



CITY OF BETHEL
PUBLIC WORKS COMMITTEE
WEDNESDAY, NOVEMBER 16, 2022, 5:30 PM

LOCATION: 300 CHIEF EDDIE HOFFMAN HIGHWAY, BETHEL, ALASKA

JOIN ZOOM MEETING

[HTTPS://US06WEB.ZOOM.US/J/83051385613?PWD=UZZINWZOV0ZWNKXLUNP3BKEYOUJXDZ09](https://us06web.zoom.us/j/83051385613?pwd=UZZINWZOV0ZWNKXLUNP3BKEYOUJXDZ09)

MEETING ID: 830 5138 5613

PASSCODE: 605375

888 475 4499 US TOLL-FREE 833 548 0276 US TOLL-FREE

833 548 0282 US TOLL-FREE 877 853 5257 US TOLL-FREE

MEMBERS

Ryan Butte
Juan Delgado

Alyssa Leary
Mark Springer, Council Rep.

STAFF

Bill Arnold, Ex Officio Member
pwadmin@cityofbethel.net
907-543-3110

I. CALL TO ORDER

II. ROLL CALL

III. PEOPLE TO BE HEARD – FIVE MINUTES PER PERSON

- A. Please submit written public comments to pwadmin@cityofbethel.net by 4:00 p.m. the day of the meeting.

IV. APPROVAL OF AGENDA

V. APPROVAL OF MEETING MINUTES

- A. July 20, 2022 Meeting Minutes
B. August 17, 2022 Meeting Minutes
C. September 21, 2022 Regular Meeting Minutes
D. October 19, 2022 Meeting Minutes

VI. UNFINISHED BUSINESS

- A. Amending BMC 08.12.020 and 08.12.030, Related to Plastic Bags And Disposable Food Service Ware
B. Follow Up On Recommendation For Code Enforcer Position
C. Evaluation Of Committees 2022 Goals, Tasks And Priorities
D. Bethel Comprehensive Plan Update-Committee Review And Input
E. Creating A Street Sweeping Policy/Municipal Code Requiring Owners Of Paved Roads To Have And Follow A Street Sweeping Policy (Butte)

VII. NEW BUSINESS

VIII. EX OFFICIO REPORT

IX. MEMBER COMMENTS

X. ADJOURNMENT

Posted November 9, 2022 at City Hall, AC Co., Swanson's, and the Post Office.

Name, Ex-Officio Staff

Posted November 9, 2022 at City Hall, AC Co., Swanson's, and the Post Office.

Name, Ex-Officio Staff

City of Bethel, Alaska

Public Works Committee Minutes

July 20, 2022

Regular Meeting

Bethel, Alaska

I. CALL TO ORDER:

A regular Public Works Committee Meeting was held on July 20, 2022, via Zoom. Mark Springer called the meeting to order at 05:39 pm.

II. ROLL CALL:

Comprising a quorum of the committee, the following were present for Roll Call: Ryan Butte, Mark Springer, Alyssa Leary, Juan Delgado

III. PEOPLE TO BE HEARD:

IV. APPROVAL OF AGENDA:

Moved By:	Ryan Butte	Motion to approve agenda
SECONDED BY:	Juan Delgado	
VOTE ON MOTION	Motion carried by unanimous vote.	

V. APPROVAL OF MINUTES:

- A. October 20, 2021, Regular Meeting
- B. November 17, 2021, Meeting Minutes
- C. December 15, 2021, Meeting Minutes
- D. January 19, 2022, Regular Meeting Minutes
- E. February 16, 2022, Regular Meeting Minutes
- F. March 16, 2022, Regular Meeting Minutes
- G. April 20, 2022, Regular Meeting
- H. May 18, 2022, Regular Meeting

Moved By:	Alyssa Leary	Motion to approve meeting minutes.
SECONDED BY:	Ryan Butte	
VOTE ON MOTION	Motion carried by unanimous vote.	

VI. UNFINISHED BUSINESS:

- A. Amending BMC 08.12.020 and 08.12.030, related to plastic bags and Disposable Food Service Ware
- B. Follow Up on Recommendation for Code Enforcer Position
- C. Election of Vice-Chair

Moved By:	Alyssa Leary	Motion to nomination for Ryan Butte to be Vice-Chair.
Seconded By:	Juan Delgado	
VOTE ON MOTION	Motion carried by unanimous vote.	

- D. Election of Chair Motion

Execution of Chair Motion:		
Moved By:	Alyssa Leary	Motion to nomination for Mark Springer to be Chair.
SECONDED BY:	Juan Delgado	
VOTE ON MOTION	Motion carried by unanimous vote.	

- E. Evaluation of Committees 2022 Goals, Tasks and Priorities
- F. Declaration of Vacancy- Two Seats Due to Member Resignations

Declaration of vacancy		No Seats Due to Member Resignations	
Moved By:	Ryan Butte		Motion to declare, Declaration of vacancy to remove Fritz Charles, and Judy Jordan from the seats due to resignations.
SECONDED BY:	Juan Delgado		
VOTE ON MOTION	Motion carried by unanimous vote.		

G. Explanation of Possible Amendments to Bethel Municipal Code to Clarify Ownership of Piped Water Service Lines

H. Review of Fiscal Year 2023 Proposed Budget

I. Bethel Comprehensive Plan Update-Committee Review and Input

VII. NEW BUSINESS:

VIII. EX OFFICIO MEMBER REPORT:

A. Monthly Department Head Operational Reports

IX. COMMITTEE MEMBER COMMENTS:

A.Leary: Thank everyone to be here tonight.

R.Butte: Thinking about trying out talk-line for the first time, good meeting.

J.Delgado: Good meeting.

M.Springer: More members and that we continue to talk about trash bags.

X. ADJOURNMENT:

MOVED BY:	Ryan Butte	Motion to adjourn.
SECONDED BY:	Alyssa Leary	
VOTE ON MOTION	Motion carried by unanimous vote.	

With no further business, meeting adjourned at 06:30 PM.

APPROVED THIS _____ DAY OF _____, 2022.

Mark Springer
Committee Chair

Frank Bayer
Recorder of Minutes

City of Bethel, Alaska

Public Works Committee Minutes

August 17, 2022

Regular Meeting

Bethel, Alaska

I. CALL TO ORDER:

A regular Public Works Committee Meeting was held on August 17, 2022, Mark Springer called the meeting a no show due to missing members at 5:40 PM meeting ended.

II. ROLL CALL:

Comprising a quorum of the committee, the following were present for Roll Call:

Mark Springer: here

Ryan Butte: here

Alyssa Leary: here

Juan Delgado: no show

Also Present:

Frank Bayer: here

Bill Arnold: here

In the absence of a quorum, the meeting adjourned.

Mark Springer
Committee Interim Chair

Frank Bayer
Recorder of Minutes

City of Bethel, Alaska

Public Works Committee Minutes

September 21, 2022

Regular Meeting

Bethel, Alaska

I. CALL TO ORDER:

A regular Public Works Committee Meeting was held on September 21, 2022, Mark Springer called the meeting to order at 5:40 PM.

II. ROLL CALL:

The following were present for Roll Call:

Mark Springe
Ryan Butte
Alyssa Leary

The following were absent for Roll Call:

Juan Delgado

Ex Officio Members Present:

Frank Bayer
Bill Arnold

Due to the lack of a quorum the meeting adjourned at 5:40pm.

Frank Bayer
Records Coordinator

Mark Springer
Committee Chair

City of Bethel, Alaska

Public Works Committee Minutes

October 19, 2022	Regular Meeting	Bethel, Alaska
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I. **CALL TO ORDER:**

A regular Public Works Committee Meeting was held on October 19, 2022, Ryan Butte called the meeting to order at 06:10 PM meeting.

II. **ROLL CALL:**

Comprising a quorum of the committee, the following were present for Roll Call:

Mark Springer: ABSENT

Ryan Butte: HERE

Alyssa Leary: HERE

Juan Delgado: ABSENT

Also Present:

Frank Bayer: HERE

Bill Arnold: NO SHOW

Excused Absence:

A meeting was not held due to a lack of a quorum

Mark Springer
Committee Interim Chair

Frank Bayer
Recorder of Minutes

Chapter 8.12

PLASTIC BAGS AND POLYSTYRENE CONTAINERS

Sections:

- 8.12.010 Definitions.**
- 8.12.020 Nonbiodegradable plastic carry-out bags.**
- 8.12.030 Polystyrene foam disposable food service ware.**
- 8.12.040 Exemptions.**

8.12.010 Definitions.

"Affected retail establishment" means any commercial business facility that sells goods directly to the ultimate consumer including but not limited to grocery stores, pharmacies, and retail stores.

"ASTM standard" means meeting the standards of the American Society for Testing and Materials (ASTM) International Standards D6400 or D6868 for biodegradable and compostable plastics.

"Biodegradable" means the entire product or package will completely break down and return to nature, i.e., decompose into elements found in nature within a reasonably short period of time after customary disposal.

"Customer" means any person obtaining prepared food from a restaurant or retail vendor.

"Disposable food service ware" means all containers, bowls, plates, trays, cartons, cups, lids, and other items that are designated for one-time use and on, or in, which restaurant or retail food vendors directly places or packages prepared food or which are used to consume foods. This includes, but is not limited to, service ware for takeout foods and/or leftovers from partially consumed meals prepared at restaurants or retail food vendors.

"Food vendor" means any restaurant or retail food vendor located or operating within the city of Bethel.

"Polystyrene foam" means and includes blown polystyrene and expanded and extruded foams which are thermoplastic petrochemical materials utilizing a styrene monomer and processed by any number of techniques including but not limited to fusion of polymer spheres, injection molding, foam molding, and extrusion-blow molding. Polystyrene foam is generally used to make cups, bowls, plates, trays otherwise known as Styrofoam. [Ord. 09-12 § 2.]

8.12.020 Nonbiodegradable plastic carry-out bags.

A. Affected retail establishments, food vendors and nonprofit vendors are prohibited from providing plastic carry-out bags to their customers at the point of sale to transport purchased items. Reusable bags, recyclable paper bags and compostable bags, including biodegradable plastic bags, are allowed alternatives.

- B. Nothing in this section shall be read to preclude affected retail establishments, food vendors and nonprofit vendors from making recyclable paper bags available to customers.
- C. Affected retail establishments, food vendors and nonprofit vendors are encouraged to provide incentives for the use of reusable bags through education and through credits or rebates for customers that use reusable bags at the point of sale for the purpose of carrying away goods.
- D. No person shall distribute plastic carry-out bags at any city facility or any event held on city property. [Ord. 09-12 § 2.]

8.12.030 Polystyrene foam disposable food service ware.

- A. Except as provided in BMC [8.12.040](#), food vendors are prohibited from providing prepared food to customers in disposable food service ware that uses polystyrene foam.
- B. All city facilities are prohibited from using polystyrene foam disposable food service ware and all city departments and agencies will not purchase or acquire polystyrene foam disposable food service ware for use at city facilities.
- C. All food vendors using any disposable food service ware will use biodegradable or compostable disposable food service ware unless they can show an affordable biodegradable or compostable product is not available for a specific application. Food vendors are strongly encouraged to reuse food service ware in place of using disposable food service ware. [Ord. 09-12 § 2.]

8.12.040 Exemptions.

- A. Prepared food prepared or packaged outside the city of Bethel is exempt from the provisions of this chapter. Purveyors of food prepared or packaged outside the city of Bethel are encouraged to follow the provision of this chapter.
- B. Food vendors will be exempted from the provisions of this chapter for specific items or types of disposable food service ware if the city administrator or their designee finds that a suitable affordable biodegradable or compostable alternative does not exist and/or that imposing the requirements of this chapter on that item or type of disposable food service ware would cause undue hardship.
- C. Polystyrene foam coolers and ice chests that are intended for reuse are exempt from the provisions of this chapter.
- D. Disposable food service ware composed entirely of aluminum is exempt from the provisions of this chapter.
- E. *Emergency Supply and Service Procurement.* In a situation deemed by the city administrator to be an emergency, for the immediate preservation of the public peace, health or safety, city facilities, food vendors, contractors and vendors doing business with the city shall be exempt from the provisions of this chapter. [Ord. 09-12 § 2.]

The Bethel Municipal Code is current through Ordinance 21-49, passed October 12, 2021.

Disclaimer: The city clerk's office has the official version of the Bethel Municipal Code. Users should contact the city clerk's office for ordinances passed subsequent to the ordinance cited above.

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[City Website: www.cityofbethel.org](http://www.cityofbethel.org)

[Code Publishing Company](#)

Article VIII. Public Works Committee

2.60.200 Establishment of public works committee.

There is established a public works committee for the purpose of advising the city council on city roads, facilities, utility operations, vehicle and equipment operations, and other public works-related matters. [Ord. 21-20 § 4, 2021.]

2.60.210 Public works committee duties.

A. The public works committee may review and make recommendations to the council on:

1. The operations of the city's water and wastewater collection, distribution, treatment and compliance; and solid waste planning, collection, disposal and compliance.
2. The development, operations, and maintenance of city properties, roads, traffic, drainage, snow removal, parks, cemeteries, grounds, and trails.
3. The operations of the transit system.
4. The operations and maintenance of the city's vehicle fleet and heavy equipment.
5. The budget as it relates to public works operations and capital projects.
6. City capital planning and implementation of projects related to public works.
7. Energy and environmental improvements for city operations.
8. The progress toward achieving the goals set out in the city's comprehensive plan as they relate to public works.

B. The public works committee may perform other such duties as the city council may from time to time refer. [Ord. 21-20 § 4, 2021.]

MEETING: Public Works Committee Meeting – April 20, 2022
TOPIC: Bethel Comprehensive Plan Update 2045 – Energy, Public Facilities & Services
PRESENTER: LaQuita Chmielowski – DOWL Senior Land Use Planning Manger &
Comprehensive Plan Update Project Manager

Comprehensive Plan Update – Project Introduction

The City of Bethel, working with DOWL, is updating its Comprehensive Plan. The Plan was last updated in 2011 and looked towards 2035; the Comprehensive Plan Update currently in progress is planning for Bethel in 2045.

The Bethel Comprehensive Plan 2045 is a guide for community development and services. It sets clear goals and strategies to achieve those goals. This, combined with the flexibility needed to respond to new situations and opportunities, creates the framework to successfully implement the City's vision. As with any plan, periodic updates are required to acknowledge current conditions and changes to community priorities and goals.

The Comprehensive Plan covers topics like:

- Regional context
- Vision and goals
- Land use, housing, and environment
- Transportation
- Economic development
- Energy
- Public facilities and services

The Plan integrates these topics and suggests implementation strategies that lead to projects with the flexibility to adapt to unforeseen changes.

Public Works Committee Input Requested

As part of the Comprehensive Plan Update, we are gathering input from the public at Community Meetings (first one was held on March 24), a stakeholder working group meeting bi-weekly, the City Council, and City committees and commissions, including the Public Works Committee.

Please review the appended excerpts relating to Public Works in Bethel:

- Current Comprehensive Plan (2011) sections:
 - o Energy
 - o Public Facilities & Services

These sections will be the starting point for the parts of our Comprehensive Plan Update 2045 that address Energy and Public Facilities & Services. Some goals or implementation action items may have been achieved, some may no longer be relevant, or some important new priorities could be missing from the plan. For example, DOWL is currently working on a Utility Rate Study for Bethel, as well as a report on piped water and sewer infrastructure, both of which are not addressed in the 2011 plan since they were not in progress yet. Additionally, the structure of our plan sections could change. For these reasons, we value your review and any input you can provide, whether the input is broad guidance on priorities or specific items to note.

At the April 20 Public Works Committee meeting, LaQuita Chmielowski will provide a brief introduction to the Comprehensive Plan Update project and the input we are seeking from the Public Works Committee. This meeting will serve as an introduction, and DOWL will plan to return to a future Public Works Committee meeting to discuss comments and questions in greater detail.

Additional Information & Contact

We are early in our process of gathering community input on the Comprehensive Plan Update during Spring 2022. We understand that we will not have time to cover all input the Committee may have to offer at the April 20 meeting. Engagement and work on the project is scheduled to continue until Fall 2022, so please feel free to reach out with questions or comments at any time.

For more information about the project and upcoming meetings, check out the project website: <https://bethelcompplanupdate.com/>

Send us an email with comments or questions: BethelCompPlanUpdate@dowl.com

Add your comments to the Public Comment Map on the project website: <https://bethelcompplanupdate.com/public-comment-map>

Or, call Morgan McCammon, DOWL Public Involvement Specialist: 907-562-2000

Energy (Chapter 7)

High energy costs (for electricity, home heating, and for cars, snowmachines, boats and planes) are driving up the cost of living and the cost of doing business in Bethel, for both public and private entities. One of the highest priorities for Bethel is to find a way to lower or at least to stabilize energy costs. Because of Bethel's location, distant from Alaska's major population centers and off the road system, and due to the area's cold climate and lack of local energy-producing resources, it is unlikely that Bethel will see energy prices lower substantially.

There are a number of initiatives currently underway to address the high cost of energy in Bethel. Bethel residents are using new and traditional energy sources (such as wood-burning technology) to heat buildings and generate electricity (e.g., wind turbines). The City and Orutsararmiut Native Council (ONC) are working with others in the community to help reduce energy use and energy costs. The Housing Authority partnered with AHFC to train energy auditors, and ONC has funding to help homeowners improve the energy efficiency of their houses. The City is looking at alternatives including natural gas and large-scale wind energy.

Regional projects under consideration include:

- a hydroelectric facility at Chikuminuk Lake to provide electricity to Bethel and 13 villages in the Yukon-Kuskokwim Delta, with regional plants, interties, and wind farms supplementing power needs in individual communities as needed.
- options for natural gas.
- construction of electric transmission lines among clusters of villages to distribute power from a system of centralized shared power generation plants.
- Bulk fuel purchases, in which multiple communities purchase fuel as a group.

The City recently completed a study of potential costs savings that could be realized under different electric utility ownership structures, alternative fuel procurement, increased wind-generation, and with surplus heat sales (waste heat). The study found that:

- On balance private ownership of a local electric utility is not the major cause of high electric prices in Bethel.
- Electricity costs in rural Alaska are largely a function of the cost of diesel fuel.
- The integration of wind could help reduce costs for electricity (by between 1.8 and 5.3 percent) when the utility itself provides the wind resource. When wind generation is held by a third party, potential cost savings are significantly reduced.
- The ideal electric utility model for Bethel would be a cooperative that operates its own fuel storage (possibly using a pipeline system), integrates wind, and allows the city to utilize waste heat. *This assumes that BUC would be willing to sell to a cooperative and that a locally based cooperative could be formed with the capacity and resources to take over and run the utility.*

- The City should develop relationships with key agencies, businesses and institutions, including BUC (or its successor), the RCA and the RAPA,² and other organizations to work on energy issues in Bethel.
- A regional energy cooperative with the ability to address energy needs and issues at the regional level could be formed to make bulk fuel purchases and lower the cost of diesel fuel.
- While new energy sources need to be pursued, energy conservation is the single most important means to respond to rising energy costs. Over the long term, more manageable energy costs will likely come about through a range of modest actions, rather than one or two dramatic changes.

