



SUSTAINABILITY PLAN



April 21, 2023

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EXECUTIVE SUMMARY

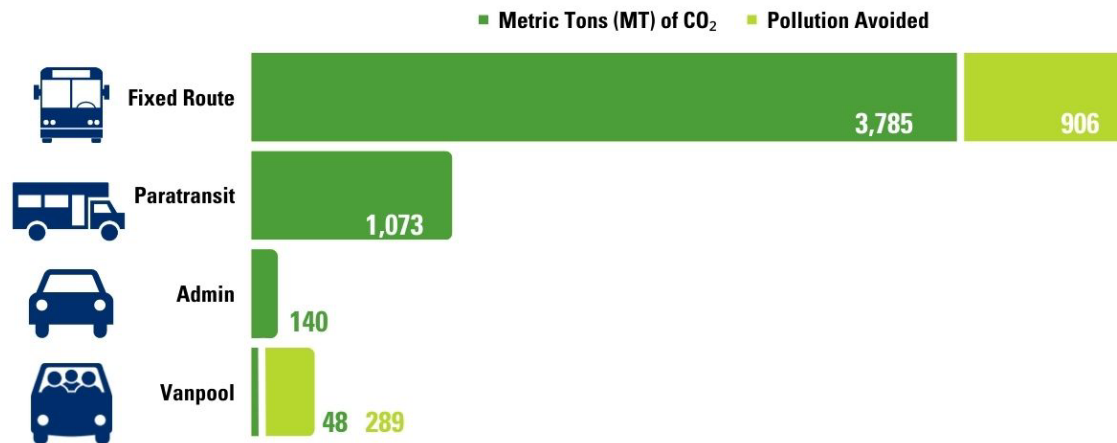
Whatcom Transportation Authority is committed to reducing greenhouse gas emissions from our vehicle fleet and administrative operations.

Our 2023 Sustainability Plan encompasses an inventory of energy, water, and fuel use, and associated emissions from 2009 to 2021, as well as goals and strategies to minimize our environmental impact.

Transit plays a crucial role in reducing GHG emissions. While our operations do generate emissions, we also help individuals reduce their personal emissions when they choose to ride the bus instead of driving. One of the most effective ways for us to offset our emissions is to encourage more people to use public transit more frequently.

Vehicles are our main source of emissions

2021 numbers



WTA owns seven properties: four transit stations, and three sites used for administrative operations and bus maintenance.

Greenhouse gas emissions are produced from the generation of electricity and the burning of Natural Gas. WTA participates in Puget Sound Energy's Green Power Program to offset most of the Carbon Dioxide equivalent (CO₂e) emissions generated from our electricity use.

In 2021, WTA used:



1.47 million kilowatt hours of electricity. The generation of that electricity emitted 60 MT of CO₂e, 538 MT of CO₂e were offset through the purchase of green power



25,690 Therms of Natural Gas, emitting 1.62 MT of CO₂



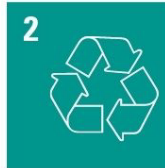
16,612 Centum Cubic Feet of water (12,426,639 gallons)

EXECUTIVE SUMMARY

GOALS



**1 INCREASE SUSTAINABLE
TRANSPORTATION MODE-
SHARE**



**2 REDUCE ENVIRONMENTAL
IMPACTS AS AN
ORGANIZATION**



**3 TRANSITION TO ZERO-
EMISSION FLEET AND
FACILITIES**



**4 PREPARE FOR
CLIMATE CHANGE
RESILIENCY**

TARGETS*

- Reduce Administrative building kWh of electricity per employee by **40%**
- Reduce emissions associated with electricity generation by **100%**
- Reduce employee generated waste that is sent to the landfill by **30%**
- Reduce CCF of water per employee by **50%**
- Reduce Natural Gas therms per building square feet by **30%**
- Increase the number of trips made by walking, biking, riding the bus and carpooling in Whatcom County to **40%**

**By 2030, targets based off of statistics from baseline year 2009*

Transition entire fleet to zero-emission by 2040

As an organization, WTA is dedicated to implementing sustainable practices, transitioning to zero-emission technologies, and preparing for the impacts of climate change. We are committed to achieving our sustainability goals and contributing to a more environmentally responsible transportation system in Whatcom County.

1. INTRODUCTION

Stewardship is at the foundation of WTA’s sustainability work. We strive to be good stewards of the environment, of public funds and in the community we serve.

In 2022, President Biden and the Federal Transit Administration (FTA) issued a challenge to transit agencies to take bold action to reduce GHG emissions and to create a Climate Action or Sustainability Plan, as part of the “Sustainable Transit for a Healthy Planet Challenge”. WTA accepted this challenge, kicking off the development of the Sustainability Plan.

WTA’s Sustainability Plan will support the Climate Action Plans of the City of Bellingham and Whatcom County. WTA 2040, the agency’s long-range plan, lists Preserving the Environment as one of three key pillars and writing a Sustainability Plan as one implementation strategy.

A cross-departmental project team (“the team”) met monthly from June 2022 through April 2023. The team members brought expertise from their respective departments and analyzed the feasibility and implication of suggested strategies. The team also developed and ranked goals and strategies and helped gather data for the emissions inventory.

The Sustainability Plan Charter outlined the following tasks for the project team:

- Inventory energy, water and waste consumption at WTA from 2009 - 2021, and create goals, targets and strategies to reduce consumption
- Inventory GHG Emissions from 2009 - 2021 and create goals, targets and strategies to reduce GHG emissions
- Write a Solar Panel Feasibility Study
- Work with consultants to write a Zero Emission Fleet Transition Study
- Document the social impacts of WTA operations, and create goals, targets and strategies to reduce negative impacts and increase positive impacts
- Document the economic impacts of WTA operations, the estimated cost to implement proposed strategies and proposed funding mechanisms for implementation of the Sustainability Plan

The Project Team consisted of the following staff members:

Name	Department
Mary Anderson, Project Manager	Planning
Tim Wilder	Planning
Michael Harpool	Planning
Josh Nylander	Information Technology
Lynda Fox	Finance
Kim Putich	Fleet
Cindy Campen	Facilities
Michele Zlotek	Human Resources
Maureen McCarthy	Community Relations
Jamie Fairbanks	Operations

Table 1-1 Sustainability Plan Project Team Members

2. AGENCY OVERVIEW

Whatcom Transportation Authority (WTA) provides public transportation services throughout Whatcom County, Washington.

WTA's mission is to enhance our community by:

- Delivering safe, reliable, efficient and friendly service
- Offering environmentally sound transportation choices
- Providing leadership in creating innovative transportation solutions
- Partnering with our community to improve transportation systems

2.1. SERVICE TYPES

Fixed Route: WTA's fixed routes provide service to designated bus stops using large transit buses. WTA offers 28 fixed routes, including a network of four high-frequency corridors. WTA provides service seven days a week, with more limited service on Saturdays, Sundays, and evenings.

Paratransit: WTA's paratransit service provides transportation to riders whose disability prevents them from riding our fixed route bus system. Paratransit's service area and hours of operation mirror those of our fixed routes. Everyone who rides paratransit must qualify and be approved before riding.

Vanpool: The vanpool program allows groups of three or more people to "lease" a WTA-owned van for the purpose of commuting to and from a common worksite.

Lynden Hop: An on-demand service that allows people to hail a ride that starts and ends within the Lynden Hop service boundary. The Lynden Hop is open to anyone and is wheelchair accessible.

Zone Service: Zone service provides limited transit service to rural areas of Whatcom County. There are no eligibility requirements for using zone service; anyone within the designated area can request a ride. Service is only available to each zone on certain days of the week and advance reservations are required.

2021	Fixed Route	Paratransit	Zone	Vanpool	Hop
					
Boardings	1,714,220	128,441	1,337	15,874	4,530
Revenue Hours	142,059	55,579	568	2,204	2,730
Revenue Miles	1,933,706	683,021	13,986	119,984	20,219
Passenger Miles	5,417,600	605,444	18,533	561,894	12,154
Boardings per Hour	12.1	2.3	2.4	7.2	1.7
Passenger Miles per Hour	38.1	10.9	32.6	255.0	4.5
Passenger Miles per Boarding	3.2	4.7	13.9	35.4	2.7

Figure 2-1: 2021 Performance by Service Type

2.2. EMPLOYEES

The number of full-time equivalent employees has increased from 238 in 2009 to 286 in 2021.

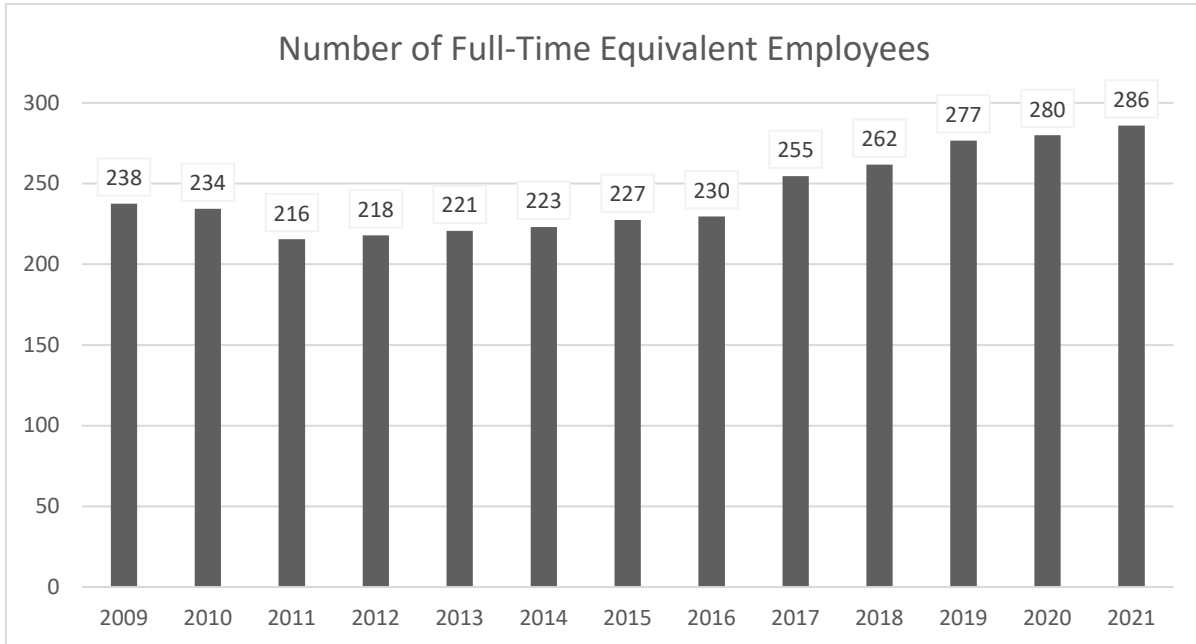


Figure 2-2: Number of Full-Time Equivalent Employees

Most WTA employees are Fixed Route or Paratransit Operators.

