

**ASSEMBLY STANDING COMMITTEE
PUBLIC WORKS AND FACILITIES COMMITTEE
THE CITY AND BOROUGH OF JUNEAU, ALASKA**

February 8, 2021 12:00 PM
Work Session - Virtual Meeting

Please copy and paste the link to join the webinar: <https://juneau.zoom.us/j/97671295070> Or iPhone one-tap
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215 8782 or +1 312 626 6799 or +1 929 436 2866 or +1 301 715 8592 Webinar ID: 976 7129 5070

I. CALL TO ORDER

II. ITEMS FOR ACTION

- A. Calhoun Avenue Reconstruction
- B. PWFC Assembly Goals and Work Plan

III. ADJOURNMENT

- A. February 22, 2021 - Regular Meeting - 12:00 Noon

ADA accommodations available upon request: Please contact the Clerk's office 72 hours prior to any meeting so arrangements can be made to have a sign language interpreter present or an audiotape containing the Assembly's agenda made available. The Clerk's office telephone number is 586-5278, TDD 586-5351, e-mail: city.clerk@juneau.org



TO: Chair Hale and Assembly Public Works and Facilities Committee

DATE: January 20, 2021

FROM: Rorie Watt, City Manager

RE: Calhoun Avenue

As is detailed in your packet the proposed reconstruction of Calhoun Avenue has been forwarded to the PWFC by the Assembly. The Planning Commission made two recommendations:

1. That the Assembly DENY the project as designed
2. That a full traffic study be conducted prior to reconstruction.

One way to look at the Commission recommendations is to realize that the Commission tendered a policy question back to the Assembly – “Should CBJ proceed with a reconstruction of the roadway, while making practical improvements to pedestrian improvements and maintaining two way driving access or should the CBJ proceed with a traffic study prior to reconstructing?”

A significant amount of background to these recommendations is the request from one or more neighbors to consider making Calhoun Avenue a One-Way street. I strongly do not support studying the One-Way study idea any further as it is likely to use up staff time, municipal funds and would support what I think is an unrealistic expectation that it is a possible outcome.

A short list of problematic consequences of making the road One-Way include:

Limits Downtown to only one Two-Way access road (Egan)

Large vehicle movements - Fire, garbage, fuel, construction, moving vehicles need both accesses.

Traffic diversions – Making a road one-way usually means that traffic is diverted onto other roads.

Winter routes – Diverted traffic may have to use steeper alternatives.

By policy and action, CBJ and its staff are very supportive of providing non-motorized amenities and accesses on every project that is developed. In this case, the One-Way idea obscures consideration of what is a well-developed reconstruction project that has to navigate the limitations of our goals and historic property and rights of way lines.

Recommendations: I recommend the following:

- A. That the Assembly reject both recommendations by the Planning Commission.
- B. That the Assembly remove the concept of turning Calhoun Avenue into a One-way street from further consideration or study.
- C. That the reconstruction proposal go back to the Planning Commission for review.
- D. If the Commission wants to propose a traffic study, then it should propose a scope of study, being mindful of the limits on staff and financial resources and considering other important unfunded priorities, like updating the Comprehensive Plan.

The PWFC should forward its decision on these recommendations to the Assembly.

The PWFC Feb. 1, 2021 Mtg. Packet may be viewed here: <https://packet.cbjak.org/CoverSheet.aspx?ItemID=9549&MeetingID=1448>

The Planning Commission staff report and presentation may be viewed here:

<https://packet.cbjak.org/CoverSheet.aspx?ItemID=9362&MeetingID=1412>



MEMORANDUM

ENGINEERING & PUBLIC WORKS
230 S. Franklin Street, Suite 315
Juneau AK 99801

DATE: February 4, 2021

TO: Katie Koester
Director of Engineering & Public Works

FROM: Janet Sanbei
Administrative Officer I

RE: Calhoun Avenue Reconstruction

Life of a Street Reconstruction Project

Most projects are initiated because of failing infrastructure. Generally, projects are prioritized and scheduled in the 6 - year Capital Improvement Program. There are typically four to eight street reconstruction projects that follow this process each year. A project may sit on the list for many years before receiving funding...or it may never be funded due to changes in priorities or availability of funding. Once the project comes forward for funding and is approved by the Assembly, then the action to move forward with formal design and construction is put into place. Generally, the approved projects are scheduled to begin design at the beginning of the fiscal year they receive funding (July, August); and construction begins the following spring.

A design consultant is selected for the project. Their typical initial tasks are scoping, research, site surveying, schematic design (35%) and preparing a rough estimate. The design consultant reaches out to the individuals within the neighborhood multiple times and works to maintain an "open door" policy. A mail out is first sent to the neighborhood informing of the start of design work and the project contacts. The designer works to meet with each neighborhood property owner in person, during the early on-site reconnaissance and survey, by going door to door to meet and discuss the project with each neighbor (typically this is the best source of information for little idiosyncrasies of an area). If contact is not made, a door hanger is provided with the project contact information again, hoping for neighbors to reach out and discuss concerns. The intent of the early and often designer contact is to create an open dialogue and rapport with the neighborhood to facilitate communication. If the schematic design plans fit available funding, the consultant continues further detailed design. The designer and staff conduct a neighborhood meeting about half way between the completion of the schematic design and final bidding (roughly 50% design development). At this time, the design has progressed enough for the designer to have an understanding of the project area limitations, specific details of the underground municipal utility replacements and impacts to the final configuration of the reconstruction project. The neighborhood meeting is the opportunity to present the more specific details of the project, receive neighborhood comment, concern, criticism and continue the discussion with the neighborhood about what the final project details can look like and what comments and concerns can be incorporated into the final design. Final design is completed with incorporation of applicable neighborhood comments, the project tendered for bid, the lowest bidding contractor awarded the project and construction commences.

The Planning Commission City State Project review (CSP) has typically occurred following the neighborhood public meeting to incorporate the applicable public concerns raised. A CSP review by the Planning Commission determines consistency with Title 49 for CIP projects over \$500,000.

In order to assist the Committee in discussing the ideas presented at the February 1, 2021, PWFC meeting, I have included the comments from those who testified.

