

BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

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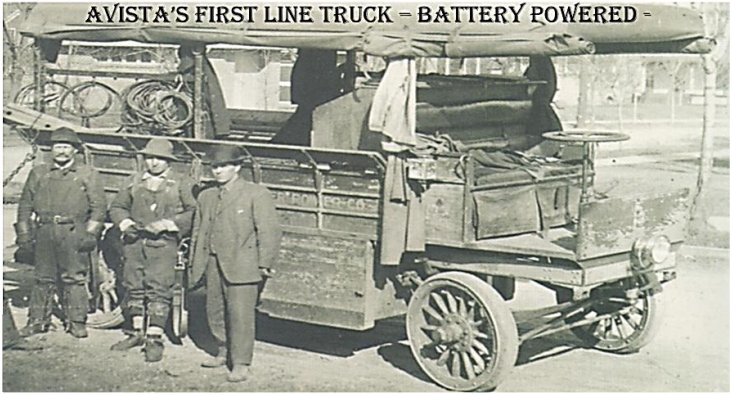
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REPRESENTING AVISTA CORPORATION



# Avista Utilities Fleet Infrastructure Plan 2020



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# INTRODUCTION

Often the most visible representation of Avista to customers are the trucks they see on the road and in their neighborhoods, bringing people and equipment needed to fix a problem or maintain equipment. In fact, a 2018 Avista brand study found that customers are most likely to see and identify with Avista



via their bill (69%) and/or the Company's vehicles (65%).<sup>1</sup> These vehicles and associated gear are an essential part addressing customer needs and performing the work required to be an effective and efficient electric and gas utility. This report is focused on Avista's Fleet Management group, those who provide and manage the vehicles and related equipment that play a central role in serving customers.

Avista's Fleet Management team is responsible for mission critical assets that have a direct and significant impact on achieving corporate objectives to provide good service to customers. Utility fleet management requires significant expertise in managing diverse and often geographically dispersed, complex, specialized and sophisticated assets. These fleet assets are wide ranging in type and nature, and can include pickup trucks, service trucks, excavation equipment, backhoes, boom trucks, and a variety of portable and specialty equipment. At Avista, Fleet's area of responsibility also includes motor pools of shared vehicles for corporate staff as well as specialized wheeled equipment such as air compressors, welders, and generators for field crews.

Avista's Fleet Group performs maintenance, repairs, fueling, purchasing and retiring of all these assets, as well as a variety of other tasks intended to uphold the safety and dependability of the Company's vehicles and equipment. They also perform complex and sophisticated work designed to manage the entirety of the fleet and maximize its value, availability, and service levels.



<sup>1</sup> 2018 Avista Brand Study, [https://avistacorp.sharepoint.com/p:/s/SP/surveyresults/EeEzUOReBexJuJV\\_gFZ\\_AFUB8P14pMSE20MVoajcUJkbSg?rttime=2-Y98T0910g](https://avistacorp.sharepoint.com/p:/s/SP/surveyresults/EeEzUOReBexJuJV_gFZ_AFUB8P14pMSE20MVoajcUJkbSg?rttime=2-Y98T0910g), Slide 16. It should be noted that bills are an unpleasant association whereas vehicles are typically a pleasant association.

Avista's Fleet is very metrics focused. Using sophisticated asset management techniques, these employees determine the appropriate lifecycle and amount of work needed to deliver readiness of equipment for the least cost. They model costs and benefits in order to maximize asset value. They also use a complex industry model that compares Avista's assets and their performance with those of other utilities across the U.S. This allows Fleet to pinpoint problem areas before they can cause a loss in service, determine if Avista is on track with industry performance standards, and provides information to make rapid and effective changes in their management techniques as needed. This technology helps the Fleet group deliver the most

effective fleet management possible. The team has a philosophy of continuous improvement in both managing their resources and in providing everything Avista crews need to quickly and efficiently address any kind of condition in the electric and gas systems. They are keenly aware that the faster the Company can address problems, the better it is for customers, and that the vehicles and equipment they manage are key to a rapid and effective response to issues and providing top level customer service.

Fleet is also faced with the realities affecting fleet operators nationwide: increasing replacement costs for vehicles and equipment, volatile fuel costs, budgetary pressures to reduce costs, increasing regulatory burdens related to issues like emissions, alternative fuels, use of electric vehicles, more sophisticated technology systems both in the vehicles themselves and for use in managing the fleet, and much more. This report attempts to explain the work done by Avista's dedicated Fleet team, their methods and priorities, tools and techniques, and the wide range of equipment under their area of responsibility. It defines the ways in which this group is meeting the challenges faced by the Company and by their peers. It further describes their spending and budgets and the ways they manage expenditures to get the most value for the dollars they are allocated.



# FLEET MANAGEMENT

The basic goal of Fleet Management at Avista is to manage all the assets under their control in a manner that is sustainable and cost-effective while ensuring that the vehicles and equipment needed to perform the work of the utility are available when needed.

- Fleet Shop Locations**

  - ✦ Mission Campus
  - ✦ Dollar Road
  - ✦ Clarkston
  - ✦ Coeur d'Alene
  - ✦ Colville
  - ✦ Pullman
  - ✦ Sandpoint

In order to maximize safety, reliability and responsiveness to meet customer needs including emergency outage restoration, vehicles and equipment should be in optimal working condition. At Avista, 80% of the maintenance is performed in-house. The Company believes that having expertise available at primary work sites rather than depending upon outside expertise helps control the cost and timeline of the work.<sup>2</sup> The work can get done when it *needs* to be done, rather than waiting on someone else's schedule. It also helps to ensure that safety remains a top priority

when working on these assets and as part of their functionality. Most importantly, Fleet believes that one of their primary missions is to provide high availability levels, which specifically benefits Avista customers. Avista maintenance shops currently provide an availability of around 95%.<sup>3</sup> Their focus provides the vehicles and equipment needed to quickly respond to customer requirements as well as efficiently manage routine work and maintenance and system events such as outages and equipment failure or damage. When customers need Avista to resolve an issue, the Company wants to be there, as quickly as possible and fully prepared for whatever may be encountered.

This management strategy also benefits Avista employees. Work crews can spend hours at a time in their vehicles. Crews are most effective and efficient if the tools and equipment they need are right at hand. They value having



*Avista crews work to free a customer vehicle that snagged distribution lines. They use a digger derrick (left) to hold the lines up and a bucket truck (right) to place the lineman into position.*

<sup>2</sup> Outsourcing maintenance for utility vehicles is quite expensive. In Avista's experience this typically costs between \$75 and \$125 per hour, as compared to the total loaded labor cost for an Avista Journeyman Garage position at around \$67 per hour (per Avista Human Resources data).

<sup>3</sup> In the industry, typically new equipment is available 92–98% of the time, older equipment is usually available 80-85% of the time. Source: Lori Sullivan, "3 Ways to Ensure Availability of Equipment," May 3, 2016, <https://www.fleetio.com/blog/3-ways-to-ensure-availability-of-equipment>. Note that Avista's average unit age is almost exactly the same as the utility industry average unit age.

work vehicles that perform exactly as they want and expect. In effect, the trucks and the crews operate as a unit. These vehicles are mobile work platforms that allow Avista crews to operate and maintain



the electric and gas systems. Having a reliable, properly outfitted vehicle allows them the flexibility of handling almost any type of task that may arise during their working day or in emergency situations.

Properly maintained equipment also contributes to a safe work environment. A poorly maintained vehicle can fail at critical moments, potentially causing accidents and putting lives in jeopardy.<sup>4</sup> Avista addresses potential fleet safety risks in three primary

ways: appropriate preventative maintenance on all Company vehicles and equipment, repairing identified issues as quickly as possible, and requiring employees to walk all the way around a vehicle to inspect it (and any specialized equipment associated with it) before it is driven or used. Many of Avista’s Fleet vehicles also include specialized accessories like aerial platforms, diggers, cable spools, etc. which are also regularly inspected by specially trained personnel to ensure safe working order.

Fleet also strives to provide clean, high quality vehicles. As mentioned earlier, Avista’s vehicles are often the most powerful and visible positive symbols of Avista seen by customers. These vehicles are ambassadors. Just as a dilapidated customer service center can turn customers away and make them doubt the integrity of Company spending, clean professional-looking vehicles instill confidence in Avista’s ability to handle any kind of situation. When a big Avista line truck rolls down the street while customers are experiencing an outage, it is reassuring to see a fully loaded professional rig with a crew fully capable of restoring the power quickly.

### **The Nuts and Bolts of Managing a Diverse Fleet**

So how does a small group of employees manage such a large and diverse group of assets? At Avista, Fleet mechanics and servicemen provide nearly all the mechanical and automotive related services equipment, and keep that equipment



*Specialized equipment needed to set a pole – a backhoe, a service truck, and a digger derrick.*

<sup>4</sup> In fact, motor vehicle crashes are the leading cause of work-related deaths in the U.S. Source: “Motor Vehicle Safety at Work,” National Institute for Occupational Safety and Health, <https://www.cdc.gov/niosh/motorvehicle/default.html>. According to the National Highway Transportation Safety Administration, 20% of those accidents are due to poor maintenance of the vehicle. Carlos Berdejo, “Importance of Car Maintenance To Help Avoid Car Accidents,” SAGAS Insurance Pros, <https://sagazpro.com/blog/2017/9/18/importance-of-car-maintenance-to-help-avoid-car-accidents>



functioning as expected. These experts are available every weekday from 6:30 a.m. until midnight to provide crews with adequate equipment, and to keep that equipment functioning as expected. This extended availability ensures that the vehicles needed for each day’s work are ready to go when the crews require them. After hours, crews have access to an emergency phone number to get whatever help is needed. There are also a limited number of loaner trucks, trailers, and a backhoe available if a crew’s regular vehicle is out of service. These vehicles are stocked with a basic inventory of tools and supplies, which allows work to continue even if a regular vehicle is undergoing repairs or routine maintenance. Any requests for new or replacement vehicles or accessories go through a rigorous review process, as Fleet manages their portfolio using data and analytics, so these requests must be vetted with specific requirements for adding to inventory. This process creates awareness of the impact to existing vehicles, manpower requirements, and budgets. It will be described in more detail in this report.

<i>Avista Fleet Crew</i>	
19	Journeymen Mechanics
5	Garage Foremen
4	Garage Servicemen
1	Coordinator
2	Drivers
1	Parts Specialist
2	Fleet Specialists
1	Fleet Analyst
2	Assistants
1	Manager

Avista’s service territory extends over more than 30,000 square miles of very diverse climates and conditions, from steep mountain canyons to desert terrain, cities to farmland. Vehicles providing customer service in Sandpoint face different challenges than those faced by Spokane-based crews or those out in the Palouse. Different types of equipment are also required for different locations and conditions. Avista’s Fleet group is responsible for ensuring that the right assets are in the right places, always at the ready to provide any service required of them wherever they may reside. This is especially true in emergency

situations such as windstorms, but it is also a necessity for everyday activities like dealing with minor outages, replacing a failed pole, installing new service, or performing routine maintenance.

### *A Focus on Safety*

Avista has a very strong commitment to safety and safe work practices. In keeping with this philosophy, employees are always required to wear seatbelts on Company time (and strongly encouraged to do so on their own time as well). Using mobile devices in a moving vehicle is prohibited and use of alcohol or any controlled substances is strictly forbidden.<sup>5</sup> All Avista drivers must follow safe driving practices and obey all traffic regulations. A valid driver’s license or commercial driver’s license (if applicable) are also required. In addition, as mentioned earlier, employees are required to perform a walk around each time they move their Fleet vehicle to ensure that the area is safe and that there are



*Left: Crane setting a pole on a steep hillside.*

*Below: Line truck faces conditions in Sandpoint*



<sup>5</sup> This includes prescribed medications that can affect driving capability.

no impediments in the vicinity. Employees also have a rigorous safety protocol to follow, such as testing the integrity of the bucket extension and safety gear before starting their shift and ensuring that they have all of the safety equipment they need (like traffic safety cones, reflective vests and flares) before they begin their work day.

Fleet also follows stringent safety protocols. All aerial equipment is inspected on a strictly enforced schedule. If a new aerial device (such as a boom, bucket, or crane) is placed into service, they are inspected after purchase by Fleet experts at intervals of 30 days, 90 days, 180 days, and 365 days. Thereafter inspections take place every three months. Fleet has two dedicated mechanics with specialized training to perform these critical safety and mechanical inspections. These inspectors are mobile, so can provide onsite inspections across the service territory, which reduces crew down time and fuel costs by eliminating transport of the Company's large trucks. Dates and records related to these inspections are maintained by Fleet, and decals and forms are placed in each truck after inspection to keep truck operators informed of their vehicle's status.



*Safety cones are set up around Avista vehicles to protect the public*

Crash statistics indicate that a vehicle is 130 times more dangerous in backing up than in driving forward.<sup>6</sup> To help guard against these dangers, Avista installs backup alarms and cameras on every new vehicle as part of their standard equipment.

About one in seven vehicle incidents occur in parking areas,<sup>7</sup> so they are a natural place to focus on reducing on-site incidents. Parking lots are filled with obstacles and hazards like moving vehicles and pedestrians, often not paying attention the way they should. The Company encourages the use of pedestrian crosswalks and promotes awareness of this issue for drivers of Avista vehicles and even employee personal vehicles.

In addition, employees at all levels of the Company are encouraged to back into parking spaces, as this provides better views of the surroundings when pulling out of a parking space, helping to avoid oncoming traffic or potentially bumping into pedestrians. Backing into a parking space has two main advantages: line of sight and maneuverability. Pulling out of a parking area frequently means encountering blind zones created by the vehicles parked alongside which obstruct the driver's vision. In fact, about 20% of all accidents occur during parking,<sup>8</sup> so the Company believes that this is a beneficial focus area. Interestingly, studies have also found that the way employees' park when they arrive at

<sup>6</sup> Smith System "Advanced Backing," <https://www.drivedifferent.com/industry/utilities/>

<sup>7</sup> "Prevent Parking Lot Crashes," State Farm Simple Insights, <https://www.statefarm.com/simple-insights/auto-and-vehicles/prevent-parking-lot-crashes>

<sup>8</sup> "Parking Lot Accidents: Statistics, Causes, and Liability," My Parking Sign, 2019, <https://www.myparkingsign.com/blog/parking-lot-accidents/>

work can affect their safety behavior throughout the workday,<sup>9</sup> which adds additional benefit. Avista wishes to encourage safety as a habit and thus addresses this issue with all employees, especially those responsible for operating Company fleet vehicles and equipment.

To help specifically address driving related safety concerns, the Company and the Fleet group provide the Smith System Driver Improvement Course for employees. The Smith System is used around the world to teach drivers to drive differently. Avista is in good company utilizing this approach. More than half of the Fortune 500 fleets use the Smith System for driver safety training.<sup>14</sup> The Smith method provides a more thoughtful approach to driving, including the knowledge and tools to make better decisions behind the wheel, which leads to a significant return on investment in terms of crash and injury reduction, maintenance savings, fuel savings, higher employee satisfaction and, most importantly, saved lives.

As an example of the effectiveness of driver improvement programs, Nationwide Insurance found that when they implemented such a program, though miles driven increased by 19% that year, the organization's preventable crashes decreased by 53% and total motor vehicle loss costs went down 40%. Pike Industries, an asphalt paving company in Vermont, has approximately 250 employees. These employees travel over 2 million miles each year hauling construction equipment and materials as well as performing construction activities (many in highly dangerous work zones) similar to what utility crews experience in their daily work. After implementing a focused safety and driver training program like Smith, the number of significant roadway incidents dropped to near zero, workers' compensation claims for vehicle incidents dropped from a high of 73% in total losses in one year to 2% the next. Vehicle property damage losses also followed this trend.<sup>15</sup>

This focused methodology is proven to increase safety. Although it is concentrated on Fleet vehicles and equipment, it applies equally to driving while on company business or driving the family to the movies. It is yet another piece of evidence that Avista cares about the safety and well-being of both their own employees and that of the general public.

