



# 2016 REPORT

Pierce  
County  
Office of  
Sustainability



## sustainability 2016

The Pierce County Council endorsed the Sustainability 2020 Plan on April 26, 2016 and here we are a year later reporting back on our sustainability efforts. The Office of Sustainability is now located in Facilities Management and remains focused on saving money, limiting waste, protecting the environment, and protecting human health.

Sustainability 2020 is an ambitious sustainability plan for Pierce County government that can only be met with the efforts and leadership of all of

“ Because of technology advancements the sustainable choice is now often the one that saves you the most money. We should not continue to pay more to pollute more when there are better options available. ”

Pierce County employees. Given limited resources, the Office of Sustainability is totally dependent on partnerships to meet our internal and external goals.

When Pierce County employees make sustainable choices it saves us money and allows us to spend more tax dollars on public safety and other critical County

services. The County owns and operates 72 buildings, 1,084 vehicles and employs over 3,500 people. Making good decisions about these assets is critical for the wellbeing of Pierce County residents and can help ensure a cleaner future.

Ryan Dicks  
*Office of Sustainability*

## trends in 2016

**Everything Electric:** In October of 2016 Pierce County created the first of its kind Electric First Policy that directs County departments to purchase electric vehicles and equipment when they meet the department's needs. Electric vehicles offer many positive benefits, like cleaner air and water. They also save \$1,500-\$2,500 a year in lower fuel and maintenance costs.

**LEDs:** Switching to LED lights continues to be a money saver for Pierce County. LED lights use about 1/5 as much energy and local utilities are helping to make them more affordable with rebates.

**Biodiesel:** In 2016 Pierce County started a successful biodiesel pilot project and used over 17,000 gallons of B20 biodiesel in our fleet. Biodiesel made from reused cooking grease can dramatically lower the carbon intensity of fuel.

## 2016 sustainability successes

**Air Quality:** Fine particle pollution levels have improved in Pierce County, from 46 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) in 2009 to 28 ( $\mu\text{g}/\text{m}^3$ ) in 2016. 884 woodstoves were replaced in Pierce County in 2016.

**Sheriff Fleet:** The Sheriff's fleet improved to 16.65 mpg. More efficient vehicles, anti-idling technology, and driver behavior all played a role in the overall improvement.

**Floodplains for the Future:** Pierce County continues to support a large scale partnership with regional interests around floodplains. Pierce County ranked 2nd in the state out of 53 applications for State funding for the next biennium. Surface Water Management successfully removed 11 frequently flooded homes out of the floodway in 2016.

**Farmland and Natural Areas Conserved:** Pierce County and partners conserved over 328 acres of farmland and another 657 acres of forestland for a total of 985 acres conserved in 2016.

**Online Permitting:** 43% of all development projects in Pierce County were initiated online in 2016. The 7,770 projects reduced an estimated 186,480 miles of driving for residents.

**Energy Use:** Energy efficiency in County-owned facilities has improved, dropping 13.5% below 2009 levels from all sources in metered buildings.



# air quality

## active partners

City of Tacoma, Puget Sound Clean Air Agency (PSCAA), Tacoma Pierce Health Department, TPU, Puyallup Tribe

## trend

Air Quality is improving in Pierce County.

## goal

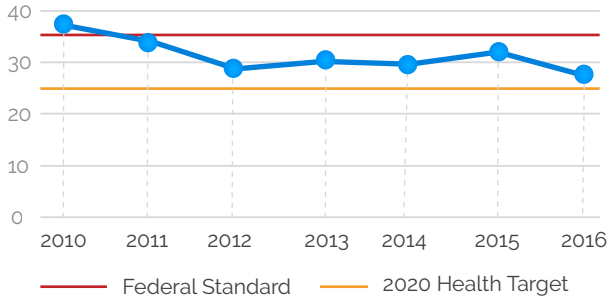
Pierce County is committed to staying in attainment for PM<sub>2.5</sub> and attaining the PSCAA daily health goal by 2020.



