
The City Of Porter Ranch Plants

Introduction

Porter Ranch Plants is an appealing and futuristic city to visit. The people are sweet, kind, happy, and always very welcoming to anyone who visits or lives there. The city was founded in 1871, and has an estimated population of 324,073 people. It's located near beautiful Boulder, Colorado. With Porter Ranch Plants being at the foothills of the Rocky Mountains, it's an amazing place for anyone who likes the outdoors. There's an outstanding scenery of the canyons and forests, and an never-ending view. There are also plenty of activities to keep you occupied, from rock climbing, to kayaking, to hiking.

Nature

Our city gets an average of 245 sunny days a year, and 88 days that they receive some sort of precipitation. It somewhat gets a touch of every season, from rain, to snow, to heat, to hail. The city contains a river in the center of the city that a bridge runs over. There is also another small lake/pond that a smaller bridge runs over in the neighborhood park.

Infrastructure and Education

The city provides an efficient ambulance along with the large hospital, fire station, and police station. Porter Ranch Plants contains many different levels of education, as well. There is a university, high school, and an elementary/preschool. The public education gives those who can't afford to go to private schools, still a great education. The teachers have multiple degrees and are very qualified for their jobs, so the kids are getting the best education they can receive.

The city also has a futuristic and efficient electric bullet train that runs through the city, with multiple stops. The electric train allows people to get to their destinations faster, and it helps decrease the pollution created by cars.

Activities

Some appealing activities to teenagers in our city are, kayaking, tubing, biking, rock climbing, and many other outdoor activities. Adults may also like those activities, but they would also enjoy hiking and exploring the mountains, and the beautiful views of the city. They may even enjoy drinking a nice cup of tea at the local cafe, and taking a breath of the aroma in the air. In the winter time it snows a lot in Porter Ranch Plants, so there are many snow activities you can do. You can ski, snowboard, sled, go tubing, and even have a friendly snowball fight with your family and friends. The snow adds to the scenery and makes the city look even more appealing. Our electric train system provides a faster transport system that beats waiting in traffic jams and being late. It saves more money while saving the environment, and it's more resilient and energy-efficient. The train is always on time with no delays, ever.

The Problem of Drought

Since our city receives a lot of precipitation including rain, one of our water supply systems, rooftop rainwater harvesting, affects the housing. It's mandatory for every house to have the system that collects and transports the rainwater to the home. Our resilient city has engineers that build filtration systems, so that after the rainwater is collected, the water can go through the filtration process and then be used for home consumption. Our city's threat to its drinking water is that, we are in a drought. Since there's a drought, it disrupts the drinking water by not being able to supply enough water for the city. This would force citizens to move elsewhere. It would also cost too much money to buy, take, or transfer money from somewhere else. The main threat we are focusing on that's caused by the drought, is the city's lack of water, for drinking and other purposes. The drought would also cause other immediate challenges such as damage to crops, forced migration, and famine. These could cause social and economic disasters. Some long term effects include effects on animals and vegetation. Droughts are also one of the costliest disasters, so it could leave the city in a heavy debt. The situation puts citizens health at risk, because they could be dehydrated. If forced migration occurs, it makes it hard for the elderly to move due to the state they are in. They may not be able to physically move, and it could effect their health. If they aren't able to move, it makes it extremely dangerous for them and prone to dehydration. The economically-disadvantaged may not be able to afford to move, so they would be forced to stay in the city. If the city cannot supply enough water for them, they could die from dehydration.

The Solutions of This Problem

We receive drinking water from three sources: Arapahoe Glacier and Silver Lake Reservoir (40%), Barker Reservoir (40%) and the Colorado River (20%). Those main reservoirs are located in the central area of Boulder Creek, plus we get diversions from the upper Colorado River on the west slope. Our city's ability to obtain water from both east and west slope sources provides a measure of water reliability in response to droughts and other events. We treat our water at two places the Betasso Water Treatment Plant, and Boulder Reservoir Water Treatment Plant. The water is sent through 450 miles of pipeline to homes and businesses. The water is used for things like drinking water, irrigation, firefighting, and many more.

Our city's innovative water supply solutions, include a rainwater harvesting system, and permeable pavement. Rainwater harvesting will be very beneficial to the city because Porter Ranch Plants receives a lot of rain. It is mandatory for every house to have the rainwater collection system on their rooftops. If the city catches someone that doesn't have the system, then they will be heavily fined. Once the rain is collected, the water will go through a filtration process that cleans the water and then will be transferred into the home. The water will then be used for toilet water, showers, hoses, tap water, and more. The system allows the city to take advantage and renew the rain that they get, instead of wasting precious water.