Department	2021
Fixed Route Transit Operators	127.4
Paratransit & Lynden Hop Operators	47
Fleet Maintenance, Vehicle Servicing & Warehouse	28.53
Fixed Route Operations (minus operators)	19.33
Paratransit Operations (minus operators)	15.27
Transit Administration	14
Facilities & Routes Maintenance	8.48
Finance, Accounting, & Revenue	7
Information Technology	7
Planning & Vanpool	5
Human Resources	4
Executive Administration	2
Community Relations & Marketing	1

Table 2-1: 2021 Employee Count by Department

2.3. NATIONAL TRANSIT DATABASE DATA

The following data was compiled from historic National Transit Database (NTD) reports. It shows agency-wide and county-wide information. The impacts of COVID are clearly seen with the reduction in unlinked passenger trips, revenue hours and passenger miles.

The population of Whatcom County grew by 16.7% from 2009 – 2019 while revenue hours increased by 12.2% during the same period.

	County-Wide Annual Vehicle Miles Traveled*	Population in Service Area	Operating Expense	WTA Vehicle Revenue Miles	WTA Unlinked Passenger Trips	WTA Revenue Hours	WTA Passenger Miles
Year	VMT	People	Dollars	VRM	UPT	RVH	PMT
2009	1,571,683,061	192,870	21,701,493	3,234,458	5,168,212	208,289	19,227,293
2010	1,582,397,333	195,272	21,122,552	3,159,093	4,950,850	201,928	18,501,948
2011	1,592,382,585	201,923	20,819,321	2,972,591	4,915,209	191,404	18,847,076
2012	1,602,430,845	203,318	22,064,920	3,122,020	5,177,188	197,314	20,015,143
2013	1,612,353,088	205,618	22,993,694	3,154,206	5,922,381	200,019	19,841,394
2014	1,608,228,595	207,416	23,774,381	3,242,471	6,190,270	201,595	22,007,238
2015	1,604,114,652	209,612	24,903,628	3,200,993	5,200,826	203,401	18,141,646
2016	1,600,011,233	212,357	26,131,029	3,161,096	4,968,178	205,378	17,140,455
2017	1,595,918,310	216,108	28,575,194	3,337,251	4,870,954	220,500	16,407,115
2018	1,591,835,858	220,158	29,817,274	3,460,381	4,805,835	229,248	16,000,857
2019	1,587,606,127	225,099	31,916,725	3,348,824	4,703,865	233,672	15,735,526
2020	1,409,794,241	227,801	31,512,651	2,478,926	2,049,632	178,050	7,232,068
2021	1,557,822,636	225,928	34,736,835	2,732,706	1,864,401	200,386	6,526,767

Table 2-2: NTD Data 2009 – 2021

*County-wide VMT was provided by the Whatcom Council of Governments

2.4. PROPERTIES

The following seven properties are owned by WTA, and each have their own water, electric and natural gas bill.

Maintenance, Operations, Administrative, Base (MOAB): located in the Irongate industrial neighborhood at 4011 Bakerview Spur, Bellingham. WTA has one main campus that houses all administrative and maintenance staff, and all operations staff report for duty here. The building and bus wash are a combined 58,898 square feet.

Midway Lot: located on land directly across the street from MOAB, on land that WTA has owned since 1999 and developed in 2019. The lot was built primarily as a space to park and charge electric buses. Conduit was laid to provide electricity to six pedestal chargers that will charge two buses each, for a total of 12 electric buses. As of 2023, two pedestal chargers have been installed.

North Lot: located on land contiguous from MOAB. The property was purchased in 2021 and will be developed for expanded transit vehicle parking in the future.

Bellingham Station (BTS): located at 205 East Magnolia St in downtown Bellingham. BTS has a passenger lobby, restrooms, and a customer service booth open to the public, plus office space for six operations staff, a breakroom, and restrooms for employees. The building is 5,843 square feet.

Cordata Station (CTS): located in north Bellingham at 4194 Cordata Parkway, across the street from Whatcom Community College. CTS has two platforms in use with space for three buses each, plus one platform that is not currently in use with space for three buses. CTS is served by 11 routes. CTS has public restrooms and employee restrooms and a breakroom. The building is 1,556 square feet.

Ferndale Station (FTS): located at 1675 Main Street in Ferndale. It has three bus bays and is served by two routes. There are no public facilities. The Ferndale Food Bank is located on this property in a separately maintained and operated building.

Lynden Station: (LTS): located at 1945 Front Street in Lynden. Served by one fixed route and the Lynden Hop. It has space for two buses. A private restaurant rents space from WTA at this location, their proportion of electricity, natural gas and water was not included in this report. The building is 1,466 square feet.

3. EMISSIONS INVENTORY

WTA chose 2009 as the baseline year because historic data was readily available for all components of the inventory.

3.1. VEHICLES

As a transportation service provider, it is no surprise that vehicle emissions represent the majority of WTA's total Greenhouse Gas (GHG) emissions.

In addition to the vehicles needed to directly operate service, like Fixed Route buses and Paratransit buses, WTA also has a fleet of non-revenue vehicles. These vehicles are used as driver shuttles, administration staff vehicles, and fleet and facilities work-trucks.

Vehicle Fuel Usage			
	Diesel	Unleaded	Propane
Year	Gallons	Gallons	Gallons
2009	437,451	152,846	0
2010	418,508	142,101	0
2011	379,742	141,967	0
2012	389,294	143,627	0
2013	378,890	151,275	0
2014	382,211	153,251	0
2015	390,545	155,035	0
2016	391,511	158,687	0
2017	427,411	173,651	0
2018	444,900	177,936	33
2019	446,528	135,654	71,808
2020	357,121	86,533	49,488
2021	377,203	83,016	85,951

Table 3-1: Vehicle Fuel Usage

As of 2022, WTA owns and operates 165 vehicles.

Service Type	Number of Vehicles	Fuel Type
Fixed Route	62	2 electric, 8 hybrid, 52 diesel
Paratransit	47	25 unleaded, 22 propane
Vanpool	17	17 unleaded
Non-revenue	37	29 unleaded, 5 hybrid, 1 plug-in hybrid electric, 2 diesel
On-Demand	2	2 unleaded

Table 3-2: Vehicle Type and Quantify

TAILPIPE EMISSIONS

To calculate historical annual vehicle emissions, an inventory was compiled which included make, model, year, annual miles driven, and total gallons of fuel consumed for every vehicle WTA has owned and operated from 2009 – 2021. The 2022 Climate Registry Default Emission Factors and the Environmental Protection Agency’s Diesel Emissions Quantifier (DEQ) online tool were used to estimate emissions from each vehicle.

We use the term “pollution avoided” to quantify the tailpipe emissions that would have been emitted if people drove a car instead of riding transit. To calculate pollution avoided by people riding transit rather than driving a personal motor vehicle, Annual Passenger Miles Traveled was multiplied by 38%, the number of people who ride Fixed Route and would have otherwise driven. For vanpool, it was assumed that 100% of the trips would have been made by personal automobile. Paratransit and staff vehicles do not have an emissions reduction component, due to the nature of their service.

In Figures 3-1 and 3-2, the dark grey bar graphs above the x-axis show tailpipe emissions from 2009 - 2021. The lighter grey bar graphs below the x-axis show the estimated pollution avoided by people riding Fixed Route and Vanpool, rather than driving themselves.