# technical overview

Fine particle pollution levels have improved in Pierce County, from 46 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ) in 2009 to 28 ( $\mu\text{g}/\text{m}^3$ ) in 2016. When weather conditions that play into air quality (such as wind speeds and temperatures) are taken into account, they alone can't explain the difference. The improvement coincides with a focused effort over several years to remove thousands of old, polluting uncertified wood stoves and increase education and enforcement of wintertime air quality burn bans.

Pierce County Air Pollution



## coming in 2017

Pierce County and partners will compete for VW settlement funding to reduce diesel emissions and look for money to install electric vehicle infrastructure throughout Pierce County.



Pierce County partners were able to successfully remove over 884 wood stoves in 2016. Pierce County violated the Federal Standard for PM2.5 on one day January 1st 2016. Pierce County violated the Health standard for PM2.5 on 6 days the lowest number since 2010 a year that had favorable weather conditions (lots of wind and rain).

## did you know?

Since 2008, Pierce County and partners have been able to remove 4,587 wood stoves.




# climate change resilience



## active partners

City of Tacoma, King County, Tacoma Pierce Health Department, TPU, Port of Tacoma, Puyallup Tribe, Muckleshoot Tribe, Pierce Conservation District.



## trend

Beginning resilience efforts



## goal

Have a completed Climate Change Resilience Strategy for Pierce County. This strategy will develop recommendations with priority action steps.



## overview

The most significant changes projected for the Pacific Northwest will be to temperature, precipitation, and sea level:



Sea level - increase in base sea level and high tides



Temperature - increase in average temperatures, minimum temperatures, and the frequency & duration of extreme heat event



Mountain snowpack - reductions in snowpack and shifts in the timing of stream flow



Precipitation - little change in annual precipitation but wetter winters, drier summers, and more extreme precipitation events

## 2016 resilience update

Pierce County Surface Water Management removed 11 houses from floodways in 2016 and protected 27 acres.

### coming in 2017

Pierce County is currently ranked 2nd in the state for the next round of Floodplains by Design funding. We also expect to have the beginning of a climate resilience plan for Pierce County. Pierce County will continue to engage partners who are interested in understanding resilience.



Pierce County is just starting our work to create a Climate Change Resilience Plan with recommended priority action steps. We continue to partner with tribes and farmers to create more resilient floodplains through our Floodplains for the Future Group. In 2015 Pierce County and partners successfully applied and received \$9.2 million from Floodplains by Design state funding.

### did you know?

Annual precipitation in Pierce County is expected to be about the same in the future, but we will have wetter winters and dryer summers resulting in less snowpack and more flooding.

# human health + commute trip reduction

## active partners

City of Tacoma, Downtown on the Go!, Tacoma Pierce Health Department, Pierce Transit, Sound Transit.

## trend

Human health and commute trip reduction trends have largely stayed the same over the last five years.

## goals

Incentivize Pierce County employees to create a personal health plan with wellness goals.

Improve the health of Pierce County residents

35% of employees use a commute trip reduction mode to commute to work.



## overview

Pierce County is in the first year of creating an employee health and wellness program. 731 employees signed up for the Hubbub health and wellness program and 567 earned the financial incentive.

Pierce County recently ranked 24th out of 39 counties in Human Health. Improved funding for Pierce County parks in 2016 will improve health and wellness opportunities at Pierce County parks.

Roughly 12% of Pierce County employees used a Commute Trip Reduction mode in 2016. While County employees continue to get a free ORCA card very few are using them because free parking is often offered to Pierce County employees.



25 miles of trail owned by Pierce County with an estimated 485,400 trail users



911,364 residents are directly served by Pierce County Parks - 4.6 million indirectly



79% of Pierce County citizens drive alone to work



Pierce County employees took 32,980 trips with their orca card - 12.5% increase since 2012



1,321 people experienced homelessness during the 2017 Point-In-Time Count

## coming in 2017

Water bottle fillers in place of water fountains at the County City Building and Annex. Two miles of new trails will be added to the Foothills Trail System in 2017.



