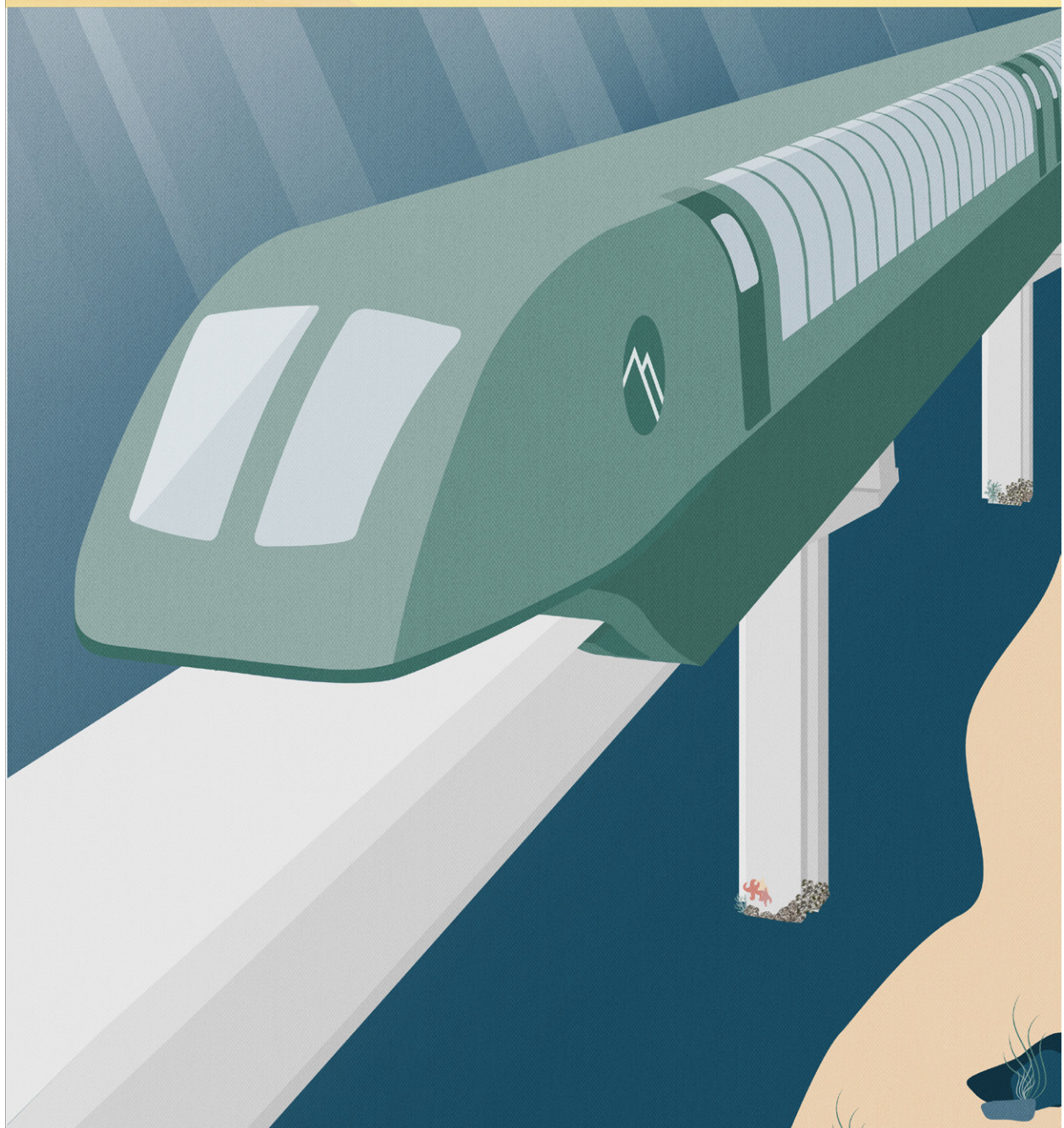**Release Form**

Landscape Architecture
School of Architecture and Landscape Architecture
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Graduate Project Title: Journey Through Cascadia

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Name   Signature   Date

Journey Through Cascadia

Abstract

On the West Coast of North America lies the bioregion of Cascadia. Encompassing numerous watersheds, this bioregion is made up of mountains, islands, temperate rainforests, and many more landscapes inherent to its identity. Known for its natural beauty, the region has also been characterized as being environmentally focused with politically left-leaning urban residents. Shared economies, politics, and watersheds have all inspired independence movements for the new nation of Cascadia. This graduate project takes place in a future where Cascadia has seceded from both Canada and the United States and the bioregion's health is placed at the centre of all decision making.

To help connect its three largest cities, the first large infrastructural project in Cascadia is a high speed rail line from Vancouver to Portland. Though inherently tied to the land, rail also has the ability to separate passengers from it while passing by at tremendous speeds. Being that the landscape holds such importance in this new nation, the planning of the new rail line seeks to give passengers every opportunity to experience the landscape as they travel through.

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Acknowledgments

I'd like to acknowledge my family, both the Lorimer side and the Teeninga side, who have lifted me up over the last three years. Your support and love mean so much to me and I am continually grateful for the encouragement you all offered over the course of this degree. Thank you to all my nieces and nephews who brought some much needed perspective reminding me of the world outside of the studio. To my dearest Pieter, my favourite human, this degree is as much yours as it is mine.

Introduction

GP1 Introduction

On the West Coast of North America lies the Pacific Northwest, or Cascadia as some like to call it. The region is home to mountains, beaches, islands, temperate rainforests, and many more breathtaking landscapes that are inherent to its identity. Abundant and plentiful, the area has been home to Indigenous people for thousands of years and settlers arrived to colonize the region in the 18th century. Since that time, the Pacific Northwest and its economy grew due in large part to the arrival of the railways, and the plentiful resources that could be harvested from the land. As technology advanced, the railways that helped build the region drew fewer travelers as they no longer provided the freedom of a car or the efficiency of an airplane.

In early 2018, a new high-speed rail project was proposed to connect the emerging Cascadia megaregion which spans between the major cities of Vancouver, Seattle, and Portland. These cross border cities have much in common and with a regional population that is forecast to grow, and a cross-border economy that is anticipated to become more interconnected, travel in the region will also increase. High speed rail would give prospective passengers the opportunity to travel efficiently through the Pacific Northwest, with fewer carbon emissions than if they traveled by car or by plane.

When tourists and commuters take this train, they will be a captive audience on a linear route and the landscapes that they see are the physical manifestations of the regional narratives that overlap and intertwine. From the train we are able to take in the landscape but are also separated from it. The building of this new route is a chance to think about that collective narrative and how passengers might interact with the landscapes that they are passing through. The story told on this particular journey is the story of Cascadia. Using the landscape as narrative device, what is the story that we might tell?

1. Shaping the Region

The Influence of Rail
Cascadia
High Speed Megaregion

The Influence of Rail

Dating back to 8000 years or more, the land that is now called the Pacific Northwest, or Cascadia, has been inhabited by its Indigenous peoples.[1] European settlers arrived in the 18th century and the cities and towns that developed grew, profiting mostly from resource extraction in this abundant place. As the gold rush began in the late 1850's, populations in the region exploded especially in the cities of Portland, Seattle, Tacoma, and in the Colony of British Columbia. Noticing the opportunity that these prosperous port cities offered, railways set their sights on the west.[2] The railroads in the region meant a strong economy which explains the inflation of population in Tacoma when the Northern Pacific Railway chose it as its western terminus, and its subsequent population stagnation when the line continued northward to Seattle.

In 1871, the colony of British Columbia agreed to join confederation on the condition that a transcontinental railway be built connecting it to eastern Canada.[3] With some of the most dangerous mountain passes built with the blood, sweat and tears of underpaid, slave driven Chinese labourers,[4] a dark spot in Canadian history, the line was finally completed in 1885. Simultaneously, the Canadian Pacific Railway had negotiated with the provincial government for "6,000 acres of prime land in the heart of Vancouver,"[5] which at that time, had a population of only 600[6]. Illustrating just how much influence the railways had in building western cities, the population increased tenfold with the line's arrival and the CPR went on to build neighbourhoods, hotels, opera houses, and other such establishments on the land it had been given.[7]

With the arrival of both World Wars, shipbuilding began in earnest on the west coast and Boeing set up its headquarters in Seattle. Ports became more established and were hubs for trade with Asia. Some of the railroad companies capitalized on this too by expanding their business, now having an ocean fleet of freighters and luxury ships as well.

As technology advanced, railways start to see a decline in their ridership in the 1950's with the advent of air travel. Because of this shift, we see many of these once strong businesses merge and focus their efforts on freighting and the industry today is "dominated by seven 'Class I' [railroad]"[8] companies which own 69% of the track and earn 95% of the revenue generated by all 600 freight rail lines.[9] What this means is that the passenger rail companies operated by Via Rail and Amtrak (publicly and quasi-publicly owned) lease out the tracks from these large companies. In the Pacific Northwest

1. "The First Ones," San Juan Island, National Park Service, last modified July 14, 2015, https://www.nps.gov/sajh/learn/historyculture/the-first-ones.htm
2. "VIII. Timeline of Pacific Northwest Environmental History," Center for the Study of the Pacific Northwest," University of Washington, accessed on December 16, 2018, http://www.washington.edu/uwired/outreach/cspn/Website/Classroom%20Materials/Curriculum%20Packets/Building%20Nature/VIII.html
3. "British Columbia and Federation," The Canadian Encyclopedia, accessed December 16, 2018, https://www.thecanadianencyclopedia.ca/en/article/british-columbia-and-confederation
4. "Work: Railways," The Chinese Experience in British Columbia: 1850-1950, University of British Columbia Library, accessed December 16, 2018, https://www.library.ubc.ca/chineseinbc/railways.html

for example, the track that the current Amtrak Cascades trains travel on is owned by Burlington Northern and Sante Fe Railway (BNSF) whose headquarters are in Fort Worth Texas.

The economy in the Pacific Northwest still does have its feet in resources like timber but over the last two decades, the region has also seen a rise in tech companies that call it home. This influx has grown the region in new ways and led to it being named an emerging megaregion, the Cascadian Megaregion, by the National Committee for America 2050. Looking ahead at the possibility of a high speed rail line in Cascadia, it's possible that the tech industry will play a large roll in realizing the project especially since it has already financially contributed to a business case analysis jointly contracted by the local governments.

fig. 1.1: 1913 map of rail and transmission lines
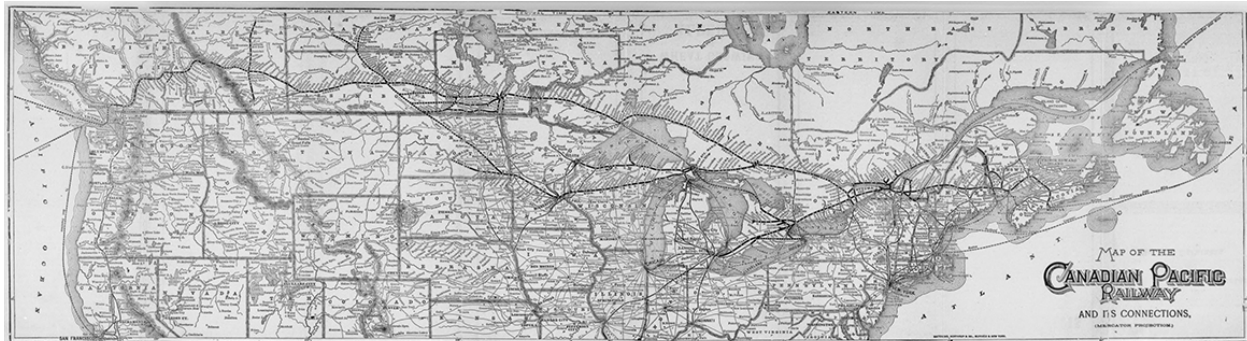
fig. 1.2: 1892 map of Canadian Pacific Railway lines

5. "Shaughnessy," Areas of the City, City of Vancouver, accessed December 16, 2018, https://vancouver.ca/news-calendar/shaughnessy.aspx
6. John Mackie, "The Birth of a City," Vancouver Sun, April 1, 2011, http://www.vancouversun.com/news/vancouver-125/birth+city/4518187/story.html
7. Mackie, "Birth of a City."
8. Robert Wright, "The Biggest North American Railroads," Financial Times, August 22, 2011, https://www.ft.com/content/ba1227d4-ccd8-11e0-88fe-00144feabdc0
9. Paige Stewart, "Rail Freight Shipping: Class I Railroads in America," ArcBest Blog, August 15, 2018 https://arcb.com/blog/rail-freight-shipping-class-i-railroads-in-america

Timeline of Regional Development Influenced by Rail

1891, Seattle, Lake Shore and Eastern Railway reach the Canadian border connecting it to the Canadian transcontinental line

1869, First trans-continental railroad completed in San Francisco

1917, US and Canada enter WWI and Shipbuilding in the region booms

1867, origins of Vancouver, Gastown, build up around Hasting's Mill

1889, Washington joins the United States

1916, Shipyards opened along Puget Sound and Boeing sets up in Seattle

1887, Canadian Pacific Railway extends to Vancouver

1864, American Congress grants Northern Pacific Railway land in a 40-mile strip at $2,00/acre

1885, Canadian Pacific Railway reaches BC. Seattle, Lake Shore & Eastern Railway founded in Seattle

1915, Canadian Northern Railway arrives in Vancouver

1859, Oregon joins the United States

1911, Port of Seattle established

1909, Chicago, Milwaukee & St. Paul railroad begins operating

1858, Gold rush begins. Colony of British Columbia Established

1884, Canadian Pacific Railway (CPR) negotiates with government for 6,280 acres in Vancouver

1893, Great Northern Railroad reaches Seattle

1846, 49th parallel established as boundary between US and British North America

1883, Northern Pacific Railroad reaches Spokane and begins operating in Portland

1897, Vancouver displaces Victoria as the provincial capital

1871, Colony of British Columbia agrees to join Confederation on the condition that a railway be built to link it to the rest of Canada

1923, Canadian Northern Railway becomes Canadian National Railway

1843, starting this year, 53,000 settlers arrived via the Oregon Trail

1900, Weyerhaeuser moves lumbering operations to the Pacific Northwest opening his "Sawdust Empire"

