improvements.

The plan will also identify potential funding sources such as the State Revolving Fund. The stormwater management plan will consider innovative approaches such as green infrastructure and other similar approaches as they may provide more environmentally sustainable solutions.

The plan will outline actions needed to reach the goal of healthier water quality in Lake Lucille through best management practices to reduce stormwater pollution. To be eligible, this action must demonstrate at a minimum, local government (City of Wasilla) and Alaska Department of Transportation (DOT) support and involvement.

This is a one year project. Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>.

Project Schedule:

Project will start July 1, 2017 and end June 30, 2018.

Waterbodies: Nome Area Streams: Anvil Creek, Dry Creek, Glacier Creek, Nome River and Snake River (Nome)

DEC Contact: Chandra McGee, chandra.mcgee@alaska.gov or (907) 451-2140

Water Quality Goal

To collect and evaluate the historical water quality data in order to design a site specific sampling plan.

Water Quality Concern and Background Information: Turbidity

The Nome Area Streams are in the Data Collection and Monitoring Track with water quality and habitat as the primary concerns. Threats include sedimentation, turbidity, and metals. Other concerns include barriers to fish passage, bank erosion and riparian damage.

Solicited Action to Help Reach Goal

The grantee will research and collect all available background information on water quality for selected waterbodies in the Nome area. This project involves collection of existing data and does not include collection of any new field data.

The data inventory must include the following:

- Database searches and water quality information solicited from local organizations, universities, state and federal agencies and other relevant information sources
- Literature review of information sources and published reports,
- Contaminant source inventory,
- Evaluation of current land use, and
- Compilation of currently permitted activities in each watershed.

Once data is collected, the grantee will compile the information and prepare a draft and final report. The report must include:

- A summary of historical data, identification of data gaps, and recommendations for future data collection,
- An annotated bibliography with summaries of all data sources (including unpublished information and personal communications), and
- A Geographic Information System (GIS) geodatabase demonstrating spatial relationships with current land use, permitted activities, potential pollution sources, topographic contours, surface water hydrology, and historical water quality data. The geodatabase must be provided in NAD83/Alaska Albers. Deliverables include an ArcGIS geodatabase and map(s).

To the extent feasible, electronic and hard copies of the original information summarized in the report will be copied and compiled for inclusion in DEC's files on those waterbodies. Several waterbodies are included on this solicitation and the applicant should submit one proposal to address this action for all of the waterbodies (i.e., Anvil Creek, Dry Creek, Glacier Creek, Nome River and Snake River).

This is a one year project. Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>.

Project Schedule:

Project will start July 1, 2017 and end June 30, 2018.

Waterbody: Noyes Slough (Fairbanks)

DEC Contact: Chandra McGee, chandra.mcgee@alaska.gov or (907) 451-2140

Water Quality Goal

To reduce dumping of trash into the slough and meet water quality standards for residues (debris).

Water Quality Concern and Background Information: Urbanization

Noyes Slough is in the Waterbody Recovery Track with water quality being the primary concern due to urban run-off and debris. There are no setback requirements in the Fairbanks area to protect against loss of riparian area. Riparian areas serve as a buffer that filter sediment and other pollutants from run-off before it enters waterbodies. A Total Maximum Daily Load (TMDL) for residues was completed in 2008 and a TMDL for petroleum hydrocarbons, oils and grease was completed in 2011. A copy of the TMDL is available

here: http://dec.alaska.gov/water/tmdl/pdfs/Noyes_Slough_oil_and_grease_TMDL_Final_10-7-11.pdf

Since 2005, the City of Fairbanks and co-permittees have organized an annual Stream Clean-Up as one of the requirements of their Municipal Separate Storm Sewer System (MS4) permit. The Tanana Valley Watershed Association (TVWA) conducted an evaluation of the trash pulled out of the slough from this annual event in 2016 and created a final report that includes past clean-up efforts, current status, and recommendations for decreasing dumping trash in the slough.

Solicited Action to Help Reach Goal

The grantee will use TVWA's draft final report (ACWA Grant 17-09) to design a project which implements the report recommendations to reduce trash dumping in Noyes Slough. Contact Chandra McGee (contact above) for a copy of this report. The grantee must partner with the City of Fairbanks and MS4 co-permittees on the project.

This is a one year project. Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>.

Project Schedule:

Project will start July 1, 2017 and end June 30, 2018.

BEACH Project Waterbody Actions

Waterbody: Kenai River Beaches (Kenai)

DEC Contacts: Jeanne Swartz, jeanne.swartz@alaska.gov or (907) 269-7523, or Gretchen Pikul, gretchen.pikul@alaska.gov or (907) 465-5023

Water Quality Goal

To assess coastal recreational waters for disease-causing microorganisms (enterococci and/or fecal coliform bacteria), and reduce risks of disease to recreational beach users.

