MEMORANDUM

CITY/BOROUGH OF JUNEAU
155 South Seward Street, Juneau, Alaska 99801

DATE: November 6, 2007

TO: Planning Commission

FROM: Ben Lyman, Planner
Community Development Department

RE: Review of Chapter 6, Energy Conservation, of the July 2007 Draft Comprehensive Plan.

FILE NO.: TXT2006-00003: Comprehensive Plan Text and Land Use Map Amendments

The Commission continues its review of the July 2007 Draft CBJ Comprehensive Plan (Draft Plan). On October 16, 2007, the Planning Commission was scheduled to review Energy Conservation SOPs, DGs and IAs found in Chapter 6 of the Draft Plan. Due to comments made at that meeting by Tim McLeod and Murray Walsh of Alaska Electric Light & Power (AEL&P), the Commission decided to postpone discussion of these items until AEL&P had been able to present information on Juneau's electrical energy system to the Commission. Mr. McLeod and Mr. Walsh have agreed to speak to the Commission on November 13, 2007, prior to the Commission's review of this memorandum. Staff has been informed by other members of the public who are involved in energy issues and by the Commission on Sustainability that there is a desire for additional public testimony on this matter. Staff recommends that the Planning Commission allow public testimony on this Chapter prior to Commission discussion of the recommended Policies, Implementing Actions (IAs), Standard Operating Procedures (SOPs), and Development Guidelines (DGs) in this memorandum.

Although already reviewed by the Commission, the Policies of these chapters are presented for reference purposes. Many IAs of the 1995 Comp Plan are carried forward in the 2007 Draft Plan and, where this occurs, the relevant 1995 IA number is noted in [brackets] after the SOP, DG or IA. Some of the 1995 IAs have been converted to SOPs or DGs as they are to be deemed by their implementing agencies as standard operating procedures, rather than as a "to do" action which characterizes an Implementing Action. New SOPs, DGs or IAs are explained and a planning rationale for the item is provided, where appropriate. Changes to the 2007 Draft Plan recommended by staff are shown in italics for new text and in struck-through text for deletions.

Staff recommends that the numbering system utilized in the Draft Comprehensive Plan and the 1995 Update to the Comprehensive Plan be revised due to significant confusion resulting from the existing system. This memorandum utilizes the recommended system, with the previously-utilized numbering system inside the { } symbols. Staff requests that the Commission provide guidance as to whether or not the proposed system should be used with or without modification. If the Commission desires to utilize the proposed numbering system, staff recommends the information below (in bold) be included in the introduction to the Comprehensive Plan to explain how to read citations from the Plan.

Chapter #.Policy #.Subtype (IA, DG, SOP) #

Examples: **1 (Chapter 1)**
3.3.IA4 (Chapter 3, Policy 3, IA 4);
6.1.DG1 (Chapter 6, Policy 1, DG1);
7.2 (Chapter 7, Policy 2)

CITY/BOROUGH OF JUNEAU
ALASKA'S CAPITAL CITY

Energy Conservation-related Policies, Standard Operating Procedures, Development Guidelines and Implementing Actions of the July 2007 Draft CBJ Comprehensive Plan.

Some policies and implementing actions (IAs) of the 1995 Comp Plan have been carried over to the 2007 draft Plan. Where that happens, the number of the 1995 Policy or IA is noted at the end of the sentence in [brackets]. Policies, Standard Operating Procedures (SOPS), Development Guidelines (DGs) and Implementing Actions (IAs) without a 1995 notation in brackets are new and an explanation or planning rationale for that new item is presented. Staff comments on the July 2007 proposed SOP. DG or IA are noted after the item in brackets and in this font type. Additional staff-recommended changes to the July 2007 Draft Plan are shown in italics for new text and in struck-through text for deletions.

