= Portage Glacier Highway =

The Portage Glacier Highway , or Portage Glacier Road , is a highway located in the U.S. state of Alaska . The highway is made up of a series of roads , bridges , and tunnels that connect the Portage Glacier area of the Chugach National Forest and the city of Whittier to the Seward Highway . Most of the highway travels through mainly rural areas just north of the Kenai Peninsula , with the Anton Anderson Memorial Tunnel passing under Maynard Mountain , part of the Chugach Mountain Range . Parts of the route were first constructed in the early 1900s , and the entire highway was completed on June 7 , 2000 , as part of the Whittier Access Project . As of 2012 , the highway has not been extended or rerouted . The main portion of the highway traveling from the western terminus to the Begich , Boggs visitors center is designated as National Forest Highway 35 by the U.S. Forest Service .

= = Route description = =

The portion of the Portage Glacier Highway traveling from the Seward Highway to the Begich , Boggs Visitor Center is designated as part of Forest Highway 35 , a Federal Forest Highway (FFH) . Forest Highways are funded and administered by the US Forest Service and the Federal Highway Administration ; the system was created by the Federal Aid Highway Act of 1921 . FFH @-@ 35 is one of the 33 Forest Highways that are currently designated in Alaska .

= = = Chugach National Forest = = =

The Portage Glacier Highway begins at an at @-@ grade intersection with the Seward Highway , in the former town of Portage . At this point , the highway is a two @-@ lane , asphalt road . Almost immediately after the Seward Highway intersection , the road crosses over the Coastal Classic line of the Alaska Railroad . The highway continues in a southeasterly direction along the Portage Valley , with Portage Creek to the north and pine forests to the south . After about 1 @.@ 2 miles (1 @.@ 9 km) , the roadway intersects a small gravel road that leads to the Moose Flats Day Use area , which has access to several scenic hiking trails . Peaks of the Chugach Mountains , along with several hanging glaciers can be seen from the road ; Portage Glacier itself is out of view . The highway passes through a low @-@ lying wetland before reentering forest and providing access to the Alder Pond Day Use area and the Portage Valley RV park .

Portage Glacier Highway continues southeastward , providing access to the Black Bear Campgrounds , maintained by the USFS . The roadway bends eastward , passing the USFS Williwaw Campgrounds , as well as several small gravel roads . The road continues for a short distance before passing the Begich , Boggs Visitor Center and associated buildings , comprising the headquarters of Portage Glacier unit of the Chugach National Forest . The highway continues onto the Portage Creek Bridge , which is 114 feet (35 m) long . It allows the highway to cross over the small Portage Creek , which is fed by the Portage Glacier and Portage Lake . The bridge ends at the start of the Portage Lake Tunnel . The tunnel is 445 feet (136 m) long and constructed of concrete . The route proceeds on to a 0 @.@ 5 mi (0 @.@ 8 km) portion of road known as the " Rock Cut at Portage Lake " by the Alaska Department of Transportation & Public Facilities (DOT & PF) . This road passes along the coast of Portage Lake , and borders a large , man @-@ made cliff to the north (hence the name " Rock Cut ") . This portion of the route terminates at the Placer Creek Bridge . The bridge , which is just 83 feet (25 m) long , spans over Placer Creek , the smaller of the two creeks fed by Portage Lake . The highway continues to the six @-@ lane Bear Valley Staging area , and the toll booth for the Anton Anderson Memorial Tunnel . The road continues into the Anton Anderson Memorial Tunnel .

= = = Anton Anderson Memorial Tunnel = = =

The Anton Anderson Memorial Tunnel (often referred to simply as the Whittier Tunnel) is a multi

@-@ use highway and railroad tunnel that passes under Maynard Mountain . At 13 @,@ 300 ft (4 @,@ 100 m) , it is the second @-@ longest highway tunnel and longest combined rail and highway tunnel in North America . The tunnel was upgraded to mixed use by the Kiewit Construction Company .

