



Ethan Berkowitz, Mayor

2017 Stormwater Outreach Public Education and Involvement APDES Permit No. AKS-052558

**MUNICIPALITY OF ANCHORAGE
WATERSHED MANAGEMENT PROGRAM**

February 2017

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Public Education and Involvement
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WATERSHED MANAGEMENT PROGRAM

February 1, 2018

Prepared for: Municipality of Anchorage
Watershed Management Services

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Final Report for Year Two Activities

by Anchorage Waterways Council

on

the Municipality of Anchorage's

APDES MS4 Stormwater Discharge Permit,

AKS-05258 2015-2020

By Cherie Northon, Ph.D, Executive Director

February 1, 2018

**Final Report for Year Two Activities by Anchorage Waterways Council on
Municipality of Anchorage APDES MS4 Stormwater Discharge Permit, AKS-05258, 2015-2020**

The following “parts” of the APDES AKS-05258 permit are in the 2015-2020 contract with Anchorage Waterways Council for services. This is the final report for work completed in Year Two. All backup documentation is being provided.

Part 2.7.1 & 2.7.2—Evaluate at least two watershed plans – under “General Requirements” by fourth year.

“Chester Creek Watershed Plan – 2014”

AWC updated the action plan, and during Year Two there was less progress in the Chester Creek watershed than the previous year.

- The Chester Creek culverts in Table 6.1 that are noted as needing to be upgraded were reviewed against ADF&G’s Fish Passage Improvement Program (FPIP) interactive mapper.
- Bank restoration at Valley of the Moon Park which was completed by YEP in 2013 was re-evaluated. Despite replanting, the addition of steps to direct people to the creek to reduce bank trampling, and temporary fencing, the area remains similar to as it was.
- A letter was sent by AWC to the Ambergate neighborhood providing instructions on how to better take care of Chester Creek which runs through their backyards.

“Little Campbell Creek Watershed Management Plan – 2007”

AWC evaluated the 2017 progress in the LCC Watershed plan:

- Over the last year the most significant project was the replacement of the original culverts under the New Seward Highway that carried the north and south forks of Little Campbell Creek west by large box culverts which were functioning as of 11/1/17.

Part 2.7.3—“Complete scoping document for one watershed plan” by fifth year.

The Campbell Creek Watershed Plan committee did not meet during 2017, although work is progressing by AWC staff who are gathering information for the plan.

- AWC consulted with Maeve Nevins Lavtar of the MOA’s Parks and Recs Department regarding trail improvements on Campbell Creek which were impacting access and bank stability. The improvements cover the trail between Northwood Dr. and C St.
- Work accomplished by Youth Employment in Parks (YEP) on bank restoration through the Division of Forestry’s Community Forestry Program. This year YEP worked on Campbell Creek between the Old Seward and Dimond including removal of invasive plants, streambank stabilization, and public education on creek stewardship.
- Field work on the only 3 culverts located on Campbell Creek was done.

Part 3.3.3—“Evaluate animal facility program” by third year

During Year Two, the balance of the 78 commercial animal facilities identified in Year One were visited as well as some new ones that had recently come into existence.

- One of the Action Items in the Little Campbell Creek Watershed Management Plan (2007) that involves animal facilities is under “Aquatic Habitat”, 3.1, Ensure fish passage through Alaska Zoo. This was completed by September 2015 when a 60’ culvert had been replaced on zoo property as well as another culvert located on a private driveway nearby. According to the 2008 HDR report and observations by Dr. Eley in 2017, a severely perched culvert remains upstream of the zoo’s eastern boundary which negates the downstream improvements.
- Two other issues at the zoo were reviewed in 2017 by field work and water quality testing:
 - One was the diversion of water to the Anchorage Golf Course from a 1987 withdrawal agreement at the west end of the zoo that may be causing LCC to go dry periodically.
 - The other was the probable input of fecal material from zoo animals (mainly the brown bears) as runoff into Little Campbell Creek.
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Part 3.6.1—“Public Education and Involvement” annually

AWC promotes public education on stormwater by focusing on a variety of topics that affect water quality. The primary ones are pet waste; waterfowl feeding; the application of fertilizers, herbicides, and pesticides; the disposal of green waste; snow melt chemicals and snow removal; residential vehicle repairs and car washing; and hazardous waste and materials. These are accomplished through a variety of avenues: events, social media, e-newsletters, mailings, presentations, and regular TV/radio/news media.

Pet Waste

- AWC tables at all major pet events, i.e. Dog Jog, Pawstice, and Pucks and Paws as well as other opportunities, including Earth Day, Potter Marsh Day, the Fish Creek Festival, and the Sears Mall Spring Garden Show.
- This year AWC four hour-long lectures over 4 weeks in the fall on Anchorage’s water to several hundred adults. Topics discussed included the hydrologic cycle, the Clean Water Act, stormwater runoff, APDES, water pollution, point and non-point pollution, common forms of water pollution in Anchorage stormwater, fecal coliform bacteria (*E.coli*) and problems with *E. coli* contamination, Cuddy Pond, water quality monitoring, erosion by water, stream and river behavior, and being a citizen watch-dog for water issue problems.
- AWC also responds to complaints about dog poop.
 - Multi-family residences, condo associations, apartments, neighborhoods, individuals
 - Door hangers, signs, brochures
- AWC has been awarded grants to add additional pet waste stations (ADEC, Anchorage Park Foundation) to the Municipality. These are mapped during updates in a GIS which is provided to the MOA.
- STP Committee meetings are convened by AWC annually.
- AWC generates media stories on radio and TV and in the newspaper.
- AWC does selective mailings to pet-related businesses to offer help and resources
- Scoop the Poop is on Social media (Facebook
 - Facebook “reaches” are tallied annually. From January 1, 2017 to December 31, 2017, AWC Scoop the Poop posts have reached over 3,200 people

- Schools are visited for Scoop the Poop outreach.
- Stationary locations are provided with Scoop the Poop information. In 2017 approximately 1,000 rack cards were placed at various locations including Alaska Mill and Feed, Alaska Veterinary Clinic, and David Jensen Photography.

Waterfowl Feeding

By July 2016, BMPs had been put into place at Cuddy Park to reduce humans feeding waterfowl. They consisted of four interactive signs, extensive landscape work and fencing was done by MOA Parks and Rec, and five bus signs were placed on PeopleMover buses for 17 weeks in summer 2016.

- In summer 2017, 5 buses ran for 7 weeks paid for from APDES funds.
- By the end of summer 2017, fecal coliform counts from the middle of Cuddy pond were under the Alaska State Standards for secondary contact recreation (200 FC/100 ML).

Yard Chemicals (Ice melt, fertilizers, pesticides, herbicides)

Tabling at the annual Sears Mall Spring Garden Show, Alaska Botanical Garden events, and appropriate venues such as Earth Day focused on yard chemicals.

- During 2017, AWC created a large watershed map to use at tabling and other events. People are asked to place an adhesive dot on the map showing which watershed they live in to evaluate their sense of watersheds.

News Media

During 2017, AWC participated in 8 television and newspaper stories.

AWC E-Newsletters

AWC put out 8 e-newsletters associated with APDES outreach during 2017, and there were 1,106 “opens” as well as hundreds of others that were reached through Facebook.

The newsletters were also posted at least on Facebook (www.facebook.com/anchoragewaterways/) and reached hundreds of others through this manner.

Social Media

Facebook posts from AWC on watershed issues have reached over 25,000 viewers this year. As with the Scoop the Poop posts, we are now spending money boosting posts which has resulted in a much greater reach for a minimal cost.

Part 3.6.3—“APDES Annual Meeting” each year

Anchorage Waterways Council made a presentation at the 2017 APDES Annual Meeting on March 29, 2017, at the BP Center. AWC produced a poster for this meeting titled, "Why do creeks turn orange, red, or brown?".

Conclusion

During Year Two of the 2015-2020 APDES permit, AWC focused on areas that had been prioritized after the review of Year One. Implementation of tasks was also sparked by the action items in the two watershed plans. There were some action items in the plans that AWC was the lead on, such as outreach targeting specific groups along creeks on issues, assessing and documenting success (or not) on action items that had been completed, and creating some resources, such as a public access map along Little Campbell Creek.

AWC continues to find that printed materials, such as rack cards in stationary locations, are not that likely to be picked up and read. To the contrary, bus signs tend to hit a smaller audience although they do have a good impact as suggested in the face-to-face Cuddy surveys. As was realized last year, social media and the regular media are probably a much better way to get information out, and AWC will continue to expand efforts in these areas. Tabling, which is mostly a one-on-one situation, is also effective, but reaches a much smaller audience. Regardless, it is an important tool. An array of outreach methods is definitely the best means of reaching a broader audience.

AWC is looking forward to Year Three on the APDES permit and has already started working on new outreach areas as well as continuing the current projects.

Watershed Plan Evaluation

Little Campbell Creek
Watershed Management Plan
Updates: 9/15/13, 11/15/16, and 11/1/17
By
Anchorage Waterways Council

Water Quality

Goal: Improve overall water quality in Little Campbell Creek and prevent further degradation.

Strategy: Identify and implement projects that reduce sediment and other pollutants by reducing point and non-point sources.

Priority	Implementation Strategy	Action Items	Anticipated Start/End	Cost Estimate	Evaluation Methods/Milestones
1	1.1. Identify and analyze LCC subbasins, stream banks and channel for hydrologic, sediment and other select pollutant contributions. Prioritize to mitigate quantified impacts above reference condition.	<ul style="list-style-type: none"> • Verify/modify current subbasin delineation • Model pollutant/stormwater runoff with SWMM using values and select pollutants from Chester Creek model with ditch areas added • Determine subbasins with most pollutants/stormwater runoff and map • Evaluate sediment contribution by stream banks/channel and compare to a stable reference condition • Determine erosion rates on stream and if it is above a reference condition and map • Prioritize subbasins/ channel issues by cost/benefit and strategize mitigation measures 	<i>Start:</i> 2009 <i>End:</i> 2012	\$150k for modeling and FWS assistance with WMS staff on sediment estimates	<i>Milestones:/</i> <ul style="list-style-type: none"> - RFP to WTF/WMS for review - Obtain Funding - Report and Map - WTF formal recommendation - Selection of top three projects.
2	1.2. Based on results identified in 1.1a prioritization, implement first three projects.	<ul style="list-style-type: none"> • Design (Drawings, Specs, Report, Bid Document, Cost) for each project • Put projects on CIP list • Construct projects 	<i>Start:</i> 2011 <i>End:</i> 2013	Design: \$140 - \$200k	<i>Milestones:</i> <ul style="list-style-type: none"> - Obtain Funding - Top three on CIP list for 2011 - Projects constructed by 2012
3	1.3 Incorporate BMPs into existing and future drainage projects.	<ul style="list-style-type: none"> • Incorporate end-of-pipe treatment to all new and retrofit projects (i.e. OGS) • Strategize and make recommendations on current projects in RFP 27-P041 for 64th, 72nd, and 88th Ave. drainage improvement projects. • Implement Low Impact Development strategies and Action Plan 	<i>Start:</i> 2007 <i>End:</i> Ongoing	Incorporate as part of cost estimates for CIP projects.	<i>Milestones:</i> <ul style="list-style-type: none"> - Each drainage improvement utilizes best practices.

Priority	Implementation Strategy	Action Items	Anticipated Start/End	Cost Estimate	Evaluation Methods/Milestones
4	1.4. Improve existing sedimentation ponds to current MOA design criteria standards (i.e. wetland incorporation, sizing criteria).	Design Study Reports on improvement options and preferred alternative with concept costs on sedimentation ponds: <ul style="list-style-type: none"> Meadow Park (Meadow St. at 68th) Brayton near 82nd St. north of Dimond. Pebblebrook (68th and Carriage St.) Desiree and 64th <ul style="list-style-type: none"> Design (Drawings, Specs, Report, Bid Document) Construct Projects 	<i>Start:</i> February 2009 <i>(after CIP priority list is completed)</i>	Design - \$75k per sediment pond Construct of wetlands only - \$100k/basin	<i>Milestones:</i> - Funding Obtained - One project/year starting in 2009 - Constructed 2012

2013 UPDATE

- 1.1 Plan to review 2012 Anchorage Waterways Council "Creek Report Card" for issues found by observations and incorporate information into "Restoration Opportunities.
- 1.3 64th, 72nd, and 88th Ave. drainage improvement projects have been completed.
- 1.3 Low Impact Development Plan has been completed by consultant and provided to MOA, need to implement projects.
- 1.4 Meadow Park has restored wetlands at the corner of 68th and Meadow from work by AWC, GLT, USFWS, and inkind donations in 2007. Beavers removed from sedimentation pond at Meadow Park in 2009 because of culvert blocking under 68th and further down under the New Seward Highway.

2016 UPDATE

- None to report.

Water Quantity

Goal: Reduce flood hazards and prevent habitat degradation.

Strategy: Maintain existing floodplains and widen existing floodplains where applicable.

Priority	Implementation Strategy	Action Items	Anticipated Start/End	Cost Estimate	Evaluation Methods/Milestones
1	2.1. Preserve existing floodplain and restore or recreate historic floodplain.	<ul style="list-style-type: none"> Preserve undeveloped floodplain lands through conservation easements from owners for priority areas identified by WMS, Flood Hazard Program, Taskforce subcommittee, GLT and WAG – first is the Vander Court area and near Meadow Park. Identify MOA and private properties with floodplains and work to preserve areas identified as important for reducing flood hazards. 	2007 and ongoing	Varies	<ul style="list-style-type: none"> Complete Vander Court area by Spring 2008 (GLT) Evaluate critical floodplain for acquisition winter, 2008 Acquire critical floodplain areas as able
2	2.2. Update floodplain data and mapping.	<ul style="list-style-type: none"> Create updated floodplain mapping for entire LCC. Implement Action Item 1.1 to identify stormwater runoff mitigation areas 	<i>Start:</i> 2007 <i>End:</i> 2012	Varies depending on current information	<ul style="list-style-type: none"> Evaluate current HDR /Shannon Wilson
3	2.3. Remove restrictions to flood flows.	<ul style="list-style-type: none"> DOT to replace culverts under New Seward Highway to minimize current flood hazard issues. Design Report evaluating other flood flow restrictions, alternatives, improvements to public safety and cost benefit of removal. Design and Construct top three restrictions. 	DOT current upgrade project. <i>Start:</i> 2007 Others <i>Start:</i> 2008 and ongoing.	\$150k Design Study Report for overall evaluation.	<ul style="list-style-type: none"> Design Report complete by 2010. Design and construct top three by 2014.

2013 UPDATE

- 2.1 The MOA WMS has created a website that provides scanned FEMA flood hazard maps on it as well as an interactive flood mapper at: <http://anchoragewatershed.com/femaFHmaps.html>. This can be used to identify MOA and private properties that may be subject to flooding.
- 2.1 Remove many of the illegal foot bridges and small dams along LCC as identified in the AWC's "Creek Report Card" summary because of the potential to cause flooding.
- 2.1 Vander Court area was acquired and restored.
- 2.1 Floodplain was evaluated and has a prioritization on the GLT list.
- 2.3 AKDOT will need to review their priorities for the culvert replacement under the New Seward Highway.

2016 UPDATE

- 2.3 According to AKDOT&PF Eric Miyashiro (11/4/16), 12' x 3' box culverts will replace the existing culverts under the Seward Highway (including frontage roads) for the North and South Forks of Little Campbell Creeks. A similar box culvert will also be constructed for the South Fork of Little Campbell Creek at Sandlewood Place as part of the Seward Highway/Dimond Blvd to Dowling Rd Reconstruction Project.

2017 UPDATE

- 2.3 Box culverts have replaced the existing culverts under the Seward Highway (including frontage roads) for the North and South Forks of Little Campbell Creeks. A similar box culvert was also constructed for the South Fork of Little Campbell Creek at Sandlewood Place as part of the Seward Highway/Dimond Blvd to Dowling Rd Reconstruction Project. Photos included.

Terrestrial Habitat

Goal: Evaluate and maintain wildlife corridors and expand where appropriate for the benefit of wildlife and people.

Strategy: Establish a Little Campbell Creek greenbelt; preserve and enhance wildlife corridors and existing riparian habitat.

Priority	Implementation Strategy	Action Items	Anticipated Start/End	Cost Estimate	Evaluation Methods/Milestones
1	3.1. Identify and prioritize lands for inclusion in LCC riparian corridor.	<ul style="list-style-type: none"> Municipal land managers prioritize lands Work with public and private entities to preserve areas identified. 	Start: In process	Varies	Acres and linear feet of creek preserved Milestones: Have greenbelt plan at the end of 2008.
2	3.2. Identify, map, and maintain wildlife corridors.	<ul style="list-style-type: none"> Planning to evaluate current MOA mapping and update. 	Start: 2008	In house coordination with ADF&G.	Map in early 2008. In-house
3	3.3. Create program that offers assistance for restoration of riparian habitats.	<ul style="list-style-type: none"> Program created with local nurseries and the State Plant Material Center to provide riparian species to MOA and landowners Create a pamphlet for landowners that explains the benefits of riparian buffers and suggested plants for distribution through local nurseries. 	Start: February 2008	~\$30K.	Milestones: Educational pamphlet complete in 2008.
4	3.4. Improve small animal passage along creek corridors.	<ul style="list-style-type: none"> Incorporate small animal passage in new or retrofit projects for road crossings. 	Start: January 2008	Varies	Milestones: - Small animal passage included for identified fish passage projects.

2013 UPDATE

- 3.1 Riparian corridors can be gleaned partially from the recently updated MOA 2012 Wetlands Atlas at <http://www.muni.org/Departments/OCPD/Planning/Projects/Documents/AWMP-March2012PHD-5-6-12.pdf> although it should be noted that this has not been adopted yet. This should also be coordinated with ADF&G.
- 3.3 A pamphlet has been designed and printed by AWC for landowners titled "How to live with a creek". It provides important information on riparian buffers and setbacks, and its distribution will begin in fall 2013. See example at end of document.
- 3.4 Small animal passage along creek corridors should be coordinated between ADF&G and AKDOT on projects along creeks.

Aquatic Habitat

Goal: Improve fish passage, channel habitat maintain flows to support fish and creek function in the watershed.

Strategy: Provide unimpeded fish passage, restore straightened channels, protect and increase wetland habitat.

Priority	Implementation Strategy	Action Items	Anticipated Start/End	Cost Estimate	Evaluation Methods/Milestones
1	4.1. Upgrade culverts identified in ADF&G culvert survey that impede fish passage.	<ul style="list-style-type: none"> Design and construct top 10 prioritized culverts – first eight are (AF&G ID): <ul style="list-style-type: none"> #103- North Fork (Abbott Road) #105-South Fork (Atkins/near 85th) #150- North Fork (Lake Otis Pkwy/72nd) The other culverts identified are: #99, 107, 126, 125, 124 Ensure fish passage through Alaska Zoo Ensure fish passage along new Elmore Road New Seward Highway culverts – work with DOT to produce best design possible -has highest long-term impact for fish passage. 	<i>Start:</i> February 2008 <i>(Road upgrade schedule applies)</i>	\$1.5 million first 5 culverts in SSSP grant. DOT cost unknown for #103 or New Seward Highway replacements. All other culverts on municipal streets.	<i>Evaluation Methods:</i> - Culverts replaced - Miles restored <i>Milestones:</i> - Top 3 culverts 2009 - Top 10 culverts 2012
2	4.2a. Restore modified channels for habitat improvements.	<ul style="list-style-type: none"> Assess, design and construct the top creek restoration projects – first five are: <ul style="list-style-type: none"> 1st : Replace 360 foot long culvert at DNS concrete with open channel. 2nd: Parcel-72nd South of Parcel 3rd: Parcel-Galatea Estates 4rd: Turinski Parcel east of Lake Otis Parkway 5th: Channel South of 88th. Ave. 	<i>Start:</i> June 2008		<i>Evaluation:</i> - Linear feet restored <i>Milestones:</i> - First restoration in 2008 - Top three 2011
3	4.3a. Construct, restore, and preserve wetlands and open water habitats.	<ul style="list-style-type: none"> Acquisitions and protections related to 2.1. Support ADF&G in-stream flow gauging and apply for instream flows. 	2007 and ongoing	\$40k for gauging	In-stream flow reservation by 2010

Note: Culvert designations are found at http://www.sf.adfg.state.ak.us/SARR/Fishpassage/FP_mapping.cf

2013 UPDATE

- *The ADF&G now has an interactive mapper for culverts and information on them and fish passage at: <http://www.adfg.alaska.gov/index.cfm?adfg=fishpassage.mapping> . This is a valuable resource for prioritizing culvert issues.*
- *4.1 A report on fish passage through the Alaska Zoo was completed by HDR in December 2008, and is titled, “South Fork Little Campbell Creek Fish Passage Assessment” and this is in the design phase..*
- *4.2a There was culvert work at DNS Concrete in 2012 for fish passage, but the original plan of a 360’ culvert was not practical. The parcel at 72nd Ave (if this is the one just east of Lake Otis), has been accomplished. Also, fish passage along new Elmore Road has been completed.*
- *4.2a There as a road culvert replacement on Dimond Hook where it changes to E. Dimond Blvd. on the S. Fork of LCC. Culvert replacement was also accomplished at 82nd and Sandlewood on the S. Fork of LCC. According to the ADF&G interactive mapper, the culvert south of 88th looks to have been replaced. Also, parcels on 72nd, Galatea Estates and the Turinski parcel east of Lake Otis have been completed.*
- *AKDOT is still working to replace culverts under the New Seward Highway.*
- *ADF&G has attempted to complete an instream flow reservation on LCC, but funding to finalize 2 years of data gathering has not been forthcoming. AWC has gathered 3 years of data where LCC joins Campbell Creek.*

2016 UPDATE

- *4.1 Culverts #105-South Fork (Atkins near 85th), #150-North Fork (Lake Otis Pkwy/72nd), #99, and #107were replaced by The Boutet Company.*
- *4.1 Ensure fish passage through Alaska Zoo was completed by The Boutet Company in 2015 but fish cannot pass through a perched culvert at the east end of the zoo.*
- *4.2a Replace 360’ long culvert at DNS Concrete with open channel. This was completed by The Boutet Company although overall culvert length is 336’.*

2017 UPDATE

- *4.1 Box culverts have replaced the existing culverts under the Seward Highway (including frontage roads) for the North and South Forks of Little Campbell Creeks. A similar box culvert was also constructed for the South Fork of Little Campbell Creek at Sandlewood Place as part of the Seward Highway/Dimond Blvd to Dowling Rd Reconstruction Project. See action item 2.3 above. Photos included.*

Recreational and Economic Opportunities

Goal: Promote recreational and economic benefits of healthy watersheds.

Strategy: Promote benefits of the link between healthier watersheds and recreational and economic benefits to the community.

Priority	Implementation Strategy	Action Items	Anticipated Start/End	Cost Estimate	Evaluation Methods/Milestone
1	5.1. ID specific cost/benefits of LCC to Anchorage economic sectors	<ul style="list-style-type: none"> Create a study of the value of LCC creeks and riparian areas to the community. Distribute the results of the study to local business and residential groups. 	<i>Start:</i> 2008	Varies	Program evaluation by 2009
2	5.2. Create a business partnership program for businesses located on the banks of LCC.	<ul style="list-style-type: none"> Annual program to meet business owners, distribute information on LCC and make recommendations as appropriate. “Creek Steward” sticker program with participating businesses and related advertising of them. Work with businesses to distribute benefit data to other groups. 	<i>Start:</i> 2007	\$30K/Year	Program established for 5 Years, 2007-2012
3	5.3 Create wetland preservations incentives	<ul style="list-style-type: none"> Evaluate current wetland mitigation program and ways to improve it. Evaluate subdivision guidelines for wetland preservation. Create a public access map in relation to Park and other access areas. 	<i>Start:</i> in process	Varies	Program evaluation by 2009
4	5.4 Create public access awareness and access points as appropriate	<ul style="list-style-type: none"> Evaluate with Parks Dept. potential for more access points Update map and make available for LCC outreach program Include LCC information on interpretive displays in Campbell Creek and other restoration projects within the watershed 	<i>Start:</i> 2008	In-house	Complete in 2009 and as Restoration projects are Completed.

2013 UPDATE

- *5.3 Much of the information gathered by the AWC “Creek Report Card” project applies here. One of the major issues commented on was lack of access. A large portion of LCC runs through private yards with fences.*
- *5.3 A map of Campbell and Little Campbell Creeks has been completed by AWC for distribution at REI. This map could be altered easily to show access points.*
- *5.4 A kiosk with an interpretive sign and a case for current information from Polaris School students has been placed at the corner of 68th and Meadow by AWC.*

2016 UPDATE

- *None to report.*

2017 UPDATE

- *5.3 Public access map draft attached. A map of Little Campbell Creek created and printed by AWC in 2009 could be updated and reprinted. Copy attached.*

Communication and Coordination

Goal: Promote watershed awareness and community stewardship.

Strategy: Increasing public involvement in stewardship activities.

Priority	Implementation Strategy	Action Items	Anticipated Start/End	Cost Estimate	Evaluation Methods/Milestones
1	6.1. Promote LCC Watershed Management Plan implementation within the municipality.	<ul style="list-style-type: none"> WMS assigns responsibility for plan implementation. Coordinate with Watershed Task Force (WTF) to promote plan projects. WMS prepares annual State of the LCC Watershed Report for review by WTF. Partners will provide support in development of this report. WTF review report and makes recommendations for plan updates, revision and priorities to Mayor. 	<i>Start:</i> 2008	Varies	<i>Milestones:</i> <ul style="list-style-type: none"> Plan being implemented. Report ready for WTF to review. Report recommended to Mayor. Report available to public.
2	6.2 Increase community understanding of watershed problems and solutions within watershed.	<ul style="list-style-type: none"> Provide support and funding to watershed education programs. Workshops with local utilities, MOA departments, businesses, contractors on watershed issues and solutions. Create a “Creekside Stewardship” program and offer to people who own land adjacent to LCC to promote a positive stewardship ethic. Give out “care of your creek” information packet. 2-3 workshops with real estate community to create an information packet on “care of your creek” to go to new land owners. Work with ASD and ADF&G to develop riparian buffer studies, a “Salmon in the Classroom” program, and “It takes a watershed to raise a fish” curricula and/or other programs. Create an “Adopt-A-Stream” program with local schools. 	<i>Start:</i> 2008	Varies	-Start in 2008 and continue program for 5 years.

Priority	Implementation Strategy	Action Items	Anticipated Start/End	Cost Estimate	Evaluation Methods/Milestones
3	6.3. Increase outreach and education program within the Municipality.	<ul style="list-style-type: none"> Hire WMS outreach staff person. Start: 2008 Increase partnering with agencies, nonprofits, and other entities to deliver stewardship messages. Update WMS website on a regular basis. 		\$100K/year	Hire staff person in 2008 Update website in 2008

2013 UPDATE

- *The Watershed Task Force has been morphed into the Watershed Roundtable which tries to meet quarterly.*
- *The MOA WMS is promoting information on creeks, watershed plans, and other information on its new website at anchoragewatershed.com.*
- *AWC also hosts the LCC and Chester Creek watershed plans (the former adopted, the latter being worked on) on its website at anchoragecreeks.org.*
- *AWC has designed and printed "How to live with a creek" which will begin distribution to creekside parcels (residences and businesses) in fall 2013.*
- *AWC has also provided brochures and "talking points" to various property manager organizations and has developed a card for "do-it-yourself" rental companies to give to customers renting excavation equipment, etc. (See end of document for example.)*
- *AWC is going into its 4th year of "Creeks as Classrooms" which caters to K-12 and university.*
- *AWC's Adopt-A-Stream program varies by group. Several reaches have been adopted, but the motivation to perpetuate the work year after year often wanes. New groups come along.*
- *AWC is also doing the stormwater outreach and education for the MOA's APDES permit.*
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2016 UPDATE

- *None to report.*

2017 UPDATE

- *AWC is going into its 6th year of "Creeks as Classrooms" which caters to K-12 and university.*

Open Space

Goal: Protect and maintain lands that support healthy watershed functions and services.

Strategy: Healthy, sustainable watershed functions that can be self-maintaining and actively used for recreation.

Priority	Strategy	Action Items	Start/End	Cost Estimate	/Milestones
1	7.1. Identify, map and prioritize parcels for potential preservation, restoration and recreational open space.	<ul style="list-style-type: none"> Implement Action Items in Goals “Terrestrial Habitat (Priority 1)”, “Aquatic Habitat (Priority 3)” and “Recreational and Economic Opportunity (Priority 3)”. 	2007 and ongoing with yearly evaluation and task responsibilities	Varies	- Yearly updates of priority list and CIP list
2	7.2. Implement acquisitions and easement plan	<ul style="list-style-type: none"> Implement Action Item in 7.1. 	2007 and ongoing.	Varies	- One area conserved on a yearly basis.

- This is more in the hands of the Municipality and the Great Land Trust.*

2013 UPDATE

- None to report.*

2016 UPDATE

- None to report.*

2017 UPDATE

- None to report.*

Data Acquisition

Goal: Identify significant gaps in data and create programs to acquire data.

Strategy: Create a database for Little Campbell Creek from which management decisions can be made based on science.

Priority	Implementation Strategy	Action Items	Anticipated Start/End	Cost Estimate	Evaluation Methods/Milestones
1	8.1. Obtain data necessary to maintain watershed health.	<ul style="list-style-type: none"> Evaluate sediment source inputs as discussed in Action Items of 1.1 as surrogate for all pollutants. Evaluate fecal coliform concentrations in LCC. Implement a continuous DO and temperature program to note seasonal changes in evaluation of fish habitat for natural and impacted 	2007 and ongoing	Varies	<ul style="list-style-type: none"> Sediment/coliform input report 2010. DO and Temperature 2008-2010. Fish/ Invertebrate Report 2009. Habitat Assessment by 2010
2	8.2. Create, maintain and make accessible to public all data on LCC.	<ul style="list-style-type: none"> Create website of data access online. Contact all resource agencies and both local universities for their data and/or references regularly. Compile and upload all data to MOA website. Maintain list. 	Start: 2008 End: 2009	\$40K	- Maintain yearly.
3	8.3. Evaluate ADF&G's grey designated culverts in LCC for fish passage issues.	<ul style="list-style-type: none"> Complete project between MOA and Alaska Department of Fish and Game. 	Start: Feb. 2008 End: 2009	\$70K	Evaluation finished in 2009

2013 UPDATE

- Some fecal coliform studies (DNA) were done by ARRI (Aquatic and Restoration Research Institute) in 2010 titled, "Fecal Coliform Bacteria Source Assessment in the waters of Cottonwood Creek, Wasilla, and Little Campbell Creek, Anchorage". The point was to assess the origin of fecal contamination and was funded by ADEC. Two sites on the North Fork of LCC and three on the South Fork were studied, and other data were collected in the report.
- AWC has 4 water quality monitoring stations on LCC, but keeping the CEMP (Citizens Environmental Monitoring Program) funded is problematic. It would appear that monitoring above and below the Alaska Zoo at times of heavy precipitation might be useful.
- The AWC "Creek Report Card" project resulted in the entire creek (within the urban watershed) being walked and observations made. While this is not a true habitat assessment, it does contain some important information.
- AWC has received an ACWA grant from ADEC to evaluate Mutt Mitt stations in the 8 primary urban watersheds to see if this can be a way to reduce fecal contamination.

2016 UPDATE

- AWC has received another ACWA grant from ADEC which added more pet waste stations in primary urban watersheds to see if this can be a way to reduce fecal contamination.

○ How to Live With a Creek

The Municipality of Anchorage is about 2,000 mi² and has approximately 2,250 miles of creeks and rivers. These waterways are often listed as some of Anchorage's premier amenities. This handout endeavors to provide information on how to be a good neighbor to our creeks.

- ◆ **Be a steward for your local creek and keep an eye on it.** Report any issues online at anchoragecreeks.org and clean up any trash.
- ◆ **Don't alter the course of a creek.** Creeks have a mind of their own about where they want to go, which is protected by local, state, and federal law.
- ◆ **Stormwater and yard runoff, cigarette butts, pet waste, other pollutants and debris run directly into storm drains which lead to our creeks--NOT to the sewage plant.**
- ◆ **Don't water your driveway and paved areas, and don't overwater your yard.** Your yard only needs about 1" of water. Put an empty tuna can on the area you are watering, and when it is full--you have about 1" of water.
- ◆ **Sweep your driveway rather than power washing or hosing it.**
- ◆ **Direct your downspouts onto your yard and off of impermeable surfaces.** Also consider rain barrels and rain gardens to reduce yard runoff.
- ◆ **Use automatic car washes as their waste water is usually recycled and is directed into the sewage system--not our creeks.** If you wash at home, park your vehicle on grass or gravel, and use non-phosphate soap.
- ◆ **Ensure that storm drains and culverts are not clogged.** Obstructed culverts and storm drains can cause flooding and block fish passage.
- ◆ **Keep dogs and horses out of creeks and off of creek banks ESPECIALLY when salmon are spawning.** Bank trampling causes erosion and sediment to run off into waterways, which disturbs gravel beds where fish spawn and little ones grow.
- ◆ **Clean up pet waste because the fecal coliform bacteria found in it runs off into our creeks.** All the creeks in Anchorage (except Rabbit and Little Rabbit) are considered "impaired waters" due to fecal coliform contamination. Do your part to reduce this problem. **SCOOP-the-POOP!**



- ◆ **Protect and preserve shoreline vegetation and don't cut trees or remove vegetation within 25' of the creek.** This vegetation provides habitat, shade to keep the water cooler, protection from prey, and stabilization of the streambank. It also reduces bank erosion. Naturally fallen wood produces in-stream habitat and nutrients for fish and other aquatic organisms. Leave NATURAL vegetation in the creek.
- ◆ **Do not dump yard wastes into the creek or cut your lawn up to the creek's edge.** Yard waste contains chemical additives and high nitrogen and phosphorus. Rather than bag your grass clippings, leave them on the lawn as a source of fertilizing mulch. Yard waste that decomposes in streams and lakes will use up dissolved oxygen in the water that is essential for fish habitat. Leave native vegetation buffers creekside.
- ◆ **Don't disturb instream rocks or build dams and footbridges.** The undersides of rocks are habitat for macroinvertebrates, which are the food for fish, birds, and other aquatic organisms. Dams can block fish passage, and during high water events, dams and footbridges can catch debris and increase the likelihood of flooding in your yard.
- ◆ **Participate in the Anchorage Waterways Council's Annual Creek Cleanup (every spring), and become a member of the organization.** Memberships help support a variety of programs.

BE THE GUARDIAN OF YOUR CREEKS!



Anchorage Waterways Council is a non-profit 501 (c) (3) corporation that is funded by memberships, donations, and grants.

anchoragecreeks.org

907 272-7335

Follow us on Facebook at Anchorage Waterways Council

This is a 2-sided "rack card" that will be placed on door handles of homes and businesses along creeks.

PRIOR TO ANY EXCAVATION OR GROUND DISTURBING WORK:

- ◆ Ensure you know how to safely operate the equipment.
- ◆ Call "811" for the "Locates" on underground power, water, sewer, gas, electrical, cable, or phone lines BEFORE you dig.
- ◆ Check to see if you need any permits before you begin work. The reverse side of this card provides information on the most commonly needed for small projects.
- ◆ Watch overhead power lines when operating equipment.
- ◆ Do not cut or disturb any trees with nesting birds in them.
- ◆ Familiarize yourself with Anchorage's creeks and tributaries as some resemble ditches more than creeks.

DID YOU KNOW?

- ◆ Almost every creek and river in the Municipality is anadromous (salmon spawning), so they are protected under Alaska's statute known as the Anadromous Fish Act (AS 16.05.871)
- ◆ It is a violation of the **Clean Water Act** to dump or plow pollutants, such as soil, debris, vegetation, aggregate, or snow, into any creek or down any storm drain.
- ◆ "Dewatering" (removal of excess water) must be properly managed and not discharged into storm drains or other areas where it may flow into a waterway.
- ◆ Because storm drains discharge directly to waterways, without treatment by the Municipal sewer system, do not pour any paint, chemicals, gas, oil, or other pollutants into them.
- ◆ When washing equipment after use, hose it down on a pervious surface (such as lawn or gravel), or use a commercial spray wash station because that water is treated by the Municipal sewer system.
- ◆ Anchorage Municipal Code TITLE 21 regulates land disturbance activities adjacent to streams and watercourses. These include clearing of vegetation; grading, fill or excavation; location of buildings or structures; and channel alteration. Check with the Municipality to ensure compliance with the current stream setback regulations at library.municode.com/index.aspx?clientId=12717.

WHERE YOU CAN CHECK FOR PERMIT & REGULATION INFORMATION:

- ◆ **Municipal:** If ground disturbance is 500 sq. ft. or greater, check permit criteria and storm water pollution control plans at:
www.muni.org/Departments/OCPD/development/BSO/Handouts/handoutag21.pdf
- ◆ **State:** Alaska State statutes require notification and permit approval from the Alaska Department of Fish & Game before altering or affecting the "natural flow or bed" of a waterbody or stream. For full information, see:
www.adfg.alaska.gov/index.cfm?adfg=habitatregulations.prohibited
- ◆ A useful, comprehensive guide for the state of Alaska that covers all levels of permits has been published by the Alaska Department of Environmental Conservation at:
dec.alaska.gov/water/wmpspc/stormwater/Guidance.html
- ◆ **Federal:** Filling of waterways and wetlands is regulated by the Army Corps of Engineers. Information is at:
www.poa.usace.army.mil/Missions/Regulatory/Permits.aspx



Thank you for taking the time to read and use this information. By adhering to these regulations, you help ensure that our waterways and fish habitat will not be damaged by sediment, fill, and other pollutants.

If you would like additional information, please visit our website or contact us at the listing below.

Anchorage Waterways Council
P.O. Box 241774
Anchorage AK 99524
907-272-7335

Website: anchoragecreeks.org
Email: awc@anchoragecreeks.org

This is a 2-sided card that has been and is being distributed to "do-it-yourself" rental companies to provide their customers.

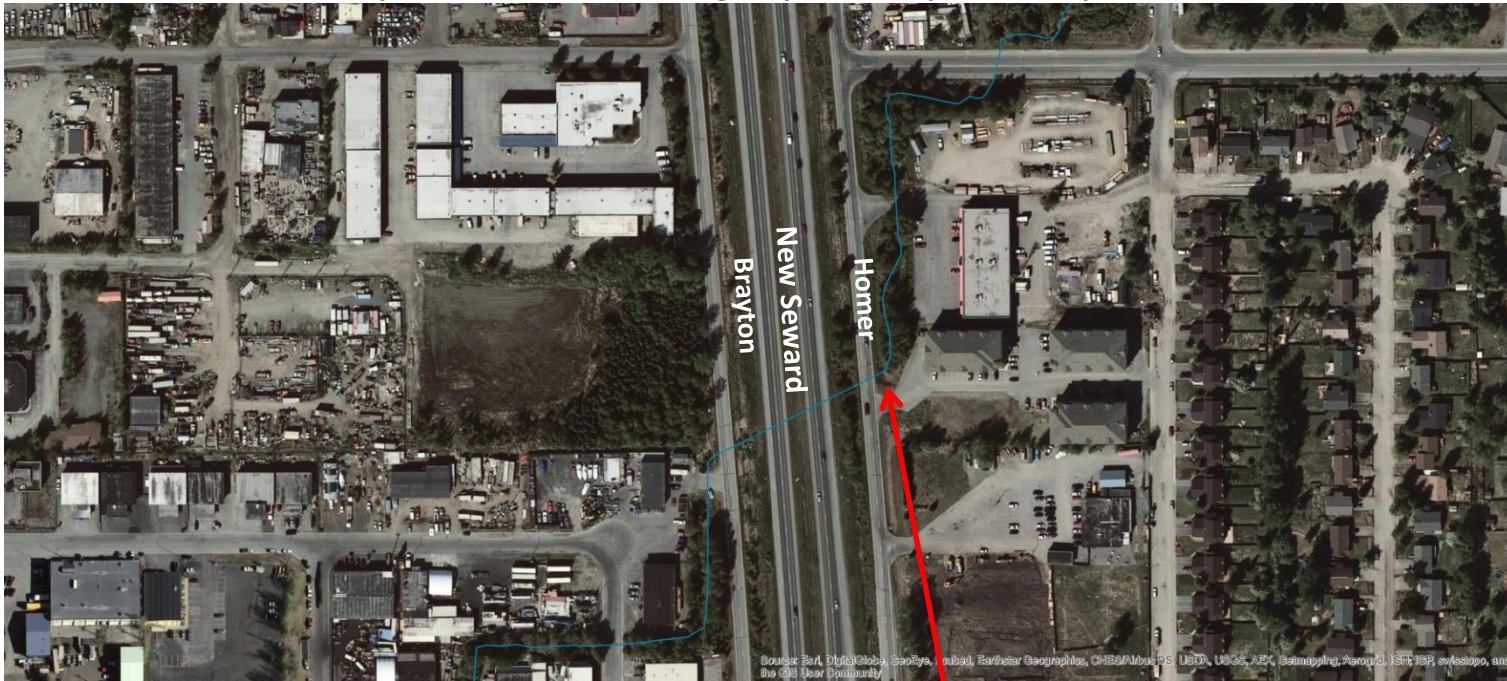
Little Campbell Creek Watershed Management Plan

Update Photos

October 31, 2017

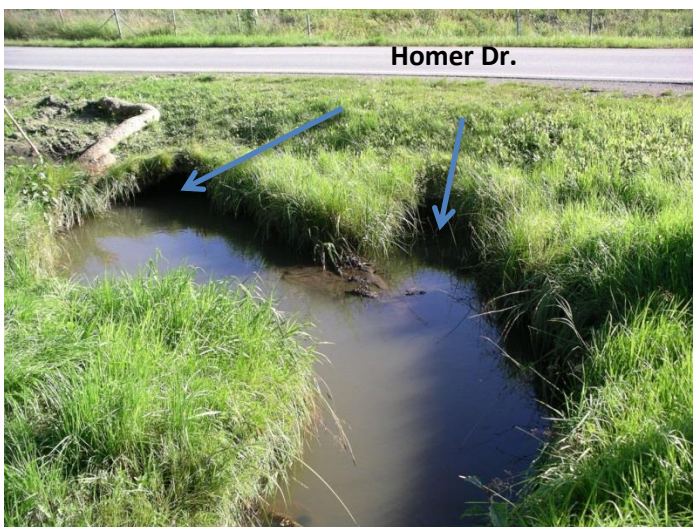
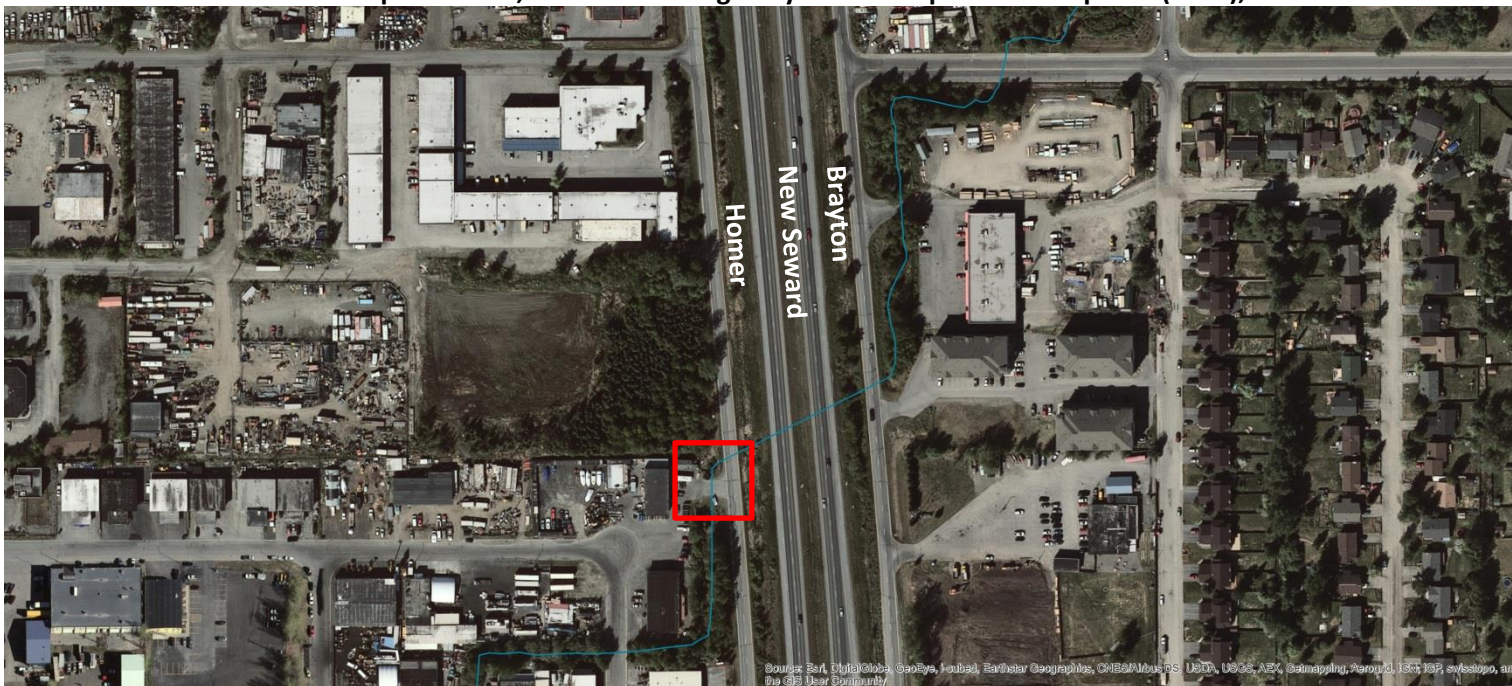
2.3 and 4.1

N. Fork Little Campbell Creek, New Seward Highway Culvert Replacement Update (east), Oct. 2017



N. Fork Little Campbell Creek inflow on the east under the New Seward at Brayton between 68th and 72nd in 2017 (looking west)

N. Fork Little Campbell Creek, New Seward Highway Culvert Replacement Update (west), Oct. 2017



N. Fork Little Campbell Creek outflow west under the New Seward at 70th and Homer looking east (2010)

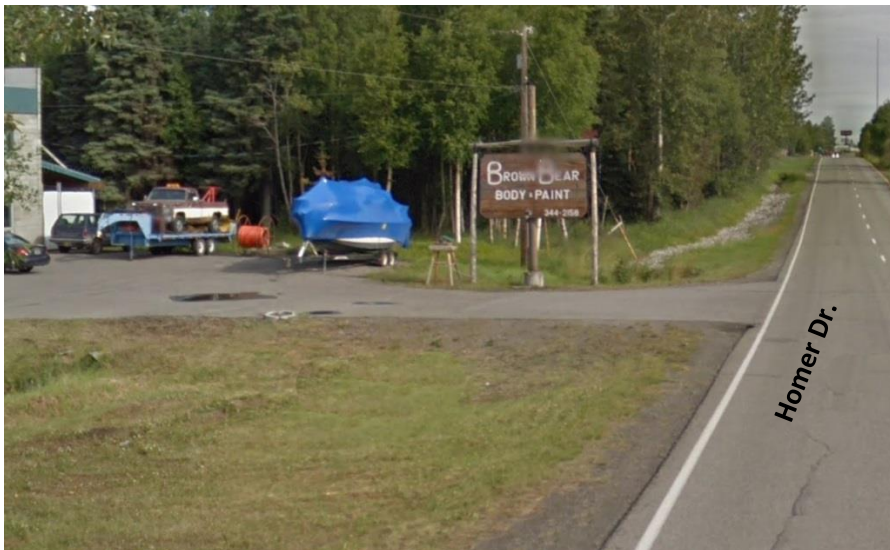
N. Fork Little Campbell Creek with new replacement culverts under the New Seward at 70th and Homer looking east (August 2017)



View of the old driveway over N. Fork of Little Campbell Creek. Looking towards the southwest from Homer Dr. at 70th (2011)



View of the flow of N. Fork Little Campbell Creek (looking southeast) running under the new driveway (August 2017)

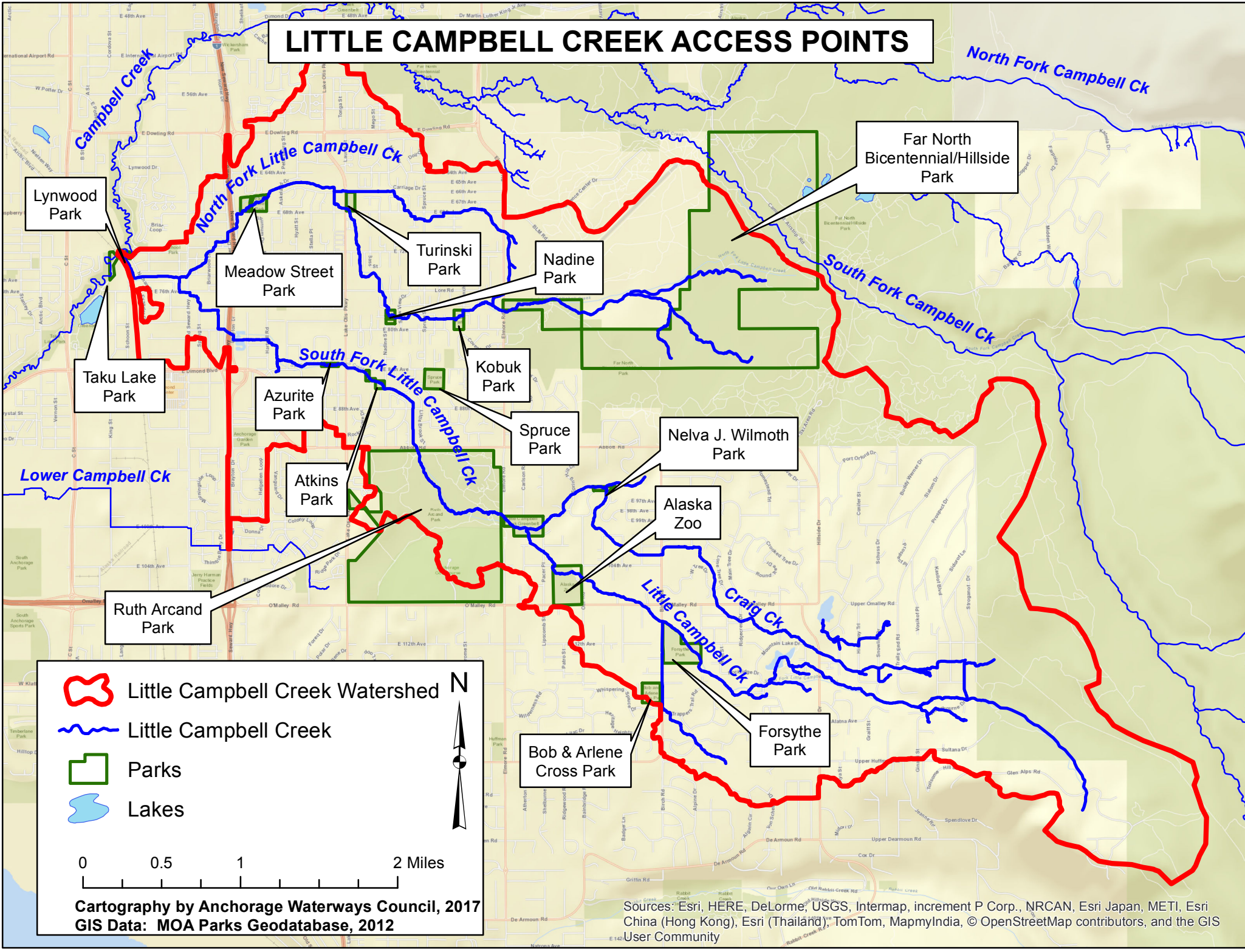


View of the old driveway over N. Fork Little Campbell Creek looking north (2012)



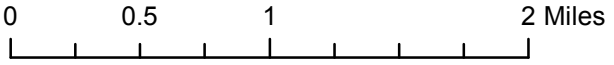
View of the new driveway over N. Fork Little Campbell Creek looking north (2017).