Chapter 6: ENERGY

Energy Planning

POLICY 6.1 {6}. IT IS THE POLICY OF THE CBJ TO ANALYZE THE CBJ ENERGY SYSTEM, ESTABLISH A LONG-TERM ENERGY PLAN, AND *TO* IMPLEMENT THAT PLAN FOR THE AFFORDABLE AND SUSTAINABLE USE OF ENERGY IN THE CBJ. [1995 Policy 2.21]

Implementing Actions

6.1.IA1 {6.1.} The CBJ should fund an analysis of the entire energy system in our community and determine near-term and long-term needs and opportunities and seek to comply with LEEDs (Leadership in Energy and Environmental Design) objectives. This analysis should catalog the CBJ's current energy budget: sources and uses, in energy units (gallons, KWH and dollars). The analysis should incorporate life-cycle costs. [1995 2.21.1]

6.1.IA2 {6.2.} Establish and implement a CBJ energy plan which addresses both private-sector and CBJ energy conservation and management goals, objectives, and an action plan. [1995 2.21.3] [Staff recommends that this IA be amended to also call for the CBJ to conduct a "risk management" assessment of the CBJ's dependence on fossil fuel and the formulation of a plan and strategy for energy independence by the year 2030 (or so). This risk assessment should include an assessment of our hydroelectric power system as a result of future increased demand due to conversion from oil and gas-power to hydro power, and any potential effects of climate change to our Icefield, lakes and tributaries. This is to address a potential CBJ "Weakness".]

6.1.IA 3 {6.3.} The CBJ should host research projects *and symposia* that identify power/energy sources that use renewable resources such as hydroelectric, tidal, solar, wind power and energy from organic waste (e.g. cellulosic ethanol) that can be used by households, businesses and the public sector.

[This is one of the Plan's sustainability goals and is an important strategic action needed to become energy independent in the face of imminent, pervasive and exorbitant costs of fossil fuels.]

Support State Capital Functions

POLICY 6.2 {6.1.} IT IS THE POLICY OF THE CBJ TO PROVIDE COST-EFFECTIVE AND ENERGY-EFFICIENT FACILITIES, SYSTEMS AND INFRASTRUCTURE THAT STRENGTHENS ITS ROLE AS THE STATE CAPITAL.

Standard Operating Procedure

6.2.SOP1 {6.1.1.} Continue to invest in energy-efficient technologies and equipment that provide affordable access to State legislative, courts and other governmental affairs for Alaskan residents.

[This Policy and SOP have been recommended by the Planning Commission.]

Energy Efficient CBJ Buildings and Projects

POLICY 6.3 {6.2.} IT IS THE POLICY OF THE CBJ TO INCORPORATE TECHNOLOGIES AND OPERATING PRACTICES THAT WILL PROMOTE EFFICIENT AND COST EFFECTIVE ENERGY USE INTO ALL OF ITS NEW AND EXISTING BUILDINGS AND ENERGY-USING PROJECTS. [1995 2.22]

Standard Operating Procedure

6.3.SOP1 {6.2.1.} Replace inefficient street lighting and lighting in CBJ buildings and facilities upon replacement cycle. [1995 IA 2.22.7]

Implementing Actions

6.3.IA1 {6.2.2.} Establish and fund a revolving energy conservation investment fund, to invest in energy-saving public projects that meet CBJ return-on-investment criteria. [19952.22.1]

6.3.IA2 {6.2.3.} The CBJ should invest in necessary metering equipment to produce monthly project energy reports. [1995 IA 2.22.5]

6.3.IA3 {6.2.4.} Establish energy management goals for targeted CBJ buildings. [1995 IA 2.22.3]

6.3.IA4 {6.2.5.} D evelop and implement a system for rewarding CBJ employee initiative and responsibility in good energy management. [1995 IA 2.22.2]

6.3.IA5 {6.2.6.} Incorporate LEED principles and standards when designing public structures and facilities. The LEED standards should be adapted for local climate and materials resources and should include life-cycle cost analyses (including long-term operational costs) with appropriate fuel cost sensitivity analyses over the long-term life of the Project.
[This is a sustainability goal of the Plan and is recommended by CDD staff as well as the Energy Advisory Committee.]

