



Ethan Berkowitz, Mayor

2016 Stormwater Outreach Public Education and Involvement APDES Permit No. AKS-052558

**MUNICIPALITY OF ANCHORAGE
WATERSHED MANAGEMENT PROGRAM**

January 2017

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WATERSHED MANAGEMENT PROGRAM

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Prepared for: Municipality of Anchorage
Watershed Management Services

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Final Report for Year One 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 a summary of work completed in Year One. All backup documentation has been provided in this report’s Appendix.

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

“Chester Creek Watershed Plan – 2014”

This watershed plan was adopted by the Anchorage Municipal Assembly during their May 14, 2014, meeting after it went through the public process by way of Community Councils and written comments from a variety of stakeholders including a resolution from the Municipal Commission on Watersheds and Natural Resources and the Municipal Planning and Zoning Committee. It is 83 pages long, contains 32 figures and 10 tables, and is organized as such:

- Introduction
- Creation of Plan
- Watershed Characterization
- Watershed Issues
- Plan Implementation
- Appendix
- References/Bibliography

Pending some updates to Municipal Plans and Code and an update of the Anchorage Land Use Map, the focus of this report is to update the action items that were called for in the 2014 plan. Over the next couple of years these code and map documents should be finalized and available for incorporating into the watershed plans if necessary. Current updates are in the Appendix and include a summary document. The primary findings show that the AKDOT&PF has completed some tasks; there are some locations that were initially designated for AKDOT&PF that they believe are not their entire jurisdiction or should be totally under the MOA’s; and there are some upgrades that will be completed by AKDOT&PF when a major road reconstruction project occurs in the same area. HDR has completed some major changes in the area of Muldoon and DeBarr, and 3 projects were finished at Reflection Lake in 2014 according to MOA records. There are also a few action items that need to be corrected or have additional information added, and these have been noted.

“Little Campbell Creek Watershed Plan – 2007”

This watershed plan resulted from increased concerns about fish mortality in Little Campbell Creek around 2005. The next year brought together a group of stakeholders to create a plan. It was adopted by the Municipal Assembly in December 2007. It is 55 pages long, has 14 figures, and 3 tables. It is organized as such:

- Introduction
- Creation of Plan
- Watershed Characterization
- Watershed Issues
- Plan Implementation

Some updates were provided in 2013 and are in the final report. Additional updates were completed during Year One of the MOA's 2015-2020 APDES permit period, and they are appended to the 2013 update. Generally speaking, there is progress being made on the action items of both existing watershed plans.

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

On July 21, 2016, a scoping meeting was held at the MOA's PM&E Building to begin discussion on a third watershed plan. In attendance were Cherie Northon (AWC), Franklin Dekker (USFWS), Jeanne Swartz (ADEC), Jacob Cunha (ADF&G), Megan Marie (ADF&G) and Kristi Bischofberger (MOA WMS).

A number of options were discussed in regard to the next watershed plan. These included: Meadow Creek, Hood Creek, Furrow Creek, Fire Creek, Fish Creek, Peters Creek, Rabbit Creek, Glacier Creek, Ship Creek, and Campbell Creek. Several good points were made by various people in the group, such as whether we should we go “outside” of the “Bowl” and think about other areas within the Municipality. Some factors considered were:

- having an anadromous classification,
- the size and population of the watershed,
- its level of development (heavily developed or going through development or undeveloped),
- the availability of community interest groups,
- availability of good and accessible recreational opportunities,
- flooding and fish passage issues,
- the state of riparian vegetation,
- potential partnerships,
- environmental justice,
- funding opportunities,
- educational partnerships,
- wildlife and more.

After several opinions were expressed, the question of what might we miss by excluding an area was discussed. Despite playing devil's advocate regarding several locations, the group kept coming back to Campbell Creek Watershed. The benefits: Little Campbell Creek has a plan in place, and this would complete a large, well known watershed. It has good headwaters; minimal (maybe only one) culverts that impede fish passage; is a high-use recreation area for kayaking, canoeing, rafting and fishing; lots of greenbelt area; good opportunities for educational projects; there are still meanders which are causing changes in the morphology all the time (and in the past few years some meanders have been cut off completely); and there are restoration opportunities (including LID) that can be done and those that have been done can be evaluated. There are also substantial issues with Campbell Lake, invasives, and wildlife corridors. Long-term water quality monitoring data exists, and Campbell Creek is on the state's impaired waterway list (fecal coliform). The group felt unanimously that this would be the next big project to scope out during the upcoming 4 years of the APDES permit, and then have the plan written during the following 5 year term. Work has begun on this new watershed plan.

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

AWC’s Dr. Thom Eley has worked on the animal facility evaluation. The written document is now 44 pages long and includes six maps. The report covers Alaska Criminal Laws and Municipality of Anchorage Ordinances that have regulations involving animals (more than just Title 17). There are interviews with personnel from the MOA’s Animal Care and Control Center, Anchorage Water and Wastewater Utility (AWWU), and the Education Director of the Alaska Zoo. Some topics addressed include off-leash dog parks, venues for pet activities, information from site visits, and other relevant matters. The full animal facility report is in the Appendix.

Part 3.6.1—“Public Education and Involvement” annually

Scoop the Poop

Anchorage Waterways Council (AWC) provides public education and involvement in a variety of ways. For one of the most important programs, Scoop the Poop, AWC convenes the Scoop the Poop Committee every year. It is composed of representatives from AWC, MOA Parks and Recreation, MOA Animal Care & Control Center, BLM Campbell Tract, Alaska Department of Environmental Conservation, MOA Watershed Management Services, Alaska SPCA, Friends of Pets, Alyeska Canine Trainers, Anchorage Unleashed, Drool Central, and Alaska Dog Sports. After an initial meeting on January 27, 2016, a calendar was drawn up that included 7 events for tabling as well as Scoop the Poop Day on April 16. This year AWC added a pet emergency card as a handout item for tabling and other events.

Pet Alert Card	
In case of an emergency, contacts are listed on the reverse side for helping my pets. Thank you.	
My name is: _____	
My Pet’s Name	Type of Animal/Age
_____	_____
_____	_____
_____	_____
_____	_____
	
Contact name: _____	
Phone number(s): _____	
Contact name: _____	
Phone number(s): _____	
Veterinary name: _____	
Phone number: _____	
Courtesy of Anchorage Waterways Council & Scoop the Poop anchoragecreeks.org	

Besides tabling, AWC compiled a list of 31 pet-related businesses that clean up pet waste to see if they were interested in any fliers for their clients. Interestingly, there were no responses to our offer. AWC manages the Scoop the Poop Anchorage page on Facebook (www.facebook.com/ScoopthePoopAnchorage/) and has tallied the number of people reached in 2016 with posts. Three thousand and thirty-seven viewers saw Facebook posts for the first 10 months of 2016. Some examples of the posts are provided in the Appendix along with other Scoop the Poop documents.

It should be noted that a grant from the Alaska Department of Environmental Conservation (ADEC) to AWC for FY 2015-2016 provided funding to work at reducing the feeding of waterfowl and improving water quality (most notably FC) at Cuddy Family Midtown Park. Also 14 new Mutt Mitt stations were added to the Municipality for a total of 143. A map of their locations in in the Appendix.

The educational aspect on the Cuddy project about waterfowl and high fecal coliform (FC) counts in Cuddy Pond (a portion of Fish Creek) appears to be making a difference. SGS Laboratories in Anchorage provided free FC analysis to AWC in 2015 and 2016. Once the signage went up along with landscape changes and fencing, the FC counts dropped dramatically. It was also a time when many geese began to migrate, so additional testing in 2017 should provide insight into the pond's improvement in water quality. A map and figures are in the Appendix.

Another small project that AWC participated in was helping a resident by Goose Lake create some signage that is being placed on the frozen lake in an attempt to reduce the amount of pet waste and trash left on, in, and around the lake. The lake, which has swimming in the summer and ice skating and a polar plunge in the winter, tends to draw several users with dogs to the beach area during the summer and skaters (with pets) to the lake during the winter. It is hoped that this will help reduce the amount of pet waste left by users which is often cleaned up by the resident who is putting the signs up. Pictures of some of the signage are shown following.



Goose Lake Park (12/16)

Gardening Surveys

Other outreach activities included the Annual Sears Garden Show on April 9. AWC has been collecting surveys from garden event attendees for several years. Through various gardening shows and fairs, such as the Sears Mall Spring Garden Show and The Alaska Botanical Garden's many events, AWC received survey information from over 275 participants between 2012 and 2016. These surveys focused on individual gardening habits and preferences (see p. 9). The first question addressed the use of yard chemicals including conventional and organic as well as those who chose to use none.

Fertilizers (Fig. 1): Organic fertilizers rated consistently above all other types over the five years—holding steadily at 40% and above. Those using conventional or “both” also were fairly consistent hovering just above and below 20%. Those who do not use anything rose to nearly 20% in 2013, 2014 and 2016. The small number that represented the total of 2015 surveys (11) undoubtedly skews the results for that year.

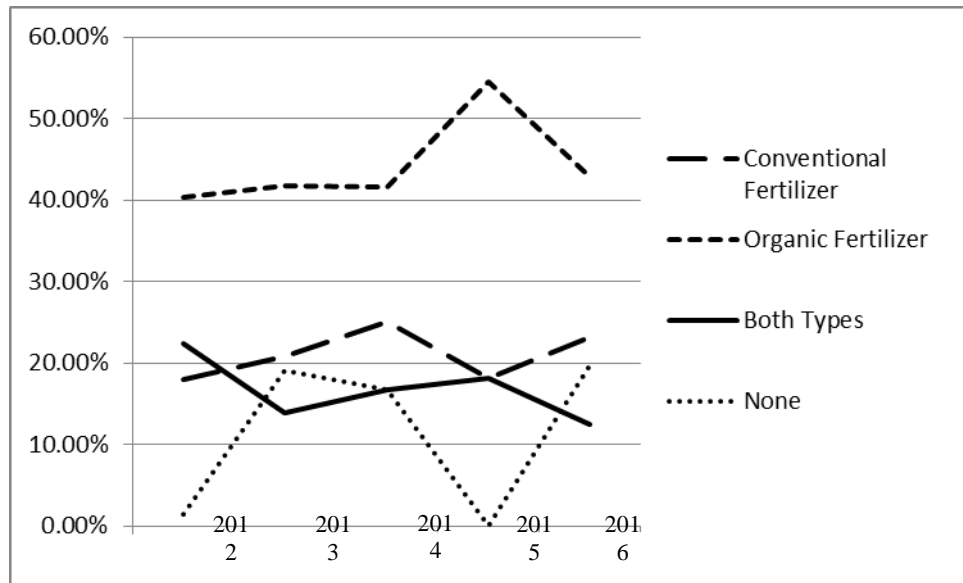


Fig. 1 Fertilizer Choices 2012-2016

Herbicides (Fig. 2): People not using any herbicides grew steadily from 2012 to 2015 where the peak was 80% with a small dropoff in 2016. Those choosing conventional, organic or “both” stayed fairly consistent below 30%.

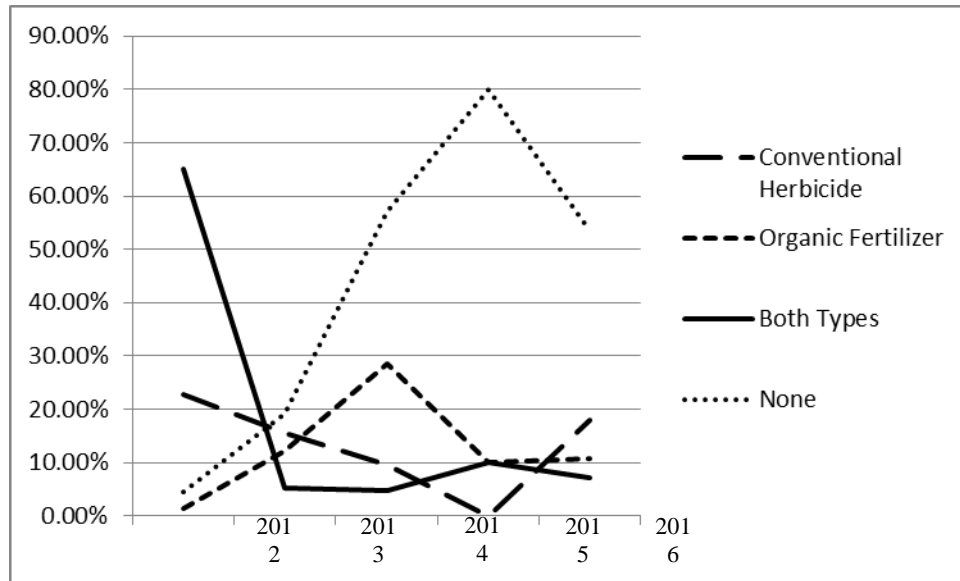


Fig. 2 Herbicide Choices 2012-2016

Pesticides (Fig. 3): Those using pesticides were very interesting. Conventional and organic users stayed under 20% for the most part. People using “both” also stayed low, under 10%, with the exception of 2012 which started at 80%. The choice to not use any rose steadily from ~5% in 2012 to over 70% with a small drop in 2014.

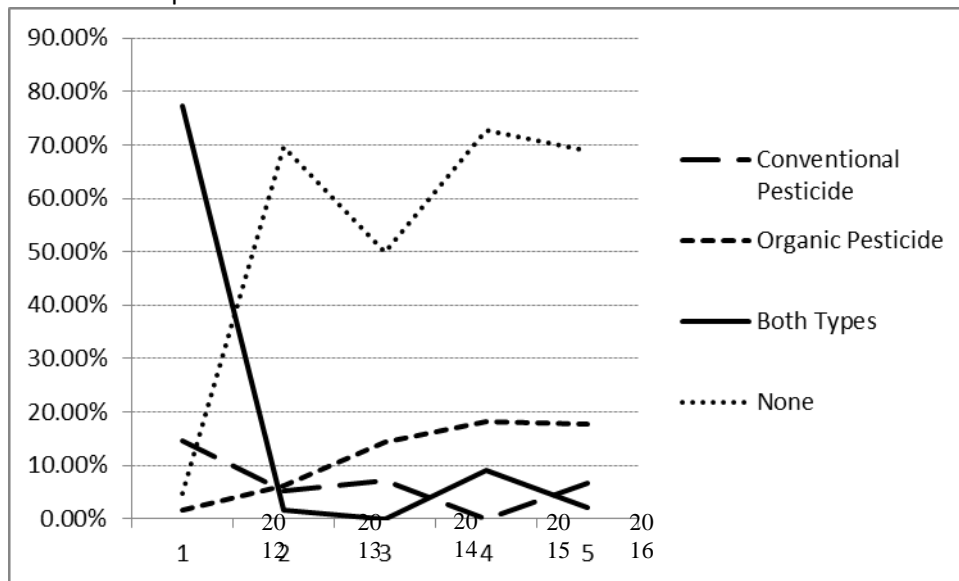


Fig. 3 Pesticide Choices 2012-2016

Overall, it would appear that there is a trend towards the use of safer chemicals or none at all.

The two other questions on the survey are not as easily reconciled due to multiple answers in some categories. In summary the survey shows that a majority of people, ~70%, prefer a more natural yard as opposed to ~30% who would rather have a well manicured yard, which would undoubtedly require more chemical inputs. And, those who compost and mulch rank much higher than those who bag their green waste which goes to the landfill. Only two people marked that they tossed the clippings into a waterway or wetlands.

AWC Gardening Survey

1. At your residence, do you or a gardening service apply any of the following lawn or garden products? Please check ALL that apply.

	Conventional	Organic	Both	None	N/A
Fertilizer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weed killers/herbicides	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pesticides	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Which of the following statements represent(s) your gardening preferences (you can answer more than one)?

- I prefer the look of a manicured yard with grass and flowers.
- I prefer a yard with natural/native vegetation.
- I have a vegetable garden, berries, fruit trees, etc.
- Other:

Other (please specify)

3. How do you typically dispose of green waste (lawn clippings, leaves, etc.)? Please answer all that apply.

- Bag it and put it out with the garbage
- Compost it in the yard
- Mulch onto lawn
- Dispose of it in a wetland area or water body (creek or lake)
- Dispose of it along a creek bank or lake edge
- Gardener takes it
- Other:

Other (please specify)

Additionally, AWC finished a 4-year invasive eradication project at Grass Creek Village on Chester Creek by Muldoon and DeBarr and sent over 80 letters to the neighborhood (example of letter is in the Appendix). The letters provide general information on Anchorage creeks and specific information on invasive plants and being good creek stewards. A copy of AWC's rack card, "How to live with a creek", was included in the mailing.

Another informational mailing was completed in September 2016 to 63 property management companies. AWC offered some of our printed resources and expertise. This letter is also in the Appendix. No one responded to our offer.

News Media

Throughout the first 10 months of 2016, AWC was involved in 9 news stories. These are:

1. February 18, 2016, KTVA, Lauren Maxwell, "Volunteer on a quest to keep University Lake dog park clean" at www.ktva.com/volunteer-on-a-quest-to-keep-university-lake-dog-park-clean-585/
2. April 16, 2016, KTVA, Eric Ruble, "Volunteers pick up after other people's pooches" at www.ktva.com/scoop-the-poop-volunteers-pick-up-after-other-peoples-pooches-501/
3. May 16, 2016, *Alaska Dispatch*, Rick Sinnott, "Will no-feeding signs end disgusting 'poop soup' in Anchorage park?" at www.adn.com/wildlife/article/will-no-feeding-signs-end-disgusting-poop-soup-anchorage-park/2016/05/15/
4. May 31, 2016, KTVA, Lauren Maxwell, "New push to stop feeding the birds at Cuddy Family Midtown Park" at www.ktva.com/new-push-to-stop-feeding-the-birds-at-cuddy-family-midtown-park-553/
5. June 14, 2016, KTUU, Beth Verge, "Cuddy Family Midtown Park birds, pond water still a problem" at www.ktuu.com/content/news/Cuddy--383010561.html
6. July 6, 2016, KTVA, Heather Hintze, "New signs deter feeding fowl at Cuddy Family Midtown Park" at www.ktva.com/new-signs-deter-feeding-fowl-at-cuddy-family-midtown-park-868/
7. July 7, 2016, KTUU, Beth Verge, "New signage, shrubbery at Cuddy Park in place to discourage bird feeding" at www.ktuu.com/content/news/New-signage-shrubbery-at-Cuddy-Park-in-place-to-discourage-bird-feeding-385902581.html
8. September 27, 2016, KTVA, Lauren Maxwell, "Cuddy Family Park pond shows comeback as fewer people feed the birds" at www.ktva.com/cuddy-family-park-pond-shows-comeback-as-fewer-people-feed-the-birds-573/
9. October 12, 2016, KTUU, Dan Carpenter, "Fowl Problem Improving at Cuddy Park" at www.ktuu.com/content/news/Fowl-problem-improving-at-Cuddy-Park-396888891.html

Summaries of the stories are provided in the Appendix. Three of the stories focused on Scoop the Poop and the balance were providing education on the Cuddy Park waterfowl feeding problem.

Newsletters

Every month AWC publishes an e-newsletter. Eight of the e-newsletters through late November were concerned with stormwater and runoff issues and creek health. They are:

1. "And once there was snow..." 1/8/16 (144 opens in Constant Contact)
2. "Kids in Creeks" 1/29/16 (139 opens in Constant Contact)
3. "Break(ing) up is hard to do..." 3/10/16 (141 opens in Constant Contact)
4. "Fighting the 'poo' wars" 4/20/16 (134 opens in Constant Contact)
5. "Another Great Creek Cleanup" 5/31/16 (128 opens in Constant Contact)
6. "Cuddy Park's New Look" 7/25/16 (157 opens in Constant Contact)
7. "Using Ice/Snow Melt Properly" 11/8/16 (140 opens in Constant Contact)
8. "How Sisters, Oregon, Keeps Stormwater Runoff Out of its Waterways" 11/30/16 (123 opens in Constant Contact)

The newsletters are included in the Appendix. The figures shown above are the number of “opens” that were made directly through email, but each newsletter was posted at least twice on Anchorage Waterways Council’s Facebook page (www.facebook.com/anchoragewaterways/) where many more people were reached.

Anchorage Waterways Council’s Annual Meeting October 12, 2016

This year’s AWC annual meeting was titled, “Foul Water from Water Fowl”. It focused on the Cuddy Park project that AWC undertook to curb feeding of waterfowl and to try and clean up the bird feces that were inundating the park grounds and severely affecting water quality. The entire program is in the Appendix.

There were five presentations:

- “*The Cuddy Park Dilemma*” by Dr. Thomas Eley (AWC)
- “*You Have to Have Standards*” by Jeanne Swartz (ADEC)
- “*Why is there a pond in Cuddy Park?*” by Bill Spencer (HDR)
- “*Communication Trends in Interpretive Media: The Cuddy Park Story*” by Meg Anderson (DNR)
- “*Cuddy Park: Now and in the Future*” by Dr. Cherie Northon (AWC)

These gave a nice picture of the origin and reason for the Cuddy ponds, the ensuing problems due to their appeal to waterfowl, the human feeding factor, and methods taken to reduce feeding and clean up the water.

Part 3.6.3—“APDES Annual Meeting” each year

Anchorage Waterways Council made a presentation at the 2016 APDES Annual Meeting on March 1, 2016, held at the BP Center. AWC’s focus at this presentation was its recent comparison of watershed perception survey results from 2010 and 2014. A poster session was done along with a presentation and a question and answer period. Some of the responses with the most bearing on watershed health involved: scooping poop, understanding that we all live in a watershed, issues with carwashing, the biggest perceived threat to our waterways, public understanding of common watershed terms, where does stormwater and runoff go, and how much responsibility do Anchorage’s citizens have for their watershed. These graphs are included in the Appendix.

Conclusion

During the first year of APDES activities, AWC spent considerable time reviewing previous outreach efforts and their effectiveness. Based on the watershed perception survey comparisons between 2010 and 2014, there has been some improvement (as well as a decline) in various important areas. Those who clean up after their pets increased by 5%; knowledge of living in a watershed decreased which means that is an area to focus on and this coincides somewhat with a good number of respondents still not aware that stormwater is discharged untreated into our waterways; and there was a 16% increase in people believing they have a major responsibility for clean creeks which is heartening. By taking the entire survey into account, there are several positive improvements as well as areas that need more work, and AWC has been addressing them over the past year and will continue as we move forward.

It is also becoming more apparent that printed materials, i.e. rack cards in stationary places, are generally not picked up and therefore are not read. This is based on several locations where AWC has placed rack cards and over time they still remain there when checking on the supply. 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 pretty much a one-on-one situation, is also effective, but reaches a much smaller audience. Regardless, it is an important tool.

