

Climate Justice in Architecture

Design centering both the environmental and social aspects of climate change.

Climate justice in architecture refers to engagement, advocacy, planning, and design that draw down emissions; build resilience and capacity; support human, cultural, and ecological health; and protect all communities in the era of climate change.

Committee on the Environment

AIA Knowledge Community



Sealaska Heritage Institute Arts Campus, Heritage Square, and Sealaska Cultural Values Totem Pole
Image Credit: Zane Jones

Sealaska Heritage Institute

This case study highlights an exemplary architecture project that prioritized both environmental and social aspects of climate change in its design process, community engagement, and final design. It aligns with many aspects of the AIA Climate Justice in Architecture Taxonomy across the building, neighborhood, regional, and global scales.

Sealaska Heritage Institute

Juneau, Alaska



Heritage Plaza
Image Credit: MRV Architects

Summary

The Sealaska Heritage Institute (SHI) was founded in 1980 to celebrate and perpetuate the history, heritage, and cultures of the three Native peoples served by the Sealaska Corporation—the Tlingit, Haida, and Tsimshian. SHI’s architectural design is notable, in part, for embracing regional Native building materials and monumental formline designs within a historic district whose design standards required new buildings to meet antiquated historical standards, designed to blend in with existing buildings from Juneau’s mining heyday in the late 19th and early 20th centuries, which ignored Indigenous people and architecture that predated them.

The SHI campus is anchored by the LEED Gold-certified Walter Soboleff Building, which houses exhibition space for historic and contemporary Alaska Native art, as well as SHI offices. Across the street, SHI converted a surface parking lot into the only pedestrian plaza in the city center, surrounded by artist studios and classrooms. The overall effect is a welcoming space that serves as a community hub for the Tlingit, Haida, and Tsimshian; a regional center celebrating Native heritage, history, and art of the Pacific Northwest; and one of the preeminent centers of cultural exchange in Southeast Alaska. Designed as a demonstration project blending local materials and longstanding Native construction practices with Western building science and sustainability metrics, the complex exemplifies Southeast Alaska Native core cultural values:

- Haa Aaní | Íitl' Tlagáa | Na Laxyuubm: Honoring & Utilizing Our Land
- Haa Shuká | Íitl' Kuniisii | Na Łagigyetgm: Honoring Our Ancestors & Future Generations
- Haa Latseení | Íitl' Dagwiigáay | Na Gatlleedm: Strength of Body, Mind & Spirit
- Wooch Yáx | Gu Dlúu | Ama Mackshm: Social & Spiritual Balance

More information: mysealaska.com/AboutSealaska/MissionCoreValues

Project overview

BUILDING PROGRAM TYPE(S):
Cultural

PROJECT TYPE:
New Construction/Addition

TOTAL FLOOR AREA:
30,000 sq. ft.

TOTAL USERS:
104 staff, 50,000+ visitors, beneficiaries

SITE AREA:
6,000 sq. ft.

NUMBER OF FLOORS:
4

PROJECT CLIMATE ZONE:
ICC Climate Zone 6A

PROJECT SITE:
Previously developed land, Historic structure or district

PROJECT SETTING:
Urban

YEAR OF SUBSTANTIAL COMPLETION:
2022

COST OF CONSTRUCTION (EXCLUDING FURNISHING):
\$18M

THIRD PARTY RATING SYSTEM:
LEED Gold

Project team

OWNER:
Sealaska Heritage Institute

ARCHITECT:
MRV Architects

MEP ENGINEERS:
PDC Engineers, Haight and Associates

STRUCTURAL ENGINEER:
BBFM Engineers, Inc.

CIVIL ENGINEER:
PDC Engineers

GENERAL CONTRACTOR:
Dawson Construction, Inc.

“The core cultural values we follow at the Sealaska Heritage Institute allowed our people to survive and thrive here in Southeast Alaska for at least 12,000 years before modern heating, before ventilation, before anything. We are good stewards of the environment. It’s who we are. It’s the way we work. It’s the way we live. And it’s the way we think from an Indigenous perspective. The way we’ve routed the construction of our properties. And the rationality of how we’ve utilized Indigenous art and Indigenous materials in the construction of our projects speaks to the heart of what climate justice is about.”
—Lee Kadinger, Chief of Operations, Sealaska Heritage Institute



Entrance to the Walter Soboleff Building in Downtown Juneau, Alaska
Image Credit: Ken Graham Photography

Design Process

The Sealaska Corporation is the Alaska Native corporation for Southeast Alaska, representing the interests of the Tlingit, Haida, and Tsimshian peoples, who have called the region home for more than 12,000 years. The corporation founded Sealaska Heritage Institute (SHI) in 1980 to celebrate and perpetuate the heritage, history, and cultures of the three Native peoples it serves. In 2008, the Sealaska Corporation purchased a property next to its headquarters in downtown Juneau and donated it to SHI with the goal of accommodating expanding staff and creating a new space for programs, education, and outreach. The second phase of development, which converted a surface parking lot into a pedestrian plaza surrounded by classrooms and artist studios over an underground parking garage, was completed in 2022.

Design competition

SHI held a design competition for the anchor building, the Walter Soboleff Building, to signal its intention of establishing Juneau as the Northwest Coast Native arts capital—similar to the role the Institute of American Indian Arts in Santa Fe, New Mexico, plays for Southwestern Native art. Central to the design challenge was a call for concepts that integrated the highest contemporary sustainability standards and techniques with the traditional knowledge and underpinnings of the Native cultures of Southeast Alaska.

Local firm MRV’s winning design drew on their long history collaborating with Tribal organizations in Southeast Alaska, starting with their founder Linn Forrest, who moved to Alaska from the lower 48 states in the 1930s to document and restore Tribal houses through the Civilian Conservation Corps. That decades-long relationship enabled MRV to communicate effectively with SHI staff and master craftsmen,

interpret project goals, and co-create new hybrid building technologies that apply traditional materials and techniques in contemporary commercial buildings.

Native reviewers with expertise in design facilitation guided the process to blend Alaska Native design concepts, materials, construction techniques, and artistic expression with Western green building strategies. The architecture of the Walter Soboleff Building was particularly inspired by Northwest Coast clan houses built by the Tlingit, which feature large-scale flat carvings on their façades and carved structural columns throughout.