Maximize Use of Local Energy Resources

POLICY 6.4 {6.3.} IT IS THE POLICY OF THE CBJ TO MAXIMIZE THE USE OF LOCAL ENERGY RESOURCES TO REDUCE COSTS AND TO ASSURE SUPPLY. [1995 Policy 2.23]

Standard Operating Procedure

6.4.SOP1 {6.3.1.} Encourage energy conservation to reduce the amount of money leaving the community to pay for fuels. [1995 IA 2.23.3]

Implementing Action

6.4.IA1 {6.3.2.} Seek federal and state funding to convert the CBJ fleet and, particularly, public transit vehicles, to hydroelectric-powered vehicles (e.g. battery-powered vehicles) *and/or dual-fuel or hybrid* vehicles. [1995 IA 2.23.2]

6.4.IA2 {6.3.3.} Where practicable in large industrial operations, the CBJ should encourage co-generation processes to transform waste heat to electrical power for use by the operation and adjacent uses or for transmission to a nearby power grid.

6.4.IA3 {6.3.4.} Where practicable and where there are no adverse impacts to marine life, the CBJ should encourage the use of tidal action to generate energy for adjacent uses or for transmission to the power grid.

[IAs 6.4.IA2 and 6.4.IA3 {6.3.3 and 6.3.4} address sustainability goals of this Plan, per Chapter 2.]

6.4.IA 4 {6.3.5.} Encourage fuel switching and dual fuel systems which are cost effective for buildings. [1995 IA 2.23.1]

Maximize Use of Renewable Energy Resources

POLICY 6.5 {6.4.} IT IS THE POLICY OF THE CBJ TO MAXIMIZE THE USE OF RENEWABLE ENERGY RESOURCES. [1995 Policy 2.25]
[Staff recommends that the Planning Commission review and revise the wording of this policy.

The policy, as worded, promotes the use of renewable energy resources even when such use is excessive or wasteful, when the intention is to promote the use of renewable energy resources over the use of non-renewable energy resources.]

Implementing Actions

6.5.IA1 {6.4.1.} Coordinate efforts with the University of Alaska and other research organizations and companies to identify potential renewable energy sources to power vehicles, vessels, aircraft, structures and utilities and to heat structures. These efforts should analyze both the short-term and long-term costs and environmental impacts of power production and distribution systems and should give preference to dependable, cost-competitive, renewable sources that does not adversely affect natural resources and wildlife habitat when choosing a source of energy.

[This addresses sustainability goals of this Plan, per Chapter 2, and particularly the goal of beginning energy and food independent.]

6.5.IA2 {6.4.2.} When designing new facilities or major renovation of CBJ facilities, the CBJ should analyze life-cycle costs of energy applications with consideration of renewable sources given priority. [1995 IA 2.25.2]

Full-Cost Analysis

POLICY 6.6 {6.5.} IT IS THE POLICY OF THE CBJ TO INCLUDE THE INDIRECT, OR EXTERNAL, COSTS OF ENERGY USE IN ITS ECONOMIC ANALYSES. [1995 Policy 2.24]

Standard Operating Procedure

6.6.SOP1 {6.5.1.} Encourage energy regulators and providers to expand the cost-of-service definition to include quantifiable external and indirect costs in establishing the cost of energy to be used in the life-cycle cost analyses of CBJ facilities, projects, and operations. [1995 IA 2.24.1]

Minimize Utility Investment

POLICY 6.7 {6.6.} IT IS THE POLICY OF THE CBJ TO ENCOURAGE ELECTRICAL ENERGY USE PATTERNS WHICH MINIMIZE UTILITY INVESTMENT. [1995 Policy 2.26]

Implementing Actions

6.7.IA1 {6.6.1.} ~~When additional sources of energy are required for the community, the Assembly should require an analysis of the cost effectiveness of aggressive energy conservation programs and load-leveling mechanisms before the construction of new energy facilities. [1995 IA 2.26.1]~~ *The CBJ should work with electrical utility providers to develop programs and educational materials promoting energy conservation.*

[The original 6.7.IA1 {IA 6.6.1.} fails to account for several factors affecting the development of new energy sources. The time frame involved in designing, permitting, and constructing new

energy facilities is extensive, and delaying this process in order to provide time for an energy conservation program, even an aggressive one, could have detrimental effects on the electrical energy supply in the CBJ. Furthermore, the original IA is in direct conflict with 6.8.IA2 {IA 6.7.2.}]

6.7.IA2 {6.6.2.} When designing CBJ facilities, the CBJ should encourage lowering peak loads by shifting to off-peak periods and should encourage interruptible loads. [1995 IA 2.26.4 & 2.26.5]