Calhoun Public Comment

Ms. Frances Leach, 925 Calhoun Ave. She is right at the start of this project at the corner of Goldbelt and Calhoun, just up from Cope Park. She also works at 410 Calhoun Ave. She and her children walk this corridor to work and the school bus stop regularly. She stated in 2018 she wrote City Manager Watt an email expressing her concerns for the safety of pedestrians after seeing a man nearly struck by a vehicle. She also stated she and her children have had some very close calls while walking on the sidewalk as vehicles drive by very closely. The side view mirrors of vehicles hang over the sidewalk, which means pedestrians need to be alert of traffic on the street. She put in the email she is very concerned for the safety of her family and others. Mr. Watt reassured her with a comment that good news is the road and sidewalk are already in the planning stages for being upgraded. She feels his recommendation to reject the Planning Commission's decision to do a traffic study is a blatant disrespect of the concerns from citizens of the neighborhood. She doesn't feel 40 inches is big enough for a sidewalk. She stated if passing another pedestrian one would need to step in the street to get by. She asked staff to take a walk down Calhoun Ave. to see the concerns the neighborhood is expressing.

Ms. Emily Ferry, 836 Calhoun Ave. She agrees the improvements to the road and utilities is important, but pedestrian and bicycle safety is also very important. She would really like to engage with the City in what the One Way would really look like and the issues that may preclude it from happening. She feels this hasn't happened yet. She would to see from this project a way for children to bike to school safely. Currently, and the way the project is designed at this time, that can't happen. She would also like pedestrians to be able to walk on the sidewalk without police officers stopping to tell them it isn't safe to walk on the sidewalk. This design doesn't allow for safe walking within the corridor. She would like the City to "Walk the Talk" about making the community a pedestrian friendly community. There are so many plans that speak to that. She would love to see the City take the opportunity to make this happen in this very important corridor. It is a very important corridor because it is 1 of only 3 corridors in and out of downtown Juneau. (At this time Ms. Ferry's phone stopped transmitting her comments. Ms. Hale stated her time was up and asked her to send in a letter.)

Peter Metcalf, 354 Distin Ave. He stated they access Calhoun both on foot and by vehicle. They access Calhoun on W. 8th St. This is a very dangerous intersection. It has blind corners from both directions. People speed around those blind corners most frequently. He concurred with others, saying there have been several accidents because of the dangers in this corridor. He said he doesn't feel Staff has been receptive of the comments made. He feels they have been dismissed and not recognized as important. He would like to see Staff take the comments seriously and comment seriously. The neighborhood is disgruntled. He would like the City to go forward with the Planning Commission recommendation and complete a study. He doesn't feel it needs to be extravagant, but something that will give information. He just asks that Staff listen to the neighborhood.

Mr. Mark Choate, 230 W. 8th St. He stated he has 2 issues to address. The first, is safety. His stone wall has been hit 3 times since he purchased the property. The most recent did an extensive amount of damage and sideswiped a pedestrian. He feels the City has a liability for dangerous conditions and this location is dangerous. He feels the City has done nothing to resolve the danger. The second issue is he feels the process has been more than dismal. The City has been providing lip service with comments such as "We have this under control, don't worry about it.", but there has been a lot of push back from Staff. There has been no opportunity to participate in any meaningful manner. He feels he knows the area quite

well, as he has lived in this location for more than 30 years. He paid to install a fire hydrant on his property. He feels he knows the water system and he has had no problems with the water at his location. He has spent 6 years as a School Board Member and understands the process of public participation. He asks that the City to not move forward and let the neighborhood respond. It is an active group and they will respond quickly. He feels the Engineering Department and the project is at a D- in terms of its responsiveness to the community.

Ms. Marilyn Holmes, corner of Goldbelt and Calhoun. This has to be one of the most hazardous intersections in the City. The process of walking down the portion of Calhoun to be reconstructed is absolutely harrowing. She would not even think about riding a bike on this stretch of road...she likes to ride. She agrees with other comments as this is a dangerous corridor. She agrees it needs to be redesigned, but not just for people and bikes, but also for any utility or other type of emergency vehicle. In 2004 a section of Calhoun that intersects with Goldbelt was under construction. The neighbors all got together and they paid for AEL&P to put the conduit underground for the utilities. She says it is possible to put the lines within conduit and underground. She would like to see the City add conduit installed for putting the utility lines underground. So eventually the power lines could be taken down.

Mary Alice McKeen, 212 W. 9th Street. She has lived here for 39 years. She doesn't feel the City has made any effort to consider the neighborhood's concerns for this street. She stated when the project began the neighborhood started emailing with each other discussing suggestions. One individual wrote back saying..."These are interesting ideas. Good luck getting the City to take any of these suggestions. From my limited experience, they are pretty unreceptive to community suggestions." She feels there has been lip service paid, but there has not been any meaningful response to community concerns or suggestions. She stated the Engineering Department responded saying they didn't have the scope to widen the road. She feels making the street 2-way and 3 foot sidewalks is not being safety conscious. She really feels the 1-way should be seriously considered. This is the only way to have reasonably wide sidewalks, a bike lane and traffic on this street. She feels the City has threatened the neighborhood by saying a traffic study would be too expensive. She stated that she thinks this is disingenuous for the City to say this. She would like all of these studied. She feels the allegation of the fire department not being able to get a fire truck up 9th Street is false. She would like all of these items studied.



Engineering & Public Works Department

Marine View Building, Juneau, AK 99801

907-586-5254 <phone>

MEMORANDUM

DATE: February 4, 2021

TO: Chair Hale and City and Borough of Juneau Public Works and Facilities Committee

FROM: Katie Koester, Engineering & Public Works Director

SUBJECT: 2021 Assembly Goals and PWFC Workplan

The purpose of this memo is to organize committee discussion on Assembly goals for 2021 that are in the purview of the PWFC committee. I have worked with Staff, with the input of JCOS members, to begin to develop a list of potential action items under each goal. Some of these items are actively being worked on, and others will require Assembly action and/or additional resources. This is by no means an exhaustive list; it is a starting place to help get ideas flowing. As a small piece of homework, the packet is set up with plenty of white space for you to add your own ideas to this list. During committee discussion Chair Hale will go through each goal and encourage committee discussion and adding items to the list. Ideally, the committee will land on 2-3 action items from this list that PWFC can work on during 2021. This exercise will culminate in a recommendation to the Assembly to confirm that the Assembly is aligned with the goals PWFC chooses to work on in 2021. An agenda item will be added to the PWFC agenda to allow for regular committee work and updates on these goals.