- Motor vehicle crashes cost \$871 billion in societal and economic harm in the US each year, more than \$900 per person.<sup>10</sup>
- Motor vehicle crashes cost employers \$60 billion annually in medical care, legal expenses, property damage, and lost productivity. They drive up the cost of benefits such as workers' compensation, Social Security, and private health and disability insurance. In addition, they increase company overhead to administer safety programs.<sup>11</sup>
- The average crash costs an employer \$16,500, increasing to \$74,000 if there is an injury, over \$500,000 if there is a fatality.<sup>12</sup>
- Liberty Mutual Insurance Company surveyed business executives and found that 61% believe their companies receive an ROI of \$3.00 or more for every \$1.00 they spent on improving workplace safety.<sup>13</sup>

<sup>9</sup> "4 Reasons Backing Into Parking Spaces Is Safer," SafeStart, March 23, 2016, <https://safestart.com/news/4-reasons-backing-parking-spaces-safer/>

<sup>10</sup> National Safety Council, "NHTSA: Motor Vehicle Crashes Have \$871 Billion Impact," June 11, 2014, <https://www.safetyandhealthmagazine.com/articles/10545-nhtsa-motor-vehicle-crashes-have-871-billion-impact>

<sup>11</sup> OSHA, "Guideline for Employers to Reduce Motor Vehicle Accidents," [https://www.osha.gov/Publications/motor\\_vehicle\\_guide.pdf](https://www.osha.gov/Publications/motor_vehicle_guide.pdf)

<sup>12</sup> Ibid.


<sup>13</sup> Ergoweb, "More Liberty Mutual Data on Workplace Safety," September 26, 2001, <https://ergoweb.com/more-liberty-mutual-data-on-workplace-safety/> also: OSHA, "Guideline for Employers to Reduce Motor Vehicle Accidents," [https://www.osha.gov/Publications/motor\\_vehicle\\_guide.pdf](https://www.osha.gov/Publications/motor_vehicle_guide.pdf)

<sup>14</sup> Smith System, <https://www.drivedifferent.com/>. The Smith System reaches more than 250,000 drivers annually around the world.

<sup>15</sup> Nationwide & Pike stories from the United States Department of Labor, OSHA, [https://www.osha.gov/Publications/motor\\_vehicle\\_guide.html](https://www.osha.gov/Publications/motor_vehicle_guide.html)

## DATA AND ANALYTICS

So how does Fleet balance risk and investment dollars based upon a limited budget while providing vehicles, equipment, and tools that are always at the ready to work as needed? One of the primary ways they achieve this balance is by using statistical analysis and modeling to determine how to optimize the value of their assets. This data-focused approach helps ensure that maintenance and associated costs remain as flat and predictable as possible, keeping capital outlays low and helping guarantee that the customer gets the best possible value for the funding they provide the Company to operate its fleet. Fleet capital spending averages about 3% of Avista’s entire capital budget.



**Utilimarc Software Insights:**

- ❖ Vehicle Safety
- ❖ Fuel Expenditures
- ❖ Maintenance Costs
- ❖ Ownership Costs
- ❖ Expenses Compared to Peers
- ❖ Technician Productivity
- ❖ Fleet Mix Makeup
- ❖ Vehicle Utilization
- ❖ Staffing Ratios
- ❖ Vehicle Lifespan
- ❖ Asset Expected Life Cycle Cost
- ❖ Staff Wage Comparisons
- ❖ Tracking Equipment Throughout Asset Life

Fleet uses a modeling system offered by Utilimarc, an industry recognized software and analytics company, to help develop the most practical and cost-efficient decisions related to managing Avista’s assets. The Utilimarc tools incorporate a wide spectrum of data to help develop lifecycle expectations, costs, replacement schedules, etc. The broad base of this dataset includes utility industry benchmarks, purchase and auction data, and nationwide vehicle information, providing visibility into how Avista manages its fleet compared to industry peers. It also contains a robust dataset based on Avista’s own fleet data, and uses this information to recommend vehicle replacement dates, develop actual and projected costs, and even suggest staffing and expertise needed to manage the Company’s fleet most effectively. It also considers annual expected ownership and maintenance costs for each vehicle and equipment class.

### *Lifecycle Costs*

As would be expected, fleet equipment experiences increasing costs related to its operation as it ages. Those costs are driven by the requirement of more parts and more labor to keep a unit up and running as it gets older. As the average age of a fleet increases, more frequent breakdowns occur, along with a need

Vehicle Type	Utilimarc Estimated Replacement Cost 2019
Light Duty Bucket	\$169,000.00
Super HD Digger/Derrick/De	\$392,909.00
Light Duty Service Truck	\$85,000.00
Heavy Duty Bucket	\$320,000.00
Light Duty Pickup	\$37,000.00
Stake Truck	\$95,000.00
Medium Duty Pickup	\$41,037.00
Super HD Bucket	\$292,000.00

*Figure 1. Utilimarc’s Estimated Replacement Costs*

for additional parts to keep equipment in service, creating a steady but accelerating trajectory of costs and necessitating more complex repairs and more associated maintenance work hours. Those increasing costs are not just the burden of Fleet; the people who depend upon these vehicles and equipment will see the impact in lost productivity and downtime if a vehicle or key piece of equipment is unavailable when needed. The Utilimarc software helps the Company determine how to optimize the value of each asset and when costs will begin to exceed benefits, indicating that replacement is needed. These analytics assist the Fleet professionals in determining how to globally manage the fleet based on solid asset management practices.

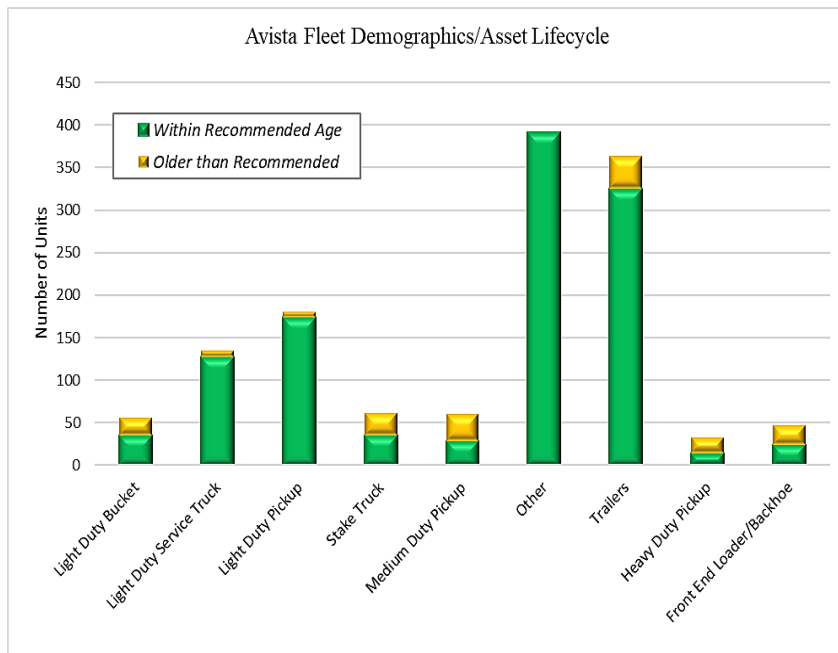


Figure 2. Avista's Fleet Demographics For Recommended Replacement

Avista's average vehicle age is 6.76 years compared to the industry average of 6.4 years.

For each class of vehicle in the Company's fleet, Utilimarc determines what lifecycle achieves the lowest cost of ownership and maintenance for an average asset in that class over its lifetime.<sup>16</sup> The model provides an approximately three year vehicle replacement window, allowing flexibility when planning replacement expenditures to reduce the effect on Fleet's overall budget. The Fleet Manager and Fleet Specialist closely monitor each vehicle, and once a vehicle or piece of

equipment reaches its maximum predicted lifecycle based on mileage, hours, and/or overall usage, using the Utilimarc recommendations and their own expertise, they determine if that item should be retired from the fleet and if (and how) it should be replaced. As shown in Figure 2, Fleet's careful management of their inventory is keeping nearly all Avista's vehicles within their recommended lifecycle, helping keep maintenance costs and capital budget requests low and steady.

Vehicle Type	Replacement Age (in Years)
Dump Truck	9-16
Bucket Truck	8-18
Digger Derrick	20
Pickup Truck	9-17
Service Truck	7-13
Stake Truck	18
Cranes	15-20
Passenger Vehicles	5-14
Excavators	11-21
Trailers	20

<sup>16</sup> It does this by calculating annualized total cost for each potential lifecycle. Annualized cost total is the sum of all ownership and maintenance costs a unit incurs over the course of its life, divided by the number of years the unit is in service.

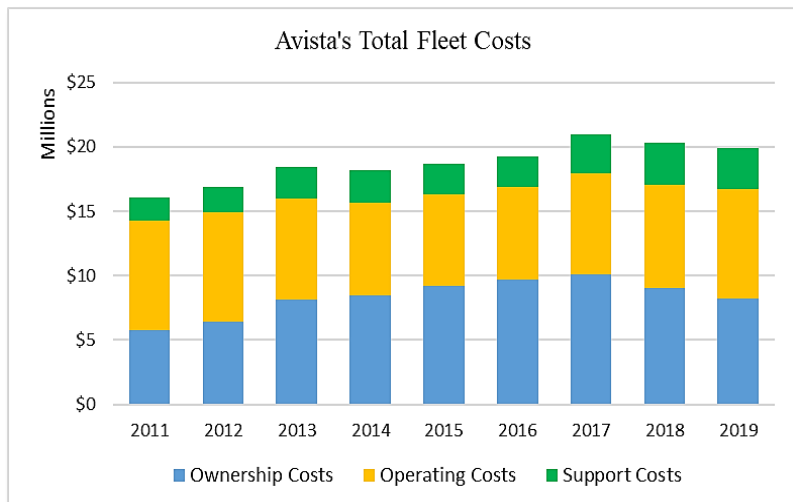


Figure 3. Avista Total Fleet Costs

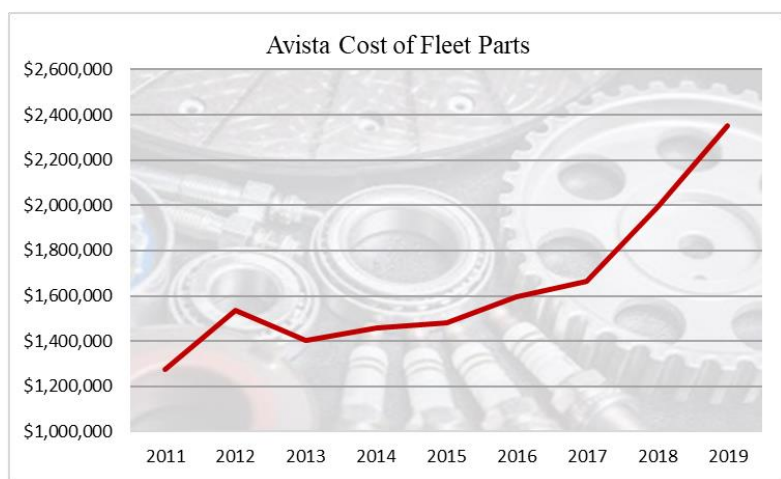


Figure 4. Costs for Parts Over Time

Another consideration is required fleet size.<sup>17</sup> The Fleet group must allow for vehicles to be out of service for maintenance or other unforeseen circumstances. Some assets are more critical than others, especially those that are specialized to particular tasks or one-of-a-kind items, and this criticality is also factored into Avista’s maintenance strategies. Fleet must manage their entire inventory to ensure that assets are available when needed under almost any circumstance.

As shown in Figure 3, even with the variability of costs they deal with, Fleet has kept their costs fairly steady. The blue bars, “ownership costs,” reflect depreciation, interest costs, and licensing. The yellow bars, “operating costs,” include technician costs, parts, outside vendors, and fuel expenses. The green bars, “support costs,” contain expenditures for support labor. Just as an example of what this team deals with, Figure 4 shows the cost of

parts over the same time period as shown in Figure 3 to provide an idea of the way just one factor impacts the management of Fleet expenses.<sup>18</sup>

### Labor Costs

On the employee side of the equation, the Utilimarc tool offers a wage comparison for fleet employee classes, a recommended ratio of staff (and types of staff) to equipment, as well as statistics about technician productivity. Avista’s technicians are routinely more efficient than industry averages. For example, Avista’s average annual mechanic hours per vehicle in 2018 was 29.2 hours compared to the industry average of 33.4 hours, indicating that Avista’s mechanics and fleet maintenance personnel are

<sup>17</sup> For more information about this industry-wide, please see Dan Fellows, “How to Develop a Fleet Replacement Strategy,” EMSWorld, April 2016, <https://www.emsworld.com/article/12187528/how-to-develop-a-fleet-replacement-strategy>

<sup>18</sup> These costs for both Figure 3 and Figure 4 are based on Avista’s actual expenditures as tracked by the Utilimarc data system.

highly efficient. In fact, according to Utilimarc, Avista is among the most efficient utilities in the nation in maintaining their vehicles.

As mentioned earlier, Avista believes it is in the best interests of Company operations to perform most maintenance in-house versus outsourcing this critical activity. Avista outsources approximately 11% of its maintenance compared to the industry average of 21%.<sup>19</sup> In-house maintenance allows having more control over vehicle availability, but cost is also a very important factor. Avista Fleet personnel have found that outsourcing maintenance for utility vehicles typically costs between \$95 and \$125 per hour, as compared to the total loaded labor cost for an Avista Journeyman Garage position at around \$67 per hour.<sup>20</sup>



### Fuel Costs

Many fleet managers believe one of their greatest challenges is planning, budgeting, and mitigating the variable cost of fuel. Fleet continually assesses expected fuel expenditures and fuel efficiency. Obviously, the size of many of these vehicles makes this a challenge.

A combination of addressing driver behavior (over speed, idling, deceleration, acceleration, etc.), selecting more fuel-efficient vehicles when possible, adhering to preventive maintenance schedules, and monitoring fuel usage reports can help, but these cost increases are mostly beyond the control of drivers and fleet managers. The cost is exacerbated by the fact that many Fleet vehicles are very large and do not get high mileage. As an

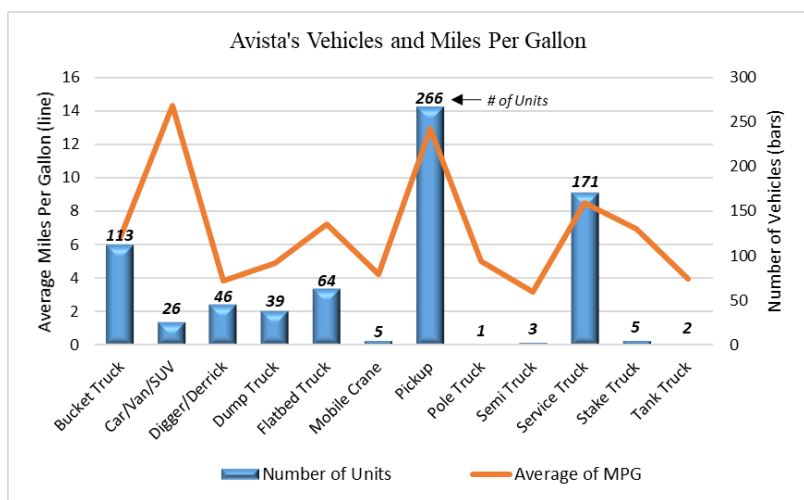


Figure 5. Avista Vehicles and Miles Per Gallon

example, some of the largest vehicles such as heavy-duty digger derricks only get about four miles per gallon; the largest bucket trucks may only get around five miles per gallon. The majority of the Company's vehicles are bucket trucks, pickups, and service trucks. These large vehicles drag down the Company average miles per gallon to about 9.3. Thus, fuel costs are always a big factor.

<sup>19</sup> Utilimarc "2018 Fleet Executive Summary: Avista," available upon request.

<sup>20</sup> According to AAA most auto repair shops charge between \$47 and \$215 per hour for auto repair only, not specifically for the large vehicles Avista utilizes. <https://www.aaa.com/autorepair/articles/auto-repair-labor-rates-explained>. Avista Journeyman Garage rate is from Avista Human Resources.

In the United States gasoline and diesel prices have varied widely over time, as shown in Figure 6. These commodities mirror the price of crude oil, which is determined by worldwide supply and demand. In addition, taxes add to the price of gasoline. In Washington State, the gasoline and diesel taxes are currently 49.4¢ per gallon with an added federal tax of 18.4¢ per gallon. Only Pennsylvania has a higher state gas tax.<sup>21</sup> The amount of this tax is subject to the decisions of the Washington Legislature.

