

**ASSEMBLY STANDING COMMITTEE
COMMITTEE OF THE WHOLE
THE CITY AND BOROUGH OF JUNEAU, ALASKA
March 10, 2014, 6:00 PM.
Municipal Building - Assembly Chambers**

Assembly Worksession - No Public Comment - This meeting will begin immediately following the Special Assembly Meeting which begins at 6 p.m.

I. ROLL CALL

II. APPROVAL OF AGENDA

III. APPROVAL OF MINUTES

- A. February 10, 2014 Assembly Committee of the Whole

IV. AGENDA TOPICS

- A. CBJ Budget Projections
- B. Transit Development Plan
- C. Asset Management - Building Maintenance, Airport, Docks and Harbors, Public Works
- D. Cell Tower Master Plan & Ordinance Review
- E. Spuhn Island Cell Tower Update

V. COMMITTEE MEMBER / LIAISON COMMENTS AND QUESTIONS

VI. ADJOURNMENT

Note: Agenda packets are available for review online at www.juneau.org.

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

**ASSEMBLY AGENDA/MANAGER'S REPORT
THE CITY AND BOROUGH OF JUNEAU, ALASKA**

February 10, 2014 Assembly Committee of the Whole

ATTACHMENTS:

	Description	Upload Date	Type
☐	February 10, 2014 Assembly Committee of the Whole Minutes	3/6/2014	Minutes

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THE CITY AND BOROUGH OF JUNEAU, ALASKA Assembly Committee Of The Whole Work Session Minutes

February 10, 2014

I. ROLL CALL

Deputy Mayor Mary Becker called the meeting to order at 6:41 p.m. in the Assembly Chambers.

Assemblymembers Present: Mary Becker, Karen Crane, Loren Jones, Jesse Kiehl, Jerry Nankervis, Merrill Sanford, Carlton Smith, Kate Troll and Randy Wanamaker (telephonic)

Assemblymembers Absent: None.

Staff present: Kim Kiefer, City Manager; Rob Steedle, Deputy City Manager; Beth McEwen, Deputy Clerk; Kirk Duncan, Public Works Director; Dave Crabtree, Utility Manager; Hal Hart, Community Development Director; Travis Goddard, Planning Manager; Brent Fischer, Parks and Recreation Director; Rorie Watt, Engineering Director; Bob Bartholomew, Finance Director; Carl Uchytel, Port Director; Sky Stekoll, Engineering Associate; and George Schaaf, Parks and Landscape Superintendent.

II. APPROVAL OF AGENDA

Hearing no objection, the agenda was approved as presented.

III. APPROVAL OF MINUTES

a. January 13, 2014 Assembly Committee of the Whole

Hearing no objection, the minutes of the January 13, 2014 Committee of the Whole meeting were approved.

IV. AGENDA TOPICS

a. Cruise Industry Update - John Binkley presenting.

Mr. Binkley gave an update on the cruise industry locally and globally. Mr. Binkley serves as President of CLIA Alaska, which was formerly Alaska Cruise Association. Now they are affiliated with Cruise Lines International Association (CLIA). CLIA represents eleven member cruise lines which are: Celebrity Cruises, Carnival, Crystal Cruises, Disney Cruise Line, Holland America Line, Norwegian Cruise Line, Oceania Cruises, Princess Cruises, Regent Seven Seas Cruises, Royal Caribbean International, and Silversea.

He said in 2013, they had almost 1,000,000 passengers come to Alaska. 999,600 cruise passengers came in 2013 which includes passengers not only from their 11 member lines but also from the smaller cruise ship lines as well. CLIA members had 28 ships totaling 482 voyages. There are mainly two different kinds of voyages to Alaska – the roundtrip to Alaska which consists of approximately 2/3rds of the traffic. They come up through Southeast and turn around and go back – usually to Seattle. The other 1/3 of the passengers come up through Southeast, stopping at three ports on the way north and then continue on across the Gulf of Alaska to Seward or Whittier, disembark and then go to interior locations such as Denali. Another group flies in, takes the interior tour, boards the ship and travels south by way of Southeast Alaska.

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This past year saw the first “Solstice Class” ship in Alaska which is one of the newer/larger ships. That was by Celebrity Cruises and is 1,041 feet in length and handles 2850 passengers and 1500 crew members. Next year a larger Princess ship will arrive, dimensionally the same length but taller, with another deck and will be able to have 3,000+ passengers.

Mr. Binkley presented 2012 visitor figures which showed a total of 1,586,600 summer visitors to Alaska broken down as 937,000 cruise passengers, 69,100 Ferry/Highway passengers, and 580,500 visitors via airlines. The impact of the visitor industry in Southeast Alaska according to a 2010 study showed 10,600 full time employees with an economic impact of just over one billion dollars.

His presentation showed the growth fluctuations within Alaska in the cruise industry. Even though Alaska had a decline in 2010/2011, the global cruise industry continued to grow around the world. The world cruise market increased at approximately 7.6% per year. Alaska’ share of the market declined approximately 30% from the world’s market share due to other destinations aggressively marketing their destination ports. He said measures by the Governor, Lt. Governor and the Juneau legislative delegation to roll back taxes had reversed that decline.

He went on to give an overview of the global cruise markets. In 2013 there were 393 ships deployed around the world and hauled approximately 21 million passengers. The leading cruise destinations include the Caribbean (37%), Mediterranean (19%), N. Europe (11.1%), Australia/New Zealand (5.9%) and Alaska (4.5%). In comparing the global market and the Alaskan share of the global market, his graph showed a 30% decline of market share for Alaska from 2006-2012. The future growth of the market globally is huge in that CLIA lines will introduce 24 new ships in 2014 and 2015 which represents a total capital investment of approximately \$8 billion. The increased deployments in 2014 include the Caribbean (+12%), Northern Europe (+5.2%), Asia (+31.6%), and Australasia (+22%).

They are cautiously optimistic about Alaska’s market and challenges include the fact that it is a high cost destination. The taxes and regulatory atmosphere has changed. Alaska has increased its marketing efforts and continued to build land based improvements.

Some of the challenges Alaska faces is the expense to move cruise ships in and out of Alaska and operate within Alaska. The main market for Alaska cruises is the N. American market and that market is slow in growing. The Asian market is a huge potential source market; it is estimated that by 2020, 7 million cruises will be coming out of Asia. The demand is outpacing the construction. There is more demand for the building of cruise ships than the schedule can provide. If there are not enough new ships out there to meet the demand, they will take existing ships from existing markets and move them to new destinations.

Discussion took place regarding the challenges for Alaskan cruises and the main obstacle is still the price of an Alaskan cruise vs. the lower costs for cruising to other destinations. Mr. Binkley said that destinations work with the cruise industry to partner on how they can best market and improve the experiences and profitability of the industry. CLIA Global announced the creation of a Global Ports Committee and putting staff and efforts in coordinating on a global level the construction of new ports around the world and how it fits in with the plans for the industry. They are looking for better collaboration between industry and local governments. They appreciate the efforts of the Mayor and the administration in sitting down together to discuss the use of Marine Passenger Fees to discuss the spending of those funds to address the needs of the industry in the future.

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Discussion also took place regarding the impact of the projects Juneau is currently undergoing such as the 16b Dock replacement, bus parking reconfiguration, the work at Auke Bay to alleviate the congestion and whether or not that makes Juneau a competitive market. Mr. Binkley said those are exactly the types of things destinations need to do and the things that the cruise industry is looking for. However, they come at a steep price; here in Juneau the 16b facility construction is approximately \$54 million that is coming from the passengers. It is great to have those facilities but paying a fee in for those becomes an inhibitor for people to come because that makes the cost go up. He said the combined total of the A.J. Dock, the Franklin Dock, the McGraw Dock (Sitka), the Whittier Dock did not come close to the \$54 million dollar cost for the two docks in Juneau. Those costs are exorbitantly high compared to what the industry was used to in other areas even within the state of Alaska. Most of those facilities were financed by private industry or by public industries that don't necessarily tax the cruise lines on those but by the increased economic activity that comes as a result of the cruise passengers.

Additional discussion took place regarding the 2014 forecasts for cruise passengers and their spending habits and the types of passengers (discount or high spenders). Mr. Binkley said it is difficult to try to predict and that it depends on the national economy. They also discussed the longer itineraries vs. the shorter itineraries and if there are any shifts anticipated to longer itineraries. Mr. Binkley explained that the longer itineraries are a small portion of the market, less than 10%. He said the standard is a seven day cruise with primarily three ports but sometimes four ports.

Additional discussion took place regarding the main market for Alaska cruises is N. America. They spoke about the various factors that affect the prices which include air travel, fuel, head tax, and ways to possibly be able to reduce those costs in the future. Mr. Binkley said anything that would help reduce the costs is a help not only for the industry but for the community as well. Such things as plugging in to shore power and having fuel efficiencies available make for a win/win situation.

Ms. Becker thanked Mr. Binkley for providing his update to the Assembly.

b. State of Alaska Dept. of Transportation (DOT)/Public Facilities Report on 10th & Egan Project – Al Clough, presenting.

Al Clough, Regional Director for Southeast DOT presented information on the project to resurface Egan Drive from Main Street to 10th Street. The project is resurfacing Egan Drive and improving some pedestrian and bicycle facilities along that corridor. The retaining wall under Merchant's Wharf needed some improvements as well.

Mr. Clough said the project was redesigned based upon public comments. He showed how the travel lanes will be reduced from the current 12.5' travel lanes to 11' travel lanes to allow for a buffered bike lane (2' buffer and 4.5' bike lane) and the 6' sidewalk on the land side and the 8' sidewalk on the sea side. He gave comparisons to the 11' travel lanes currently in place from the Red Dog Saloon area south to Thane and on the Old Glacier Hwy. by Twin Lakes. He said the middle section would consist of a 16' raised media/turn lane which is slightly narrower than is currently there. Between Whittier and Willoughby, it will have to two full travel lanes outbound and one through lane inbound and one lane that will be a left turn only lane for Willoughby. If traveling through to downtown, and earlier right merge will be required.

The Willoughby St. to Main Street reconfiguration would be for one thru lane each inbound and outbound with a middle left turn lane but both sides would add bike lanes and significantly wider sidewalks, especially in front of Merchant's Wharf. He showed a photo of the current concrete

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block retaining wall under Merchant's Wharf Building. Work to strengthen the retaining wall under Merchants Wharf will be done from underneath rather than opening up the street.

The environmental document in the design phase should be done this spring. They anticipate coming to the Planning Commission sometime this summer. They are scheduled to advertise the project late fall with construction to begin sometime in 2015. Because they are not totally done with the planning portion of it, he can't say how long they anticipate the construction will take. He understands that CBJ is interested in a utility project that would be done concurrently with this project. He said this is a multi-year project with the most disruptive parts of the construction schedule to be before and after the summer cruise season.

This section of Egan Drive is eligible for National Highway System and has to compete with other projects. The project as redesigned meets the goals of providing much improved pedestrian and non-motorized travel and still preserves and improves vehicle travel through the area.

Discussion took place about the documents presented to the Assembly in November 2013, which had the sidewalk and bike track off the road. Mr. Clough said the elevated cycle track used up quite a bit of right-of-way. He explained that by keeping a traditional marked bike path along the roadway, it is consistent with what is found in other areas of town as well as provides additional vehicle space if emergency vehicles needed to get through and around other vehicles in the roadway. Mr. Jones expressed his concerns that they are narrowing the traffic lane widths and by not having the elevated bike path, it is putting the bike traffic very close to the large busses and trucks that will be traveling directly next to the bike lane.

Ms. Crane asked where they plan on staging the equipment for the project and downtown parking. Mr. Clough said those decisions are left up to the contractor to determine as the process develops.

Mr. Wanamaker asked if there was some reason the medians were being kept or if there was some way to either narrow them down or eliminate them so there could be more space for bicycles. Mr. Clough said they had been narrowed down and were used up by the left turn lanes.

Mayor Sanford asked if the Engineering and the Community Development Departments were involved with this project. Mr. Clough said that they have been made aware of interest by CBJ to combine utility work to interface with this project and as they get further along in the design and scheduling process, they will be working together. He said they would anticipate that CBJ would provide the funding and DOT would work with the design and administer the utility portion of this project. He said they have begun a series of informal project meetings which include CBJ Engineering and the Planning Group on an ad hoc basis as well as going through the formal Planning Commission process.

Mr. Charles Tripp of DOTPF came forward and continued a question and answer session with the Assembly.

c. Utility Rate Study – Kirk Duncan and Bill Wilks, presenting.

Public Works Director Kirk Duncan introduced Bill Wilks FCS Group Senior Project Manager. Mr. Duncan previously spoke about the need for \$73 million to rehabilitate water and wastewater facilities. This meeting focuses on how the rates will be structured. CBJ contracted with FCS to provide a "Cost of Service Study" and Mr. Wilks would present that report. Mr. Duncan said that Scott Willis and Jeff Larson from the Utility Advisory Board were present at the meeting as well.

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Mr. Wilks gave a PowerPoint presentation with an overview of the rate study process, current rates, and next steps.

Mr. Wilks said the Revenue Requirement Cost Study answered the question “Is the utility operating at a surplus or deficiency and if it is, what is the percent change that is necessary to the rates to achieve the revenue requirement?” The Revenue Requirement Cost Study looks at the utility at a macro level. What they found when they conducted that Revenue Requirement Cost Study was that both CBJ utilities are operating at a deficiency.

The Cost of Service Study focuses on the question “Do existing rates by class of service cover the cost of that service?” He said as policy makers they will want to know if some services are subsidizing other services. The Cost of Service Study looks at the micro level and if specific services are self-sufficient or subsidizing other services or being subsidized in some other method.

He said the Rate Design Study is different from the previous two studies. It is where Revenue Requirement and Cost of Service are specifically mathematically driven by accountants but then the Assembly inserts the public policy involvement into the equation. They will be coming back later to present the Rate Design Study to the Assembly COW and following that, the Assembly will need to make some policy decisions on how it wishes to proceed.

Assemblymembers asked a number of questions pertaining to the proposed water and sewer sample customer bills and the impacts on both the residential and commercial proposed billings and the differences being shown between the proposed metered vs. flat rates.

Mr. Wilks took the baseline water cost of service and analyzed it and found that it was placing some significant impacts on some of the large commercial customers. He suggested keeping the “Residential Flat Rate” as it is since it is working. He said the Mobile Home Parks would be assigned to the “Residential Metered” rate and the “Commercial Flat” rate also works. He then suggests that they designate the brewery as a “Commercial Metered” customer and that the “Large Commercial: Seasonal” would include the cruise ships and fish processors. Under the proposed water cost of service, they suggest removing from this study, the brewery, the seasonal customers and the cruise ships in order to make them special contracts. The rates in this study would not apply to those customers. Instead, negotiated contracts could recover their specific costs.

When Mr. Jones asked for clarification on who was charged Commercial Flat vs. Commercial Metered, Mr. Duncan explained that all commercial entities were metered with the exception of buildings under construction or entities that were estimated to use less than 4,000 gallons/month. There are 24 Commercial Flat entities. The Airport is under an agreement that was developed in 2006 and that would be handled separately. They are currently being billed at the Large Commercial Rate and it is anticipated that they will be switched to Commercial Metered in the future.

Assemblymembers discussed the choice of the low, medium, or high use figures in developing the Rate Design Study. Members wanted information that shows what is needed for maintenance and operations to stay current and the scheduling of the capital projects. Mr. Duncan said he would resend the list of all those projects that make up the \$22 million in water projects and the \$51 million in wastewater. Mr. Duncan said if they cut those numbers in half and go to baseline, we would fall further behind. He had given the Assembly what they consider to be the most responsible way to go. They are talking about replacing 25% of our infrastructure over the next 10 years.

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Mr. Kiehl said that there may be different finance options other than rate increases. Mr. Duncan the Revenue Model in December used a scenario for a total of \$73 million in improvements with \$22 million from sales tax, \$8 million from passenger fees, and the remainder coming from the rate increases.

Mayor Sanford asked when they will be seeing all the options. Mr. Wilks explained that this Cost of Service model showed the baseline, low, medium, and high options. They hoped the Assembly would give direction at this meeting on how to proceed with the revenue requirements. Mr. Wilks explained that depending on policy decisions by the Assembly, any number of scenarios could be calculated and brought forth.

Mr. Duncan said over time there was a lack of consistent increases and no fiscal policy to fund depreciation. The model presented funds depreciation, inflation, and operations and maintenance and provides the needed money for capital improvements. It was a reasonable and responsible plan, although unpleasant. Mr. Wilks also explained that during the last rate study, the Assembly adopted an across-the-board increase but didn't go forward with a cost of service adjustment. If the Assembly goes with a cost of service adjustment, that would be corrected.

Mr. Duncan explained that this proposal replaced 25% of a 40-year system, and would be needed every ten years. Not funding depreciation, puts the system further behind. Additional discussion took place regarding other possible funding sources. Mr. Duncan explained that they would look for funding in every location including DEC grants. This document would be reviewed by the Assembly every year to assess if targets were met and any adjustments needed.

Mr. Jones said he was concerned if they adopt the top rate increase than it would be a tough sell to go to the legislature to ask for additional funding assistance, or to do an LID.

Mr. Wilks said the methodology is the same for the sewer as was used for the water rates. They have been given the Revenue Requirements and the Cost of Service scenarios and it is now up to the Assembly to finalize the Revenue Requirement and then finalize the Cost of Service on the preferred scenario and then they can take it to the next step. That is where they get out of math and taking public policy direction, get into rate design.

Additional discussion took place regarding next steps and the timing of what needs to be done. Chair Becker asked that the projects list that was sent in December be resent to them. They also discussed sewer usage vs. the water usage since sewer isn't metered. Mr. Duncan said that their numbers were based on the assumption of what goes in, is equivalent to what is coming out. He also explained that we have twice as much invested in infrastructure for wastewater as we do for the water system.

Ms. Crane said she needed more education on this issue and hoped they would have a number of meetings to discuss the policy questions involved in this process before it went to the Finance Committee. Chair Becker asked the Manager if she could outline policy questions for the Assembly.

d. Whale/Bridge Park – Rorie Watt, presenting.

Engineering Director Rorie Watt presented updated information on the Waterfront Plan passed by the Assembly, the resolution endorsing the bridge site as the location for the Whale, the adopted plan by the Assembly allocating land between Docks and Harbors, Parks, the Whale,

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the Marine Exchange Building. He was looking for approval to pursue permitting and to return with additional information as it unfolded.

He said some geothermal exploration and permitting work was done to work through the permitting issues. Waterfront project permitting could take a long time and was complicated. He explained a map which showed an "island" fill for the whale statue favored by biologist, which creates habitat.

He anticipates be an 8-10 months permitting process with the Corps of Engineers. The full project is an expensive concept and will take quite a few years of capital funding to implement. The plan can be phased in. The whale sculpture could go, the Marine Exchange Center could go, and they could build the park in phases. They had already taken some small steps by demolishing the city shop. The seawalk could be funded at a later date.

Mr. Watt said the draft CIP proposes capital funding for some local sales tax for the park site. There may be some things that passenger fees could support. The seawalk and the walkways and bus staging that have a strong link to pedestrian and bus transportation and the safety and efficiency of commerce. The whale pool and fountain works have to come from either the whale committee or the Assembly.

Mayor Sanford said the key issue is to find out when the whale is expected to come to Juneau. Mr. Watt said the whale committee is optimistic and pushing hard to try to get more funds. They hope to get the whale here this summer but he doesn't know if they will be able to pull that off. Even if they are successful, it will take a while to make a home for it here. If the fill permit is going to take 6-10 months and then whatever capital monies they get on the first of the fiscal year, we will not be July 1 either.

Mayor Sanford said Paul Voelkers and Reed Stoops met with him about a proposal that they are working on for the sub-port Mental Health Property and indicated that the whale could go there or adjacent to it on city tidelands that could be filled and that development could be harmonious with redevelopment of the sub-port. Ms. Kiefer said she had a meeting scheduled to go over what their proposal and would forward any additional information from that meeting to the Assemblymembers. Mayor Sanford said they have a conceptual design of the sub-port area and harbor by Gold Creek. Mr. Watt said he thinks the whale committee wants to go where the whale will be received and is successful. They would like for us to continue permitting on this but they don't object to the other idea being worked on. Mr. Kiehl said two sets of Corps permits for one project seems like an unnecessary expense so he was trying to determine what direction they would be giving to Mr. Watt during this meeting.

Additional discussion took place on whether they wanted to give direction to proceed forward with the Corps permits on the Bridge Park area as presented by Mr. Watt or to wait and received additional information about this new proposal from Mr. Voelkers and Mr. Stoops. Mr. Wanamaker encouraged that they wait to decide until after they receive the additional information on this new proposal.

Mr. Watt said that under any scenario, they would need a Corps of Engineers permit for the seawalk. He said that if the whale didn't go in the proposed location, the fill there would not be the same, it would be a slightly smaller permit without the whale. He said that if they are doing a Corps permit application, they need to identify the maximum extent of what they might do and if things change, they could always scale that back.

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Ms. Troll said this isn't a question of whether the city is going to fund and build the whale itself, rather, it is a question of are we going to build our waterfront plan and seawalk in a way that allows us to make modifications to be flexible as new things develop.

MOTION by Troll, to authorize Mr. Watt to begin the process of the Corps of Engineers permit.

Mr. Wanamaker objected as he felt that the Assembly should get copies of all the correspondence that was previously submitted before it makes any decisions.

Roll call:

Aye: Crane, Jones, Kiehl, Nankervis, Smith, Troll, Sanford, Becker

Nay: Wanamaker

Motion passed 8 ayes, 1 nay.

Mayor Sanford asked staff to look at this other proposal and work with the other group.

Ms. Becker asked for information on the location of the Marine Exchange Building Mr. Jones said that at the last Docks & Harbors meeting the Marine Exchange Building representatives reported that they were pushing ahead as they have some other sources of revenue and they wanted to sit down and discuss with the Port Director and City Manager to discuss leases for Docks & Harbors Office space leases as part of their funding plan. He said if someone else has a different proposal for where the Marine Exchange Building is located, hopefully they are all talking with one another.

e. Lemon Creek Access presentation

Mr. Watt said this information was presented at the Public Works and Facilities Committee meeting on February 6.

Chair Becker asked the City Manager to add this topic to the agenda for a future COW meeting.

V. STAFF REPORTS – None.

VI. COMMITTEE MEMBER / LIAISON COMMENTS AND QUESTIONS

Ms. Crane noted that there were a Special Assembly Meeting and Assembly Finance Committee meeting scheduled for Wednesday, February 12 and the agendas/packets were distributed at this meeting.

Mr. Nankervis said the Planning Commission would be meeting on February 11 and the Airport Board would be meeting on February 12.

Mr. Wanamaker asked the City Manager to contact him the next morning before he delivered the letters to the TSA the next day.