Your packet includes background information provided by JCOS that you may find useful when developing your thoughts on action items to add under each goal.

Key

Italicized: Item underway already

\$\$\$\$\$: Level of effort - \$ low level of effort \$\$\$\$\$ high level of effort

3. Sustainable Budget and Organization – Assure that CBJ is able to deliver services in a cost efficient and effective manner that meets the needs of the community.**3a. Maintain Assembly focus on deferred maintenance including BRH and JSD;**

Responsibility: Assembly, Manager's Office, E&PW, all operating departments with facilities

Notes: Short-term

Potential Action Items

1. *Bond package funds many maintenance projects, including JSD*
2. *BRH deferred maintenance efforts supported by Assembly with annual appropriation and staff*
- 3.

3f. Examine life cycle costs of CBJ facilities including city hall.

Responsibility: Assembly, Manager's Office, E&PW

Notes: Short term

1. *Update internal working document on deferred maintenance for CBJ facilities (excluding BRH and JSD) and present to committee*
- 2.

5. Sustainable Community – Juneau will maintain a resilient social, economic, and environmental habitat for existing population and future generations.**5a. Develop strategy to measure, track and reduce CBJ energy consumption.**

Responsibility: Assembly, Manager's Office, E&PW

Notes: Short term

1. *Measure/track: Develop a dashboard using procurement data on how many gallons of fuel CBJ uses.* \$
2. *Measure/track: Dive deeper into a few facilities as case studies on energy consumption over time.* \$
3. *Work with an energy tracking software firm to establish tracking mechanisms for energy use that can be easily used by departments and decision makers to make facility and program based recommendations to reduce energy consumption.* \$\$

5b. Make a long term plan to achieve reliance on 80% renewable energy sources by 2045

Responsibility: Assembly, Manager's Office, E&PW

Notes: Short term

1. Do we first need to be able to identify and quantify what energy we use before we reduce it? \$\$
 - a. Hire a firm to establish community wide energy/ greenhouse gas emissions estimates and model potential scenarios for reductions in energy usage
 - b. The plan is community wide and not specific to municipal infrastructure; who is the appropriate backbone organization for the plan and what is CBJs role? \$
2. Draft a Plan: Develop a scope of work, governance structure and Request for Proposal. \$\$

5c. Develop climate change adaptation plan

Responsibility: Assembly, Manager's Office

Notes: Short term

1. Hire firm to draft a plan: Develop a scope of work informed by *revisions to the 2007 Juneau Climate Change Report due out spring of 2021* that identifies climate hazards, impact of hazards and mitigation measures. Establish a governance structure and RFP. \$\$
- 2.

5d. Develop solid waste strategy including plans to increase recycling and deal with abandoned/junked vehicles.

Responsibility: Assembly, Manager's Office, E&PW, JPD

Notes: Long term

1. Increase recycling.
 - a. Expand standardized recycling to all CBJ facilities (including JSD and BRH) \$
 - b.
 - c.
2. Junk vehicles.
 - a. Improve timeline for removal and disposal of junked and abandoned cars including exploring code amendments, policy/procedure updates and investment in infrastructure. \$\$
 - b.
3. Solid waste
 - a. Study the pros and cons of alternatives that divert waste from the landfill and extend its useful life (i.e. shipping waste, incinerating waste, compost). \$\$
 - b. Research and develop a plan for an industrial scale compositing program in order to divert waste from the landfill and organics from the wastewater treatment plant. \$
 - c.
 - d.

BACKGROUND INFORMATION

1. JRES Executive Summary
2. Memo from JCOS – Re: 2021 Sustainable Community Goals
3. JCOS 2021 Priorities

Juneau Renewable Energy Strategy

Setting the scene and priority actions



This revised version incorporates technical amendments to background information on the Juneau electricity system as approved by the Juneau Commission on Sustainability on March 14, 2018. These technical amendments replaced text in the version approved by Assembly Resolution 2808. The amendments do not alter the recommended actions or goal of 80% renewable by 2045.

CBJ Resolution 2808
February 12, 2018

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Juneau has benefited from clean renewable energy – hydroelectricity - for 100 years. Hydropower gives Juneau the lowest, most stable electric rates in the state, supplying 20% of the total energy used in the community.

Low costs for hydroelectricity have helped offset Juneau's dependence on the fuel oil, diesel and gasoline that supply the other 80% of the energy used in the community, but we still send more than \$140 million out of the local economy annually to import these fuels.

Juneau has an opportunity to increase its energy independence, lower energy costs, and support economic development, by expanding use and supplies of renewable energy. The CBJ can encourage this long-term transition from fossil fuels to renewable sources by taking a leadership role and adopting an ambitious goal to guide public policy and encourage private choices.

This strategy plan recommends that the CBJ adopt a target of obtaining 80% of our energy from renewable sources by the year 2045. General strategies for achieving this target include increasing energy efficiency, shifting transportation and space heating to renewable energy, and increasing supplies of renewable energy.

The Juneau Economic Development Plan (2015) identifies hydro resources as one of the community's significant assets. Strengthening the renewable energy sector can contribute to each of the plan's overarching goals: building a more resilient and diversified economy, providing infrastructure that supports and strengthens the economy, leveraging natural competitive advantages to create new wealth, and enhancing quality of life attributes.

Replacing fossil fuels substantially with renewable energy will have a wide range of benefits for Juneau. Our long distances from fuel suppliers, and our small, captive market with little competition means Juneau residents pay higher prices for these imported fuels than the rest of the country. Our dependence on barges, ferries, and jet travel for most of our access and supplies means our living expenses and business costs are greatly affected by high fuel costs, and by spikes in fuel prices. Major industries and employers such as tourism and fishing are also affected directly by fuel costs.