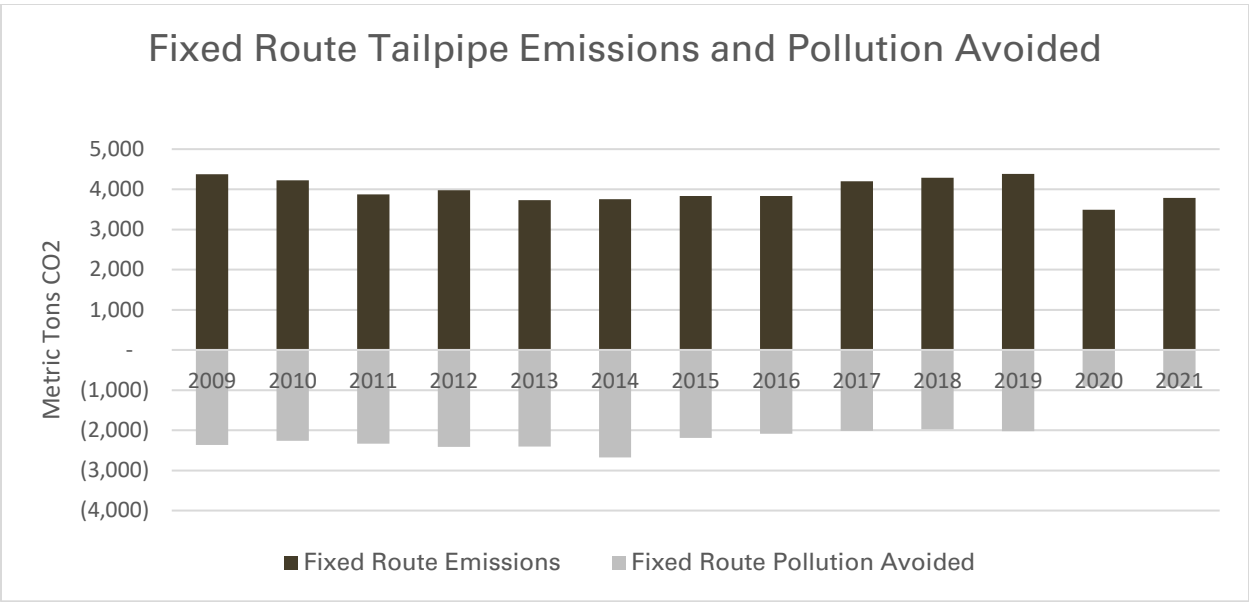


Figure 3-1 Fixed Route Annual Tailpipe Emissions and Pollution Avoided

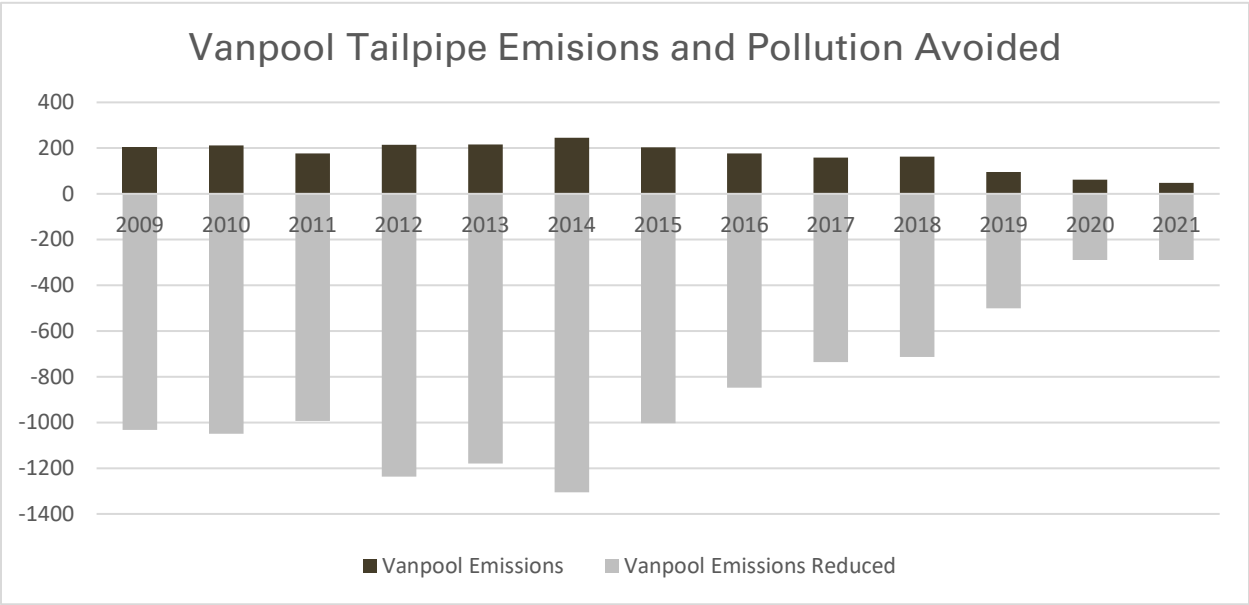


Figure 3-2 Vanpool Annual Tailpipe Emissions and Pollution Avoided

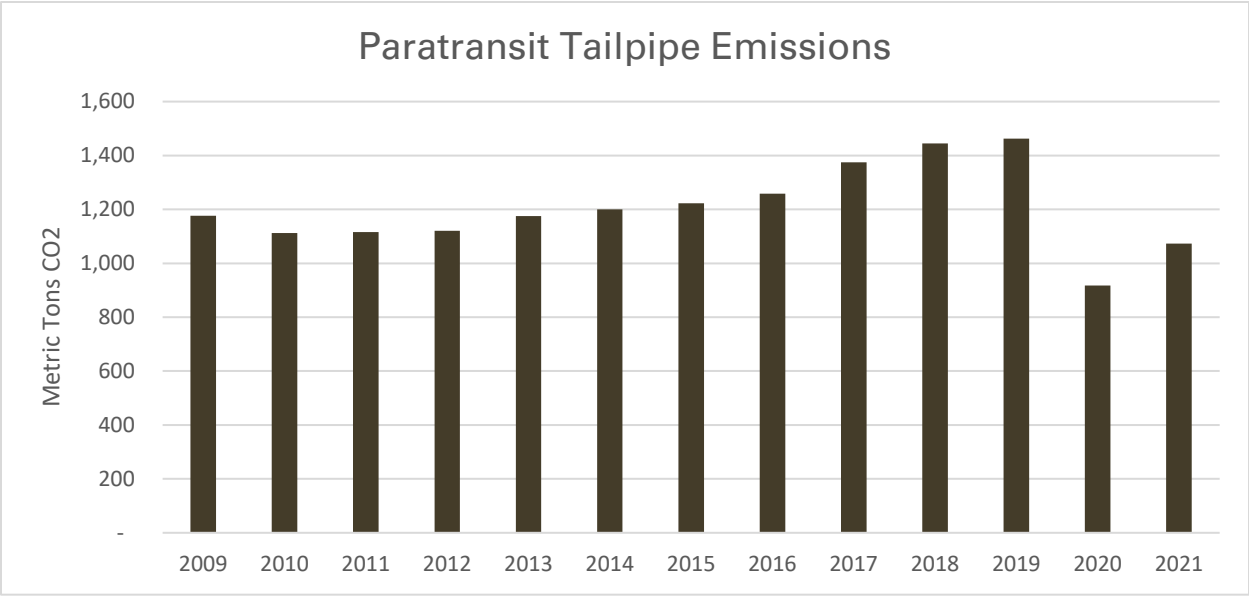


Figure 3-3 Paratransit Annual Emissions

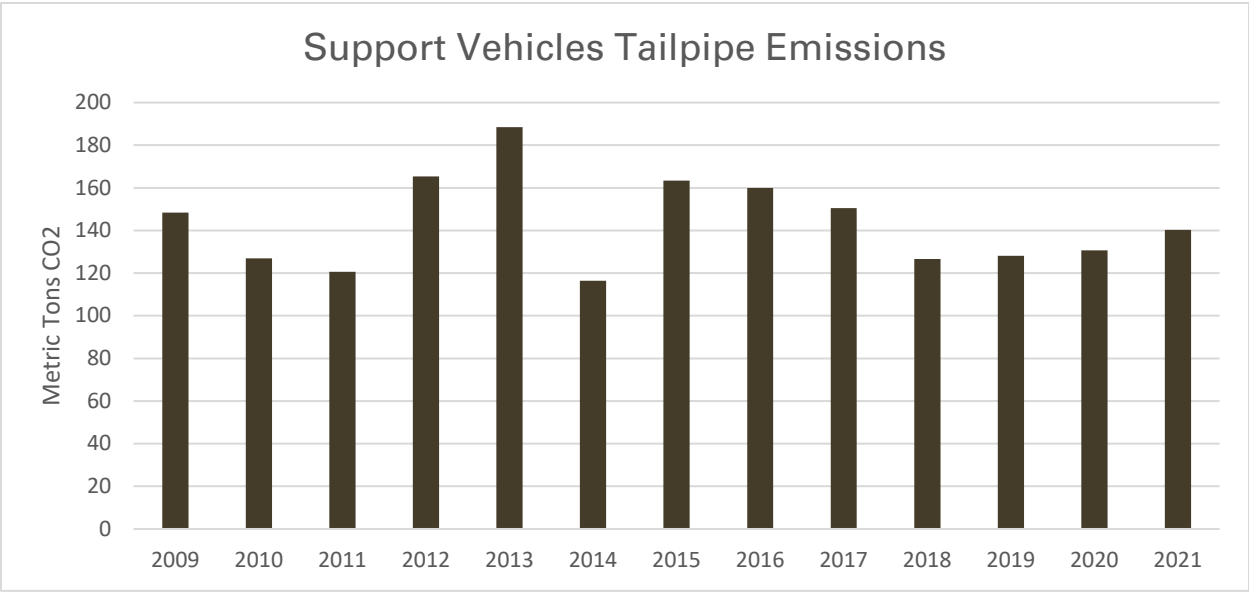


Figure 3-4 Support Vehicles Tailpipe Emissions

Even after subtracting the pollution avoided from people utilizing our services, WTA is still a net producer of greenhouse gas emissions. One of the best ways for WTA to offset tailpipe emissions and move towards carbon neutral is for more people to ride transit more often. Increased ridership coupled with low or no emission vehicles will have a positive impact on the reduction of greenhouse gases in our community.

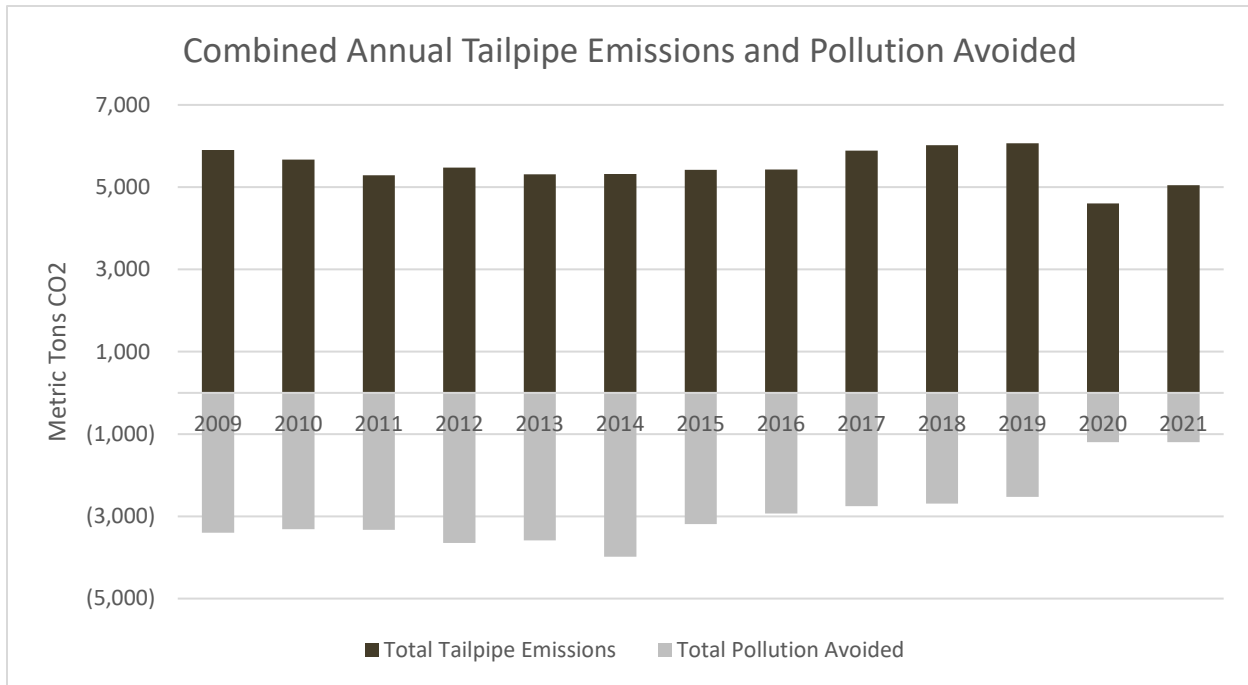


Figure 3-5 Combined Annual Tailpipe Emissions and Pollution Avoided

Figure 3-6 compares fixed route revenue miles to fixed route vehicle tailpipe emissions. The bar graph shows Carbon Dioxide tailpipe emissions, and the black line shows revenue miles. Something to note here is that our Fixed Route revenue miles were nearly identical for 2009 and 2021, but our tailpipe emissions were 13% lower. This is due to the incorporation of hybrid and electric buses into our fleet, starting in 2012.

Revenue miles decreased significantly in 2020 and 2021, because of a reduction in service that was warranted as a response to the COVID-19 pandemic. During that

time, WTA operated at about 70% of pre-pandemic service levels. Service was restored in June 2021.

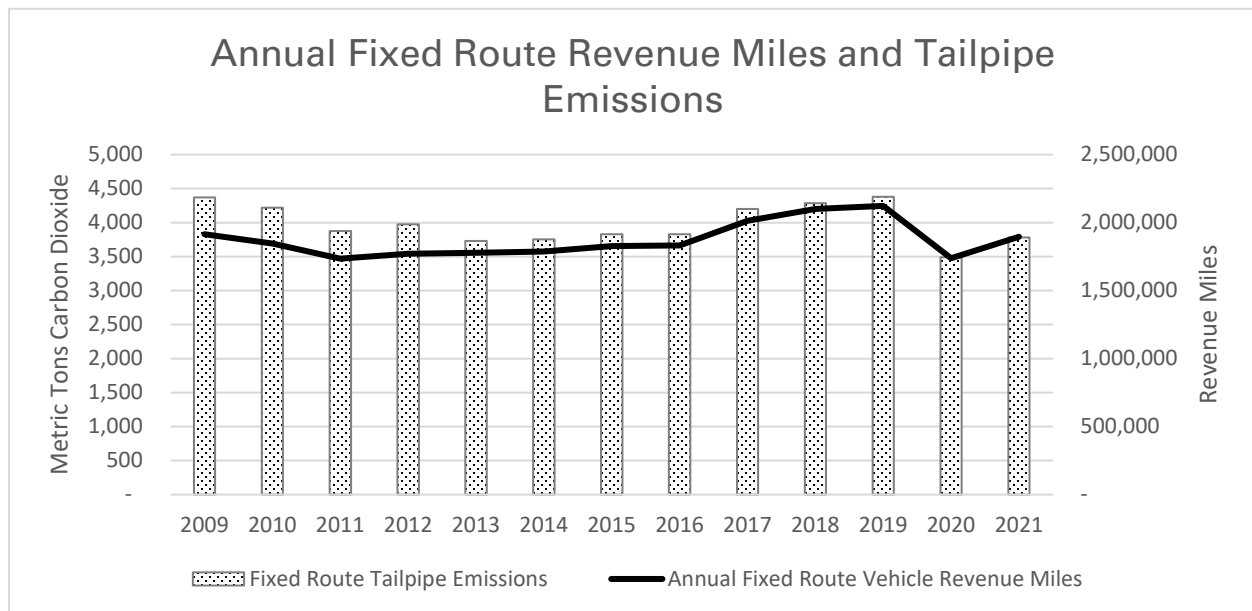


Figure 3-6 Annual Fixed Route Revenue Miles and Tailpipe Emissions

Another way to look at tailpipe emissions is per passenger mile traveled (PMT) and per unlinked passenger trip (UPT), also known as boardings. PMT is calculated by multiplying total annual boardings by average trip length in miles. The average trip length is calculated through on-vehicle boarding and alighting data collection. For comparison, a person driving alone in a personal automobile would emit, on average, 0.88 pounds of CO₂ per mile driven.