“SHI set LEED Gold as a design goal ‘to comport with core cultural values that honor past, present, and future generations. ... Although we realized that meeting the Gold standard would mean higher initial construction costs, we had no other alternative but to ensure that we complied with our core cultural values, such as Haa Shuká, which translates as honoring our ancestors and future generations. ... Buildings have an enormous impact on the well-being of people and the planet, and we’re proud to say we’ve achieved one of the greenest LEED levels in the world.’ ”
—Dr. Rosita Kaaháni Worl, President,
Sealaska Heritage Institute (Alaska Business, 2019)

Increasing the visibility of Alaska Native culture, history, and art in the center of Juneau

The property Sealaska Corporation purchased to house the future SHI headquarters was located in the historic district of downtown Juneau. The building code overlay identified the period of architectural significance as 1889–1944, encompassing the late Victorian through Art Deco periods and explicitly excluding traditional Alaska Native architectural features.

While the SHI complex meets the spirit of most of the requirements in the historic standards—including building scale, massing, a transparent storefront along the sidewalk, and canopies to protect pedestrians from the climate’s near-constant rain—the monumental formline panels created by celebrated Haida master artist Robert Davidson for the Walter Soboleff Building; the glass canopy displaying etched formline designs by artist Steve Brown who studied with Tlingit master artist Nathan Jackson; and the arts campus pavilions that evoke Tlingit, Haida, and Tsimshian bentwood boxes challenge the historic standards’ emphasis on Western architectural styles.

After a prolonged debate within the Historic Review committee about whether or not Native art and architecture met the design standards, the borough assembly removed the SHI campus from the historic district, allowing construction to proceed.

While the debate did not lead to an immediate update to Juneau’s historic district design standards, it started a local conversation about how to do a better job of acknowledging and celebrating the cultures living side by side in Southeast Alaska. The city’s most recent Cultural Historic Preservation plan recognizes Indigenous cultures and histories as significant to Juneau’s sense of place.

“I think the Walter Soboleff Building and the larger campus project have changed the mindset of the preservationists in Juneau. In fact, the recent cultural preservation plan has some cover images of the SHI project, presenting it as the gold standard of how Indigenous design fits into historic preservation. So, [the debate in the Historic Review Commission] had a tremendous ripple effect. It has created a cultural identity that is recognized alongside other identities in Juneau.”

—Zane Jones, AIA, Partner & Senior Architect, Principal-in-Charge, MRV Architects

Blending Alaska Native and Western design and construction practices

SHI worked with MRV Architects to use the design and construction process as a model for weaving Indigenous building and environmentally responsive technologies together with Western construction practices and regulations. The project delivery process required flexibility and ingenuity on all sides to design, procure, manufacture, install, and verify code compliance for the new construction.

SHI worked closely with MRV Architects to identify opportunities for integrating Indigenous materials and construction technologies adapted to the harsh climate of Southeast Alaska, which experiences freezing temperatures, rain, and high humidity for much of the year. For example, the heavy timber cedar columns in the Walter Soboleff Building both echo pairs of totem poles that would grace the entrance and interior of regional clan houses and meet fire code ratings for commercial buildings. Similarly, large scale screens decorated with formline designs that adorn the exterior of many longhouses were reinterpreted in metal on the exterior by Haida and Tlingit master artist Robert Davidson and in glass on the interior by Tlingit master artist Preston Singletary. Untreated local yellow cedar cladding replaced the prefabricated metal panels often used in high-efficiency buildings in Southeast Alaska. The cedar panels were assembled off-site and quickly installed on custom steel brackets. The final assembly meets requirements for a 100-year building envelope system.

SHI worked with designers and Alaska Native artists and builders to translate traditional construction techniques from Northwest Coast longhouses into details in the building information management (BIM) computer model. The resulting architectural plans clarified which elements of the building would be constructed by Alaska Native artists and builders using traditional methods, which elements would be manufactured using contemporary commercial construction practices, and how these components would be coordinated during installation.

“The task, then, was both a sense of material, or ‘being,’ that the building material and environment impose on the design. Instead of looking to leading products and the latest and greatest technology, the design team at MRV Architects looked to how the ancient practice of thick-cut yellow cedar could be added to a sealed envelope housing a contemporary high-efficiency mechanical system. Thick-cut yellow cedar planks, two inches or more, have incredible natural weathering properties. Yellow cedar is naturally anti-fungal and is one of the slowest weathering local wood species.”

—Zane Jones, AIA, Partner & Senior Architect, Principal-in-Charge, MRV Architects (Jones, 2018)

Project financing

SHI built the campus in several phases due to evolving programmatic needs and fundraising timelines. Initially housed within the headquarters of the Sealaska Corporation, SHI began expanding into its own office and exhibition space when its programming outgrew existing capacity. After purchasing an adjacent property in 2008, which had sat abandoned for a number of years after the previous structure was destroyed in a fire, the corporation donated the site to SHI for the future campus.

SHI included anticipated construction premiums associated with decarbonization and climate resilience strategies in its overall fundraising goal, including LEED Gold certification for the Walter Soboleff Building. Because the campus is intended as a 100+ year capital investment, SHI sent clear direction to the design and construction team that they were willing to pay a modest construction premium to minimize their long-term operations and maintenance costs—particularly for building systems.

SHI President Dr. Rosita Kaaháni Worl and COO Lee Kadinger built public support for the projects through conversations with state legislators and the Juneau borough assembly, creating a strong foundation for public sector grants and private philanthropic support. This included a \$3 million investment from the City and Borough of Juneau, a \$5 million investment from the State of Alaska for the Walter Soboleff Building, and a \$5.6 million federal grant from the U.S. Department of Education for the arts campus. Local artists also supported the fundraising effort. For example, Haida master artist Robert Davidson donated his painting *Greatest Echo*, which inspired the monumental formline screens on the Walter Soboleff Building, to help raise funds.

The COVID pandemic temporarily slowed the fundraising effort for the arts campus, which had raised \$10.4 million of the \$13.2 million budget by 2020. With support from the City and Borough of Juneau, including a \$1.5 million contribution, SHI decided to start construction that summer and build in phases while continuing outreach to funders.

SHI has capitalized on the success of the Walter Soboleff Building and arts campus to seek funding for public art installations radiating out into the community from the campus that will help establish Juneau as the Native arts capital of the Northwest Coast. For example, a \$2.9 million grant from the Mellon Foundation in 2023 made it possible for them to hire Tlingit, Haida, and Tsimshian master artists to carve ten totem poles along the waterfront. The project, called Kootéeyaa Deiyí (Totem Pole Trail), will eventually comprise 30 totem poles leading from the waterfront to the SHI arts campus plaza, known as Heritage Square.