Water Quality Concern and Background Information:

Alaska's BEACH Program was established in response to the Beaches Environmental Assessment and Coastal Health (BEACH) Act authorized by Congress, amending the Clean Water Act. The program provides grants and support to local communities, tribal governments, and watershed councils to sample recreational marine beach water for organisms (fecal coliform and enterococci bacteria) that indicate the presence of fecal contamination. The program helps to prevent illnesses that could result from exposure to contaminated beach water, by notifying the public in the event that a beach sample exceeds the allowable levels. More information on the Alaska Beach Program is available on the DEC webpage <http://dec.alaska.gov/water/wqsar/wqs/beachprogram.htm>.

Data from 2010 through 2014 demonstrates that the City of Kenai public use beaches regularly exceed water quality standards for fecal coliform and enterococci during the July personal use fishery (PUF). The majority of the bacteria pollution is from gull feces. Gulls are attracted to the north and south Kenai River beaches by unnaturally large quantities of fish waste present during the fishery. For more information see the *Water Quality Assessment of the Kenai River Watershed from July 2000 to July 2014*. (<http://dec.alaska.gov/water/wqsar/reports.html>)

Solicited Action to Help Reach Goal

The grantee will continue recreational beach monitoring at the north and south Kenai River beaches, Warren Ames Bridge, and upstream and downstream of the gull colony. Monitoring should be designed to determine background conditions and detect exceedances of enterococci (ASTMD-6503-99 by Most Probable Number) and fecal coliform bacteria criteria (SM9222-D by Membrane Filtration). The grantee will conduct water quality bacteria sampling before, during, and following the 2018 personal use dipnet fishery (PUF), and in accordance with a DEC-approved Quality Assurance Project Plan (QAPP). The previously approved QAPP and BEACH Monitoring Handbook must be updated.

The grantee must also plan to monitor field sites during one field season (and in the same calendar year). As part of the monitoring, the grantee must conduct six (6) sampling events starting mid-June (SFY2018) and 14 sampling events in July through August (SFY2019). Collect duplicate samples for each analyte per event. Conduct two sampling events each week including one event on Sunday. Collect sampling throughout one 24-hour high use period to evaluate trends of bacteria concentrations, tide cycles, bird count, and recreational users.

The grantee must also conduct sanitary surveys of areas near and upriver of the beaches prior to the start of PUF, and during each sampling event. In addition to fecal coliform bacteria and enterococci analysis, information on the Environmental Protection Agency's mobile app:

Marine Beach Sanitary Survey <https://www.epa.gov/beach-tech/beach-sanitary-surveys#app> should be completed by the grantee.

The grantee must submit sanitary surveys, site photos, chain-of-custody forms, and preliminary analytical data to the DEC within 36 hours of sampling. Final analytical data must be submitted within 10 days of sampling.

A portion of the award includes communication about the beach program and the sampling results to the Kenai community. Communication should include public service announcements via radio, local newspaper and social media. A previously produced radio announcement should be used. Coordinate with DEC, ADF&G and City of Kenai to distribute the existing educational materials (the City of Kenai's, "Kenai River Personal Use Fishery General Information" brochure and DEC's, "Protect Your Health While Dipnetting" pamphlet) to PUF participants. Consider developing a short video (e.g., Go-Pro) for website and social media posting. If an exceedance occurs, the grantee will work with DEC, the Department of Public Health and Social Services, and the City of Kenai to inform the public.

The grantee must prepare an interim report, draft, and final comprehensive reports for DEC review. The reports should include potential sources, data evaluation (use the recently revised Marine and Water Quality Indicator Criteria) and QA review, conclusions and recommendations to reduce the amount of bacteria in the river. The grantee will also enter the data into a DEC-provided Excel spreadsheet template, incorporating all project data and appropriate references as appendices.

The grantee will develop a Geographic Information System (GIS) geodatabase demonstrating spatial relationship between residential/public waste treatment, septic systems, topographic contours, surface water hydrology, other potential on-site pollution sources, and beach survey data; provide the data in NAD83/Alaska Albers.

The grantee will conduct a meeting with interested local representatives to discuss the results and any further actions.

A letter of project support must be provided from the City of Kenai. All necessary permits will be obtained.

This project is eligible for two year funding. The project continuation in state fiscal year 2019 is contingent upon DEC approval.

Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>. Use the templates to prepare separate work plans for each State fiscal year [FY 2018 (July 1, 2017-June 30, 2018); and FY 2019 (July 1, 2018 – June 30, 2019)].