1824, Hudson's Bay establishes Fort Vancouver in Washington

1873, Northern Pacific Railway chose Tacoma as western terminus

1880, Seattle & Walla Wall Railroad purchased & renamed Puget Sound Railroad

1805, Lewis & Clark cross the Rockies extending the US claim on the territory

Europeans arrive

Presence of people in the Pacific Northwest

| 8,000 yrs ago | 18th Century | 1855 | 1870 | 1875 | 1880 | 1885 | 1890 | 1900 | 1910 | 1920 | 193 |

2009, Through service
from Portland to
Vancouver starts on
Amtrak eliminating the
need to transfer in Seattle

2018, High Speed Rail business
case analysis funded by Oregon,
Washington, and BC governments as
well as the tech industry

1980, Chicago, Milwaukee,
St. Paul and Pacific Railroad
abandons its pacific extension

1994 Amazon
founded in Seattle

2017, Amtrak Cascades train derails
on its inaugural run of the Point
Defiance Bypass near Dupont,
Washington. All service is rerouted to
old shore-hugging line until 2019

1977, Canadian passenger rail
company Via Rail is founded

1995, Amtrak
service to
Vancouver restarts

1975, World's first personal
computer invented in Seattle

1981, Amtrak
service to
Vancouver
discontinued due to
lack of interest

1972, Amtrak operates its first
international route with service
from Seattle to Vancouver

1996, Burlington Northern
Railroad merged with
Atchison, Topeka and Santa
Fe Railway to form the
Burlington Northern and
Santa Fe Railway (BNSF)

1971, Amtrak established and
assumed all passenger rail
service from the country's
private rail companies who could
no longer financially provide it.
Amtrak Cascades begins service
from Seattle to Portland

1986,
Microsoft
HQ
opens in
Redmond
near Seattle

1970, Great Northern Railway,
the Northern Pacific Railway,
the Spokane, Portland and
Seattle Railway and the Chicago,
Burlington and Quincy Railroad
merge to form the Burlington
Northern Railway

1951, Pacific
Coast Railway
becomes
subsidiary
of The Great
Northern
Railway
(now BNSF)

1939,
Shipbuilding sees
a second boom
when WWII
starts

800

Seattle

700

Portland
Vancouver

600

500

400

300

Tacoma
200

100
thousand

0

30　　1940　　1950　　1960　　1970　　1980　　1990　　2000　　2005　　2010　　2015　　2018

Cascadia

At 21 years old traveling through Hungary, I met a fellow traveler in a hostel. As I was nearing the end of my month long trip, I had become accustomed to the standard exchange of questions when meeting someone new and had grown used to hearing, "Vancouver? I hear it's beautiful there," when telling others of the place I called home. Upon hearing where I was from, my new acquaintance instead responded with a mysterious "ah, another Cascadian," before offering that he grew up in Portland, Oregon. Seeing my confusion, the traveler described for me the bioregion and proposed country which encompassed both of our hometowns and the parallel independence movements that had sprung up with it.

There are many different websites and groups that propose the formation of the new nation of Cascadia with varying prospective borders but predominantly, the country would include most of BC, Washington and Oregon. At its largest, and incorporating the entire bioregion, the country would span from the southeastern tips of Alaska and the Yukon down to northwestern California, and would include most of Idaho and parts of Montana, Wyoming and Nevada in its eastward stretch. As described by Peter Berg,

> *"A bioregion is defined in terms of the unique overall pattern of natural characteristics that are found in a specific place. The main features are generally found throughout a continuous geographic terrain and include a particular climate, local aspects of seasons, landforms, watersheds, soils, and native plants and animals. People are also counted as an integral aspect of a place's life, as can be seen in the ecologically adaptive cultures of early inhabitants, and in the activities of present day reinhabitants who attempt to harmonize in a sustainable way with the place where they live."* [2]

With this as the foundation of the largest group promoting Cascadia, *CascadiaNow!* promotes the concept of bioregionalism, "the idea that culture stems from place, and that watersheds better represent regions than...current political boundaries do."[3] This independence movement turned non-profit has never promoted separation as some more politically focused groups have. Instead, their focus is on growing a positive and inclusive social movement that "seeks to further local autonomy, empower individuals and communities to better represent their own needs, and create sustainable local economies through bioregional planning."[4] Though the push for secession is not as strong these days, the movement did see a resurgence after the 2016 US election that saw Donald Trump elected president.[5] Notably, if Cascadia were to defect, the small country would, by some accounts, have a population of about 15 million people with the 18th largest economy in the world.[6]

1. David McCloskley, "Cascadia: Land of Falling Waters," Cascadia Institute, Accessed December 11, 2018, http://cascadia-institute.org
2. Peter Berg, "Bioregionalism: An Introduction," Planet Drum, last modified August 20, 2018, http://www.planetdrum.org/bioregionalism_defined.htm
3. cascadianow, "We're CascadiaNow! your local independence movement, now turned 501(c)3 non-profit and social movement. We're here on our unofficial Cascadia Day celebration, so ask us anything," Reddit comment, May 18, 2017, https://www.reddit.com/r/IAmA/comments/6c057a/were_cascadianow_your_local_independence_movement/
4. "Cascadia & Bioregionalism." CascadiaNow!, Accessed December 11, 2018, https://www.cascadianow.org/bioregionalism/
5. Jake Bullinger, "Could a Cascadian Secession Actually Happen?" Seattle Met, Accessed 11 December, 2018, https://www.seattlemet.com/articles/2017/5/15/could-a-cascadian-secession-actually-be-a-thing
6. cascadianow, "We're CascadiaNow! your local independence movement, now turned 501(c)3 non-profit and social movement. We're here on our unofficial Cascadia Day celebration, so ask us anything," Reddit comment, May 19, 2017, https://www.reddit.com/r/IAmA/comments/6c057a/were_cascadianow_your_local_independence_movement/

"Every place, as with every person, has its own story to tell...The power, and beauty and tragedy of this place is palpable, its promise still to be fulfilled. This place is a story unfolding on many levels." [7]

7.   David McCloskley, "Cascadia: Land of Falling Waters," Cascadia Institute, Accessed December 11, 2018, http://cascadia-institute.org

fig. 1.4: Borders of Cascadia as defined by its bioregion

Mega-Region Population

100,000,000
10,000,000
1,000,000

Labels on map: Cascadia, Tor-Buff-Chester, Chi-Pitts, Bos-Wash, Nor-Cal, Denver-Boulder, So-Cal, Phoenix-Tucson, Char-lanta, Dal-Austin, Hou-Orleans, So-Flo

Mega-Regions Compared to Countries
(GDP Billions)

$1,000
$100

Labels on map:
Switzerland - $631 (Cascadia $593)
Sweden - $526 (Tor-Buff-Chester $593)
Brazil - $2,254 (Chi-Pitts $2,314)
Germany - $3,428 (Bos-Wash $3,751)
Indonesia - $878 (Nor-Cal $909)
Finland - $247 (Denver-Boulder $256)
Mexico $1,178 (So-Cal $1,204)
Hong Kong - $263 (Phoenix-Tucson $256)
South Korea - $1,129 (Char-lanta $1,149)
Saudi Arabia - $711 (Dal-Austin $723)
Netherlands - $771 (Hou-Orleans $755)
Turkey - $788 (So-Flo $765)

fig. 1.5-1.6: Adapted diagrams from Martin Prosperity Institute
(top) Mega-Regions of USA*, Population
(bottom) Mega-Regions of USA*, GDP compared to countries
*Note that Vancouver, BC is part of Cascadia Mega-Region and Toronto is part of Tor-Buff-Chester Mega-Region

Journey Through Cascadia

High Speed Megaregion

Deemed an emerging megaregion by the National Committee for America 2050, the Cascadian region has aligned economic systems, shared natural resources, and common transportation systems that link it together. Acknowledging this common ground, the annual Cascadia Innovation Corridor Conference was established in 2016 to unite "business, academic, and government leaders from both sides of the border to explore new strategies for the region to come together, maximize [its] shared competitive advantages, and elevate [its] global economic position"[1]. As the region grows, the need for better transportation will too. The current ground transportation options within the region take a significant amount of time encouraging both tourists and commuters to consider air travel instead.

For many years, a high-speed rail corridor connecting Vancouver to Seattle and Portland was just an idea but in May of 2018 when funding for a business case analysis was announced, the likelihood of the project being realized grew. The support base for the proposed project has also grown as of late with the tech industry sponsoring a portion of the study. While comparative studies have shown that high speed rail produces significantly fewer emissions than the aviation industry[2], it has been speculated that all the machinery needed to build the new rail lines might completely negate its positive impact.[3] Though this may be the case for new routes, the region has the benefit of already having rail alignments for slower moving trains in most of the areas the project has proposed it would connect. By re-purposing some of these alignments for high speed trains, it may still be possible to build the necessary infrastructure for faster trains without having the emissions produced from its building outweigh the benefits of high speed rail.

In the future, if the Cascadia Rail project were built, travelers in the region would have several different transportation options. When deciding between them, efficiency and cost are two primary considerations for commuters and tourists alike, but a distinctive experience is something that can completely sway this decision and could help high speed rail break into this market. High speed train travel is unique in many ways and with experience at the center of the design process, Cascadia Rail has the opportunity to become the front-runner for transportation options in the region.

1. "Cascadia Innovation Corridor Conference - A Cross-Border Conference." n.d. Accessed July 14, 2018. http://www.cascadiaconference.com/

2. Campos, Javier, and Ginés de Rus. 2009. "Some Stylized Facts about High-Speed Rail: A Review of HSR Experiences around the World." Transport Policy 16 (1): 19–28. https://doi.org/10.1016/j.tranpol.2009.02.008.

3. Jaffe, Eric. n.d. "How Green Is High-Speed Rail?" CityLab. Accessed October 4, 2018. http://www.theatlanticcities.com/commute/2011/11/how-green-high-speed-rail/492/

2. Narratives in the Landscape

Layered Narratives
Selection of Regional Narratives
Landscape Narrative Precedents

"We are part of a collective consciousness, connected to one another through time by our works, images, thoughts, and writings. We communicate to future generations what we are, what we have been, hopefully influencing for the better what we will become."[1]

1. Maya Lin, "Speech at Juniata College," in *Maya Lin: A Strong Clear Vision*, directed by Freida Lee Mock (1995), https://www.youtube.com/watch?v=FWGXGTK_5k0&t=1790s

Layered Narratives

In the preface of their book, *Landscape Narratives*, Potteiger and Purinton state that "narrative is a very fundamental way [that] people shape and make sense of experience and landscapes. Stories link the sense of time, event, experience, memory and other intangibles to the more tangible aspects of place. Because stories sequence and configure experience of place into meaningful relationships, narrative offers ways of knowing and shaping landscapes not typically acknowledged in conventional documentation, mapping, surveys, or even the formal concerns of design."[1] Narratives can be implicit, as is the case of the natural processes of a landscape, or explicit as exemplified by the use of interpretive signage. Some narratives of a place can be understood by many, while some are subjective to the individual.

When searching the hashtags #Cascadia and #PNW (for Pacific Northwest) on Instagram, we are provided a glimpse at some initial narratives to help us with our understanding of place. In reviewing the most popular posts associated with these hashtags over the course of three days (fig.1.7), about 90% of the posts affiliate the narrative of inspiring scenery with the landscape of the region and about half of these images also feature different types of outdoor recreation. Out of 54 images, 29 feature mountains, emphasizing their deep-rooted connection to this place.

While these visuals illustrate two dominant landscape narratives emblematic of the area, Potteiger and Purington point out that a walk in the woods can also conjure "narratives of retreat, discovery, interpretation of natural history...and return,"[2] all narratives that might be more specific to the individual. Among the top posts linked to Cascadia or the Pacific Northwest are a few images whose narratives are more obscure. By reinterpreting the idea "that each reader enlivens a text with his or her own experiences and understandings and that the meaning of text is therefore multiple and fluid,"[3] we can discern that while there may be dominate landscape narratives legible to the collective, sometimes imbued by the designer, there will always be multiple layers of narratives in the landscape perceptible only to the individual.

1.   Matthew Potteiger and Jamie Purinton, *Landscape Narratives: design practices for telling stories* (J. Wiley, New York 1998), ix.
2.   Potteiger and Purinton, ix.
3.   Potteiger and Purinton, 73.

Subjective and Collective Narratives in the Region:
Top Instagram Posts for #Cascadia & #PNW

#Cascadia

| Nov 12, 2018 | Nov 17, 2018 | Nov 19, 2018 |

#PNW

| Nov 12, 2018 | Nov 17, 2018 | Nov 19, 2018 |
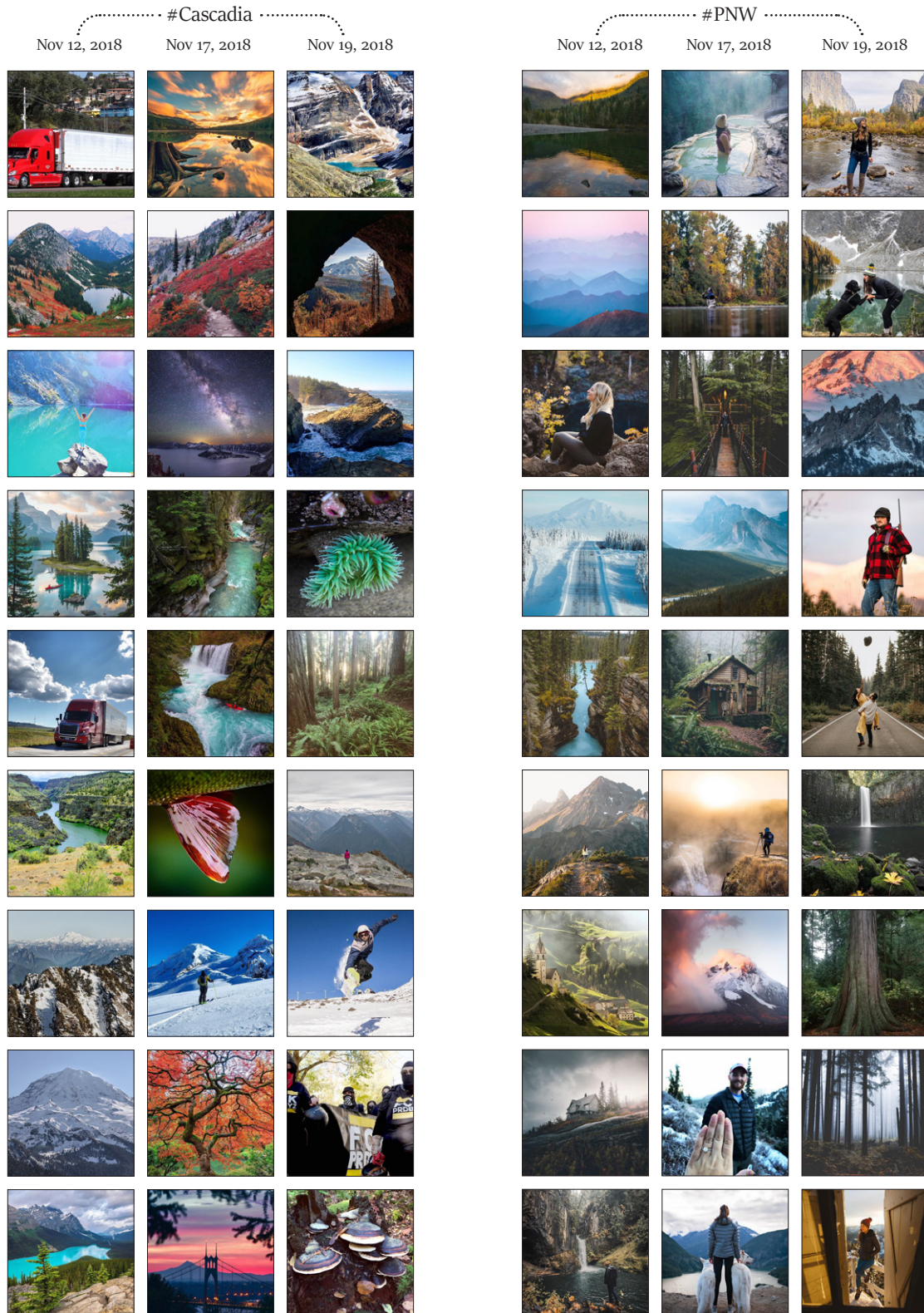
fig. 1.7 Instagram top posts with #Cascadia and #PNW

