# Skagit County Public Works





## Annual Report 2017





#### **Board of Skagit County Commissioners**



Ron Wesen District 1 Ken Dahlstedt District 2 Lisa Janicki District 3

Skagit County Public Works April, 2018

Skagit County Administrative Building 1800 Continental Place Mount Vernon, WA 98273

Designed and Prepared by Jim Mickel

Front cover photos: Burlington Northern Overpass Project

## Skagit County Public Works Annual Report 2017

Dan Berentson, Director of Public Works



Message from Public Works Director Dan Berentson

We spend a lot of money in Public Works. It's your money, the taxpayers of Skagit County and we respect the restricted nature of those funds and strive to focus on the projects and services that have the largest impact and benefit to you the public. That's not a new concept, but it has to be taken to a higher level.

This year's annual report focuses on each of those restricted funds and how we put them to work for you. With more than 800 miles of roads and 109 bridges, 113,000 tons of solid waste to dispose of, 360 vehicles to maintain, drainage and water quality issues, are just a few of the challenges.

In the last several years, we have gotten leaner and more efficient. We're working hard to make sure the services we provide make your quality of life better and more efficient. In 2018, we will strive to embrace technology to be more efficient, provide additional training to our employees to perform at a higher level and keep reaching out to you for constructive criticism on how we can do a better job.

In the natural resources realm we are also working hard to preserve Skagit County's rich farmland, improve critical areas and wetlands, plant trees to provide shade and habitat for fish and remove barriers for fish in our creeks and rivers.

Some people think that local government's don't get along. That's not true in Skagit County Public Works. We have more than 60 inter local agreements with neighboring jurisdictions from Skagit PUD, to the tribes, to dike and drainage districts. We share resources and expertise on a daily basis to give you're the best value possible for your hard-earned tax dollars.

We're proud of our professional staff and the talent and knowledge they bring to the job every day. The status quo is never acceptable in Skagit County Public Works. Let us know how we can do a better job to serve you.

Sincerely,

Roth

Dan Berentson Director of Public Works

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## Skagit County Public Works Department Annual Report and Guide to Activities by Fund

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Road Fund 117	29,132,939	27,955,932	6
Solid Waste 401	10,701,961	10,026,517	22
ER&R 501	5,817,673	5,468,923	26
Clean Water 120	2,022,216	1,988,076	32
Drainage Utility 402	1,810,591	1,633,708	38
Farmland Legacy 122	1,131,915	101,513	44
Noxious Weeds 01-024	71,392	158,764	47
River Improvement 110	79,321	130,887	50
Lake Management District 141	57,076	48,458	51
Lake Management District 142	14,610	14,324	51
Lake Management District 143	29,445	38,220	51
Lake Management District 144	-	26,667	51
Total	50,789,818	47,461,102	



1936 Burlington Northern Overpass Construction

## Public Works Road Fund

Paul Randall-Grutter, P.E. County Engineer

The Road Fund has seven divisions responsible for the construction and maintenance of the County Road system.

- Division 3 Road Operations
- Division 4 Ferry Operations
- Division 5 Facilities
- Division 6 Administration
- Division 7 Development Review
- Division 8 Engineering
- Division 11 Transportation and Programs



#### Illabot Creek Channel Restoration Project

Statutory Use of Road Funds:

In developing a response to the question "can we expend County Road Funds on \_\_\_\_\_\_", the following three principles must be applied:

1. Article II, Section 40 (18th amendment), of the state constitution restricts the use of motor vehicle fees and excise taxes (fuel tax) to only highway purposes.

2. The local Road Levy (property tax) is imposed only on properties in the unincorporated areas of the county, and must be used solely for the benefit of the unincorporated area.

3. The state grants authority to the county to exercise a governmental authority. A county may not create and implement any local code or take any action unless clearly permitted to do so by the state through RCW (including, but not limited to RCW 36.82.070).

Three additional factors that influence the application of the first three:

Comingled revenue sources in the Road Fund - RCW 36.82.010:

- "There is created in each county of the state a county fund to be known as the 'county road fund.' Any funds which accrue to any county for use upon county roads, shall be credited to and deposited in the county road fund"
- Comingled funds Each individual revenue deposited in the Road Fund receives the aggregated legal protections of every other revenue deposited in the fund. Within the context of principle #3, there is extremely limited permission in statue to create accounts in order to separate Road Fund revenues for different purposes. Other than these very specific statutory permissions, the Road Fund is to be managed as a single financial resource.
- Access to and use of road related revenues are subject to ongoing compliance with all applicable laws, rules, and required procedures.

Other revenue sources, such as local option taxes, grants, and fees, all have unique rules, but they cannot be used in a way that would conflict with #1, #2, and #3.

RCW 36.80.010 - Employment of road engineer.

The county legislative authority of each county shall employ a county road engineer...

RCW 36.80.020 - Qualifications – Bond

He or she shall be a registered and licensed professional civil engineer under the laws of this state, duly qualified and experienced in highway and road engineering and construction. He or she shall serve at the pleasure of the board.

Before entering upon his or her employment, every county road engineer shall give an official bond to the county in such amount as the board shall determine, conditioned upon the fact that he or she will faithfully perform all the duties of his or her employment and account for all property of the county entrusted to his or her care. R20110143 waived that requirement.

RCW 36.75.020 - County Roads -- County legislative authority as agent of state

All of the county roads shall be established, laid out, constructed ... and maintained by the legislative authority ... Such work shall be ... under the supervision and direction of the county engineer.

Due to the scope and scale of departmental and statutory responsibilities, the position of County Engineer within Skagit County's Public Works organizational structure oversees the following Divisions:

Engineering	Equipment
Ferry	Operations

#### Overview

The Road Operations Division maintains the roadway system and structures to the highest possible standards. Operations maintains over 800 miles of road and accompanying right of way. Currently there are 55 employees and 56 activities to maintain road system.

There are three maintenance districts in Skagit County; each district has a supervisor and 11 crew members. Within each district there are cities, towns, and state routes that are out of our jurisdiction and maintained by their own governing agency.

In addition, the Special Operations crew does overhead tree trimming and maintains all signs, guardrails and bridges. Special Operations also takes on many special projects such as, installing fences around county property, performing maintenance on county owned pits and solid waste facilities, and helping with traffic control for special events such as the Tulip Festival and Big Lake Fire Works.

#### **Service Requests**

In 2017, during normal operating hours, County crews responded to 355 service requests. These requests typically are phone calls or emails from the public. Depending on the nature of the request, they are routed to the appropriate supervisor who responds to the request and oversees that the job gets done. Skagit County strives to provide an exceptional level of service to our customers.

#### After Hours-911 Emergency Response

Road Operation crews are on call 24 hours 7 days a week. After hours calls from 911 go directly to the on call supervisor's phone. Supervisors rotate weekends and evenings to be on call. Calls are frequently response to accidents, water over roadway, or other obstructions in the roadway such as trees or mud slides. Along with road repairs, sign crews are often dispatched to deploy emergency signs.



Friday Creek Bridge 2017 Inspection

#### **Chip Seal Program**

Each year road maintenance crews chip seal approximately 90 miles of roads. The roads to be chip sealed are selected on a cycle from 7-10 years, depending on the condition of the roadway surface. Roads must be prepared properly before applying a seal coat, this includes removing sod and adding gravel to the shoulders, clearing brush, cleaning ditches, replacing culverts, and pre-leveling the road with asphalt and fog seal. The preparation work begins in March, but the actual chip seal starts typically in June or July when temperatures are right and rain is minimal. During the process, raised pavement markers are used to mark the centerline and the speed limit is reduced to 25 MPH. A liquid coat of asphalt is applied followed by a layer of rock chips that are rolled and left to cure for at least one week. After the road is cured it is swept and striped. A fog seal is added to help cure and keep rocks stabilized on roads that are not as heavily traveled.

Activity	Description	Amount	Unit	Cost
Bituminous Surface Treatment	Adding liquid asphalt and aggregate over roadway to improve the texture of and water- proof an asphalt surface, also known as "Chip Sealing"	90	Miles	\$1,633,081
Asphalt Leveling	Placing Asphalt cement or emulsion mix to level surface irregularities or failures. Normal- ly done prior to seal coating or overlay. To achieve 100% of surface rating when com- plete	8,239	Tons	\$911,101
Shoulder Grading	Grading gravel shoulders when shoulder drop off exceeds 1" or when extensive rutting, erosion, or loss of material exists. Done to provide a uniform and level shoulder, matched to the edge of the paved surface	225	Miles	\$24,748
Shoulder Graveling	Placing gravel or rock on shoulder to re- establish shoulder width, elevation and crown slope and to allow proper road drainage and prevent shoulder erosion	11,641	Tons	\$455,847
Fog Seal	To seal and enrich the asphalt pavement sur- face, seal minor cracks and asphalt patches on roads to be chip sealed in same year, to pre- vent raveling, delineate shoulders, and reduce chip loss on B.S.T.	29,097	Gallons	\$81,472



North Fork Bridge Debris Removal 2017

#### Snow and Ice Removal

During winter road maintenance crews sand and plow roads during freezing temperatures. Each road district has a list of priority areas that get plowed and sanded first. There are 17 snow plows with sanders in the fleet. Early in 2017 there was record breaking snow falls in the upper river areas. In the second part of 2017 snowfall was closer to normal. District supervisors get 2-3 weather reports a day from weathernet.com specifically forecasted for our region. This helps them predict ice and snowfall and have crews on call when needed.