Priority Implementation Actions:

Priority Energy implementation actions include:

- Establish education and support services for local residents and builders so that existing homes can be made more energy efficient, and to support energy efficient design and construction for new homes. (GOAL 1, Action 1b, p9-23)
- Encourage the use of more fuel-efficient motorized vehicles. (GOAL 1, Action 2c, p9-23)
- Share and update information (e.g., maps of future commercial, residential and/or institutional development, maps of easements and rights-of-way, plans for utility infrastructure expansion) on an annual basis, with the goal of improving the City's ability to coordinate planning for future land development and a range of energy solutions. . (GOAL 2, Action 3a, p9-24)
- Engage in a joint long-range planning effort to ensure that the utility, the City, major electricity users, and other local and regional stakeholders work together to meet community electricity needs. (GOAL 2, Action 3b, p9-24)
- Explore the feasibility of a City-owned tank farm. (GOAL 2, Action 4a, p9-24)
- Explore bulk fuel purchasing options. (GOAL 2, Action 4b, p9-24)
- Develop new City policy to guide the placement and operation of wind turbines to ensure the safety and quiet enjoyment of the community. (GOAL 3, Action 1a, p9-24)
- Work with the electric utility to understand the capacity of Bethel's electric generation and transmission infrastructure to accommodate alternative energy sources, and also to determine the most appropriate levels of investment in various alternative energy sources. (GOAL 3, Action 1b, p9-24)
- Reserve land or land development rights for alternative energy development and facilities (e.g., wind turbines, natural gas pipeline rights-of-way). (Also Land Use Goal 1.) (GOAL 3, Action 1c, p9-25)

² The Regulatory Commission of Alaska (RCA) is the State Commission that regulates utilities in Alaska. The Regulatory and Public Affairs (RAPA) Division of the Attorney General advocates for the public interest in matters that come before the RCA.

- Explore the use of innovative financing programs for renewable energy investments (e.g., Property Assessed Clean Energy or Sales Tax Assessed Clean Energy). (GOAL 3, Action 1d, p9-25)
- Coordinate with regional partners, at a minimum to keep City and regional partners informed of each other's energy-related policies and projects. As practicable, coordinate local and regional policies and projects, including (but not limited to) options for hydro and natural gas prospects, regional wind farms, and inter-village transmission lines connecting centralized power plants. (GOAL 3, Action 2a, p9-25)

Public Facilities and Services (Chapter 8)

The City of Bethel provides a number of important services and facilities to the Bethel community, which contributes to Bethel's status as a regional hub. This chapter also provides specific guidance to several City departments: Administration, Finance, Public Works, Technology, Fire and Emergency Services, Police, and Parks and Recreation.

- **Administration:** Administrative services for the City of Bethel are provided by the City Manager, City Clerk, Grants Manager and Finance Department. Priorities include improvements to administrative policy and procedure that will improve customer service and foster a more forward-thinking approach to financial management and decision-making.
- **Public Works:** The Bethel Public Works Department provides water and sewer services, and owns and operates the associated infrastructure, including water wells, pipes, trucks,³ five sewer lift stations and a sewage lagoon to treat and dispel wastewater. It is also responsible for operations, maintenance, construction and planning oversight for the City's solid waste facilities, and cleanup and trash collection for City property. The City owns dumpsters, a haul truck, a municipal landfill for solid waste and a recycling center. Priorities include addressing the future need to replace the existing landfill and lagoon, and to settle on the optimum form of a hybrid piped and trucked system, which will likely mean establishing new satellite water/sewer stations.

³ Two water treatment facilities are in operation: the Bethel Heights Water Treatment Plant (BHWTP) and the City Subdivision Water Treatment Plant. A third water treatment facility, the City Center Water Treatment Plant was decommissioned and replaced by the City Subdivision plant.

Map 8.1

City of Bethel *Public Works*



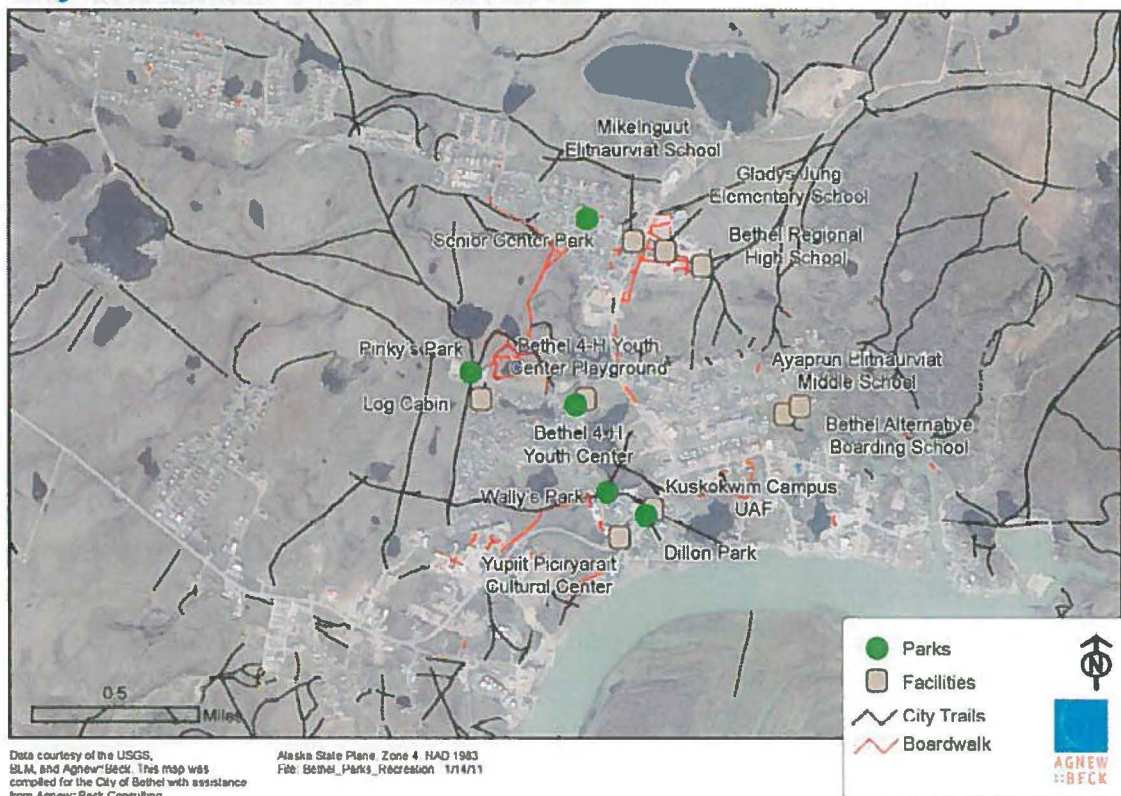
- **Technology:** The Technology Department maintains the City of Bethel's information technology systems. Priorities include improvements to the City's communications technology system.
- **Fire and Emergency Medical Services:** The City of Bethel Fire Department works to protect life and property by providing quick and efficient responses to fires, medical emergencies, hazardous material response and other hazardous situations, as well as increasing public awareness of hazards through fire prevention and public education programs. Priorities include a substation near the airport.
- **Police:** The Bethel Police Department provides police services within Bethel city limits and often works in cooperation with other agencies and the citizens of Bethel to address the greater community's public safety needs and concerns. Priorities include improvements to communications infrastructure (e.g., tower, e-911) and relocating the police department to new quarters.
- **Youth and Adult Recreation:** The Bethel Parks and Recreation Department manages and plans for the City's parks, playgrounds and recreation facilities. The department coordinates activities and programs for the city's diverse population. In addition to the City facilities and spaces available, Bethel has a number of facilities operated in partnership with other agencies and institutions, including the school district and

university, whose spaces are available for limited use. Priorities include capital improvements to existing and future recreation facilities.

- Other parks and recreation infrastructure improvements are detailed in the 2011 Bethel Parks and Recreation Master Plan (updated concurrent with this Comprehensive Plan).

Map 8.3

City of Bethel Parks + Recreation



- Intergovernmental Cooperation: In order to accomplish some of the goals and strategies included in this plan, each chapter reiterates the need for partnerships, cooperation and coordination among the City and other Bethel institutions, such as ONC, the local and regional Native Corporations, the regional school district, housing corporation and health center. To support these efforts, the Public Facilities and Services chapter includes a set of policies for intergovernmental cooperation.

Priority Implementation Actions:

Priority Public Facilities and Services implementation actions include:

- Implement improvements to internal city management processes and procedures (e.g., cross-training, streamlining procedures). (GOAL 1, Objective A, Action 1a, p9-26)
- Work with individual City departments to develop 5-year capital needs and deferred maintenance plans. (GOAL 1, Objective A, Action 2a, p9-26)
- Better enforce City business licensing and sales tax collection. (GOAL 1, Objective A, Action 3e, p9-27)
- Develop a financial plan for service provision: incorporate capital needs and deferred maintenance, rate study, and recommendations for future improvements. Explore the possibility of charging for piped water/sewer on a meter basis, comparable to trucked/hailed service. (GOAL 1, Objective B, Action 1a, p9-27)
- Establish an alternative treatment system to replace the existing sewer lagoon. Identify and secure a site for new wastewater treatment system. (GOAL 1, Objective A, Action 4a, p9-28)
- Consider building additional water/sewer transfer station(s) in key locations, to create a city wide hub and spoke system. GOAL 1, Objective B, Action 4a, p9-28)
- Identify possible site(s) for a new landfill (to eventually replace existing landfill). (GOAL 1, Objective C, Action 1a, p9-28)
- Consider options for compacting waste (e.g., dynamic compaction). (GOAL 1, Objective C, Action 2a, p9-28)
- Develop and implement a business plan for the Bethel recycling center. (GOAL 1, Objective C, Action 3a, p9-29)
- Market/provide accurate, up-to-date information about what waste management, recycling, composting, and resale services, programs and facilities are available in Bethel. (GOAL 1, Objective C, Action 4e, p9-30)
- Secure new facilities for Bethel Police headquarters. (GOAL 1, Objective F, Action 1a, p9-31)
- Upgrade the Bethel 4-H Youth Center. (GOAL 1, Objective G, Action 1a, p9-31)
- Develop a community swimming pool complex. (GOAL 1, Objective G, Action 1b, p9-31)
- Explore the use of shared facilities and the coordination of services provided by ONC. (GOAL 2, Action 4a, p9-32)

7. Energy

Introduction

High energy costs (for electricity, home heating, and for cars, snowmachines, boats and planes) are driving up the cost of living and the cost of doing business in Bethel, for both public and private entities. As the tables below show, Bethel residents have observed dramatic changes in prices in a short time frame.

Bethel Gas Prices 1996-2010¹

1996	\$2/gallon
2005	\$3/gallon
2010	\$6/gallon

Bethel Fuel Oil Prices 2004-2010²

2004	\$1.40/gallon
2010	\$5.00/gallon

Typical household costs for electricity can range from \$200-\$700 per month, and \$800-900 per month for heating.³ These high energy costs impact every aspect of life in Bethel: from the health of the economy and available jobs, to choices people make about where to live, transportation, and in some cases, the ability to afford to stay in Bethel at all. Table 7.1 shows how dramatically energy costs have grown relative to Alaska household incomes.

Table 7.1

Median Share of Income Alaska Households Spend for Home Energy Use (2000, 2008)		
	2000	2008
Alaska Statewide (all households, all incomes)	2.8%	4.7%
Anchorage	5.5%	8.7%
Other Large and Road System Communities	9.2%	17.9%
Remote Rural Communities	15.9%	47.0%

Saylor, Haley, Szymoniak 2008. ISER

One of the highest priorities for Bethel is to find a way to lower or at least to stabilize energy costs. Because of Bethel's location, distant from Alaska's major population centers and off the road system, and due to the area's cold climate and lack of local energy-producing resources, it is unlikely that Bethel will see energy prices lower substantially. More realistic goals will be to stabilize costs, or at least slow the rate at which energy costs grow in future.

Residents are paying higher rates to heat and light their homes, to travel, and for purchased goods. The cost of doing business and governing the community is rising. If energy costs can be controlled, the City's administrative costs will go down, which will help with the City's financial challenges. Bethel residents, institutions and businesses are exploring a wide range of alternatives

¹ Kurt Kuhne, Yuut Elitnaurviat. Personal communication, November 29, 2010.

² Ibid.

³ Chuck Willert, City of Bethel Public Works. Personal communication. April 6, 2011.

to control energy costs. These efforts must continue to target the many different aspects of community life that affect energy use. This means not only the source and cost of fuel and energy production technologies, but also all the factors that affect energy consumption, including land use, transportation choices, building techniques, etc.

Energy Trends

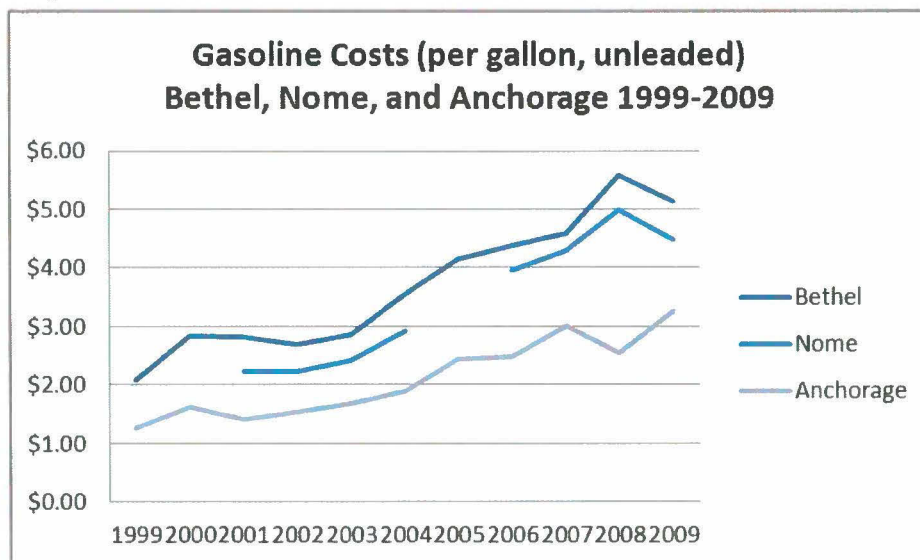
Fuel for Transportation

As Figure 7.2 shows, the general trend for fuel prices in Bethel has mirrored that of other communities in Alaska over the past ten years. These have been trending upward for the most part, though there has been a decline since fuel prices spiked across the state in 2008.

Gas stations in Bethel buy from either Crowley or Delta Western, the two wholesalers that ship fuel to Bethel. Crowley supplies the majority of fuel and owns the fuel tanks at the Bethel Petro Port. The Bethel tank farm has a 17 million gallon capacity, 2 million gallons of which are currently dedicated to Delta Western. About 20 percent of the tank farm fuel goes to villages in the region.

Shipping costs are high: the Kuskokwim is a shallow river, restricting the size of barges that can make it as far upriver as Bethel. These barges can only bring 1.5-2.5 million gallons at a time (barges can deliver three million gallons at a time in Nome). Due to river ice, barge deliveries can only be made during the summer shipping season from June 1 to November 1. During this short window of time, fuel is offloaded in the Port of Bethel around nine days per year.

Figure 7.2



Source: Alaska Food Cost Survey (<http://www.uaf.edu/ces/fcs/>).

Heat

The majority of Bethel's residents heat their homes with some form of heating oil. A small number of homes are heated with either wood or electricity. Non-residential buildings mainly use heating oil; a few purchase waste heat from Bethel's electric utility.

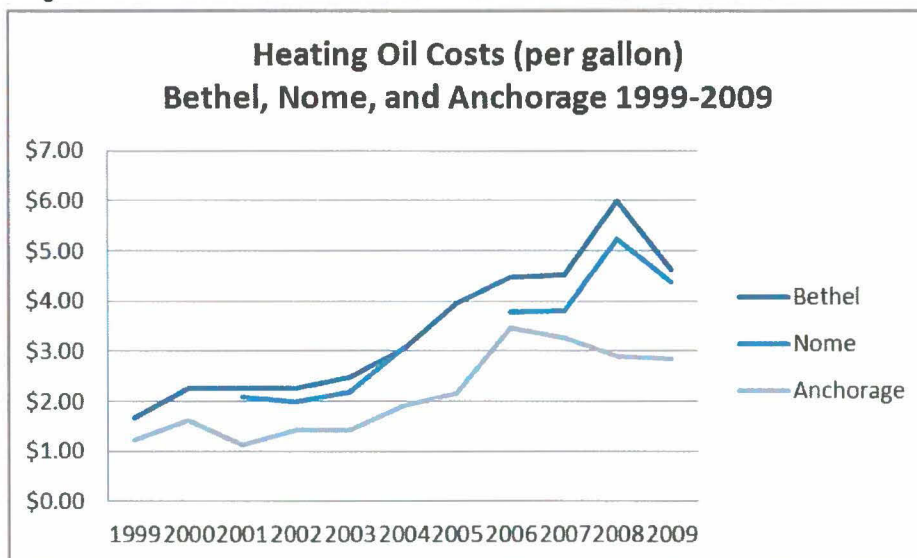
The cost of waste heat has also risen over time. Waste heat requires expensive insulated pipes; they are about 25 years old now and could need to be replaced or improved by the electric utility in the near future. Unless the utility were to receive a grant subsidy, these capital costs would have to be recouped through energy fees.

Table 7.3

City of Bethel, Residential Heating Types	
utility gas, fuel oil, kerosene, etc.	92.5%
wood	3.9%
electricity	3.7%
total units	100.0%

Source: U.S. Census Bureau, 2005-2009 American Community Survey.

Figure 7.4



Source: Alaska Food Cost Survey (<http://www.uaf.edu/ces/fcs/>).

Electricity

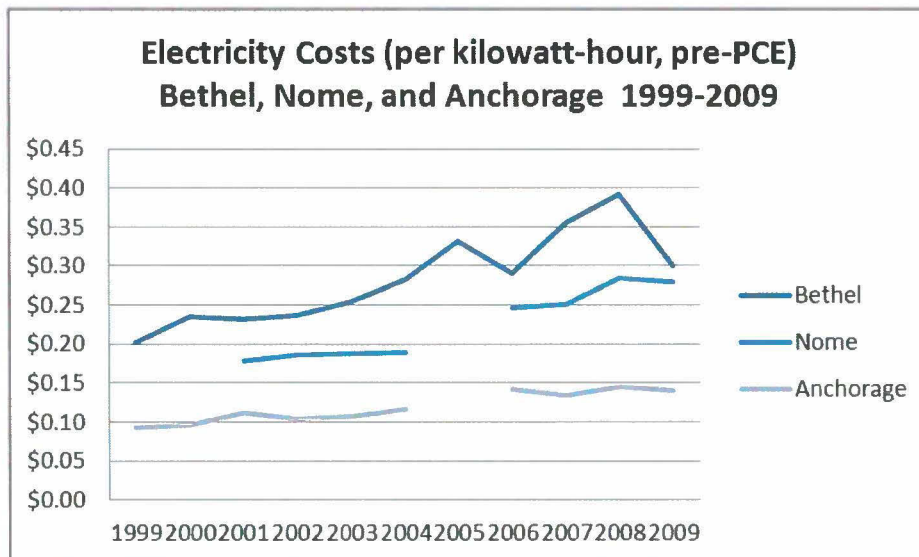
Bethel has a single electric utility, the Bethel Utility Company (BUC, Inc.). BUC is a private, investor-owned utility that was formed in 1972. As a private utility, BUC is regulated by the Regulatory Commission of Alaska (RCA). The current facility has six diesel generators,⁴ two 20,000 gallon diesel storage tanks, and one 64 pound per hour incinerator. Three to four of the generators are run at a given time, with the others as backup. Each generator can produce 2,220 kilowatts (giving the utility a total capacity of 13,600 kilowatts).

Several private property owners in Bethel have erected small wind turbines to meet or supplement their household or business electricity needs. The City has plans to erect four 100-kilowatt wind turbines near the Bethel landfill; these have not yet been erected.

Electricity prices in Bethel are noticeably high, even among other small Alaska hub cities (e.g., Nome). These prices would be significantly higher were it not for the State of Alaska's power cost equalization program, which cuts Bethel electricity costs of residential users (but not businesses) by more than half.

As is the case with gasoline and heating fuel, costs for electricity are taking a steadily growing bite out of the pocketbooks of Bethel residents, businesses and institutions. While some individual households and business owners have the resources to take action individually (for example to purchase and install wind turbines), most do not; community-scale action is needed.

Figure 7.5



Source: Alaska Food Cost Survey (<http://www.uaf.edu/ces/fcs/>). These electricity rates do not include Power Cost Equalization (PCE).