VII. ADJOURNMENT - 9:35 p.m.

Submitted by Beth McEwen, Deputy Clerk

**ASSEMBLY AGENDA/MANAGER'S REPORT
THE CITY AND BOROUGH OF JUNEAU, ALASKA**

CBJ Budget Projections

ATTACHMENTS:

Description	Upload Date	Type
☐ Preliminary FY15 - 16 Budget Analysis	3/6/2014	Cover Memo

Preliminary FY15 & FY16 General Government Budget Status
as of February 26, 2014

	FY15 > FY14	FY16 > FY15	2-year Total
General Government Need/Increase	\$ 3,926,000	3,926,000	
Year 2 Additional General Government Need/Increase	-	2,443,000	
	<u>\$ 3,926,000</u>	<u>6,369,000</u>	\$ 10,295,000
 FY15 & 16 Increased Major Revenues	 1,421,000	 762,000	 2,183,000
 Fund Balance Previously Committed to Negotiated Wage & Benefit Increases	 985,000	 2,135,000	 3,120,000
	<u>985,000</u>	<u>2,135,000</u>	<u>3,120,000</u>
 Remaining Need	 <u><u>\$ 1,520,000</u></u>	 <u><u>\$ 3,472,000</u></u>	 <u><u>\$ 4,992,000</u></u>

CBJ
General Government Fund Balance Available
as of February 26, 2014

	General Govt Funds	Sales Tax Fund	Total
Projected FY14 Fund Balance at 06/30/2013	\$ 3,309,000	3,555,000	\$ 6,864,000
Departmental Impact-positive/(negative) variance	1,700,000	-	1,700,000
Major Non-departmental Revenue Impact	194,000	(1,075,000)	(881,000)
FY14 Projected Ending Fund Balance at 02/22/14	\$ 5,203,000	2,480,000	7,683,000
Fund Balance Previously Committed to Negotiated Wage & Benefit Increases	3,120,000	-	3,120,000
Net Available	\$ 2,083,000	2,480,000	4,563,000

City and Borough of Juneau
FY15 - 16 Revenue Projected Status

February 24, 2014

Major Revenues

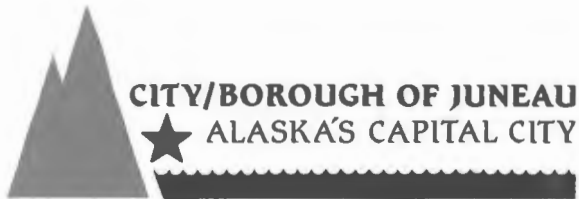
Accounts	FY14 Budget	FY15 Budget Projection	FY16 Budget Projection	FY14 - 15 Variance Positive / (Negative)	FY15 - 16 Variance Positive / (Negative)
Taxes					
Property Tax	\$ 45,519,000	\$ 45,855,000	\$ 46,311,000	\$ 336,000	\$ 456,000
Sales Tax	44,675,000	43,875,000	44,225,000	(800,000)	350,000
Alcohol Tax	925,000	934,000	943,000	9,000	9,000
Tobacco	1,340,000	1,280,000	1,225,000	(60,000)	(55,000)
Hotel	1,070,000	1,275,000	1,300,000	205,000	25,000
General Government					
Investment Income Gen Gov't (includes tax late fees etc.)	2,022,000	1,900,000	2,100,000	(122,000)	\$ 200,000
State Revenues (CRS)					
Federal Revenues (PILT, SRS)		1,700,000		1,700,000	
Total Major Revenues	\$ 95,551,000	\$ 96,819,000	\$ 96,104,000	\$ 1,268,000	\$ 985,000
Adjustment for taxes not allocated to general government				(152,750)	222,650
Increase in GG budgeted major revenues				\$ 1,420,750	\$ 762,350

**ASSEMBLY AGENDA/MANAGER'S REPORT
THE CITY AND BOROUGH OF JUNEAU, ALASKA**

Transit Development Plan

ATTACHMENTS:

Description	Upload Date	Type
☐ Planning Commission Recommendation	3/5/2014	Cover Memo
☐ CDD Staff Report for Transit Development Plan	3/5/2014	Cover Memo
☐ Transit Development Plan	3/5/2014	Cover Memo



**PLANNING COMMISSION
NOTICE OF RECOMMENDATION**

Date: March 3, 2014

File No.: CSP2013 0009

City and Borough of Juneau
City and Borough Assembly
155 South Seward Street
Juneau, AK 99801

Proposal: Planning Commission Review of and Recommendation to the Assembly regarding the 2014 *Transit Development Plan*.

Legal Description: N/A

Property Address: Boroughwide

Parcel Code No.: Boroughwide

Hearing Date: February 25, 2014

The Planning Commission, at a regular public meeting, forwarded the Draft 2014 *Transit Development Plan* to the Assembly with a recommendation for adoption and funding.

The Planning Commission directed that their comments on the Draft *Transit Development Plan*, as recorded in the minutes of the meeting, would be forwarded to the Assembly with this recommendation.

This Notice of Recommendation constitutes a recommendation of the CBJ Planning Commission to the City and Borough Assembly. Decisions to recommend an action are not appealable, even if the recommendation is procedurally required as a prerequisite to some other decision, according to the provisions of CBJ 01.50.020(b).

Project Planner: _____


Ben Lyman, Senior Planner
Community Development Department


Michael Satre, Chair
Planning Commission


Filed With City Clerk

Date

3/4/14

cc: Plan Review

NOTE: The Americans with Disabilities Act (ADA) is a federal civil rights law that may affect this development project. ADA regulations have access requirements above and beyond CBJ - adopted regulations. The State Government and project designers are responsible for compliance with ADA. Contact an ADA - trained architect or other ADA trained personnel with questions about the ADA: Department of Justice (202) 272-5434, or fax (202) 272-5447, NW Disability Business Technical Center (800) 949-4232, or fax (360) 438-3208.

2013 CAPITAL TRANSIT SERVICE SCENARIO
CSP2013 0009

**PLANNING COMMISSION REVIEW AND
RECOMMENDATION
TO THE ASSEMBLY**

PLANNING COMMISSION
City and Borough of Juneau
Michael Satre, Chair

REGULAR MEETING
February 25, 2014

Commissioners present: Mike Satre, Chairman; Dennis Watson, Vice Chairman; Karen Lawfer, Ben Haight, Bill Peters, Paul Voelckers, Dan Miller

Commissioners absent: Nicole Grewe, Gordon Jackson

A quorum was present

Staff present: Hal Hart, Planning Director; Travis Goddard, Planning Manager; Beth McKibben, Senior Planner; Ben Lyman, Senior Planner; Eric Feldt, Planner II; Sarah Bronstein, Planner I, Rob Steedle, Assistant City Manager; John Kern, Transit Superintendent

Staff Recommendation

Staff recommends that the Planning Commission forward the Draft 2014 Transit Development Plan to the Assembly with a recommendation for adoption and implementation.

Planning Commission Recommendation

MOTION: *By Ms. Lawfer, that the Planning Commission adopt CSP2013 0009 with the staff report as well as a copy of the minutes regarding the comments made this evening along with the letter from the Commission on Aging which was already forwarded to the Assembly. She asked for unanimous consent.*

The motion was approved by unanimous consent.

Summation of Commission Comments and Recommendations

- Increased bus access for passengers on snow days

- Support for the downtown circulator by the Commission and the Downtown Business Association although it is recognized this may not be implemented within this short-term plan
- Scheduling of bus routes so there is enough room to fit busses in the Downtown Transportation Center
- Holiday Service, supported by the Planning Commission and the Juneau Commission on Aging
- Interest in the allocation of cruise ship funds for transit

MR. LYMAN PRESENTATION

Mr. Lyman told the Commission that he would not provide a full presentation about the full transit development plan since most of it has been reviewed previously. He said this evening that he would like to go over the history of how they got here, what has been accomplished since the Commission last revisited the Plan, and then answer questions.

The Draft 2014 Transit Development Plan was last before the Commission on January 7, of this year. At that time the Planning Commission recommended that the Assembly support the Plan's recommended service changes by unanimous consent.

The Transit Development Plan is a standard short-range planning document for implementing and operating Juneau's transit system. It is updated every five years; the last update occurred in 2008, said Mr. Lyman. Prior to that date, the last adopted Transit Development Plan was in 1996. There was a plan in 2001 which was not adopted.

The Project Management Team is composed of: John Kern, Capital Transit Superintendent; Rob Steedle, Deputy City Manager; Kirk Duncan, Public Works Director; Hal Hart, community Development Director; and Mr. Lyman. The Team has been working with the Project Study Advisory Group and Nelson/Nygaard, Consulting Associates Inc.

Last fall the Planning Commission, the public and the Assembly were presented with the Comprehensive Operations Analysis to describe the existing conditions. The team then recommended changes to service with three different service scenarios which were brought forward and evaluated. Comments were collected and integrated into a single recommended service change, which is what was presented to the Commission in January.

Based upon feedback on the recommended service changes, the team developed the Transit Development Plan, which incorporated the recommended service changes along with consideration of capital costs. It is important to consider that the context for all of the recommendations is to meet the goal to minimize the need for increased local financial support for transit. The goal was to incorporate the service changes without any increase to the operational budget of Capital Transit.

The service objectives included service to new areas, including:

- ✓ South Riverside Drive
- ✓ The Employment Centers in the Lemon Creek Industrial Area

- ✓ The Alaska Marine Highway System Ferry Terminal in Auke Bay
- ✓ Holiday Service
- ✓ Extended Weekend Service
- ✓ Earlier Morning Service
- ✓ Later Evening Service

Not all of these needs could be met without budget increases. Therefore, the team's short-term recommendation does include a budget increase of \$200,000 a year. Pages five through eight of the report outline what the team could accomplish and items that could not be addressed within budget constraints.

Earlier morning and later evening service was not something the team could implement within the \$200,000 increase in operational funding. For an additional \$45,000 - \$55,000 a year, for example, holiday service could be added when that funding became available. Costs are also broken out for getting to the Ferry Terminal, morning and later evening service and implementing a downtown circulator. This is something the team found could not likely be accomplished within the five year plan .

Mr. Lyman included information from the Comprehensive Plan and the Area-wide Transportation Plan, and the recommended improvements are in conformance with both plans. The plan is consistent with Title 49 and its adopted plans.

Comments were received from the Douglas Indian Association (DIA). At one point in the plan development it had been considered to provide hourly service to Douglas in the mid-day. The DIA was pleased to see this service was not reduced. The DIA said it was disappointed that service could not be provided to the ferry terminal in the short term, and encouraged the city to continue to work in that direction.

The Juneau Commission on Aging urged that the growing elder population and its unique needs be addressed in the Transit Plan, including a strong recommendation that holiday service be added, allowing people to get to jobs and family gatherings on holidays.

Other issues mentioned were unsafe bus stops, lack of shelters or sidewalks, maintenance and snow removal, no place to stand while waiting to board the bus or getting off the bus, the disposal of unsafe drop-off points, and the provision of direct service to and from stores in the Costco area. There was also the suggestion for travel training. There currently exist several travel training programs in Juneau, such as programs where REACH and JAHMI (Juneau Alliance for Mental Health, Incorporated) work with their clients on travel training. Capital Transit also has a travel training program. That is a program that could grow without a huge outlay of cost, said Mr. Lyman.

In the Transit Development document there is new discussion of the Park and Ride program, which had been discussed but not addressed in writing before, and discussion of the Care-A-Van program. This program is the para-transit side of Capital Transit, required under the

Americans with Disabilities Act, and it also provides additional service under different funding to serve seniors.

There were no changes in the short term recommendations. In the midterm recommendations there is additional information on providing service to the Lemon Creek Industrial area, the Ferry Terminal, earlier and later service, and holiday service. The holiday service discussion includes options such as bus service for all of the current Capital Transit holidays, or reduced holiday service limited to Memorial Day, July Fourth, and Labor Day.

There is discussion in the report about shelter lighting, which is a continuing Capital Improvement line item. There is also discussion about the provision for bicycle lockers, for people who commute by bicycle part way, prior to using the bus service.

At the end of the packet are the funding options, which is the menu where the Assembly can look to identify funding for both continued transit operations, and expansion of the system, said Mr. Lyman

QUESTIONS

Ms. Lawfer commented that she was glad to see the letter commenting on the Transit Development Plan from the Commission on Aging. The safety of the bus and transit system is discussed in the Comprehensive Plan, said Ms. Lawfer, and has been discussed frequently in user groups that people cannot get to and from the bus stops, other than the major hubs. She added that she saw no operating expense allocated for increased bus stop access. She asked if bus stop maintenance/access been discussed. Ms. Lawfer added that after a snow it is five days before someone can access the bus stops, except for the major hubs. She said it was one of the major topics of comments from the public regarding the transportation system.

Mr. Lyman said there is staff which maintains access to the bus shelters and bus stops. Most of the Capital Transit routes run on state right-of-ways, which means it is the State of Alaska Department of Transportation and Public Works and Facilities (DOT&PF) which maintains those roadways. They would first plow the roadway and plow the snow off the road and onto the sidewalk or bicycle lane. After the major roadways are cleared, they would then remove the snow off of the sidewalks, explained Mr. Lyman. The City takes a similar approach to plowing its streets, said Mr. Lyman, except that the Public Works Department has prioritized the clearing of major bus stops and safe routes to schools for children.

Those funds are all outside of the Capital Transit budget, said Mr. Lyman. It is the Streets Division within Public Works, he said, which performs this work.

Mr. Kern said that sidewalk maintenance is an area of continuing work for the community as more sidewalks have been added over the years, and that personnel has been added to the Transit staff, and that their goal is clearing the actual bus shelter areas of snow by the next day.

Mr. Kern said he believes they clear bus stop areas within three days. Mr. Kern said that he thinks that DOT&PF can take up to five days to clear the sidewalks that get the bus passengers to the shelters. Mr. Kern said what they often see now is that the shelters are clear but the sidewalks taking the passengers to the shelters are not yet cleared. Mr. Kern said they are continuing to work with Public Works staff and the state staff to increase their understanding of where the Capital Transit priorities rest.

Ms. Lawfer clarified that funds used for clearing the shelters would be found in the Public Works portion of the City Capital Improvement budget within the snow removal section. Mr. Kern responded there is no proposal to add funds to the Capital Transit Program for snow removal.

Ms. Lawfer asked if it was addressed in the Public Works budget.

Mr. Lyman said there is no recommended increase in the budget in the Transit Development Plan for Public Works snow removal funding.

Mr. Voelckers said that the circulator loop around town was not included in the five year plan. Mr. Voelckers asked if this implies there is a shorter term recommendation to be included in the midterm recommendations.

Mr. Lyman said within the five year plan, shorter term recommendations fall within three to six months. Some of them would require capital improvements, so would take a little longer to accomplish.

The mid-term improvements are the improvements that are really dependent on new infrastructure and new equipment, said Mr. Lyman. Those fall within the three year mark of the plan. Anything else would fall outside of the five years covered in the Transit Plan, he said.

The downtown circulator is acknowledged as an important step in the transportation solution, said Mr. Lyman, but it did not rise to the top of immediate needs enabling people to get to their jobs and health care via transit. Downtown Juneau is almost entirely within a quarter mile of existing transit routes which is the industry standard for walking distances to reach public transportation, said Mr. Lyman. Implementing a downtown circulator would take a large chunk of funds beyond what the team could foresee becoming available within the next five years, he added.

Mr. Voelckers said he agreed with the ranking and was more focused on the projects that did make the five year plan, and hoped they could be implemented as soon as practical.

Mr. Watson said he understood that Capital Transit lost some cruise ship funds, and that he admired the team for accomplishing the plan with less money. He asked if the cruise ship funds were reinstated, or if they were absent this or for the forthcoming year.

Mr. Kern responded that the transit budget was just in the preliminary stages. It will be going before the Assembly Finance Committee in the coming month, said Mr. Kern. He added that he cannot speak to the amount of revenue source at this time.

Mr. Watson said at one time there was concern expressed about fitting three buses into the Transit Center. He wondered if with the proposed new bus routing, if it would ease the number of busses at the Transit Center at one time.

The next step of the Plan is implementation, said Mr. Kern, and one of those steps will be coordination of the busses through the Downtown Transportation Center. He said it was designed to accommodate only two buses at one time. They may have to coordinate their activities so the busses can move through the Center, said Mr. Kern.

Mr. Watson said one of the short term goals in the 2002 Riverside Corridor study and plan was to establish bus service on Riverside, and another was to install a traffic light on Stephen Richards Drive. Mr. Watson said it looked like that project was now about to be complete.

Juneau resident Dixie Hood spoke in favor adding holiday service to the budget for the Capital Transit busses. She said that service would not just be for senior citizens, but for others in the community who do not have their own transportation.

Juneau resident Greg Fisk said he is a member of the Downtown Business Association. He said he is a big fan of the downtown circulator but he understands the resources for that are not currently available. He said the Downtown Business Association is thankful the plan calls for restructuring and only running one bus route through town instead of two busses at the same time.

Mr. Satre said they have excellent comments from the Juneau Commission on Aging, and there are Planning Commission comments that have been incorporated into the record. He said he would hope that the letter from the Commission on Aging and any prior comments from the Commission on the Transit Plan would all be part of any recommendation that would be put forward on the plan.

Mr. Lyman said as of February 1, the City is now providing employees who do not need a parking pass for the parking garage with a transit pass instead. He said they are moving forward getting the City employees on busses and not just taking up parking spaces in town.

Mr. Satre said he appreciated the work of all of the Commissioners who have advocated for transit. He said they will continue to advocate for transit infrastructure.

MEMORANDUM

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

DATE: February 10, 2014

TO: Planning Commission

FROM: Ben Lyman, Senior Planner 
Community Development Department

FILE NO.: CSP2013 0009

PROPOSAL: Planning Commission Review of and Recommendation to the Assembly regarding the 2013 Capital Transit *Transit Development Plan*.

GENERAL INFORMATION

Applicant: City and Borough of Juneau

Parcel Code No.: Boroughwide (0)

BACKGROUND

The City and Borough of Juneau has contracted with Nelson\Nygaard Consulting Associate Inc. to conduct a Comprehensive Operations Analysis, Transit Development Plan, and Capital Improvement Plan for Capital Transit. The Draft Recommendations of the Transit Development Plan were presented for consideration prior to the completion of the Final Transit Development Plan and Capital Improvement Plan. Although there is no ordinance requiring the Planning Commission's review of transit planning documents, a clear connection between land use and transportation is made in the 2013 *Comprehensive Plan* of the City and Borough of Juneau, and the Planning Commission has expressed a high level of interest in and knowledge of transit and its impacts on the City and Borough of Juneau. Accordingly, the Project Management Team, consisting of Rob Steedle, Deputy City Manager; Kirk Duncan, Director of Public Works; Hal Hart, Director of Community Development; John Kern, Capital Transit Superintendent; and Ben Lyman, Senior Planner, request that the Planning Commission review and make a recommendation to the Assembly on the Draft Transit Development Plan.

During its January 7, 2014 meeting, the Planning Commission, by unanimous consent, recommended that the Assembly support the recommended changes to service with the following five comments, which are copied here from the Notice of Recommendation:

- 1) Operating Costs - \$200,000 operational increase does not include fare box recovery; Juneau collects 15% of its funding through fares. At this rate, \$30,000 of the \$200,000 increase would be borne directly by riders.
- 2) Automatic Vehicle Locators/Computer Aided Dispatch – The system that Commissioner Watson uses for a statewide transit system is substantially less expensive than what is recommended.

The proposed system would, however, distribute real-time information to the public, not just administrators.

Although Capital Transit is a very effective system, they are lagging behind the industry in terms of implementation of technology.

- 3) Bus stops do not exist out of the travel lane on most of Riverside Drive.

Notably, north of Melvin Park, busses will have to stop in the travel lane, however, there are likely to be no more than two stops in this area. South of Melvin Park there is one existing bus pullout at Dimond Park, and three additional stops may have to be constructed to allow the busses to pull out of the travel lane.

- 4) Snow removal is a real problem for both busses and riders, and can prevent riders from reaching the stops. How/do Capital Transit and the rest of Public Works coordinate snow removal?

Capital Transit and the Alaska Department of Transportation & Public Facilities (DOT&PF) try to work together to clear bus pullouts, and a shelter maintenance position has been funded for the last couple of years. All shelters can now be cleared within a couple of days, typically. Major streets with sidewalks that connect to bus routes are prioritized for snow removal from sidewalks by CBJ Public Works.

- 5) The Planning Commission has looked at transit and at Capital Transit and making it the most robust system possible. It is a real credit to Mr. Kern and all of his staff that an outside consultant looks at the system and says that it is one of the best systems that they have seen in terms of ridership compared to population. We've done a very good job of operating the system with limited resources, and having a linear community has helped us in doing that.

Now as the community expands, as we look to develop certain areas, we're having trouble servicing portions of it, because now we have to get into spurs off this main linear trunk line. It's good that we have these studies and that we can focus some investment in our transit system. But we as a Planning Commission have advocated for a step change in how we address the funding, both on a capital and an operational side. We need to look at this transit system just as we look at our sewer and water systems, and just as we look at building and maintaining roads, as part of the puzzle we have to look at when we are trying to address affordable housing in this community.

We don't have to look at the balance sheet here at the Planning Commission, so it frees us to make some recommendations, and we appreciate the Assembly members here who do have to look at that balance sheet, but we seem to find ways to build buildings that the community loves and uses, and we find ways to maintain them, and as a community we have to find ways to invest in the capital that is needed to do this step change expansion to our transit system.

We recognize that that is going to take an incredible amount of operating monies as well, but if we are going to recognize the benefits of things this commission has done, and things the Affordable Housing Commission has recommended, such as increasing density and fostering development in our community, we have to have the transit system. It's not just the roads and the sewers that make this happen. You have to be able to get people in and out; you have to make it attractive for people to not necessarily have to have a vehicle in order to live in certain areas. If you can bring down the overall cost for them, they can afford a variety of housing.

So we look forward, as a Planning Commission, to conversations along this line with the Assembly, and we hope that all of these recommendations that are before us tonight are taken up and put into future budgets. We hope to contribute more as we go, and hope we're not doing window dressing to our Capital Transit system.

It's all well and good that we look at a couple million dollars in dispatch systems and the ability to see where your busses are on a smart phone, but somebody who is climbing over a four-foot snow berm to sit in the middle of a puddle and get splashed by vehicles as they wait for that bus, I don't think that they really care where that bus is on that dispatch system. They want good, well-lit transit stops, and that costs money to build those and to operate those. They want those busses where the centers of housing, the centers of education, and the centers of commerce are, and it's going to take a concerted effort to get there. There are no easy solutions, and we understand that there are budget constraints, but we want to be part of that discussion.

ANALYSIS

A Transit Development Plan (TDP) is generally conducted every five years; the current TDP was adopted in 2008. The Draft Comprehensive Operations Analysis (COA) was completed in August 2013 and is available on-line at <http://juneautransitplan.org/wp-content/uploads/2013/08/Juneau-COA-DRAFT-8-20-13.pdf>. The COA details strengths and weaknesses of the existing Capital Transit system, and includes a peer review of Capital Transit against transit systems in communities with similar attributes to Juneau. The TDP is based on the findings of the COA, and aims to meet the needs identified in the COA with minimal increases to operating costs.

Recommended changes to the service were developed and presented to the Planning Commission and Assembly in early January 2014, and are available on-line at <http://juneautransitplan.org/wp-content/uploads/2014/01/Juneau-Transit-Plan-Draft-Recommendations-Report.pdf>.

This memorandum accompanies the third and final part of this project, the Transit Development Plan itself. This document contains the blueprint for how to implement the recommendations, including capital investments and financial recommendations.

As stated in the TDP (page 1-2):

It is important to reiterate that the context for all recommendations is a goal to minimize the need for increased local financial support for transit.

All of the recommendations are based on the following service goals:

1. Ensure that routes have adequate time to operate on-schedule.
2. Better match service levels with ridership demand to ensure resources are being used in the most efficient way possible.
3. Evaluate requests/demand for service to new areas, including:
 - Riverside Drive
 - Lemon Creek industrial/employment area
 - Ferry Terminal
4. Strive to ensure high-quality and convenient service, so that:
 - When a transfer is required, make it as convenient and comfortable and wait times are as short as possible.
 - Service is provided for commuter needs during peak periods as well as riders using the service during non-peak times and on weekends.
 - Some service continues to operate through the core of downtown (Franklin, Fourth, and Main).
5. Ensure that service design, marketing information, buses, and other elements of the service are as legible and easy-to-understand as possible.

Although the Project Management Team and Consultant Team were unable to develop a set of recommended changes that met all five of the goals listed above without raising operational expenses for Capital Transit substantially, every effort was made to do so. The short- and mid-term (immediate and five-year horizons, respectively) recommendations make significant headway in achieving those goals. A summary of the recommendations is provided in the TDP (pages 2-1 through 2-3) and reiterated here:

- **Improve on-time performance:** Existing Valley Local and Express routes are increasingly operating behind schedule at certain times of the day, resulting in late arrivals and missed transfers. In addition, drivers have little or no time for layover and recovery at certain times of the day, resulting in routes remaining behind schedule on successive trips. The proposed short-term changes would resolve all on-time performance issues. The most significant ways in which this would be done include:

- Add a third bus to the Express route during peak periods to provide additional schedule time (and allow service to be extended to Montana Creek and the Downtown Transportation Center (DTC)). However, to offset the cost of the additional bus, midday service frequencies would be reduced from every 30 to every 60 minutes.
- Shorten Valley Local service to operate to and from the Downtown Transit Center rather than around the downtown loop, and via a more direct alignment through Lemon Creek.
- **Maintain timed-transfers:** On paper, Capital Transit provides perfectly timed transfers between nearly all routes; in practice, late buses mean that many are being missed. The proposed short-term changes would provide reliable timed-transfers for the large majority of existing riders. However, longer transfers would be required for some trips, most notably non-peak direction travel between Douglas and the Mendenhall Valley or Lemon Creek.
- **Provide service along Riverside Drive:** Riverside Drive is the highest demand area in Juneau that is not served, and is the location of important public facilities such as the Dimond Park Aquatic Center, Library, Thunder Mountain High School and multiple sports fields. The short-term recommendation includes seven day a week service to Riverside Drive with reconfigured Valley Local service.
- **Maintain service to Back Loop:** Ridership on “Back Loop” portion of Mendenhall Loop Road is low, but existing riders rely on the service. With the shifting of Valley Local service to Riverside Drive, the short-term recommendations include extending Express service to Montana Creek via the Back Loop. However, service to the Back Loop and Auke Bay would end approximately two hours earlier than it now does (late evening ridership in this area is low).
- **Provide service to Lemon Creek Industrial Area:** The Lemon Creek Industrial Area, which is where Costco, the Alaskan Brewing Company, Home Depot and other major employers are located, is another high demand area that is not served. The provision of service to this area, which primarily benefit employees, but also shoppers, would cost an additional \$540,000 per year and cannot be accommodated within existing budget levels, and thus is not included in the short-term recommendations. It has, however, been included in the mid-term recommendations and can be implemented when funding becomes available.
- **Provide service to Auke Bay Ferry Terminal:** A significant amount of demand was expressed throughout this study for service to the Auke Bay ferry terminal. However, the provision of this service would cost \$450,000 per year and cannot be accommodated within existing budget levels, and thus is also not included in the short-term recommendations. It has, however, been included in the mid-term recommendations and can be implemented when funding becomes available.
- **Implement a Downtown Circulator route:** There was significant demand expressed during this study for a dedicated downtown circulator to provide service every 15

minutes. The implementation of a downtown circulator bus that operates from 7:00 AM to 11:00 PM seven days a week would cost approximately \$600,000 per year to operate and cannot be accommodated within existing budget levels.¹ Instead, service would be provided around the downtown loop every 30 minutes by the Douglas route.