## did you know?

The most sustainable thing you can do is live near where you work. The closer you live to work the less time you spend in traffic and the more time you have to get healthy and participate in your community.


An aerial photograph showing a group of people in a boat on a river. They are wearing jackets and are engaged in cleaning the riverbank. There are white buckets and tools visible on the boat. The water is a light greenish color, and the banks are rocky and covered with some vegetation.

## sustainability education



### active partners

Pierce County employees,  
Pierce County residents, and  
Washington Green Schools.



### trend

Pierce County employees  
continue to be very well educated  
about sustainability. The office of  
sustainability will do more sustainability  
training to residents in 2017

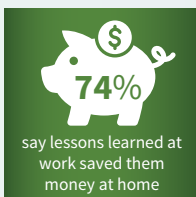
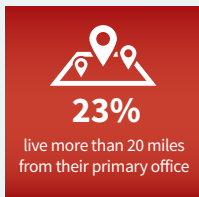
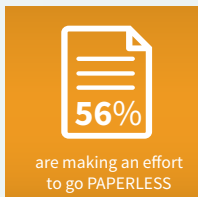
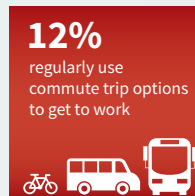
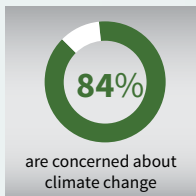


### goal

Educate Pierce County employees and  
residents about how to save money,  
limit waste, protect the environment  
and protect human health.

## Pierce County employees

Pierce County does an annual sustainability survey to make sure employees are informed on sustainability trends.



## Pierce County residents

In 2016 the Office of Sustainability presented over 20 times to local and regional groups. If your group or organization is interested in a presentation please contact Ryan Dicks at [rdicks@co.pierce.wa.us](mailto:rdicks@co.pierce.wa.us)

### did you know?

Electric cars and lawn equipment are widely available and can help save money on gas and require very little maintenance. They are also good for limiting air and water pollution and allow you to spend your money with your local utility.



# energy + water use

## active partners

TPU, PSE, BPA, Smart Buildings Center,  
Lighting Design Lab

## trend

Pierce County-owned buildings are  
using less energy

## goals

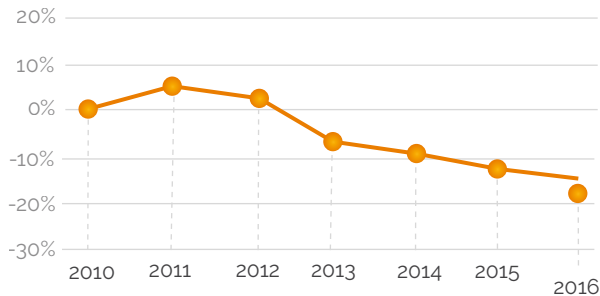
Reduce the energy use intensity (kBtu/  
sq ft) in County-owned buildings by 30%  
over 2009 levels. Reduce natural gas  
used in all County operations by 50%  
over 2009 levels.

Reduce water use by 30% in our owned  
facilities.

## overview

Energy efficient use of County-owned buildings has improved 13.5% (*sewer treatment plant not included*) below a 2010 benchmark. The largest drops, from 2013-2016, correspond to an increase in energy conservation measures, decommissioning nearly 30,000 ft<sup>2</sup> in inefficient facilities, and the addition of 140,000+ ft<sup>2</sup> of high-efficiency space for the County to occupy. We determine energy efficiency by measuring how much natural gas and electricity the County uses.

### Energy Use Intensity (EUI) Change in kBtu/sq.ft.



Pierce County has 1,200 street lights; of these 75% have been converted to LED.

### Water Usage

Water usage has gone up by 9.2% per sq.ft. since 2009. Pierce County has added over 110,000 square feet of office space in that time. Water use varies by building use and we continue to prioritize water conservation in all operations.