“We looked at having hardwood flooring in the Walter Soboleff Building. But after going back and forth and looking at the maintenance and the cost of having to refinish it, we went with another option—a large tile that looked almost like an old growth tree ring. We ended up playing with that pattern, and we are much happier in the long run. There is no maintenance, aside from mopping and cleaning. It is holding up wonderfully eleven years later, and you would think it was installed yesterday. We changed what we were going to do initially when we considered not only the environmental impacts of the material but also the short-term and long-term costs.”

—Lee Kadinger, Chief of Operations,
Sealaska Heritage Institute

Essential climate justice design components include:

- 1. Leading with Alaska Native core cultural values:** Setting high environmental standards for the campus reflected SHI’s core cultural values around protecting and honoring past, present, and future generations.
- 2. Centering cultural exchange:** The campus architecture set a precedent for architectural design that weaves together traditional construction materials and techniques with contemporary building science in Juneau’s historic district, whose design standards had previously ignored the 12,000-year history of Native peoples in Southeast Alaska.
- 3. Decarbonization and resilience strategies supporting social connections:** This urban infill project converted an unsightly vacant property and surface parking lot into the only open-air public space in downtown Juneau. The SHI campus promotes walkability in the center city and reduces urban heat island effects, street flooding risk, and nonpoint water pollution entering nearby Gastineau Channel.

AIA Climate Justice in Architecture Taxonomy

Climate change both creates new and amplifies existing environmental and social challenges across seven themes or categories: Social determinants of health, cultural connection to place, economic development without displacement, environmental justice, ecosystem health, climate change health and resilience, and decarbonization. The Climate Justice in Architecture Taxonomy addresses both the environmental and social dimensions of climate change, guiding teams to design architectural responses that impact these themes at three scales: Building occupants, the surrounding neighborhood, and regionally and globally.

The taxonomy aligns and connects with the AIA Framework for Design Excellence, which represents the defining principles of design excellence in the 21st century. The framework is comprised of 10 principles and informs progress toward four outcomes: A zero-carbon, healthy, resilient, and equitable built environment.

Sealaska Heritage Institute addresses all three scales in the framework, with particular emphasis on the building and regional/global scales.

Climate Justice Taxonomy	Impact of Design Features by Spatial Scale			Alignment with Framework for Design Excellence					
	Building	Neighborhood	Regional/Global						
 Social Determinants of Health				 Integration	 Equitable Communities	 Economy	 Well-being	 Resources	
 Cultural Connection to Place				 Integration	 Equitable Communities	 Well-being	 Resources	 Discovery	
 Economic Development without Displacement					 Equitable Communities	 Economy			
 Environmental Justice									
 Ecosystem Health				 Integration	 Equitable Communities	 Ecosystems	 Well-being	 Change	
 Climate Change Health & Resilience				 Integration	 Equitable Communities	 Ecosystems	 Economy	 Energy	
				 Well-being	 Resources	 Change	 Discovery		
 Decarbonization				 Integration	 Equitable Communities	 Water	 Energy	 Well-being	
				 Resources	 Change	 Discovery			

Overview of AIA Climate Justice in Architecture Taxonomy themes and spatial scales: Sealaska Heritage Institute. Source: Biositu, LLC



Shuká Hit Community Space in the Walter Soboleff Building Evokes Regional Alaska Native Clan Longhouse Architecture
Image Credit: Ken Graham Photography

Social determinants of health

Creating a health-promoting indoor environment through design:

The buildings on the SHI campus are designed to promote mental health in a climate that is rainy and/or dark for much of the year. Relevant green and healthy building design elements include daylighting; biophilic materials, particularly wood paneling and heavy timber columns; and occupant control over lighting and thermal comfort.

Reducing exposure to airborne pollutants in the interior environment:

Low-emitting paints and coatings were installed throughout the campus to reduce occupant exposure to pollutants emitted from interior finishes. The project also met requirements for the LEED Outdoor Air Delivery Monitoring credit, which further protects building occupants from exposure to outdoor air pollution entering the indoor environment.

Reducing exposure to traffic-related air pollution and vehicle-related injury:

Downtown Juneau boasts a high percentage of residents who commute using public transit, walking, or cycling—27.2%, compared with 8.6% in the City and Borough of Juneau, 9.5% in Alaska, and 6.7% in the U.S. Moving a surface parking lot underground and replacing it with a pedestrian plaza surrounded by buildings encourages that culture of active transportation by reducing plaza users' exposure to traffic-related air pollution and the risk of vehicle-related injury in the heart of downtown Juneau.

Enhancing neighborhood public safety in one of Juneau's most visited areas:

SHI is located in an area that has been identified on the Juneau Community Crime Map as moderate- to high-risk for theft, assault, and larceny. The pedestrian plaza and educational and cultural programming hosted by SHI reduce the risk of crime by increasing foot traffic.

“[SHI] will bring needed vitality to the downtown region and generate economic and educational benefits to both Juneau and the region.”

—Beth Weldon, Mayor, City of Juneau, Alaska (ICT, 2020)

Creating a regional Alaska Native art and culture educational hub for all ages:

The arts campus filled a gap in Native arts and culture programming in Southeast Alaska. It helps perpetuate traditional Alaska Native arts and cultural practices and fosters contemporary artists by offering classes to all ages both in person and online, as well as making studio space available to local artists and craftsmen.

Supporting short- and long-term mental health among Native peoples in Southeast Alaska:

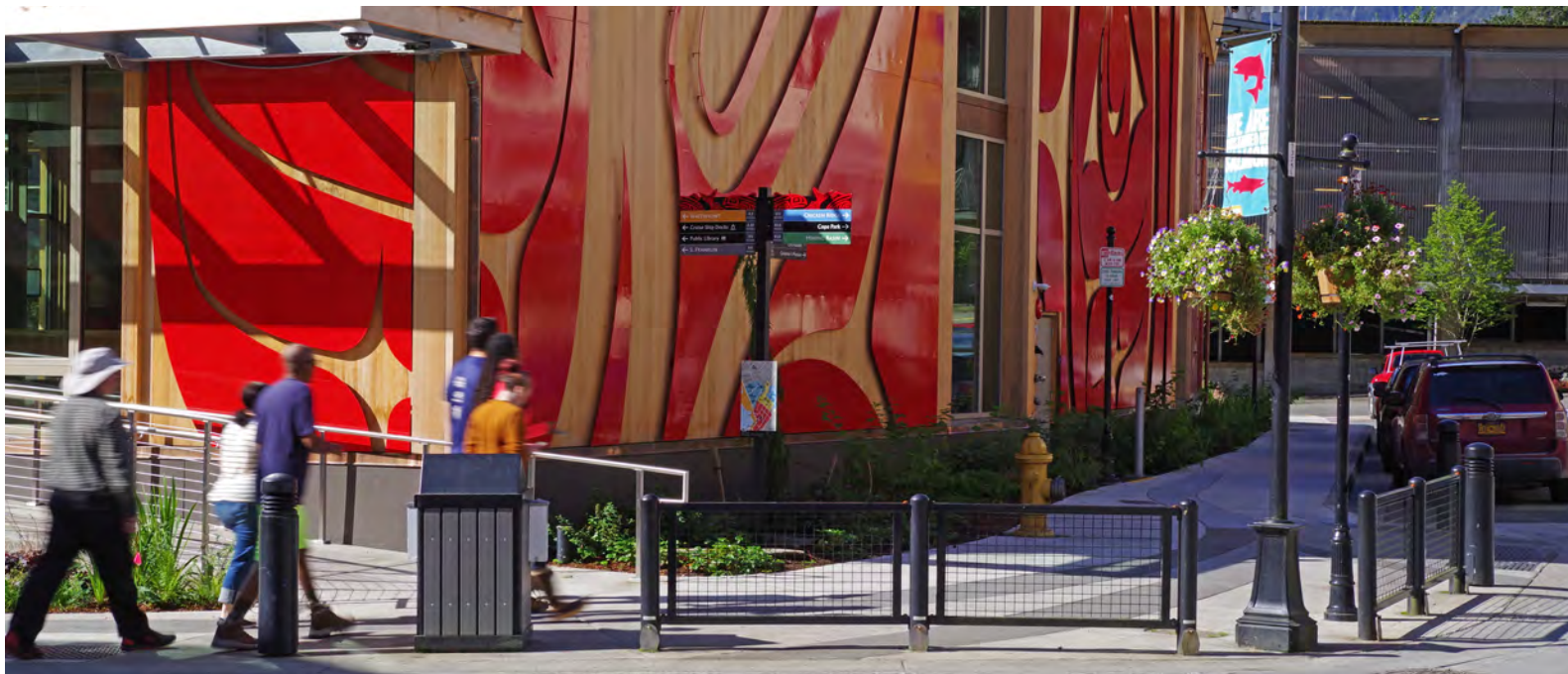
SHI began construction of the arts campus during the COVID pandemic, in part as a gesture of optimism and hope for the future during a difficult time. Classrooms were fitted out with technology to enable distance learning during the pandemic. By constructing the first public pedestrian plaza in downtown Juneau and expanding venues for cultural events, the campus is designed to support social connections and community building, which contribute to mental health.

“It’s really amazing that we’re in the capital city of Alaska, and the arts campus is truly the first public plaza. That was especially important during the COVID years. It’s amazing that that was done by the Sealaska Heritage Institute.”

—Zane Jones, AIA, Partner & Senior Architect, Principal-in-Charge, MRV Architects

“Sealaska Heritage Institute also hopes the project will boost morale in a year when bad news has prevailed. We’re living in a time when people are just trying to get by, but the Sealaska Heritage Arts Campus is about the future. It’s about a vision to help revitalize Juneau and provide opportunities in-person and online for artists and the public. We’re living in a new and challenging world, but the campus will rise in spite of that.”

—Dr. Rosita Kaaháni Worl, President, Sealaska Heritage Institute (ICT, 2020)



Street Level Wayfinding Signage Directing Pedestrians to Heritage Plaza at the Sealaska Heritage Institute
Image Credit: Zane Jones

Cultural connection to place

Celebrating the living and vibrant Native cultures of Southeast Alaska through architecture: The architecture of SHI integrates culturally significant building forms and climate-responsive technologies with contemporary Western materials and construction practices. For example, a clan house Shuká Hít is embedded within the ground floor of the Walter Soboleff Building, where it both serves the traditional purpose of providing a place for community gatherings and gives visitors the opportunity to experience the materiality of traditional Tlingit hand-adzed cedar beams and panels. Similarly, the classroom pavilions that ring the pedestrian plaza on the arts campus resemble bentwood boxes capped with red cedar, a Tlingit, Haida, and Tsimshian art form that represents the place where the Raven keeps knowledge.

Demonstrating the relationship between traditional Alaska Native building science and artistic expression: The metal rain screens and untreated cedar cladding on the Walter Soboleff Building demonstrate how traditional longhouses integrated public art—through monumental formline paintings—with rainscreen technology and rot-resistant wood to create buildings that lasted more than 100 years in a harsh climate.

Reinforcing the living nature of Alaska Native building technologies through ongoing cultural practice: Activities hosted at SHI foster the continued use of traditional materials, such as hand-adzed cedar. A carving area is set up outside the building during summer months to shelter Native cedar carving artists. As MRV architect Zane Jones writes,

“The fresh smell of yellow and red cedar permeates the air around these carvers as they continue to practice their art.” (Jones, 2018).

“We strove to build a work of art that befits the great traditions of our ancestors. We have taken an ancient art form and rendered it on metal in a modern way. To me, it expresses the antiquity of our culture but in a new and vibrant way.”

—Dr. Rosita Kaaháni Worl, President,
Sealaska Heritage Institute (ICT, 2022)

Setting a precedent for recognizing Alaska Native architecture as a valued part of Juneau’s history: While the SHI campus was technically removed from the Juneau historic district to speed the permitting process, the fact that it blends Native art and traditional materials and building techniques with the historic overlay design standards has set a precedent for expanding the definition of historic architecture in Juneau to include the Native cultures who have called Southeast Alaska home for over 12,000 years.

“The city didn’t want Indigenous looking buildings in the historic district. So that was kind of a difficult topic. We lost at the Historic Resources Advisory Council. We lost at the Planning Commission, where they felt the building needed to look Victorian or Art Deco in nature, not following Native architecture. So we appealed to the assembly. Through their wise review, they ended up just removing our lot from the historic district. That was the creative solution to get us to a point where we could build a building that was inspired by 12,000 years of history, that was inspired by our Indigenous core cultural values, and, further, takes into account Indigenous science—how buildings have survived here for 12,000 years. So, that was our initial push to have a building that represents us and incorporates the environmental stewardship that Alaska Natives have had for 12,000 years that’s predicated on utilizing the land while also respecting the land.”

—Lee Kadinger, Chief of Operations,
Sealaska Heritage Institute

Creating an indoor-outdoor venue for Alaska’s largest social

gathering: The campus acts as one of the main venues for Celebration, a biennial dance-and-culture festival that features more than 2,000 dancers from 50+ dance groups, juried art shows for adults and youth, a Northwest Coast art market, a parade through downtown Juneau, and opportunities to sample Alaska Native food.