LITTLE CAMPBELL CREEK ACCESS POINTS



⬮ Little Campbell Creek Watershed
⬮ Little Campbell Creek
⬮ Parks
⬮ Lakes

N



Cartography by Anchorage Waterways Council, 2017
GIS Data: MOA Parks Geodatabase, 2012

Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

6. Appendix

I. RESTORATION PRIORITIES FOR CHESTER CREEK WATERSHED¹

The following table (Table.6.1.) is divided into five drainage areas that begin at the mouth of Chester Creek and can be located on the accompanying map (Figure 6.1):

C = All Chester Watershed Drainages
CW = Westchester/Eastchester Drainage
CMF = Middle Fork Chester Drainage
CSF = South Fork Chester Drainage
CRL = Chester Reflection Lake Drainage
CNF = North Fork Chester Drainage

The 7 goals from the watershed plan are listed for each action item in the drainage. The actions are listed in geographic order for the most part.

Goal 1 – WATER QUALITY: Meet State standards for water quality in Chester Creek.

Goal 2 – WATER QUANTITY: Return Chester Creek to a more natural hydrologic regime.

Goal 3 – WILDLIFE HABITAT: Provide habitat for a diversity of wildlife along Chester Creek.

Goal 4 – FISH HABITAT: Provide for healthy fish and other aquatic organism populations in Chester Creek.

Goal 5 – SOCIAL and ECONOMIC OPPORTUNITIES: Foster a high degree of social and economic opportunities.

Goal 6 – COMMUNICATION and COORDINATION: To have a highly involved and dedicated community and Municipality in maintaining the health of Chester Creek.

Goal 7 – DATA ACQUISITION: Improve our understanding of the watershed.

“Lead” refers to the most likely agency or organization to work on the project.

ADF&G – Alaska Department of Fish and Game
AKDOT – Alaska Department of Transportation and Public Facilities
APF – Anchorage Park Foundation
APU – Alaska Pacific University
AWC – Anchorage Waterways Council
Coop Ext – UAF Cooperative Extension
DPW – MOA Department of Public Works

¹ This list was created from by recommendations from the “Watershed Planning in the Municipality of Anchorage” group, which met between 2010 and 2012.

GLT – Great Land Trust
HLB – MOA Heritage Land Bank
MOA – Municipality of Anchorage (Department of Public Works and/or Street Maintenance)
P&R – MOA Parks and Recreation
USFWS – U.S. Fish and Wildlife Service
WMS – MOA Watershed Management Services

“Cost” is an estimate range based on 2014 figures.

- 1 - \$0-\$10,000
- 2 - \$10,001-\$50,000
- 3 - \$50,001-\$100,000
- 4 - \$100,001-\$250,000
- 5 - \$250,001-\$500,000
- 6 - >\$500,000

“Priority” is a suggested value.

- 1 – Highest
- 2 – Medium
- 3– Lowest

“Mandate” is where the action’s need most likely originates.

ADEC WQS – Alaska Department of Environmental Conservation Water Quality Standards
ADF&G – Alaska Department of Fish and Game, Habitat Division
APDES – Alaska Pollutant Discharge Elimination System Permit
Comp Plan – Anchorage 2020 Comprehensive Plan
Title 21 – Anchorage’s Municipal Land Use Laws

Funding for projects will be sought from a variety of sources:
Municipal CIP (Capital Improvement Program) and Grants

Figure 6.1. Restoration Priority Locations for Chester Creek Watershed

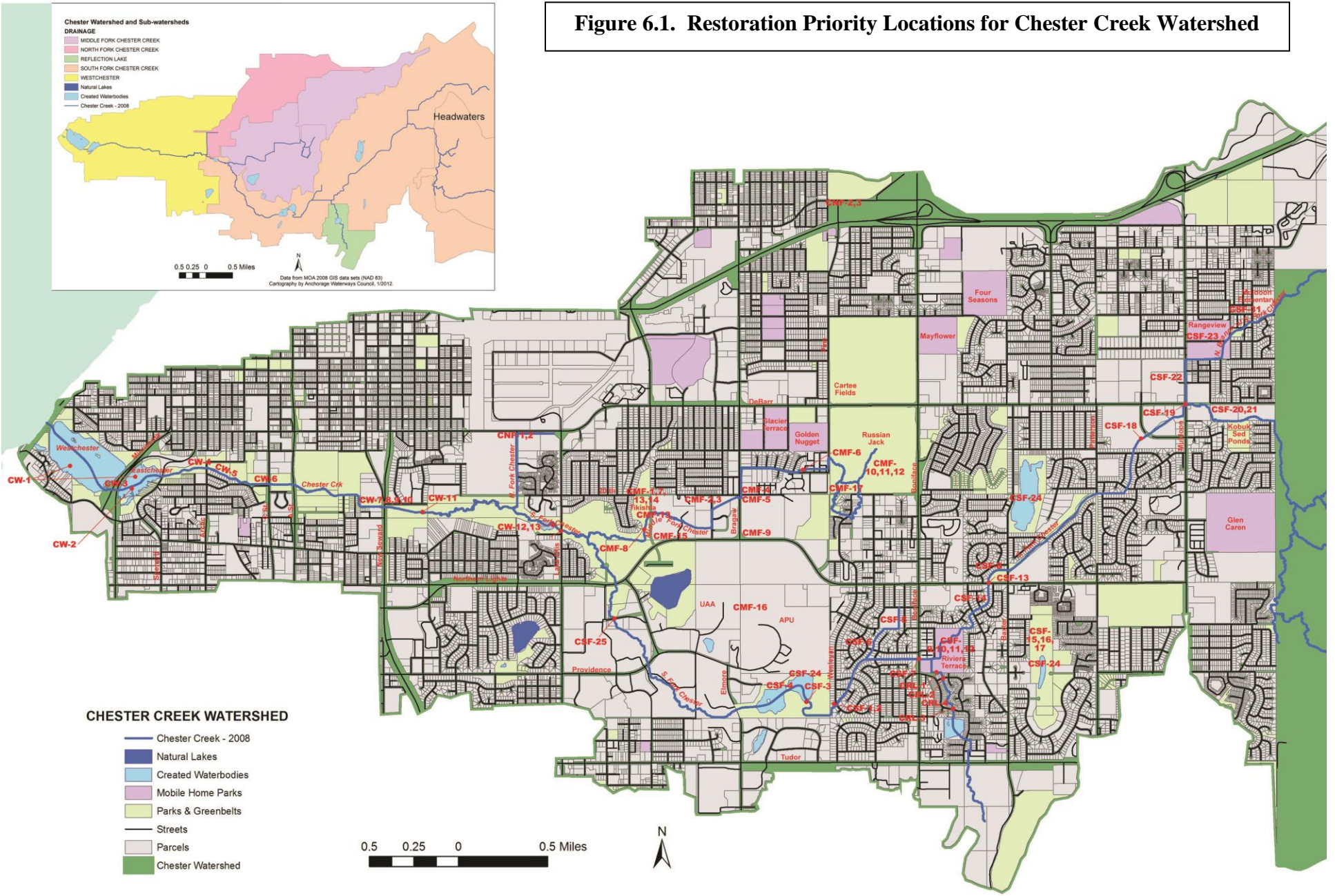


Table 6.1. Restoration Priorities Shown on Map
ALL CHESTER WATERSHED DRAINAGES (C)

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
C-1	2,3,4,6,7	N/A			Conduct update to flood mapping for watershed.	WMS	Varies	1	Title 21
C-2	1,2,3,4,5,6,7	N/A			Create and implement invasive removal and control strategy for Bird Cherry, Purple Loosestrife and Reed Canarygrass.	P&R, WMS, APF, Coop Ext	3	1	Title 21
C-3	1,3,4,5,6	N/A			Work with MOA Parks Dept and landowners to keep vegetation buffer between lawns and stream banks.	P&R	2	2	APDES, Title 21
C-4	1,2,3,4,5,6,7	N/A			Implement an LID/OGS strategy watershed-wide.	WMS	5	1	APDES
C-5	3,4,5,6,7	N/A			Conduct salmon monitoring on a yearly basis.	ADF&G, APU	1	2	ADF&G
C-6	1,3,4,5,6	N/A			Place signs at all creek crossings identifying creek.	WMS	2	2	APDES, Comp Plan
C-7	1,2,3,4,5	N/A			Protect privately-owned wetlands throughout drainage.	HLB, GLT	Varies	1	APDES, Comp Plan
C-8	1,3,4,5,6	N/A			Create interactive walking tours of greenbelt.	AWC	2	3	APDES
C-9	1,3,4,5,6	N/A	Ambergate St. between N. Lights and Campbell Airstrip		Conduct educational campaign on tossing household/greenhouse plants into the creek and riparian area. AWC letter to residents 6/12/17	AWC	1	1	Title 21
C-10	2,4	N/A			Identify low flow conditions for fish habitat.	WMS, APU, ADF&G	<u>2</u>	<u>1</u>	Comp Plan

WESTCHESTER/EASTCHESTER AREA (CW)

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CW-1	1,2,3,4,5,6,7	N/A	Westchester & Eastchester		Control Reed Canarygrass, Purple Loosestrife and other invasives around Westchester and Eastchester Lagoons	P&R, WMS, APF, Coop Ext	2	1	Title 21
CW-2	1,2,3,4	N/A	Eastchester	Sediment has accumulated, filling in old channel as a natural process.	Active street sediment source removal in stormwater system to reduce rate of accumulation by reducing sediment input by streets upstream. 2016 UPDATE: Status according to AKDOT's Eric Miyashiro, 11/4/16, DOT&PF has instituted a sweeping program that sweeps the streets to remove sediment and keep it from entering water systems. Also there is a storm drain cleaning program that cleans the sediment, debris and pollutants from the storm drain systems. This keeps the system functioning properly and keeps sediment and contaminants out of waterways.	DPW, AKDOT	Varies	1	APDES, Title 21
CW-3	1,2,3,4,5,6	61.2, -149.89	Arctic Blvd.	Boulders backwater culvert and upstream creek, increasing sediment deposition and eroding banks. Culvert backwaters local area during 100-year flood event. ADF&G 20400056 culvert green.	Model culvert to review capacity, impact to homeowners for flooding concerns and fish passage. Replace Arctic Blvd. culvert top pass 100 year flood and minimize backwater effects to homeowners, remove or retrofit rocks to decrease sedimentation and backwater through area. Partially completed. This culvert # is incorrect. It is ADF&G 2040031. For ADF&G 20400056—see CSF-6.	MOA	6	1	Title 21
CW-4	1,3,4,5,6,7	N/A	Valley of the Moon Park along creek and bike trail	High use by public causing extensive streambank trampling and erosion.	Area was revegetated in 2013 and access stairs were placed to direct people and pets to creek in specific locations. Monitor progress. Area reviewed on 10/3/17. Stairs need repair, people still using and trampling long stretches of bank on park (west) side. 2017 UPDATE: Photos included.	P&R	1	2	Title 21

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CW-5	1,3,4,5,6	N/A	Valley of the Moon Park along Chester Creek	Rock lined banks and lawn to water's edge of houses along south side of bike path and creek	Work with property owners to remove rocks and install more diverse habitat through bioengineering techniques and create a vegetated buffer of riparian vegetation between creek and lawn. Area reviewed on 10/3/17. Yard furniture and some lawn/yard areas remain unvegetated. 2017 UPDATE: Photos included.	P&R, WMS	1	2	APDES, Title 21
CW-6	1,2,4,5,7	61.2, -149.88	C Street Bridge	Channel widened to accommodate construction, local slope may have been reduced, increasing sediment deposition rates.	Evaluate current condition and produce a feasibility study of potential options to consider the magnitude of the problem and to increase sediment transport and habitat features as well as riparian vegetation. 2016 UPDATE: Status according to AKDOT's Eric Miyashiro, 11/4/16, is the channel at the bridge appears to be similar to the upstream and downstream channel. DOT&PF only has jurisdiction within its right-of-way. Beyond that is the MOA's responsibility.	AKDOT	5	2	APDES, Comp Plan
CW-7	1,2,6,7	N/A	Seward Highway	Untreated stormwater from a 42-inch diameter storm drain southwest corner of crossing.	Evaluate AKDOT record drawings showing a petroleum separator in first manhole from outfall and if it is in service. Evaluate potential to connect part of storm network to other storm drains, reducing flows. 2016 UPDATE: Status according to AKDOT's Eric Miyashiro, 11/4/16, is that the culvert crossing met the design standards in place at the time of construction. DOT&PF will replace the culvert when the Seward Highway requires major reconstruction in this area. It is not known when this will be needed.	AKDOT	1	1	APDES
CW-8	1,4	N/A	Seward Highway	Untreated stormwater from a 42-inch diameter storm drain southwest corner of crossing.	Construct stormwater treatment area at Chester Creek at Eagle Street and connect with 1300 feet of storm drain. 2016 UPDATE: Status according to AKDOT's Eric Miyashiro, 11/4/16, is that the culvert crossing met the design standards in place at the time of construction. DOT&PF will replace the culvert when the Seward Highway requires major reconstruction in this area. Date unknown.	AKDOT	2	1	APDES

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CW-9	2	N/A	Creek downstream of Seward Highway	High velocities from culvert during floods erode streambanks, banks are too steep, gabions eroding into creek, river left bank too steep for vegetation establishment, storm drain flow erodes creek/banks.	Remove/reinforce gabions - install root wads on both sides of creek revegetate, install boulder erosion protection to dissipate energy from storm water flows from storm drain outlet. 2016 UPDATE: Status according to AKDOT's Eric Miyashiro, 11/4/16, is that the problem extends beyond the DOT&PF ROW. The gabion baskets appear to be part of the private parking lot located on the south side of the creek. This is a MOA issue.	AKDOT	5	2	APDES
CW-10	2,3,4,5	61.2, -149.86	Seward Highway	ADF&G 20400033 fish passage issue. Culvert too small, constricted, debris and fish barrier, ice jacking compromised upstream 20-25 feet of culvert.	Replace Seward Highway culvert with bridge for fish, animal and pedestrian passage 2016 UPDATE: May be a custom pipe. The culvert crossing met the design standards in place at the time of construction. DOT&PF will replace the culvert when the Seward Highway requires major reconstruction in this area. It is not known when this will be needed.	AKDOT	6	2	Title 21
CW-11	1,3,4	N/A	Karluk Street Bike Trail Bridge	An exposed telephone cable is causing the creek to erode the channel banks.	Work with utility to bury utility line below streambed. 2016 UPDATE: Field work 8/27/16 showed the utility line is no longer in streambed.	Utility	1	1	ADF&G
CW-12	1,2,3,4	61.2, -149.84	Hillstrand Pond	ADF&G 20400035 fish passage issue. Perch and velocity issues at culvert outlets.	Replace Hillstrand Pond culverts with bridge, weir and rocky riffle 2017 UPDATE: Culvert still coded red on 11/1/17.	MOA	3	2	ADF&G
CW-13	1,3	N/A	Hillstrand Pond	Stormwater pipe from Cliffside Drive is not treated prior to discharge to creek near Hillstrand Pond	Install end-of-pipe controls at Cliffside Drive	DPW	2	1	APDES

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CW-14	4	61.19, -149.83	Lake Otis Parkway	ADF&G 20400036 fish passage issue. Velocity and perch issues at culvert outlet	Replace culvert and wood fish ladder with bridge or large, embedded pipe. 2016 UPDATE: Per Eric Miyashiro, 11/4/16, this is a MOA maintained road. 2017 UPDATE: Culvert still coded red on 11/1/17.	MOA, AKDOT	3	2	ADF&G
CW-15	1	61.19, -149.83	Lake Otis Parkway	Runoff from road is not treated prior to discharge to creek.	Install pretreatment basin for Lake Otis runoff.	DPW	4	1	APDES

MIDDLE FORK CHESTER (CMF)

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CMF-1	2,4	N/A	Middle Fork at Tikishla Park	Channel widening and habitat loss from utility work at ditch confluence	Reconstruct creek and ditch banks to increase depth and available habitat.	WMS	5	2	ADF&G
CMF-2	2,4	N/A	Middle Fork at Nichols Street	Middle Fork was culverted in this area during development for about 500 feet.	Construct an open channel. Channel would have one road and two driveway crossings with steep, deep sides.	ADF&G	6	2	ADF&G
CMF-3	2,4,7	61.2, -149.81	Middle Fork at Nichols Street	ADF&G 20400038 fish passage issue for slope.	Evaluate and replace culvert. 2017 UPDATE: Culvert still coded red on 11/1/17.	MOA	3	2	ADF&G
CMF-4	1,4	61.2, -149.8	Middle Fork at Bragaw Street	Untreated stormwater input	Construct a water treatment pond to improve water quality prior to discharge from approximately 1800 acres, including Russian Jack Springs which is located in an area bounded by Bragaw, Northern Lights and Nichols Street. 2016 UPDATE: Status according to AKDOT's Eric Miyashiro, 11/4/16, if there are water quality issues they are probably associated with routing the stream through Reka Drive with its adjacent development. The MOA would be the lead if a water treatment pond is needed.	AKDOT	5	1	APDES
CMF-5	2,4	61.2, -149.8	Middle Fork at Bragaw Street	ADF&G 20400039 culvert fish passage issues at culvert, maintenance of culvert and stormwater piping of stream upstream.	Replace culvert for fish passage and hydraulic conductivity as a maintenance issue for flows. 2017 UPDATE: Culvert still coded red on 11/1/17.	MOA	3	2	ADF&G

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CMF-6	2,4,6	61.2, -149.79	Middle Fork at Reka Street	ADF&G 20400043 fish passage issue and upstream driveway culverts small, banks mowed to edge, lack of habitat.	This area is cut off from rest of creek by 2400 feet of storm drain. Perform study of fish use, enlarge pipes, add riparian vegetation and instream logs and boulders for habitat diversity, replace fish passage issue at culvert. 2017 UPDATE: Culvert still coded red on 11/1/17. (Has been added to the ADF&G map).	MOA	5	2	ADF&G
CMF-7	1,2	N/A	Middle Fork at Tikishla Park	Floodplain disconnect and untreated stormwater flows.	Install pretreatment facilities and reconnect flows to adjacent lowlands in Tikishla Park.	DPW	5	1	APDES
CMF-8	1	N/A	Middle Fork at Alder Drive	Untreated stormwater flows.	Install end-of-pipe pretreatment at Alder Drive.	DPW	4	1	APDES
CMF-9	1,2,5	N/A	Middle Fork near East High School	Untreated stormwater flows.	Disconnect storm drains near East High School and Wesleyan to natural wetlands.	DPW	4	1	APDES, Comp Plan
CMF-10	1,2,5	N/A	Middle Fork near Russian Jack Park	Protection of wetlands for stormwater buffer	Protect uplands and wetlands north of Northern Lights and west of Wesleyan Drive.	HLB, GLT	5	2	Comp Plan
CMF-11	1,2,5	N/A	Middle Fork near Russian Jack Park	Protection of wetlands for stormwater buffer	Protect privately owned wetlands near Russian Jack Park.	HLB, GLT	4	2	Comp Plan
CMF-12	1	N/A	Middle Fork headwaters above Russian Jack Park	Untreated stormwater flows.	Construct LID at Glacier, Mayflower and Four Seasons mobile home parks.	WMS	5	1	APDES
CMF-13	1	N/A	Middle Fork at Tikishla Park	Middle Fork runs orange and highly turbid during rain events and springmelt.	Create a report that evaluates the history, conditions and feasibility of various options to decrease the amount of turbidity caused by groundwater input into the local stormwater system and creek. Implement suggestions.	WMS	1	1	APDES

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CMF-14	4	N/A	Middle Fork/drainage tributary	Fish Passage is blocked under trail - no ADF&G name or location in database.	Lower culvert or replace with larger, embedded pipe.	ADF&G, P&R	3	2	ADF&G
CMF-15	4	61.19, -149.82	Northern Lights Blvd.	ADF&G Culvert 20400047 fish passage issue as constriction/velocity	Replace with a larger, embedded culvert. 2017 UPDATE: Culvert location fixed on ADF&G map. Still coded gray on 11/1/17.	MOA	3	2	ADF&G
CMF-16	1	N/A	Middle Fork at University Area	Untreated stormwater flows.	Install end-of-pipe pretreatments at UAA and APU.	DPW	2	1	APDES
CMF-17	1		Middle Fork at Pine Street	Untreated stormwater flows.	Disconnect Pine Street outfall that drains to Cartee Softball Fields.	DPW	2	1	APDES

SOUTH FORK CHESTER (CSF)

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CSF-1	4	N/A	South Fork - University Lake and Wesleyan Drive	Creek is over-widened and straight with little habitat diversity as it is a rerouted section of creek to fill University Lake	Increase habitat diversity in stream between University Lake and Wesleyan Drive, potentially add bankfull banks to bring to a more representative cross-section area for riffles, add boulders for scour pools. This area has the potential to re-create meanders for the creek and a floodplain in undeveloped area to the north of creek.	USFWS	5	2	ADF&G
CSF-2	1,2,4	N/A	South Fork - University Lake and Wesleyan Dr.	To keep the potential for remeandering creek in this area.	Protect uplands and wetlands north of Northern Lights and west of Wesleyan Drive	HLB, GLT	4	2	Comp Plan
CSF-3	1,3	N/A	South Fork at inlet to University Lake	Low flow issues over sediment delta at creek inlet to lake, potentially exacerbated when Chester was rerouted into the lake, causing significant erosion upstream.	Remove sediment from inlet, create sediment trap to capture estimated additional sediment from further bank erosion, narrow creek mouth downstream of bridge, consider habitat diversification in eroded section of channel.	P&R	5	2	APDES
CSF-4	1,3	N/A	South Fork at University Lake	Dog park introduction of fecal coliform into lake and trampling of lakeshore is high.	Create directed access to lake and maintain vegetated buffer outside of access areas, restore vegetated buffer in impacted locations. 2017 UPDATE: Still a problem as dogs access the lake in various places. Photos included.	P&R	3	1	APDES
CSF-5	1,2,3,4	N/A	South Fork at College Gate Elementary	Channel is overwidened with a gabion wall along the west bank. Slope grade causes severe icing and backwatering.	Replace gabion with bioengineering and replant riparian vegetation, potential to create wetland marsh while narrowing channel or regrade stream to eliminate backwater and create habitat diversity riffles and pools.	USFWS	5	1	Comp Plan

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CSF-6	4	61.18, -149.78	South Fork at Emmanuel Street	ADF&G 20400056 fish passage issue - set at wrong grade creating a velocity chute at inlet of culvert.	Evaluate flows, at minimum remove mitered end of culvert and restore site unless flow calculations indicate complete replacement for hydraulic capacity. 2016 UPDATE: Status according to AKDOT's Eric Miyashiro, 11/4/16, is that this is a MOA maintained road. 2017 UPDATE: Culvert is still shown red as of 11/1/17.	AKDOT	3	1	ADF&G
CSF-7	4	61.18, -149.77	South Fork at Boniface	ADF&G 20400063 fish passage issue. Gradient grey, constriction ration grey, rock weir at inlet increase velocities.	Evaluate fish passage flows for crossing, take out rock weir (looks to be fallen rock from riprap sides) and replace. Evaluate large opening for large animal passage under Boniface. 2016 UPDATE: Status according to AKDOT's Eric Miyashiro, 11/4/16, the culvert met the design standards in place at the time of construction. DOT&PF will replace the culvert when Boniface requires major reconstruction. It is not known when this will be needed. 2017 UPDATE: Culvert is now shown on ADF&G map and is still gray.	AKDOT, ADF&G	3	1	ADF&G
CSF-8	1	N/A	South Fork Boniface & Beaver	Untreated stormwater flows.	Install End of pipe controls in Nunaka Valley	DPW	2	1	APDES
CSF-9	4	61.18, -149.77	South Fork at Riviera Terrace Trailer Park - Lee Street	ADF&G 20400057 fish passage issue. Gradient & constriction issues for double pipe & velocity gradient, backwaters a large length of creek.	Evaluate for fish passage flows and replace pipe with one large pipe to comply with MOA Standard Design Criteria and ADF&G fish passage for embedded pipes, slope so no backwater of creek upstream. 2017 UPDATE: Culvert is now shown on ADF&G map and is still gray as of 11/1/17.	Private	3	1	ADF&G

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CSF-10	4	61.19, -149.77	South Fork at Riviera Terrace Trailer Court - Sylvia Drive	ADF&G 20400058 fish passage issues. Perch, velocity issues. Triple culvert does not conform to MOA design criteria.	Replace with a larger, embedded culvert. 2017 UPDATE: Culvert is still shown red as of 11/1/17.	Private	3	1	ADF&G

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CSF-11	4	61.19, -149.77	South Fork at Riviera Terrace Trailer Court - Sylvia Drive	ADF&G 20400060 fish passage issues. Velocity issues & triple culvert does not conform to MOA design criteria.	Replace with a larger, embedded culvert. 2017 UPDATE: Culvert is still shown red as of 11/1/17.	Private	3	1	ADF&G
CSF-12	1,6	N/A	South Fork at Riviera Terrace Trailer Court	Debris in creek and riparian areas, general encroachment into buffer zone and backwater issues due to culverts or rock weirs at culverts.	Clean up area, education outreach needed, removal of rock weirs put there by locals, improve tossing of house plants into creek.	AWC	1	2	APDES
CSF-13	4	61.19, -149.76	South Fork at Northern Lights Blvd.	ADF&G 20400064 fish passage issue. Obstructions in pipe, barrier potential at outlet.	Clean obstructions and outlet barrier, evaluate for hydraulic and fish passage criteria, replace if necessary. 2017 UPDATE: Culvert is now shown on ADF&G map and is red as of 11/1/17.	MOA	3	1	ADF&G
CSF-14	6,7	N/A	South Fork along Ambergate	General erosion along fences, lawns, issues with tree cutting.	Walk creek to evaluate extent of issues, form an approach to address erosion, educate local homeowners on value of riparian area.	AWC	1	2	Title 21
CSF-15	1	N/A	South Fork at Baxter Road	Untreated storm water runoff	Detention and treatment at discharge of basin Baxter Road and Northern Lights.	DPW	3	1	APDES
CSF-16	1	N/A	South Fork at Baxter Bog	Untreated storm water runoff	Sediment removal and hydraulic dampening all basins into Baxter Bog.	DPW, P&R	3	1	APDES
CSF-17	1,2,5	N/A	South Fork at Baxter Bog	Drying of Baxter Bog wetlands	Reconnect storm water flow to Baxter Bog.	DPW, P&R	3	1	APDES Comp Plan

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CSF-17	1,2,5	N/A	South Fork at Baxter Bog	Drying of Baxter Bog wetlands	Reconnect storm water flow to Baxter Bog.	DPW, P&R	3	1	APDES Comp Plan
CSF-18	4	N/A	South Fork at Begich Middle School	Invasives, rock weir formation by children to cross stream	Perform invasive removal and design/construct small bridges for children to cross creek.	AWC	1	3	Title21, ADF&G
CSF-19	4	61.2, -149.73	South Fork at Muldoon Road	ADF&G 20400249 fish passage issue. Gradient in culvert makes perch and velocity barrier, long-term maintenance issue for hydraulics, does not pass 100-year flood well, backwaters upstream businesses.	Replace culvert, evaluate current (2012) design to move creek to new location and crossing under Muldoon road. 2016 UPDATE: Completed per Bill Spencer, HDR, 7/25/16. 2017 UPDATE: Photos included.	MOA, AKDOT	6	1	ADF&G
CSF-20	3,4	N/A	South Fork upstream of Muldoon Road	Creek is modified with low habitat diversity and at-risk of road and development.	Create more natural creek on South Fork east of Muldoon Road. Align to Hill with a 100 foot corridor. 2016 UPDATE: Completed per Bill Spencer, HDR, 7/25/16. 2017 UPDATE: Photos included.	DPW	5	2	ADF&G
CSF-21	1	N/A	South Fork upstream of Muldoon Road	Creek has significant debris in it up to halfway to military land	Take debris out of creek. 2016 UPDATE: This is ongoing per Bill Spencer, HDR, as of 7/25/16.	AWC	1	1	APDES
CSF-22	4	N/A	North Fork of the South Fork Muldoon Road	Creek is culverted under Muldoon Road for 1,500 feet	Remove North Branch of South Fork from Muldoon Road and put into open channel in a 100 foot ROW. 2016 UPDATE: Not accomplished 7/25/16 per Bill Spencer, HDR.	DPW	2	2	ADF&G
CSF-23	6	N/A	North Fork of South Fork at Rangeview Trailer Ct.	Encroachment & debris issues in the creek, dog use, & bank trampling.	Remove debris, install access points, revegetate other access points.	Private	1	3	APDES

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CSF-24	6	N/A	South Fork at lakes and bogs	No education signage for public.	Install kiosks at University Lake, Baxter Bog, Cheney Lake.	AWC	1	3	APDES
CSF-25	4	61.192, -149.829	Mallard Drive	ADF&G Culvert 20400250 fish passage issue as a constriction to creek	2017 UPDATE: ADF&G reports it was replaced with a larger, embedded culvert. Still shown as red for fish passage on Nov. 1, 2017, in ADF&G mapper. Needs to be field checked after breakup in 2018.	MOA	3	2	ADF&G
CSF-26	1,4	N/A	U-Med District	Evaluate cumulative effects of water temperature from building inputs	Monitor creek above, below and in selected areas where buildings are discharging HVAC water.	AWC	1	1	ADEC WQS

CHESTER REFLECTION LAKE (CRL)

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CRL-1	4	61.18, -149.77	Reflection Lake at Sapien Ave.	ADF&G 20400212 fish passage issue. Perch and gradient issues.	Replace with a larger, embedded culvert. Completed (J. Urbanus 12/10/14) 2017 UPDATE: Still shown as black on map as of 11/1/17. Note that culvert was replaced in 2012, needs to be resurveyed by ADF&G.	MOA	3	2	ADF&G
CRL-2	4	61.18, -149.77	Reflection Lake at Image Drive	ADF&G 20400214 fish passage issue. Gradient, constriction and velocity issues.	Replace with a larger, embedded culvert. Completed (J. Urbanus 12/10/14). 2017 UPDATE: Still shown as black on map as of 11/1/17. Note that culvert was replaced in 2012, needs to be resurveyed by ADF&G.	MOA	3	2	ADF&G
CRL-3	4	61.18, -149.77	Reflection Lake at Reflection Drive	ADF&G 20400215 fish passage issue and flow capacity. Gradient, velocity.	Replace with a larger, embedded culvert and investigate outlet of Reflection Lake for open channel if necessary. Completed (J. Urbanus 12/10/14) 2017 UPDATE: Still shown as black on map as of 11/1/17. Note that culvert was replaced in 2012, needs to be resurveyed by ADF&G.	MOA	3	2	ADF&G
CRL-4	2,3,4	N/A	Reflection Lake between Image and Reflection Drive	Area could be made into a wetland marsh to enhance habitat.	Image Drive and Reflection Drive area turn greenbelt to marshy profile for creek.	MOA	4	3	Comp Plan

NORTH FORK CHESTER (CNF)

Map ID	Goal(s)	Lat/Long	Approximate Location	Issue	Action Item	Lead	Cost	Priority	Mandate
CNF-1	1,2,3,4,5,6	N/A	Sitka Street Park	The North Fork was diverted from this area in the 1960s. The original channel was dewatered but still exists through the park. Approximately 2,200 feet of prime Coho salmon rearing habitat exists in the dewatered channel and can be restored.	Construct a diversion at Sitka Street to route the North Fork base flow to the channel through Sitka Street Park while bypassing peak flood flows down the current ditched channel.	WMS	6	2	ADF&G
CNF-2	5,6	N/A	North Fork at Sitka and Davis Parks	No educational information available	Place kiosks at Sitka Street Park and Davis Park on LID, pesticide use, fertilizers and pets.	AWC	1	3	APDES
CNF-3	1,4	N/A	North Fork at Mountain View	Headwaters are highly developed curb and gutter, increasing runoff and pollutants into creek	Evaluate, prioritize and construct headwater street retrofits in Mountain View to improve stormwater.	WMS	4	1	APDES

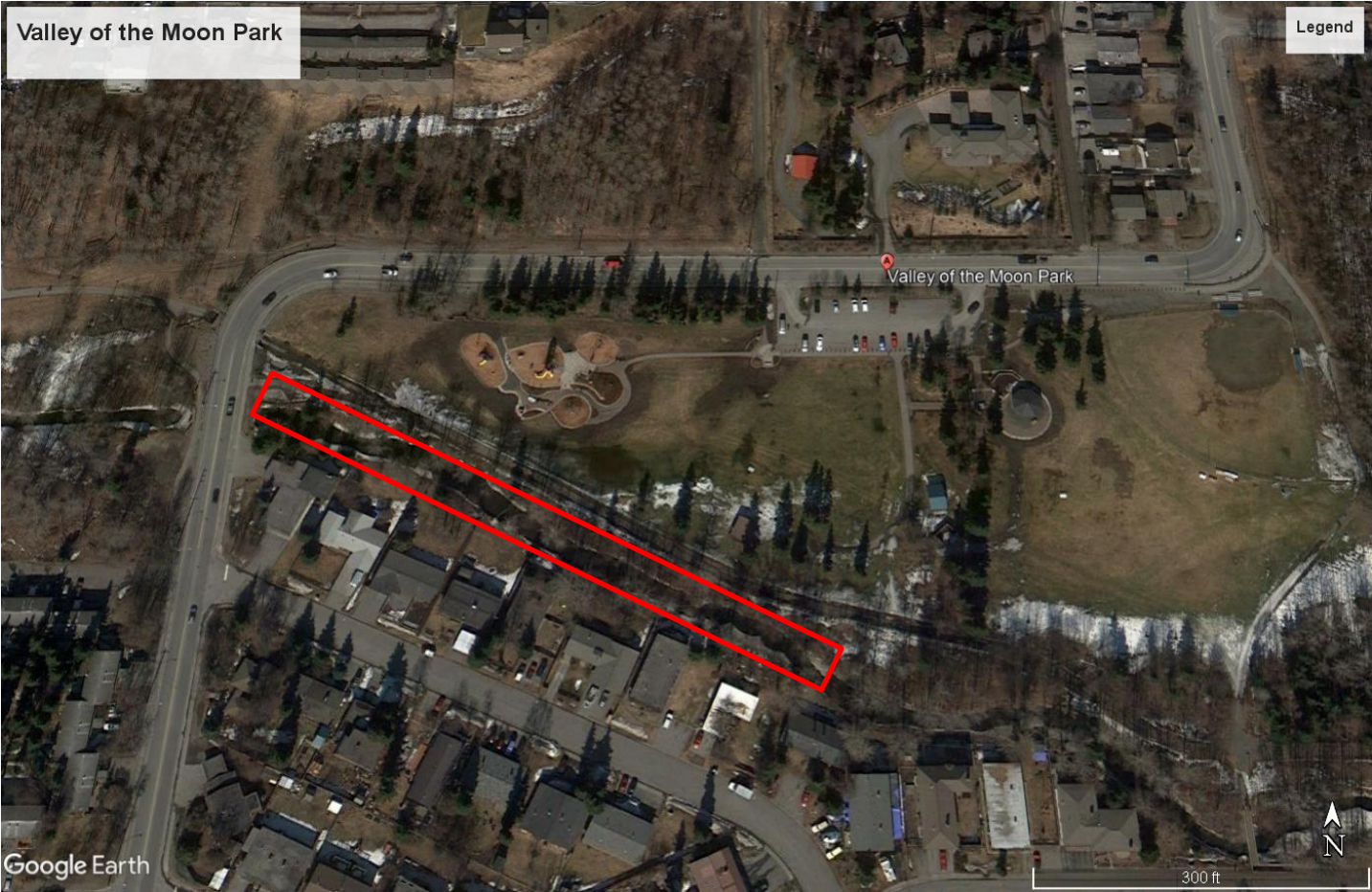
Chester Creek Watershed Management Plan

Update Photos for Restoration Priorities in Table 6.1

October 31, 2017

CW-4 and CW-5

Chester Creek at Valley of the Moon Park, C-4 and C-5



Approximate area of concern for bank trampling (CW-4) and properties needing vegetation buffer (CW-5)



West bank of Chester Creek showing eroded bank and east bank with lawn up to the water's edge in 2011 (CW-4 and C-5)



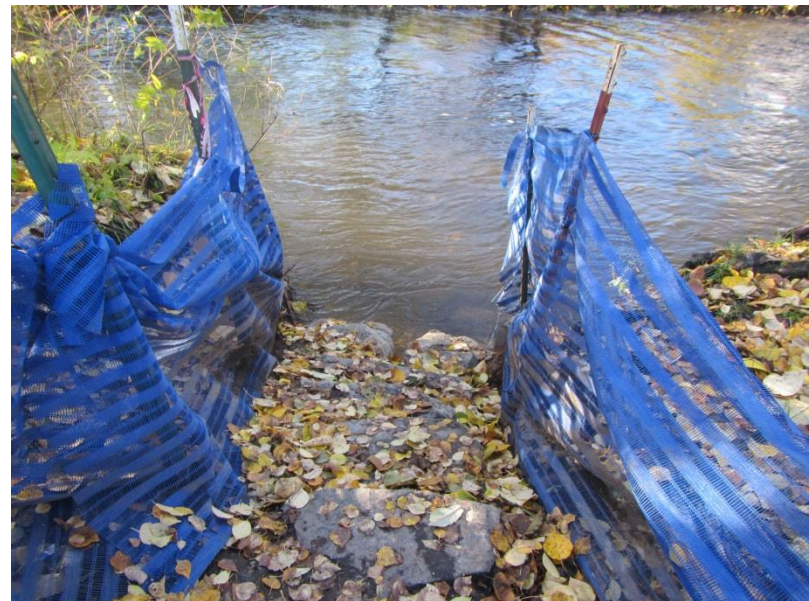
West bank of Chester Creek showing eroded bank in 2011 (CW-4)



West bank of Chester Creek in 2013 after YEP (Youth Employment in Parks) revegetation project (CW-4)



Revegetation along Chester Creek Trail in 2013 by YEP (C-4)



Stone steps to Chester Creek along west bank in 2013 after YEP project (CW-4)



Fencing to direct people towards stone steps along west bank of Chester in 2013 after YEP project (CW-4)



Creek Close-up of stone steps at Chester Creek along west bank (CW-4)



Area near stone steps at Chester Creek along west bank in 17 (CW-4)



East bank of Chester Creek in 2017 showing persistent bank trampling (CW-4)



East bank of Chester Creek showing minimal vegetative buffer in May 2017 (CW-5) East bank of Chester Creek showing property fence in May 2017 (CW-5)



East bank of Chester Creek showing lawn to creek edge in May 2017 (CW-5)



East bank of Chester Creek showing yard up to creek edge in Oct. 2017 (CW-5)

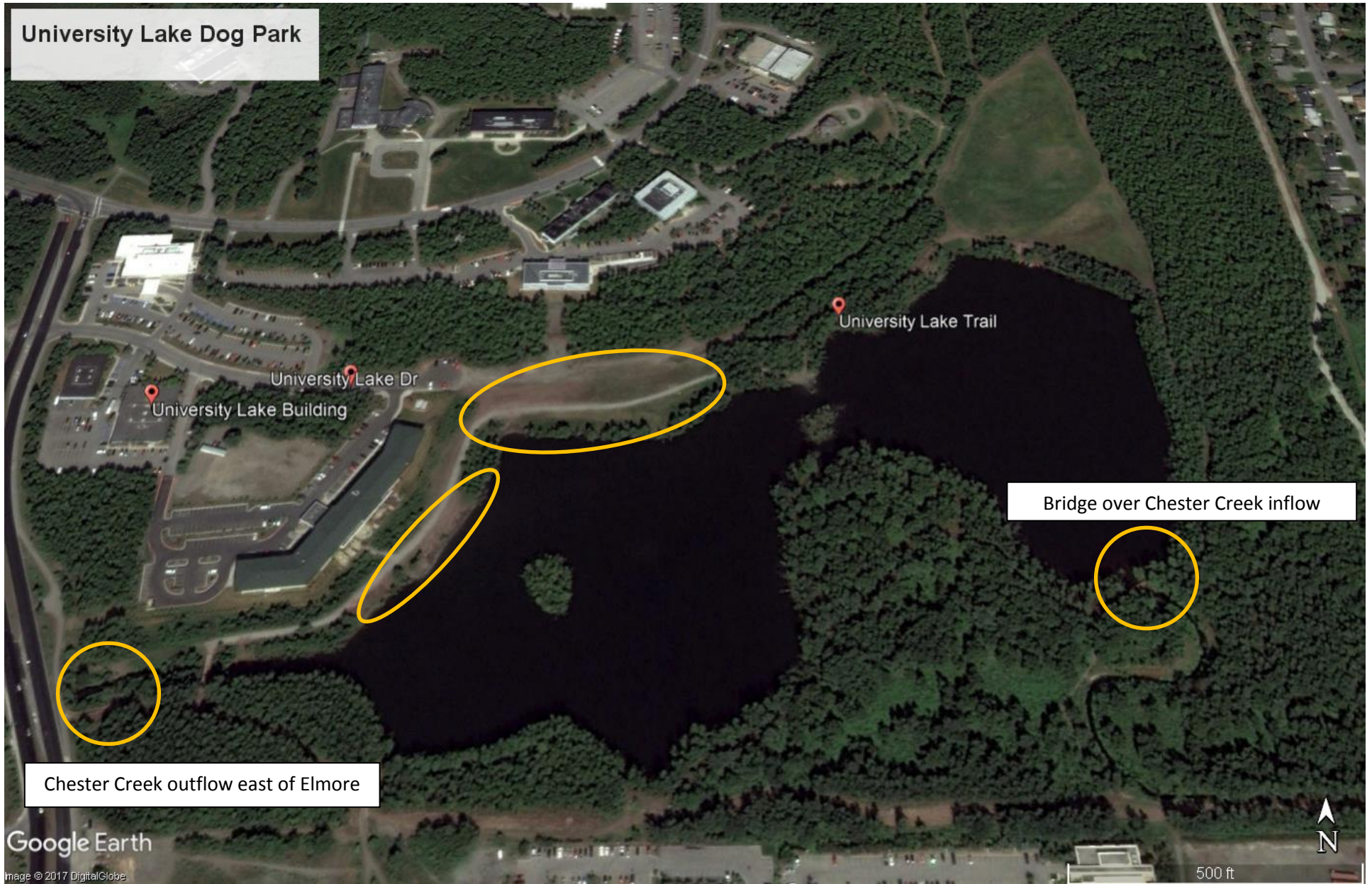
Chester Creek Watershed Management Plan

Update Photos

October 31, 2017

CSF-4

Chester Creek at University Lake Dog Park



Areas subject to erosion from bank trampling (CSF-4), pictures follow for two of the areas. One has been restored, the other has not.