- **Provide earlier service for workers with early work start times:** Existing service is generally designed to serve work trips that start at 8:00 AM, while many workers start earlier. The short-term recommendation includes earlier service on the Valley Local and Express routes to better serve start times as early as 7:00 AM.
- **Provide later Express service between UAS and downtown:** Service on the Express route currently ends at 6:03 PM from downtown and 6:27 PM from UAS, and thus does not serve evening classes. The short-term recommendation adds new Route 2 Auke Bay – Nugget Mall service that would operate until 8:47 PM from the Nugget Mall and until 9:22 PM from UAS with connections to and from downtown at the Nugget Mall. However, as mentioned above, Valley Local service would no longer operate via the Back Loop, and thus the proposed service would end earlier than the existing Valley Local route that now indirectly serves UAS.
- **Implement technology improvements to improve operations and passenger information:** Capital Transit performs many functions manually that most other transit systems have automated. The mid-term recommendations include procurement and implementation of technology solutions that are now used as a matter of course by most transit systems:
 - Computer Aided Dispatch (CAD) and Automatic Vehicle Location (AVL) so that Capital Transit can know where its vehicles are and quickly respond to problems, and provide passengers with real-time passenger information.
 - Electronic fareboxes, to improve fare handling and provide better ridership information.
 - Automatic Passenger Counters (APCs) to track ridership and loads on an ongoing basis, so that Capital Transit can make service adjustments more quickly than every five years (the TDP cycle).
 - Real-Time Passenger Information via signs at major transit points and via smartphones.
 - Improved web and printed information, and the provision of schedule information via Google Maps.
- **Make service simpler and easier to understand:** There are a number of existing service elements that are confusing to many, and especially potential new riders. These

1. Construction and operation of a fixed-guideway circulator system would be more expensive to initiate, but would likely result in increased private investment along the alignment and higher tax revenues. As a fixed-guideway system is likely a longer-term project than the five-year planning horizon of this TDP, this project did not include a market analysis or impact study of such a system.

include the alternating loop service in the Mendenhall Valley, and “Additional Service” trips that are similar to, but different, than existing services, and in the case of Douglas service, create a “hole” in the regular schedule, and inconsistent route nomenclatures. The short-term recommendations would make service simpler and easier to understand in a number of ways:

- Rebrand all routes with a name and a number.
- Operate loop service through the Mendenhall Valley counter-clockwise only.
- Combine the different Mendenhall Valley and Lemon Creek “Additional Service” express trips into a new Route 1X Mendenhall Valley – Downtown Express route in which all trips would operate in a consistent manner.

CONFORMITY WITH ADOPTED PLANS

The proposed project was reviewed for conformance with the following CBJ-adopted plans:

Comprehensive Plan (2013)

Area-Wide Transportation Plan (2001)

Comprehensive Plan:

POLICY 8.5. TO PROMOTE A BALANCED, WELL-INTEGRATED LOCAL MULTI-MODAL SURFACE TRANSPORTATION SYSTEM THAT PROVIDES SAFE, CONVENIENT AND ENERGY-EFFICIENT ACCESS AND TRANSPORT FOR PEOPLE AND COMMODITIES.

Standard Operating Procedures

- 8.5 - SOP1 Provide a safe, convenient, reliable and low-cost public transit and rapid transit system within the Urban Service Area to ensure that within that area, everyone has the ability to access work, school, services, shopping and leisure activities by public transit, with stops located so as to be within ½ mile of each other along routes.
- 8.5 - SOP2 Maintain area-wide and subarea transportation plans and ensure their consistency with other relevant CBJ-adopted Plans, including the *Comprehensive Plan*, the *Parks and Recreation Comprehensive Plan* and the *Capital Improvement Plan* and Program.
- 8.5 - SOP3 Provide public transit services to low- and moderate-income neighborhoods and support supplementary transit service for the elderly, handicapped and homeless residents seeking work or medical or social services.

Implementing Actions

- 8.5 - IA2 Consider the concept of Bus Rapid Transit (BRT) or other dedicated express bus service throughout the Urban Service Area in future Transit Development Plans and related plans and studies in order to provide faster service between major trip origins and destinations.

- 8.5 - IA3 Update, adopt and implement the *Capital Transit Development Plan*. Elements of an updated plan may include, but are not limited to the following:
- Providing all day express bus service to facilitate the movement of people between downtown Juneau and other major destinations in the Urban Service Area;
 - Expanding Capital Transit to provide service on all holidays;
 - Providing additional bus capacity to reduce overcrowding on buses;
 - Providing bus pullout areas at bus stops to avoid impeding the roadway travel lanes with requirements for motorists to immediately allow buses to re-enter the roadway upon their signaling to re-enter;
 - Exploring the feasibility of a Mendenhall Valley shuttle service and/or park and ride linked to downtown by express buses;
 - Exploring the use of buses powered by non-fossil fuels, hybrid technology, or other systems consistent with the community's commitment to sustainability;
 - Providing a downtown circulating shuttle service, serving the Central Business District. Evaluate the feasibility of serving the Federal Building, the Rock Dump, and other popular trip destinations and origins in the downtown area with this shuttle service;
 - Evaluating the best locations and size for Park & Ride facilities and purchase of the land or easements on the land for future improvements. When residential densities warrant, develop the Park & Ride facilities where they can serve commuter traffic from residential areas. These facilities would be in the form of satellite parking areas served directly by transit routes that would provide convenient access and express service to downtown Juneau for residents living significant distances (more than a quarter mile) from existing transit routes. Likely areas that could be served by Park & Ride facilities would be the Mendenhall Valley north of Egan Drive, and areas north or northwest of the University of Alaska Southeast if significant population increases occur in that area; and
 - Providing a mix of transit vehicle sizes powered by non-fossil fuels or hybrid fuels to promote cost efficiency and to provide flexibility in service.
- B.5 - IA4 Identify, map and designate on the CBJ GIS system and in Land Use Maps of the *Comprehensive Plan* a Transit Corridor for which the CBJ government should purchase and/or maintain an adequate easement or right-of-way for travel lanes, park & ride facilities, and transit stops and transfer stations.
- 8.5 - IA5 Along the identified Transit Corridor for the borough, identify potential transit and transfer stops or nodes and re-zone land around those nodes for high-density residential and/or mixed use and employment centers to facilitate the convenient and efficient use of the transit system. The transit system would, ideally, link the Ferry and Airport transport systems to a "chain" of transit nodes representing major destinations such as shopping centers, transit-oriented residential or mixed use developments, schools and the University, the hospital, major recreation or cultural destinations, major employment centers, and downtown Juneau.
- 8.5 - IA6 To reduce the demand for land-consuming parking spaces, reduce use of fossil fuels, and encourage the use of public transit, the CBJ government and community should urge downtown federal, state, and local government agencies, as well as private-sector employers to participate in a Coordinated Downtown Transportation Management

Program managed by CBJ staff or a third party. The program could include, but would not be limited to, the following features:

...

Improved bus service, including a downtown circulator shuttle;

...

- 8.5 - IA8 Construct or complete the improvements and planning documents called for in the Area Wide Transportation Plan as funding becomes available. Where there is a public need for those improvements in the immediate future, actively pursue the funding needed to complete those improvements.
- 8.5 – IA9 Priority for improvements should be given to improve transit corridors, transit Park and Ride facilities, and to roads, bridges and intersections within the Urban Service Area where vacant lands can accommodate higher-density affordable housing if and when such improvements are made to accommodate this development and to improve Levels Of Service to D or better.

POLICY 8.6. TO PROMOTE AND FACILITATE TRANSPORTATION ALTERNATIVES TO PRIVATE VEHICLES AS A MEANS OF REDUCING TRAFFIC CONGESTION, AIR POLLUTION AND THE CONSUMPTION OF FOSSIL FUELS, AND TO PROVIDE SAFE AND HEALTHY MEANS OF TRANSPORTATION TO ALL PEOPLE.

Transit First Policy

The CBJ's Capital Transit public transit system provides transport services to about 4,000 riders on a typical weekday. 1.2 million times a year a passenger boards a Capital Transit bus. In May 2001, Capital Transit implemented a 30-minute service (headway) on many of its routes, which resulted in an 18% increase in ridership over the previous year. The system is patronized heavily by government office workers commuting between downtown Juneau and Douglas Island, Lemon Creek and the Mendenhall Valley. The system accommodates approximately 8 to 10 percent of the commuter work force in the downtown area and, with some fleet, route and station improvements, has the potential of displacing a substantial portion of the total vehicular trips made in the borough. A number of recommendations in the 2008 Transit Development Plan, Transit Improvement Plan, Downtown Circulator Shuttle Feasibility Study, and Coordinated Human Services Transportation Plan would improve the convenience and quality of transit service. This would: increase transit ridership; reduce fossil fuel consumption by Single-Occupancy-Vehicles (SOV); reduce SOV-related air pollution; lessen overall congestion and surface wear of CBJ roads, intersections, bridges, and parking facilities; and ultimately reduce commute times for those who still drive SOVs.

Increased numbers of transit vehicles are needed to accommodate commuter ridership to downtown Juneau. Implementation of improved express bus service (over 2008 levels) or other improved transit service along Glacier Highway and Egan Drive should be followed by zoning amendments to accommodate higher residential and employment densities along these transit corridors—the initiation of 30-minute express bus headways in October 2009 warrants consideration of such zoning amendments. Higher residential and non-residential densities along transit corridors will improve the efficiency and reduce the cost-per-passenger of the transit service therein. Typically, 25 to 30 residential units per acre or more would adequately support a Bus Rapid Transit (BRT) or other substantially increased level of transit service.

In 2012, residential density limits and height restrictions were increased in three commercial and mixed use zoning districts in order to allow the higher residential densities called for in this Plan; the community was able to support these changes with minimal discussion, and additional modifications to land use regulations will be necessary in order to realize the goal of increasing residential densities and the diversity and mixture of uses in these areas. As residential and mixed use projects are developed at higher densities along transit routes, transit service will need to grow to keep pace with demand; the strategy of clustering denser development along transit lines may backfire if adequate transit services are not available to meet the induced demand.

As questions of system capacity and funding are raised, which they will inevitably be, it is important to remember that the public's investment in Capital Transit reduces the financial burden of extending water, sewer, road, fire, police, and other services to newly developed areas of the borough. Although the relationship between transit, residential density, housing affordability, and access to jobs is reiterated throughout this Plan, there is another even more direct relationship between funds allocated for projects for different transportation modes (i.e. transit, biking, single-occupant vehicle)

Care-A-Van, the paratransit partner agency to Capital Transit, is currently operated under contract by Catholic Community Services. Other Human Services Transportation Provider agencies, including REACH, Inc., Southeast Alaska Independent Living (SAIL) and the Juneau Alliance for Mental Health, Inc. (JAMHI) work with the Juneau Coordinated Transportation Coalition (JCTC) to ensure that services are coordinated and that projects are prioritized for funding by the various member agencies. As the "silver tsunami" of baby-boomers reaches retirement age (at a rate of 10,000 per day, nationwide), a growing proportion of Juneau's aging population will qualify for, and may require, the services provided by these agencies. Convenient fixed-route service by Capital Transit is far less expensive to provide, per ride, than demand-responsive rides provided by JCTC members and Care-A-Van, so ensuring that fixed route buses are accessible and convenient to these new riders has the potential to avert unsustainable increases in funding requirements for demand-responsive services.

Other transportation options, such as car-pooling and formal car-sharing programs should be investigated for feasibility within the Urban Service Area.

Area Wide Transportation Plan (AWTP):

Improvement ID #2: Increased Frequency of Transit Service.

Double service frequency, to a bus every 30 minutes, along existing local routes during peak hours Monday through Sunday. Extend Care-A-Van service from 6 PM to 9 PM on Sundays.

Improvement ID #7: Improved Local Transit Service in the Mendenhall Valley.

Restructure local service on the existing Mendenhall Valley/Lemon Creek/Downtown route. Provide a circle route using Mendenhall Loop Road and Riverside Drive. This route will continue to Downtown on Egan Drive as Express service. Create a separate route providing service on Glacier Highway to the Lemon Creek area, and another route serving the West Mendenhall Valley. Both new routes would connect to other routes at the Valley transfer center (Nugget Mall).

Improvement ID #11: Transit Support Improvements.

Provide additional transit support including: bus stop signs/schedules, transit center at Nugget Mall and Downtown, maintenance program for transit facilities, additional vehicle storage and an ongoing marketing program.

Improvement ID #20: Downtown Circulator Service.

Provide frequent, weather protected, shuttle service within Downtown and between downtown activity areas and remote parking. Provide user facilities at stops on the route. Integrate shuttle with Capital Transit schedule.

FINDINGS

The Draft Recommendations of the Transit Development Plan are consistent with the Policies, Standard Operating Procedures, and Implementing Actions of the 2013 Comprehensive Plan and the recommended improvements of the Area Wide Transportation Plan. Although not all of the objectives or improvements called for in those plans are included in this Transit Development Plan, implementation of the recommended services would achieve a considerable number of long-standing objectives for transit in Juneau.

The project is consistent with CBJ 49 and the plans adopted therein.

RECOMMENDATION

Staff recommends that the Planning Commission forward the Draft 2014 Transit Development Plan to the Assembly with a recommendation for adoption and implementation.



City and Borough of Juneau Transit Development Plan FINAL REPORT

February 13, 2014



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1 INTRODUCTION

Unlike many small cities across the country, transit in Juneau is very well utilized and is an important part of the transportation infrastructure and daily life. In fact, ridership on Capital Transit is among the highest in the country for a community of its size. Buses in Juneau are frequently full, service is provided seven days a week, and service extends well into the evening, which are all characteristics of much larger transit systems. Financial and community support for transit in Juneau is also exceptional compared to most other small cities, with many very passionate about ensuring transit continues to be an integral part of Juneau's transportation system.

However, in recent years, physical changes in the community (traffic, new signals, etc.) and increasing ridership on the transit system have meant buses are running behind schedule more often, some transfers are being missed, and buses are overcrowded at certain times of the day. Operators are also having a harder time staying on schedule, especially in the late afternoon, and they often do not have time for a break after driving very long routes. At the same time, there are demands for service to areas of the community that do not currently have transit service – in particular Riverside Drive, the Lemon Creek industrial area, and the Ferry Terminal. Similarly, there are demands for earlier and later service to certain areas, like UAS, the employment center in Lemon Creek, and downtown Juneau. And while service has been improved over the last 20 years, such as more frequent express service since the last Transit Development Plan, the route structure has not changed as much as the community has. While the permanence of transit in Juneau is a benefit, the existing transit system can no longer be maintained as is, let alone meet new service demands. At the same time, it is recognized that funding is constrained, and thus this Transit Development Plan has focused on recommendations that do not significantly increase operating costs. Because resources are not infinite, changes to the system necessarily come with strengths and weaknesses.

The City and Borough of Juneau (CBJ) recognizes that transit services must periodically be reviewed to ensure they are effectively bringing people where they need to go. As such, a Transit Development Plan (TDP) is performed about every five years. As with other TDPs, this update was performed to evaluate how well Capital Transit and Care-A-Van are serving existing population, employment and activity centers in the community, as well as the overall productivity and effectiveness of individual bus routes. This TDP update consisted of the following key tasks, all of which have resulted in the recommendations included in this report:

- A **Comprehensive Operations Analysis** that included:
 - A **market analysis** that identified concentrations of population and employment, as well as other activity centers that have the ability to effectively support transit
 - **Stakeholder outreach**, including extensive stakeholder interviews and meetings to discuss common objectives and perceived travel needs throughout the Juneau area.
 - **Customer and non-rider surveys** conducted during the spring and summer of 2013 to identify the travel patterns and desires of more than 2,000 riders, as well as individuals who don't currently ride Capital Transit or Care-A-Van.

- A **peer review** of five other communities around Alaska and the country that have some characteristics similar to Juneau.
- **Detailed route evaluations** that consisted of in-depth analysis of the market each route is intended to serve, its ridership patterns, its strengths and weaknesses, and opportunities for improvement.
- **Development of service scenarios** that included:
 - **Three service scenarios** that presented different ways transit could be provided in Juneau.
 - **Presentation of the service scenarios to the public** as well as the Assembly and Planning Commission.
 - **An online survey** soliciting input on the service scenarios.
 - **Ongoing communication with a Project Management Team** to discuss technical issues and concerns.

The information gained during this process led to the recommendations in this Plan. The recommendations incorporate a number of common improvement themes, plus specific changes to each route, as described in subsequent sections. It is important to reiterate that the context for all recommendations is a goal to minimize the need for increased local financial support for transit.

All of the recommendations are based on the following service goals:

1. Ensure that routes have adequate time to operate on-schedule.
2. Better match service levels with ridership demand to ensure resources are being used in the most efficient way possible.
3. Evaluate requests/demand for service to new areas, including:
 - Riverside Drive
 - Lemon Creek industrial/employment area
 - Ferry Terminal
4. Strive to ensure high-quality and convenient service, so that:
 - When a transfer is required, make it convenient and comfortable with wait times as short as possible.
 - Service is provided for commuter needs during peak periods as well as riders using the service during non-peak times and on weekends.
 - Some service continues to operate through the core of downtown (Franklin, Fourth, and Main).
5. Ensure that service design, marketing information, buses, and other elements of the service are as legible and easy-to-understand as possible.

2 OVERVIEW OF RECOMMENDATIONS

As described at the beginning of this document, Capital Transit is very successful, but is also stretched very thin, and due to financial constraints, does not serve all areas where there is demand. The framework for this effort was to determine:

- Short-term changes that could be made over the next two years within Capital Transit's existing budget, or that would require only minimal increases.
- Mid-term improvements that could be made in years three to five that would grow the system to meet the most important unmet demands.

Within this overall framework, the study was also guided by a number of service goals, which were:

1. Ensure that routes have adequate time to operate on schedule.
2. Provide service to new residential and employment areas including Riverside Drive, the Lemon Creek industrial/employment area, Juneau International Airport and the AMHS Ferry Terminal.
3. Maintain timed-transfers to the greatest extent possible, and provide convenient and comfortable transfer locations.
4. Operate all downtown service to, from, or via the Downtown Transit Center.
5. Match service levels with ridership demand to ensure resources are being used as efficiently as possible.
6. Ensure that service design, marketing information, buses, and other elements of the service are as legible and easy-to-understand as possible.

The short-term recommendations will resolve most existing operational issues (primarily reliability) and expand service to Riverside Drive, which is the highest density area in Juneau that is not served, and Montana Creek. However, they do not achieve all of the service expansion objectives, as there is no way to provide service to the Lemon Creek Industrial Area, the Auke Bay ferry terminal, and implement a downtown circulator within existing or minimally expanded budget levels. Thus, some service expansion initiatives are in the mid-term, rather than short-term, recommendations, or are not included. A summary of how each major objective is addressed follows:

- **Improve on-time performance:** Existing Valley Local and Express routes are increasingly operating behind schedule at certain times of the day, resulting in late arrivals and missed transfers. In addition, drivers have little or no time for layover and recovery at certain times of the day, resulting in routes remaining behind schedule on successive trips. The proposed short-term changes would resolve all on-time performance issues. The most significant ways in which this would be done include:
 - Add a third bus to the Express route during peak periods to provide additional schedule time (and allow service to be extended to Montana Creek and the Downtown Transportation Center (DTC)). However, to offset the cost of the additional bus, midday service frequencies would be reduced from every 30 to every 60 minutes.

- Shorten Valley Local service to operate to and from the Downtown Transit Center rather than around the downtown loop, and via a more direct alignment through Lemon Creek.
- **Maintain timed-transfers:** On paper, Capital Transit provides perfectly timed transfers between nearly all routes; in practice, late buses mean that many are being missed. The proposed short-term changes would provide reliable timed-transfers for the large majority of existing riders. However, longer transfers would be required for some trips, most notably non-peak direction travel between Douglas and the Mendenhall Valley or Lemon Creek.
- **Provide service along Riverside Drive:** Riverside Drive is the highest demand area in Juneau that is not served, and is the location of important public facilities such as the Dimond Park Aquatic Center, a soon-to-be-constructed Library, Thunder Mountain High School and multiple sports fields. The short-term recommendation includes seven day a week service to Riverside Drive with reconfigured Valley Local service.
- **Maintain service to Back Loop:** Ridership on “Back Loop” portion of Mendenhall Loop Road is low, but existing riders rely on the service. With the shifting of Valley Local service to Riverside Drive, the short-term recommendations include extending Express service to Montana Creek via the Back Loop. However, service to the Back Loop and Auke Bay would end approximately two hours earlier than it now does (late evening ridership in this area is low).
- **Provide service to Lemon Creek Industrial Area:** The Lemon Creek Industrial Area, which is where Costco, the Alaskan Brewing Company, Home Depot and other major employers are located, is another high demand area that is not served. The provision of service to this area, which primarily benefit employees, but also shoppers, would cost an additional \$550,000 per year and cannot be accommodated within existing budget levels, and thus is not included in the short-term recommendations. It has, however, been included in the mid-term recommendations and can be implemented when funding becomes available.
- **Provide service to Auke Bay Ferry Terminal:** A significant amount of demand was expressed throughout this study for service to the Auke Bay ferry terminal. However, the provision of this service would cost \$500,000 per year and cannot be accommodated within existing budget levels, and thus is also not included in the short-term recommendations. It has, however, been included in the mid-term recommendations and can be implemented when funding becomes available.
- **Implement a Downtown Circulator route:** There was significant demand expressed during this study for a dedicated downtown circulator to provide service every 15 minutes. The implementation of a downtown circulator bus that operates from 7:00 AM to 11:00 PM seven days a week would cost approximately \$600,000 per year to operate and cannot be accommodated within existing budget levels.¹ Instead, service would be provided around the downtown loop every 30 minutes by the Douglas route.
- **Provide earlier service for workers with early work start times:** Existing service is generally designed to serve work trips that start at 8:00 AM, while many workers start earlier. The short-term recommendation includes earlier service on the Valley Local and Express routes to better serve start times as early as 7:00 AM.

¹ Construction and operation of a fixed-guideway circulator system would be more expensive to initiate, but would likely result in increased private investment along the alignment and higher tax revenues. As a fixed-guideway system is likely a longer-term project than the five-year planning horizon of this TDP, this project did not include a market analysis or impact study of such a system.

- **Provide later Express service between UAS and downtown:** Service on the Express route currently ends at 6:03 PM from downtown and 6:27 PM from UAS, and thus does not serve evening classes. The short-term recommendation adds new Route 2 Auke Bay – Nugget Mall service that would operate until 8:47 PM from the Nugget Mall and until 9:22 PM from UAS with connections to and from downtown at the Nugget Mall. However, as mentioned above, Valley Local service would no longer operate via the Back Loop, and thus the proposed service would end earlier than the existing Valley Local route that now indirectly serves UAS.
- **Implement technology improvements to improve operations and passenger information:** Capital Transit performs many functions manually that most other transit systems have automated. The mid-term recommendations include procurement and implementation of technology solutions that are now used as a matter of course by most transit systems:
 - Computer Aided Dispatch (CAD) and Automatic Vehicle Location (AVL) so that Capital Transit can know where its vehicles are and quickly respond to problems, and provide passengers with real-time passenger information.
 - Electronic fareboxes, to improve fare handling and provide better ridership information.
 - Automatic Passenger Counters (APCs) to track ridership and loads on an ongoing basis, so that Capital Transit can make service adjustments more quickly than every five years (the TDP cycle).
 - Real-Time Passenger Information via signs at major transit points and via smartphones.
 - Improved web and printed information, and the provision of schedule information via Google Maps.
- **Make service simpler and easier to understand:** There are a number of existing service elements that are confusing to many, and especially potential new riders. These include the alternating loop service in the Mendenhall Valley, “Additional Service” trips that are similar to, but different than, existing services, and in the case of Douglas service, create a “hole” in the regular schedule, and inconsistent route nomenclatures. The short-term recommendations would make service simpler and easier to understand in a number of ways:
 - Rebrand all routes with a name and a number.
 - Operate loop service through the Mendenhall Valley counter-clockwise only.
 - Combine the different Mendenhall Valley and Lemon Creek “Additional Service” express trips into a new Route 1X Mendenhall Valley – Downtown Express route in which all trips would operate in a consistent manner.