## coming in 2017

As the Resource Conservation Management (RCM) program collects greater amounts of information, good data management and analysis tools and practices become essential in implementing and maintaining our resource conservation efforts. The RCM Program is exploring which tools are most practical for enabling insights into how Pierce County facilities might operate more efficiently and effectively.



# fleet + ferry



## active partners

City of Puyallup, Lakewood and Tacoma, Western Washington Clean Cities, and Puyallup Tribe.



## trend

Fleet fuel use has slightly declined. Ferry Fuel use was up in 2016 due to increased trips.



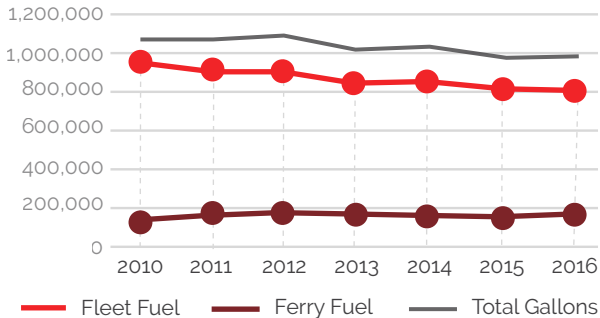
## goal

Reduce fossil fuel use by 20% by 2020 in Pierce County Fleet/Ferry.

## overview

The Pierce County fleet has reduced fuel use in our 1,084 vehicles by 14.39% since 2010. In 2016 the Fleet used 813,638 gallons, 136,770 fewer gallons than in 2010.

Pierce County Fuel Use



## 2016 fleet update

Pierce County used 17,883 of B20 Biodiesel in 2016 as part of a pilot program.

Pierce County owns and operates 1,084 vehicles and we are using 15.1% less fuel per vehicle than in 2010.

Pierce County operates 3 electric vehicles, 1 electric Zamboni, and 1 electric trash buggy.

## 2016 ferry update

The Pierce County Ferry increased fuel use to 166,659 gallons a 5.9% increase over its use in 2015. The ferry made an estimated 270 additional trips in 2016 compared to 2015.

## coming in 2017

Pierce County and partners will compete for VW settlement funding to reduce diesel emissions and look for money to install electric vehicle infrastructure throughout Pierce County.

# materials management

## active partners

Pierce County residents, LRI

## trend

Pierce County saw an increase in purchases. Pierce County is meeting Solid Waste Management Plan goals.

## goals

Reduce office supply purchases by 20%.

Reducing tonnage of landfill waste by 30% over 2010 baseline from Pierce County facilities. Tracking to the best of our ability waste and recycling at county owned facilities.

Reduce household waste to 3lbs disposed per person per day by 2020.



## purchasing overview

39.4% of Pierce County purchases contained recycled content—a slight decrease from the 40.5% in 2015.

	2014	2015	2016
Total Spend All Product	910,619	724,001	894,209
% of All Products Recycled	36.9%	40.5%	39.4%
Total Spend Office Supplies	576,288	480,340	630,863
Total Spend All Paper	103,732	86,461	119,864
Total Spend Recycled Paper	92,206	81,658	113,555
% Recycled Paper	88.9%	94.4%	94.7%

## waste overview

Residential, commercial and institutional customers in Pierce County's solid waste system disposed less garbage than the target level set in the 2016 Supplement to the Tacoma-Pierce County Solid Waste Management Plan. At 3.40 pounds per day, County customers "beat" the performance benchmark of 3.58 pounds by 5 percent.

### coming in 2017

Food waste reduction at Pierce County Jail.  
Annual waste characterization study to better understand what is going into the landfill.



### Tons of Garbage Disposed in 2016

379,391

### Service Area Population (OFM, 4/1/16)

609,740

### Days (leap year)

366

### Pounds per capita per Day (pcd)

3.40

### Actuals Pounds Per Day

2015 3.29

2014 3.18

## did you know?

### Reduce, Reuse, Recycle


There is a reason "reduce" is the first of the three Rs. The easiest way to manage waste is to not create it in the first place.