Bank erosion in 2013 on north side of Chester Creek near Elmore



2014 bank restoration shown in 2017 on north side of Chester Creek near Elmore



Bank erosion in 2013 on south side of Chester Creek near Elmore



2014 bank restoration shown in 2017 on south side of Chester Creek near Elmore



Bank erosion in 2016 near bridge across Chester Creek inflow



Bank erosion in 2016 near bridge across Chester Creek inflow

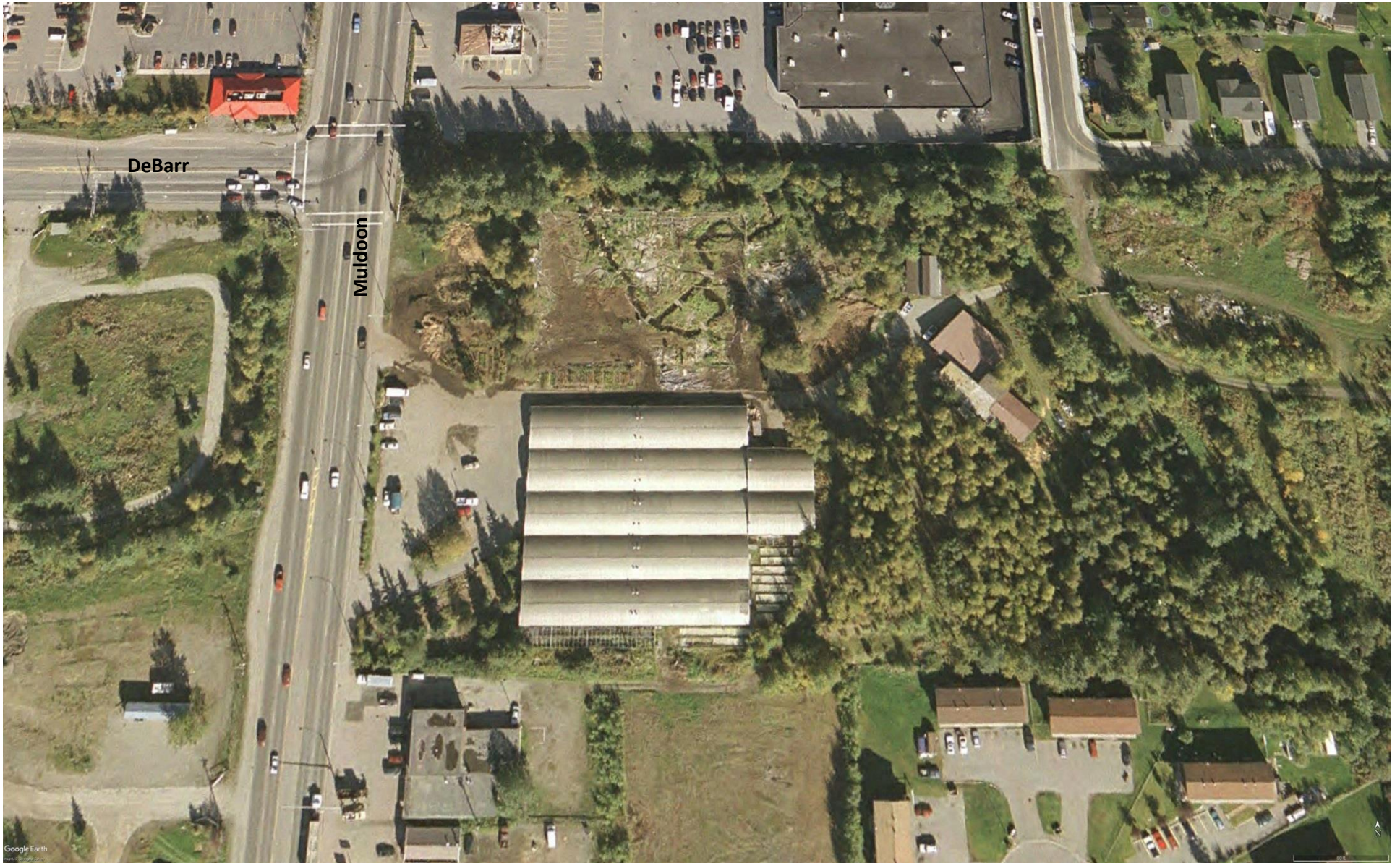
Chester Creek Watershed Management Plan

Update Photos

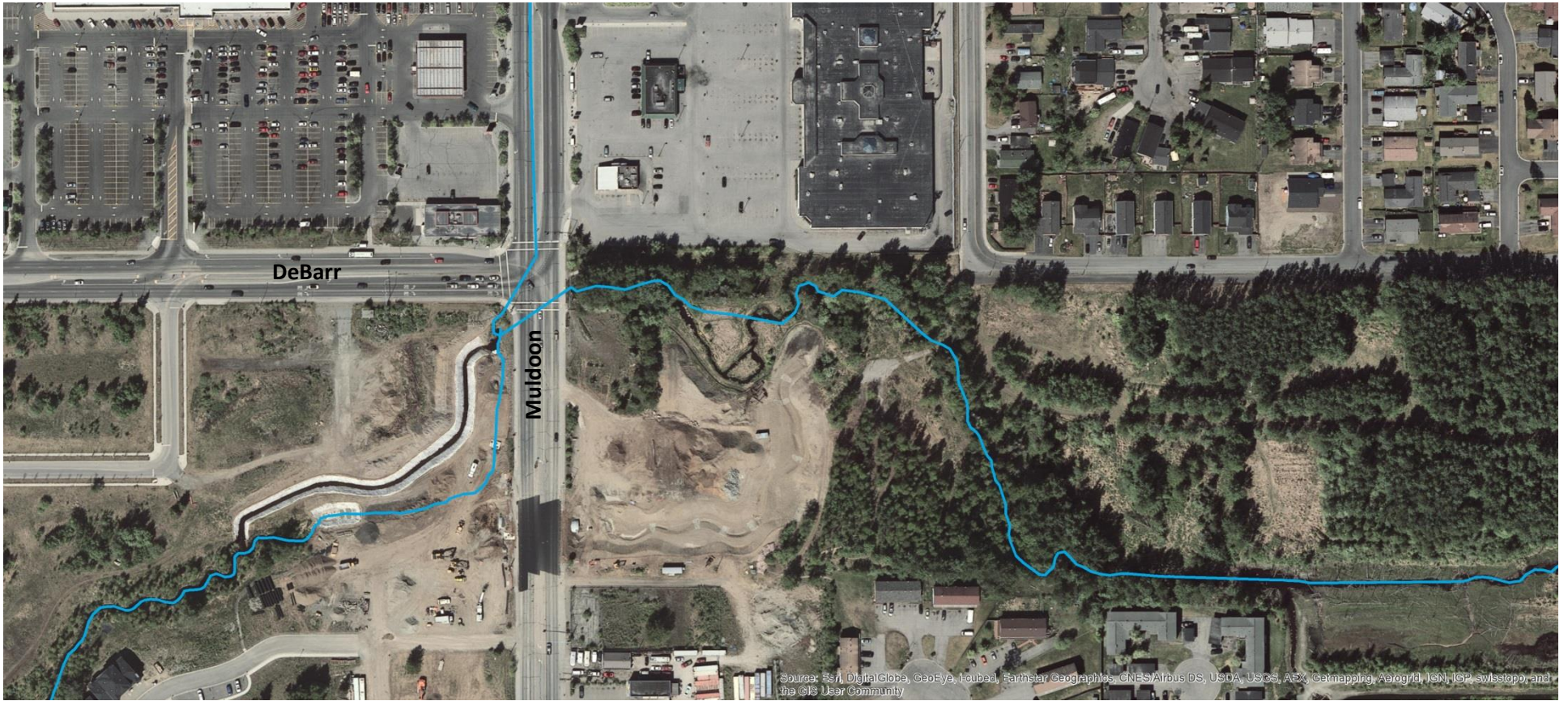
October 31, 2017

CSF-19 and CSF-20

S. Fork Chester Creek at Muldoon and DeBarr realignment update



S. Fork Chester Creek at Muldoon and DeBarr (2002) showing the old Alaska Greenhouse property which was purchased by the Municipality in 2006.



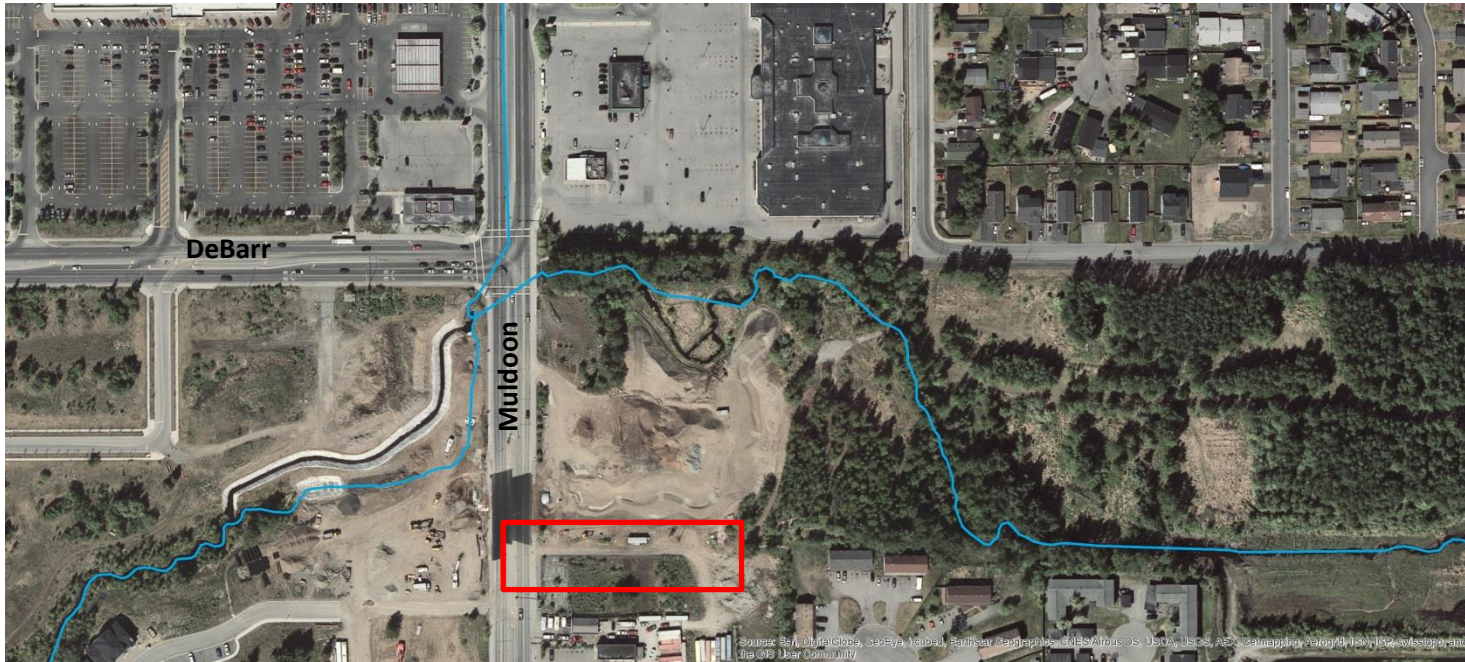
S. Fork Chester Creek at Muldoon and DeBarr (~ 2015) with greenhouses removed and the beginning of the creek realignment on the east side of Muldoon. The new creek meanders are visible in this image. Creek realignment on the west side of Muldoon is undersay. The blue line is a MOA GIS shapefile showing the original channel of the S. Fork Chester Creek.



Red rectangle is the area shown in the photos below.



S. Fork Chester Creek in 2009 in its original channel (looking east from Muldoon). Same view in 2017 after creek was moved south to new channel.



Red rectangle is the area shown below.



Looking east from Muldoon at the former Greenhouse Property before creek alignment (2012).



Looking east from Muldoon at the former Greenhouse Property after creek alignment (August 2015).



Looking east from Muldoon at the former Greenhouse Property after creek alignment (August 2017). Vegetation is filling in well.



Old culverts on S. Fork Chester original channel going west under Muldoon (2009). New culvert on realigned S. Fork Chester going west under Muldoon (2017).



ANCHORAGE WATERWAYS COUNCIL

P.O. Box 241774 • Anchorage, Alaska 99524-1774 • 907 272-7335 • anchoragecreeks.org

June 12, 2017

Dear Chester Creek Neighbor,

Thank you for reading this important information about the great creek that runs by your property. In Anchorage we are fortunate to have so many waterways that provide a variety of activities for recreation and getting close to nature. Nearly every waterway in the Anchorage “bowl” is anadromous, which means they have fish that hatch and eventually head to the ocean only to return again and spawn in their home waters. There are certain requirements for this process:

- clear water (free from sediment and other particles that impact the amount of light that can be absorbed);
- cool water temperatures which occur with intact overhead vegetation;
- high levels of dissolved oxygen which are helped by fast-running waters;
- a good range of pH readings; and
- a nice substrate of cobbles, rocks, gravel and sand with meanders that help provide the right habitat for fish and the aquatic insects that are their food.

More than 30 years ago, there were a lot of changes made to Anchorage as the city developed, and many of the creeks were actually moved, channelized, put into culverts, made into lakes (University Lake is an example), or worse. Fortunately, scientists and others see that a healthy and vibrant city should have waterways that are also healthy, and some of these changes are being undone.

The reason for this letter is to ask you all to be good creek stewards. There are several things that you can do near your property to help bring Chester Creek back to a nice healthy state. Probably one of the biggest positive effect you can have is, if you own pets, to clean up after them as dog poop washes down into the creek and raises its fecal coliform level. Water with high fecal coliform is not something you want to drink or get splashed into your mouth or eyes. Another is to not put anything on the creek bank or into the water, such as green waste and plant cuttings, because these break down and remove oxygen in the water.

There are many other actions you can take which are listed on the enclosed card, “How to live with a creek”. Please take a moment to read it, maybe post it on your refrigerator, discuss it with your family or housemates. We can make a positive difference in this area and other parts of Anchorage. It takes everyone helping in some capacity. Please consider the creek as part of the ambiance and value of your neighborhood and treat it well. This will benefit you, your neighbors, the people who live downstream, and the critters that live in and use the creek. And, by all means, contact us with concerns or questions at awc@anchoragecreeks.org.

Thank you,

Cherie Northon, Ph.D., Executive Director

Watershed Plan Scoping

Fish Passage Site 20400085

Coordinates (dec. deg.): 61.16882°, -149.76459°

Legal Description: S013N003W35

Region: South Central

Road Name: Campbell Airstrip Road

Datum: NAD83

Quad Name / ITM: Anchorage A-8

AWC Stream #: 247-60-10340-2021

Stream Name: Campbell Creek North Fork

Elevation:

Site Comments: CABBELL CREEK WATERSHED

Survey [MOA08-085](#)

Survey Date: Sep 25, 2008 ▼

Observers: Heidi Zimmer, Desiree Demers, Dave Ryland

Overall Fish Passage Rating: Red

Tidal: No

Step Pools:

Backwatered: No

Construction Year:

Site Observations:

1. Culvert gradient gray
2. Constriction ratio red

Comments: CR from 2004. Fish Xing = RED

Culvert Measurements

ID: 1 Structure Type: Pipe-arch (Corrugated steel)

Fish Passage Rating: Red

Length(ft): 42.9	Inlet	Outlet
Inlet Type: Headwall	Width(ft): 5.9	5.8
Outlet Type: Headwall	Height(ft): 4.0	4.0
Corrugation Depth(in.): 1.5	Apron Length(ft):	
Corrugation Width(in.): 2.75	Water Depth(ft):	0.8
Condition Rating(1-5): 4	Rustline Height(ft): 1.4	
Approach Angle:	Substrate Depth(ft): 0.0	0.0
Sedimentation At Inlet:		
Inlet Substrate: None		
Outlet Substrate: None		

Backwatered?:
Baffles Present: No
Embedded?: No
Outfall Height: 0.0
Outfall Type:
Constriction Ratio: 0.46
Culvert Gradient: 1.28%
Max Slope:
Max Slope Length:

Culvert Observations:

1. Culvert gradient gray
2. Constriction ratio red

ID: 2 Structure Type: Pipe-arch (Corrugated steel)

Fish Passage Rating: Red

Length(ft): 42.8	Inlet	Outlet
Inlet Type: Headwall	Width(ft): 6.1	5.8
Outlet Type: Headwall	Height(ft): 3.8	4.0
Corrugation Depth(in.): 1.5	Apron Length(ft):	
Corrugation Width(in.): 2.75	Water Depth(ft):	0.75
Condition Rating(1-5): 4	Rustline Height(ft): 1.6	
Approach Angle:	Substrate Depth(ft): 0.0	0.0
Sedimentation At Inlet:		
Inlet Substrate: None		
Outlet Substrate: None		

Backwatered?:
Baffles Present: No
Embedded?: No
Outfall Height: 0.0
Outfall Type:
Constriction Ratio: 0.46
Culvert Gradient: 1.24%
Max Slope:
Max Slope Length:

Comments: CR from 2004. Fish Xing = RED

Culvert Observations:

1. Culvert gradient gray
2. Constriction ratio red

Stream Measurements

Stream Substrates	Upstream	Downstream
Dominant:	Gravel	Gravel
Subdominant:	Gravel	Gravel

Stream Slope(deg.):
Stream Flow Stage:

No stream width data available.

Elevations

Locator ID	Culvert Number	River Distance (ft) ¹	Distance From Crossing (ft) ²	Relative Elevation (ft)
D/S Water Surface Elev (WS @ GP 190' d/s)		0.00	190.0	91.35
D/S Grade Ctrl (Thalweg)		61.00	129.0	91.17
D/S Water Surface Elev		61.00	129.0	92.12
D/S Grade Ctrl (Thalweg)		91.00	99.0	91.25
D/S Water Surface Elev		91.00	99.0	92.44
D/S Water Surface Elev		123.00	67.0	94.21
D/S Water Surface Elev		130.00	60.0	92.72
D/S Grade Ctrl (Thalweg)		130.00	60.0	91.76
D/S Tailcrest or 1st Thalweg (TWC thalweg)		164.20	25.8	91.57
D/S Thalweg (TWC pipe 1)	1	165.00	25.0	92.62
D/S Thalweg	2	170.20	19.8	91.20
D/S Thalweg	1	174.20	15.8	91.82
D/S Thalweg	2	176.00	14.0	91.13
D/S Thalweg	1	178.00	12.0	91.11
D/S Thalweg	2	181.50	8.5	90.88
D/S Thalweg	1	183.50	6.5	90.46
D/S Thalweg	2	186.00	4.0	91.30
D/S Thalweg	1	187.40	2.6	90.83
D/S Thalweg (end of concrete footing)	1	187.50	2.5	91.38
D/S Thalweg (streambed at outlet)	1	190.00	0.0	91.48
Outlet Pool Water Elev (between pipes at headwall)		190.00	0.0	92.83
D/S Thalweg	2	190.00	0.0	91.54
Outlet Invert	2	190.00	0.0	92.11
Outlet Invert	1	190.00	0.0	92.15
U/S Headwater	2	232.00	0.0	93.86
U/S Headwater	1	232.00	0.0	93.86
Inlet Culvert Invert	1	232.00	0.0	92.70
Inlet Culvert Invert	2	232.00	0.0	92.64
U/S Thalweg	2	234.00	2.0	92.59
U/S Thalweg	2	236.50	4.5	93.32
U/S Thalweg (11' u/s pipe 1)	2	246.00	14.0	92.92
U/S Thalweg (shallow fast glide u/s w/no grade points)		292.00	60.0	93.06
U/S Thalweg (discharge x-section)		299.00	67.0	92.91

Notes:

1. River distance is measured continuously throughout the survey reach along the thalweg of the stream.
2. Measured from each end of the crossing along the thalweg of the stream.

Fish Sampling Efforts

No fish sampling occurred during this survey.

Fish Observations

No fish observations occurred during this survey.

Photos



Questions or comments about this report can be directed to dfg.dsf.webmaster@alaska.gov

Fish Passage Site 20401812

Coordinates (dec. deg.): 61.12980°, -149.96007°
Legal Description: S012N004W15
Region: South Central
Road Name: Sewer Line

Datum:
Quad Name / ITM: Anchorage A-8
AWC Stream #:
Stream Name: Campbell Creek

Elevation:

Site Comments: Culvert under sewerline at Campbell Lake outlet.

Survey MSB10-CAM01

Survey Date: May 07, 2010

Project Supervisor: Gillian O'Doherty, ADFG
Observers: Gillian O'Doherty, Ben Hestand, Mark Eisenman

Overall Fish Passage Rating: Gray

Tidal: Yes **Step Pools:** No
Backwatered: No **Construction Year:**

Site Observations:

1. Mechanical damage or joints parting

Comments: Substrate mostly scoured out of pipe. Inlet perch embedded. Site is Tidal.

Culvert Measurements

ID: 1 Structure Type: Circular pipe (Structural steel plate)

Fish Passage Rating: Gray

Length(ft): 40.0		Inlet	Outlet	Backwatered?: No
Inlet Type: Flared Inlet	Width(ft):	11.0	11.0	Baffles Present:
Outlet Type: Mitered	Height(ft):	5.9	4.8	Embedded?: Maybe
Corrugation Depth(in.): 2.0	Apron Length(ft):	0.0	0.0	Embedded Depth(ft): 3.3
Corrugation Width(in.): 6.0	Water Depth(ft):		2.1	Outfall Height: 0.0
Condition Rating(1-5): 4	Rustline Height(ft):	2.45		Outfall Type: At Stream Grade
Approach Angle:	Substrate Depth(ft):	5.1	6.2	Constriction Ratio:
Sedimentation At Inlet: Yes				Culvert Gradient:
Inlet Substrate: Gravel				Max Slope:
Outlet Substrate: Gravel				Max Slope Length:

ID: 2 Structure Type: Circular pipe (Structural steel plate)

Fish Passage Rating: Gray

Length(ft): 40.0		Inlet	Outlet	Backwatered?:
Inlet Type: Projecting	Width(ft):	11.0	11.0	Baffles Present:
Outlet Type: Projecting	Height(ft):			Embedded?: Yes
Corrugation Depth(in.):	Apron Length(ft):			Outfall Height:
Corrugation Width(in.):	Water Depth(ft):			Outfall Type: At Stream Grade
Condition Rating(1-5): 1	Rustline Height(ft):			Constriction Ratio:
Approach Angle: 13.0	Substrate Depth(ft):			Culvert Gradient:
Sedimentation At Inlet:				Max Slope:
Inlet Substrate:				Max Slope Length:
Outlet Substrate:				

Stream Measurements

Stream Substrates	Upstream	Downstream
Dominant:	Gravel	Gravel
Subdominant:	None	Sand

Stream Slope(deg.):
Stream Flow Stage:

No stream width data available.

Elevations

No elevation data available.

Fish Sampling Efforts

No fish sampling occurred during this survey.

Fish Observations

No fish observations occurred during this survey.

Photos



Questions or comments about this report can be directed to dfg.dsf.webmaster@alaska.gov

Fish Passage Site 20401888

Coordinates (dec. deg.): 61.17599°, -149.78523°

Legal Description: S013N003W34

Region: South Central

Road Name: Radio Tower Access Road

Datum: NAD83

Quad Name / ITM: Anchorage A-8

AWC Stream #:

Stream Name: Campbell Creek

Elevation:

Site Comments: Located on the state-owned road leading to the radio tower and DOT maintenance yard in Bicentennial Park.

Survey UPDATE-RTA01

Survey Date: Sep 15, 2009

Project Supervisor: Gillian O'Doherty, ADFG

Observers: Gillian O'Doherty, Ben Histand, Heidi Zimmer

Overall Fish Passage Rating: **Red**

Tidal: No

Step Pools: No

Backwatered: No

Construction Year:

Site Observations:

1. Constriction ratio red
2. Culvert gradient red
3. Inlet perch
4. Material inadequate for designed use

Comments: Spot velocities taken during survey at low water were 3.12 ft/s at the inlet and 7.46 ft/s at the outlet. Velocities very high in concrete pipe. Debris regularly blocks inlet. Adult salmonid was observed repeatedly trying to enter the pipe and failing. Overflow pipes are rusted through. Two additional overflow pipes above the two small pipes surveyed, not wet during regular flows.

Culvert Measurements

ID: 1 Structure Type: Circular pipe (Corrugated steel)

Fish Passage Rating: Red

Length(ft): 32.0		Inlet	Outlet
Inlet Type: Projecting	Width(ft):	1.5	1.5
Outlet Type: Projecting	Height(ft):	0.9	1.4
Corrugation Depth(in.): 0.5	Apron Length(ft):		
Corrugation Width(in.): 2.66	Water Depth(ft):		0.0
Condition Rating(1-5): 1	Rustline Height(ft):	0.9	
Approach Angle: 31.0	Substrate Depth(ft):	0.0	0.0
Sedimentation At Inlet: Yes			
Inlet Substrate:			
Outlet Substrate:			

Backwatered?: No
Baffles Present: No
Embedded?: No
Outfall Height: 0.21
Outfall Type: Overflow Pipe
Constriction Ratio: 0.3
Culvert Gradient: 2.84%
Max Slope:
Max Slope Length:

Culvert Observations:

- 1. Outfall height gray
- 2. Culvert gradient red
- 3. Constriction ratio red

ID: 2 Structure Type: Circular pipe (Reinforced concrete)

Fish Passage Rating: Red

Length(ft): 32.7		Inlet	Outlet
Inlet Type: Projecting	Width(ft):	3.5	3.5
Outlet Type: Projecting	Height(ft):	3.5	3.5
Corrugation Depth(in.):	Apron Length(ft):		
Corrugation Width(in.):	Water Depth(ft):		0.77
Condition Rating(1-5): 5	Rustline Height(ft):		
Approach Angle: 31.0	Substrate Depth(ft):	0.0	0.0
Sedimentation At Inlet: Yes			
Inlet Substrate:			
Outlet Substrate:			

Backwatered?: No
Baffles Present: No
Embedded?: No
Outfall Height: 0.0
Outfall Type: At Stream Grade
Constriction Ratio: 0.3
Culvert Gradient: 1.07%
Max Slope:
Max Slope Length:

Culvert Observations:

- 1. Constriction ratio red
- 2. Inlet perch

ID: 3 Structure Type: Circular pipe (Corrugated steel)

Fish Passage Rating: Red

Length(ft): 32.0		Inlet	Outlet
Inlet Type: Projecting	Width(ft):	1.5	1.5
Outlet Type: Projecting	Height(ft):	1.0	1.5
Corrugation Depth(in.): 0.5	Apron Length(ft):		
Corrugation Width(in.): 2.66	Water Depth(ft):		0.67
Condition Rating(1-5): 1	Rustline Height(ft):	1.0	
Approach Angle: 31.0	Substrate Depth(ft):	0.0	0.0
Sedimentation At Inlet: Yes			
Inlet Substrate:			
Outlet Substrate:			

Backwatered?: No
Baffles Present: No
Embedded?: No
Outfall Height: 0.0
Outfall Type: At Stream Grade
Constriction Ratio: 0.3
Culvert Gradient: 3.50%
Max Slope:
Max Slope Length:

Culvert Observations:

- 1. Culvert gradient red
- 2. Constriction ratio red

Stream Measurements

Stream Substrates	Upstream	Downstream
Dominant:	Silt/Clay	Gravel
Subdominant:	Gravel	

Stream Slope(deg.):
Stream Flow Stage: Low

Stream Width Type	Distance From Crossing (ft)	Stream Width (ft)
Upstream ordinary high water	125.0	15.70
Upstream ordinary high water	172.0	13.75
Upstream ordinary high water	220.0	11.00

Elevations

Locator ID	Culvert Number	River Distance (ft)¹	Distance From Crossing (ft)²	Relative Elevation (ft)
D/S Grade Ctrl (Thalweg)		0.00	75.0	96.95
D/S Water Surface Elev		0.00	75.0	97.51
D/S Tailcrest or 1st Thalweg		52.50	22.5	97.22
D/S Water Surface Elev (turbulent)		52.50	22.5	97.77
D/S Thalweg (bottom of pool)		66.00	9.0	95.50
D/S Thalweg		70.00	5.0	95.55
Outlet Invert	1	75.00	0.0	97.94
Outlet Pool Water Elev	1	75.00	0.0	97.73
D/S Thalweg	1	75.00	0.0	96.90
Outlet Invert	2	75.00	0.0	96.98
Outlet Pool Water Elev	2	75.00	0.0	97.75
Outlet Pool Water Elev	3	75.00	0.0	97.75
Outlet Invert	3	75.00	0.0	97.47
D/S Thalweg	3	75.00	0.0	96.80
Road Elev		91.00		103.17
Inlet Culvert Invert	2	107.00	0.0	97.33
U/S Headwater	2	107.00	0.0	98.74
Inlet Culvert Invert	1	107.00	0.0	98.85
U/S Headwater	1	107.00	0.0	98.83
U/S Headwater	3	107.00	0.0	98.74
Inlet Culvert Invert	3	107.00	0.0	98.59
U/S Thalweg (u/s top of scour hole @ inlet)		112.50	5.5	98.13
U/S Grade Ctrl (Thalweg) (1st grade pt u/s in thalweg)		119.00	12.0	98.15
U/S Water Surface Elev		119.00	12.0	98.81

Notes:

1. River distance is measured continuously throughout the survey reach along the thalweg of the stream.
2. Measured from each end of the crossing along the thalweg of the stream.

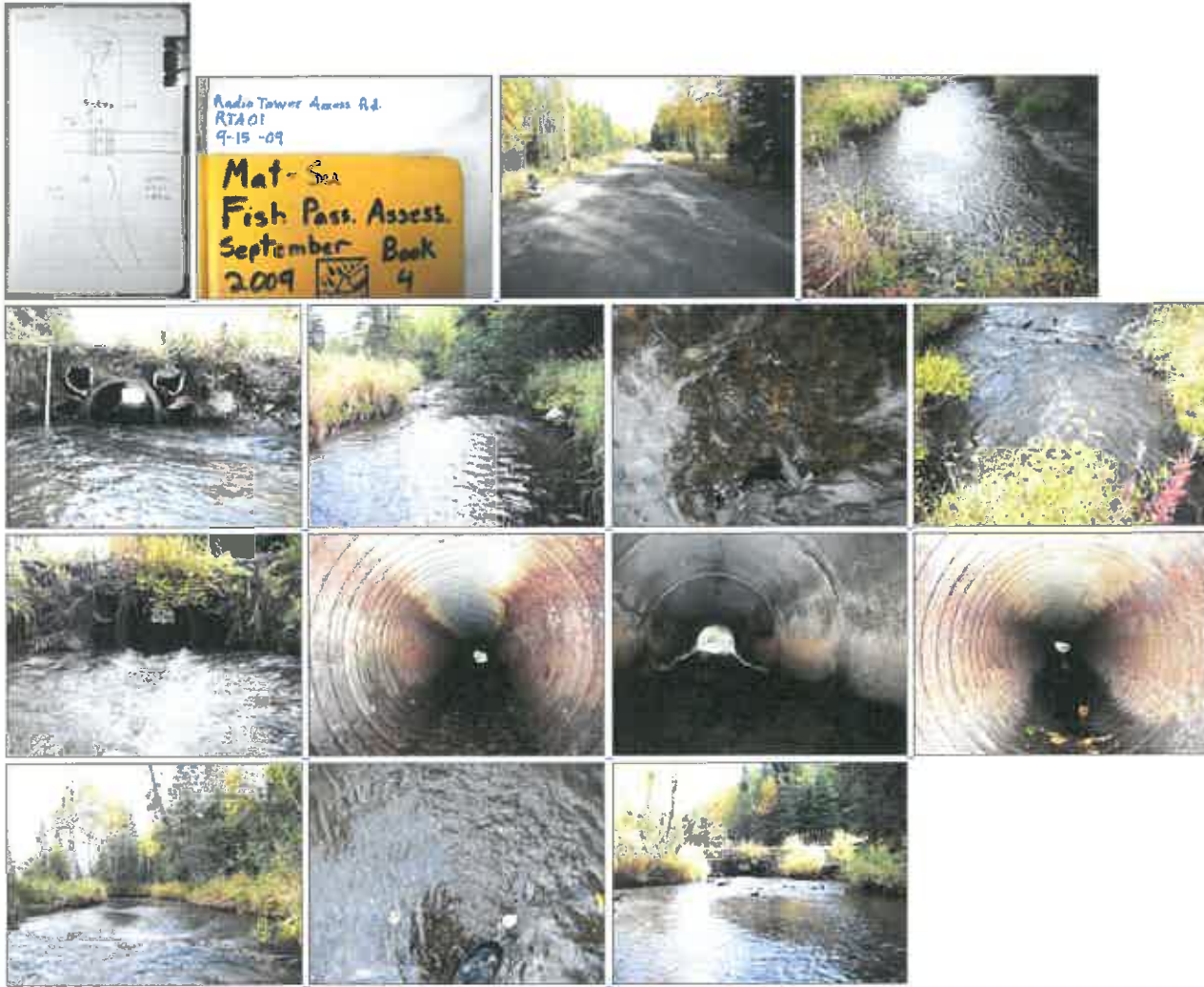
Fish Sampling Efforts

No fish sampling occurred during this survey.

Fish Observations

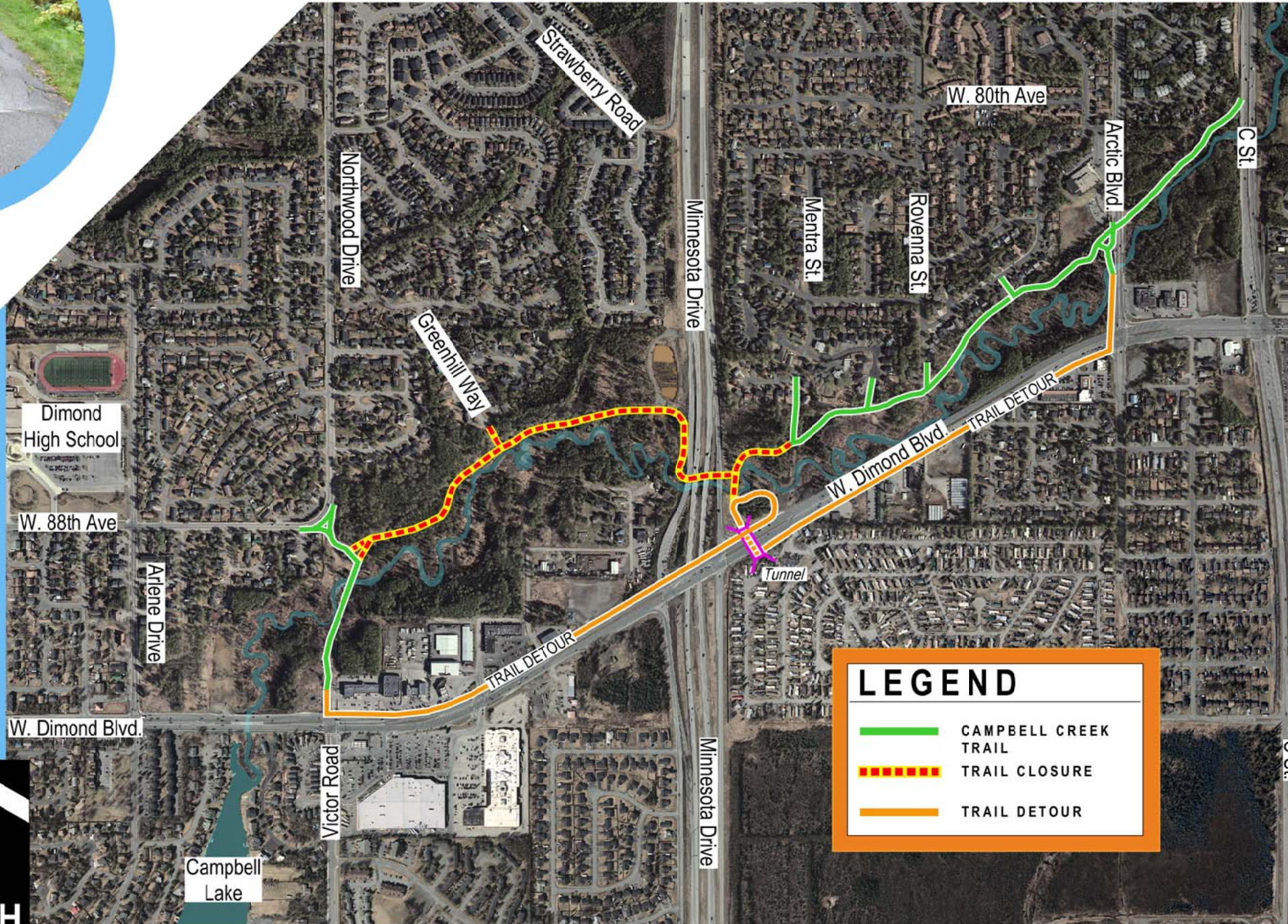
No fish observations occurred during this survey.

Photos



Questions or comments about this report can be directed to dfg.dsf.webmaster@alaska.gov

DETOUR INFORMATION



LEGEND

- CAMPBELL CREEK TRAIL
- TRAIL CLOSURE
- TRAIL DETOUR

The Campbell Creek Trail is closed east of West 88th Avenue / Northwood Drive to Menta Street Spur Trail, starting Thursday, July 20, 2017.

The Municipality Of Anchorage is Reconstructing and Improving the portion of Campbell Creek Trail between Northwood Drive to C Street through October 31, 2017.

Message signs will direct trail users to suggested detour route for Campbell Creek Trail access.

**PLAN YOUR TRIP ACCORDINGLY,
TRAVEL TIME MAY INCREASE.
THANK YOU FOR YOUR PATIENCE!**



CAMPBELL CREEK TRAIL IMPROVEMENTS

Contact the Municipality of Anchorage Parks & Recreation Department for questions: (907)-343-4355;
Project Website and MAP LINKS: <http://www.muni.org/Departments/parks/Pages/CampbellCreekTrailBridges.aspx>

Campbell Creek Trail Improvements (Multi-Year Phased Construction)¹

OVERVIEW

The multi-use greenbelt trail provides a safe means of access for users to a large portion of the Anchorage bowl and Campbell Creek Watershed. The Campbell Creek Watershed is a natural asset which provides many recreational and fishing opportunities, natural flood control, salmon viewing, and quality habitat for fish and wildlife. Over the years the trail has been subject to significant wear.

PROJECT HISTORY

In 2015, an engineering assessment was conducted for the entire 7 mile trail corridor, bridges and underpasses. The assessment was used to identify the highest priority areas and cost estimates for repair.

During summer 2016, due to severe winter erosion, two segments of heavily damaged trail were realigned/reconstructed and streambank restoration occurred. The segments were located near the Greenhill Way and Rovenna Street trail spurs.

In fall 2016 - winter 2017, a pre-construction survey was completed, and we are now completing the engineering design and permitting process for Phase 1 and potentially Phase 2 of construction.

FUNDING

Funding from a 2014 State of Alaska Legislative Grant was used for the engineering assessment and trail survey. Funding from the 2016 Municipal Park Bond will be used for Phase 1 of engineering design and construction. Phase 2 construction will be funded by the 2017 Municipal Park Bond.

PROJECT TIMELINE AND SCOPE

The Parks Department has completed Phase 1 and construction began on Sept. 21, 2017 of Phase 2. This work will continue through the fall as long as weather stays warm, then we will shut down for the winter season and restart again in Spring 2018. This will require intermittent closures of the trail by segments. Detour routes will be marked with maps and signs.

Project Concept Design:

Phase 1 - 2017: Approximately 1 mile of trail rehabilitation from West Dimond Blvd. to Minnesota Dr.; including all associated neighborhood trail spurs. The project elements will include the rehabilitation/replacement of cracked and heaving asphalt, streambank restoration, bridges, underpasses, amenity upgrades and improved signage and wayfinding. The trail is currently 8.5 feet wide asphalt surface, this will remain the same with the addition of two-foot wide soft-surface shoulders on each side of the trail.

Schedule: COMPLETED in summer 2017

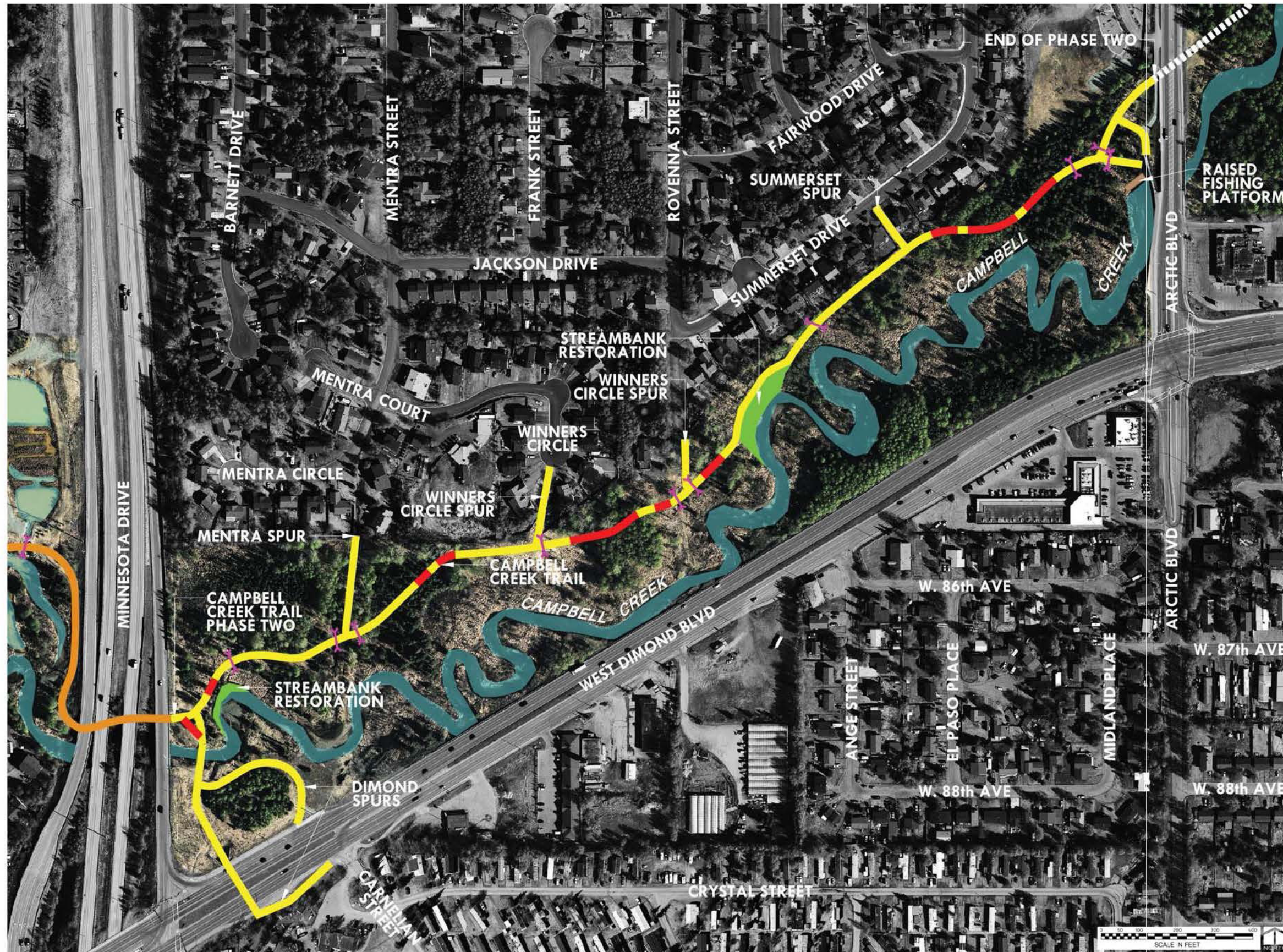
Phase 2

The scope will include approximately 1 mile of trail rehabilitation from Minnesota Dr. to west of C St.; this phase will be a continuation of phase 1 rehabilitation.

Schedule: Begin approximately Sept. 21, 2017 to spring 2018(*weather dependent)

For questions contact: Maeve Nevins Lavtar, Project Manager/Senior Park Planner, (907)-343-4135 or NevinsLavtarMV@muni.org.