The tunnel is designed with a single highway lane . The floor of the tunnel is constructed of 1 @,@ 800 texturized concrete panels (each 7 @.@ 5 feet (2 @.@ 3 m) by 8 feet (2 @.@ 4 m)) with the railroad tracks sunken slightly below the road surface . The interior is exposed rock , and contains several " safe @-@ houses " , which are small buildings that are used in case of severe earthquakes , vehicle fires , or other emergencies . The tunnel also contains several pull @-@ outs , which are reserved for disabled vehicles . The tunnel uses a combination of portal fans and reversible jet engines to ensure proper air flow and air quality throughout the tunnel . There are two backup generators to ensure that the computerized traffic controls and safe @-@ house ventilation systems in the tunnel continue to function in the event of a power failure . Because eastbound traffic , westbound traffic , and the Alaska Railroad must share the tunnel , rail and road traffic are coordinated by two sophisticated computer @-@ based systems : the Tunnel Control System and the Train Signal System . These systems control the timing of vehicles entering the tunnel , spacing them for safety , and lower railroad gates when a train is approaching . The tunnel 's entrance portals are designed in an A @-@ shape , with a large , train @-@ sized " garage door " , which allows traffic in and out of the tunnel . The entrance portals are designed to withstand the force of an avalanche . The tunnel 's eastern terminus is in Whittier . The staging areas on either side of the tunnel can accommodate as many as 450 vehicles waiting to pass through .

Track circuits in the tunnel had problems because of wetness ; in 2015 these were replaced with axle counters .

= = = Whittier = = =

After exiting the tunnel , the highway enters the nine @-@ lane Whittier staging area , where it passes several of the tunnel 's automated control systems . Before traveling past the single @-@ runway Whittier Airport , the route intersects two small roads , one of which is the Portage Pass Trail access route . Running parallel to the Alaska Railroad line , the route continues between the Passage Canal and several mountains for approximately 0 @.@ 5 miles (0 @.@ 80 km) . Passing by the Cliffside Marina , the route crosses over Whittier Creek before immediately turning off of Camp Road and onto Whittier Street . The road crosses over the Alaska Railroad , before bending southeastward and traveling past a large parking lot , the Whittier Parking and Camping headquarters . Traveling past several businesses making up central Whittier , the highway turns east and intersects Glacier Avenue , as well as a short pedestrian pathway . The roadway continues through central Whittier before reaching a four @-@ way intersection with Blackstone Road , Eastern Avenue , and Depot Road , after which the route transfers to the latter . The road continues along Passage Canal for a short distance , while traveling towards the Alaska Marine Highway (AMHS) pier . Depot Road splits away from the highway , which continues for a short distance along Dock Access Road before reaching its eastern terminus , the AMHS pier .

= = = Traffic = = =

The highway is maintained by the Alaska Department of Transportation & Public Facilities (AkDOT & PF) . Part of the job of the AkDOT & PF is to measure traffic along the highway . These counts are taken using a metric called annual average daily traffic (AADT) . This is a statistical calculation of the average daily number of vehicles that travel along a portion of the highway . The estimated AADT for the Portage Glacier Highway is 1 @,@ 030 vehicles . In addition to taking AADT , the AkDOT & PF also takes monthly and yearly counts for the highway . The road 's yearly traffic count for 2010 was 234 @,@ 738 vehicles . The roadway 's highest monthly traffic is in mid @-@ summer , when an average of nearly 50 @,@ 000 vehicles use the tunnel each month . The highway 's lowest monthly traffic is in late winter , when the average monthly traffic is only about 6 @,@ 000 .

The monthly and yearly counts are taken at the entrance to the Anton Anderson Memorial Tunnel . The entire length of the highway is designated as an Intermodal Connector Route , part of the National Highway System (NHS) , a network of roads important to the country 's economy , defense , and mobility .