“[Celebration is] a time when Tlingit, Haida, and Tsimshian people come together to celebrate their cultural survival and also to share their cultures with the public.”

—Dr. Rosita Kaaháni Worl, President,
Sealaska Heritage Institute (SHI, 2022)

Raising the visibility of Alaska Native history, culture, and art in the state capital:

While 14.3% of Alaskan residents and 9.4% of residents in the City and Borough of Juneau self-identify as American Indian or Alaska Native on the U.S. Census, compared with 0.8% nationwide, the SHI campus is the first contemporary building project in the city center to celebrate Native art and architecture with its design. Public appreciation for the SHI campus has helped build support for expanding Native artwork into other parts of the city. For example, wayfinding signs in downtown Juneau incorporate Native art. A 60-foot by 80-foot mural of civil rights icon and Native leader Elizabeth Peratrovich greets the 1.7 million tourists who enter Juneau each year through the cruise terminal. In addition, a line of 30 totems, known as Kootéeyaa Deiyí, representing all of the clans in Southeast Alaska is under construction along the waterfront and lining a trail leading to the public plaza on the SHI campus.

“Our vision, our goal is to have all along the waterfront what one would have seen 200 years ago when you came up to a village. All of the Tlingit clans of Southeast Alaska as well as Haida and Tsimshian will have representation on the waterfront as a statement of, ‘This is who we are. This is whose lands you’re on.’ And, when you walk the Kootéeyaa Deiyí (Totem Pole Trail), it will lead you to Heritage Square and the Walter Soboleff Building and the arts campus area.

So, the whole trail is geared towards providing an introduction to Alaska Native people and Alaska Native culture.”

—Lee Kadinger, Chief of Operations,
Sealaska Heritage Institute

Creating a civic space and source of pride for Juneau residents:

By providing exhibition space for Alaska Native art across various scales, opportunities to take lessons, and places to view artists at work, the arts campus serves as the epicenter of SHI’s public art initiative. It attracts Juneau residents and visitors to a public space where they can experience Native art and artists who work at various scales—including monumental artistic practices such as carving totem poles. During Celebration, the biennial Native arts and culture festival, 60 Native artists from across the state set up booths in the plaza to sell their work.

“One of the things that I take the greatest pride from is going down to the plaza and watching people’s reaction. It is palpable that [Heritage Square] has become a source of Native pride. It is an important, beautiful place. A marker of cultural resurgence... The campus feels very representational, and a place where all are invited. Just a lot of that next tier step of connectiveness, both cultural and physical.”

—Zane Jones, AIA, Partner & Senior Architect,
Principal-in-Charge, MRV Architects



Glass Promenade in the Walter Soboleff Building Displays
Etched Formline designs by Steve Brown
Image Credit: Ken Graham Photography

Economic development without causing displacement

Moving surface parking underground to create urban opportunity:

Converting a surface parking lot and empty lot into an arts, education, and cultural hub with underground parking has the potential to spur economic development in downtown Juneau, in addition to the \$30.1 million economic impact that SHI contributes to Juneau. The SHI campus also supports the \$58 million Native art industry in Southeast Alaska by providing platforms for artists and craftsmen to train, refine, showcase, and sell their work.

Creating construction jobs during an economic downturn:

The construction of both phases of the SHI campus created construction jobs—65 for the Walter Soboleff Building and 55 for the arts campus. The construction jobs created by the arts campus project were particularly welcome to the local economy, because they helped counteract the economic downturn caused by the COVID pandemic.

Ecosystem health

Combining materials, construction techniques, and audio to create sensory connections with local ecosystems: SHI is located two blocks from the waterfront and a city park, placing 100% of the neighborhood within easy walking access to green space, compared with 66.3% in Alaska and 61% in the U.S. However, the neighborhood is generally urban and devoid of trees and green space. The untreated cedar wall finish inside the clan house on the ground floor of the Walter Soboleff Building gives off a distinctive fragrance due to the hand-adze technique used to shape it. These visual and olfactory elements, combined with audio of local birds and forest sounds, create a sensory connection with local ecosystems despite the campus’ urban context.

Using interior finishes to commemorate the intertwined history of nature and people in Southeast Alaska: Local marble tiles from Prince of Wales Island in southern Southeast Alaska contain fossils—reminding Walter Soboleff Building visitors of the core cultural values that have made it possible for Native cultures to survive and thrive in their unique ecosystem for 12,000 years.

Protecting nocturnal plants and animals through lighting design: The Walter Soboleff Building achieved the LEED light pollution reduction credit, minimizing the development’s negative impact on nocturnal ecosystems.

Climate change health & resilience

Combining Alaska Native and Western building materials and techniques to protect occupants and cultural artifacts: Climate change is increasing the risk of exposure to precipitation in a region that is both cold and experiences rain over 200 days per year. Climate models predict increased risk of heavy precipitation from atmospheric rivers, particularly in downtown Juneau. The SHI campus pairs untreated yellow cedar siding with exterior wall detailing recommended by the Cold Climate Housing Research Center in Fairbanks, Alaska to construct highly insulated buildings with breathable, rot-resistant materials and rainscreens outside the waterproofing barrier, keeping the dew point on the exterior of the building.

Enhanced building energy efficiency reduces hydroelectric demand and supports electrification: Nearly all of Juneau’s electricity is generated at hydroelectric dams, whose ability to operate is placed at risk during periods of drought. Furthermore, roughly two-thirds of Juneau’s electricity needs relate to heating and are required during the winter, when freezing temperatures result in reduced inflows to the storage reservoirs. As a result, ramping up building energy efficiency is seen as a key strategy for increasing the resilience of Juneau’s energy and water systems.

“The incorporation of yellow cedar and the direction of the grain is why we got into an argument with the city over Victorian requirements for the Walter Soboleff Building. They wanted us to run it horizontally rather than vertically. But we knew that 1) that didn’t represent the Northwest Coast art style, and 2) running across the grain wouldn’t allow for proper drainage.”
–Lee Kadinger, Chief of Operations,
Sealaska Heritage Institute

Protecting the site and neighborhood from increasing flood risks:

Extreme precipitation events increase the risk of combined sewer overflows and small landslides in Juneau. This is particularly true in downtown Juneau, with its sparse tree canopy and very low percentage of green space. The SHI campus reduces neighborhood exposure to stormwater by capturing rainwater and allowing it to percolate on site.