Selection of Regional Narratives

As the distance from Vancouver to Portland is approximately 510 kilometers, there are many different but repeating landscapes viewable from the existing rail route. These scenes, all evoking their own narratives, would likely still be passed on any route that a future high speed rail line might take.

fig. 2.1: existing railway in relation to the major cities in the region

Shoreline

The train tracks run adjacent to the ocean for most of the trip between Vancouver and Seattle. Along the way, passengers can spot wildlife, distant islands and occasionally mountains to the east. This part of the trip is beautiful and by far one of the more memorable portions, but with the impending threat of sea-level rise, many parts of the track would need to be raised or moved all together. The view of the ocean from the train is a perfect representation of the region whose identity, history, and narratives are interwoven with what has been renamed the Salish Sea.

fig. 2.2-2.4: (top) photo from train of shoreline on existing rail route, (bottom left) existing rail tracks in Shoreline, WA, (bottom right) existing rail tracks in Lynnwood, WA

Wetlands

As much of the existing track is close to sea-level, a myriad of wetlands appear along the route. Notably, the train travels through the wetlands of Mud Bay in Surrey, BC for approximately 4.5 kilometers. Located in Boundary Bay, one of Canada's most valued avian habitats, Mud Bay park is frequented by various types of wildlife. On the park's website, they note that "at high tide, seals and loons can be seen in the waves" and that at low tide, the table is set for a shorebird's favourite feast when mudflats and eelgrass meadows are exposed to the air."[1]

fig. 2.5-2.7: (top) photo from train of Mud Bay on existing rail route, (bottom left) existing rail tracks in Mud Bay, (bottom right) existing rail tracks Mud Bay

1.   "Mud Bay Park," City of Surrey, accessed December 15, 2018,
       https://www.surrey.ca/culture-recreation/2023.aspx

Towns

Between the larger cities of Vancouver, Seattle and Portland are many small towns that pass in the blink of an eye. At times the train travels beside or across a main street and passengers are granted the swiftest glance of a place, making it difficult to ascertain any real sort of identity or character. From the little that can be seen though, imaginings of a small town with a slower paced lifestyle can be conjured as the train rushes past some of the waving locals.

fig. 2.8-2.10: small towns along the existing rail line

fig. 2.11: Kayaker on the Salish Sea

Tourism and Recreation

With its striking natural beauty, the Pacific Northwest is a hotbed for tourism and outdoor recreation. Some of the most popular outdoor activities include skiing, hiking, surfing and kayaking. It is not uncommon to see kayakers out for a paddle while the train runs along the shoreline.

Industry

The Pacific Northwest was built on the backs of its resources and the export of timber and minerals via rail and ocean freighter are still a large part of its economy. Proximity to the Pacific Ocean and sheltered deep sea harbours make the region's ports and shipyards primary hubs for incoming barges from Asia. Through their train windows, passengers can see some of these ports and shipyards as well as many timber mills, concrete plants, and a now defunct petroleum products facility.

fig. 2.12-2.14: industry along the existing rail line

fig. 2.15: agriculture along existing rail line

Agriculture

According to the American Farmland Trust, "the Pacific Northwest region is one of the most ecologically rich farming areas in the United States"[2] and the same can be said for lands north of the border. For large portions of the train trip, travelers pass through large agricultural fields where crops like hay, corn, berries and onions are grown.

2.   "Pacific Northwest," American Farmland Trust, accessed December 15, 2018, https://www.farmland.org/our-work/where-we-work/pacific-northwest
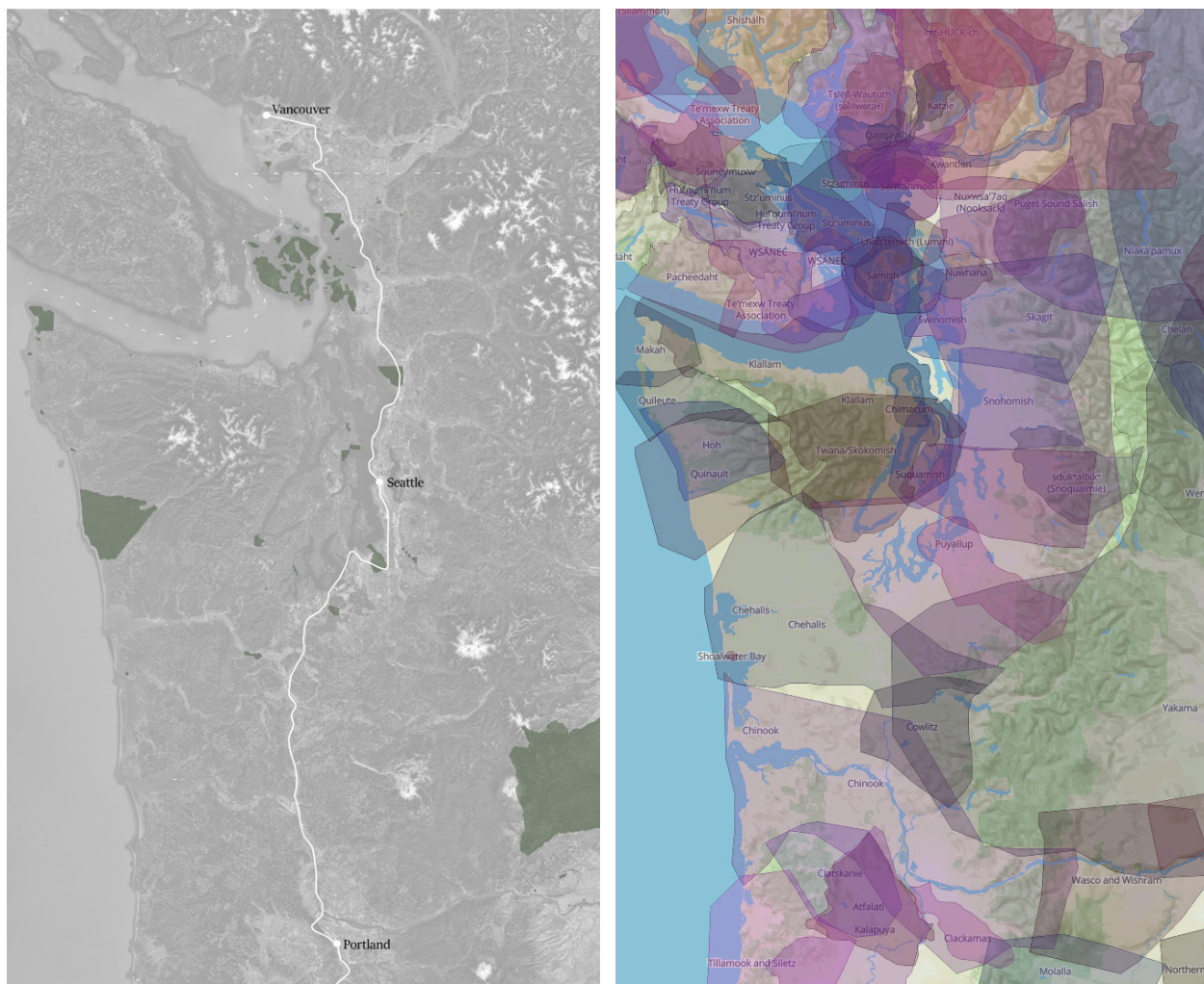
fig. 2.16-2.17: (left) Reservations in relation to the railway, (right) *Native-Land* visualization of overlapping Indigenous homelands

Indigenous Land

While in the US, the train passes near many different reservations in both Washington and Oregon. In these States and others in the US, treaties were signed and specific parcels of land were designated as on and off reserve land belonging to different Indigenous groups. In BC, a unique situation to Canada exists wherein very few treaties were signed with the original inhabitants of the land and thus cities have been built on the unceded homelands of many different Indigenous groups. For example, Vancouver was built on the homelands of the Musqueum, Squamish and Tsleil-Waututh First Nations. The homelands of many of these groups extend down into the US past the arbitrary border agreed upon during the process of colonization, and include many different islands and the waterways that make up the Salish Sea.

Journey Through Cascadia

fig. 2.18: Musqueum Interactive Map

In an effort to retain and disseminate their history, the Musqueum First Nation set out to develop an interactive map "to improve documentation of [their] Oral History collection, develop a children's place names book, and utilize archival materials to...highlight hən̓q̓əmin̓əm̓ place names throughout [their] Traditional Territory."[3] The map displays the vastness of the lands that the Musqueum people would travel seasonally, many pronunciations of words in the hən̓q̓əmin̓əm̓ language, as well as various stories associated with different landscapes, passed down through generations.

As the Indigenous peoples of the Pacific Northwest have been here for an estimated 8,000 years before colonization, their narratives are rich and countless. While I am a settler on this land and their history is not mine to tell, I feel it important to acknowledge their existence and that their narratives are inherently tied to this landscape.

3.   "Place Names Map," Our Story, Musqueum, accessed
      December 15, 2018, https://www.musqueam.bc.ca/our-story/
      musqueam-territory/place-names-map/NotesNotes

Vietnam Veterans War Memorial, Maya Lin

"I imagined taking a knife and cutting into the earth, opening it up, an initial violence and pain that in time would heal."[1]

Norway in a Nutshell Tour

"This legendary tour takes you through Norway's most breathtaking UNESCO-protected fjord and mountain scenery..."[2]

1. Christopher Klein, "The Remarkable Story of Maya Lin's Vietnam Veterans Memorial," Biography, last modified November 10, 2015, https://www.biography.com/news/maya-lin-vietnam-veterans-memorial

2. "Norway in a Nutshell," Fjord Tours, accessed December 13, 2018, https://www.norwaynutshell.com/original-norway-in-a-nutshell/
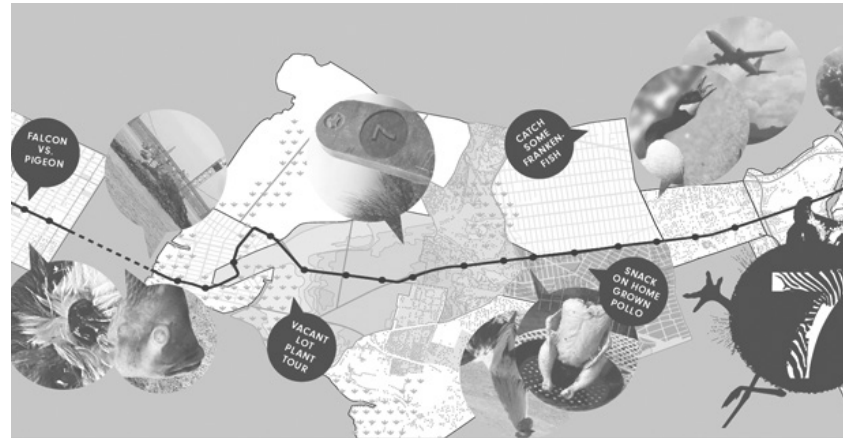
Safari 7, SCAPE
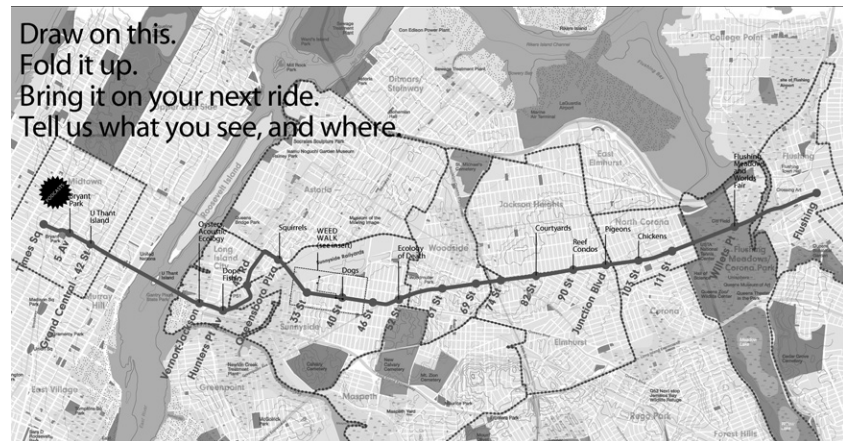
"Safari 7 imagines trains as urban classrooms, and provides maps and podcasts for travelers to engage the immediate environment of their city."[3]