3 SHORT-TERM RECOMMENDATIONS

The short-term recommendations consist of low cost changes and improvements that would resolve existing operating issues, provide better service to most riders, expand service into some new areas, and provide better service information to existing and potential new riders.

SYSTEMWIDE IMPROVEMENTS

For people to be able to use transit, they must first know that it is there and be able to understand how to use it. This means that it is extremely important for transit systems to provide clear and concise information on their available services. Furthermore, transit in Juneau serves a very broad cross-section of the area's residents, workers, and visitors. Because different people access, use, and process information in different ways, transit systems must deliver clear and consistent information in a number of different ways. For example, many seniors are not web-literate, and thus the provision of information via the web will not reach many older residents. For this reason, telephone and printed information must be provided. However, telephone and printed information will not reach many younger riders, who rely primarily on the Internet. For transit systems to reach the people that they are there to serve, it is essential that they provide effective information in ways that will reach all potential riders.

Proposed improvements for Capital Transit include consistently numbering and naming routes to provide greater clarity on where they go, improving printed marketing information, and getting Capital Transit on Google Transit.

Designate All Routes with Numbers and Names

Capital Transit inconsistently labels routes with numbers and names, or just names. To make it easier for passengers to refer to routes and understand how they operate, all routes should be rebranded with both a number and a name. The following are suggested designations for the proposed new and revised services:

- 1 Mendenhall Valley - Downtown
- 1X Mendenhall Valley – Downtown Express
- 2 Montana Creek/Auke Bay – Nugget Mall
- 2X Montana Creek/Auke Bay - Downtown Express
- 5 Douglas - Downtown
- 6 North Douglas - Downtown

The route names and numbers should also be used consistently on all schedules, bus head signs, on marketing materials, etc.

Publish Schedule Information on Google Transit

Google Transit is increasingly becoming an important trip planning tool for transit riders across the country. Just a few years ago, Google Transit's availability was limited to larger or more extensive systems – but no longer. Even small and rural communities are taking advantage of Google Transit. While the service is free to use, there are costs associated with formatting schedule and bus stop

information into the General Transit Feed Specifications, or GTFS. The GTFS is essentially a common format that transit providers can use to incorporate transit schedules, fares and associated geographic information into Google Maps. Due to the interest in getting into Google Transit, the wait time can be substantial. As such, it is recommended that Capital Transit begin this process as soon as possible – even if it is before service changes are implemented as part of this TDP. Once a transit agency has submitted their GTFS to Google, and has been accepted, changes are relatively easy to make. (Additional information about Google Transit can be found at: <https://developers.google.com/transit/>. The National Rural Transit Assistance Program also provides support and software for GTFS development: www.nationalrtap.org.)

Produce System Map and Single Brochure with Simplified Schedules

For many riders, the starting point for determining whether service is available is a system map. Effective system maps display the services that are available with enough detail to allow the user to determine origins, destination, major attractions, and routes. Similarly, a single transit brochure allows riders (or potential riders) to quickly understand all available transit services.

While Capital Transit had historically prepared a system map and brochure, and the website has an interactive system map, print versions have been replaced by two schedule pamphlets with simplified route maps:

- One of the brochures is blue and labeled simply “Bus Schedule.” This brochure clearly presents the schedules for Route 3/4 Valley Local and Douglas service. It less clearly presents information on North Douglas service and most of the “Additional Service” peak period express trips that are provided between the Mendenhall Valley and Lemon Creek and downtown.
- The second brochure is red and labeled as “Express Bus Schedule.” This brochure clearly presents UAS/Auke Bay – Downtown express service schedule, but does not present any information on the “Additional Service” peak period express trips (which as described above, are presented in the “Bus Schedule” brochure).

Because these brochures present the schedule information inconsistently, some riders—or more importantly, potential riders—can be confused by the two schedules, or just pick up the Bus Schedules brochure and think that the routes presented therein are the only services available. To provide clearer information on available services, the existing two brochures should be combined into a single brochure.

Upgrade Website

Websites for transit systems have become ubiquitous, and most people interested in using transit find the information they desire on the Internet. While Capital Transit makes good use of its website within the City’s site, the website is easy to find via search engines, and the website is simple to link from other sites or put on printed materials (www.juneau.org/capitaltransit), it would be preferable to have a stand-alone website specifically for Capital Transit with links back to the CBJ website. The website should include all of the same information as the brochure (system map, schedules, fare information, etc.), but could also include some additional features, such as:

- Links to a Facebook page and/or Twitter feed
- Trip planner (using Google Transit, when available)
- Information on news, events and rider alerts
- Ability for users to provide input about the system (phone, email, comment form)

ROUTE CHANGES

This section presents specific recommended short-term route changes. A map of the proposed changes is shown in Figure 1, and draft schedules are presented at the end of this report for each route.

One important note about the recommendations is that Capital Transit's services are currently scheduled to facilitate transfers at the Nugget Mall and the Federal Building, and when service is operating on schedule, convenient transfers are available between nearly all routes in all directions. However, because travel times have been increasing, more and more transfers are being missed, and with increased travel times, there is no possible way to continue to provide timed transfers between all routes. These recommendations maintain very convenient transfers for most, but not all, riders. Key information on transfer-related elements of the recommended service plan is as follows:

- **Maintain Nugget Mall as outer transfer location.** The Nugget Mall has served as the main transfer location for the Express and Local buses in the Mendenhall Valley for many years and it offers a good location for transferring passengers (on Mallard Street). While passenger facilities are minimal (there are two small shelters), the location is relatively easy to access, there are sidewalks on both sides of the street, a marked crosswalk across Mallard Street, and a door directly into the Nugget Mall close to the bus stop. For these reasons, it is recommended that in the short-term, this remain the main transfer location in the Mendenhall Valley.
- **Maintain timed-transfers for the major travel flows.** There are a number of important timed transfers in the existing system, particularly:
 - Mendenhall Valley Local (Routes 3 and 4) to the Express route (both directions) at the Nugget Mall
 - Mendenhall Valley Local (Routes 3 and 4) to the Douglas route (both directions) at the Federal Building

Maintaining these transfers is a primary focus of the service changes. However, because of modified route alignments, timed transfers between the Valley Local (Route 1) and the Douglas Local (Route 5) occur in one direction in the morning (inbound Route 5 to outbound Route 1) and the other direction in the late afternoon and evening (inbound Route 1 to outbound Route 5). This is because ridership from Douglas is largely inbound to Juneau in the morning and outbound to Douglas in the afternoon/evening.

Operate all service to/from or via the Downtown Transportation Center. Besides the buses themselves, the Downtown Transportation Center (DTC) is most visible feature of Capital Transit, and provides a very comfortable transfer location. As such, it is recommended that all routes serve the DTC – both for symbolic reasons as well as operational reasons related to driver layover and recovery.

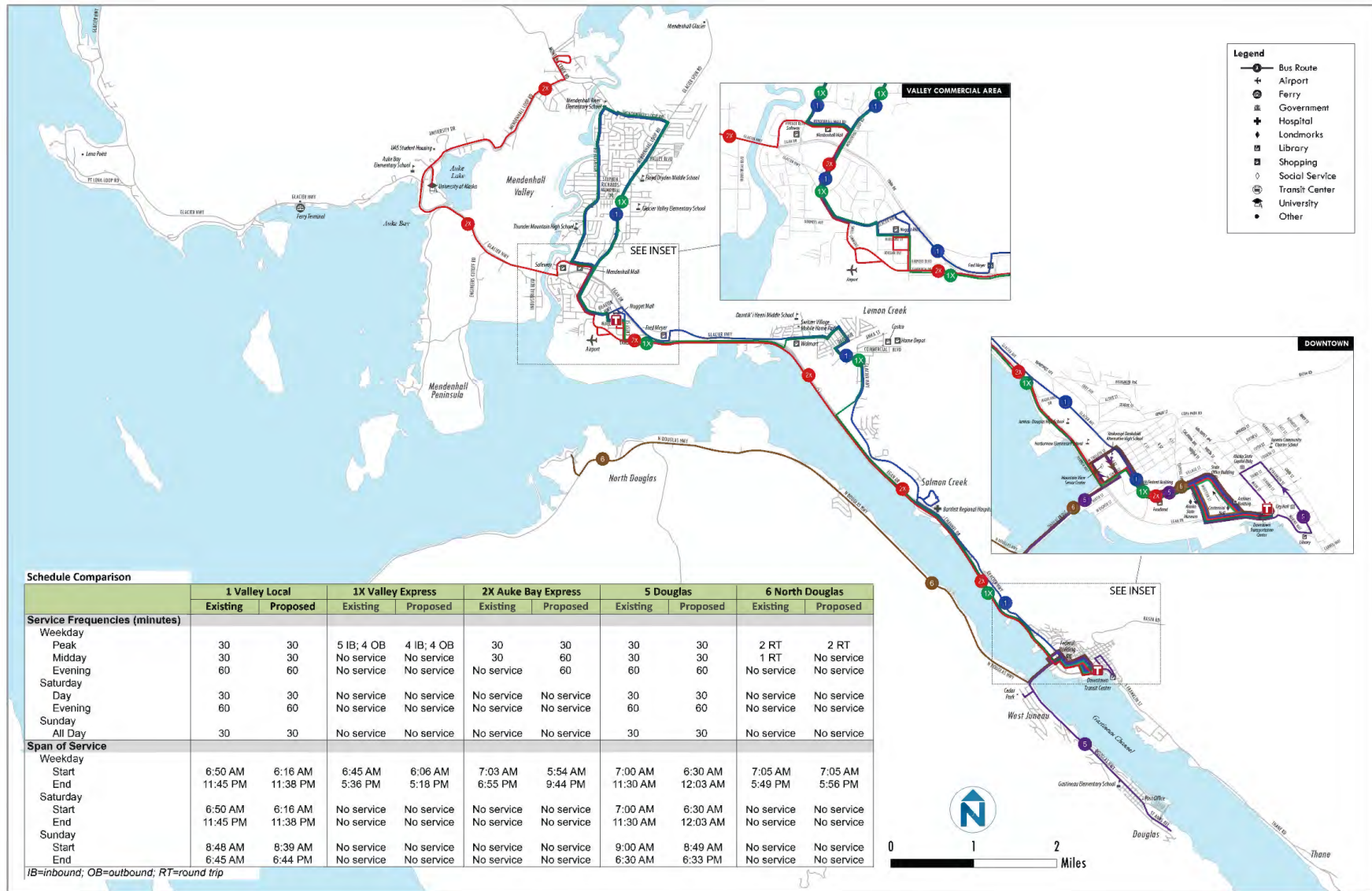
Route 3/4 Valley Local (Rebrand as Route 1 Mendenhall Valley – Downtown)

Route 3/4 is Capital Transit's highest ridership route, and in most respects is very successful. However, there are a number of issues, which are:

- Bus running times have increased due to heavier traffic, new traffic lights, and heavy ridership to the extent that the route is now experiencing significant on-time performance issues, especially in the late afternoon. As a result, transfers are being missed and drivers often do not have sufficient time for breaks.
- The route does not serve Riverside Drive, where demand is among the highest in Juneau, and where new community facilities have been and continue to be located.

City and Borough of Juneau Transit Development Plan 2014 Update

Figure 1 Map of Recommended Changes



- The alternating loop operation through the Mendenhall Valley (Route 3 counter-clockwise/Route 4 clockwise) is confusing and makes service frequencies irregular.

To resolve these issues, the following changes are recommended (see also Figure 2):

- Revise the outer loop so that all service operates counter-clockwise via Mendenhall Loop Road, Mint Way, and Riverside Drive. This shift will continue to provide frequent service to the eastern part of Mendenhall Loop Road and provide additional service coverage to an area with high population density (Riverside Drive), serve activity centers at Dimond Park (high school, library, pool), and improve the simplicity service and provide more consistent service.
- Shorten the deviation through Lemon Creek to operate via Central Avenue, Lund Street and Davis Avenue. This change will reduce travel times for through passengers while still providing convenient service to Lemon Creek, and the time savings will help resolve reliability issues.
- Operate service to and from the Downtown Transit Center instead of via the downtown loop to shorten running times, also to resolve on-time performance issues.
- Start weekday service earlier, at 6:16 AM, to serve 7:30 AM work start times.
- Rebrand the route as Route 1 Mendenhall Valley – Downtown.

With the exception of the earlier weekday service described above, service spans and frequencies would remain essentially as they are today (see Table 1).

Table 1 Valley Local and Route 1 Schedule Comparison

	Existing Route 3/4			Proposed Route 1		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Service Frequencies (mins)						
Peak	30	30	30	30	30	30
Midday	30	30	30	30	30	30
Evening	60	60	-	60	60	-
Span of Service						
Start	6:50 AM	6:50 AM	8:48 AM	6:16 AM	6:46 AM	8:39 AM
End	11:45 PM	11:45 PM	6:45 PM	11:38 PM	11:38 PM	6:44 PM

Express Route (Rebrand as Route 2 Montana Creek/Auke Bay – Nugget Mall and Route 2X Montana Creek/Auke Bay – Downtown Express)

The existing Express route operates between UAS and the Archives Building in downtown. This route is also experiencing on-time performance issues and currently does not operate all the way into downtown because it does not have sufficient time to do so. Because transfers between this route and the Valley Local route are so important, many of the recommended changes are designed to ensure that these connections can be provided more reliably (see also Figure 3). They would also provide seven day a week and evening service to and from the airport:

- Add a third bus during peak periods so that it can operate reliably.
- Extend most outer end service to Montana Creek to serve this growing neighborhood and maintain service on Back Loop in lieu of existing Valley Local (3/4) service.
- Extend downtown service to the Downtown Transportation Center.

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Figure 2 Valley Local Changes (with Service Rebranded as Mendenhall Valley – Downtown)



Figure 3 Express Route Changes (with Service Rebranded as Route 2 Montana Creek/Auke Bay – Nugget Mall and 2X Montana Creek/Auke Bay – Downtown)



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- Start weekday service earlier (at 5:45 AM with an arrival in downtown at 6:30 AM) to better serve earlier work start times.
- Operate weekday service later (until 9:32 PM) to better serve evening classes at UAS.
- Add weekend service between Montana Creek and the Nugget Mall via UAS to replace Valley local service that would be shifted to Riverside Drive, with timed transfers to Route 1 Mendenhall Valley – Downtown at the Nugget Mall.² This would also provide service to the airport on weekends, with connections to and from downtown at the Nugget Mall.
- To mitigate the cost increases of adding a third bus and the extended service, operate evening trips only between Montana Creek and the Nugget Mall (with timed transfers to Route 1), and reduce lightly utilized midday service from every 30 minutes to every 60 minutes).
- Brand the Montana Creek/Auke Bay – Nugget Mall evening and weekend service as Route 2 Montana Creek – Nugget Mall, and the weekday service between Montana Creek and downtown as Route 2X Montana Creek/Auke Bay – Downtown Express.

A comparison of Route 2/2X service characteristics to the existing Express schedule is provided below in Table 2.

Table 2 Express and Route 2/X Schedule Comparison

	Existing Express			Proposed Route 2/2X		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Service Frequencies (mins)						
Peak	30	-	-	30	60	60
Midday	30	-	-	60	60	60
Evening	-	-	-	60	60	-
Span of Service						
Start	7:03 AM	-	-	5:54 AM	6:05 AM	9:05 AM
End	6:55 PM	-	-	9:44 PM	8:05 PM	6:05 PM

Douglas (Rebrand as Route 5 Douglas – Downtown)

The Douglas route generally operates very well, and only minor changes are proposed:

- Incorporate AM peak “Douglas Express” morning trip (that departs St Anns Avenue at 7:30 AM) into the regular Douglas schedule to simplify service and plug the hole in the existing Douglas schedule.
- Interline³ early morning Douglas trips with the new Route 2X Auke Bay/Montana Creek Express so that passengers traveling from Douglas can choose to stay on the same bus and continue on Route 2X to the Nugget Mall, UAS or Auke Bay during these times. (Due to schedule constraints, a similar interline would not work during other times.)
- Rebrand Service as Route 5 Douglas – Downtown.

² It should be noted that although later service would be provided into UAS, the provision of service to the Back Loop with Route 2 will mean that service to Auke Bay will end earlier than with the current Valley Local service that operates until approximately 11:30 PM on weekdays and Saturdays. However, nighttime ridership in those areas is very light.

³ Interlining means that two routes are operated in combination. In this case, buses that operate from Douglas to downtown, instead of turning around to operate back to Douglas, would become Route 2X trips and operate to Montana Creek. Passengers traveling from Douglas to locations along Route 2X would be able to stay on the same bus through downtown.

Other important notes about Route 5 include:

- All service would continue to provide service around the downtown loop.
- In the morning, timed-transfers would be provided at the Federal Building between inbound Route 5 Douglas service and outbound Route 1 Mendenhall Valley – Downtown service, and the reverse would be the case in the afternoon. This would maintain timed-transfers for most riders. However, with the schedule changes that would be required so that Route 1 will operate reliably, transfers in the off-peak direction would not be timed, and would be 20 minutes. However, these transfers would be reliable, which is not the case with the current transfers that appear very good on paper but that often do not work well in practice.

Table 3 Douglas and Route 5 Schedule Comparison

	Existing Douglas			Proposed Route 5		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Service Frequencies (mins)						
Peak	30	30	30	30	30	30
Midday	30	30	30	30	30	30
Evening	60	60	-	60	60	-
Span of Service						
Start	7:00 AM	7:00 AM	9:00 AM	6:30 AM	6:30 AM	8:49 AM
End	11:30 PM	11:30 PM	6:30 PM	11:33 PM	11:33 PM	6:33 PM

North Douglas (Rebrand as Route 6 North Douglas)

While service is limited to North Douglas and ridership is low compared to other routes in the system, it is recognized that this is an important lifeline service for some people. However, because an important objective of this planning process is to focus on the most efficient use of resources spent on the system, the midday trip is recommended for elimination due to very low ridership (only two riders in each direction observed during on-board surveying). The existing resources spent on this one midday trip accounts for about 1.1% of total annual expenses, which could be better allocated elsewhere in the system. The route should also be branded as Route 6 North Douglas - Downtown.

Table 4 presents a comparison of existing and proposed service.

Table 4 North Douglas Schedule Comparison

	Existing North Douglas			Proposed Route 6		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Service Frequencies (mins)						
Peak	2 RT	-	-	2 RT	-	-
Midday	1 RT	-	-	-	-	-
Evening	-	-	-	-	-	-
Span of Service						
Start	7:00 AM	-	-	7:05 AM	-	-
End	5:55 PM	-	-	5:56 PM	-	-

“Additional Service” Valley Express Trips (Rebrand as Route 1X Mendenhall Valley – Downtown Express)

Capital Transit publicizes four AM inbound and three PM outbound trips that provide peak period peak direction service. These trips are similar to each other but vary slightly:

- “Lemon Creek Express,” which consists of a single AM inbound trip that operates between Switzer Village and downtown via Lemon Creek with no outbound counterpart.
- “Mendenhall Valley Commuter Morning Run,” which consists of a single AM inbound trip that operates between Auke Bay and downtown via Riverside Drive and Egan Drive. This trip does not have a direct outbound counterpart.
- “Mendenhall Valley Express Morning Runs,” which consists of two AM inbound trips that operate between the Auke Bay and downtown via the Mendenhall Loop Road and Egan Drive. These trips do not have a direct outbound counterpart.
- “Lemon Creek/Mendenhall Valley Express Afternoon Runs,” which consists of PM outbound trips that operate between downtown and the Mendenhall Valley via Lemon Creek. These trips do not have a direct inbound counterpart.

These trips are designed to provide faster service during peak periods and to relieve pressure on the Valley Local and Express routes during the peak commute periods. However, they are confusing to understand, especially for new riders, and not all trips are publicized.

To make service easier to understand and more consistent, it is recommended that all of the Mendenhall Valley and Lemon Creek “Additional Service” express routes be consolidated into a new Mendenhall Valley – Downtown express route that provides all service in the same manner (see Figure 4):

- From the Downtown Transportation Center, operate to the Federal Building and then via Egan Drive to the Nugget Mall via Egan Drive and Lemon Creek, and then through the Mendenhall Valley in the same manner as Route 1 (Mendenhall Loop Road, Mint Way, and Riverside Drive).
- On weekdays, provide four AM inbound and four PM outbound trips.
- Brand the route as Route 1X Mendenhall Valley – Downtown Express.

PARK AND RIDE PROGRAM

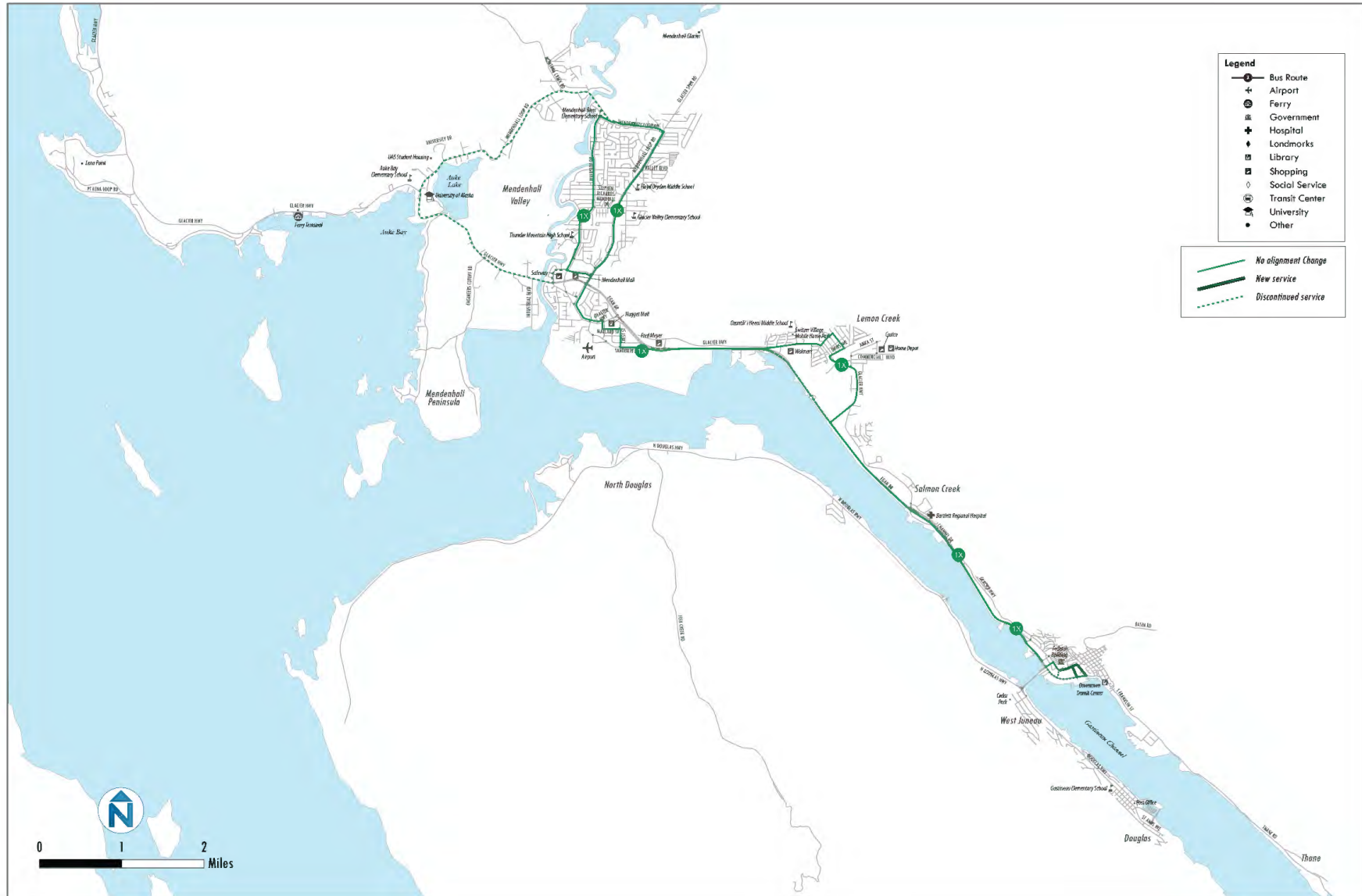
At the present time, anecdotal information and observations indicate that many riders access Capital Transit service by informally parking along routes at locations such as UAS and the Nugget Mall. However, the provision of formal park and ride spaces could increase ridership by those who are beyond walking distance of service by increasing awareness of park and ride opportunities, and use by those who are uncomfortable parking in unofficial/informal spaces.

The most cost-effective approach for Capital Transit to provide park and ride spaces would be to develop arrangements for the use of existing lots that are underutilized and/or not used on weekdays (for example, at churches). Potential locations include UAS, the Mendenhall Mall, and the Nugget Mall along the Valley Local and Express routes. It may also be desirable to develop at least one location along the Douglas route for residents who live beyond walking distance of the route.