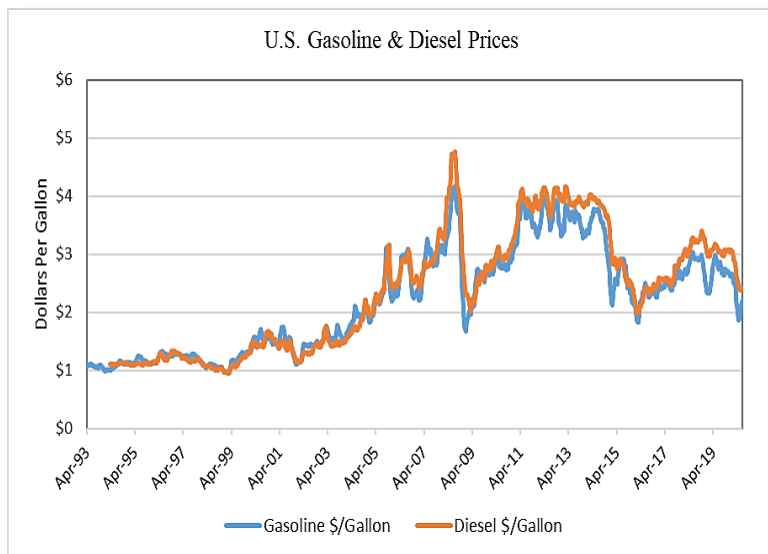


Figure 6. U.S. Gasoline & Diesel Prices Over Time

On a side note, regular drivers of Avista vehicles are given a fuel card so they can purchase fuel as they need it without using their own credit cards and having to submit an expense report. This is another way Fleet has streamlined operations.

### Data Tracking

In the Fleet perspective, data is as much a key requirement in caring for assets as the mechanic and his tool set. Vehicle maintenance records provide evidence of failures and the frequency of those events, providing clues about certain vehicle brands or engine types that may be more costly or less reliable than expected. Data provides identifiable patterns that can be incorporated into decision-making. It also provides valuable information that helps continually improve Fleet’s asset management practices.



A variety of vehicles may be needed to handle an outage or perform a large installation or repair

This is important, as poor maintenance practices potentially equate to poor customer service. If a key vehicle is not available when needed, breaks down on the way to an outage, or causes other delays due to availability, the customer is poorly served. As mentioned earlier, Fleet is highly focused on availability. Data tracking and maintaining good records helps them stay on top of this. In addition, having a comprehensive set of vehicle records is required by Federal law.<sup>22</sup>

<sup>21</sup> “Washington State is Helping You See Exactly How Much You Pay in Gas Taxes,” November 17, 2017, <https://q13fox.com/2017/11/23/washington-state-is-helping-you-see-exactly-how-much-you-pay-in-gas-taxes/>

<sup>22</sup> Federal Motor Carrier Safety Administration, Department of Transportation, § 379.1. <https://www.law.cornell.edu/cfr/text/49/379.1>





*The diversity of conditions across Avista's service territory offers its own challenges. As shown above, crews use a digger derrick to hold up a pole in the river after the riverbank washed out.*

Another tool Avista's Fleet group uses to track data is AssetWorks, an asset information management system. Utilimarc provides analysis, statistics, and recommendations on aspects such as asset replacement schedules and costs. AssetWorks is used to track an asset throughout its entire life cycle. It has fully integrated fleet, fuel, motor pool and GPS management systems that Avista's Fleet group uses to keep track of their vehicle maintenance records, track warranties, recalls, ensure that aerial equipment is tested before it is used each day, monitor usage, and handle work orders.

Avista's Fleet also uses the Zonar software system to track and document inspection records

and results. The Fleet team utilizes the reports generated by this system to help schedule preventative maintenance and plan repairs efficiently. It is also an important part of the systems and documentation required to remain in compliance with U.S. Department of Transportation regulations.<sup>23</sup> The software also has remote engine diagnostics to provide alerts before issues become serious.

## Regulation

Regulatory considerations must also be considered. Any truck or a truck/trailer combination that weighs 10,001 pounds or more must comply with Federal Motor Carrier Safety Regulations regarding maintenance and repair, required inspections, minimum standard equipment, and safety gear specifications. In addition, there are regulations for trucks that include limits on truck sizes, weights and cargo securement rules.<sup>24</sup>



The Washington State Department of Transportation (WSDOT) also administers vehicle size and weight state laws as well as administrative code and issuing the special permits needed to operate vehicles of a size or weight greater than the legal maximum on state highways. They have regulations for

<sup>23</sup> Federal Motor Carrier Safety Administration, <https://www.fmcsa.dot.gov/regulations/title49/section/396.17> and <https://www.fmcsa.dot.gov/safety/passenger-safety/inspection-repair-and-maintenance-motor-carriers-passengers-part-396>

<sup>24</sup> "What Are the DOT Regulations for Trucks?" <https://www.reference.com/government-politics/dot-regulations-trucks-1088fb70bee692c>

**State Regulations:**

- *Commercial Driver's License*
- *Vehicle Inspection*
- *Size, Weight, Load*
- *Transportation of Hazardous Materials*
- *Motor Vehicle Transporters*
- *Out-of-State and Interstate Permits*

everything from mirrors to load securement, tires and axels, accident reporting and even recording practices.<sup>25</sup> The Washington State Department of Licensing (DOL) administers state laws and administrative code relating to the licensing and regulation of commercial vehicles and their owner/operators.<sup>26</sup>

**Federal Regulations:**

- *Training Requirements*
- *Drug & Alcohol Testing*
- *Commercial Driver's License*
- *Insurance Requirements*
- *General Requirements*
- *Driver Files (Background Checks, Qualifications, Records)*
- *Rules for Driving Commercial Motor Vehicles*
- *Equipment Requirements*
- *Hours of Service*
- *Vehicle Maintenance Files*
- *Hazardous Materials Transport*

The Environmental Protection Agency mandates engine and fuel emission controls for non-road diesel engines such as backhoes, forklifts, generators, pumps, and compressors.<sup>27</sup> They also have requirements for all vehicle emissions.<sup>28</sup> There are also national commercial regulations related to everything from driver background checks to vehicle maintenance records.<sup>29</sup>

Avista is required by the U.S. Department of Energy (DOE) to acquire alternative fuel vehicles as a percentage of their annual light-duty vehicle acquisitions or, instead, to use specific petroleum-reduction methods. The Company must file an annual report with the DOE to show compliance.<sup>30</sup> To maintain compliance with this directive, Fleet has actively added Compressed Natural Gas (CNG) vehicles as appropriate as well as a CNG filling station on the Mission Campus.



*Compressed Natural Gas Fueling Station on Mission Campus*

They also purchase vehicles capable of running on E85 fuel, which is a blend of gasoline and ethanol.

There are also state regulations related to fuel consumption, utilization practices, driver monitoring, licensing, and reporting requirements.<sup>31</sup> Fleet must track all state, federal, and local regulations associated with every asset type; regulations which continually change over time.

<sup>25</sup> For a full description of WSDOT and National Commercial Vehicle Rules and Regulations, please see: <https://www.wsdot.wa.gov/publications/manuals/fulltext/M30-39/CVG.pdf> and <http://www.wsp.wa.gov/driver/commercial-vehicle-driver/commercial-vehicle-laws/>.

<sup>26</sup> <https://www.wsdot.wa.gov/publications/manuals/fulltext/M30-39/CVG.pdf>

<sup>27</sup> <https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-emissions-heavy-equipment-compression>

<sup>28</sup> <https://www.epa.gov/emission-standards-reference-guide/epa-emission-standards-heavy-duty-highway-engines-and-vehicles>

<sup>29</sup> <http://www.wsp.wa.gov/driver/commercial-vehicle-driver/commercial-vehicle-laws/>

<sup>30</sup> The Energy Policy Act of 1992 encourages the use of alternative fuels through both regulatory and voluntary activities. It requires fleets to acquire alternative fuel vehicles including methanol, ethanol, and other alcohols; blends of 85% or more of alcohol with gasoline (E85); natural gas and liquid fuels domestically produced from natural gas, electricity; biodiesel, etc. See: B100U.S. Department of Energy, "State & Alternative Fuel Provider Fleets," <https://epact.energy.gov/> and [https://afdc.energy.gov/laws/key\\_legislation#epact92](https://afdc.energy.gov/laws/key_legislation#epact92)

<sup>31</sup> State of Washington Enterprise Services, <https://des.wa.gov/services/travel-cars-parking/fleet-maintenance-service/fleet-management-best-practices>

## Benefits of a Data-Focused Approach

At Avista, the Fleet group utilizes analysis that is firmly focused upon the key goals of lowest cost of ownership while providing highly reliable (and available) service. This analytical approach has proven highly effective. In fact, the Fleet current monthly availability levels average 95%. At the same time, Fleet capital expenditures have remained very low and stable, as shown in Figure 7.

The Utilimarc, Assetworks, and Zonar systems play a valuable role in helping achieve the predictable, consistent capital budget Fleet provides the Company. In part, this is achieved by accurately estimating forward needs and smoothing out potential expenditure “bubbles.” For example, if many vehicles are concentrated within relatively few vintages, the Company could experience a sudden increase in parts and labor costs, vehicle downtime, and technician requirements simply due to a large group of vehicles aging at the same rate. Replacing a constant number of units each year avoids this problem. Consequently, the Utilimarc model will occasionally recommend replacing a unit before it reaches the end of its projected lifecycle, or it may let a unit run beyond its lifecycle to maintain this balance.

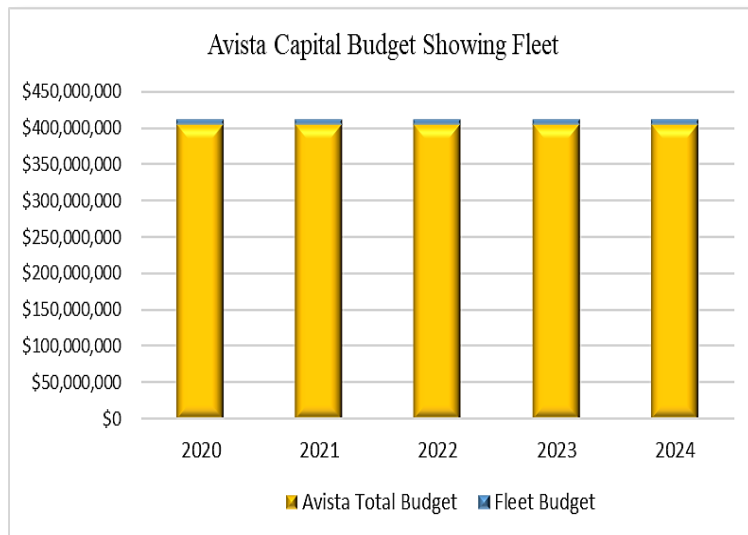


Figure 7. Fleet as Part of Avista Capital Budget

All of the statistics, data, modeling, and specific information Fleet gathers, analyzes, and utilizes provides a highly reliable budget estimate. It allows Fleet to replace equipment in a predictive manner, with adequate staffing levels to meet expected workloads for maintenance and repair throughout the budgeting period. It also gives the team plenty of heads-up time to prepare for when vehicles should be repaired or retired and what new equipment should be purchased. Thus, Fleet budgets remain highly consistent across the budgeting time frame, as their requests are based upon metrics, analytics, and specific expertise.



## MANAGING COSTS

Vehicles and equipment have fixed and variable costs associated with them. These costs fluctuate depending upon the vehicle type, how it is used and driven, external factors such as weather and the type of roads encountered, and market factors such as fuel costs. For example, there are higher fuel and maintenance costs associated with driving in congested urban areas, in rugged terrain, or on rough roads, as these types of conditions reduce fuel efficiency as well as add wear and tear and associated costs. Interestingly, even things as simple as driving on a roadway with a lot of curves requires more energy from the vehicle to counter the centrifugal force, resulting in more wear on the engine and the tires.<sup>32</sup> For the Fleet group, a variety of cost considerations and mission-critical activities are taken into account when managing their assets and associated expenditures.

### Maintenance and Operating Costs

Utility vehicles tend to be heavily used and often face adverse conditions such as steep topography, extreme weather and off-road situations. Normally they have more moving parts and complex systems associated with them and endure a much higher level of use and workload than typical vehicles. The cost of ownership for Avista's fleet vehicles varies depending upon the vehicle type, its usage, and the complexity of its associated systems and equipment, as shown in Figure 8.

Age is also an important factor. Fleet experts estimate that maintenance costs for vehicles over six years of age are about 2.75 times higher than the operating costs for vehicles less than three years old.<sup>34</sup> Cost of maintenance also increases if a vehicle pulls a trailer, experiences excessive idling, is operated by multiple drivers, or experiences off-road, dusty, or extreme weather conditions. To add further complexity, advanced vehicle technology, increased tire prices, and widespread use of engines that require high-capacity and synthetic oils all add significant cost.<sup>35</sup> Increasing shop overhead costs are

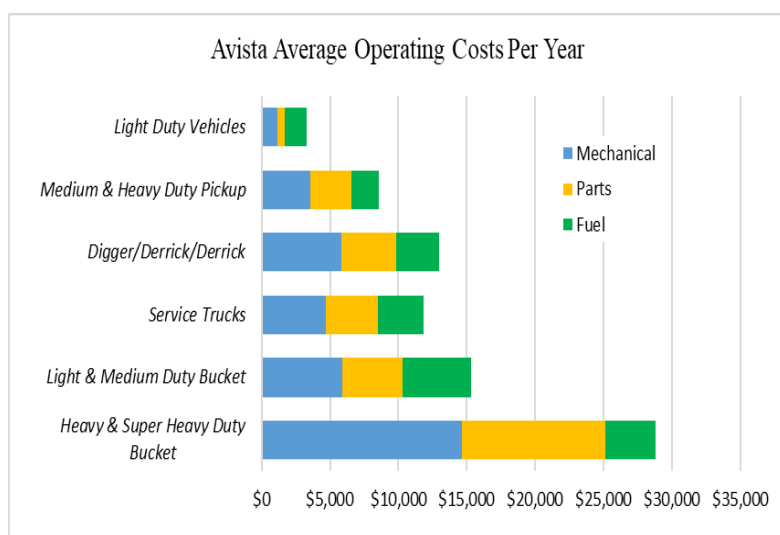


Figure 8. Fleet Average Operating Costs Per Year<sup>33</sup>

<sup>32</sup> "Transportation Benefit-Cost Analysis," <http://bca.transportationeconomics.org/benefits/vehicle-operating-cost>

<sup>33</sup> These operating costs are based upon Utilimarc data specific to Avista.

<sup>34</sup> Cristina Commendatore, "Vehicle Lifecycles vs. Maintenance Costs," February 12, 2016, FleetOwner, <https://www.fleetowner.com/maintenance/vehicle-lifecycles-vs-maintenance-costs>

<sup>35</sup> Mike Antich, "Maintenance Costs Increase as Labor Rates Rise," November 1, 2018, Automotive Fleet, <https://www.automotive-fleet.com/318193/fleet-maintenance-costs-increase-as-labor-rates-rise>

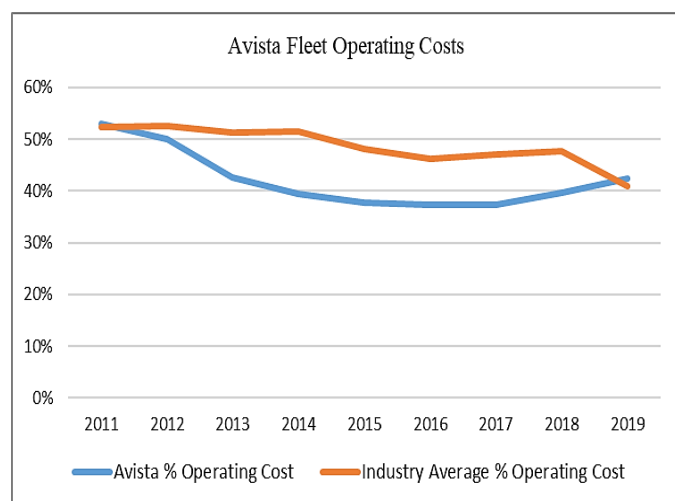
also adding to maintenance costs as a greater number of sophisticated tools and software are needed to service advanced vehicle systems. All of these factors must be tracked and factored into maintenance strategies and practices, and the additional costs required must be managed.

There are basically two types of maintenance: preventative and unscheduled. Preventative maintenance is normally determined by manufacturer recommendations based on periodic mileage and/or calendar intervals. Vehicles routinely undergo inspections, oil and lubrication changes, cleaning, and replacement of elements such as wiper blades and tires, as well as repair of worn or broken parts. This keeps vehicles and equipment operating as expected and safe for drivers and the public. This type of maintenance is preemptive in nature. It helps avoid potential problems while maximizing vehicle availability and, if not performed regularly, will reduce vehicle lifespan and ultimately increase costs.