Juneau is therefore particularly vulnerable to spikes in fossil fuel prices resulting from national and international political and economic responses to world events and climate change. As the costs of climate change grow in coming decades, an obvious policy response may be to tax carbon emissions to discourage their use and pay for mitigation measures. Such measures, beyond CBJ or Juneau's control, would have a disproportionate impact on Juneau's economy.

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This strategic plan provides background information on Juneau's energy use and supplies, discusses alternative energy paths, and recommends targets and strategies. It sets direction and a general path forward. It is not intended to be a detailed guideline or tactical action plan, but is instead a general roadmap for more detailed planning and budgeting.

While Juneau can't influence the costs of imported fossil fuels, it can take a wide range of actions to influence energy consumption, supplies, and costs within the community. Reducing dependence on fossil fuels, through energy efficiency and substitution of renewable energy sources, can help create new jobs and businesses, reduce costs, and increase community resilience, while reducing climate impacts.

Juneau has considerable experience in reducing costs through energy efficiency and shifting from fossil fuels to renewable hydroelectricity. After avalanches cut off Juneau's hydroelectric supplies in 2008 and 2009, Juneau residents cut their electricity use by 25% short term, and by 8% longer term. During this period Juneau residents implemented energy efficiency measures that continue to affect energy use patterns.

The CBJ, together with other organizations and households, have made many successful investments in efficiency and renewable energy. Our airport has achieved substantial cost savings by replacing runway lighting with LED's and by installing a ground-source heat pump system for heating buildings and melting ice. The NOAA Ted Stevens Marine Research Institute helped pioneer seawater heat pump systems in the U.S. A growing number of Juneau businesses and households are saving on heating bills by converting to heat pumps. Local heat pump installation and service companies have expanded significantly in the past 5 years.

Similarly, Juneau has become a leader in adoption of electric vehicles (EV), ranking in the top communities in the nation in terms of per capita EV ownership. In 2016-2017 two EV's are arriving per week in the community, with rapid Juneau acceptance of electrical vehicle transportation. A growing number of EV charging stations have been installed through cooperative efforts between the CBJ and other agencies and businesses. Several private and public/private charging stations are also being planned. Gastineau Guiding put the first electric hybrid tour bus went into service in 2016 and there is growing community interest in electric buses to reduce operating and maintenance costs.

Building on this experience to increase local energy security and resilience will help keep more of the \$140 million that we now spend on fossil fuels circulating in the community to reduce energy costs for residents and businesses, grow local businesses and jobs, and reduce vulnerability to volatile fuel prices.

This strategy can enhance economic development in other ways, by supporting innovators through business and technology research, incubation, and demonstration; by targeting key events and organizations that represent clean tech and renewable energy; and by attracting "green capital" and enabling more innovative financing for clean and renewable businesses. These are all goals identified in the Juneau Economic Development Plan.

Juneau is in good company in shifting toward renewable energy and can learn from the experience of other communities. Cities across the United States, and Canada, and nations such

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as Norway and Sweden, are moving toward 100% renewable energy by mid-century. Our neighbor to the south, Vancouver, B.C., has set a goal of replacing 100% of fossil fuels with renewable energy by mid-century.

Juneau has a head start in transitioning toward renewable energy. We have a great opportunity to use local resources to create a stronger, more resilient economy, while helping reduce carbon emissions, and reducing energy costs for local government, schools, businesses and households.

STRATEGY DEVELOPMENT

This strategic plan originated as a priority recommendation in the Juneau Climate Action and Implementation Plan (CBJ Resolution 2593, Nov. 2011). In 2015 the CBJ contracted with the energy consulting firm Stantec to develop an initial draft of this strategy which was completed in 2016. The Energy Committee of the Juneau Commission on Sustainability (JCOS) served as a sounding board, and assisted CBJ staff in reviewing and revising the draft. JCOS also assisted in conducting an extensive public review process between July 2016 and January 2017.

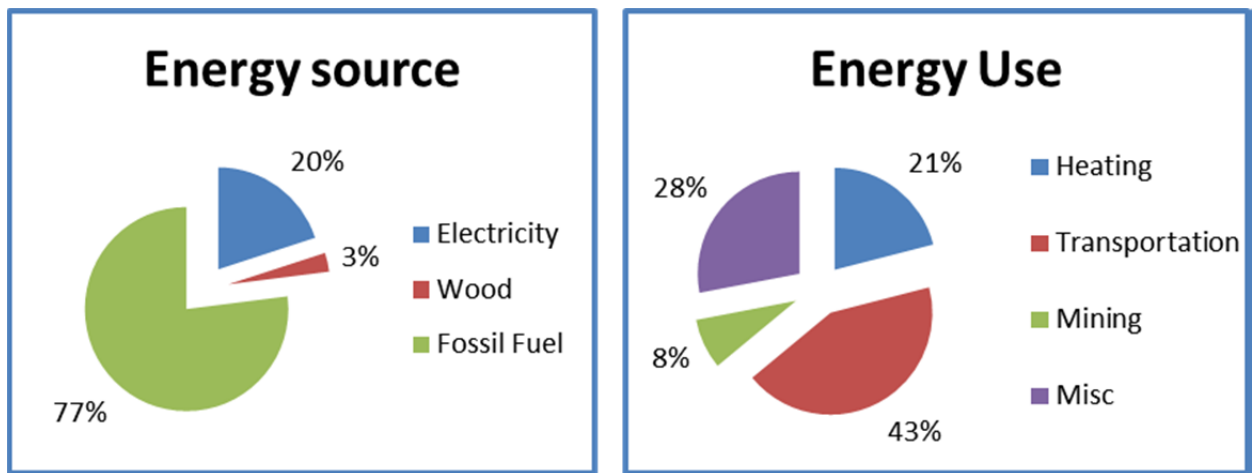
In addition to an introductory public meeting, presentations were made, and discussions were held with the CBJ Assembly COW, the CBJ Planning Commission, and many groups and organizations, including the Downtown Improvement Group, the JEDC Renewable Energy Cluster Working Group, the Alaska Climate Action Network, Renewable Juneau, and the Juneau Chamber of Commerce. JCOS also co-sponsored a series of seven “Energy Forums” as part of their Sustainability Session Outreach Program with assistance from the city manager, JEDC, the Capital City Engineers, the USFS, the Juneau Electric Vehicle Association, Juneau Hydropower, Juneau District Heating, and AEL&P. These were well attended, and provided information and opportunities for discussing issues raised in the strategy.