¹ <http://www.muni.org/Departments/parks/Pages/CampbellCreekTrailImprovements.aspx>



STORM DRAIN IMPROVEMENTS



SUBSURFACE IMPROVEMENTS



SUBSURFACE IMPROVEMENTS



REALIGNMENT AND STREAM BANK IMPROVEMENTS

LEGEND

- █ REPAVE TRAIL & ADDITION OF JOGGING SHOULDERS
- █ RECONSTRUCT TRAIL & ADDITION OF JOGGING SHOULDERS
- █ PHASE 1 CONSTRUCTION
- █ STREAMBANK STABILIZATION
- █ DRAINAGE IMPROVEMENTS

CAMPBELL CREEK TRAIL

MINNESOTA DR. TO ARCTIC BLVD. (POTENTIAL CONSTRUCTION 2017)

PHASE TWO



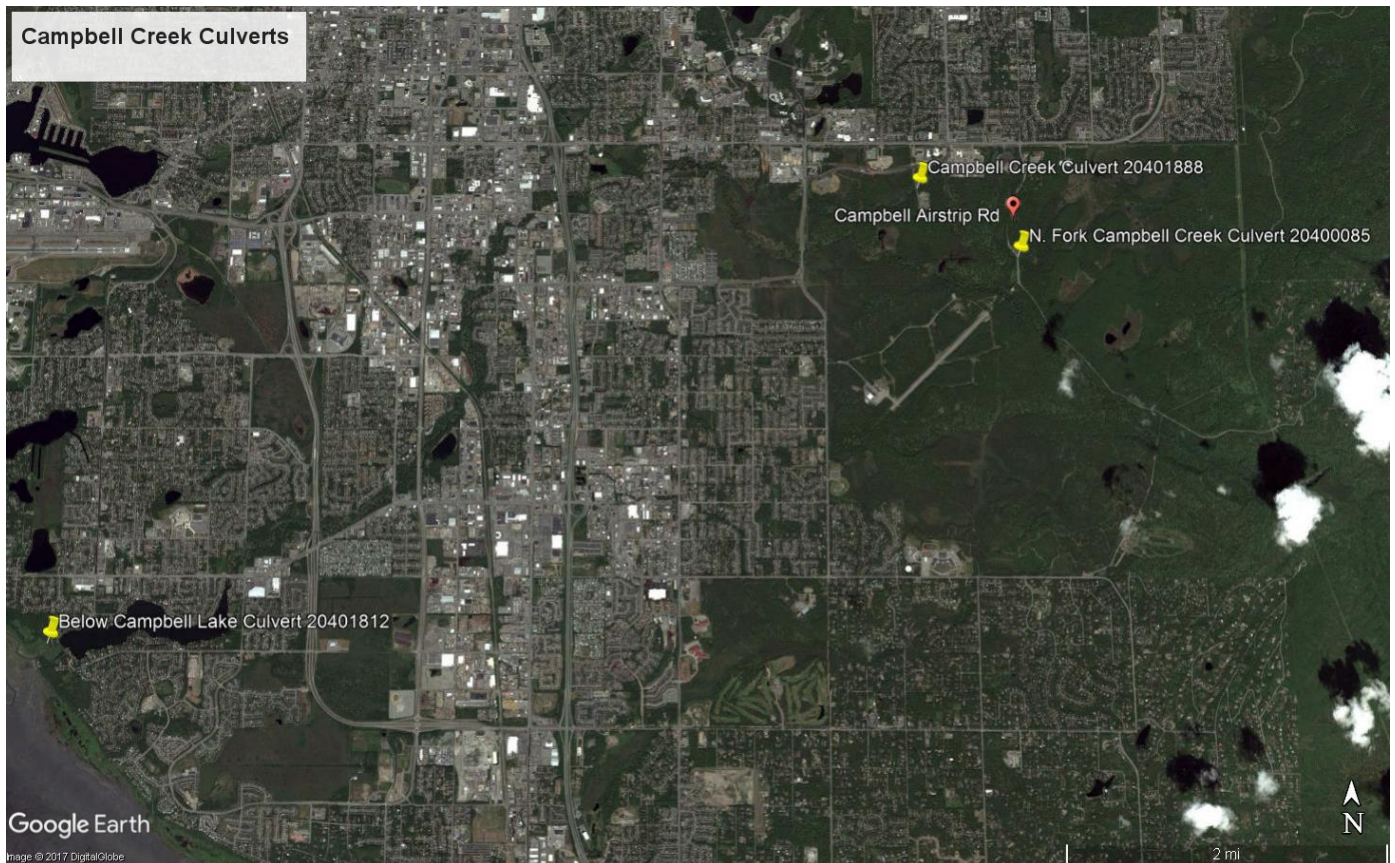
Campbell Creek Watershed Plan Scoping

Culvert Photos

October 31, 2017

Culverts on Campbell Creek

During the first scoping meeting for the Campbell Creek Watershed Plan on July 21, 2016, it was noted that Campbell Creek is literally devoid of culverts. From field work and from the ADF&G Fish Passage Mapper, it was confirmed that there are only two culverts on North Fork Campbell Creek upstream of Campbell Lake and a double culvert downstream of Campbell Lake. Campbell Lake itself is formed by a weir (**documentation**) that was established in 1959.



1. Culvert 20401812 is a culvert under the sewerline at Campbell Lake outlet. It was surveyed in 2010 and has a gray rating for fish passage. According to ADF&G's report comments, "Substrate mostly scoured out of pipe. Inlet perch embedded. Site is tidal"¹.



Culvert 20401812 inflow

¹ <http://www.adfg.alaska.gov/sf/reports/FishPassage/rptSite.cfm?site=20401812>

2. Culvert 20401888 is located on the Radio Tower Access Road off of Dr. Martin Luther King Dr. It is on a state-owned road leading to the tower and DOT maintenance yard in Bicentennial Park. The culvert is rated red for fish passage². Noted in the Comments, "Spot velocities taken during survey at low water were 3.12 ft/s at the inlet and 7.46 ft/s at the outlet. Velocities very high in concrete pipe. Debris regularly clocks inlet. Adult salmonid was observed repeatedly trying to enter the pipe and failing. Overflow pipes are rusted through. Two additional overflow pipes above the two small pipes surveyed, not wet during regular flows".



Culvert 20401812 outflow (2017)

² <http://www.adfg.alaska.gov/sf/reports/FishPassage/rptSite.cfm?site=20401888>



Culvert 20401812 inflow (2017)

3. Culvert 20400085 is on the North Fork of Campbell Creek where it intersects with Campbell Airstrip Rd. The culvert is rated red³ for fish passage. It consists of two corrugated steel pipe-arch. No other comments noted in ADF&G report.



Culvert 20400085 outflow (2017)

³ <http://www.adfg.alaska.gov/sf/reports/FishPassage/rptSite.cfm?site=20400085>



Culvert 20400085 inflow (2017)

Data sheets from the ADF&G Fish Passage Mapper⁴ follow this report.

⁴ <https://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=main.interactive>

Campbell Creek Restoration Grant, Fish Need A Forest

2017 Progress Report

Alaska Department of Natural Resources, Division of Forestry, Community Forestry Program

550 W. 7th Avenue, Suite 1450, Anchorage, AK 99501, (907) 269-8465

<http://forestry.alaska.gov/community/index.htm> / jim.renkert@alaska.gov

DNR staff purchased and planted trees and shrubs with the Anchorage Park Foundation (APF) Youth Employment in Parks (YEP) crews at a new 2017 project area along Campbell Creek known as the Lynnwood Street/Bittner House site. DNR Staff demonstrated proper planting techniques, laid out plants and assisted with planting.

YEP crews performed or assisted in the following accomplishments:

- West Dimond Blvd at the intersection of Campbell Creek: 1) Replaced Elevated Light Penetrating (ELP) boardwalks; 2) installed 120 feet of brush layering and coir logs; and 3) revegetated.
- Arctic Blvd: 1) Replaced ELP boardwalk; 2) installed 100 feet of vegetation mat and live willow staking; 3) Revegetate ~ 1000 sq. foot area under platform and where asphalt from old trail was removed.
- Lynnwood/ Bittner: 1) planted over 250 trees and shrubs (silverberry, rusty menziesia, devils club, rose, raspberry, red elderberry, birch; 2) installed 35 feet of brush layering, coir logs and willow stakes along streambank; and 3) pulled high priority invasive plant species.

DNR, including the staff from Forest Health, met with the MOA to consult on practices to manage spruce bark beetle activity along the creek corridor.

The APF's invasive species contractor repeated a survey for invasive plants in the same geographic areas as 2016. The Southcentral Foundation youth crew and YEP crews pulled bird vetch. The 2017 Weed Smackdown was held on Saturday July 15th at Taku Lake again to remove additional European bird cherry trees. Approximately 80 volunteers participated.

Twenty-eight Anchorage School District (ASD) teachers from grades K-12 attended a two day ASD Summer Academy course focused on outdoor learning and education on May 30 - 31, 2017. Three hours of the course was taught along the Campbell Creek Trail at the Greenhill Way entrance, where revegetation and bank restoration had been completed. Participants learned about the importance of the native plant species, restoration work, its role in vital salmon habitat, how to monitor wildlife along creek corridors, and how to monitor water quality of the creek with a macro invertebrate study. Teachers will use these lessons with their students in the following school year.

The "Conserving Campbell Creek through Conservation and Restoration" workshop was held June 2-3, 2017 as part of another ASD Summer Academy. The course utilized Project WILD/Alaska Wildlife Curriculum and Project Learning Tree Curriculum. The instructional focus

was on the Campbell Creek riparian area, its indigenous and invasive plants and wildlife, and the impacts of human use. The workshop demonstrated methods of conservation, preservation and restoration of urban habitats for wildlife. Project WILD elements were taught by Brenda Duty with the Alaska Department of Fish & Game; Project Learning Tree elements were taught by ANROE contractor Valerie Zeigler; and restoration techniques were taught by Stephen Nickel with the DNR Community Forestry Program.

Animal Facility Evaluation

**Evaluation of Animal Facilities and Venues
For Years One and Two**

By Dr. Thom Eley

Anchorage Waterways Council

12/31/2017

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* Some of these facilities have closed and a few new ones have opened as of December 31, 2017.

Goal: Develop a list for review of animal facilities and locations of high domestic animal usage in the Municipality, such as kennels/boarding and pet day care facilities, pens, corrals, and stables; recreational facilities and trails; show and event areas; pet stores; groomers; dog parks; the Alaska Zoo; and other commercial animal facilities.

Actions for APDES Permit:

1. Work with the Municipality of Anchorage’s (MOA) Animal Care and Control Center (ACCC) staff to obtain information on their multiple-pet licensing program requirements, staff visits and reports/complaints.

2. Look at permitting and requirements for other facilities listed above in Action.

Actions 1 and 2 have been combined for this report.

Alaska Criminal Laws:

Animals are covered in five sections of Alaska Statutes Title 11. Criminal Law.

- 11.56.705 Police Dog—Harming 1: Class C Felony
- 11.56.710 Police Dog—Harming 2: Class A Misdemeanor
- 11.81.900 Police Dog—Definitions
- 11.61.140 Animals—Cruelty: Class C Felony or Class A Misdemeanor
- 11.61.145 Animals—Fighting: Class C Felony or Class A Misdemeanor or Class B Misdemeanor

Municipality of Anchorage Animal Ordinances:

Anchorage Municipality Code (AMC) Ordinances that include animal regulations can be found in:

- TITLE 2 - LEGISLATIVE BRANCH
- TITLE 4 - BOARDS AND COMMISSIONS
- TITLE 7 - PURCHASING AND CONTRACTS AND PROFESSIONAL SERVICES
- TITLE 8 - PENAL CODE
- TITLE 9 - VEHICLES AND TRAFFIC
- TITLE 11 - TRANSPORTATION
- TITLE 14 - ADMINISTRATIVE ENFORCEMENT
- TITLE 15 - ENVIRONMENTAL PROTECTION
- TITLE 16 - HEALTH
- TITLE 17 - ANIMALS
- TITLE 21 - LAND USE PLANNING (OLD CODE - Expires December 31, 2015)
- TITLE 21 - LAND USE PLANNING (NEW CODE - Effective January 1, 2014)*
- TITLE 25 - PUBLIC LANDS
- TITLE 26 - UTILITIES
- TITLE 27 - SERVICE AREAS

ANIMAL CARE AND CONTROL CENTER STAFF AND POLICIES:

On 29 January 2016, Dr. Eley interviewed Officer Bradley Larson, Enforcement Supervisor, Municipality of Anchorage, Anchorage Animal Care and Control and he was very gracious and helpful. Dr. Eley provided him with copies of the Goal and Action for the Evaluation of animal facility program (Year 1 of 3). It was stressed that his help was needed and that we would work as partners through the process. Dr. Eley told Officer Larson that he would provide him with a copy of all written materials concerning ACCC and Municipal Ordinances for his comment and review.

AMC Title 17 defines an animal as all members of the Phylum Cordata, Subphylum Vertebrates, excluding nondomestic animals (wildlife) and humans. However, Title 17 specifically addresses only dogs, cats, rabbits, ferrets and horses. Animal control officers respond to complaints of cruelty, abuse, animal fighting, neglect and other issues for all species of animals. They have even responded to an issue of a non-zoo elephant. Additionally, llamas (*Lama glama*), alpaca (*Vicugna pacos*), domestic goats (*Capra hircus*), domestic sheep (*Ovis aries*), domestic pigs and pot-bellied pigs (*Sus scrofa domesticus*), guinea pigs (*Cavia porcellus*), hamsters (several species), gerbils (several species), mice (probably several species), donkeys or asses (*Equus africanus asinus*)[on 31 January 2016, 34 donkeys were listed as for sale or free to a good home in Anchorage], and allegedly one mule (*Equus asinus* × *Equus caballus*). Rats (*Rattus rattus* and *Rattus norvegicus*) are specifically prohibited as pets in Anchorage (Section) 16.90.030 Rat control--Ownership or breeding of rats is prohibited; report of presence of rats; extermination). In addition, various species of birds, reptiles and amphibians are kept as pets. The red-eared slider turtle (*Trachemys scripta elegans*) that is commonly sold in pet stores in Anchorage has been sighted in significant numbers in University Lake, Chester and Campbell Creeks, and in a pond near Minnesota Ave. over the last couple of years.

Appropriate Ordinances: These ordinances may be only quoted in the part that is relevant to this project.

17.10.010 -Animals in public places.

A. It is unlawful for any animal to be in a public place unless it is controlled by a leash, and in the control of a person competent to restrain the animal except:

1. Control of an animal by command is allowed if the animal is engaged in an activity that precludes it from accomplishing that activity if restrained, and the animal is in an area normally associated with that activity, and the activity is conducted in a manner that minimizes impact with the general public;
2. A dog may be unconfined in areas sanctioned by the municipality as off leash dog areas. The owner or custodian of a dog, unconfined in an off leash dog area, must have a leash restraint immediately available for the physical control of the dog and be physically capable of controlling the dog;
3. An animal, at shows and events, may be unconfined during the time of the demonstration in a manner which does not pose a threat to public health and safety or the safety of other animals;

4. An animal may be humanely attached in or to a vehicle in a public place, provided the animal may not: a. Be capable of removing or detaching itself from the vehicle; b. Be attached so as to fall, jump, be thrown from or dragged by the vehicle; c. Be exposed to prolonged inclement weather; or d. Pose a threat to public health and safety or the safety of other animals.

5. An animal may be humanely contained inside an attended or locked, fully enclosed container.

17.10.015 – Animals creating disturbance or nuisance.

B. No owner or custodian of an animal shall permit the animal’s feces to be left on public or private property. **[This would include feces left behind by horses, cats, dogs with joggers or bicyclists, and dog teams.]**

17.10.090 - Off-leash dog park spaces.

A. Notwithstanding any other provision of this Code, legally licensed dogs with current rabies vaccinations may be allowed, unleashed, in areas recommended by the animal control advisory board with concurrence of the parks and recreation commission and the mayor, subject to approval by the assembly. Such areas shall include but are not limited to designated areas within the following locations: University Lake Park; Far North Bicentennial Park (North Gasline Trail); Russian Jack Park; Connors Bog; South Anchorage Sports Park (Future American Legion Trails); and Valley of the Moon Park.

B. Rules and regulations promulgated for the use of off-leash dog park spaces shall be posted and shall include the following:

1. Dogs must be leashed upon entering and leaving the off-leash dog park space.
2. Classified¹ dogs and female dogs in heat are prohibited.

¹ 17.40.020 - Classifications and exceptions to classification of animals.

A. Classifications. Subject to the authority of the chief animal control officer under subsection B below, an animal may be classified based on one of the following levels:

1. *Level one behavior* is established if an unrestrained animal is found to menace or chase, and display threatening or aggressive behavior, or otherwise threaten or endanger the safety of any person or domestic animal.
2. *Level two behavior* is established if an animal bites or causes physical injury to any domestic animal, or if an unrestrained animal kills any unrestrained domestic animal.
3. *Level three behavior* is established if an animal, while under restraint, inflicts an aggressive bite or causes any physical injury to any human.
4. *Level four behavior* is established if any of the following occur:
 - a. An unrestrained animal inflicts an aggressive bite or causes physical injury to any human; or
 - b. An unrestrained animal kills a domestic animal that is restrained; or
 - c. An animal, regardless of whether it is restrained, for the second time injures or kills a domestic animal.
5. *Level five behavior* is established if any of the following occur:
 - a. An animal, regardless of whether it is restrained, causes serious physical injury or the death of any human; or
 - b. An animal is used as a weapon in the commission of a crime; or
 - c. An animal previously classified as a level three or four, or as a potentially dangerous animal under a prior enactment of this Code, commits a level three or four behaviors described in subsection A.3. or A.4. above after the owner receives notice of the prior level three or four classification.

3. The owner or custodian of the dog must remain in the dog park space with the dog.
4. Dogs must be under control as defined in this chapter.
5. Dog feces must be cleaned up by the dog owner or custodian.
6. Holes dug by dogs must be filled by the dog owner or custodian.
7. Owners or custodians are responsible for all actions of their dogs.

C. Additional rules and regulations for each off-leash dog park space may be needed and will be recommended by the animal control advisory board with concurrence of the parks and recreation commission and approval by the director of the parks and recreation department and the chief animal control officer. Additional approved rules and regulations shall be posted.

D. It shall be unlawful for any owner or custodian of a dog to permit the dog to violate rules and regulations under AMC 17.10.090.

17.10.012 - Cat identification required.

A. The owner or custodian of a cat over the age of four months shall maintain an identification worn by the cat at all times except:

1. When the cat is on the private property of the owner or custodian; or
2. When the cat, under control by leash or control by confinement, is either in a public place or on the private property of another.

B. Identification must be either a collar or tag which includes the current name, address and telephone number of the owner, or a microchip registering the owner.

17.15.010 - Municipality of Anchorage dog license required.

A. Any person who owns or has custody of a dog or wolf hybrid² over the age of four months shall obtain a Municipality of Anchorage dog license for the dog or wolf hybrid except a dog brought into the municipality for less than 30 days.

17.15.050 - Municipal dog license tags and receipts.

² **Wolf Hybrids:** Possession of wolf hybrids (AMC 17.60.010). No person shall own, possess, keep, maintain, harbor, transport, sell or advertise for sale any wolf hybrid within municipal boundaries except as provided under state law. Such possession of wolf hybrids is a criminal offense as set forth in AMC 8.55.070. Wolf hybrids (AMC 8.55.070). Any person convicted of violating any provision of AMC 17.60, "Wolf Hybrids" with criminal negligence is guilty of a misdemeanor and may be punished by imprisonment for up to six months in jail or a fine of not more than \$2,000.00 or both.

A. A dog or wolf-hybrid shall bear a current Municipality of Anchorage dog license tag securely fastened to its collar, chain collar, or harness at all times except:

1. Any licensed dog or wolf hybrid while confined on the owner's or custodian's premises; or
2. While in competition, in training or while hunting.

17.15.0060 - Special Purpose Licenses.

Three special purpose licenses are issued by ACCC (AMC 17.15.060):

- 1. Animal litter license:** Issued to a person who sells or reconveys not more than 3 litters of dogs or cats in a calendar year.
- 2. Multi-animal facility license:** A person or facility, including a dwelling unit, residence, or business premise, that owns, possesses or is the custodian of four or more dogs, four or more cats, four or more rabbits, four or more ferrets, four or more horses or any combination of seven or more of the above animals, shall be required to obtain a multi-animal facility license: a. This section shall not apply to a person who has a single litter of dogs and/or cats that are not for sale and under the age of four months. b. This license shall be valid for two years from date of issuance.
- 3. Commercial facility license:** A person or facility that boards or grooms dogs, cats, rabbits, ferrets, and/or horses for fees or services, or any person or facility that reconveys four or more dogs or cats in a calendar year, or any person or facility that breeds more than three litters of dogs and/or cats in a calendar year shall be required to obtain a commercial facility license. a. This license shall be valid for one year from date of issuance. b. A pet store is a commercial facility for purposes of this section.
- 4. Special Purpose License Facilities Summary:** The following facilities are Special Purpose License Facilities:
 - An owner raising 3 or less litters of dogs or cats per year.
 - Home kennels with 4 or more animals or a combination of 7 animals. This would include dog teams.
 - Boarding kennels.
 - Stables that board horses or provide riding lessons.
 - Doggy-day care facilities.
 - Pet stores.
 - Pet groomers.
 - Commercial pet breeders.
 - Some rescue shelters.
- 5. Facilities Exempt From Licensing:** Veterinarians, non-commercial stables (unless they fall into the Multi-animal facility category), pet trainers, Alaska Zoo, Pooper Scoopers, and pet exercisers are exempt from the facility license requirement. Pet sitters are an odd category that may fall into the Multi-animal facility or commercial animal facility category or in none of the categories, depending upon how

the “sitting” is done. Licensing requirements do not apply to rescue groups approved by and registered with the animal care and control center.

6. Pet Waste Disposal: When an owner receives an Anchorage Animal Care and Control Special Purpose License Application, they receive a copy of the Municipality of Anchorage Waste Management Guidelines. The guideline lists the waste storage location setback distances from streams and surface waters as 25 feet. (See Appendix 1)

17.15.090 Inspections.

A. The animal care and control center may inspect the premises and/or animals of all special purpose licensees annually or upon a public complaint. The animal care and control center may inspect prior to the issuance or renewal of a multi-animal or commercial facility license.

B. Special purpose license inspections:

1. A commercial facility, open to the public, may be inspected without notice during the times of normal business operations; or
2. A private residence may be inspected within 72 hours of notification to the resident of the intent to inspect. Such inspection shall be conducted between the hours of 8:00 a.m. and 8:00 p.m.
3. Inspections shall be conducted by animal control officers and/or a licensed veterinarian trainee to examine all animals in the facility.

Inspection Coverage:

Animal Control Officers or Veterinarian Trainees conduct all inspections. The inspection ensures that the facility meets Title 17.10.050.

17.10.050 - Standards for operating animal facilities.

A. An owner or operator of a multi-animal facility, commercial facility, or any other facility associated with keeping of domestic animals for which a permit is required, as specified under chapter 17.15 and any other municipal regulations, shall:

1. Provide adequate and appropriate shelter to ensure animal health, safety, and welfare.
2. Maintain the facility in a sanitary condition (guidance to applicants on the disposal of animals are attached as Appendix 1.)
3. Provide veterinary care as necessary.
4. Provide for adequate and appropriate care and feeding of animals and ensure the availability of adequate food and fresh water.
5. Ensure no animals prohibited by federal, state and municipal laws are kept.

6. Ensure all animals are confined or in control on any premises where the animals are kept.
7. Keep only the number of animals in the facility or on premises which allows for appropriate space, safe keeping, humane care and sanitary environment consistent with the animal's breed, size, age, and species for all animals kept.
8. Comply with the provisions of this title, municipal regulations, and the terms, conditions and limitations of any license issued under chapter 17.15.
9. Comply with the provisions of Title 21 (Land Use Planning) of this Code.

Complaints:

According to Officer Larson, the four most common complaints are:

1. Chronic animal noise: barking, and other disturbing noises that animals might make.
2. Animal feces on trails, in parks and in individual's yards. This is a constant complaint of all trail and park users. However, some of the worse places are the parking lots and trails leading to off-leash dog parks. People get out of their vehicle, let their dogs run unleashed [after all we're going to an off-leash park] around the parking lot and the trail where the dogs often defecate. This is a violation of the off-leash park rules. People don't seem to clean up these areas with any vigor.
3. The smell of feces or horse manure, which is generally the result of failure to clean up yards or paddocks and barns. However, the smell of feces and urine goes away during the coldest part of the winter, yet when the melt begins the smell, even though cleanliness has been maintained, returns.
4. Too many animals at a facility: usually this complaint is made by someone whose neighbor has more than 3 animals on their premises. More often than not, the person making the complaint doesn't understand that the individual has a Multi-animal permit.

Other complaints include:

5. Occasionally, there will be a complaint against a specific boarding kennel or dog groomer, but they are not common. However, some of these complaints are complex and time consuming.
6. Loose or stray dogs.
7. Vicious dogs
8. Animal cruelty cases.
9. Neighborhood feuds: Where neighbors are feuding over some issue and will call various agencies (Code Enforcement, Animal Control, etc.) in retaliation for some aspect of the feud.

Ordinance Reviews:

The animal control ordinances of 15 cities approximately the size, as well as some larger and some smaller, of the Municipality of Anchorage were reviewed and compared to the Title 17 of the Municipality of Anchorage Ordinances (Table 1). Most of the cities combine all animal ordinance and issues under one title while Anchorage has animal issues addressed in Titles 2, 4, 7, 8, 9, 11, 14, 15, 16, 17, 21, 25, 26, and 27.

Title 17 is in line with ordinances from other cities with a few differences in numbers and kinds of animals that can be possessed, fine and fee schedules and administrative processes. Most cities address all animals in their ordinances: dogs, cats, ferrets, caged birds, domestic birds, chickens, turkeys, ducks, geese, swans, goats, sheep, horses and ponies, cattle, alpaca and llama, camel, kangaroos and wallabies, ostriches, rheas, emus, wild animals as pets (permitted in some states), reptiles, and amphibians. Interestingly, most cities allow and regulate pigmy goats, pigmy sheep, miniature horses, and Vietnamese pot-bellied pigs below a certain weight and length.

Several ordinances prohibit the releasing of any pet (one ordinance includes the dumping of aquarium fish and plants) into the wild where it could become a feral or invasive species. **This provision would be a good addition to Anchorage’s Title 17 or Title 21.**

Table 1. Cities where animal ordinances were reviewed.

City	Population
Anaheim, CA	336,268
Bend, OR	76,639
Boise, ID	392,365
Denver, CO	600,158
Eugene, OR	156,185
Fresno, CA	494,665
Long Beach, CA	462,250
Oakland, CA	397,245
Portland, OR	581,485
Salem, OR	130,398
Santa Ana, CA	324,528
Seattle, WA	608,660
Spokane, WA	208,916
Tacoma, WA	198,397
Walla Walla, WA	31,731

Title 17 addresses only dogs, cats, rabbits, ferrets and horses. However, sheep, goats, cows, pigs, llamas, alpacas, rabbits (including feral rabbit populations), chickens, turkeys, domestic ducks and domestic geese are found in Anchorage, but they are not specifically addressed in Title 17 and no guidance is given to their ownership provisions. Some people have suggested a review of the covenants for their subdivision, but, for many residents, they and their neighbors don’t have a copy of the covenants. Additionally, owners of newer houses built in the subdivision or adjacent to the subdivision are not covered under the covenants. Others contend that covenants expire after a period of time, but little information is available on covenants in the Municipality.

AMC Sec.21.05.050 discusses large domestic animal facilities, which harbor four or more “large domestic animals.” Large domestic animals are not defined, although horses and equestrian activities are mentioned later in this section.

Other requirements. Large domestic animal facilities shall:

- (A) Meet the requirements of AMC Chapter 15.20 regarding animal waste; AMC subsection 15.55.060 B., concerning separation requirements from water supply wells; and AMC Section 21.07.020 concerning stream protection setbacks.
- (B) Obtain an animal control facility license.
- (C) Obtain certification of compliance with a state of Alaska, Anchorage Soil and Water Conservation District conservation plan, or obtain a letter of intent from the district showing demonstrated intent to come into compliance with a conservation plan within one year; and
- (D) Comply with licensing and other laws concerning the keeping of animals as set forth in AMC Titles 15, 17, and 21.

Additional Conditions: The planning and zoning commission may impose additional conditions upon a conditional use permit that are found necessary to protect any person or neighboring use from unsanitary conditions or unreasonable noise or odors, or to protect the public health and safety.

AMC Sec.21.05.070 (Accessory Uses and Structures) states that “up to five animals may be kept on lots of 6,000 ft² (0.14 acres) or less with an additional one animal per additional 1,000 ft². It is unclear whether the five animals on lots of 6,000 ft² or less applies just to outside animals or animals kept primarily in a residence. Further, the title states, “One to three large domestic animals may be kept outdoors on lots of 20,000 square feet [0.46 acres] or greater...” Is this the minimum size lot that a horse could be kept on? We still don’t know what constitutes a “large domestic animal.” Title 21 also allows one animal per 1,000 square feet lot area to be kept outdoors on lots of 40,000 ft² (0.92 acres) or greater. Thus someone with a parcel of 40,000 ft² could keep 40 head of horses. There are horses kept in the Municipality on lots considerably less than 40,000 ft² and certainly less than 20,000 ft². Do large domestic animals include miniature horses, pigmy goats, goats, alpacas, llamas, sheep, and pigs?

Title 21 prohibits excessively noisy animals such as roosters, turkeys, guinea fowl, peacocks, or geese on lots less than 40,000 ft². Where is the specific guidance on chickens and other fowl other than excessively noisy animals?

3. Contact Anchorage Water and Wastewater Utility (AWWU) regarding their Industrial Pretreatment program standards in regard to animal facilities.

Mr. Chris R. Kosinski, Public Affairs, Anchorage Water and Waste Water Utility provided the following answers to Action 3 (email 4 January 2016):

- AWWU does not specifically address animal facilities with standards for discharge, other than the applicable prohibited discharge standards codified and listed in Anchorage Municipal Code 26.50.050 (copy attached).
- 26.50.050 - Prohibited acts (abbreviated list, see attached copy of all Prohibited acts).
- A. It shall be unlawful for any user to:
 - 2. Discharge or cause to be discharged any of the following described pollutants, substances, or wastewater into the municipal sewerage system:
 - c. Any solid or viscous substance, or liquid that can become viscous when cooled, in amounts capable of causing obstruction to the flow in sewers or other interference with the proper operation of the sewerage system such as, but not limited to, fat, grease, uncomminuted garbage, animal guts or tissues, hair, hide, fleshings or entrails.

Question by researcher Dr. Eley to Mr. Kosinski: *Do wastes from animal facilities, vets' offices, etc. receive any special treatment by you folks or does it just go down the drain with the rest of wastes.*

- “No special treatment requirements, unless discharges resulted in blockages, in which case pretreatment would recommend use of best management practices to prevent sewer blockages (i.e., dispose of animal hair to solid waste, install floor drain screening devices, etc.)” Mr. Kosinski’s reply (email 5 January 2016).

4. Prepare list of facilities and event locations and develop maps of them for proximity to waterbodies and other pertinent features that would impact stormwater runoff.

Six maps have been prepared for this report in 2016 and in 2017 (see Appendix 5):

- Map 1. Indoor Animal Facilities, Anchorage
- Map 2. Off-Leash Dog Parks, Anchorage
- Map 3. Commercial Stables and Zoo, Anchorage
- Map 4. Stables in Chugiak
- Map 5. Anchorage Animal Venues
- Map 6. Chugiak and Eagle River Animal Venues

Off-Leash Dog Parks: The watersheds for the seven Off-Leash Dog Parks are shown in Table 2 and Map 2. Currently, the Valley of the Moon Dog Park is closed as it is being redesigned. Information available to Off-Leash Dog Park users by Animal Care and Control is shown in Brochure 1 and 2. While some of the parks are located on a creek (University Lake on the South Fork of Chester Creek or Valley of the Moon Park on Chester

Creek), others are some distance away, but all have stormwater drainage to their particular creek. Thus all of the Off-Leash Parks are potential sources of *E. coli* to the creeks and watersheds list in Table 2.

All seven Off-Leash Dog Parks were visited and all have Pet Waste Stations in the park or at the trail heads. Unfortunately, folks using the parks are doing a poor job of cleaning up after their dogs. Additionally all of the Municipal parks, greenbelts, and trails had considerable dog feces lying on the ground and are being used as off-leash dog parks.

Park	Watershed	Location
Arctic/Benson Park	Fish Creek	Stormwater to Fish Creek
Connors Bog Park	Lower Campbell Creek & Connors Lake	Stormwater to Lower Campbell Creek & Connors Lake
Far North Bicentennial Park Gasline Trail	South Fork of Campbell Creek	On South Fork of Campbell Creek
Russian Jack Park	Middle Fork, Chester Creek	South part of the Park is located on the Middle Fork of Chester Creek & north part is stormwater drainage into the Middle Fork
South Anchorage Sports Park	Campbell Creek	Stormwater drainage to Campbell Creek, recently redone ³
University Lake Park	South Fork of Chester Creek	On South Fork of Chester Creek
Valley of the Moon Park	Chester Creek	Reopened after being redone in 2017 ⁴










Watching people’s behavior at the parks yielded some interesting observations. About half of the people pick up after their dogs and these are usually people who are actively interacting with their dog. The other half do not clean up after their pets. Many dog owners just turn their dog(s) loose in the park and pay no attention to it or what it is doing. Some dog owners stand around in big groups talking and are oblivious to the dogs unless there is a fight. Some folks are on cells phone and are focused on their conversation and not their pets.

³ South Anchorage Sports Park Dog Park was field checked by Dr. Eley on 12 January 2018 and is finished. Good signage at the dog park, pet waste stations in place, trash cans, etc. Signage directing people to the dog park is absent, which results in pet owners using other areas of the park for their dogs (off-leash in on-leash areas). Signage to be place in Spring 2018.

⁴ Valley of the Moon Dog Park was field checked by Dr. Eley on 8 Jan 2018 and is now finished, complete with poop left in the fenced area. Four cars pulled up to the main park area and let their dogs out to poop in the park while he was there.









GOING TO THE OFF-LEASH AREA

To make your time at the off-leash dog area safe and enjoyable, please use good etiquette and:

-  **Always carry a leash and leash-up for arrival and departure.**
-  **Always clean up after your pet and properly dispose of the waste.**
-  **Once inside, take your dog away from the entrance when other dogs are coming in.** Entering the park is the most stressful time for a dog, made even more so when the new dog is surrounded by other dogs.
-  **Manage your dog's interactions with other dogs.** Play time should be mutual, with both dogs taking part. Improper or worrisome behaviors may include extreme submissiveness, mounting and bullying. Don't be afraid to call your dog back to you if play is getting too rough. In fact, the dog park is a good place to practice your recall with your dog so your dog doesn't think the only time you call him/her is when you're leaving.
-  **Be respectful of other users—keep your dog from jumping on or interfering with other people and their animals.**
-  **If your dog gets really excited when you visit the dog park, try walking around the park or the parking lot with your dog on leash first until he/she calms down.**
-  **Pay Attention.** Your time at the park is your dog's opportunity to socialize, not yours. You need to keep your eyes on your dog at all times to ensure he/she is safe and under control.
-  **Listen to Your Dog.** If your dog is hanging around you or not interacting with the other dogs, it's time to go. Your dog may be tired or just doesn't feel like being there any more.
-  **Most importantly, know your dog and general dog behavior.** Can you differentiate between real dog aggression and play? Can you recognize when your dog is anxious? Often it is the owner's actions or lack thereof that cause concerns.

USE RULES

Off-leash dog area users are required to follow area rules at all times. Failure to comply with rules may result in municipal citations including fines. Rules include:

-  Dogs must be leashed upon entering and leaving the off-leash dog areas.
-  Dogs must be legally licensed and have a current rabies vaccination.
-  Classified dogs and female dogs in heat are prohibited.
-  The owner or custodian of the dog must remain in the dog area with the dog.
-  Dogs must be under control as defined in Anchorage Municipal Code Title 17 (Animals).
-  Dog feces must be cleaned up by the dog owner or custodian.
-  Holes dug by dogs must be filled by the dog owner or custodian.
-  You are fully responsible for your dog and his actions.

MUNICIPALITY OF ANCHORAGE OFF-LEASH DOG AREAS



Five off-leash dog areas exist within municipal parks in Anchorage. Each is a multi-purpose area serving a variety of park users.

The continued success of off-leash dog areas depends on you. Please follow use rules and remember to be courteous of all users recreating in the parks.



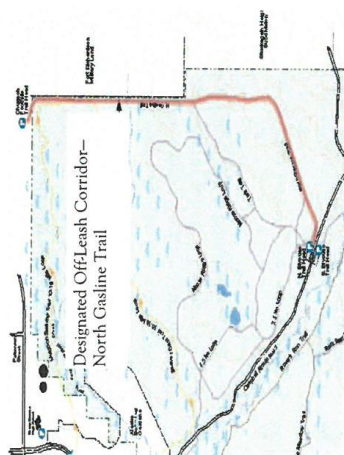
**Municipality of Anchorage
Animal Care and Control Services**
4711 Elmwood Road
Anchorage, AK 99507
Phone: 907-343-8118 Main
Phone: 907-343-8119 Enforcement Dispatch
Phone: 907-343-8122 Customer Service
Fax: 907-343-8134 www.muni.org/animal
Revised March 27, 2009

OFF-LEASH AREA MAPS AND INFORMATION



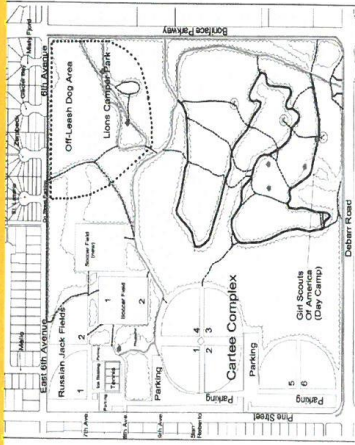
Connor's Bog

Connor's Bog consists of many unpaved trails surrounding Connor's Lake and is best for dogs that enjoy trail walking. Dog walkers should pay special attention to wildlife in this area making sure their dogs do not interfere with or harass wild animals. Directions: Go West on International Airport Road, left on Jewel Lake, left onto the frontage Road, take an immediate right into the parking area.



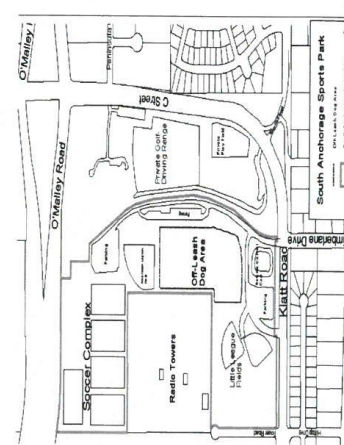
Far North Bicentennial Park

Of the many trails in Far North Bicentennial Park, the Gasline trail is the only one where off-leash activity is allowed. Gasline is a long trail and is great for dogs that like hiking in the woods. Along the way, there is a brook for dogs to cool off in. Directions: Travel approximately 2.4 miles South on Campbell Atstrip Road off Tudor Road. Parking is on the left.



Russian Jack Springs—Lions Camper Park

Off-leash dog activity is allowed in the Lions Camper Park and the trail off 6th Avenue. All other areas including paved trails, ball fields, soccer fields and the playground are not open for off-leash dogs. This is a secluded wooded area with some open spaces. On street parking is available off 6th Avenue. It is a dead end street. The Lions Camper Park gates on Boniface may be opened in the future for parking in the site. Directions: DeBarr Road (between Boniface and Bragaw), North on Pine Street, and East on 6th Avenue.



South Anchorage Sports Park—Future American Legion Ball Fields

A wide open area between the ball fields is designated as the off-leash activity area. It will be the first fenced off-leash area for public use in Anchorage. Directions: Take Minnesota or O'Malley, South on C Street, right onto South Anchorage Sports Park Drive. A paved parking lot next to the ball fields doubles as an off-leash parking area.



University Lake Park

An unpaved trail surrounds scenic University Lake. Off-leash activity is restricted to municipal property only. The open soccer field area is not municipal property and is closed to off-leash dogs at all times. Some groomed ski trails will be closed to off-leash use in the winter. Please watch for signs indicating closures. Trails are used for a variety of activities so please be respectful of other users. University Lake is best for very well behaved dogs that do not chase or jump on people. Dog activities include trail walking, swimming, and retrieval. Directions: Take Tudor Road, South on Elmora, left on East 46th Avenue for parking at Chuck Albrecht Ball Fields OR Tudor Road, North on Bragaw, then right on University Lake Drive for on street parking.



DONATIONS AND CONTACTS

Donations for signage, scoop bags, and maintenance may be sent to:

Anchorage Unleashed
 c/o Alaska Community Foundation
 400 L Street, Suite 100
 Anchorage, AK 99501
 (907) 334-6700

Checks should be made out to ACF—Anchorage Unleashed.
 A specific off-leash area may be specified.

To contact Anchorage Unleashed, e-mail us at
 kaylaepstein48@yahoo.com.

Animal Care & Control

Health and Human Services

Animal Care and Control

Adopting a Pet

Lost Pets

Licensing Your Dog

Owner Surrendering Pets

Animal Bites

Animals and Disaster Preparation

Barking Dogs

Donations

Employment

Forms and Brochures

Licensing Your Animal Facility

Off-Leash Dog Areas

Leash Law

Scoop the Poop

Spaying and Neutering

Trapping Loose Domestic Animals

Vaccinations

Volunteering

Animal Control Advisory Board

Animal Control Hearings Office

Off-Leash Dog Areas

A number of areas within municipal parks have been established for off-leash dog activity in Anchorage. The designated areas are within the following locations:

- University Lake Park
- Far North Bicentennial Park (North Gasline Trail)
- Russian Jack Park
- Connors Bog
- South Anchorage Sports Park (Future American Legion Fields)
- Valley of the Moon Park (Fenced Area)
- Arctic Benson Park (Fenced Area)

Off-Leash Dog Areas - Rules and Regulations

- Dogs must be legally licensed and have a current rabies vaccination.
- Dogs must be leashed upon entering and leaving the off-leash dog areas.
- Classified dogs and female dogs in heat are prohibited.
- The owner or custodian of the dog must remain in the dog area with the dog.
- Dogs must be under control as defined in [Title 17](#).
- Dog feces must be cleaned up by the dog owner or custodian.
- Holes dug by dogs must be filled by the dog owner or custodian.
- Owners or custodians are responsible for all actions of their dogs.

Additional Rules and Regulations for Specific Areas

Connor's Bog

- Off-leash activity shall be restricted to the designated area once ski-joring trails are groomed.

University Lake

- Specific trails within this park may be closed to off-leash use on a seasonal basis. Such trails will be clearly posted.

Good Petiquette

Areas designated for off-leash dog use are shared by many park users including skiers, walkers, runners, bikers, and others. Because these areas are truly multi-use, it is important to exhibit courteous behavior or "good petiquette". There are some simple things that can be done to make off-leash areas enjoyable for all users including:

- Always carry a leash (if you need it, you have it).
- Bring poop scoop bags from home to clean up after your pet. Please help by picking up extra. Even responsible dog owners get distracted.
- Keep your dog in sight and under control at all times.
- Control excessive barking.
- Off-leash areas are shared for a variety of activities so please be respectful of other users. Keep your dog controlled and from interfering with other people and their dogs (especially leashed ones).
- Properly dispose of all garbage in cans or take it home with you.
- Remember, you are fully responsible for your dog and his actions.

Health and Human Services Divisions

- [Administration](#)
- [Cemetery](#)
- [Community and Family Health Division](#)
- [Housing and Community Services](#)

Related Links

[Live Pet Camera](#)

[Pet ID Video "ACATamy Award"](#)

[Pet Spay or Neuter Video "Get Real"](#)

[Pet Licensing Video "Bling"](#)

[Pet Licensing Video "Let's See Some ID"](#)

[Strategic Plan: Animal Care & Control \(PDF\)](#)

[Municipal Animal Law Amended 5-26-15 \(AO 2015-55\)](#)

[Municipal Animal Law Amended 7-14-15 \(AO 2015-74\)](#)

[Municipal Animal Law \(Title 17\)](#)

Dog Parks

[Urban Dog Etiquette \(Adobe pdf\)](#)

[Far North Bicentennial](#)

[University Lake](#)

[Russian Jack](#)

[Connors Bog](#)

[South Anchorage Sports Pk](#)

[Valley of the Moon Park](#)

[Arctic Benson Park](#)

Confusion exists at some parks, such as University Lake, as to where the Off-Leash section starts. There are signs in some areas but people just assume all of University Lake and its trails are Off-Leash. The parking lots at off-leash dog parks are full of dog feces as well. People park their cars and then open the door and their dog or dogs jump out. Many of the dogs will immediately defecate in the parking lot and seldom was anyone observed cleaning it up. However, an Animal Control Officer who was at University Lake recently observed someone's dog had defecated in the road and it was not cleaned up by the owner. The Officer was finishing paper work and the dog owner returned and started to get in their car again not picking up their pet waste. The Officer cited the woman.

Title 17.10.090 and the Off-Leash Dog Areas information sheets prepared by Animal Care and Control (Brochure 2) lists one off-leash dog park as Connors Bog. Reviewing the Municipality's park database, Connor Bog Park is east and south of the lake. North of the lake is designated as Connors Lake Park. Does Title 17's designation refer just to Connors Bog Park or does it include Connors Lake Park? The Parks Foundation refers to it as Connors Lake Park. In reality, people and dogs are using both areas. The Parks Foundation map shows both Connors Lake and Connors Bog Park as off-leash areas (Figure 1).

Connors Bog and Lake Parks have specific regulations that apply to this area when the ski trails are groomed and these are well depicted on the Park Foundation Map (Figure 1 and Brochure 2) available from the Anchorage Animal Care and Control website. However, a visit to Connors Bog on 14 September 2016 found the following map (Figure 2 and sign posted) but nothing about restrictions when the trails are groomed.



Figure 1. Map showing the outline of the park and the restricted areas when the trails are groomed.



Figure 2. Map posted at the park showing the outline of the park but not the restricted areas when the trails are groomed.



Figure 3. The sign in Connors Bog Park’s parking area lists the park regulations, but it does not mention any seasonal restrictions.

Additionally, in the same area, is the sign indicating that you are on Ted Stevens Anchorage International Airport (Figure 4). Park users have no idea what this means to them or that they are actually in the airport’s “crash zone.” Is this a Municipal Park or part of the Anchorage International Airport?