At Avista, most scheduled maintenance for pickups, dump trucks, and service trucks is based on mileage. Larger equipment such as digger derricks and bucket trucks, construction equipment, cranes and the like are maintained based on the number of hours they have been in operation. Most other equipment such as ATVs and UTVs, trailers, and equipment mounted on trailers like Genie lifts, compressors, tensioners, etc. are maintained on a fixed schedule. For more details on maintenance intervals, please see the Appendix C “Charge-Out Base.”

Unscheduled maintenance is also a factor. This may include things like wheel alignments or replacement of parts that have been worn out, damaged or broken. These repairs must be made in a timely manner in order to keep the fleet in a safe, operable condition. Avista minimizes these types of



unplanned outages with a robust and thorough maintenance strategy. In addition, the Company encourages equipment operators to report when they notice something not working as it should. Operators have knowledge of the equipment and the expertise to identify issues before they become serious simply by their experience with the asset and their awareness. As shown in Figure 9, Avista’s Fleet group has been successful at keeping operating costs consistent over time, and Avista’s costs are typically lower than the industry average.

Figure 9. Fleet Primary Vehicles Operating Costs

## Replacement

One of the largest expenses facing fleets is the cost of replacing vehicles and equipment. This is especially true of utilities, because their vehicles tend to be very specific, and the types of equipment



they use such as aerial lifts, cranes, drillers, etc. are specialized and expensive to replace. Replacement costs for all types of vehicles have risen significantly in recent years. For example, the average purchase price of light-duty bucket trucks has been steadily increasing nearly every year. The average cost was \$92,571 in 2008, and by 2016 the average purchase price had risen to \$148,974, a 61% increase.<sup>36</sup> Heavy duty bucket truck average prices are also up significantly, nearly 45% from 2006 to 2014.<sup>37</sup> A single large bucket truck can now cost up to nearly \$400,000

depending upon how it is outfitted.<sup>38</sup> The costs for this type of equipment are expected to continue to increase over time. It is also important to note that all capital, ownership, and maintenance costs increase annually due to inflation, which is currently 2% per year.<sup>39</sup> All of these increases have had a significant impact on Avista’s Fleet budgets, though in the past years they have been mostly held at bay due to creative and thoughtful choices in managing the assets.

Vehicle Type	Recommended Replacement Age (in Years)
Dump Truck	9-12
Heavy Duty Bucket	13-17
Heavy Duty Pickup	6-9
Heavy Duty Service Truck	11-15
Light Duty Bucket	6-9
Light Duty Pickup	10-14
Light Duty Service Truck	10-14
Medium Duty Pickup	7-10
Stake Truck	11-14
Super Heavy Duty Bucket	6-9
Super Heavy Duty Bucket	11-15
Super Heavy Duty Digger/Derrick	11-15

*Utilimarc Current Replacement Age Recommendations*

### Types of Costs

Fleet managers must know all the costs associated with each vehicle and piece of equipment in order to control and manage budgets and to determine when it is in the Company’s best interests to retire or replace assets. There are two main cost classifications for Fleet operations: direct costs and indirect costs. Direct costs are further differentiated by fixed and variable costs.

**Direct Costs** can be readily connected to a specific asset, for example, all the costs associated with a particular pickup, or it can mean the portion of costs assigned to that asset. Avista utilizes the second approach, assigning maintenance costs utilizing a “clearing account” in which these types of costs are put into a single bucket and then apportioned as appropriate across the fleet. As an asset is

<sup>36</sup> “Utilimarc: Bucket Truck Purchasing Costs Rose 61%,” Government Fleet, May 2, 2018, <https://www.government-fleet.com/297221/utilimarc-bucket-truck-purchasing-costs-rose-61>

<sup>37</sup> Fleet Benchmarking Study: “Heavy Duty Bucket Truck,” August 21, 2015, Utilimarc, <https://utilimarc.com/fleet-benchmarking-study-heavy-duty-bucket-truck/>

<sup>38</sup> Kompareit, “How Much Does a Bucket Truck Cost?” 2019, <https://kompareit.com/business/constuction-equipment-cost-bucket-truck.html>

<sup>39</sup> Based on latest data available: April 2019, [https://inflationdata.com/Inflation/Inflation\\_Rate/CurrentInflation.asp?reloaded=true](https://inflationdata.com/Inflation/Inflation_Rate/CurrentInflation.asp?reloaded=true)

maintained, the related expenses are put into this clearing account, then split between capital and O&M based upon the type of vehicle and how it is used. Some assets are heavier on the capital side, others require more O&M, thus Fleet allocates the expenditures in the clearing account in a meticulous fashion, accounting for these factors and creating a monthly cost that is monitored and tracked.

Note that direct costs are fairly easily measured and are usually the focus of any cost reducing measures. Things like maintenance costs, fuel, tires, insurance, repairs, and labor costs can be at least somewhat influenced by management practices. Direct costs are broken into two primary categories: fixed and variable.

**Fixed Direct Costs** are incurred by a vehicle whether it is being used or not. These costs are typically computed based on time (such as cost per month or year). Fixed costs may include expenditures to purchase the vehicle, license it, and pay for elements like taxes, registration, and other fees. Vehicles and equipment also need regular maintenance even if they are not used frequently.

#### FIXED COSTS OF OWNING A VEHICLE

- ✓ Purchase Price
- ✓ Registration Fees
- ✓ Licensing Fees
- ✓ Scheduled Maintenance

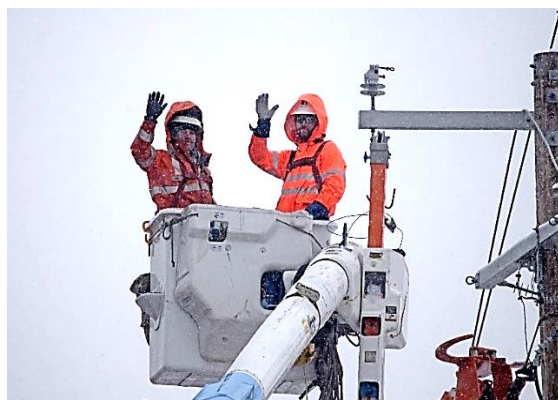
#### VARIABLE COSTS OF OWNING A VEHICLE

- ✓ Fuel & Oil
- ✓ Tires
- ✓ Unscheduled Maintenance/Repairs
- ✓ Labor Costs
- ✓ Depreciation

**Variable Direct Costs** are those related to the vehicle's activity, usually computed using the distance traveled or the hours of operation. These kinds of costs include items such as tires, fuel, fluids, and wiper blades but also might include maintenance and repairs as they arise from the asset's use. Most direct costs are in the variable category.

**Indirect** costs are expenses associated with maintaining the entire fleet and are not directly associated with a particular piece of equipment but are still critical to its operation. Mechanics, their labor costs and associated tools and equipment, work areas and buildings, as well as hardware and software applications fall into this category. However, mechanic costs become direct costs during the time they are actually working on a particular vehicle.

"Total cost of ownership" is another commonly used description that includes both the purchase price of the item plus the cost of operating it. Operations costs usually include things like maintenance costs, downtime costs, and driver costs. One of the proven ways to reduce these costs and, at the same time, improve productivity, is using Avista's approach: centralized administration and analytically determined practices.<sup>40</sup>



<sup>40</sup> "Fleet Cost Management: Reducing Costs & Driving Productivity," <https://www.elementfleet.com/fleet-solutions/fleet-cost-management>

# AVISTA'S FLEET

### Avista's Primary Fleet Composition

- Pickup Trucks 39.0%
- Service Trucks 21.7%
- Bucket Trucks 14.9%
- Stake Trucks 8.7%
- Digger/Derricks 6.3%

*These five vehicle classes make up 48.3% of Avista's total vehicle inventory.*

Utilities depend upon a wide variety of equipment in order to serve customers. Beyond a diverse fleet of trucks and other types of vehicles, they require the functionality and usability of everything from boats to jack hammers, snowplows to traffic control equipment. The Avista Fleet team also maintains compressors, generators, welders, and associated equipment needed to keep the utility functioning every moment of every day.

### Primary Fleet Resources

Avista's fleet contains over 1300 different vehicles and types of equipment across a wide spectrum, all of which require varying degrees of maintenance and upkeep. Figure 10 shows some of the primary types of vehicles and equipment utilized at Avista. To clarify the categories shown, please note that service trucks are more specialized than pickup trucks, often having additional associated equipment such as water tanks, welders, cranes, plows, buckets, lifters, tool storage, etc. Excavation vehicles include ditch witches, trenchers, vacuum units, front loaders, bulldozers, and other earth-moving equipment. The miscellaneous category includes equipment such as generators. Components include buckets, sanders, jackhammers, reels, booms, and other equipment fitted on vehicles. Figure 11 indicates Fleet's non-vehicle outlays, providing a glimpse into the other types of equipment that must be purchased and maintained to keep Avista operational and serving customers effectively.

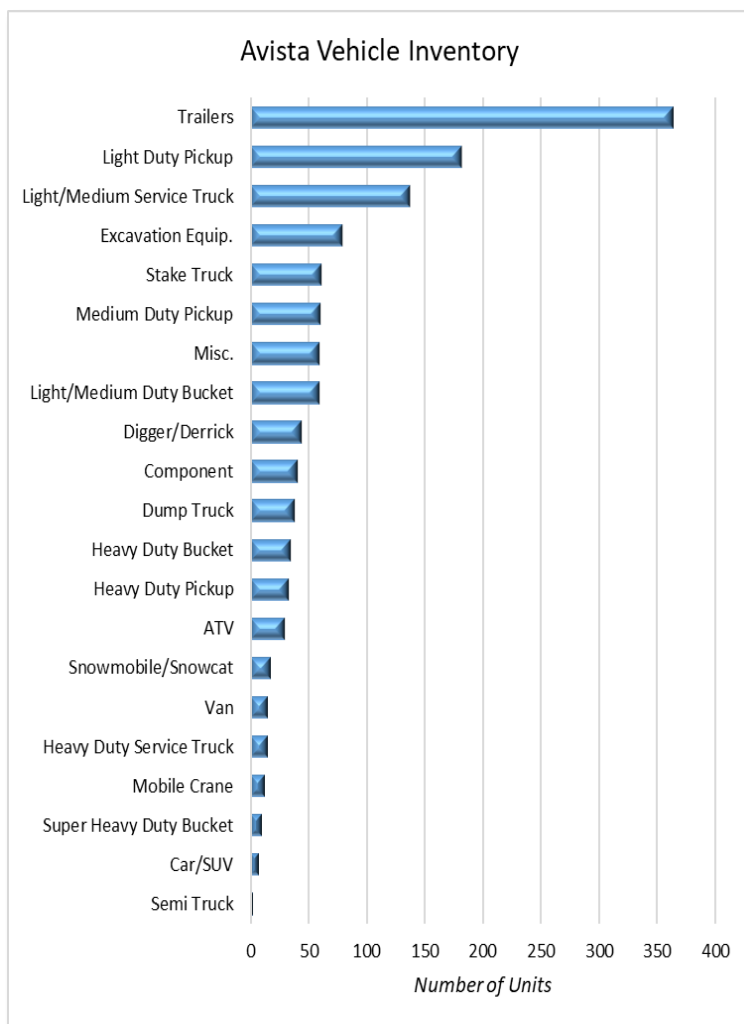


Figure 10. Avista's Complete Fleet Inventory (2020)



### Avista's Fleet Trucks

As mentioned earlier, trucks make up a large percentage of Avista's fleet, about half in fact. These vehicles tend to be highly specialized and custom outfitted to perform the work required of them. They may be specially insulated for high voltage work, have heavy-duty frames and drive trains, and components such as drills, buckets, flatbeds, cranes and more. Utility trucks are considered commercial vehicles, which means more government regulations. They are also more expensive and more complicated to operate and maintain than typical trucks.

At Avista these trucks are broken into seven primary categories that will be explained in more detail below.

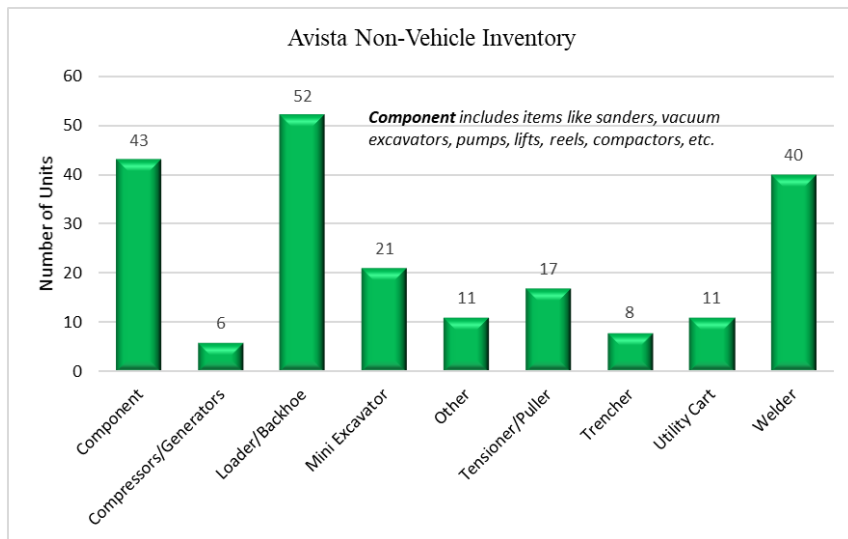


Figure 11. Avista's Fleet Non-Vehicle Inventory

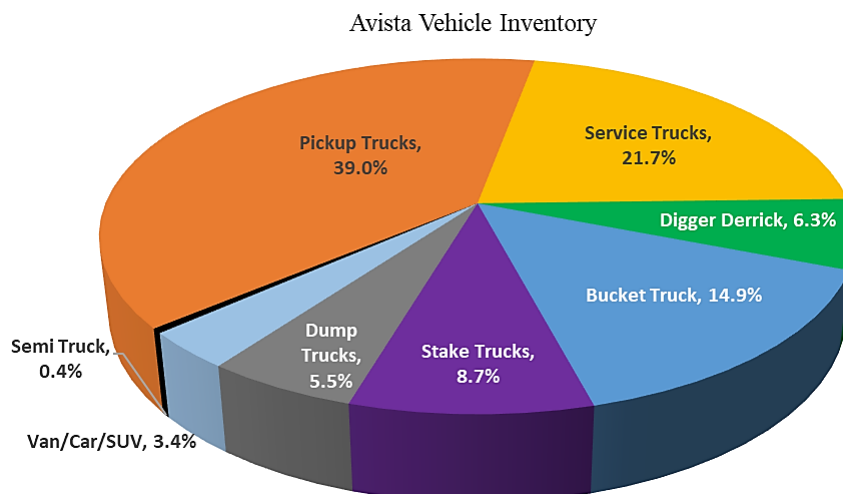


Figure 12. Avista's Vehicle Inventory

Truck Type	Count
Digger/Derrick	45
Dump Truck	39
Heavy Duty Bucket	35
Heavy Duty Pickup	34
Heavy Duty Service Truck	16
Light Duty Pickup	182
Light/Medium Duty Bucket	60
Light/Medium Service Truck	138
Medium Duty Pickup	61
Semi Truck	3
Stake Truck	62
Super Heavy Duty Bucket	11
<b>Grand Total</b>	<b>686</b>

Avista Truck Inventory 2020



## Aerial Devices

All bucket trucks play a crucial role in the operation of a utility. Someone once said, “Ask a lineman what they can’t live without in the field and you’ll find it’s a bucket truck.”<sup>41</sup> A bucket truck has an aerial work platform known as boom lift which is mounted on its back. The boom lift is outfitted with a bucket that is designed for a person (or two people) to stand in so they can perform work at heights, such as power line maintenance or replacing streetlights. The buckets are designed to be at about waist height for safety, reducing the risk of someone falling out. These trucks are also grounded so they protect against stray current. Some bucket trucks can reach as high as 125 feet in the air, though most have a range of 40 to 60 feet in height. These trucks also have a significant amount of storage onboard for tools and equipment. They are the safest and most efficient way to convey linemen to the heights where they work to manage, maintain, and improve the electric power grid.



Avista bucket trucks on the job

As the primary power line service equipment, these vehicles are

on the road almost constantly. Avista currently has over 100 bucket trucks of varying sizes depending upon the area supported and the tasks that need to be accomplished. These vehicles allow safe and efficient access to power lines and critical equipment and are a mainstay in the electric utility world.