⁴ Three of the generators were installed in 1976, one in 1985, one in 1990 and one in 1992. Page 2, Alaska Department of Environmental Conservation Air Quality Operating Permit for the Bethel Power Plant. Issued 2007, expires 2012. Accessed from the World Wide Web 4/7/2011: <http://www.dec.state.ak.us/air/ap/docs/AQ0205TVP02finpersob.pdf>.

Recent and Ongoing Initiatives

There are a number of initiatives currently underway to address the high cost of energy in Bethel. These efforts are operating at all levels, from individuals, businesses and institutions, to City and Tribal government efforts, to regional cooperative initiatives. Work at all these scales is needed to make progress on energy issues. Some of these actions focus on short term relief to households, businesses and institutions; others aim to investigate and implement long term solutions for viable energy solutions for future generations.

The section below provides an overview of these actions. Before starting that section, it is worth again emphasizing the reality that energy prices globally (and particularly in remote locations like Bethel) are destined to remain high. Consequently, while new energy sources need to be pursued, energy conservation is the single most important means to respond to rising energy costs.

Residents, Businesses and Institutions

As individual households, businesses and institutions, Bethel residents are using new and traditional energy sources (such as wood-burning technology) to heat buildings and generate electricity (e.g., wind turbines). Several homeowners and institutions, such as the Association of Village Council Presidents (AVCP) and the Yukon Kuskokwim Health Corporation (YKHC), are purchasing and erecting wind turbines to supply some of their electricity needs. Some use the net metering approach, as allowed by Alaska state law. These customers are billed for the net monthly consumption of electricity after accounting for the integration of wind. When more wind is generated than used, customers receive a credit for the excess at published rates. For YKHC, energy savings strategies have been more cost effective than wind generation. But windmills are successfully augmenting the electricity needs of these property owners. The turbines used to generate electricity for individual facilities are also proving useful in nearby villages. Yuut Elitnaurviat teaches maintenance and technical skills to install and service wind turbines.

City and Tribal Efforts

The City and Orutsararmiut Native Council (ONC) are working with others in the community to help reduce energy use and energy costs. The Housing Authority partnered with AHFC to train energy auditors, and ONC has funding to help homeowners improve the energy efficiency of their houses. The state has a generous (but relatively complex) program that covers the cost of home energy conservation improvements. Many Bethel homes and businesses are not designed to conserve energy, and much more could be done to reduce both heating oil and electricity use through targeted energy conservation investments.

Bethel, with the encouragement of the current Mayor, is looking at options for natural gas. The City is currently focused on better understanding the costs and infrastructure needed to retrofit Bethel homes, businesses and institutional facilities to use natural gas, and to seek partners to work with the City to develop a liquefied natural gas (LNG) tank farm. Most recently, the City, working with a consulting firm (PDC Harris Group LLC) has completed a grant application to the Alaska Energy Authority (AEA). The purpose of the proposal, "Phase 1 Application for Emerging Energy Technology Grant to Alaska Energy Authority" is to conduct concept design and feasibility level analysis in Bethel to demonstrate the economic feasibility of transporting Liquefied Natural Gas to a remote community, storing the fuel as Compressed Natural Gas in

commercially available pressure vessels on-site, and distributing the gas for use in existing furnaces, boilers and a diesel engine electric generator. It may also be possible to turn tundra marsh grasses into a usable form; this possibility has yet to be explored by the City.

The City has been also been actively exploring the feasibility of larger-scale wind energy. According to a 2006 AEA study, wind resources at or near Bethel, Alaska are categorized as Class 4 (or “good”) for wind power development. Class 4 or greater typically indicates that average wind power density at a height of 30 to 50 meters will produce energy suitable for utility or small-scale wind applications.

In 2006, the City petitioned, and was awarded, a State of Alaska legislative grant to complete a wind energy feasibility study. The completed study (up to 60 percent engineering and design study for wind resources) evaluated wind installations consistent with low, medium, and high penetration scenarios. The study recommended Fuhrlander 600 kW wind turbines and a battery system for the integration of the variable resource.

In 2008, the City petitioned for an AEA grant to install four 100 kW Northwind turbines. The AEA awarded the City two grants totaling nearly \$3 million. The City is required to obtain an interconnection agreement from BUC and Qualifying Facility (QF) rate documentation before the grant money is released. To date, BUC has not shown interest in an interconnection agreement with the City. One of the issues, according to BUC, is that the current equipment at BUC’s generators would need to be updated in order to take output from an intermittent resource like wind. There are technical challenges involved with integrating alternative energy into the Bethel electric grid. In order to use wind turbines for power generation, the power company has to be able to monitor the wind and energy coming in, and at a moment’s notice fire up backup diesel generators when the wind dies down. System upgrades to the generation equipment used by BUC could be needed, including higher-technology equipment and a small generator that would fire up quickly.

Because wind turbines can have potential negative impacts (e.g., noise, damage to property if the blades disconnect, interference with the airport’s air rights), the City Planning Department is looking at developing City guidelines or regulations for locating and maintaining turbines to avoid conflicts among neighbors. The City has looked into other alternative energy sources; studies show that solar is viable in Bethel, but wind power is more financially efficient (providing more “bang for the buck”).⁵

As one way of reducing energy consumption, the City is replacing old streetlights with new LED lights, which are designed to be more energy efficient; Bethel Public Works (with BUC’s help) is monitoring the performance of these lights to see how well they perform in Bethel.

With funding from the State Legislature, the City recently completed an investigation of the potential costs savings that could be realized under three main electric utility ownership structures: private ownership (the existing ownership structure), municipal ownership, and cooperative ownership.⁶ The study also looks at the potential for cost savings that could be achieved by each of the three ownership structures as a result of alternative fuel procurement, integrating wind energy into the Bethel electric grid, and as a result of surplus heat sales (waste heat). Major conclusions of that study are highlighted below:

⁵ Interviews with city staff.

⁶ Agnew::Beck Consulting and EES Consulting (May 2011). Electric Utility Ownership Feasibility Study. Prepared for the City of Bethel.

- While alternatives to the current ownership structure could offer the potential for modest cost savings (about five percent), on balance private ownership of a local electric utility is not the major cause of high electric prices in Bethel.
- Electricity costs in rural Alaska are largely a function of the cost of diesel fuel. BUC fuel procurement practices are between 0.5 percent and 11.6 percent higher than other communities analyzed in this study when an “apples to apples” comparison is conducted.
- The integration of wind could help reduce costs for electricity (by between 1.8 and 5.3 percent) when the utility itself provides the wind resource. One of the findings of the study is that for wind power to lead to cost savings, the facilities are best owned by the utility. When wind generation is held by a third party that requires a return on investment, potential cost savings are significantly reduced.
- The study concludes that the ideal electric utility model for Bethel would be a cooperative that operates its own fuel storage (possibly using a pipeline system), integrates wind, and allows the city to utilize waste heat. This assumes that BUC would be willing to sell to a cooperative and that a locally based cooperative could be formed with the capacity and resources to take over and run the utility.
- Even without a cooperative, the study recommends that the City develop relationships with key agencies, businesses and institutions, including BUC (or its successor), the RCA and the RAPA,⁷ and other organizations to work on energy issues in Bethel.
- The study also supports forming a regional energy cooperative with the ability to address energy needs and issues at the regional level. A cooperative could be formed to make bulk fuel purchases (like the Western Alaska Fuel Buying Group formed by the communities of Nome, Dillingham, Naknek, Unalakleet, Illiamna, and Kotzebue). Another quite successful example of a cooperative is AVEC (the Alaska Village Electric Cooperative), which operates in the Bethel area.
- Overall, the study recommends that the City and community of Bethel look comprehensively at options to reduce energy use and energy costs, particularly emphasizing energy efficiency and conservation programs to help reduce resident, business and City use of electricity. Over the long term, more manageable energy costs will likely come about through a range of modest actions, rather than one or two dramatic changes.

Regional Efforts

The Alaska Energy Authority (AEA) has agreed to invest millions of dollars in alternative energy projects in the Bethel area, though most of this assistance is contingent upon regional coordination of energy planning, generation and transmission.⁸ To meet regional energy needs, Nuvista Light and Power has considered a range of energy alternatives. Nuvista is a non-profit

⁷ The Regulatory Commission of Alaska (RCA) is the State Commission that regulates utilities in Alaska. The Regulatory and Public Affairs (RAPA) Division of the Attorney General advocates for the public interest in matters that come before the RCA.

⁸ p1, Alaska Energy Authority (2011). Alaska Renewable Energy Fund: Round 4 Award Notice App#604 Bethel Renewable Energy Project.

organization that was established in 1995 by Calista Corporation to function as a regional generation and transmission utility and potentially serve the energy needs of the proposed Donlin Creek Mine. The organization currently includes representatives from Calista Corporation, AVCP, AVCP Housing Authority, YKHC, Lower Yukon, Chaninik Wind Group, Alaska Village Electric Cooperative (AVEC), and the Middle Kuskokwim Electric Cooperative, Inc. Though Nuvista is a regional group, Bethel would be the hub and have the largest energy demand; therefore the City has a vested interest in Nuvista's long-term plans and vice versa.

The AEA requires that grant applicants examine all available resources to determine which options are the best. Nuvista's study looked at diesel, geothermal, wind power, hydropower, coal power, and nuclear power. The study determined that hydropower would be the most feasible alternative for energy production. Based on these results, feasibility studies have been done on two hydroelectric projects in the area: Kiseralik River in the Yukon Delta National Wildlife Refuge and Chikuminuk Lake in Wood Tikchik State Wilderness Park. Chikuminuk Lake was found to have the greatest capacity to provide a reliable regional energy supply; it would provide 89.3 gigawatt hours (GWh), enough power to supply 50 percent of the region's population, 13 villages and displace diesel generation year-round.

Nuvista has approached the AEA and the State Legislature for \$17.6 million to complete a detailed feasibility assessment, engineering plans, and preliminary design. If built, the project is estimated to cost about \$451 million⁹ (to put this estimate in context, cost estimates for the Susitna hydroelectric project proposed for Southeast Alaska range from \$3 billion to \$8 billion¹⁰). The initial feasibility study is vague about the exact location of the Chikuminuk project, but it would include transmission lines providing DC power to Bethel, where it would then convert to AC power at a local substation. Regional plants, interties, and wind farms would supplement power needs in individual communities as needed. Nuvista is also exploring natural gas options.

Several more modest energy proposals are currently being pursued, largely by AVEC. Newer, larger power plants are much more energy efficient (by approximately 35 percent, according to AVEC research) than what is possible when each individual community generates its own power. Given this efficiency of scale, AVEC is advocating for construction of electric transmission lines among clusters of villages to distribute power from a system of centralized shared power generation plants. This approach can also reduce fuel shipping costs and reduce the risk of fuel spills. In this same spirit, cost savings can be realized in fuel purchases where multiple communities purchase fuel as a group. AVEC has been very successful with this model in the past.

9 Nuvista Light and Electric Cooperative (2001). Calista Region Alternative Energy Update, PowerPoint presentation. Accessed from the World Wide Web Friday April 1, 2011: www.legis.state.ak.us/basis/get_documents.asp?session=27&docid=2087.

10 Bradner, Tim. "State lawmakers seem favorable forward Susitna dam project." Alaska Journal of Commerce. Web posted Friday, March 11, 2011. Accessed from the World Wide Web Friday April 1, 2011: http://www.alaskajournal.com/stories/031111/loc_slsfts.shtml.

Goals and Strategies

Energy Efficiency: Consumption

GOAL 1: Reduce energy consumption.

Strategy 1: Improve the energy efficiency of residential, commercial and public facilities.

Action 1a: Adopt (state) energy conservation and efficiency standards for all City facilities.

All public facilities must be designed to comply with the thermal and lighting energy standards adopted by the Alaska Department of Transportation and Public Facilities under AS44.42.020(a)(14). The City will follow these standards when making improvements to City of Bethel facilities, and strongly encourages these standards to be followed when other public or non-profit organizations build new or renovate existing civic structures. This action will lead the City to focus on energy-efficiency when making capital replacement choices.

Action 1b: Establish education and support services for local residents and builders so that existing homes can be made more energy efficient, and to support energy efficient design and construction for new homes.

The City should partner with other organizations with experience and responsibility in this area, such as the Alaska Housing Finance Corporation (AHFC), the local electric utility, and Orutsarmiut Native Council (ONC) (ONC currently has funding to subsidize home improvements for energy efficiency) to fund and implement specific educational and support services, such as a program that links people with information on the benefits of conservation investments, technical information on improvement/construction options, guides to funding for energy conservation, and ideally, direct consultation and assistance with accessing those programs.

Strategy 2: Reduce energy used for transportation.

Action 2a: Improve and/or expand public transportation and carpooling programs. (See Transportation Goal 4.)

Action 2b: Improve and/or expand local and regional trails and multi-use roads to better serve non-motorized transportation (e.g., pedestrians, bicycles, mushers, skiers). (See Transportation Goal 3.)

Action 2c: Encourage transportation efficiency, including the use of more fuel-efficient motorized vehicles, hydrogen, public transit, city fleet and other options.

For example, the City could purchase more fuel-efficient fleet vehicles. The City could also explore options for the use of four-wheelers rather than cars. A professor with the Institute for Social and Economic Resources (ISER) has suggested that rural communities switch from gas-powered vehicles to electric four-wheelers, which could be recharged using wind power.¹¹

Policy 2d: Encourage land use patterns and forms of development that require less energy use (i.e., concentrating residential, civic and work places within a walkable radius of land area); discourage new development in outlying areas that would require driving farther. (See Land Use Goal2)

Background

Energy conservation is the most important action the community can undertake to reduce the impact of rising energy costs.

¹¹ Steve Colt, University of Alaska Anchorage, Institute for Social and Economic Research (ISER) presentation to Commonwealth North, May 19, 2011.

Energy Efficiency: Existing Infrastructure

GOAL 2: Improve and/or expand existing energy infrastructure.

Strategy 1: Explore the feasibility of expanding waste heat facilities in Bethel.

In the past, the City of Bethel was able to purchase waste heat generated by the BUC generating plant. This service should be reinstituted. Additional options for the use of waste heat should be investigated, particularly in the relatively concentrated, commercial and civic area in the center of town.

Action 1a: Work with the Bethel electric utility to re-establish waste heat services to the City.

Strategy 2: Support improvements to the generation and transmission efficiency of existing electric utility infrastructure.

New electrical generating facilities can provide significant increases in the output of electricity for a given amount of fuel. Likewise, improvements to Bethel's aging transmission system are (or soon will be) needed; these can help increase the reliability of delivering power to homes and businesses.

No actions associated with this strategy.

Strategy 3: Engage in a cooperative relationship with Bethel's electric utility to coordinate planning for future land development and a range of energy solutions.

Action 3a: Share and update information (e.g., maps of future commercial, residential and/or institutional development, maps of easements and rights-of-way, plans for utility infrastructure expansion) on an annual basis.

Action 3b: Engage in a joint long-range planning effort to ensure that the utility, the City, major electricity users, and other local and regional stakeholders work together to meet community electricity needs.

Work to fully understand the potential opportunities and limitations of each entity to pursue improvements in electricity service provision. Collaborative programs to pursue could include: cooperative education to users regarding energy conservation, use of alternative energy sources, options for reducing fuel costs, and/or coordination with regional energy initiatives.

Strategy 4: Reduce Fuel Costs in Bethel.

Fuel costs make up approximately 85-90 percent of the cost of electricity in Bethel. Changes in the cost of fuel immediately impact the cost of home heating, and the cost of operating cars, boats, planes and snowmobiles.

Action 4a: Explore the feasibility of a City-owned tank farm.

The large majority of Bethel's fuel supplies are stored in a tank farm owned by Crowley, the company that supplies nearly all Bethel's home heating fuel, vehicle fuel and the diesel used to generate electricity. The price paid for fuel in Bethel is higher (by as much as 11 percent) than other western Alaska hub communities. If the City or a local cooperative utility owned the storage facilities, this would create the option to seek competitive bids for fuel.

Action 4b: Explore bulk fuel purchasing options.

Options to explore include joining Alaska Village Electric Cooperative (AVEC), joining the Western Alaska Fuel Buying Coop, or by starting a new, more localized fuel co-op. In addition, ISER and others have suggested that the State should establish a statewide fuel purchasing program.¹²

Strategy 5: Reduce and/or encourage reduction of water use.

For example, the energy used by water deliveries via haul trucks can be reduced through lower water consumption.

No actions associated with this strategy.

¹² Steve Colt, University of Alaska Anchorage, Institute for Social and Economic Research (ISER) presentation to Commonwealth North, May 19, 2011.

New/Alternative Energy Sources

GOAL 3: Develop new, alternative energy sources and innovative methods to reduce the cost of energy.
Strategy 1: Develop new energy sources, such as solar panels, wind turbines, hydroelectric power, and natural gas, as feasible.
Action1a: Develop new City policy to guide the placement and operation of wind turbines to ensure the safety and quiet enjoyment of the community.
Action 1b: Work with the electric utility to understand the capacity of Bethel's electric generation and transmission infrastructure to accommodate alternative energy sources, and also to determine the most appropriate levels of investment in various alternative energy sources.
Action 1c: Reserve land or land development rights for alternative energy development and facilities (e.g., wind turbines, natural gas pipeline rights-of-way). <i>(See Land Use Goal 1.)</i>
Action 1d: Explore the use of innovative financing programs for renewable energy investments (e.g., Property Assessed Clean Energy or Sales Tax Assessed Clean Energy).
Policy 1e: Encourage smaller-scale private sector use of new energy technologies (e.g., wind turbines).
Strategy 2: Engage in cooperative relationships with other entities pursuing new or improved energy infrastructure in Bethel and the Yukon-Kuskokwim region.
Action 2a: Coordinate with regional partners, at a minimum to keep City and regional partners informed of each other's energy-related policies and projects. As practicable, coordinate local and regional policies and projects, including (but not limited to) options for hydro and natural gas prospects, regional wind farms, and inter-village transmission lines connecting centralized power plants.

Background

A number of different alternative energy sources are being explored or used, both locally in Bethel and around the region. By pursuing the policies and actions under Goal 3, the City can speed the day when alternatives are able to provide a longer-term, commercially viable alternative to reliance on diesel fuel.

8. Public Facilities and Services

Introduction

The City of Bethel provides a number of important services and facilities to the Bethel community, which contributes to Bethel's status as a regional hub. This chapter outlines actions needed to maintain and improve upon Bethel's existing level and quality of public service provision, and addresses several of the City's nine departments: Administration, Finance, Public Works, Technology, Fire and Emergency Services, Police, and Parks and Recreation. The Bethel Port and Harbor are included in the Transportation chapter, and guidance for the Planning Department is included in the Economic Development and Planning chapter.

Goals and Strategies

Essential Facilities and Services

GOAL 1: Provide and improve essential public facilities and city services. Respond to current needs and plan for future demand. Link the extension of public facilities to land use development to ensure that growth occurs in a logical, planned and cost-effective manner.

Strategy 1: Maintain, regularly update, and distribute information about City services and facilities.

Action 1a: Regularly update the City website as a guide to City services and facilities.

Action 1b: Report successes (e.g., maintaining a balanced budget for two years running) to the Bethel community at large, for example, via press releases to Bethel media.

Administration and Finance

Objective A: Administration and Finance. Provide adequate administration services and associated facilities to meet current and anticipated future administration demands on the City of Bethel.

Strategy 1: Improve customer service with the aim of becoming a more service-oriented department, operating at a higher level of efficiency and accountability.

Action 1a: Implement improvements to internal processes and procedures.

Finance Department staff members identified several internal needs, including:

- Streamline finance procedures.
- Develop and produce a departmental policy and procedures manual.
- Provide staff training and cross-training.
- Work closely with other City departments to train and assist them in tracking, managing, and reporting on their budgets.

Action 1b: Make a comprehensive, up-to-date City fee schedule available at City Hall and on the City website.