The costs of developing park and ride spaces in this manner should range from very low to low, although specific costs would need to be determined as the program is developed. At public facilities such as UAS,

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Figure 4 New Mendenhall Valley – Downtown Express Route



institutions are often willing to make spaces available at no cost. At private properties such as malls, owners often make spaces in underutilized areas available at no cost in return for the additional business that park and ride users bring. One study found that Park & Ride users are 1.55 times more likely to shop at retail centers with shared parking for Park & Ride facilities, which translates into an additional \$1,000 dollars per Park & Ride user being spent each year at retail centers that share parking spaces.⁴ In other cases, transit systems lease the spaces at widely varying rates or pay a one-time upfront rate. Some churches are willing to provide space as a contribution to the public good, lease the spaces, or request donations from those using the spaces.

In most cases, transit systems make limited capital improvements at the lots, including the installation of shelters, signage, and delineation of the spaces. In cases where the spaces are adjacent to existing stops, the improvements are often limited to signage and, and if necessary, the delineation of spaces.

To implement a park and ride program, Capital Transit should take the following steps:

1. Identify potential locations. As described above, three potential locations that are well served by Capital Transit are UAS, the Mendenhall Mall, and the Nugget Mall.
2. Meet with property owners to determine their willing to make some spaces available for park and ride and at what cost and under what terms.
3. Develop a Capital Transit policy that defines the costs, payments, terms, and capital improvements that it would make in return for the use of spaces.
4. Negotiate agreements with individual property owners.
5. Make required capital improvements.
6. Publicize the availability of new/formalized park and ride locations.

CARE-A-VAN PROGRAM CHANGES

The evaluation of Care-A-Van operations and performance that was conducted as part of the Comprehensive Operations Analysis and presented in that document demonstrate that the program provides a high level of transportation to Juneau's most vulnerable population, but also identified a number of areas where changes could be considered to better meet future needs within available resources, and that should be investigated further.

Trip Accounting

Capital Transit contracts with Southeast Senior Services (SESS) to provide its paratransit service. Its' contract is based on a fixed-cost, and SESS provides the paratransit service as part of it overall program that includes other senior-related transit services. The provision of Capital Transit paratransit service as part of its overall program allows SESS to realize operational efficiencies by sharing rides across its different programs.

However, the mixing of rides among different programs means that the actual costs of the provision of Capital Transit's paratransit services is not known, and the paratransit program may be subsidizing other program costs to the extent that other medical transportation programs, most notably Medicaid, are receiving fewer federal funds than they may be entitled. A second challenge relates to compliance. In its last Federal Transit Administration (FTA) triennial audit, Care-A-Van was cited for denying too many

⁴ Virginia Department of Transportation Statewide Park & Ride Program Best Practices Guide, February 2013

trips. ADA requires that paratransit operators have sufficient capacity to meet demand; Care-A-Van was unable to meet demand largely because the service is available to both older adults and people with disabilities. In the short-term this problem has been addressed by giving individuals with disabilities priority over people who participate purely in the program based on age.

At the same time, there are potential disadvantages associated with clearer lines between the programs, namely that it could undermine coordinated service delivery. Currently, the programs have similar service levels and eligibility criteria, which makes it is easier for SESS to mingle trips and coordinate rides. In addition, the existing format allows Care-A-Van to provide the same high level of service to all riders regardless of funding source or trip purpose.

Expand Use of Paratransit Technology

SESS uses ParaPlan software to schedule and manage the Care-A-Van service. While the system is helpful, it does not fully coordinate and integrate the reservation, scheduling and dispatch systems. Paratransit scheduling software including vehicle tracking technology would allow SESS to more closely coordinate the trip reservations with scheduling and then support management of the schedule in real-time when drivers are on the road.

A more sophisticated system would improve the scheduling of trips, provide drivers with better information, ensure that service meets ADA standards, provide real-time information for drivers and dispatchers, and automatically record travel times and mileages by passenger and trip.

However, paratransit scheduling software is an expensive investment both in terms of the capital costs associated with purchasing the system but also staff resources that need to be invested in learning and managing the system. The general rule for paratransit scheduling software is that the more sophisticated systems become cost effective when agencies provide at least 200 trips a day. The Care-A-Van program provides on the order of 150 trips a day, which is below this threshold; however SESS with its combined services provides closer to 200 trips a day. Thus a combined effort may achieve efficiencies. Furthermore, as Care-A-Van must provide services during the same hours of operation as Capital Transit, and must serve the same geographic area, any expansion in Capital Transit's hours of operation or geographic coverage may increase the eligible demand for Care-A-Van services.

Implement Expanded Set of Performance Measures

Nationally, many communities experienced a growth in paratransit demand over the past few years. Some demand is attributed to the economic recession and reductions in human service agency budgets, which may have led to some riders using paratransit instead of other transportation programs. It is also widely believed that demand for paratransit service will increase steadily over the next few years as the population ages. As a result, Capital Transit should consider tracking key trend indicators, such as cost per passenger as well as usage data (annual riders, the number of unduplicated riders enrolled in Care-A-Van and the number of trips per rider).

For example, in the past four years (2009-2012), the cost per passenger has fluctuated substantially and ranged from a 3% increase to an 11% increase and a 4% decrease. While year-to-year fluctuations are expected, as are moderate rates of cost increases, large differences are not. Tracking this information will assist Capital Transit in understanding why costs changed significantly, if changes are reflect unique circumstances or part of a longer trend; and if necessary, signal when Capital Transit needs to develop programs and policies to contain costs.

Operating Efficiency and Effectiveness

SESS sets a maximum cost per rider in its contract of \$28.65 and SESS effectively guarantees Capital Transit this rate. However, it is not an actual rate that reflects the actual cost of a paratransit trip. As Capital Transit considers changing some of Care-A-Van's program rules, there is value in understanding some other metrics of service cost. These metrics can help guide investment decisions, such as the potential value of investing in paratransit scheduling software.

Some of the standard paratransit metrics used throughout the industry include:

- Operating cost per vehicle hour
- Passenger trips per vehicle hour
- Administrative expenses as a portion of total operating expenses
- No-shows as portion of all trips

Transition from Lump-Sum to Fixed-Price

Nationally, most contracted transit and paratransit services are paid according to the amount of service provided, typically based on hours of service or a cost per trip. Most operators use fixed-price contracts because more of the responsibility of controlling costs of service is assigned to the contractor.

The primary advantage associated with moving towards a fixed-price contract is that Capital Transit will have more control over costs and how costs relate to the amount and type of service provide. The main disadvantages of moving away from lump sum contracts is that they will require more effort to manage for both the contract manager (Capital Transit) and the contractor (SESS), and this could increase the administrative cost of the service.

Implement Fares and Extend the VIP Bus Pass to Seniors

Care-A-Van provides rides free-of-charge with a recommended donation of \$4.00 per trips. Data is not clear with regards to how many people pay a donation and how many ride for free. SESS ridership reports suggest that a significant number of riders—as many as 70%—pay the suggested donation; but annual budgets suggest much lower revenues (between \$1,500 and \$3,000) raised by collecting donations.

ADA allows transit operators to charge passengers up to twice the fixed-route fare for paratransit service and charging a fare is an easy and straightforward way to manage demand and potentially lower the cost of service. Capital Transit could also extend the VIP Bus Pass program, which is currently available only to persons with disabilities, to seniors. This would create an incentive for using fixed route service.

Limit Care-A-Van Service to ADA Minimum Requirements

As discussed, Care-A-Van provides a high level of service that is much appreciated by riders and the community. The service is also highly integrated and coordinated with other human service transportation programs, a practice that makes the system more cost-efficient as compared with national standards. That said, Care-A-Van currently goes above and beyond the minimum requirements for ADA service and there may be cost savings associated with moving the service towards the minimum.

Opportunities include:

- **Eliminate Age-Based Criteria**—Older adults aged 60 or older are eligible to use Care-A-Van service purely based on their age. ADA regulations, however, do not automatically qualify people for the service based on age, but instead require complementary paratransit for individuals

unable to use fixed-route transit because of a disability. Thus, Care-A-Van could stop providing the service to people who are aged 60 or older and are able to use fixed-route transit.

- **Level of Service**—ADA requires that complementary paratransit be provided as a curb-to-curb service so that passengers are expected to wait for the vehicle at the curb in front of their pick-up location. The law does not require that drivers go into buildings and homes to greet and assist passengers into the vehicle, except if required based on an individual's disability.
- **Service Area/Time of Day**—Care-A-Van currently serves North Douglas at all times of the day, but per ADA only needs to serve this area at certain times of the day.

Move Toward Categorical Eligibility

Once riders are deemed eligible to use Care-A-Van service, they are granted permanent unconditional eligibility. This means they once they are deemed eligible to use the service, they are able to use it for as long as they wish and for any trip. This compares with ADA regulations that allow transit agencies to assign passengers different levels of eligibility:

- Unconditional Eligibility – individuals who are unable to use fully accessible fixed-route service for any purpose and are unconditionally certified for any and all trips.
- Conditional Eligibility – individuals who are able to use accessible fixed-route service for some but not all trips. These individual are certified for paratransit service for some, but not all trips.
- Temporary/Transitional/Recurring Conditions – individuals who have a temporary or recurring condition that limits their ability to use fixed-route service. Individuals in this category have unconditional or conditional eligibility; the difference is that eligibility is defined according to a length or period of time.

The primary reason for implementing functional assessments and categorical eligibility for Care-A-Van would be to control costs and limit access to the service to individuals who require the higher level of service. However, this would be administratively more complex to implement, as it would require additional staff to assess people's abilities and disabilities under a variety of conditions and circumstances.

OPERATING COST IMPACTS OF SHORT-TERM RECOMMENDATIONS

The operating cost impacts of the recommended changes would consist of one-time implementation costs plus ongoing operating costs. The one-time costs would consist of the elements described above in the Systemwide Changes section, which include Google Transit implementation, the development of a system map and new schedules, and the updating of Capital Transit's website. These costs would total approximately \$20,000 if outside parties were contracted to conduct the work, less if it were performed internally or by other city departments (see Table 5).

In term of ongoing operating cost impacts, one of the most important aspects of the TDP is to ensure that services are being provided as cost effectively and efficiently as possible, and to keep operating costs at or near the existing budget. A large number of trade-offs were considered as part of the development of this plan, and reductions have been recommended in some areas to make the overall system stronger (for example, 60 minute off-peak service on the Express route). However, the Project Management Team concluded that the trade-offs required to make all changes within the existing budget require reductions were not desirable (for example, reductions in spans of service and/or reduced weekend service). Thus, the recommended changes would require an increase in Capital Transit's operating budget of approximately \$200,000 per year (see also Table 5).

In addition, operating costs could increase to some extent if Capital Transit determines that it should, or needs to, lease park and ride spaces. On the other hand, costs could also be reduced if some or all of the Care-A-Van changes presented above are implemented. However, these cost and savings have not been included as additional program development will be needed before they can be determined.

Table 5 Changes in Fixed-Route Pay Hours and Operating Costs

Day	Pay Hours			Operating Cost
	Existing	Recommended	Change (%)	Impact
One-Time Implementation Costs				
Google Transit ⁵				\$7,000
System Map/Schedules ⁶				\$5,000
Update Website ⁷				\$7,000
Total				\$19,000
Service Changes				
Weekdays	142	144	+ 2%	
Saturdays	91	106	+ 17%	
Sundays	64	73	+14%	
Annual	44,300	46,200	+ 4.3%	+\$200,000

CAPITAL REQUIREMENTS FOR SHORT-TERM RECOMMENDATIONS

As described in more detail in Chapter 5, a number of capital-related improvements are recommended to improve and enhance service. However, none of the short-term service improvements, save some minor shelter and signage improvements at park and ride lots, would hinge on associated capital improvements. Furthermore, the short-term improvements would reduce fixed-route peak vehicle requirements by one bus, which would produce capital cost savings over time as one less bus would need to be replaced.

⁵ Estimate based on 40 hours at \$180 per hour.

⁶ Estimate based on 32 hours at \$180 per hour

⁷ Estimate based on 40 hours at \$180 per hour

4 MID-TERM RECOMMENDATIONS

The recommended mid-term improvements consist of service expansion that would require additional operating funds and capital improvements that would require a number of years to implement, and that would also require the identification of capital funding.

SERVICE CHANGES

Provide Service to Lemon Creek Industrial Area

Based on input from existing riders as well as the community, one of the most important changes recommended in the mid-term will be to operate Route 1 into the Lemon Creek Industrial area to better serve Costco, Home Depot, Alaskan Brewing Company, and other businesses and especially employees in this area.

As outlined above, a number of short-term changes are recommended for Valley Local service. However, these changes would not allow enough time to deviate into the Lemon Creek industrial area. After extensive evaluation of different options, it was determined that the best way to serve this area was to extend the round trip operating time by 30 minutes so that the route could deviate into this area in both directions. This change would extend the round trip travel time to 150 minutes, which would require the deployment of one additional bus to maintain existing 30 minute headways. This service would cost \$550,000 per year to operate and would increase peak vehicle requirements by one.

Provide Service to Auke Bay Ferry Terminal

To maintain service to the Back Loop in the short-term, it is recommended that Express service (rebranded as Route 2/2X) be extended to Montana Creek, and to fund that extension, midday service be reduced from every 30 minutes to every 60 minutes. On weekdays, with a restoration of midday service to every 30 minutes, and the provision of evening service every 30 minutes, outer end service could be reconfigured to alternate between Montana Creek and the Ferry Terminal (which would reduce peak period service to the Back Loop to every 60 minutes). On weekends, with one additional bus deployed, the proposed Route 2 Montana Creek – Nugget Mall route could alternate its trips between Montana Creek and the Ferry Terminal to provide service to each every 60 minutes, and every 30 minutes between Auke Bay and the Nugget Mall. This service would increase operating costs by \$500,000 per year, but would not require additional vehicles.

Note that this expanded service could also be provided only during the summer when demand is highest, and the provision of seasonal service would reduce the cost of this service to approximately \$150,000 (assuming service for 3.5 months).

Provide Earlier and Later Service

Over the course of this study, many expressed a desire for earlier and later service, as most routes do not start early enough to serve 7:00 AM work start times, or late work end times. As financial resources permit, it is recommended that Capital Transit's span of service be expanded to start earlier and end later.

At the present time, and with the short-term recommendations, the first trips on the Valley Local and Douglas routes, which are two of Capital Transit's highest ridership routes, do not arrive in downtown until after 7:00 AM. Providing earlier service on those routes (which would be rebranded as Routes 1 and 5) on weekdays and Saturdays would cost approximately \$50,000 per year. The two other major routes—the proposed Routes 1X Mendenhall Valley–Downtown Express, and 2X Montana Creek/Auke Bay – Downtown Express—would serve 7:00 AM starts with the short-term recommendations.

Table 6 Annual Operating Costs for Earlier Weekday and Saturday Service to Serve 7:00 AM Work Start Times

	First Arrival in Downtown		Annual Operating Cost
	Short-Term Recs	To Serve 7:00 AM Starts	
Rt 1 Mendenhall Valley - Downtown	7:20 AM	6:50 AM	\$32,000
Rt 1X Mendenhall Valley – Downtown Express	6:50 AM	6:50 AM	\$0
Rt 2X Montana Creek/Auke Bay – Downtown Express	6:27 AM	6:27 AM	\$0
Rt 5 Douglas - Downtown	7:12 AM	6:42 AM	\$16,000
Total			\$48,000

The short-term recommendations would not significantly change the evening end of service, and the last trips would depart from downtown between 8:47 PM (Route 2X Montana Creek/Auke Bay – Downtown Express) and 11:17 PM (Route 1 Mendenhall Valley – Downtown) (see Table 7). The cost to extend service so that the last departures on all major routes on weekdays and Saturdays would be 11:30 PM or later would be approximately \$150,000 per year. Neither earlier or later service would require additional vehicles.

Table 7 Annual Operating Costs for Later Weekday and Saturday Service to Serve 11:30 Departure Times

	First Arrival in Downtown		Annual Operating Cost
	Short-Term Recs	To Provide Service until at least 11:30 PM	
Rt 1 Mendenhall Valley - Downtown	10:35 PM	11:35 PM	\$40,000
Rt 1X Mendenhall Valley – Downtown Express	No evening service	NA	\$0
Rt 2X Montana Creek/Auke Bay – Downtown Express	8:47 PM	11:47 PM	\$96,000
Rt 5 Douglas - Downtown	11:17 PM	12:17 AM	\$16,000
Total			\$152,000

Note that, in a similar manner as for service to the Auke Bay ferry terminal, earlier and later service could also be provided only during the summer when demand is highest, and the provision of seasonal service would reduce the cost of this service to approximately \$60,000 (assuming service for 3.5 months). It could also be possible to fund this service using cruise Marine Passenger Fee revenues. In this case, it may also be possible to shift implementation of this expanded service to the short-term.

Provide Holiday Service

Currently, Capital Transit does not provide service on six holidays, which are New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving, and Christmas. While travel is significantly lower on these days than on other holidays, many Juneau residents still need to travel for work and other purposes, and especially on Memorial Day, July 4th, and Labor Day. The operating cost to provide service with Sunday schedules on all six holidays would range from \$40,000 to \$55,000 per year, with the lower figure for the provision of the proposed short-term services on the six holidays, and the higher figure for the provision of expanded service (to Lemon Creek industrial area and the Auke Bay ferry terminal) on the six holidays.

The provision of service on only the three busier holidays—Memorial Days, July 4th, and Labor Day—would cost half as much.

OPERATING COST IMPACTS OF MID-TERM RECOMMENDATIONS

Implementation of all of the Mid-Term recommendations would increase annual operating costs by approximately \$1.3 million per year if all services were implemented on a year round basis (see Table 8).

Table 8 Annual Operating Cost Impacts of Mid-Term Improvements

	Total
Operating Costs	
Lemon Creek Industrial Area	\$550,000
Auke Bay Ferry Terminal	\$500,000
Holiday Service (all six holidays, with Mid-Term improvements)	\$55,000
Earlier/Later Service	\$200,000
Total	\$1,305,000

CAPITAL REQUIREMENTS FOR MID-TERM RECOMMENDATIONS

As described in more detail in Chapter 5, a number of capital-related improvements are recommended to improve and enhance service. The Mid-Term recommendations would increase peak vehicle requirements by one (to provide Valley Local service via the Lemon Creek industrial area). However, since the Short-Term recommendations would reduce peak vehicle requirements by one, that bus would be available, and Capital Transit would not need to purchase an additional bus to operate the additional service.

5 CAPITAL IMPROVEMENT PLAN

In addition to the operating improvements described above, a number of capital improvements are also recommended. These start with regular “course of business” elements such as vehicle replacement, maintenance equipment, and upgrade’s to Capital Transit’s administration, operations, and maintenance facility. They also include technology enhancements, upgrades to Nugget Mall transfer facilities, better lighting at unlit or poorly lit stops, and bicycle lockers at key locations. These items, similar to the service changes described in the previous chapters, are intended to improve and enhance service.

Note that all costs presented in this chapter represent the total cost of improvements. With the availability of funds from other sources, particularly for bus replacement, CBJ’s share of the costs will be lower. This chapter also includes updated cost estimates for some items that are in CBJ’s current capital plan, such as electronic fareboxes, that are lower than previous estimates.

VEHICLE AND EQUIPMENT REPLACEMENT

Like all transit systems, Capital Transit must replace its vehicles on a periodic basis and does so based on age. Over the next five years, Capital Transit will need to replace (see also Table 9):

- Seven 35’ buses at \$300,000 each (three in FY 2016 and four in FY 2017).⁸
- Seven paratransit vans at approximately \$50,000 each (four in FY 2015, four in FY 2016, and three in FY 2017).
- Four service vehicles at approximately \$25,000 to \$50,000 each (a pick-up and van in FY 2015, an SUV in FY 2018 and another in FY 2019).

Table 9 Vehicle and Equipment Replacement Plan

Capital Costs	FY 2015 - 2016	FY 2017 - 2019	Total	Notes
35' Buses	\$900,000	\$1,200,000	\$2,100,000	3 in FY2016, 4 in FY2018
Paratransit Vans	\$400,000	\$150,000	\$550,000	4 in FY 2015, 4 in FY2016, 3 in FY2017
Service Vehicles	\$105,000		\$105,000	2 in FY 2016, 1 in FY2018, 1 in FY2019
Misc Equipment	\$20,000	\$10,000	\$30,000	Vehicle lift in FY2015 and generator in FY2017
Total	\$1,425,000	\$1,360,000	\$2,785,000	

Capital Transit has also programmed the purchase of a vehicle lift in FY 2015 (\$17,000) and a generator in FY 2017 (\$7,500). Total vehicle and equipment replacement costs will total \$1.4 million for FY 2015-2015 and \$1.4 million for FY 2017-FY 2019.

⁸ All costs are in FY 2014 dollars, and do not include inflation.

FACILITY IMPROVEMENTS

Operations Facility

The CBJ's 2012 bond bill included \$3.05 million to re-side the administration, operations, and maintenance facility and to improve the heating system, and it is anticipated that this work could occur in FY 2017 or FY 2018.

Upgrade Nugget Mall Transfer Facility

For the foreseeable future, the Nugget Mall will continue to be Capital Transit's primary outer hub, and this location, although one of the most important and highest ridership stops in the Capital Transit system, has only very basic facilities (see Figure 5).

Figure 5 **Nugget Mall Transfer Facility**



Source: Google Street View

Considering the importance of this location, these facilities should be upgraded to at least “superstop” status, in which comfortable facilities and a wide range of amenities are provided (see Figure 6). The cost of developing a superstop would be largely dependent upon the design and included elements, and could range in cost from approximately \$100,000 to over \$1 million. For the purposes of this plan, a capital cost of \$500,000, and a timeframe of FY 2017 to FY 2019 were assumed.

Ongoing Shelter Improvement Program

Capital Transit has an ongoing shelter improvement program that budgets approximately \$75,000 per year to install shelters at stops that currently do not have shelters, to upgrade existing shelters, and replace older shelters. This plan will continue that program at existing funding levels. In addition, and as

Figure 6 Superstop Example



described in the following two sections, it is also recommended that the program be expanded to provide lighting and bicycle lockers at key locations.

Provide Shelter Lighting

Many of Capital Transit's bus stops are located in unlit or poorly lit locations, which can make waiting uncomfortable. It also makes it difficult for bus operators to see waiting passengers. One lighting solution would be to install solar powered lighting, which can be done for approximately \$1,000 per shelter. It is recommended that Capital Transit undertake a program to install solar powered lighting at shelters in unlit and poorly lit locations as part of its ongoing stop improvement program, at a cost of approximately \$10,000 per year.

Provide Bicycle Lockers

Bicycle lockers provide those who desire to ride their bicycles to and from the bus at one end of their trips with a secure and weatherproof place to leave their bicycles. Typically, lockers hold one bicycle as well as bicycle gear such as locks, lights, and other equipment, and are leased to users on a monthly or longer basis. The arrangement provides users with the certainty that it will be available and the transit system with revenue to defer program costs. Many transit systems also make lockers available on an on-demand basis for an hourly fee. For example, Metro Transit in Minneapolis leases lockers for \$48 per year, and RioMetro in Albuquerque leases lockers for \$24 for six months.

Bike lockers can cost between less than \$1,000 and \$2,000 each, and need a solid foundation upon which they can be secured. It is recommended that Capital Transit begin to install bicycle lockers at high ridership locations on an ongoing basis as part of its stop improvement program, at a cost of approximately \$10,000 per year.

Figure 7 **Bicycle Lockers**



TECHNOLOGY ENHANCEMENTS

Several technology improvements are recommended to enable Capital Transit to provide more reliable service, to provide better customer information, and to better track ridership and performance on an ongoing basis:

- **Automatic Vehicle Location (AVL)/Computer Aided Dispatch (CAD)**, which would provide the ability for Capital Transit to know where buses are throughout the day and communicate more effectively with bus operators, which would in turn allow the system to better respond to delays and incidents. According to the USDOT Research and Innovative Technology Administration (RITA) publication, *Intelligent Transportation Systems Benefits, Costs, Deployment, and Lessons Learned* (2008 Update), the deployment of AVL/CAD can produce schedule adherence improvements in the range of 9 to 23%. The cost of an AVL/CAD system would be approximately \$600,000.

- **Scheduling software**, which would allow Capital Transit to develop bus and driver schedules more efficiently, make schedule adjustments, and monitor performance over time. The cost of scheduling software would be approximately \$150,000.
- **Automatic passenger counters (APCs)** would count the number of passengers getting on and off the bus at each stop on an ongoing basis, which would provide better information to Capital Transit staff on how the system is being utilized. Data on passenger boarding activity could be collected throughout the year to better understand seasonal differences. The cost of an APC system that would be tied into the AVL/CAD system would be approximately \$150,000.
- **Real-time passenger information**, which would also be tied into the AVL/CAD system, could provide passengers with information on the current location of buses, estimated actual departure times at individual stops via smartphones and fixed signage at stops. The development of a system to provide real-time information via smartphones would be approximately \$65,000, and the provision of estimated actual departure times via signs at stops would be approximately \$150,000 for 10 stops, and \$4,000 for each additional location.
- **Electronic fareboxes** would allow Capital Transit to accept electronic fare media and collect more robust boarding data. Implementation of an electronic fare collection system involves numerous up-front and ongoing costs to establish and maintain fare collection equipment, as well as internal and external processes to print and distribute tickets and passes, collect and reconcile fares, and conduct other customer relations and financial transactions. Estimated costs for electronic fareboxes and associated items are \$250,000.