Using a variety of different sizes of bucket trucks and support vehicles to repair storm damage in Kamiah



<sup>41</sup> Amy Fischback, “Take A Look Inside A Lineman’s Bucket Truck,” T&D World, September 5, 2013, <https://www.tdworld.com/electric-utility-operations/take-look-inside-lineman-s-bucket-truck>

## Service Trucks

Service trucks have specialized compartments to carry a variety of tools and equipment, enabling crews to perform routine jobs. These vehicles are also equipped to deal with more complex situations. In a power restoration effort, this level of readiness can mean getting the lights on a lot faster.



Avista electric service truck being charged

Service trucks have been compared to having a doctor and a surgical suite in every ambulance, as they enable the technicians to perform more multifaceted tasks onsite because their tools and equipment are close at hand. Many of these trucks are equipped with four-wheel drive to allow them more



flexibility in accessing situations in rough terrain. In fact, most of Avista's service trucks are equipped with four-wheel drive due to the topography and required access across the service territory for both the gas and electric sides of the business.<sup>42</sup> Service trucks are highly versatile.

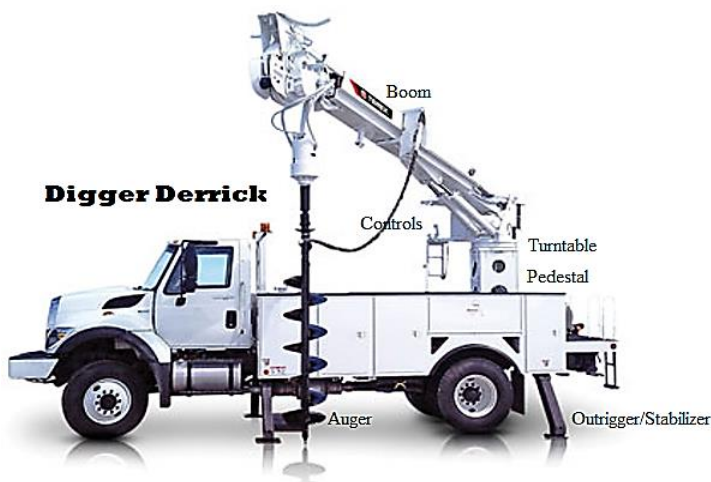
Even when they do not have



bucket attachments, they allow crews to have all the tools they need with them at all times, with the versatility in storage to allow these vehicles to be customized to the needs of the day or the crew using them.

## Digger Derricks

This is a type of truck that is designed to dig holes, hoist, hold, and set poles, and lift very heavy equipment. It is a crane-like truck with a huge boom on its back that has a heavy and powerful hydraulic auger attached. These trucks are designed for very heavy work including digging holes, lifting and setting poles, turning in screw anchors, lifting and setting transformers or maneuvering other sizeable equipment into place. The main components of a digger derrick



<sup>42</sup> Utilimarc studies indicate that the difference in operating and maintenance expenses between 4x2 and 4x4 trucks has significantly narrowed, making it easier to justify the extra upfront expense of a 4x4 based on the broader range of uses it offers. Sean Lyden, "The Rise of the 4x4 Service Truck," Utility Fleet Professional, September 2018, <https://utilityfleetprofessional.com/departments/fleet-profiles/the-rise-of-the-4x4-service-truck>



are the pedestal, the turntable, the boom, the outriggers or stabilizers, the digger motor, the auger and auger teeth, and the controls. From digging to lifting, these trucks are designed to be completely versatile. They are extremely large due to the physical dimensions and heavy weight of the attached pedestal and boom, as well as the hydraulic motor, auger and accessories. The digger derrick (or digger truck) has a powerful engine to multiply the torque and manage the hydraulic system that drives the

auger. The auger looks like a giant corkscrew and is used for drilling into the ground. Most can dig holes about 18" in diameter and can dig a 10-foot deep hole in one "dip." Their hydraulic augers dig very quickly and efficiently. Many have cranes as part of their attached equipment and can perform heavy lifting as needed. Often these trucks are used to both dig the hole, put the pole in place, then hold it up as it is being set. Sometimes they are used to hold a pole up to keep lines in service when a pole has been hit by a car and knocked down. They basically serve as the pole until crews can make necessary repairs. These machines are one of the most used, most adaptable tools in line work.



### Stake Trucks



These are flat body trucks that have an open platform rather than having a bed like a traditional pickup. These platforms often have sockets along the sides into which removable posts or stakes can be placed to form a fence around a load. These are an ideal solution for hauling loads of various sizes, including loose loads (for which the "fence" can be used). These vehicles tend to have rugged and durable construction so they can be used for a variety of tasks, including hauling supplies and equipment, spools of conductor or gas pipeline, or large bulky items that will not fit easily into a pickup bed. Many of Avista's stake trucks have some tool

storage bins on board as well. These vehicles are used extensively by Avista’s electric and gas distribution crews and are often important support vehicles on work sites.

### Pickup Trucks

Pickups are used company-wide for a great variety of purposes. These vehicles are used by both electric and gas crews for surveys, inspections, maintenance activities, customer services such as meter



*Avista pickup takes a crew to work on Clearwater Paper’s gas system*

reading or trouble calls, transporting crews and their equipment, and so much more. These trucks allow engineers to inspect transmission lines in rugged terrain and gas inspectors to access pipelines in all areas. Pickups can carry tools and equipment needed to perform repair or maintenance across the system, including pull trailers with generators, spools of conductor or gas pipe. Most have four-wheel drive to allow access to any terrain.



### Semi-Trucks

Semis are used by the Company to haul freight and large payloads. Avista’s small fleet of these trucks provide support across the service territory.



*Avista has a small number of semi-trucks for really big jobs like hauling generator parts to a power plant*



## Dump Trucks

Dump trucks are used across the service territory as well. Dump trucks are equipped with an open box bed that is hinged at the rear and equipped with hydraulic lifts so the dump portion of the truck can be lifted to allow whatever is inside to slide out. Some of these have large capacity box beds, others have more of a fence surrounding the cargo area. The Company has about 40 dump trucks of various sizes and capacities, used for jobs such as hauling dirt into and out of construction sites or hauling cargo.



*Avista dump truck filled with bags of blankets, hats, and mittens to distribute to low income and homeless in Spokane County*



*Avista natural gas-powered dump truck*

## Avista's Other Fleet Vehicles & Equipment

### Compressed Natural Gas

Compressed Natural Gas (CNG) capable vehicles are designed to be switchable to compressed natural gas as their primary fuel if the situation allows it, while maintaining the flexibility of using gasoline or diesel as a primary fuel if that is a better option.<sup>43</sup> The Company is adding CNG vehicles, primarily trucks, to the fleet as it is feasible. At present, about 90 of Avista's fleet vehicles are related to CNG by being either CNG bi-fuel vehicles or as the trailers that haul CNG to support these vehicles.



*Above: Compressed Natural Gas station at Mission Campus  
Left: Avista natural gas-powered work truck*

<sup>43</sup> Bi-Fuel or "switchable" vehicles give owners the best of both worlds. These vehicles can run on CNG as long as there is fuel in the CNG tank, then switch to gasoline or diesel until the CNG tank is refilled.

## Snow Cats

These vehicles are invaluable assets in the rough country faced by some of Avista’s line crews. During the winter, there are times when a line truck simply cannot access a downed powerline. Line crews have had to use snow machines or, at times, had to snowshoe to a situation to initiate repairs. Snow cats are especially helpful, as they



*Above: Some of the terrain Avista line crews face (Pine Creek – Burke Thompson line)*

typically haul more people and equipment than a snowmobile can.<sup>44</sup> These handy vehicles can also access the Company’s mountaintop meter repeater stations during winter months for maintenance or repair, or can be used to plow roads in remote areas for crew accessibility.



*Snowcat plows a path for line crews*

## Excavation Equipment

This type of equipment is used across the business as well. Backhoes, excavators, bulldozers, loaders, skid-steers, trenchers, drills, and components such as vacuum systems all help perform routine utility work, flattening areas for substation equipment, digging trenches to install pipeline, laying underground electric cables or gas



lines, excavating areas to set poles, building roads to reach transmission lines, snow removal, construction or demolition activities, to name a few. These tools provide what Company crews need for the construction aspect of their jobs, whatever that may entail.



*Avista gas crew uses a backhoe to dig up and repair a gas leak in Odessa*

<sup>44</sup> Snowmobiles can only accommodate one or two riders, who are exposed to the elements as they travel and have very little or no storage for supplies. Snowcats are enclosed all-terrain vehicles that usually carry 2-6 people plus their gear.

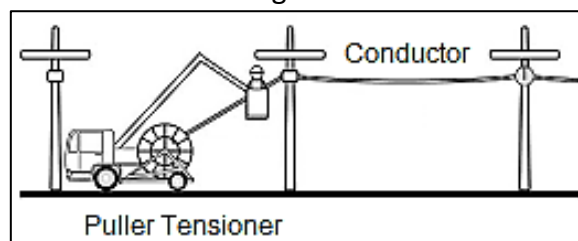
## Puller-Tensioners

This is specialized equipment used to maintain a constant tension on power line/conductor as it is being strung or taken down. A puller (winch) is set up at one end of the powerline section, and a



*Puller-Tensioner stringing a high voltage transmission line*

tensioner is set up at the other end. The reel of conductor is placed behind the tensioner. The end of the pulling line is attached to the conductor end after it has been threaded through the tensioner. Then while the line is being strung, it is held by this device under tension to keep it clear of the ground and other obstructions that could cause damage. These devices can pull out old conductor, wind it on a reel, then release the new conductor under tension to keep it under control as it is being placed on the poles. These devices are also invaluable in holding conductor so it can be spliced if it is broken or damaged.



## Mobile Crane

This is a cable-controlled moveable crane with a telescoping boom that has a hook on the end. These cranes are used to lift and move very heavy objects, aiding in construction projects or helping crews extract, place, or maintain large items like transformers or conductor spools. Most of Avista’s mobile cranes are attached to a truck, enabling them to quickly and easily respond as needed as well as access even relatively small areas.



*Avista service truck with a crane lifts a spool of cable*

## ATV/UTV

All terrain or utility vehicles are a staple for a utility with a service territory as challenging as some of Avista’s areas. All-terrain vehicles (ATVs) are small, typically meant for one or two people, and are very nimble. These are more like motorcycles with four wheels – riders straddle them to ride. ATVs also have a handlebar system for steering. Utility task (or terrain) vehicles (UTVs) are larger, often seating



between two and five people, typically have covers on top and bench or bucket seats (i.e. are more carlike) and sometimes small beds for hauling equipment. These units have steering wheels rather than handlebars and are designed for rougher terrain than a traditional four-wheel drive pickup.



ATVs are usually cheaper than UTVs but do not have the horsepower and hauling capacity of a UTV. Avista utilizes both types of vehicles for various applications. For

example, a transmission inspection engineer may use an ATV to access lines in remote, heavily forested areas where roads cannot reach. Line crews might use UTVs to access these same types of locations when they need the extra room to haul people and equipment.

### Trailers

These make up a high percentage of Fleet’s inventory, as they are so versatile. Avista uses trailers of all different shapes and sizes, covered and flatbed, open and ready to haul whatever is needed, or heavily customized to specific utility uses. Trailers haul everything from backhoes to conductor reel, poles, CNG or water tanks, ATVs and UTVs, snow cats, boats, generators, various excavation equipment, power plant parts, welders, compressors, and some even perform as mobile substations.

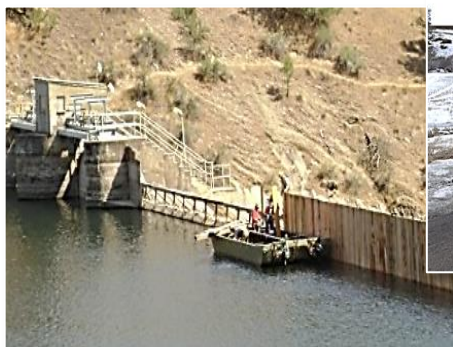


Trailers haul everything from backhoes to conductor reel, poles, CNG or water tanks, ATVs and UTVs, snow cats, boats, generators, various excavation equipment, power plant parts, welders, compressors, and some even perform as mobile substations. They are a versatile and invaluable part of Avista’s fleet inventory.



### Miscellaneous Equipment

Vehicles and equipment such as fleet cars and SUVs, boats, and backyard mobile equipment, as well as equipment like utility carts, generators and welders are also managed by Avista Fleet.



*Using a boat to set flashboards at Little Falls*



*Crews must use a boat to access a pole that crosses a river.*



*Using a small caterpillar to set a pole on Palouse farmland to minimize field damage*

### Additional Equipment Needs

The Fleet Department has the capability of renting specialized vehicles, specifically utility trucks or heavy equipment, if they are needed for a particular project and are not available within the Company’s inventory. If the rental includes any aerial equipment such as lifts or buckets, it must first be inspected by Fleet specialists to ensure that it is in full compliance with Avista’s safety requirements before being released into use.



Fleet is also responsible for renting passenger vehicles or providing Company loaner cars for regular employees. If an employee needs transportation for two days or less while on Company business, Avista has three loaner cars available. Two of their loaner passenger vehicles are electric vehicles.<sup>45</sup> If



*Fleet provides electric vehicles for employee use in conducting Company business*

the vehicles routinely provided are not adequate or if an employee is traveling outside the area, the Company has very specific requirements around employees renting vehicles from an outside source. The Company utilizes Enterprise Rent-a-Car for these situations. Reservations for Enterprise vehicles must be made at least 12 hours in advance. A few of their rental cars are parked at the Mission Campus for convenience.

<sup>45</sup> Of these two electric vehicles, one has a total trip limit of 50 miles so can only be used within Spokane, and the other can travel as far as 250 miles on electric power if the batteries are fully charged.

If employees are traveling on Company business, they are required to select the most economic and efficient ground transportation method available (rental car or public transportation, for example.) If they are renting a vehicle, standard class is the default option unless there are special considerations. This concept helps the Company manage and control costs.



Dollar Road Fleet Building (above) includes multi-purpose lifts (below)

Employees are only eligible to drive a dedicated Company vehicle if their manager determines that their job duties

**Fleet Definitions**

**Fleet Vehicle** – A Company owned, rented, or leased vehicle available for employee use.

**Assigned Vehicle** – A fleet vehicle assigned to a specific employee or work group on the basis of job duties.

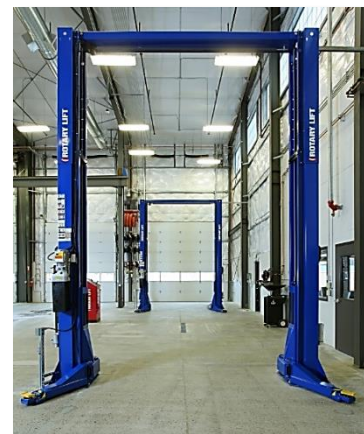
**Fleet Pool Vehicle** – A fleet vehicle that is available to loan when an employee or department’s regular vehicle is undergoing inspection, maintenance, or repair.

**Personal Vehicle Used for Business Purposes** – Use of an employee’s own vehicle to engage in Company business. Eligible for mileage reimbursement.

and responsibilities justify such use.<sup>46</sup>

Once approved, drivers are required to submit their mileage records monthly for every vehicle they utilize without exception. Company vehicles may be driven

to an employee’s home only if that person is on call or is a first responder for the Company.



Finally, employees are expected to be responsible for their vehicles. They must report anything they notice that might indicate a mechanical problem, and they must try to keep their vehicles clean and well organized, not only for efficiency in their work, but because these vehicles represent a physical symbol of Avista to customers.



<sup>46</sup> This is done through the use of an “Assigned Vehicle Decision Matrix” based on specific requirements and criteria such as driving over 18,000 miles per year on Company business, having to carry tools or supplies that are not practical for a personal vehicle, daily trips to multiple locations, customer safety and concern considerations (sometimes an identified Company vehicle provides necessary credibility), or if the employee faces extreme driving conditions such as off road driving. See Appendix A for the Assigned Vehicle Decision Matrix.

# AVISTA'S FLEET INVESTMENTS

## Operations & Maintenance (O&M) Expenditures

Avista's Fleet group manages primary Operations and Maintenance/non-capital expenditures using a clearing account, as mentioned earlier. All these types of costs are put into one bucket then dispersed monthly across the fleet based on the type of vehicle or equipment and how it is used.