This document addresses four key questions relating to Juneau’s energy future:

Where are we now? What is Juneau’s energy use today?

Juneau currently derives almost 100% of its electricity from hydropower, which provides economical renewable energy while limiting climate impacts. This hydroelectricity provides about 20% of the total energy used in Juneau. Another 3% of Juneau’s total energy use comes from wood, a renewable heating source. The remaining 77% comes from fossil fuels, which are the primary energy source for heating buildings (which account for about 21% of fossil fuel use), transportation (accounting for about 43%), and mining (about 8%).

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**Where are we going?**

The business-as-usual path is derived from historical trends. Total energy use in Juneau is projected to rise at about the same rate as population growth, historically averaging about 1% per year. Gradual growth in energy use is tied to population change, driven primarily by costs and the choices of private utility and fuel providers. The mix of energy supplies is projected to remain similar to today. Existing trends of slow growth in energy efficiency, and some level of electric vehicle adoption continue.

Where do we want to go? What energy future would we like to see?

The plan examines two scenarios for Juneau's desired energy future - "Do Something", and "Do More".

The "Do Something" path is based on Resolution 2593, in which the CBJ Assembly in 2011 adopted a goal of reducing Greenhouse Gas (GHG) emissions 25% over 20 years. This would be roughly equivalent to replacing 25% of fossil fuels with renewable energy. The Juneau Climate Action and Implementation Plan (JCAIP) identifies a wide array of approaches and actions that could reduce GHG emissions and fossil fuel use. The 'Do-something' path modelled the potential impact of implementing a list of higher priority JCAIP actions. The result was a stabilization of 2007 GHG and energy use. While progress has been made, this target is not being met because the recommended actions are not being implemented quickly enough.

The "Do More" path resulted from discussions between Stantec and the Juneau Commission on Sustainability (JCOS), which served as the steering committee for the energy plan in 2015 and 2016. Since the adoption of Resolution 2593 it has become increasingly clear that significantly greater cuts to carbon emissions will need to be made in order to successfully achieve our community goals. This scenario considers a path toward substantially replacing fossil fuels, creating new economic opportunities and jobs around renewable energy development, and reducing community vulnerability to increases in fossil fuel costs. These discussions resulted in the

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recommended target of 80% of all Juneau's energy use to be provided by renewable sources by 2045. This proposed target received strong community support in public comments and discussions.

How Can We Get There?

The plan identifies four broad strategies for achieving the 80% renewable energy target:

A. Implement a CBJ energy management program to make the organization a leader in energy efficiency and adoption of renewable energy

The CBJ spends about \$8 million per year on energy. Adopting a formal energy management program, including tracking energy use and costs, implementing energy efficiency best practices, and implementing recommendation of energy audits could result in substantial savings. Consolidating the CBJ vehicle fleet and converting to electric vehicles is another area of potential energy and cost savings. The CBJ could also provide examples and information to the public on opportunities for energy savings. These provide the mechanics for CBJ to lead by example.

The JCOS has developed the outline of energy management program for the CBJ (see **Appendix E**), which summarizes specific recommendations from the JCAIP that address city operations, recommends procedures and financing options, and outlines the potential for \$500,000 in annual savings over the first 3 years.

B. Reduce Juneau's dependence on fossil fuels for space heating.

Space heating accounts for about 21% of the fossil fuels used in Juneau. Significant shifts to electric heat have occurred over the years, particularly when fuel oil costs were high relative to electric rates, so today almost 25% of Juneau homes are heated by electricity.

District heating for the downtown core and other parts of town could reduce heating costs and use of fuel oil. Heat pumps are becoming more common, are more energy efficient, and save money for homes, businesses and government. Energy efficiency is a cost effective strategy for stretching existing renewable resources. For example replacing electric resistance/baseboard heating systems with air-source heat pumps could provide 2-3 times more heating capacity for the same amount of hydroelectricity used. Given Juneau's older housing stock, there are opportunities for energy retrofits as older buildings are updated and renovated. Innovative financing mechanisms could assist in saving money on space heating, while supporting a variety of businesses.

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C. Reduce Juneau's dependence on fossil fuels for transportation.

Transportation is the largest (43%) use of fossil fuels in Juneau. Electrification of transportation provides a major opportunity to transform transportation to renewable energy, and Juneau already has one of the most rapid rates of EV adoption in the country. Other significant opportunities to reduce fossil fuel use include supporting energy efficient, compact, mixed use development, improving and electrifying the CBJ transit system, and supporting non-motorized transportation.

D. Support efforts to provide new renewable energy supplies for Juneau.

Expansion of hydropower resources is the most obvious opportunity for increasing the supply of renewable energy in Juneau. Rain and the power that it creates is one of our major resources. New small and mid-sized hydroelectric sites have been identified by AEL&P and Juneau Hydropower. These projects require large up front investments and coordination of demand growth.

More research, development and economic viability studies are needed to identify the potential of other local renewable energy sources, including wind, solar, tidal and biomass, as well as energy storage. Some of these studies may have been done already but are commercially confidential. Currently there are few apparent incentives or economic conditions that would allow these to compete with local hydropower or fossil fuels imported to the community. Electrification of local mining operations using hydropower has played a key role in financing existing renewable sources, and may continue to play such a role in the future.

Implementation

Each of these broad strategies requires substantial work to pull together appropriate actors and organizations, and to develop specific action and implementation plans. Many priority actions are identified in the 2011 Juneau Climate Action and Implementation Plan (JCAIP) (CBJ Resolution 2593), while others were identified during development of this plan.

There is no silver bullet, or simple path, for accomplishing the ambitious goal of transitioning from fossil fuels to renewable sources, and no single entity or organization that can implement it. Instead, a wide variety of actors are involved in making energy choices, including individual home and vehicle owners, businesses, energy suppliers such as AEL&P and fuel companies, and government agencies.