3.   Kate Orff, Toward an Urban Ecology (New York: The Monacelli Press, 2016), 151.

Vietnam Veterans War Memorial, Maya Lin

fig. 2.19: Aerial view of Vietnam Veterans War Memorial

At 21 years old, undergraduate student Maya Lin won a public competition with her design for the Vietnam Veterans War Memorial in Washington, DC. As described by Daniel Abramson, the memorial is "an identical pair of black granite walls descending into the grassy earth in the northwest part of the Mall and meeting at an angle so as to point equally to the nearby Lincoln Memorial and Washington Monument. Entirely covering the walls' surface is a complete listing of the war's 58,156 American dead, arranged chronologically beginning and ending with the dates 1959 and 1975 at the memorial's vertex."[1] With the dates of the first and last to be killed in the war meeting in the middle, visitors "metaphorically [descend] back and forth [in] time"[2] and are presented with "a narrative rather than a list, which acknowledges individuals as well as collective loss over time."[3] Stretching through the landscape, with walls rising approximately 10 feet, the sheer number of names
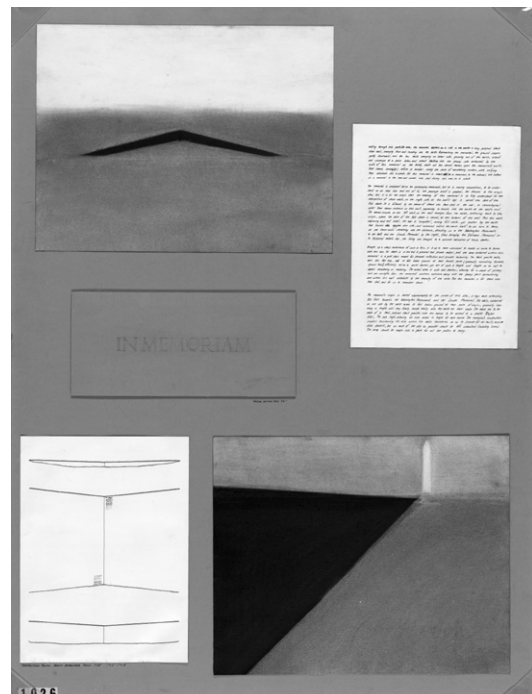
fig. 2.20: Lin's submission

1. Daniel Abramson, "Maya Lin and the 1960s: Monuments, Time Lines, and Minimalism." Critical Inquiry 22, no. 4 (1996): 681-682

2. Matthew Potteiger and Jamie Purinton, Landscape Narratives: design practices for telling stories (J. Wiley, New York 1998), 124

3. Nicholas J. Capasso, "The National Vietnam Veterans Memorial In Context: Commemorative Public Art in America, 1960-1997" (PhD diss., Rutgers University, 1998), 179

4. Capasso, "The National," 170

is overwhelming. Each name has carefully been etched onto highly polished black granite panels and being tactile in nature, are often touched by visitors, incorporating another sense into the experience of commemoration. The tactility of the engravings, the reflectiveness of the material, the path that must be traveled down, below grade, toward the longest lists of names as well as both the beginning and the end of the war; all are subtle elements that produce a participatory ritual that forces visitors to be confronted with death, themselves, and the monumental loss of life.

The competition called for all proposals to be apolitical in nature, and being purposefully ambiguous, the memorial has played host to all sorts of interpretations on both the anti and pro war sides. Criticism began soon after it was chosen as the winning design and the memorial was once called "a black gash of shame"[4] by Vietnam veteran Tom Carhart. Once built though, the "memorial proved to be a pilgrimage site for those who served in the war and those who had loved ones who fought in Vietnam."[5] Though its obscure nature invited readings of political positioning, it evoked many more narratives of reconciliation, strength, and remembrance and became a point of convergence for a nation in need healing. The depth of the design lay in its understated and ambiguous nature which invited "all visitors to...participate in the construction of its content"[6] and meaning.

fig. 2.21: Reflective granite face of the memorial

5.   Christopher Klein, "The Remarkable Story of Maya Lin's Vietnam Veterans Memorial," Biography, last modified November 10, 2015, https://www.biography.com/news/maya-lin-vietnam-veterans-memorial
6.   Capasso, "The National," 189

Norway in a Nutshell Tour

fig. 2.22: Flam railway train

The Norway in a Nutshell tour is described on *Fjord Tours*' website as a "legendary tour that takes you through Norway's most breathtaking UNESCO-protected fjord and mountain scenery, as well as a trip on Europe's top scenic rail journeys."[1] Curiously, the tour is not a typical one led by a guide, but is instead a coordinated trip on both private and public transportation that *Fjord Tours* books for visitors. Including legs on bus, boat, and train, tourists can choose to do the trip in a single day or at their own pace, staying in hotels along the way. Known for its awe-inspiring beauty, the now famous route is known as Norway in a Nutshell because it passes through fjords, mountains, and valleys, all landscapes representative of Norway, in a relatively short amount of time.

Featuring train travel for most of the trip, vision of the landscape is certainly the highlighted experience of this journey and other senses would be used very little. If taken in one day, the trip is approximately twelve hours and there is very little time between transfers to explore independently.

On this journey, the itinerary is set, the course is fixed, and the established narrative is unveiled through the window. Though still magnificent, this type of tour is an example of how modern travel has separated us from the landscape. Rushing past, we are purely its observer reading what we can of what is in focus.
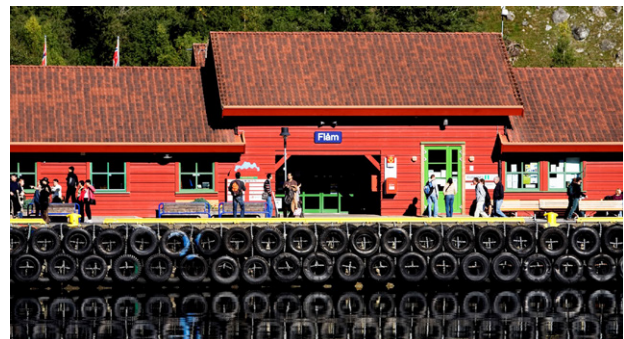
fig. 2.23: Flam harbour

1.   "Norway in a Nutshell," Fjord Tours, accessed December 12, 2018, https://www.norwaynutshell.com/original-norway-in-a-nutshell/

Journey Through Cascadia

fig. 2.24-2.25: (top) Bergen railway, (bottom) view on the tour

Safari 7,
Urban Landscape Lab at Columbia University, SCAPE and MTWTF

fig. 2.26-2.27: (top) project materials, (bottom) zoom in of project section/perspective

Envisioned by Columbia University's Urban Landscape Lab and developed by SCAPE and design firm MTWTF, "Safari 7 [was] a self-guided tour of urban wildlife along New York City's 7 subway line."[1] The project was a series of "podcasts, maps, events and curriculum guides"[2] that sought to engage passengers with their city, teaching them "about the complexity, biodiversity, conflicts, and potential of New York's urban ecosystems."[3] While in transit, passengers could listen to pre-downloaded podcasts and read maps that described the environments they were passing through rendering the experience both individual and collective. The content sought to be approachable and offer a "lighthearted entry into the broader field of urban ecology"[4] with topics like the pigeon population, common weeds, and the reefs built out of subway cars around Manhattan island.

The project launched in May of 2009 and from October to December of that year, it lived on in the form of a public exhibition at Grand Central Station. Included in the exhibition were "a series
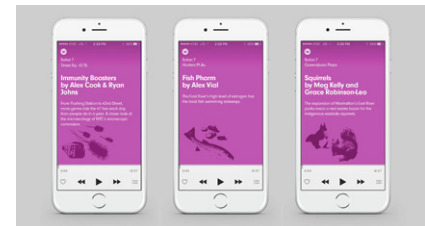
fig. 2.28-2.30: (top) project metro card, (middle) podcast screenshots, (bottom) passengers listening to content
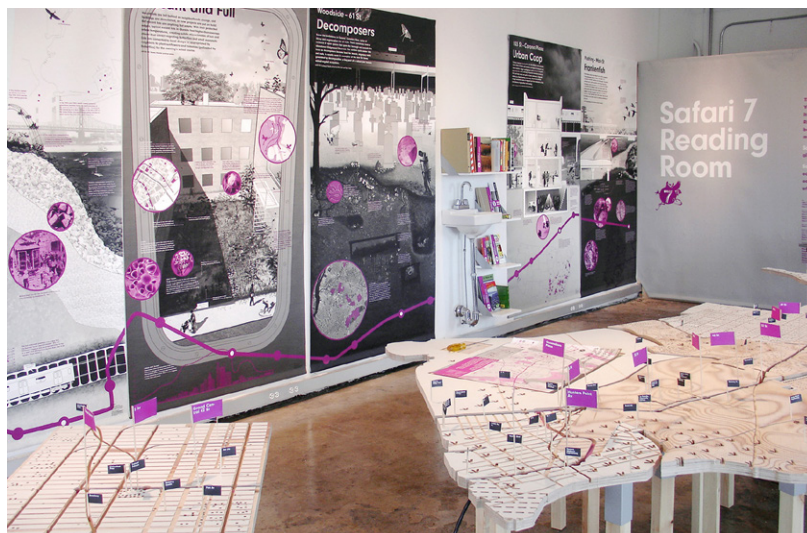
fig. 2.31: layout of Safari 7 reading room

of illustrative sections, maps, [an] interactive 'Map Table,' and a collection of books, where visitors [could] learn more about urban nature and transportation infrastructure as means of ecological and community engagement."[5] Safari 7 offers us the insight that collaboration across disciplines is essential and that a project that seeks to engage the public should make every effort to be accessible and relate to that which is familiar.

1. Kate Orff, Toward an Urban Ecology (New York: The Monacelli Press, 2016), 151.
2. Orff, 151.
3. Orff, 154.
4. Orff, 156.
5. "Honor Award: Safari 7," 2010 ASLA Professional Awards, American Society of Landscape Architects, accessed December 16, 2018, https://www.asla.org/2010awards/061.html

3. Rail and the Landscape

Marketing the Rail Experience
Perceiving the Landscape in Motion
The Dome Car

Riding the Dome Car by Gladys Wibking

We rode
the dome car
and felt like birds
in a nest on an apple bough.
The car shone
with the sunshine of oranges and apricots
A friendliness peopled
with neighborly presences
surrounded us all day.
The children busied the narrow aisle
with the newest of holidays
as fancy became games.

On our minds' elbows
we saw the mountain peaks far above us
in their white feathery-plumes;
far below, the green valleys,
rivers with cliff banks
flowered with hanging foam.

The train
always the wind's racer
rushed between air-walls
with a light feathery sound,
matching his surely-shod feet
with the road-bed's rails.[1]

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1.   Gladys Wibking, (1971, Spring). RIDING THE DOME CAR. Poet Lore, 64. Retrieved from http://ezproxy.library.ubc.ca/login?url=https://search-proquest-com.ezproxy.library.ubc.ca/docview/1296786146?accountid=14656
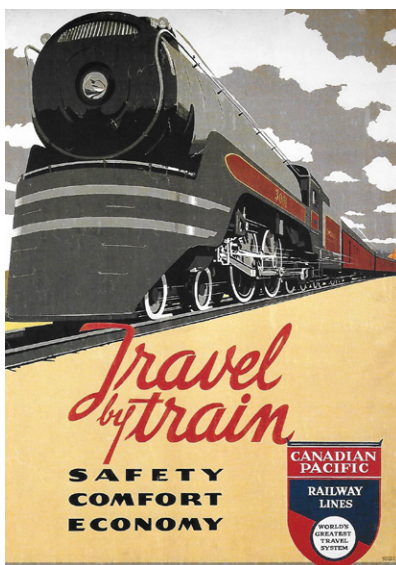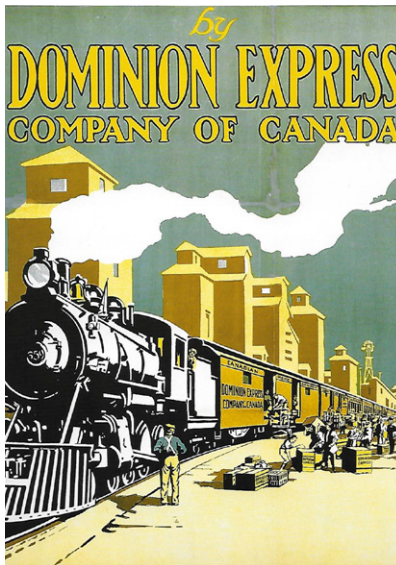
fig. 3.1-3.6: Examples of rail posters featuring the onboard experience, the train and the landscape

Marketing the Rail Experience

Through the years, rail marketing materials have used the same elements to sell tickets. Advertisements have highlighted the train itself, the experience onboard, and most of all, the landscape (fig.3.1-3.6). A comparison of many North American advertisements, most featuring attractive scenery, illustrates just how inseparable the experience of rail travel is from the land. In some cases, advertisements featured only the landscape and omitted the train completely (fig. 3.7).
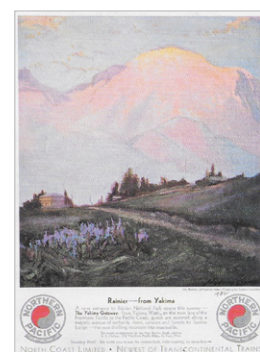
fig. 3.7: Poster featuring only the landscape