Unfortunately, AWC's Creeks as Classrooms program was not funded for 2016-2017 by ConocoPhillips. This has been a very valuable way to reach youth (approximately 5,000 every year), and it is no secret that kids are like sponges regarding information. They absorb good information and accept it a whole lot faster than adults who sometimes take 5-6 times as long to (if they ever do). AWC will probably still conduct some outreach to youth so that this important group is not lost.

As for the other aspects of the APDES contract, AWC will continue to review the existing watershed plans for annual updates and turn its attention towards the new Campbell Creek Watershed Plan. The animal facilities' report will be updated as businesses and venues come and go, and AWC will be available to present at the 2017 APDES Annual Meeting. A suggestion for a topic might be the changes at Cuddy Park.

For questions or additional information, please contact Cherie Northon, AWC Executive Director, at 907 272-7335 or cherie@anchoragecreeks.org.

APPENDICES

WATERSHED PLANNING

UPDATE SUMMARY OF RESTORATION PRIORITIES FOR CHESTER CREEK WATERSHED 12/2016

By Anchorage Waterways Council

The Chester Creek Watershed Plan was completed in 2014 and adopted by the Municipal Assembly in 2014. The following comments are a summary of updates that have been added to the Appendix, I. Restoration Priorities for Chester Creek Watershed. A review of the plan was completed in 2016. More details are listed in the accompanying table.

ALL CHESTER WATERSHED DRAINAGES (C)

C-9: Conduct educational campaign on tossing household/greenhouse plants into the creek and riparian area. Underway since 2014.

C-5 and C-10: Conduct salmon monitoring/identify low flow conditions for fish habitat. Note: one of the “leads” on this was APU’s Dr. Rusty Myers, however he passed away in 2015 and it is unclear whether or not this focus at APU has been replaced.

WESTCHESTER/EASTCHESTER AREA (CW)

CW-2: Reduce sediment accumulation coming from streets upstream. AKDOT&PF has instituted a sweeping program and storm drain cleaning program to help reduce sediment.

CW-3: Incorrect culvert designation. Number has been changed to correct, and the existing number is already listed in another section of the table.

CW-4: Area was revegetated and paths directing people to access stairs were placed in 2013. Needs to be monitored.

CW-6: Evaluate impact of channel widening and sediment deposition. AKDOT&PF states that they only have jurisdiction for the area in the DOT ROW, otherwise they believe it is a MOA issue.

CW-7: Untreated stormwater—evaluate. AKDOT&PF will replace culvert when there is a major reconstruction project in the area.

CW-8: Untreated stormwater—evaluate. AKDOT&PF will replace culvert when there is a major reconstruction project in the area.

CW-9: High velocities during floods, etc. AKDOT&PF believes this is a MOA issue and possibly Due to gabions on private property.

CW-10: Replace Seward Highway culvert with bridge. AKDOT&PF will replace culvert when there is a major reconstruction project in the area.

CW-11: Bury utility line. Field work by AWC shows that this cable is no longer in the creek bed (8/27/16).

CW-14: Replace fish ladder or large embedded pipe. AKDOT&PF believes this is a MOA issue.

CHESTER MIDDLE FORK (CMF)

CMF-4: Construct water treatment pond. AKDOT&PF believes the MOA would be the lead on this project.

CMF-6: This numbered culvert was not found on the ADF&G Interactive Culvert Map, although there is a report on this problem (attached Culvert 20400043).

CMF-14: Need information on where this culvert is and its identifier.

CHESTER SOUTH FORK (CSF)

- CSF-6:** Evaluate flows, alter culvert. AKDOT&PF believes this is a MOA-maintained road.
- CSF-7:** Evaluate fish passage. AKDOT&PF will replace culvert when there is a major reconstruction project in the area.
- CSF-9:** ADF&G report from 8/19/04 shows this as "green". Needs to be checked about fish passage concerns and updated to see if they have deteriorated.
- CSF-19:** Replace culvert under Muldoon Road. Completed per HDR.
- CSF-20:** Create more natural creek east of Muldoon. Completed per HDR.
- CSF-21:** Remove debris. This is ongoing per HDR.

CHESTER REFLECTION LAKE (CRL)

- CRL-1:** Replace with larger culvert. Completed per MOA in 2014.
- CRL-2:** Replace with larger culvert. Completed per MOA in 2014.
- CRL-3:** Replace with larger culvert. Completed per MOA in 2014.

Little Campbell Creek
Watershed Management Plan
Updates: 9/15/13 and 11/15/16
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 WMA
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, 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.*
- *2.3 Top three restrictions have been completed.*

2016 UPDATE

- *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/Diamond Blvd to Dowling Rd Reconstruction Project.*

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

- *Culverts #105-South Fork (Atkins near 85th), #150-North Fork (Lake Otis Pkwy/72nd), #99, and #107 were replaced by The Boutet Company.*
- *Ensure fish passage through Alaska Zoo was completed by The Boutet Company.*
- *Replace 360’ long culvert at DNS Concrete with open channel. This was completed by The Boutet Company although overall culvert length is 336’.*

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 relations 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

- *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. Only Ruth Arcand Park is listed as a public place with access that would be highly recommended for recreational use. LCC is either inaccessible or not very pleasing aesthetically.*
- *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.*
- *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.*

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.*

2016 UPDATE

- None to report.*

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.*

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

- None to report.

○ 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/BSD/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/wnpssc/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.

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

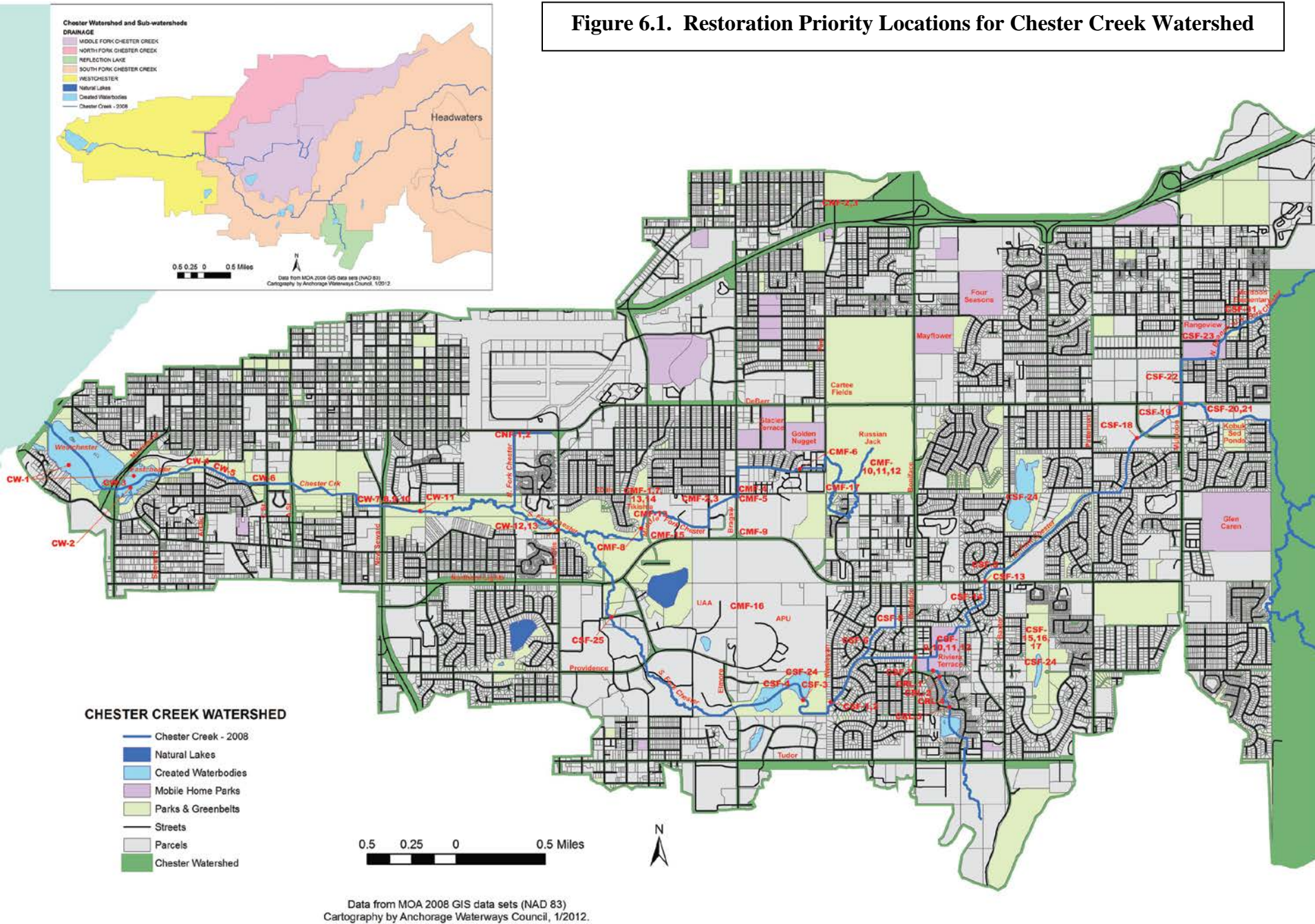


Table 6.1. Restoration Priorities Shown on Map
ALL CHESTER WATERSHED DRAINAGES (C)

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			Conduct educational campaign on tossing household/greenhouse plants into the creek and riparian area. UPDATE: Underway and ongoing (2014-16).	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. 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 is incorrectly identified. 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.	UPDATE: Area was revegetated in 2013 and access stairs were placed to direct people and pets to creek in specific locations. Monitor progress.	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.	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. 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. 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. 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	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. 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 UPDATE: Culvert red as of 9-1-16. 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 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 UPDATE: Culvert coded red 8/12/04 and remains so in 9/1/16.	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. <i>UPDATE: Culvert coded red 8/12/04 and still in 9/1/16. Per Eric Miyashiro, 11/4/16, this is a MOA maintained road.</i>	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. STATUS: Culvert coded red 8/12/04 and still in 9/1/16.	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. 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. UPDATE: Culvert coded black 8/12/04 and still in 9/1/16.	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. <i>This is not found on ADF&G map but there is a report.</i>	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. <i>Where is this?</i>	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. UPDATE: <i>Culvert coded gray 8/17/04 and location on ADF&G map goes to 20400039. There is a report on it.</i>	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 Drive	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.	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. UPDATE: Culvert is shown red as of 8/25/04 and 8/31/16. Status according to AKDOT's Eric Miyashiro, 11/4/16, is that this is a MOA maintained road.	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. UPDATE: Culvert is not shown on map but report is gray. Survey date on report is 8/19/04. Needs to be checked? 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.	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. Culvert is not shown on map but report is green. Survey date on report is 8/19/04. Check?	Private	3	1	ADF&G
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 at this culvert. Triple culvert does not conform to MOA design criteria.	Replace with a larger, embedded culvert. UPDATE: Culvert is shown red as of 8/19/04 and 8/31/16.	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. UPDATE: Culvert is shown red as of 8/25/04 and 8/31/16.	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. UPDATE: Culvert is not shown on map but report is gray. Survey date on report is 8/19/04. Checked?	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. UPDATE: Completed per Bill Spencer, HDR, 7/25/16.	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. UPDATE: Completed per Bill Spencer, HDR, 7/25/16.	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. 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. 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	61.19, -149.82	Mallard Drive	ADF&G Culvert 20400250 fish passage issue as a constriction to creek	Replace with a larger, embedded culvert.	MOA	3	2	ADF&G
CSF-26	1,4	61.19, -149.82	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. UPDATE: Completed (J. Urbanus, MOA, 12/10/14)	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. UPDATE: Completed (J. Urbanus, MOA, 12/10/14)	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. UPDATE: Completed (J. Urbanus, MOA, 12/10/14)	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

ANIMAL FACILITIES

Part 3.3.3—Evaluate Animal Facility (Year 1 of 3)

By Dr. Thom Eley

Anchorage Waterways Council

11/19/16

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* Some of these facilities have closed and a few new ones have opened as of Sept. 30, 2016. This list will be revised in Year Two.

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:

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 Gasoline 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

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.

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.

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.

17.15.050 - Municipal dog license tags and receipts.

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 three 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:

- Map 1. Indoor Animal Facilities, Anchorage, AK
- Map 2. Off-Leash Dog, Anchorage, AK
- Map 3. Commercial Stables and Zoo, Anchorage, AK
- Map 4. Stables in Chugiak, AK
- Map 5. Anchorage AK 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. 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) and others are some distance away 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.

Table 2. 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
University Lake Park	South Fork of Chester Creek	On South Fork of Chester Creek
Valley of the Moon Park	Chester Creek	On Chester Creek

Watching people's behavior at the parks yielded some interesting observations. About half of the people using the park 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.









GOING TO THE OFF-LEASH AREA

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



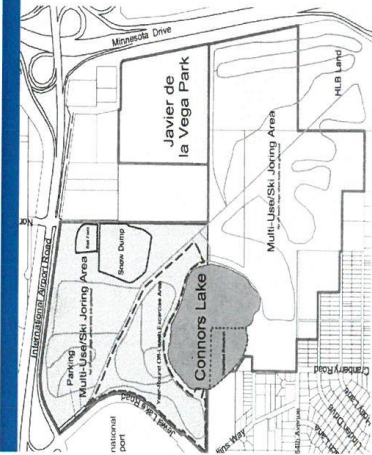
Five off-leash dog areas exist within municipal parks in Anchorage. Each is a multi purpose area serving a variety of park users.

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.



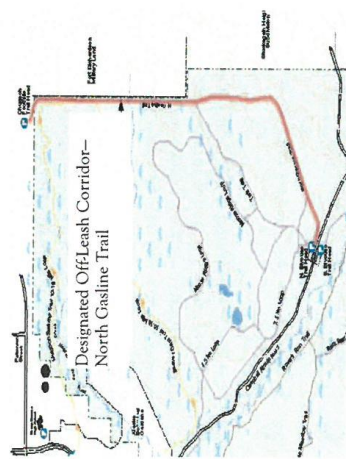
Municipality of Anchorage
Animal Care and Control Services
 4711 Elmore Road
 Anchorage, AK 99507
 Phone: 907-343-8118 Main
 Phone: 907-343-8119 Enforcement Dispatch
 Phone: 907-343-8122 Customer Service
 Fax: 907-343-8134 www.muni.org/animal
 Revised March 27, 2009

OFF-LEASH AREA MAPS AND INFORMATION



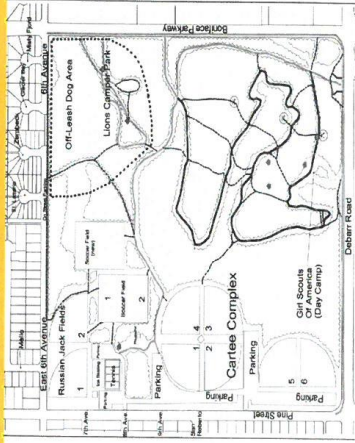
Connor's Bog

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.



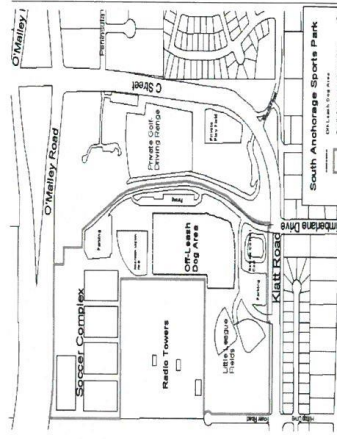
Far North Bicentennial Park

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 at Connors Bog Park’s parking area lists the park regulations but it does not mention any seasonal restrictions.



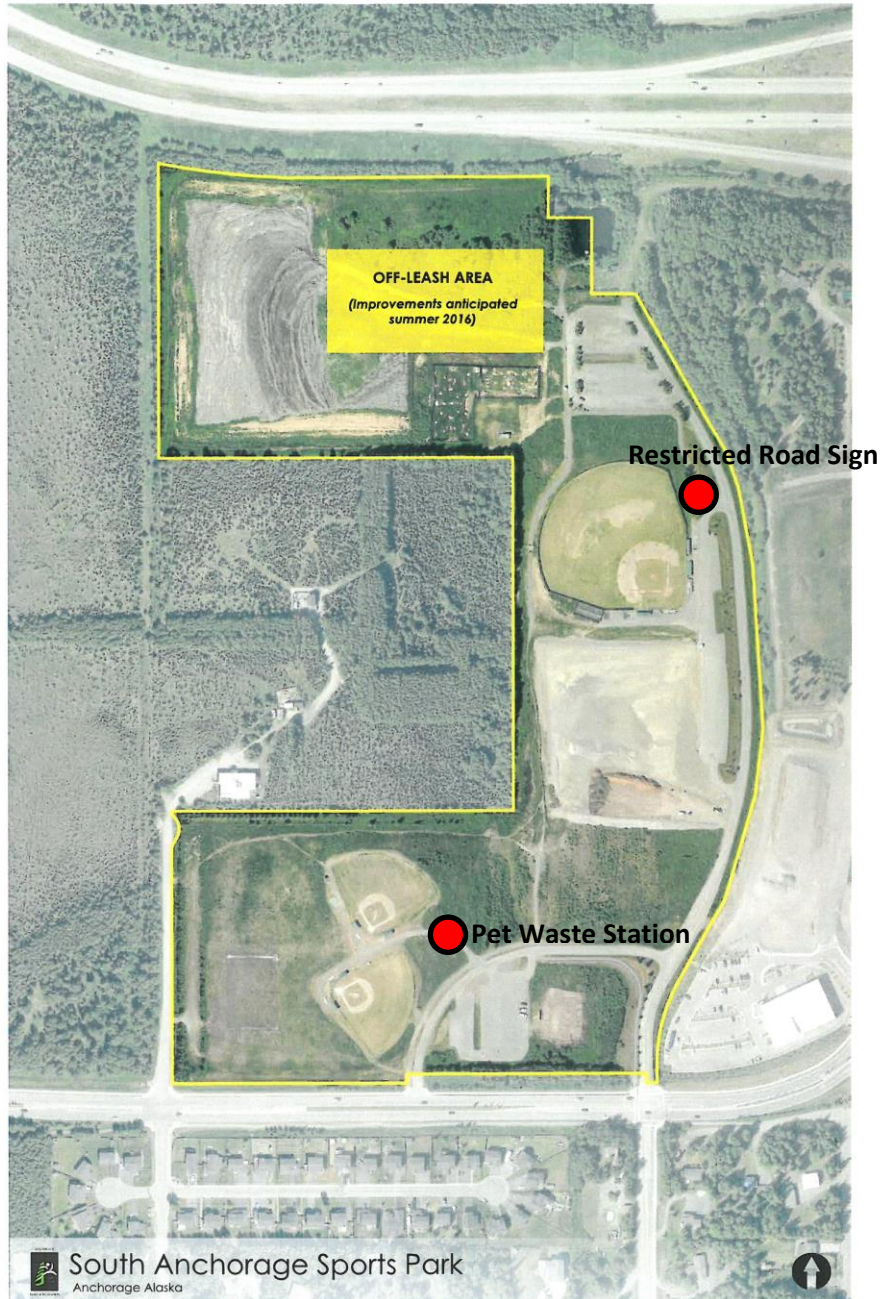
Additionally, in the same area is the sign indicating that you are on Ted Stevens Anchorage International Airport (Figure 4). Park users have no idea what this means to them or that they are actually in the airport’s “crash zone.” Is this a Municipal Park or part of the Anchorage International Airport?

Figure 4



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.



Another source of confusion is a sign (Figure 6) on the road that leads to the actual South Anchorage Sports Park Off-Leash Area. How is a park user supposed to know whether they are authorized or not? Common sense would say that the person probably is not authorized.

Figure 6.



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. 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 Method. 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
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 Start along Chester Creek Trail in 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. Begin site visits to facility list. Goal is to review 40-50% of them during year one.

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 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 Year One:

1. All seven Off-Leash Dog Parks, other MOA parks were visited (see comments above). As mentioned above, 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. Twenty-three (~50%) commercially licensed in-door facilities (groomers, pet stores that sell pets, kennels, and doggy daycares). With the exception of one kennel, which is currently the subject of several litigations, all facilities were clean and disposed of their wastes via Solid Waste Services or Alaska Waste. Several potentially invasive plants were noted as well as red-eared slider turtles and golden turtles are being sold in pet stores. Two facilities do not sell aquatic turtles because of the potential hazard of them becoming invasive.
4. Although veterinary clinics are exempt from inspections as their wastes go down the Municipal sewer system, one veterinary clinic was visited to see their operations.
5. About 50% of the venues were visited, and all appeared to be relatively clean of animal wastes from activities.
6. 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 but they are not, however, some individuals at Parks and Recreation contend that horse riders do clean up after their horses on the trails.

Zoo Interview:

Interview of Stephanie Hartman, Education Director, Alaska Zoo, 22 May 2016 at the Alaska Zoo by Dr. Eley, AWC

1. Little Campbell Creek Realigned by MOA in summer 2015.
2. Only animal wastes into the creek are from waterfowl, water birds and mammals found in the creek.
3. All cages drain into sewer system.
4. Wastes picked up by hand or shovel before washing cages.
5. Most wastes inside cages are food wastes, which are picked up and disposed of.
6. Water was tested after the realignment (she didn't know who tested the water) and "deemed okay."
7. Wastes disposed of by going to the dump. However residents can come and pick up wastes if they want it for their gardens. Yak wastes are the most popular.

Observations of Dr. Eley, AWC about the Alaska Zoo, 22 May 2016

1. Creek looks very natural and quite attractive.
2. No animal waste smells noted in the Zoo except for the Yak pen.

Facilities of Concern:

Three facilities of concern that were found during this survey and these require additional investigation in FY 2017.

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 in as Boca Raton, FL and Minneapolis, MN.



Figure 7. 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.