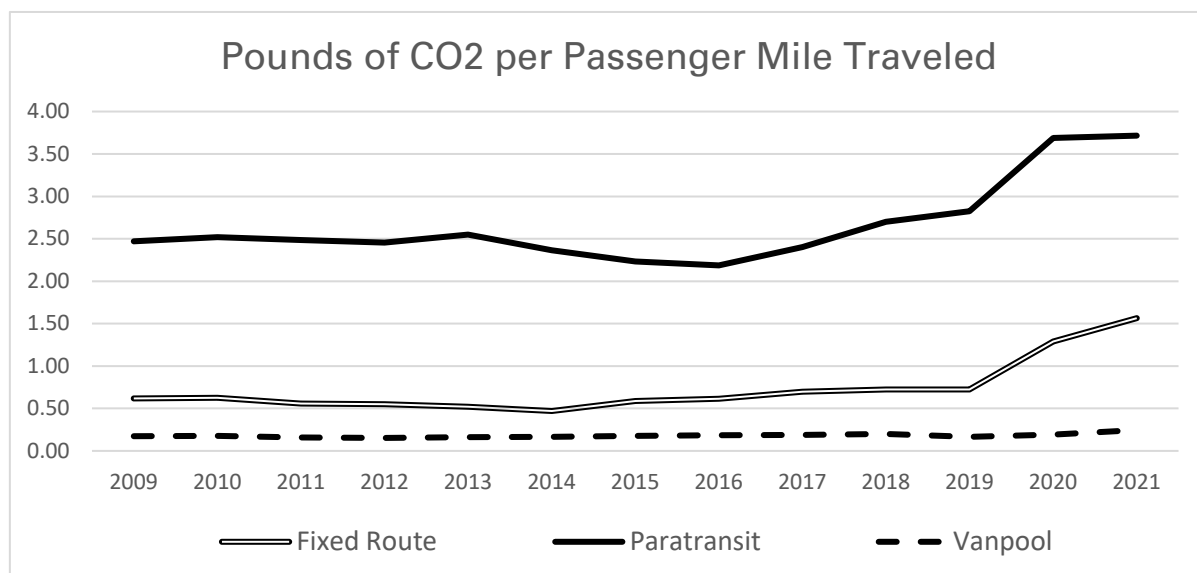


Figure 3-7 Annual Pounds of Carbon Dioxide per Passenger Mile Traveled

Higher annual boardings will result in lower emissions per passenger mile traveled and passenger trip. Due to the COVID-19 pandemic, ridership drastically reduced in 2020 and 2021, resulting in much higher emissions per PMT and UPT.

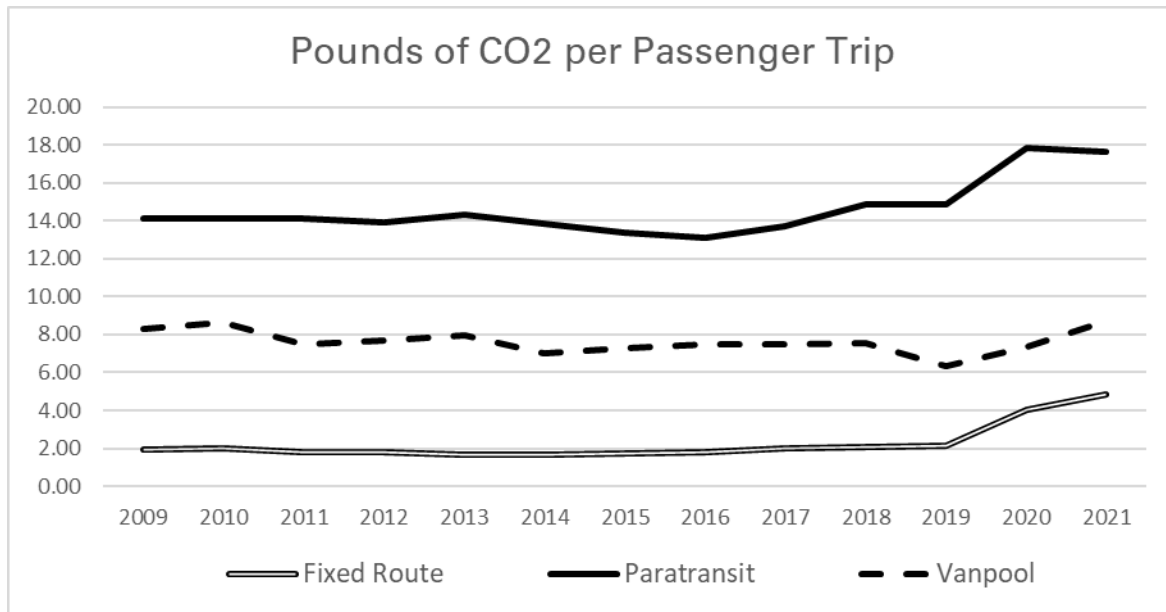


Figure 3-8 Annual Pounds of Carbon Dioxide Emitted per Passenger Trip

3.2. ELECTRICITY

As noted above, all seven sites have separate electricity meters. Table 3-3 shows total combined kilowatt hours (kWh) for all sites from 2009 – 2021 and total emissions from the generation of the electricity. Five of WTA’s seven properties participate in Puget Sound Energy’s (PSE) green power program to offset greenhouse gas emissions.

A significant effort has been made by WTA facilities staff to convert incandescent light bulbs to light emitting diode (LED), which are up to 90% more efficient than incandescent bulbs. As buildings are remodeled and new buildings are constructed, LED bulbs and motion-activated lighting are installed. It is expected that WTA’s energy consumption will increase significantly as more electric buses are introduced into the Fixed Route fleet, so it will behoove WTA to reduce energy consumption through means of increased efficiency.

	Total Electricity Used	Green Power Sites	Non-Green Power Sites	CO₂e Emissions Total	CO₂e Emissions Non-Green Power	CO₂e Emissions Reduced by Purchasing Green Power
Year	kWh	kWh	kWh	Metric Tons	Metric Tons	Metric Tons
2009	1,603,190	1,529,870	73,320	707	32	675
2010	1,546,731	1,478,691	68,040	723	32	691
2011	1,459,682	1,377,962	81,720	574	32	542
2012	1,442,990	1,365,430	77,560	582	31	550
2013	1,426,455	1,345,115	81,340	636	36	600
2014	1,449,039	1,352,959	96,080	652	43	609
2015	1,398,185	1,314,225	83,960	655	39	615
2016	1,259,137	1,182,537	76,600	633	39	595
2017	1,262,304	1,181,424	80,880	618	40	578
2018	1,327,891	1,252,051	75,840	631	36	595
2019	1,387,128	1,306,448	80,680	737	43	694
2020	1,357,338	1,269,978	87,360	538	35	503
2021	1,466,710	1,320,070	146,640	598	60	538

Table 3-3: Electricity Use and Associated Emissions

Year	MOAB kWh	FTE Count	kWh/FTE
2009	1,258,800	238	5,289
2010	1,203,900	234	5,145
2011	1,117,200	216	5,172
2012	1,056,900	218	4,848
2013	1,061,500	221	4,803
2014	1,082,900	223	4,856
2015	1,054,200	227	4,644
2016	929,100	230	4,040
2017	914,100	255	3,585
2018	989,400	262	3,776
2019	1,058,100	277	3,820
2020	1,009,800	280	3,606
2021	1,045,800	286	3,657

Table 3-4 kWh per Full-Time Equivalent Employee

Figure 3-9 shows combined annual electricity used and associated emissions from the generation of that electricity. To quantify the emissions from the generation of electricity, an emission factor was applied to the annual kilowatt hours (kWh). Each year, PSE has a different mix of energy sources, thus there is a different emission factor applied to the kWh annually. This is why the emissions bar graph might be higher one year even if the total energy used was lower.

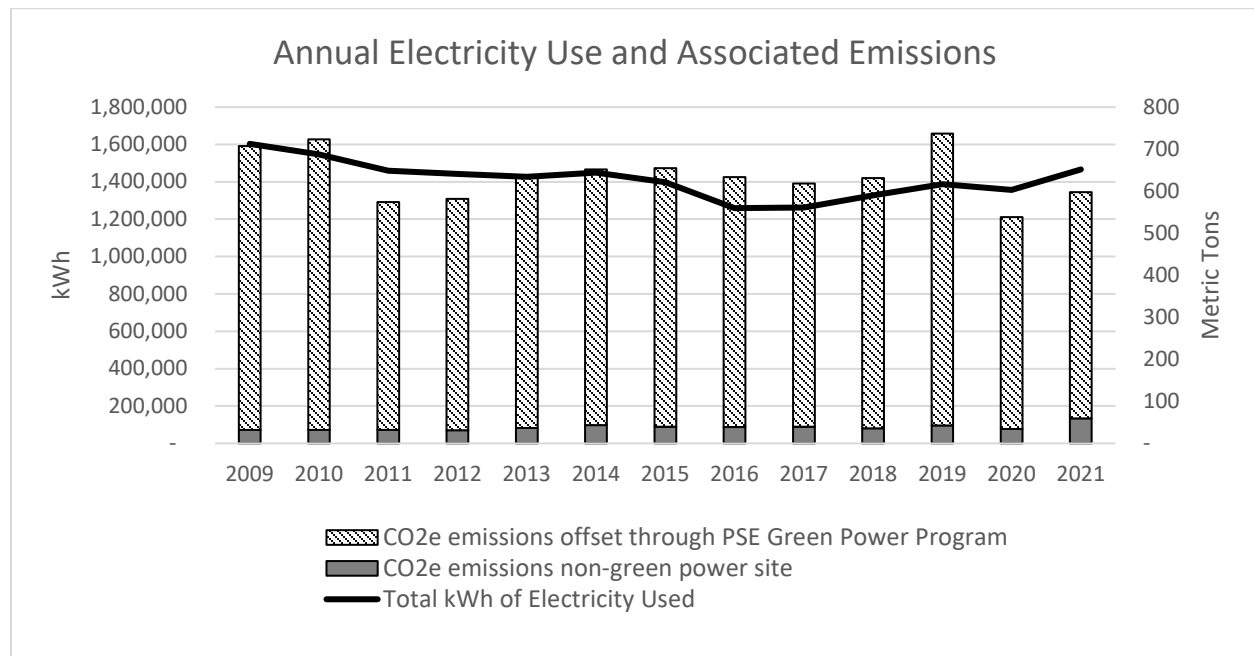


Figure 3-9 Annual Electricity Use and Associated Emissions

The black line shows the total annual kWh of electricity used at all sites. The solid grey bar graph shows emissions from production of electricity for the two sites where WTA does not purchase green power. The patterned bar graph stacked on top of the grey shows the emissions offset by purchasing green power through PSE.