These picturesque depictions of landscape are reminiscent of the 1994 study featured in Komar and Melamid's book *Painting by Numbers* where Americans were asked a series of questions to determine what would make up America's most wanted painting (fig. 3.8). With the answers of respondents, the painting that was created featured an idealized landscape, similar to those portrayed in rail advertisements. It is no surprise then that the posters created to market the rail experience, before photography became the primary means of
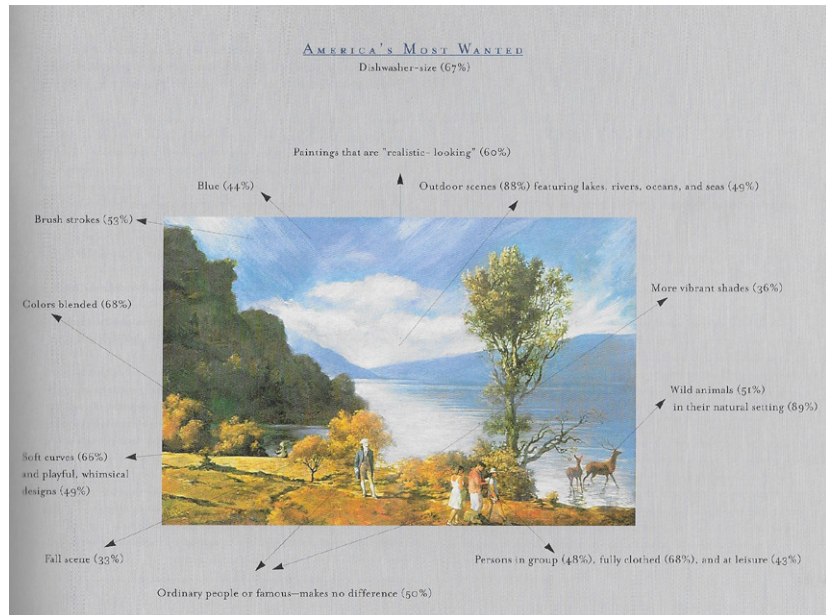
fig. 3.8: 'America's Most Wanted Painting'
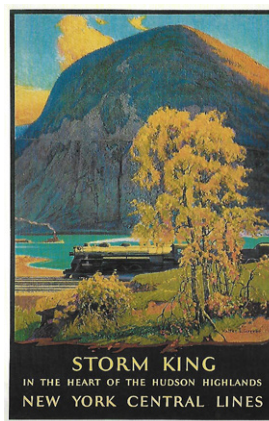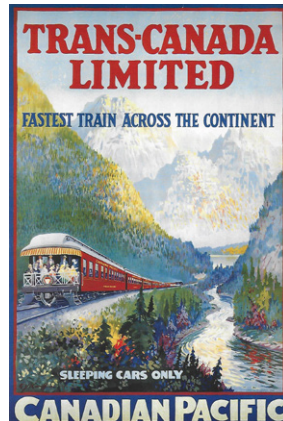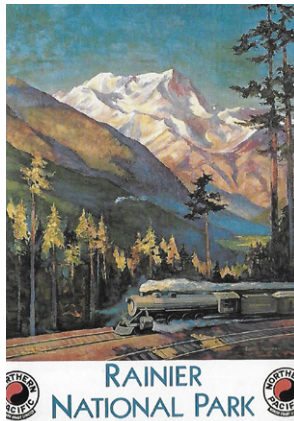
fig. 3.9-3.11: Picturesque style landscapes
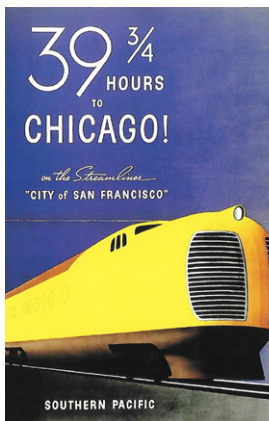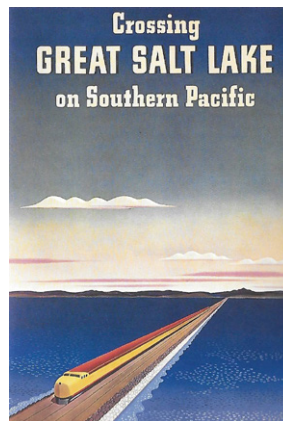
fig. 3.12-3.14: Posters influenced by trends in art

depiction, have become so admired that some now frame and hang them as art (3.9-3.11). As trends in the art world changed, so did the style of many illustrators. Though these trends influenced the creation of more colourful, abstract representations of the landscape there were still many who remained in the realm of the picturesque evoking memories of the romanticized notions of rail travel and viewing the landscape (fig. 3.12-3.14).
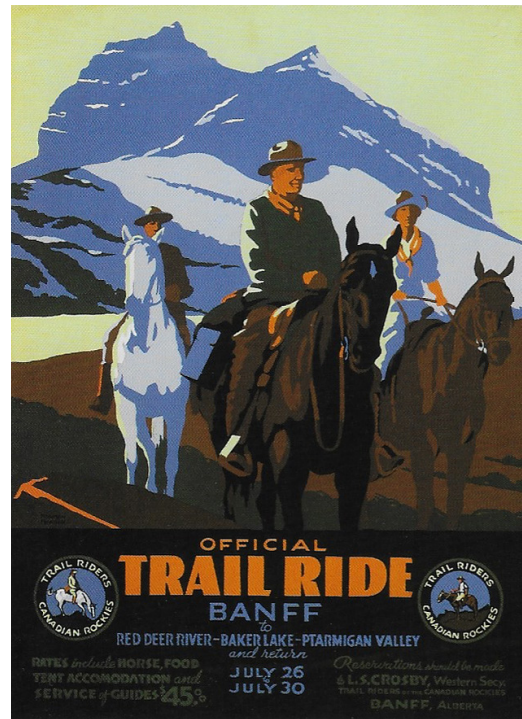
fig. 3.15-3.18: CP advertisements promoting their hotel in the Rocky Mountains

Journey Through Cascadia

THE GREAT
WESTERN
WAY
THE CANADIAN

ATHABASCA RIVER, ALBERTA

fig. 3.19: 2018 advertisement featuring landscape

In Canada, Canadian Pacific further capitalized on the use of their railway by building large, opulent hotels near most of their stations. Now with more goods to sell, CP's posters began to feature the landscapes and experiences at these destinations encouraging more tourists to travel there by train. Sited within the magnificent Rocky Mountains, many advertisements were made featuring the landscapes and recreational opportunities in and around their Banff Springs Hotel (fig. 3.15-3.18). Because of landscapes like the Rockies, railway companies were, and are still, able to harness the striking beauty of the landscape as a powerful marketing tool (fig. 3.19-3.23). The experience along Amtrak's Cascade route from Vancouver through to Portland is made mesmerizing by its proximity to the ocean, its view of the mountains, and the varied narratives that can be deciphered along the way. When planning for a new high speed train, it would be crucial to keep the main character of the trip, the landscape, at the forefront of the story.

fig. 3.20-3.23: 2018 advertisements featuring landscape

Perceiving the Landscape in Motion

There is something undeniably mesmerizing about train travel. The rumbling of the engine, the steady chug of the wheels, the familiar whistle that every child knows and the landscape that slowly rises and falls around us forging infinite new views along our journey. The landscape follows us continuously along our linear path feeding us narratives of the places that we are traveling through. Still, what we see from the train is simply the broad strokes. As Mitchell Schwarzer points out, "from the train, architecture," and correspondingly, landscape, "is witnessed as a torrent of images from which viewers can often discern only the gist of customary meanings."[1]

As modes of transportation have changed over the centuries, so too have our experiences of the landscape. Traveling by foot allows for a

human scaled interaction at a recognizable speed that allows all of our senses to advise us. Comparatively, train travel favours vision and occludes or hinders the interaction of our other senses with the landscape. The experience is similar to other forms of travel in many ways, but riding a train is unique as we are close to, and engaged with the landscape while being isolated from it, permitted a specific view, along a predetermined path, out of a specifically sized window.

And yet, with all of its prescriptiveness, trains have the ability to "sever distance between places, suturing town and city into a montage of dissimilar images, but also the speed of the train runs our eyes past architecture," and thus landscape, "in a wholly new way."[2] With speed, distances shrink and this proximity allows us to develop a notion of place at a regional scale as we
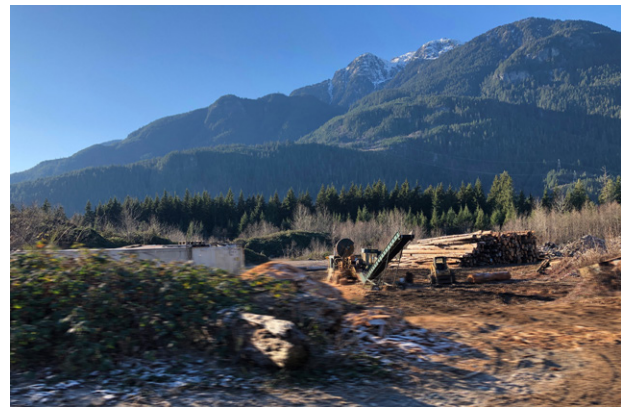
Increasing Speed

fig. 3.24: the landscape blurs as speed increases

1.   Mitchell Schwarzer, *Zoomscape: Architecture in Motion and Media (*Princeton Architectural Press, New York 2004), 45.
2.   Schwarzer, 45.

unwittingly note both patterns and distinctions in the landscape. Because of its speed, the view from the train window becomes near panoramic, a feature many trains have sought to enhance.

Many high speed rail lines are able to cross vast distances quickly both because of their speed and infrequency of stops. To maintain short travel times for commuters, it would be important for the new Cascadia High Speed rail line to have express trains, but there may also be ways to allow these passengers to interact with the landscape while on board. Travelers who are not in a hurry may also benefit from more local stops at different times of the day where they can disembark and explore.

fig. 3.25: senses used inside a train versus in the landscape

The Dome Car

In a retrospective article titled *The Vista Dome at 50*, Karl Zimmermann takes a look back at the invention of the dome car created specifically for viewing the landscape. Zimmerman explains that in the 1960's when the California Zephyr train would wind its way through the Colorado Canyon, the hostess of the train would tell the story of the dome car's beginnings. In this story, it's 1944 and Cyrus Osborn, a vice-president of General Motors, "was riding in the cab of a...locomotive through this canyon."[1] She goes on to say that "the majestic scenery inspired him and challenged his inventive nature to provide for passengers the same unobstructed view he enjoyed from the locomotive cab."[2] To the engineer Osborn said "they would pay $500 just to sit in the fireman's seat from Chicago to the Coast,"[3] which is about $7,000 today.

Inspired by the incredible view of the landscape, Osborne sketched out some possible designs of what would come to be known as the dome car, and the first one was shown in Chicago in 1945. About the new novelty, the New York Times wrote:

"A steel ribbed dome, air conditioned and enclosed in double plate safety glass resistant to the sun's glare and heat, housed twenty-four deluxe seats, and with its elevation of 2 feet 8 inches above the car roof gave the passengers vision ahead, behind, above and on both sides. It is reached by a carpeted stairway from the car's main floor."[4]

The innovation was very popular and picked up by many railroad companies thereafter with the first dome car coming into service in 1947. Since then, design of dome cars has been improved and are still in use on several present day routes. Via Rail, which operates mostly in Canada, has several different types of dome cars in their fleet including panorama cars which are more window than steel (fig.3.26).

The idea for the dome car was sparked by the realization that a wide and unadulterated view of the landscape was a commodity to be sold. From that realization though, their also lay the recognition that this view was a magnificent and compelling force that inspires us to consider the natural world.
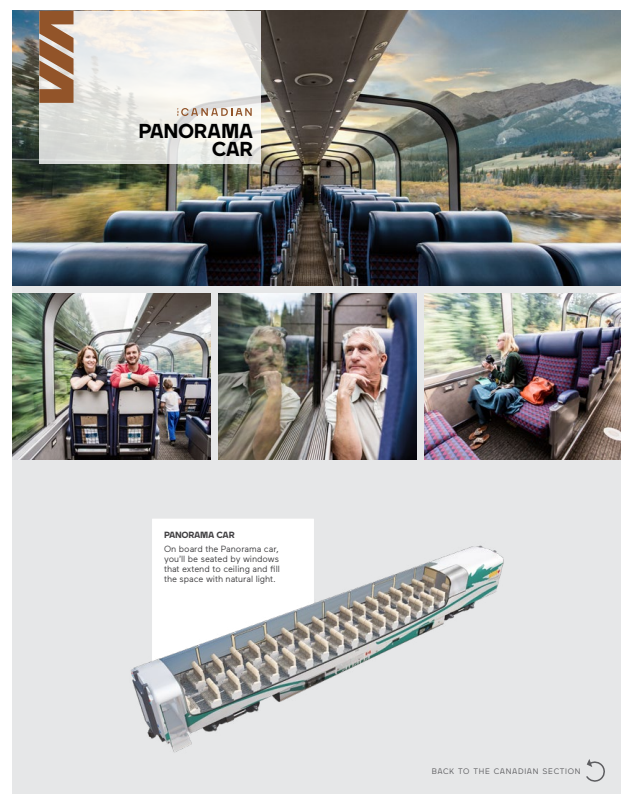
fig. 3.26: Via Rail's panorama car

1. Karl Zimmermann, "The Vista Dome at 50," *Trains*, 10, 1994, 70, http://ezproxy.library.ubc.ca/login?url=https://search-proquest-com.ezproxy.library.ubc.ca/docview/206624142?accountid=14656.
2. Zimmerman, "Vista Dome"
3. Zimmerman, "Vista Dome"
4. "Glass-Dome Rail Car Shown by Burlington, (1945, Jul 24), *New York Times (1923-Current File)* http://ezproxy.library.ubc.ca/login?url=https://search-proquest-com.ezproxy.library.ubc.ca/docview/107304461?accountid=14656

fig. 3.27-3.30: (top) artistic rendering of new rail cars ordered by Via Rail, (middle left) onboard Via Rail's Rocky Mountaineer, (right) dome cars from the Rocky Mountaineer, (bottom left) view inside an Amtrak dome car

4. Design Drivers

Narratives as Catalysts

Plan of Work

fig. 4.1: train window touch screen

Narratives as Catalyst

Moving into GP2, one of the ways I will approach design is by investigating ways that the train trip can be enhanced for those aboard so that they can interact with the landscape from their train windows rather than simply passing it by at great speeds. The general idea is that the windows would be touch screens that allow passengers the opportunity to take a photo of the landscape in order to slow it down, interact with different elements in the scene and learn more. As there are many different collective narratives in the landscape to learn about, passengers would be able to toggle between

Journey Through Cascadia

various narratives that appear on the sidebar to give them more information about what they are seeing. The different narratives could be created with members of those communities so they can tell their own stories along the trip. As some of the new line will have to be built anew, there would be an opportunity to think about where that new track might go and what new things we might see from it to round out the stories being told along the trip.