Activity	Description	Amount	Unit	Cost
Plowing &	Remove snow and distribute sand and salt	3,843	Man	\$526,888
Sanding	mixture on roadway when snow accumulates 2		Hours	
	-3 "and frost conditions or compact snow oc-			
	curs, with priority given to grades, intersec-			
	tions, curves, bridges and high volume roads			

#### **Vegetation Management**

Effective management of vegetation along the road not only improves the aesthetics of an area but also improves safety. When vegetation is controlled, sight distance to signs, curves and intersections are improved, off road emergency parking is available, fire potential is reduced, and bicyclists and pedestrians have an area to use. Skagit County uses both herbicides and non-chemical methods of vegetation control.

#### Non-chemical methods

Mowing, brush cutting, weeding and tree trimming, sod removal are all methods of vegetation control Skagit County Road Maintenance crews use on our roads.

Activity	Description	Amount	Unit	Cost
Sod Removal	Removal of sod to prevent roadway surface damage due to improper drainage and to provide a safe and stable shoulder	312	Miles	\$275,231
Mowing	Mowing to maintain ungraded shoulders and intersections to a grass height below 12", 2-3 times during the season	2,016	Miles	\$233,466
Brush Cutting	Brush is trimmed to prevent brush onto roadway and to provide sight distance on curves and intersections	3,050	Miles	\$281,646
Tree Removal Manual	Tree removal work is be done from October to March on trees blocking site distance and signs	2,814	Man Hours	\$182.090
Tree Trimming	Work is performed to maintain a vertical clearance of 20' - 30' over the right-of-way and a horizontal clearance adequate to pro- vide site distance	206	Miles	\$396,101

#### Herbicides

To make applications to the county right of way a license is required with the Washington State Department of Agriculture. A license is necessary so applicators know the laws and safety around using chemicals that minimize risk to humans and the environment.

Chemical control on shoulders helps prevent the buildup of sod and allows proper drainage of the road surface. It controls the growth of brush along the fence lines, guardrail, bridge approaches, sign and other areas where mowers cannot reach. In the spring and summer herbicide is applied in the county right of way, approximately 4 feet of road side shoulders and guardrail. In the fall, herbicides are used to control the blackberries.

The County uses a NORSTAR herbicide truck that carries 800 gallons of water and has three chemical tanks. The herbicide truck uses a computer to record the spray data that is downloaded to the server every night. By law, these records must be retained for seven years. The chemical rates are also controlled by a computer so there is not any over applications.

Activity	Description	Amount	Unit	Cost
Herbicides -	Herbicides are applied annually to pre-	522	Acres	\$275,231
Shoulders	vent vegetation on shoulders and to pro-			
	vide for shoulder drainage			
Herbicides –	Applying herbicide to brush, weeds and	462	Acres	\$40,936
Brush &	grass encroaching the road and other			
<b>Noxious Weeds</b>	areas mowers cannot reach			

#### Signs and Pavement Markings

According to the manual for Traffic Control Devices for Streets and Highway Signs and Object Markers county signs must meet the standard requirement for shape, size and color, both day and night. Yearly our sign crews manage this requirement by doing a visual inspection of signs from a moving vehicle during nighttime conditions. Signs that are visually identified to have retroflectively below the minimum level one of the following actions are taken: 1) Reflective failure replaced the sign, 2) Sign washed 3) Sign was missing and replaced 4) Brush trimmed around the sign. This year crews inspected all 12,347 signs and found 415 signs (less than 4%) that failed to meet standard.

Activity	Description	Amount	Unit	Cost
Sign	Maintain and replace regulatory signs,	3,987	Signs	\$436,515
Maintenance	signals and warning signs. Install new			
	signs as requested by an engineering			
	study or requested by traffic engineer			
Striping Edge	Restore faded and worn edge line on	765	Miles	\$242,190
Line	existing and newly resurfaced roads			
Striping	Restore faded and worn centerline on	578	Miles	\$196,872
Centerline	existing or newly resurfaced roads with			
	two lanes at least 16' or more in width			
	and speed limit of 35 MPH or greater			
Pavement	Work is normally done to mark or re-	239	Mark-	\$41,889
Markings	mark on pedestrian crossings, railroad		ings	
	crossings, directional arrows and stop			
	bars, legends marked on road, school			
	crossings, and raised pavement markers			

#### **Environmental Services**

Environmental Services is a small crew created to work on off road right-of-way projects and those that contain "sensitive areas" such as within streams, wetlands, or other critical areas. They often assist other Public Works sections such as Surface Water Management and other departments such as the Parks Department. They also work with other agencies such as Washington Department of Fish and Wildlife, and Tribal agencies, although there were no outside partnerships in 2018. In 2018 they worked on 3 Road Operations projects, 7 drainage utility projects, and 5 Natural Resource Stewardship Program projects. In addition, they assisted the districts as needed, including fish removal and exclusion and water bypassing, ensured compliance with our membership in the Regional Roads Maintenance Program by tracking and removing Best Management Practices (BMPs), and obtained all road maintenance project and emergency permits.

#### **Other Maintenance**

Throughout the year the roadway requires routine maintenance as needed. Here are some of those activity's accomplishments for 2017:

Activity	Description	Amount	Units	Cost
Ditch Maintenance	Open ditch to keep water flowing and mini- mize road damage. Environmental laws pro- hibit ditch maintenance without a permit if there is water in the ditch	95,801	Feet	\$417,121
Culvert Install & Repair Pothole	Work is done to restore or improve roadway drainage. Normally done to enlarge existing culverts or catch basins, replace deteriorated pipes or to open up new drainage Repair edge breaks and pot holes on the road-	267	Feet	\$219,651 \$161,713
Patching	way by filling them with premixed hot or cold asphalt	207	10113	φ101,715
Crack Sealing	Cleaning, filling, and sealing cracks in paved roadway surface to prevent passage of water into base of road	10,575	Pounds	\$70,726
Grading Roadway	Grading and shaping gravel roads to level ridges, cut and fill holes and distribute exist- ing gravel evenly over the surface	81	Miles	\$36,643

#### **Interlocal Agreements**

Throughout the year road operations crews, upon request, will do work for our partnering local agencies. This year we did the following:

Agency	Description	Amount
Whatcom County	Snow plowing Baker Lake Rd.	\$1,372
Whatcom County	Striping approximately 4 miles	\$3,743
Port of Skagit	Clean catch basins	\$2,582
Port of Skagit	Tree removal	\$6,966
Dike District #5	Herbicide for weed control	\$1,385
City of Sedro Woolley	Making miscellaneous signs	\$2,213
Sedro Woolley School Dist.	Minor road repair and gravel	\$1,230
San Juan County	149 miles of road striping	\$23,025
City of Anacortes	Chip seal 2.2 miles of Heart Lake Rd.	\$45,683
San Juan County	Clean catch basins	\$8,703
Total		\$96,902

## Ferry Operations Division, Captain Rachel Rowe, Division Manager

The Guemes Island Ferry is owned and operated by Skagit County and provides an essential transportation link between Anacortes and Guemes Island. The current vessel was built in 1979, and put in service in 1980. The ferry crossing is approximately 5/8 mile with a round-trip taking between 20 and 25 minutes to complete.

A staff of 18 on-call/part-time, regular part-time and full time employees maintains, operates and provides dependable ferry service on the 21-car, 99-passenger M/V Guemes.

The M/V Guemes is 38 years old, and one of the challenges faced by the County today is the rising cost of maintaining a vessel of this age. Skagit County is currently seeking funding for the replacement of the current vessel.



#### **Ferry Replacement Project**

Skagit County has operated a vehicle and passenger ferry service between Anacortes and Guemes Island, WA since the early 1960s. The current vessel, the M/V GUEMES, is a 21-vehicle, 99-passenger, diesel-powered ferry that was built and put into service in 1979. Today, the ferry operates 365 days a year and transports roughly 200,000 vehicles and 400,000 passengers annually.

There are no alternative roads or highways that provide access to Guemes Island; as such, the Skagit County ferry system serves as a vital transportation link for its ridership. In addition to transporting commuters, the ferry also carries tourist traffic, construction and logging trucks, essential services trucks and emergency vehicles and personnel to and from the Island.

In the last few years, haul-out and dry dock costs have increased substantially. Since 2014, the Ferry Division has spent nearly half of its annual \$2.5 million operating budget on maintenance of the vessel and associated machinery and repair projects. This has become increasingly burdensome on Skagit County's road fund with the annual subsidy from that fund contributing approximately \$1 million per year in the last few years.

In 2013, Skagit County began the process of studying vessel replacement when they hired Elliott Bay Design Group to publish a Ferry Replacement Plan for the M/V GUEMES. The study looked at the existing cost of operation then formulated replacement scenarios to determine the most economic replacement option. The conclusion was that immediate or near-term replacement of the vessel will minimize the overall cost of ownership and provide environmental improvements in vessel operation.

Skagit County has determined a need to replace its diesel-powered vehicle and passenger ferry. If constructed, an allelectric vessel would potentially reduce operational and maintenance costs, increase energy independence and reduce harmful CO2 (Carbon dioxide) air emissions by 619,359 kg. A propulsion/feasibility study, completed by Art Anderson Associates in 2016, concluded, that based on power requirements, "...an all-electric propulsion system for a new concept vessel to replace the M/V GUEMES is highly feasible for this particular route and its unique environmental conditions...It is recommended that all-electric propulsion be considered for the design of a replacement vessel that will provide safe and reliable service."