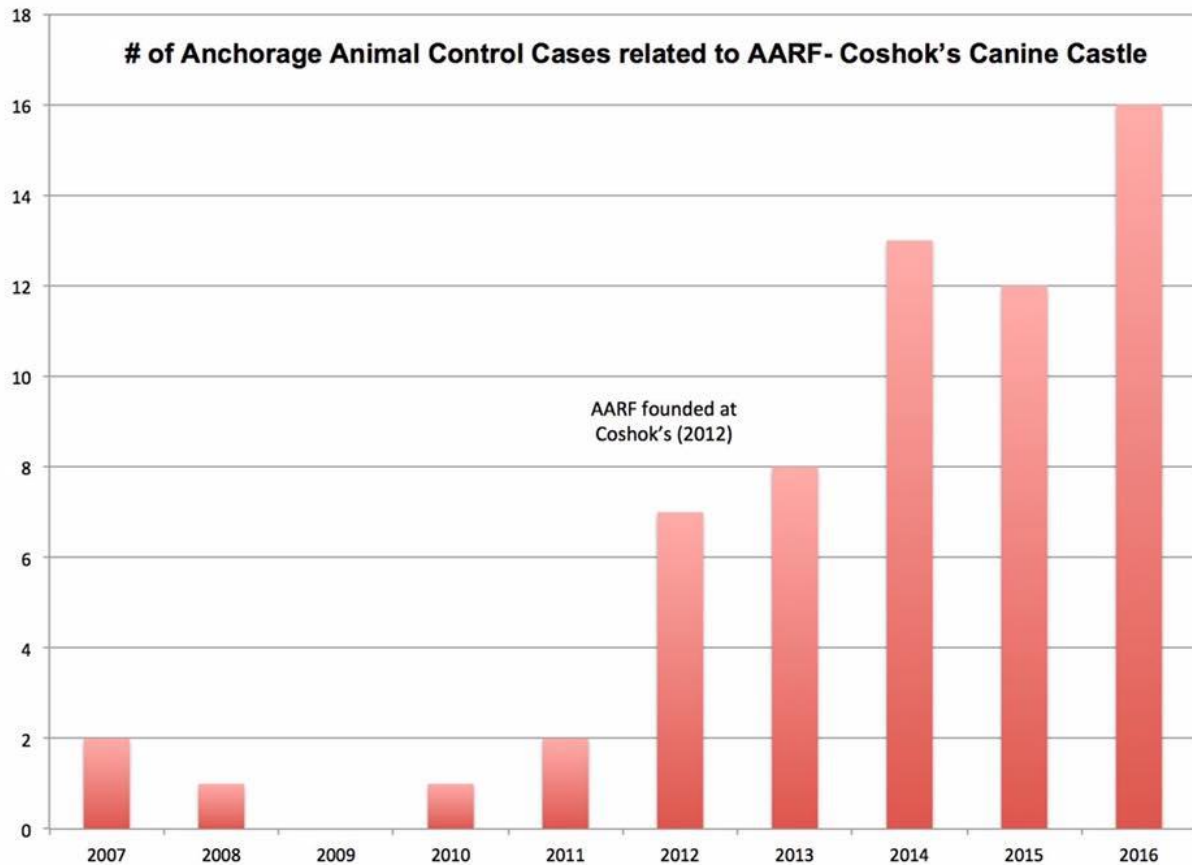
Interestingly enough, 1216 E. 70 Ave is also the facility used by Arctic Paws LLC, the makers of Yummy Chummies. There was an issue several years ago with Yummy Chummies’ preparation waste (salmon juice and glycerin) which was draining from their building into a drain in their parking lot and then into 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. Coshok’s Canine Castle has had at least 60 complaints about the health and sanitary conditions at the facility. On Thursday, September 22nd at 5:30 p.m. the Anchorage Animal Control Advisory Board Meeting was held at the Animal Care and Control Center and was attended by Dr. Northon and Dr. Eley from Anchorage Waterways Council. All of the public comments (~8 people) centered on Coshok’s Canine Castle and Alaska Animal Rescue Friends (AARF) who boards animals for adoption at

Coshok's. Figure 8 illustrates the number of complaints about Coshok's that Animal Care has received since 2007.

Figure 8.



Of all the animal boarding facilities visited by Dr. Eley, Coshok's was the nastiest in Anchorage with animal feces (including diarrheic feces) not cleaned up, dead rodents in dog food, and smells of urine. Although the main building is on city sewer, many dogs (including 3 sled dog teams) are housed outside so their feces and urine can enter nearby storm drains. Coshok's is a facility that could be adding *E. coli* to our creeks and bears close watching. Many people are fighting to have Coshok's closed because of their unsanitary conditions, but the Animal Control Board has been reluctant since closing down businesses is "politically" unacceptable to some of our Municipal politicians.

Anchorage Pets Lost & Found has been leading the fight against Coshok's and AARF and requiring higher standards for kennels. On October 2, 2016, they sent out a questionnaire on Facebook concerning Animal Care and Control (Appendix 3). The results of this survey are unknown. Many folks are concerned with House Bill 91 (Crime Bill) will result in lighter or no sentences for those convicted of animal related crimes.

As a postscript to the discussion of Coshok's Kennel, on October 21, 2016, the Chief Animal Control Officer, Capt. Bradley Larson, and the Director of Anchorage Animal Care and Control, Dr. Myra Wilson, denied the issuance of the Commercial Facilities License to Coshok's Canine Castle (Appendix 4).

3. One other issue of concern is the disposal of animal wastes from stables. The contention is that people come and get it for their gardens or that it is taken to the landfill. This contention hasn't 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 Parks and Recreation contends that riders do clean up after their horses and one individual reported seeing a rider clean up after their horse. However is not the always the case as horse manure has been seen on trails in Far North Bicentennial Park. Many riders take their horses across creeks or ride in the creek. Dr. Eley and Dr. Northon have ridden horses in the Talkeetna Mountains that defecated into creeks.

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 (particularly on sidewalks) can collect on the sidewalks and wash down into Cuddy Pond (Fish Creek), human food is not good for aquatic birds, 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...

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

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

APPENDIX 2

DISPOSAL GUIDANCE

Proper waste management and disposal is important to protect human health and the environment. Many materials and situations raise questions regarding the best way to handle or dispose of a waste. The guidance on this page is intended to help provide solutions for some of the most common and most asked about materials.

Contact Rebecca Colvin with additional questions at rebecca.colvin@alaska.gov or 907-269-7802.

Fish Waste

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 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:

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.

If you have local trash pickup, freeze the fish waste to eliminate odors and then put it out of the morning of your trash pickup day. Do not place waste out the night before or put it in commercial dumpsters.

Commercial Fish Waste

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

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

Related Regulations

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.

18 AAC 60.010(e) Land Application of Fish Processing Waste 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.

APPENDIX 3

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://kviksurveys.com/s/zutdqqu#/>

1/5

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 4

Municipality of Anchorage
Animal Care and Control Center
4711 Elmore Road
Anchorage, Alaska 99507
(907) 343-8122

October 21, 2016

Marion Randall
Coshok's Canine Castle
11801 Old Seward Hwy
Anchorage, AK 99515

Subject: Coshok's Canine Castle Commercial Animal Facility License

Ms. Randall,

Pursuant to AMC 17.15.080, the chief animal control officer may deny a special purpose license application on the following grounds:

1. The manner or method of keeping animals constitutes a health hazard to humans or animals;
2. The manner or method of keeping the animals violates any ordinance or regulation under this title; or
3. A present or prior violation of a term, condition or limitation of the license issued under this title.

The Chief Animal Control Officer has determined the commercial animal facility license should be denied on the following grounds:

1. **The manner or method of keeping animals constitutes a health hazard to humans or animals.**

On 9/27/16, Ms. Ausick indicated all of the 31 dogs present at the facility on 9/27/16 except three were Alaskan Animal Rescue Friends (AARF) dogs. She also stated many of these dogs came from Bethel, Alaska or the surrounding villages.

Ms. Ausick stated they take in a large number of animals from the Alaska "bush". Anchorage Animal Care and Control (AACC) has also received records that AARF is bringing in animals from California. A letter from one of the AARF veterinarians stated "In 2015 alone, my practice saw 561 different AARF animals that were presented for some form of veterinary care; many of them multiple times, for multiple reasons."

AACC has verified that at least one AARF dogs housed at Coshok's were diagnosed with canine parvo virus within the past year. Parvo virus is a highly contagious and infectious disease that can persist in the environment for months to years.

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).

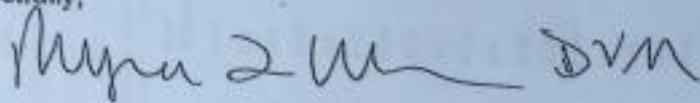
For the reasons observed in the 9/27/16 inspection and as described above, Coshok's Canine Castle has been and continues to be in violation of this requirement.

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.

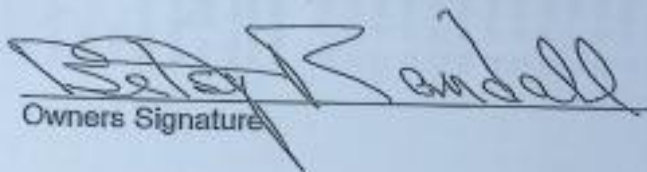
If you are able to meet the requirements of AMC 17.10.050, 17.10.030 and do not have any violations of Title 17 within one year of receiving this denial, you may reapply for a special purpose license.

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,

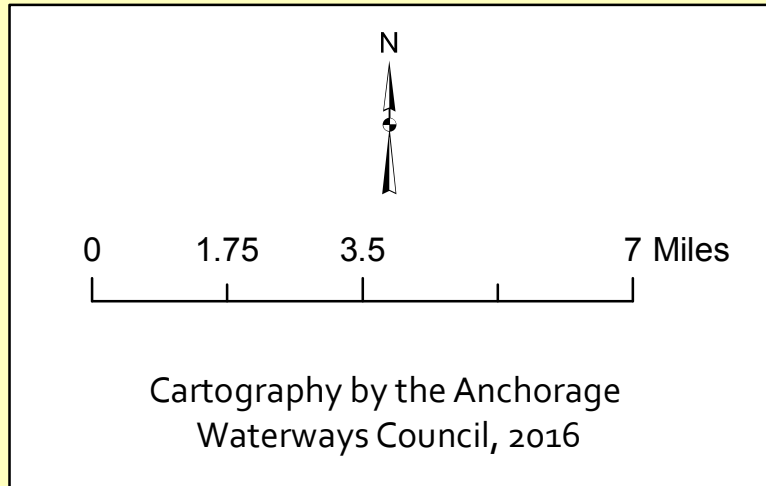
 DVM

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


Owners Signature

Date 10/21/16

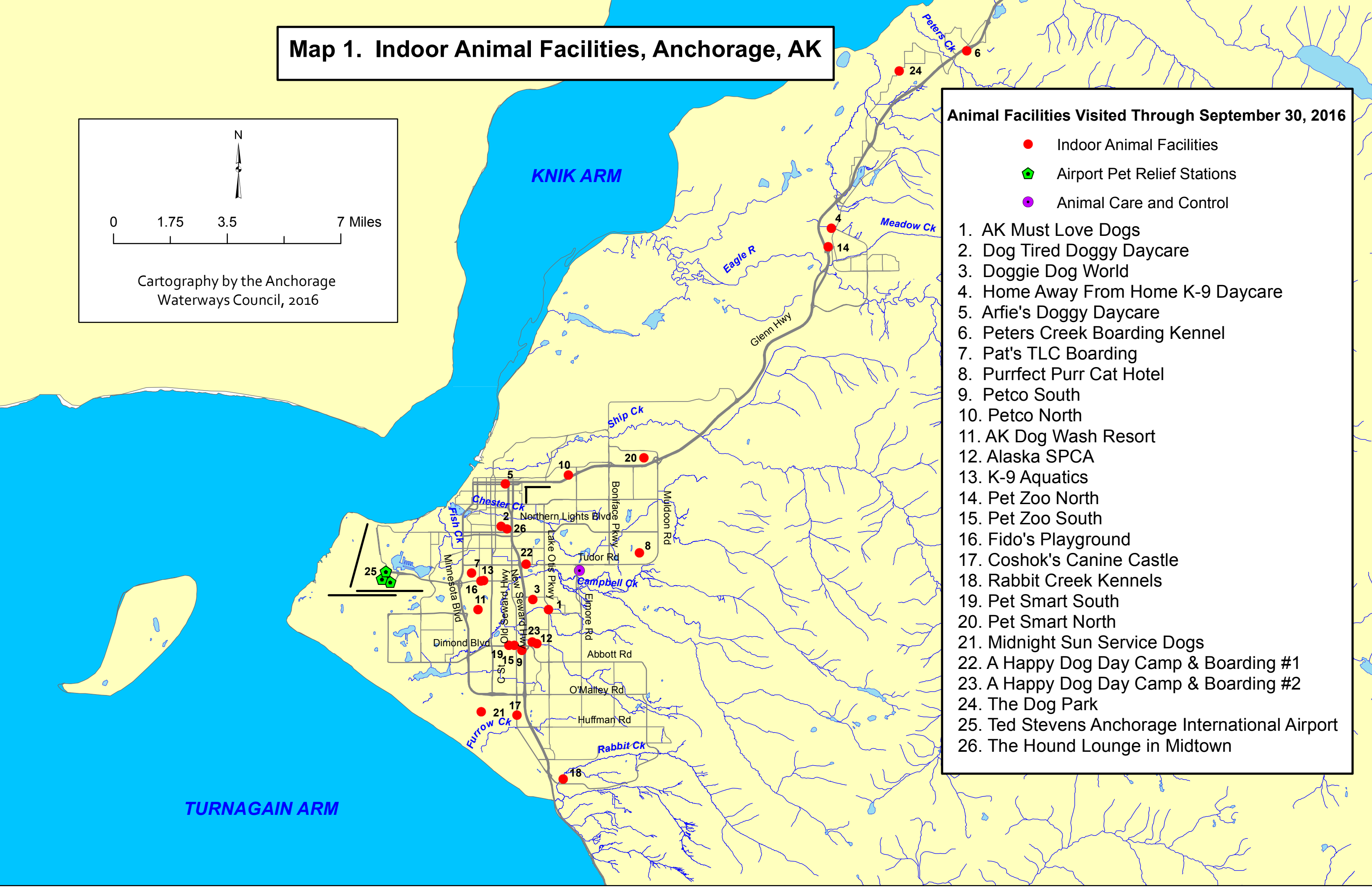
Map 1. Indoor Animal Facilities, Anchorage, AK



Animal Facilities Visited Through September 30, 2016

- 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. Coshok's Canine Castle
18. Rabbit Creek Kennels
19. Pet Smart South
20. Pet Smart North
21. Midnight Sun Service Dogs
22. A Happy Dog Day Camp & Boarding #1
23. A Happy Dog Day Camp & Boarding #2
24. The Dog Park
25. Ted Stevens Anchorage International Airport
26. The Hound Lounge in Midtown