Figure 4. Ted Stevens International Airport sign at Connors Park

Another confusion that needs to be dealt with is where the off-leash dog park actually is. Figure 5 shows the South Anchorage Sports Park and its Off-Leash Area in yellow. There is nothing to indicate that this is the dog park area. The two ball fields at the south end of the park have signs that say “No Dogs on Ball Fields.” In addition, the pet waste station is located next to these ball fields. In actuality, the whole park was used in summer 2016 as an off-leash park and the YEP youth who cleaned up the animal wastes in the park, with Dr. Eley of AWC, found considerable animal wastes in all of the park. Although not a Title 17 change issue, the Off-Leash Areas need to be better identified.

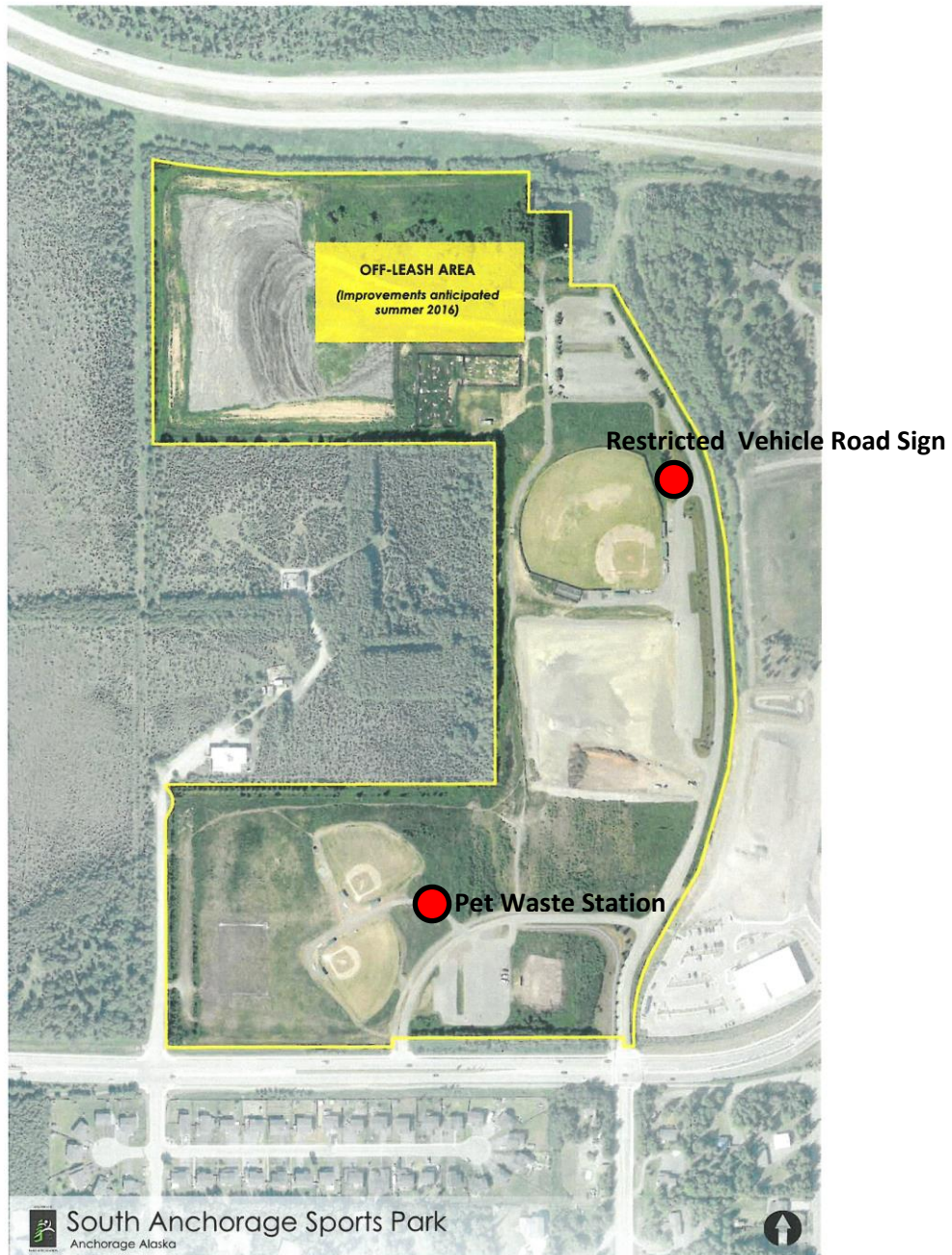


Figure 5. South Anchorage Sports Park map (2016)

Another source of confusion is a sign (Figure 6) on the road that leads to the actual South Anchorage Sports Park Off-Leash Area. This area was checked on 12 January 2018, and even though this is the road to the new dog park, the sign is still there. Additionally, there is no signage directing people to the new dog park which is in this area. (Pers. Comm. with Maeve NevinsLavtar, on 22 January 2018, signage to be installed spring 2018).



Figure 6. Sign posted at the South Anchorage Sports Park (2016)

Unfortunately, enforcement is difficult with so few officers and so many parks. Officers are aware of the importance of cleaning up pet wastes, but vicious dogs, dog bites, loose dogs, and barking dogs take up most of the officers' time. Further, Anchorage Animal Care and Control serves the entire Municipality of Anchorage, from Girdwood to Eklutna.

During the past several years, Anchorage Waterways Council personnel have visited most of the Municipality of Anchorage parks, greenbelts, and trails of Anchorage. It is sad to report that essentially all of these are being used as off-leash dog areas and minimal effort is put forth to clean up dog waste. Some users are bicyclists, runners, and skijors who move fast along the trail and they don't realize that their dogs are leaving waste behind. Essentially all school yards and ball fields are used as off-leash parks with minimal waste cleanup.

It seems that many pet owners don't seem to feel responsible for disposing of their pet wastes. Many have voiced the opinion that they pay taxes so the Municipality should clean up the wastes. Others may assume that Scoop-the-Poop Days will clean up the wastes. Fortunately, a number of individuals have taken it upon themselves to clean up dog wastes in specific parks.

Airport Pet Waste Stations: The Anchorage International Airport has three pet waste stations adjacent to the terminals. These areas have waste disposal bags, garbage cans, and "fire plugs." Signage concerning the

disposal of pet wastes is also present. Environmental Manager Scott Lytle wrote to Dr. Eley on 30 March 2016:

Thom,

We have bags at the airport pet stations. We usually do cleanup of the areas, but not on a routine basis. Monitor and do as needed. In winter, when we have snow, things get overlooked until spring time due to staff handling snow and other things.

There are no indoor areas for pets, either pre or post security. Have had talks but no desire to do it at this time. I have seen some people use the piddle pads and then toss in garbage at boarding gate areas. We also get 'accidents' that our Facility Maintenance responds to.

Around Lake Hood and Spenard, we have three bag stations with garbage cans next to them. The one on north side by gate gets used the most.

Thanks,

*Scott Lytle - Environmental Section
Ted Stevens Anchorage International Airport
907-266-2129*

Dr. Eley has visited the airport's pet waste stations several times, and they always appear clean and in good order. The stormwater runoff from these stations enters the stormwater system and not the sanitary sewer system.

Venues: The venues for major animal activities in the Municipality of Anchorage are shown in Table 3 and Maps 2, 3, 4, 5, and 6. The maps cover the venues in Anchorage and Eagle River-Chugiak. All venues were visited this year. Most of the Agility Trial, AKC Dog Shows and Alaska Herding Group do a good job of cleaning up before and after their activities. Actually most of these groups clean up before their activity, including goose feces, so that the dogs are not distracted. Waste pickup is mandated in their use permits. MOA Parks and Recreation occasionally allows some animal events on MOA parks and they contend that any animal use at these permitted events (parades, dog competitions, etc.) must be cleaned up. However, cleaning up of animal wastes is not listed on their application materials on their website. Cleaning up of all debris is required.

Some groups are using ball fields as training grounds and they contend that they cleanup after their events. The Horse Drawn Carriage Company puts "catch bags" on their horses to collect the horse manure.

Some problematic groups are dog mushers including both the Iditarod and World Championships and the smaller scale (Tozier Track and Chugiak Dog Mushers) mushing events dogs' feces. The mushing trails cross parks, creeks, streets and greenbelts and no dog wastes are cleaned up after the event. A Parks and Recreation employee assured an AWC researcher that "the dogs are trained athletes and do not poop while they run." This is both incorrect and absurd as anyone who has mushed dogs or watched a mushing event close up knows. On the day after the March 5 Ceremonial Start of the Iditarod in Anchorage, AWC personnel examined a 1,700 foot section of undisturbed Iditarod Trail in the Chester Creek Greenbelt at Eastchester Park. Twenty-three piles of dog feces were found or about one pile every 75 feet. Snow from the trail was

collected for *E. coli* sampling using the Coliscan® Method⁵. A second sample off the trail was collected for comparison. The findings of this sampling are shown in Table 4.

Table 3. Known Venues of Animal Activities in the Municipality of Anchorage

Activity	Venues
Agility Trials	Waldron Lake (occasionally)
AKC Dog Shows	Chugiak Benefit Association Grounds, 18606 Old Glenn Hwy, Chugiak, AK
Alaska Dog Sports	Their facility at 511 West 54th Avenue, Anchorage, AK and Ball Fields
Alaska Herding Group Club	Chugiak Benefit Association Grounds, 18606 Old Glenn Hwy, Chugiak, AK
Alaska K-9 Trainers	Their facility at 549 W International Airport Rd, Anchorage, AK & Ball Fields
Alaskan Sled Dog & Racing Association	Tozier Track, and Campbell and Chester Creeks and Greenbelt and Far North Bicentennial Park
Anchorage Horse Council Events	William Clark Chamberlin Equestrian Center
Chugiak Dog Musers	Beach Lake Park
Horse Drawn Carriage Company	Downtown and Peters Creek
Hundesport Alaska & AK Schutzhund Clubs	Hundeplatz Field, Kincaid Park
Iditarod Ceremonial Start	Downtown, Chester Creek Trail, Campbell Greenbelt, and Far North Bicentennial Park
Lions Club Rodeo	Lions Club Park, Eagle River
World Championship Sled Dog Races	Downtown, Chester Creek Trail, Campbell Greenbelt and Far North Bicentennial Park

Table 4. *E. coli* counts from samples collected from the Iditarod Ceremonial Start along Chester Creek Trail near 20th and the New Seward, Anchorage, AK, 6 March 2016.

Location	<i>E. coli</i> Colony Count Per 5 ml Sample (/100 ml)
Iditarod Trail	56/5 ml (1,120/100 ml)
30 feet off the Iditarod Trail	2/5 ml (40/100 ml)

High levels of *E. coli* are undoubtedly entering the ecosystem due to dog mushing events. It seems cogent that mushers or mushing organizations should be required to clean up dog wastes after events. There will be moaning and groaning in abundance by mushers if this were required, but their dogs are a source of fecal coliform bacteria.

5. Facility Visits:

Official Inspections of Facilities: Animal Care and Control have about 250 licensed facilities. About 220 are private residences with 4 to 10 animals and these residences are inspected every two years when their license is renewed. Approximately 30 to 50 commercially licensed facilities are found within the Municipality and these are inspected at least once a year and unannounced. Animal Care and Control, on average, will conduct approximately 140 initial inspections and perhaps more if some issue is found that must be corrected. These 140 inspections equate to approximately 1 inspection every other business day with inspections lasting from

⁵ https://www.micrologylabs.com/page.php?page_id=93&page_name=Coliscan-Easygel

one to two hours and possibly more. Then, the paperwork must be completed and approved. This is a considerable time commitment for an organization that is under-staffed as it is.

The inspections conducted by Animal Care and Control Officers are thorough, complete, and helpful to kennel or facility owners. Waste disposal and noise are some of the major concerns during the inspections. The officers often point out things the owner hadn't noticed and provide particularly helpful tips. The inspections are adequate and no suggestions for improvement are offered. Licensed commercial animal facilities, with the exception of stables, are shown on Map 1.

AWC Work During Years One and Two:

1. All seven Off-Leash Dog Parks, and other MOA parks were visited (see comments above). As mentioned, the Off-Leash Dog Parks and essentially all other MOA parks, greenbelts, ball fields and school grounds are being used as Off-Leash areas, and little attention is given to cleaning up pet wastes.
2. All three pet waste stations at the Ted Stevens International Airport were visited as mentioned above.
3. Between 2015 and 2017, there were 78 commercially licensed in-door facilities (groomers, pet stores that sell pets, kennels, and doggy daycares) and 24 veterinarians (who are not required to have a license through Anchorage Animal Care and Control. Seventy of the 78 commercially licensed in-door facilities have been visited by Dr. Thom Eley of AWC.
4. With the exception of one kennel, which was the subject of several litigations, all facilities were clean and disposed of their wastes via Solid Waste Services, Alaska Waste, or Anchorage Waste Water Utility. The kennel that was under litigation has now changed ownership, and the facilities have vastly improved. Several potentially invasive plants were noted as well as red-eared slider turtles and golden turtles as being sold in pet stores. Two facilities do not sell aquatic turtles because of the potential hazard of them becoming invasive.
5. Indoor animal facilities come and go over time and many people provide commercial kenneling services, grooming and other facilities without the proper license. AACC is aware of these illicit facilities and attempts to deal with them as time allows. The unstableness of these unlicensed facilities makes enforcement difficult. There are several unlicensed facilities out on JBER.
6. Although veterinary clinics are exempt from inspections as their wastes go down the Municipal sewer system, one veterinary clinic was visited to see its operation.
7. All 13 animal event venues were visited, and all appeared to be relatively clean of animal wastes from activities. Animal events may be conducted at other locations, depending on time, such as parks and school grounds.
8. Some concern exists about horse event venues, stables, one urban farm and horses on trails and the disposal of animal wastes. Horse-event venues, stables and the one urban farm contend that their wastes are taken to the Municipal Landfill or given to people who want the wastes for their gardens. Theoretically, the wastes of horses on trails should be cleaned up per Title 13. They are not being cleaned up, however, some individuals at Parks and Recreation contend that horse riders do clean up after their horses on the trails. Some of the horse trails cross creeks and AWC personnel have observed people riding horses in the creeks.

The Alaska Zoo (2017)

The Alaska Zoo, located in Anchorage, covers 25 acres at 4731 O'Malley Road. It is a popular attraction in Alaska with nearly 200,000 visitors per year. The zoo currently houses more than 100 birds and mammals, representing over 50 species. The zoo focuses on the native animals of Alaska as well as some exotics, such as Amur tigers, Bactrian camels, Snow leopards and yaks. Their "Mission is to promote the conservation of Arctic, Sub-Arctic and like-climate species through education, research and community enrichment." They also are involved in animal rehabilitation as many of the zoo's current animals were found orphaned or injured.

A restoration project focused on the South Fork of Little Campbell Creek within the zoo's boundary was completed in 2015. For a number of years there has been concern expressed about the impact of the zoo on water quality and flow in Little Campbell Creek. The following is a discussion by Patrick Lampi, the zoo's Executive Director, regarding the restoration of Little Campbell Creek as it flows through the Alaska Zoo (alaskazoo.org/little-campbell-creek-restoration).

Little Campbell Creek Restoration at the Zoo

The Alaska Zoo is very pleased with the fish passage improvements to the creek. It was a great cooperative project and a pleasure to work with all the people involved. This endeavor has been "in the works" since around 2008. Visitors can look forward to the addition of interpretive graphics and signage about the project in the near future. Many people were involved over the years. Some have left positions they were in while working on it. I hope they come out to see the fruits of their labor.~
Patrick Lampi, Executive Zoo Director

View a gallery of images by John Gomes showing the final stages of this project and the completed area.

<http://www.akjohn.com/Zoos/COMPLETED-ZOO-CREEK-RESTORATIO/n-dDhVkr/i-2s5...>





South Fork of Little Campbell Creek

Many visitors are familiar with the creek that runs through the back of the zoo. This is the south fork of Little Campbell Creek which runs down the Anchorage hillside. Little Campbell Creek and its drainages make up an urban watershed in the Municipality. Ten federal, local and state agencies along with nonprofits joined Municipal Watershed Management Services to develop a plan with priority to increase fish passage.



The creek runs by the old elephant house. Several structures that stop fish passage are being removed, the two ponds will be replaced by three smaller ponds, the stream will take a curved path and an elevation drop will be in place. The natural stream bed will be restored by placing boulders, tree roots and stumps for fish habitat. All of this work is taking place downstream of the small bridge by the swan area. The creek quality in the zoo is good upstream from the bridge due to the protected nature of the area on grounds. At the end, a trail will extend to the middle of the restoration area and signs will educate visitors about this important watershed in our ecosystem.

We will post updates to this page as we have them. If you have questions about this project, contact Executive Director Pat Lampi at plampi@alaskazoo.org.

Although fish passage is noted by Mr. Lampi as part of the Little Campbell Creek restoration, unfortunately , just 100 yards east (61.12544° , -149.78901°) of where the South Fork Little Campbell Creek enters the zoo’s boundary, a perched culvert prohibits any fish passage further upstream (Photo 1). Trout and young salmon can be found in the pool at the base of the culvert.



Photo 1. Perched culvert just east of the Alaska Zoo’s boundary, Little Campbell Creek, Anchorage (2017) (Photo by Thom Eley).

This culvert, made of welded 55 gallon drums, was built in about 1953 so that the upstream landowner could create a pond. The Alaska Dept. of Fish and Game rates this as a “Red” culvert – “likely impacts fish passage” (<http://extra.sf.adfg.state.ak.us/FishResourceMonitor/?mode=culv>).

Dr. Eley represented the Anchorage Waterways Council at Migratory Bird Day in the Alaska Zoo on a rainy Saturday, 21 July 2017. During that time he was able to assess the restoration changes of Little Campbell Creek in the zoo. The creek water was clear despite the rain, and the riparian vegetation was lush. Little Campbell Creek was full of water and out of its banks in certain areas. The creek’s water was flooding a section of the brown bears’ (*Ursus arctos*) enclosure with some fecal material near the water’s edge. Photo 2 shows a brown bear in its exhibit playing in flood waters from Little Campbell Creek in 2008 before restoration.



Photo 2. Brown bear (*Ursus arctos*) playing in flood water from Little Campbell Creek in the bear exhibit at the Alaska Zoo prior to channel improvements (2008). (Photo by Thom Eley).

The brown bear (grizzly bear) exhibit has been a subject of controversy over several years, with the latest being a story by KTUU on 20 June 2016 about the alleged “negligent care” of the exhibit. One of the issues brought up in the complaint petition is that the bears have no water.

In the interview, zoo director Patrick Lampi stated, “the other thing that they said is the bears have no water”, but the South Fork of the Little Campbell Creek actually runs through a corner of the brown bear exhibit.”⁶ Photo 3 is a Google Earth photo of the Alaska Zoo bear enclosure and it clearly shows Little Campbell Creek meandering through the bear exhibit.”

⁶ <http://www.ktuu.com/content/news/Zoo-responds-to-claims-of-grizzly-bear-.html>



Photo 3. The south fork of Little Campbell Creek can be seen flowing through the brown bear exhibit.

A visit to the zoo on 4 October 2017 in a heavy rain, again found Little Campbell Creek flooding the bear pen (Photo 4). The water runs along the inside and outside of the exhibit and then enters a culvert that takes the water back to Little Campbell Creek (Photo 5).



Photo 4. Little Campbell Creek water floods the brown bear exhibit at the Alaska Zoo. (Photo by Cherie Northon)



Photo 5. Culvert returning water from the brown bear exhibit to Little Campbell Creek.
(Photo by Cherie Northon)

The bear issue ties in with another consistent complaint about the zoo being the source of the high *E. coli* levels sometimes found in Little Campbell Creek. In response to these complaints, Dr. Eley (AWC) interviewed Zoo Education Director Stephanie Hartman on 22 May 2016, about the zoo and its animals and Little Campbell Creek. The main points she emphasized are listed below. Dr. Eley's comments are in red.

1. Little Campbell Creek was realigned by the MOA in summer 2015 and the creek looks very natural and quite attractive looking. [Agreed]
2. The only animal wastes going into the creek are from waterfowl, water birds and mammals found in the creek—muskrat (*Ondatra zibethicus*), mink (*Neovison vison*) and river otter (*Lontra canadensis*). [Certainly animal wastes from the brown bear, camel (*Camelus bactrianus*), yak (*Bos grunniens*), caribou (*Rangifer tarandus*), and muskox (*Ovibos moschatus*) exhibits drain down the sidewalks to the creek in a heavy rain event such as on 21 July 2017 or 4 October 2017. (Photos 6-9)]
3. All cages drain into sewer system. [Perhaps, but stormwater from some cages does run down walkways to the stormwater drains or into the creek.]
4. Feces are picked up before washing cages.
5. Most wastes inside cages are food wastes, which are picked up and disposed of.

6. The creek water was tested by the MOA during the realignment of the creek and deemed okay. [She was not certain who tested the water but she thought it was the MOA].
7. The smell of feces is at a minimum except for the yaks. [Agreed]
8. Wastes are disposed of in the Municipal landfill, however residents can come and pick up wastes if they want it for their gardens. Yak wastes are the most popular.



Photo 6. Muskoxen pen, note the mud (Photo by Cherie Northon)



Photo 7. Muskoxen pen, note the mud and the slight slope toward Little Campbell Creek in the background (photo by Cherie Northon).



Photo 8. Caribou pen which slopes downhill (Photo by Cherie Northon).



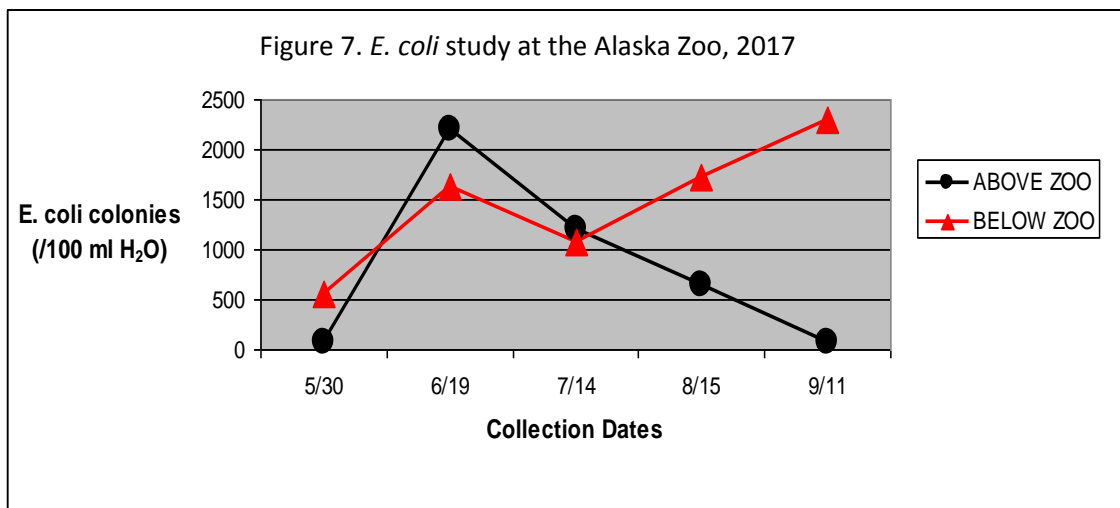
Photo 9. Yak pen, note the sloping terrain. (Photo by Cherie Northon)

Beginning in May 2017, through the generous support and assistance of SGS Environmental Services, Anchorage Waterways Council personnel have been able to conduct monthly monitoring for *E. coli* of Little Campbell Creek where the creek enters and leaves the zoo. Anchorage experienced a very wet summer with 7.39 inches of precipitation during the May and September sampling occasions, which is about 1.09 inches above normal. The results of the 2017 surveys are shown in Table 5 and Figure 7. A total of 11,481 *E. coli*

colonies were enumerated with 36.5% being from water above the zoo while 63.5% were collected from water exiting the zoo grounds.

DATE	ABOVE ZOO	BELOW ZOO	TOTAL COUNT
30-May-17	78	553	631
19-Jun-17	2,200	1,630	3,830
14-Jul-17	1,200	1,080	2,280
15-Aug-17	640	1,730	2,370
11-Sep-17	70	2,300	2,370
TOTAL	4,188 (36.5 %)	7,293 (63.5 %)	11,481 (100%)

¹ Laboratory analyses by SGS Environmental Laboratories.



While the zoo does provide the larger share of *E. coli* to upper Little Campbell Creek, the upstream houses also provide a significant amount of bacteria as they are largely on septic systems. The Alaska Dept. of Environmental Conservation (ADEC) stated that, “well-built systems can last 20 years or more when properly maintained”⁷, which most people do not do in Alaska. Further, ADEC recommends that the septic system be pumped every two years and further recognized that few people follow this time table. Many of the homes upstream of the Alaska Zoo are older than 20 years and many still have the old wood-crib septic tanks.

ZOO RECOMMENDATION 1: Monitoring of *E. coli* levels in Little Campbell Creek above and below the Alaska Zoo should continue with AWC personnel collecting the water samples above and below the zoo and SGS Environmental Laboratory analyzing the results. The *E. coli* concentrations below the zoo are significant with the zoo’s contribution making up the larger component, but upstream stormwater run-off and septic leakage can’t be ignored if we want to ultimately have the creek removed from the State’s impaired water list. We

⁷ http://dec.alaska.gov/water/wwdp/onsite/maintain_septic.htm

currently have one year's worth of sampling. Although the USGS and EPA⁸ consider one sampling season sufficient for baseline information, one season seems minimalist for Alaska in the summer where we may have extended wet or dry spells, each sampling yielding significantly different information.

ZOO RECOMMENDATION 2: Little Campbell Creek water should be monitored below the brown bear enclosure to ascertain any *E. coli* being added to the creek from the animal enclosures uphill from the creek.

Water Diversion to the Golf Course (2017)

Although Little Campbell Creek flows through it, the zoo does not take any water from the creek. The only water it uses is for their waterfowl pond impoundment. Water is diverted at the zoo in an underground piping system to irrigate the Anchorage Golf Course. The surface water permit allows the golf course to draw 122 gallons/minutes or as much as 18,247,786 gallons during the period of 1 June to 30 September. Between 1994 and 2008, the golf course has averaged 12,444,153 gallons per year with a start date as early as 20 April in 1998 and 1999 (HDR 2008).

On 7 August 2017, an Anchorage resident, living on Pacer Street along Little Campbell Creek, just downstream of the zoo, called AWC to report that Little Campbell Creek was dry at his house. Dr. Eley visited the residence on 8 August 2017, and indeed there was little water running in the creek (Photo 10), and fish were trapped in the few pools that remained. The resident said that he had lived in the house for 7+ years and bought it because it was on the creek. Dr. Eley visited the site and the water was indeed low with fish confined to just a few pools. He checked the outflow from the zoo, and it was lower than normal (he monitors the water near the zoo every month for *E. coli*). He then visited the culvert on Our Road and the flow was considerable higher than the outflow from the zoo. He checked on the South Fork of Little Campbell Creek at the ASPCA office on Petersburg St., and the creek was entirely dry.



Photo 10. Little Campbell Creek showing very little water and a cobbly substrate. (Photo by Thom Eley)

⁸ Overview of Watershed Monitoring., EPA Water Monitoring, Training Module, 2002, (<http://www.epa.gov/watertrain>). Monitoring and Assessing Water Quality, EPA – no date, (<https://archive.epa.gov/water/archive/web/html/index-19.html>). Water-Quality Data for the Nation. USGS, National Water Information System—no date, (<https://waterdata.usgs.gov/nwis/qw>)

Researching the Anchorage Golf Course's surface water permit, they are allowed to draw 122 gallons/min from the creek or as much as 18,247,786 gallons during the period of 1 June to 30 September. Between 1994 and 2008, the golf course has averaged 12,444,153 gallons per year with a start date as early as 20 April in 1998 and 1999 (HDR 2008⁹).

HDR contends that the permit for 122 gallons per minute was based on a flow of 0.27 ft³/sec. A flow of 0.27 ft³/sec would equal 16.2 ft³/min which would yield 2.16 gallons/min. Where are the other 120 gallons coming from? HDR also expressed concerns about over-drafting of Little Campbell Creek water for the golf course.

In 2007, the Municipality of Anchorage measured the Annual Peak of 4.5 ft³/sec. If we use the Annual Peak as the daily flow, 4.5 ft³/sec yields 36 gallons/min—certainly not 122 gallons/min. The USGS calculated the 2 year peak to be 23 ft³/sec, and if we use this figure—recognizing that it is a peak measurement—it would yield about 188 gallons/minute at the “peak,” but over the course of the year the flow would be lower than peak. These measurements are all based on “peak flows.”

AWC finds it difficult to see that the South Fork Little Campbell Creek would yield a sustainable 122 gallons/min, particularly at low flow. 122 gal/min would require a flow of 16.3 ft³/min especially if you would need to have some additional for the fish as it is an anadromous fish stream.

The Alaska Dept. of Fish and Game and the Water Resources Section of Alaska Department of Natural Resources were contacted and photographs provided, but no action appeared to be taken.

ZOO RECOMMENDATION 3: The flow of water into the zoo in Little Campbell Creek should be accurately determined as well as the flow leaving the zoo. The flow measurements should be used to determine whether the Anchorage Golf Course is diverting enough water to make fish passage and survival impossible.

⁹ HDR Alaska, Inc. 2008. South Fork Little Campbell Creek Fish Passage Assessment In The Vicinity of the Alaska Zoo: Summary Report. Prepared for: USFWS, 608 West 4th Avenue, Anchorage, AK 99501. 35pp+Appendices.



Photo 11. South Fork Little Campbell Creek, after exiting the zoo compound, not dry but with fish confined to a few small pools and certainly lower than normal. Water staining on the rocks shows recent water level being higher than it is now. (Photo Thom Eley)



Photo 12. South Fork of Little Campbell Creek as it exits the perched culvert east of Our Road and just before it enters the zoo. The flow is fairly normal for this time of the year. (Photo by Thom Eley)



Photo 13. South Fork Little Campbell Creek adjacent to 8301 Petersburg Street showing the creek essentially dry. (Photo by Thom Eley)

Facilities of Concern:

Four facilities of concern that were found during this survey and these require additional investigation in Year 3.

1. **PurrFerred Pet Food LLC** which provides “quality frozen ingredients for pet food and fresh high quality wild and farmed raised salmon.” On the internet their offices are listed as Boca Raton, FL and Minneapolis, MN.



Figure 8. Photos from PurrFerred Pet Food LLC’s website (purrferredpetfoodak.com/index.html)

With a little investigation, we found out that PurrFerred Pet Food LLC had a processing facility in Anchorage at 1216 E 70th Ave, Anchorage, AK 99518. This location is on the banks of Little Campbell Creek, while the facility is on Municipal sewer, they have water use in their “yard” and some water running out of the building into the yard. This water appears to be going into Little Campbell Creek by way of a parking lot storm drain.

Interestingly enough, 1216 E. 70 Ave is also the facility used by Arctic Paws LLC, the makers of Yummy Chummies. There was an issue several years ago with Yummy Chummies’ preparation waste (salmon juice and glycerin) which was draining from their building into a drain in their parking lot and then into Little Campbell Creek. It was reported to the Municipality and former WMS staff Tammie Wilson responded. She talked with Brett Gibson, the owner and founder of Yummy Chummies and a local attorney. Mr. Gibson denied that the storm drain in his yard drained into Little Campbell Creek. He then called Dr. Northon, Executive Director of Anchorage Waterways Council, and threatened her with legal action if she ever stepped on his property again. Dealing with them could be contentious.

According to the DEC’s Division of Environmental Health’s Solid Waste Disposal Program Disposal Guidance (Appendix 3) *“Disposal of commercial fish waste in water requires a permit from the ADEC Wastewater Discharge Program.”*

2. **Stables** and their disposal of animal wastes. The contention is that people come and get it for their gardens or that it is taken to the landfill. Neither of these has been verified. Additionally, horse riders (and dog mushers) are supposed to clean up any wastes that are deposited on trails. Mr. C.B. Stewart of MOA Parks and Recreation contends that riders do clean up after their horses. However, this is not always the case as horse manure has been seen on trails in Far North Bicentennial Park and other locations. Many riders take their horses across creeks or ride in the creek.
3. **The Alaska Zoo** and its contribution of *E. coli* to Little Campbell Creek. This topic was discussed in the Alaska Zoo section and is of major concern, with the recommendation for continued monitoring.
4. Assessing the **Anchorage Golf Course’s** removal of water from Little Campbell Creek in order to ascertain whether Anchorage Golf Course is over drafting the creek for its irrigation.

6. Begin to develop draft recommendations for additions or changes to licensing program and ordinance/regulations that could have positive effects on water quality.

Initial recommendations for changes that would have positive effects on water quality:

1. The Anchorage Animal Control Advisory Board has a subcommittee that is currently in the process of updating Title 17. Dr. Eley of Anchorage Waterways Council will be attending this subcommittee’s meetings whenever possible.

2. An Ordinance is needed (in either AMC Title 17 or 21) that would make it illegal to feed aquatic birds in Anchorage lakes and creeks. Aquatic birds are a major source of *E. coli*. Large congregations of aquatic birds attracted by human feeding will significantly raise the *E. coli* level in waterbodies as we have seen in Cuddy Pond. In addition, the bird feces can collect in great amounts on the sidewalks and wash down into Cuddy Pond (Fish Creek), human food is not good for aquatic birds, there is increased bank trampling and sloughing into the pond, and congregations of birds are more disease prone as well as a hazard to aviation.

3. An Ordinance is needed (in ether AMC Title 17 or 21) that would make it illegal to dump fish, other aquatic pets and aquatic aquarium plants into Anchorage waterways or lakes. In addition, the ordinance should require pet stores to post signs concerning this prohibition. This is probably how elodea (*Elodea canadensis*) was introduced into many Anchorage Lakes.

Many potentially invasive and problematic aquatic plants can be ordered over the internet, such as wild celery (*Vallisneria americana*), elodea, water hyacinth (*Eichhornia crassipes*), and others (some of which are already here) that have a great potential due to warmer winters in Anchorage. Figure 9 is an advertisement from Ebay for water hyacinths touted as bio-filters for aquariums. In the wild, they have the reputation of being one of the fastest growing plants and clogging waterways and lakes. During summer 2016, Dr. Eley measured water temperatures over 70° F Connors and University Lakes.

Figure 9. Water hyacinth available for sale on Ebay.



25 WATER HYACINTHS, POND BIO-FILTER PLANTS

\$24.39

Buy It Now
Free Shipping

This listing is for 25 Water Hyacinth. (I always ship extra plants with every order) ~FREE PRIORITY SHIPPING~ The plants will survive temps below freezing but thrive in temps in the mid-70s and higher...

APPENDICES

MUNICIPALITY OF ANCHORAGE

Department of Health and Human Services



907-343-6718

Mayor Ethan Berkowitz

Land Use Enforcement
Main Office: 343-8301
Complaint Hotline: 343-4141

Animal Waste Management Guidelines

These guidelines have been developed to address and prevent public health problems associated with storage and disposal of animal waste. Public health concerns include attraction and harborage of pests, odor, runoff, pollution of surface water, contamination of groundwater, unsightly premises and general public nuisance.

Manner of storage

Waste must be contained with container either closed or covered. Examples of waste containers are Dumpsters, watertight trailers, lined watertight pits or bins; and for smaller operations, plastic or metal garbage cans, garbage bags. These examples are considered closed containers. Dumpsters and garbage cans with lids, tarp covered waste storage areas and other means to keep rain and snow off stored waste are considered covered.

Frequency of Waste Removal

Waste must be removed from the property at least once every seven days. See other side of this sheet for locations of facilities accepting waste for disposal. Proper disposal does not include burying waste on your property. MOA Land Use codes do not allow use of waste as fill.

A single horse can produce about 50 pounds of manure and urine per day which needs nearly 2 ½ cubic feet of storage space. That's over eight tons of waste in a year. If bedding materials are included it adds up even quicker. In the absence of frequent removal, this amount of waste can quickly pose disposal challenges. The amount of waste stored on a property at any one time should not exceed the amount expected to be and possible to be removed within a week.

Waste storage location/ setback distances

Drinking water wells	100 feet
Streams and other surface water	25 feet
Property lines	Structures over 30" high other than fences must meet setback requirements for the zoning district in which they are located. For more information on fences, call Zoning/Land Use at 343-8380.

Composting on site, a difficult alternative to removal every seven days

Logistics can make this a difficult alternative even with only a couple of animals. Composting is the breakdown of organic material containing nitrogen and carbon in the proper ratios and in the presence of oxygen. When managed properly, it has very little or no odor. Managing material ratios and frequent turning can be labor-intensive. Compost must be contained and maintained free of odors. If you compost animal waste on your property, you will need to identify a timeframe for composting to be complete and identify an adequate destination for all compost.

Guidelines based on AMC 15.20 Public Nuisance revised 1/31/05

P.O. Box 196650 • Anchorage, Alaska 99519-6650 • <http://www.muni.org>

¹⁰ https://www.muni.org/Departments/health/Admin/animal_control/Documents/Facility%20License%20P2%202016.pdf. This information is not easily found.

Anchorage Regional Landfill 343-6250

15500 E. Eagle River Loop Rd (Intersection of Glenn Highway and Hiland Road, near the community of Eagle River)

Monday – Friday 7:30 am to 5:00 pm
Saturday 8:00 am to 5:00 pm
Sunday CLOSED

Hazardous Waste Center waste oil accepted any day during normal business hours
Asbestos accepted Wednesday & Thursday only

Central Transfer Station 343-6250

Residential: E. 54th & Old Seward / 1150 E. 54th Ave.

Monday – Saturday 8:00 am to 5:00 pm
Sunday CLOSED

Only small amounts of animal waste double-bagged in garbage bags will be accepted.

Commercial: E. 56th & Old Seward / 1111 E. 56th Ave.

Monday – Friday 6:30 am to 5:00 pm
Saturday 8:00 am to 5:00 pm
Sunday CLOSED

Hazardous Waste Center

(Residential Only)

Tuesday, Thursday and Saturday 8:00 am to 5:00 pm

Waste oil accepted any day during normal business hours

Girdwood Transfer Station 343-6250

Ruane Road, east of Alyeska Highway

Friday through Monday 10:00 am to 5:00 pm
Tuesday through Thursday CLOSED

Hazardous Waste Center

Only batteries and oil accepted during business hours

Call the information hotline at 343-6298 if you have questions about any of the services provided by or regulations concerning the MOA Solid Waste Services Department or visit their website at:

www.muni.org/sws

Central Landfill Mat-Su Valley 745-9838

South end of North 49th State Street, Mile 3 of the Palmer Wasilla Highway

Monday - Friday 7:00 am to 6:00 pm
Saturday & Sunday 9:30 am to 4:30 pm

Fish Waste Handling & Disposal

August 2016



*Division of
Environmental Health*

Solid Waste Program

Anchorage Office:
555 Cordova St
Anchorage, AK 99501
(907)269-7802
Fax (907) 269-7510

Fairbanks Office:
610 University Ave
Fairbanks, AK 99709
(907) 451-2108
Fox (907) 451-2188

Juneau Office:
410 Willoughby Ave.
Suite 303
Juneau, AK 99801
(907) 465-5318
Fax (907) 465-5362

Improper disposal of fish waste from sport fishing, personal use fishing, and commercial fisheries poses a potential risk to the environment and public health and safety. The Alaska Department of Environmental Conservation (ADEC) Solid Waste Program only regulates the land disposal of fish waste from commercial operations. However, it is important to understand the best management practices for disposing fish waste to reduce nuisances and animal attraction.

Personal Use & Sport Fish Waste

Even for sport and personal use fishing, disposing of fish waste on public or private land is illegal and can result in fines. The [Alaska Department of Fish & Game](#) recommends that you clean fish riverside or in port, chop fish carcasses into numerous pieces, and throw them into deep or fast-moving water or use a provided fish grinder. Anglers who remove fish from the fishing site and fillet or process them must also dispose of fish waste in a safe manner:

- α Fish waste should be taken directly to a permitted landfill that will accept it.
 - The Central Peninsula Landfill in Soldotna accepts fish waste free of charge during the fishing season.
 - Anchorage Regional Landfill, the Central Transfer Station, and the Girdwood Transfer Station accept residential fish waste.
 - Matanuska-Susitna Borough takes bagged residential fish waste at the Palmer Central Landfill and the Big Lake, Butte, and Sutton transfer stations.
- α If you have local trash pickup, freeze the fish waste to eliminate odors and then put it out the morning of your trash pickup day. Do not place waste out the night before or put it in commercial dumpsters.

Improper disposal of fish waste creates a dangerous bear attractant.

- **Chop the fish carcass up and throw it into fast-moving water;**
- **Take it directly to the landfill; or**
- **Put it in YOUR trash the morning of pickup.**

Commercial Fish Waste

ADEC Solid Waste Program allows three methods for managing commercial fish waste on land:

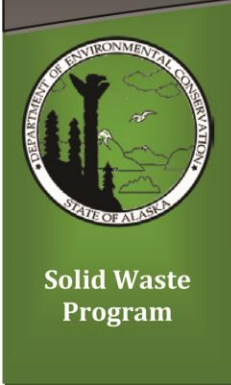
- α Landfill Disposal: Commercial fish waste may be disposed in a permitted landfill willing to accept it.



¹¹ <http://dec.alaska.gov/eh/pdf/sw/2016-fish-waste.pdf>

Fish Waste Disposal

August 2016



- α Land Application: Fish waste may be ground and tilled into agricultural or silvicultural land as fertilizer, provided the waste is processed and treated as prescribed in the solid waste regulations [18 AAC 60.010(e)].
- α Composting: Fish waste can be composted to create a usable product. Several successful composting projects have been operated in Alaska. [Alaska Sea Grant](#) offers [guidance](#) on proper composting operations in Alaska. Depending on the volume of waste involved, a composting operation may require a solid waste treatment permit or plan approval.

Commercial fish waste placed on land must be carefully managed to minimize pathogens, odors, animal attraction, and contamination of water resources. Improper management of fish waste can attract wildlife and pose a serious risk to health, safety, and the environment. Contact the ADEC Solid Waste Program to determine if your project requires an authorization.

Disposal of commercial fish waste in water requires a permit from the ADEC [Wastewater Discharge Program](#).

18 AAC 60.010

Land Application of Fish Processing Waste

(e) Subject to 18 AAC 60.040(b), a person who wishes to dispose of organic waste from a commercial slaughterhouse or fish processing waste may apply that waste to agricultural or silvicultural land for soil enhancement purposes if the waste is

- (1) ground up to less than two inches in diameter;
- (2) treated by a method described in 40 C.F.R. 503.15, revised as of July 1, 1997, adopted by reference, to reduce the number of *salmonella* spp. or fecal coliform bacteria present to meet the Class A requirements for pathogen reduction at the time of land application;
- (3) incorporated into the soil surface when the waste is applied;
- (4) applied at or below the agronomic rate for nitrogen for any crop or vegetation that will be grown on that land;
- (5) applied in a manner that does not create an odor nuisance or attract animals or other vectors; and
- (6) applied in a manner that ensures that run-off of surface water from the disposal site does not violate the water quality standards in 18 AAC 70.

18 AAC 60.040 (b) A person may not dispose of septage, sewage solids, fish waste, animal manure, or animal byproducts or waste on the ground within 100 feet of a well that produces water suitable for drinking.



APPENDIX 3¹²

10/2/2016

Anchorage Animal Standards of Care

**Create your own
FREE ONLINE SURVEY**

Anchorage Animal Standards of Care

Conducted by Anchorage Pets Lost and Found

1 Do you live within the Anchorage City Limits?

Yes	No
remove answer	

2 How many animals do you presently own?

0	1
2	3
4 or more	
remove answer	

3 Title 17 in Anchorage governs Animal Care Standards for animals within the city limits. Did you know this?

Yes	No
remove answer	

4 Do you feel Title 17 is adequate in its present form?

Yes	No
Don't know	
remove answer	

<https://kwikisurveys.com/s/zutdqjiu/#> 1/5

¹² Survey by Anchorage Pets Lost and Found, Cynthia White, 2016. No response from Ms. White on the results (Jan 2018).

5 Do you feel the present Animal Care Standards outlined in Title 17 are adequate in protecting animals?

Yes No

Don't know

remove answer

6 Have you heard of the Anchorage Animal Advisory Board?

Yes No

remove answer

7 Should all rescues, kennels and residents within Anchorage be held to higher Animal Care Standards?

Yes No

Don't know

remove answer

8 Should all rescues, kennels and residents within Anchorage be held to equal Animal Care Standards?

Yes No

Don't know

remove answer

9 Would you support new legislation that caps the number of animals a shelter or rescue can adequately care for based on the number of volunteers, staff and square footage of the shelter and/or rescue?

Yes No

Don't know

remove answer

10 Are you familiar with Anchorage Animal Care and Control?

yes NO

remove answer

11 Did you know that Anchorage Animal Care and Control Officers can issue Notice of Violations (NOV's) to rescues, shelters and boarding facilities in Anchorage?

Yes No

remove answer

12 Did you know that Anchorage Animal Care and Control can revoke a multi-animal facility license?

Yes No

remove answer

13 In the past ten years, how many times has Anchorage Animal Care and Control revoked a multi-animal facility license?

0 1
2 3 or more times

remove answer

14 Should Anchorage Animal Care and Control Officers be permitted access to homes in which animals are being fostered by a rescue organization for the purpose of checking an animals welfare?

Yes No

remove answer

15

Should shelters and rescues be mandated to keep adequate vaccination records, adoption records and animal behavioral records on each animal under their care?

Yes No

remove answer

16 Should individuals who are convicted of animal related offenses within the past ten years be permitted to manage, volunteer or work at an animal care facility or rescue?

Yes

No

remove answer

17 Have you heard of SB-91?

Yes

No

18 Did you know that SB-91 is generally regarded as the most significant overhaul of the criminal justice system since statehood?

Yes

No

remove answer

19 Under SB-91 did you know that a person who commits felony-level animal cruelty such as poisoning an animal or causing prolonged and severe pain and suffering cannot be sentenced to jail?

Yes

No

remove answer

20 Do you believe that a person who commits felony-level animal cruelty such as poisoning an animal or causing prolonged and severe pain and suffering should be sentenced to jail?

Yes

No

remove answer

21 Under SB-91, did you know that a person who commits misdemeanor-level animal cruelty such as killing a pet through lack of care or engaging in sexual conduct with an animal will have the maximum sentence reduced from one year to 30 days and that the sentence for a misdemeanor is higher than the sentence

for a felony?