These types of expenditures can vary based on market conditions, such as fuel, parts, tires, and even employee pay. As shown in Figure 13, these types of costs have gone up over time, mostly at somewhat standard inflation levels, though fuel costs have been widely variable. Even with often changeable costs in the market, Avista's Fleet O&M costs have stayed relatively stable and typically below budget, as shown in Figure 14, indicative of the careful, analytical, measured approach this team takes to managing their people and equipment.

The Fleet group manages a great variety of vehicles and devices and therefore must maintain a fairly complex inventory. Beyond the expected vehicles and equipment, their non-capital expenses also

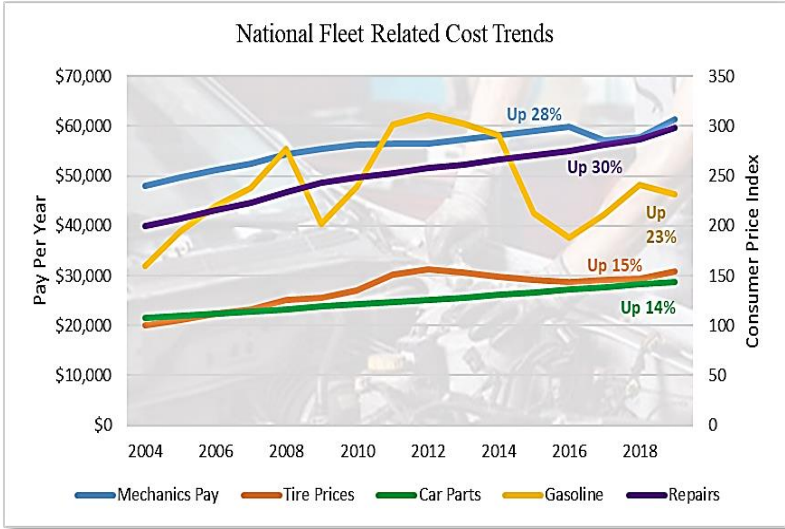


Figure 13. Fleet Related Expense Cost Trends (U.S.)<sup>47</sup>

include elements such as hardware and software, taxes, permits and the like. This category also includes employee training and travel, union contractual obligations, parts and supplies for both vehicles and supporting equipment, tools, uniforms, leases and rentals, costs of regulations and compliance,

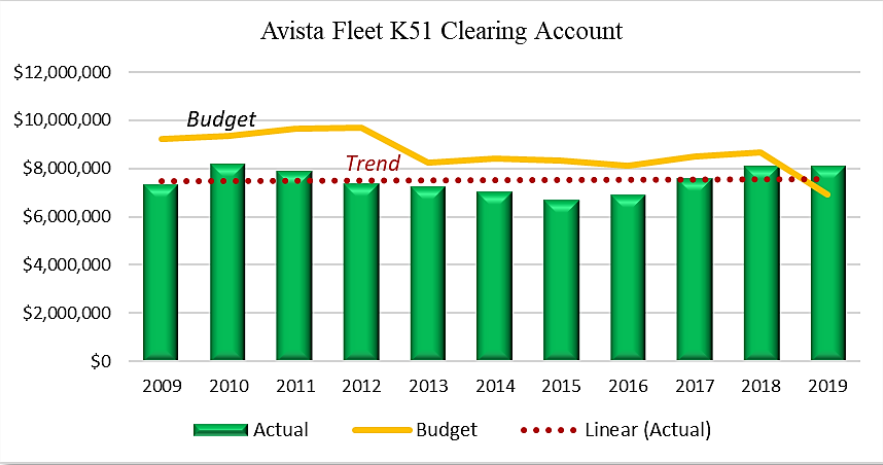


Figure 14. Fleet Budget and Actual Clearing Account Related Expenditures

<sup>47</sup> Data sources: Mechanics Pay: <https://www.federalpay.org/employees/occupations/automotive-mechanic>, Tire Prices: <https://www.statista.com/statistics/262841/us-producer-price-index-of-car-tires/>, Car Parts: <http://www.in2013dollars.com/Motor-vehicle-parts-and-equipment/price-inflation>, Gasoline: <https://www.ceicdata.com/en/united-states/consumer-price/consumer-price-average-gasoline-unleaded-regular>

and labor expenses related to maintenance and repair.

The largest expenditure categories are fuel, employee pay, repairs, parts, and tires, as shown in the pie chart of Figure 15. This is all a balancing act. Fuel, tires, parts, and repair services are priced by the market, though the team attempts to shop around for the best prices whenever possible. Employee pay is another primary category. Avista must stay competitive with the industry to attract and retain the high-quality employees needed to achieve the levels of availability the Company’s work crews need and expect. Avista is also bound by union requirements.

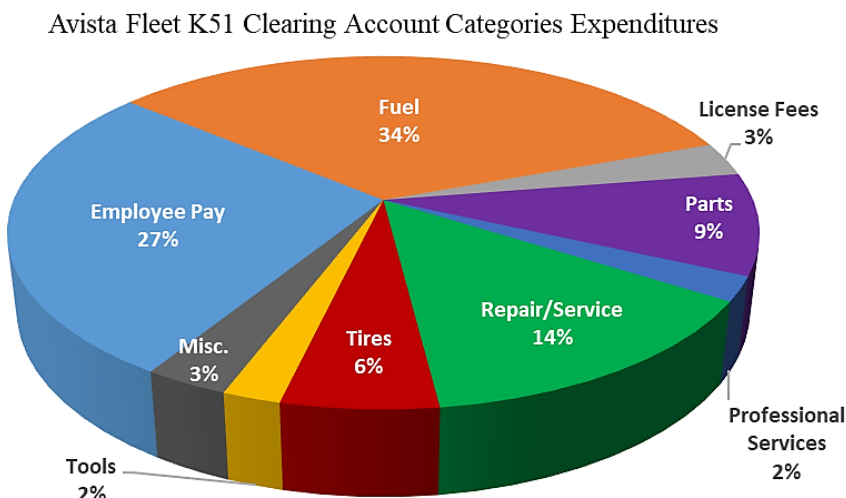


Figure 15. Fleet O&M Clearing Account Historic Expenditures

### Capital Expenditures

Fleet’s capital budget requests also tend to be stable, as shown by the “Average Budget” line in Figure 16, especially with the guidance of the Utilimarc software regarding replacements. Note that the blue bars are actually approved, not requested, budgets, which can vary substantially. Over the last several years, approximately \$7 million per year is spent on vehicles and equipment, depending upon the need. Some budget years are dramatically affected by the type of equipment required. As an example, in 2009 and 2010 the Company purchased twelve digger derricks (some at nearly \$400,000 each) and twelve heavy duty bucket trucks, pushing their requested funding temporarily above typical levels, as

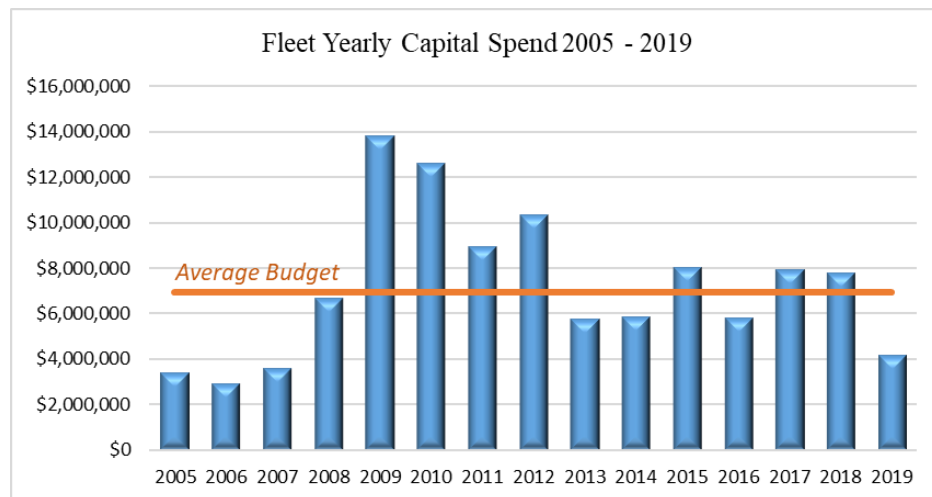


Figure 16. Fleet Capital Spending 2005-2019

shown in Figure 16. However, they plan for a stable budget of about \$7 million per year, in part based on the historical year average. Though this team controls some of the Company’s key assets, Fleet capital expenditures typically comprise only about 2%-3% of the entire Avista budget, as shown in Figure 17. This year

they were allocated about \$6.2 million for each of the next five years.

Many of Fleet’s capital purchases are for trucks as mentioned previously. However, many other components are also required to perform routine utility work. The historic capital expenditures for these are shown in Figure 18.

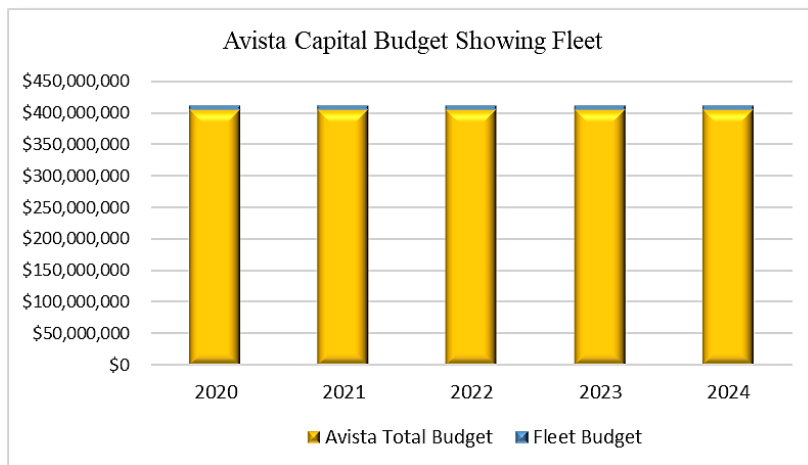


Figure 17. Fleet Capital Budget as Part of Avista Total Capital Budget

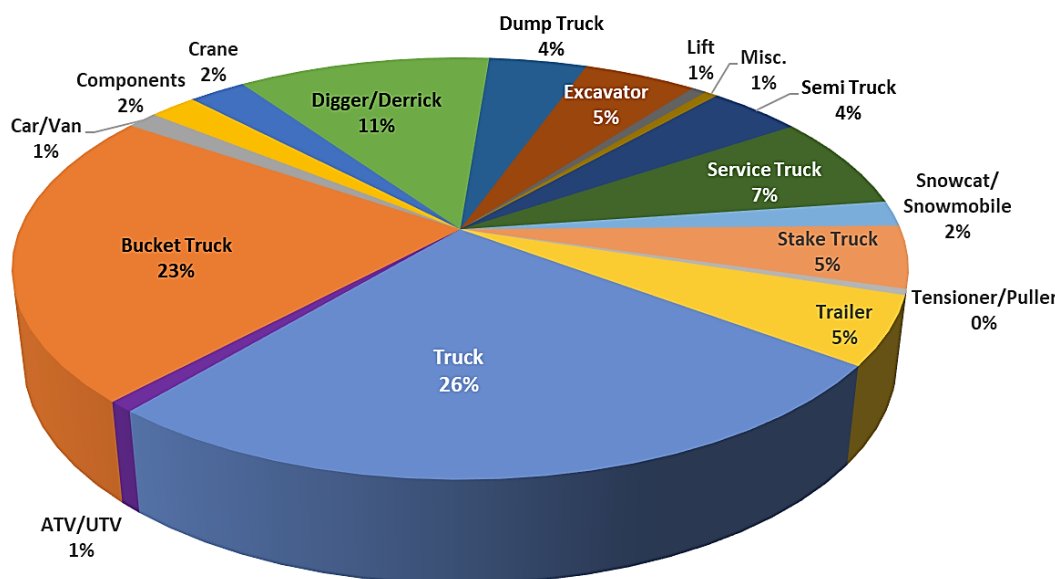


Figure 18. Fleet Historic Capital Spending Since 2005



As shown in Figure 19 on the right, Fleet is responsible for purchasing, maintaining, and retiring assets across the service territory and in every major area of the Company. Large operations such as those in Spokane, Pullman, Lewiston-Clarkston and Coeur d’Alene by their natures require more equipment, but Fleet also provides vehicles and equipment for business units like Generation, Substations, and the Meter Shop.

Managing such a diverse fleet has wide ranging yet and often subtle challenges as well. Keeping a lid on costs, maximizing value from contracts, forging strategic partnerships, seizing opportunities presented by new technology, preparing for a zero-emission future, managing occupational road risk, and dealing with ever changing legal requirements and regulations pose their own problems. In addition, managing utility vehicles is more complex than a handling a typical fleet of cars and trucks. Utility vehicles are normally highly customized for various tasks, carry a lot of very expensive equipment and people, and are required to perform perfectly under every kind of weather and road condition. They must be safe for both employees and the public. They must be protected against theft and vandalism and be licensed and permitted. Importantly, they must be supported by adequate maintenance staff and practices, a sufficient parts and service inventory, and suitable storage areas.

As shown in Figure 20, Avista’s Fleet group has been highly successful at keeping their costs low over the long

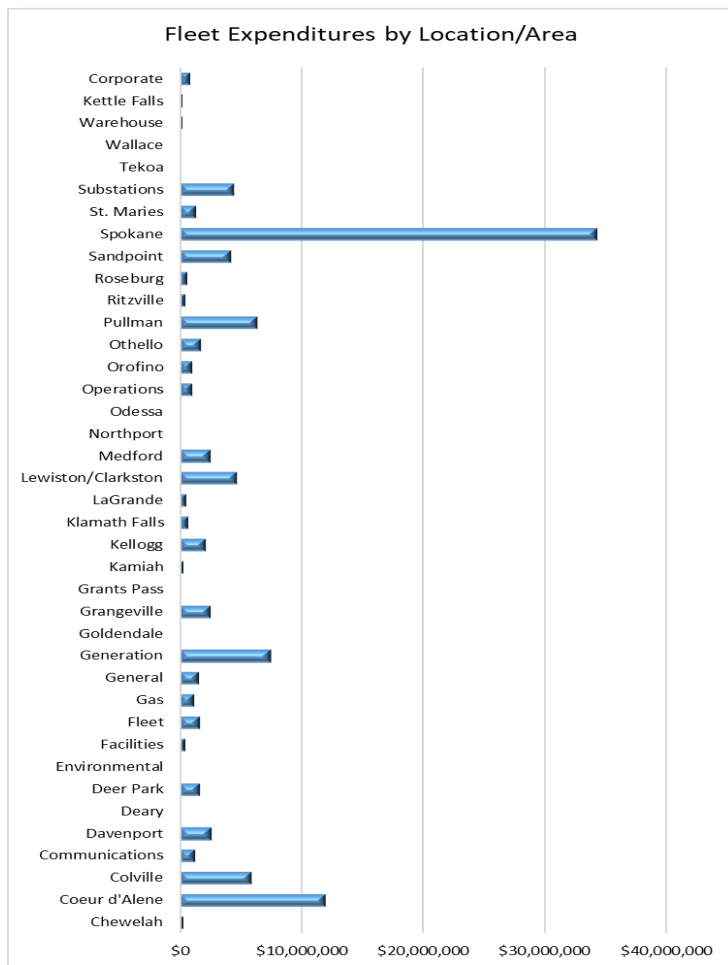


Figure 19. Fleet Historic Capital Purchase Dollars By Location

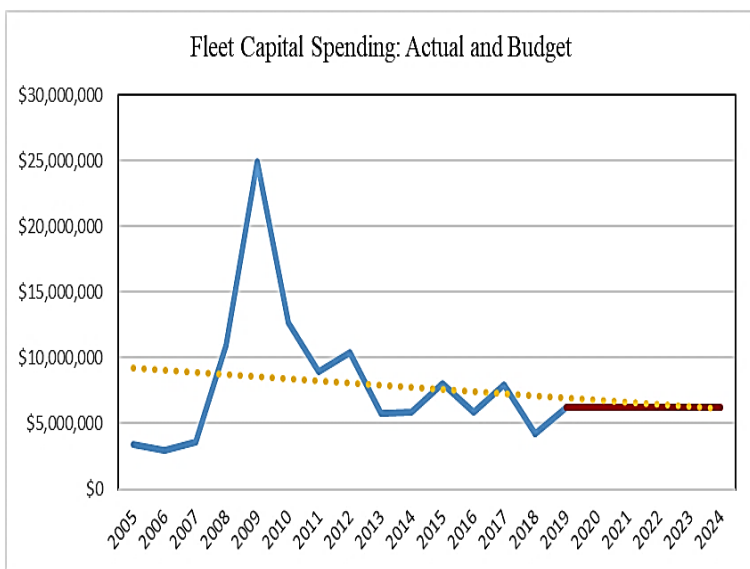


Figure 20. Fleet Capital Actuals and Budget

term, as indicated by the trend line, staying at an average of about \$7 million per year. This consistent spending pattern is expected to continue into the future.