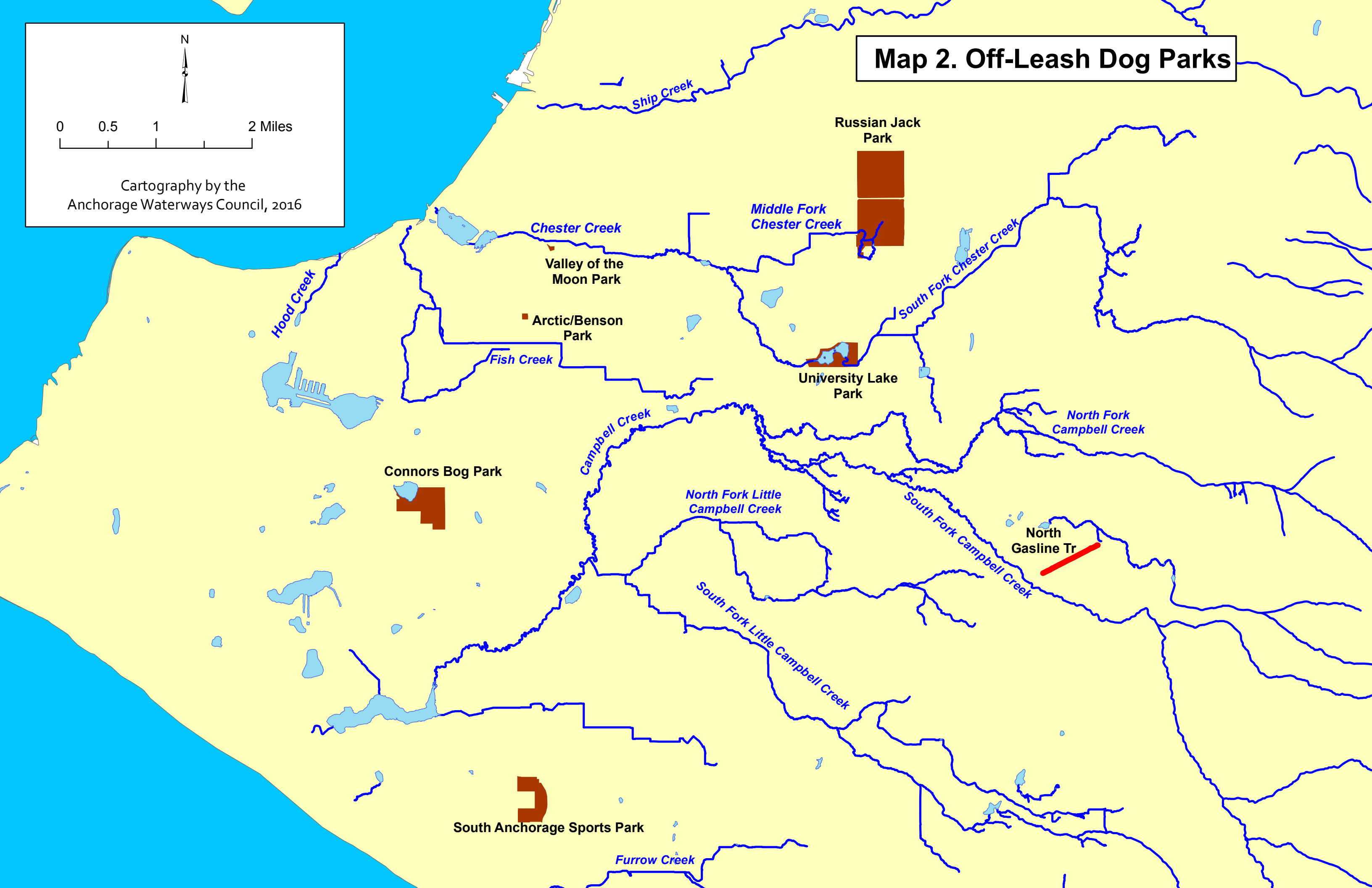


Map 2. Off-Leash Dog Parks

N

0 0.5 1 2 Miles

Cartography by the Anchorage Waterways Council, 2016

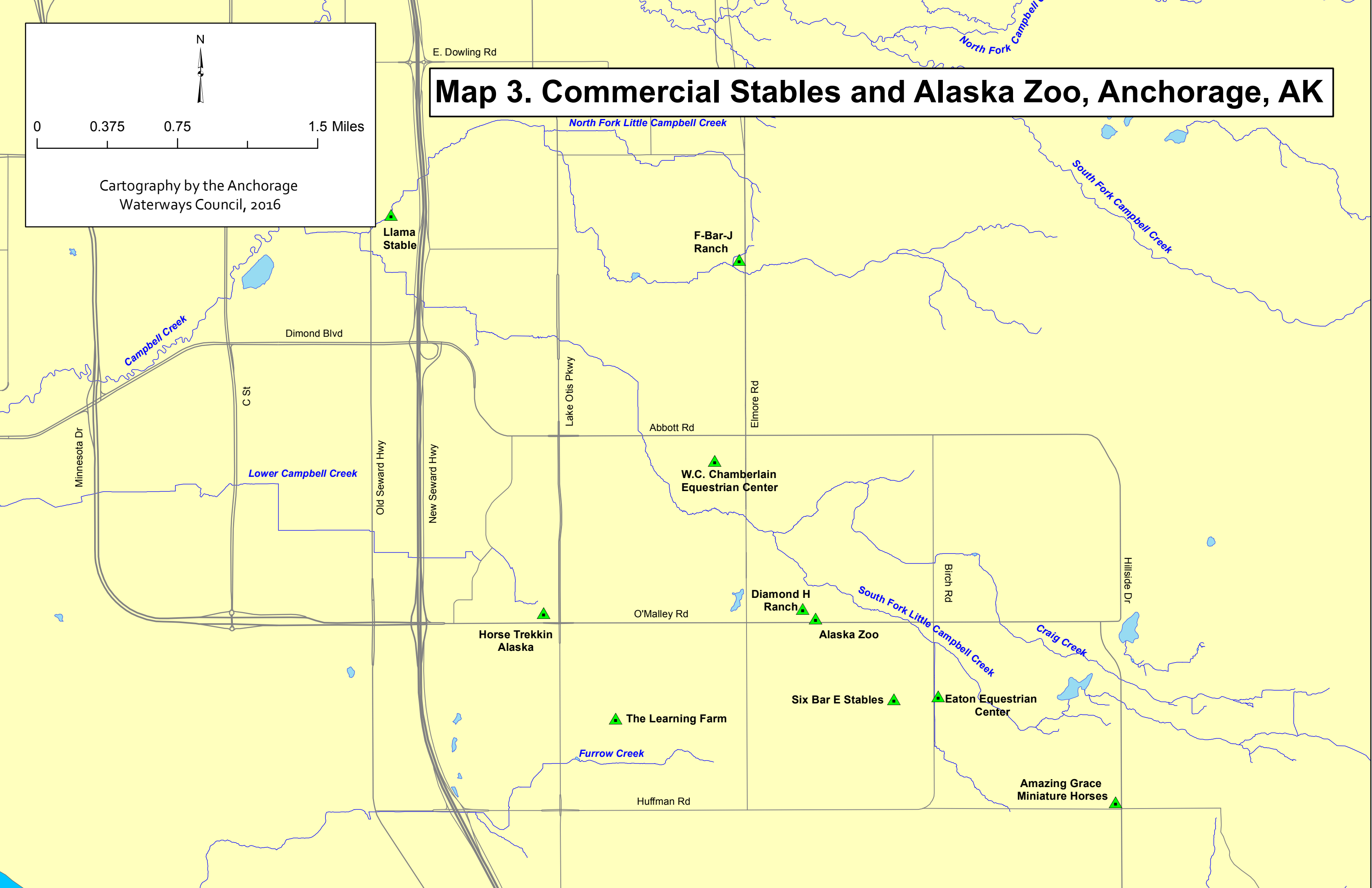


Map 3. Commercial Stables and Alaska Zoo, Anchorage, AK

N

0 0.375 0.75 1.5 Miles

Cartography by the Anchorage Waterways Council, 2016



Llama Stable

F-Bar-J Ranch

W.C. Chamberlain Equestrian Center

Diamond H Ranch

Alaska Zoo

Six Bar E Stables

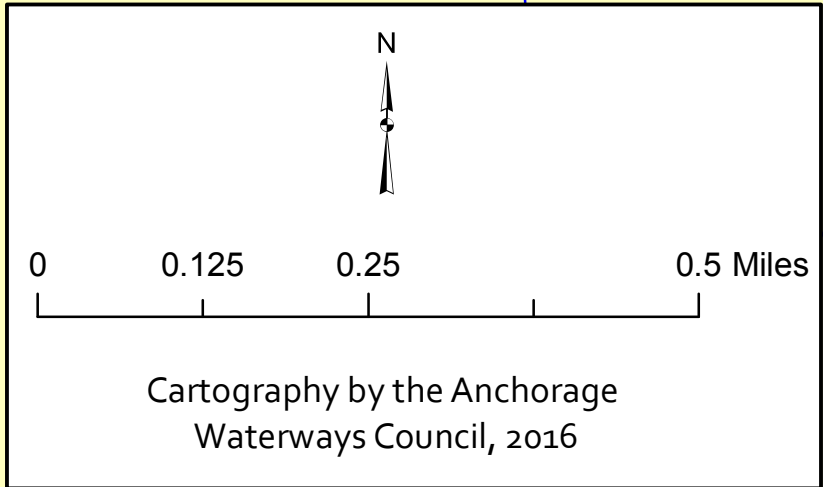
Eaton Equestrian Center

Amazing Grace Miniature Horses

Horse Trekkin Alaska

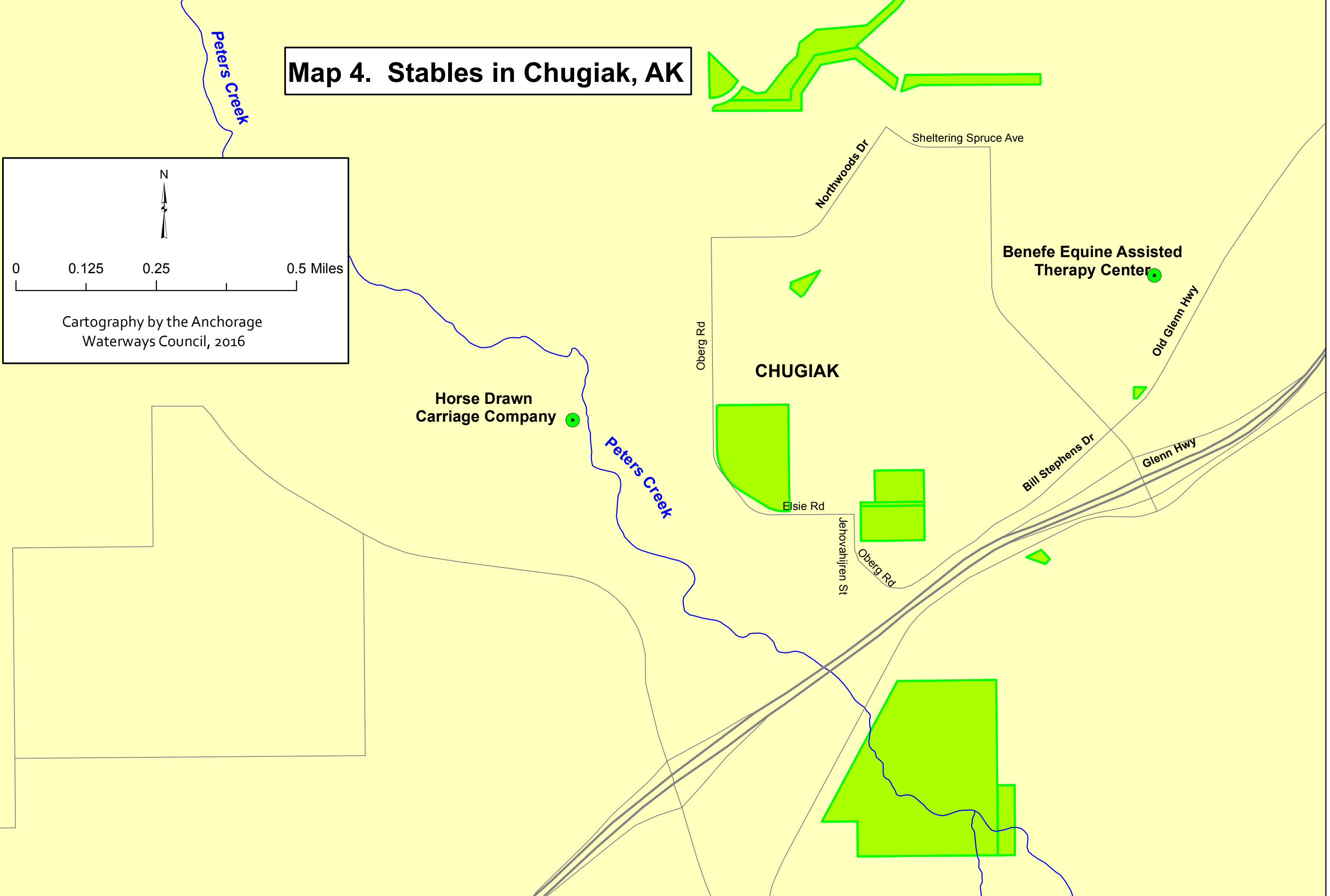
The Learning Farm

Map 4. Stables in Chugiak, AK



0 0.125 0.25 0.5 Miles

Cartography by the Anchorage Waterways Council, 2016



Map 5. Anchorage, AK Animal Venues

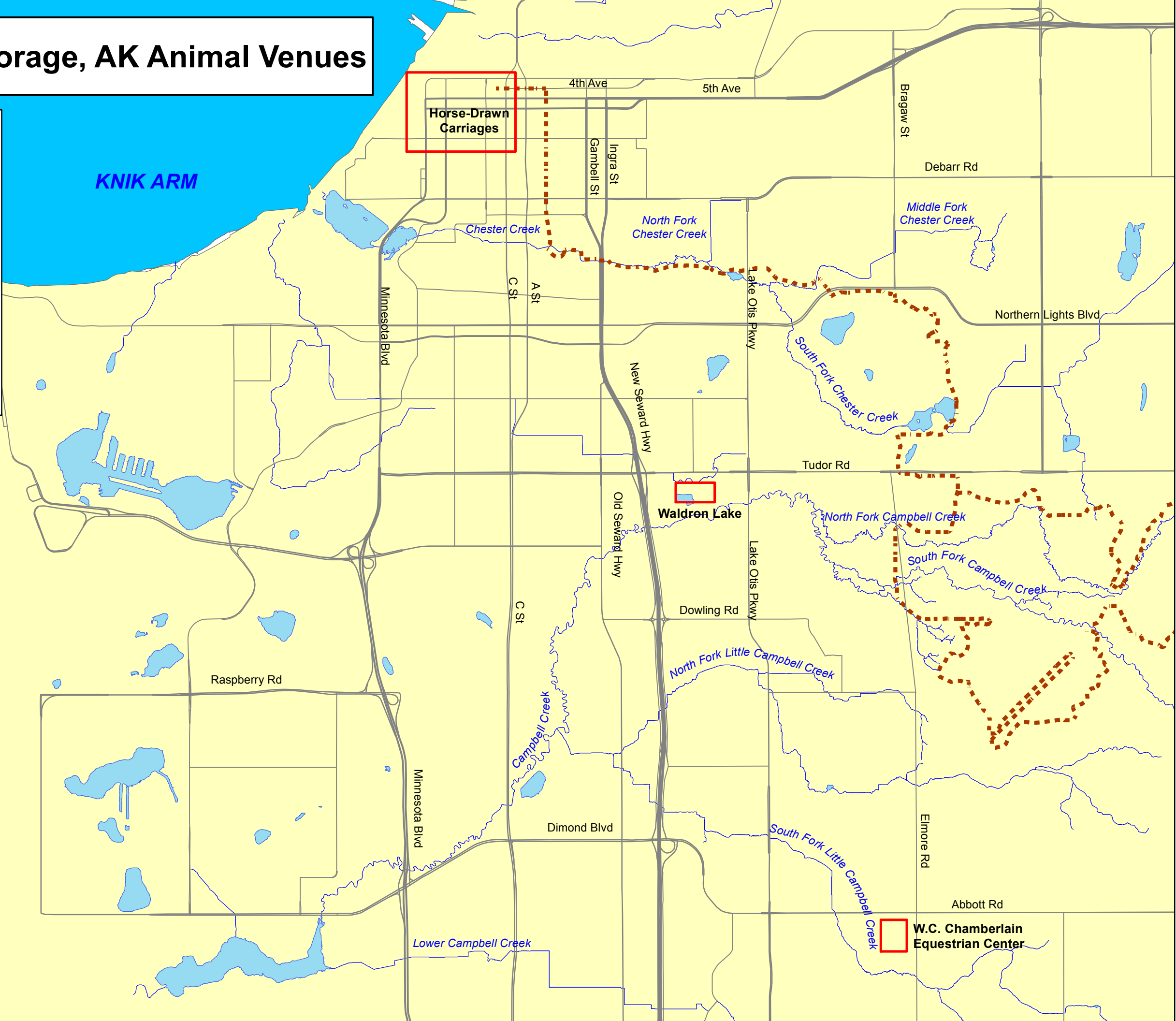
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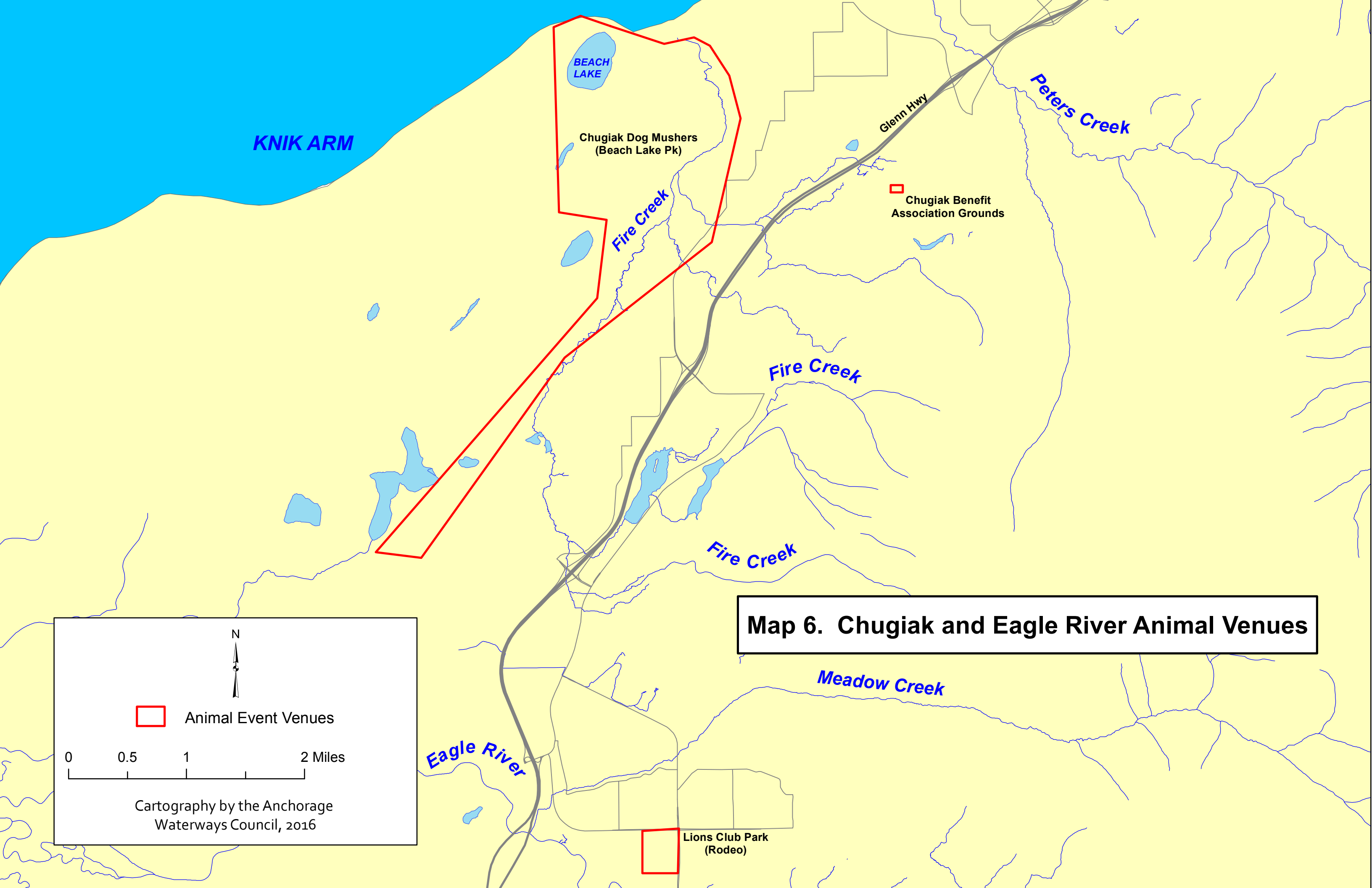
Fur Rondy & Iditarod Trails

Animal Event Venues

0 0.5 1 2 Miles

Cartography by the Anchorage Waterways Council, 2016





KNIK ARM

BEACH LAKE

Chugiak Dog Musers
(Beach Lake Pk)

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

Animal Event Venues

0 0.5 1 2 Miles

Cartography by the Anchorage
Waterways Council, 2016

EDUCATION OUTREACH AND INVOLVEMENT

Scoop the Poop 2016 Calendar

MONTH	Date	Event Name	Time	Location
January	1/27/2016	STP Meeting	10 am to noon	MOA
April	4/9/2016	Sears Garden Show	10 am to 2 pm	Sears Mall
April	4/16/2016	Earth Month- Scoop the Poop Day	11 am to 3 pm	University Dog Park & Connors Bog
April	4/25/2016	Paddlefest Tabling	7 pm to 8 pm	Bear's Tooth
June	6/26/2016	Pawstice (Alaska SPCA)	noon to 2 pm	Ruth Arcand Park
July	7/23/2016	Dog Jog	10 am to 2 pm	Service High
July	7/26/2016	YEP Outreach	9 am to 10 pm	South Anchorage Sports Complex
September	9/23/2016	Puppy Up Walk	5 pm to 8 pm	Delaney Park Strip



ANCHORAGE WATERWAYS COUNCIL

P.O. Box 241774 • Anchorage, Alaska 99524-1774
907 272-7335 • www.anchoragecreeks.org
Facebook (Anchorage Waterways Council)



March 31, 2016

Dear Alaska Pet & Yard Services,

WE WANT TO THANK YOU FOR WHAT YOU DO!

Have you heard of **ANCHORAGE WATERWAYS COUNCIL**? We are a local Anchorage based non-profit organization. In May, we will celebrate 32 years of caring for creeks. Our mission has been to protect, restore and enhance Anchorage's 26 municipal creeks. Some, if not ALL OF YOU, have been working alongside us, perhaps not even realizing it!! We thank you for this.

One of our more popular (and essential) programs is the **SCOOP THE POOP** campaign. Besides our annual April Scoop the Poop Day at a few local dog parks, we have been working the past few years on mapping the locations of over 100 Mutt Mitt pet waste stations around our city. Through a grant and our memberships, we have been able to increase the TOTAL number of pet waste stations by approximately 25% in just two years! The locations have been placed on our website at anchoragecreeks.org/pages/scoopthepoop_about.php. Please share these locations with your dog owner friends. If you're not sure what a Mutt Mitt station is, they are typically green metal boxes that dispense bags to pick up and dispose of Fido's droppings into the nearest trash receptacle.



WE ARE CONTACTING YOU TODAY WITH THE HOPE THAT YOU WILL

Share our message with your clients:

With over 65,000 dogs in our city, each depositing an estimated $\frac{3}{4}$ lbs. of poop per day, totaling over 24 tons EVERY SINGLE DAY, we need every pet owner, yard cleaner, and persons caring for dogs to join us in cleaning up. We have found that many people just don't realize the impact our furry friends have on the health of our creeks. By sharing our knowledge, many HAVE and WILL continue to *step up* to help keep our trails and parks *picked up*, but we still NEED your help.

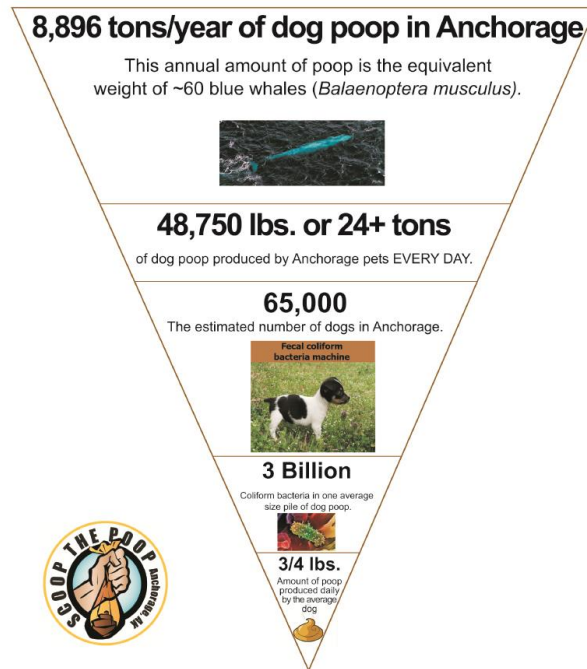
Some Facts:

- When dog waste is left to decompose on the ground, it eventually breaks down and is washed unfiltered into our storm drains where it goes directly into our creeks.
- The average pile of poop has some 3 billion harmful coliform bacteria.
- Once in our creeks and lakes, it can encourage excessive plant growth which deprives fish and other aquatic life of the oxygen necessary for survival...in other words, they can suffocate!
- Dog waste is NOT a viable compost/fertilizer. Most commercial dog foods are composed of meat or meat byproducts. This creates a highly acidic waste that is bad for your grass and can leave your yard with dead patches or no green at all.

Included with this mailout:

We are including informational fliers and rack cards with this letter. We encourage you to contact us so we can provide you with additional materials, which we hope you will hand out to your clients, tuck in door jams, leave at your vet's office and doggie day care centers/homes, share with your friends and neighbors, add to your welcome packets and take to any other dog-friendly locations that you may know of. We would be pleased if you would post information (jpegs are available from AWC) on your websites and social media pages. Please help us share our message!

The Poop Pyramid



**So, Scoop Your Poop and
Save a Whale!
And your local waterways too!**

Remember: Scooping Each Day, Keeps the Poop at Bay

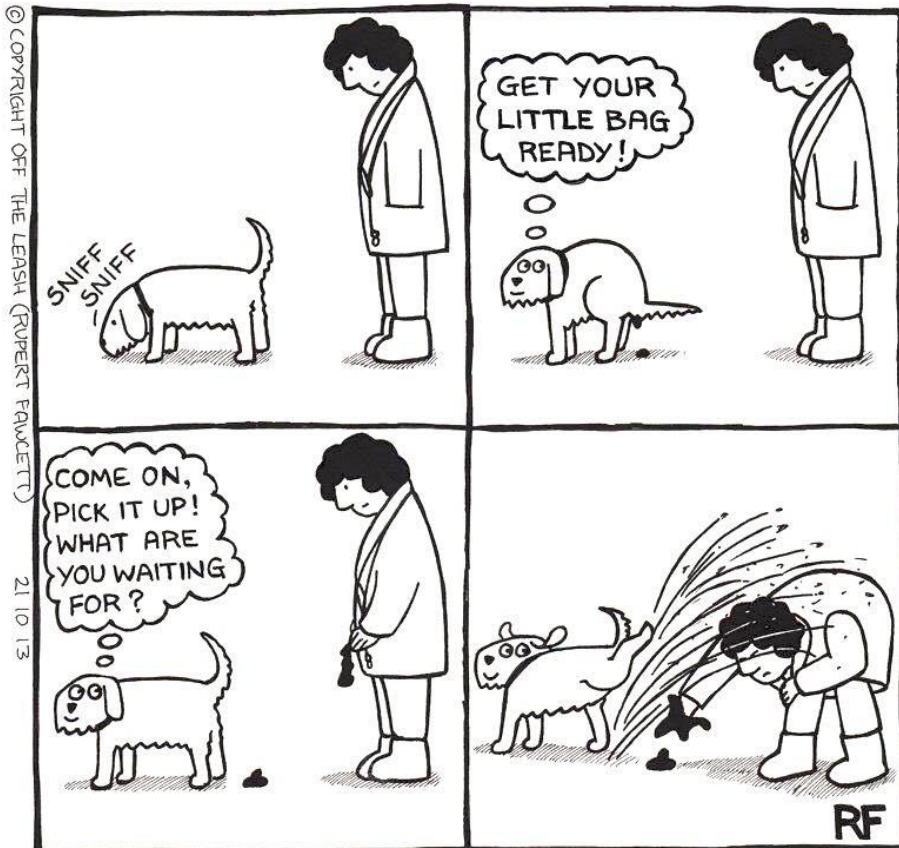
If you are interested in receiving our quarterly STP email updates or our free AWC monthly e-newsletter; please send an email request to awc@anchoragecreeks.org, give us a call (272-7335), or go to our website for instructions on how to sign up.

For more information about AWC, please feel free to call us and check out our website, anchoragecreeks.org and our TWO Facebook pages, *Anchorage Waterways Council* and *Scoop the Poop Anchorage*. "Like" our pages and help spread the word, not the waste.

From the team at *Anchorage Waterways Council* and the *Scoop the Poop Committee*



10/3/16



© COPYRIGHT OFF THE LEASH (RUPERT FAWCETT)

21 10 13

FACEBOOK.COM/OFF THE LEASH DAILY DOG CARTOONS

9/29/16



Puppy Up Event, 9/24/16



wildHow to Pick Up Dog Poop

9/23/16 (Keep your trails clean)



Anchorage has enough dog droppings to fill an 18-wheeler every day and a half. Think what impact this has on our clean water if not picked up! So, remember to Scoop The Poop! E. coli is deadly. E. coli is an abbreviation of the species name *Escherichia coli*, which denotes a bacterium commonly found in the intestines of warm-blooded animals. 9/23/16



9/1/16



The Scots don't have a lot of tolerance for dog poop left on the ground. The streets are very clean. This says: Your Dog, Your Mess, Our £ 40. 8/28/16



Stinky problem brewing at Westminster Hills Off-Leash Dog Park (article from Denver, Colo.) 8/2/16



Dog Jog, 9/24/16



9/14/16



New Mutt Mitt Station at Russian Jack Park, 7/2/16



New Mutt Mitt Station at S. Bivouac Trail Head, 7/4/16



New Mutt Mitt Station at Connors Bog, 7/2/16



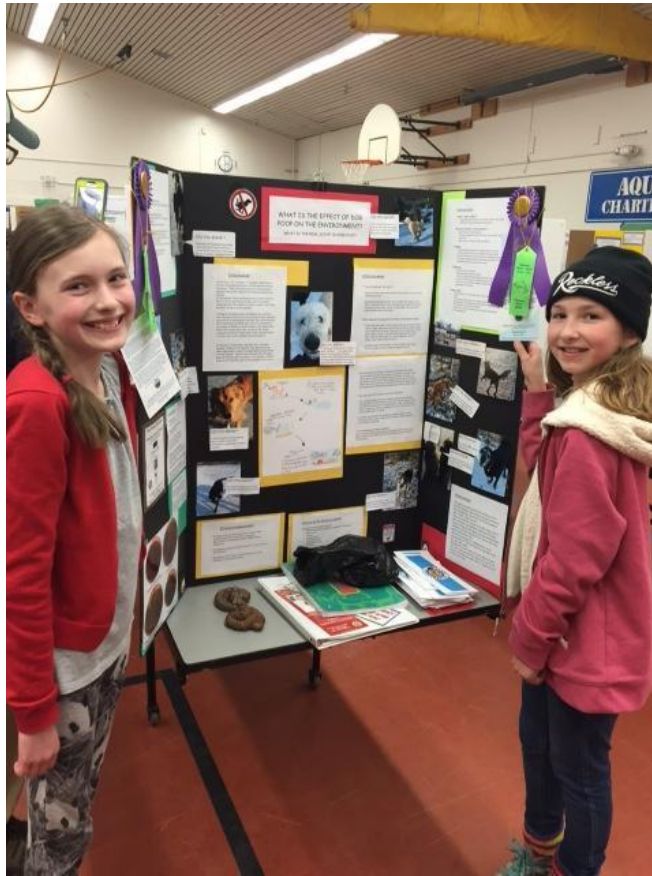
New Mutt Mitt Station at Taku Lake, 7/2/16



New Mutt Mitt Station at Waldron Lak3, 6/30/16



Mo and Jasper took their "mom" Tamera Zeller for a great hike along the Gasline Trail last Saturday for Scoop the Poop Day. The three of them grabbed about 2/3 of a bag on their 2.5 mile hike. Thanks, Mo and Jasper! Hope to see you next year. 4/16/16



The Real Scoop on Dog Poop: What Are The Effects of Dog Poop on Health and the Environment?