= = Scenic and recreational opportunities = =

The Portage Glacier Highway offers numerous scenic and recreational opportunities , mostly located along the section designated as FFH @-@ 35 . A short , 0 @.@ 25 miles (0 @.@ 40 km) long boardwalk trail and the 4 @.@ 6 miles (7 @.@ 4 km) long Trail of Blue Ice are accessible through the Moose Flats Day @-@ Use area . A viewing area for the Explorer Glacier is located near milepost 2 , and a turnout for the Portage River is located near milepost 3 . Near milepost 4 is the Williwaw fish viewing observation deck , which allows travelers to view spanning salmon in July through September . The 2 miles (3 @.@ 2 km) long loop Williwaw Nature Trail is accessible through the Williwaw Campground . The trail provides views of the Middle Glacier . At the turnout for the Begich , Boggs Visitor Center is the Byron Glacier Trail as well as several others . The Portage Glacier can be seen on a short cruise on the M / V Ptarmigan ; The glacier is no longer visible from the road . Past milepost 6 is a turnout for the Byron Glacier and Portage Lake .

Many large hoofed animals such as moose , and caribou can be seen along the highway , as well as black and brown bear species . Bald Eagles can occasionally be seen from the highway . If using binoculars , mountain goats can be seen on the sides of the mountains . During spring and autumn , migrating species of ducks , geese , swans , and cranes can be seen throughout the region . Spawning salmon species of sockeye , chum , and coho can be seen in Portage Creek . Several unique species of wildflowers are found along several of the trails in the area . Whittier annually holds the Walk to Whittier , which is an event where pedestrians walk through the Anton Anderson Memorial Tunnel to Whittier , the only time pedestrians may use the tunnel . The event has been held since 2002 , except it was not held in 2010 . The walk traditionally takes place in June .

= = Tolls = =

A toll is charged for access through the Anton Anderson Tunnel . The fees are collected from vehicles traveling eastbound . The fee for a regular vehicle is $ 13 , as is the price for motorcycles . Vehicles pulling trailers must pay a higher toll , set at $ 20 . Small buses and regular RVs are charged $ 35 , while large buses must pay $ 125 . Oversize and unusually sized vehicles , those 10 to 11 feet (3 @.@ 0 to 3 @.@ 4 m) wide and 14 to 15 feet (4 @.@ 3 to 4 @.@ 6 m) high must pay $ 300 per use . Vehicles that are exempt from paying tolls are those owned by the Alaska Railroad , the DOT & PF , or any emergency or law enforcement vehicle . Any vehicles owned or operated by any state government agency or school district must pay just $ 10 .

Seasonal passes are also available for normal @-@ sized cars , trucks and motorcycles , and are priced at over $ 500 . The average passenger vehicle toll cost per mile is $ 39 @.@ 42 , while the average per @-@ mile vehicle price for trucks is $ 39 @.@ 52 . The tunnel is operated on a strict time schedule , with vehicles being allowed in for 15 minutes from each a single direction before alternating to the other . The tunnel is open from 5 : 30 A.M. to 11 : 15 P.M. during summer months , and from 7 : 00 A.M. to 10 : 45 P.M. during winter months .

= = History = =

= = = Native trail = = =

The earliest evidence of the Portage Valley being used for transportation dates back to early A.D , when the Inuit people used the flat , low @-@ lying valley as a pass through the Chugach Mountains . The Dena 'ina people continued use of the valley as a passage between Cochrane Bay

and the Turnagain Arm . They used Portage Creek for fishing purposes , and established a series of trails along the creek . Russian fur traders and early settlers continued to use the valley , establishing a trail along the creek and the Portage and Burns glaciers . It was possible for boats to travel through the valley by using the Passage Canal and the creek up until 1913 . The trail was usable until 1939 , due to the continuous recession of the Portage Glacier . The final party to attempt to use the trail that year was forced to climb 3 @,@ 000 feet (910 m) up the Portage Shoulder to avoid the drop @-@ offs and crevasses that had formed along the trail .