Strategy 2: Encourage more forward-thinking budgeting. <i>The City will always be challenged to balance spending on new projects with the operations, maintenance and capital replacement costs for its existing facilities and services. Planning ahead for the future expenses of existing facilities and services helps City departments and City Council prioritize and make informed decisions about which new projects to take on and how to fit them into existing activities.</i>
Action 2a: Work with individual City departments to develop 5-year capital needs and deferred maintenance plans.
Action 2b: Set priorities for the improved provision of public services and facilities. <i>Use the City's capital improvement program and budget process to set priorities for the cost-effective provision of City services.</i>
Action 2c: Establish a formal capital improvement program (CIP). <i>This could be established incrementally, starting with a list of future capital needs (e.g., over the next five years) for each department, which is updated and submitted annually to the City Manager, and then to City Council for review.</i> • <i>Establish a yearly schedule whereby City Departments identify, describe, and estimate costs for capital improvement needs for a three-to-five year cycle.</i> • <i>Publish the Capital Improvement Program for public review prior to City Council adoption.</i> • <i>Ensure that the City budgeting cycle is coordinated with the state capital budgeting cycle.</i>
Action 2d: Increase City reserves to help pay for large capital needs and emergency expenses.
Strategy 3: Optimize existing and potential revenue sources. <i>City revenues come primarily through a mix of taxes, fees, grants and debt, some of which are dedicated for particular expenditures and some of which make up the City's General Fund. To make the best use of existing revenue sources, the City is currently updating portions of its fee schedule. Some City departments have indicated that although existing fees do not cover the costs of service provision, customers would be unable (or unwilling) to pay increased rates because fees for some public services (such as water and sewer) are already so high that any increases would be considered prohibitive. The City has also reported some difficulty enforcing business license regulations and tax reporting among local businesses. Without support from the State, the City has no way to shut down noncompliant businesses. To address this issue, the Finance Department aims to work more in partnership with businesses to encourage and facilitate sales tax reporting. The Bethel Finance Committee is exploring ways to augment and diversify the City's existing revenue sources.</i>
Action 3a: Conduct a comprehensive study of municipal finances to determine the most efficient and effective fiscal structure.
Action 3b: Conduct a financial analysis/rate study to determine the appropriate rates and financing structure for the City's enterprise funds.
Action 3c: Explore potential funding mechanisms, e.g., grant programs, donations/set asides (for key projects like the BATHC), property and other taxes not currently used.
Action 3d: Periodically (e.g., every 1-5 years) update the City fee schedule.
Action 3e: Enforce City business licensing and sales tax collection.
Strategy 4: Leverage the power of partnerships. <i>The City has expressed and demonstrated a willingness to work more closely with other public and private entities to leverage the power of partnerships to achieve common goals. One example is the City's partnership with the University of Alaska Fairbanks Cooperative Extension to provide a community garden for all Bethel residents to use. These cooperative arrangements tend to make grant applications more competitive; in some cases, they may even mandated by funding agencies.</i>
<i>See Public Facilities and Services Goal 2.</i>

Background

Administrative services for the City of Bethel are provided by the City Manager, City Clerk, Grants Manager and Finance Department. The City Manager serves as the chief executive officer of the City and directs day-to-day operations through the departments of Administration, Finance, Public Works, Police, Port, Fire, Senior Services and Parks and Recreation. Bethel's Administration Office provides general information to the public and directs inquiries to appropriate city personnel. Administration also serves as the city employment and Human Resources Office. The City Manager's office also oversees City leases and contracts; the City contracts with a private practice attorney for legal counsel.

Appointed by City Council, the city clerk maintains and manages City records, conducts municipal elections, and serves as the notary public. The Clerk maintains original ordinances and resolutions, researches and writes ordinances and resolutions under the guidance of the City Attorney, and carries out ordinance codification. As staff to the Bethel City Council, the City Clerk researches and provides information to Council, processes Council requests and actions, and acts as parliamentary advisor to Council. The City Clerk is the City's public relations liaison and interfaces with federal, state and local government representatives and agencies.

The finance department prepares and administers the annual City budget in cooperation with the city manager, administers City financial accounts, processes the receipt and payment of City funds, and administers City business licenses, taxes, fees, and certain grants. The finance department also maintains the City's financial records, prepares financial reports as needed, and advises the City Manager and Council on City financial matters. The Grants Manager obtains grant funding for various City capital and operating needs.

City of Bethel general fund revenue sources include a bed tax, sales tax, alcohol use tax, gaming fees, and payment in lieu of taxes. General funds are used to pay for general city department expenses (e.g., staff salaries, building operating costs). The City of Bethel sales tax is currently six percent, one-half percent of which is dedicated to the construction of the future BATH center. Seniors are exempt from sales tax. Unlike the large majority of Alaskan cities of Bethel's size (exceptions are Wasilla and Barrow), Bethel does not levy a property tax. This is due to the extensive mix of Native allotments (nontaxable land) and privately owned (taxable land) parcels within city boundaries. City departments charge user fees for certain City services and facilities, such as water and sewer service, solid waste services and port facilities. Certain City services are (such as water and sewer) are set up as enterprise funds, whereby the enterprise fund provides goods or services for a fee that (in theory) makes it self-supporting.

Water and Sewer

Objective B: Water and Sewer. Provide adequate infrastructure and facilities and services to meet current and anticipated future demands for water and sewer services in the City of Bethel.

City policy regarding water and sewer system remains undecided, although a mixed piped and trucked system is likely to remain for some time. Options include: 1) the entire city is on a piped system, 2) the entire city is on a trucked/hailed system, 3) continue to operate a mixed system in which property owners may receive either piped or trucked/hailed water and wastewater services.

Depending on the type of system pursued, the City aims to extend water and sewer services to unserved/underserved parts of town. Other priorities for expansion include: an additional transfer station to decrease the number of miles driven by haul trucks (would decrease cost of service provision), system expansions where mandated by law, replacement or expansion where there is stress on existing pipes, replacement or expansion to comply with regulations so that different entities can use the main sewer pipe.

Strategy 1: Provide water and sewer services at rates that are affordable to residents, while still being able to cover the costs of service provision.

Action 1a: Develop a financial plan for service provision: incorporate capital needs and deferred maintenance, rate study, and recommendations for future improvements. Explore the possibility of charging for piped water/sewer on a meter basis, comparable to trucked/hailed service.

The Public Works Department has begun by working with the Planning Department to make an inventory of capital replacement needs. Improvements in the City's finance department policies and procedures will also help to this end. With a plan in place, the City can more easily and effectively determine priorities for the use of its funds, as well as pursue grant funding or other revenue sources to pay for public improvements.

A rate study would assist in determining how and when water and sewer rates could best be modified to avoid sudden rate hikes and possibly even reduce rates. The rate study should be done in conjunction with an overall financial and capital replacement plan for water and sewer service provision.

Action 1b: Upgrade water treatment plants so that one licensed operator (with an additional backup person) can monitor multiple water treatment plants from a single location.

Policy 1c: Keep overhead costs to a minimum.

The Public Works Department estimates that its overhead costs might be significantly reduced by taking measures to make city operations more energy efficient, particularly by reducing the amount of diesel fuel expended (e.g., by building water transfer stations in key locations to reduce the number of miles driven by water and sewer trucks) and by reducing electricity consumption throughout the City.

Policy 1d: Tie expansion of service provision to land use/development policy.

The 1996 Comprehensive Plan recommends that the City adopt the 1996 Sewer and Water Master Plan service area designations (at the gross level) as the service limits for sequential development of vacant lands. By limiting geographic expansion of the service area, the City can contain per capita costs. For a piped system, a smaller service area requires less pipe, and for a trucked/hailed system, a smaller service area means the trucks have shorter distances to travel and will therefore use less fuel.

In most cities where city water and sewer services are mandated, developers dedicate public easements and are responsible for installing pipes, pumps and other infrastructure during the initial development process. As an example, Figure 8.2 shows three methods used by the Anchorage Water and Wastewater Utility to extend public water and sewer services. The City aims to work with developers and landowners to enforce its subdivision regulations and to update subdivision regulations as needed to ensure quality service provision.

Strategy 2: Maintain and improve the efficiency of the piped system.

Action 2a: Replace aging infrastructure (e.g., Bethel Heights piped water distribution upgrades, City Complex manholes). <i>Grant funding will likely be sought to pay for this major capital improvement. The original steel pipes are reaching the end of their usable lifespan and will need to be replaced. The City is replacing these with HDPE pipes (high-density polyethylene, a type of plastic), which should eliminate water discoloration caused by iron leaching from the deteriorating steel pipes. Some residents have suggested that water and sewer pipes be located underground, as they are in many US cities. Bethel has not built pipes underground due to the added cost of doing so in permafrost soils, but expenses aside, there is no reason the piped system could not be buried underground.</i>
Action 2b: Conduct a cost analysis and rate study for the 2010 Institutional Corridor Feasibility Study, and complete the institutional corridor piped water improvements.
Strategy 3: Maintain and improve the efficiency of the <u>trucked/hailed</u> system. <i>Bethel is already very efficient at hauled water/sewer. According to the 2005 Bethel Water & Sewer Facilities Master Plan Update,¹ it takes six days to serve all customers on Bethel's 25 miles of roads, and about ten minutes are spent servicing one residence or facility. This level of efficiency is the same year-round.</i>
Action 3a: Consider building additional water/sewer transfer station(s)² in key locations (hub and spoke system). <i>Additional transfer stations in key locations would decrease the distances the haul trucks would have to travel lowering fuel consumption (and therefore, lowering transportation costs). Additional stations could also allow Public Works to increase the frequency of service. The hub and spoke system can be designed to hook into piped system at a later date.</i>
Action 3b: Secure additional storage for haul trucks, as needed.
Policy 3c: Keep roads graded and trucks well maintained. <i>Better ongoing maintenance has already resulted in fewer truck breakdowns and lower maintenance costs.</i>
Strategy 4: Pursue wastewater treatment alternatives.
Action 4a: Establish an alternative treatment system to replace existing lagoon. Identify and secure a site for new wastewater treatment system. <i>Bethel's sewage lagoon consists of two non-aerated cells which are pumped twice each year. The lagoon is filling up twice as fast as anticipated, mainly because rain and snow are seeping through the permafrost and into the lagoon.³ The lagoon meets current federal water quality requirements⁴ only because the high volume of water seeping into the lagoon through the permafrost dilutes the wastewater. It is not large enough to treat the amount of organic waste accumulating in the lagoon,⁵ and the Environmental Protection Agency (EPA) will likely require the City to bring the lagoon into compliance. This will involve cleaning out the lagoon and finding an alternative treatment system. The 2005 Water & Sewer Master Plan Update recommends decommissioning the lagoon and building a wastewater facility that would cost nearly \$20 million.⁶ The City has expressed an interest in pursuing a less expensive biotreatment option.</i> <i>The City is currently discussing alternative potential sites for the new treatment facility: one is located on City land adjacent to the existing lagoon; the other two sites are currently Native allotments (one east of where the lagoon currently discharges, the other farther north). The City will most likely use its own land because the process for negotiating for other properties is lengthy and expensive.</i>

¹ Page 32, CRW Engineering Group, LLC, Bethel Water & Sewer Facilities Master Plan Update, April 2005

² Not to be confused with water treatment plants, treated water would be piped to these satellite stations and then held for transfer elsewhere.

³ The piped water system does somewhat increase the amount of wastewater entering the lagoon (customers receiving hauled water tend to use it more conservatively than those on the piped system), but this only accounts for a small amount of the excess wastewater volume in the lagoon.

⁴ Under the Clean Water Act, the US Environmental Protection Agency (EPA) controls water pollution by issuing pollution permits under a program called the National Pollutant Discharge Elimination System (NPDES). Municipal wastewater facilities (such as Bethel's wastewater lagoon) are allowed to discharge at a certain level of water pollution regulated by the program.

⁵ p39. CRW Engineering Group, LLC (April 2005). Bethel Water & Sewer Facilities Master Plan Update.

Action 4b: Maintain and distribute a list of illegal substances to dump into the wastewater system.

Action 4c: To the extent allowed by Alaska State and US Federal law, revise Bethel Municipal Code to allow the use of alternative residential wastewater treatment systems (e.g., composting toilets, graywater systems, adapted boat toilet technology).

Background

The Bethel Public Works Department provides water and sewer services, and owns and operates the associated infrastructure, including water wells, pipes, trucks, two water treatment plants/truck fill facilities,⁷ five sewer lift stations and a sewage lagoon to treat and disperse wastewater. Most of Bethel's property owners receive City water and wastewater services. Some neighborhoods and property owners are served by a piped water and sewer system; others pay for trucked water and sewer. Households not paying for city water draw water from private wells. Without sewer services, people have traditionally used honeybuckets (septic systems do not work in local soil conditions). Bethel Municipal Code (BMC 13.08.025) prohibits the use of honeybuckets and requires all properties to be served by City sewer service.

For reasons of public health and safety, the City aims to eliminate the need for honeybuckets by providing all residents with water and sewer services, but these services can be prohibitively expensive for some residents. City water and wastewater rates vary, depending on whether customers are on the piped system (metered or non-metered) or the hauled system (volume and frequency of service). Assuming that an average Bethel household uses about 500 gallons of water (and generates about 500 gallons of wastewater) per month, rates for water and sewer services could be anywhere from \$110-160/month for piped water and \$50-800/month for trucked water and sewer service.⁸ Individual customers on the piped system must also pay for the energy costs associated with keeping the pipes serving their property from freezing (circulation pumps).

Converting the existing truck-haul water and sewer system to a piped system has been an ongoing recommendation in previous planning efforts for Bethel's water and sewer provision. It was established in the 1996 Sewer and Water Master Plan, and later confirmed in the 2005 Bethel Water and Sewer Facilities Master Plan Update. The 2005 plan was intended to allow flexibility in decision-making, with the understanding that segments of the community have been satisfied with truck-haul system, and/or a piped system may not be feasible in all areas.

The debate of whether a hauled or piped water/sewer system is preferable has yet to be resolved. Piped systems tend to be less expensive to maintain than trucked systems and cause less wear and tear on Bethel's gravel road system. As long as the capital costs of pipes and associated treatment facilities can be paid for with grant funds, the piped system is also less expensive for the City to construct, but when the pipes need to be replaced, they prove to be more expensive than purchasing a new haul truck, for example. The hauled system has higher operating costs (people must be employed to operate the trucks), but capital replacement is less expensive. The City is experiencing some problems with the piped system, including water

⁶ Ibid. Appendix M, p1.

⁷ Two water treatment facilities are in operation: the Bethel Heights Water Treatment Plant (BHWTP) and the City Subdivision Water Treatment Plant. A third water treatment facility, the City Center Water Treatment Plant was decommissioned and replaced by the City Subdivision plant.

⁸ Assumes water and sewer rates as given in BMC Chapter 13.16 UTILITY RATES (accessed from the City of Bethel Website, May 2011) applied to a unit household usage of 500 gallons/month water and sewer services. Actual rates of service use may vary considerably, depending on household.

discoloration from old pipes that need to be replaced, occasional unwillingness of customers to pay the electricity costs associated with keeping circulation pumps going (to keep pipes from freezing in winter), and conflicts with traditional trail routes (pipes are located above-ground for cost savings and ease of maintenance). Property owners receiving piped water service (or living within 1,000 feet of a fire hydrant connected to the piped system) enjoy lower insurance rates, but also tend to use more water than customers receiving hauled water. Residents have also complained that the above-ground pipes are ugly (“Nobody wants them in their yards.”) and inconveniently block some trails.

Though high, rates for water and sewer services have not always kept up with the costs of providing these services. During public planning discussions, residents expressed equity concerns about the division of customers paying by volume (piped metered and hauled) versus those on the piped system (un-metered), and suggested that all customers on the piped system be metered and charged by volume of water used. As one resident pointed out, “We have people going to a relative’s house to do laundry because they’re on the piped system, so it doesn’t matter how much water they use. That isn’t right.” To address these concerns, a priority for the City should be to conduct a rate study to determine the most equitable and fiscally responsible rate structure, and to provide a clear explanation of these results with the general public.

Priority Projects Underway

1. **Sewer force main and service lift station upgrades.** Force main upgrades along Chief Eddie Hoffman Highway, at City Subdivision, and the utility corridor from 7th Avenue to the sewer lagoon, and upgrades to lift stations QFC #2, the Trailer Court, and QFC Store. Paid for with USDA Rural Development funding. This project is nearly complete. Contractor: CH2MHill.
2. **City Complex manholes.** Some of the manholes near the Courthouse are sinking and tearing apart the piping connected to them. Public Works will pull them above ground. Estimated to cost about \$275,000, this project is scheduled for this coming summer and will be paid for with City funds.
3. **Bethel Heights piped water distribution upgrades.** Pipes for A, B, and C loop will have to be replaced to address the high iron content in the water. Estimated to cost over \$2 million. This project is on hold until funding is secured.
4. **Wastewater lagoon.** The lagoon is the Public Works Department’s highest future priority; USDA Rural Development has refused to fund any other Bethel projects until completed. The project is currently in the planning stage, and will probably take two to three years to construct due to Bethel’s short construction window (4-5 months). The project is estimated to cost about \$20 million. Contractor: Larsen Engineering.
5. **Bethel Institutional Corridor piped water distribution upgrades.** The Bethel Institutional Corridor Water System Phases 1 and 2 is the second highest priority after the Bethel wastewater lagoon. A feasibility study for piped water was recently done for the Bethel Institutional Corridor, in the City Subdivision area serving multiple institutions along the Chief Eddie Hoffman Highway (Contractor: Larsen Engineering). A full cost analysis and rate study will be needed before further action is taken on this project.

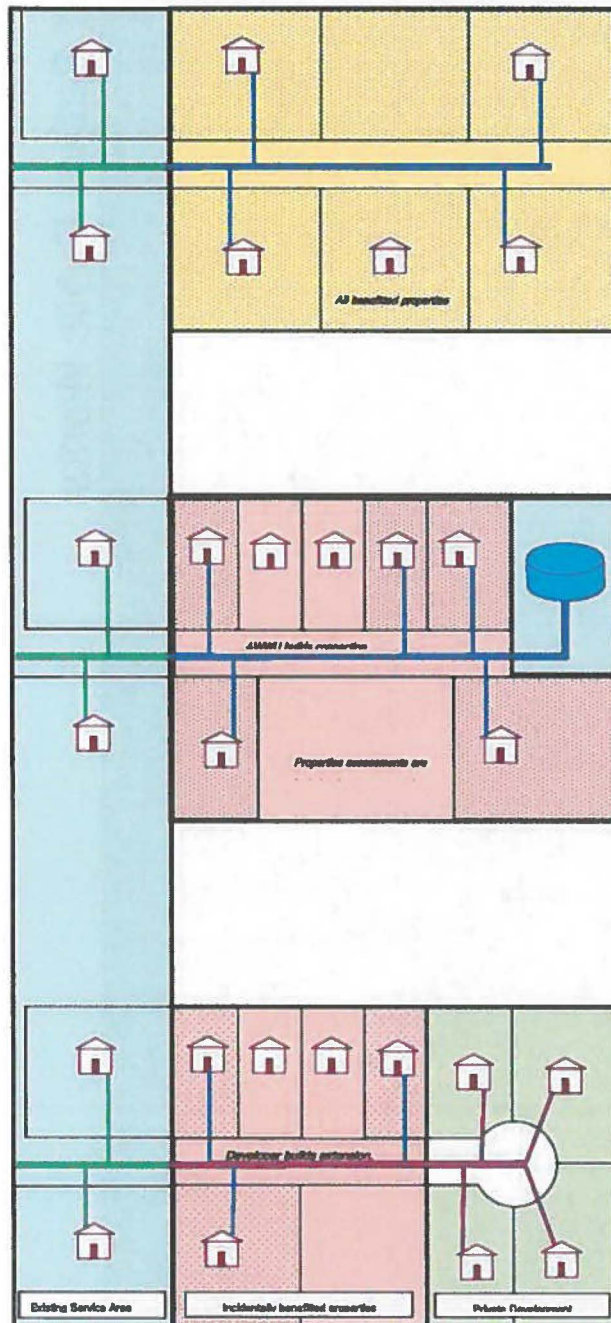
Map 8.1

City of Bethel *Public Works*



Figure 8.2

Three Programs for Extending Municipal Water and Sewer Service in Anchorage



Special Assessment Improvement District. Property owners petition AWWU to provide service and vote to assume the costs of construction. AWWU administers balloting, design, and construction. The cost is recovered by special assessment assigned to each parcel in the district (shaded lots). Connection is not required, but all properties are assessed if the ballot passes, regardless of whether an individual connection is made.