SOLAR PANEL FEASIBILITY

WTA has taken a preliminary look into the feasibility of solar power at each of our properties. Generating renewable energy through the installation of photovoltaic solar arrays (PV) is a great way to reduce the agency's carbon footprint and to help offset energy costs with the use of locally generated power. Puget Sound Energy (PSE) also offers alternative sustainable energy programs if PV system installation is not the best option for a property.

The Green Power program and the Solar Choice program allows you to match a share of your energy with renewable energy and solar power generated locally. WTA currently contributes to the Green Power program at five of our seven

properties. The Community Solar program allows an agency to purchase credits from locally sourced solar to replace the power they have utilized.

Table 7 summarizes the results from the solar panel feasibility analysis (see [Appendix A: Solar Panel Feasibility Study](#) for the full report) and provides a solar recommendation for each property. The feasibility was done for existing buildings and not modeled for future buildings or structures. The amount of energy utilized at each property differs significantly, from MOAB utilizing over 1 million kWh per year to the Lynden Transit Station utilizing under 60 thousand kWh per year.

The differences in energy use and physical layout of each of the properties result in a range of system size recommendations. For some properties, recommendations were gauged towards taking advantage of PSE's alternative renewable energy programs.

WTA Property	Lot Size (Acres)	Average Monthly Bill	Annual Electricity Use	Solar System Requirements	Solar Recommendation	Recommended Solar System Size
MOAB	8.97	\$9,112	1,082,900 kWh	898 kW	Install solar and subscribe to 'Solar Choice'	500 kW
BTS	1.00	\$1,820	192,197 kWh	159 kW	Subscribe to 'Community Solar' and install solar	200 kW
CTS	1.51	\$819	96,080 kWh	80 kW	Install solar	80 kW
FTS	11.75	\$581	64,795 kWh	54 kW	Subscribe to 'Community Solar'	N/A
Midway	1.91	\$1,062	65,040 kWh	54 kW	Subscribe to 'Community Solar' and install solar	100 kW
LTS	3.53	\$551	59,985 kWh	50 kW	Subscribe to 'Community Solar' and install solar	N/A
North Lot	3.26	N/A	N/A	N/A	Install solar	100 kW

Table 3-5: Solar Panel Feasibility

3.3. NATURAL GAS

Natural gas is used at three properties (MOAB, LTS and CTS) to fuel HVAC units, pressure washers in the fuel island, the bus chassis wash, and water heaters. The total square footage of building space that uses natural gas is 66,300.

	Total Natural Gas Consumed	Estimated CO ₂ Emissions	Estimated CH ₄ Emissions	Estimated N ₂ O Emissions
Year	Therms	kg/MMBTU	g/MMBTU	g/MMBTU
2009	36,866	1,956	0.036866	0.0036866
2010	28,644	1,520	0.028644	0.0028644
2011	26,543	1,408	0.02654348	0.002654348
2012	24,062	1,277	0.024062	0.002406
2013	27,905	1,481	0.02790519	0.002790519
2014	31,203	1,656	0.031203	0.003120
2015	22,088	1,172	0.02208836	0.002208836
2016	24,169	1,282	0.02416856	0.002416856
2017	31,485	1,671	0.0314846	0.00314846
2018	25,920	1,375	0.02592026	0.002592026
2019	37,272	1,978	0.03727202	0.003727202
2020	34,883	1,851	0.034883	0.003488
2021	30,554	1,621	0.030554	0.003055

Table 3-6: Annual Natural Gas Therms Consumed and Associated Emissions

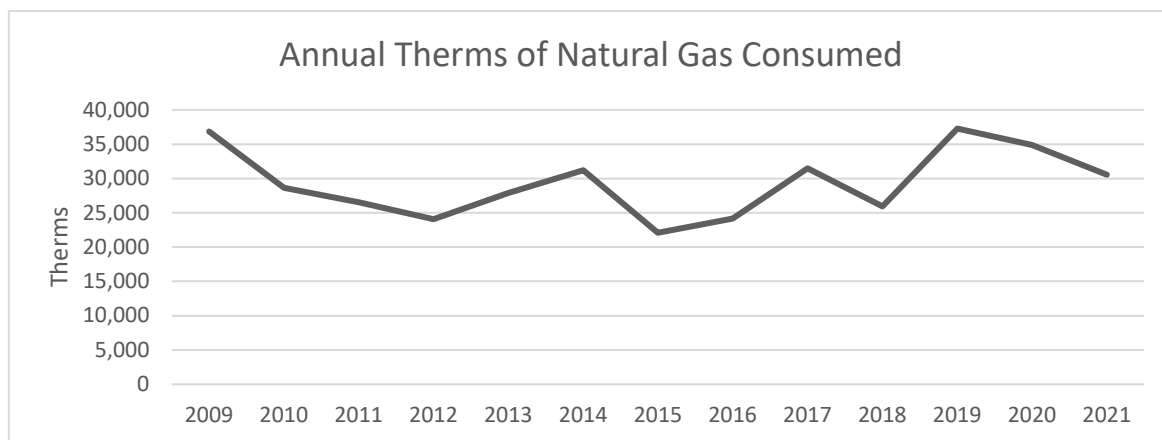


Figure 3-10 Annual Therms of Natural Gas Consumed

3.4. WATER

Like electricity and natural gas, each of the WTA owned properties is on a separate water meter. Each site has potable water and irrigation. The primary water uses are: bus washing, bus chassis washing, toilets & sinks, and landscape irrigation.

Total Water Used Potable and Irrigation			
Year	Centum Cubic Feet (CCF)	Number of FTE	CCF Per FTE
2009	25,770	238	108
2010	22,288	234	95
2011 – 2016 data unavailable			
2017	16,573	255	65
2018	12,896	262	49
2019	6,858	277	25
2020	9,235	280	33
2021	16,612	286	58

Table 3-7: Total Annual Water Used

One CCF equals 748.05 US liquid gallons.

WTA Bus Wash

WTA's vehicles are not washed on a set schedule. They are washed less frequently in the summer months compared to the winter months. Whether or not a vehicle is washed is dependent on how dirty it is and weather conditions.

When a bus is washed the water goes through reclaim system and the heavy particles, like sand, are filtered out and contained in a sump pit and a sludge tank. Then the filtered water is pumped up into a large holding tank and some fresh water mixes in with it and then that water is used to wash the buses again. This is a continuous cycle. Some of the dirty water from the sump pit continually flows out to an oil/water separator then out to sanitary sewer.

The wash water is continuously being partially re-used and partially sent out to sanitary sewer, during the washing cycles. The sludge, sand and particles that are filtered out and contained in the sump pit and sludge tank are periodically pumped out by a vactor truck and taken away for proper disposal.

3.5. WASTE

WTA disposes of waste generated both directly and indirectly from transit operations. Waste is generated by employees in office settings, restrooms, breakrooms and in the maintenance bays. Waste is also generated by transit riders and collected at bus stops and stations. Currently, WTA has trash receptacles located at XX bus stops systemwide, at the four WTA transit stations and on-board every Fixed Route and Paratransit vehicle. Except for BTS, which has a dumpster on site, all waste from bus stops and stations is collected by Route Maintenance staff and brought back to MOAB for disposal.

WTA has separate recycling receptacles for:

- Paper
- Plastic, tin, aluminum, and glass
- Cardboard
- Scrap metal from the shop
- Motor oil
- Batteries

In September 2022, WTA participated in a Waste Assessment through Sustainable Connections. The entire report may be found in [Appendix B: Waste Assessment Report](#). Some of the highlighted recommendations include:

- Begin a FoodPlus! program at WTA to divert food waste and compostable materials from landfills
- Begin recycling plastic film
- Install water bottle filling stations at MOAB and transit stations to decrease single use plastic water bottles (this was completed at MOAB and BTS in early 2023)

The journey of a piece of trash at MOAB

1. An employee throws away a piece of trash in their desk-side trash receptacle that is lined with a black plastic bag.
2. Nightly, a janitorial staff wheels a large trash receptacle to each office and empties the desk-side trash bin into the larger receptacle.
3. The trash bag containing waste from all offices is placed in one of two six-yard² dumpsters, located outside of MOAB.
4. The two six-yard² dumpsters are collected by Sanitary Services Company (SSC) weekly.

4. COMMUNITY IMPACT

WTA must strike the balance of providing quality transit service to the people who need it most, while also taking responsibility for the negative effects of transit, including air and noise pollution from diesel buses. Transitioning to low and no-emission buses helps address some of the negative externalities associated with transit.

4.1. ENVIRONMENTAL JUSTICE

In Whatcom County, 60% of people who live below the poverty line live within a quarter mile of a WTA bus route. While this is great for transit access, it also means that they are exposed to air and noise pollution from WTA fixed route buses.

Three low-income apartment complexes are located within a quarter mile of the downtown Bellingham Station. There are 427 trips both departing and arriving (854 total trips) at the Bellingham Station each weekday. It is a near constant flurry of activity with buses coming and going from 6:00 am until 10:00 pm, which is great for transit access, but not so great for air and noise pollution. In the 2018 boarding and alighting survey WTA counted 3,344 boardings and 2,826 alightings at the Bellingham Station on an average weekday.

Western Washington University (WWU) is another area that has hundreds of diesel buses driving through campus and the surrounding neighborhoods daily. Historically, WWU students and staff have accounted for 40% of WTA's ridership with over 12,000 weekday boardings pre-COVID and approximately 8,000 weekday boardings in 2021.

WTA diesel buses travel through campus over 200 times each weekday, providing vital access for students and staff, while also emitting air and noise pollutants. By converting to low or no emissions buses WTA will be able to maintain frequent and reliable service while also reducing air and noise pollution.

The Downtown Bellingham and WWU neighborhoods have higher than average poverty rates and are more dependent on transit than the rest of Whatcom County. In the two Census Tracts that cover those areas 48.4% of people are below the poverty level, 57.6% are cost-burdened, 20.7% are zero-car households and 26.5% are non-white.

4.2. RACIAL EQUITY

In Whatcom County, 13.8% of residents are non-white or Hispanic. However, 21.2% of people living within a quarter mile of a WTA bus stops are non-white or Hispanic. A disproportionate number of minorities in Whatcom County are exposed to tailpipe and noise pollution due to their proximity to a bus stop.

Of the 18,494 weekday boardings in the 2018 boarding and alighting survey, 7,770, or 42%, of the boardings took place in a census tract with a higher-than-average proportion of minorities.

4.3. BARRIERS TO OPPORTUNITY

The 2018 Community Needs Assessment administered by the Opportunity Council, found that lack of transportation was the reason that 40% of respondents couldn't get or keep a job and 16% couldn't access medical care.

4.4. EQUITY AND PRIORITY POPULATIONS

WTA 2040, the long-range plan for WTA, identifies equity as one of three key priorities. WTA is committed to focusing on providing access to opportunities and service to those who need it the most in the community.