Utilimarc recommends that Avista spend about \$8 million per year in capital replacements. This is based upon replacing 91 of Avista’s 1,334 Fleet assets annually over the next five years, which is about 7% of the existing fleet. Replacement, as mentioned earlier, is based on asset management strategies related to maximizing lifecycle costs. This data includes mileage, hours of operation, and general performance and costs. About 58% of these planned replacements are for various trucks or digger derricks, the other 42% are components and equipment such as welders, compressors, generators, lifts, excavation equipment, and the like.

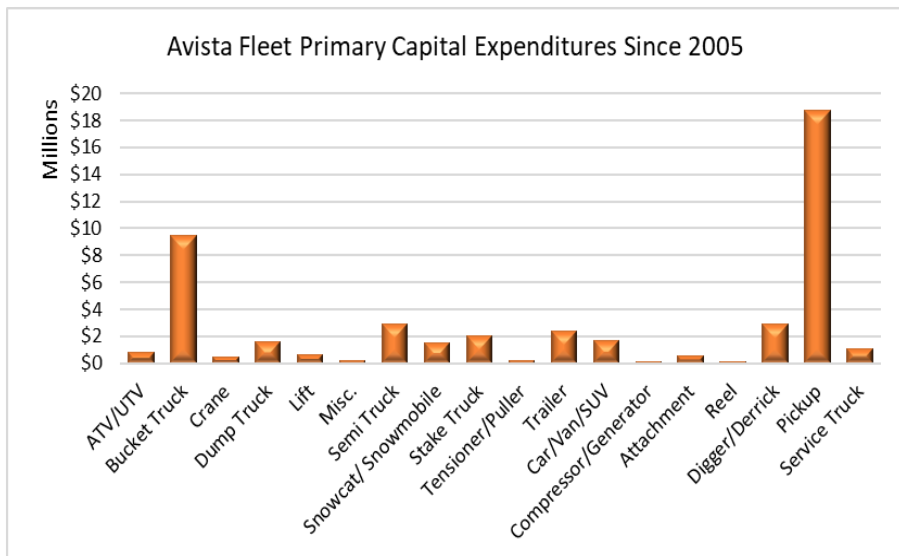


Figure 21. Fleet Historic Primary Capital Expenditure Categories

Replacement, as mentioned earlier, is based on asset management strategies related to maximizing lifecycle costs. This data includes mileage, hours of operation, and general performance and costs. About 58% of these planned replacements are for various trucks or digger derricks, the other 42% are components and equipment such as welders, compressors, generators, lifts, excavation equipment, and the like.

Utilimarc Replacement Recommendations for Avista in 2019

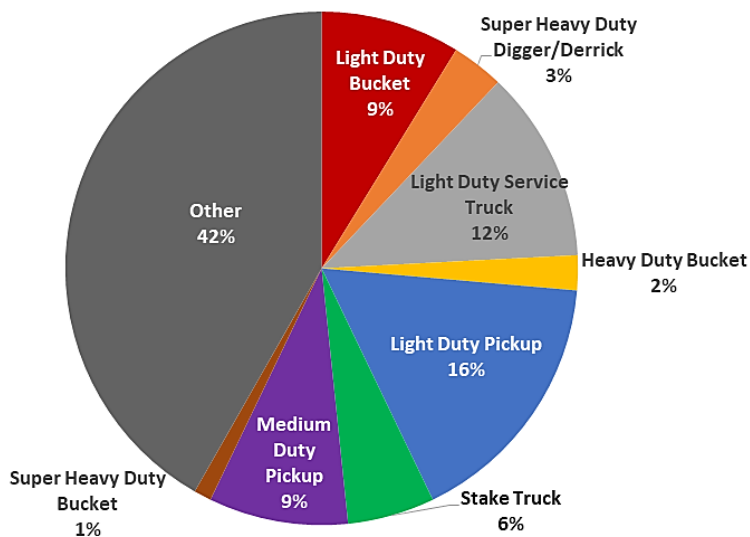


Figure 22. Utilimarc Recommended Replacements



Bucket truck and Genie lift allow crews access to transmission tower at Noxon



Fleet has managed their budgets so effectively that the Company has been able to maintain the recommended industry average age for their fleet vehicles, leading to controlled maintenance costs over time, as shown by the green line in Figure 23 (note that this budget amount includes inflation). Utilimarc recommends a replacement budget based primarily on lifecycle costs. If more assets are being used beyond their recommended life, it will inevitably lead to more breakdowns or failures as the asset ages. As shown in Figure 24, the Company is driving toward a goal of having all Avista’s Fleet assets at or near their expected life to keep costs low and service availability as high as possible. As mentioned earlier, the typical budget for Fleet is about \$7 million. This year the Capital Planning Group allocated \$6.2 million per year for the next five years.

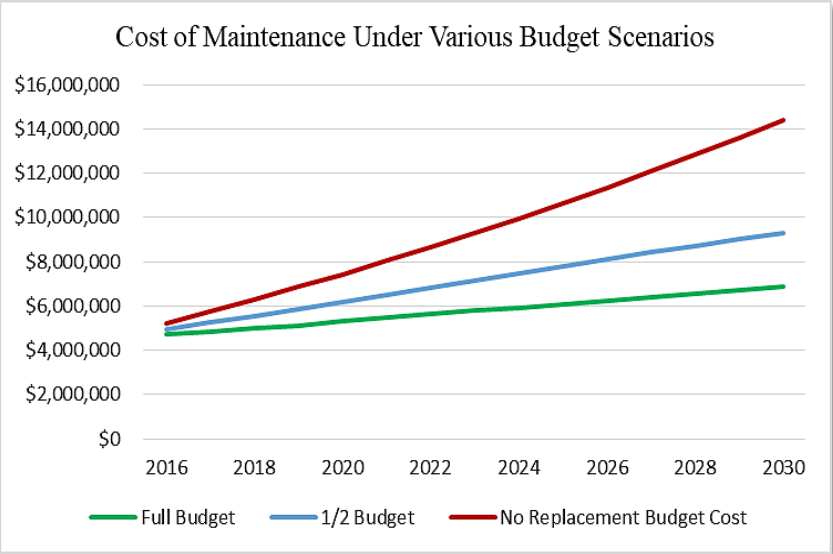


Figure 23. Maintenance Costs Under Various Budget Scenarios

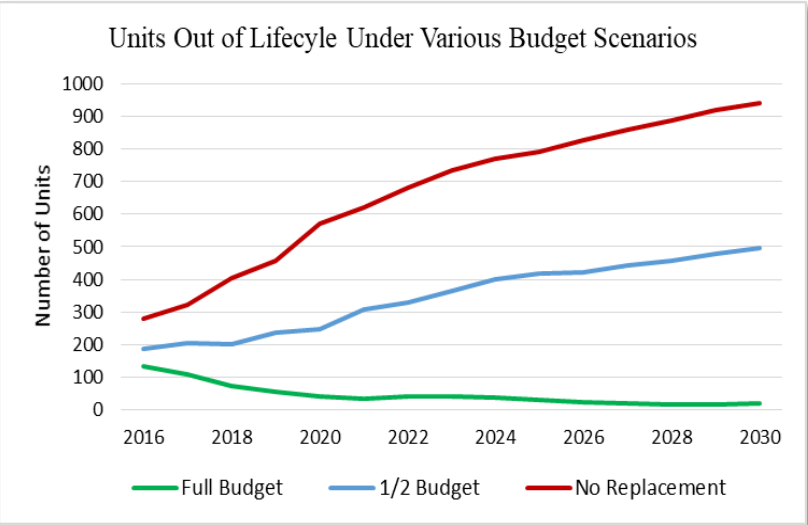


Figure 24. Number of Units Past Recommended Lifecycle Under Various Budget Scenarios



## SUMMARY

Avista's Fleet ensures that every vehicle and piece of equipment meets operators' needs and expectations. The information shared in this report is evidence of the Fleet team's commitment to providing the efficiency, cost effectiveness, safety, reliability, and availability around equipment that is critical to keeping Avista's energy delivery system operating. Fleet performance is enabled and proven by data that has been collected consistently for over a decade. This information allows the Fleet team to make value driven, data focused decisions for each business unit and for the Company. Data and analytics play a key role, but there are many more factors.

When it comes to safety, the Fleet team is constantly working to ensure that they are rolling out the latest safety information and technology to all vehicle and equipment users. Safety systems are in place for all Fleet equipment. The Fleet team works closely with OSHA as well as state regulators to make sure that all safety equipment, technologies and practices meet regulatory requirements. They collaborate with vehicle ergonomic experts to reduce any chance of injury. As an example, due to advanced safety systems, Avista crews now have a new and safer way to handle energized conductors on the job site, reducing outage duration and making maintenance or repair faster and more efficient, while at the same time protecting employees from harm. As another example, at the end of 2019 Fleet is deploying the first Avista heavy duty vehicle with advanced safety features, including collision avoidance systems. Efforts such as these have a positive impact on reducing long term injury rates for field workers and making work areas safer for the general public as well.

Storms and the related outages have severely tested Avista's fleet in recent years. 95% availability sounds impressive, but what does it mean when it really counts? Time and experience prove that Fleet's performance does not disappoint. The Company's largest outage event, the November 2015 windstorm, pushed Fleet equipment to the edge. In a ten-day period, almost a quarter of a years' worth of fuel was consumed. Equipment was utilized 24 hours a day, non-stop, but there was not a single catastrophic failure of equipment. Small repairs and maintenance were completed during rest periods to maximize crew and equipment availability. Avista's Emergency Operations Plan incidence results consistently show that Fleet performs at a very high level during major impact events. It is clearly evident that Fleet programs, data driven analytics, and investment strategies are working to provide Avista with exactly what is needed to perform work as a utility under any condition.

Value is another important element provided by Fleet. As reported earlier in this report, Fleet performance and results are typically in the first and second quartile compared to industry data, proving that Avista's Fleet team manages the Company's key work resources wisely. Expenditures have stayed level even though some costs change constantly. This is due to careful and thoughtful Fleet management and choices. Fleet delivers what is needed to perform work for customers and provide new and innovative safety solutions, never losing sight of reliability and availability. Fleet's performance is proven to be outstanding. This dedicated group of people work hard every day to ensure success in all the key areas necessary for operating Avista's electric and gas systems.

## APPENDIX A: ASSIGNED VEHICLE DECISION MATRIX

### Assigned Vehicle Decision Matrix

**Manager Evaluation:**  
 Should Avista provide the employee an Assigned Vehicle for business purposes? (Please answer the following questions for clarification.)

<i>Is this add request as follows:</i> A field position that requires a vehicle as a part of the positions tool (i.e. bucket truck, stake trucks, tester van, service truck, etc.)? If YES skip to section 2, if NO see next column	All other requests please answer the following questions in section one.
---	--

#### Section 1

- Will the annual mileage in exceed 18,000 miles  
 OR
- Do the job duties regularly require necessary tools, materials or equipment or supplies that are not practical to carry or load daily into a personal vehicle?  
 (Regular usage is defined as 3-5 times per week)  
 OR
- Do the conditions under which a vehicle is frequently used pose an unreasonable risk of damage or excessive wear to an employee’s personal vehicle, such as driving off road or parking in state right of ways where minimum traffic awareness measures must be taken?  
 (Frequently is defined as at least 1 or more times per month)  
 OR
- Does the job function require daily trips to multiple locations and a vehicle with required Company identification?

#### Section 2

YES	NO
<ol style="list-style-type: none"> <li>1. Manager to complete business case with financial analysis - submit to Fleet.</li> <li>2. Manager to complete a VLC request form in conjunction with vehicle capital specialist.</li> <li>3. Submit VLC for Officer approval.</li> <li>4. Coordinate order and delivery with Fleet Services.</li> <li>5. Provide an Assigned Vehicle to the employee.</li> </ol>	<ul style="list-style-type: none"> <li>• Employee will submit an Expense Report with business mileage for reimbursement at the IRS-approved rate per business mile.                      OR</li> <li>• Use of a pool vehicle                      OR</li> <li>• Rent a vehicle (Contact Fleet Coordinator)</li> </ul>

## APPENDIX B: VEHICLE USE POLICY



Revised January 2018

### *Purpose*

The purpose of this Vehicle Use Policy (“Policy”) is to ensure the safety of employees and the public while driving during the course of doing business; provide employees with expectations for the use of company-owned and rented vehicles; provide expectations on the use of personal vehicles for company business; and ensure compliance with all federal, state, city and local motor vehicle regulations.

### *Policy Statement*

Avista provides company-owned or rented vehicles for employees whose job duties and responsibilities necessitate driving. Driving any vehicle carries significant risk of injury. Avista is dedicated to ensuring the safety of its employees, and therefore has developed guidelines for the assignment, use, operation and maintenance of fleet vehicles and the use of personal vehicles while being used for business. This Policy supplements Part 4 of Avista’s Incident Prevention Manual, which is incorporated and referenced herein.

### *Policy Definitions*

**Fleet Vehicle** – A Company-owned, rented, or leased vehicle available for employee use. A Fleet Vehicle is designated as either an Assigned Vehicle or a Fleet Pool Vehicle.

**Assigned Vehicle** – A Fleet Vehicle that is assigned to an employee or to a department on the basis of a specific department’s or employee’s job duties and reserved for day-to-day use.

**Fleet Pool Vehicle** – A Fleet Vehicle assigned to and issued by Fleet Services as a loaner when a department’s Assigned Vehicle has been scheduled for inspection, maintenance or repair.

**Personal Vehicle Used for Business Purposes** – The use of a personal vehicle during the course of business that would qualify for mileage reimbursement under Avista’s Travel & Expense Reimbursement Guidelines.

### *Scope and Applicability*

The vehicle use policy applies to all employees when using fleet, assigned or fleet pool vehicles as defined above, as well as personal vehicles while being used for business. The employee’s record of acknowledgement will be kept in Avista Learning Network and will be acknowledged annually.

The policy is broken into two sections: Personal Vehicles Used for Company Business and Company Owned Vehicles. Since any employee may find it necessary to travel outside the office for business reasons, this policy shall be reviewed by all employees. The Company Owned Vehicles Section is for employees who may as a course of their duties operate a company-owned vehicle as defined above.

## Personal Vehicles Used For Company Business

### Vehicle Safety Rules:

- Employee must wear a safety belt at all times the vehicle is in motion and must ensure that all occupants do the same.
- Employee shall follow Avista's Mobile Device Policy, which limits the use of mobile devices (including hands free) in personal vehicles on company business. The use of a mobile device shall happen only when the vehicle is pulled to side of the road and legally parked.
- The use of alcohol and controlled substances prior to and during operation of any vehicle is strictly prohibited.
- Vehicles shall be operated within the legal speed limit at all times and at lower speed where conditions warrant.
- Employee shall take steps to ensure the security of Avista-owned property that is being transported.
- Employee must follow generally accepted safe driving practices and obey traffic regulations for the state, city and county in which they are operating the vehicle.
- Employee shall ensure that their vehicle is in safe operating order.

### Reporting Requirements:

- Before driving a personal vehicle for company business, employee must notify his or her manager if there is a change in status to their driver's license for any reason, including but not limited to, revocation, restriction or permission.
- Employee will be solely responsible for payment and any defense of citations received while operating their personal vehicle during the course of business.
- If an accident occurs during the use of an employee's personal vehicle for business purposes, they shall notify their manager to complete an Avista Report of Accident Form.

## Company Owned Vehicles

### Eligibility:

Employees are eligible for an Assigned Vehicle if their manager determines their job duties and responsibilities satisfy the criteria set forth in the "Assigned Vehicle Decision Matrix" (See Appendix A.) Managers will evaluate and determine an employee's eligibility and submit the necessary information to Fleet Services.

Once issued an Assigned Vehicle, employees are required to maintain a valid and current driver's license for the type of Fleet Vehicle they are operating and comply with all rules and requirements in this policy. An employee's failure to comply with this policy will result in loss of vehicle privileges and/or discipline up to and including termination.

### General Requirements:

- Employee shall not use Fleet Vehicles for non-business reasons, except for "de minimis" use (such as a short stop for an errand on the way between a business purpose and the employee's work location or home).
- Pets are not allowed to ride in Fleet Vehicles including the truck bed.
- Smoking and vaping are strictly prohibited in Fleet Vehicles.
- Absolutely no hitchhikers are allowed in Fleet Vehicles.
- Towing of any type of employee owned recreational equipment is prohibited.