Project Schedule:

- Fall 2017: QAPP and Handbook
- June 2018; SFY2018 and July-August 2018; SFY2019: monitoring program
- June 2018: geodatabase and map, and interim project report

- May 2019: draft report and
- June 2019: final report
- Duration: educational outreach

Waterbody: Middle and East Beaches (Nome)

DEC Contact: Gretchen Pikul, gretchen.pikul@alaska.gov or (907) 465-5023

Water Quality Goal

To assess coastal recreational waters for disease-causing microorganisms (enterococci and/or fecal coliform bacteria), and reduce risks of disease to recreational beach users.

Water Quality Concern and Background Information

Alaska's BEACH Program was established in response to the Beaches Environmental Assessment and Coastal Health (BEACH) Act authorized by Congress, amending the Clean Water Act. The program provides grants and support to local communities, tribal governments, and watershed councils to sample recreational marine beach water for organisms (fecal coliform and enterococci bacteria) that indicate the presence of fecal contamination. The program helps to prevent illnesses that could result from exposure to contaminated beach water, by notifying the public in the event that a beach sample exceeds the allowable levels. More information on the Alaska Beach Program is available on the DEC webpage <http://dec.alaska.gov/water/wqsar/wqs/beachprogram.htm>.

Solicited Action to Help Reach Goal

The grantee will continue recreational beach monitoring at Middle and East Beaches to determine if fecal coliform bacteria and enterococcus exceed recreational water quality criteria on these Tier 1 beaches. The goal is to increase public awareness of potential sources and health risks associated with bacterial contamination.

The grantee will conduct sampling for fecal coliform bacteria (SM9222-D by Membrane Filtration) and enterococci (ASTMD-6503-99 by Most Probable Number) from July through September 2017, May and June 2018 (FY 2018), and July 2018 through September 2018 (FY 2019). Sample in accordance with the DEC-approved QAPP/Sampling Plan and BEACH Monitoring Handbook.

The grantee will conduct 13 sampling events from July through September, and seven sampling events in May and June 2018, with duplicate samples for each analyte per event. The grantee will collect weekly water quality samples during high recreational use, and analyze at a DEC-approved laboratory. The monitoring season may be adjusted in the event of an exceedance in order to accommodate the need for additional sampling.

The grantee will conduct sanitary surveys of the beaches and surrounding areas and obtain site photographs. In addition to the fecal coliform bacteria and enterococci analysis, information on the Environmental Protection Agency's mobile app, *Marine Beach Sanitary Survey*, should be updated: <https://www.epa.gov/beach-tech/beach-sanitary-surveys#app>

The grantee must submit sanitary surveys, site photos, chain-of-custody forms, and preliminary analytical data to the DEC within 36 hours of sampling. Submit final analytical data within 10 days of sampling.

The grantee must also communicate the beach program and sampling results to the Nome community. Communication should include public service announcements via radio, local newspaper and/or social media. Consider developing a short video (e.g., Go-Pro) for website and social media posting. If an exceedance occurs, work with DEC, the City of Nome (Middle Beach landowner) and private landowners at East Beach, Nome Eskimo Community, to determine how best to reduce risk to recreational users and inform the public.

The grantee will prepare an interim report, draft, and final comprehensive reports for DEC review. The report should include potential sources, data evaluation (use the recently revised Marine and Water Quality Indicator Criteria) and QA review, conclusions and recommendations to reduce the amount of bacteria (if needed). The grantee will enter the data into a DEC-provided Excel spreadsheet template and incorporate all project data and appropriate references as appendices.

The grantee will develop a Geographic Information System (GIS) geodatabase demonstrating spatial relationship between residential/public waste treatment, septic systems, topographic contours, surface water hydrology, potential on-site pollution sources, and beach survey data. Provide the data in NAD83/Alaska Albers.

This project is eligible for two year funding. The project continuation in state fiscal year 2019 is contingent upon DEC approval.

Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>. Use the templates to prepare separate work plans for each State fiscal year [FY 2018 (July 1, 2017-June 30, 2018); and FY 2019 (July 1, 2018 – June 30, 2019)].

Project Schedule:

- July 2017 and May 2018: Revised QAPP/Sampling Plan and Handbook
- July-September 2017; and May and June 2018, SFY2018; and July-September 2018, SFY2019: monitoring program
- June 2018: ArcGIS geodatabase and map, and interim project report
- June 2019: final report
- Duration: educational outreach

Waterbody: Rotary Beach Park and Settlers Cove State Recreation Site Beaches (Ketchikan)

DEC Contact: Gretchen Pikul, gretchen.pikul@alaska.gov or (907) 465-5023

Water Quality Goal

To assess coastal recreational waters for disease-causing microorganisms (enterococci and/or fecal coliform bacteria), and reduce risks of disease to recreational beach users.