When developing the service expansion network plans, staff prioritized corridors that had higher than average levels of minority populations, low-income households, people with a disability, older adults, and zero-car households.

4.5 TRANSPORTATION MODE SPLIT

Transportation is the number one source of GHG emissions in the City of Bellingham, and the third highest source in Whatcom County, after Industrial point source and electricity emissions. When community members walk, bike, carpool, or ride the bus, instead of driving alone they reduce vehicle miles traveled (VMT) and GHG emissions in the community. The 2021 Whatcom County Climate Action Plan states a goal of reducing GHG emissions 45% below 1990 levels by 2030 and a strategy to "Reduce vehicle miles traveled (VMT) by promoting alternatives to single occupancy vehicle (SOV) transportation". The City of Bellingham's 2018 Climate Action Plan update and the 2016 Comprehensive Plan, have a goal of reducing SOV trips to 50% by 2036.

The estimated transportation mode split is shown in Figure 4-1 (data from the Whatcom Council of Governments).

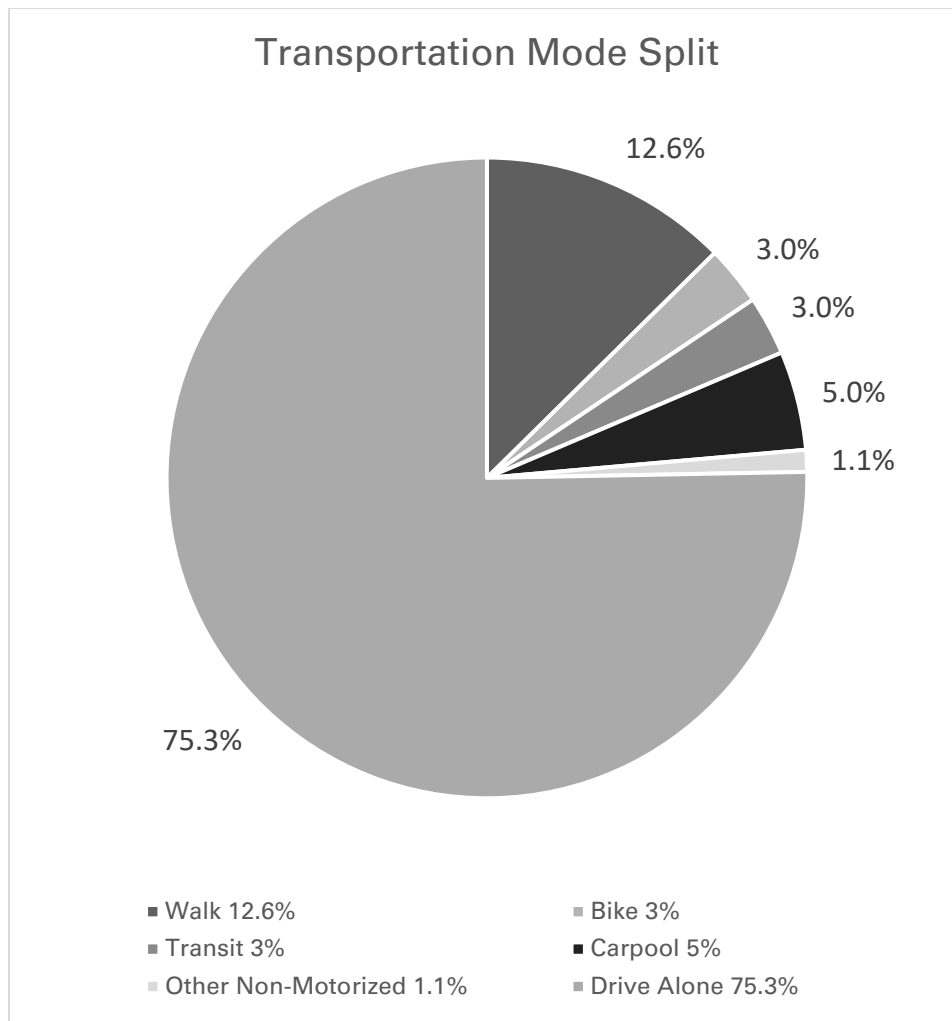


Figure 4-1 Whatcom County Estimated Transportation Mode Split

5. PAST AND CURRENT INITIATIVES

WTA has a long history of implementing environmentally friendly projects and policies.

Year	Sustainability Initiatives, Policies and Programs
1997	WTA voluntarily signs on as a Commute Trip Reduction (CTR) employer partner and in 2002 is mandated by Washington State to participate
2003	The first Toyota Prius purchased for non-revenue fleet
2006	WTA is a founding partner, a key collaborator, and a financial sponsor of Whatcom Smart Trips
2008	One Ford Escape Hybrid added to non-revenue fleet
2009	Puget Sound Energy names WTA a “Green Power Leader”
2012	Eight Hybrid Electric Buses added to WTA’s Fixed Route fleet
2015	One Chevy Volt added to non-revenue fleet
2016	Policy 106-04 “Reducing Energy Use, Waste and Greenhouse Gas Emissions” approved At MOAB campus: the parking lot poles, building exteriors, all maintenance shop bays, the warehouse and the team room light fixtures retrofitted to LED
2017	Two solar panel arrays installed on the roof of Bellingham Station Parking lot light pole fixtures at CTS retrofitted with LED lamps
2018	Paratransit fleet begins a transition to propane fuel The Dispatch Center, CSR area and three offices located on the 1 st floor of MOAB remodeled and retrofitted with LED fixtures
2019	Midway Lot constructed, laying the groundwork for the charging of 12 electric buses Smart Cards introduced, allowing passengers to load a bus pass onto a reusable card
2020	The “WTA Bus Tracker” app is released, reducing the printing quantities of transit guides
2021	WTA introduces two electric buses into its Fixed Route fleet
2022	WTA signs President Bidens “Sustainable Transit for a Healthy Planet Challenge” Paystubs are no longer printed for all WTA employees All outdoor light fixtures at Ferndale Station retrofitted with LED fixtures Approximately 70% of MOAB 2 nd floor rooms and office overhead light fixtures replaced with LED fixtures and motion activated lights during remodel
2023	Four water bottle filling stations installed at MOAB and one at Bellingham Station Policy 402-18 “Encouraging Employees to Walk, Bike, Ride the Bus and Carpool” updated WTA signs the APTA Sustainability Commitment

Table 1-1: Past and Current Sustainability Initiatives

6. EMISSION REDUCTION GOALS, TARGETS AND STRATEGIES

This plan identifies four goals and 20 strategies, along with associated tactics and metrics. The strategies vary in the amount of effort, staff time and expense they will require to implement.

Each strategy has an *estimated* implementation timeline, dedicated staff time and budget implication:

- **Timeline:** Near-term (one – three years), Mid-term (four – six years), or Long-term (seven – ten + years)
- **Estimated staff time:** Low ^ (one time or a few hours a week), Medium ^^ (three – ten hours a week for six months or longer), High ^^^ (over ten hours a week for six months or longer)
- **Budget implication:** Low \$ (under \$10,000), Medium \$\$ (\$10,000 - \$149,000), High \$\$\$ (over \$150,000)

	2030 Targets (baseline year 2009)	2021 Compared to 2009
Electricity	Reduce administrative building kWh of electricity per WTA employee by 40%	-31%
	Reduce emissions associated with electricity generation by 100%	+85%
Waste	Reduce employee generated waste that is sent to the landfill by 30%	NA
Tailpipe Emissions	Reduce WTA Fixed Route tailpipe emissions per passenger mile traveled by 5%	+153%
	Entire fleet is zero-emissions by 2040	2 vehicles
Water	Reduce CCF of water per WTA employee by 50%	-46%
Natural Gas	Reduce Natural Gas therms per building square foot by 30%	-17%
		2021
Mode Share	Increase the percent of trips made by walking, biking, riding the bus and carpooling in Whatcom County to 40%	24.7%

Table 6-1 2030 Reduction Targets

Goal 1: Increase the sustainable transportation mode-share in Whatcom County

Objective Increase the percent of trips made by walking, biking, riding the bus and carpooling in Whatcom County to 30% by 2030

KPI WTA ridership, ACS transportation mode share, WCOG household transportation survey

			Near Term	Mid Term	Long Term	Staff Time	Budget
Strategy	1.1	Increase the frequency of fixed route transit				^^^	\$\$\$
	Tactic	Follow WTA 2040 schedule to expand fixed route					
	Metric	Annual Fixed Route revenue hours					
Strategy	1.2	Partner with other agencies to research the feasibility of bringing bike share to Bellingham				^	\$
	Tactic	Partner with the City of Bellingham to create a bike share feasibility and business plan, then implement the plan, if deemed feasible					
	Metric	Number of bike share bikes available in Bellingham					
Strategy	1.3	Partner with other agencies to research the feasibility bringing car share to Bellingham				^	\$
	Tactic	Support efforts to research the feasibility of bringing car share to Bellingham					
	Metric	Number of car share vehicles available in Bellingham					
Strategy	1.4	Work with our jurisdictional partners to reduce VMT and incentivize sustainable transportation				^	\$
	Tactic	Support and partner on transit-oriented development (TOD) and bicycle and pedestrian projects, grants and plans					
	Metric	Number of projects, plans and grants WTA supports or partners with other agency's on					
Strategy	1.5	Expand and enhance the Vanpool program, taking advantage of the new 3 rider limit				^^	\$
	Tactic	Provide outreach and education to large worksites and consolidated worksites					
	Metric	Number of Vanpools and number of Vanpool riders					
Strategy	1.6	Continue to partner with and financially support Whatcom Smart Trips				^	\$\$\$
	Tactic	Jointly implement the Whatcom Smart Trips program as per the interlocal agreement with the Whatcom Council of Governments					
	Metric	Number of trips logged, number of active participants and pollution avoided, annual financial contribution made by WTA					

Goal 2: Reduce the environmental impacts of WTA as an organization

Objective The emissions and waste generated by operating an organization are reduced each year

KPI Annual: kWh of electricity, CCF of water, therms of natural gas, cubic yards of waste, emissions from non-revenue vehicles, miles and number of Smart Trips made to work

			Near Term	Mid Term	Long Term	Staff Time	Budget
Strategy	2.1	Establish a Sustainability Plan Implementation Program				^^	\$
	Tactic	Identify a sustainability champion within the organization coupled with sufficient human and financial resources to implement the plan					
	Metric	Sustainability budget, presence of sustainability champion (y/n)					
	Tactic	Establish an employee outreach program that engages staff on how they can help achieve the agency's sustainability goals					
	Metric	Number of engagement opportunities per year					
	Tactic	Establish a cross-departmental Sustainability Plan Implementation Team					
	Metric	Number of team members and number of meetings per year					
Strategy	2.2	Train staff on sustainability best practices, including Diversity, Equity, and Inclusion (DEI)				^	\$
	Tactic	Encourage key staff to achieve sustainability professional accreditations					
	Metric	Number of staff with sustainability related professional accreditations					
	Tactic	Provide DEI training for all staff					
	Metric	Percent of staff who have received DEI training					
Strategy	2.3	Create guidelines to reduce the environmental impact of day-to-day operations by WTA staff				^	\$
	Tactic	Implement new programs and enhance existing programs to reduce energy use, waste production, water use and single occupancy vehicle trips made to work					
	Metric	Electricity use, water use, waste volume, and Smart Trips logged to work					
Strategy	2.4	Define best practices for hosting a sustainable meeting or training				^	\$
	Tactic	Encourage employees to provide food and beverages with limited or no packaging, reusable or compostable cutlery and limited printed materials					
	Metric	Number of people who pledge to host sustainable meetings					
Strategy	2.5	Create guidelines on the printing and buying of promotional and educational items				^	\$