This plan emphasizes the role of the CBJ, both because it can take actions that save public money while reducing fossil fuel use, and because it represents community values and interests. But expanding use and supplies of local renewable energy can only be achieved through cooperation and collaboration between a range of private and public entities.

Fortunately Juneau has many individuals and groups experimenting with, and tackling these issues. The Renewable Energy Cluster Working Group, JEDC, with its work on incentives for

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electric vehicles, and the development of concepts for a Juneau heating district provide good models. Other local examples come from innovative local businesses such as the Alaska Brewing Company, with its “beer-powered beer”, using waste products to improve energy efficiency and increase profits.

Energy efficiency is frequently the most cost-effective way to reduce and shift energy use. Land use policies supporting compact, mixed use development are also important for reducing energy costs, as well as being a key solution to housing affordability problems, as identified in the 2016 CBJ Housing Action Plan (CBJ Resolution 2780).

The strategies recommended here are consistent with, and support recommendations concerning affordable housing in the 2015 Juneau Economic Development Plan (Ordinance 2015-10) and the CBJ Housing Action Plan. Costs for space heating and domestic hot water significantly affect housing affordability. Many homes, and most multi-family rental units, use expensive and wasteful electric resistance heat. Improving energy efficiency and shifting from electric baseboard heat to heat pumps can substantially reduce heating costs. Developing ways to encourage and finance conversions would be a win-win for AEL&P, renters, landlords, and Juneau’s climate impacts.

Greater attention to land use and compact development are also major recommendations made in the Juneau Economic Development Plan and the CBJ Housing Action Plan

“CBJ’s plans, zoning ordinance, development codes, and Land Management Plan, must all stress the value of utilizing existing infrastructure before building new and maximizing old and new infrastructure through higher densities and greater concentrations of uses wherever appropriate.” p. 20.

Recommendations

This strategy document recommends that the Mayor and Assembly take the following actions to move forward in developing the Juneau Renewable Energy Strategy and delivering on identified priority strategies:

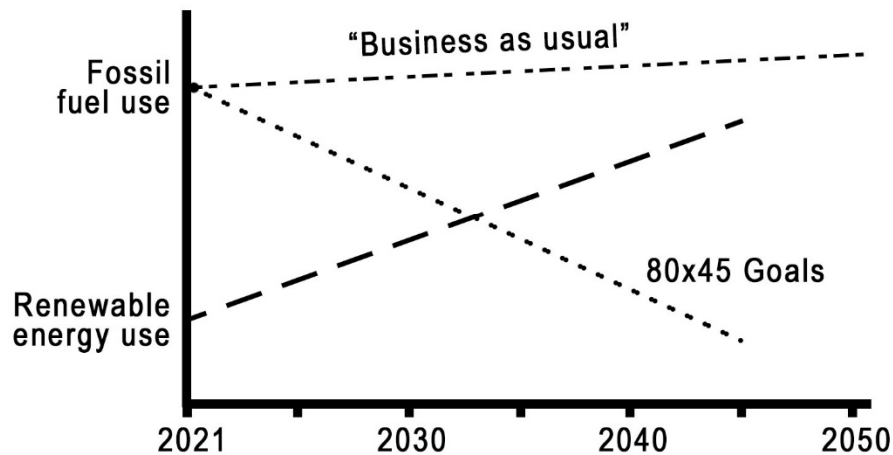
1. Adopt a community target of transforming Juneau’s energy use to 80% renewable sources by the year 2045. This guideline will provide direction for further planning and action, position Juneau as a national leader in the transition to renewable energy, and support CBJ, business, and government efforts to obtain financing, including grant assistance, for these purposes.
2. Require development of action plans for each of the strategies identified, and to begin implementing priority near-term actions using the priority action list as a guide to direct early efforts. Direct the Juneau Commission on Sustainability, with CBJ staff help, to seek assistance from the public, JEDC, Juneau Chamber of Commerce, and other organizations to develop and obtain support for these plans
3. Direct the CBJ organization to implement a formal energy management program. This recommendation will require all departments and independent boards to identify and

EXECUTIVE SUMMARY

monitor energy use and costs; evaluate potential energy savings and implement cost effective efficiency measures; explicitly incorporate energy usage into operational decision making and the Capital Improvement Program (CIP), as recommended in the CBJ Comprehensive Plan and the JCAIP; and implement a Sustainable Indicators program for energy use, consistent with Policy 2.2 of the Comprehensive Plan. A proposal for a CBJ Energy Management Program is included in Appendix E.

4. Direct the CBJ, through the JCOS, to monitor community energy use as a whole, by updating the JCAIP Energy and GHG Emissions Inventory at least every three years. Develop mechanism to gather fuel sales data.
5. Provide funding direction and CBJ staff allocations to accomplish these recommendations, with the understanding that committed and effective management will ensure that energy savings and energy-related grants will more than offset additional expenses.
6. Direct JCOS, with CBJ staff assistance, to review progress annually on these recommendations, highlighting successful community achievements, dynamically incorporating lessons learned to become more successful in meeting our community energy values as expressed in the JRES and reporting to the Assembly and to the public.

Juneau Energy Use + JRES goal



Broad strategies for reaching the 80x45 JRES goal

Improve energy efficiency, increase electrification

A. CBJ energy management program

Fleet electrification:
Capital Transit.
Small vehicles.

Buildings & facilities.

Water & wastewater system.

Track + report energy costs.

B. Building / space heating

Support heat pump conversions.

Support energy efficiency programs.

Update energy code.

C. Transportation

Support EV adoption:
EV chargers.
Fleet concersion.

Increase transit ridership.

Non-motorized transport plan.

Ammend building code to require wiring for EV charger.