Currently, no state in the U.S. operates an all-electric vehicle ferry; however, the technology has been proven in Norway. Development of the all-electric ferry demonstrates that Skagit County and Washington State are technology leaders willing to invest in safe, environmentally conscious, clean energy projects that benefit both the local community and the global environment.



M/V Guemes transiting Guemes Channel, Guemes Island in the background

### Ferry Division Fund 117 Roads

Revenues	2017
Taxes/Assessments	-
Intergovernmental Revenue	159,051
Charges for Services	1,155,413
Miscellaneous	4,792
Other	962
Total Revenue	1,320,218
Expenditures	2017
Salaries and Wages	760,108
Benefits	324,979
Supplies	236,173
Other Services and Charges	1,508,061
Intergovernmental Services	34,586
Total Expenditures	2,863,907
Net Increase/Decrease	(1,543,689)

## Engineering Division, Keith Elefson P.E., Division Manager

The Engineering Division has a staff of 17 full-time technical, administrative, and professional employees as well as one on-call field assistant and several on-call construction project inspectors. This division is responsible for capital projects from initiation and funding through design, construction, contract administration, and close out. The staff works under the direction and supervision of the County Engineer.

The Engineering Division also houses the Transportation/Programs Section which is responsible for preliminary research, data compilation and preservation maintenance, and preliminary scoping of projects until established as a County Road Project, as well as the various grant programs, grant applications, programmatic functions, bridge inspections, and other items associated with transportation planning, and initial project planning and scoping.

The Section is also responsible for right-of-way vacations and easements within the County right-of-way, County Road Administration Board (CRAB) and Washington State Department of Transportation (WSDOT) statutory and other reports, traffic investigations and studies, road database management and asset inventory, pavement management and traffic-count programs, bridge inspection program, service requests, over legal permits, traffic safety coordination, crash documentation, right-of-way surveying, and in some instances is also responsible for right-of-way acquisition.

Projects often start when a citizen or County staff see a deficiency developing in the road or bridge, and report it to the Office of the County Engineer. At other times, our inspections reveal developing deficiencies, or we see a history of collisions in a certain area. Another way that a project may be identified is when a culvert fails or becomes a fish barrier, by either becoming perched or by being undersized.

Once a project is identified, appropriate Engineering staff will define (or scope) the project. During this time, we determine the extents of the project, and start to think about likely solutions to the problem. We also start thinking about potential funding sources. This is where we provide our initial estimate, and the preliminary budget is established. The project gets a County Road Project (CRP) number to authorize and track spending. The project may also be put on the County's 6-Year Transportation Improvement Program (6-Year TIP), dependent on its regional significance or funding source. If the project is to be designed or constructed in that year, it is added to the Annual Construction Program.

The next step is the initiation of actual design on the project. Some projects are designed entirely in-house, whereas consultants may be utilized for projects that require design in areas that we lack expertise (such as bridges or retaining walls), or when our staffing levels are insufficient to complete the work. There may also be times that we utilized consultants for portions of the work, but maintain the bulk of the work in-house. Some cases where we use this approach are for survey work that requires a Professional Land Surveyor, geotechnical investigations, and for right-of-way acquisition. Engineering Division staff manage the consultant contracts and coordinate the work.

We start by developing the conceptual, or 30 percent design. The conceptual design is used in efforts to secure final design and construction funding, acquire right-of-way, and to obtain the necessary permits. It is important to begin the permits and acquire right-of-way process early, as either may take up to 18 months.

Funding primarily comes from the County Road Fund or through state and federal grants. The Road Fund comes from the County Road Levy, which is a property tax. The levy also includes an amount that is diverted to the Current Expense fund for traffic law enforcement. Road Fund money can either fully fund a project, or is often used as a match for grants.

After the concept is developed, we build off of it to complete the ad ready construction plans, specifications and estimates. These are the documents used in the bidding of the project, and become part of the contract. The Board of County Commissioners issue a Call for Bids, inviting contractors to submit bids for the project. The typical bidding period is two to three weeks, followed by the Bid Opening. The lowest responsive and responsible bidder may be selected after review of all bids, or the bids may all be rejected. If one of the bidders is selected, the contract is executed with the contractor.

Once the contract is executed, a pre-construction conference is held do discuss potential issues with the contractor, and a Notice to Proceed is sent to them. The contractor will start sending their submittals, and Engineering staff will review them for compliance with the contract documents. Unless otherwise negotiated, the construction will start within 10 working days. Engineering staff will manage the construction contract, review submittals, manage change orders, monitor the budget, inspect the construction, and process pay estimates. For large projects, a construction management company or the design firm may provide some of these services. At the completion of the project, we close the project out and process final payment.

Development Review and the Utility permit process ensures that developments and work performed within the County right-of-way by others is in compliance with Skagit County ordinances, codes, and standards regarding roadways and drainage.

Accomplishments:

- Right-of-Way Acquisition and Vacations
- Franchise Agreements
- Vehicle Collision Reporting
- Service Requests from public, staff, WSDOT and other local agencies
- Priority Array Report
- Traffic Count service for County and various local agencies
- Maintained County Freights and Goods System
- Bridge inspection of County's 109 bridges biennially as well as 25 owned by local agencies
- Development review of plats for layout and drainage
- Permit review for fill and grade, access, utilities, administrative variance requests, special use applications, and technical input for Code Enforcement Action
- Submitted CRAB reports required for receipt of Certificate of Good Practice, including:
  - Road Levy Certification
  - Annual Construction Program
  - County Arterial Preservations Program (CAPP)
  - Pavement Management System (PMS) Certification for CAPP
  - County Budget Summary
  - Work Plan and Budget for MMS (Maintenance Management System)
  - Road-log Action Record and Summary Record
  - Traffic Law Enforcement Certification
  - Fish Passage Barrier Expenditures
  - Annual Construction Report
  - Annual CAPP Report
  - Annual Certification of MMS

## **Concrete-Sauk Valley Road Bank Stabilization Project** Near Milepost 13 Funding Sources: **Skagit County Road Fund** \$450,000 Concrete-Sauk Valley Road Bank Stabilization **Project Funding:** Current funding for the project is from the County Road Fund in the amount of \$450,000 for 2018. Additional funding will likely be required to complete the design and construct the project. We will have a better understanding of that amount once the preliminary design (30%) has been completed. **Project Funding Graph** County 100% Road Fund

#### Project Narrative:

The Concrete-Sauk Valley Road Bank Stabilization Project was established in response to channel migration on the Sauk River. The project is located between Concrete and Rockport on the Concrete-Sauk Valley Road near milepost 13. Over the past ten plus years, the Sauk River has migrated approximately 1300 feet to the west at this location. As a result, Concrete-Sauk Valley Road has been reduced to one alternating lane of travel.

Currently staff is working with a consultant to investigate the current conditions and evaluate various options for a permanent repair that addresses channel migration/scour, fish passage, and transportation needs. Once this has been completed, we will move forward with the final design and construction. This study should be completed in December of 2018.



#### **River Migration near MP 13**





#### **Project Narrative:**

The Francis Road Reconstruction, Section 1 Project will improve Francis Road between Highway 9 in Clear Lake, and where the previous project left off near Debay's Isle Road. Improvements will widen the existing travel lanes and shoulders to match the previously completed project to the west.

The project is currently in the Design phase with Construction scheduled for 2019.



## **Road Reconstruction Projects**

Lafayette Road Improvements (Raspberry Ridge)

Funding Sources: Skagit County

0.....

\$1,015,878

Housing Authority of Skagit County \$293,739

#### Lafayette Rd Improvement (Raspberry Ridge)





## **Project Funding Graph**



#### Project Narrative:

The Lafayette Road Improvement Project is a partnership between Skagit County, City of Burlington and the Housing Authority of Skagit County. The project begins at the intersection of Gardner Road and runs east on Lafayette Road approximately 1300 feet (just before the 90 degree corner). Improvements will add a center turn lane and widen the existing travel lanes. Curbs, gutters and sidewalks will be added on both sides of the roadway. A new storm drainage system and City of Burlington sewer line will be extended through the project area.

The project will be advertised for bid on March 15, 2018 with Construction anticipated to begin in May of 2018.



Lafayette Road



## Road Fund Revenue and Expenditures

Revenues	2017
Taxes/Assessments	13,837,156
Intergovernmental	12,887,701
Licenses and Permits	99,328
Charges for Services	2,148,690
Miscellaneous	123,314
Other	36,748
Total Revenue	29,132,937
Expenditures	2017
Salaries and Wages	4,980,106
Benefits	2,480,969
Supplies	2,803,507
Other Services and Charges	7,190,795
Intergovernmental Services	2,129,812
Capital Outlays	8,370,740
Total Expenditures	27,955,929
Net Increase/Decrease in Fund	
Balance	1,177,008
Other Total Revenue Expenditures Salaries and Wages Benefits Supplies Other Services and Charges Intergovernmental Services Capital Outlays Total Expenditures Net Increase/Decrease in Fund Balance	36,748 29,132,937 <b>2017</b> 4,980,106 2,480,969 2,803,507 7,190,795 2,129,812 8,370,740 27,955,929 1,177,008

The Solid Waste Division is responsible for the removal of all solid waste in Skagit County. The Skagit County Transfer Station on Ovenell is the final collection point for all solid waste generated in Skagit County. Material is brought to the Transfer station by commercial truck or self-hauler. Transfer Station staff direct traffic to ensure safety of all customers while they unload material. After the waste has been dumped on the tipping floor, Transfer Station staff will use a loader to push the waste into the compactor located below the tipping floor. There the waste is compacted to decreased volume and increase shipping efficiency. The material is pushed into a bin, and each bin holds approximately 30 tons of material. Once a bin has been filled and fully compacted, one of the transfer station drivers will drive the full bin over to the rail yard close to the Transfer Station. The bin will then be loaded onto a train and taken to the Roosevelt Landfill in Klickitat County where the waste is landfilled.