= = = Railroad development = = =

In 1940 , the U.S. Government realized that it needed to reevaluate its territories , including Alaska . Alaska was declared a vulnerable attack target , as was the existing railroad connecting Anchorage and Seward . The U.S. Armed Forces began planning for new roads and railroads , and on October 15 , 1940 , General Simon Bolivar Buckner , Jr. announced those plans . The plan called for the existing railroad to be transferred to Whittier , and for the construction of a road to Seward (the Seward Highway) , a road to the Richardson Highway (the Glenn Highway and the Tok Cut @-@ Off) , and a road to the Portage Valley (the Portage Glacier Highway) . Less than a week after the announcement of the plan , surveying of the area around Whittier was taking place in order to make sure of the safety of building the railroad terminal . The project was strongly opposed by the city of Seward , but after the survey was complete , the project was definite .

In early 1941 , large groups of people from the Kenai Peninsula traveled to Washington , D.C. to protest the moving of the railroad . The protests were useless , and on April 3 , 1941 , U.S. Congress passed a bill providing the project with $ 5 @.@ 3 million (equivalent to $ 85 @,@ 267 @,@ 600 respectively in 2016) . In late April , the U.S. Army 's 177th Engineering group began work on clearing and grading the former native trail . The U.S. Army hired the West Construction Company of Boston , MA. to assist in the construction of the future railroad 's two tunnels . West Construction and the Army began working on the tunnel under Mount Maynard in late August 1941 . The first boring of the tunnel began on the east side of the mountain , and shortly afterwards , construction on the west side began . Winter hindered the construction of the tunnel until mid November , when a small " snowshed " building was constructed . The U.S. entered World War II on December 8 , 1941 , after the Japanese bombing of Pearl Harbor . This sparked the need for the completion of the tunnel earlier than expected . By the end of 1941 , workers had tunneled more than 170 feet (52 m) into Maynard Mountain .

Work on the tunnel rapidly increased into the summer of 1942 . Large areas of the rock were blasted away with controlled explosions , using dynamite . The material removed from the tunnel was used as grading material for other parts of the railway . Supplies were received behind schedule , mainly due to the war . This hindered progress on the tunnel . In June 1942 , Japanese forces attacked and invaded the Alaskan islands of Attu and Kiska , again provoking the need to complete the tunnels sooner . The winter conditions of 1942 and 1943 slowed the progress of the tunnels . Work on the railroad continued until April 23 , 1943 , when the project was completed . Anton Anderson , the lead engineer for the tunnels and namesake for the tunnel to Whittier , was not present when the railroad was used for the first time , fearing the Whittier Tunnel was not ready .

= = = Early roads = = =

The U.S. army established a series of simple earthen roads while constructing the railroad spur . This was the first road to exist in the Portage Valley . Whittier began to grow after the completion of the railroad spur . The port boomed in the mid @-@ 1940s , with the population reaching over 1 @,@ 000 . The city , including roads , began to form . By 1953 , the earthen road in Portage Valley had generally been relocated near the location of the present highway . Also around that time , a road in Whittier in the location of the present highway existed as a graded , dirt road . The highway was probably paved sometime between 1965 and 1967 , and three small bridges along the route were constructed , all of which are still used today .

= = = Highway studies and proposals = = =

Between the late 1950s and the early 1960s , the U.S. Military pulled out of Whittier , allowing the town to grow as a commercial port . Whittier 's location made it a large tourist location , and after the military pullout , travel to Whittier grew massively . In addition to the state 's paving of the highway , the Alaska Railroad began offering shuttle services between Portage and Whittier in the mid @-@ 1960s . The Alaska Railroad would allow vehicles to drive onto flatcars , which would then be transported by train through the Anton Anderson Memorial Tunnel to Whittier . The number of people visiting Whittier grew progressively , bringing with it a larger number of requests for a more convenient and affordable way of transportation to Whittier . During the late 1970s , a proposal was put forward for a road to Whittier . In preparation for the highway , Anchorage businessman Pete Zamarello purchased the Buckner Building , and planned to convert it into a resort . However , the highway proposal fell through . In 1981 , the AkDOT & PF began to study possible alternatives to the railroad , which would have cost anywhere between $ 10 million and $ 68 million .