6.7.IA3 {6.6.3.} These implementing actions should apply to both public and private sector developments. [1995 IA 2.26.6]

Use of Favorable Energy Assets for Job Creation

POLICY 6.8 {6.7.} IT IS THE POLICY OF THE CBJ TO TAKE ADVANTAGE OF JUNEAU'S FAVORABLE ELECTRICAL ENERGY ASSETS TO ADD QUALITY JOB OPPORTUNITIES. [1995 Policy 2.27]

Implementing Actions

6.8.IA1 {6.7.1.} The Juneau Economic Development Council (JEDC) should explain *and promote* the CBJ's favorable energy assets to potential employers. [1995 IA 2.27.1]

6.8.IA2 {6.7.2.} Along with implementation of an aggressive water and energy conservation program, the CBJ should immediately plan for the next increment of hydroelectric power to be brought on-line in the CBJ, particularly to accommodate conversions of home heat and vehicle fuels from fossil fuels to hydroelectric power. *The CBJ should coordinate the conversion of fossil fuel-powered systems to hydroelectric-powered systems with the schedule for increasing the capacity of the hydroelectric system to ensure that the system is not over-loaded.* [1995 IA 2.27.2]

[AEL&P's letter of October 19, 2007 (attached) addresses this IA]

Use Renewable Energy for Transportation

POLICY 6.9 {6.8.} IT IS THE POLICY OF THE CBJ TO ENCOURAGE THE TRANSPORTATION OF CBJ RESIDENTS, VISITORS, FREIGHT AND MAIL POWERED BY RENEWABLE ENERGY ON BOTH PRIVATE AND PUBLIC TRANSPORTATION. [1995 Policy 2.28]

Implementing Actions

6.9.IA1 {6.8.1.} Capital Transit should use a mix of vehicle sizes and fuels for public transport to promote fuel and cost efficiency, and to keep frequency of service such that it will encourage use of public transportation systems. [1995 IA 2.28.1]

6.9.IA2 {6.8.2.} The Assembly should seek to convert fossil-fuel powered buses, both public and private, to hydroelectric-powered vehicles, *as long as electric buses can be charged exclusively during off-peak times. Hybrid or other dual-fuel buses which can run on fuel other than electricity when off-peak charging is not feasible may be preferable to electric-only buses.*

[AEL&P's letter of October 19, 2007 (attached) addresses this IA]

6.9.IA3 {6.8.3.} The CBJ should provide electric power sources at parking lots and garages to re-charge electric private automobiles and give preferential parking spaces for those vehicles, *although use of these power sources should be restricted to off-peak hours.*

[AEL&P's letter of October 19, 2007 (attached) addresses this IA]

6.9.IA4 {6.8.4.}The CBJ should investigate the feasibility of providing light or heavy rail public transit service, powered by renewable energy sources, linking existing and new neighborhoods of Douglas Island with the mainland and, in the future, to the Alaskan interior. The analysis of the feasibility of such a Borough-wide rail transport system should consider the life-cycle costs of design, construction, environmental mitigation and monitoring, as well as operation and maintenance costs.

[6.9.IA2, 6.9.IA3, and 6.9.IA4 {IAs 6.8.2, 6.8.3 and 6.8.4}, address important sustainability goals of this Plan and are needed to support facilities and modes of transport that reduce our reliance and dependence upon fossil fuels.]

Creation of Energy Efficient Buildings

POLICY 6.10 {6.9.} IT IS THE POLICY OF THE CBJ TO ENCOURAGE COST EFFECTIVE ENERGY EFFICIENT BUILDING AND REMODELING PRACTICES. [1995 Policy 2.29]

Implementing Actions

6.10.IA1 {6.9.1.} The CBJ Community Development Department (CDD) should encourage the installation of renewable sources of ~~electrical~~ *dual-fuel* energy-heating systems in new construction *by offering incentives to developers to do so.* [1995 IA 2.29.1]

[AEL&P's letter of October 19, 2007 (attached) addresses this IA]