# resource lands



## active partners

Forterra, PCC Farmland Trust, Pierce Conservation District, Agriculture & Forest communities of interest, Puyallup Tribe, Muckleshoot Tribe, Nisqually Tribe.



## trend

No major changes in Pierce County Agriculture. Forestry is a new area of focus.



## goals

Grow the agricultural economy by 10% making sure the agriculture resource is economically viable for future generations. Hire or contract for a County stewardship forester to create a unified management plan and oversee the stewardship of Pierce County-owned forestland. This person could also be a much needed resource for local forest landowners.

## overview

Pierce County continues to provide support to the agricultural community through the Agriculture Program. In 2016 Pierce County and partners hosted several farmer-focused events dealing with issues like drainage, local marketing and succession planning.



Pierce County employees purchased 700 boxes of fresh food through the Fresh food program. Fresh Food is delivered to 7 Pierce County buildings weekly and Pierce County employees that sign up get free delivery.



Pierce County and our partners conserved 2 farms in 2016 keeping 328 acres in active farming in perpetuity.



657 acres of sensitive forestlands conserved in 2016.



The City of Tacoma bought 11 development credits from Pierce County's TDR Bank and sold 4 to a local developer, helping to conserve agricultural land along the Puyallup River.

## coming in 2017

Pierce County and partners will continue to purchase conservation easements on several agricultural and floodplain properties. Conservation Futures will complete another funding round of conservation projects throughout Pierce County. The case for a Pierce County stewardship forester will be made to the County Council. Pierce County will be looking at how we can help support new forest technology around CLT that could create jobs locally.



## did you know?

Purchasing local food is the most important thing most people can do to help farmers stay on the land.

# water quality



## active partners

Puyallup Tribe, Squaxin Island Indian Tribe, Nisqually Indian Tribe, Chambers/Clover, KGI, and Puyallup River watershed Councils, Nisqually River Council, Health Department, Pierce County Conservation District, Alliance for a Healthy South Sound, West Sound Watershed Council, King County



## trend

Trend water quality is slightly improving.



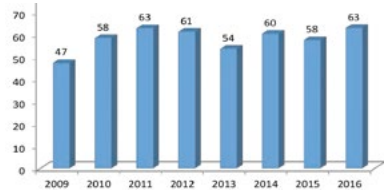
## goal

Increase stream quality to a reported grade of B in at least one watershed by 2020, with all others reaching a minimum of C+.

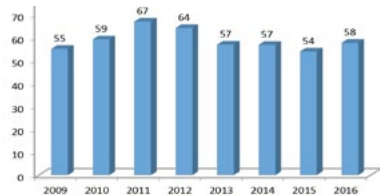
## watershed data

The figures below display overall scores in each of the four watersheds.

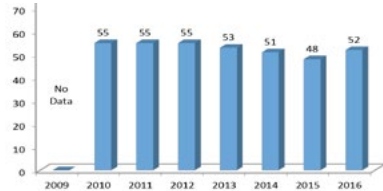
### KGI Watershed



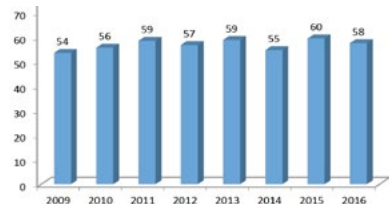
### Nisqually Watershed



### Chambers/Clover Watershed



### Puyallup Watershed



## technical overview

Pierce County Planning and Public Works staff monitor water quality monthly at 54 Pierce County streams.



Pierce County's water health received a C grade in 2016.

Benthic samples from a subset of 43 streams are collected every summer. The Pierce Conservation District samples water quality in a number of lakes. We then analyze these data in a complex, compound index of water quality and biological factors and publish them annually in the Pierce County Surface Water Health Report Card. The report card assigns a letter grade to streams, lakes and watersheds and includes information about local water quality issues.