In addition to the Skagit County Transfer and Recycling Station on Ovenell, the Solid Waste Division operates two satellite sites to support solid waste disposal needs throughout Skagit County. These other sites include:

Sauk Transfer Station in Concrete;

Clear Lake Compactor Site in Clear Lake;

Each of these sites offers drop-off services for garbage disposal and household recycling as well as household appliances, used motor oil, batteries, and antifreeze. Recycled materials collected at all three transfer stations are taken to Skagit River Steel and Recycling for further sorting and processing. The Sauk Transfer Station and Clear Lake Compactor Site took in approximately 2% of the total waste collected in Skagit County.

In 2017, the three Skagit County sites collected 112,802 tons of solid waste and 2,638 tons of recycling.

The Solid Waste Division has a staff of 22 full-time and regular part-time administrative and operational employees as well as two on-call employees. The Division is responsible for Transfer Station operations, Household Hazardous Waste collection, Litter Crew program, Recycling Education, and Environmental monitoring programs for the County's closed and abandoned landfills.

Throughout the year the Solid Waste Division focused on improving the operation of the System ensuring that waste was handled as efficiently as possible, while maintaining our traditionally high level of customer service.

#### Litter Crew Program

The Litter Crew Program is an effective way to keep the County jail from becoming overcrowded by offering out-ofcustody inmates the chance to show up for a job every morning and pay restitution to their community.

In 2017, the litter crew:

- Completed 9,140 supervised Community Services Hours;
- Cleaned 605 miles of county roads;
- Responded to 164 illegal dump sites;
- Collected 113,440 pounds of trash; and
- 56 individuals completed the Jail Alternative program.

#### Household Hazardous Waste Program

The Skagit County Household Hazardous Waste (HHW) Facility is operated within the grounds of the Skagit County Transfer and Recycling Station on Ovenell Road in Mount Vernon. The HHW facility is free for Skagit County residents to dispose of their household generated hazardous materials. Household hazardous waste includes such items as household cleaners, used motor oil, herbicides, fertilizers, air fresheners, and fluorescent lightbulbs.

The facility assisted 6,597 households in 2017 (an increase of over 800 households from 2016) and disposed of approximately:

- 8,143 pounds of fluorescent lights;
- 12,687 gallons of used motor oil;
- 40 pounds of elemental mercury;
- 27,776 pounds of automobile batteries;
- 6,418 pounds of corrosive liquids;
- 53,503 pounds of oil paint/solvents; and
- 66,462 pounds of toxic/pesticides materials.

In addition to County households, businesses that qualify as Small Quantity Generators (SQGs) of hazardous waste use the Facility for their hazardous waste disposal needs. Some examples of these businesses are dental offices, machine shops, tanning salons, and water treatment plants along with local cities. To qualify as a SQG, the business must produce less than 220 pounds of hazardous material per month.

In 2017, the Skagit County SQG program helped 166 local businesses dispose of approximately:

- 6,942 fluorescent bulbs;
- 178 gallons of used motor oil;
- 1,152 pounds of corrosive liquids;
- 7,497 pounds of oil paints/solvents; and
- 4,338 pounds of pesticides.

The Skagit County HHW Facility ensures the safe disposal of these materials out of our general waste stream which keeps the Transfer Station staff safe and helps to keep our land, air, and waters safe from contamination.

#### Solid Waste Outreach and Education

Throughout 2017, the Solid Waste Division continued to encourage residents of Skagit County to reduce waste through recycling, waste reduction, and composting education. This took place through a variety of community events listed below and social media outreach. The Skagit County Solid Waste Reduction/Recycling Education Specialist and Master Composter/Recycler Volunteers helped to lead waste reduction efforts through the following community events:

2016 Community Events for Outreach Education were:

- Storming the Sound Annual Conference, January
- Skagit Valley Food Coop Wellness Faire, March
- SICBA Home & Garden Tour, March
- Master Gardener Plant Faire, May
- Skagit County Fair, August
- Skagit River Salmon Festival, September
- Farmers Markets, April-October

In September through June, waste reduction education is offered through a variety of programs such as, assistance with cafeteria composting, school lunch waste audits, zero waste lunch education displays, classroom presentations, and waste reduction books and video lending to teachers. Since 1998, Skagit County has published a quarterly recycling newsletter and classroom activity pages for 4th and 5th grade students called Trash Talk! Trash Talk! continues to be published and was sent to schools in 2017.

In 2017, the Public School Outreach events were:

- Transfer Station Tour to Salish Sea Deaf School
- High School Green Career Panel
- Recycling 101 talks to K-12 through Skagit
- Composting and Vermicomposting programing to Skagit Public Schools, K-12
- Boys and Girls Club Presentation
- Bayview Elementary School Waste Audit

Throughout the year, oversight was provided to three home composting demonstration sites. Locations include the Washington State University Master Gardener Discovery Garden in Mount Vernon, the Anacortes Community Gardens at 29th Street in Anacortes, and the Anacortes Community Gardens, at the Mount Erie School Community Garden. In 2017 all compost demonstration sites were maintained. The Washington State University Discovery Garden demonstration site continues to be the primary location for which all home composting workshops are taught by the County.

#### 2017 Compost workshops were:

- Compost Education for Master Gardeners
- Vermicompost Workshop, February
- Home Composting Workshop, April
- Home Composting Workshop, May
- Home Composting Workshop, June
- Vermicompost Workshop, June
- Home Composting Workshop, September
- Home Composting Workshop, October

The Waste Reduction Recycling Education Specialist continued to organize and offer technical assistance for event recycling around Skagit County. These efforts helped to reduce waste at over 30 public events in 2017 including the Skagit County Fair and Skagit River Salmon Festival, and the Sedro-Woolley Loggerodeo.

#### Landfill Environmental Monitoring Program

The County Hydrogeologist manages the Environmental Monitoring Program for the Solid Waste Division. The Environmental Monitoring Program includes groundwater and landfill gas (LFG) monitoring and maintenance of landfill caps and appurtenances at three closed landfills: Gibraltar, Inman, and Sauk, and the operation and maintenance of the LFG extraction and leachate collection system at Inman Landfill. The Environmental Monitoring Program also includes the investigation and management of several older landfills located throughout the County, including the environmental investigation of Whitmarsh Landfill.



## Solid Waste Fund Fund 401

Revenues	2017
Taxes/Assessments	
Grants	191,504
Charges for Services	10,488,212
Miscellaneous	22,244
Other	
Total Revenue	10,701,960
Expenditures	2017
Salaries and Wages	1,156,379
Benefits	533,438
Supplies	172,396
Other Services and Charges	6,958,422
Intergovernmental Services	489,845
Debt Service	376,477
Depreciation	339,587
Total Expenditures	10,026,544
Net Increase/Decrease in Fund	
Balance	675,416

#### The Equipment Division Also known as "ER&R" or the "County Shop"



#### Staff

Mike Elde	Division Manager
Rick Owens	Shop Supervisor
Leslie Bosa	Inventory Clerk
Jeff White	Maintenance Mechanic III
Rex Elliott	Maintenance Mechanic III
Travis Serna	Maintenance Mechanic III
Andrew Brown	Maintenance Mechanic II
Jesse Breckenridge	Maintenance Mechanic II
Casey Haveman	Maintenance Mechanic I
What is ER&R?	

Equipment Rental and Revolving funds, also known as ER&R funds, are established to provide equipment rental services within local government. Per RCW 36.33A all Counties shall establish an ER&R fund to be used for the purchase of equipment, materials and supplies needed by the county road Department. Skagit County's ER&R Fund was established by resolution #8059 on July 24, 1979. It is the duty of the County Engineer to administer the ER&R fund. The County Engineer is responsible for determining how rental rates are calculated and is held accountable by the County Road Administration Board (CRAB) for all equipment purchases.

#### **Responsibilities of the Equipment Division**

- Manage Equipment Rental and Revolving Fund
- Purchase all County vehicles and equipment
- Operate the Mechanic Shop Maintain the County Fleet
- Mange Stockpile Inventories in all County owned gravel pits
- Manage Central Stores / Inventory
- Operate Fuel Depots at three locations
- Manage the 800 MHz Radio System
- Coordinate County Surplus (Auctions)
- Facility Maintenance (Burlington and Concrete

#### Goal

ER&R is to be run like a business - rental rates should cover all expenses including fuel and provide enough funding to replace vehicles and equipment at the end of their useful lives. Reserves will be used for large projects like gravel crushing contracts or other capital improvement projects. Reserves can also be used to offer rental rate reductions to all County Departments which we have been able to do for the last three years in a row.

#### The ER&R Fleet

Basically anything with a steering wheel and a County logo on the door is part of our fleet. We rent vehicles and equipment to 28 different county departments or divisions. Our four biggest customers are Road Operations, Solid Waste, the Sheriff Department and the Parks Department. We currently have 319 total units in the ER&R fleet.