Educating architects, contractors, and regulators on traditional weatherization techniques: Permitting the Walter Soboleff Building created an opportunity to increase regional awareness of the durability of traditional construction techniques. For example, hand-adzed cedar is a durable, weather-resistant material in the Southeast Alaskan climate. Adzed planking left untreated is rated to last longer than metal siding, which is the industry gold standard.

“Preliminary findings [from modern researchers] indicate that adzing crushed and folded the wood fibers at a micro-level, making the wood more water resistant.”
—Zane Jones, AIA, Partner & Senior Architect, Principal-in-Charge, MRV Architects (Jones, 2018)

Creating weatherized public spaces that support the Native arts economy: A glass covered promenade linking the Sealaska Plaza building with Atnané Hít (Sealaska Heritage Arts Campus) includes infrastructure such as electric outlets for artists, allowing them to sell their wares all year regardless of the weather and the changing climate.

Decarbonization

Maximizing LEED credits that align with SHI’s cultural values:

The design of the SHI campus buildings prioritizes LEED credits that enhance energy and water efficiency (such as LED lighting), as well as credits that reduce the risk of exposure to toxic chemicals (such as low VOC paints and coatings).

Encouraging efficient operations through flexible spaces: The interior layout of buildings on the SHI campus echo the flexible use of space in traditional Southeast Alaska Native buildings, such as clan longhouses, supporting multi-tasking and the efficient use of space.

Reducing embodied carbon with regional cedar and minimal concrete: Local yellow and red cedar are used for structure (e.g., glulam beams), exterior cladding, wall caps, and interior finishes, reducing embodied carbon through both carbon sequestration and short transportation distances for key building materials. The plaza structure in the arts campus was designed as a post-tensioned concrete slab to minimize concrete.

Reducing operational greenhouse gas emissions through active and passive design strategies: The energy-efficient building envelope and daylighting design are complemented by renewable pellet heating and high-efficiency building systems, such as air source heat pumps. Furthermore, the parking garage under the public plaza was engineered to be passively ventilated.

“We’re pretty proud of doing right [across cultural heritage, sustainability, and climate change]. There was a lot of quiet consideration during the design process to make sure that the buildings were highly energy efficient. The new facility is heated with air source heat pumps that are discreetly located on the roof. No one even knows they’re there. And, combining traditional cedar materials for siding and heavy timber construction feels very familiar to people in Southeast Alaska.”
—Paul Voelckers, AIA, President, Principal Architect, MRV Architects

Framing LEED certification as a demonstration of Alaska Native cultural values: SHI President Dr. Rosita Kaaháni Worl framed her decision to set a high LEED certification goal for the Walter Soboleff Building as an opportunity to communicate the parallels between Alaska Native values of living with nature and the goals of Western green and healthy building practices.

Contributing to local climate action: Many of the LEED credits achieved by the Walter Soboleff Building support the City and Borough of Juneau Climate Action Plan, including increasing building energy and water efficiency, renewable energy generation, and public transportation.

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Lead Author

Biositu, LLC, [biositu.com](https://www.biositu.com)

Contributors

COTE Knowledge Community and AIA Staff

Special thanks

Sealaska Heritage Institute, MRV Architects, and interview participants

Additional information

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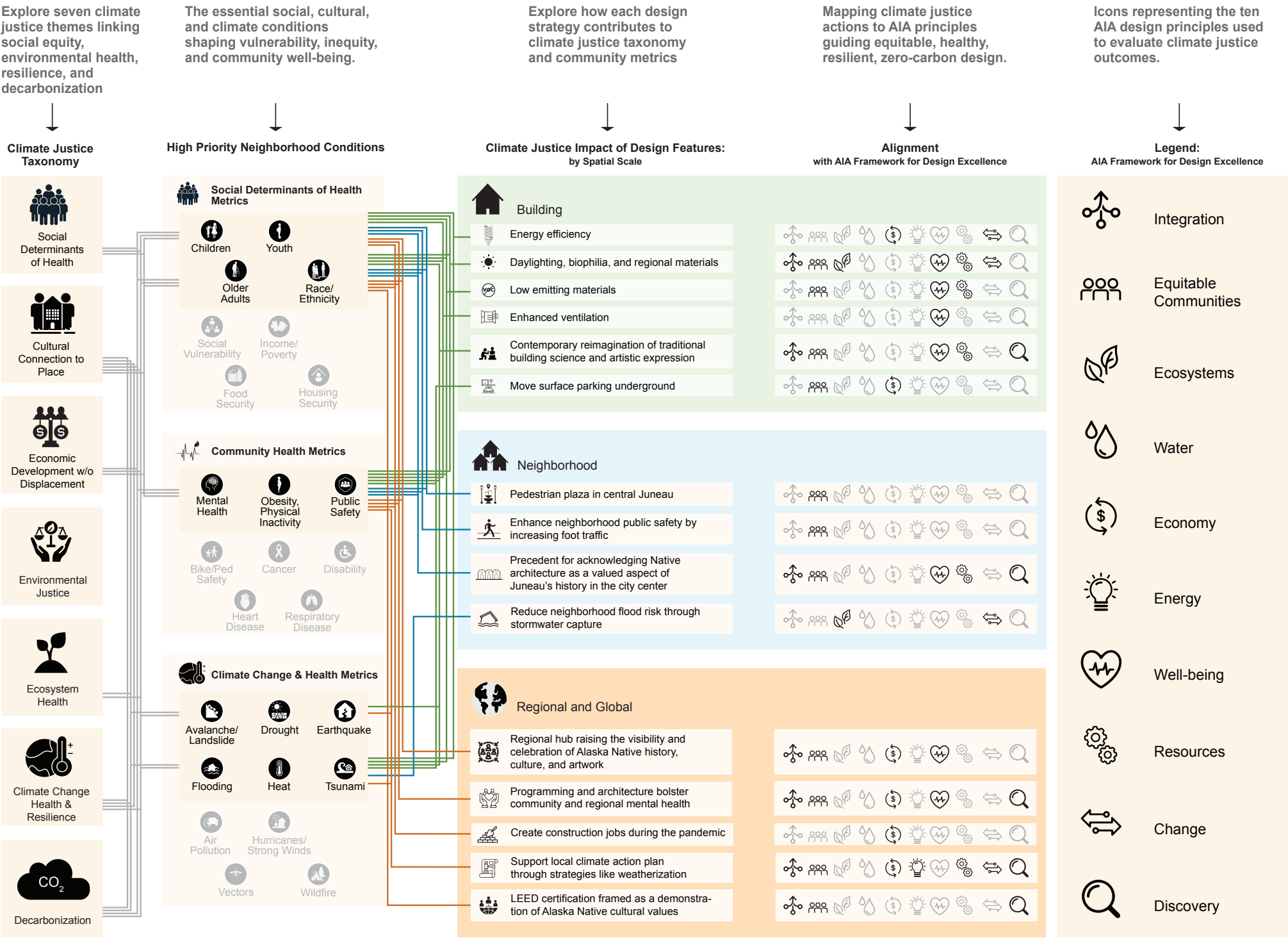
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Committee on the Environment