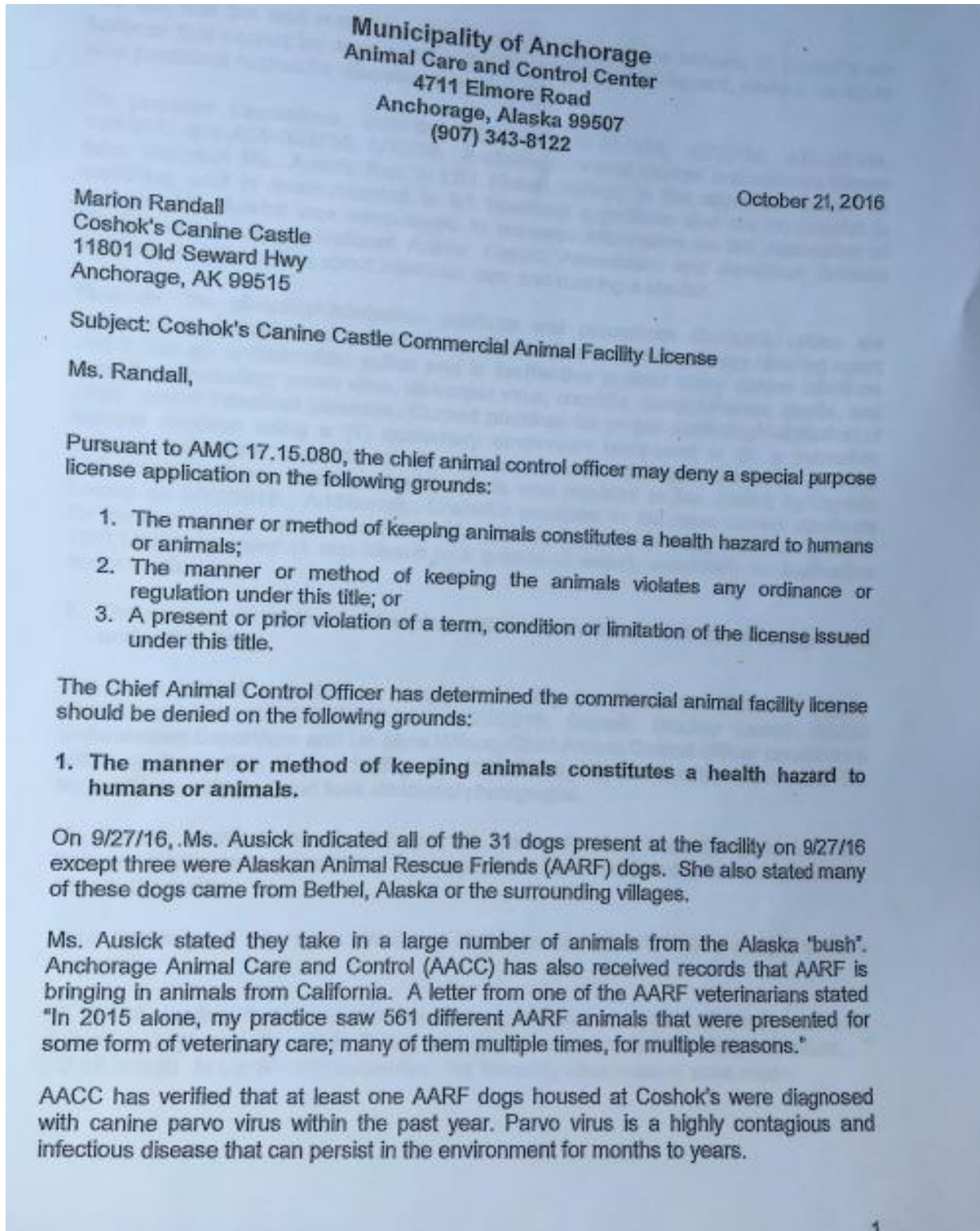
Yes No

remove answer

Finish Survey

Report Abuse | Powered by KwikSurveys

APPENDIX 4¹³



¹³ Letter to Coshok's Canine Castle, Oct. 21, 2016

The fact that the wall materials and flooring in many of the kennels at Coshok's are surfaces that cannot be appropriately disinfected is a health hazard, since it can serve as a persistent source for disease transmission.

On previous inspections, including those in A14-017196, 10/23/14; A15-023494, 11/15/15; and A16-028768, 8/17/16, Anchorage Animal Control enforcement officers have informed Ms. Ausick that a 1:32 bleach mixture is the approved mixture for sanitizing, and is recommended to kill infectious organisms and not be harmful to animals. Ms. Ausick was encouraged to research information on the Association of Shelter Veterinarians, National Animal Control Association and American Humane websites for information about adequate care and running a shelter.

However, the cleaning/disinfection products and procedures Coshok's utilizes are extremely inadequate and substandard. Simple Green is their primary cleaning agent and it has no antimicrobial action and is ineffective against many canine infectious organisms including; parvo virus, distemper virus, coccidia, campylobacter, giardia, and many canine intestinal parasites. Current practices for proper sanitizing/disinfection of kennels requires using a (1) quaternary ammonium compound or (2) a potassium peroxymonosulfate product or (3) an accelerated hydrogen peroxide product. References to these practices and products was provided to Ms. Ausick by Captain Larson on 8/17/2016. Additionally, Coshok's practices do not meet current standards for the appropriate use of bleach. Per Ms. Ausick, Coshok's is using a dilution factor of 1:80 bleach to water (1 cup bleach to 5 gallons of water), essentially an ineffective concentration.

2. The manner or method of keeping animals violates an ordinance or regulation under this title.

You were issued a notice to comply for facility conditions on 9/12/2016 with a compliance date of 9/26/2016. On 9/27/2016, Captain Bradley Larson, AACC Enforcement Supervisor and Dr. Myra Wilson, Chief Animal Control Officer conducted a follow up inspection of your facility. On 10/04/2016, Captain Bradley Larson and Dr. Myra Wilson, returned and took additional photographs.

Ms. Beverly Ausick, Coshok's Manager, Ms. Marion Randall, Coshok's Owner and Ms. Natasha Norris were present for the inspection. Ms. Ausick indicated there were 31 dogs in the facility.

Upon inspection it was determined that violations of AMC 17.10.030 remain or have occurred.

17.10.030 requires that an animal owner or custodian maintain "...all areas, where an animal is kept and to which it has access, in a clean and sanitary condition...." (17.10.030.B) At the 9/27/16 inspection, the following observations were made:

(1) Several kennels had accumulations of hair/organic material at the bottom of the chain link fence separating them from the adjoining kennels.

(2) Most kennels had back walls/areas of wood or a ply-board type material. Several kennels had evidence of these areas being damaged and/or chewed. Two kennels had been covered/repared with a linoleum type covering over the damaged portion since the last inspection, but the remaining wood or ply-board type material cannot be properly sanitized.

(3) Some outdoor kennels did not have drains for animal waste and had either an asphalt/dirt or deck type substrate for the floor of the kennel.

(4) Some water pails had a slightly green tint.

(5) Bleach solution being used for food and water dishes, as described by Ms. Ausick, remains ineffective.

(6) Simple Green and bleach solution being used for kennels, as describe by Ms. Ausick, continues to be ineffective.

3. A present or prior violation of a term, condition or limitation of a license issued under this title.

AMC 17.10.050 requires that an animal facility "provide adequate and appropriate shelter to ensure animal health, safety, and welfare" (17.10.050.A.1) and "maintain the facility in a sanitary condition." (17.10.050.A.2).

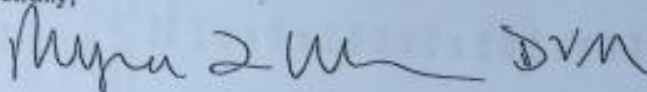
For the reasons observed in the 9/27/16 inspection and as described above, Coshok's Canine Castle has been and continues to be in violation of this requirement.

Because the special purpose license is being denied, you are required to cease activities that would be allowed with a license such as boarding or grooming animals for fees or services. Additionally, you must not own, house, possess or be the custodian of more than three dogs, more than three cats, more than three rabbits, more than three ferrets, more than three horses or a combination more than six of the before mentioned animals.

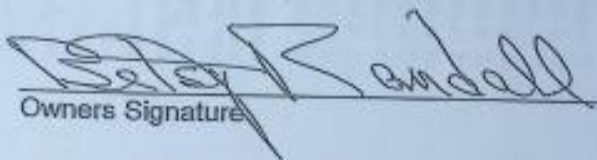
If you are able to meet the requirements of AMC 17.10.050, 17.10.030 and do not have any violations of Title 17 within one year of receiving this denial, you may reapply for a special purpose license.

Per AMC 17.05.100 you have the right to a hearing on this administrative decision by filing a written request for a hearing to the Administrative Hearing Office located at City Hall, 632 West 6th Avenue, Suite 740, Anchorage, Alaska 99501 no later than 15 business days after service of this decision. Request for hearing forms are available at the Administrative Hearing Office or at the Anchorage Animal Control Center.

Respectfully,

 DVM

Dr. Myra Wilson, Director
Anchorage Animal Care and Control Center


Owners Signature

Date 10/21/16

APPENDIX 5 - MAPS

Map 1



0 1.75 3.5 7 Miles

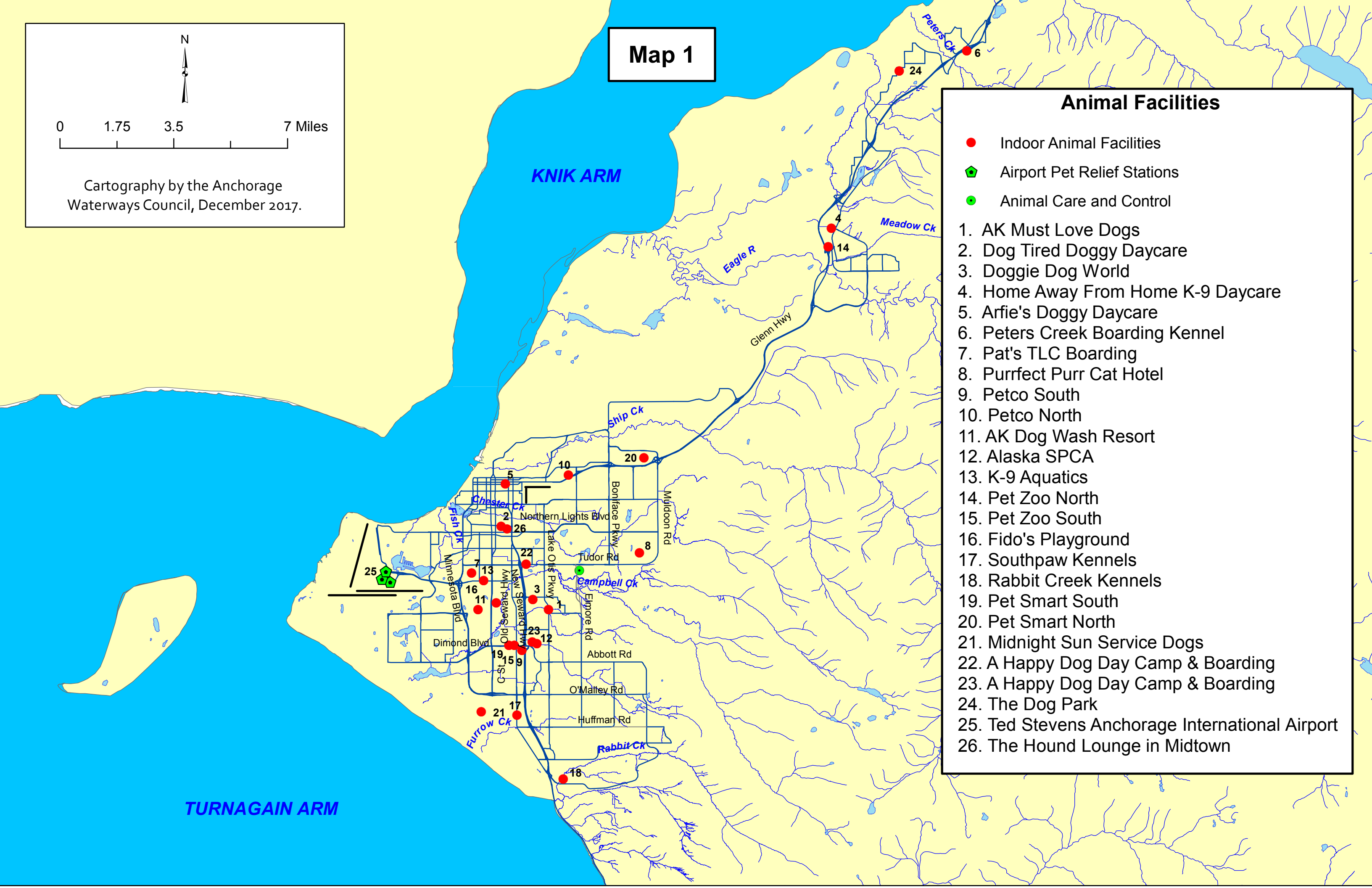
Cartography by the Anchorage Waterways Council, December 2017.

Animal Facilities

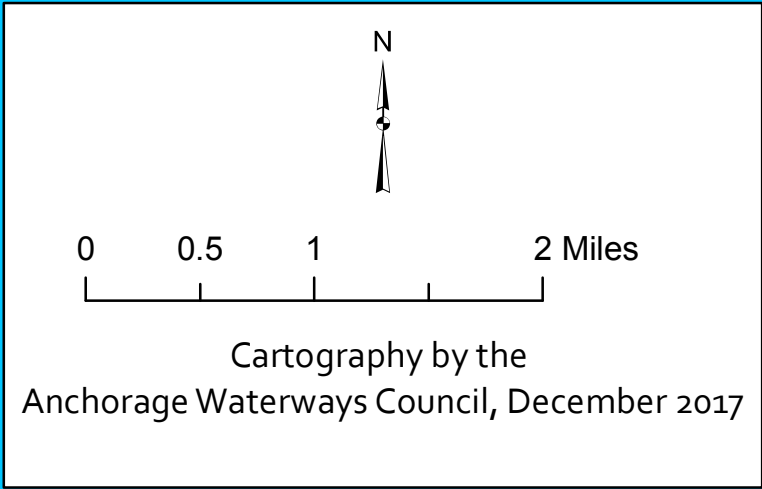
- Indoor Animal Facilities
 - ◆ Airport Pet Relief Stations
 - Animal Care and Control
1. AK Must Love Dogs
 2. Dog Tired Doggy Daycare
 3. Doggie Dog World
 4. Home Away From Home K-9 Daycare
 5. Arfie's Doggy Daycare
 6. Peters Creek Boarding Kennel
 7. Pat's TLC Boarding
 8. Purrfect Purr Cat Hotel
 9. Petco South
 10. Petco North
 11. AK Dog Wash Resort
 12. Alaska SPCA
 13. K-9 Aquatics
 14. Pet Zoo North
 15. Pet Zoo South
 16. Fido's Playground
 17. Southpaw Kennels
 18. Rabbit Creek Kennels
 19. Pet Smart South
 20. Pet Smart North
 21. Midnight Sun Service Dogs
 22. A Happy Dog Day Camp & Boarding
 23. A Happy Dog Day Camp & Boarding
 24. The Dog Park
 25. Ted Stevens Anchorage International Airport
 26. The Hound Lounge in Midtown

KNIK ARM

TURNAGAIN ARM

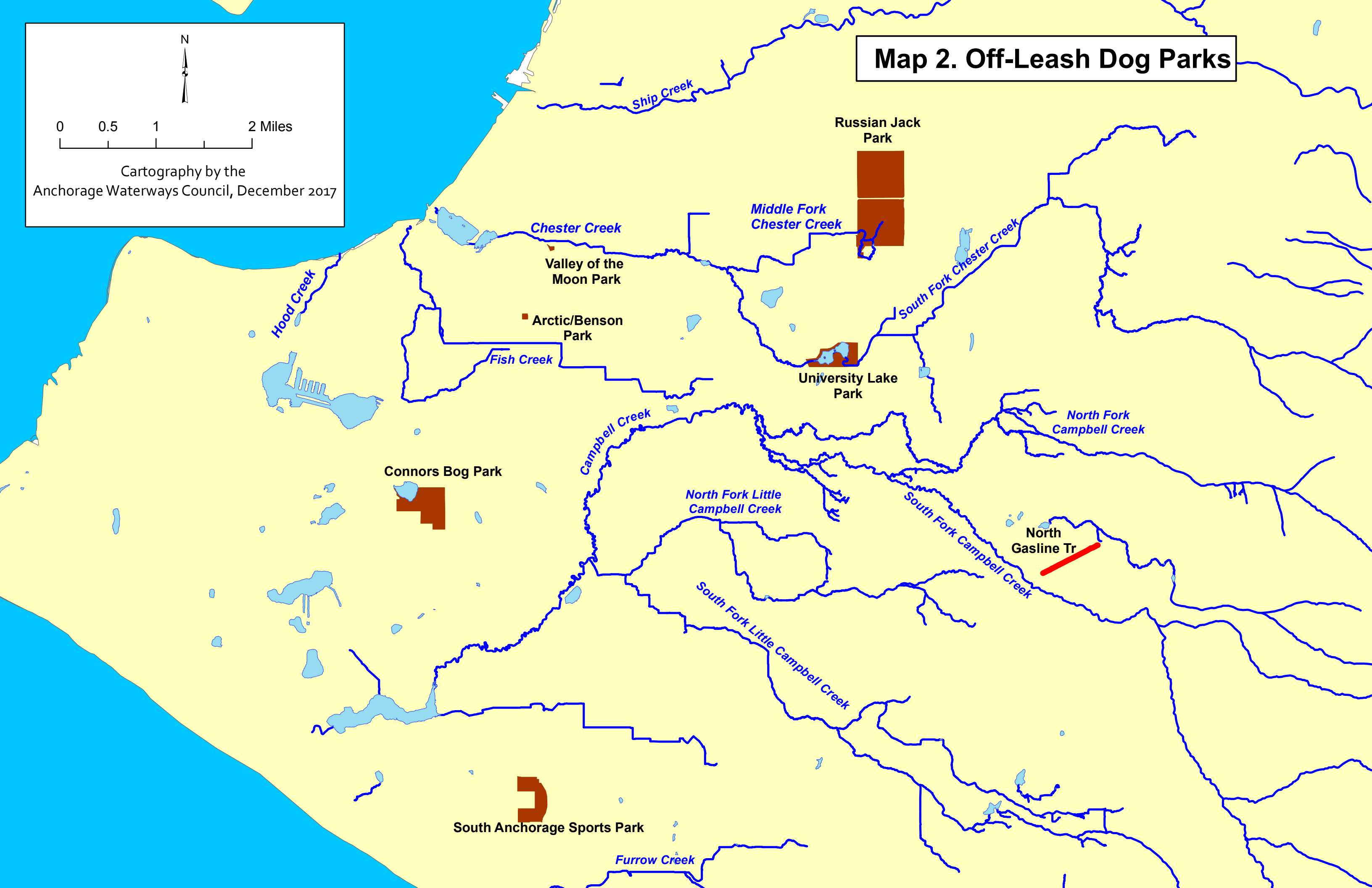


Map 2. Off-Leash Dog Parks



0 0.5 1 2 Miles

Cartography by the Anchorage Waterways Council, December 2017

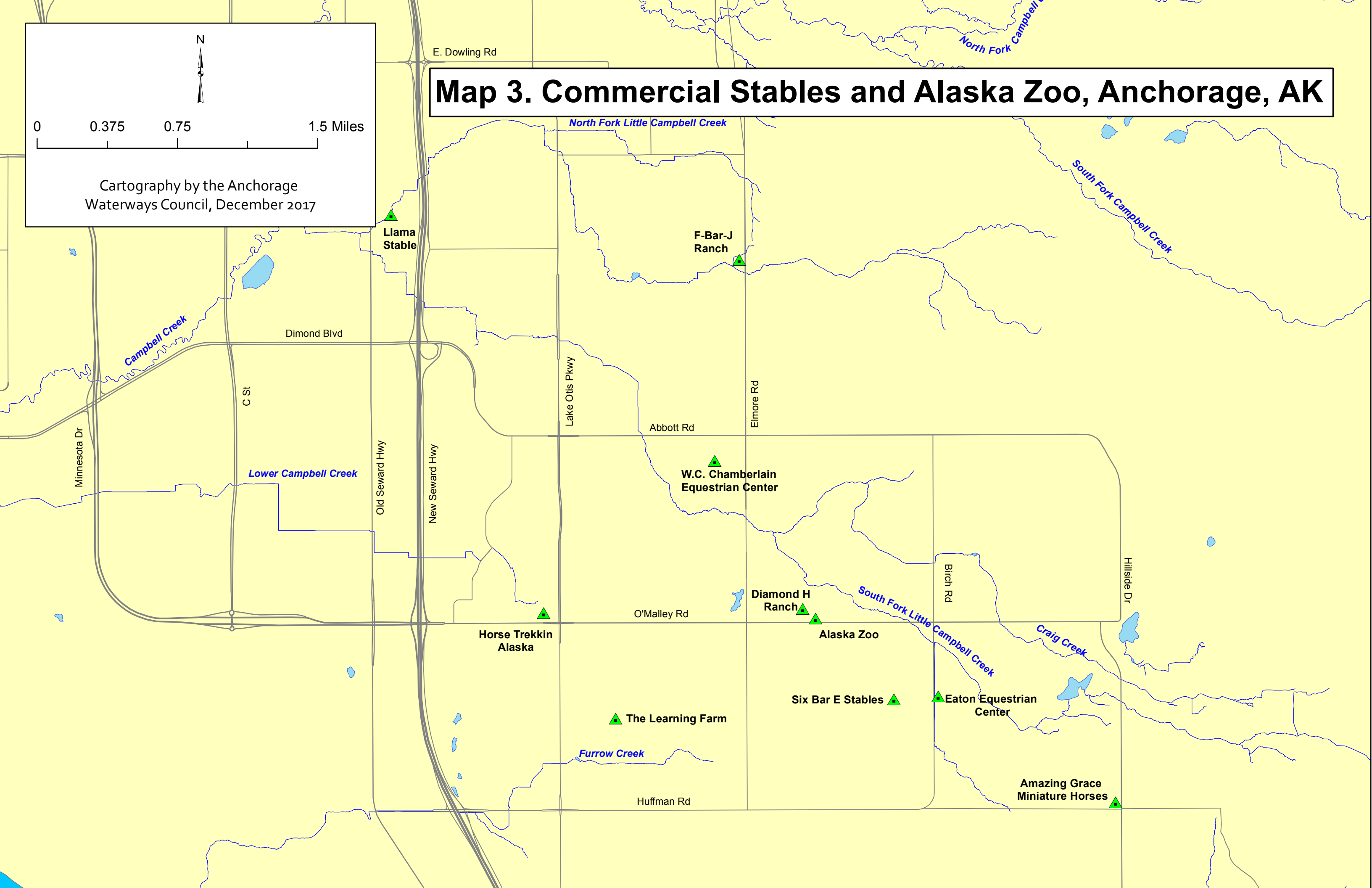


Map 3. Commercial Stables and Alaska Zoo, Anchorage, AK

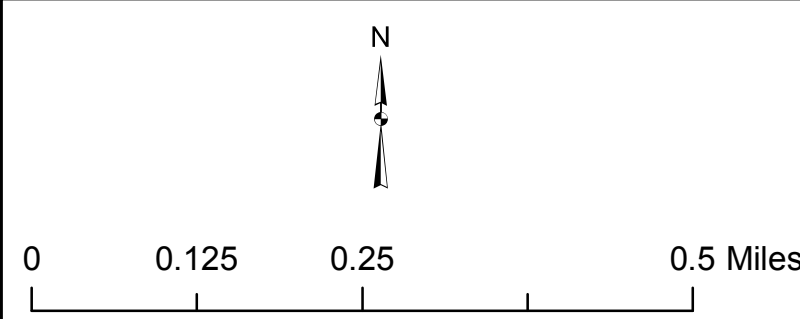
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0 0.375 0.75 1.5 Miles

Cartography by the Anchorage
Waterways Council, December 2017

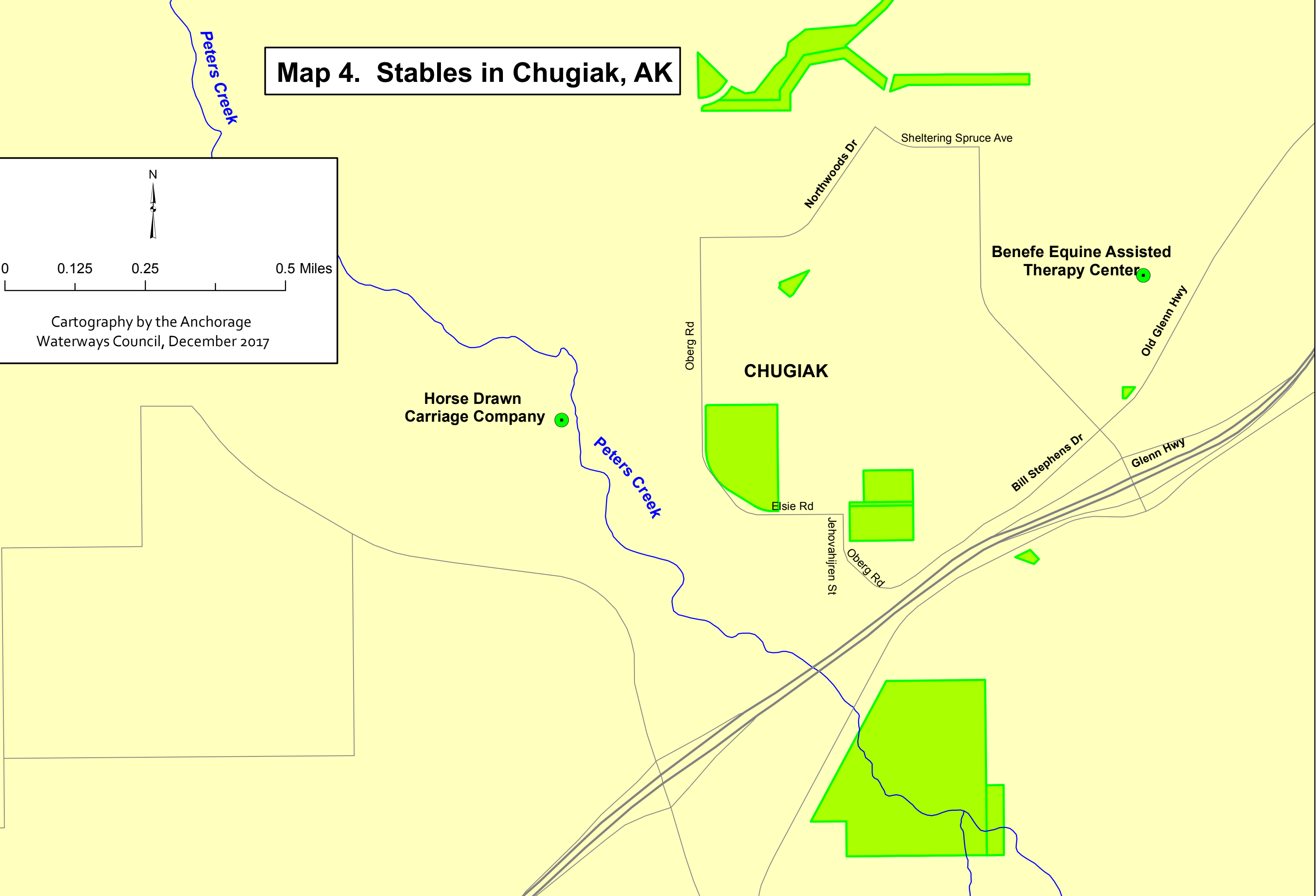


Map 4. Stables in Chugiak, AK



0 0.125 0.25 0.5 Miles

Cartography by the Anchorage Waterways Council, December 2017



Map 5. Anchorage, AK Animal Venues

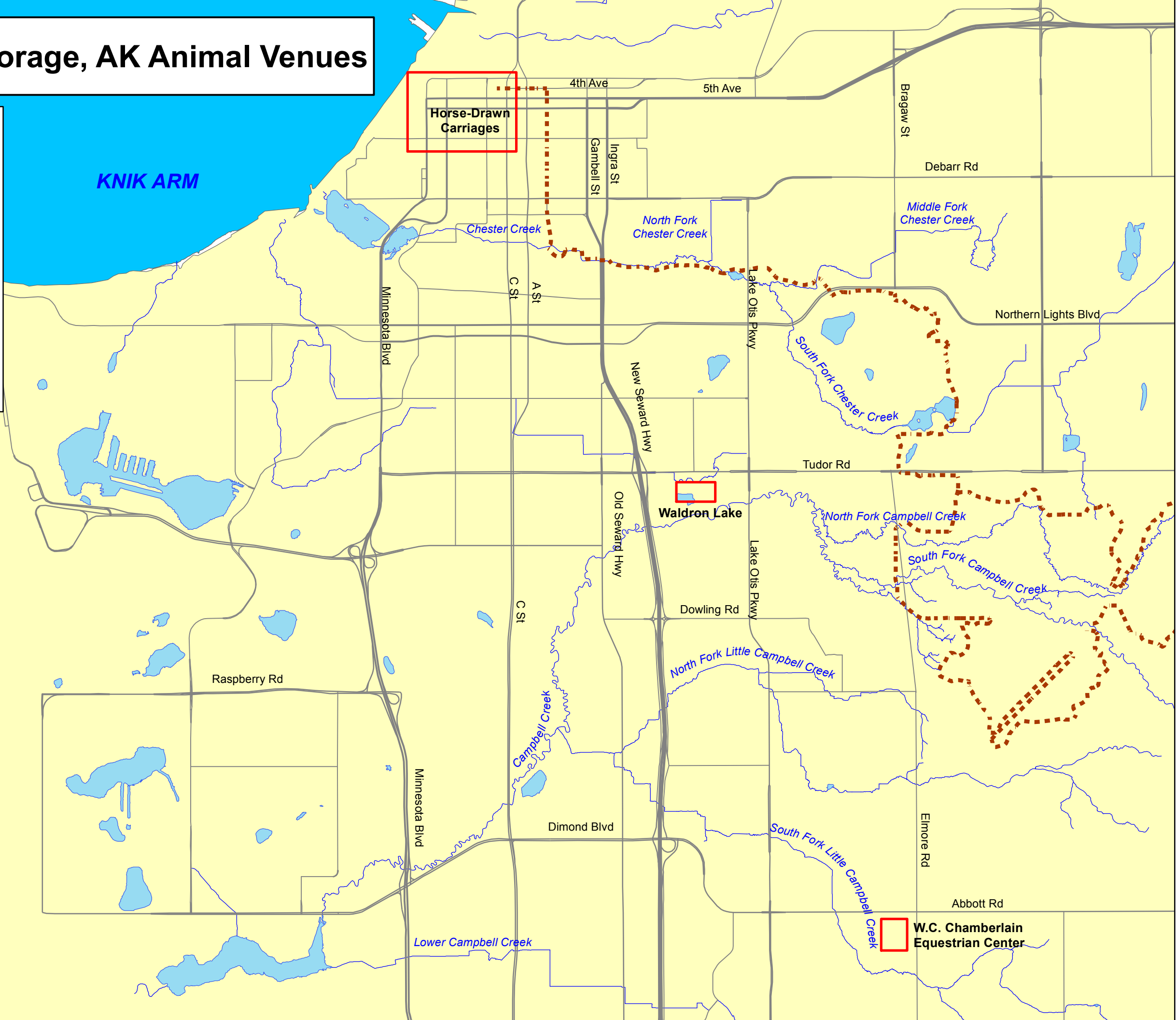
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Fur Rondy & Iditarod Trails

Animal Event Venues

0 0.5 1 2 Miles

Cartography by the Anchorage Waterways Council, December 2017



KNIK ARM

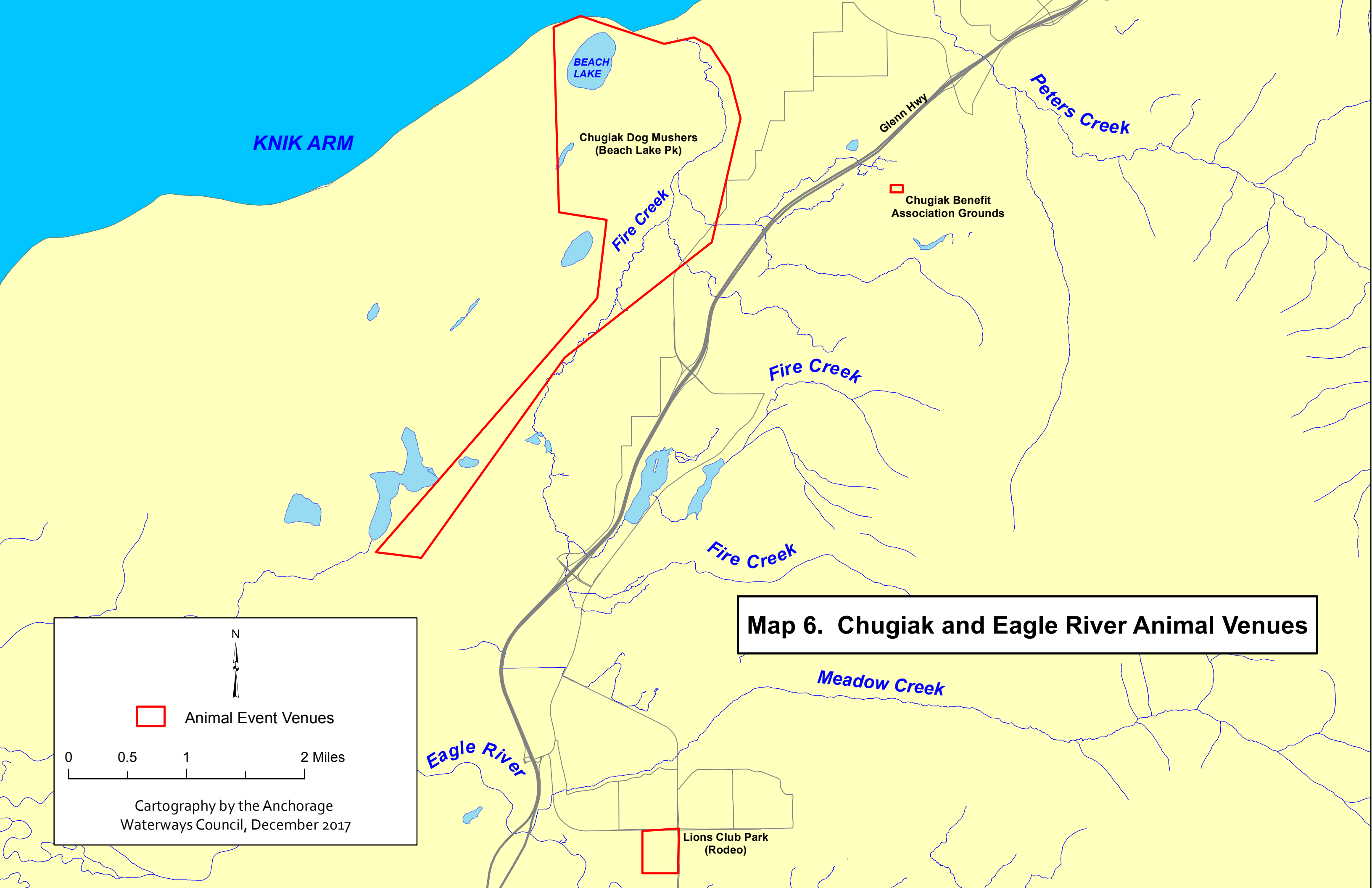
Horse-Drawn Carriages

Waldron Lake

W.C. Chamberlain Equestrian Center

Shultzhund Training Area, Kincaid Pk

TURNAGAIN ARM



KNIK ARM

BEACH LAKE

**Chugiak Dog Musher's
(Beach Lake Park)**

Glenn Hwy

Peters Creek

**Chugiak Benefit
Association Grounds**

Fire Creek

Fire Creek

Fire Creek

Map 6. Chugiak and Eagle River Animal Venues

Meadow Creek

Eagle River

**Lions Club Park
(Rodeo)**

N
S

Animal Event Venues

0 0.5 1 2 Miles

Cartography by the Anchorage
Waterways Council, December 2017

Public Education and Involvement



JOIN or RENEW NOW

AWC UPDATE:

A message from the Executive Director, Cherie Northon

Well, since I can't complain about the lack of snow, it seems fitting to do a rerun of 2016. It was a very busy year for AWC. Our staff is small, yet we still manage to run several valuable programs and events. This is thanks to AWC's board members and our fantastic and generous volunteers, interns, members, and sponsors. Thank you all. We sincerely hope to keep up the pace in 2017 with your help.

AWC Programs

We have several programs running simultaneously, which means a lot of juggling for our 3 staff. One of our most popular programs has been "**Creeks as Classrooms**", which began eight years ago. It originated from a 2 year grant by the US Fish and Wildlife Service, and then was picked up for the last five years by annual grants from ConocoPhillips' "Spirit of Conservation" program. Each year AWC has been able to work with approximately 5,000 ASD students and summer science campers. Due to the current downturn in the oil industry, AWC did not receive funding for 2017 from ConocoPhillips, but we are hoping it will be restored in the next round for 2018. AWC believes it is essential for youth to "unplug" and get outside to nature. With a high percentage of Anchorage schools located within walking distance of a creek or lake, thousands of students have been provided hands-on experience in measuring stream velocity, identifying invasive species, learning about healthy fish habitat, collecting macroinvertebrates (fish food and indicators of stream health), and doing chemical testing to determine pH, temperature, dissolved oxygen, turbidity, and fecal coliform levels. The youth who learn to care for our creeks now will be the stewards of them tomorrow.



Kids in Creeks!

Early in the New Year, AWC starts to gather forces for its **Scoop the Poop** programs. Several representatives from a variety of groups meet every year to discuss problem areas, ideas, and to plan for our April "Scoop the Poop" Day. Typically we have stations (gloves, bags, shovels, and buckets) at University Lake and Connors Bog dog parks, and some volunteers pick up supplies to go to other areas. A couple of hundred people come out to help pick up the "leavings" from a long winter. This event is a great way to start spring and provide a good example of the importance of cleaning up pet waste immediately. Throughout the year AWC tables at several dog-oriented events (Dog Jog, Pawstice, and Puppy Up) where we provide information on fecal coliform issues and our waterways.



University Lake on Scoop the Poop Day



Connors Bog on Scoop the Poop Day

Another long-time program is the **Citizens' Environmental Monitoring Program (CEMP)** which has trained hundreds of volunteers since 1998. The results are thousands of water quality readings from our local waterways, i.e.

temperature, turbidity, fecal coliform, pH, and dissolved oxygen. These dedicated monitors spend 100 or more hours every year testing water, incubating tests, reading results, taking photos, and turning in data sheets. Unfortunately it has been a difficult program to fund for the past decade even though it is the ONLY one that tests Anchorage's waters regularly. Due to decreased funding, AWC had to streamline the program in 2016, but it is still in existence. We are grateful for the hundreds of volunteers who have kept CEMP going for the past 18 years, our current team that is monitoring now, and for those who make substantial financial contributions to help fund it.



Former monitor Scott McKim on Eagle River

In 2015, Thom Eley worked with Eagle Scout candidate Kyler Ince on his Eagle project, **Monofilament Collection and Recycling**. AWC acquired match funding from the Anchorage Parks Foundation to build and deploy over 20 PVC collection bins at popular fishing spots. Anglers now have a place to deposit unused fishing line, hooks, and weights besides the ground. Prior to building and deploying these bins, miles and miles of fishing line were observed on the ground and in waterways. There they entangle birds and small animals, and hooks and other debris often result in a painful death for fish and birds that swallow them. Even though there is no longer the expense involved in building new ones, it does take time to check and empty the bins

a couple of times every year. AWC has been unable to acquire even a small grant to cover staff costs, and we are continually looking to find a solution to this. In the meantime, volunteers wanting to do community service and staff who donate their time are emptying the bins, sorting out the debris, cleaning the line, and sending it to Berkley Industries for recycling--sometimes into artificial fish habitat. If this interests you as something to help AWC on, we would be very glad for the assistance since it is turning into such a successful and beneficial project.



AWC was also the recipient of grant and contract funding for other projects. In fiscal year 2015-2016 the Alaska Department of Environmental Conservation (ADEC) awarded us a grant for "**Improving Water Quality in Anchorage Waterbodies**". It was specifically geared to improve Cuddy Family Midtown Park's water quality and overall park experience which were being degraded by park visitors feeding waterfowl. With the funding, AWC formed a large stakeholder group of interested parties who contributed a variety of perspectives on the problem as well as many solutions. With this input, a range of communication methods (park signage, bus signs, and news stories) were developed to discourage the constant feeding of geese in summer and ducks year-round. The signage and education campaigns in conjunction with the MOA's Parks and Rec Department's addition of new

fencing and landscaping to separate waterfowl from people, have resulted in a major improvement in water quality and cleaner park paths. This is based on field observations combined with testing for fecal coliform (FC) in the ponds.

Because the Cuddy ponds are a daylighted section of Fish Creek, the high levels of FC (over 40 times the Alaska state standards at times) have the potential to spread downstream all the way to Cook Inlet. Thanks to the generosity of SGS Labs, who provided free testing of FC samples throughout the summer, a dramatic decline in FC was observed. Besides the impact on water quality, most feeders do not realize that ducks and geese do just fine with their own natural foods and that anything other than grass or pond weeds can cause severe or even fatal health problems for the waterfowl. Feeding also increases population numbers and dependence (and along with it more bird feces). It is with great anticipation that we look forward to reviewing this project in 2017 to see how successful this work has been.

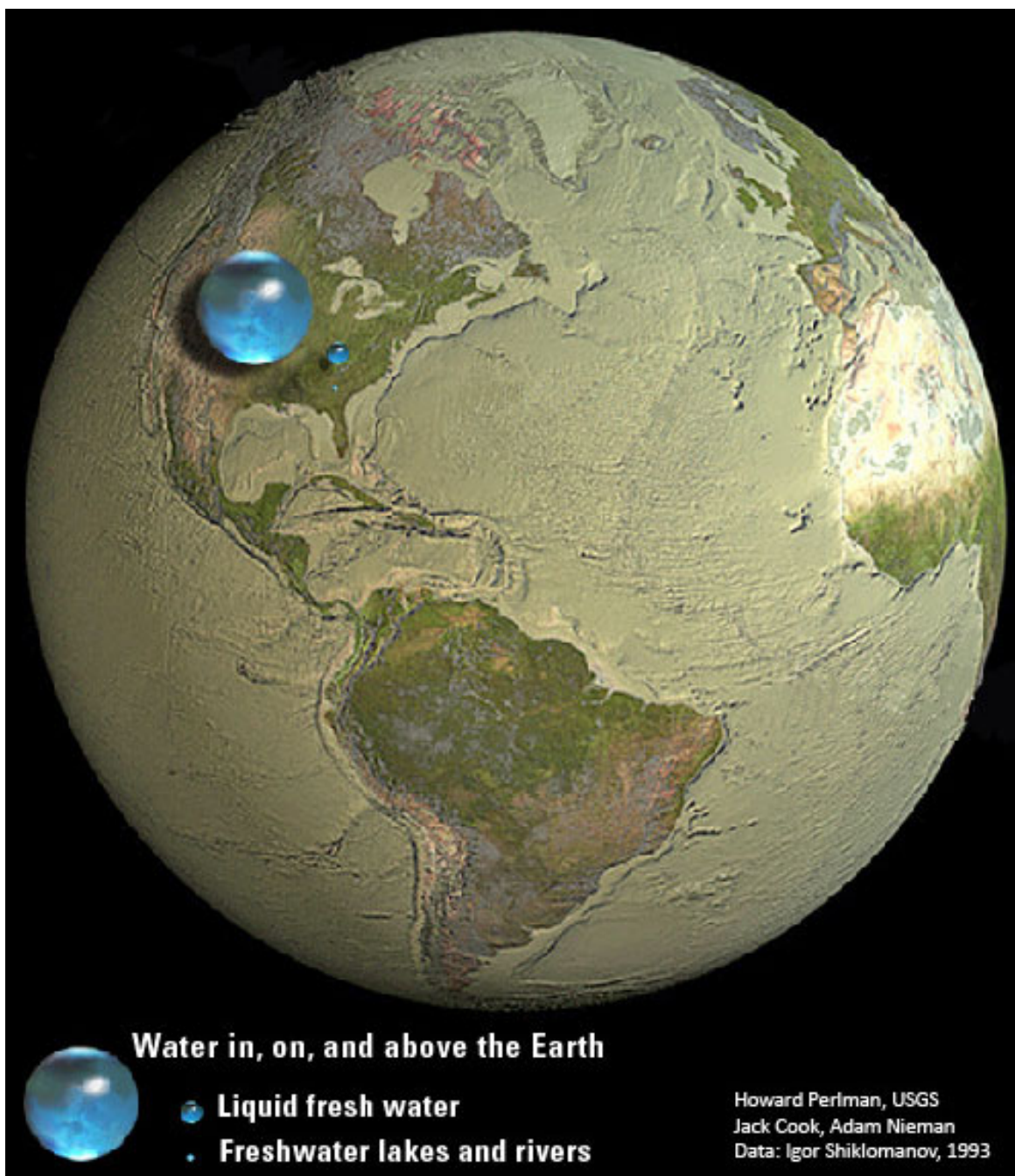


New signage to discourage feeding at Cuddy Park

An ongoing contract that AWC has with the Municipality for its **Alaska Pollutant Discharge Elimination System (APDES)** involves education on watershed issues that are most often the result of non-point source pollution.

It is especially important to view our place in the world from a watershed perspective. Everyone on the terrestrial part of Earth lives in a watershed. From the elevational divides (high or low) between basins, when precipitation falls it carries whatever is in that watershed down to the lowest point which is most likely a water feature (lake, river, creek, bay or stream). All the debris (trash, plastic, cigarette butts, pet waste), toxics (vehicle fluids, ice melt products, fertilizers), and other pollutants are picked up on this journey through the watershed where much eventually reaches an ocean or large body of water. The more we can reduce what is picked up and carried away into our waterways, the cleaner they will remain as will the oceans. It's incumbent upon each of us to reduce the amount of pollution as well as the preponderance of water that carries the pollution through our watersheds. Every tree or vegetated area that is removed and paved over increases runoff because of less infiltration into the ground. Urban areas are, obviously, one of the more common causes of increased runoff and transport of items that adversely affect our water.