6.10.IA2 {6.9.2.} The Assembly should encourage participation in current residential energy efficient mortgage programs for both new and existing homes. Encourage favorable lending rate programs for energy efficient multifamily housing and commercial construction or renovation. [1995 IA 2.29.4]

6.10.IA3 {6.9.3.} The Assembly should establish energy efficient standards for new and existing multifamily housing and commercial buildings. [1995 IA2.29.5]

6.10.IA4 {6.9.4.} Encourage the conversion of existing heating systems from fossil fuel to renewable sources of ~~electrical~~ energy. [1995 IA 2.29.2]

6.10.IA5 {6.9.5.} The Assembly should immediately enact water conservation ordinances. Water conservation measures would lead to significant energy savings to the CBJ in pumping water and in treating wastewater. Conservation measures might include such things as metering of water wells and single-family homes, mandatory installation of low flow plumbing fixtures, installation of on-demand electric water heaters, or other incentives to save water. A municipal bond measure should be considered to assist homeowners in paying for the installation of water meters. [1995 IA 2.29.7]

Industrial Energy Use

POLICY 6.11 {6.10.} IT IS THE POLICY OF THE CBJ TO ENCOURAGE INDUSTRIAL AND COMMERCIAL USERS TO BE AS EFFICIENT AS POSSIBLE IN THEIR USE OF ENERGY, TO USE RENEWABLE ENERGY SOURCES, AND TO MAKE ENERGY BY-PRODUCTS AVAILABLE FOR USE ELSEWHERE IN THE COMMUNITY. [1995 Policy 2.30]

Implementing Actions

6.11.IA1 {6.10.1.} Discourage energy intensive projects from compromising CBJ energy policy. [1995 IA 2.30.3]

[AEL&P's letter of October 19, 2007 (attached) addresses this IA, but does not make recommendations for revised language other than deleting the IA entirely. Staff recommends that the Commission revise or delete this IA after discussion with AEL&P staff on November 13, 2007.]

6.11.IA2 {6.10.2.} Assist those proposing energy intensive projects, such as mining, in understanding, at the earliest point in their projects, the CBJ energy policy. [1995 IA 2.30.4]

[AEL&P's letter of October 19, 2007 (attached) addresses this IA and recommends that its language be revised. Staff recommends that the Commission revise this IA after discussion with AEL&P staff on November 13, 2007.]

6.11.IA3 {6.10.3.} Require the use of renewable and environmentally-sensitive energy sources for energy intensive projects, where cost effective. [1995 IA 2.30.5]

6.11.IA4 {6.10.4.} Encourage the development of co-generated electrical power at avoided cost. [1995 IA 2.30.9]

[Staff recommends that the language "avoided cost" be revised to improve readability and foster public understanding of this IA]

6.11.IA5 {6.10.5.} Encourage appropriate land use patterns of development close to potential location of surplus waste heat *where the land use producing the surplus waste heat would not be a nuisance to adjacent residential development.* [1995 IA 2.30.10]

Waste Reduction, Reuse and Recycling

POLICY 6.12 {6.11.} IT IS THE POLICY OF THE CBJ TO ENCOURAGE WASTE REDUCTION, REUSE AND RECYCLING ACTIVITIES WHICH HAVE POSITIVE ECONOMIC AND/OR ENVIRONMENTAL BENEFITS. [1995 Policy 2.31]

Implementing Actions

6.12.IA1 {6.11.1.} Complete the 2007 Long-Range Solid Waste Management Strategy and Alternatives Analysis Project and coordinate/cooperate with villages, towns, municipalities, private companies and non-profit organizations within the region on solid waste management programs.

6.12.IA2 {6.11.2.} The CBJ should consider adopting a mandatory program for the curbside pick-up of recyclable materials by solid waste collection companies throughout the area of the CBJ where garbage pick-up is currently offered and the transfer of that material to appropriate recycling centers. This program may be implemented by franchise or permit approval.

[This IA responds to a highly valued and desired community service, that of curbside pick-up of recyclable materials.]