For the purposes of this plan, it was assumed that these ITS improvements would be implemented between FY 2017 and FY 2019, although earlier would be preferable.

CAPITAL PLAN SUMMARY

Over the next five years, the capital improvements identified as part of this effort would cost approximately \$8.0 million, with \$2.1 million in expenditures in the short-term between FY 2015 and FY 2016, and \$6.2 million between FY 2017 and FY 2019 (see Table 10).

Table 10 Capital Plan Summary

	Short-Term FY 2015-16	Mid-Term FY 2017-19	Total Total	Note
Vehicles and Equipment				
35' Buses	\$900,000	\$1,200,000	\$2,100,000	3 in FY2016, 4 in FY2018
Paratransit Vans	\$400,000	\$150,000	\$550,000	4 in FY 2015, 4 in FY2016, 3 in FY2017
Service Vehicles	\$105,000		\$105,000	2 in FY 2016, 1 in FY2018, 1 in FY2019
Misc Equipment	\$20,000	\$10,000	\$30,000	Vehicle lift in FY2015 and generator in FY2017
Subtotal	\$1,425,000	\$1,360,000	\$2,785,000	
Technology Improvements				
Automatic Vehicle Location (AVL)	\$215,000	\$60,000	\$275,000	
Computer Aided Dispatch (CAD)	\$280,000		\$280,000	
Scheduling Software		\$255,000	\$255,000	
Automatic Passenger Counters (APCs)		\$170,000	\$170,000	
Real-Time Passenger Information		\$195,000	\$195,000	
Electronic Fareboxes		\$325,000	\$325,000	
Subtotal	\$495,000	\$1,005,000	\$1,500,000	
Facility Upgrades				
Admin and Maintenance Facility Improvements		\$3,050,000	\$3,050,000	
Nugget Mall Transfer Facility Upgrades		\$500,000	\$500,000	
New Shelters/Shelter Upgrades and Replacement	\$150,000	\$225,000		\$75,000 per year
Shelter Lighting	\$20,000	\$30,000	\$50,000	\$10,000 per year
Bicycle Lockers	\$20,000	\$30,000	\$50,000	\$10,000 per year
Subtotal	\$190,000	\$3,835,000	\$4,025,000	
Total Capital	\$2,110,000	\$6,200,000	\$8,310,000	

6 TOTAL COST SUMMARY

Juneau is served with an impressively successful transit system, but one whose success has exceeded its capacity to deliver. It has also fallen behind technologically, and its manual processes provide further challenges in meeting its passengers' needs. The short-term recommendations presented in this report would address the system's most pressing short term issues with a modest increase in operating costs (\$200,000 per year), but would not be sufficient to serve new areas, particularly the Lemon Creek Industrial Area and the Auke Bay Ferry Terminal. There would be approximately \$20,000 in one-time implementation costs associated with the short-term improvements, but no directly associated capital costs. However, a number of technology improvements are proposed to improve overall system performance, as well as normal vehicle and equipment replacement costs, and these would total \$2.1 million (see Tables 11 and 12).

Table 11 Operating Cost Summary

	Short-Term FY 2015-16	Mid-Term FY 2017-19	Total
One-Time Implementation Costs			
Google Transit	\$7,000		\$7,000
System Map/Schedules	\$5,000	\$5,000	\$10,000
Update Website	\$7,000		\$7,000
Total	\$19,000	\$5,000	\$24,000
Annual Operating Costs			
Short-Term Service Changes (per Year)	\$200,000		\$200,000
Mid-Term Service Expansion (per Year)			
Lemon Creek Industrial Area		\$550,000	\$550,000
Auke Bay Ferry Terminal		\$500,000	\$500,000
Holiday Service		\$55,000	\$55,000
Earlier/Later Service		\$200,000	\$200,000
Subtotal		\$1,305,000	\$1,305,000
Short and Mid-Term Total	\$200,000	\$1,305,000	\$1,505,000

The mid-term recommendations, which would expand service to the Lemon Creek industrial area and the Auke Bay ferry terminal, add earlier and later service, and holiday service, would require an increase in operating expenditures of approximately \$1.3 million per year. Technological improvements, which would provide Capital Transit with the ability to better track service on an ongoing basis to more quickly adjust to changing demand, provide better customer information, and improve internal processes in line with what most other transit systems already do, plus vehicle replacement and facility upgrade costs, would require a total of approximately \$6.2 million in capital expenditures, and which would be phased over three years.

City and Borough of Juneau
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Table 12 Capital Cost Summary

	Short-Term FY 2015-16	Mid-Term FY 2017-19	Total
Capital Costs			
Vehicles and Equipment			
35' Buses	\$900,000	\$1,200,000	\$2,100,000
Paratransit Vans	\$400,000	\$150,000	\$550,000
Service Vehicles	\$105,000		\$105,000
Misc Equipment	\$20,000	\$10,000	\$30,000
Subtotal	\$1,425,000	\$1,360,000	\$2,785,000
Technology Improvements			
Automatic Vehicle Location (AVL)	\$215,000	\$60,000	\$275,000
Computer Aided Dispatch (CAD)	\$280,000		\$280,000
Scheduling Software		\$255,000	\$255,000
Automatic Passenger Counters (APCs)		\$170,000	\$170,000
Real-Time Passenger Information		\$195,000	\$195,000
Electronic Fareboxes		\$325,000	\$325,000
Subtotal	\$495,000	\$1,005,000	\$1,500,000
Facility Upgrades			
Admin and Maintenance Facility Improvements		\$3,050,000	\$3,050,000
Nugget Mall Transfer Facility Upgrades		\$500,000	\$500,000
New Shelters/Shelter Upgrades and Replacement	\$150,000	\$225,000	
Shelter Lighting	\$20,000	\$30,000	\$50,000
Bicycle Lockers	\$20,000	\$30,000	\$50,000
Subtotal	\$190,000	\$3,835,000	\$4,025,000
Total Capital	\$2,110,000	\$6,200,000	\$8,310,000

7 FUNDING OPTIONS

One of CBJ's challenges in implementing the improvements recommended in this plan will be to fund them. This chapter presents an overview of selected funding sources that could potentially be used to fund Capital Transit service improvements and capital costs. This information is presented at a high level, and additional analysis would be needed to determine political feasibility, and for most, the amount of potential revenue that could be generated.

Dedicated Transit Sales Tax

Dedicated transit sales taxes have been implemented to fund operating and/or capital costs throughout the country, particularly in western states and California. The most common amounts are ¼% and ½%. In Juneau, as is often the case elsewhere, voter approval is needed to implement a dedicated sales tax. Thus, to win approval, sales tax initiatives are frequently linked to a specific program of projects that specifies the improvements that will be implemented with the new revenues.

In Juneau, a ¼% sales tax would generate approximately \$2.2 million per year, which would fund operating costs for the proposed short and mid-term improvements, and provide approximately \$0.7 million in capital funding. A ½% sales tax would generate approximately \$4.3 million per year.

Marine Passenger Fee

Juneau collects a \$5 per passenger fee on every arriving cruise ship passenger, and those funds can be used to fund projects that enhance the tourism experience and offset community impacts created by the cruise ship industry. Those funds could potentially be used to fund seasonal summertime service improvements, provided that such service provides a direct benefit to cruise ship passengers or mitigates problems caused by the industry.

Taxes and Fees Imposed on Visitors

Most local governments, not surprisingly, prefer to implement taxes and fees that are paid by visitors rather than their own residents. Two common ways in which this is done are through hotel taxes and rental car fees, and which are set at varying rates.

Fuel and Vehicle Taxes

In Alaska, local governments can enact registration taxes based on vehicle value or age and the proceeds can be used for any purpose. Local governments can also enact fuel taxes, and while most are used for road purposes, they could also be used for transit purposes.

Partnerships

Many transit systems form partnership with other entities in which they provide service in exchange for contributions. One of the more common types of partnerships are "UPass" arrangements with local universities in which universities pay a negotiated rate for "free" transit for all of their students (and sometimes faculty as well) with costs frequently funded through student fees. In Juneau, UAS would be a

potential UPass partner, especially with the proposed mid-term improvements to UAS, and as a way to implement service to the ferry terminal earlier. Another potential partnership could be with Alaskan Brewing Company, which is based in the Lemon Creek industrial area. With Valley Local service expanded to serve the industrial area, that route could provide convenient service between downtown and the brewery to cruise ship passengers at a lower cost than the current private shuttle.

Advertising

Most transit systems now have some form of advertising on vehicles and at shelters. In most cases, the amount of revenue generated is relatively low, and not high enough to fund a large amount of service. In Alaska, Fairbanks generates \$18,000 per year in advertising revenue, while Anchorage generates nearly \$400,000.

APPENDIX A: DRAFT SCHEDULES FOR SHORT-TERM IMPLEMENTATION

Transit Development Plan

2014 Update

Route 1 Mendenhall Valley – Downtown

Seven days a week, service outside of shaded area does not run on Sunday

Outbound					Valley Loop				Inbound					
DTC	Federal Bldg	Hospital	Lemon Creek	Nugget Mall (arr)	Nugget Mall (dep)	Mend Mall	Riverside/ Taku	Mend Mall	Nugget Mall (arr)	Nugget Mall (dep)	Lemon Creek	Hospital	Federal Bldg	DTC
						6:16 AM	6:22 AM	6:31 AM	6:37 AM	6:39 AM	6:53 AM	7:02 AM	7:14 AM	7:20 AM
						6:46 AM	6:52 AM	7:01 AM	7:07 AM	7:09 AM	7:23 AM	7:32 AM	7:44 AM	7:50 AM
						7:16 AM	7:22 AM	7:31 AM	7:37 AM	7:39 AM	7:53 AM	8:02 AM	8:14 AM	8:20 AM
						7:46 AM	7:52 AM	8:01 AM	8:07 AM	8:09 AM	8:23 AM	8:32 AM	8:44 AM	8:50 AM
6:58 AM	7:02 AM	7:12 AM	7:23 AM	7:37 AM	7:39 AM	8:16 AM	8:22 AM	8:31 AM	8:37 AM	8:39 AM	8:53 AM	9:02 AM	9:14 AM	9:20 AM
7:28 AM	7:32 AM	7:42 AM	7:53 AM	8:07 AM	8:09 AM	8:46 AM	8:52 AM	9:01 AM	9:07 AM	9:09 AM	9:23 AM	9:32 AM	9:44 AM	9:50 AM
7:58 AM	8:02 AM	8:12 AM	8:23 AM	8:37 AM	8:39 AM	9:16 AM	9:22 AM	9:31 AM	9:37 AM	9:39 AM	9:53 AM	10:02 AM	10:14 AM	10:20 AM
8:28 AM	8:32 AM	8:42 AM	8:53 AM	9:07 AM	9:09 AM	9:46 AM	9:52 AM	10:01 AM	10:07 AM	10:09 AM	10:23 AM	10:32 AM	10:44 AM	10:50 AM
8:58 AM	9:02 AM	9:12 AM	9:23 AM	9:37 AM	9:39 AM	10:16 AM	10:22 AM	10:31 AM	10:37 AM	10:39 AM	10:53 AM	11:02 AM	11:14 AM	11:20 AM
9:28 AM	9:32 AM	9:42 AM	9:53 AM	10:07 AM	10:09 AM	10:46 AM	10:52 AM	11:01 AM	11:07 AM	11:09 AM	11:23 AM	11:32 AM	11:44 AM	11:50 AM
9:58 AM	10:02 AM	10:12 AM	10:23 AM	10:37 AM	10:39 AM	11:16 AM	11:22 AM	11:31 AM	11:37 AM	11:39 AM	11:53 AM	12:02 PM	12:14 PM	12:20 PM
10:28 AM	10:32 AM	10:42 AM	10:53 AM	11:07 AM	11:09 AM	11:46 AM	11:52 AM	12:01 PM	12:07 PM	12:09 PM	12:23 PM	12:32 PM	12:44 PM	12:50 PM
10:58 AM	11:02 AM	11:12 AM	11:23 AM	11:37 AM	11:39 AM	12:16 PM	12:22 PM	12:31 PM	12:37 PM	12:39 PM	12:53 PM	1:02 PM	1:14 PM	1:20 PM
11:28 AM	11:32 AM	11:42 AM	11:53 AM	12:07 PM	12:09 PM	12:46 PM	12:52 PM	1:01 PM	1:07 PM	1:09 PM	1:23 PM	1:32 PM	1:44 PM	1:50 PM
11:58 AM	12:02 PM	12:12 PM	12:23 PM	12:37 PM	12:39 PM	1:16 PM	1:22 PM	1:31 PM	1:37 PM	1:39 PM	1:53 PM	2:02 PM	2:14 PM	2:20 PM
12:28 PM	12:32 PM	12:42 PM	12:53 PM	1:07 PM	1:09 PM	1:46 PM	1:52 PM	2:01 PM	2:07 PM	2:09 PM	2:23 PM	2:32 PM	2:44 PM	2:50 PM
12:58 PM	1:02 PM	1:12 PM	1:23 PM	1:37 PM	1:39 PM	2:16 PM	2:22 PM	2:31 PM	2:37 PM	2:39 PM	2:53 PM	3:02 PM	3:14 PM	3:20 PM
1:28 PM	1:32 PM	1:42 PM	1:53 PM	2:07 PM	2:09 PM	2:46 PM	2:52 PM	3:01 PM	3:07 PM	3:09 PM	3:23 PM	3:32 PM	3:44 PM	3:50 PM
1:58 PM	2:02 PM	2:12 PM	2:23 PM	2:37 PM	2:39 PM	3:23 PM	3:29 PM	3:38 PM	3:44 PM	3:46 PM	4:00 PM	4:09 PM	4:21 PM	4:27 PM
2:35 PM	2:39 PM	2:49 PM	3:00 PM	3:14 PM	3:16 PM	3:53 PM	3:59 PM	4:08 PM	4:14 PM	4:16 PM	4:30 PM	4:39 PM	4:51 PM	4:57 PM
3:05 PM	3:09 PM	3:19 PM	3:30 PM	3:44 PM	3:46 PM	4:23 PM	4:29 PM	4:38 PM	4:44 PM	4:46 PM	5:00 PM	5:09 PM	5:21 PM	5:27 PM
3:35 PM	3:39 PM	3:49 PM	4:00 PM	4:14 PM	4:16 PM	4:53 PM	4:59 PM	5:08 PM	5:14 PM	5:16 PM	5:30 PM	5:39 PM	5:51 PM	5:57 PM
4:05 PM	4:09 PM	4:19 PM	4:30 PM	4:44 PM	4:46 PM	5:23 PM	5:29 PM	5:38 PM	5:44 PM	5:46 PM	6:00 PM	6:09 PM	6:21 PM	6:27 PM
4:35 PM	4:39 PM	4:49 PM	5:00 PM	5:14 PM	5:16 PM	5:53 PM	5:59 PM	6:08 PM	6:14 PM	6:16 PM	6:30 PM	6:39 PM	6:51 PM	6:57 PM
5:05 PM	5:09 PM	5:19 PM	5:30 PM	5:44 PM	5:46 PM	6:23 PM	6:29 PM	6:38 PM	6:44 PM	6:46 PM	7:00 PM	7:09 PM	7:21 PM	7:27 PM
5:35 PM	5:39 PM	5:49 PM	6:00 PM	6:14 PM	6:16 PM	7:23 PM	7:29 PM	7:38 PM	7:44 PM	7:46 PM	8:00 PM	8:09 PM	8:21 PM	8:27 PM
6:35 PM	6:39 PM	6:49 PM	7:00 PM	7:14 PM	7:16 PM	8:23 PM	8:29 PM	8:38 PM	8:44 PM	8:46 PM	9:00 PM	9:09 PM	9:21 PM	9:27 PM
7:35 PM	7:39 PM	7:49 PM	8:00 PM	8:14 PM	8:16 PM	9:23 PM	9:29 PM	9:38 PM	9:44 PM	9:46 PM	10:00 PM	10:09 PM	10:21 PM	10:27 PM
8:35 PM	8:39 PM	8:49 PM	9:00 PM	9:14 PM	9:16 PM	10:23 PM	10:29 PM	10:38 PM	10:44 PM	10:46 PM	11:00 PM	11:09 PM	11:21 PM	11:27 PM
9:35 PM	9:39 PM	9:49 PM	10:00 PM	10:14 PM	10:16 PM	11:23 PM	11:29 PM	11:38 PM						
10:35 PM	10:39 PM	10:49 PM	11:00 PM	11:14 PM	11:16 PM									

Transit Development Plan

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Route 1X Valley Mendenhall Valley – Downtown Express

Weekdays Only

Outbound				Valley Loop				Inbound				
DTC	Federal Bldg	Lemon Creek	Nugget Mall (arr)	Nugget Mall (dep)	Mend Mall	Riverside/ Taku	Mend Mall	Nugget Mall (arr)	Nugget Mall (dep)	Lemon Creek	Federal Bldg	DTC
					5:55 AM	6:01 AM	6:10 AM	6:16 AM	6:18 AM	6:29 AM	6:42 AM	6:48 AM
					6:25 AM	6:31 AM	6:40 AM	6:46 AM	6:48 AM	6:59 AM	7:12 AM	7:18 AM
					6:45 AM	6:51 AM	7:00 AM	7:06 AM	7:08 AM	7:19 AM	7:32 AM	7:38 AM
					6:55 AM	7:01 AM	7:10 AM	7:16 AM	7:18 AM	7:29 AM	7:42 AM	7:48 AM
3:10 PM	3:14 PM	3:27 PM	3:21 PM	3:23 PM	3:30 PM	3:36 PM	3:45 PM					
3:40 PM	3:44 PM	3:57 PM	3:51 PM	3:53 PM	4:00 PM	4:06 PM	4:15 PM					
4:10 PM	4:14 PM	4:27 PM	4:21 PM	4:23 PM	4:30 PM	4:36 PM	4:45 PM					
4:40 PM	4:44 PM	4:57 PM	4:51 PM	4:53 PM	5:00 PM	5:06 PM	5:15 PM					

Transit Development Plan

2014 Update

Route 2 Montana Creek/Auke Bay – Nugget Mall/Route 2X Montana Creek/Auke Bay – Downtown Express Weekday Service

Outbound								Inbound											
Route	DTC	Federal Bldg	Nugget Mall (arr)	Nugget Mall (dep)	Airport	UAS	Montana Cr (Arr)	Route	Montana Cr (Dep)	UAS	Airport	Nugget Mall (arr)	Nugget Mall (dep)	Federal Bldg	DTC	Franklin St	4th St	DTC	
2X	7:18 AM	7:22 AM	7:37 AM	7:39 AM	7:41 AM	7:51 AM	8:03 AM	2X	8:14 AM	8:24 AM	8:34 AM	8:36 AM	8:38 AM	8:53 AM	-	8:58 AM	9:00 AM	9:03 AM	
	7:48 AM	7:52 AM	8:07 AM	8:09 AM	8:11 AM	8:21 AM	8:33 AM	2X	8:44 AM	8:54 AM	9:04 AM	9:06 AM	9:08 AM	9:23 AM	-	9:28 AM	9:30 AM	9:33 AM	
	8:18 AM	8:22 AM	8:37 AM	8:39 AM	8:41 AM	8:51 AM	9:03 AM	2X	9:14 AM	9:24 AM	9:34 AM	9:36 AM	9:38 AM	9:53 AM	-	9:58 AM	10:00 AM	10:03 AM	
	9:18 AM	9:22 AM	9:37 AM	9:39 AM	9:41 AM	9:51 AM	10:03 AM	2X	10:14 AM	10:24 AM	10:34 AM	10:36 AM	10:38 AM	10:53 AM	-	10:58 AM	11:00 AM	11:03 AM	
	10:18 AM	10:22 AM	10:37 AM	10:39 AM	10:41 AM	10:51 AM	11:03 AM	2X	11:14 AM	11:24 AM	11:34 AM	11:36 AM	11:38 AM	11:53 AM	-	11:58 AM	12:00 PM	12:03 PM	
	11:18 AM	11:22 AM	11:37 AM	11:39 AM	11:41 AM	11:51 AM	12:03 PM	2X	12:14 PM	12:24 PM	12:34 PM	12:36 PM	12:38 PM	12:53 PM	-	12:58 PM	1:00 PM	1:03 PM	
	12:18 PM	12:22 PM	12:37 PM	12:39 PM	12:41 PM	12:51 PM	1:03 PM	2X	1:14 PM	1:24 PM	1:34 PM	1:36 PM	1:38 PM	1:53 PM	-	1:58 PM	2:00 PM	2:03 PM	
	1:18 PM	1:22 PM	1:37 PM	1:39 PM	1:41 PM	1:51 PM	2:03 PM	2X	2:14 PM	2:24 PM	2:34 PM	2:36 PM	2:38 PM	2:53 PM	-	2:58 PM	3:00 PM	3:03 PM	
	2:18 PM	2:22 PM	2:37 PM	2:39 PM	2:41 PM	2:51 PM	3:03 PM	2X	3:22 PM	3:32 PM	3:42 PM	3:44 PM	3:46 PM	4:01 PM	-	4:06 PM	4:08 PM	4:11 PM	
	2:56 PM	3:00 PM	3:15 PM	3:17 PM	3:19 PM	3:29 PM	3:41 PM	2X	4:22 PM	4:32 PM	4:42 PM	4:44 PM	4:46 PM	5:01 PM	-	5:06 PM	5:08 PM	5:11 PM	
2	3:26 PM	3:30 PM	3:45 PM	3:47 PM	3:49 PM	3:59 PM	4:11 PM	2X	5:22 PM	5:32 PM	5:42 PM	5:44 PM	5:46 PM	6:01 PM	-	6:06 PM	6:08 PM	6:11 PM	
	3:56 PM	4:00 PM	4:15 PM	4:17 PM	4:19 PM	4:29 PM	4:41 PM	2	5:52 PM	6:02 PM	6:12 PM	6:14 PM							
	4:26 PM	4:30 PM	4:45 PM	4:47 PM	4:49 PM	4:59 PM	5:11 PM	2	6:22 PM	6:32 PM	6:42 PM	6:44 PM							
	4:56 PM	5:00 PM	5:15 PM	5:17 PM	5:19 PM	5:29 PM	5:41 PM	2		6:39 PM	6:49 PM	6:51 PM							
	5:26 PM	5:30 PM	5:45 PM	5:47 PM	5:49 PM	5:59 PM	6:11 PM	2	7:22 PM	7:32 PM	7:42 PM	7:44 PM							
	5:56 PM	6:00 PM	6:15 PM	6:17 PM	6:19 PM	6:29 PM		2	8:22 PM	8:32 PM	8:42 PM	8:44 PM							
	6:26 PM	6:30 PM	6:45 PM	6:47 PM	6:49 PM	6:59 PM	7:11 PM	2	9:22 PM	9:32 PM	9:42 PM	9:44 PM							
				7:47 PM	7:49 PM	7:59 PM	8:11 PM												
				8:47 PM	8:49 PM	8:59 PM	9:11 PM												

Note: Schedule shift at 2:56 PM to correspond to commuter needs and connections to Route 1

Weekend Service; service outside of shaded area does not run on Sunday

Outbound				Inbound			
Nugget Mall (dep)	Airport	UAS	Montana Cr (Arrive)	Montana Cr (Depart)	UAS (Depart)	Airport	Nugget Mall (arr)
6:39 AM	6:41 AM	6:51 AM	6:58 AM	6:05 AM	6:15 AM	6:25 AM	6:32 AM
7:39 AM	7:41 AM	7:51 AM	7:58 AM	7:05 AM	7:15 AM	7:25 AM	7:32 AM
8:39 AM	8:41 AM	8:51 AM	8:58 AM	8:05 AM	8:15 AM	8:25 AM	8:32 AM
9:39 AM	9:41 AM	9:51 AM	9:58 AM	9:05 AM	9:15 AM	9:25 AM	9:32 AM
10:39 AM	10:41 AM	10:51 AM	10:58 AM	10:05 AM	10:15 AM	10:25 AM	10:32 AM
11:39 AM	11:41 AM	11:51 AM	11:58 AM	11:05 AM	11:15 AM	11:25 AM	11:32 AM
12:39 PM	12:41 PM	12:51 PM	12:58 PM	12:05 PM	12:15 PM	12:25 PM	12:32 PM
1:39 PM	1:41 PM	1:51 PM	1:58 PM	1:05 PM	1:15 PM	1:25 PM	1:32 PM
2:39 PM	2:41 PM	2:51 PM	2:58 PM	2:05 PM	2:15 PM	2:25 PM	2:32 PM
3:46 PM	3:48 PM	3:58 PM	4:05 PM	3:12 PM	3:22 PM	3:32 PM	3:39 PM
4:46 PM	4:48 PM	4:58 PM	5:05 PM	4:12 PM	4:22 PM	4:32 PM	4:39 PM
5:46 PM	5:48 PM	5:58 PM	6:05 PM	5:12 PM	5:22 PM	5:32 PM	5:39 PM
6:46 PM	6:48 PM	6:58 PM	7:05 PM	6:12 PM	6:22 PM	6:32 PM	6:39 PM
7:46 PM	7:48 PM	7:58 PM	8:05 PM	7:12 PM	7:22 PM	7:32 PM	7:39 PM