Water Quality Concern and Background Information:

Alaska's BEACH Program was established in response to the Beaches Environmental Assessment and Coastal Health (BEACH) Act authorized by Congress, amending the Clean Water Act. The program provides grants and support to local communities, tribal governments, and watershed councils to sample recreational marine beach water for organisms (fecal coliform and enterococci bacteria) that indicate the presence of fecal contamination. The program helps to prevent illnesses that could result from exposure to contaminated beach water, by notifying the public in the event that a beach sample exceeds the allowable levels. More information on the Alaska Beach Program is available on the DEC webpage <http://dec.alaska.gov/water/wqsar/wqs/beachprogram.htm>.

Rotary Beach Park and Settlers Cove State Recreation Site are high use recreational beaches. Rotary Beach Park is situated close to downtown Ketchikan, and is used by tourists and local residents. The beach is a popular swimming area with a cement causeway allowing tidewaters to enter and warm in a 'protected pond' area. The beach also serves as a cockle harvest area in cooler months. Settlers Cove State Recreation Site includes a campground and public use cabin, and is mainly used by local residents. Recreational activities include kayaking, fishing, and shellfish and kelp harvesting. This is also the site for the Ketchikan Indian Community phytoplankton/shellfish PSP monitoring.

Solicited Action to Help Reach Goal

This project requires that the grantee begin recreational beach monitoring at Rotary Beach Park and Settlers Cove State Recreation to determine if fecal coliform bacteria and enterococcus exceed recreational water quality criteria on these Tier 1 beaches. The goal is to increase public awareness of potential sources and health risks associated with bacterial contamination.

The grantee must also conduct water quality bacteria sampling in May and June 2018 in accordance with a DEC-approved Quality Assurance Project Plan (QAPP)/Sampling Plan and BEACH Monitoring Handbook. An example of a generic QAPP/Sampling Plan and BEACH Monitoring Handbook can be found at <http://dec.alaska.gov/water/wqsar/wqs/beachprogram.htm>.

The grantee must collect weekly water quality samples for fecal coliform bacteria (SM9222-D by Membrane Filtration) and enterococci (ASTMD-6503-99 by Most Probable Number) during high recreational use periods. The grantee must use a DEC-approved laboratory for analysis. Conduct 7 sampling events between May and June 2019; obtain duplicate samples for each analyte per event. The monitoring season may be adjusted in the event of an exceedance in order to accommodate the need for additional sampling.

The grantee must also conduct sanitary surveys of the beaches and surrounding areas. Photograph the area prior to initiating monitoring and during each sampling event. In addition to fecal coliform

bacteria and enterococci analysis, information on EPA mobile app *Marine Beach Sanitary Survey* <https://www.epa.gov/beach-tech/beach-sanitary-surveys#app> should be completed by the grantee.

The grantee is required to submit sanitary surveys, site photos, chain-of-custody forms, and preliminary analytical data to DEC within 36 hours of sampling. Submit final analytical data within 10 days of sampling.

Communication about the beach program and sampling results to the Ketchikan community is also a part of this project. Communication should include public service announcements via radio, local newspaper and/or social media. Consider developing a short video (e.g., Go-Pro) for website and social media posting. If an exceedance occurs, work with the Ketchikan Gateway Borough (landowner), Alaska Department of Natural Resources (landowner), City of Ketchikan, Ketchikan Indian Association, and DEC to determine how best to reduce risk to recreational users and inform the public.

The grantee will prepare an interim report, draft, and final comprehensive reports for DEC review. The reports should include potential sources, data evaluation (use the recently revised Marine and Water Quality Indicator Criteria) and QA review, conclusions and recommendations to reduce the amount of bacteria (if needed). The grantee must enter the data into a DEC-provided Excel spreadsheet template. Incorporate all project data and appropriate references as appendices.

The grantee is responsible for developing a Geographic Information System (GIS) geodatabase demonstrating spatial relationship between residential/public waste treatment, septic systems, topographic contours, surface water hydrology, potential on-site pollution sources, and beach survey data; provide the data in NAD83/Alaska Albers.

The grantee must also conduct a meeting with interested local representatives to discuss the results and any further actions. A letter of project support must be provided from the Ketchikan Gateway Borough, Alaska Department of Natural Resources, and City of Ketchikan be submitted with the grant application. All necessary permits will be obtained.

Project proposals must use the solicitation's work plan template for Objectives, Tasks, and Deliverables and the financial spreadsheet template for detailed costs per task based on the requested action <http://dec.alaska.gov/water/acwa/onlineACWAapp.htm>.

Project Schedule:

- Fall 2017: QAPP/Sampling Plan and Handbook
- May-June 2018; SFY2018: monitoring program
- June 2018: geodatabase and map and project report