Public Education on Energy

POLICY 6.13 {6.12.} IT IS THE POLICY OF THE CBJ TO INCREASE PUBLIC UNDERSTANDING OF HOW INDIVIDUAL AND CBJ ENERGY DECISIONS AFFECT INDIVIDUAL CONSUMER COSTS, AS WELL AS THE LIVABILITY AND SUSTAINABILITY OF THE COMMUNITY. [1995 Policy 2.32]

Implementing Actions

6.13.IA1 {6.12.1.} The Juneau School District should improve energy education in K-12 public school educational curriculum, including:

- energy as a fundamental human need;
- historical perspective of energy;
- understanding our local energy system, and how it fits within the state, federal, and world systems;
- helping students become smart consumers;
- informing future voters on the need to establish and maintain an energy system that is high quality, secure, equitable, and sustainable;
- a multi-disciplinary approach to energy; and
- working with the CBJ Sustainability Commission on energy curriculum. [1995 IA 2.32.2]

6.13.IA2 {6.12.2.} The CBJ should conduct a public education program to explain the benefits of conservation of energy during the periods in which AEL&P is using diesel fuel instead of hydropower. **[1995 IA 2.32.3]**

6.13.IA3 {6.12.3.} The CBJ should conduct public meetings to explain and discuss the Energy Chapter of this Plan. **[1995 IA 2.32.4]**

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AEL&P

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October 19, 2007

Mr. Ben Lyman
CBJ Community Development Department
155 South Seward Street
Juneau, AK 99801

RE: July 2007 Draft Comprehensive Plan

Dear Mr. Lyman,

Thank you for allowing our consultant, Murray Walsh and me the opportunity to discuss energy issues during the planning commission meeting of Oct 16, 2007. We appreciate the commission's willingness to consider input from Alaska Electric Light and Power Company (AELP) on this matter. We understand the importance of planning and support the city's inclusion of an energy section in the Comprehensive Plan.

We believe that AELP's goals are compatible with the objectives of the Comprehensive Plan and look forward to assisting in its development.

AELP's corporate goals are as follows:

1. Provide reliable and safe service from electric energy generated from renewable resources.
2. Provide among the lowest average electric rates of major regulated utilities within Alaska over the long run, while maintaining financial integrity.
3. Utilize electric resources efficiently.

To achieve its corporate goals, AELP has developed multiple internal plans for producing and delivering energy.

AELP has reviewed the draft comprehensive plan and have identified several items of concern. In general, the draft, if adopted, would create unrealistic expectations for the supply of renewable energy for space heating and transportation.

The following paragraph provides background regarding AELP's renewable energy capacity and will help explain our comments to the draft comprehensive plan.

With recent load growth from new buildings and a swing toward electric space heating driven by the cost and volatility of oil, AELP's existing hydro facilities have reached capacity. With completion of the Lake Dorothy, Phase 1 project in 2009, AELP's hydro capacity will increase by about 20%. The cost per kWh for this new increment of energy will be nearly twice the average cost of the existing facilities. Fortunately, all of the surplus energy can be sold to interruptible customers such as cruise ships and the Greens Creek mine, significantly reducing the economic impact to other customers. A planned second phase of the Dorothy Lake project will increase the hydro capacity by an additional 20% but will also incrementally increase the cost of electricity. Other renewable resources are under review, including wind, tidal current and small hydro projects, all of which will have a similar effect on the cost of energy. Because hydro appears to be the most cost effective source of energy at this time, our focus is primarily on the development of those resources first. Renewable energy projects offer the advantage of low operating costs that result in a low costs per kWh when fully utilized. Because they are expensive to construct, financing and construction of new facilities must be justified by firm loads. Until the construction of new facilities is justified, supplemental diesel generated energy is the only reasonable alternative.

Diesel generators are about 30% efficient. Electric space heating systems that are supplied by diesel generators are far less efficient than oil heating systems that are typically 70 to 80% efficient.

Page and item-specific comments follow.

Page 10, List of Potential Threats: The fourth threat listed suggests that melting glaciers threaten water sources for hydroelectric power. This may not be of significant concern as hydro potential depends primarily on *recurring* precipitation from rain and snow. According to a study done by the Army Corps of Engineers for the Snettisham project, glacial contribution is minor.