Transit Development Plan

2014 Update

Route 5 Douglas – Downtown

Seven days a week, service outside of shaded area does not run on Sunday

Outbound				Inbound						
DTC	Fed Bldg	Cordova St	Post Office	St. Anns (Dep)	Post Office	Cordova St	Federal Bldg	Franklin St	4th St	DTC
6:30 AM	6:34 AM	6:39 AM	6:46 AM	6:49 AM	6:52 AM	6:57 AM	7:02 AM	7:07 AM	7:09 AM	7:12 AM
7:00 AM	7:04 AM	7:09 AM	7:16 AM	7:19 AM	7:22 AM	7:27 AM	7:32 AM	7:37 AM	7:39 AM	7:42 AM
7:30 AM	7:34 AM	7:39 AM	7:46 AM	7:49 AM	7:52 AM	7:57 AM	8:02 AM	8:07 AM	8:09 AM	8:12 AM
8:00 AM	8:04 AM	8:09 AM	8:16 AM	8:19 AM	8:22 AM	8:27 AM	8:32 AM	8:37 AM	8:39 AM	8:42 AM
8:30 AM	8:34 AM	8:39 AM	8:46 AM	8:49 AM	8:52 AM	8:57 AM	9:02 AM	9:07 AM	9:09 AM	9:12 AM
9:00 AM	9:04 AM	9:09 AM	9:16 AM	9:19 AM	9:22 AM	9:27 AM	9:32 AM	9:37 AM	9:39 AM	9:42 AM
9:30 AM	9:34 AM	9:39 AM	9:46 AM	9:49 AM	9:52 AM	9:57 AM	10:02 AM	10:07 AM	10:09 AM	10:12 AM
10:00 AM	10:04 AM	10:09 AM	10:16 AM	10:19 AM	10:22 AM	10:27 AM	10:32 AM	10:37 AM	10:39 AM	10:42 AM
10:30 AM	10:34 AM	10:39 AM	10:46 AM	10:49 AM	10:52 AM	10:57 AM	11:02 AM	11:07 AM	11:09 AM	11:12 AM
11:00 AM	11:04 AM	11:09 AM	11:16 AM	11:19 AM	11:22 AM	11:27 AM	11:32 AM	11:37 AM	11:39 AM	11:42 AM
11:30 AM	11:34 AM	11:39 AM	11:46 AM	11:49 AM	11:52 AM	11:57 AM	12:02 PM	12:07 PM	12:09 PM	12:12 PM
12:00 PM	12:04 PM	12:09 PM	12:16 PM	12:19 PM	12:22 PM	12:27 PM	12:32 PM	12:37 PM	12:39 PM	12:42 PM
12:30 PM	12:34 PM	12:39 PM	12:46 PM	12:49 PM	12:52 PM	12:57 PM	1:02 PM	1:07 PM	1:09 PM	1:12 PM
1:00 PM	1:04 PM	1:09 PM	1:16 PM	1:19 PM	1:22 PM	1:27 PM	1:32 PM	1:37 PM	1:39 PM	1:42 PM
1:30 PM	1:34 PM	1:39 PM	1:46 PM	1:49 PM	1:52 PM	1:57 PM	2:02 PM	2:07 PM	2:09 PM	2:12 PM
2:00 PM	2:04 PM	2:09 PM	2:16 PM	2:19 PM	2:22 PM	2:27 PM	2:32 PM	2:37 PM	2:39 PM	2:42 PM
2:30 PM	2:34 PM	2:39 PM	2:46 PM	2:49 PM	2:52 PM	2:57 PM	3:02 PM	3:07 PM	3:09 PM	3:12 PM
3:00 PM	3:04 PM	3:09 PM	3:16 PM	3:19 PM	3:22 PM	3:27 PM	3:32 PM	3:37 PM	3:39 PM	3:42 PM
3:30 PM	3:34 PM	3:39 PM	3:46 PM	3:49 PM	3:52 PM	3:57 PM	4:02 PM	4:07 PM	4:09 PM	4:12 PM
4:00 PM	4:04 PM	4:09 PM	4:16 PM	4:19 PM	4:22 PM	4:27 PM	4:32 PM	4:37 PM	4:39 PM	4:42 PM
4:17 PM	4:21 PM	4:26 PM	4:33 PM	4:36 PM	4:39 PM	4:44 PM	4:49 PM	4:54 PM	4:56 PM	4:59 PM
4:47 PM	4:51 PM	4:56 PM	5:03 PM	5:06 PM	5:09 PM	5:14 PM	5:19 PM	5:24 PM	5:26 PM	5:29 PM
5:17 PM	5:21 PM	5:26 PM	5:33 PM	5:36 PM	5:39 PM	5:44 PM	5:49 PM	5:54 PM	5:56 PM	5:59 PM
5:47 PM	5:51 PM	5:56 PM	6:03 PM	6:06 PM	6:09 PM	6:14 PM	6:19 PM	6:24 PM	6:26 PM	6:29 PM
6:17 PM	6:21 PM	6:26 PM	6:33 PM	6:36 PM	6:39 PM	6:44 PM	6:49 PM	6:54 PM	6:56 PM	6:59 PM
7:17 PM	7:21 PM	7:26 PM	7:33 PM	7:36 PM	7:39 PM	7:44 PM	7:49 PM	7:54 PM	7:56 PM	7:59 PM
8:17 PM	8:21 PM	8:26 PM	8:33 PM	8:36 PM	8:39 PM	8:44 PM	8:49 PM	8:54 PM	8:56 PM	8:59 PM
9:17 PM	9:21 PM	9:26 PM	9:33 PM	9:36 PM	9:39 PM	9:44 PM	9:49 PM	9:54 PM	9:56 PM	9:59 PM
10:17 PM	10:21 PM	10:26 PM	10:33 PM	10:36 PM	10:39 PM	10:44 PM	10:49 PM	10:54 PM	10:56 PM	10:59 PM
11:17 PM	11:21 PM	11:26 PM	11:33 PM							

Transit Development Plan

2014 Update

Route 6 North Douglas

Weekdays Only

Outbound				Inbound			
DTC	Federal Bldg	Bonnie Doon	Sundown Drive	Sundown Drive	Bonnie Doon	Federal Bldg	DTC
7:05 AM	7:09 AM	7:11 AM	7:21 AM	7:31 AM	7:33 AM	7:47 AM	7:51 AM
5:10 PM	5:14 PM	5:16 PM	5:26 PM	5:36 PM	5:38 PM	5:52 PM	5:56 PM

**ASSEMBLY AGENDA/MANAGER'S REPORT
THE CITY AND BOROUGH OF JUNEAU, ALASKA**

Asset Management - Building Maintenance, Airport, Docks and Harbors, Public Works

ATTACHMENTS:

Description	Upload Date	Type
☐ Rorie Watt Memo re Asset Lists	3/6/2014	Cover Memo
☐ Building Maintenance List	3/6/2014	Exhibit
☐ Airport List	3/6/2014	Exhibit
☐ Water - Wastewater and Docks List	3/6/2014	Exhibit



Engineering Department

155 South Seward Street

Juneau, Alaska 99801

Telephone: 586-0800 Facsimile: 463-2606

DATE: March 3, 2014

TO: Mary Becker, Chair
Assembly COW

FROM: Rorie Watt, PE, Director
Engineering Department

RE: Asset Lists

As requested by the Assembly, attached are asset lists for Building Maintenance, Water, Wastewater, Airport and Docks & Harbors.

As you can see, it is not a uniform process. Each Department tracks their facilities differently, typically because they have different types of facilities, different life spans, different funding issues, different user issues and differing ability to regularly inspect and evaluate the condition of their assets.

As an example, Public Works has a list of assets and an estimated value that has been prepared so that utility rates can be considered. Building Maintenance has more of a damage control list as they seek to keep facilities operating within the limited funding that is available.

All of these lists are based upon estimates and no one should read into an individual estimate too closely. However, they do a good job of displaying the magnitude of the issues.

Probably the best summary is that as Juneau grew rapidly in the 80's we invested heavily in facilities and infrastructure and that many of those assets are approaching the ends of their useful lives. Over the next decade and more, we should be prepared to focus more resources on major maintenance or complete replacement of those assets.

P44-073 Major Maint. F.Y. 2014 - 2016 MAINTENANCE LIST - REPLACEMENT, RENOVATIONS & REPAIRS March 2014				
BUILDING NO. & NAME	WORK DESCRIPTION	Status	Consultant/Contractor	Total Project Costs Estimated
02 -MUNICIPAL BLDG.	Roof Penthouse-Rotten framing & T-111 Siding Replacement with Metal	Summer '14	Bid May '14	\$50,000
	Water piping replace - all floors with Abatement	Summer '14	Maint Staff/Contr as Req'd	\$280,000
	Marquee-Membrane roof replacement & metal flashing replacement	Summer '14	Bid May '14	\$175,000
	Exterior Concrete Patching, Prep and Painting	Proj. Pending	Brent Direction Needed	\$175,000
	Exterior Windows - Wood Frame Rot Replacement - all floors	Proj. Pending	Brent Direction Needed	\$280,000
	Carpet Replacement -All Floors with Abatement	Proj. Pending	Brent Direction Needed	\$350,000
03- TREADWELL AREA	Repair localized roof leaks caused by wind driven rain at metal roof fasteners	As Req'd	Maint Staff/Contr as Req'd	\$7,000
04- JD CITY MUSEUM	HVAC system repl. Asbestos abate, repl boiler, water and heating system piping	Summer '14	PDC Engrs/Wolverine	\$800,000
	Note: Funded from dedicated CIP, not Bldg. Maintenance P44-073			
	Main Entry Door brushes to stop wind blown water infiltration	Summer '14	Maint Staff	\$3,000
	Replace two rear corner windows due to rust and old seals	Summer '14	Bid May '14	\$10,000
	Carpet Replacement approx. 8,500 sq.ft. x \$40/yd installed	Proj Pending	Install winter '14	\$60,000
	Caulk entry concrete joints to stop basement stair water infiltration	Proj Pending	Maint Staff	\$2,000
05F- DOUGLAS FIRE STATION	Refinish conference room parquet floor	Fall '14	Maint Staff	\$5,000
05L- DOUGLAS LIBRARY	Total Light fixture re-lamp from T-12 to T-8 flourescent tubes	Fall '14	Maint Staff	\$15,000
	Digital heating control system with Bldg. Automation System integration	Fall '15	Design/Bid	\$35,000
06- D.P. AQUATICS CENTER				
07-CRUISE VISTOR'S CENTER				
08- MAYFLOWER BUILDING	Replace Exterior Windows and Wood frames *Note historic preserv. Rules apply	Proj Pending	Design '14 Bid '15	\$215,000
	Grade and asphalt parking area -Approx 3,000 sq.ft	Proj Pending	Brent Direction Needed	\$35,000
	Install kitchen exhaust fan to outside & modify siding at penetration -St. Ann's side	Summer '14	Maint Staff	\$5,000
09-CRUISESHIP TERMINAL				
10 & 11 -Not Used				
12- Mt. JUMBO GYM	East Exterior wall concrete leak repairs & rusted angle beam replacement	Summer '14	MRV-Master Cond. Study	\$55,000
	HVAC, interior lighting and acoustical upgrades	Proj Pending	MRV-Master Cond. Study	\$140,000
	Roof Replacement - On hold pending MRV Master Cond. Study results	Proj Pending	Tie in with poss. Mtl.siding	\$280,000
	Repl. galvanized water piping with copper at showers, restrooms	Fall '14	Maint Staff	\$10,000
13 - Mt. JUMBO CITY SHOP	Pipe insulation asbestos abatement-Furnace room, weld shop, filter storage	Spring '15	Bid Winter '14	\$28,000
	Chip seal parking areas	Spring '15	Bid Winter '14	\$12,500
	Basement shops - Bring up to current codes	Fall '15	MRV-Master Cond. Study	\$45,000
			SHEET SUBTOTAL:	\$2,272,500

P44-073 Major Maint.		F.Y. 2014 - 2016 MAINTENANCE LIST - REPLACEMENT, RENOVATIONS & REPAIRS March 2014		
BUILDING NO. & NAME	WORK DESCRIPTION	Status	Consultant/Contractor	Total Project Costs Est.
14-Not Used				
15-HAGEVIG FTC	Automatic Gate Operator, Controls, Security Cameras	Spring '14	AE Rogers/Ever Electric	\$100,000
16- JUNEAU FIRE STATION	Main Floor Water & Waste Piping Repl. due to electrlysis	Proj Pending	Design Study/Term Consult	\$280,000
	Dorm and shower room renovations -Design compete	Summer '15	North Wind? Bid Winter '14	\$385,000
	Install Digital HVAC Control system w/BAS integration	Proj Pending	Design Study/Term Consult	\$85,000
	Boiler - Buy two new segments as future replacements	Recomm.	Behrends	\$6,000
	Total Light fixture re-lamp from T-12 to T-8 flourescent tubes	Fall '14	Maint Staff	\$20,000
17- GLACIER FIRE STATION	Metal Siding and Roof Replacement	Design '14	Term Consult/Bid '15	\$400,000
	Install Digital HVAC Control system w/BAS integration	Proj Pending	Design Study/Term Consult	\$115,000
	Total Light fixture re-lamp from T-12 to T-8 flourescent tubes	Fall '14	Maint Staff	\$15,000
	Replace Air Compressor	Fall '14	Maint Staff	\$10,000
	Boiler - Buy two new segments as future replacements	Recomm.	Behrends	\$6,000
18-AUKE BAY FIRE STATION	Parking area asphalt - Slope & Drainage corrections, repairs	Summer '15	CBJ Engr. Nelson/Bid	\$70,000
	Boiler- Segment seal leak repairs. Braize repairs, repack seals.	Spring '14	Maint Staff	\$10,000
	Kitchen Remodel w/Lounge & Dorm finish replacement	Spring '15	Desgn/Term Contractor	\$70,000
	Total Light fixture re-lamp from T-12 to T-8 flourescent tubes	Fall '14	Maint Staff	\$15,000
19-AUGUSTUS BROWN POOL	Metal Roof 25 years old and nearly rusted through at boiler stack	Unknown	Per MRV Comprehensive	\$10,000,000
	due to sulfur from exh. emissions. Parts for pneumatic HVAC		Condition Assesment	
	control system are no longer made or available. A digital control		Report Due July 2014	
	system is needed for zone control & energy savings. Water piping		Report will identify building	
	leaks increasing-some piping is in CMU walls and not accessible.		deficiencies, estimate costs	
	Window wall at viewing area -metal frames highly corroded, and		to repair or replace systems	
	window seals are gone. Spot repairs are no longer practical.		within 0-2 yrs and 2-4 yrs	
	High windows at South clerestory are single pane, cracked and			
	should be blocked off during new construction to enclose horizontal			
	space into a sealed return air-plenum. These windows do not			
	provide any natural light into the pool area and should be eliminated.			
	Concrete pool liner cracks will be investivgated during May shutdown.			
	Replace resin flooring in changing rooms, exits to pool area.			
	Replace flooring in entry, reception, public viewing area.			
	Water lines over Electrcial panels does not meet current code.			
	Replace main distr. Panel, subpanels & all orig. diconnects w/controls.			
	Replace entry storefront and metal doors	Summer '14	Design complete. Bid April '14	\$65,000
	Total Light fixture re-lamp from T-12 to T-8 flourescent tubes	Fall '14	Maint Staff	\$20,000
20-JD TREATMENT PLANT	Not maintained by Bldg. Maintenance			
21-MENDENHALL TREATMENT PLANT	Not maintained by Bldg. Maintenance			
22-CITY SHOP	Number Deleted from list after 7-mile Shop completion in 2012.			
			SHEET SUBTOTAL:	\$11,672,000

P44-073 Major Maint.		F.Y. 2014 - 2016 MAINTENANCE LIST - REPLACEMENT, RENOVATIONS & REPAIRS March 2014		
BUILDING NO. & NAME	WORK DESCRIPTION	Status	Consultant/Contractor	Total Project Costs Est.
23-DOUGLAS SHOP				
24-INCINERATOR BLDG.				
25- SHOPPER'S PARKING				
26-MENDENHAVEN STORAGE				
27- LEMON CREEK HAZMAT	Repair seal coating at spill surface concrete pad		Maint Staff	\$10,000
	Power wash exterior - this is performed 2x/year by Bldg. Maint		"	\$2,000
	Install flashing over small gable roof at garage door		"	\$2,000
	Replace ceiling insulation where required		"	\$1,000
28- NOT USED				
29- JUNEAU POLICE DEPT.	Automatic gate operator replacement, controls, security cameras	Spring '14	AE Rogers/EVER Electric	\$100,000
	Replace carpet w/base - both levels \$40/sq.yd. x 1600 sq.yds (15,000 sq.ft.)	Summer '15	Design: Archt'l Term Contract	\$90,000
30- COMMUNICATIONS BLDGS.				
31- STATTER HARBOR BLDG.				
32- DOWNTOWN HARBORMASTER BLDG.	Drainage correction at low slope porch entry roof	Summer '14	Maint Staff	\$5,000
33-THANE WAREHOUSE	Power wash and metal siding rust repairs, repainting	Summer '14	Engr Staff/ Painting Term Contr.	\$60,000
	Install sprinkler system so storage height can be increased	Fall '14	Design needed	\$115,000
34- BUS BARN & MAINT. FACILITY	Connect bldg. into city sewer line. Decomission old septic system	Summer '14	J.Bohan /Term Contractor	\$25,000
	Total facility renovation. CIP funds sufficient to begin Design. Constr. In 2017	2016 -?	Issue Design RFP in April '14	\$6,200,000
	Note: Funded from dedicated CIP, not Bldg. Maintenance P44-073			
35-DOWNTOWN TRANSIT CENTER				
36- PUBLIC RESTROOMS-MARINE PARKING GARAGE				
37-MARINE PARKING GARAGE	Repl. 10 rusted exterior doors with heavy duty fiberglass & safety glass insert	Summer '14	NorthWind/ Bid May '14	\$85,000
*Note: Full garage due to parking issues may postpone these projects.	Power wash exterior, paint exposed wood, seal concrete	Spring '14	In house spec/Herr's Painting	\$50,000
	Replace dry sprinkler piping system. System has air leaks, +30yrs. old.	Fall '14 & '15	CRW Engrs. Anch./Bid Aug. '14	\$175,000
	Elev. Lobby Interior renovation. Design complete, finishes selected by Lib. Staff	Fall '14	MRV/Bid	\$35,000
	Fix settlement problem at elevator lobby metal/glass entry. Leaks increasing.	Unknown	Design RFP needed:Civil/Archt'l	\$140,000
	Replace all light ceiling fixtures in parking garage with LED high/low	Fall '14	Electrical Contractor Bid	\$140,000
39- MENDENHALL LIBRARY -Leased Space				
40 -NOT USED				
41-HARRIS HARBOR	CBJ Docks and Harbors maintains this			
42-JUNEAU HARBOR	CBJ Docks and Harbors maintains this			
43-DOUGLAS HARBOR	CBJ Docks and Harbors maintains this			
44- CONSOLIDATED STREETS SHOP 7-MILE	CBJ Public works maintains this bldg.			
45 -NOT USED				
46-VALLEY SHOP				
47- AUKE BAY WASTEWATER TREATMENT PLANT	Not maintained by CBJ Bldg. Maintenance			
			SHEET SUBTOTAL:	\$1,035,000

P44-073 Major Maint.		F.Y. 2014 - 2016 MAINTENANCE LIST - REPLACEMENT, RENOVATIONS & REPAIRS March 2014		
BUILDING NO. & NAME	WORK DESCRIPTION	Status	Consultant/Contractor	Total Project Costs Est.
48- LYNN CANAL FIRE STATION	Boiler repairs	Summer '14	Maintenance Staff	\$15,000
	Paint plywood interior of vehicle bay	Summer '14	Engr. Staff/Painting Term	\$14,000
	Install guardrail on exterior stair landing	Summer '14	Maintenance Staff	\$5,000
49-WATER DEPT. LEMON CREEK SHOP	Interior remodel project currently underway. Bid awarded Feb. '14	Spring '14	JYL/North Pacific Erectors	\$400,000
	Note: Funded from dedicated CIP, not Bldg. Maintenance P44-073			
50- WATER DEPT PUMPHOUSE BLDGS	Maintenance by Water Department			
51- AUKE BAY WASTEWATER OUTBUILDINGS	"			
52-WASTEWATER MISC. OUTBUILDINGS	"			
53-VALLEY WASTEWATER MISC.OUTBUILDINGS	Maintenance by Waste Water Dept.			
54 -57 NOT USED				
58 - CENTENNIAL HALL	Roof replacement with metal flashing and accessories	Summer '14	JYL/ Bids in April '14	\$1,500,000
	Note: Funded from dedicated CIP, not Bldg. Maintenance P44-073			
	Full water piping system replacement, additional restrooms	Fall '14	JYL/Bid in May '14	\$1,800,000
	Kitchen water piping replacement, renovate existing restrooms			
	Note: Funded from dedicated CIP, not Bldg. Maintenance P44-073			
	Operable acoustical wall carpet re-glue and install perimeter trim pieces	Spring '15	Constr.Term Contract	\$45,000
59- ZACH GORDON YOUTH CENTER	Install new heater core assembly in domestic hot water heater	Spring '14	Maintenance Staff	\$8,000
	Flooring replacement - hallway and weight training room hard surfaces	Fall '14	Engr. Staff/Term Contractor	\$35,000
	Decommision underground heating oil tank. Install new above ground tank.	Summer '15	Design RFP/Bid	\$105,000
	Replace galvanized 2" diameter water supply line with copper	Summer '14		
	Kitchen remodel - DEC approval req'd. Note: Rasmusen Grant Funded not P44-073	Fall '14	JYL/Bids June '14	\$75,000
60 -65 NOT USED				
66- MUNI WAY BUILDING -Leased space				
67-NOT USED				
68-DIMOND PARK SHOP				
69-DIMOND PARK GREENHOUSE				
70-JENSEN ARBORETUM HOUSE & GARAGE				
71 -75 NOT USED				
76-NORTH FRANKLIN STREET PARKING LOT				
77- MARINE VIEW BUILDING -LEASED SPACE				
78-NOT USED				
79-MENDENHALL TREATMENT PLANT (NEW)	Maintenance by Waste Water Dept.			
80- JUNEAU LIBRARY (DOWNTOWN)	Replace 20 exterior windows - Staff area and channel side - seals failed. Sizes vary.	Sprng '15	Design RFP/Bid	\$152,000
81-NOT USED				
			Sheet Subtotal:	\$379,000

P44-073 Major Maint.		F.Y. 2014 - 2016 MAINTENANCE LIST - REPLACEMENT, RENOVATIONS & REPAIRS March 2014		
BUILDING NO. & NAME	WORK DESCRIPTION	Status	Consultant/Contractor	Total Project Costs Est
82- BUS SHELTERS CAPITAL TRANSIT				
83- CAPITAL TRANSIT BREAK ROOM IN DTC				
84-96 NOT USED				
97- APARC PARKING KIOSKS				
98-100 NOT USED				
101- ADAIR KENNEDY PARK	Replace failing wood facia on baseball grandstand. Paint football stands.	Spring '14	Term painting contractor	\$25,000
102- COPE PARK				
103-DIMOND PARK				
104-EVERGREEN CEMETARY				
105- GLACIER VALLEY SPORTSFIELDS				
106-GUNAKADEIT PARK -S. FRANKLIN				
107-HOMESTEAD PARK				
108- HANK HARMON RIFLE RANGE				
109- MENDENHALL RIVER SPORTSFIELDS				
110-MELVIN PARK	Construct permanent concession stand	Parks and Rec direction needed		unknown
111-RIVERSIDE ROTARY PARK	Repair sink holes in walking surface asphalt.	Parks and Rec direction needed		
	Build restrooms	Parks and Rec direction needed		
	Chipseal parking lot	Parks and Rec direction needed		
112-SAVIKKO PARK				
113- TWIN LAKES PARK	Replace metal doors on both public restrooms	Summer '14	Maintenance Staff	\$20,000
114- LAST CHANCE BASIN HISTORICAL AREA				
115-DZANTIK' I HEENI SPORTSFIELDS	Replace shingles over kiosk	Summer '14	Maintenance Staff	\$5,000
116-RENNINGER SKATE PARK				
117- SAGA LODGE				
118- CAPITAL PARK				
119-120 NOT USED				
121-DOWNTOWN CLOCK from 1890				
122- DOWNTOWN STREETLIGHTS				
123 -CARILLON	Note: Removed from Sealaska building FY.'14			
124-A'antiyeik PARK				
			SHEET SUBTOTAL:	\$50,000
			GRAND TOTAL -ALL SHEETS	\$15,408,500
			AMT. IN P44-073 Major Maint	\$900,000