Climate Justice in Architecture

Appendix

APPENDIX: Full AIA Climate Justice Taxonomy

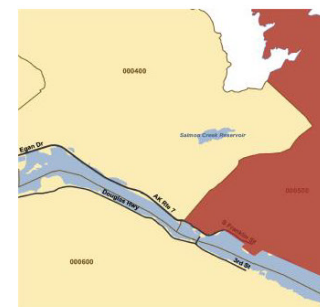


Health Situation Analysis - Data Description

Juneau, AK: Sealaska Heritage Institute

Census Tract: 02110000500 (dark red in map)

Owner: Sealaska Heritage Institute



Focus Area	Description	Neighborhood (x500)	Juneau City and Borough	AK	U.S.	Year	Data Source
Social Determinants of Health							
Social Vulnerability	Overall SVI Score (Moderately Low)	0.41				2022	U.S. CDC, Social Vulnerability Index, https://svi.cdc.gov/map.html
★ Children	Percent children <5 years old (Low)	3.2%	5.2%	6.7%	5.7%	2022 5-year estimate	U.S. Census American Community Survey, DP05, https://data.census.gov/cedsci/
★ Youth	Percent individuals 10-19 years old (Low)	3.4%	12.0%	13.8%	12.5%	2022 5-year estimate	U.S. Census American Community Survey, DP05, https://data.census.gov/cedsci/
★ Older Adults	Adults >65 years (High)	29.8%	14.8%	12.8%	16.5%	2022 5-year estimate	U.S. Census American Community Survey, DP05, https://data.census.gov/cedsci/
★ Race/ Ethnicity	African American/Black (Very Low)	0.0%	1.1%	3.3% B	12.5%	2022 5-year estimate	U.S. Census American Community Survey, DP-05, https://data.census.gov/cedsci/

Focus Area	Description	Neighborhood (x500)	Juneau City and Borough	AK	U.S.	Year	Data Source
	American Indian/Alaska Native <i>(Moderately Low Compared with AK, but Very High Compared with US)</i>	8.1%	9.4%	14.3%	0.8%	2022 5-year estimate	U.S. Census American Community Survey, DP-05, https://data.census.gov/cedsci/
	Asian <i>(Moderately High)</i>	9.4%	7.2%	6.5%	5.8%	2022 5-year estimate	U.S. Census American Community Survey, DP-05, https://data.census.gov/cedsci/
	White <i>(Moderately High)</i>	73.4%	64.0%	61.3%	65.9%	2022 5-year estimate	U.S. Census American Community Survey, DP-05, https://data.census.gov/cedsci/
	Hispanic/Latinx <i>(Moderately Low Compared with Juneau; Low Compared with US)</i>	6.4%	7.2%	7.5%	18.7%	2022 5-year estimate	U.S. Census American Community Survey, DP-05, https://data.census.gov/cedsci/
Median Household Income	Median household income in the past 12 months <i>(Moderately Low Compared with Juneau; Moderately High Compared with U.S.)</i>	\$90,259	\$95,711	\$86,370	\$75,149	2022 5-year estimate	U.S. Census American Community Survey, S1901, https://data.census.gov/cedsci/
Poverty Status	Percent individuals below poverty level over the past 12 months <i>(Low Compared with Alaska and US)</i>	5.1%	6.9%	10.5%	12.5%	2022 5-year estimate	U.S. Census American Community Survey, S1701, https://data.census.gov/cedsci/
Food Security	Not located in a food desert	not in a food desert				2019	USDA Food Access Research Atlas, https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas/

Focus Area	Description	Neighborhood (x500)	Juneau City and Borough	AK	U.S.	Year	Data Source
	Food Insecurity (<i>Moderate</i>)		12.2%	14.5%	13.5%	2022	Gundersen C, Strayer M, Dewey A, Hake M, Engelhard E. Map the meal gap 2021: An analysis of county and congressional district food insecurity and county food cost in the United States in 2019. Feeding America. 2021. https://map.feedingamerica.org
	Food Insecurity (<i>Moderately Low Compared with Alaska</i>)	8.7%	10.1%	13.8%	11.6%	2021 version	CDC PLACES*, https://www.cdc.gov/places
Housing Security	Prevalence of housing insecurity (<i>Moderately Low</i>)	8.8%	10.0%	12.5%	10.2%	2022 version	CDC PLACES*, https://www.cdc.gov/places
	Percent owner occupied (<i>Moderately Low</i>)	44.7%	64.3%	66.3%	64.8%	2022 5-year estimate	U.S. Census American Community Survey, S2502, https://data.census.gov/
	Housing + Transportation as percentage of household income (<i>Moderately High</i>)	37%	44%			2015	Center for Neighborhood Technology. H&T Index. https://htaindex.cnt.org/

Focus Area	Description	Neighborhood (x500)	Juneau City and Borough	AK	U.S.	Year	Data Source
Community Health							
Bike/ Pedestrian Safety	Low Risk	low risk at site, but surrounded by several streets with high motor vehicle crash				Accessed 2025	Juneau Community Crime Map, https://www.communitycrimemap.com/?address=juneau,ak
Cancer	Adult cancer prevalence (Excluding Skin Cancer) (Moderately High)	8.8%	7.4%		7.0%	2021 version	CDC PLACES*, https://www.cdc.gov/places
Disability	Adults diagnosed with a disability (Moderately Low)	25.0%	25.8%	30.0%	30.6%	2022 version	CDC PLACES*, https://www.cdc.gov/places
Heart Disease	Adult coronary heart disease (Moderate)	6.4%	5.9%		6.1%	2021 version	CDC PLACES*, https://www.cdc.gov/places
Mental Health	Adult depression prevalence (Average)	19.1%	20.0%		19.5%	2022 version	CDC PLACES*, https://www.cdc.gov/places
	Adult poor mental health over past 14 days (Moderately Low)	13.9%	15.4%	16.1%	16.6%	2022 version	CDC PLACES*, https://www.cdc.gov/places
	★ Percent of people living within 1/2 or 1 mile from a park (High)	100.0%	100.0%	66.3%	61.0%	2020	U.S. National Environmental Public Health Tracking Network, https://ephtracking.cdc.gov/
Obesity, Diabetes, Hypertension	Adult high blood pressure (Average)	31.6%	29.0%		32.7%	2021 version	CDC PLACES*, https://www.cdc.gov/places