Plan of Work

	Nov.	Dec.	Jan.	Feb.	March	April

GP1 Booklet
  Site
  Research
  Method
  Precedents
  Design Strategies

Site Analysis

Schematic Design

Design Details

Progress Review

Substantial Review

Production

Final Review

GP2 Booklet
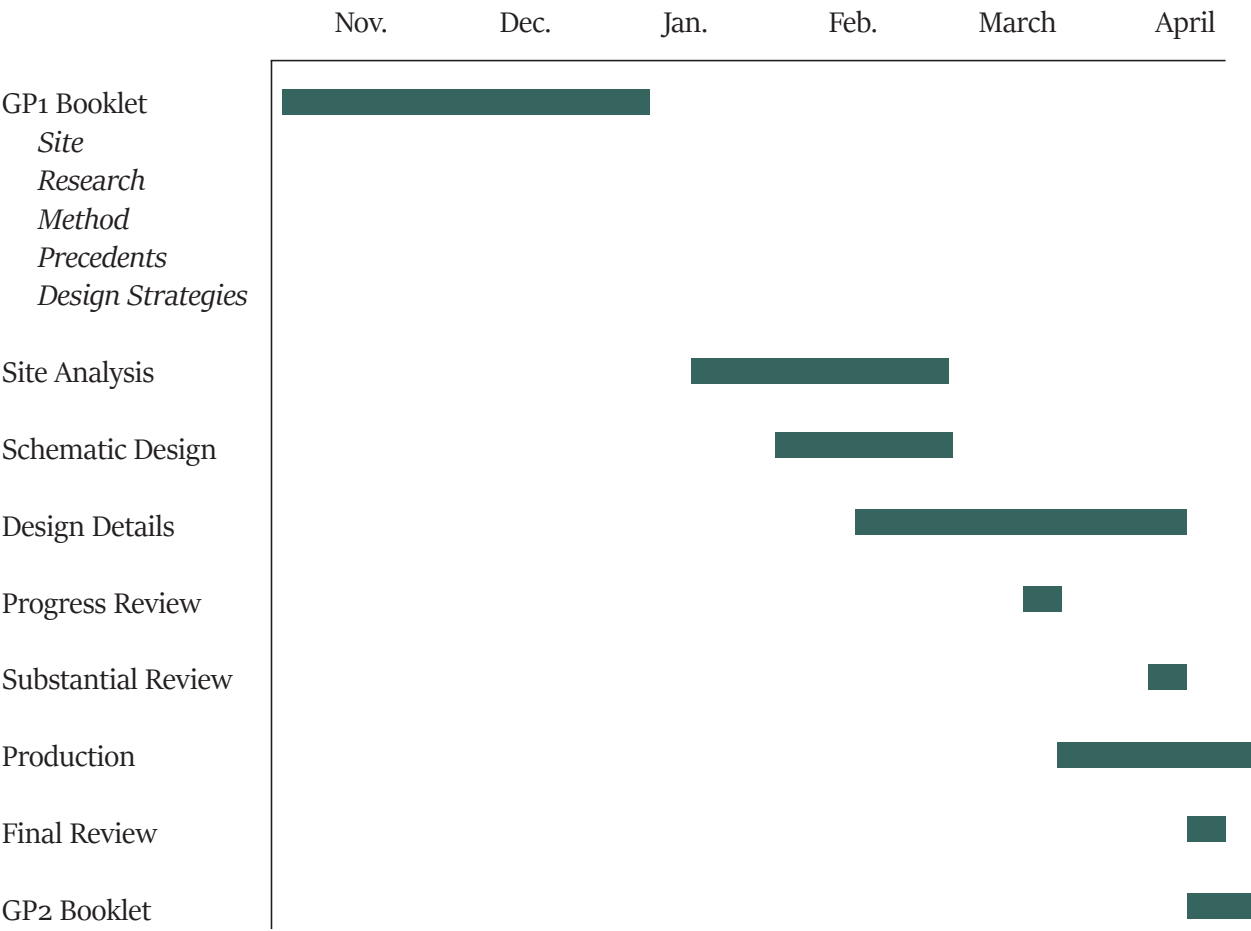
5. Part II, GP2

Journey Through Cascadia Narrative

GP2 Notes

At the end of GP1, I was still very focused on the high-speed rail line and what the experience of the passengers would be while riding the train through Cascadia. Though the train is still a large part of the final project. I became far more interested in the possible country of Cascadia and how this new nation might negotiate the change that a rapid transit line would bring. In my view, the new country would continue with the building of this large infrastructural project because of its ability to help reduce carbon emissions with it as the main form of transportation. As a main pivot point for the rest of the project, the high-speed rail line became the view finder through which I chose to investigate the proposed country of Cascadia.

The presentation of my GP2 work, places the audience in a future where Cascadia has seceded from the US and Canada and has been a thriving, self-sustaining nation for forty years.

Journey Through Cascadia

On the West Coast of North America lies the bioregion of Cascadia. Encompassing 227 watersheds that all flow to the Pacific Ocean, this bioregion is made up of mountains, islands, temperate rainforests, and many more landscapes inherent to its identity.

CASCADIA

WATERSHEDS AND MEGAREGION
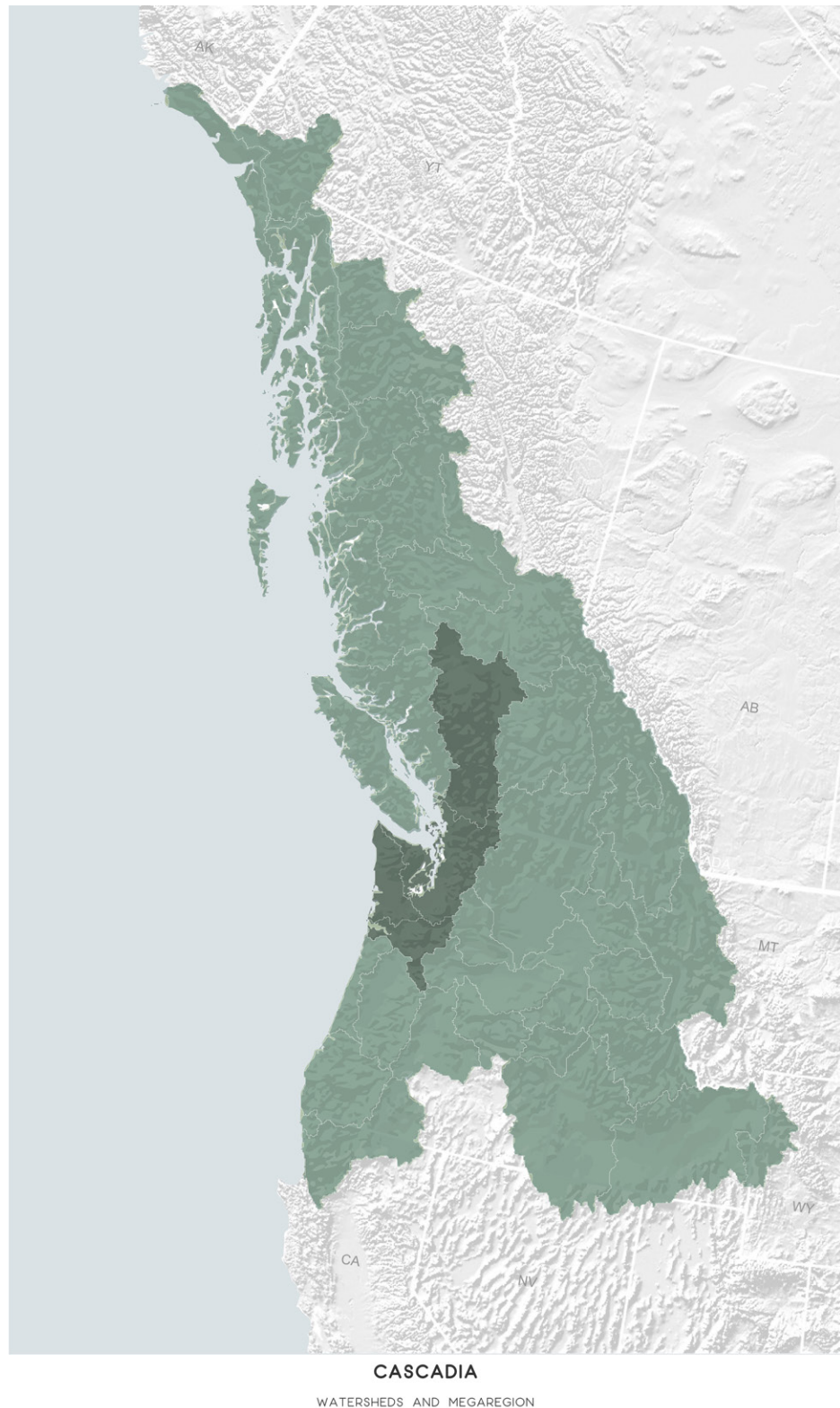
fig. 5.1: Cascadia watersheds and megaregion

fig. 5.2: Archival image, logging in BC

fig. 5.3: Archival image, CPR train in New Westminster BC

fig. 5.4: Archival image, Near Sandon BC

Abundant and plentiful, the area that was once known as the Pacific Northwest was home to Indigenous people for thousands of years, long before settlers arrived to colonize the region in the 18th century. After colonization, the economy grew due in large part to the arrival of the railways and the plentiful resources that could be harvested from the land.

fig. 5.5: Cresecent Beach Surrey 1960's

fig. 5.6: Archival image, 1957 passengers boarding airplane

As technology advanced, the railways that helped build the region drew fewer travelers as they no longer provided the freedom of a car or efficiency of an airplane. This shift in transportation amplified an increase in the region's carbon emissions and the remaining railroad companies centred themselves around shipping.

fig. 5.7: Cascadia megaregion

In the early twenty-first century, it was the tech industry in the three largest cities of the Pacific Northwest, Vancouver, Seattle, and Portland, that furthered the region's economy. Because of their density, population, and joint GDP similar to that of Switzerland's, the region spanning these three cities was identified as the Cascadia megaregion. These cross border cities had much in common including growing regional populations and interconnected economies, and had been characterized as being environmentally focused with politically left-leaning residents.

Cascadia

Tor-Buff-Chester

Chi-Pitts   Bos-Wash

Nor-Cal   Denver-Boulder

So-Cal

Phoenix-
Tucson   Char-lanta

Dal-Austin

Hou-Orleans

So-Flo

Mega-Region
Population
100,000,000

10,000,000

1,000,000

Switzerland - $631
(Cascadia $593)

Sweden - $526
(Tor-Buff-Chester $593)

Brazil - $2,254   Germany - $3,428
(Chi-Pitts $2,314)   (Bos-Wash $3,751)

Indonesia - $878   Finland - $247
(Nor-Cal $909)   (Denver-Boulder $256)

Mexico $1,178   South Korea - $1,129
(So-Cal $1,204)   (Char-lanta $1,149)

Hong Kong - $263
(Phoenix-Tucson $256)

Saudi Arabia - $711
(Dal-Austin $723)

Netherlands - $771
(Hou-Orleans $755)   Turkey - $788
(So-Flo $765)

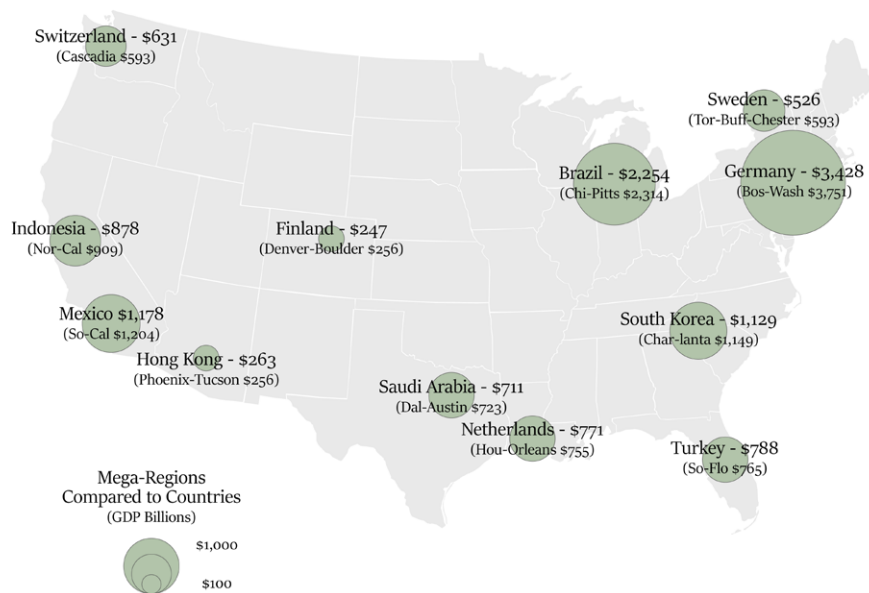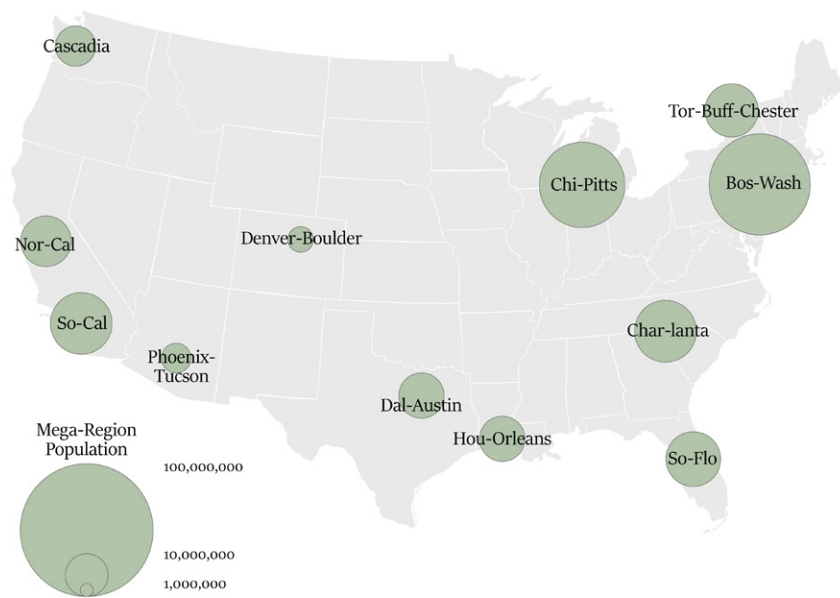Mega-Regions
Compared to Countries
(GDP Billions)
$1,000

$100

fig. 5.8-5.9: Adapted diagrams from Martin Prosperity Institute, (top) Mega-Regions of USA*,
Population, (bottom) Mega-Regions of USA*, GDP compared to countries
*Note that Vancouver, BC is part of Cascadia Mega-Region and Toronto is part of Tor-Buff-Chester
Mega-Region

At this time, politics, environmentalism, the economy, and other overlapping considerations all inspired independence movements for the new, independent country of Cascadia. With the federal governments of Canada and the United States doing very little to address the worsening effects of climate change and distancing themselves from the weight of their own actions, calls for the secession of the country grew and gained momentum. Meetings and rallies were held to promote the idea that the people of this place could do better for themselves as well as for the land and its natural systems. Varying boundaries were proposed but ultimately, the edges of the new nation were defined by the bioregion itself with the logic that these interconnected watersheds flowing to the Pacific Ocean should define the new country's borders. The country spanned from what was formerly known as southeastern Alaska and the Yukon down to northwestern California and stretched eastward to the continental divide.