Two fourth-graders at Aquarian Charter School, Nicky Widdis and Madeleine (Maddy) Reckmeyer, did their science fair project on poop. It is titled, "The Real Scoop on Dog Poop: What is the Effect of Dog Poop on the Environment?" The project was inspired by all of the dog poop the girls saw in local parks, on the trails and even on ice skating rinks from dog owners who don't pick up after their dogs.

For their project, the girls looked at the potential effects of dog poop on water, air, human health, and animal health, with a particular emphasis on water, thanks to Cherie Northon and Thom Eley from the Anchorage Waterways Council. The girls were surprised to learn that every stream except one in the Anchorage bowl is considered "impaired" under the state standards for recreation use - and were even more shocked to see the levels of *E. coli* in samples they took around town, including a puddle in the park at Lake Otis and 48th Street, University Lake, and upstream on Campbell Creek. They explored different options for how to deal with dog poop, from "scoop it/bag it/trash it" to composting to using poop as a potential energy source. The girls hoped the project would increase their fellow students' and others' awareness about this nasty problem and the importance of folks picking up after their dogs.

The project was a huge hit at the Aquarian school science fair in early March, where it received a Grand Prize, Principal's Choice award, and a first place ribbon. The girls also took the project to the Alaska Science and Engineering Fair in early April, where it received a first place ribbon and was selected for a special award by the *Association for Women in Science* and the

Alaska Experimental Program to Stimulate Competitive Research.

(By Lisa Toussaint)

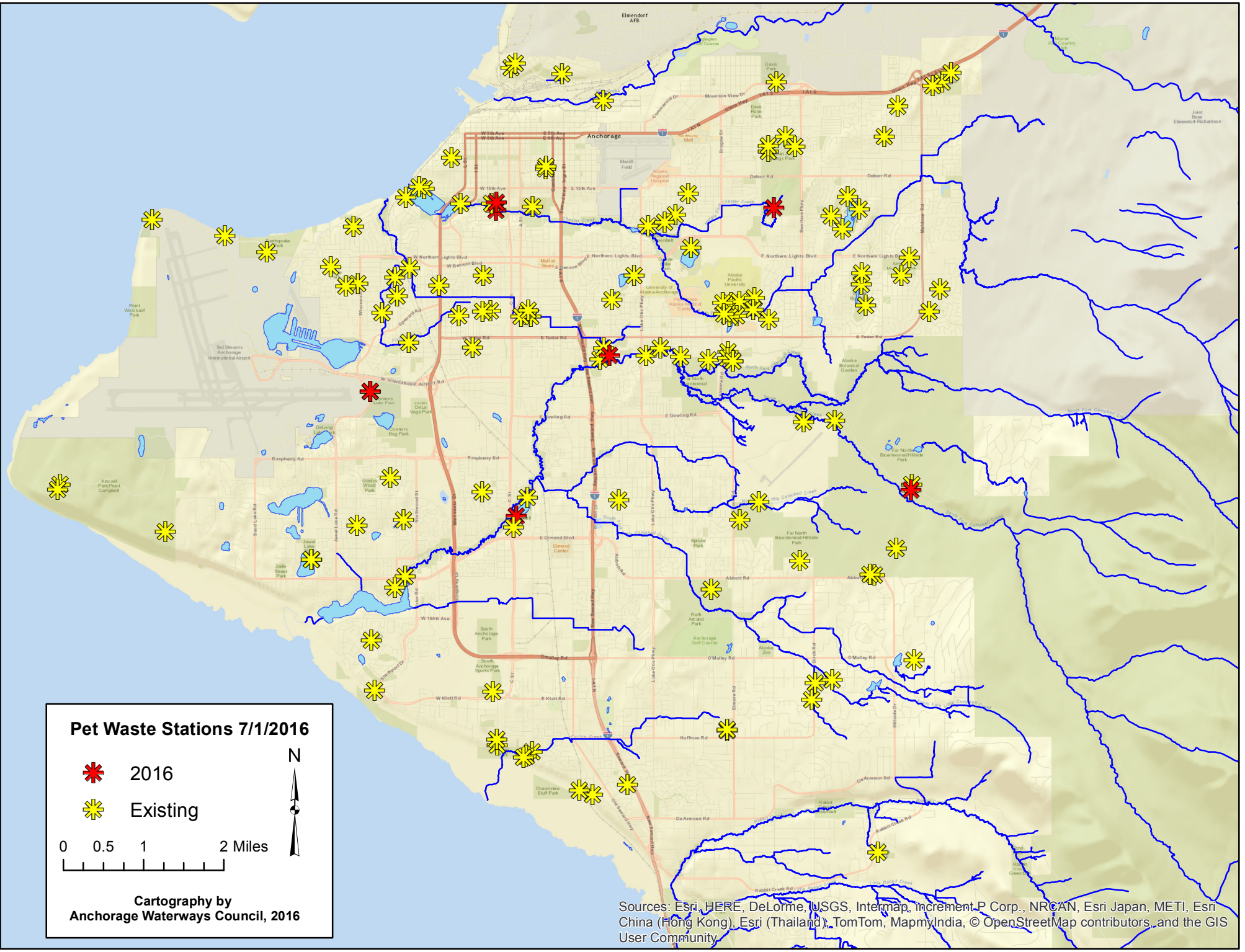
4/20/16



Scoop the Poop Day at Connors Bog, 4/16/16



Scoop the Poop Day at Connors Bog, 4/16/16



Pet Waste Stations 7/1/2016

 2016

 Existing

0 0.5 1 2 Miles



**Cartography by
Anchorage Waterways Council, 2016**

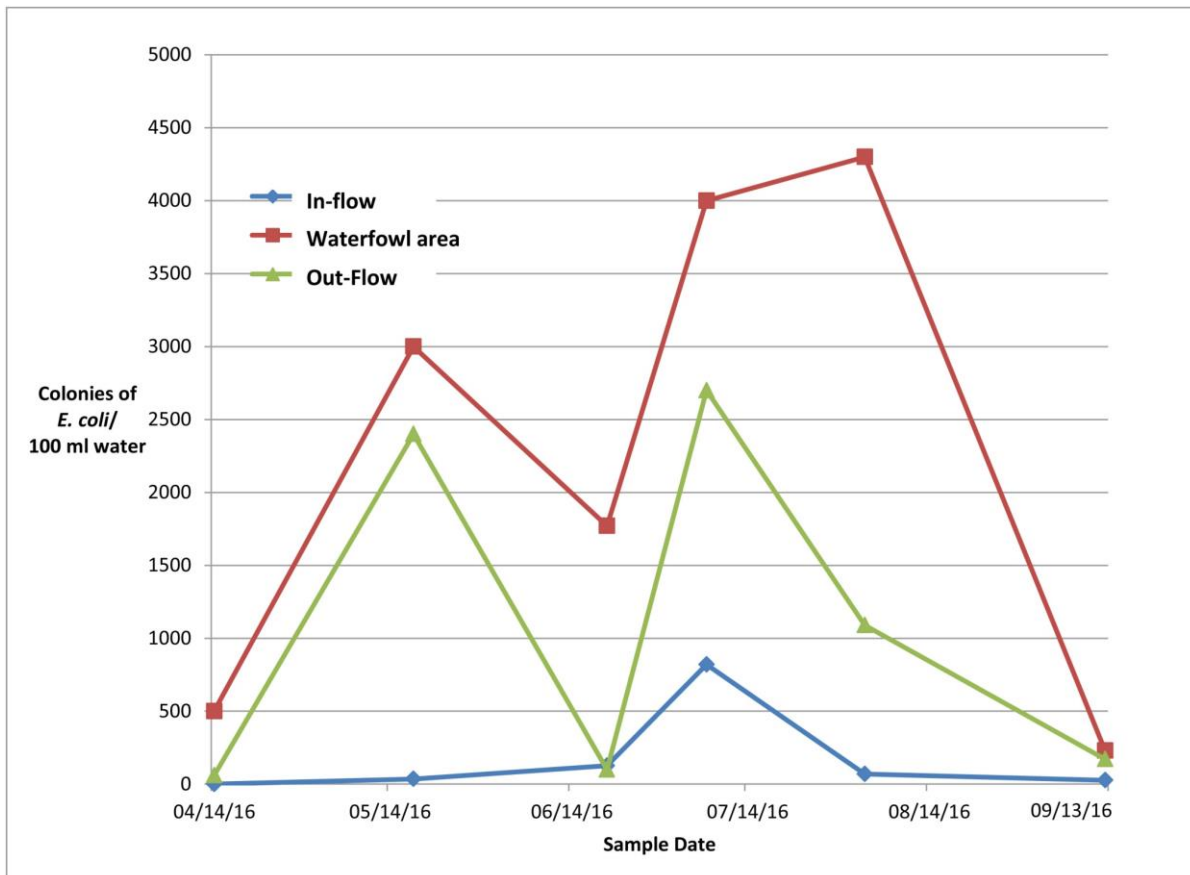
Sources: Esri, HERE, DeLorme, USGS, Intermap, increment.P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

***E. coli* at Cuddy Pond [Fish Creek], Anchorage, AK, 5 August 2015**

Samples collected by Dr. Thom Eley. Samples analyzed by SGS Laboratory.



Cartography by Dr. Thom Eley, Anchorage Waterways Council





ANCHORAGE WATERWAYS COUNCIL

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

June 9, 2016

Dear Chester Creek Neighbor

Some of you have lived in this area for several years, while others are relatively new. For a little history, the area north of your home where Walgreens is now located along DeBarr used to be part of a mobile home park as well as a poorly-designed channelized stretch of Chester Creek. The mobile home park is gone, and Chester Creek has been given a new lease on life with two major restoration projects. The first was just east of Begich Middle School where the original Grass Creek Village now sits, and the second involves the recent project that is east of Clearwater Village as well as across Muldoon through the old “greenhouse” property. Chester Creek is being “put back” into channels that are more natura--like they were originally.

A little information about creeks in general and in Anchorage. First, almost every waterway in the Anchorage “bowl” is anadromous, which means we have spawning fish in them. Requirements for this type of habitat include clear water (as free from sediment as possible), cool water temperatures, high dissolved oxygen levels, pH readings that are in a good range for spawning and rearing fish, and a few other parameters. These necessities are most often found in creeks and streams that have some nice meanders in them (rather than being a straight shot), lots of vegetation along the banks, some different types of substrates on the bottom (cobbles, rocks, sand, and gravel), and a healthy supply of fish food—commonly known as macroinvertebrates or aquatic bugs. These little bugs grow up in healthy water, provide food for fish, and sometimes hatch and become the common insects that fly fishermen/women use for catching trout and salmon.

Thirty or more 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 as an example), or worse. Fortunately, scientists and others see that a healthy and vibrant city should have waterways that are also healthy, thus little by little there are changes being made around town to return the creek environment back into a more natural state. In order to achieve the best results, there are other things that need to occur. One project that some of you lived adjacent to for about 3 years was the tarping of the creek’s banks to try and eradicate an invasive plant known as Reed Canarygrass (RCG). In May, Anchorage Waterways Council pulled the tarps up and reseeded the area. The RCG was eradicated under the tarps, but due to its plant structure it crept out from the edges of the tarps and spread to new areas. The method used was an experiment to try and avoid a common way of removing RCG with herbicides particularly because of the nearness of Chester Creek. A lot was learned from this project, and the results will be evaluated by several groups. Thank you for your patience in living with the tarps.

The reason for this letter is both to explain a little about the reason for the tarping project and to ask you all to be good creek stewards. Invasive plants are just one impact on creeks. There are several things that you can do near your residence to help bring Chester Creek back to a nice healthy state. Probably one of the biggest positive effects you can have is, if you own pets, to clean up after them. Quite a bit of dog poop was found on the tarps, and this 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. 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. Please contact us with concerns at awc@anchoragecreeks.org.

Thank you again,

Cherie Northon, Ph.D.
Executive Director



ANCHORAGE WATERWAYS COUNCIL

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

September 23, 2016

Great Land Realty Inc
11411 Old Glenn Hwy
Eagle River, AK 99577

Anchorage Waterways Council (AWC) was established in 1984 to help address the escalation of pollution in our city's waterways. I'm sure you know our creeks and lakes are a very attractive part of life in Anchorage, but they need to be cared for like anything else. As the Municipality's population has grown from 174,431 people in the early 80's to 298,908 today, it is imperative that we take action to keep this great resource clean and healthy.

We have been working with the Municipality for over 5 years to target specific activities that are particularly detrimental to our water environment. These activities include:

- Yard and property care and maintenance practices (landscaping, snow removal/storage, and paved areas)
- Trash and hazardous waste disposal issues
- Pet waste problems
- Chemical additives (fertilizers, herbicides, and ice melt)
- General stormwater runoff—which carries all of the above directly into our creeks untreated.

Since 2010, AWC has developed several outreach items to help educate residents and businesses about caring for our creeks and lakes— which provide a variety of recreational activities year-round and are the home to world class salmon and other fish and wildlife.

We are reaching out to property managers to share some of the resources we provide. Perhaps some will resonate with you as a means of keeping your properties in pristine condition, while also helping our creeks. Much is educational, and often people will change their activities if they understand what a creek requires to stay healthy while encouraging its critters to thrive. ***Did you know that certain macroinvertebrates (primarily what fish eat) cannot exist in polluted water?***

Some of the items we have are:

- Rack cards that can be hung on door knobs or added to your welcome packets to remind people about cleaning up after their pets.
- A tri-fold brochure that goes into detail on what happens when dog poop isn't cleaned up and is carried down into our creeks and lakes by rain and other runoff processes.
- Two other rack cards that focus specifically on creeks and lakes. Titled "How to Live with a Creek" and "How to Live with a Lake", they provide good tips covering a range of issues from chemical additives to car washing to yard waste.

We would like to offer to provide them to you at no charge to help educate your tenants, HOA members, and whomever you think would benefit.

We could also arrange to have someone speak to you or a small group to discuss these issues and answer questions. If you would like to participate or have questions, please contact me at 272-7335 or cherie@anchoragecreeks.org, and we can discuss how we can help you manage your properties in ways that benefit our waterways.

Best regards,

Cherie Northon, Ph.D.
Executive Director





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AWC UPDATE:

A message from the Executive Director, Cherie Northon



Posted on Facebook recently
by The Alaska Life

The image above appeared on my Facebook page this week. It pretty much says it all. But for those of you who have forgotten what that cold white stuff is, here is just a little reminder of how our neighborhoods looked a few years ago compared to this week.



**Snow height in March 2012
(photo by C. Northon)**



**Snow height in January 2016
(photo by C. Northon)**

Snow in Anchorage--and lots of it--is not a figment of our imaginations. We have seen it, shoveled it, skied and snowboarded on it, mushed through it, and watched it evaporate (really known as "sublimation") and melt during our "normal" spring breakups--not to mention about 3 times this winter. So, where is it now? This last week my neighbors were ice skating on our street, while ice skaters on some of the local lakes and lagoons were told to use "caution". Sled dog race organizers have serious and well-founded concerns about this year's races, and some routes are already being changed. The typical and most common answer is that this is an "El Niño" year.

Most of us have heard the terms "El Niño" and "La Niña" which have been attributed to Peruvian fishermen in the 19th century (although some claim the names may date back to the 1600s). Because these extreme weather events occurred close to Christmas, the Spanish term "El Niño" is thought to have evolved from "The Little Boy" or the "Christ Child". "La Niña" is Spanish for "The Little Girl" and refers to an anti-El Niño period or a "cold event". Recognized in a short 1891 article from the *Lima Geographical Society Bulletin*, President Dr. Luis Carranza called attention to the fact that a countercurrent was found flowing from north to south by sailors near Paita, Peru. In the same article Dr. Carranza suggested a correlation between heavy rains in an area typically without them coincident with the countercurrent. He speculated that this phenomenon undoubtedly was having a significant influence on climatic conditions along the Peruvian coast.

Fast forward, and "El Niño" has been recorded as an intermittent large-scale interaction between the ocean and atmosphere when there are periodic warmings in sea surface temperatures (SST) in the region extending across the central and east-central areas of the Equatorial Pacific. On a map this would be roughly between the International Date Line (180°) to 120° West which is the meridian that runs north and south through western Canada, Washington, Oregon, and California until it exits North America and ends in Antarctica. The north-south boundaries are approximately 5° of latitude on either side of the Equator. While this discussion relates to a local phenomenon that is impacting North America's West coast including Alaska, "El Niño" has global implications and impacts. For the sake of brevity many of the aspects of "El Niño", commonly referred to as ENSO (El Niño Southern Oscillation), will not be discussed here. Suffice it to say that it is a complex system with lots of variables. For more information, check out NOAA's many webpages devoted to it.

Fortunately the recognition that this situation has occurred multiple times led to some understanding of its episodic nature. The time between occurrences varies, but there is a general range of 2 to 7 years. The severity of the events differs as well. Some years are much stronger than others--most recently those have been 1976-1977, 1982-1983, 1986-1987, and 1991-1994. NOAA has synthesized the data into 3-month periods from 1950 which can be viewed in this [table](#). It is interesting to note that 2009-2010 had warmer SSTs, but they are considerably less than what have been recorded for 2015. The highest SST in the earlier period was 1.3° for two 3-month periods, while October, November and December in 2015 have hit 2.3° as a high--and it's not over yet.

What does this hold for us in Alaska and Anchorage? In October 2015, NOAA issued a forecast titled "[Strong El Niño sets the stage for 2015-2016 winter weather](#)". While much of this provides information for the continental U.S., there are also predictions for Alaska. For precipitation, it states that wetter-than-average conditions will most likely occur in southeastern Alaska. Drier-than-average conditions will prevail in central and western Alaska. Regarding temperature, above-average temperatures are favored in much of Alaska--which we have seen in many cases along with diminished precipitation. Conversely, this past week drought-stricken California has battled with extreme rains, snow, mudslides, floods, high surf advisories, and warnings about unsafe water conditions from stormwater runoff, while we sit here in relatively warm weather with little to no precipitation.

Clearly these changes in weather patterns have a variety of regional impacts. Locally, it's economically devastating for our ski resorts and ski facilities as well as for events such as Fur Rondy and the Iditarod. Mentally, it is trying as well. There is less light from the snow's reflection after dark during winter, freeze and melt cycles have resulted in horrific ice that is

dangerous for drivers and pedestrians, and other than riding fat-tire bikes--our normal winter sports on Anchorage's trails are non-existent or downright treacherous if attempted.

What about our snow pack? Snow pack typically is not something that is a topic of conversation in Alaska. California, yes, but not here. The Chugach Mountains, which are the headwaters for many of our urban creeks, have not really had a decent cover of snow yet this winter. Two of our primary sources for drinking water are Eklutna Lake and Ship Creek--both fed from the snow pack in the Chugach. Many residents are on wells that depend on groundwater replenishment, which is important for the refilling of aquifers. Several of our waterways depend on groundwater as part of their normal flow. How will they fare with possibly less snow pack this year? Will our creeks run lower than normal? Will some dry up intermittently? Will water temperatures rise? All of these conditions affect our migrating, spawning, and rearing salmon as well as our recreation opportunities in creeks and lakes.

Earth's water is limited--it is a closed system. If we waste or pollute it, there is no more. This became critically clear in California over the past few years as the drought in the West continued until the current El Niño conditions have finally brought some relief. And, while there is much rain and snow helping to refill reservoirs, aquifers, and the snow pack as I write this, there are also warnings for the state's residents to not abandon water conservation. According to climatologist [Mike Anderson](#) of California's Department of Water Resources, "California's water deficit is so deep after four years of drought that a steady parade of storms will be needed for years to come."

Let's celebrate our good fortune as a state that has not been prone to drought (yet). We have valuable water resources in our city that need to be cared for, and that is the mission of the [Anchorage Waterways Council](#). As we head into Spring, AWC will provide tips on how each of us can save and protect our precious water. If we all pitch in, we will make a difference.

The December Trash Survey Results

In our last e-newsletter, I invited readers to take a short survey on attitudes towards trash. Thanks to all who participated.

The majority of the respondents prefer to keep trash cans nearby where they recreate, but if they were removed the same number would be willing to pack their trash out. Everyone recycles! Half the respondents have dogs, and most of them scoop the poop ALWAYS while a few do SOMETIMES. Poop bag disposal is usually at the nearest trash can or they take it home, which is most easily accomplished if you are walking. An interesting comment may have answered one of the most burning questions many of us have about unattended bags of poop that are left hanging in trees, bushes, or on the ground. A respondent said, "***The one situation where I have a hard time is with my dog's poop bags. I have yet to find a convenient and pleasant way to pack those for long distances, especially during activities like skiing and running. I've tried different solutions, like tying it to my ski pole, but it flops around, smells, and I'm afraid I'm going to fall on it and break it open and get smelly germy dog poop all over me.***" So, now we know. Someone needs to invent a poop bag carrier that allows easy and safe transport of the poop until it can be disposed of properly.

How can you help AWC maintain healthier creeks?



Donate to AWC with Pick Click Give (PCG)

Anchorage Waterways Council is part of the Pick Click Give program, and has received several thousands of dollars from generous Alaskans who select us as one of their charity choices when filing for their PFD. You can read more about how your donations help our creeks on the PCG site under [Anchorage Waterways Council](#). Thank you for considering us and all the other great charities in our state. And, PCG has just announced that 10 lucky donors will be chosen to receive double their dividend. Details are on the [Pick Click Give site](#).