Focus Area	Description	Neighborhood (x500)	Juneau City and Borough	AK	U.S.	Year	Data Source
	Adult diabetes (Average)	8.7%	8.5%		11.3%	2021 version	CDC PLACES*, https://www.cdc.gov/places
	Adult obesity (Average)	32.9%	33.6%		33.0%	2021 version	CDC PLACES*, https://www.cdc.gov/places
	Adult physical inactivity (Average)	19.1%	20.7%		23.7%	2021 version	CDC PLACES*, https://www.cdc.gov/places
	★ Commute using public transit, walking, or cycling (High)	27.2%	8.6%	9.5%	6.7%	2022 5-year estimate	U.S. Census American Community Survey, S0801, https://data.census.gov/cedsci
★ Public Safety	Moderately High Risk	moderately high risk of theft, assault, larceny				Accessed 2025	Juneau Community Crime Map, https://www.communitycrimemap.com/ ?address=juneau,ak
Respiratory Disease	Adult Asthma (Average)	9.7%	10.2%		9.7%	2021 version	CDC PLACES*, https://www.cdc.gov/places
General health	Adult prevalence fair/poor health (Slightly Lower Risk Compared with Juneau and US)	12.4%	13.6%		16.1%	2021 version	CDC PLACES*, https://www.cdc.gov/places
General physical health	Adult poor physical health over past 14 days (Average)	10.9%	11.6%		10.9%	2021 version	CDC PLACES*, https://www.cdc.gov/places

* Crude rate, because available at
census tract level

Focus Area	Description	Neighborhood (x500)	Juneau City and Borough	AK	U.S.	Year	Data Source
Climate Change							
Overall Climate Risk	Moderate Risk	45.3				2021 version	FEMA National Risk Index, https://hazards.fema.gov/nri/
Expected Annual Loss	Moderate Risk	43.4				2021 version	FEMA National Risk Index, https://hazards.fema.gov/nri/
Social Vulnerability	Average Risk	50.2				2021 version	FEMA National Risk Index, https://hazards.fema.gov/nri/
Community Resilience	Moderate Risk	58.4				2021 version	FEMA National Risk Index, https://hazards.fema.gov/nri/
Air Quality	Respiratory risk (hazard index) due to cumulative air toxics (<i>Low Risk</i>)	0.15				various, accessed 2024	EPA EnviroAtlas, https://enviroatlas.epa.gov/enviroatlas/interactivemap/
★ Avalanche/ Landslide	High Risk		High risk of landslide and avalanche in steep terrain			2022	Juneau Climate Report, June 2022, https://acrc.alaska.edu/juneau-climate-report/
★ Drought			Increased drought risk poses a risk to hydroelectric power			2022	Juneau Climate Report, June 2022, https://acrc.alaska.edu/juneau-climate-report/
★ Earthquake	Moderately High Risk	81.9				2021 version	FEMA National Risk Index, https://hazards.fema.gov/nri/

Focus Area	Description	Neighborhood (x500)	Juneau City and Borough	AK	U.S.	Year	Data Source
★ Flooding	High climate risk of flooding		High risk of exposure to heavy precipitation from atmospheric rivers (particularly in downtown Juneau)			2022	Juneau Climate Report, June 2022, https://acrc.alaska.edu/juneau-climate-report/
			High risk of Pacific storms and storm surge				
			High risk of glacier outburst floods				
	Not Located in Floodplain (Moderate Risk)	not in a floodplain, but 3 blocks from coastline					City and Borough of Juneau, Alaska - Flood Map Comparison (Historic vs. Effective), https://fema.maps.arcgis.com/apps/StorytellingSwipe/index.html?appid=48beaefc7ca447f895978686b8e6bd1d#
	Coastal Flooding (Moderately High Risk)	86.5				2021 version	FEMA National Risk Index, https://hazards.fema.gov/nri/
	Riverine Flooding (Moderate Risk)	61.9				2021 version	FEMA National Risk Index, https://hazards.fema.gov/nri/
	Impervious Surface (Very High)	100%				Accessed 2025	Google Maps, https://www.google.com/maps

Focus Area	Description	Neighborhood (x500)	Juneau City and Borough	AK	U.S.	Year	Data Source
	Sanitary Sewer Overflows (High Risk)		High risk of combined sewer overflows (particularly in downtown Juneau)			2022	Juneau Climate Report, June 2022, https://acrc.alaska.edu/juneau-climate-report/
★ Heat	Extreme Heat Vulnerability (High Risk)		Significant increase in winter and summer temperatures; projected 10°F increase in annual average temperature by 2100			2022	Juneau Climate Report, June 2022, https://acrc.alaska.edu/juneau-climate-report/
	Tree Canopy Average (Very Low)	HUC 12 ID 190103010606: 0%				various, accessed 2022	EPA EnviroAtlas, https://enviroatlas.epa.gov/enviroatlas/interactivemap/
	Tree Canopy Average - alternative example (Very Low)	0%				2021	USGS Multi-Resolution Land Characteristics Consortium, NLCD Impervious Surface 2021 CONUS, https://www.mrlc.gov/viewer/
Tornado	Very Low Risk	0.2				2021 version	FEMA National Risk Index, https://hazards.fema.gov/nri/
★ Tsunami	Very High Risk	97.2				2021 version	FEMA National Risk Index, https://hazards.fema.gov/nri/
Vectorborne Disease	Tickborne Diseases (Very Low Incidence)	9 cases				2001-2022	CDC Lyme Disease Case Map, https://www.cdc.gov/lyme/data-research/facts-stats/lyme-disease-case-map.html

Focus Area	Description	Neighborhood (x500)	Juneau City and Borough	AK	U.S.	Year	Data Source
Wildfire	Very Low Wildfire Likelihood		Nearly all other the US counties, on average, have greater wildfire likelihood than Juneau City and Borough			various, accessed 2022	USGDA Forest Service, Wildfire Risk to Communities data portal, https://wildfirerisk.org/explore
	Very Low Wildfire Risk to Homes		Nearly all other the US counties, on average, have greater wildfire likelihood than Juneau City and Borough			various, accessed 2022	USGDA Forest Service, Wildfire Risk to Communities data portal, https://wildfirerisk.org/explore
Winter Weather	Average Risk	49.2				2021 version	FEMA National Risk Index, https://hazards.fema.gov/nri/