Here is a list of some of the variety of equipment that we purchase and maintain:

Dump trucks	Front end loaders
Tractors with boom mowers	Road graders
Excavators	Sweepers (kick off and vacuum)
Rollers	Chip Spreader
Sod picker	Paint Striper Truck
Vactor truck	Road oil distributors
Roadside vegetation management truck	One ton trucks
Garbage bin hauling trucks	Vans
Pickups	Cars (gas, hybrid and electric)
SUV's	Riding mowers
Ballfield equipment	All-Terrain Vehicles
Patrol vehicles	Tractors with loaders and attachments

Small non-drivable equipment like pumps, plate compactors, jumping jacks



Sod Picker used to transfer windrows of sod and gravel into dump trucks

#### **Reimbursable Customers**

We also have several Reimbursable customers. These customers have us maintain vehicles and equipment that are not owned by our division. We have customers who we have worked with for several years including the Central Valley Ambulance Authority, the Sheriff Task Force and Search and Rescue. In the last two years we have entered into Interlocal agreements with Public Utility District No 1 of Skagit County and the City of Sedro Woolley Equipment. These two agencies have equipment that is the same or very similar to what we have at Skagit County. They do not have the facility or the experienced mechanics that we have. After jobs are completed our customers are billed for parts and materials and pay a 9 percent administration fee.

#### Working for other County Departments and Divisions

Our crew performs a variety of work for other County departments. The following are just a few examples:

- Engine swaps and many other maintenance activities for the Guemes Island Ferry
- Repairs to the steel floor in front of the compactor on the tipping floor and inside the compactor itself for the Solid Waste Division
- Repair work to 30 yard roll off dumpsters for the Solid Waste Division
- Fabrication of weapon ammunition deposit stations for the Sheriff's Department
- Fabrication and installation of large steel gates for Road Operations
- Assisting with the demolition of large RV's for the Sheriff's Department
- Sharpening machetes for the Natural Resources Division



Getting ready to pull a main engine from the Guemes Ferry

#### **Other Activities of the Equipment Division**

- Annual Surplus Auction Process
- Create a list of surplus from all County Departments
- Call for a public Hearing
- Hold a public hearing
- Ask other local government agencies If they are interested in purchasing our surplus
- Prep everything on the list to go to auction
- Coordinate transporting to James G. Murphy auction yard
- Report all vehicle sales to Washington State Department of Licensing
- Manage the inventory of stockpiles in the following pits: Butler Pit, Duke's Hill Pit and Eagle Hill Pit.
- All pits are permitted and have approved reclamation plans from the DNR
- The most popular used products from our pits are ½" chip rock (used for chip sealing program), Sand (used for sanding icy roads) and 1 1/4 minus (used for road shoulders).

**Central Stores** 

Our Division purchases and keeps track of a variety of parts and materials. Examples of inventory that is tracked:

- Parts for the fleet
- Tires
- Road salt (mixed with sand and used on icy roads)
- Culvert
- Guardrail
- Paint (for striping center lines and fog lines on County roads)
- Road oil and tack (used for the annual chip sealing program)
- Fuel for the fleet

We work with the accounting division to conduct an annual inventory count every May.

#### Fuel Depots

- We maintain three sites (Burlington Shop, Concrete Shop and Sheriff's Office)
- 3 underground unleaded tanks (Total capacity of 20,000 gallons)
- 2 underground diesel tanks (Total capacity of 22,000 gallons)
- 11 dispensers
- Tanks are tested for leaks and dispensers are calibrated once a year by a private company
- All fuel storage sites are inspected by the Department of Ecology once every three years.

Facilities in Burlington and Concrete - This is a team effort between the Equipment Division and the Road Operations Division. We are responsible for everything from making sure that the yards are winterized each year to cleaning out the oil water separators to painting the lines in the parking lots.

**Burlington Yard Includes:** 

- Mechanic Shop
- Road oil tank farm
- Wash rack
- Two truck sheds
- A sign shop
- The old shop along HWY 20
- A sand /salt storage building
- Admin (offices and crew room) building

Concrete Includes:

- Shop / truck shed
- Sand / salt storage building
- 800 MHZ radio system.
  - The County has over 200 mobile and portable radios. The radio system is not used nearly as much as it once was because cell phones are the primary form of communication. However, cell phones stop working during some emergencies so it is important for us to keep radios in all the emergency response vehicles and in construction equipment so that crews can communicate.
  - Our crew installs and programs the radios that go into new equipment
  - We maintain the repeater site at Leonard Ridge. This site is powered off of 20 solar batteries.
  - Two other repeater sites (Lyman Hill and Devil's Mountain) are maintained by a contractor.

Maintenance Material Bid Process

- Each December we advertise a call for bids for the following products: Liquid Asphalt, Gravel and Rock Products, Specialty and mixed asphalt, concrete, road salt, culvert lining and slope stabilization products
- We open bids in January for these products which will be used by the Road Operations Division to complete their maintenance activities.
- We enter into contracts with all vendors who we think we will spend over \$25,000 in a one year period.

#### 2017 Vehicle and Equipment Purchases

(Total Cost Includes all Outfitting)

Description	Тс	otal Cost	Department
Mini Cargo Van	\$	24,383.15	Facilities
Mini Cargo Van	\$	26,166.73	Facilities
Asphalt Patch Truck	\$	160,498.70	Operations
Crane Truck with Man lift Bucket	\$	271,951.76	Operations
Excavator	\$	101,678.80	Operations
Vacuum Sweeper Truck	\$	300,002.65	Operations
Chip Spreader	\$	279,289.95	Operations
Kickoff Sweeper	\$	57,876.51	Operations
4 Door Car	\$	21,349.18	Courthouse Pool
4 Door Car - Hybrid	\$	26,378.61	Health
1/2 Ton Pick up	\$	33,112.51	Parks
1/2 Ton Pick up	\$	38,125.78	Parks Ranger
1/2 Ton Pick up	\$	40,602.32	Operations
1/2 Ton Pick up	\$	40,412.05	PW Engineering
Meals on Wheels Pick up	\$	53,813.99	Senior Citizens
3/4 Ton Pick up	\$	34,773.56	Operations
Service Truck with a Crane	\$	142,344.35	Burlington Shop
FWD Small SUV	\$	20,337.64	Planning
FWD Small SUV	\$	20,416.64	Assessor
1/2 Ton Crew Cab Pickup	\$	60,759.82	Sheriff Patrol
1/2 Ton Crew Cab Pickup	\$	63,120.34	Sheriff Patrol
3/4 Ton Pickup (Animal Control)	\$	44,822.45	Sheriff Animal
FWD Mid-Sized SUV	\$	43,335.66	Sheriff Detective
FWD Mid-Sized SUV	\$	50,049.28	Sheriff Patrol
4 Door Car	\$	21,032.35	Sheriff Admin
4 Door Car	\$	20,991.32	Sheriff Admin
TOTAL	\$	1,997,626.10	

## Equipment Rental & Revolving Fund 501

Revenues	2017
Taxes/Assessments	-
Grants	-
Charges for Services	2,301,200
Miscellaneous	3,386,918
Other	129,554
Total Revenue	5,817,672
Expenditures	2017
Salaries and Wages	531,705
Benefits	242,147
Supplies	2,463,681
Other Services and Charges	995,844
Intergovernmental Services	128,815
Depreciation and Reclass	1,106,728
Interfund Payment for Services	
Total Expenditures	5,468,920

Net Increase/Decrease in Fund Balance	348,752
	/

## Natural Resources Division, Dan Berentson, Division Manager

The Natural Resources Division of Skagit County Public Works is comprised of two Sections: Surface Water (Drainage Utility Fund 402) and Water Resources (Clean Water Fund 120). A highly-trained staff of 19 manages a number of programs to provide clean water, effective drainage, flood damage reduction and restoration. Partnering with dike and drainage districts, tribes, state and federal agencies, Skagit Conservation District and local non-profit agencies, Skagit County effectively leverages local funding sources and resources for maximum efficiency and results.

The Natural Resources Division works closely with:

- Engineering Division
- Operations Division
- Solid Waste Division
- Skagit County Planning and Development Services Department
- Skagit County Environmental Health

## Clean Water Fund 120, Mike See, Section Manager

The Clean Water Program developed from the Clean Water (Shellfish Protection) District (CWD) created in 1995, which was originally designed to reduce bacterial pollution in Samish Bay by correcting failing septic systems in Edison and Blanchard.

From 1999 – 2005, Skagit County monitored water quality throughout the Samish Watershed. This monitoring revealed an ongoing fecal coliform pollution problem. Fecal coliform indicates the presence of bacterial organisms that can cause diseases such as typhoid fever, viral and bacterial gastroenteritis, hepatitis, and norovirus.

As a result of the continued high bacterial levels, Skagit County created the Clean Water Program (CWP) to strengthen non-point pollution reduction measures, educate the public, control non-point pollution, and develop a more thorough water quality monitoring program.

All of the programs listed within this publication are wholly or partially funded by the CWP and are dedicated towards improving Skagit County's water quality.

#### **Marine Resources Committee**

Established in 1999, the Skagit County Marine Resources Committee (SMRC) is one of seven citizen-based advisory committees formed under the congressionally authorized Northwest Straits Marine Conservation Initiative (NWSI). SMRC has been primarily supported by federal grant funding through the NWSI and the Northwest Straights Commission, and partly by the Clean Water Program (CWP) and other grant funding administered through the Northwest Straits Foundation (NWSF). Below are some of the 2017 highlights:

#### **Education and Outreach**

Fidalgo Bay Day: Fidalgo Bay Day is a free, fun, educational event for citizens of all ages who want to learn about the marine environment and what they can do to help protect it. Some of the event highlights included: a beach seining demonstration, beach walks, a portable aquarium with live sea creatures to see and touch, the skull of a gray whale, educational displays, kid's craft activities, and games. Over 400 visitors attended SMRC's 14th annual Fidalgo Bay Day on August 12, 2017 at the beautiful Fidalgo Bay Resort in Anacortes.