Utility Capital Improvements AWWU extends a pipe to address a service requirement for existing customers (for example, a reservoir site). Homes along the route are incidentally benefitted by the construction, and are notified of the availability and estimated cost of hookup. Properties are assessed a Levy-Upon-Connection (LUC) only when the property owner chooses to connect (shaded lots).

Mainline Extension Agreement (Private Development) A land developer establishes an agreement with AWWU to extend underground utilities. Homes along the route of the extension are incidentally benefitted and are notified of the availability and estimated cost. Property owners choosing to connect within three years of the completion of construction pay an assessment to reimburse a portion of the developer's project cost. After three years, the property owners can connect to the system without the special assessment charge.

Solid Waste

Objective C: Solid Waste. Provide adequate facilities to meet current and anticipated future demands for solid waste disposal in the City of Bethel.
Strategy 1: Improve existing solid waste services and facilities.
Action 1a: Identify possible site(s) for a new landfill (to eventually replace existing landfill).
Action 1b: Consider privatizing/contracting out waste collection and/or recycling.
Action 1c: Improve the function and appearance of existing dumpsters, by for example, screening them with fencing, relocating or providing additional dumpsters as needed, working with businesses to find alternatives for commercial use of residential dumpsters, etc. Provide additional dumpsters in neighborhoods, as needed.
Action 1d: Fix the road to the landfill.
Strategy 2: Reduce the volume of waste in the existing landfill.
Action 2a: Consider options for compacting waste (e.g., dynamic compaction). <i>These might include: using dynamic compaction to pound waste into the landfill, using a large baler to compact waste before it goes into the landfill, using a car crusher to compact auto waste, or burning waste (using a burn box or incinerator). The 2002 Bethel Solid Waste and Sewage Lagoon Facilities Design Study/Master Plan Update recommends that the City purchase a sheep's foot compactor.</i>
Action 2b: Remove visible and/or easily-retrieved scrap metal for recycling.
Action 2c: Consider burning (burnable, non-toxic) refuse, using a burn box, incinerator or some other method.
Strategy 3: Develop and maintain a comprehensive recycling program.
Action 3a: Develop and implement a business plan for the Bethel recycling center.
Action 3b: Develop partnerships (e.g. with barge companies, school, Yuut Elitnaurviat) to leverage cost savings and possibly run the center as an education and workforce development program.
Action 3c: Promote waste to wealth industries to make useful products from recycled materials.
Action 3d: Coordinate with Yukon-Kuskokwim Delta villages and other communities in Southwest Alaska to serve as a regional recycling and transfer facility. <i>Though the region's small population centers and high shipping costs make recycling and backhauling economically unfeasible for many individual communities, regional coordination could allow enough cost savings to at least break even.</i>
Action 3e: Complete facility upgrades to the Bethel recycling center and Public Works building. <i>Needed improvements will allow the public works department to provide a higher quality of service.</i>
Action 3f: Purchase a shredder so that recyclable waste can be converted to a form acceptable to recycling companies.
Strategy 4: Divert as much waste from entering the landfill as possible.
Action 4a: Set a series of municipal targets for diverting waste stream through recycling, composting, and other means of waste diversion over the next several years (e.g., achieve a diversion rate from disposal of 40 percent by 2012, 50 percent by 2014, 60 percent by 2016, 70 percent by 2018, and 75 percent by 2020). <i>Track and report on indicators of improvements in waste diversion (e.g., percentage of businesses in compliance with commercial recycling program, percentage of residential users recycling, rates of recycled versus non-recycled waste collected at collection centers, or similar measures).</i>
Action 4b: Explore the feasibility of a program that requires source separated organic waste collection and processing.

Action 4c: Use a portion of the City's waste stream (e.g., food waste, brush cuttings) for composting, and work with other local groups to make it available for use by community gardens and local farms.
Action 4d: Encourage composting, mulching and other onsite methods of yard waste disposal to reduce the amount of yard waste collected and transported to the landfill.
Action 4e: Market/provide accurate, up-to-date information about what waste management, recycling, composting, and resale services, programs and facilities are available in Bethel. <i>This could be done on the City website, with paper flyers, etc. For example, Anchorage Solid Waste Services produces a household guide to waste management options. Paper copies are distributed throughout town, and an electronic version is available on the Muni website.⁹ Another idea that came up in public workshop is to start a Bethel "Craigslist" or similar service to advertise items for resale.</i>
Action 4f: Designate an area at the landfill or recycling center where people can leave and/or take usable items.
Action 4g: Consider establishing a junkyard for used vehicles and parts.
Action 4h: Consider city bulk-buy programs for items such as composting bins or energy efficient light bulbs.
Action 4i: Enforce BMC Chapter 8.12 regulating plastic bags and polystyrene containers. Consider stronger regulation of plastic bottles and bags (e.g., ban outright, nickel deposit program).
Strategy 5: Reduce the amount of litter and illegal dumping throughout Bethel.
Action 5a: Invite US Army to assist with a massive city-wide cleanup.
Action 5b: Organize community clean-ups and/or a beautification contest for residential neighborhoods.

Background

The Bethel Public Works Department is responsible for operations, maintenance, construction and planning oversight for the City's solid waste facilities, and cleanup and trash collection for City property. The City owns dumpsters, a haul truck, a municipal landfill for solid waste and a recycling center.

The City owns and maintains about 183 public dumpsters throughout Bethel and a garbage truck for trash collection. Residential customers are charged a flat fee that is updated periodically.¹⁰ Commercial customers are charged \$59 each time a four-cubic-yard container is emptied, and \$74 each time an eight-cubic-yard container is emptied. Additional charges apply to on-call service. For customers hauling their own waste to the landfill, customers can drop off up to four cubic yards per day for free and pay \$10/cubic yard after that.

The Bethel landfill was built in 1991 and designed to last about 25 years. Bethel Public Works estimates that the landfill will last another 30 years before reaching capacity if current rates of landfill remain as they are today, and if the City continues an aggressive policy of compacting the refuse as it accumulates at the landfill.¹¹ The 2002 Solid Waste and Sewage Lagoon Facilities Design Study/Master Plan estimates anywhere from 2012-2037 for the landfill life, depending on how aggressive the City is about recycling, baling, using compaction and/or incineration. With incineration, the landfill life is estimated to last until 2037; the study predicts that all other methods would stretch the life of the landfill only to the next four years (2012-2016).¹²

⁹ <http://www.muni.org/Departments/SWS/Documents/A%20to%20Z%20Guide%20Fall%202010.pdf>

¹⁰ Solid Waste rates are given in BMC Chapter 13.16 UTILITY RATES (accessed from the City of Bethel Website, May 2011).

¹¹ Personal Communication; Willert

¹² p6-39, CH2MHill, 2002. City of Bethel Solid Waste and Sewage Lagoon Facilities Design Study/Master Plan Update.

According to that study, the life of the landfill could also be extended until the year 2030 if it is allowed to be filled to a very steep contour (5:1 slope), although the steeper and higher the landfill cover, the more noticeable it will be. When the landfill does need to be expanded or relocated, the City will probably use the adjacent lagoon cell when filled. By keeping the landfill and lagoon in the same general area, the City protects the property values and ability to develop other parts of town, since people generally do not choose to live or develop commercial uses near waste facilities. The 2002 Solid Waste and Sewage Lagoon Facilities Design Study/Master Plan offers criteria for choosing a new landfill site based on State regulations (18 AAC 60.300) and community goals.¹³ Once closed, the landfill will be required to be monitored, an additional cost for the City.



Because of the expenses involved, Bethel has a compelling incentive to extend the life of the landfill as long as possible. There are two general strategies for doing this:

Minimize the volume of the existing landfill. The Public Works rule of thumb is that lowering the level of the landfill one inch lengthens the life of the landfill by about a year. One of the Bethel Waste Management Plan recommendations is to use dynamic compaction (pounding refuse into the ground with a large cement block), which would cost about \$250,000 and extend the life of the landfill by an estimated 13.5 years.¹⁴ The City could also remove visible and/or easily-retrieved scrap metal for recycling (the landfill currently takes in a fairly significant amount of scrap steel, e.g., old vehicles, cranes, tanks). Burning refuse is another option to consider. A burn box could be purchased and used on burnable waste, although the City would bear the personnel costs to separate trash and tend the burn box. An incinerator could also generate waste heat, but would be expensive to construct, would require extensive permitting and periodic air quality testing, and it is unclear whether it is located too far from town to effectively provide waste heat to the community. The 2002 Bethel Solid Waste and Sewage Lagoon Facilities Design Study/Master Plan Update estimates that a mass burn refuse incinerator would cost at least \$5million, and that this would greatly exceed the value of landfill space saved at the Bethel Landfill.¹⁵

Divert as much waste from entering the landfill as possible. Wood pallets and lumber are set aside at the landfill for people to take for steams or woodburning stoves. Recycling cars for parts is allowed, although a junkyard could be established expressly for this purpose. When it was open, the Bethel Recycling Center accepted recyclable metals (aluminum cans, scrap aluminum, copper, and stainless steel), paper (newspapers and office paper), and plastics #1 and #2. Although glass has not been accepted for recycling, the City could purchase a grinder capable of grinding glass to be reused for paving roads and parking lots (although the City would also have to purchase paving equipment). Currently nearly 40 percent of the material going into

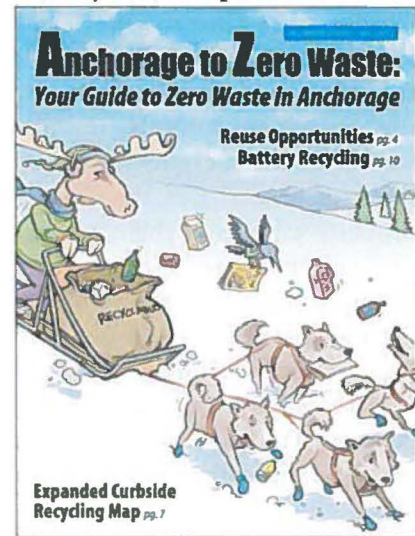
¹³ P6-15, CH2MHill, 2002. City of Bethel Solid Waste and Sewage Lagoon Facilities Design Study/Master Plan Update.

¹⁴ P6-39 and Appendix B, CH2MHill, 2002. City of Bethel Solid Waste and Sewage Lagoon Facilities Design Study/Master Plan Update.

¹⁵ P6-32, Ibid.

the Bethel landfill is paper and cardboard, which could be reused, recycled, composted or burned. Computer equipment and hazardous materials can now be recycled through Total Reclaim.¹⁶

In addition to the recycling facility, the City owns a skid steer, bailer, cargo containers and other recycling equipment. The City has grant funding to support the recycling center, but it is not currently in operation, due to challenges with lack of staff to operate the facility, lack of additional equipment (e.g., shredder¹⁷), and the high cost of shipping the recyclable goods to markets outside the region. The City can work with barge companies to coordinate a backhaul services, up to six containers per year. There is only one barge in Alaska suited for hauling trash (it has a concrete bottom to prevent leaks), which would be needed to transport materials for recycling to Seattle. Recycling is a regional issue, and the Bethel facility represents an opportunity to provide a regional service if the City can coordinate with surrounding villages. The recycling center could also be operated as an education and workforce development program in partnership with local educational institutions. No matter how it is run, taking steps to re-establish or expand recycling program(s) in Bethel is a high priority for the community.



Other waste management challenges facing the City include addressing illegal dumping and managing hazardous materials (hazmat) to protect subsistence resources and minimize environmental impacts to the land and the Kuskokwim River. According to the Bethel waste management plan, appliances containing chlorofluorocarbons (CFCs, refrigerant gas) are stored until the gases can be recovered by an authorized appliance service agent. Sorbents and oily rags are burned in a Smart Ash unit. Latex paints are opened and allowed to dry before disposal in the landfill. The City is unable to take batteries at this time, but the Napa store in Bethel accepts used car batteries. Used oil is stored in 55-gallon drums and eventually burned in a space heater at the landfill office or Public Works shop. The City occasionally contracts to containerize and ship out household hazardous waste on an as-needed basis. The 2002 Bethel Waste Management Plan recommends keeping records on hazardous wastes (e.g., used motor oil, oil-based paints and solvents, lead-acid batteries, refrigerators, antifreeze).

¹⁶ Total Reclaim, a Pacific Northwest recycling company, now has an Anchorage office and serves communities throughout Alaska. <http://www.totalreclaim.com/alaska.html>

¹⁷ Recycling companies in Seattle want shredded material, so in order to sell recyclable material to these companies, the City would have to shred and package it accordingly.

Technology

Objective D: Technology. Provide for current and future technology needs.
Strategy 1: Promote the widespread availability of communication systems to facilitate communication among members of the public, public institutions, government agencies, and businesses, and to promote the public service and safety advantages and economic opportunities afforded to the community due to the availability of state-of-the-art telecommunications technology.
Action 1a: Review and update potentially suitable personal wireless facility locations, as identified on the official City Map every five years.
Action 1b: Encourage competition for communications technology providers in Bethel; actively work to recruit and/or remove barriers to entry for competing firms.
Action 1c: Explore the costs and benefits of the City providing wi-fi service to the entire city and to city employees only.
Policy 1d: Telecommunications facilities that are developed and operated expressly to carry out emergency services should be considered essential public facilities.

Background

The Technology Department maintains the City of Bethel's information technology systems. It has been negotiating a program to re-lease computers every three-to-five years in order to keep the City's hardware up-to-date and in working order. A four-year lease is currently in place for computer equipment. The department has also been working on a program to upgrade the City's printers/copiers to heavy duty machines that will perform reliably and that use the same type of toner cartridges so that the City can reduce operations costs by buying the toner cartridges in bulk. The Department now has five multi-function machines in a maintenance program.

The Technology Department is upgrading the City's internet infrastructure to increase internet access and lower costs for the City and community. Once the upgrades are complete, the City will be able to create a wireless internet network for City employees, saving the City \$2,000 a year. These upgrades will also provide the police and fire departments with more secure communications. For Police, it will allow officers to report from laptops in their patrol cars or PDA devices, saving time and money. The City could possibly broadcast free wireless internet throughout the city or to sell it as a service for a small fee (e.g., \$10/month). Whether or not this is possible will depend on a number of factors:

- **Communications infrastructure.** Communications companies would need to provide Bethel with increased bandwidth.
- **Community partnerships.** If other Bethel-based organizations joined the City, they could provide a full-fledged internet service.
- **Legal considerations.** If the City were to provide internet service to the community at large, it would be competing with Bethel's existing private internet service provider, GCI. Other communities have invested in providing free or subsidized public internet service as an economic development strategy, with mixed success. These initiatives can be met with opposition from private communications companies, which stand to lose a considerable amount of revenue if the City is successful in setting up a free or subsidized open wireless internet network. (One resource for municipal wireless networks is www.muniwireless.com.)

Fire and Emergency Medical Services

Objective E: Fire and Emergency Medical Services. Provide adequate fire protection measures and services in Bethel to respond to current and future anticipated emergency service needs.
Strategy 1: Maintain and improve fire and emergency medical services and related facilities.
Action 1a: Plan for and construct a substation close to the airport. <i>Bethel recently upgraded its fire station. The station serves the entire city adequately, but the department would like to plan for a substation close to the airport. A substation would allow the Fire Department to better respond to homes in the Kasayulie subdivision, the Tundra Ridge subdivision and the airport. The substation would house a vehicle and equipment; no employees would be staffed there. Rather, it would be a gathering point for community volunteers called via the radio/paging system. At least eleven houses in the Kasayulie subdivision are located outside Bethel's five-mile fire response radius. These houses receive the same service from the fire department as the rest of Bethel, but receive lower ISO ratings,¹⁸ and are therefore charged much higher insurance rates than properties within the five-mile fire response radius (two- to three-times higher¹⁹). Building a substation near the airport would expand the response radius to include these properties, better serving them and lowering their insurance rates.</i>
Action 1b: Address other capital replacement needs, as needed. <i>Current anticipated equipment and capital replacement needs include one or two fire engines (triple combination: truck, pump, water supply) and a radiation detector.</i>
Action 1c: Decide whether to use the fire training tower in its present location, move it closer to the fire station or decommission it; carry out decision. <i>The City's existing fire tower is located near the sewage lagoon, and has been proposed to be relocated along with the new fire station. No decision has been made whether to use the existing tower in its present location, move it closer to the fire station or decommission it. The existing site has been found to contain fuel-contaminated soil; remediation is underway, but not yet complete. Though the existing location is not ideal, the City will probably fix it up and use it in its present location.</i>
Action 1d: Continue to provide training for fire and EMS staff. <i>Training will continue to be important for new recruits and to maintain the skills of existing firefighting and emergency services staff.</i>
Policy 1e: As the City's piped water system is expanded, hydrants should be installed (and will likely be required). <i>Fire hydrants will not only allow the Fire Department ready access to larger amounts of water for firefighting purposes, they will also improve the ISO rating (thereby reducing insurance rates) for properties located within 1,000 feet of each hydrant.</i>

Background

The City of Bethel Fire Department works to protect life and property by providing quick and efficient responses to fires, medical emergencies, hazardous material response and other hazardous situations, as well as increasing public awareness of hazards through fire prevention and public education programs. The Bethel Fire Department has a full-time staff of one captain, one chief and five paid responders. The responders work a rotating schedule of 24 hour shifts that enables there to be two paid staff per shift. The Fire Chief works days and is on-call at all other times. There are, in addition, about 20 members of the community that serve as firefighter/EMT volunteers with the department. The department operates two fire engines, a water tanker, an aerial apparatus and a small tundra fire vehicle out of the fire station building at

¹⁸ ISO fire protection ratings are given by independent raters and are used by insurance companies to determine rates and coverage. The City does not have control over the policies or criteria used to determine the ISO ratings for specific properties, nor over the insurance rates charged to property owners. The Bethel Fire Department is committed to providing emergency services to all Bethel residents and property owners.

¹⁹ Personal Communication, Young.

320 Hoffman Highway. The City has a mutual aid agreement with the Bethel airport to provide services and a cooperative agreement with the US Bureau of Land Management (BLM) for access to equipment and personnel.

Prevention and education programs include a home safety inspection program, fire prevention classes and fire drills for children through field trips and school visits (including Fire Prevention Month in October), and a program in which fire department personnel regularly examine commercial and residential properties in areas of the community where a significant fire problem might develop. Smoke detectors are available and can be tested year-round at the fire station. The department will also provide, test or install detectors in homes for those without the means to do so themselves.

The department responds to emergency medical service (EMS) calls 24 hours a day. All paid staff and volunteer staff of the department are certified by the State of Alaska as Emergency Medical Technicians (EMTs). About ten members of the community serve as volunteer EMT's with the department. Ambulance service in Bethel is certified by the State of Alaska as an "Advanced Life Support" unit, a higher level of service than the minimum requirement of a "Basic Life Support" unit.

The department responds to hazardous materials incidents at the first responder level of training (OSHA regulations require that all emergency responders be trained to this level), and a few department staff are trained to the hazardous waste handler level. Major hazardous materials incidents are coordinated with the local Alaska Department of Environmental Conservation (ADEC) office in Bethel and the Alaska Division of Emergency Services (ADES) at Fort Richardson.