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 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**" button, to join, renew or donate, or click the "**Join 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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UPDATE:

A message from the Executive Director, Cherie Northon

For this e-newsletter, I had the good fortune of having a guest contributor, AWC Education Director and Researcher, Dr. Thom Eley. Thom heads up our ever-popular "Creeks as Classrooms", and we decided to share some information about the program with our readers as it won't be long before the creeks will be accessible again and kids will be out there in them.



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

Paul and Meyer, 2001,
Streams in the Urban Landscape.



"Creeks as Classrooms" introduces more people, primarily K-12 students, to Anchorage's urban creeks than any other program in Anchorage, and is one of Anchorage Waterways Council's (AWC) most successful. Annually, with the ongoing multi-year and generous support of ConocoPhillips Alaska, over 5,000 K-12 students and their parents and teachers learn about the various creeks and watersheds running throughout the Municipality of Anchorage. Because Anchorage is a multi-cultural city with 100 languages being spoken at home besides English, "Creeks as Classroom" has

brought students of most of the 99 non-English speaking cultures to experience our creeks, something that they may not have had in their home countries or even here.

We are fortunate in the Municipality that most schools are within walking distances to creeks, so students can have an actual hands-on experience. Thom likes to refer to this particular program as "Kids in Creeks" as he endeavors to have them do more than observe. In his opinion, "[y]ou truly don't experience a creek unless you are in the creek itself. Just looking at one is nice, but not the same as feeling the water rushing by your boots and your feet in the mud or walking over rocks or having a salmon swim by." Creek programs are held rain, shine, or snow. He has conducted some creek work with students just as the creek is starting to freeze with grease ice forming on the water's surface. This provides students with a rare view of their creeks.

Many of our creeks become invisible during the winter as they are frozen or covered with snow. People pass them and generally don't give them much thought--out of sight, out of mind--although there are many intrepid souls who x-country ski on them. And, we know for a fact that juvenile salmon and other fish live year-round under the ice. Working creekside in the winter can be dangerous, so when there is no access to safe open water, he takes the programs into the classrooms and works with teachers on the water-related parts of their curricula, i.e. the hydrologic cycle.

Creek and stream work with classrooms includes identification and categorization of aquatic macroinvertebrates, water quality monitoring, stream hydrology and ecology, and watershed consciousness. In one field exercise, he had Begich Middle School students (6th grade) compute the amount of water passing their school using the flow equation used by geographers, geologists and hydrologists-- $\text{Flow (ft}^3/\text{sec)} = \text{Width} \times \text{Mean Depth} \times \text{Velocity}$. The students got into the creek and computed an average stream width of 10.0 feet, mean depth of 2.0 feet, and a velocity of 5.0 ft/sec. Using the flow equation this computes to 100 ft³ of water flowing past a point every second. While this may not impress students at first, he reminds them that 1 ft³ of water is 7 gallons. Thus 42,000 gallons flow past per minute, 2,520,000 gallons per hour, and an amazing 60,480,000 gallons per day. These figures really catch their attention.



The most popular part of our program involves the aquatic macroinvertebrates which are done either with individual classes or in large organized events such as BLM's "Water Days". "Water Days" are held over three days in September, and AWC staff work with six classes of 4th graders per day (approaching 1,000 students total) to collect and identify aquatic macroinvertebrates from Campbell Creek in the Campbell Tract. We also do the same with individual groups both in the field and in the classroom, summer camps, school district programs, Girl Scout Water Days, and science nights at various schools.

Aquatic macroinvertebrates never cease to mesmerize students. Even the most hardened high schooler ("I don't like science") can get caught up in looking for and identifying "bugs" in the water--

screaming "I've found one. I've found one, come see, Mr. Thom. What is it?" Thom says that he finds that macroinvertebrates are magical to students--something they'd never heard of or seen--and these bugs just grab their imagination. It is incredible and a great way to help introduce ideas of stewardship.

2016 already looks to be a busy one for "Creeks as Classrooms". East High science teacher Arnold Harder, who AWC has worked with in the field and classroom for a few years, is testing out some of our new monitoring technology that will become part of AWC's re-designed volunteer CEMP (Citizens' Environmental Monitoring Program). Several teachers are already contacting us now as they want to get out and have their students look for bugs as soon as the creeks open up--which could be any day now! It is a fun program for AWC staff as well as students, teachers and parents.

AWC would like to thank the following for their help with "Creeks as Classrooms": ConocoPhillips Alaska for their continuous support without which the program would not be possible; Intern Ashana Armstrong (APU Biology Student); Bob Mitchell (long-time CEMP and classroom volunteer); and Bob Shipley (Vice President of AWC and expert on bugs). We would also like to thank all the teachers for having us; the students for their enthusiasm; and 2015 chaperones who were very attentive and as a result, not a single student needed to be pulled out of the water this year!



If you are interested in getting a class or group signed up for an event, email Thom at Thom@anchoragecreeks.org. And in the immortal words of Aldo Leopold,

"Like winds and sunsets, wild things were taken for granted until progress began to do away with them. Now we face the question whether a still higher 'standard of living' is worth its cost in things natural, wild and free. For us of the minority, the opportunity to see geese and streams is more important than television [or social media]."

OTHER HAPPENINGS: The "*Chester Creek Flooding Project*" is currently underway to address flooding along the Chester Creek corridor from A St. to Westchester Lagoon. This has been a recurring problem for many years that impacts property owners, vehicle traffic, and trail users. More information is available at the project [website](#). Anchorage residents are also encouraged to respond to a project questionnaire which can be found at: www.surveymonkey.com/r/ccfproject.

As a reminder, AWC is a non-profit membership organization that relies on donations, grants, and contracts to fulfill its mission. If you are not already a member, please consider joining. If your company has an employer-match program, these can help bring revenue to our programs. Many of our projects are funded, and some are not. After 18 years of providing volunteer water quality monitoring through CEMP, we have had to suspend the program until we can find more funding. The monitoring protocols have been simplified to gather the most important pieces of information at a reduced cost, and our sampling is completed entirely by volunteers. Regardless, there are expenses for the chemicals and materials we need as well as staff time to archive the data and enter it into a database. It is our hope to restart the program in spring when the creeks open up and not miss a

beat. These data are useful to many, and it is our goal to make them easily accessible to those who are interested.

AWC is also part of **Pick, Click, Give**, and this is a great way to support your favorite non-profits. And, ten of those choosing to donate part of their PFD this year will be entered into a drawing to get a second PFD! So, help a charity in Alaska and maybe double your dividend. Thank you to all who are members and contributors especially to AWC. It does make a difference.



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AWC UPDATE:

A message from the Executive Director, Cherie Northon



Splash created by a car driving through standing water

It seems like there have been a lot more puddles and splashes than snow this year. How many break-ups has Anchorage had this winter? Most of us have probably lost count by now. Aside from the occasional drenching of pedestrians or cyclists or the complete inundation of your car's windshield while driving or uncontrolled hydroplaning, there are other hazards which are the result of too much water on an impervious

surface (i.e. a street, highway, or parking lot). It is, of course, compounded during winter when the ground is frozen in areas where some water is not able to percolate down below the surface and consequently even more is added to the runoff.

In a large urban area such as Anchorage, there is a complex infrastructure beneath many of our streets and roads. It is a "storm sewer system". This is in addition to the "sanitary sewer system" which carries liquid waste from buildings to the sewage treatment plant. In Anchorage, the plant is the John M. Asplund Water Treatment Facility located near Ted Stevens International Airport and discharges into Cook Inlet, while Eagle River and Girdwood have their own treatment plants that empty into Eagle River and Glacier Creek respectively.

Regarding stormwater runoff, AWC likes to remind people that "what's on the ground, washes down". That means that anything left on the ground will most likely be carried into the Municipality's stormwater sewer system by way of storm drains and then discharged into the nearest creek or lake.



Various stages of storm drains (spring, summer, winter break-up)

Some of the items washing down storm drains include: vehicle fluid drips; pet waste that has not been picked up; sand and gravel placed on roads for traction; trash, litter, and cigarette butts; snow melt and yard chemicals; car washing detergents; and a myriad of other things. As long as a storm drain is open (not frozen over by snow), these pollutants all run into the stormwater sewer system and then directly--without any treatment--into our creeks and lakes where much eventually ends up in Cook Inlet, the Gulf of Alaska, and even the Pacific Ocean.



Stormwater sewer outfall from storm drains flows into Little Campbell Creek

Known as "MS4s" (municipal separate storm sewer systems), this is one of two ways that metropolitan areas move their sanitary and stormwater out to sea, and Anchorage is a MS4 city. The other method is a combined sewer system (CSS) where a single pipe can carry sewage, stormwater runoff, and industrial waste to a treatment plant. The problem with a CSS is that inundation by any of these inputs can exceed the system's capacity and UNTREATED sewage and industrial waste can then flow into lakes, creeks, and other water bodies. Generally, Anchorage's system is the preferred, although not every home or building is part of the MS4--many still remain on septic systems, such as on the "Hillside".



Stormwater outfall from C St.
into Chester Creek—some trash is captured by a grate.

The Municipality (MOA) along with the Alaska Department of Transportation and Public Facilities (AKDOTPF) are tasked with maintaining compliance with the Alaska Pollutant Discharge Elimination System (APDES) permit that is overseen by the Alaska Department of Environmental Conservation (ADEC). The permit is written up with conditions that help the MOA and AKDOTPF comply with the [U.S. Clean Water Act](#). The APDES permit is over 50 pages long and covers quite a variety of actions and issues. Typically they are renewed every 5 years, and each year there is an Annual Meeting to bring all the participants together to share ideas of what has happened during the previous year and where and how the two entities are going forward for the next year.

On March 1, 2016, the MOA's APDES Annual Meeting was held, and all attendees were updated on a variety of matters. Some of these included Green Infrastructure/LID (Low Impact Development) projects in Anchorage, erosion and sediment control, changes to compliance documents, and a poster session showing issues with culverts, results of wet and dry weather screening for discovery of illicit discharges, construction site runoff control, measures of success through outreach and education, and many other topics.

AWC is fortunate to be a part of the group working to keep the permittees and our city in compliance. One of AWC's primary tasks is outreach and education about stormwater and runoff. Under this "umbrella", we work to educate residents and businesses about the various types of polluting

items that can easily be washed down a storm drain and the effects that they have. As an example, one of our biggest areas of concern is pet waste, because every creek in Anchorage except Rabbit has been designated as having a fecal coliform impairment (exceeds the maximum allowable fecal coliform colonies for primary and secondary contact during recreation)--and the most likely culprit is dog poop that has not been cleaned up and is washed down into waterways.

The MOA estimates about 65,000 dogs live here. Multiply that by .75 lbs (of poop) and that is about 24 TONS of pet waste deposited DAILY. It's quite apparent from what is on the ground that not everyone picks up after their pet(s) when out and many don't clean up their yards often enough. There are MOA fines if one gets caught not cleaning up their pet's waste. (Fines range from \$100 to \$250!) It's a shame that there is even a need to fine people for what should be a courteous and environmentally sound action especially for our waterways, but that's the case.

Fecal coliform is a human health issue. In a waterway if the fecal colonies reach above a certain level there can be serious health impacts on humans and even their pets. So, if you have a dog or two or more, please do the right thing and clean up. Carry bags with you or use one from any of the more than 100 Mutt Mitt stations placed around the Municipality. Let's all work to clean up the health of our creeks.



Mutt Mitt station at Cheney Lake/Baxter Road (photo by Vangie Wight)

As part of AWC's education and outreach campaign, the [Scoop-the-Poop Committee](#) will be holding its annual Scoop-the-Poop Day at the beginning of Earth Week. Two dog parks, University Lake and Connors Bog, will have volunteers out with bags, gloves, buckets, and cleanup tools on Saturday, April 16, from 11-3. Come on out and give our city a hand particularly if you are a pet owner. More information can be found on our [website](#). All you need are boots and enthusiasm (but you can always bring your own tools as well).



Be the Solution to
POO-llution

University Lake Connor's Bog

 Super Scoopers Unite...

SCOOP the POOP Day!
Saturday, April 16, 11 - 3!

WHY? Because we all want clean parks and healthy waterways.

All equipment will be provided

Free Thank you gifts.

 **Details at:**
anchoragecreeks.org
or  **at**
Scoop the Poop Anchorage



If you would like to read more about AWC's work with the MOA on their MS4 Permit, we have posted two surveys on our website that were taken

by Anchorage residents in [2010](#) and [2014](#). Comparisons have been done about our citizens' perceptions regarding waterways, their habits, how they recreate, and more during our 4 years of outreach. In some cases, major improvements have been accomplished, and in a few areas there is more work to be done. This is one method for assessing the results of our programs.



SAVE THE DATES

April 9 is the **Mall at Sears Annual Garden Show** from 10 am to 5 pm. Stop by our table and enter our drawing for one of two \$25 gift certificates from Alaska Mill and Feed. Get a jump on your gardening!

April 16 is **Scoop the Poop Day**, 11 am to 3 pm, University Lake and Connors Bog. Information on the AWC [website](#).

May 12-15 will be **AWC's Creek Cleanup 2016**. You can choose a [location](#) and [sign up a team](#) in advance, or show up on Saturday, May 14, at University Lake or Westchester Lagoon for supplies. ***AWC is also experiencing a shortfall this year in funding for our largest event. If you have an idea to help cover our expenses to organize and supply the hundreds of volunteers who are cleaning our community's waterways, please contact us at awc@anchoragecreeks.org.***

How can you help AWC maintain healthier creeks?



Donate to AWC with Pick Click Give (PCG) by March 31!

Please consider donating a portion of your PFD to **Anchorage Waterways Council**, which is part of the Pick Click Give program, and has received several thousands of dollars from generous Alaskans who select us as one of their non-profit choices when filing for their PFD. You can read more about how your donations help our creeks on the PCG site under **Anchorage Waterways Council**. Thank you for considering us and all the other great charities in our state. And, PCG has just announced that 10 lucky donors will be chosen to receive double their dividend. Details are on the [Pick Click Give site](#).

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It's easy, you can go online at www.anchorag creeks.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@anchorag creeks.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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AWC UPDATE:

A message from the Executive Director, Cherie Northon

Talking about animal waste can be one of those delicate subjects. Well, actually, talking about it isn't as difficult as it was to come up with a subject name for this e-newsletter. It's an important topic but I didn't want to lose readers because of wording that might offend someone. "Poo" is likely one of the least bothersome to most, and you still know what I'm talking about.

This is an important time of year when it comes to animal waste. As the snow melts, it leaves behind all those little nuggets that were dropped on the ground and that disappeared under a magic white veil last fall. April is Earth month/week--and AWC and its partners celebrate it with Scoop-the-Poop Day. Spring is also when Canada geese are heading north, and many have decided to remain in Anchorage during summer for a variety of reasons that I will enumerate shortly. And, we have a great example illustrating that you're never too young to tackle a problem involving excess pet waste.



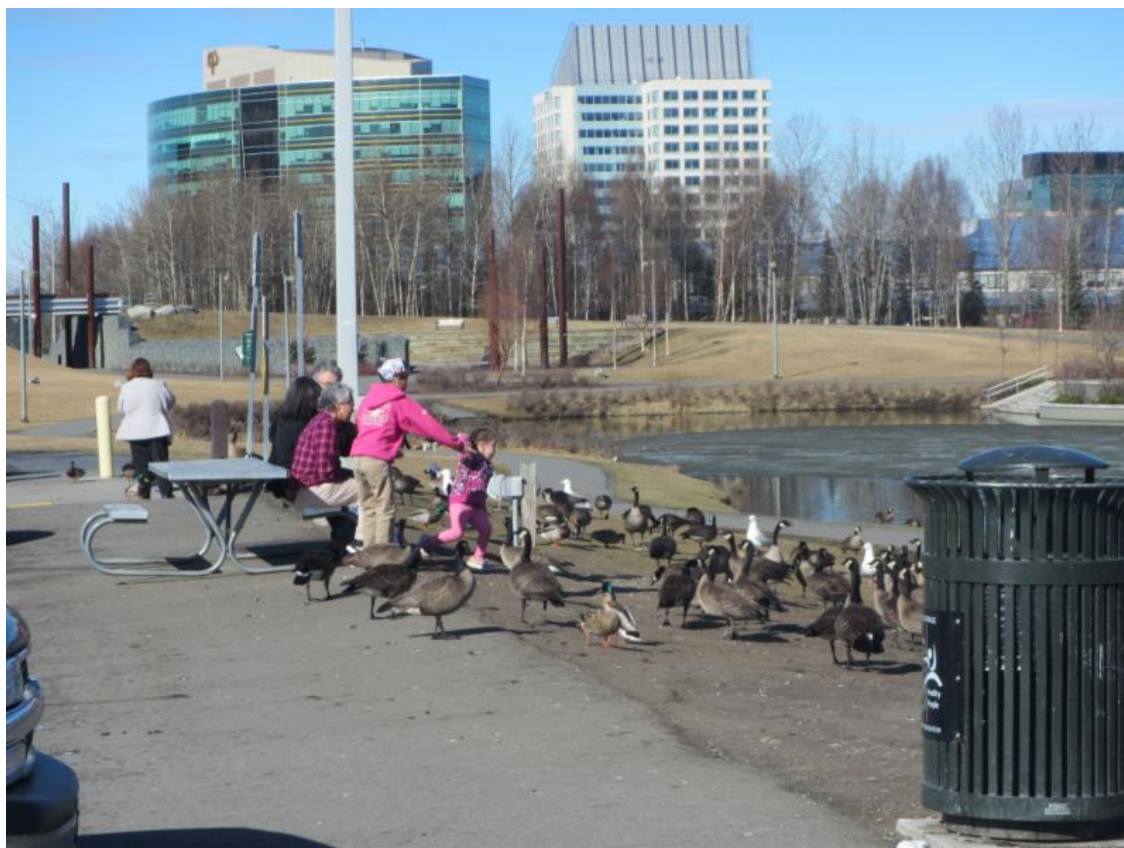


Scoop-the-Poop Day, April 16, 2016

As part of AWC's education and outreach campaign, the [Scoop-the-Poop Committee](#) held its annual Scoop-the-Poop Day on April 16 to coincide with Earth month. Two dog parks, University Lake and Connors Bog, and trails in the Campbell Airstrip area were cleaned by a couple of hundred people. (Thanks to David Jensen and his Alaska Trails and Tails group for taking on their own area!). The weather was gorgeous, the snow was gone, and a lot of poop was gathered. Thank you to all who participated. Remember, this is not a daily, weekly, or quarterly "service" for pet owners. It is to demonstrate that a lot of pet waste is not picked up, and, if you read our March [e-newsletter](#) the reasons why poop causes problems in our waterways were discussed.



Canada geese who have just arrived at Waldron Lake (4-15-16)



Canada geese, mallards, and gulls who have recently arrived at Cuddy Pond (4/14/16)

The preceding two pictures of recently-returned Canada geese were taken a day apart--one at bucolic Waldron Lake which is now one of Anchorage's newest parks, and the second was taken at Cuddy Family Midtown Park by Cuddy Pond, which is actually a day-lighted section of Fish Creek.

The geese at Waldron Lake are in a place that has what they need to gain back weight lost on their migration north, mate, reproduce, molt, and prepare for the big trip back down the Pacific Flyway in fall. In contrast, the geese at Cuddy Park have become, over the past few years, habituated to humans feeding them foods that are not part of a good goose diet. Geese are grazers and need grass, they do not need dried and moldy bread, popcorn, bagels, pretzels, dog food, or Angel Food cake. Some of their offspring will likely develop a wing condition called "Angel Wing" (not caused by the cake but from high protein foods such as bread). Birds with "Angel Wing" are unable to fly the thousands of miles necessary to their winter grounds. Their fate is sealed when their fellow geese have to leave them behind.



Canada goose at Cuddy Park with Angel Wing (8-26-15)

These birds are doomed and most likely will be trapped and euthanized unless a predator gets them first.



It's obvious that feeding the birds is not just for kids, and the "Please Do Not Feed the Birds" sign is clearly being ignored (8-26-15).

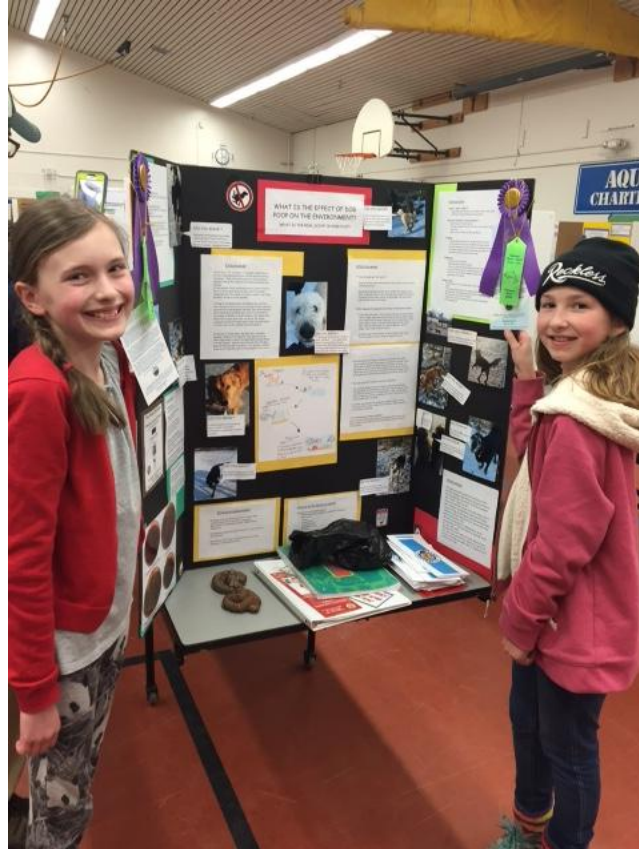
Several groups and agencies in Anchorage came together in summer 2015 to address this problem. Three guided walks around Cuddy Park happened in August and September, and then a general meeting of all interested parties was held in late September. The project was facilitated by a grant to AWC from the Alaska Department of Environmental Conservation (ADEC). Several interesting perspectives emerged during the meeting besides AWC's concern with water quality.

After this meeting, ADEC and AWC worked with the Department of Natural Resources' (ADNR) Alaska State Parks group that produces all of those great interpretive signs, the Alaska Department of Fish and Game (ADF&G), and the Municipality's Parks and Rec Department to design signage that we want park users to pay attention to, learn from, and heed. The signage is being produced now and should be in place by June. And, a big THANKS to [SGS Labs](#) here in Anchorage who are donating fecal coliform analysis to this project. This is a tremendous boon for us, and will help to determine how bad the problems really are and hopefully documentation of improvements.