	Tactic	Reduce the number of printed materials such as transit guides, maps and brochures. Consider the environmental impact of promotional items.				
	Metric	Number of unused transit guides, maps and brochures.				
Strategy	2.6	Create guidelines for the use of green building principles for new construction and the adaptation of existing infrastructure			^	\$\$\$
	Tactic	Construct to LEED standards when feasible, or use as many green building principles as possible				
	Metric	Number of green building principles applied to new construction, remodel and retrofit projects				
Strategy	2.7	Create guidelines on company travel that encourage employees to consider their environmental impact			^	\$
	Tactic	Encourage employees to drive or take a bus or train, to in-state meetings. When driving, employees are encouraged to share rides with other employees.				
	Metric	Estimated GHG emissions from employee travel				

Goal 3: Transition to zero emission fleet and facilities

Objective Convert all WTA owned vehicles and equipment to zero-emissions by 2040

KPI Percent of fleet and equipment that is zero-emissions

			Near Term	Mid Term	Long Term	Staff Time	Budget
Strategy	3.1	Pursue zero-emission vehicle grant funding				^	\$\$\$
	Tactic	Apply to local, state and federally funded grant programs for zero-emissions vehicles					
	Metric	Number of grants applied to yearly, number of successful grants					
Strategy	3.2	Design and build zero-emission infrastructure				^	\$\$\$
	Tactic	Apply to local, state and federally funded grant programs for zero-emissions charging and fueling infrastructure					
	Metric	Number of fleet electric vehicle charging stations and zero-emissions fueling stations					
Strategy	3.3	Transition to non-gas-powered landscaping equipment				^	\$
	Tactic	Purchase non-gas-powered equipment when feasible					
	Metric	Percent of landscape and other equipment that is non-gas powered					

Goal 4: Prepare for climate change resiliency as an organization and with our community partners

Objective Identify how WTA operations may be impacted by climate change and how WTA can help our partners prepare for and respond to climate change

KPI

			Near Term	Mid Term	Long Term	Staff Time	Budget
Strategy	4.1	Increase the number of shelters at bus stops, to provide protection from sun and rain				^^	\$\$
	Tactic	Install shelters at bus stops as staffing and budget allows					
	Metric	Percent of bus stops that have shelters					
Strategy	4.2	Ensure all new vehicles are equipped with air conditioning				^	\$\$
	Tactic	When purchasing new vehicles, ensure they are equipped with air conditioning					
	Metric	Percent of WTA owned and operated vehicles that have air conditioning					
Strategy	4.3	Participate in partner jurisdictions sustainability and climate action plan development and implementation efforts				^	\$
	Tactic	Attend Whatcom County Climate Coordination Committee (C4) monthly meetings					
	Metric	Number of meetings attended annually, number of projects and plans WTA staff participates in					
Strategy	4.4	Continue to provide transportation to cold weather, extreme heat, low air-quality or other emergency shelters				^	\$
	Tactic	When feasible, provide transportation to emergency shelters					
	Metric	Number of trips that WTA provides to emergency shelters, number of boardings on each trip					

7. IMPLEMENTATION AND MONITORING

The first order of business to implement this plan will be to name a Sustainability Coordinator. The coordinator will convene a Sustainability Implementation Team, which will meet biannually or quarterly, to guide and prioritize the implementation efforts.

The coordinator will prepare an annual Sustainability Progress Report documenting agency-wide emissions, emission reductions and the implementation status of the goals and strategies. This report will be available by quarter three after the calendar year ends.

The Sustainability Coordinator will aggregate data from each department and apply emissions factors to estimate greenhouse gas emissions.

- Facilities staff will continue to document monthly electricity, water, and natural gas use.
- Fleet staff will provide data for all revenue and non-revenue vehicles driven in the prior year, including make, model, annual miles and total fuel consumed.
- Finance staff will provide the annual percent share of electricity, natural gas, and water that the restaurant at the Lynden Station used.
- The Employee Transportation Coordinator (ETC) will provide aggregated annual Smart Trips data, including the number of employees who made Smart Trips to work, the trip types, trip distances and number of trips.
- The Sustainability Coordinator will refer to the Annual Performance Report and the agencies National Transit Database (NTD) report for annual: operating expense, Vehicle Revenue Miles (VRM), population in service area, Unlinked Passenger Trips (UPT), Revenue Hours (RVH) and Passenger Miles (PMT) for Fixed Route, Paratransit and Vanpool.
- Human Resource staff will provide a year-end total FTE count.
- The Whatcom Council of Governments will provide estimated annual Vehicle Miles Traveled (VMT) and mode share data for Whatcom County.

APPENDIX A: SOLAR PANEL FEASIBILITY STUDY

The Whatcom Transportation Authority (WTA) has taken a preliminary look into the feasibility of solar power at each of their properties. Generating renewable energy through the installation of photovoltaic solar arrays (PV) is a great way to reduce the agency's carbon footprint and to help offset energy costs with the use of locally generated power. Puget Sound Energy (PSE) also offers alternative sustainable energy programs in the case PV system installation is not the best option for a property. The Green Power program and the Solar Choice program allows agencies to match a share of their energy with renewable energy and solar power generated locally. WTA currently participates in the PSE Green Power Program at five of the seven properties. The Community Solar program allows an agency to purchase credits from locally sourced solar to replace the power they have utilized.

WTA owns and operates at seven properties spread throughout Whatcom County. These properties include four transit stations, the Maintenance, Operations, and Administrative Building (MOAB), and two underutilized lots planned for future growth in electrical vehicle charging, maintenance, and staffing needs. A previous WTA study found that MOAB and Cordata Transit Station (CTS) to be good candidates for solar, siting the structural integrity, roof space availability and material, and the ease of connecting the system to the grid. Although feasible, Bellingham Transit Station (BTS) was deemed as a challenging site for solar system installation given the steep grade of the roof and the location of the meter for interconnection. However, a system was installed at BTS in 2017 and is the only WTA property generating solar energy. The BTS system generates a small portion of the energy it utilizes monthly.

There are many factors that go into assessing the feasibility of solar at a facility. Design factors such as the material of roof, availability of continuous open space, structural integrity, the direction in which the roof faces, and location of the utility meter. These factors can have an serious impact on both the effectiveness or energy output provided by the system and the costs of installing the system. There are also environmental factors that can minimize productivity and increase maintenance costs. A few of the most common include local climate and the presence of objects that may produce shade and/or debris. Peak sun-hours (PSH) is a measure that is used to represent how much solar generation one can expect from a panel in a given locale. In Bellingham, WA the PSH is 3.8 which is fairly low; however, with the right design, solar array installation at WTA facilities could generate a significant reduction in the use of fossil fuels and huge cost savings.

WTA staff conducted an analysis looking at each property's monthly and annual energy use between 2014 and 2021 (when available). For each facility, the year with the highest use of electricity was utilized for the analysis as WTA plans to grow operations, fleet, and administration. The analysis relies on a general rule of thumb for determining the appropriate size solar system based off annual electricity use. To compile detailed installation costs, cost savings, and the solar capacity of each property WTA must request a site analysis and quote through an installer or contractor.

Through the analysis it was important to consider the variability in energy use and peak sun-hours throughout the year. WTA facilities receive a lot less sunlight during Fall, Winter, and Spring months than they do in the summer. During the darker seasons, electricity use tends to be much higher. For WTA's smaller facilities, a program called net metering can be used to size solar systems efficiently so they are able to generate more electricity than is being used to be turned to credits that can be used in later months. For properties with larger energy needs, PSE's alternative renewable energy sources can be utilized to increase the share of electricity that is attributable to solar produced power.

The table below summarizes the results from the analysis and provides a solar recommendation for each facility. Each property is billed separately and the amount of energy they utilize differs significantly, from MOAB utilizing over 1 million kWh per year to the Lynden Transit Station utilizing under 60 thousand kWh per year. The dramatic differences in energy use and physical layout of each of the properties results in a wide range of system size recommendations. For some properties, recommendations were gauged towards taking advantage of PSE's alternative renewable energy programs. WTA is growing and current facilities are reaching capacity, so there are numerous projects and potential projects that need to be considered before installing solar. The next section explains additional details that went into the recommendation for each WTA property.

WTA Property	Lot Size (Acres)	Average Monthly Bill	Annual Electricity Use	Solar System Requirements	Solar Proposal	Proposed Solar System Size
MOAB	8.97	\$9,112	1,082,900 kWh	898 kW	Install solar and subscribe to 'Solar Choice'	500 kW
BTS	1.00	\$1,820	192,197 kWh	159 kW	Subscribe to 'Community Solar' and install solar	200 kW
CTS	1.51	\$819	96,080 kWh	80 kW	Install solar	80 kW
FTS	11.75	\$581	64,795 kWh	54 kW	Subscribe to 'Community Solar'	N/A
Midway	1.91	\$1,062	65,040 kWh	54 kW	Subscribe to 'Community Solar' and install solar	100 kW
LTS	3.53	\$551	59,985 kWh	50 kW	Subscribe to 'Community Solar' and install solar	N/A
North Lot	3.26	N/A	N/A	N/A	Install solar	100 kW

MOAB



The MOAB property is nearly 9 acres and consists of a main building and a smaller covered structure built for fueling and washing WTA vehicles. The fuel and washing building boasts over 8,000 square feet of southern facing roof which is ideal for a large solar array. If WTA takes advantage of the roof of both structures, this property could host up to a 500-kW system. Systems that exceed 500-kW are held to much more stringent technical standards for system protection. As operations, fleet, and staff continue to grow, the use of electricity will intensify. WTA staff does not expect MOAB to ever be 100% solar efficient but a solar system this size could greatly offset reliance on fossil fuels and lower monthly utility costs. It is recommended that WTA also consider PSE's alternative renewable energy programs.

Bellingham Station



The Bellingham Station is 1 acre and hosts the transit station and administration building and a long canopy structure. BTS is WTA's only facility with existing solar power. There is remaining roof space available on the Bellingham Station building; however, there is over 4,000 sq ft of available space on the station canopy structure that would be more suitable for a solar array. The roof is southeast facing and has better sun exposure than the main building. While an additional solar installation could benefit this property, WTA staff is currently conducting a study to consider the redevelopment and expansion of the transit station. It is recommended that WTA consider solar installation in the redesign of the Bellingham Station. A 200-kW system would be recommended to handle additional activities and electric bus charging. While the studies and plans are worked on and the station redevelopment is complete, WTA should consider subscribing to the Community Solar program for this site.