Our permeable pavement system is where we make our cities' patios, sidewalks, residential roads and driveways, swimming pool decks, etc, out of porous concrete. The porous concrete is made from a mixture of cement, coarse aggregates, and water. It allows water to pass through the concrete. The water that passes through the pavement, will go to underground aquifers. We can also spend less money on curbs and gutters by doing this, and reduce runoff. The innovative pavement also allows the water to naturally be purified and filtered, before reaching the aquifers. The stone or gravel acts as a natural filter and clears the water of pollutants. This environmentally friendly pavement is suitable for various conditions including hot climates, high-

speed traffic areas and less-traveled areas. There will be no ice buildup on it as rain and snow flow through the pavement. The pavement can stay hot even at freezing temperatures and proves to be a safe driving and walking ground. Once the water reaches the aquifers, the water is sent to the reservoirs in Boulder Creek.

Our rainwater harvesting system does not effect the health of the citizens at all, because they will be using the water for other purposes, not including drinking the water. If they drank the water, there would be more risks. The permeable pavement's water collected will not effect citizens health, because the water goes through a thorough filtration process. The filtration process is so advanced it assures residents 100% that the water is safe and healthy to drink. The water is not only being filtered naturally, but is being filtered after that as well. It's being filtered 2 times to secure the water's safety. The only risk that rainwater harvesting has, is that the water could be polluted and dirty. Additionally, the rooftop rainwater water will be coming off the roof, with whatever was on the roof. For example, the water could contain dust, and bird poop, because a bird pooped on your roof. Also, throughout the day a lot of dust particles could collect and gather on top of you roof. So along with the rainwater, the dust and bird poop would be in the water. This risk is avoided because our highly advanced filtration system purifies the water, before reaching the home. The rainwater will be so clean, that the water could be potable and drinkable. The water will be used for other purposes though, avoiding the risks of becoming sick. Permeable pavement has some minor risks such as, when you put consistent pressure on it, the asphalt pores will collapse. Because of this, it is not desirable to create airport runways and highways with permeable pavement. This risk will be avoided because we will not be using the pavement for such uses. It is typically going to be used in parking lots, sidewalks, driveways, patios, ect. The true drawback, is installation is more expensive than traditional pavements. If we prepare right then we can reduce the amount of money we're spending on stormwater infrastructure because we've got a special pavement now.

Some of the trade offs related with our water supply networks is that this year we may not get enough rain to supply our entire city, but we may also get water from other sources including rivers. Our model eliminates trade offs by storing water in dams and reservoirs to ensure that there is as much water required in our region. We don't really have to worry about how much rain Porter Ranch Plants gets, due to the fact that it's near Boulder, Colorado. If our city was in California, we'd have to think more and plan differently. The engineering types involved in our resilient city are the water filtration systems engineers built to ensure that our daily drinking / water sources such as toilets, showers and sinks are clean.

One form of technology entering our city is the water reservoir engineers built to ensure that the water levels are great and to ensure that the city does not use too much water. Pipeline networks are one of modern civilization's most vital infrastructure structures. They mainly act as distribution systems to enable the transportation of large amounts of liquids such as gasoline, water and gas through geographic locations. Therefore, geotechnical engineering has a dominant role in the design, construction, installation and satisfactory operation of buried pipelines. Our permeable pavement system requires underground piping, so the water that seeps through the concrete could reach the underground aquifer. Geotechnical engineering is required in order to build the underground pipelines. Typically, buried pipelines are installed using either conventional open-cut or trenchless methods.

Conclusion

Porter Ranch Plant's restaurants, cafes, funky stores, bike lanes and walking trails that cross the area, the farmer's market and beautiful natural scenery make it one of the world's most special places. A perfect mix is the mixture of big city culture and outdoor adventure. In Porter Ranch Plants it's always great to see many high-fiving hikers on top of the thigh-burning mountain's hike, and then refreshed by the valley's views. Then, seeing the snow-dusted West mountains on a blue-sky day. Porter Ranch Plants is the warmest and most beautiful town with the most beautiful people. Since there's a drought it risks all the aquifers to go dry, and our people won't have enough drinking water (or water at all) to live there. It would also cost us too much money to buy / take water from other places. This is very risky to our people as they can be dehydrated and get very sick. The economically-disadvantaged doesn't have enough money to move around, so they need to stay in our city, which puts them at risk. Our first priority is the health of our citizens and keeping them safe, so something had to be done. Therefore, we created 2 innovative and efficient water supply systems. Our rainwater harvesting system and permeable pavement will provide citizens with more water, while still assuring their safety. The water collected from both systems will be heavily filtered before reaching residents access to the water. I am 100% confident in our engineers who have worked diligently to make sure the systems have no flaws, and assure the safety of our residents.

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