In 1993 , the AkDOT & PF finally initiated the study for the alternative transportation system to Whittier . The project would be named the " Whittier Access Project " . The AkDOT & PF authorized HDR Alaska to conduct the study . The study presented five solutions : increasing the existing flatcar service , installing a high @-@ speed electric rail service , constructing a series of highways over the mountain range , building a highway and tunnels through the mountain range , and constructing a highway to the existing railroad tunnel and expanding the tunnel to withstand motor vehicles . After consulting with members of the Alaska Railroad , the general public , and highway and tunnel engineers , the AkDOT & PF decided to move forward with the last option , involving the expansion of the Anton Anderson Memorial Tunnel and the construction of a highway . In November 1995 , an environmental impact statement , created by HDR Alaska , was approved by the FHWA , allowing the project to move forward .

= = = Whittier Access Project = = =

In March 1996 , the state of Alaska announced its final plans for the construction of the Whittier Access Project . The project was predicted to cost around $ 50 million , and the project was planned to begin later that year . However , the project was met with much controversy , and by December 1996 , the project still had not begun . The cost of construction was reevaluated to be around $ 60 million , and the project was planned to begin in March 1997 . Construction of the Whittier Access Project finally began on May 6 , 1997 . Then @-@ governor of Alaska Tony Knowles began the construction when he detonated six pounds of explosives located on Begich Peak , although this was unrelated to the project itself . On May 22 , 1997 , construction of the project was halted . Carl S. Armbrister , the Director of the Office of Planning and Program Development for the FHWA 's 10th Region and head of the project was sued by several environmental agencies and tourism groups , headed by the Alaska Center for the Environment (ACE) . The ACE brought the suit against Armbrister on the grounds that the project violated section 4 (f) of the Department of Transportation Act of 1966 , which requires that all environmental impacts of a project be assessed and that a project " [has] no feasible and prudent alternative " . The ACE held that a new highway was not needed and improving the existing rail service was a prudent and feasible option . However , one day after construction was stopped , a judicial ruling was issued permitting work to continue . Construction continued for a week , until May 31 , but was then halted again due to the lawsuit . Work on the project was ruled off until at least mid @-@ July of that year .

James Keith Singleton , Jr . , the district judge overseeing the case , ruled in favor of Armbrister and the FHWA and stated that the agency was correct in its decision against improved rail service . The suit was compared to the landmark 1971 case Citizens to Preserve Overton Park , Inc. v. Volpe , where the supreme court ruled in favor of Memphis , Tennessee citizens attempting to protect Overton Park from a plan to route Interstate 40 through 26 acres (11 ha) of its forest . However , unlike in that case , the Whittier Access project was found to be the only feasible solution for a link

to Whittier . The ACE appealed the decision and the case went to the Ninth Circuit Court of Appeals . The court upheld Singleton 's decision , finding that the project only affected a very small amount of parkland and that the road was necessary to meet the requirements for a link to the city . These rulings were legally significant as they appeared to overturn the precedent established in the Overton Park case , which was interpreted as saying that " it must be shown that the implications of not building [a] highway pose an `unusual situation ' " .

Work on the project was finally approved following the Ninth Circuit 's decision . The lawsuit had put the project , which had been planned to be completed by the end of 1998 , far behind schedule . The first phase of construction consisted of building the Portage Creek Bridge and the construction of a new tunnel through Begich Peak . The contract for the phase had been awarded prior to the lawsuit , but work on the components was not completed until very late in 1998 . A temporary bridge was built over Portage Creek so that the tunnel could be constructed . The final part of the phase was replacing the temporary bridge over Portage Creek . The structure was designed so that it would appear to fit with the environment but could also withstand the regular seismic activity of the region and have a minimal impact on the surrounding fish and plant populations . CH2M Hill was selected to design the approximately 1 @.@ 5 miles (2 @.@ 4 km) of highway that would connect the existing road to the Anton Anderson Tunnel . Construction of the highway , done by Herndon and Thompson Inc . , was finished before tunnel work began .