Salish Sea Stewards: SMRC's signature Salish Sea Stewards program provides over 40 hours of classroom and 10 hours field-based training for volunteers. In return, volunteers pledge to contribute 50 hours of volunteer services. The classes are taught by qualified experts and cover marine science-related topics and important issues impacting the Salish Sea. A record number of 34 new volunteers completed the training in 2017, for a combined total of 95 trained Salish Sea Stewards in Skagit County. In 2017, volunteers logged over 6,622 hours of volunteer services!

#### **Marine Habitat Protection and Restoration**

Nearshore Restoration Monitoring: SMRC partnered with the NWSF and other multiple partners in a coordinated effort to continue post-construction monitoring at the SMRC's Bowman Bay and NW March's Point nearshore restoration sites with the help of trained volunteers. Nearshore monitoring parameters include forage fish spawning surveys, beach seining, intertidal monitoring, and beach wrack and large woody debris surveys. In 2017, volunteers logged over 830 hours of nearshore monitoring.

Forage Fish Index Site Surveys: Forage fish index sites are being coordinated under the leadership of the Washington Department of Fish and Wildlife (WDFW). All seven MRCs are involved in conducting monthly forage fish index surveys in their own counties.

#### **Marine Species Protection and Restoration**

Pinto Abalone Recovery: The pinto (northern) abalone is the only abalone species indigenous to Washington State marine waters and is in serious decline. From 2009 to 2017, as part of an ongoing collaborative effort to build a sustainable pinto abalone population, over 9,200 hatchery-raised juvenile abalone have been introduced to six different outplant sites in Skagit County. In 2017, SMRC partnered with the Puget Sound Restoration Fund (PSRF) to conduct diver surveys and outplant an additional 1,799 juvenile pinto abalone at four of the six sites in Skagit County.

Olympia Oyster Restoration: Since 2002, SMRC has been working collaboratively with PSRF and other partners, to establish several sustainable native Olympia oyster beds in Fidalgo Bay. In 2017, volunteers helped deploy oyster shell along the west side of Fidalgo Bay to provide additional habitat for oyster larval settlement. The oyster settlement from last year was very good (about the third highest in 15 years!). In 2017, volunteers contributed over 62 volunteer hours towards native oyster restoration in Skagit County.

#### Pollution Identification and Correction Program

The mission of the Skagit County's Pollution Identification and Correction (PIC) Program is to protect the public from waterborne illness and other related water-quality hazards. Water polluted with fecal bacteria has been our primary concern; however, PIC methods can be used for nutrients, sediment, temperature and other pollutants. Skagit County's PIC Program has been operating since 2010 and has been successful in reducing levels of fecal coliform bacteria in the Samish Bay watershed. In 2015, the program expanded to include the Padilla Bay watershed.

Water quality monitoring is the core of any PIC Program. Traditionally, sampling sites are identified near the confluence of streams and are monitored on a regular basis. Where high levels of pollutants are found, source identification sampling (sometimes referred to as "bracket sampling") occurs upstream to identify where the pollution is coming from. Staff then follow up with site visits to property owners to identify the source of pollution, then work with property owners to correct any problems that are found. Common sources include pets, leaking septic systems, livestock such as horses, cows, and pigs, and wildlife.

The PIC Program has partnered with a number of other organizations to offer resources to property owners who may have problems on their property that need to be solved. Our partners include the Skagit Conservation District, the Skagit County Health Department, and Skagit Fisheries Enhancement Group, among others. With the help of our partners, we can offer low interest loans and grants for septic system repairs or replacements, free and confidential farm assessments by trained farm planners, assistance with farm management, and financial assistance for fencing, invasive plant removal, native plantings, and other projects.

#### **Clean Samish Initiative**

The Clean Samish Initiative (CSI) is a partnership between state and local agencies, tribes and volunteers to identify and correct sources of bacterial pollution in the Samish Bay watershed. The partnership was established in 2009 after high levels of bacteria were discovered in the Samish River in 2008. Led by Skagit County, the CSI partners developed a program to identify and eliminate fecal coliform bacteria sources, with the goal of reducing bacteria levels so that the Samish River meets state water quality standards. Since 2015, the CSI partners have worked with the Governor's Office to reevaluate our work, experiment with new methods, and improve our processes.

Due to strong community participation and stewardship activities, we are continuing to make progress, and we are closer to our goal than ever. The CSI team continued our focus on the upper watershed areas of Wear Creek, Skarrup Creek, and Friday Creek and its tributaries in 2017. In these areas and others in the watershed, water quality sampling, investigations, and other work led to the identification of 23 septic system failures in the Samish watershed. We evaluated 19 properties with livestock problems. Working with the Skagit Conservation District and others, we resolved 14 livestock problems. Thanks all the work done over the years, in late 2017, the Washington Department of Health updated the emergency closure criteria used to protect public health, in recognition of the water quality improvements that have been made. In 2018, the CSI partners will continue to explore the watershed to identify potential pollution sources and get them fixed.

In addition to water quality monitoring and watershed assessments, Skagit County is working hard to encourage our citizens to adopt practices that reduce pollution through various education and outreach efforts. From attendance at a wide variety of public events to creating videos about septic systems to maintaining a presence on social media via our Facebook page, Skagit County is committed to experimenting with new methods to improve our work.

#### Water Quality Monitoring Program

Skagit County's Water Quality Monitoring Program (SCMP) initiated as part of the Monitoring and Adaptive Management component of the current Critical Areas for Ongoing Agriculture (SCC 14.24.120)(Ag-CAO). The monitoring program began in October 2003 and consists of 40 sites through-out western Skagit County, located both within and outside of areas zoned Agri-cultural Natural Resources Lands (Ag-NRL) and Rural Resource.

Each sampling site is visited biweekly (26 times per year), and staffers measure such parameters as dissolved oxygen, temperature, pH, turbidity, conductivity, and salinity. Samples are also obtained for laboratory analysis of fecal coliform bacteria (each visit) and nutrients (quarterly).

The intent of the SCMP is to assess current water quality conditions and determine if positive or negative trends in water quality were occurring in areas affected by the Ag-CAO, and to determine if those trends were unique to agricultural areas or widespread throughout the county. Data analysis indicates that for the length of the study, there are several statistically significant trends in water quality in Skagit County. As of the end of 2016 (latest data available), negative trends outnumbered improving trends. Positive and negative trends occurred in both agricultural and reference locations.

Another measurement we use is the Water Quality Index (WQI), intended as an overall look at the water quality of a given watercourse. Throughout the monitoring project since 2003, there has been an increase in the number of monitoring sites that meet the "lowest concern" or green category. In 2006 there were 3 green sites out of the 40 monitoring locations. In 2016 there were 15 green sites, one less than 2015. See the table below for the history of WQI findings in the monitoring program.

Several years ago, SCMP monitoring revealed fecal coliform problems in the Samish River. This finding led to the formation of the Clean Samish Initiative (CSI). Part of the CSI effort is a Pollution Identification and Correction (PIC) program designed to locate and remediate sources of pollution through cooperative, common sense measures.

Water quality monitoring remains an important component of the Skagit County Public Works – Natural Resource Division functions. Water quality is an important barometer of natural resource conditions as we seek to protect and restore our aquatic resources.

Number of sites in Water Quality Index (WQI) categories Total number = 40 sites

Year	Green (Lowest	Yellow	Red (Highest
	Concern)	(Moderate Con-	Concern)
		cern)	
2006	3	15	22
2007	6	17	17
2008	10	13	17
2009	17	11	12
2010	13	19	8
2011	20	9	11
2012	13	16	11
2013	15	14	11
2014	16	13	11
2015	16	13	11
2016	15	15	10

#### Fish Habitat Restoration Program

The Fish Habitat Restoration Program is an ongoing County program dedicated to protecting water quality and fish habitat and is guided by the Habitat Improvement Plan (HIP). The mission of the HIP is to create and advance restoration strategies that support Skagit County goals for promoting the health of our watershed, improved water quality, and enhanced habitat for salmon. The HIP provides a road map for restoring salmonid habitat and improving water quality by identifying short, medium, and long-term project goals while allowing flexibility to work on opportunistic projects.

Projects designed to improve fish habitat also have water quality benefits. Riparian vegetation acts as a filter by removing pollutants before they reach streams, while at the same time providing distance between pollutant sources and streams and stabilizing banks. Riparian habitat restoration therefore results in improved stream temperatures and reduced pollution levels.

Skagit County has more than 800 miles of roads with hundreds of culverts. In the past two decades, the County has replaced many small, inefficient culverts with larger culverts or other fish-friendly crossings. Smaller, older culverts, can act as barriers for fish attempting to make the upstream migration while also easily plugging causing erosion or flooding upstream. Small culverts often present a velocity barrier for fish attempting to migrate through them, and perched culverts prevent fish from jumping and entering the culvert., meaning they can't access spawning or rearing grounds upstream. Conversely, large culverts and bridges allow water to flow through at a more natural rate providing a more stable stream environment for fish that also reduces flooding problems. Reducing flooding and erosion problems also improves downstream water quality throughout Skagit County.