Support for Improvements in Other City Departments

The Bethel Fire Department also benefits from improvements within the purview of other City departments, such as Public Works and the Port. The Fire Department supports public works projects such as piped water distribution (with fire hydrants) and additional water storage around town. The department can save more lives and property with ready water; for property owners, piped water distribution means significantly lower insurance rates (could be about half the cost

Emergency Services and Insurance Rates in Bethel

Properties located outside the fire service radius (five miles away from the fire station) are rated by insurance companies as "unprotected." Though the Bethel Fire Department serves these and other properties within the service radius equally, insurance companies consider them a greater risk, and therefore charge higher homeowners' fire, and casualty insurance rates (two- to three- times higher) than properties inside the fire service radius.

Properties located within the fire-service radius (within five miles of the fire station) receive ISO rating 8. The Bethel Fire Department has tested their ability to serve properties within this radius using either piped or hauled water, and found that both methods of water transport allow firefighters to serve properties within the fire service radius well enough to receive an ISO rating of 8.

Properties located within the fire-service radius (within five miles of the fire station) and within 1,000 feet of a fire hydrant (hooked up to piped water) receive an ISO rating 5. These properties are considered by insurance companies to have the least risk and are charged the lowest homeowners' fire, and casualty insurance rates. The property does not have to be connected to the piped system (it may still receive hauled water), nor does it have to be part of a subdivision that receives piped water; it only has to be located within 1,000 feet of a hydrant connected to the piped system.

of insurance with hauled water distribution).²⁰ The Fire Department also benefits from better emergency access from road improvements, from paved roads (which mean less wear and tear on firefighting equipment than gravel roads), and from road maintenance improvements (for example, if there is an emergency, firefighting trucks must navigate around stuck cars during snowstorms). The Fire Department also supports maintenance and improvements to port facilities and access to the Kuskokwim to promote maritime safety.

Police

Objective F: Police. Provide adequate police services to meet existing demand and anticipated future demands.
Strategy 1: Maintain and improve police services and related facilities. <i>Bethel has seen an improvement in the safety of its citizens and police service, and the police department is working to continue this trend.</i>
Action 1a: Secure new facilities for Bethel Police headquarters. <i>Bethel City Council recently approved a two-acre site on Salmonberry Street. This site is large enough to accommodate department offices, training center, animal control and a vehicle impound yard. The City currently does not have a vehicle impound yard; vehicles are kept at Public Works, where they are stored but not secured. A number of private towing companies also have private vehicle lots. A vehicle impound yard is anticipated to be included in the new police station.</i>
Action 1b: Upgrade public safety dispatch and communications equipment, including a new radio tower. <i>The Bethel police department will be looking at replacing repeaters and consul radios, updating its electronic dispatch infrastructure (e-911), and installing separate police communications infrastructure (radio tower) at the new police station. The new 80 ft. communications tower will allow the Bethel Police Department to move its existing antennas and other communications equipment from the KYUK Radio Station facilities to the new police station, where it will be more secure. Relocating the Police communications equipment to City-owned facilities will also save the City about \$400/month in rental fees.</i> <i>The department also has a 311 non-emergency number that residents can call for information and services. Public comments indicate that this is a helpful service; however, the number only works from landlines, not from cell phones. In order to make the number work for cell phones, the City would need gain the local phone company's compliance to ensure cell phones are integrated into the e-911 infrastructure (this is a Federal mandate to cellular carriers).</i>
Action 1c: Improve police housing (i.e., replace Quonset hut).
Strategy 2: Expand investigation and evidence collection capabilities to bring them up to current national standards.
Action 2a: Purchase equipment (e.g., surveillance equipment at the Port, video cameras on police vehicles), as needed. <i>The department has received grants for new equipment (\$16,000) and for an instant command trailer to store collected evidence and respond quickly to crime scenes (\$35,000). Additional surveillance equipment (e.g., at the Port, video cameras on police vehicles) could also benefit police investigations and the safety of the citizens of Bethel.</i>
Action 2b: Provide training for police staff, as needed.

²⁰ Personal Communication, Young.

Background

The Bethel Police Department aims to provide the most professional, unbiased and effective police services possible to the community of Bethel. The department often works in cooperation with other agencies and the citizens of Bethel to address the community's public safety needs and concerns. The department currently has 13 sworn staff. In 2010, the staff handled approximately 16,000 calls for service. For comparison, this figure is about twice that of Wasilla, a city that has twice as many officers as Bethel.

Bethel police respond only to calls placed within city limits, but Bethel is also the public safety answering point (PSAP) for both the Alaska State Troopers and Bethel Police. The Bethel PSAP includes an area approximately the size of Texas (a full list is included on the next page). The Alaska State Troopers contract with the City for after-hours dispatch services. 911 calls are fielded in Bethel, then forwarded to the Alaska State Troopers to respond. Bethel also has a State grant-funded Community Service Patrol program that employs three full-time employees and two part-time employees. This program helps to spread out some of the department's response load, but the funding to continue this program in the future is uncertain.

The City is currently in the process of securing a new location for the police department, which will allow the department to upgrade their physical facilities and centralize public safety services in one location. In addition, a sobering center is opening in partnership with the Yukon-Kuskokwim Health Corporation (YKHC). This facility will be funded by the State of Alaska, operated by the YKHC, and will relieve some pressure on both the Yukon Kuskokwim Correctional Center (YKCC) and emergency room (YKHC).

Bethel Public Safety Answering Point (PSAP)

Bethel is the public safety answering point (PSAP) for both the Alaska State Troopers and Bethel Police. The Bethel PSAP covers an area approximately the size of Texas and includes the following communities: Kotlik, Billmore Slough, Hamilton, Chuloonawick, Emmonak, Alakanuk, Sheldon Point (Nunam Iqua), Palmute, Hooper Bay, Scammon Bay, Chevak, Newtok, Tununak, Tooksook Bay, Umkumuit, Mekoryuk, Nightmute, Cheformak, Kipnuk, Kongiganak, Kwiglilingok, Quinhagak, Goodnews Bay, Platinum, Lime Village, Eek, Tuntutuliak, Sleetmute, Stony River, McGrath, Takotna, Nikolai, Red Devil, Georgetown, Crooked Creek, Napaimute, Chuathbaluk, Aniak, Upper Kalskag, Lower Kalskag, Tuluksak, Akiak, Akiachak, Kwethluk, Napaskiak, Oscarville, Napakia, Nunapitchuk, Kasigluk, Atmautluk, Mountain Village, St. Mary's, Pitka's Point, Andreafski, Pilot Station, Marshall, Ohogomuit, Rissian Mission, Holy Cross, Shageluk, Anvik, Grayling, and Bethel.

Of these, the following have Trooper posts: Aniak, McGrath, St. Mary's, Emmonak, and Bethel.

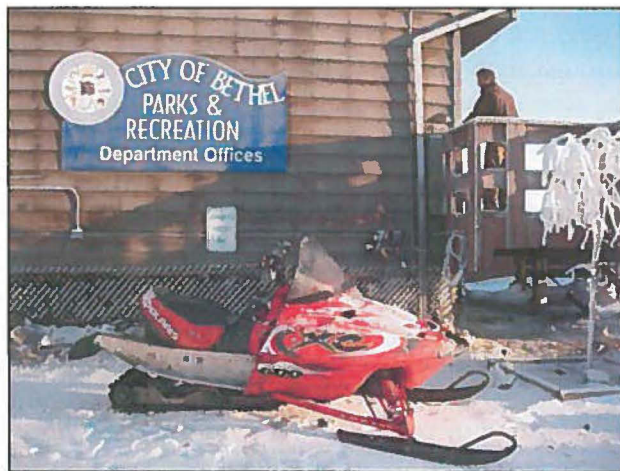
Youth and Adult Recreation

Objective G: Youth and Adult Recreation. Sustain and enhance facilities and programs for youth and adult recreation.
Strategy 1: Develop public meeting places and indoor recreational facilities for all age groups.
Action 1a: Upgrade the Bethel 4-H Youth Center. <i>The Bethel 4-H Youth Center building needs an upgrade. Improvements include ADA compliant bathrooms and shower, covered entryways for access, egress, more parking space for program participants, fenced area for workshop, equipment and greenhouse to separate it from the youth facilities, new siding and leveling the building. The Youth Center is being considered for an emergency shelter site, which would include the need for cots, sleeping bags, etc. These upgrades will need to be completed whether or not the BATH Center is constructed.</i>
Action 1b: Develop a community swimming pool complex. <i>Complete the BATH Center (Phases I and II). Hire a project manager and initiate 2-year fundraising for BATH Center. Consider re-naming the BATH Center to emphasize its regional value. Completing the BATH Center will increase the availability of year-round recreation opportunities for all community members, provide a much-needed public safety resource, and alleviate pressure on the 4-H Youth Center.</i>
Strategy 2: Expand and improve the Bethel trail system.
<i>See Transportation Goal 5.</i>
Strategy 3: Improve Bethel's existing system of parks and recreational open space.
Action 3a: Make improvements to Tundra Ridge Park. <i>These include: three-tier design with tables and/or benches in the middle for parent supervision to upper and lower areas. In other areas install age 2-12 appropriate equipment, one section with swings.</i>
Action 3b: Make improvements to the Senior Center Park. <i>These include: more greenery, tables, and benches. Install age 5-12 appropriate play equipment.</i>
Action 3c: Apply to the Land and Water Conservation Fund to incorporate more land into Pinky's Park.
Action 3d: Upgrade the ball field.
Action 3e: Maintain skatepark and consider expanding to other locations.
Strategy 4: Build additional park and outdoor recreational facilities in order to meet recreational needs of residents and visitors as the community grows.
Action 4a: Consider creating/designating additional recreation areas in Bethel (e.g., dog park, recreational campground, ski/non-motorized winter recreation area, waterfront park as part of the Bethel Port, new field for Little League softball, frisbee, soccer and/or football).
Policy 4b: Encourage the creation of neighborhood parks/open space in private developments through development standards and the subdivision review process; encourage wider use of the Planned Unit Development ("Conservation Subdivision") approach. <i>(Also Land Use Goal 6 Strategy 1 Policy 1d)</i> <i>The City could establish policy and procedure, planning and funding assistance to develop a system of neighborhood parks in each of Bethel's residential neighborhood areas (e.g., Kasayulie subdivision, Larson subdivision, Blueberry subdivision, Boat Harbor/Brown's Slough area, the Trailer Court, and future residential areas).</i> <i>Work with landowners/developers to address potential liability concerns for neighborhood parks.</i>
Policy 4c: For subdivisions with a dedicated neighborhood park, assess homebuyers a one-time user fee for park maintenance.
Policy 4d: Examine any publicly owned lands including street rights-of-way for their potential open space use before their disposition.

Policy 4e: Preserve the central area of Bethel called the Donut Hole area between the H-Marker Lake and Chief Eddie Hoffman Hwy as permanent open space; encourage year-round recreational activities.
Policy 4f: Encourage multiple recreational uses of open space land, provided that the uses are compatible.
Policy 4g: Plan community recreation facilities in conjunction with existing and planned school facilities so that they complement each other in function.
Strategy 5: Expand and/or develop recreational and educational programming to complement recreation facilities.
Action 5a: Expand youth programs currently operating out of the 4-H Youth Center, e.g., food programs, and recreational and educational programs for teens and afterschool youth.

Background

The Bethel Parks and Recreation Department manages and plans for the City's parks, playgrounds and recreation facilities. The department coordinates activities and programs for the city's diverse population. In addition to the City facilities and spaces available, Bethel has a number of facilities operated in partnership with other agencies and institutions, including the school district and university, whose spaces are available for limited use. The facilities are shown in Map 8.3.



The City of Bethel-Parks and Recreation Department has a number of existing parks and recreation facilities available to the public, including: Pinky's Park, Wally's Park, Dillon Park, Senior Center Park, Bethel 4-H Youth Center and playground, and the Log Cabin. In addition, Boat Harbor Park, Tundra Ridge Park and Pitt Lake Park are undeveloped spaces within the city. The City of Bethel has dedicated substantial funding toward building a new recreation center. Design for the Bethel Aquatic Training and Health Center (BATHC) are 65 percent complete. Operational funds for the facility will come from a combination of user fees and a designated one-half percent sales tax levied by the City. The City is still seeking matching funds for construction. The facility plans currently include a pool, fitness facilities, and additional recreation spaces.

The Bethel Parks and Recreation Department also coordinates a variety of community activities, programs and facilities. These include the Bethel 4-H Youth Center and related activities; the weight room,²¹ after-school program, teen program, family nights, youth computer center, arts and crafts program and various other indoor and outdoor activities. Other recreational activities include soccer, adult and youth softball and karate programs,²² ice-skating, volunteer-coordinated broomball, pre-school playgroup activities, community services activities, including the 4th of July, Clean-up/Green-up, and basketball against drugs. The Parks and Recreation Department

²¹ The City plans to relocate the weight room to the BATH Center.

²² Adult karate is offered through the Kuskokwim Campus Continuing Education Program. Youth karate is offered through 4-H.

also coordinates use of the Log Cabin, and Bethel's Community Garden managed by the Cooperative Extension Service.

The Bethel 4-H Youth Center is essential to the Bethel community. It is the only place in town where all youth have year-round access to recreation facilities. The existing building was constructed in 1981 as a teen center and includes the only public weight room in Bethel. Over the years, as the number of latch key youth has increased, programs run out of the center expanded for afterschool youth and teens. In 1995, the Bethel Parks and Recreation Department collaborated with the University of Alaska Cooperative Extension Service to start a 4-H Youth Development Program, which continues today. The program has been recognized to the Board of Regents by the UAF President, showcased in the College of Rural Alaska annual publication, the Cooperative Extension annual publication, and has received state awards.

Today, the Bethel 4-H Youth Center is open 50 weeks a year for afterschool youth (kindergarten through sixth grade) and teens (13-18 years old). During the school year, the program is available for afterschool youth from the time school is out until 5:30pm; during the summer, early release, and vacations, it is available from noon to 5:30pm, Monday through Saturday. The program is available for teens from 6pm to 9:30pm during the school year and the summer months, six days a week (staffing issues have caused the Center to close on Saturdays; this has been hard on the community).

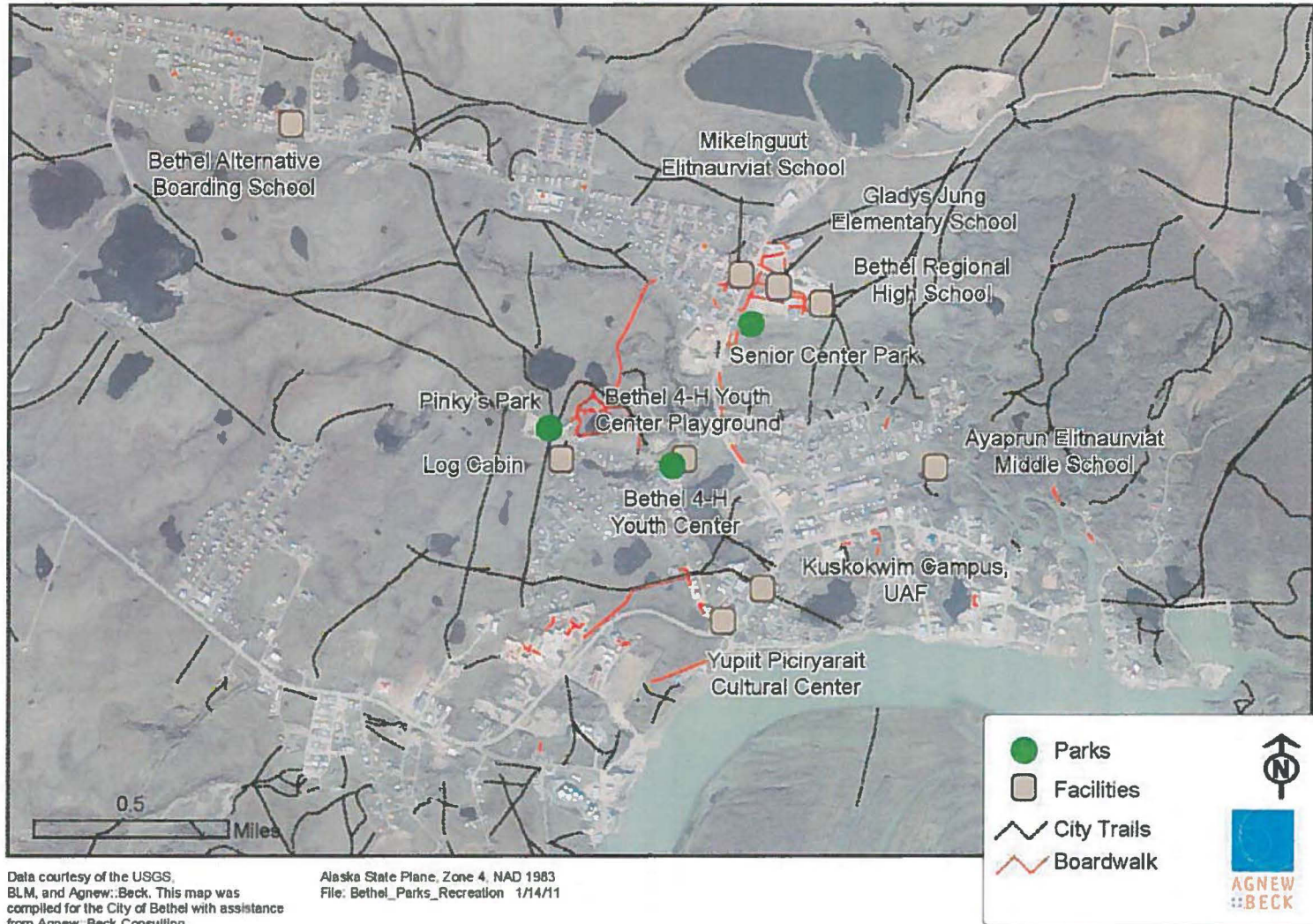
The Center runs two USDA food programs: the Summer Food Service Program is a ten week program in which hot food (lunch, snack and dinner) are served to all youth up to the age of 18; the Youth at Risk Snack Program for afterschool youth runs during the school year. These are the most basic of youth development programs: when children go hungry it is hard for them to function and focus. The Parks and Recreation department is also working to identify a funding source to provide a snack or dinner for teens during the school year. It is included in the City of Bethel Parks and Recreation Department draft budget for FY11-12, but there is no guarantee that it will be funded. The department is therefore seeking alternative funding sources (i.e. the BCS Foundation). The foods program also includes a youth garden and greenhouse that are used to grow produce for the snack program, working with Parks and Recreation staff and local volunteer Master Gardeners.²³ The Center also operates several life skills programs, including the computer lab, GPS training, arts, crafts, recreation, community service, gardening, cooking, sewing, games, and animal and bird watching projects. The Youth Center programs attract about 50 kids a day after school and 30 teens at night, with a total of about 500-600 Bethel youth. Of these, only about 300 are formally enrolled in the Center's programs. These programs are outgrowing the size of the current facility.

Safe and affordable daycare, childcare, and youth summer and afterschool activities are an important service. The Parks and Recreation facilities (and programs run out of them) provide some portion of this need, but additional services and facilities (whether publicly or privately run) are needed in the community.

²³ Bethel's youth garden is located at the Bethel 4-H Youth Center and is designated for the youth gardening programs; it exists in addition to the Bethel Community Garden, which is located on Osage Street on the north side of Pinky's Park.

Map 8.3

City of Bethel Parks + Recreation



Facilities run in partnership between the City of Bethel and other institutions include Mikelnguut Elitnaurviat School (grades K-2), Ayaprun Elitnaruviik School (grades K-6), Gladys Jung School (grades 3-6), Bethel Regional High School (grades 7-12), Bethel Alternative Boarding School (grades 10-12), the University of Alaska Fairbanks – Kuskokwim Campus and the Yuppit Piciyarait Cultural Center. Due to ongoing school use, liability concerns, application process, the need for supervision and scheduling constraints, public use of school facilities has been on a very limited basis.