View the full report at [www.piercecountywa.org/swm](http://www.piercecountywa.org/swm)

coming in 2017

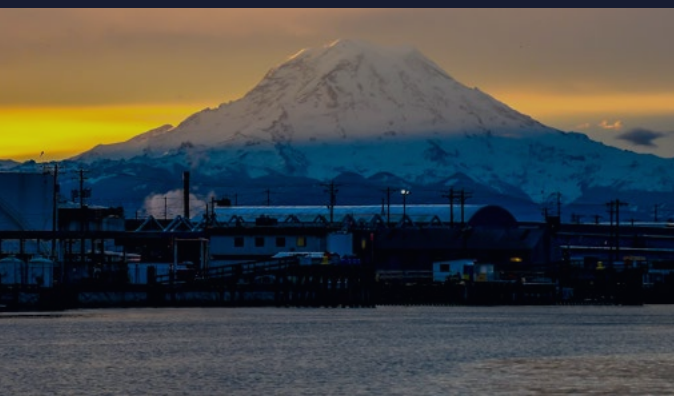
Beginning in 2017 and continuing into 2018, Pierce County, the state, US EPA, and other stakeholders will once again make decisions on the role of stormwater permits in addressing this national problem. That is because the current permit expires in July 2018 and the state is deciding how to reissue it.

## what makes the grade?

Water Quality Index (WQI) score is calculated using monthly stream water quality sampling for fecal coliform bacteria, pH, dissolved oxygen, temperature, turbidity, total suspended solids, total nitrogen and total phosphorus. Streams with scores 80-100 are of the lowest concern, 40-79 are of marginal concern and less than 40 are of highest concern.

Lake Quality Index (LQI) score is generated based on summer sampling results of total phosphorus, algae, fecal coliform bacteria and water clarity. A penalty is assessed for closures due to unsafe water quality at public swimming beaches. Lakes with scores greater than 10 received an A; between 10 and 8 received a B; between 7 and 5 received a C; between 4 and 2 a D; and less than 2 an F.

Benthic Index of Biotic Integrity (BIBI) scores are calculated using benthic macroinvertebrate (bugs living on the bottom of streams) samples collected at least once every five years. Scores between 80-100 are considered excellent; 60-79 are good; 40-59 are fair; 20-39 are poor and 0-19 are very poor.





# partners

Alliance for a Healthy South Sound

BPA

Chambers/Clover Watershed Council

Citizens for a Healthy Bay

City of Lakewood

City of Portland

City of Puyallup

City of Tacoma

City of Seattle

Downtown on the Go

Forterra

KGI Watershed Council

King County

King-Pierce County Farm Bureau

Kitsap County

Land Recovery, Inc.

Lighting Design Lab

Muckleshoot Tribe

Nisqually River Council

Nisqually Tribe

Pacific Lutheran University

PCC Farmland Trust

Pierce Conservation District

Pierce Transit

Port of Tacoma

Puget Sound Clean Air Agency

Puget Sound Energy

Puget Sound Regional Council

Puyallup River Watershed Council

Puyallup Tribe

Puyallup Watershed Initiative

The Russell Family Foundation

Smart Buildings Center

Snohomish County Sound Transit

Squaxin Island Indian Tribe

Tacoma Pierce Health Department

Tacoma Public Utilities

Tahoma Audubon

University of Puget Sound

University of Washington - Tacoma

Washington Green Schools

WA State Department of Commerce

WA State Department of Ecology

Western Washington Clean Cities Coalition

West Sound Watershed Council.

# sustainability challenges on the horizon

**Getting Good Data:** It continues to be a challenge to measure many areas of sustainability within Pierce County government. We will continue in 2017 looking for better ways to measure Pierce County's sustainability efforts.

**Utility Rate Increases:** Tacoma Public Utilities plans to increase electric rates by 5% in 2017 and 2018. Pierce County will need to decrease energy use to control future costs.

**Pierce County is Growing:** While growth can be good we are seeing major issues around affordable housing and traffic. Creating more good jobs in Pierce County is critical to improving health outcomes for our residents.

Learn more about Pierce County's  
Office of Sustainability

[piercecountywa.org/sustainability](http://piercecountywa.org/sustainability)



Pierce County