The County routinely applies for grants from various agencies including the State Recreation and Conservation Office, Salmon Recovery Funding Board, Department of Ecology, and private sources. Additionally, we partner with various organizations throughout the County including Tribes, Skagit Fisheries Enhancement Group, Skagit Land Trust, and others.

Some of the Fish Habitat projects from 2017:

- Trumpeter Creek Restoration Project
- County culvert analysis and project development
- Maintenance on existing Restoration projects including
  - Illabot Creek
  - Martin Riparian Restoration
  - Conservation Reserve Enhancement Projects
- South Fork Delta Channel on-going Design
- Hansen Creek Reach 5 Channel-on-going Final Design

Natural Resources Stewardship Program

## Clean Water Fund Revenue and Expenditures

Revenues	2017
Taxes/Assessments	1,466,624
Grants	527,056
Charges for Services	210
Miscellaneous	28,325
Other	
Total Revenue	2,022,215
Expenditures	2017
Salaries and Wages	521,052
Benefits	240,532
Supplies	60,316
Other Services and Charges	960,401
Intergovernmental Services	
Capital Outlays	-
Interfund Payment for Services	205,773
Total Expenditures	1,988,074
Net Increase/Decrease in Fund	
Balance	34,141

Skagit County's drainage problems are interrelated and ongoing. Often, the source of a drainage problem is from surface water or runoff that has traveled from other parts of the County. Managing our stormwater and drainage problems can be very expensive, particularly if it involves capital improvements. Long-term solutions are often too costly for individual drainage districts or property owners to bear alone and are unfair, many say, because surface water from other parts of the County can contribute to localized problems. In addition, solving one problem may also create or affect other drainage concerns nearby or many miles away. The Drainage Utility is a solution that addresses the needs of everyone and shares the costs in an equitable manner.

#### History of the Drainage Utility

For many years, road funds provided the only source of funding for drainage projects. As a result, Skagit County only addressed drainage problems within County road rights-of-way.

In order to address a wider range of drainage problems, Skagit County pursued the idea of a County-wide Drainage Utility. Led by constituent pressure and support, the Drainage Utility formed in December 1994.

The Drainage Utility now allows the County to address drainage problems unrelated to road drainage while allowing road funds to focus on roadway improvement

projects. The Drainage Utility includes all areas within Skagit County with the

exception of those with established service boundaries of their own. These exceptions include drainage districts, incorporated cities and towns, federal and reservation lands, commercial timber lands, and waterways.

#### What drainage issues does the Drainage Utility address?

Many water-related projects ranging from the construction of pump stations and piping to tide gates and ditching systems are eligible for Drainage Utility funding. Problems associated with the impacts of increased stormwater from developed areas are also eligible.

The Drainage Utility only addresses drainage concerns; however, stormwater-related water quality issues may also be corrected by a Drainage Utility Project. For example, a soil stability and erosion reduction project that includes river and stream bank

restoration may also correct excessive sedimentation resulting from stormwater runoff.

All drainage and stormwater problems are evaluated and prioritized to ensure that the most urgent needs are dealt with in an expedient manner. Given the large number of problems identified to date, as well as fixed financial resources, lower prioritized projects may not be immediately corrected, but the County reviews and assesses every problem reported.

#### **Drainage Utility Project Limitations**

State law mandates that Drainage Utility funds may only be used for stormwater control facilities. However, Drainage Utility funds can be used on cooperative watershed management actions, including watershed management partnerships and other governmental agreements, for purposes of water supply, water quality, and water resource and habitat protection and

management.

The Drainage Utility covers most of the county, with some exceptions including drainage districts, cities, tribal lands, and forest lands. However, it was recognized that watersheds may overlap both Drainage Utility properties and exempt properties. Because of the mutual impact, Drainage Utility projects have been constructed in partnership with many groups, including:

- Dike, Drainage and Irrigation Improvement District 5
- Dike, Drainage and Irrigation Improvement District 12
- Drainage and Irrigation Improvement District 14
- Drainage and Irrigation Improvement District 15
- Drainage and Irrigation Improvement District 16
- Drainage and Irrigation Improvement District 17
- Drainage and Irrigation Improvement District 19

- Drainage District 21
- Consolidated Diking Improvement District 22
- Dike, Drain and Irrigation Improvement District 25
- Skagit River System Cooperative
- Sauk-Suiattle Indian Tribe
- Swinomish Indian Tribe
- Upper Skagit Indian Tribe

Partnerships have enabled the completion of dozens of mutual benefit projects over the years, including some of the projects shown below:



No Name Slough Bypass Culverts



Bay View Padilla Bay Culvert Extension



Maupin Road Conveyance Improvement Dike & Drainage District 22

(2008)



Red Creek Culvert Replacement



Brown Slough Pipe Lining



Samish Flood Return Pipe Lining



Joe Leary Slough Bridges



Chilberg Pump Discharge Pipe Lining

## Drainage Concerns

In 1999, the Drainage Utility first began to address drainage concerns. Surveys were sent out to property owners across the County in 1998 asking if there were any drainage problems in the area. Several hundred responses were received; each

response was evaluated to determine if a project was feasible. Since that time, drainage concerns have typically been received by telephone or email. The Drainage Utility has received over 1,400 drainage concerns in the 20 years it has been managing stormwater drainage. While a solution may not have been possible for all drainage concerns, each one has been investigated, tracked, evaluated, and closed out.

The Drainage Utility provides up to \$5,000 for minor repairs or modifications to man-made conveyance systems. Concerns that exceed \$5,000 are considered projects, and are evaluated and prioritized with all other County stormwater projects. Common concerns include:

- Ditch maintenance, grading, and/or cleaning
- Culvert cleaning
- Catch-basin cleaning or installation

#### **Helmick Road**

Over





#### Samish Island Rd. Outfall Extension

An existing outfall pipe originally ended at the top of the bank, resulting in erosion on the property. Skagit County Road District #1 was able to install a Diffuser Tee to meter the rate of flow and prevent continued erosion.





#### South Shore Conveyance Maintenance

An existing cross culvert was unable to contain flow within the conveyance system to Lake Cavanaugh. Runoff waters were avulsing from within the system and sheet flowing across private properties causing some property damage. Drainage Utility, along with Public Works Environmental Services, obtained the permits and completed the

reestablishment of the existing system.

## Drainage Utility Projects 1999-2017



## 1997—2017



## Drainage Utility Fund 402

Revenues	2017
Taxes/Assessments	1,736,028
Grants	50,000
Charges for Services	
Miscellaneous	24,563
Other	
Total Revenue	1,810,591
Expenditures	2017
Salaries and Wages	442,899
Benefits	197,184
Supplies	90,862
Other Services and Charges	441,528
Intergovernmental Services	106,906
Capital Outlays	16,767
Depreciation	375,136
Total Expenditures	1,671,282
Net Increase/Decrease in Fund	
Balance (Cash Basis)	139,309

## Conservation Futures/Farmland Legacy Program Fund 122

The Skagit County Farmland Legacy Program is a County initiative that purchases agricultural easements on Skagit farmland, and works to support policies, programs, and plans that enhance the protection of farmland. Funding comes from the conservation tax and is often leveraged with federal and state grants and private donations. The Farmland Legacy Program became part of Skagit County Public Works in 2014.

#### Responsibilities

The Skagit County Conservation Futures Advisory Board is responsible for administering the Farmland Legacy Program, which purchases development rights and places perpetual conservation easements on agricultural lands.

#### **Program Concept**

Easements are held by the County in perpetuity. The property owner continues to own the land and may sell or lease the farm if he or she chooses but the development restrictions run with the land. The intention is to maintain the farmland in a productive manner allowing uses that support that goal.

The Farmland Legacy Program is a purchase of development rights program designed to preserve agricultural lands through conservation easements. The program is primarily supported by the County's Conservation Futures tax and is often leveraged against federal, state, and non-profit dollars. It is a voluntary program which enables landowners to sell their development rights to the County, while holding fee simple title to the land and continuing to farm. The easement places permanent restrictions on future use and development of the land in order to protect its agricultural character and productivity.

The principles of the Farmland Legacy Program are to preserve and enhance a critical mass of farmland to sustain the farm-related agricultural industry, to target key farmlands that are under pressure from development, to coordinate with other farmland preservation programs, and to provide for ongoing easement monitoring and enforcement.



The Program added just over 100 acres into Conservation Easements in 2017, including 78 acres on Samish Island Road and 23 acres on Bradshaw Road. The monitoring contractor completed monitoring on all easements in the FLP database and there were no compliance issues noted. The Conservation Futures advisory committee and staff produced an annual report that included landowner testimonials, program statistics to date, and a map showing all implemented easements. The report was distributed in the Skagit Valley Herald and is accessible online.



## Conservation Future/Farmland Legacy Revenue and Expenditures

Revenues	2017
Taxes/Assessments	1,030,908
Grants	62,586
Charges for Services	
Miscellaneous	38,419
Other	
Total Revenue	1,131,913
<b>F</b>	2017
Expenditures	2017
Salaries and Wages	30,408
Benefits	14,364
Supplies	48
Other Services and Charges	42,363
Intergovernmental Services	14,327
Capital Outlays	
Interfund Payment for Services	-
Total Expenditures	101,510
Net Increase/Decrease in Fund	
Balance	1,030,403

#### Samish River Knotweed Program



Last year with our Samish River Knotweed program we worked with 31 landowners' throughout the river system to treat Japanese knotweed - Fallopia japonica and Bohemian Knotweeed - Polygonum x bohemicum. Within those properties we surveyed 80 acres and treated a total of 2.7 solid acres of Knotweed over 2.6 river miles. In 2014 we surveyed 165.7 acres, treating 10.2 solid acres of Knotweed over a total of 6.6 river miles. It is hard to determine program success due to insufficient funds to adequately address the Knotweed infestation in the Samish River watershed. Although we have seen decreases in Knotweed populations in treated sites our overall number of treatment sites have been decreasing. For 2018 we will be exploring alternative funding sources to support the Samish River Knotweed Programs.