With six staff in winter months and two additional seasonal staff for park maintenance in summer, the Parks and Recreation Department relies heavily upon community volunteers to keep recreational programs going. Additional staff can only be paid for through grant funded programs or in collaboration with other agencies. Bethel Parks and Recreation is currently working with the AVCP TANF Program; a Program Assistant was hired through this partnership to do additional activities with youth.

The City has been updating the Bethel Parks and Recreation Master Plan concurrent with this Comprehensive Plan. The Comprehensive Plan includes selected priorities from the Master Plan, which identifies Bethel's future recreational uses, demands and future needs in greater detail. The plan will also establish park facility and space standards to help the City maintain a system of quality recreational spaces suited for Bethel's population needs and financial resources. Priority parks and recreation infrastructure improvements are included in the Comprehensive Plan.

Recreation facilities for Bethel's youth are important to the community. As one resident said at a planning workshop, "The skate park is the best thing that has happened in Bethel!" Other participants asked about additional playground facilities and a shooting range. The Parks Department currently has a playground at the 4-H Youth Center, and this plan includes strategies to use City policy to encourage the creation of additional neighborhood parks throughout Bethel. Though the City has no plans to build or operate a shooting range, the Bethel Sportsman Club has indicated plans to build a 200-yard multi-purpose rifle range, a pistol range and a shotgun range to support their educational programs in firearm safety, marksmanship and sportsmanship.²⁴

Other parks and recreation infrastructure improvements are detailed in the 2011 Bethel Parks and Recreation Master Plan.

²⁴ Letter to the City of Bethel from Jaimie Kassman, Bethel Sportsman Club President. See Appendix A Public Comments.

Intergovernmental Cooperation

GOAL 2: Foster intergovernmental cooperation: a network of local governmental and civic organizations committed to the common good of the community, based on a high degree of resident participation, interagency cooperation, and inspired leadership.
Strategy 1: Support only new development that occurs at a rate consistent with the community's ability to accommodate new development, physically and financially.
Action 1a: Work cooperatively with the school district to plan for the replacement or construction of new school facilities as needed to meet projected school enrollments. Establish a committee of appropriate representation for school site selection. Use the committee to establish needs and identify potential sites.
Strategy 2: Consider new sources of municipal revenue, including impact fees and public land dedications, or special service taxing (e.g., business improvement district) to support needed services.
<i>No actions associated with this strategy.</i>
Strategy 3: Seek State of Alaska and federal assistance that supports the attraction of business and employment development.
<i>No actions associated with this strategy.</i>
Strategy 4: Develop policies, cooperative agreements and working relationships promoting intergovernmental cooperation, information sharing and the sharing of services with other governmental units.
Action 4a: Explore the use of shared facilities and the coordination of services provided by ONC.
Policy 4b: Foster cooperative working relationships with local, state, and federal agencies operating in Bethel.
Policy 4c: Use interagency working groups when appropriate to solve problems of mutual interest.
Policy 4d: Maintain joint planning efforts with the ONC.
Policy 4e: Continue working with ONC on the implementation of joint planning efforts (e.g., Transportation and Community Economic Development Strategies (CEDS) plans).



PUBLIC WORKS DEPARTMENT

STREET SWEEPING POLICY & PROCEDURE MANUAL

I. INTRODUCTION

In the best interest of the residents of the City of Goodlettsville, the Public Works Department shall assume basic responsibility for sweeping public streets. Reasonable sweeping is necessary for vehicle and pedestrian safety, water quality, and environmental concerns. The City shall provide such service in a cost-effective manner keeping in mind safety; limited equipment, budget, and personnel; and environmental concerns. The City may use City equipment and employees, and/or private contractors to provide this service. Completion times and dates for street sweeping operations are dependent upon weather conditions and employee and equipment availability. Annually the City sweeps about 1,380 miles of public streets and as a result disposes of over 225 cubic yards of sediment, leaves and other debris.

The Public Works Director or his/her designee is responsible for scheduling of employees, equipment, and/or contractors to achieve the desired results of maintaining the city streets.

II. COMMENCING SWEEPING OPERATIONS A. Spring sweeping, primarily consists of removal of snow and ice control aggregate, sediment and other debris on the road surfaces, shall begin as soon as possible when streets are generally clear of snow and ice, and significant snow and ice storms diminish. Spring sweeping, designed to pick up the bulk of the aggregate, usually begins between mid-March and mid-April and is typically completed in early May.

A. Fall sweeping is typically scheduled to begin the third week of October and completed by the last week in November, weather permitting. Areas with extensive foliage shall be swept when leaves begin to fall to keep up with the accumulation rate of the leaves.

B. Sweeping operations are conducted as necessary throughout the year. Sweeping operations should focus on watershed areas which drain directly to significant water bodies, major roads, and the downtown area. Some factors that may prohibit or delay sweeping operations include temperatures below freezing, wind, heavy rain, snow and frozen gutter lines.

C. Citizen requests for sweeping shall be evaluated by the Public Works Director or his/her designee and a priority status determined.

D. State highways are the responsibility of the Tennessee Department of Transportation and county roads are the responsibility of Sumner County or Davidson County/Metro Transportation. The City may assist in sweeping operations on these roadways by request, by maintenance agreement, or under emergency conditions.

CITY OF HARTFORD STREET SWEEPING POLICY

I. INTRODUCTION

In the best interest of the residents of the City of Hartford, the Public Works Department shall assume basic responsibility for sweeping public streets. Reasonable sweeping is necessary for vehicle and pedestrian safety, water quality, and environmental concerns. The City shall provide such service in a cost-effective manner keeping in mind safety; limited equipment, budget, and personnel; and environmental concerns. The City will use City equipment and City employees to provide this service. Completion dates are dependent upon weather conditions and employee and equipment availability. The Public Works Director or his designee shall be responsible for scheduling of employees and equipment.

II. COMMENCING SWEEPING OPERATIONS

- A. First round sweeping, which typically occurs in spring, shall begin as soon as possible when streets are generally clear of snow and ice. First round sweeping, designed to pick up the bulk of the aggregate, usually begins between mid March and mid April and is typically completed in early May.
- B. Second round sweeping picks up the aggregate missed during the first round. Second round sweeping normally requires less equipment than first round. Second round sweeping is typically scheduled to begin one month after completion of first round sweeping.
- C. Third round sweeping, or fall sweeping, is typically scheduled to begin the third week of October and completed by the last week in November, weather permitting. Areas with extensive foliage shall be swept after most leaves have fallen.
- D. Sweeping operations are conducted as necessary THROUGHOUT THE YEAR. Sweeping operations should focus on watershed areas which drain directly to significant water bodies, major roads, and the DOWNTOWN AREA. Some factors that may prohibit or delay sweeping operations include temperatures below 32 degrees Fahrenheit, wind, heavy rain, and frozen gutter lines.
- E. Police Department and citizen requests for sweeping shall be evaluated by the Public Works Director or his designee and a priority status determined.

Continued...

III. STREET SWEEPING PROCEDURE

Sweeping is a slow process with gutter line speeds that can be as low as two to three miles per hour. The City will sweep with its own equipment and manpower to complete an operation. Typically, centerlines are swept after gutter lines are cleaned. Equipment used includes mechanical, vacuum sweeper.

Street sweepings are taken to the Wastewater Treatment Plant grounds and deposited in a drying bed; once the material is dried the material is then hauled to a licensed landfill for disposal.

IV. PRIORITIES

The City has prioritized sweeping of City streets with attention to sensitive areas based on the street function, traffic volume, impact on water quality and the environment, and the welfare of citizens in the community, taking into consideration the following:

- A. Storm Water Management Plan
- B. Downtown watershed (swept at least two times per month) during warm weather season

V. WORK SCHEDULES

Sweeping operations are performed in conjunction with other maintenance operations.

Sweeping

operations are normally to be conducted Monday through Friday, from 7:00 a.m. to 3:30 p.m. Sweeping may be restricted due to hazardous weather conditions. Extended workdays may be expected for spring cleanup or emergency sweeping operations.

City of Greeley

Department of Public Works

Greeley, Colorado

STREET SWEEPING PLAN

Prepared By:

**The Department of Public Works-----Streets Division
Revised March 1998**

OVERVIEW

Street sweeping is one of the most visible aspects of the Public Works Department, for the citizens and the traveling public. Clean streets and gutters not only give the City an overall clean appearance, but aids in helping reduce traffic accidents and air pollution caused by fine dust particles and sand put down during snowstorms. Street sweeping is an important part in the Street Division, along with snow and ice control, weed control, street resurfacing and street drainage maintenance functions.

Keeping debris off the street and out of the gutters prevents the debris from entering and plugging the storm drainage system which can add to the cost the City faces for cleaning drainage lines. There are four budgeted full-time team members in the Street Sweeping Plan. The team is responsible for the daily maintenance and seeing that service is done on the equipment. The Sweeping Team is responsible for sweeping over 284 miles, or 552 curb miles (a curb mile is from the centerline to the edge of roadway).

Street sweeping has seasonal demands, as well (refer to Section III). A maintenance schedule was developed for sweeping from a list of priorities. The analysis of street sweeping contained in this plan is based on the most cost effective and efficient delivery of service. There are other factors which the City considers in the street sweeping area. The City first considers the level of service which would be acceptable (seasonal only, year-round sweeping, whether to sweep or not sweep residential streets, etc.) There are also environmental issues which the City must consider.

CONTENT

SECTION I	OBJECTIVES
SECTION II	POLICIES & ORDINANCES
SECTION III	OPERATIONS
SECTION IV	LOCATIONS
SECTION V	PERSONNEL AND EQUIPMENT LISTINGS
SECTION VI	PREPARING FOR THE SEASON
SECTION VII	MISCELLANEOUS

OBJECTIVES

One of the primary objectives of the City of Greeley, Department of Public Works, Street Division is to provide a plan for the safe and orderly movement of emergency equipment, vehicle traffic and pedestrians through the City.

The Street Sweeping Plan was developed to facilitate this objective as it relates to the Street Division. This objective provides for an attractive City, as well as, arterial entry ways. In addition there is a cleaner flowing drainage system.

The procedures presented in this Plan serve to outline the manner in which the Sweeping Team performs sweeping provided to the citizens.

This objective is accomplished using preventative maintenance schedules.

POLICY

It is the policy of the City of Greeley, Department of Public Works, Street Division, Sweeping Team to have a plan in writing for sweeping the ever growing infrastructure utilizing a preventative maintenance schedule.

Established policy for Street Sweeping shall be:

- Main arterials are first priority and are swept a minimum of twice a month (18 to 24 times per year)
- Priority 2, 3 and residential streets are swept a minimum of five times per year.
- Downtown streets weekly (early morning on Fridays parking restrictions)
- Downtown alleys monthly
- Other paved alleys -- five times per year
- City owned parking lots -- monthly (early morning to avoid parked cars)
- Specials -- anytime (examples are traffic accidents, crack seal program, requests from citizens, broken glass, debris, etc.) A special is anytime the sweeper stops routine sweeping to take care of the request. A one hour minimum charge is added to any one special.
- Over holidays, school vacations, etc. sweeper teams will make it a priority to sweep around schools.
- The first and third Friday of the month the City shop, Street Division shop, service center and inside Bus Garage will be swept.
- All team members will carry 2-way radios or have 2-way radios in their sweepers so they can be reached at all times for emergencies and special requests.

Weather conditions can have a major impact on the Sweeping Plan. All sweeping listed above shall be minimum. Additional sweeping may be required.

PARKING AND DISABLED VEHICLE POLICY

The Street Division Sweeping Team, with the help from the Greeley Police Department, follow up on cars, trucks, trailers and boats left parked or abandoned in the public street for longer than 24 hours.

It is not our intent to anger the public by notifying the Police of these vehicles, but rather getting these vehicles moved off the street. At times the Sweeping Team has found many vehicles, campers, etc. parked or abandoned for such long periods of time that dirt and debris built up causing storm water to back into the street.

(PARKING ORDINANCES)

Ordinance 1220. of the City of Greeley. Leaving Vehicle unattended unlawful.

(1) It is unlawful for any person to leave any vehicle which she/he owns or controls unattended within any portion of a street or highway right-of-way within this municipality for a period of twenty-four (24) hours or more.

(2) The permissible time for leaving a vehicle unattended within a street or highway right-of-way shall be extended with respect to a disabled motor vehicle if, within the twenty-four hour period, the owner or operator of the vehicle places a written notice conspicuously on or within the vehicle indicating his or her intention to remove the vehicle from that location and if the vehicle, in fact, is removed from that location to some location not within a street or highway right-of-way within twenty-four (24) hours after the placing of the notice.

(3) **Disabled motor vehicle**, for the purposes of this section, means any motor vehicle which is stopped or parked, either attended or unattended, upon a public right-of-way and which, due to any mechanical failure or any inoperability because of a collision, a fire or any other such damage, is temporarily inoperable under its own power.

(4) Nothing in this section shall limit the authority of a Police officer to move a damaged vehicle.

1221. Parking Violation Summons and Procedure

(1) Whenever any motor vehicle is found parked or stopped in violation of the provisions of the sections of this Chapter specified in paragraph (C) of this section, the officer or other City employee assigned to the Department of Public Works pursuant to Section III who observes such vehicle shall record its registration number and any other information displayed on the vehicle which may identify its driver and owner and shall conspicuously affix to such vehicle or deliver to the driver, if she/he is present, a parking violation notice, on a form authorized in Section 1718. The form shall give notice that a particular parking or stopping violation has occurred at that time and place and that a summons and complaint, listing the owner of the motor vehicle as the defendant, will be issued fifteen (15) days after the date of violation unless within those fifteen (15) days a voluntary payment of the assessment, provided for in paragraph (C) of this section and shall state the procedure for payment of the assessment.

(2) No summons and complaint shall be issued to any person alleged to have violated any of the sections of this Chapter specified in paragraph (3) of the section until fifteen (15) or more days have elapsed beginning with the date of the alleged violation. The foregoing limitation shall not apply if the alleged driver, wishing to immediately controvert the charge, signs a written request with the clerk of the municipal court for the issuance of a summons and complaint. In any case where a parking violation notice exceeds the fifteen-day time limit, the parking violation notice will be declared delinquent as authorized by Section 1222 and a summons and complaint for a delinquent parking citation shall state the assessment value for delinquency as provided for in

paragraph (3) of this section. In those cases where a person makes payment of the original parking citation, after the fifteen day time limit, that person shall be notified that the parking citation is now delinquent and that an additional fine has been added. The notice will inform the person that a summons and complaint will be issued for the delinquent citation and that the amount already paid will be considered as a partial payment.

OPERATIONS

A. YEARLY SCHEDULE

The Street Division objective is to sweep main arterial and selected collectors 18-24 times per year (twice a month). Some selected arterials are swept weekly. Residential streets, from 23rd Avenue west are swept a minimum of five times a year and residential streets east of 23rd Avenue are swept a minimum of six times a year. The reason for sweeping a minimum of six times a year east of 23rd Avenue is the amount of mature trees, graveled alleys, and driveways which cause more debris on the streets. The downtown area, downtown alleys and parking lots are swept once every month.

B. WINTER STREET SWEEPING

During the winter, team members, (on a priority basis) concentrate on sweeping all snow routes. The team members, after a storm ends and weather permitting, start sweeping immediately. The Street Division's objective is to have all snow routes swept within two weeks after a major snow storm. This policy will cut down on air pollution (dust caused by sand) and also reduce accidents caused from vehicles sliding at intersections because of high volume sanding. After a snow storm, priority sweeping is performed on main arterial and collectors first, bus routes second and around school areas third. During winter street sweeping, a double shift will be utilized, if necessary, to speed clean-up operations of sand and salt on all snow routes.

Two new products are now being used that will reduce the need to sweep after some snow storms. These new products are Magnesium Chloride and Ice Slicer. These new products dissolve and evaporate, leaving the streets cleaner than with the use of sand and salt, or the heavier squeegee product.

C. SPRING STREET SWEEPING

During spring street sweeping, the team members, when necessary, will work two eight hour shifts cleaning all main arterial and collector streets. When finished with main arterial and collector streets, they return to normal hour shifts to finish all residential streets. Every street in Greeley is swept thoroughly a minimum of one time during spring. The amount of passes needed in the summer will be lessened and curb miles swept increased by sweeping thoroughly in the spring.

D. SUMMER STREET SWEEPING

During the summer sweeping, every street in the City is Swept one to two more times. Generally, the Division uses three sweepers on a full-time basis with a chase truck during the summer to achieve these results.

E. FALL STREET SWEEPING

During the fall, the sweepers and chase trucks are used for the City Leaf Pick-up Program. Every street in the City is swept an additional one to two times. Besides the obvious benefit of cleaner streets, the benefits to the City are money saved on equipment and manpower and a reduction in drainage problems.

F. SWEEPER DEBRIS HAULING

Sweeper debris is stockpiled in various locations (dump sites) throughout the City of Greeley to reduce travel time for the sweepers. The debris is then hauled from these dump sites to the City's landfill. This is accomplished with a front end loader and dump trucks and usually occurs once a month. Approximately 3% of the Street Sweeping budget is dedicated to hauling the debris to the City's landfill. Our sweepings are tested one time per year for hazardous material to make sure it is safe to dump the debris at the landfill. The Division operates one to two chase trucks with the Mobil high dump sweepers when justified to cut down travel time of the sweepers going to and from the dump sites, which in turn increases the miles of streets swept.

G. STREET SWEEPING REQUEST

The charge for this service is a minimum of \$50.00 per hour. Street sweeper team members spend a very small portion of their time responding to special requests, such as traffic accidents, emergency spill clean-ups, water breaks, etc. Operators also sweep after the contractors for the City's Crack Seal Program. Sweeping for the Crack Seal Program is very costly because of overtime on weekends and causes more wear on the sweepers because of the heavy material.

H. SPECIAL EVENTS

During the 4th of July, it has been requested that the City of Greeley Street Sweeping Team sweep all parade routes and the extended area around UNC College. The Sweeping Team starts its pre-parade clean-up at 4:00 a.m., starting in the downtown area and working south to 23rd street, cleaning all gutters, side streets and intersections. It is common that all street sweepers, working in pairs, will make 3 to 4 passes through the parade following behind horses, and staying after the parade is finished to clean up all trash and debris left behind.

I. EQUIPMENT UTILIZATION

The City of Greeley uses three (3) mechanical high dump sweepers and one (1) vacuum sweeper. A combination of quality sweeper operators and quality equipment enable us to perform the job of street sweeping very efficiently and cost effectively. The repair and maintenance cost for the vacuum machine is approximately 10% lower than the mechanical sweepers in past years. On the other hand, the mechanical sweepers sweep approximately 20% faster than the vacuum sweeper.

The purpose for using high dump sweepers is to save road time driving back and forth to dump sites. With high dumps, the sweeper can utilize chase trucks at key times of the year, allowing more time spent for the street sweepers to concentrate on cleaning and less time driving to dump sites.

The City first started using an air type sweeper in 1988. The air, or vacuum sweeper, cleans at 90% dust free, picking up more of the finer particulate that adds to air pollution and Colorado's brown cloud.

By utilizing the vacuum in combination with the mechanical sweeper, efficiency and cleanliness increases.

J. MAINTENANCE

Approximately 14% of the team member's time is dedicated to daily and weekly equipment maintenance. This maintenance insures the sweepers are kept in quality operating condition.

The team members wash and clean, grease all the moving parts and make minor adjustments, broom down pressure, measurements of broom patterns, center deflectors and rear curtain along with drag shoe alignments. Gutter brooms are changed approximately every 40 to 50 hours, and rear brooms every 90 to 100 hours (on an average).

During the seasonal slow down, team members do more of the heavy and time consuming work. Elevator chains, drive chains and sprockets (etc). It was proven that by rotating the elevator chains during the replacing of the rubber flights will lengthen the life of the elevator chains, a proven savings to the budget. The fleet maintenance (TECOM) performs all engine service, breaks and major repairs.