In the mean time, the birds are back and the people who love to feed them are too. The general consensus is that most don't realize it is not in the birds' best interest to give them human food, and with some educational information we look forward to this practice diminishing drastically. Wildlife has existed for millennia without our help, and will do

just fine continuing that way. **Please do not feed the birds**, just enjoy them from a distance and perhaps with your camera.

WHAT IT LOOKS LIKE TO BE 9 AND WIN FIRST PLACE AT YOUR SCHOOL'S SCIENCE FAIR



Nicky Widdis and Maddy Reckmeyer from Aquarian Charter School (March 2016)

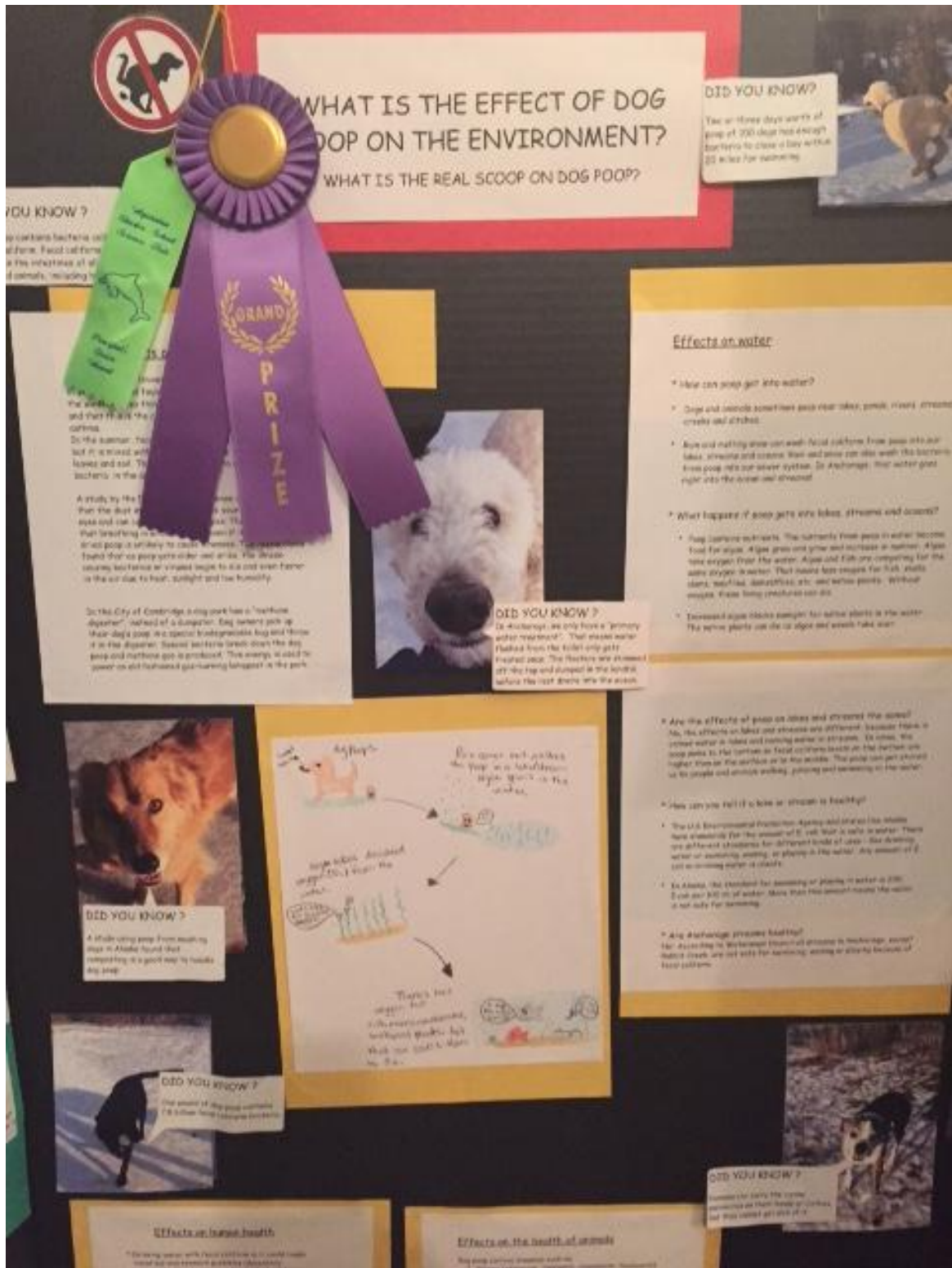
The Real Scoop on Dog Poop: What Are The Effects of Dog Poop on Health and the Environment?

Two fourth-graders at Aquarian Charter School, Nicky Widdis and Madeleine (Maddy) Reckmeyer, did their science fair project on poop. It is titled, "The Real Scoop on Dog Poop: What is the Effect of Dog Poop on the Environment?" The project was inspired by all of the dog poop the girls saw in local parks, on the trails and even on ice skating rinks from dog owners who don't pick up after their dogs.

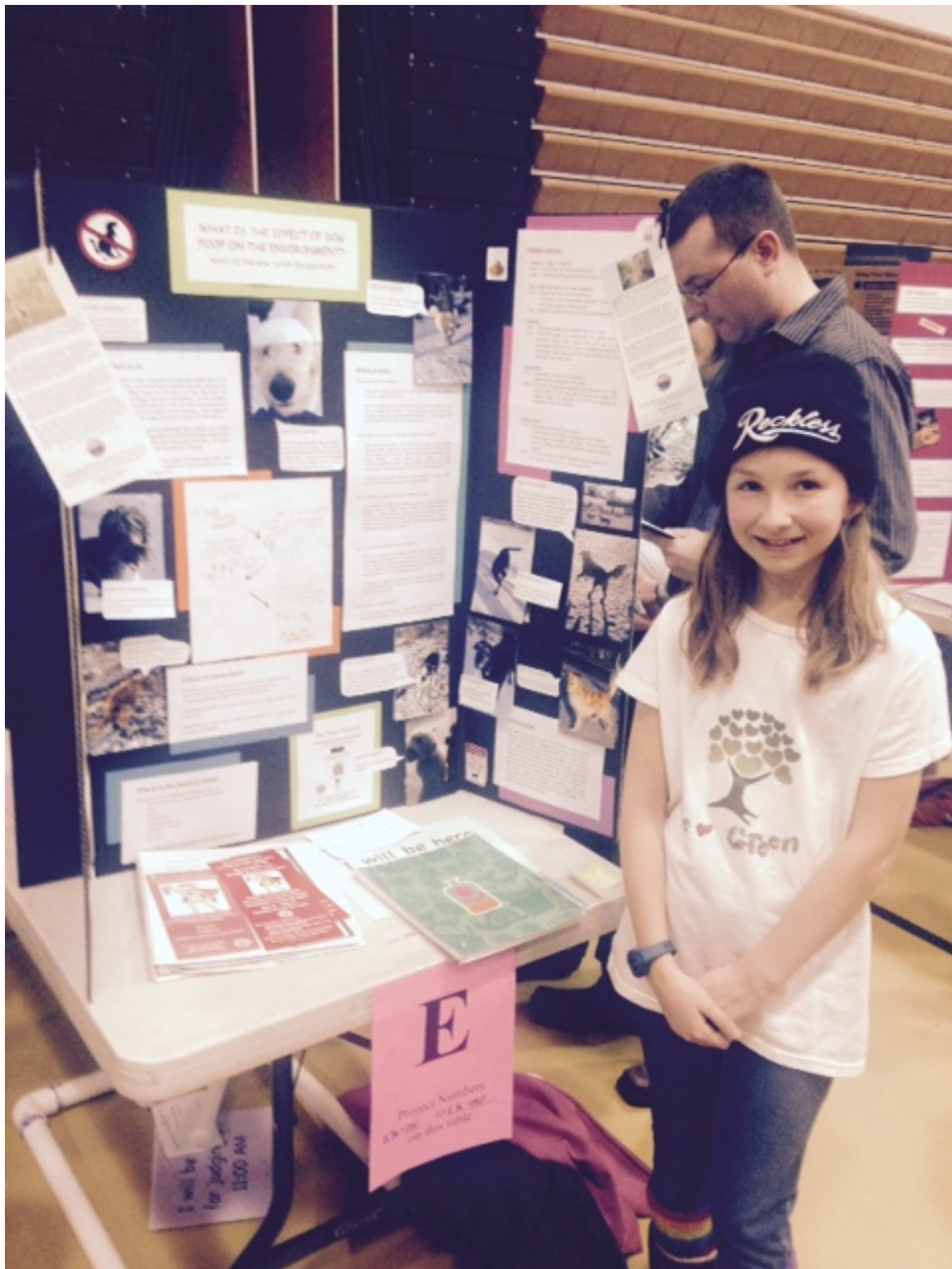
For their project, the girls looked at the potential effects of dog poop on water, air, human health, and animal health, with a particular emphasis on water, thanks to Cherie Northon and Thom Eley from the Anchorage Waterways Council. The girls were surprised to learn that every stream except one in

the Anchorage bowl is considered "impaired" under the state standards for recreation use - and were even more shocked to see the levels of *E. coli* in samples they took around town, including a puddle in the park at Lake Otis and 48th Street, University Lake, and upstream on Campbell Creek. They explored different options for how to deal with dog poop, from "scoop it/bag it/trash it" to composting to using poop as a potential energy source. The girls hoped the project would increase their fellow students' and others' awareness about this nasty problem and the importance of folks picking up after their dogs.

The project was a huge hit at the Aquarian school science fair in early March, where it received a Grand Prize, Principal's Choice award, and a first place ribbon. The girls also took the project to the Alaska Science and Engineering Fair in early April, where it received a first place ribbon and was selected for a special award by the *Association for Women in Science* and the *Alaska Experimental Program to Stimulate Competitive Research*.
(By Lisa Toussaint)



Aquarian School Science Fair Project Ribbons



Maddy Reckmeyer at the Alaska Science and Engineering Fair ("E" is for Elementary Project, April 2016)

It's really exciting to see young people become passionate about a project especially when it's one that they recognize as a societal problem. Let's hope they keep on working towards eliminating pet waste from our city and all the detrimental effects it has on our waterways. AWC's participation with

these young ladies was funded by ConocoPhillips from our ["Creeks as Classrooms"](#) program.

SAVE THE DATES

April 25 is the **Anchorage Paddling Film Festival** at the Bear Tooth Theater from 5:30 pm to 8 pm. Seven films that capture a broad array of interests will be featured: women whitewater paddlers drop into the abyss; a short on the joy of bringing our youngest paddlers into the sport; a sea kayaking adventure across the entire Aleutian Island chain; a compilation of whitewater carnage; a Grand Canyon river running adventure that highlights the history of Colorado River conservation; and a multi-sport Arctic trekking odyssey across Canada's Baffin Island featuring sea kayaking, whitewater kayaking, and backpacking. There is something for everyone! Proceeds go to a water conservation group. More information is available at the Bear Tooth's [website](#).

May 12-15 will be **AWC's Creek Cleanup 2016**. You can choose a [location](#) and [sign up a team](#) in advance, or show up on Saturday, May 14, at University Lake or Westchester Lagoon for supplies. ***AWC is also experiencing a shortfall this year in funding for our largest event. If you have an idea to help cover our expenses to organize and supply the hundreds of volunteers who are cleaning our community's waterways, please contact us at awc@anchoragecreeks.org.***

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AWC UPDATE:

A message from the Executive Director, Cherie Northon

Four days of Creek Cleanup in mid-May (12th-15th) and here are the stats:

- 38 cleanup teams totaling ~500 volunteers signed up in advance.
- They included: Halo Salon, Department of Natural Resources, SGS North America, Alaska Center for the Environment (ACE), U.S. Fish and Wildlife Service, Nautilus Impact Investing, The North Face, Hard Rock Cafe, Susitna Environmental, CRW Engineering, Knik Canoers and Kayakers, ERM Alaska, HDR Alaska, Southcentral Alaska Trout Unlimited, UMIAQ, Get Outdoors Anchorage, Weston Solutions, Yale Stream Team, PND Engineers, Bureau of Ocean Energy Management & Bureau of Safety and Environmental Enforcement, Quantum Spatial, GCI, East High Environmental Club, BSA Troop 26, and Cub Scout Packs 125 and 104. In addition there were several individuals, families and neighbor groups.
- more than 50 volunteers showed up on Saturday, May 14 to get supplies at University Lake and Westchester Lagoon.
- MOA's Solid Waste Station received over 2,500 pounds of trash brought in by volunteers.
- MOA's Parks and Rec Department collected hundreds of pounds of trash from volunteers that was left, with permission, in parks and greenbelts.
- Cleanups happened at: Ship, Chester, Fish, Campbell, Little Campbell, Furrow, and Glacier Creeks as well as Potter Marsh, Jewel Lake and Westchester Lagoon.

THANK YOU!



Team Jasmine



Willow Street's group (6 adults and 3 children) display their collection by the Old Hermit Park trash can

Some comments:

"Our daughter and her friends had a great time and were rewarded with a BBQ after Cleanup. It is great to be able to instill awareness into our teenagers. So thank you and we will be on board next year too!" (Team Jasmine)

"I was at Storck Park in Bear Valley cleaning up. It was remarkably clean! I want to give thanks to our neighborhood listserve." (Michael Haukedalen)

"I estimate that we collected 400-500 pounds of litter, way down from last year. This decline does not mean that we were loafing. I think the previous year is higher because there had been an accumulation of trash over many years, but this year we were just picking up trash from the previous 12 months." (Arnold Harder, East High School science teacher).
Note: 72 students signed up for 2 days of cleaning!

"Our cleanup on Friday was insane. We ended up extending our cleanup down to the beach, where we found SERIOUS trash, including a bike that had melted onto a big metal sheet. We ended up with at least 6 or 7 huge bagfuls of junk. We all ended up looking like something the cat dragged in." (Lisa Toussaint)



Homeless camp along Campbell Creek (KCK)



Homeless area along Wellness Drive (M. Villon)

Unfortunately, homeless camps are one of the many sources of trash in our public areas and creeks. While AWC specifically states that no one is to approach them due to legal, health and other considerations, they are a terrible blight in our parks, greenbelts and along creeks and need to be

cleaned up. Fortunately, there is considerable recognition being given to this problem by Mayor Berkowitz and others.

Another year down, and we look forward to our 33rd Annual Creek Cleanup in 2017. All of you who volunteered to help clean and provided funding and other donations, we could not do this without you.

THANK YOU!

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

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HDR ♦ GCI ♦ Moose's Tooth



CLUB FOSTERED STEWARDSHIP
A grant program funded by

L.L.Bean



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

Keep your eyes out for...

In last month's *Streamline*, the focus was on issues involving pet and waterfowl waste, which have detrimental effects on our waterways as well as other impacts. This week AWC is rolling out one of the first efforts to bring awareness to the problems caused by humans feeding waterfowl

particularly at Cuddy Park. Keep your eyes open for these great bus signs created for us by Meg Anderson at Alaska State Parks (DNR). Five buses will be moving around the Municipality with these signs on the back. Stay tuned for additional signs in a fixed location (Hint: Cuddy Park).



Reminder!

As fishing season is upon us, please consider our creeks and lakes when you are out enjoying this activity. AWC has placed over 20 monofilament recycling bins around popular fishing spots in the Municipality. Your fishing line can be placed in the bin (rather than on the ground) and it will be recycled into usable fish habitat by [Berkley](#). This not only provides a good use for old fishing line, but it keeps it out of the environment where birds, fish, small mammals, pets, and children won't get caught in it. You may also place used hooks, lures, weights and other fishing debris in the bins as it will be sorted out. PLEASE do not place trash in the bin--put litter in its proper place.



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AWC UPDATE:

A message from the Executive Director, Cherie Northon

A year of planning and a huge makeover in 3 weeks!

Last July, with a grant from the Department of Environmental Conservation (ADEC) to improve water quality at Cuddy Pond and Fish Creek, AWC began a year-long project which was completed at the end of June, and it is continuing on by way of another grant to the MOA's Parks and Rec Department. Last fall, a large group of stakeholders from agencies, the public, and other organizations helped AWC map out plans to begin cleaning up Cuddy Park and its pond--which is really an open section of Fish Creek.

The problem: A rapid increase in the numbers of Canada geese (*Branta canadensis*) during summer months and a larger overwintering population of Mallard ducks (*Anas platyrhynchos*) began to be quite noticeable in 2012.

The cause: Transforming the urban landscape into a park with large grassy areas and water features attracted the migrating geese on their way north, and more began to stay over summer in various Anchorage parks and on sports fields. Soon the birds became an attraction for park visitors to Cuddy who began to feed them. The waterfowl adapted quickly (commonly termed "habituated").

The result: More birds, more feces, more bacteria in the ponds, and it became nearly impossible to walk without stepping in bird poop. The fecal coliform in the water reached exceedance of Alaska state water quality standards by magnitudes. Large blooms of algae began to form from the increased nitrates and phosphates washing into the pond. More mallards overwintered. And, the food being fed to the waterfowl was not part of their own, natural, healthy diet which resulted in some bird deformities.



Over-wintering ducks crowd the only open water at Cuddy Pond (2012, U.S.D.A.)



Parents and children feeding geese by ramp, Aug. 2015, (photo by C. Northon)



Geese and gulls following the food, Aug. 2015, (photo by C. Northon)



The park's walks and grass were quite nasty during summer, July 2016, (photo by C. Northon)



Algae spurred on by runoff from bird feces, Aug. 2015, (photo by C. Northon)

The solution: Returning the park and pond to a healthier state required a multi-pronged approach. It began with new signage that was specially designed to attract park goers and provide them information about some of the issues that feeding causes. Bus signs were produced and they are traveling around on 5 buses in Anchorage for several weeks--hopefully you've seen one! The media helped provide additional information on the problems and transformation, and the most recent addition has been a major landscape change at the park. Park designers are using plants and trees to help keep the waterfowl and people separated. The project, partially funded by ADEC, was underway by the great "Youth Employment in Parks" (YEP) group who began the transformation in early July and accomplished much in only a couple of days. They put up temporary fencing to allow the plants to establish themselves and have the birds stay closer to the water. New sod was placed down on the barren slopes that were eroding into the pond.



One of the new, interactive signs at Cuddy Park (the wheel turns), July 2016, (photo by C. Northon)



Once the grass takes hold and the vegetation is stable, the fencing will be removed, July 2016 (photo by C. Northon)



This used to be a bare, trampled bank, July 2016 (photo by C. Northon)



And the people can see the ducks and geese, still walk their dogs and with their children on a much cleaner path, and the waterfowl are eating their natural foods: grass and aquatic plants, July 2016 (photo by C. Northon)

At first, the ducks and geese seemed a bit perplexed, but they appear to be adapting well. On a visit there recently, none of them approached us when we were standing on the ramp where they formerly had been fed. That's a great sign. Let's keep our wildlife WILD!

Most everyone grew up feeding ducks and geese and we have fond memories of it. But please, for the sake of the waterfowl and the environment, look but don't feed. Keep in mind also that this applies to other lakes and waterways in Anchorage.

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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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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

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 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.

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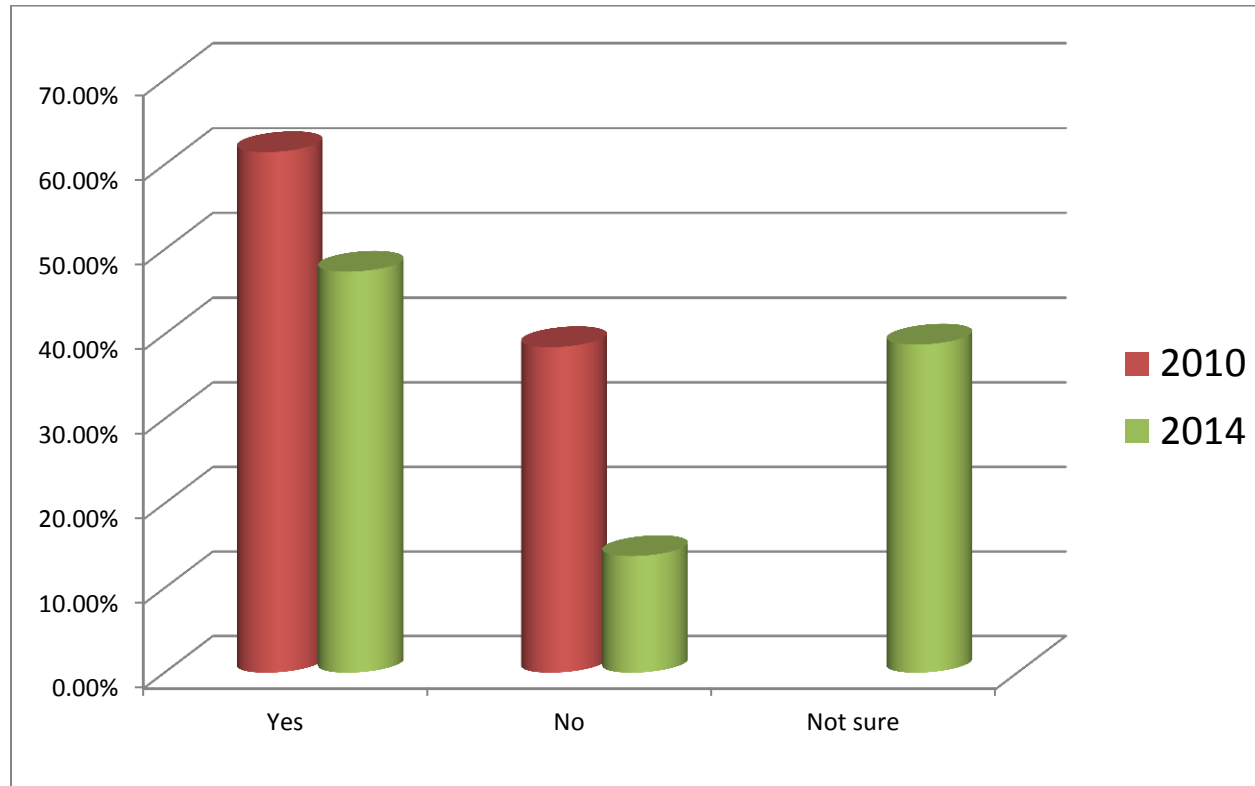
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ANNUAL MEETING

Question 2 - Do you live in a watershed? If yes, can you name it?