### Passengers:

During the course of business employees may need to transport passengers who are not employees of Avista. Passengers must always use a seatbelt. If the vehicle is outfitted with a laptop mount, the driver and passenger must take precaution that the device and mount is not in the airbag deployment zone. The device and mount should be placed in the center of the cab.

In limited and non-recurring instances employees may need to provide transportation for a family member in a company owned or rented vehicle while on call, commuting or traveling for business purposes. If this is needed the employee should notify their manager. If there is a need outside of the previous definition the manager must contact the Fleet Manager for guidance.

## Company Owned Vehicles (cont.)

### Vehicle Safety Rules:

- Employee must wear a safety belt at all times the vehicle is in motion and must ensure that all occupants do the same.
- Employee shall follow Avista's Mobile Device Policy, which limits the use of mobile devices (including hands free) in both company owned and leased vehicles and personal vehicles on company business. The use of a mobile device shall happen only when the vehicle is pulled to side of the road and legally parked. The full policy can be found in the Avista Incident and Prevention Manual section 4.
- The use of alcohol and controlled substances prior to and during operation of any vehicle is strictly prohibited.
- Vehicles shall be operated within the legal speed limit at all times and at lower speed where conditions warrant.
- Employee is responsible for the security of vehicles. Employee should avoid leaving any items of value in vehicles wherever possible.
- Employee must follow generally accepted safe driving practices and obey traffic regulations for the state, city and county in which they are operating the vehicle.

### Employee Reporting Requirements:

- Employee must turn in vehicle mileage, no Avista vehicle is exempt. An Operations employee using Maximo for time keeping will submit mileage as a part of their daily time reporting. All other employees must turn in their mileage sheets on a monthly basis to Utility Plant Accounting.
- Employee must notify his or her manager immediately if there is a change in status to their driver's license for any reason, including but not limited to, revocation, restriction or permission. Managers and Fleet Services reserve the right to review any Employee's motor vehicle records for any reason at any time.
- Employee must notify his or her manager of any inspections and citation(s) received while operating a Fleet Vehicle.
- Employee will be solely responsible for payment and any defense of such citations.

### Fueling Fleet Vehicles:

- Employees who are provided with a Fuel-Only card must use it to fuel Fleet Vehicles at off-site retail stations. The assignment and distribution of off-site fueling cards is managed by Fleet Services. When fueling, employees are expected to enter accurate data, including fuel pump number, vehicle number, current odometer reading, and engine hours (if applicable).
- Employee must use the appropriate gasoline for each Fleet Vehicle. Fleet Vehicles that utilize regular unleaded gasoline do not require "Unleaded Plus" or "Unleaded Supreme" gasoline. Use of premium fuel is only for small tools that require fuel with no ethanol. If the vehicle is an alternative/dual fuel vehicle then the alternative fuel should be used when available.
- Employee must not keep fuel card instructions and codes with their assigned fuel card to prevent unauthorized persons from fueling.

### Fleet Vehicle Maintenance & Inspection:

- Employees shall perform a "walk around vehicle" inspection each day prior to moving the Fleet Vehicle to ensure it is safe. This inspection shall be completed after required paperwork or data entry and must always be the last task completed prior to moving the Fleet Vehicle.
- Employees must inform Fleet Services of any Fleet Vehicle maintenance needs or safety problem.
- Any Fleet Vehicle that does not meet safe operating conditions shall be immediately removed from service; its use will be prohibited until unsafe conditions have been corrected and re-inspected before being placed in service again. Employees should use "lock out- tag out" procedure for unsafe vehicles.
- Fleet Vehicles must be cleaned (interior and exterior) regularly to help maintain a good appearance.
- Employees must maintain the visible logo and equipment number on the Fleet Vehicle. Employees must report to Fleet Services if the Fleet Vehicle's logo or equipment number becomes less visible or otherwise less noticeable to others. Fleet Vehicles greater than 10,000 pounds Gross Vehicle Weight Rating (GVWR) are also required to display USDOT number.
- Employees must not modify or add accessories to any Fleet Vehicles unless the modifications or accessories are authorized and/or coordinated through his/her manager and Fleet Services. Window tinting will not be authorized.
- Employee must not decorate any Fleet Vehicle unless authorized by his/her manager and Fleet Services. Decorations include but are not limited to bumper stickers, window clings, antennae balls and advertisements.

## Company Owned Vehicles (cont.)

### Vehicle Accidents:

All employees must follow the requirements in the most recent Vehicle Accident Handbook, which is kept with each Fleet Vehicle and includes a Vehicle Accident Report form. The current Vehicle Accident Handbook can be accessed through the Safety Department Sharepoint site or at this link: Vehicle Accident Handbook.

There will be an incident assessment conducted on each accident to determine cause and how the accident could have been prevented. Employee will fully cooperate with such assessment. Upon conclusion of the review, Employee will be notified of the results of the assessment.

## Policy Responsibilities

### Fleet Services Responsibilities

- Maintaining a database of all Fleet Vehicles, assigned departments, and assigned employees Acquiring and disposing of Fleet Vehicles.
- Ensure proper care of Fleet Vehicles through maintenance and inspections.
- Maintaining the Assigned Vehicle Decision Matrix.
- Facilitating and coordinating efforts with department management to train employees regarding this Policy and any changes.
- Annual review of the policy, updating as needed.
- Maintaining a database of all Fleet Vehicles, assigned departments, and assigned employees Acquiring and disposing of Fleet Vehicles.
- Ensure proper care of Fleet Vehicles through maintenance and inspections.
- Maintaining the Assigned Vehicle Decision Matrix.
- Facilitating and coordinating efforts with department management to train employees regarding this Policy and any changes.
- Annual review of the policy, updating as needed.

### Each Department Manager Responsibilities

- Understanding, communicating the Policy.
- Requesting Fleet Vehicles for eligible employees using the Assigned Vehicle Decision Matrix Notifying Fleet Services when a vehicle needs to be acquired, reassigned or the status of an employee with an Assigned Vehicle has changed. Reasons for reassignment include job change or transfer, long term disability, termination, relocation, change to driver's license status, leave of absence or retirement.
- Ensuring that employee possesses a valid driver's license appropriate for the type of vehicle being operated in accordance with Part 4 (Vehicle and Equipment Operation) of the Avista Incident Prevention Manual.
- Approving exceptions to allow employees to drive vehicles home in certain cases.

## APPENDIX C: VEHICLE CLASSES

Vehicle Class	Description	Gross Vehicle Weight Rating	Charge Out Base
32	Passenger Cars		Mileage
46	4 x 4 pickups/SUV's, 1w/single rear wheels	6,000 GVWR or less	Mileage
47	4 x 2 Service trucks, Cargo Vans, w/single rear wheels	16,000 GVWR or less	Mileage
48	4 x 4 Service trucks/Cargo Vans, w/single rear wheels	16,000 GVWR or less	Mileage
56	Service trucks, high cube vans, flat beds, dumps, w/dual rear wheels	under 26,000 GVWR	Mileage
57	Dump & Flat Beds (Over 26,000 GVWR)		Mileage
58	Digger derricks, Service body trucks, boom or crane trucks, etc., w/single rear axles	Over 26,000 GVWR	Hours
65	Road Tractors		Mileage
66	Digger Derricks, cranes & knuckle booms, w/Tandem Rear Axles	Over 33,000 GVWR	Hours
67	Bucket trucks (45 ft and under)		Hours
68	Bucket trucks (Over 45 ft)		Hours
76	Off road construction equipment		Hours
77	ATV's, UTVs, snowmobiles		fixed monthly rate
78	Snow Cats		Hours
79	All terrain aerial equipment, cranes, manlifts, and back yard booms		Hours
85	All other equipment and trailers with mounted equipment, including: Genie lifts, welders, vacuum units, compressors, line tensioners, stringing equipment, boats, air compressors, pipe trailers, generators, drilling equipment		fixed monthly rate
86	Equipment Trailers, flatbed, and box/van only * No Mounted Equipment *	10,000 GVWR and under	fixed monthly rate
87	Equipment Trailers, flatbed, and box/van only * No Mounted Equipment *	10,001 GVWR and over	fixed monthly rate



*Avista Class 46 Vehicle*



*Avista Class 48 Vehicle*



*Avista Class 67 Vehicle*



*Left & Above: Avista Class 56 Vehicles*



*Above & Right: Avista Class 66 Vehicles*

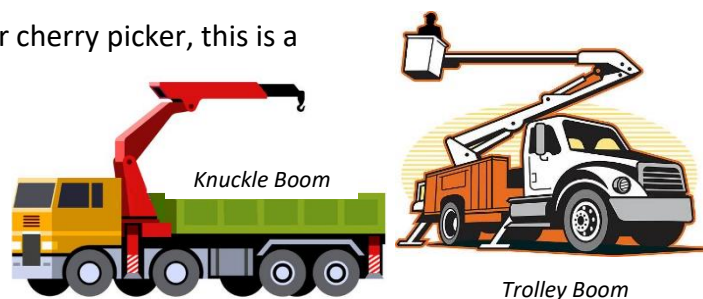


*Above: Avista Class 68 Vehicle*



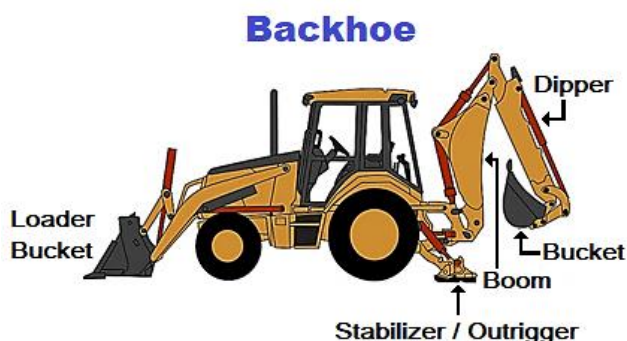
## APPENDIX D: FLEET GLOSSARY OF TERMS

**Aerial Device:** Sometimes called a boom truck or cherry picker, this is a vehicle with a long foldable arm (also called a boom) that can be used to lift workers to a height. The boom is typically mounted to a truck bed. If the arm is short and compact and is primarily used to lift items off the truck bed, it is called a “knuckle boom.” If when folded it is the length of the truck bed, it is called a “trolley boom.”



**Alternative Fuel Vehicles:** This category includes electric hybrid vehicles and those that use compressed natural gas (CNG), biodiesel, or electrically charged batteries.

**Backhoe:** This is a piece of excavating equipment that consists of a digging bucket on one end of a two-part articulating arm, usually mounted on the back of a tractor or front loader. The section of the arm closest to the vehicle is called the boom, while the section the bucket is attached to is called the dipper.



**Backup Alarm:** These are activated when a vehicle goes into reverse, notifying anyone behind that vehicle that it will be backing up, providing more safety for anyone who may be behind the vehicle.

**Benchmarking:** This means comparing performance from one organization with that of other organizations, measured according to specified definitions and standards so that the data is directly comparable. In the Fleet world, this usually focuses on fuel usage, service delivery, maintenance practices, life cycles, costs, etc.

**Compressed Natural Gas (CNG):** This is natural gas, primarily methane, which is compressed to less than 1% of the volume it takes up in its natural state, allowing it to be stored in higher volumes than standard natural gas and be more easily transported. CNG burns cleaner than gasoline, reducing emissions up to 80%. It is also abundant and inexpensive compared to gasoline. However, it requires significant modifications in order to be utilized in vehicles and must have adequate storage space and filling stations, which are currently not widely available.<sup>48</sup>



<sup>48</sup> "Advantages and Disadvantages of Natural Gas," Conserve Energy Future, <https://www.conserve-energy-future.com/advantages-and-disadvantages-of-natural-gas.php>

**Cost Benefit Analysis:** This means looking at the costs and benefits associated with a particular course of action or choice of actions. For example, the cost of purchasing a larger bucket truck versus the potential risk of not being able to reach some of the equipment that may need to be repaired.

**Digger Derrick:** A utility truck also called a digger truck or a pole truck, this vehicle is equipped with an auger to drill holes for setting poles. These very heavy-duty trucks can also pull, hold poles or lines in



*Avista Digger Derrick*

place, haul thousands of pounds in a single load, and lift extremely heavy items.

**Direct Costs** can be readily connected to a specific asset, for example, all the costs associated with a particular pickup, or it can mean the portion of costs assigned to that asset such as Fleet's tools.

**Fit for Purpose:** A vehicle or piece of equipment that is designed specifically for the purpose it serves.

**Fleet Register:** A database containing all the details about the vehicles and equipment in the Company's fleet.

**Fleet Maintenance Records:** These are details kept about each vehicle, including vehicle description, year of purchase and cost, mileage, fuel type, safety inspection results, routine maintenance reports, vehicle defect information, and repair records.

**Fixed Costs** are incurred by a vehicle whether it is being used or not and are typically computed based on time (such as cost per month or year).

**Gross Vehicle Weight (GVW):** This is the maximum operating weight of a vehicle as specified by the manufacturer. It includes the vehicles chassis, body, engine, fluids, fuel, accessories, passengers, and cargo. It is a term used for both motor vehicles and trains. (It does not include any trailers being towed.)

**Plug-In Hybrid Electric Vehicle (PHEV):** These vehicles tend to use gasoline or diesel as a main source of fuel but also have an electric motor to either assist in powering the vehicle or to provide primary power for a period of time.

**Indirect Costs** are expenses associated with maintaining the entire fleet. These costs are not directly associated with a particular piece of equipment but are still critical to its operation such as mechanics



and their labor costs, tools and equipment, fleet buildings, as well as hardware and software applications.

**Meantime Between Service:** This is a metric that defines the average operating time between regularly scheduled services/maintenance. It provides an indication of the quality of the services an asset receives. A high mean time between service dates may indicate a lack of investment in caring for an asset, which can lead to accidents or other safety issues along with the potential for premature failure.

**Mechanic Per Vehicle** is the ratio between the number of mechanics on staff and the number of vehicles in the fleet.



**Operating Cost:** This cost is associated with the maintenance and upkeep of an asset. It includes the sum of all Company mechanic labor, contract mechanic labor, parts, tires, and fuel expenses. It can also include depreciation, insurance, registration and the like.

**Ownership Cost:** This includes all costs associated with owning an asset, including the purchase price, maintenance costs, insurance, and any costs related to operating the asset.

**Power Operated Equipment (POE)** is a unit that operates off-road, including backhoes, skid steers, generators, etc.

**Skid Steer:** This is a small, rigid-framed machine with either four wheels or a track movement system that has lift arms attached to a bucket, small backhoe, plow, trencher, auger or other attachments.<sup>49</sup> These are used to lift and carry material or aid in excavation. They are capable of zero-turn radius, which makes them highly maneuverable, especially in situations requiring a small and agile loader.



*Skid Steer*

**Stake Truck:** Also called a platform truck, this has a plain flatbed or side panels (which are often removable) for hauling equipment.

**Support Cost:** The sum of all expenses related to management and support staff, the facilities, and associated shop supplies.

<sup>49</sup> For an idea of all the attachments available to these versatile machines, see: <https://www.casece.com/northamerica/en-us/products/skid-steer-loaders/overview/attachments>



**Support Staff Per Vehicle** is the ratio between the number of support staff and the number of vehicles in the fleet.

**Total Cost or Total Cost of Ownership:** This is the sum of ownership, operating and support costs. It includes both the purchase price of the item plus the cost of operating it. Operations costs usually include things like maintenance charges, downtime costs, and driver costs.

**Utilization** is the usage of vehicles based on annual average miles driven within a minimum mileage threshold.

**Units:** This is a general term for a vehicle, trailer or piece of power equipment like a generator, Genie lift, or compressor.

**Variable Costs** are those related to the vehicle's activity, usually computed using the distance traveled or the hours of operation. These kinds of costs include items such as tires, fuel, fluids, and wiper blades.



**Vehicle** is a unit that operates on the road.

**Vehicle Equivalency (VE) or Vehicle Equivalency Units (VEU):** This weighs the number of units and vehicles in the fleet according to the annual average maintenance and repair hours needed for that

particular unit or vehicle. For example, adding up how vehicles a company has in order to determine how many mechanics need to be hired. It also allows comparing the requirements of one vehicle (such as an employee fleet car) to another (such as a digger derrick) to ascertain maintenance and repair budgets. A car might have a ratio of 10 VEU to maintain compared to a digger derrick of 100 VEU to maintain.