CASCADIA

WATERSHEDS AND MEGAREGION

fig. 5.10: Cascadia watersheds and megaregion

As described by environmental writer Peter Berg,

"A bioregion is defined in terms of the unique overall pattern of natural characteristics that are found in a specific place. The main features are generally found throughout a continuous geographic terrain and include a particular climate, local aspects of seasons, landforms, watersheds, soils, and native plants and animals. People are also counted as an integral aspect of a place's life, as can be seen in the ecologically adaptive cultures of early inhabitants, and in the activities of present day reinhabitants who attempt to harmonize in a sustainable way with the place where they live." [1]

With this as their foundation, the pro-Cascadians enshrined the concept of bioregionalism as part of their new government. Bioregionalism is defined as, *"the idea that culture stems from place, and that watersheds better represent regions than...current political boundaries do."* [2] Historians have indicated that there was a clear rise in supporters for Cascadian succession around 2018 coinciding with many events including the Trans-Mountain pipeline fight, the latest UN Climate Report, and ever worsening wildfire seasons.

227 WATERSHEDS FORM THE CASCADIAN BIOREGION
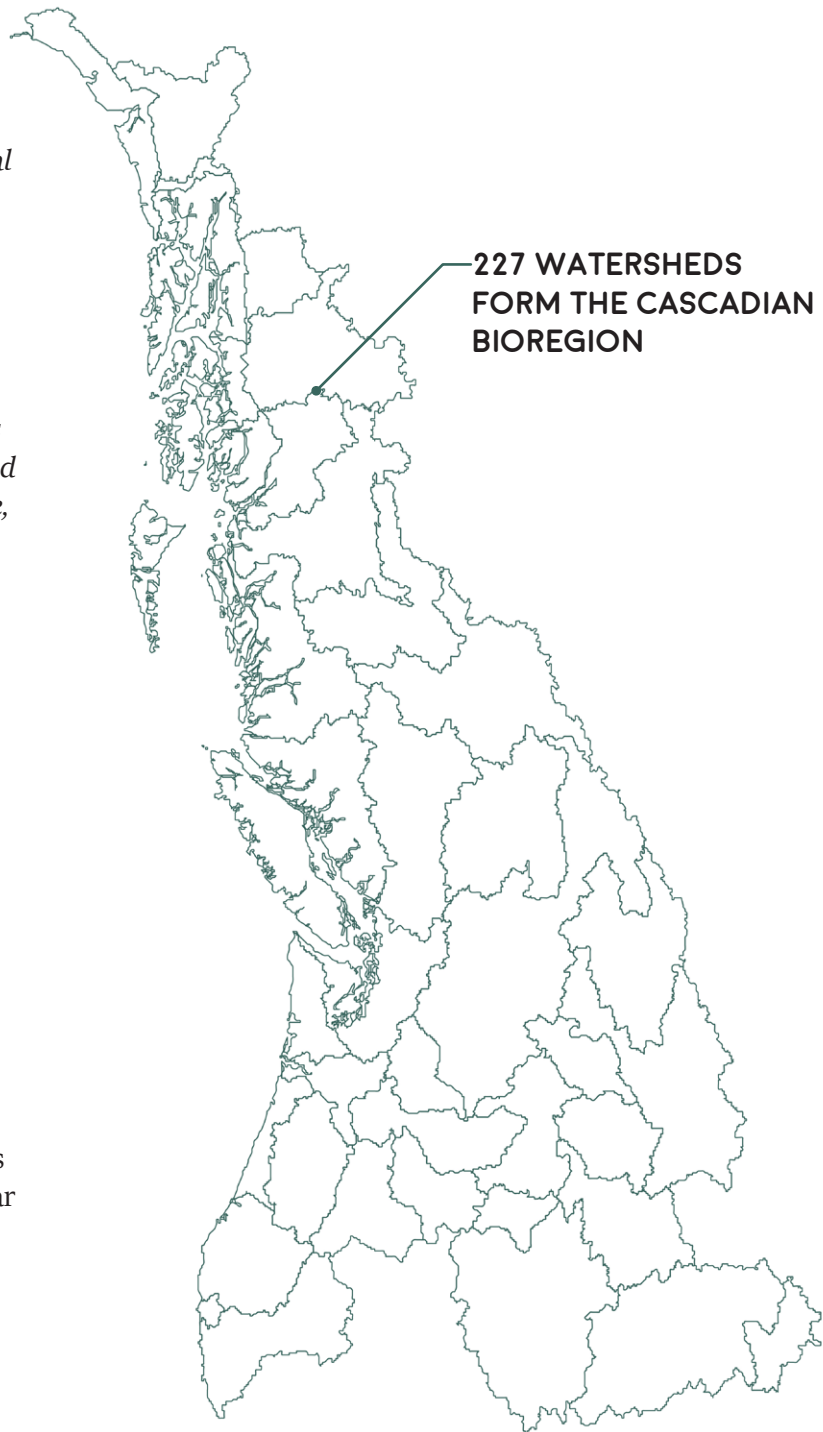
fig. 5.11: 227 watersheds of Cascadia bioregion

1.   Peter Berg, "Bioregionalism: An Introduction," Planet Drum, last modified August 20, 2018, http://www.planetdrum.org/bioregionalism_defined.htm

2.   cascadianow, "We're CascadiaNow! your local independence movement, now turned 501(c)3 non-profit and social movement. We're here on our unofficial Cascadia Day celebration, so ask us anything," Reddit comment, May 18, 2017, https://www.reddit.com/r/IAmA/comments/6c057a/were_cascadianow_your_local_independence_movement/

By the year 2064, the country of Cascadia, has been an independent, self-sustaining country for 40 years. The new country was founded upon the idea that the landscape, its functions, and its narratives are integral to the identity, values, and governance of this place. As highlighted in Cascadia's motto, "with the land as our guide," the Cascadian people place the bioregion's health at the core of all decision making.

fig. 5.12: Cascadian flag

With the goals of shifting completely to renewable energy, eliminating cars and airplanes, and banning fossil fuels ten years after secession, Cascadia made significant investments in its rail transportation networks soon after independence to give citizens better options for domestic travel. The first of these transportation focused projects was a high speed rail line within the Cascadian megaregion, connecting Vancouver, Seattle, and Portland along the former Amtrak right-of-way. Magnetic levitation, or mag-Lev, was the chosen rail technology as the system was electric and engineers had developed specialized trains capable of hyperloop speeds of 1000 km/h. Because of these technological advancements, both the express and local trains could run concurrently along the same line, but differ in their speeds and frequency of stops.

fig. 5.13: Express and local route map

Though the new country had cut their carbon emissions significantly, sea-level rise was no longer avoidable and the new rail line had to be elevated in many sections where the ocean had inundated at-grade tracks. Here, the broken concrete from narrowed former roads was stacked at the bottom of the columns to enhance habitat for marine life.
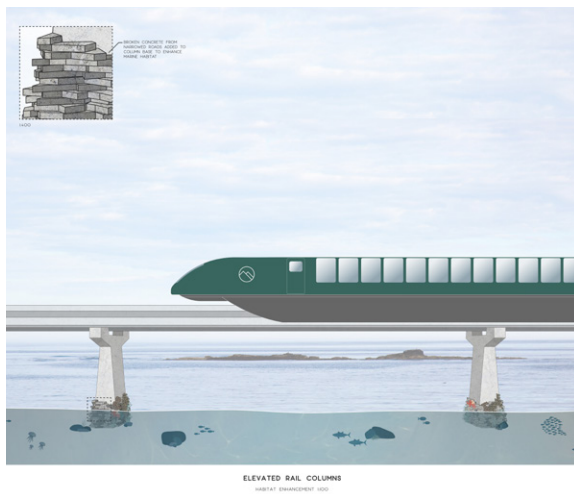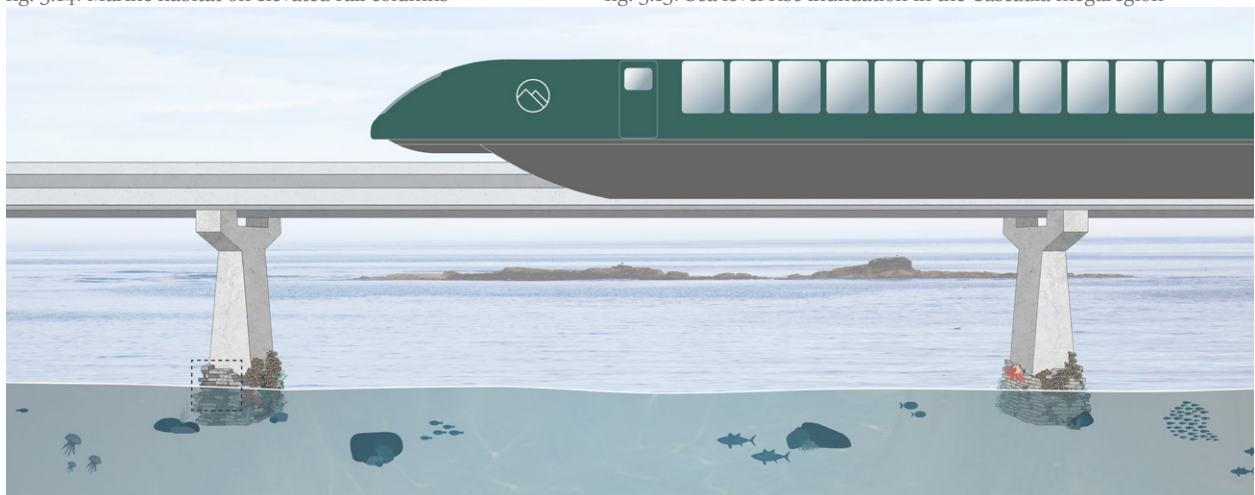

ELEVATED RAIL COLUMNS

fig. 5.14: Marine habitat on elevated rail columns

SEA LEVEL RISE INUNDATION

1:800,000

fig. 5.15: Sea level rise inundation in the Cascadia megaregion

Because the new rail line would condense space and time, commute times would be significantly reduced increasing the livability of the region. Because of this, the new line had the potential to spur rampant development. To promote cultural activities that celebrate the lands and waters of Cascadia, landscapes for outdoor recreation have been conserved and critical habitats in the region have been preserved. Areas zoned for new development and densification have been mandated to develop only on already disturbed land. Exclusively building on disturbed land or lands that were already built upon is a core principle of development in Cascadia.

DEVELOPMENT ZONING
1:800,000
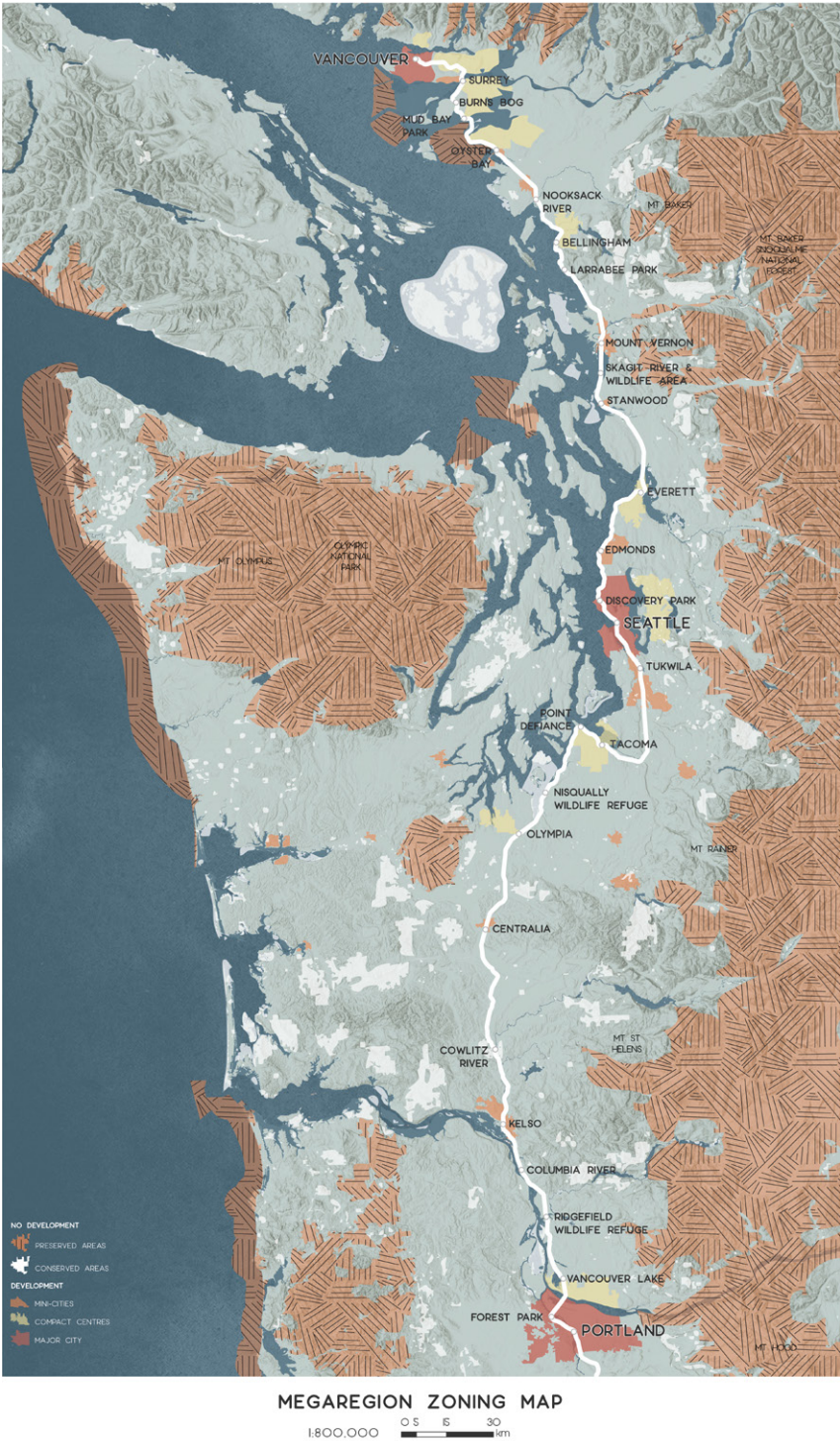
fig. 5.16: Development zoning

MEGAREGION ZONING MAP
1:800,000

fig. 5.17: Megaregion zoning

'Mini-cities' like the now named Oyster Bay, which grew on the grounds of the former Peace Arch border crossing, for example, follow this tenet. When Cascadia declared independence on May 18th, 2024, the anniversary of the Mount Saint Helens eruption, it was here that many Cascadians gathered to celebrate and welcome each other to their new nation. At this event, in the spirit of cooperation and renewal, a vision for the 'mini-city' emerged.