Cordata Station



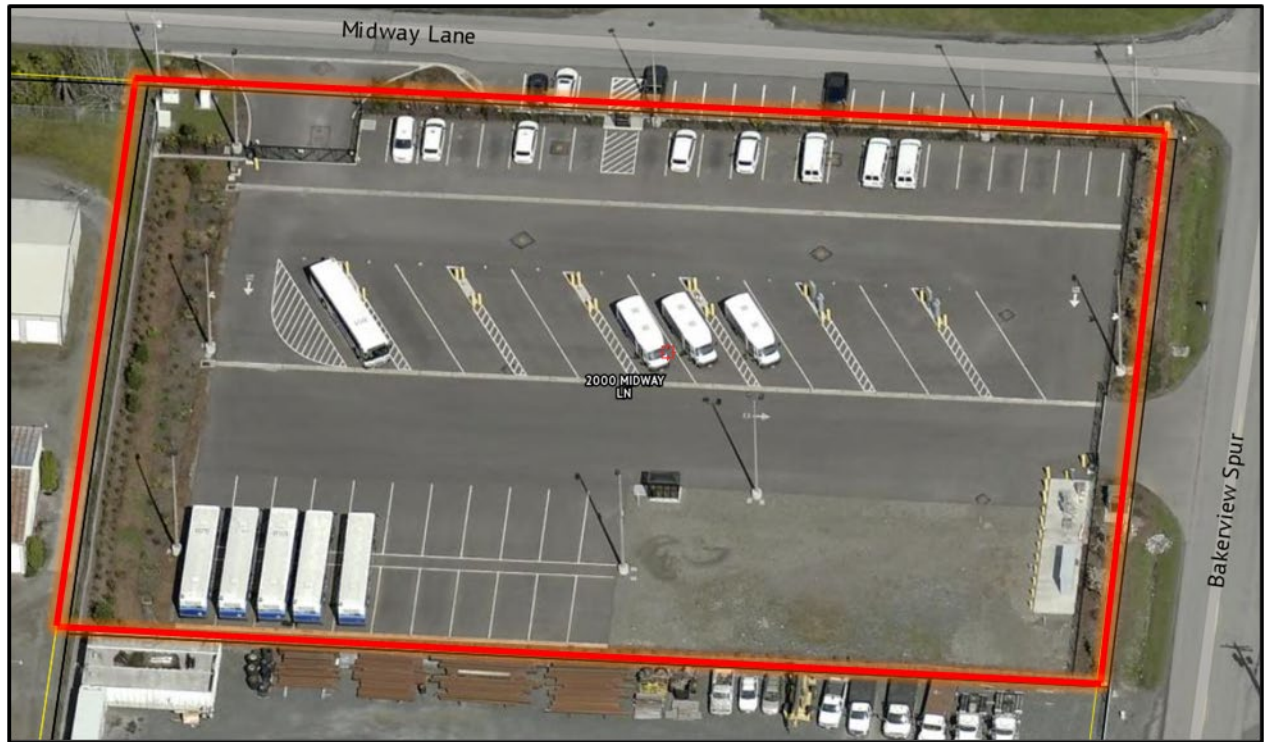
The Cordata Station is 1.5 acres and contains one office building, one restroom building, two primary canopy structures, one translucent canopy structure, and one other long canopy structure. The two primary canopy structures are the most suitable sites for a solar array. There are two additional buildings and a longer canopy structure that can also support solar. Due to the design of the middle canopy structure with the translucent roofing, it is not suitable for solar. There is approximately 4,200 square feet of available surface area to accommodate solar panels, which has the potential to host a system large enough to offset a significant portion of the properties electricity use. It is recommended that WTA install an 80-kW solar system at the station. If redevelopment of the station occurs, WTA should consider installing a larger system to account for added operations and electric vehicle charging. It is important to note that most of the available space is flat so additional design efforts may be needed for system optimization.

Ferndale Station



The two lots that make up the Ferndale Station make up approximately 12 acres and host one small building and three canopied station shelters. The property also hosts the Ferndale Food Bank, which had a solar array installed in 2022. The roof of the station shelters at the Ferndale Station are not sufficient for hosting solar arrays. The grade of the roofing is too steep which would drastically increase installation costs. There are lower grade portions of the canopy structures, but they are north facing which is not ideal for locating solar. Reliance on solar power at this property is not feasible without use of Food Bank roof which has approximately 1,500 square feet of usable space. There are no current plans to redevelop this site so the Community Solar program should be considered to offset electricity use. WTA could take advantage of smaller local solar systems that rely on battery storage to power amenities at the station. In the case of future development, WTA should design for 50+ kW system.

Midway



The Midway property is just under 2 acres and is currently used for WTA vehicle parking and electric bus charging. The future development of this property could result in additional administrative offices and electric bus charging infrastructure. Any structure built on this lot, whether a building or covered bus parking, should be designed to host a solar system up to 100 kW. Prior to the redevelopment of this site, WTA should consider subscribing to one of PSE's renewable energy programs, especially Community Solar.

Lynden Station



The Lynden Station is 3.5 acres and contains two covered station shelters. There is another building on the property that hosts a burger restaurant. The surface area of the station shelters at Lynden Station do not provide sufficient space for an efficient solar system. The shelters are also steep and there are partially shaded by surrounding trees and structures. Solar is not feasible at this site without the use of Grant's Burgers roof which has approximately 600 square feet of usable space; however, the roof is west facing and partially shaded by trees and building structures. With the potential of future expansion and development, it is recommended WTA design for a 50+ KW system. WTA should also consider subscribing to Community Solar to offset the carbon footprint of this facility. Smaller local systems to power station amenities is a potential short term option to reduce utility costs.

North Lot



The North Lot property is 3.25 acres and was recently procured by WTA for expansion. The lot hosts 3 existing structures. The development of this property could result in additional maintenance facilities, administrative office space, and charging infrastructure. It is recommended that the installation of a 100 kW solar system be considered in the design of the future development of this lot. Ideally, any new structure would feature a large, south facing roof made to the structural specifications to host the recommended solar array.

WASTE ASSESSMENT REPORT

WTA MOAB and Bellingham Station

Facility Address: 4011 Bakerview Spur and 205 E. Magnolia

Assessment Date: September 1 and 6, 2022


Successes:

We applaud the many ways in which WTA is already taking actionable steps in reducing waste. There was clear evidence of employee buy-in through the well sorted recycling and trash bins. Other waste reduction steps already in place:

- Wood is diverted from landfill through free pallet pile
- Printers default setting to double-sided
- Plastic packing materials reused
- Scrap metal being recycled
- Old bus stops donated to schools and other organizations for use as covered bike parking

MOAB Recommendations Overview

Item	Recommendation:
Divert compostable waste from landfill	<ul style="list-style-type: none"> • Add FoodPlus! service to MOAB to divert compostable waste generated by employees (paper towels, coffee grounds, and fruit peels/lunch leftovers) • Bathrooms: include a small waste bin for trash, and larger, unlined bin for paper towels. Sustainable Connections can provide “paper towel only signs” • Break rooms: include paper towel only bin by sink. A second bin with a lid could be used for food compost. Choose a bin that will be easy to wash in the breakroom sink. • Use a large liner in FoodPlus toter – these can be purchased from Bay City. Only purchase small amounts at a time because bags will break down in boxes if stored for extended periods of time. • 3 FoodPlus toters emptied weekly is the recommendation for the ~80 FTEs at MOAB. Service can be adjusted as needed. \$19.05/mo per toter.

Recycle plastic film	<ul style="list-style-type: none"> • Add plastic film recycling to MOAB. Plastic film dumpsters will get emptied once a month on the first Thursday. Start with a 3-yard dumpster. • Add 30-gallon cans to locations that handle large quantities of plastic film. Create a system for smashing plastic film down to remove air. Leaving a weight on film overnight is an easy and effective way to compress plastic film. Once cans are full of compacted film, add to plastic film dumpster. • Include employees in developing and maintaining this system • Plastic film with dried paint is acceptable • Add in a small plastic film container in break rooms labelled “clean plastic film only”
Add recycling to offices	<ul style="list-style-type: none"> • Provide employees with a small hanging bin to add to their current receptacle. Encourage employees to use the larger bin for recycling and smaller bin for trash. Pictured below.  <ul style="list-style-type: none"> • Alternatively, alert employees of recycling in common areas and the expectation that they will take their recycling to these bins.
Printing	<ul style="list-style-type: none"> • Set printer default settings to double sided and black and white. Use recycled paper. The boxes the paper comes in can be returned to Keeney for reuse. Inform employees responsible for receiving supplies of this program.
Keurig alternative	<ul style="list-style-type: none"> • Switch to compostable K-cups, such as the ones offered by Boyd's Coffee or move to a standard coffee machine
Remove single-use plastic service ware	<ul style="list-style-type: none"> • Add a dishwasher and remove single-use service ware from conference rooms or switch to compostable service ware which can then be composted with FoodPlus!

Add water bottle stations	<ul style="list-style-type: none"> • Add water bottle refill stations and provide employees with a reusable water bottle instead of offering plastic water bottles. Have a set of thrift store water bottles for employees to borrow when they forget to bring their water bottle from home.
Group receptacles together	<ul style="list-style-type: none"> • Whenever possible, group waste receptacles together so that it's easy and efficient for employees to sort waste.
Materials Exchange	<ul style="list-style-type: none"> • Donate or sell outdated products such as bike racks. The RE Store is a great local option. The NW Materials Mart has links to other regional exchanges.
Cleaning Supply Room	<ul style="list-style-type: none"> • Use wall mounted cleaning dispensers.
Additional Recommendations	<ul style="list-style-type: none"> • Ok to keep plastic lids on plastic bottles when getting recycled • Get a separate dumpster for transit station trash so that you can monitor changes in MOAB waste diversion. Investing in a garbage compactor for station trash will pay off over time as waste is very compactable. • Empty paint cans can be added to PTAG: make sure paint is dry before putting lids back on. Metal or plastic lids are ok. • Crushed oil filters can be added to scrap metal bin. • Convey any waste sorting system changes to janitorial services.

Downtown Station Recommendations Overview

Item	Recommendation:
Divert compostable waste from landfill	<ul style="list-style-type: none"> • Add FoodPlus! service to Downtown and Cordata stations employee areas to divert compostable waste generated by employees (paper towels, coffee grounds, and fruit peels/lunch leftovers) • Bathrooms: include a small waste bin for trash, and larger, unlined bin for paper towels. Sustainable Connections can provide "paper towel only signs" • Break rooms: include paper towel only bin by sink. A second bin with a lid could be used for food compost. Choose a bin that will be easy to wash in the breakroom sink. • Add 1 FoodPlus toter to downtown alley waste area.
Add recycling to offices	<ul style="list-style-type: none"> • Provide employees with a small hanging bin to add to their current receptacle. Encourage employees to use the larger bin for recycling and smaller bin for trash. • Alternatively, alert employees of recycling in common areas and the expectation that they will take their recycling to these bins.

Keurig alternative	<ul style="list-style-type: none"> Switch to compostable K-cups, such as the ones offered by Boyd's Coffee or move to a standard coffee machine.
Additional Recommendations	<ul style="list-style-type: none"> Determine who is emptying the waste receptacles in the downtown employee entrance to convey addition of compost. Convey any waste sorting system changes to janitorial services.

Next Steps:

- Involve employees in generating systems for recycling plastic film and composting in common areas.
- Work with SSC (360-734-3490) to add plastic film recycling and FoodPlus! composting
- We can provide signage for waste stations if needed (see attached files) and let us know how many you would like) and training for employees at an all-staff meeting