Did you know that the "available" freshwater on the entire Earth is a minute percentage of all the world's water? [Oceans and other saline waters](#) account for over 97% of the Earth's water which leaves about 2.5% of all resources as freshwater. Of that small percentage, over half is tied up in glaciers, ice caps, ground ice, permafrost, and groundwater. This leaves a very small proportion of less than 1% overall available for living things. Water is life, and we need to preserve it and its purity as much as possible. Water is also a closed system--this is all we have and it needs to be treated wisely because there is no more.



(1) The sphere over the western U.S., (860 miles in diameter) represents all the Earth's fresh water.

(2) The sphere over Kentucky (169.5 miles in diameter) depicts all the Earth's fresh liquid water in the ground, lakes, swamps, and rivers.

(3) The sphere over Georgia (34.9 miles in diameter) shows the amount of Earth's fresh-water lakes and rivers.

Credit: Howard Perlman, USGS; globe illustration by Jack Cook, Woods Hole Oceanographic Institution (©); Adam Nieman.

AWC Events

For the last 32 years, AWC has held an **Annual Creek Cleanup** in May. The impetus for this event originated back in the 80s under then-Mayor Tony

Knowles and his public health director, Dr. Rodman Wilson. Alarmed at the highly polluted state of Anchorage's creeks, these two began to bring attention to the many serious problems and Creek Cleanup was born (along with several other measures to ensure the health of the public). This program is one that is perpetually (and thankfully) funded by local individuals, foundations, and companies, and the cleanup is carried out each year by hundreds of volunteers from a single person to large employee teams.

In May 2016, there were four consecutive cleanup days with 38 teams and over 500 participants who pulled in a couple of tons of trash from several creeks, lakes, and Potter Marsh. ConocoPhillips has been a major donor for ten years along with CIRI, BP, The Gottstein Foundation, and Cathy and Dan Gleason. And thanks also to the American Canoeing Association, Denali Alaskan Federal Credit Union, Moose's Tooth, HDR, and GCI for their contributions. The MOA's Solid Waste Services and the Parks and Rec Department were instrumental in taking care of the creek trash.

In fall, AWC held its **Annual Meeting** which, this year, focused on the Cuddy Park project. Titled, "Foul Water from Water Fowl", there were 5 speakers who provided information on the origin of Cuddy Park and ponds, how water quality was being impacted, and some of the solutions that occurred. A question and answer period followed. AWC is currently reviewing topics for this year's meeting.

Right on the heels of the annual meeting was our annual fundraiser, **Beer and Bites**. This is always a fun event that is hosted by Midnight Sun Brewery in their brewing facilities where their great beers are paired with a variety of appetizers. A silent auction is one of the highlights, but it's also a good place to mingle and enjoy like-minded people who care about our waterways. Besides, you can't have great beer without great water! Special thanks to Midnight Sun Brewery, Dianne's Wildfork Catering, the Peanut Farm, Indian Valley Meats, Fire Island Bakery, Great Harvest Bakery, Alaska Green Solutions, artist Kurt Jacobson, the Alaska Railroad, Drool Central, Bosco's, Heather Ptak, Mayor Ethan Berkowitz, Peppercini Catering, Alaska Raft and Kayak, Hanna Smith, and O'Malley's on the Green. Keep an eye out for 2017's event, because there are room space limits that restrict the number of tickets we can sell.

THANK YOU!

AWC is especially grateful for its members, volunteers, and the many sponsors who provide support for Creek Cleanup and Beer and Bites as well as our grants and contract partners. All this great work would not happen without you.

A FEW THINGS YOU CAN DO TO HELP AWC

Many of you have linked your **Fred Meyer** rewards card to Anchorage Waterways Council and it means that we receive quarterly donations from your shopping. If you haven't linked to AWC, we would love to have you. These donations help us fund our programs. Our Fred Meyer number is 88984. This is a win-win situation for everyone. To renew or sign up, go to [Fred Meyer Rewards](#) and follow the directions. On that page you can click on their link to sign up. Thank you to all who have in the past, who renew, and who will sign up for the first time.

Amazon Smile also donates a portion of Amazon purchases to various charities. [This link](#) will give you information on what they do and how to sign up.

Finally, our largest single annual donation comes from [Pick, Click, Give](#). People choosing to donate a part of their Permanent Fund dividend can help a variety of non-profits out. Anchorage Waterways Council has been a recipient for the past 3 years, and we are very appreciative of Alaskans' generosity.



REMINDER - Taku Lake Park Master Plan

If you want to weigh in with your thoughts on the future of Taku Lake Park, public comments will end January 5. [This link](#) will take you to the MOA's page where the survey is located.

How can you help AWC maintain healthier creeks?

Volunteer

There are many ways to help AWC as a volunteer. We have fantastic volunteers who donate hundreds of hours annually to monitor our creeks each month, hundreds of participants take to the creeks every May to pull tons of trash out during our Annual Creek Cleanup, and many of you are "eyes on the creek"--reporting things that are disturbing--and we do our best to respond or help people find the right place to "complain".

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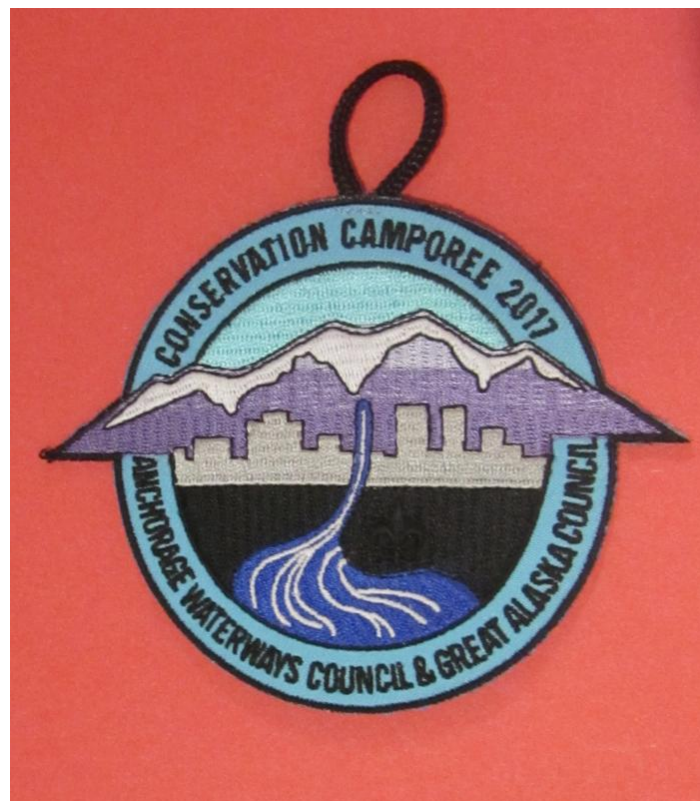


JOIN or RENEW NOW

AWC UPDATE:

A message from the Executive Director, Cherie Northon

This year approximately 600 volunteers headed into local creeks and lakes for six days in Anchorage and Girdwood. A large contingent of Boy Scouts from the Great Alaska Council kicked off the Cleanup on May 6 along with residents in Girdwood. From May 11-15 dozens of other groups collected tons of trash in the Anchorage Bowl. We are incredibly grateful for their time and energy as well as for the individuals and businesses that supported this effort.

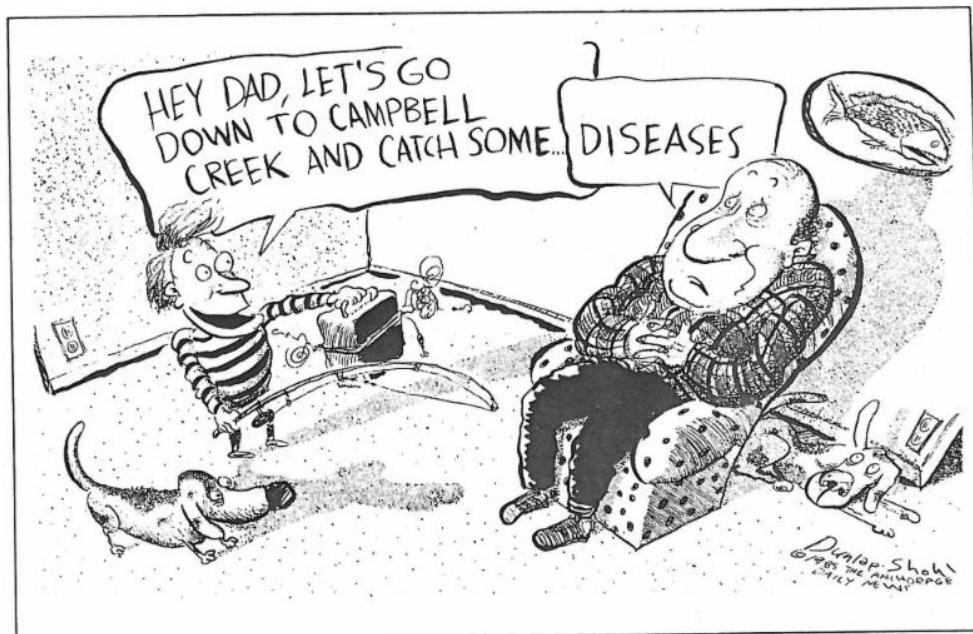


Badge created for the Scouts who did Creek Cleanup on Campbell Creek, Goose Lake, and Jewel Lake

A BRIEF HISTORY OF CREEK CLEANUP

In 1984, Mayor Tony Knowles was approached by Dr. Rodman Wilson (1921-2003) who was the Director of Anchorage's Department of Public Health and had great concerns about the level of pollution in Anchorage's waterways.

In the 1980s, human contact with local creeks had become a serious health problem because of the presence of raw sewage, trash, chemicals, and other deleterious items. Secondary contact recreation, such as fishing and canoeing, were even a great worry. Political cartoons in *The Anchorage Daily News* by Peter Dunlop-Shohl chronicle health concerns.





Dr. Rodman convinced Mayor Knowles that certain areas needed to be shut down and signs warning people of health hazards were posted.

Other journalists, including Craig Medred, followed these actions and publicized the need to shut down Anchorage's long-time Campbell Creek Canoe Classic in 1985. Moved to Goose Lake as a safety measure, the Classic never recovered although many locals have fond memories of it still.

Fortunately through decades of cleanups and regulations aimed at improving creek health, Campbell Creek has returned to being a great place for canoeing and kayaking and other water activities. In fact, Knik Canoers and Kayakers (KCK) cleaned in Campbell Creek as they have done for the past several years.



KCK members cleaning lower Campbell Creek

Anchorage Waterways Council's mission is to continue the work undertaken over 30 years ago and constantly improve the water quality of our creeks and lakes. Creek Cleanup is an important aspect of this because it brings hundreds of people out who demonstrate how much they care for local waterways. Over 40 groups participated this year. They included environmental consulting firms, environmental and conservation organizations, federal agencies, Scouts, schools, churches, hospitals, a law firm, local businesses and companies, alumni groups, and social activity groups. They were joined by families, friends, dogs, individuals and even a young woman who invited her friends to clean up in honor of her birthday! What links all these diverse volunteers is their care for and love of local waterways.



Some of the volunteer groups from Creek Cleanup 2017

It is always interesting to look at the many odd things that are tossed into creeks. This year some of the offerings included a lawnmower, a large truck tire, a big punching bag, a couple of dead mallards, a harpoon, a 20 lb. wheel well casing (which was recycled), a couch, a stove top, and lots of pallets.



Team Resolution with the harpoon they found

In years past when AWC had Creek Cleanup and a Celebration on one day, we offered prizes for a variety of trash categories, but this proved impossible once we expanded the cleanup over several days. Regardless, Rives for Rivers, created their own team prize categories as seen below!



Some awards created by Rives for Rivers for their team

Additionally it is nice to hear reports from teams who have been out for several years. Justin Miller from BOEM & BSEE wrote, "though there wasn't a huge turnout of volunteers, those who showed came with enthusiasm and high energy so we were still able to remove and dispose of over 340 lbs. of filthy, fish-habitat-polluting-trash from our section of North Fork Little Campbell Creek! All volunteers from this and prior years should be proud that our team's efforts over the last few years were so clearly noticeable, and this has been the least volume of trash we've had to haul out of our section in at least the 3 years I've been organizing the event!".

Overall, most comments resonated about finding less trash although there are still some hot spots. And, one of the biggest problems that volunteers are now running into involves homeless camps. We give strict instructions not to go into them or do any cleaning in the area, but we do like to get locations so they can be reported.

THANK YOU!

AWC is especially grateful for its members, volunteers, and the many sponsors who provide support for Creek Cleanup and other events as well as our grants and contract partners. All this great work would not happen without you.

Thank You for Helping Make our 33rd Annual Creek Cleanup a Huge Success!

Without the generous support of our sponsors, we could not organize such an important event.

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***CREEK STEWARD* (\$1,000-\$2,499)**
Cathy and Dan Gleason

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Denali Federal Credit Union ♦GCI♦Moose's Tooth♦TTT Environmental

ConocoPhillips
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Special assistance by MOA Parks and Recreation & MOA Solid Waste Services

And to all our fantastic volunteers in the creeks!

THANK YOU!

Anchoragecreeks.org

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Many of you have linked your **Fred Meyer** rewards card to Anchorage Waterways Council and it means that we receive quarterly donations from your shopping. Rewards customers continue to receive reward and fuel points as well as their rebate.

At the end of each quarter, Fred Meyer will make a donation to participating nonprofits based on the accumulated spending of the Rewards that customers linked to each nonprofit. If you haven't linked to AWC, we would love to have you. These donations help us fund some additional programs, such as the monofilament recycling. Our Fred Meyer number is 88984. This

is a win-win situation for everyone. To renew or sign up, go to [Fred Meyer Rewards](#) and follow the directions. On that page you can click on their link to sign up. Thank you to all who have in the past, who renew, and who will sign up for the first time.

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JOIN or RENEW NOW

AWC UPDATE:

A message from the Executive Director, Cherie Northon

Sisters, Oregon

In October we traveled to Central and Southern Oregon to visit family and friends. We spent 5 days in [Sisters](#), which is a small, charming town with a hardy Western flavor. It takes its name from three volcanic peaks in the Cascades that were once called Faith, Hope, and Charity by early settlers. Today known as North Sister, Middle Sister, and South Sister, they provide a stunning view in this beautiful country that is composed of varied topography and vegetation. You can find huge stands of pine, miles of lava from volcanic eruptions, high desert, "painted mountains", cattle and horse ranches, fields of alfalfa, and most anything in between. In minimal driving time, there are a variety of wonderful landscapes and recreation areas such as the Willamette National Forest and Three Sisters Wilderness Area.

This newsletter is mostly going to focus on the town of Sisters, which was formally established in 1901. For a good part of the early 20th century, the town was reliant on the timber industry, however in 1963 the last lumber mill closed. Rather than go the way of many former mill towns, Sisters reinvented itself in the early 70's. Situated in a vast area for recreation and natural beauty, Sisters adopted a zoning ordinance to recreate a downtown reminiscent of the 1880's. And, it seems to have paid off.



Sisters Feed & Supply (photo by C. Northon).



Roof of the Sisters Market (photo by C. Northon)



Sisters Bunkhouse (photo by C. Northon)

Obviously there has to be a link to water in this story, and there is. We spent a considerable amount of time walking the town as it is made for doing just that. Lots of shops and restaurants on the main street, Cascade, and many other interesting places on Main St. which parallels Cascade to the north. After crossing a few intersections I noticed the abundant use of curb cuts, plants, and drainageways that were literally found on every corner of Main St. One day we counted over 30 bioswales (four to an intersection) on a half mile stretch of the street. Bioswales are similar to raingardens, and commonly the two terms are used interchangeably although there is a nuance of difference. A good explanation of both terms is found in an [article](#) by the Soil Science Society of America, and mostly has to do with the size of the area being treated and techniques used.

The bioswales in Sisters were placed at intersections to collect stormwater runoff and filter it through vegetation and soil that was sometimes enhanced by amending or engineering it with other materials. Typically many don't think about rainwater, snow melt, or even lawn watering as an issue, but this runoff carries a variety of pollutants downhill. "What's on the ground, washes down."

On impervious surfaces (roads, parking lots, and hard packed lawns) one sees cigarette butts, trash, pet waste, yard and snow melt chemicals, vehicle drips (oil, fluids, antifreeze, etc.), and more. Flowing water is the perfect medium for moving these contaminants into storm drains which oftentimes empty into local waterways untreated. This stormwater conveyance system is found in many cities and is known as an "MS4" (multiple separate storm sewer system). It collects and carries stormwater that is not part of a sanitary sewer system. In other words, stormwater and sewage are carried separately. Sewage is generally treated before it is discharged, and stormwater tends not to be.

Anchorage is an MS4 city. Stormwater enters street drains, ditches, pipes, channels and other infrastructure and makes its way to a lake, creek or Cook Inlet where it is discharged untreated. Consequently every waterway in the Anchorage Bowl except Rabbit Creek has a fecal coliform (FC) impairment that was established by the EPA in the last decade. The most common causes for this are from pet waste that has not been picked up (Anchorage has roughly 65,000 dogs that deposit about 24 tons of poop DAILY) and failing septic tanks. In Sisters, it is less likely that Whychus Creek has a FC impairment, but it has been severely disturbed by other [factors](#), such as upstream grazing, water diversion for irrigation, dams, fish passage barriers, and channelization, which impact its ability to sustain anadromous fish runs.



Oil sheen in stormwater heading to a stormdrain, Cascade St., (photo by C. Northon)

I decided to stop by the Sisters' Public Works Department to learn more about their use of bioswales. Because Anchorage's stormwater is conveyed untreated to our local urban creeks, I assumed that Sisters' stormwater was filtered by bioswales and then piped into Whychus Creek, which runs on a southerly course through town. Surprisingly, I

learned that Sisters does not empty stormwater into its local creek, and there is a major effort to protect the Whychus.

Public Works Director Paul Bertagna was kind enough to meet with me and explain the mechanism for their many bioswales. Each has a series of underground filters which remove as much of the pollutants as possible when the water percolates downward. The stormwater is not emptied into their local creek, because it stays in the ground and recharges aquifers or dissipates. Sisters' town [website](#) has a nice, simple explanation regarding why they do it this way. This creek is considered a valuable community asset for all, and is protected because "polluted stormwater that flows into local rivers can result in degraded fresh water quality, wildlife habitat, public safety, and community health. Improperly managed runoff also impacts local infrastructure and requires costly repair and maintenance procedures to return to a functioning state".

This is an excellent example of LID (Low Impact Development), which Central Oregon is striving for in its [Central Oregon Stormwater Manual](#).



Stormwater runs through the curb cut into the bioswale, (photo by C. Northon).



Another bioswale example on Cascade St. (photo by C. Northon)



Whychus Creek (photo by C. Northon)



Covered foot bridge over Whychus Creek (photo by C. Northon)

Anchorage, too, is working towards an increase in LID projects particularly now that its current stormwater permit (A.P.D.E.S. or Alaska Pollutant Discharge Elimination System) is overseen by the State of Alaska's Department of Environmental Conservation (ADEC), and the permit specifies the use of more LID projects for compliance. But, there are major differences between the two places. Sisters' official size is under 2 sq. mi., while Anchorage is a large municipality covering nearly 2,000 sq. mi., although about 90% of this is not populated. So for a "settled land" to "settled land" comparison, Anchorage is about 100 times greater than Sisters. Anchorage has over 28 waterways in several high density areas, and it has been built with streets that could not accommodate large curb bioswales nor a major overhaul of its stormwater infrastructure. LID in Anchorage will most likely be relegated to redeveloped areas or places with new construction. Size and timing were an advantage to Sisters.

To Anchorage's credit, over the past few years the Municipality has encouraged residential, commercial, institutional, and municipal property owners to install rain gardens on their land. At the end of 2015 there were 116 (10 commercial, 5 municipal, 6 schools, and 95 residential) rain gardens. Four more are underway in 2016.

Regardless of Anchorage's inability to go back in time for a major "do-over", another avenue to pursue might be the environmental ethos in the planning and focus of Sisters, which I think is a good example for all of us to consider. Tourism and recreation are big industries that can be capitalized on. Alaska and Anchorage are known for having some great attributes, and perhaps its largest city ought to take a closer look along those lines as the State budget struggles with the impact of lost oil revenues. Taking better care of the water quality in our creeks, rivers and lakes, improving our great salmon and trout habitat, and protecting waterways from further degradation are some lofty but valuable goals which could only benefit the our city and State.

Volunteer

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AWC UPDATE:

A message from the Executive Director, Cherie Northon

Thom Eley, AWC's Education Director and Research Associate, took over our "Creeks as Classrooms" program from me several years ago. Faithfully funded by ConocoPhillips for the past six years, thousands of local youth have received some wonderful experiences in our liquid environment. As Leonardo da Vinci noted, "Water is the driving force of all nature", so preparing our future stewards to be knowledgeable regarding this precious resource is essential. Following is a recent update from Thom on the program.

Most people live in urban areas, and many children first encounter nature playing in urban streams.

"Streams in the Urban Landscape," by Michael Paul and Judy Meyer in Annual Review of Ecology and Systematics. 2001. 32:333-65.

"Creeks as Classrooms" introduces more people, primarily K-12 students, to local urban creeks than any other program in Anchorage, and it is one of Anchorage Waterways Council's (AWC) most successful. Annually, with the generous support of ConocoPhillips, over 5,000 K-12 students along with their parents, teachers, and other adults learn about and carry out activities on the various creeks running throughout Anchorage.

Anchorage is a multi-cultural city with over 100 languages being spoken in schools besides English. "Creeks as Classrooms" has introduced an incredible number of students from most of these non-English speaking cultures to our great riparian environment, which is often an entirely new experience for them.





The diversity of Anchorage's youth

We are fortunate that most schools are within walking distances to creeks so students can have an actual hands-on experience. I like to call it "**Kids in Creeks**" as you truly don't experience a creek unless you are in it. Looking at one from the shore is nice, but it's not the same feeling as water rushing by your boots or your feet in the mud or slipping over rocks.







Kids in Creeks!

Creek programs are held rain, shine, or snow. Some years, we have even been creekside just as the water is starting to freeze with grease ice forming on the surface. This stage provides students with an entirely different view of their creeks.

Because many of our creeks are somewhat invisible during the winter as they are frozen or covered with snow, people pass them and generally don't give them much thought. Every season offers interesting insight into waterways.



Grease ice forming on Campbell Creek



Girdwood students collecting macroinvertebrates in Glacier Creek



Glacier Creek

Our creek and stream work with youth (and adults as well) includes identifying and categorizing [aquatic macroinvertebrates](#), water quality monitoring, stream hydrology and ecology, and watershed awareness. Hands down, the most popular activity involves aquatic macroinvertebrates, because water bugs never cease to mesmerize youth and adults. Even the most hardened high school student ("I don't like science") can easily get caught up in looking for and identifying "bugs" in the counting trays. It's not uncommon to hear, "I've found one. I've found one, come see, Dr. Thom. Is this a [caddisfly](#)?"





Sorting macroinvertebrates by "Order", such as caddisflies

Water quality monitoring tests can be easily performed with inexpensive equipment and supplies. pH can be measured with test strips; thermometers capture air and water temperature; turbidity tubes provide an understanding of water clarity; a color comparator will provide dissolved oxygen levels; and finally *E. coli* samples can be collected and incubated overnight for determination of fecal contamination. These tests are similar to what our volunteer creek monitors use every month at their sites.

Hydrology can be as simple as dropping and timing "Poohsticks" as they float down a measured distance to obtain velocity. Riparian vegetation is discussed in relation to erosion, sedimentation, shade and cover, as well as for composition. Is it natural, absent, healthy, or showing signs of invasives? Finally, watershed awareness ties it all together. Understanding the concept of a drainage area in terms of upstream impacts on downstream is important for all, because it illustrates how an action that is not even close to a waterway will eventually find its way there. Being in a creek also allows students to have an appreciation of the trash that people deposit in them!



Testing water quality



Obtaining a stream profile



Two students retrieve a shopping cart from Chester Creek



Two students pull a TV from Little Campbell Creek

Thus far in 2017, AWC board president Isaac Watkins, vice president Bob Shipley, board member Bob McFadden, and I participated with the Boy Scouts in their May Camporee that focused on a creek cleanup service day. Two hundred fifty scouts headed out to various parts of Anchorage to collect trash! In May, I discussed the hazards of discarded monofilament fishing line

and how to recycle it for "International Migratory Bird Day" at the Alaska Zoo. June was an especially busy time with Potter Marsh Day and Alaska Department of Fish and Game "Outdoor Days" which concentrated on the importance of macroinvertebrates and good water quality. AWC intern Veronica Campbell helped with some of these outreach events. I was again asked to talk to the [Youth Employment in Parks \(YEP\)](#) group about rivers, streams and water quality. The YEP folks were doing bank restoration along Campbell Creek and planting willows and [Devil's Club \(*Oplopanax horridus*\)](#). For those of you not familiar with it, Devil's Club is an excellent bank stabilizer and it discourages bank trampling.



Some of the trash collected from Anchorage creeks and lakes by Boy Scouts



A joint badge between Anchorage Waterways Council and the Great Alaska Council



ADF&G "Outdoor Days" at Cheney Lake with intern Veronica Campbell and board member Robert McFadden

We have continued our tradition of helping Eagle Scout candidates with their service projects. Carson Chadwick is doing monthly water quality testing as well as removing trash along a reach of Chester Creek. And, he is doing an outstanding job. Another product of our Creeks as Classrooms program is Robert Veeh. He started as a volunteer in 2014 and soon accompanied me on classroom visits to East High where he was a student. Robert even made some of the presentations. Soon after he was nominated as the student member on AWC's Board of Directors--a position he held for two years before going away to school. On August 8, 2017, Robert's "Eagle Scout Court of Honor" was held. AWC staff and board members were invited to the ceremony. Director Cherie Northon, Bob Shipley, board member Lance Powell, and I attended. Fittingly, Hal the Bald Eagle from [Bird Treatment and Learning Center \(TLC\)](#) was there with his handler Dave as an honored guest. Robert's service project was to build fencing for TLC.



Eagle Scout candidate Carson Chadwick and volunteers at Chester Creek



Thom Eley and Robert Veeh at his Eagle Scout Court of Honor



TLC's Hal (eagle) with his handler

I would like to reiterate how special this type of experiential education is for so many local youth. It is a pleasure to work with them and see their spark for learning about their local environment. Thank you to ConocoPhillips for facilitating this great program here in Anchorage.

-----Thom

SAVE THE DATE!

Beer & Bites is Back!




Anchorage Waterways Council's
5th Annual "Beer and Bites"
Saturday, October 21, 2017


5 pm- 8 pm


in MIDNIGHT SUN's Brewery

8111 Dimond Hook

Appetizers! MSB Beer! Silent Auction! Door Prizes!

 Tickets are limited and ONLY available from **Anchorage Waterways Council**. Admission includes beer tickets, appetizers, and door prizes.

 Download order form from Anchoragecreeks.org or call 272-7335 to order by phone.

 *All proceeds go to enhancing and protecting Anchorage's creeks.*

General: \$55

Seniors (65+) & Veterans : \$40

Students (student ID): \$25

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Designated Driver: \$25 (no beer)

ID REQUIRED FOR ENTRY



[Download ticket order form.](#)

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for our own benefit, as well as for the countless other species that rely on them. Adding your name to our membership means we can make a stronger stand when it comes to the issues that can affect us all--use your vote and become a member today!

It's easy, you can go online at www.anchoragecreeks.org and click the "**JOIN NOW**" button, to join, renew or donate, or click the "**Join or Renew Now**" button at the top of this email. We are now set up to do recurring payments as well! This can be as simple as \$5 or \$10 a month, but it adds up BIG for us. If you have a question about your membership and when it expires, please contact us at awc@anchoragecreeks.org. If you know someone who wants to help support our great waterways, please forward this email to them, or if you want to provide a gift membership--contact us. Does your employer have a volunteer match program? Thanks to all for your continuing support and especially to our sponsors and volunteers who watch the waterways, monitor the creeks, and help this great organization--the ONLY one in Anchorage dedicated to protecting our creeks, wetlands, and watersheds.

Reminder: Follow us on **Facebook** at "Anchorage Waterways Council" and "Scoop the Poop Anchorage"

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JOIN or RENEW NOW

AWC UPDATE:

A message from the Executive Director, Cherie Northon

It's time for another guest writer. UAA student Veronica Campbell recounts her time as an AWC intern. She began last October during our Beer and Bites fundraiser and continued through Spring and Summer semesters. She is almost finished and ready to enter the workforce next month. It has been a great pleasure to have her helping us in our quest for clean and healthy creeks.

Hello all!

My name is Veronica Campbell. I am an intern with Anchorage Waterways Council (AWC) and want to recap my experiences and share some of the amazing things I have learned along the way. I first started volunteering with AWC for an Environmental Studies course and have been interning since. I am currently finishing my Bachelor's Degree at the University of Alaska Anchorage in Natural Sciences with minors in Geographic Information Systems (GIS) and Geological Sciences.

Public Awareness

One of the aims of AWC is to spread information to the public about pertinent issues relating to the creeks and lakes of Anchorage and how clean water can be achieved. This is done by having booths at events like the Sears Spring Lawn and Garden Show where one of the issues we address is the over-application of lawn fertilizers. Stormwater carries these chemicals into adjacent waterways and the result can be eutrophication (characterized by algae blooms). These blooms can kill many organisms that are beneficial to our water systems. Adding rain gardens to a property is another main talking

point as it can lessen runoff of soil and road chemicals into the watershed, and it additionally provides a garden with water that would not normally be put to use. Responsible pet ownership and cleaning up pet waste are discussed at many events including the former ACE's Paws and Pucks evening and Friends of Pets' popular Dog Jog.



Sears Lawn and Garden Show



Paws and Pucks evening at a March ACEs' Game

Recreational use of water is the highlight of the Knik Canoeing and Kayaking (KCK) Paddling Film Festival at Bear Tooth. AWC was there to provide information about the importance of clean waterways; as it affects the health/safety and enjoyment of those who use the water. On Earth Day several groups were set up by the Anchorage Museum, and AWC had an interactive map of Anchorage's watersheds, a spinning trivia wheel, and trays of macroinvertebrates.



AWC at Earth Day

AWC also organizes the annual Creek Cleanup in May, distributing supplies to volunteers for cleaning trash out of creeks and lakes. In April AWC holds a Scoop the Poop Day which focuses on dog parks. Their Annual Beer and Bites event at Midnight Sun Brewery is a fun event to raise funds for programs. This year AWC moved its annual meeting from fall to spring where it was held at Resolution Brewing Company. Three presentations were made about the importance of a good water source, such as the one supplied to our city, for making beer.

Context for Community

To assist teams volunteering in the annual Creek Cleanup I've also made ~55 GIS maps of the locations of waterways in town; this not only shows where to clean but may give a new perspective of our proximity to them. After the cleanup, I sorted supplies and recorded any information the teams had provided. I have also been accompanying AWC Education Director Thom Eley to introduce macroinvertebrates for Outdoor Youth Day(s) at Cheney Lake and Potter Marsh Day. This is a fantastic way to show the public, including me, that some of these organisms are only present if the water doesn't have an abundance of particulates or pollution. During the events, these "water bugs" are collected from a section of a creek (in this case Campbell Creek) as not all water bodies in Anchorage are suitable to provide good samples.

Map 28

Anchorage Waterways Council,
Veronica Campbell, Cartographer, 2017



Legend

- Start / end location
- Street
- Creek

0 0.075 0.15 0.3 Miles

0 0.125 0.25 0.5 Kilometers



One of the maps used by Creek Cleanup teams



Students identifying macroinvertebrates from water samples at the Outdoor Youth Day held by the Department of Fish and Game

A crucial part of analyzing these water systems is to take measurements of water quality such as pH, bacteria, and oxygen present. During my internship I have checked and entered previously-collected data so that a long-term and accurate idea of the creek's or lake's status can be achieved.

Sampling	Date of Sample Collection	Site ID	Collection Time	Monitoring ID Number	Water Volume (L)	Water Volume (Gal)	Volume (MilliLiters)	Volume (Gallons)	Temperature (C)	Temperature (F)	pH	DO (mg/L)	DO (%)	Turbidity (NTU)	Chlorophyll a (ug/L)	Chlorophyll b (ug/L)	Chlorophyll c (ug/L)	Chlorophyll Total (ug/L)	Water Temperature (C)	Water Temperature (F)	Water Transparency (cm)	Water Transparency (ft)
1	12/20/17	140001	14:00	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
2	12/20/17	140002	14:05	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
3	12/20/17	140003	14:10	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
4	12/20/17	140004	14:15	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
5	12/20/17	140005	14:20	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
6	12/20/17	140006	14:25	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
7	12/20/17	140007	14:30	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
8	12/20/17	140008	14:35	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
9	12/20/17	140009	14:40	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
10	12/20/17	140010	14:45	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
11	12/20/17	140011	14:50	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
12	12/20/17	140012	14:55	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
13	12/20/17	140013	15:00	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
14	12/20/17	140014	15:05	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
15	12/20/17	140015	15:10	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
16	12/20/17	140016	15:15	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
17	12/20/17	140017	15:20	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
18	12/20/17	140018	15:25	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
19	12/20/17	140019	15:30	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
20	12/20/17	140020	15:35	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
21	12/20/17	140021	15:40	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
22	12/20/17	140022	15:45	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
23	12/20/17	140023	15:50	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
24	12/20/17	140024	15:55	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
25	12/20/17	140025	16:00	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
26	12/20/17	140026	16:05	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
27	12/20/17	140027	16:10	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
28	12/20/17	140028	16:15	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
29	12/20/17	140029	16:20	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
30	12/20/17	140030	16:25	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
31	12/20/17	140031	16:30	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
32	12/20/17	140032	16:35	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
33	12/20/17	140033	16:40	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
34	12/20/17	140034	16:45	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
35	12/20/17	140035	16:50	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
36	12/20/17	140036	16:55	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
37	12/20/17	140037	17:00	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
38	12/20/17	140038	17:05	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
39	12/20/17	140039	17:10	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
40	12/20/17	140040	17:15	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
41	12/20/17	140041	17:20	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
42	12/20/17	140042	17:25	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
43	12/20/17	140043	17:30	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
44	12/20/17	140044	17:35	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
45	12/20/17	140045	17:40	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
46	12/20/17	140046	17:45	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
47	12/20/17	140047	17:50	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
48	12/20/17	140048	17:55	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
49	12/20/17	140049	18:00	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	
50	12/20/17	140050	18:05	AWC019	100	0.26	100	0.26	10	50	7.2	1.5	100	1.0	0.5	0.5	1.0	10	50	10	0.33	

AWC volunteers have tested various creeks throughout Anchorage and recorded their findings for many years. This data is then checked and entered into a spreadsheet so it can be further analyzed

It is clear though that through volunteers and public awareness and cooperation, that water quality can become restored such as in Cuddy Park. This park used to have an excess of bird droppings because of citizens feeding them, now it is much cleaner due to installing informational signage that explains how detrimental feeding is to the birds and environment. A recently constructed fence and new vegetation are also helping to separate people from the waterfowl. To better understand how effective these Best Management Practices (BMPs) are, I am observing and recording interactions of park visitors.



Cuddy Pond observations are conducted to monitor activity between waterfowl and humans

Human-wildlife activity like this can be a crucial part of having clean water. Another fantastic outreach program AWC has is Scoop the Poop, because, similar to the overabundant excrement from birds in Cuddy Park, dog poop greatly contributes to an unwanted amount of bacteria like E. coli in the water system. I have also helped empty monofilament line (fishing line) bins; these containers not only help keep wildlife from becoming entangled, but the discarded line is then sent to be melted and recycled!



Fishing line and trash collected from a monofilament bin near Ship Creek

By participating in various services AWC provides, I have seen a range of activities and education that are brought to our community. This is needed to bring an overall understanding of the waterways in Anchorage. Most importantly, it brings an appreciation of them; a driving force that brings people to care about and for our water to help them thrive.

I want to thank everyone who has helped me serve throughout my internship and who supports Anchorage Waterways Council.

Sincerely,
Veronica Campbell

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It's easy, you can go online at www.anchoragecreeks.org and click the "**JOIN NOW**" button, to join, renew or donate, or click the "**Join or Renew Now**" button at the top of this email. We are now set up to do recurring payments as well! This can be as simple as \$5 or \$10 a month, but it adds up BIG for us. If you have a question about your membership and when it expires, please contact us at awc@anchoragecreeks.org. If you know someone who wants to help support our great waterways, please forward this email to them, or if you want to provide a gift membership--contact us. Does your employer have a volunteer match program? Thanks to all for your continuing support and especially to our sponsors and volunteers who watch the waterways, monitor the creeks, and help this great organization--the **ONLY** one in Anchorage dedicated to protecting our creeks, wetlands, and watersheds.

Reminder: Follow us on **Facebook** at "Anchorage Waterways Council" and "Scoop the Poop Anchorage"

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JOIN or RENEW NOW

AWC UPDATE:

A message from the Executive Director, Cherie Northon

With Scoop the Poop Day on April 29 and Creek Cleanup from May 11 to 15, it has been to our great relief that the snow has started to melt. While that is good news, the bad news is that an enormous amount of pet waste and trash has emerged which is why we need these cleanup events.

In addition to information on these events which we hope you will consider, I am providing a less strenuous activity: good reading. Dr. Thom Eley, our education director and head of research, has put together an interesting and diverse reading list regarding water.

MY READING LIST ON WATER FOR PRESIDENT TRUMP[1]:

And for those of you who want to learn more about water, creeks, and rivers and their role in history

"A person who won't read has no advantage over one who can't read."-Mark Twain

Many of our Presidents have been avid readers and some have possessed libraries ranging from 900 to over 22,000 books. Of our "recent presidents," only Kennedy, Nixon, Carter, and Clinton rank in the higher part of the top 20. Not surprisingly, in the top five are Rutherford Hays (who advocated free libraries), Abe Lincoln, Thomas Jefferson and Franklin D. Roosevelt (his library exceeded 22,000 volumes).

The uppermost presidential reader was Theodore Roosevelt who read at the rate of one book per day if he was busy and two or three on a quiet evening. He has been called an "omnivorous reader" as he read whatever seized his curiosity at the time. He read regardless of whether he was conducting his presidential duties, exploring, hunting, fishing, riding the range or at war. His reading fed his imperialist thinking and concern for America's natural resources and natural beauty.

I recently read an article in the February 28, 2017 edition of *The Nugget News* (Sisters, OR) written by one of the few members of the media that I trust. The reporter wrote: "Multiple news outlets have reported that President Donald Trump does not read books. If these reports can be believed, which is a large-style "if" these day,...[Donald] eschews the written word altogether, preferring, one supposes, the background noise of flattering network coverage....True or not....This seems bad news for all of us....I would be greatly comforted if I thought that, between issuing executive orders and glad-handing billionaires, he was [studying] ...[into books that would] greatly enrich his thinking....The hero of San Juan Hill reminds us not to be arrogant about the kinds of books we read, which is an important thing. But it also assumes, as an obvious matter, that people are reading." (*The Nugget News*, 2/28/17). The President has no book? Perhaps he gets his news from the Internet, Wikipedia, or Twitter.

I don't want my kind readers to think that this is another vitriolic attack on the President. As a citizen, I think that it is my duty to provide suggestions to the President and/or Legislators or members of Congress that I think will help the Nation and State. To me, at this time, my concerns are for the environment and particularly our waters and that our President doesn't seem to be a reader. Therefore, I have prepared this reading list of books on waters that the President would definitely benefit from reading. This list is not all inclusive but reading these would be a good start for President Trump. Some of you may differ with my choices but as old Teddy reminds us:

"Books are almost as individual as friends. There is no earthly use in laying down general laws about them. Some meet the needs of one person, and some of another; and each person should beware of the booklover's besetting sin, of what Mr. Edgar Allan Poe calls 'the mad pride of intellectuality,' taking the shape of arrogant pity for the man who does not like the same kind of books."

These books would make a fine winter or summer read. Check them out!

Other than the first two recommendations, the list is in no particular order.

1. **FEDERAL WATER POLLUTION CONTROL ACT** [As Amended Through P.L. 107-303, November 27, 2002], by The United States Senate.

<https://www.epw.senate.gov/water.pdf> . This is The Clean Water Act.

2. **History of the Clean Water Act**, by the Environmental Protection Agency

<https://www.epa.gov/laws-regulations/history-clean-water-act> .

3. He should Google "what do the **Bible** and the **Quran** say about water?".

The Jews, Arabs and Christians originated in desert country where water is a dominant concern. The **Quran** even has a discussion of the water cycle that is about as accurate as is taught today in geography and other science classes.

4. ***The Wind in the Willows***, by Kenneth Grahame.

Generally considered a children's book, it contains plenty of words relevant to adults.

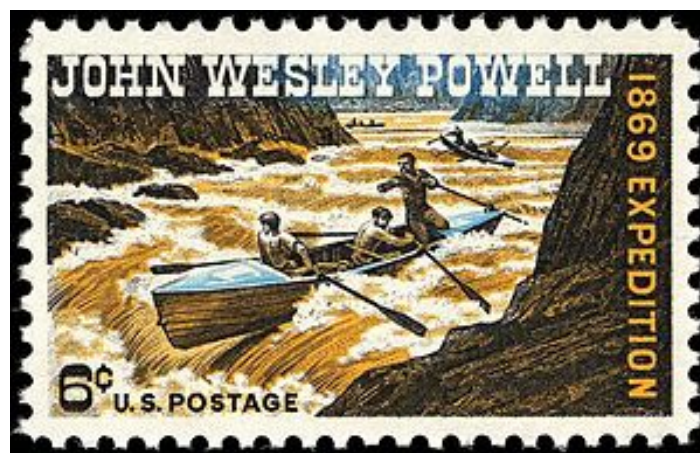
"This is one of the first books I read to myself, and I am as enthralled and enchanted by Mole's first sight of the river - and his meeting with the Water Rat - today as I was all those years ago. "So - this - is - a - river?" asks the Mole ... "The River" the Rat corrects him. "It's brother and sister to me, and aunts, and company, and food and drink, and (naturally) washing. It's my world, and I don't want any other." Well, why would he? (Katharine Norbury, <https://charlesrangeleywilson.com/2015/02/13/top-ten-river-books/>)

5. ***Goodbye to a River: A Narrative***, by John Graves.

This narrative is John Graves' poignant account of a 1957 canoe trip made by him during the fall of 1957 down a stretch of the Brazos River from Possum Kingdom Dam to Lake Whitney. The book presents both an account of the trip itself intertwined with stories about the history and settlement of the area around the river and of North Central Texas, which will be lost like the river from the effects of a proposed series of flood-control dams. Don Henley wrote a touching song based on this book and called it "Goodbye to a River" on his album *Inside Job*. John Graves also wrote a book entitled ***The Rivers of Texas*** in 2002.

6. ***Gila: The Life and Death of an American River***, by Gregory McNamee.

"Arizona's Gila River and its tributaries once formed the most important water system in the Southwest. Today, it has been bled dry; its wildlife and vegetation have been mostly destroyed and the lower river is on the EPA Superfund cleanup roster. McNamee reviews the geology and history of the Gila and chronicles its decline in a sad, familiar story of human impact on Western lands. Mining operations stripped mountains, diverted rivers and chewed up forests. Large-scale ranching, inappropriate agriculture, dams and profligate use of water have added to the river's demise. McNamee charges that Phoenix has the highest rate of water consumption in the nation, at one-fourth the cost of water in New York City; golf courses use up to one million gallons a day. To restore the river, he calls for reforesting the highlands, appropriate agriculture, removal of the dams and new federal policies. This is important reading for environmentalists." (Publishers' Weekly)



7. ***Exploration of the Colorado River***, by John Wesley Powell.

Powell was first man known to have run the Colorado River through the Grand Canyon. Having lost an arm in the Civil War, Powell was tied to a wooden chair which was tied to a wooden boat and they had no idea what was in store for them.

8. ***River of Doubt: Theodore Roosevelt's Darkest Journey***, by Candice Millard.

The *River of Doubt* is a black, uncharted tributary of the Amazon that flows through one of the most treacherous jungles in the world. Theodore, his son, Kermit, and Brazil's most famous explorer, Cândido Mariano da Silva Rondon had to deal Indians armed with poison-tipped arrows; haunting shadows of the tropical rainforest; piranhas gliding through its waters; and boulder-strewn rapids that turn the river into a roiling cauldron. All three men almost died on the voyage, and the trip had lasting impacts on President Roosevelt's health. [A note for those who may not know it-Kermit Roosevelt is buried in the Fort Richardson National Cemetery.]

9. ***Desert Solitaire***, by Edward Abbey.

The chapter "Down the River" describes one of the last float trips through Glen Canyon before the dam was built.

10. ***Life on the Mississippi***, by Mark Twain.

This is Mark Twain's 1883 account of his days as a steamboat pilot on the Mississippi River before the Civil War. Twain then recounts a trip along the Mississippi River from St. Louis to New Orleans after the War and the changes that have ensued.

11. ***A River Runs Through It***, by Norman McLean.

This is Norman McLean's autobiographical account of his growing up in the early 20th-century along Montana's Blackfoot River as well as his relationship with his brother Paul. In the McLean's family "there was no clear line between religion and fly fishing." If you've seen the movie, read the book anyway!

12. ***Yukon: The Last Frontier***, by Melody Webb.

This great book is an authoritative history of Alaska's and Yukon Territory's own Yukon River. All Alaskans know of it, but most know little about the Yukon River country or its history.

13. ***Report of an Expedition to the Copper, Tanana and Koyukuk Rivers in the Territory of Alaska in the Year 1885***, "For the purpose of obtaining all information which will be valuable and important especially to the military branch of the government, by Lieut. Henry T. Allen, Second United States Cavalry."

The collision of history and geography often results in some amazing quirks of history and geography. In 1876, old "Yellow Hair", Gen. George Custer, who was slated to command the Army's Department of the Columbia (the Territories of Idaho, Oregon, Washington and Alaska), was killed in the Battle of the Greasy Grass. Ultimately, Gen. Nelson Miles (the old Indian fighter) commanded the Department of Columbia. When he discovered that

Alaska was under his command, he launched a number of expeditions to find out what was going on in Alaska, particularly those things of military significance (Indians). These expeditions did much of the initial exploration and mapping of Alaska. In 1885, Gen. Miles assigned Lt. Henry T. Allen (1859-1930), allegedly the most dashing officer in the U.S. Cavalry, "to make a reconnaissance in Alaska", along with two enlisted soldiers. They were directed to show friendliness to all Native peoples, and do nothing to incite hostilities in the Natives. Allen traversed roughly 1,500 miles of unexplored wilderness in only five months. Gen. Miles stated that Allen's expedition "exceeded all exploration on the American Continent since Lewis and Clark." This grand book details the expedition and their amazing finds. It is a great read.