K. SWEEPER START UP PROCEDURES

1. Open hood, check oil, inspect engine area, close hood.
2. Check to see if all brooms are in the up position.
3. Climb in right seat, turn key to the "on" position, "Engine Preheat" light will come on, wait until light goes off, start engine.
4. Check 2-speed gear lever, make sure it is in the "travel" position, raise any brooms not in the up position, using broom levers.

5. Engage transmission and travel to work site, turn on any needed beacons, arrow boards, etc.
6. Stop sweeper, put transmission in park, move 2-speed lever to "sweep" position.
7. Turn broom/elevator switches to on position, lower brooms to ground, engage transmission and sweep work site.
8. Turn on water if necessary.
9. When finished, raise brooms, turn off water, turn off broom switches. NOTE: On 418, be careful not to throw switches on brooms directly into reverse position as damage may occur.
10. Stop sweeper, put transmission in park, put 2-speed lever in travel position, put transmission into drive and travel to dump site.

- NOTE:**
1. Never use starting fluid on sweeper engines.
 2. Never sweep up flammable liquids such as gasoline as spark from broom bristles may ignite such material.
 3. Never exit cab of sweeper while brooms are turning, as you can be caught on moving parts.

L. SWEEPER DUMPING PROCEDURES

1. Travel to designated dump site, position sweeper with right side next to dump pile.
2. Put transmission in "park", engage parking brake.
3. Engage "Hopper Lift" lever and raise entire hopper above the level of the cab.
4. Engage "Hopper Dump" lever to dump contents of hopper.
5. Reverse "Hopper Dump" lever to close hopper.
6. Engage "Hopper Lift" lever to lower hopper.

NOTE

If dirt or traffic accident debris is swept up, it must be dumped, but washing out is not mandatory.

If animal remains, slaughter house debris, or any other objectionable material is swept up, the sweeper must be washed out.

If washing out is necessary, travel to hydrant at 9th Avenue and "D" Street, SW corner.

M. SWEEPER WASH OUT PROCEDURES

1. Park with right side to hydrant.
2. Uncoil water hose, connect hydrant valve to hydrant, then connect water hose to hydrant valve.
3. Turn on hydrant, allowing water to fill tank and then overflow into elevator/chain area. (On #417/#418, after water tanks fill up, turn valve at top of fill hose 90 Degree)
4. Turn hydrant off, disconnect fill hose, drain and recoil.
5. Connect wash out hose, raise hopper and open hopper to dump position.
6. Turn on water and spray out hopper, lift area, and accessible chassis area. Also wash off any dirt/debris on outside of sweeper. Close and lower hopper.
7. Turn off hydrant, disconnect hose and valve, and put away.
8. Travel to shop area and take extra precaution when parking sweeper.

REVISED 2-20-98

STREET PRIORITY LISTING				
Street	Limits	MILES	CURB MILES	LANE MILES
8th Avenue	Monfort to US 34 Bypass	5.69	11.38	25.57
9th Street	10th Avenue to 23rd Avenue	1.12	2.24	7.91
10th Street	71st Avenue to 7th Avenue	6.18	12.36	39.28
16th Street	47th Avenue to 1st Avenue	4.70	9.40	23.64
23rd Avenue	"C" Street to 32nd Street	3.92	7.84	20.77
11th Avenue	North City Limits to US 34 Bypass	4.15	8.30	21.79
35th Avenue	"C" Street to 29th Street	3.98	7.96	17.45
20th Street	83rd Avenue to 23rd Avenue	6.02	12.04	23.06
47th Avenue	"C" St. to ½ mile S. of US 34 Bypass	3.02	6.04	15.13
Reservoir Road	8th Avenue to 35th Avenue	2.82	5.64	12.79
22nd Street	8th Avenue to 1st Avenue	.66	1.32	3.37
8th Street	8th Avenue to 85 Bypass	.66	1.32	3.37
18th Street	8th Avenue to 1st Avenue	.66	1.32	3.37
17th Avenue	32nd Street to Hwy 34	.54	1.08	2.83
Around Hospital	Around Hospital	.60	1.20	2.98
1st Avenue	13th Street South to the City Limits	2.33	4.66	9.30

13th Street	35th Avenue to 1st Avenue	2.99	5.98	15.67
4th & 5th Streets	83rd Avenue to River Bridge	6.18	12.36	19.57
25th Street	23rd Avenue to 85 Bypass	1.48	2.96	7.35
14th Avenue	Island Grove Park to 20th Street	2.18	4.36	9.93
10th Avenue	5th Street to 26th Street	2.27	4.54	9.83
28th Avenue	4th Street to Reservoir Road	2.53	5.06	12.34
59th Avenue	“O” Street to 20th Street	4.49	8.98	11.23
71st Avenue	“O” Street to 10th Street	2.64	5.28	8.95
“O” Street	8th Avenue to 59th Avenue	4.31	8.62	10.80
“AA” Street	East of 47th Avenue to 59th Avenue	1.78	3.56	4.45
47th Avenue	“O” Street to Road 66 (“AA” St.)	1.44	2.88	3.60
	TOTALS	79.34	158.68	346.33

DISTRICTS AND SECTIONS

DISTRICT 1	8TH AVE. EAST TO CITY LIMITS	MILES	CURB MILES	LANE MILES
Section 1	8th St. north to city limits	7.63	15.26	31.95
Section 2	8th St. to 13th St.	5.63	11.26	30.18
Section 3	13th St. to 16th St.	5.27	10.54	23.43
Section 4	16th St. to 22nd St.	7.67	15.34	36.34
Section 5	22nd St. south to city limits	8.33	16.67	31.76
TOTAL MILES		34.53	69.07	153.66

DISTRICT 2	8TH AVE. TO 14TH AVE.	MILES	CURB MILES	LANE MILES
Section 1	5th St. north to city limits	9.09	18.18	41.29
Section 2	5th St. to 10th St.	4.64	9.28	26.46
Section 3	10th St. to 13th St.	3.38	6.76	17.55
Section 4	13th St. to 16th St.	3.66	7.32	19.08
Section 5	16th St. to 20th St.	5.36	10.73	27.80
Section 6	20th St. to 26th St./ 8th Ave. to 11th Ave.	5.33	10.66	25.92
Section 7	20th St. to 28th St./ 11th Ave. to 17th Ave.	5.98	11.96	25.03
Section 8	34 Bypass south to city limits/ 11th Ave. to 17th Ave.	2.12	4.24	8.64
TOTAL MILES		39.56	79.13	191.77

DISTRICT 3	14TH AVE. TO 23RD AVE.	MILES	CURB MILES	LANE MILES
Section 1	5th St. north to city limits	4.71	9.42	15.13
Section 2	5th St. to 10th St.	5.83	11.66	27.50
Section 3	10th St. to 13th St.	4.29	8.59	16.61
Section 4	13th St. to 16th St.	4.49	8.98	19.60
Section 5	16th St. to Reservoir Rd.	12.23	24.46	41.82
Section 6	Reservoir Rd. to 34 Bypass/ 17th Ave. to 23rd Ave.	5.58	11.16	22.23
Section 7	34 Bypass south to city limits/ 17th Ave. to 23rd Ave.	3.19	6.38	15.50
TOTAL MILES		40.32	80.65	158.39

Districts and Sections
Revised 2-18-98

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DISTRICT 4	23RD AVE. TO 35TH AVE.	MILES	CURB MILES	LANE MILES
Section 1	4th St. north to city limits/ 23rd Ave. to 35th Ave.	4.51	9.02	14.33
Section 2	4th St. to 10th St./ 23rd Ave. to 28th Ave.	5.09	10.18	19.86
Section 3	4th St. to 10th St./ 28th Ave. to 35th Ave.	6.41	12.82	22.25
Section 4	10th St. to 13th St./ 23rd Ave. to 28th Ave.	2.54	5.08	10.75
Section 5	10th St. to 13th St./ 28th Ave. to 35th Ave.	3.86	7.72	15.42
Section 6	13th St. to 16th St./ 23rd Ave. to 28th Ave.	2.84	5.68	11.36
Section 7	13th St. to 16th St./ 28th Ave. to 35th Ave.	2.30	4.60	9.58
Section 8	16th St. to 20th St./ 23rd Ave. to 28th Ave.	6.79	13.58	23.95
Section 9	16th St. to 20th St./ 28th Ave. to 35th Ave.	5.38	10.76	19.38
Section 10	20th St. to Reservoir Rd./ 23rd Ave. to 28th Ave.	5.74	11.48	21.99
Section 11	20th St. to Hwy. 34/ 28th Ave. to 35th Ave.	6.59	13.18	25.14
Section 12	23rd Ave. to Reservoir Rd./ Reservoir Rd. to Hwy 34	3.70	7.40	14.15
Section 13	Hwy 34 south to city limits/ 23rd Ave. to 35th Ave.	2.14	4.28	9.58
TOTAL MILES		57.89	115.78	217.74

DISTRICT 5	35TH AVE. TO 47TH AVE.	MILES	CURB MILES	LANE MILES
Section 1	4th St. north to city limits/ 35th Ave. to 47th Ave.	8.36	16.72	32.56
Section 2	4th St. to 10th St./ 35th Ave. to 40th Ave.	5.74	11.48	24.02
Section 3	4th St. to 10th St./ 40th Ave. to 47th Ave.	5.11	10.22	21.95
Section 4	10th St. to 16th St./ 35th Ave. to 43rd Ave.	7.10	14.20	28.19
Section 5	10th St. to 16th St./ 43rd Ave. to 47th Ave.	1.57	3.14	6.51
Section 6	16th St. to 20th St./ 35th Ave. to 40th Ave.	3.02	6.04	11.83
Section 7	16th St. to 20th St./ 40th Ave. to 47th Ave.	3.31	6.62	12.77
Section 8	20th St. to Hwy 34/ 35th Ave. to 47th Ave.	9.26	18.52	35.34
TOTAL MILES		43.47	86.94	173.17

DISTRICT 6	47TH AVE. WEST TO 59TH AVE.	MILES	CURB MILES	LANE MILES
Section 1	4th St. north to city limits	9.36	18.72	36.70
Section 2	4th St. to 10th St.	7.08	14.16	32.60
Section 3	10th St. to 16th St.	6.44	12.88	28.64
Section 4	16th St. to 20th St.	3.67	7.34	13.19
Section 5	20th St. south to city limits 47th Ave. to 65th Ave.	12.44	24.88	43.13
TOTAL MILES		38.99	77.98	154.26

DISTRICT 7	59TH AVE. TO 83RD AVE.	MILES	CURB MILES	LANE MILES
Section 1	“O” St. to 4th St.	3.89	7.78	16.18
Section 2	4th St. to 10th St.	2.00	4.00	17.16
Section 3	10th St. to 20th St.	2.00	4.00	8.59
Section 4	20th St. to Hwy 34 Bypass	1.24	2.48	3.01
TOTAL MILES		9.13	18.26	44.94

		MILES	CURB MILES	LANE MILES
	ALL STREETS	263.89	527.81	1,093.93
	DOWNTOWN ALLEYS	.90	1.80	1.80
	ALL PARKING LOTS	12.56	12.56	12.56
	DOWNTOWN STREETS	7.13	14.26	39.09
	SERVICE YARD	4.67	4.67	4.67
	CEMETERY	2.50	5.00	5.00
TOTAL MILES SWEEP BY STREET DIVISION		284.52	551.84	1,117.96

DESIGNATED DOWNTOWN PARKING LOTS SWEPT MONTHLY

Senior Center -- 1010 6th Street
South of 6th Street between 10th and 11th Avenues

Public Safety Building -- 919 7th Street
South side 6th Street between 9th and 10th Avenues
North side 7th Street between 9th and 10th Avenues

Depot
East side 7th Avenue between 8th and 10th Streets

Downtown
East side 8th Avenue between 8th and 9th Streets
West side 8th Avenue between 9th and 10th Streets
9th Avenue between 7th and 10th Streets
9th Street between 9th and 10th Avenues

Methodist Church -- 917 10th Ave.
Two lots on North side of 10th Street between
10th and 11th Avenue

City Hall -- 1000 10th Street
South side of 10th Street between 10th and 11th Avenue. (Two lots)

Union Colony Civic Center -- 701 10th Avenue.
West side of 10th Avenue between 7th and 8th Street

City Service Yard and Bus Shop -- 1300 A Street

Street Division Shop Yard -- 1203 3rd Street

Community Development Building -- 1100 10th Street
Two parking lots, West side, and alley South side.

DOWNTOWN ALLEYS SWEEP MONTHLY

- 1) Two alleys, between 6th Street & 7th Street, 7th & 8th Avenue.
- 2) One alley, between 8th & 9th Avenue, 7th & 8th Street.
- 3) Two alleys, between 9th & 7th Avenue, 9th & 10th Street.
- 4) Four alleys between 11th & 7th Avenue, 10th & 11th Street.
- 5) One alley between 7th and 8th Avenue, 11th & 12th Street.
- 6) Two alleys, between 7th & 9th Avenue, 12th & 13th Street.
- 7) Two alleys, between 7th & 9th Avenue, 13th & 14th Street.
- 8) One alley between 11th & 9th Avenue, 12th & 11th Street.
- 9) Two alleys, between 11th & 9th Avenue, 12th & 11th Street.
- 10) Two alleys, between 10th & 9th Street, & 10th & 12th Avenue.

PRIMARY STREET SWEEPING TEAM

The Street Division has four budgeted full-time team members in the Street Sweeping Program and four street sweepers, three that are mechanical type used for pulling heavy material and one vacuum used for leaves and to follow behind the mechanical, picking up more of the fine particulates.

Primary Street Sweeping Team:

Ed Snodgrass	Equipment Operator II
Don Quintana	Equipment Operator II
Dick Loftus	Equipment Operator II
Larry Kinnison	Equipment Operator II

All full-time team members are cross-trained in proper procedures used in the Street Sweeping Program and fill in when needed.

**Personnel Listing
STREETS DIVISION
EXT. 9336**

Position	Name	350 ext.	Home Phone	Cell Phone	Radio No.
*Street Superintendent		9335		381-3715	303
*Crew Supervisor		9337		302-5103	397
*Crew Supervisor		9338		302-4563	317
Division Secretary		9336			BASE
Equipment Operator II		9336			402
Equipment Operator II		9336			395
Equipment Operator II		9336			313
Equipment Operator II		9336			316
Equipment Operator II		9336			310
Equipment Operator II		9336			394
Maintenance Technician		9336			314
Equipment Operator II		9336			393
Equipment Operator II		9336			318
Equipment Operator I		9336			391
Maintenance Technician		9336			403
Equipment Operator II		9336			319
Equipment Operator I		9336			404
Equipment Operator II		9336		381-0822	315
Equipment Operator II		9336			399
Equipment Operator II		9336			396
Equipment Operator II		9336			398
Maintenance Locator		9336			400
Equipment Operator II		9336			392
Equipment Operator II		9336			401
Equipment Operator II		9336			311
Maintenance Technician		9336			405

*Initial Contact Persons

On-Call cell phone no.: 302-2456

On-Call pager no.: 395-9238

STREET SWEEPERS

1990 Mobil - M9A Top Gun, 6 cylinder diesel.
Vin # 1A9C23DRXLRO59112
City Tag #10000418. Unit 418
Operator, Dick Loftus, Employee #001405, Radio #393

1992 Mobil - M9B Top Gun, 8 cylinder diesel.
Vin # 1A9S24DR8NR059016
City Tag #10000417. Unit 417
Operator, Don Quintana, Employee #100080, Radio #396

1994 Mobil-M9B Top Gun, 8 cylinder diesel.
Vin #1A9SZ4DR2PR059161
City Tag #10000415. Unit 415
Operator, Ed Snodgrass, Employee #092042, Radio #392.

1988 Johnston 600 (Ford) Chassis, 6 cylinder diesel.
Vin #9BFXH70PZJDM00803
City Tag #10000421. Unit #421
Operator, Larry Kinnison, Employee #031003, Radio #394

PREPARING FOR THE SEASON

PERSONNEL TRAINING

Training personnel on the use of street sweepers is vital. Mechanical breakdowns can occur and be quite costly if improperly operated.

The Street Division has set aside time to train team members within the Division on the proper use and operations of street sweepers, and other equipment in high volume traffic. It was also proven by cross training other team members from outside the Sweeping Program, you can keep all sweepers operating and still accommodate for vacations and the unexpected sick leave.

The trainer will ride with the trainee to help them with the operations and geography, or until the trainee feels they are comfortable with the operations.

PREPARING EQUIPMENT

All Street Division equipment go through a pre-trip checklist at the start of every shift and a post-trip at the end of the shift to identify any problems that might occur such as worn parts, burned-out lights, flashers, etc.

Pre and post-trip books are a great tool to use to really identify any part that might need prompt attention. Major repairs are done during the slower seasons. Of course, the unexpected can happen, but with the pre-trip many items will be identified.

PARTS INVENTORY

It is vital for any Public Works Department to inventory and properly stock parts. Without a good inventory system, hours or days of downtime can occur and drive up cost and decrease productivity.

On a daily routine, the Sweeper Operators check for wearing parts while doing their daily maintenance, and any parts found are noted and added to an ordering list. Brooms and regular wearing parts are always kept stocked.

REVISING THE STREET SWEEPING PLAN

Many sections of the Street Sweeping Plan require annual revisions. The Sweeping Team shall update the Plan annually, using the following checklist as a guide.

- I. Statement of Objectives and Priorities:
- II. Policies and Ordinances:
- III. Operations: Review and Revise Procedures as Necessary
- IV. Location Listings: Update as Needed
- V. Personnel and Equipment Listings: Update as Needed
- VI. Preparing for the Season: Update as Needed
- VII. Miscellaneous: Update as Needed

GOALS

1. Update Street Sweeping Plan
2. Lower cost per curb mile swept by 5%.
3. Increase curb miles swept by 10%.
4. Cross-train Division personnel in Sweeping Operations.
5. Because the City has grown, a seventh district should be added.
6. Conduct a Team Meeting once a month.
7. To use a flush truck for dust reduction and decrease passes.

ACCOMPLISHMENTS

1. Sweeping Plan has been updated.
2. Division employees were cross-trained.
3. Due to parking one sweeper and not utilizing it, the cost for curb miles went up by 10%, however, by sweeping problematic areas in advance, the calls for special request dropped by 16.5%.
4. Sweeping Team had 8 meetings to develop strategies in sweeping.
5. Responded to 243 special requests.

PERFORMANCE MEASURES

1. Street Sweeping is broken down into four categories.
 1. Routine Sweeping Program
 2. Sweepings Hauled Program
 3. Special Request Sweeping Program
 4. After Hour Calls Program

The Street Division has established performance standards and goals for street sweeping. The accomplishments are measured for street sweeping by curb miles swept per hour, total curb miles swept per year, and cost per curb mile swept. Some major changes were made by the Street/Drainage Division to improve the effectiveness and efficiencies of the Street Sweeping Program. The City was divided into six districts and 52 sections. This breakdown makes record keeping a lot simpler and the City easier to sweep. By having three high dump sweepers and utilizing chase trucks when justified, and by using one street flush truck when necessary, and change to double shifts during key time operations. These are the key elements in having an excellent program. The Division still looks for new and innovative ways to increase the sweeping services provided for the citizens of Greeley, and the ever growing infrastructure. Despite all of the improvements made to the Street Sweeping Program, there still remains challenges.

VENDORS

For the Johnston Vacuum Sweeper, parts are ordered from
Macdonald Equipment Co., 7333 Highway 85, Commerce City, CO 80022
(303) 287-7401; Fax: (303) 287-7404

Johnston Sweeper Company
4651 Schaefer Avenue, Chino, CA 91710
Phone: (909) 613-5600; Fax: (303) 613-5600
Service Manager, Lawrence Pitman

Mobil Sweepers
Power Motive Corporation, 5000 Vasquez Blvd, Denver, CO
Phone: (303) 355-5900; Fax: (303) 388-9328

All brooms for the Mobil and Johnston are to be ordered
through the City of Greeley Warehouse.