Responses to the question:

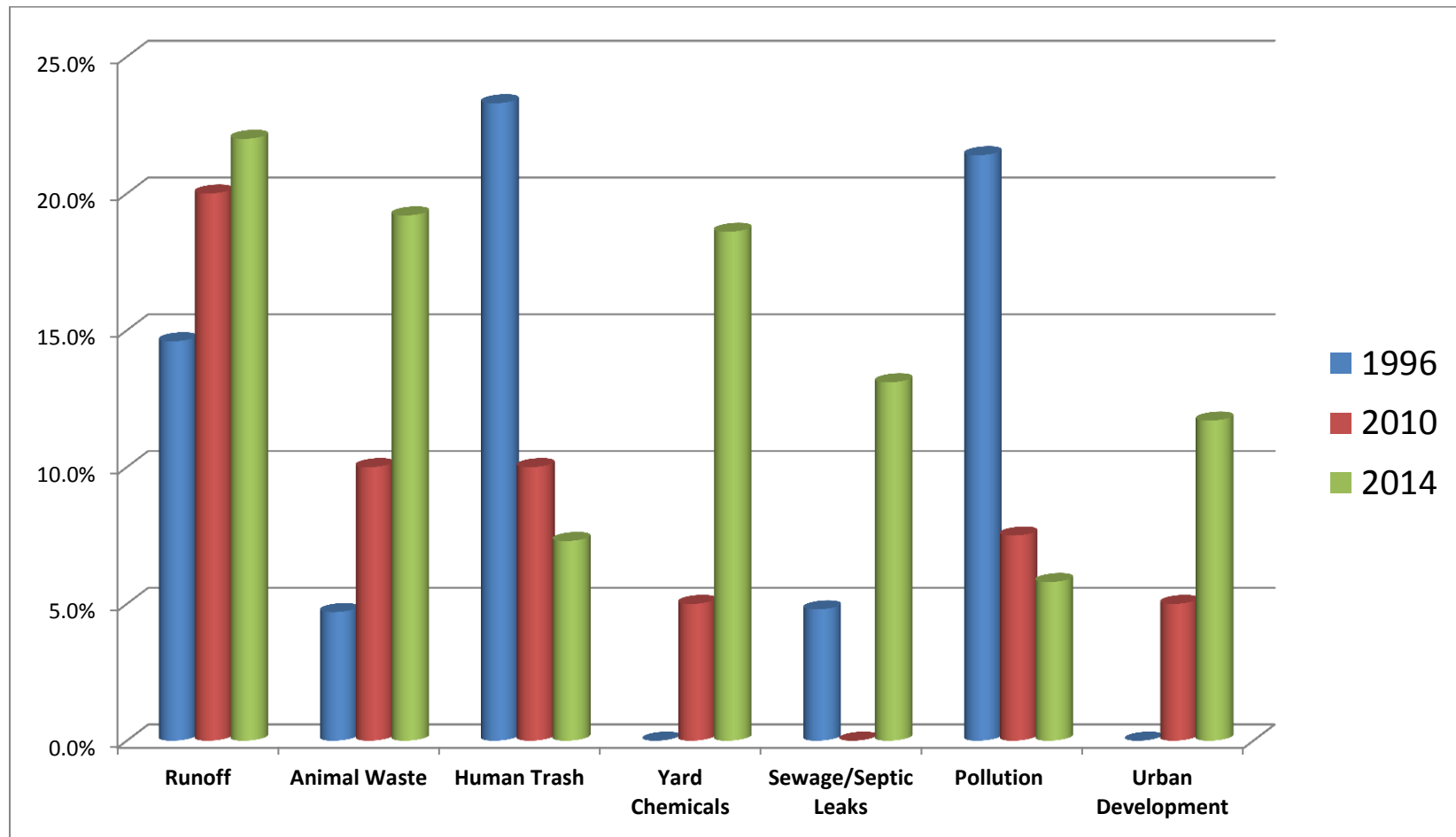
This question was not asked in 1996, and in 2010 it did not include a choice for “Not sure”, which was added for 2014. Accordingly, the responses here may not be as telling since they were not asked the same way in both years. The survey required an answer for respondents to continue, so it’s possible that in 2010 they made a choice of “yes” or “no” even if they were unsure. Regardless of the decline in those believing they live in a watershed in 2014, it speaks to the fact that more education needs to be focused in this area. And, when reading the answers for “If yes, can you name it?”—many respondents had a reasonable answer, but several did not, which further confirms the need for more education. During the next survey, the “Not sure” will be included.

Yes: There were about 14% more respondents stating that they lived in a watershed in 2010 than in 2014. ↓

No: In 2010, 38.5% of the respondents answered “no” about living in a watershed. In 2014 only 13% answered “no”. On the surface, this looks like a sizable drop, but the “Not sure” category holds 38% of the respondents--so it is impossible to draw true conclusions. Somewhere in that 38% there are some “yes” answers and some “no” answers. ↔

Not sure (2014): See category above.

Question 5 - What do you think is the biggest threat to the water quality of Anchorage's lakes and streams?



Top responses to the question:

This question was “open-ended” and the answers had to be categorized and tallied. The 3 surveys span nearly 20 years (1996-2014).

Runoff: There is an increase of a little over 7% by respondents recognizing “runoff” as a problem between 1996 and 2014. ↑

Animal Waste: This shows a dramatic increase of over four times for realization that animal waste is a major contributor to poor water quality between 1996 and 2014. ↑↑

Human Trash: A healthy decrease from the 1996's high count of 23% to 7% in 2014 suggests that events like AWC's Annual Creek Cleanup are helping with this issue. ↑↑

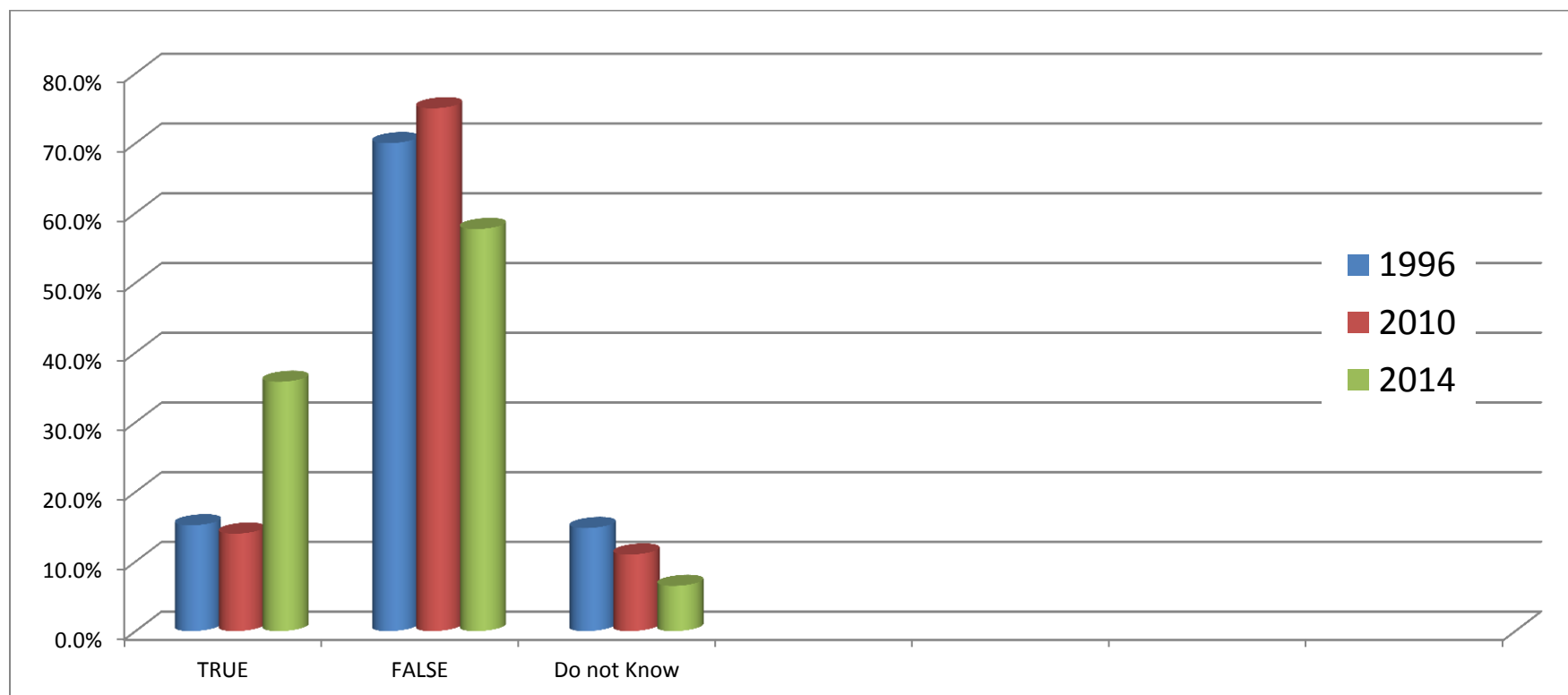
Yard Chemicals: They did not even register in 1996, and there has been a significant spike in responses between 2010 and 2014 by over three times. ↑↑

Sewage/Septic Leaks: Interesting that it was a concern in 1996, but not in the top group in 2010, but nearly three times as high in the 2014 answer. ↑↑

Pollution: This is a difficult one because the term “pollution” is somewhat generic and difficult to interpret what the respondent was referring to. ←→

Urban Development: As Anchorage has expanded, it has been recognized that urbanization is a contributor (by way of many sources) to degraded water quality. ↑

Question 8 - Surface water runoff and snowmelt from your neighborhood are treated and cleaned.



Responses to the question:

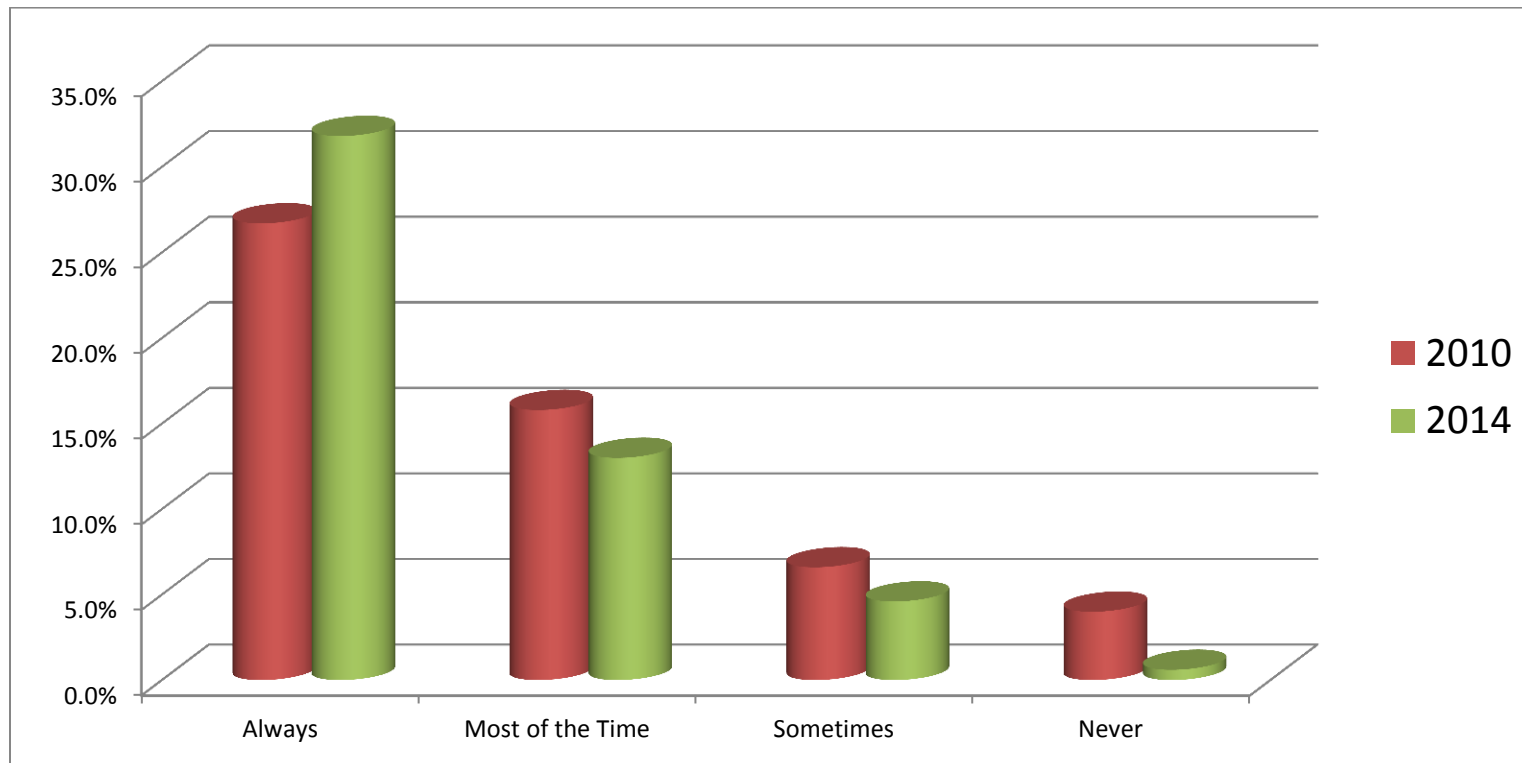
The three surveys span nearly 20 years (1996-2014). In 2010, "Do not know" was not an option so the answers were tallied from the open-ended responses.

TRUE: There is an increase of just over 20% of the respondents between 1996 and 2014 who think stormwater runoff is treated. ↓

FALSE: This loss mirrors the above question with a loss in respondents believing that stormwater is treated and cleaned between 1996 and 2014. ↓

Do not know: There is a decrease in the "Do not know" category over the course of the three surveys, but the concerns are the decrease in those understanding that runoff if not treated and cleaned. ↓

Question 13 - If you own a dog or dogs, do you pick up after your pet when out?



Responses to the question:

In 1996, this question was asked with only 3 responses, so it was not used in this graphic.

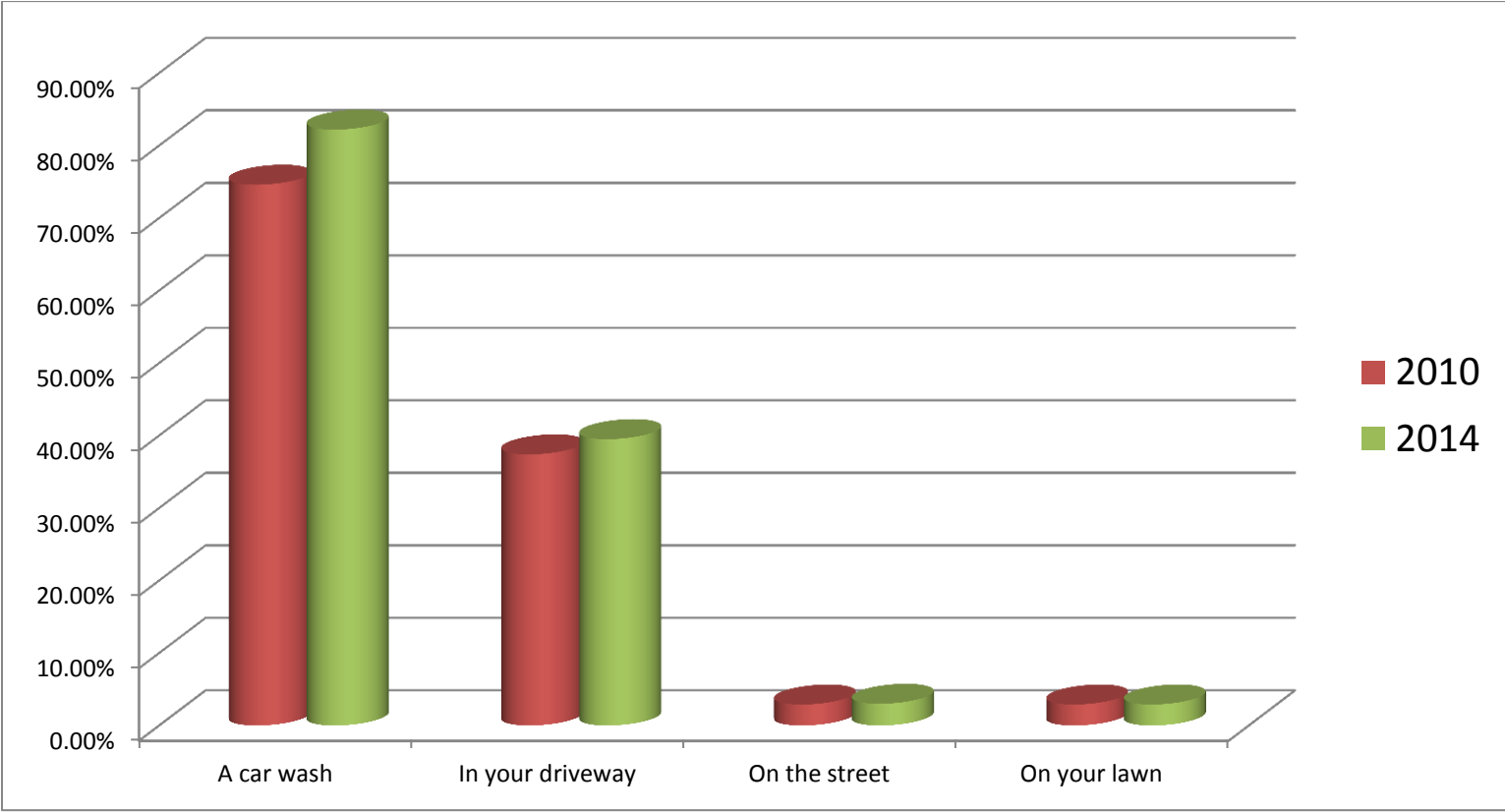
Always: There was a 5% increase in respondents stating that they always pick up after their pets between 2010 and 2014. ↑

Most of the Time: This response and the following response of “Sometimes” both show a decrease over the four years totaling nearly 5%, which may account for them moving to the “Always” category. If these two groups did, indeed, move to the “Always” category, then it’s a positive gain. ↑

Sometimes: See category above. ↑

Never: This category dropped by over 3% from 2010, which is also a positive sign. ↑

Question 21 - Do you wash your vehicle at: (check all that apply): “A Car Wash,” In Your Driveway,” “On the Street,” or “On Your Lawn”?



Responses to the question:

In 1996, this question was not asked, so it was not used in this graphic.

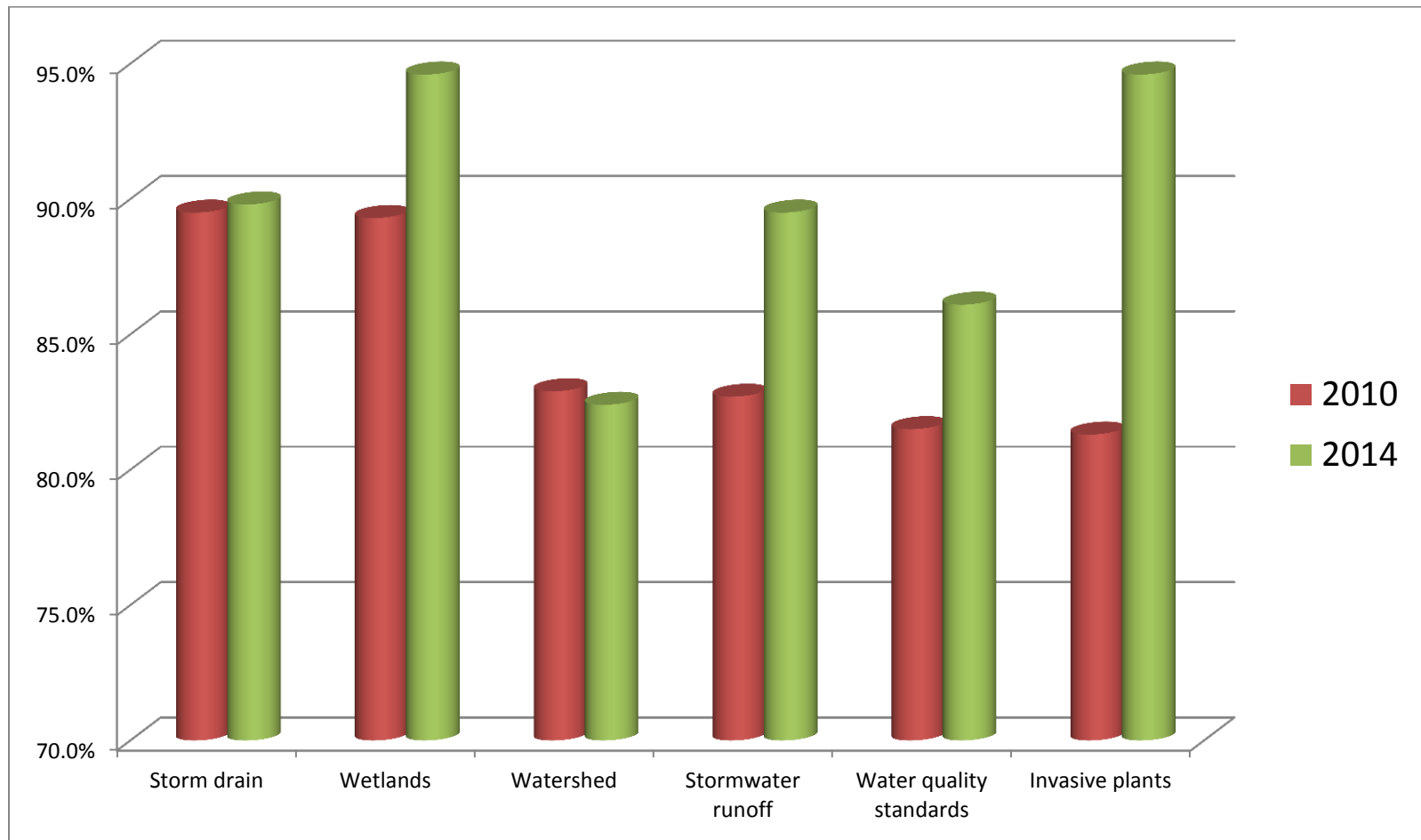
A car wash: There is an increase of just over 7% of the respondents between 2010 and 2014 who used a car wash. This is significant because car washes usually recycle their water and it goes into the sanitary sewer—not storm drains. ↑

In your driveway: This is about a 2% increase, but because people were able to answer “all that apply” it does not appear to be a major setback. ← →

On the street: There is an increase of .1% which is not significant. ← →

On your lawn: These two amounts remained identical between 2010 and 2014. ← →

Question 27 - Which of the following terms have you heard of?



Responses to the question:

This question was asked in 2010 using 20 terms/phrases that are associated with water quality, and in 2014 there were 19 terms listed. The top 6 terms based on survey responses are graphed showing a gain or loss if the respondent "heard" of them, which does not necessarily mean the terms are understood.

Storm drain: Remained almost equal. ↔

Wetlands: A 5% increase. ↑

Watershed: A .5% drop. ↔

Stormwater runoff: Nearly a 7% increase. ↑

Water quality standards: A 5% increase. ↑

Invasive plants: This is the largest change with a 13% increase. ↑