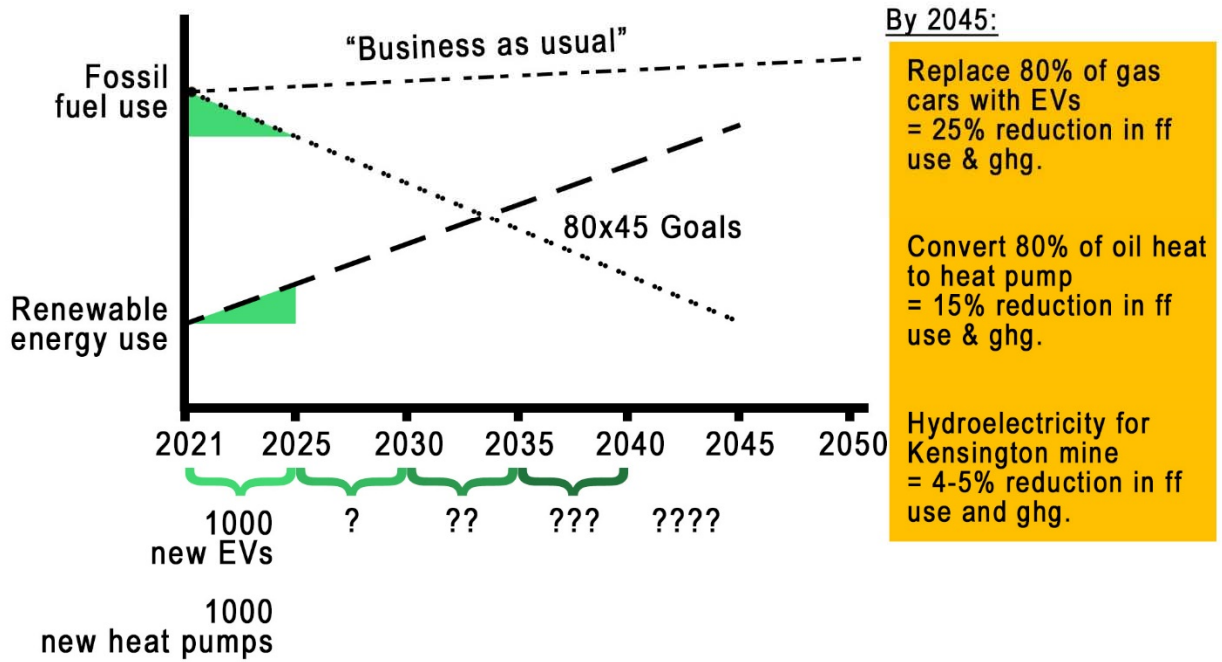
D. New Renewable energy supply

Track community energy use & supplies.

Support new Supplies.

Coordinate with major industrial users:
Mines.
Cruise ships.
District heating.

Pathways (scenarios) to 80x45





Juneau Commission on Sustainability

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Date: February 3, 2021

To: Chair Hale and CBJ Assembly Public Works & Facilities Committee
Katie Koester, Director, Engineering & Public Works Department

From: Gretchen Keiser, Chair, Juneau Commission on Sustainability

Subject: Assembly 2021 Sustainable Community Goals

The Juneau Commission on Sustainability (JCOS) offers this memo to the Assembly PW&F Committee as it focuses on the Assembly's 2021 goals - 3F. Sustainable Budget and 5. Sustainable Community - during the PWFC February 8, 2021 meeting.

Materials you will find include:

- JRES and JCAIP – What's Happening Now (Goals 3F, 5A and 5C)
- JRES – Long Term Planning (Goal 5B)
- JCOS 2021 Priorities
- JCOS Ideas for 2021 Work

While the Commission has identified several projects it intends to work on, JCOS is ready and willing to assist on 2021 projects the Assembly decides to pursue. One general area where JCOS believes it can help is in public education about Juneau's renewable energy future and solid waste. Through its website, Facebook page, ArtWorks graphics, *Juneau Empire*, Zoom-based sustainability sessions and short lunchtime sustainable topics, and presentations, JCOS intends to raise community awareness of what's happening and the challenges ahead.

Juneau Renewable Energy Strategy & Climate Action Plan – What’s Happening Now

Assembly Sustainability Goals 3F, 5A & 5C

JRES Strategy A: CBJ Energy Management Program/Goal 3F. Life-cycle Costs of CBJ Facilities

1. Oct 2020 Bond-funded energy efficiency upgrades to Glacier and Downtown Fire Stations.
2. Centennial Hall renovation includes energy efficient HVAC.
3. Juneau Airport’s North Terminal renovation is tied into existing ground-source heating system.
4. Juneau Airport to add EV charging stations.

JRES Strategy B: Reduction of Fossil Fuels for Space Heating

1. CBJ funding to Alaska Heat Smart (AHS) accelerates heat pump adoption in residential housing. CBJ funding leveraged the AHS Heat Pump Loan pilot program by True North FCU.
2. AHS is local partner in 3-year US Dept. of Energy-funded project by the UAF Cold Climate Housing Research Center to develop a scalable heat pump conversion program (marketing, audits, bulk purchasing, competitive installations) for other northern communities.
3. CDD Building Permit Center issued numerous permits for heat pump installations in 2020; information included in real property assessments by the CBJ Assessor’s Office.

Strategy C: Reduction of Fossil Fuels for Transportation

1. Capital Transit training on CBJ’s first Proterra electric bus, funded through an FTA grant and scheduled for use in April, 2021.
2. Additional CBJ applications for FTA grants for public transit electric vehicles (buses, vans?), with JCOS to gather community support letters as done in past FTA applications.
3. EV Planning project underway by E&PW Dept.
4. Approx. 500 EVs registered in Juneau. Mayor’s *Drive Electric* proclamation for 7th year at rally.
5. Ongoing non-profit & business donations & support for EV charger installation and O&M.

JRES Strategy D: Support for Efforts to Provide New Renewable Energy Supplies

1. *Dock Electrification Study* underway by CBJ Docks & Harbors, with draft anticipated in Spring, 2021.
2. Ongoing public meetings by Norwegian Cruise Lines on its proposed dock and upland facilities.
3. Renewable Juneau’s January 2021 letter to Assembly requesting a COW on sustainable community

Climate Change Adaptation Plan

1. *Juneau Climate Change Impacts & Responses* report underway, anticipated completion ~May 2021.
2. FEMA-funded mass wasting hazards report, anticipated Spring 2021.