The Kiewit Construction Company , based in Omaha , Nebraska , was awarded the contract for phase two , redesigning the Anton Anderson Tunnel . Kiewit began planning the tunnel design in June 1998 , and began work on the project sometime around September . The first part of the tunnel construction involved vertically and horizontally expanding the existing rock walls . Beginning from the western entrance , Kiewit drilled away several feet of the rock face from the top of the tunnel and installed a net to prevent any potential rockfalls . They then drilled sideways , clearing space for the nine vehicle turnaround areas . However , work on the tunnel was hindered by several different events . While crews were working on the tunnel , a drunken Whittier resident drove his or her truck into the tunnel and got it stuck on the rails . On October 23 , a thirteen @-@ car train derailed at the western entrance . Although no workers were injured , a substantial amount of the equipment was destroyed . In addition to the accidents , crews had to work in extreme weather . Kiewit claims that workers had to deal with " winds of more than 120 mph , minus 40 degree temperatures and snow up to 43 feet deep " and wind chills that would drop to around ? 80 ° F (? 62 ° C) . An avalanche also at one point halted construction for four days .

Despite the conditions , the crews were forced to do much of the work during the winter , since the project had to adjust to the train schedule . Trains ran daily during the summer , so work was restricted to about nine @-@ hour shifts during the night . During winter months , trains were only operating during four days each week . When a train was scheduled to come through the tunnel , crews reported they had to " spent up to two hours breaking down equipment , getting it all outside and waiting for the train to pass before heading back into the mountain " . Following the expanding of the tunnel , one of the first steps the crews took was to demolish the existing entrance portals . Once they were destroyed , the existing rail was removed in sections . Pre @-@ cast panels were laid where the tracks had been , before the old rail was put back and welded to the panels . While that was being completed , some crews installed a series of anti @-@ icing insulation panels and drainage pipes to keep the tunnel clear during winter months .

Construction work was completed on schedule , in early 2000 . The town of Whittier began a number of improvements to help adjust for the road 's opening . Among these were more parking facilities and increasing public restrooms . The town government also approved of several long @-@ term changes to the city that would begin after the road was opened , including a second harbor , a bike trail , a new sidewalk system , and shopping center . The official opening ceremony was held on June 7 and was marked by protests from environmentalists . A group of three of them chained themselves together in the middle of the road in an attempt to block traffic , while another group of about twenty hung banners and waved signs . The ceremony itself was attended by around 300 people . Then @-@ governor Knowles performed a ribbon @-@ cutting and rode through the tunnel in a 1954 @-@ model Cadillac .

= = Major junctions = =

= = Related route = =

Forest Highway 35 (FFH @-@ 35) is a Federal Forest Highway located entirely within Chugach National Forest . The highway is approximately 6 @.@ 6 miles (10 @.@ 6 km) long , and is mostly designated along the Portage Glacier Highway . The road serves the Portage Glacier branch of the park . FFH @-@ 35 begins at an intersection with the Seward Highway (AK @-@ 1) in Portage . The route follows the Portage Glacier Highway for approximately 5 miles (8 @.@ 0 km) , passing several park campgrounds and scenic turnouts . FFH 35 turns off the Portage Glacier Highway onto Portage Lake Loop Road , passing west of the Begich , Boggs Visitor Center Complex . The designation then shifts from Portage Lake Loop Road to Byron Glacier Road , which proceeds southward past low @-@ lying marshland along Portage Lake . It continues past a small turnout area and travels over a small creek before proceeding eastward to its eastern terminus , a building and parking lot that make up part of the visitor center .

Major intersections

The entire highway is located within the Municipality of Anchorage , Alaska .