#### Grandy Creek Knotweed Program

In 2017 our Grandy Creek program was able to work with 21 different landowners encompassing a total of 320 acres of land to treat Japanese knotweed - *Fallopia japonica*, Giant Knotweed - *Fallopia sachalinensis, Bohemian Knotweeed - Polygonum x bohemicum*. A total of 6.1 river miles was treated for the control of 3.1 solid acres of Knotweed. This has been a huge improvement when compared to 2014 where

we surveyed 115.8 acres over 5.6 river miles. In total 1.5 acres of knotweed was found and treated in 2014. Although the total amount of knotweed has increased we have also expanded our work to more alluvial areas outside of the flowing stream channel. Grandy Creek has been a huge success story but unfortunately we are seeing an increase in Butterfly bush - *Buddleja davidii*. populations. Future efforts will be focused on not only controlling Knotweed but to mitigate the spread of Butterfly Bush until native species can colonize disturbed and recently treated sites.

#### **Skagit County Spartina Program**

In 2017 we hired 5 crew members to carry out our Spartina control program from June until November to treat Common Coordgrass - *Spartina anglica*. Through the season we worked closely with Snohomish County,



**Fig. 3.** Map of Skagit County showing the extensive surveys conducted and the treatment locations of *S. anglica*. Red lines indicate survey locations conducted by SCNWCB crew members and assisting entities while purple dots indicate locations of found and treated *S. anglica*.

Washington Department of Fish and Wildlife, Washington State Department of Agriculture, Island County, Swinomish Tribe and the Padilla Bay Research Center to coordinate crossjurisdictional efforts throughout Skagit County tidal areas. In total there was an estinmated 3465 acres surveyed for a total of 739 total plants detected. Although this number may seem high most of the plants found are roughly 2 sq. ft. in size. In total 466 solid Sq. ft. of Spartina was treated. This value is low due to the outstanding efforts for the last 10 years to control the species. Since there are low numbers of plant populations there is an increase in total time needed to search for populations. Surveys can be meticulous and daunting in nature due to the complexity of marine channels, substrates and dense marine vegetation. All together we have seen a total decrease of 22% from 2016 where we found 543 solid sq. ft. of S anglica. We have seen an increase in funding from the Washington State Department of Agriculture due to our willingness to assist partners with hard to reach areas as well as implementing repeatable and thorough survey techniques.

In 2017 there were various general fund programs offered to

residents of Skagit County. The SCNWCB assisted 45 private landowner with a variety of noxious weed issues including but not limited to Himalayan Blackberry - *Rubus armeniacus*, Yellow Archangel - *Lamium galeobdolon*, Japanese knotweed - *Fallopia japonica*, Giant Knotweed - *Fallopia sachalinensis,* Bohemian Knotweeed - *Polygonum x bohemicum,* Policeman's Helmet - *Impatiens glandulifera,* Scotch Broom - *Cytisus scoparius,* Field Bindweed - *Convolvulus arvensis,* Poison Hemlock - *Conium maculatum,* Shiny Geranium - *Geranium lucidum,* Canada thistle - *Cirsium arvense,* Bull thistle - *Cirsium vulgare,* Common teasel - *Dipsacus fullonum,* Purple loosestrife -*Lythrum salicaria* and Butterfly bush - *Buddleja davidii.*  The Washington Conservation Corps (WCC) was able to provide assistance with Policeman's helmet, Yellow Archangel, Knotweed, as well as assist with Spartina surveys and control throughout Skagit County totaling more than 700 hours of in-Kind contributions. Dike District 12 was able to assist Skagit County with their Skagit River noxious weed survey providing a boat and captain for 40 hours. This ongoing survey extends from Burlington to the Sauk River confluence to determine the presence of noxious weeds and the distribution of some of our priority weeds. This is an attempt to develop a plan for the continuation of the current Knotweed efforts taking place up river on the Sauk, Grandy and upper Skagit watersheds by the Skagit County Cooperative Weed Management Area Group (CWMA). 2017 was also the first year for the full implementation of our Data collection protocols. The Skagit county Noxious Weed Control Board Collected data of all known populations of noxious weeds we are planning on continuing our survey efforts to develop a more comprehensive noxious weed analysis for Skagit County.

Another Interesting service that the SCNWCB offers is Weed Free Hay and Mulch certifications (WWHAM). In 2017 we surveyed 3 Wheat fields and plan on continuing this service in the 2018 fiscal year. We also provided rock pit surveys to help limit the Spread of Noxious weeds in fill and construction materials. In 2017 Skagit County worked with Weyerhaeuser to survey rock material to that is to be used in future USFS projects.

SCNWCB also participated in various tabling events and education sessions for students and general Skagit County citizens. In 2017 the SCNWCB tabled or held workshops at the Skagit County Fair, Skagit River Salmon Festival, Dine And Discover, Washington State Home and garden show located at the Washington state convention center, Skagit Fisheries Enhancement Group Earth Day Event, Mount Vernon High School Science Night, Invasive Plant Council Early detection and Rapid Response Northwest Training (IPC EDRRMaps), North Cascades Institute Youth Ambassadors Program, as well as the annual WSU Extension Forestry weed Management Workshop.

Revenues		2017
Taxes/Assessments		
Grants		71,350
Charges for Services		
Miscellaneous		32
Other		
Total Revenue		71,382
Expenditures		2017
Salaries and Wages		104,628
Benefits		30,335
Supplies		6,557
Other Services and Charges		17,242
Intergovernmental Services		
Capital Outlays		
Total Expenditures	•	158,762
Net Increase/Decrease in Fund Balance (Cash Basis)		(87,380)

#### Noxious Weed Program Fund 001-024

### River Improvement Fund 110 Financial Comparative Financial Information

The River Improvement program has several functions. It also provides funding for cost-sharing with United States Geological Survey (USGS) for maintenance of and communication with river gauging stations. As part of the County's responsibility for flood awareness and response, it provides public information to increase public awareness of flood risks and supports and helps coordinate flood control activities with local decision makers and other stakeholders. The River Improvement program also maintains County levees in the PL84-99 program.

River Improvement Fund		
Fund 110		
Revenues	2017	
Taxes/Assessments	-	
Grants	63,886	
Charges for Services		
Miscellaneous	435	
Other	15,000	
Total Revenue	79,321	
Expenditures	2017	
Salaries and Wages	27,837	
Benefits	13,179	
Supplies	39	
Other Services and Charges	41,809	
Intergovernmental Services	45,305	
Capital Outlays		
Interfund Payment for Services	2,718	
Total Expenditures	130,887	
Net Increase/Decrease in Fund		
Balance	(51,566)	

The purpose of the Lake Management Districts is to manage aquatic plants, particularly invasive plants, in cooperation with the lake communities. The districts are authorized for a term of ten years. Funding is through Lake Management Property Tax Assessments.

Lake Management District Fund 142 Revenue and Expenditures		
Revenues	2017	
Taxes/Assessments	57,076	
Grants		
Charges for Services		
Miscellaneous		
Other	_	
Total Revenue	57,076	
Expenditures	2017	
Salaries and Wages	2,834	
Benefits	1,188	
Supplies	10	
Other Services and Charges	44,425	
Intergovernmental Services		
Capital Outlays		
Interfund Payment for Services		
Total Expenditures	48,457	
Net Increase/Decrease in Fund		
Balance	8,619	

#### Lake Management District Fund 143 Revenue and Expenditures

Revenues	2017
Taxes/Assessments	29,445
Grants	
Charges for Services	
Miscellaneous	
Other	
Total Revenue	29,445
Expenditures	2017
Salaries and Wages	1,991
Benefits	858
Supplies	10
Other Services and Charges	35,360
Intergovernmental Services	
Capital Outlays	
Interfund Payment for Services	
Total Expenditures	38,219
Net Increase/Decrease in Fund	
Balance	<mark>(</mark> 8,774)

#### Lake Management District Fund 142 Revenue and Expenditures

Revenues	2017
Taxes/Assessments	14,610
Grants	
Charges for Services	
Miscellaneous	
Other	
Total Revenue	14,610
Expenditures	2017
Salaries and Wages	1,128
Benefits	475
Supplies	10
Other Services and Charges	12,709
Intergovernmental Services	
Capital Outlays	
Interfund Payment for Services	
Total Expenditures	14,322
Net Increase/Decrease in Fund	
Balance	288

#### Lake Management District Fund 144 Revenue and Expenditures

Revenues		2017
Taxes/Assessments		-
Grants		
Charges for Services		
Miscellaneous		
Other	_	
Total Revenue		-
Expenditures		2017
Salaries and Wages		7,114
Benefits		3,240
Supplies		19
Other Services and Charges		16,294
Intergovernmental Services		
Capital Outlays		
Interfund Payment for Services	_	
Total Expenditures		26,667
Net Increase/Decrease in Fund		
Balance		(26,667)

Fund 144 Assessment was re-authorized in 2017 and no assessments were collected for 2017.

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