With the beginning of local train service to Oyster Bay and the elimination of cars, the plethora of roads and parking lots on the site were no longer needed. Here, co-op housing, collective community spaces, green industrial facilities, and a collaborative commercial district were all built to support the community's residents. The new buildings in the community have been built closely together to make the most of the previously concreted spaces, but the heights have been restricted to 6 storeys so as not to alienate those living or working higher up from the rest of the community or the land. Though the community is quite walkable, there has been a rise in alternative transportation methods such as bicycles and horses

fig. 5.18: Oyster Bay site plan


fig. 5.19: Oyster Bay section

to easily transport goods and to journey to areas not serviced by the local train. With the rise in popularity of horses especially, some of the older buildings on the site have been converted to stables with an outdoor paddock nearby. Some space previously dedicated to personal gardens and a golf course have been converted into agricultural fields and the food that is cultivated feeds the residents of the community. Similarly, oyster, clam, and kelp beds are now kept in the shallow waters in the ocean and many Cascadians travel here to learn how to harvest and nurture these resources themselves. The remainder of the former golf course has been transformed into a frisbee golf course, the new national sport, which does not require short grasses or irrigation. Here, Oyster Bay residents keep goats who feed on the native grasses that have replaced the golf course green. To sustain the energy demands of the community, a bird friendly wind farm was built close to the ocean to harness the energy of the winds blowing in from the Pacific.

fig. 5.20: Rotated Peace Arch and 49th parallel pier
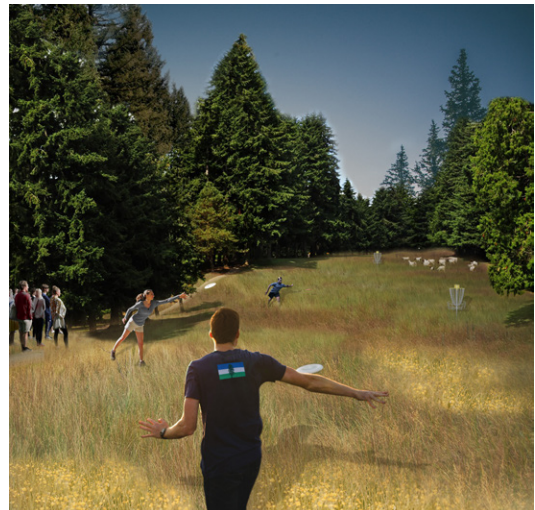
LIFE AT OYSTER BAY,
CASCADIA

fig. 5.21-5.23: (top) wind turbines, (middle) frisbee golf, (bottom) 'The Slash' trail coming in to Oyster Bay

Shortly after secession, the 49th parallel border had been reappropriated into a hiking trail that ran all the way from the Pacific to the continental divide. Cut into the vegetation before Cascadian independence, the trail was 10 meters wide, 650 km long, and came to be known as 'The Slash'. Oyster Bay acts as both a staging ground for those about to embark on this pilgrimage, as well as a restful destination for those completing their journey. Now turned to be open to the 49th parallel, the Peace Arch, marks a significant portion of the trip for those arriving and departing from the site.

fig. 5.24: Cascadia rail promotional poster for 'The Slash'

Along the rail corridor, scenic stops have been added on the local train's route where the line runs adjacent to national parks, wildlife refuges, and other areas of conservation that allow public access. Though the small train stations at these locations are new, most of the infrastructure that supports visitors is not. At Larrabee Park for example, a small station has been added to give citizens access to the hiking, cycling, camping, fishing, and kayaking facilities that predate Cascadian secession. The park is most popular as a launch site for kayak trips to the San Juan Islands and kayak storage has been added at the station itself, saving visitors from carrying their kayaks uphill to their campsites. Roads in the area were no longer needed for vehicle access and are now most useful for those cycling or horseback riding into the site. Because the road surface was wider than necessary and impeded water infiltration, the edges of the roads have been broken and stacked, like at the base of the rail columns to increase biodiversity.

LARRABEE PARK STATION

fig. 5.25: Larrabee Park Station site plan
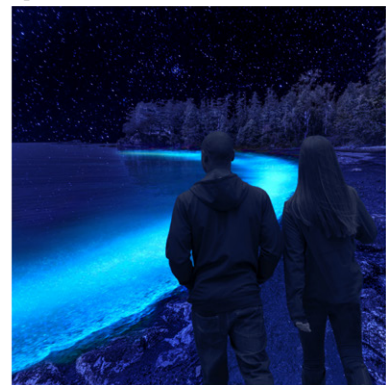
VISITING LARRABEE PARK,
CASCADIA

fig. 5.26-5.28: (left) kayak storage at train platform, (middle) stacked broken concrete at edge of old road, (right) bioluminescence at night

Near the shoreline are cabins that were purchased from homeowners by the Cascadian National Park Service. Because the cabins are on conservation land, the ownership and oversight by one owner rather than many meant that the cabins could all be retrofitted to be as sustainable as all new Cascadian buildings and the Park Service now rents out the cabins to visitors.
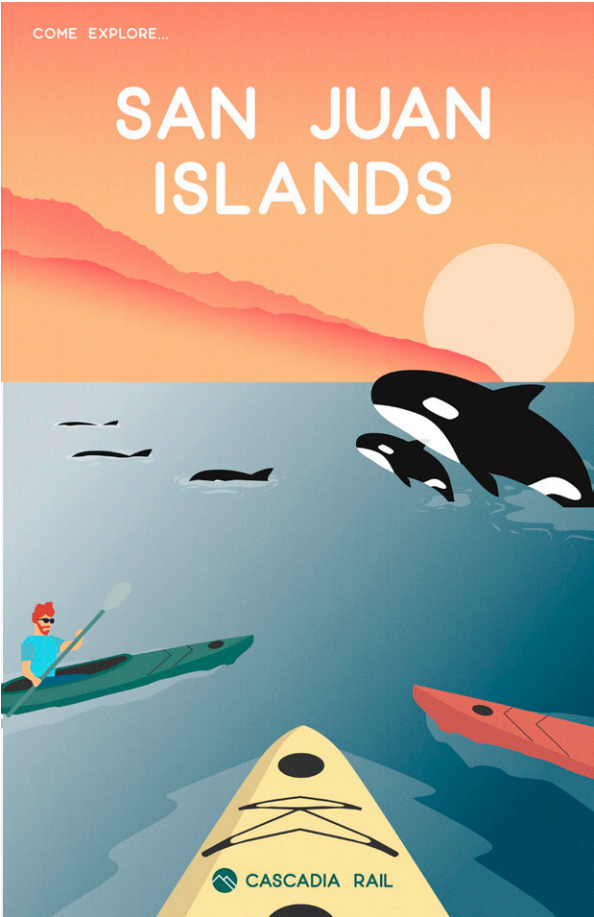

fig. 5.29: Cascadia rail promotional poster for the San Juan Islands

fig. 5.30: Rental cabin

Onboard the ultra-high speed express trains, the rail travel experience is completely unique. Because the train travels at 1000 km/h, windows were eliminated to improve aerodynamics. To replace the traditional train window, Cascadia Rail partnered with local tech companies to develop an interactive window and onboard system that would allow passengers to explore the landscape from the comfort of the train. Developed specifically for the express trains, the 'Rove' system provides passengers with views of the preserved landscapes in and around the Cascadian megaregion. With footage collected by drones, the landscapes that were once completely off-limits to people are now ostensibly explorable simply by riding the express train.

fig. 5.31: Experience onboard the express train

CASCADIAN RAIL LOGO TO GO BACK TO HOMEPAGE SCREEN (RANDOMIZED PRESERVED LANDSCAPE)

ROUTE MAP TO SHOW WHERE THE TRAIN IS ON ITS JOURNEY AND INDICATES PRESERVED LANDSCAPES

CAMERA TO TAKE AND SEND PICTURES AND VIDEOS

SWIM-UNDER TO EXPLORE UNDERWATER HABITATS CREATED BY TRAIN COLUMNS

EXPLORE TO DIGITALLY VISIT DIFFERENT PRESERVED LANDSCAPES IN THE CASCADIA MEGAREGION

ROVE INTERFACE
NTS

fig. 5.32: The Rove interface onboard the express train

Rove provides passengers the options of a Route Map, a Camera function, a Swim Under view, and an Explore Mode. The Route Map serves to indicated the train's progress along the route as well as signal the preserved landscapes viewable in the Explore mode. The Camera mode allows passengers to take photos and videos of the landscapes they see to send to themselves and others. The Swim-Under function provides views from below the ocean's surface. Specifically, the Swim-Under view allows passengers to see the different marine habitats created by the broken concrete stacks at the base of the rail columns. The final option on the 'Rove' dock is that of the Explore

fig. 5.33: Rove Route Map, Camera, Swim-Under Modes

fig. 5.34: Cascadia Rail promotional poster for Rove onboard the express train

fig. 5.35: Rove Explore mode

Mode. In the Explore mode, passengers are now able to see and contemplate the preserved landscapes of the region and go where previously they were unable. In the Olympic National Forest for instance, off limits to human exploration, intact habitats that have seen very little human influence are now viewable onboard the express train.

Journey Through Cascadia prompts the question: What if we imagined a country that put the natural systems of the land and water first. A country that promoted cultural activities tied to the land, improving both the health of the bioregion and the health of its citizens.
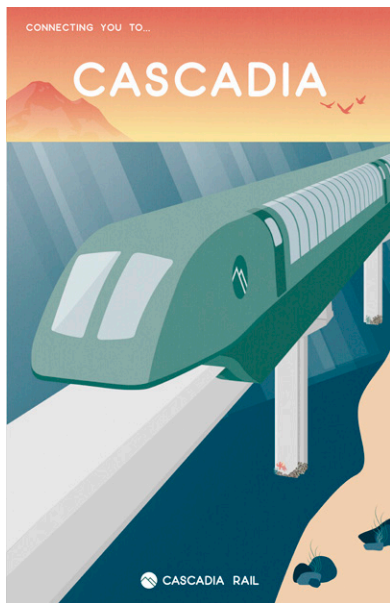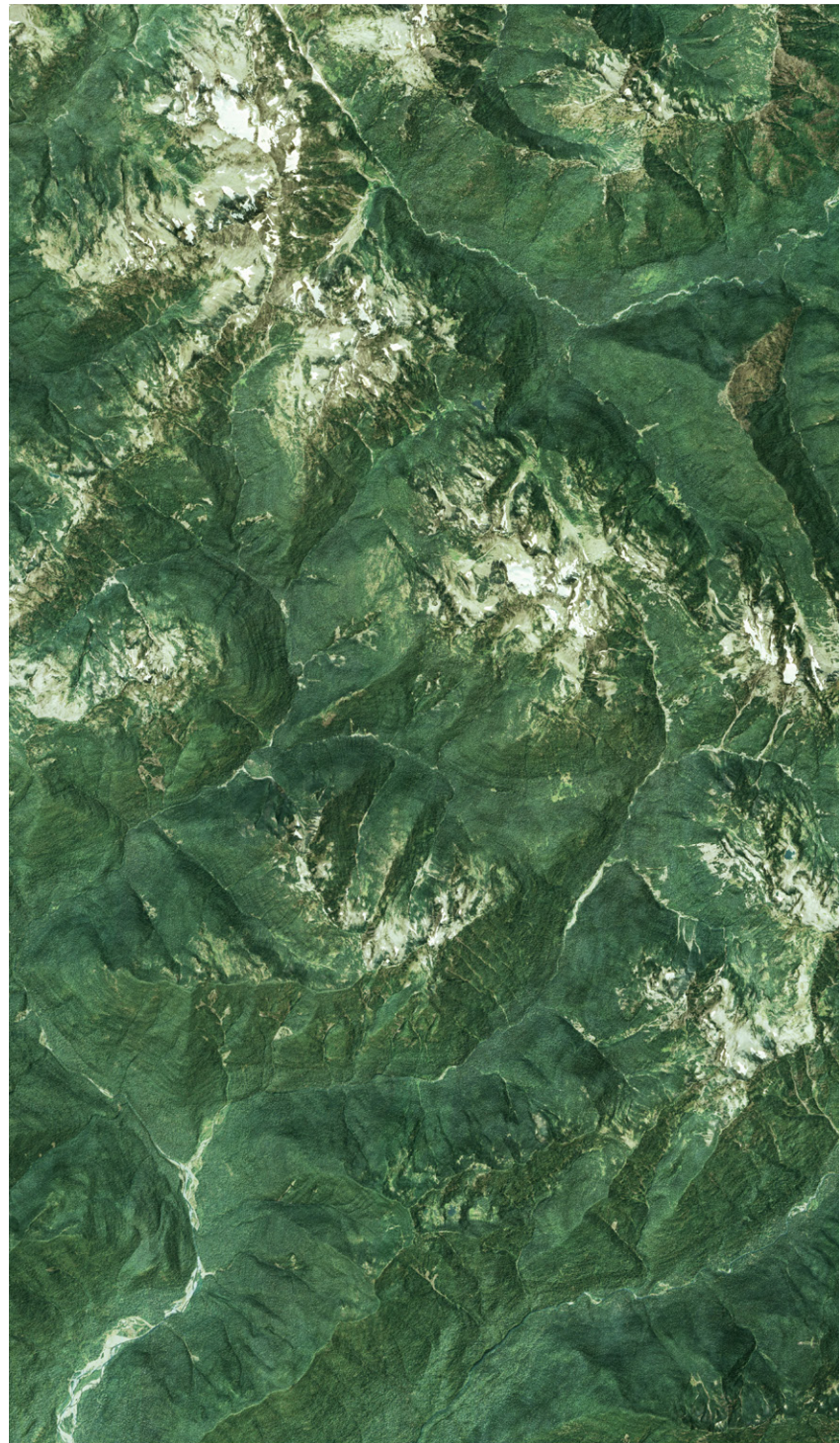

fig. 5.36: Cascadia Rail Promotional poster

PRESERVED OLYMPIC NATIONAL FOREST

fig. 5.37: Preserved Olympic National Forest site map

End Matter

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