14. ***Round River***, by Aldo Leopold and Edited by Luna B. Leopold.

The book is a series of stories about rivers and river adventures by the renowned conservationist and teacher Aldo Leopold. The first story is called "The Delta Colorado" which details a 1922 canoe trip taken by brothers Aldo and Carl Leopold on the Colorado River from Yuma, AZ to its delta in the Vermillion Sea (Gulf of California). In those days, steamboats were able to navigate from the Gulf to Yuma on the Colorado, however they were about to dam the Colorado in 1923.

In 1974, a Navy doctor and I attempted to recreate the Leopolds' ~ 100 mile round trip journey. First, we ran into the Morales Dam, where the Colorado enters Mexico. Then we were taken by truck to San Luis, Mexico where we reentered the river. About 20 miles south of San Luis, nearly half-way to the Delta, we found that we were leaving the river and entering an irrigation canal. We asked an old Mexican farmer where the river was. He replied, "*Señores, El río no va a Delta ahora. Estás al final del río. Sólo hay tierras agrícolas donde solía estar el río.*" (Translación: Señores, The river does not go to Delta now. You are at the end of the river. There are only farm lands where the river used to be.)

15. ***How to Read Water***, by Tristan Gooley.

I have not read this book, but it has been given outstanding reviews from colleagues as an introduction to water and what it means to us and can tell us.

[1] These remarks are totally the author's and do not represent the views of the Anchorage Waterways Council, its members, staff or Board of Directors.

SAVE THE DATES!

"Scoop the Poop" Day

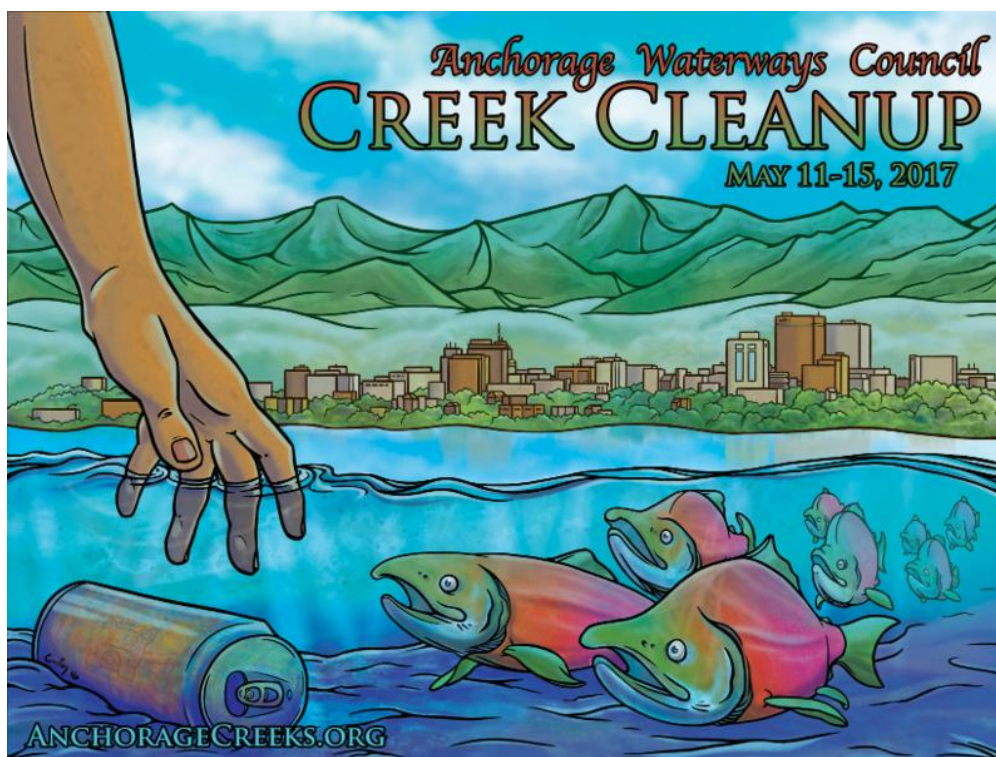
Saturday, April 29, 11 am - 3 pm

University Lake Dog Park, Connors Bog Dog Park, and South Anchorage Sports Park (11-2)

For the past several years, volunteers have devoted part of a Saturday during April's "Earth Month" to show their care and appreciation for the privilege of having dog parks in Anchorage. This year it will be held on April 29 at three locations: University Lake, Connors Bog, and South Anchorage Sports Park. Buckets, bags, gloves, and gardening tools will be provided. Remember every day is a Scoop the Poop day. Show your support and come on out and demonstrate that you care for your dog parks.

"33rd Annual AWC Creek Cleanup"
Thursday, May 11 through Monday, May 15

Now is the time to sign up for this year's Creek Cleanup. Our long-standing tradition to get winter's trash out of our lakes and creeks will run for 5 days this year. Individuals, families and teams are urged to sign up soon. First, check the list of available [locations](#). Next, sign up [here](#) so we know when and where you will be cleaning and how much you will need for supplies. Bags, gloves, first aid kits, hand wipes, directions, maps, etc. will be ready for pick up a week prior to May 11. Or, show up at University Lake and Westchester Lagoon on Saturday, May 13 from 9:30 am to 12:30 pm and pick up supplies to clean on your own. Check our [website](#) for current information.



THANK YOU!

AWC is especially grateful for its members, volunteers, and the many sponsors who provide support for Creek Cleanup and other events as well as our grants and contract partners. All this great work would not happen without you.

A FEW THINGS YOU CAN DO TO HELP AWC

Many of you have linked your **Fred Meyer** rewards card to Anchorage Waterways Council and it means that we receive quarterly donations from your shopping. If you haven't linked to AWC, we would love to have you. These donations help us fund our programs. Our Fred Meyer number is 88984. This is a win-win situation for everyone. To renew or sign up, go to [Fred Meyer Rewards](#) and follow the directions. On that page you can click on their link to sign up. Thank you to all who have in the past, who renew, and who will sign up for the first time.

Amazon Smile also donates a portion of Amazon purchases to various charities. [This link](#) will give you information on what they do and how to sign up.

How can you help AWC maintain healthier creeks?

Volunteer

There are many ways to help AWC as a volunteer. We have fantastic volunteers who donate hundreds of hours annually to monitor our creeks each month, hundreds of participants take to the creeks every May to pull tons of trash out during our Annual Creek Cleanup, and many of you are "eyes on the creek"--reporting things that are disturbing--and we do our best to respond or help people find the right place to "complain".

Consider becoming an AWC board member! AWC is a 501 (c) 3 non-profit and memberships and donations (monetary or items) are tax deductible.

AWC Membership--Renew or Join!

Being a member of AWC means that you care passionately about the well-being of your own environment. We work to keep the waterways clean, clear, and of value to all. From clean water and recreation to creating a general feeling of well-being, our waterways need protecting for our own benefit, as well as for the countless other species that rely on

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It's easy, you can go online at www.anchoragecreeks.org and click the "**JOIN NOW**" button, to join, renew or donate, or click the "**Join or Renew Now**" button at the top of this email. We are now set up to do recurring payments as well! This can be as simple as \$5 or \$10 a month, but it adds up BIG for us. If you have a question about your membership and when it expires, please contact us at awc@anchoragecreeks.org. If you know someone who wants to help support our great waterways, please forward this email to them, or if you want to provide a gift membership--contact us. Does your employer have a volunteer match program? Thanks to all for your continuing support and especially to our sponsors and volunteers who watch the waterways, monitor the creeks, and help this great organization--the **ONLY** one in Anchorage dedicated to protecting our creeks, wetlands, and watersheds.

Reminder: Follow us on **Facebook** at "Anchorage Waterways Council" and "Scoop the Poop Anchorage"

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JOIN or RENEW NOW

AWC UPDATE:

A message from the Executive Director, Cherie Northon

I sincerely hope you have been enjoying the snow this season. We have had about the same amount of snow to date as the total for the past 2 winters. The downside is that buried under all that nice snow is a considerable amount of trash and pet waste. Spring is when AWC jumps head first into cleaning up from a long winter with our Scoop the Poop Day and 33rd annual Creek Cleanup.

Many of you have participated in Creek Cleanup for years as it was started in 1984. It's encouraging to hear from those who cleaned up when they were young and are now doing so with their own children. This is a great legacy of stewardship. Below you will find links for signing up to clean an area. There is also information on our Scoop the Poop Day where we raise awareness about the need for cleaning up after our pets every day. Plan on attending the Sears Spring Flower and Garden Show! And finally, our Annual Meeting, which typically is in the fall, has been moved up to the spring and a new venue.

SAVE THE DATES!

"Clean Water: OPEN for Business"

Wednesday, March 29, 6 pm - 8 pm

Resolution Brewing Co.

3024 Mountain View Drive

Anchorage has excellent quality drinking water which helps local breweries produce some of the best beer around. Our annual meeting will have guest speakers discussing Anchorage's local water and the benefits it provides to

businesses who use it. Free appetizers will be provided and Resolution beer on tap will be available for purchase. Please join us for an informative, fun, and relaxing evening. Note: age restrictions apply, anyone under 21 must be accompanied by a parent.



Sears Mall Annual Spring Flower and Garden Show

Saturday, April 15, 10 am - 5 pm

Sears Mall

Stop by and visit the AWC table. Take a short survey and be entered into a drawing for great gifts. Learn about rain gardens!



"Scoop the Poop" Day

Saturday, April 29, 11 am - 3 pm

University Lake Dog Park and Connors Bog Dog Park

For the past several years, volunteers have devoted part of a Saturday during April's "Earth Month" to show their care and appreciation for the privilege of having dog parks in Anchorage. This year it will be held on April 29 at two locations: University Lake and Connors Bog. Buckets, bags, gloves, and gardening tools will be provided. Let's not forget that every day is a Scoop the Poop day, even though snow often hides some pet waste. Remember that each day approximately 20 TONS of pet waste is deposited in Anchorage. If it is not cleaned up, it eventually finds its way into our creeks and lakes and pollutes them with fecal coliform bacteria (*E. coli*). This impairs water quality and can make pets and humans ill. Show your support and come on out and demonstrate that you care for your dog parks.



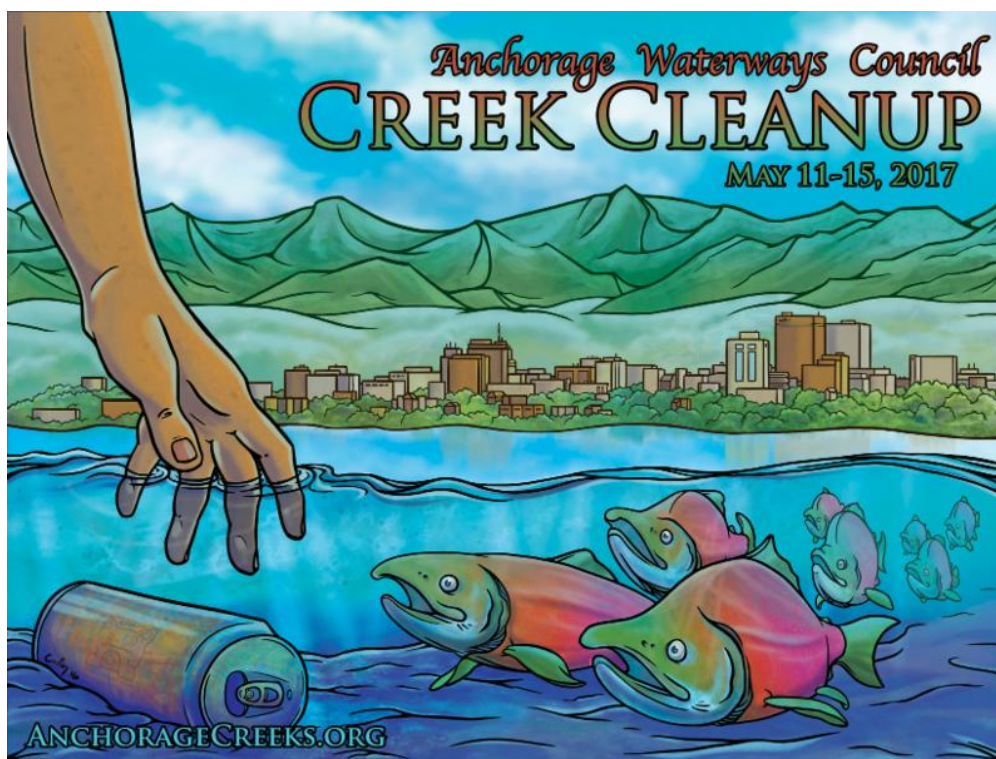
Great message borrowed from Santa Clara County, CA



Mo and Jasper doing their part!

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Finally, our largest single annual donation comes from [Pick, Click, Give](#). People choosing to donate a part of their Permanent Fund dividend can help a variety of non-profits out. Anchorage Waterways Council has been a recipient for the past 3 years, and we are very appreciative of Alaskans' generosity.



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AWC UPDATE:

A message from the Executive Director, Cherie Northon

Water Quality and Melting Ice*

We are now in some aspect of winter, although it's difficult to tell what you might call it. We've had a small snow, a melt, a very light snow followed by rain. The result is the same: very slippery roads and walkways. This is the time when many pull out a variety of ice/snow melt and traction products. All are not created equal, and each can put harmful substances by way of stormwater runoff into our waterways when the snow melts.

The following information is meant to provide you with some guidance on the best practices for salting and sanding paved areas which will minimize the effects of runoff and waterway pollution. Choosing the right ice melt material for your situation is not always easy. If one is looking for quantity, then gigantic bags from the big box stores will give you way more than needed and at a fairly low financial cost. With more than 100 brands of ice melt products that have different compositions and uses, here are some things to think about before buying and using one.

The purpose of ice melt is to *FORM a liquid brine to MELT enough to BREAK the BOND between the ice/snow and the pavement so it can be SHOVELED away more easily.* Snow/ice melt is only effective when it reaches the pavement--it is not meant to be sprinkled on top of snow and ice to make it melt or go away. And, adding more and more does not accomplish this, it only collects a greater amount of harmful chemicals that will eventually make their way into our creeks and lakes.

Calcium chloride is generally recommended for use over sodium chloride, which is basic rock salt or road salt, because it can be used in lower concentrations, it works at lower temperatures (-20° to -25° F), and it is somewhat less damaging to the environment. It has the drawback of

being more expensive than rock salt. Calcium Magnesium Acetate (CMA) is the best bet for keeping your family, pets, lawn, driveway, and waterways relatively safe--but it is more expensive.

General Ice Melt Tips:

- Apply early! Before or just as snow starts to fall is the best time to apply ice melt for maximum effectiveness.
- Do not over-apply; FOLLOW instructions on the label. Use only the quantities necessary for maximum effectiveness. More is not better!
- Do not try to melt everything. Clear snow first if applying after snow has fallen.
- Wear gloves as ice melts are an irritant.
- Do not use on new concrete that has not fully cured.
- All products have some effect on the environment. Flush area with water if overuse is suspected or damage appears on plants.
- Mix with traction products (sand/gravel) to use less.
- Apply evenly across an area not in big piles.
- Remember that when temperatures fall below the teens, many of the products are ineffective so don't waste time and money using them in extreme cold.
- Keep away from children and pets (who will often lick their paws after coming in contact with it).
- Check out the material safety (MSDS) and safety (SDS) sheets found online for each product you consider.

Ice Melt Material	Price Range	Corrosiveness	Environmental Impact	Minimum Temperature
Sodium Chloride (rock salt)	\$	Severe	Severe	5° to 20° F
Calcium Chloride	\$\$	Severe	Moderate	-25° F
Magnesium Chloride	\$\$	Moderate	Low	5° F
Potassium Chloride	\$\$\$	Moderate	Moderate	12° F
Urea	\$\$\$	Low	Moderate	15° F
Sodium Acetate	\$\$\$	Moderate	Low	0° F
Calcium Magnesium Acetate (CMA)	\$\$\$\$	Low	Low	5° to 20° F

* From The Municipality of Anchorage's "Anchorage to Zero Waste" Fall/Winter 2012-13.



Ice/snow melt applied unevenly

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Using Ice/Snow Melt Properly

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Why do creeks turn orange, red or brown?

Distinguishing features include:

- Orange-brown slime that may appear “fuzzy” or frothy, growing in the creek bed or on pipes and culverts that feed into the creek.
- An oily sheen on the water which will break into small particles or patches if disturbed, unlike actual oil that swirls when disturbed.
- The sheen originates from decomposing bacteria cells.
- Most often occurring in slow-moving reaches of streams, lakes or storm drain outfalls, particularly after a rainstorm that could cause iron-rich sediments to leach into the creek or waterway.
- May be accompanied by a distinct odor.

Origins:

- There are at least 18 types of bacteria classified as “iron bacteria”. The bacteria are long and threadlike, and they “feed” on iron and secrete slime.
- The right mix of oxygen, water and iron can create the conditions for iron bacteria to “bloom”.
- Differing from most bacteria that feed on organic matter, iron bacteria fulfill their energy requirements by oxidizing ferrous iron (Fe^{2+}) into ferric iron (Fe^{3+}). The result is insoluble iron which produces the rust colored slimy deposit or sheen on the surface.

Geobacter metallireducens
Credit: Derek Lovley

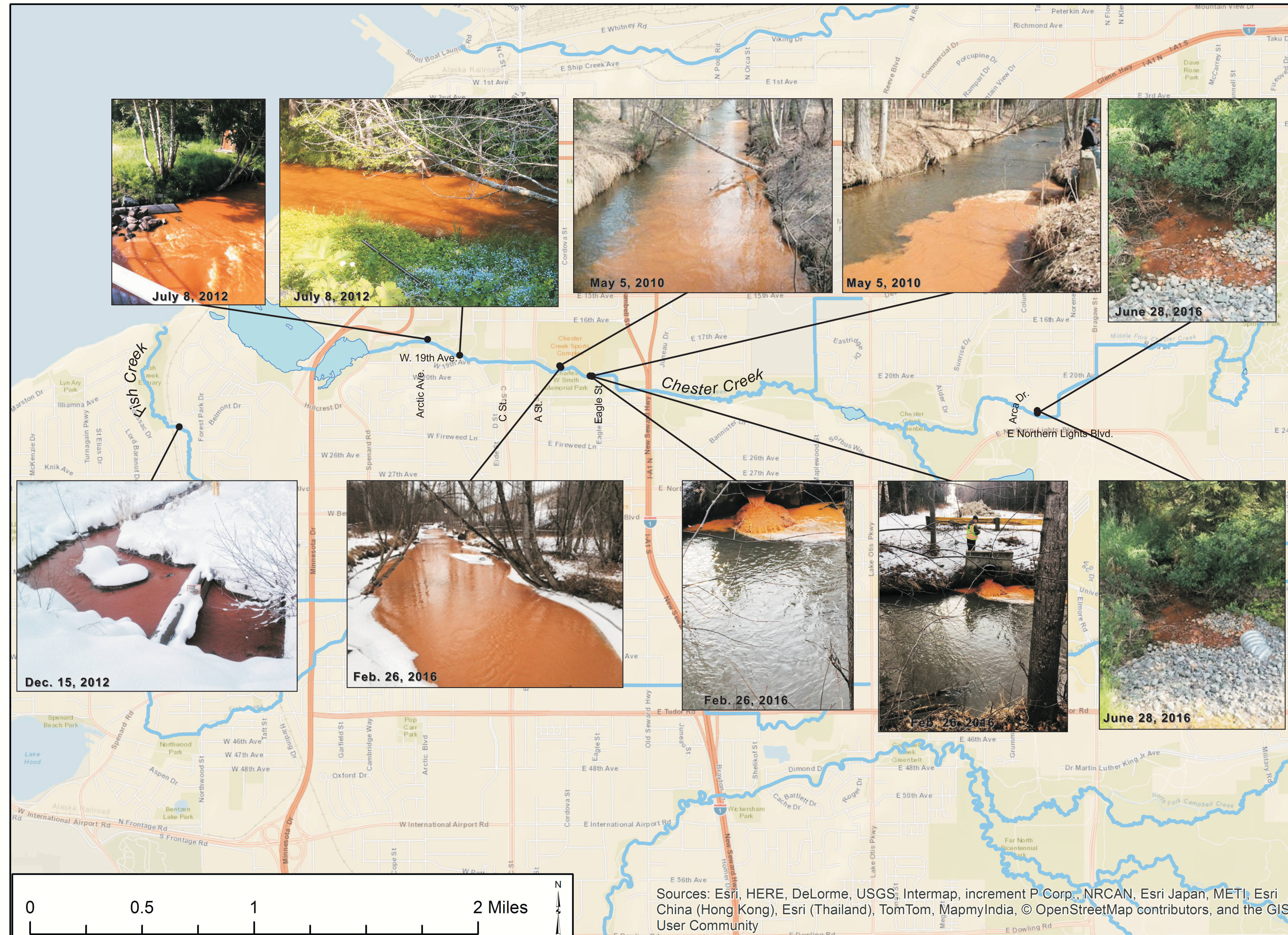
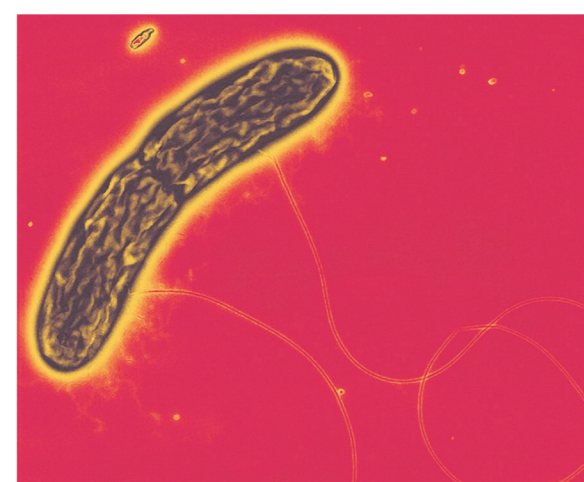


Photo Credits: Marcus Welker, Christine Tait, Cherie Northon, Ryan Astalos, Teresa Eckel, and David Clark

Background:

In 2010, two Anchorage Waterways Council (AWC) members were working with a class from North Star Elementary in Chester Creek by C St. when an orange-brown plume of water descended on them. They got the students out of the creek and called AWC Executive Director Cherie Northon who went to the site at the end of Eagle St. on the south side of Chester Creek. Pictures show the plume coming from the stormwater culvert at Eagle St. for a while and then it ceased, although the plume continued down Chester Creek where it eventually diluted and dispersed.

Since then, there have been several similar instances on Chester and one on Fish Creek that were reported to AWC. Those viewing the orange, brown, or red water were alarmed, as one would expect. There were concerns about it being a toxic spill or some pollutant. Over time the episodes have continued--most often from the outfall at the foot of Eagle Street--but also in other locations.

Anchorage has iron-rich soils, an aging stormwater infrastructure that is rusting in some areas, and stormwater outfalls that, in many cases, drain runoff from very large areas.

Why Anchorage?

- This is not unique to Anchorage, but there are certain conditions here that result in this phenomenon.
- Rusty and aging urban infrastructure whose stormwater pipes empty into local creeks and lakes.
- Rust in the storm drain’s metal is exacerbated by urban runoff: deicing salts and chemicals, cleaning agents, and vehicle fluid drips.
- Anchorage has naturally occurring iron-rich groundwater, which makes its way into the storm drain network.

Should you be alarmed?

- Although the bacteria are unsightly and the discoloration of a waterway can be startling, there is no known evidence that the bacteria pose a threat to aquatic species, humans or pets.
- Even when found in drinking wells, the bacteria are considered a “nuisance,” but are not listed as a drinking water contaminant by the U.S. EPA.
- Iron bacteria are not a threat to human health, but they are rather an aesthetic issue.

Anchorage Waterways Council
anchoragecreeks.org
(907) 272-7335



ADN 4-27-17 LTE

For their own good, please don't feed waterfowl

They're back! The gulls and Canada geese are heralding the arrival of spring. Flocks of geese can be seen in a variety of locations around town — grazing on the soon-to-be green grass. Some geese have returned to Cuddy Park and other waters where their presence attracts many people who love to watch them. And the waterfowl also draw young and old who feel the need to feed them.

Most of us grew up feeding ducks and geese and have fond memories of it. But feeding them is not what they need. Geese and ducks have managed for thousands of years to survive on their own. By feeding them we create myriad problems. Cuddy Park, until some changes were made last summer, was awash in bird poop. It was on the paths, on the grass, and in the water. The fecal coliform level in the pond was off the charts, and this is unhealthy for pets and humans. The pond water was also rife with algae and other plants that thrive on the nutrients in bird poop. More birds were attracted to the area, which can be a devastating formula if an avian disease hits them. Some geese were born with wing defects that are caused by a non natural diet (grass is what they need), and they ultimately perished — unable to join the flock for the fall migration. So, please, while it is enticing and you feel like you are helping them, it can actually be more harmful to the birds, Cuddy Pond (part of Fish Creek), and the park. Please look, but don't feed.

— *Cherie Northon, Ph.D.*

executive director

Anchorage Waterways Council

Anchorage

Anchorage is covered in poop



By Rebecca Palsha / KTUU | Posted: Mon 8:40 PM, Apr 17, 2017 | Updated: Mon 8:55 PM, Apr 17, 2017

ANCHORAGE (KTUU) Anchorage is covered in dog poop. Tons and tons of dog poop. The Anchorage Waterways Council estimates that 65,000 dogs relieve themselves every day, producing an average of 3/4 pound of waste per dog.

That's more 48,000 pounds or about 24 tons of dog waste each and every day, according to the council.

"It's gross, it's really gross," said Cherie Northon, PH.D., of the Anchorage Waterways Council.

Dog poop, covered under snow for several months has slowly started to reveal itself this spring.

And, people not cleaning up after their pets is such a large issue it created several businesses that specialize in dog waste pickup and disposal.

"Some people don't clean for a year," Stefan Zijlstra with Scooper Trooper, LLC said, "and then we've had yards that were that (shows about a foot in length) and that's the exception, where you've had layers of poop actually."

Northon said when people don't clean up after their pets the poop ends up in the waters and rivers throughout Anchorage.

"For our creeks it's really bad," Norton said, "every creek in Anchorage, except Rabbit Creek has a fecal coliform."

There's a big cleanup poop day on April 29 from 11:00 a.m. until 3:00 p.m. at University Lake and Connor's Bog. It's recommended you bring waterproof boots, gloves and any other scooping items.



Elon Musk Wants To Build A Hyperloop On The East Coast





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Cuddy Family Park pond shows comeback as fewer people feed the birds

By Lauren Maxwell (<http://www.ktva.com/authors/lauren-maxwell/>) 10:44 PM September 27, 2016

Estimated
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ANCHORAGE – A year ago it was one of the dirtiest waterways in Anchorage, but now the pond at Cuddy Family Park in midtown Anchorage may be as clean as it's ever been.

Thom Northon with the Anchorage Waterways Council has been measuring fecal coliform rates for two years at the park. Last August, a sample taken from the middle of the pond showed a fecal coliform rate of 8,000 colonies per 100ml. That's considered extremely high, according to Northon. But this Monday, he got results that surprised him even more — the rate had dropped to just 230 colonies.

"I was shocked when I got the results," Northon said. "I had to look at it three times, it was so dramatic."

Alaska Department of Conservation spokeswoman Jeanne Swartz believes a public awareness campaign is making a difference. She said the \$50,000 campaign included money to make signs for buses and the park itself that warn about the problems of attracting too many birds by feeding them.

"It's not good for the birds, it's not good for the water quality and it just generally degrades the park experience for a lot of people," Swartz explained.

The money also covered new vegetation that was planted around the banks of the pond to act as a natural buffer. Swartz said the temporary fencing is also helping to maintain a distance between people, the pond and waterfowl.

Both Swartz and Northon believe there are fewer birds congregating at the park and say the evidence can be seen in both the water and on the ground. The pathway around the pond is clear and the grass is cleaner as well. On a recent bright afternoon

families were gathered to watch the geese and ducks but there was no sign of anyone feeding them.

KTVA 11's Lauren Maxwell can be reached via email (<mailto:lmaxwell@ktva.com>) or on Twitter (<https://twitter.com/laurenKTVA>).

Duck pond at Cuddy Park is much cleaner

By Lauren Maxwell (<http://www.ktva.com/authors/lauren-maxwell/>) 1:50 PM

June 26, 2017

Estimated
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1m 17s

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A “Don’t Feed the Birds” campaign seems to be making a difference when it comes to the duck pond at Cuddy Park.

Thom Eley with the Anchorage Waterways Council said levels of fecal coliform, the bacteria that comes from bird feces, is normally sky-high this time of year,

but two recent tests show the levels have dropped dramatically.

“I thought it was a fluke at first,” said Eley, so we tested again and basically got the same numbers.”

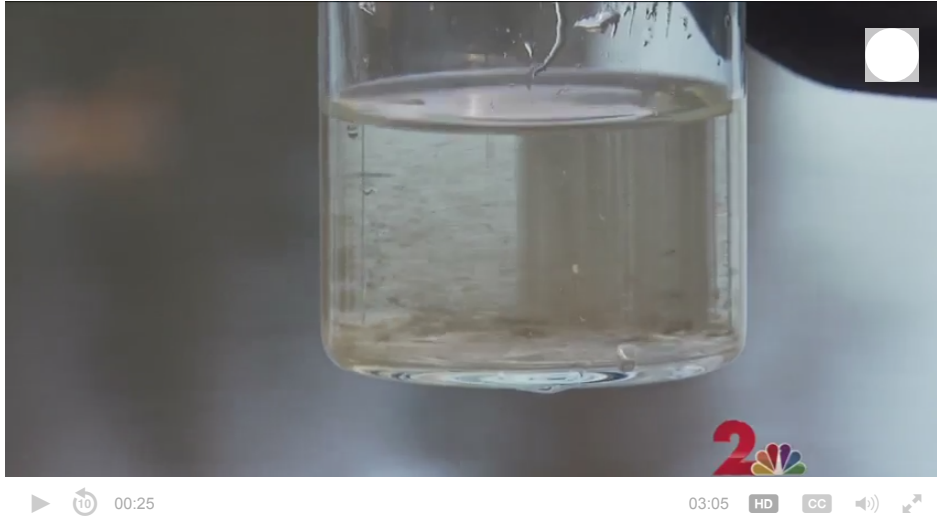
Eley said just a year ago he was finding 8,100 colonies of fecal bacteria per 100 milliliters of water. The most recent test last week showed just 32 colonies per 100 milliliters of water, a dramatic difference.

Eley said he believed a campaign that included signs on city buses, bank restoration around the pond as well as new fencing has made a difference. He said the numbers of both ducks and geese have gone down because people aren’t feeding them as frequently and they aren’t lingering in the pond.

"I'm sure we will never have 100 percent compliance, but I think it's made a difference and I think our waterways in town are so important to our way of life that you hate to see any of them in a bad way."

Even though the water is much cleaner Eley added a caution: he said he wouldn't recommend that people play or swim in it.

Fowl problem improving at Cuddy Park



By Dan Carpenter / KTUU | Posted: Wed 7:29 PM, Oct 12, 2016 | Updated: Wed 10:28 PM, Oct 12, 2016

Anchorage, KTUU A small pond at Cuddy Family Midtown Park in Anchorage has been fenced off since June. The Anchorage Waterways Council says the water is very unsanitary and can actually make people sick. "It will give you giardia or diarrhea or something worse so that's the biggest thing our concern about the health," said Executive Director Cherie Northon. She says the source of the problem is the birds that visit the pond, often fed by humans.

"The congregation of them causes high fecal coliform in the water," said Northon. The council received a grant to improve water quality and just three months after fencing went up to separate the people and birds along with educational signage its seen improvements. "We've tested it every month and seen it go up and peak and its dropped down precipitously and it will be tested again next week," said Northon.

But a frequent visitor to the park isn't happy with the fencing, saying her grandson enjoyed playing in the water. "I guess you can get sick, I don't know how sick but gee door knobs, car knobs, playground equipment, do we sanitize all that too?" said Rose White.

The Anchorage Waterways Council says next year will be very telling if the changes made to Cuddy Park reduce the number of returning birds that had been feeding on human food.

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Alaska Life

It's a dirty time of year in urban Alaska. Here's how you can help clean up.

 Author: **Suzanna Caldwell**  Updated: 2 hours ago  Published 16 hours ago

The trees are trying hard to open their leaves. Little bits of green grass are starting to poke up on brown lawns all across Southcentral Alaska.

But on top of that? Garbage and dog poop, all around the city of Anchorage.

Welcome to springtime in Alaska, when trash hidden under the snow during the long winter finally emerges, left on streets and sidewalks until someone picks it up.

That's where Citywide Cleanup Week comes in. It's been going on for 49 years, according to the Anchorage Chamber of Commerce, which organizes the effort each year.

In that time it has changed dramatically, according to ACC President Bruce Bustamante. It used to be a one-day event that culminated in a large celebration luncheon at Sullivan Arena.

But organizing the celebration took too much time away from the rest of the efforts, he said. With only one day to focus on cleanup, it was hard to coordinate schedules, so the chamber stretched it out to a week in order to get more people involved.

[The Alaskan's guide to surviving spring breakup]

In Anchorage, the week is bookended by free dump days on Saturday and May 6 — when residents can drop off loads at the Anchorage Regional Landfill in Eagle River at no cost.

Last year, 4,800 people dropped off trash over the two days, according to data from Anchorage's Solid Waste Services.

Bustamante, who has been a cleanup volunteer for about 17 years, said people keep coming back to help because they want to improve the community.

"The motivating part of it is to see how the city looks after you're done," Bustamante said. "We have friends and relatives coming to visit, we have tourists coming to town, but just for our own pride of ownership — just going to work each day or going out on the weekend, whether on trail system or walking around town. It's nice to see (Anchorage) cleaned up."

Baleen and shotguns

Craig Torrey, a fire inspector for the city, has been cleaning up sections of Anchorage for the last 15 years.

A self-described "Lone Ranger," Torrey fills dozens of bags each year before cleanup week even starts, usually in hard-to-clean-up places like the grassy shores of Westchester Lagoon.

He said the garbage revealed in snowmelt each year makes him feel "embarrassed as an Alaskan" and city resident. That's one of the main reasons he helps clean up every year.

He's found all kinds of things. One year he found an unopened, still-working Apple wireless keyboard. Another time he found a \$100 bill. He said he used it to buy several grabber sticks to help collect trash, since he goes through a few each season.

Cherie Northon, executive director of Anchorage Waterways Council, organizes both the weeklong volunteer creek cleanup and "Scoop the Poop" Day, when people pick up feces left on the ground.

She said some of the weirdest things she's seen while working for council include a bowling ball, shotgun, giant truck tire, refrigerator and even a bearskin.

"You name it, we've found it," she said.

Bob Mitchell, 85, has been pitching in on cleanup for the last 19 years and organizes a group of Yale alumni that volunteers. The strangest thing he found in Chester Creek? A piece of whale baleen.

He and his wife, Mary Ellen, started cleaning up trash while taking walks along the Chester Creek greenbelt when they moved to Alaska in 1997. He said his desire to help with cleanup is simple.

"Growing up around streams, I like to see them clean," he said. "They are a great asset, a great resource and I just hate to see them being trashed."

The desire to pick up the city is one many longtime volunteers echo. Mary Fisher, director of Alaskans for Litter Prevention and Recycling, said Alaskans really come out when it comes time for cleanup.

"We are motivated to get outside and clean up from a long winter where we couldn't do anything like that for a long period of time. So we are concentrated in the springtime for getting stuff done," Fisher said.

"Not sure if (winter) has this effect of getting enthusiasm for cleanup, but I've never seen it anywhere else."

Southcentral cleanup events

'Scoop the Poop' Day

11 a.m.-3 p.m. Saturday at University Lake, Connor's Bog and South Anchorage Ballpark. Volunteers will receive supplies in order to clean up pet waste. Find details on Facebook or anchoragecreeks.org.

Anchorage Waterways Council Creek Cleanup

May 11-15, at various creek locations. See anchoragecreeks.org for details.

Free dump days

Drop off loads for free on Saturday and May 6, from 8 a.m. to 5 p.m., at the Anchorage Regional Landfill, 1550 E. Eagle River Loop Road. Trash must be less than 1,000 pounds and be smaller than a standard pickup truck bed. No oversize trailers or U-Haul-type vehicles allowed. The Central Transfer Station in Anchorage will be closed. See muni.org for details.

Anchorage citywide trash pickup

Pick up bright orange city cleanup bags at Anchorage and Eagle River Fred Meyer customer service counters. The bags can be dropped off free of charge at the Central Transfer Facility, 1111 E. 56th Ave., May 1 through May 5. Do not leave bags on the side of the road; they must be disposed of by the organizer. Cleanup teams can register with the Anchorage Chamber of Commerce to arrange for additional pickup bags. See anchoragechamber.org for details.

City of Wasilla Cleanup Days, May 1-6

Pickup bags are available at the Wasilla City Hall Public Works Department, the Greater Wasilla Chamber of Commerce, Menard Sports Center and Dorothy Page Museum. Bags can be dropped off at a dumpster at the Iditapark parking lot from noon to 7 p.m. each day. A volunteer celebration is set for 2 p.m. May 6 at the Iditapark red pavilion. See cityofwasilla.com for more information.

About this Author

Suzanna Caldwell

Suzanna Caldwell has covered food, agriculture and general assignments at the ADN since June 2012. Raised in Wasilla, she loves exploring Alaska and getting to know the people who populate her home state.



Melting snow uncovers Anchorage's major pet waste problem

By Heather Hintze (<http://www.ktva.com/authors/heather-hintze/>) 5:37 PM
April 25, 2017

Estimated
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1m 59s

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4

Anchorage, Alaska – The signs of spring are evident at Taku Lake in Anchorage: birds chirping in the trees, a thin layer of ice melting on the lake and dog waste everywhere.

“Right on the edge of the water. That’s where kids are going to be swimming,” David Jensen said.

He volunteers his time picking up after other people’s dogs. Jensen said his mission is to make Anchorage trails cleaner for all users and he wishes others would do the same.

“I do feel civic responsibility. [I’m a] lifelong Alaskan and I love this state, and I think that everybody has a responsibility to keep this place as beautiful as possible,” Jensen said.

The Anchorage Parks and Recreation Department provides free bags at many popular parks and trails, but Jensen is frustrated not everyone takes advantage of the resources.

“Sometimes, the most notorious places that I find poop are all around the little poop stations, and I think, ‘Really, you have to be kidding me,’” he said.

Animal feces are also bad for water quality. Thom Eley, a biologist for the Anchorage Waterways Council, said nearly every creek and lake in the area is polluted with bacteria.

“Kids play in the water in Campbell Creek which has a high level of E. coli. I’ve seen kids sticking their head in the water in Cuddy Park. E. coli indicates the water is contaminated with poop,” Eley said.

Jensen said people should not only be concerned with their own health but that of their pets, too. He’s leery about letting his dog Layla near lakes.

"I'd like to know when my dog goes after a tennis ball in the water or retrieving bumper, that when it ingests some of the water, it won't get sick later on. That's a pretty tough battle we're facing now," he said.




The Municipality of Anchorage estimates there are about 65,000 dogs in town, producing up to 48,000 pounds of feces a day. Jensen said during spring breakup it's clear some people aren't responsible pet owners. He and a team of volunteers picked up 15 full bags of poop last weekend.

He encourages people to pitch in and do their part during the Scoop the Poop event. That's Saturday, April 29 at University Lake from 11 to 3.

Jensen said a little bit of scooping goes a long way toward making Anchorage a healthier place for everyone.

Weather

The Alaskan's guide to surviving breakup

 Author: **Chris Klint**  Updated: 1 hour ago  Published 17 hours ago



A truck splashes through water on the Old Seward Highway on the backside of Potter Marsh in South Anchorage on Wednesday. (Bob Hallinen / Alaska Dispatch News)

Winter and spring in Alaska can be wondrous times. It's the season in between that's the problem.

Characterized by the smell of decaying trash emerging from snowbanks, standing water in the roadways and an oppressive, drab brownness, breakup comes with a set of challenges Alaskans must confront before they can flip the switch in their brains from "winter" to "spring."

From swapping out your studded tires to calling in that ever-expanding pothole on your morning commute, here are some practical steps for getting through breakup.

Studded tires

Saturday is the first of two Alaska deadlines for the removal of studded tires, according to [the state Division of Motor Vehicles](#). Tires must be removed by April 15 in southern areas of the state and by May 1 in the rest of Alaska, including Anchorage.

[Lawmaker would boost Alaska studded tire fee to \$75 each from \$5]

Saturday's deadline covers the Aleutian Islands, Kodiak and Southeast Alaska, troopers spokeswoman Megan Peters said, but she urged drivers to change tires sooner rather than later if the roads are clear.

"It's better for the roadways – studded tires really do a number on the streets, so it's better for everybody to take them off," Peters said. "Save yourself some time and get on it now because the lines are already ridiculous."

At the Johnson's Tire Service store in Midtown Anchorage, manager Mike Hagler said people arriving early to get their tires changed should expect a wait. About a dozen people are usually in line when the store opens, though that number grows as May 1 approaches.

Although some scofflaws might challenge troopers to spot studded tires on the road, Peters said catching violators is as easy as rolling down the window.

"You can hear them," Peters said.

Being pulled over by troopers with out-of-season studded tires carries a \$50 fine, which is correctable and can be waived by changing to normal tires within 30 days. If you're stopped by Anchorage police, the fine is \$50 per tire, which isn't correctable.

Potholes

Alan Czajkowski, the municipality's director of maintenance and operations, said issues with potholes in Anchorage haven't been particularly bad so far this breakup.

"We have three crews out pretty much every day," Czajkowski said. "Our goal is to get 'em filled within 24 hours."

Starting this week, road crews have also turned their attention to sweeping city streets, beginning downtown and working their way along arterial and collector roads.

[Pothole that disabled vehicles fixed near Glenn-Parks highway interchange]

State road crews with the Department of Transportation and Public Facilities in Anchorage have also been patching potholes "day and night" for the past week and a half, spokeswoman Shannon McCarthy said.

"This season doesn't seem any worse than the last two years," McCarthy said. "That being said, there are definitely potholes out there and we want people to report them."

Roads are generally being prioritized for pothole work in **the same order they are for winter snow removal**.

"Sometimes, if a pothole is particularly concerning, we might go out and repair it right away; sometimes we try and group them," McCarthy said. "It does depend on the situation."

Anyone who wants to report a pothole can call the city's pothole hotline at 907-343-MEND or DOT in Anchorage at 907-338-1466.

Dog poop

Cherie Northon, executive director of the Anchorage Waterways Council, said the city's nearly 74,000 dogs generate about 20 tons of poop per day. Much of that ends up outdoors, which can come as an unpleasant surprise when winter snow melts.

"Anytime this time of year, when something emerges from the snow, everyone says, 'Oh my God, this is the worst year ever,'" Northon said.

Beyond being unsightly, Northon said, dog feces contaminate many Anchorage creeks and ponds with fecal coliform bacteria.

As a result, the council has worked with the state to set up **more than 140 "mutt mitt" stations** across Anchorage, which dispense plastic gloves for use in cleaning up after canines. The city doesn't have workers dedicated to cleaning up dog poop, Northon said, so some good Samaritans take it upon themselves to clean parks and ask owners who don't clean up after their dogs to do so.

In addition, the council will hold **a Scoop the Poop Day** on April 29, when volunteers will clean up a pair of Anchorage dog parks – but Northon said that effort isn't a substitute for year-round care by owners.

Laura Atwood with Anchorage Animal Care and Control points out that city code **allows owners to be cited for dog poop** left on property other than their own or at city dog parks.

"It is the law, of course, that you pick up after your dogs," Atwood said.

Needles

In recent years, Alaskans may have also noticed another, more dangerous hazard emerging from melting snow berms around their communities: used drug needles.

You don't need to call police if you find a needle, Anchorage Police Department spokeswoman Renee Oistad said, but people should be careful if they decide to dispose of them.

"If you're wearing gloves and if you have a container, you can put the needle in – it can be anything, an empty milk container, a detergent bottle. You can throw that in the trash safely," Oistad said.

Northon said there have been reports of needles thrown off bridges over Chester Creek near C Street.

"If people are dumping them off, it'll be in the center of the creek where people generally aren't recreating," Northon said.

The reports are "terribly concerning," Northon said, as the council prepares for a four-day creek cleanup May 11-15.

Four A's — the Alaskan Aids Assistance Association — can dispose of needles. Laura Herman, Four A's director of development, recommended that people use relatively puncture-proof containers like used soda bottles to carry needles. They can be dropped off at Four A's Fireweed Lane location from 9 a.m. to 5 p.m. weekdays.

Wildlife

As bears emerge from hibernation, they've begun to make their presence known in the Anchorage and Turnagain Arm areas, according to Alaska Department of Fish and Game spokesman Ken Marsh.

"There was a mother black bear with a couple of young cubs that were seen in the Anchorage area," Marsh said Thursday. "We've also had some reports of black bears stepping out in the Eagle River-Chugiak area."

Intentional or unintentional feeding of bears is a state crime, but bears ransacking garbage cans in Juneau were reported to Fish and Game this week. Alaskans can prevent bear problems by taking down bird feeders, only putting out trash on the day it's collected and cleaning up other potential attractants like dog food.

Marsh reiterated advice the department gave about wildlife last month, after a pair of incidents in which people encountered aggressive Southcentral Alaska moose.

[Moose shot to death after it charged a ski lift line at Alyeska Resort]

"Generally, give animals a wide space," Marsh said. "Give moose plenty of space, because they're coming out of a harsh winter nutritionally stressed and may be a bit grumpy yet."

The department is urging people to report encounters with wildlife by either calling 911 or using [its website](#).

Reporter Suzanna Caldwell contributed information to this story.

About this Author

Chris Klint

Chris Klint, a lifelong Alaskan and UAA graduate, covers breaking news in the mornings. He spent more than five years at Anchorage TV station KTUU before joining Alaska Dispatch News.

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