Page 18, Sustainability, bottom of page: The last paragraph contains this sentence: *"First looking globally, we need to accept the fact that the United States as a country, and each U.S. resident, individually, consumes more resources than our land and natural resources can support; we are living in an ecological deficit."* The source of this key finding should be identified, since this statement is apparently used as the basis for many of the policies in the plan. Regardless, AELP does agree that promoting conservation is a good idea.

Page 20, Sustainability, Bullet Points and IA 2.3, Conversion of Vehicles to Hydroelectric Power:

The electrification of vehicles should be investigated on an experimental basis, but should be promoted only when surplus energy from renewable sources will be available for a reasonable period of time. Charging electric vehicles during off peak periods from 10:00 PM until 6:00 AM should be encouraged as loads during those periods improves the efficiency of hydro production.

Page 75, IA 6.7.2, Planning for Next Increment of Hydropower: The draft plan indicates that this is a holdover policy from the 1995 plan. It calls for the next increment of hydropower to be planned to accommodate home heat and vehicles. This is not accurate. The 1995 policy just says: *"Encourage planning for the next increment of hydroelectric power to be brought on-line in Juneau."* There is no mention of home heat or vehicles. As said above, promoting the use of electricity for heating and vehicles is unwise unless heating systems are dual fuel so that diesel generators are not used as the energy source during periods of hydro deficits.

Page 75, IA 6.8.2. Hydro-powered buses: The use of electricity to power buses should be done conservatively and as with other vehicles, off peak charging should be encouraged.

Page 76, IA 6.8.3 Electric Power Sources in Garages: As stated above, electric vehicles should only be promoted during periods where surplus hydro energy will be available for a reasonable period of time. However, we have no objection to garages being wired to accommodate charging of electric vehicles.

Page 76, IA 6.9.1 Electrical Heating in New Construction: Electric space heating significantly affects the system demand. AELP's infrastructure, including generating facilities, must be capable of supporting peak system demands. This drives electricity costs upward. Electric heating is market driven and should not be encouraged as it could lead to high energy costs and the use of diesel generators to meet demand. Dual fuel systems are recommended. Penalty rates may eventually be necessary to discourage electric heat and the resulting economic impacts to other uses of electricity.

Page 77, IA 6.10.1. "Discourage energy intensive projects from compromising CBJ energy policy." This is a very obscure holdover policy from the 1995 plan that could be subject to misuse. It was the connection of Greens Creek Mine, a large energy user that allowed AELP to construct the new Lake Dorothy Hydro project. If not for the ability to sell the surplus energy to the mine, the hydro project would not be economically feasible and diesel generation would be used to supplement Juneau's electrical needs until loading of the new hydro plant justified construction. In addition, since allowable use and conditional use permit applications are measured against comprehensive plan policies, this policy could conflict with the economic development section of the comprehensive plan by discouraging large energy users. The brewery and large retail stores are large energy users as is the self powered Kensington mine.

Energy *efficiency* should be encouraged, but this policy could discourage economic development and limits AELP's ability to construct new hydro facilities. We recommend that this policy be deleted.

Page 77, IA 6.10.2 . "Assist those proposing energy intensive projects, such as mining, in understanding, at the earliest point in their projects, the CBJ energy policy." This

policy should not be used to discourage economic development. AELP supports the idea of providing information regarding energy use to new customers

Other Comments

AELP recommends the plan address and support the concept of *interruptible power customers.* These are customers capable of either purchasing surplus hydro energy, or using other energy sources when surplus hydro energy is not available. Examples are cruise ships and the Greens Creek Mine. With particular regard to cruise ships, the plan should set aside land and rights of way for the construction of substations and electrical facilities needed to provide hydropower to all the cruise ship berths. There is power to just one at this time. The benefit of interruptible customers is that they can enjoy the lower cost energy when hydro is plentiful and AELP's regular ratepayers will benefit by lower rates and have priority to hydro energy during periods of hydro shortages.

Conclusion: Energy issues are very complex. Juneau's renewable energy situation is dynamic and the energy policies of the comprehensive plan should be written to accommodate variable conditions. We are happy to provide any assistance and information that you need to develop this plan. Please feel free to contact me at any time. I am sure that together we can develop an energy policy that meets the objectives of both AELP and the city.

Sincerely,

Tim McLeod, President
Alaska Electric Light & Power

cc: Murray Walsh