Assembly Sustainability Goal 5B: Long-term Plan

Pathways to 80x45

JCOS proposes a project to identify the different ways that Juneau could realistically, over time, achieve 80% renewable energy by 2045 (80x45). JCOS will need consultant expertise to help us create a tool that models and evaluates different scenarios.

The JRES:

- recommends two basic strategies to achieve 80x45:
 - replace fossil fuel use with renewable energy (largely hydroelectricity)
 - improve energy efficiency (electrification is a major contributor)
- identifies hundreds of contributing actions, clumped under 4 strategies.

Many of these actions are being undertaken by the CBJ, homeowners, businesses, other government agencies, and non-profits. Some are explicitly linked to the JRES, while others part of normal activities. **However, we don't know what they add up to in terms of reaching 80x45, nor do we know which make the biggest bang for the buck.**

What progress can be made over the next 5 years to move toward 80x45? What if, for example, during this period?

- the number of EV's tripled, from 500 to 1500, replacing 1000 ICE vehicles....
- the number of heat pumps tripled
- the CBJ replaced 5 diesel buses with electric buses.....
- the CBJ replaced ¼ of its small vehicle fleet with EV's....
- 3 CBJ facilities had energy efficiency upgrades and reduced energy use by 15% on average...

What contribution would these changes make, individually and in combination, to reduce fossil fuel use and GHG emissions, to increase electric usage, to create cash savings for Juneau households, etc.?

What energy use changes could be made in future years, and what effect would they have?

- Powering the Kensington, Mine with hydroelectricity?
- Electrifying more cruise ship docks?

These are the types of questions that Juneau needs modeling tools to help answer. Answers would allow the community and decision makers to undertake alternative scenarios for achieving 80% renewable energy by 2045.

JCOS Ideas on 2021 CBJ Projects

Goal 3F: Life Cycle Costs of CBJ Facilities

1. Formally incorporate energy costs in the CIP process (design, budget, RFP and procurement).

Goal 5A: Measure, Track and Reduce CBJ Energy Consumption

1. Using Glacier and Downtown Fire Stations energy upgrade projects, develop energy use & cost data collection protocol in order to report “success stories” on energy reduction and cost savings to the community. These serve as models for commercial building owners.
2. Continue FTA grant applications for CBJ fleet electrification.

Goal 5B: Long Term Planning for 80% Renewable Energy by 2045

1. Big Picture:
 - a. Update Juneau’s 2010 Energy Use and GHG Emissions Inventory
 - b. Undertake *Energy Pathways* contract to obtain modeling tool that informs decisionmakers on optimal and timely scenarios to achieve 80% by 2045.
2. Incremental Efforts:
 - a. EV planning project to determine how CBJ can help optimize EV adoption in Juneau.
 - b. Continued support for Alaska Heat Smart. Provide endorsement for AHS efforts to secure other grant funding.
 - c. Revise CBJ Building Code to require wiring for EV charging in housing units.
 - d. Incentivize the installation of heat pumps and EV chargers in new downtown housing tax abatement initiative.

Goal 5C: Climate Change Adaptation Planning

1. Formally incorporate climate-induced hazards mitigation as a criterion in the CIP process.
2. Establish climate impacts funding for ongoing hazards mitigation/cleanup by city staff.

Goal 5D: Solid Waste Management/Planning

1. Examine waste reduction and waste diversion opportunities to prolong life of existing landfill.
2. Reassess recycling costs/benefits.
3. Examine organic wastes diversion options.

Juneau Commission on Sustainability 2021 Priorities (2/3/21)

JCOS Sub-committee	Focus of JCOS Efforts	Possible JCOS Outcomes	Parties to Work With	Overlap with Assembly Priorities
<u>Energy/Climate Action</u>	Transportation	- Gather support letters for CBJ federal grant applications – fleet electrification	Capital Transit	5A. Develop strategy to measure, track, and reduce CBJ energy consumption.
		- Collaborate: EV planning project	E&PW; PWFC	
		- Review: <i>Dock Electrification Study</i> ; - Research: potential federal funding	Docks & Hbrs; PWFC	
	Space Heating	- Support AK Heat Smart & <i>Thermalize Juneau Project</i> ; Identify financing options; - Investigate: energy code updates - Research: potential federal funding	CDD	3E. Reduce the relative cost of living in Juneau where possible.
	CBJ Energy Management	-Track energy efficiency upgrades of CBJ facilities; advocate for writing “success stories” to post on JCOS website	E&PW	5A. Develop strategy to measure, track and reduce CBJ energy consumption.
	Juneau Renewable Strategy Implementation	- Advocate/collaborate: updated Juneau Energy Use & GHG Emissions Inventory - Advocate/collaborate: <i>Energy Pathways</i> contract for tool to implement JRES scenarios	Assembly; PWFC; E&PW	5B. Make long term plan to achieve reliance on 80% renewable energy sources by 2045. 3E. Reduce the relative cost of living in Juneau where possible.
<u>Solid Waste</u>	Waste reduction Waste diversion Long-range planning for alternatives	-Complete: <i>Solid Waste Backgrounder & Recommendations</i> report for Assembly - Identify near-term, effective actions on waste reduction & waste diversion. - Create short education pieces & present to community organizations. - Research: potential federal funding.	PWFC; E&PW	5D. Develop solid waste strategy to increase recycling and deal with abandoned/junk vehicles.
<u>Climate Adaptation & Sustainability Indicators</u>	Climate Impacts/Adaptation	- Complete: <i>Juneau Climate Change Impacts and Responses Report</i>	UAS & UAF	5C. Develop Climate Change Adaptation plan.
	Sustainability Indicators	-Develop: 3 Indicators: fossil fuel use, renewable energy use & GHG emissions; establish protocol for CBJ annual update.		5A & 5B
<u>Outreach</u>	Public education and Community Recognition	-Sponsor: short sessions on reports (ADEC AQ monitoring, waste, climate impacts) -Conduct: in-depth Sustainability Sessions -Conduct: Sustainability Awards -Showcase: ArtWorks sustainability work	CDD & CBJ Public Info Officer	