Building	Building Name	Address	Building Size	Year Built	# of Floors	Facility Manager
000	Unidentified					
002	Municipal Building	155 S. Seward St.	16,312.00	1951	2	
003	Treadwell Arena	105 Savikko Rd., Douglas	35,582.00	2002	1	Lauren Anderson
004	City Museum	134 Fourth St.	6,747.00	1951	2	Jane Lindsey
005	Douglas Fire Station/Library	1016 Third St., Douglas	14,530.00	1986	2	
005F	Douglas Fire Station	1016 Third St., Douglas		1986	2	
005L	Douglas Library	1016 Third St., Douglas		1986	1	Robert Barr
006	Dimond Park Aquatics Center			2011	2	Daniel Chase
007	Port Customs Building			2012	1	
008	Mayflower Building	750 St. Anns Ave., Douglas		1934	2	
009	Cruiseship Terminal				0	
012	Mt. Jumbo Gym	400 D St., Douglas		1937	0	
013	Mt. Jumbo Shop	400 D St., Douglas		1937	0	Joab Cochrane
015	Fire Training Center	2601 Sherwood La.	10,984.00	1981	2	
015A	Fire Training Classroom	2601 Sherwood La.			0	
016	Juneau Fire Station	820 Glacier Ave.	21,002.00	1982	1	
017	Glacier Fire Station	1700 Crest Dr.	18,088.00	1980	2	
018	Auke Bay Fire Station	11900 Glacier Hwy.	4,979.00	1978	2	
019	Augustus Brown Pool	1617 Glacier Ave.	17,362.00	1973	1	Andrea Campbell
020	J-D Treatment Plant				0	
021	Old				0	
022	City Shop- No longer in service	1300 W. Ninth St.	10,253.00	1963	0	
023	Douglas Shop	802 Front St., Douglas	9,224.00	1967	2	George Schaaf
023A	Douglas RV Pumpstation				0	George Schaaf
024	Incinerator Plant				0	
025	Shopper's Parking Lot				0	
026	Mendenhaven Storage				0	
027	Lemon Creek Warehouse	5436 Commercial Blvd.	8,220.00	1996	0	
027A	PWW-Hazardous Waste				0	
027B	PWW-Streets Shop				0	
027C	PWW-Water				0	

029	Juneau Police Station	6255 Alaway Ave.	32,430.00	1999	0	Brice Harper
030	Communications Buildings				0	
031	Statter Harbor Building	11497 Glacier Hwy	2,800.00	2002	1	
032	Harbormaster Building	1435 Harbor Way	2,200.00		1	Lew McCall
033	Thane Warehouse				0	
034	Bus Barn	2560 Bentwood Pl.	23,310.00	1984	2	John Kern
035	Transit Center			2011	2	John Kern
036	Marine Garage Restrooms	299 Marine Way		2003	1	
037	Parking Garage	299 Marine Way		1984	4	
038	Downtown Parking Garage			2011	4	
039	Mendenhall Library				0	Robert Barr
041	Harris Harbor				0	
042	Juneau Harbor				0	
042A	Steamship Wharf				0	
042B	Intermediate Vessel Float				0	
042C	Fisherman's Terminal				0	
043	Douglas Harbor				0	
045	Consolodated Shop / 7 Mile			2011	2	
046	Valley Shop	2520 Barrett Ave.	6,040.00	1974	1	
047	Auke Bay Treatment Plant				0	
048	Lynn Canal Fire Station	17900 Glacier Hwy.	3,220.00	2000	1	
049	Lemon Creek Shop	5433 Shaune Dr.			2	
050	Water Buildings-Misc				0	
051	Auke Bay Wastewater-Misc				0	
052	Wastewater-Misc				0	
053	Valley Wastewater-Misc				0	
058	Centennial Hall	144 Willoughby Ave.	30,800.00	1982	1	Steven Pfister
059	Youth Center	452 Whittier St.	6,806.00	1967	1	Kristi West
065	Armory		0.00		0	
066	Muni Way Building				0	
068	Dimond Park Shop				0	
069	Dimond Park Greenhouse				0	

070	Jensen Arboretum		0.00		0	
076	North Franklin Lot				0	
077	Marine View Building				0	
079	New				0	
080	Juneau Library	299 Marine Way	17,000.00	1988	1	Robert Barr
082	Bus Shelters				0	John Kern
083	Transit Breakroom	3820 Mendenhall Loop Rd.			0	
097	On Street Pay - Stations					
100	Misc. Park Projects		0.00		0	
101	Adair Kennedy Park				0	
101A	Stand				0	
101B	A/K Stor Bldg 1				0	
101C	A/K Stor Bldg 2				0	
101D	A/K Field 1-Baseball				0	
101E	A/K Field 2-Football				0	
102	Cope Park	1101 Calhoun Ave.			0	
102A	Cope Park Restroom				0	
102B	Cope Park Shelter				0	
102C	Cope Park Field 1				0	
102D	Cope Park Tennis Courts				0	
103	Dimond Park				0	
103A	Restroom/Concession				0	
103B	Dimond Park Field 1				0	
103C	Dimond Park Field 2				0	
103D	Dimond Park Field 3				0	
103E	Dimond Park Field 4				0	
103F	Dimond Park Field 5				0	
104	Evergreen Cemetery				0	
104A	Evergreen Maintenance Bldg			1998	1	George Schaaf
105	Miller Fields (Glacier Valley)				0	
105A	Restroom/Concessions				0	
105B	Miller Fields Field 1				0	

105C	Miller Fields Field 2			0
106	Gunakadeit Park			0
107	Homestead Park	2800 Douglas Hwy		0
107A	Homestead Residence	2800 Douglas Hwy	661.00	1
108	HH Rifle Range			0
109	Mendenhall River Sportsfields			0
109A	Mendenhall River Field 1			0
109B	Mendenhall River Field 2			0
110	Melvin Park	400 Riverside Ave.		0
110A	Melvin Park Restrooms			0
110B	Melvin Park Field 1			0
110C	Melvin Park Field 2			0
110D	Melvin Park Field 3			0
111	Riverside Rotary Park			0
111A	Restroom			0
111B	1			0
111C	2			0
111D	Memorial			0
112	Savikko Park	121 Savikko Rd., Douglas		0
112A	Savikko Park Restrooms 1	121 Savikko Rd., Douglas		0
112B	Savikko Park Restrooms 2	121 Savikko Rd., Douglas		0
112C	Savikko Park Shelter 1	121 Savikko Rd., Douglas		0
112D	Savikko Park Shelter 2	121 Savikko Rd., Douglas		0
112E	Savikko Park Field 1	121 Savikko Rd., Douglas		0
112F	Savikko Park Field 2	121 Savikko Rd., Douglas		0
G	Savikko Park Field 3	121 Savikko Rd., Douglas		0
112H	Savikko Park Field 4	121 Savikko Rd., Douglas		0
113	Twin Lakes Park			0
113A	Twin Lakes Park Restrooms			0
113B	Twin Lakes Park Shelter			0
113C	Twin Lakes Park Fishing Dock			0
114	District			0 Gary Gillette

114A	LCB Compressor Building	1001 Basin Rd.	10,000.00	1912	1	Gary Gillette
114B	LCB Transformer House	1001 Basin Rd.	600.00	1924	1	Gary Gillette
114C	LCB Locomotive Repair Shop	1001 Basin Rd.	2,500.00	1916	1	Gary Gillette
115	Dzantik'i Heeni Sportsfields				0	
115A	Dzantik'i Heeni Field 1				0	
115B	Dzantik'i Heeni Field 2				0	
116	Renninger Park				0	
116A	Renninger Park Restrooms				0	
116B	Renninger Park Skatepark				0	
116C	Dumpstation				0	
117	Amalga Meadows				0	
118	Capital Park				0	
119	A'antiyeik Park				0	
119A	A'antiyeik Park Field 1				0	
119B	A'antiyeik Park Field 2				0	
120	Lena Loop Park				0	
120A	Lena Loop Park Field 1				0	
120B	Lena Loop Park Field 2				0	
121	Downtown Clock				0	
122	Downtown Streetlights				0	
123	Carillon				0	
124	Fish Creek Park				0	
999	Miscellaneous				0	

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10	011649	Land Improvements	1985	0	\$ 189,652.77	\$ -	\$ -
10	011662	Valley Center Subdivision Property	1984	0	\$ 716,509.40	\$ -	\$ -
10	011704	Heliport Subdivision	1953	0	\$ 50,701.67	\$ -	\$ -
10	011705	Airport Property	1953	0	\$ 10,076,011.66	\$ -	\$ -
10	012932	Land Improvements - Float Plane Dike	1990	0	\$ 53,584.00	\$ -	\$ -
10	014909	Block O Development - CIP345-40	2004	0	\$ 151,486.00	\$ -	\$ -
10	015153	Tract B, 8.2 acres	1998	0	\$ 1,786,000.00	\$ -	\$ -
10	015514	Gute/Gruening Property (9501 Robertson)	2001	0	\$ 339,815.92	\$ -	\$ -
		subtotal land			\$ 13,363,761.42	\$ -	\$ -
11	011657	Airport Terminal Design	1990	30	\$ 105,633.48	\$ 82,746.32	\$ 3,521.12
11	011658	Airport Apron Expansion Planning Study	1990	20	\$ 16,203.56	\$ 16,203.56	\$ -
11	014682	Airport layout plan update - CIP# 345-10	1999	1	\$ 174,588.44	\$ 174,588.44	\$ -
11	015518	Duck Creek Environmental Assessment (CIP 345-11)	2001	5	\$ 155,262.23	\$ 155,262.23	\$ -
11	015676	Airport master plan update - CIP345-20	2003	5	\$ 429,384.00	\$ 429,384.00	\$ -
11	015743	Environmental assesement - CIP345-43	2003	5	\$ 204,213.00	\$ 204,213.00	\$ -
11	015746	Terminal expansion study - CIP345-54	2005	5	\$ 263,902.25	\$ 263,902.25	\$ -
11	015880	Juneau Terminal Study Phase II-CIP345-65	2007	8	\$ 800,000.00	\$ 650,000.00	\$ 100,000.00
11	015955	Bomb Blast Assessment-CIP345-59	2008	5	\$ 18,000.00	\$ 18,000.00	\$ 1,800.00
11	016066	2007 EIS Runway safety area	2010	7	\$ 4,031,896.70	\$ 2,015,948.34	\$ 575,985.24
11	15743A	Wildlife study - CIP345-43	2003	5	\$ 40,843.00	\$ 40,843.00	\$ -
		subtotal studies			\$ 6,239,926.66	\$ 4,051,091.14	\$ 681,306.36
20	011650	Airport Terminal	1975	30	\$ 803,542.00	\$ 803,542.00	\$ -
20	011653	Airport/Glacier Valley Fire/Crash Station	1981	20	\$ 1,238,742.00	\$ 1,238,742.00	\$ -
20	011655	Airport Terminal Improvements	1981	5	\$ 25,000.00	\$ 25,000.00	\$ -
20	011700	Airport Terminal Building	1953	30	\$ 207,159.00	\$ 207,159.00	\$ -
20	011702	Airport Office Building	1958	30	\$ 351,021.71	\$ 351,021.71	\$ -
20	011703	Loading Ramp	1958	30	\$ 38,106.60	\$ 38,106.60	\$ -
20	012259	Allison Hanger	1987	30	\$ 843,497.85	\$ 745,089.90	\$ 28,116.60
20	012449	Terminal Improvements Building	1988	20	\$ 9,680.00	\$ 9,680.00	\$ -
20	012690	Airport Tower	1989	15	\$ 960,230.79	\$ 960,230.79	\$ -
20	012933	Old Terminal Remodel	1990	15	\$ 596,279.00	\$ 596,279.00	\$ -
20	012934	Terminal Improvements	1990	15	\$ 1,908,093.00	\$ 1,908,093.00	\$ -
20	012935	Terminal Addition	1990	30	\$ 6,797,583.00	\$ 5,324,773.35	\$ 226,586.10
20	014377	Shop Roof - CIP405-345-19	1996	20	\$ 17,900.00	\$ 15,662.50	\$ 895.00
20	014904	Weather Service trailer	2004	20	\$ 8,158.60	\$ 3,875.34	\$ 407.93
20	014905	Taxi stand shelter	2004	20	\$ 9,967.00	\$ 4,734.33	\$ 498.35
20	015674	Airfield maintenace shop addition	2003	20	\$ 17,718.95	\$ 9,302.48	\$ 885.95
		subtotal buildings			\$ 13,832,679.50	\$ 12,241,292.00	\$ 257,389.93
30	011664	Airport Access Road	1984	40	\$ 786,904.42	\$ 580,342.00	\$ 19,672.61
30	011667	Airport Apron Expansion	1984	15	\$ 13,198.20	\$ 13,198.20	\$ -
30	011670	Airport Passenger Ramp Handicap Modification	1984	10	\$ 19,541.69	\$ 19,541.69	\$ -
30	011671	1974-75 Airport Field Improvements	1981	20	\$ 1,330,728.16	\$ 1,330,728.16	\$ -
30	011673	Airport Apron Expansion	1981	15	\$ 465,659.95	\$ 465,659.95	\$ -
30	011674	Airport West and Center Taxiway Construction	1991	15	\$ 3,718,516.16	\$ 3,718,516.16	\$ -
30	011675	Airport West Small Plane Tiedown Area	1981	20	\$ 1,095,546.04	\$ 1,095,546.04	\$ -
30	011677	Airport Terminal Air Doors	1976	10	\$ 17,267.00	\$ 17,267.00	\$ -
30	011679	Airport Parking Lot and Land Acquisition	1977	20	\$ 566,878.00	\$ 566,878.00	\$ -
30	011701	Airport Terminal Improvements	1957	30	\$ 49,500.00	\$ 49,500.00	\$ -
30	012251	Maintenance Facility & Cessna Drive Relocate	1987	30	\$ 229,820.08	\$ 203,007.76	\$ 7,660.67
30	012698	Airfield Hanger (Sand Shed) Remodel	1989	15	\$ 24,771.00	\$ 24,771.00	\$ -
30	012937	Apron Paving	1990	20	\$ 2,385,117.00	\$ 2,385,117.00	\$ -
30	012938	Security Fence	1990	10	\$ 357,960.00	\$ 357,960.00	\$ -
30	012941	Urea Tank Farm	1990	10	\$ 17,901.00	\$ 17,901.00	\$ -
30	012944	Wings Accounting Office	1990	5	\$ 15,377.00	\$ 15,377.00	\$ -
30	012945	Restaurant Flight Kitchen Remodel	1990	5	\$ 5,026.00	\$ 5,026.00	\$ -
30	012947	APCOA Restroom Construction	1990	5	\$ 11,113.00	\$ 11,113.00	\$ -
30	012950	North Wing Restroom Remodel	1990	20	\$ 71,843.27	\$ 71,843.27	\$ -
30	012951	Delta Cabin Storage Area	1990	5	\$ 7,070.00	\$ 7,070.00	\$ -
30	012952	Ak Coastal/Haines Remodel	1990	5	\$ 12,544.00	\$ 12,544.00	\$ -
30	012964	Improvements to Old Air Traffic Control Tower	1990	20	\$ 54,266.00	\$ 54,266.00	\$ -

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30	013336	Office Remodel	1991	10	\$ 10,642.96	\$ 10,642.96	\$ -
30	013337	Airfield Tiedowns	1991	15	\$ 34,522.66	\$ 34,522.66	\$ -
30	013338	Restroom Remodeling	1991	15	\$ 87,184.24	\$ 87,184.24	\$ -
30	013339	Airfield Flag Poles	1991	10	\$ 7,191.21	\$ 7,191.21	\$ -
30	013340	Airfield Fence	1991	10	\$ 20,643.52	\$ 20,643.52	\$ -
30	014008	Tiedown Improvements - Eastside	1992	10	\$ 8,857.62	\$ 8,857.62	\$ -
30	014009	Fence Improvements	1992	10	\$ 5,502.80	\$ 5,502.80	\$ -
30	014209	Bi-Fold Door	1993	10	\$ 16,108.76	\$ 16,108.76	\$ -
30	014215	Intepretive Trail (Jordan Crk Trail/Bridge)	1993	20	\$ 16,796.97	\$ 16,796.97	\$ 419.93
30	014280	Dike Road/Trail	1995	10	\$ 5,374.47	\$ 5,374.47	\$ -
30	014281	Airfield Maintenance Shop Garage Doors	1995	30	\$ 27,052.10	\$ 16,682.19	\$ 901.74
30	014282	Automatic sliding doors package	1995	20	\$ 18,173.71	\$ 16,810.77	\$ 908.69
30	014283	Eastend T-Hanger Improvement	1995	20	\$ 7,662.00	\$ 7,087.35	\$ 383.10
30	014376	East End Water Line	1996	40	\$ 30,985.42	\$ 13,556.20	\$ 774.64
30	014378	Security Gate H - CIP405-345-19	1996	10	\$ 7,100.00	\$ 7,100.00	\$ -
30	014379	Airport Taxiway Ext Phase I-CIP405-349-42	1996	15	\$ 5,367,778.64	\$ 5,367,778.64	\$ -
30	014380	Airport Taxiway Ext Phase II-CIP405-349-45	1996	15	\$ 1,219,967.19	\$ 1,219,967.19	\$ -
30	014488	Aurora Room	1997	20	\$ 7,130.01	\$ 5,882.25	\$ 356.50
30	014490	Civil Air Patrol Tie Down	1997	10	\$ 8,581.46	\$ 8,581.46	\$ -
30	014491	East Tie Down-S.of Golf betwn taxiwy Delta 1&2	1997	10	\$ 6,521.50	\$ 6,521.50	\$ -
30	014492	Wings lot improvements	1997	30	\$ 26,071.60	\$ 14,339.33	\$ 869.05
30	014493	Airport culvert repair - CIP#345-29	1997	20	\$ 11,282.82	\$ 9,308.31	\$ 564.14
30	014620	Gate 6 Ground Access Stairs - CIP#345-15	1999	20	\$ 186,927.13	\$ 135,522.22	\$ 9,346.36
30	014621	JIA Runway Lights - CIP#345-16	1999	15	\$ 986,273.45	\$ 953,397.62	\$ 65,751.56
30	014622	North Terminal Heating - CIP#345-13	1999	20	\$ 474,953.00	\$ 344,340.93	\$ 23,747.65
30	014908	Airport terminal wall & ceiling rehab-CIP345-34	2004	10	\$ 126,755.00	\$ 120,417.25	\$ 12,675.50
30	015041	Gate F & Perimeter Fencing	1994	10	\$ 8,405.67	\$ 8,405.67	\$ -
30	015042	East Tiedown Sm Plane Area&T-Hanger Area Upgd	1994	10	\$ 8,962.24	\$ 8,962.24	\$ -
30	015147	Gate K	1998	10	\$ 11,527.88	\$ 11,527.88	\$ -
30	015148	Airport Waterline Alt 1 - CIP# 345-35	1998	40	\$ 111,262.69	\$ 43,114.34	\$ 2,781.57
30	015150	Airport Taxiway Recon/Paving-CIP#345-05	1998	15	\$ 1,011,268.81	\$ 1,011,268.81	\$ 33,708.96
30	015152	Taxiway Intersection - CIP# 345-02	1998	20	\$ 460,298.95	\$ 356,731.73	\$ 23,014.95
30	015154	Aurora Room	1998	10	\$ 8,352.68	\$ 8,352.68	\$ -
30	015373	Maintenance Bldg addition	2000	5	\$ 48,986.11	\$ 48,986.11	\$ -
30	015374	Gate E installation	2000	10	\$ 10,153.09	\$ 10,153.09	\$ -
30	015376	Fuel Tank area & road	2000	20	\$ 59,629.43	\$ 40,249.85	\$ 2,981.47
30	015449	Automated Gate	2001	10	\$ 11,013.96	\$ 11,013.96	\$ -
30	015450	Fuel Farm & Gate	2001	5	\$ 23,001.35	\$ 23,001.35	\$ -
30	015511	Power Line Relocation	2001	20	\$ 6,500.00	\$ 4,062.50	\$ 325.00
30	015512	Terminal Windows	2001	20	\$ 7,787.00	\$ 4,866.88	\$ 389.35
30	015515	Blast Pads/Hardstands/Chip Seal (CIP 345-21)	2001	20	\$ 1,357,097.00	\$ 848,185.63	\$ 67,854.85
30	015520	Perimeter Fencing (CIP 345-17)	2001	15	\$ 235,657.00	\$ 196,380.88	\$ 15,710.47
30	015611	Replace Gate D	2002	10	\$ 3,596.09	\$ 3,596.09	\$ -
30	015613	Parking lot rewire	2002	15	\$ 40,000.01	\$ 30,666.71	\$ 2,666.67
30	015616	North terminal access - CIP# 345-42	2002	20	\$ 261,071.00	\$ 150,115.83	\$ 13,053.55
30	015617	East GA/Air carrier ramp implmntn/desgn-CIP#345-38	2002	20	\$ 221,422.77	\$ 127,318.11	\$ 11,071.14
30	015618	East end gen aviation area constr - CIP# 345-35	2002	20	\$ 1,018,165.00	\$ 585,444.88	\$ 50,908.25
30	015622	RTR New site development - CIP# 345-37	2002	10	\$ 17,582.07	\$ 17,582.07	\$ -
30	015675	Runway 8-26 rehabilitation - CIP345-28	2003	15	\$ 5,698,745.99	\$ 3,989,122.20	\$ 379,916.40
30	015742	N. Terminal roof improvement - CIP345-48	2005	15	\$ 797,160.00	\$ 451,724.00	\$ 53,144.00
30	015745	Airport tower upgrade - CIP345-58	2005	20	\$ 85,318.28	\$ 36,260.24	\$ 4,265.91
30	015879	Taxiway Exentsions-CIP345-64	2007	15	\$ 1,787,422.45	\$ 774,549.75	\$ 119,161.50
30	015954	Bathrooms in Departure Lounge-CIP345-59	2008	2	\$ 106,753.70	\$ 106,753.70	\$ -
30	015958	Perimeter Fence (Blk A to Terminal)-CIP345-59	2008	15	\$ 9,375.00	\$ 3,437.50	\$ 625.00
30	015959	Customs Office Remodel-CIP345-59	2008	15	\$ 73,259.20	\$ 26,861.73	\$ 4,883.95
30	015960	Departure Lounge Exit Lane Doors-CIP345-59	2008	2	\$ 30,456.53	\$ 30,456.53	\$ -
30	015961	Assisted Bathroom Facility-CIP345-59	2008	2	\$ 227,496.06	\$ 227,496.06	\$ -
30	016065	2005 E-1 Pave Aircraft Parking	2010	15	\$ 1,540,222.54	\$ 359,385.25	\$ 102,681.50
30	14682A	Airport guidance sign system - CIP#345-10	1999	20	\$ 616,738.26	\$ 447,135.20	\$ 30,836.91
30	15147A	Gate K	1999	10	\$ 10,996.39	\$ 10,996.39	\$ -
30	15742A	Gate 4 wall siding - CIP345-48	2005	15	\$ 156,255.32	\$ 88,544.67	\$ 10,417.02
30	15743B	Runway safety improv - CIP345-43	2003	20	\$ 3,267,400.00	\$ 1,715,385.00	\$ 163,370.00
30	15743C	Slotted system drain improv - CIP345-43	2005	20	\$ 571,801.64	\$ 243,015.68	\$ 28,590.08

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		subtotal improvements			\$ 39,903,730.37	\$ 31,544,402.84	\$ 1,266,390.64
		subtotal studies, buildings, and improvements			\$ 59,976,336.53	\$ 47,836,785.98	\$ 2,205,086.93
40	004388	Cadillac Lathe and Attachments	1982	15	\$ 10,889.29	\$ 10,889.29	\$ -
40	011623	Snow Bucket	1981	5	\$ 6,789.38	\$ 6,789.38	\$ -
40	011624	Weldco Snow Bucket	1984	5	\$ 6,500.00	\$ 6,500.00	\$ -
40	011691	1981 Western Star Dump Truck	1982	10	\$ 80,322.31	\$ 80,322.31	\$ -
40	012249	30' Ramp 'Bull' Blade	1987	10	\$ 7,794.00	\$ 7,794.00	\$ -
40	012255	Snow Plow	1987	10	\$ 9,256.00	\$ 9,256.00	\$ -
40	012956	Forks for Loader	1990	5	\$ 6,450.00	\$ 6,450.00	\$ -
40	014012	Commercial Gas Range ARFF	1992	20	\$ 3,065.55	\$ 3,065.55	\$ -
40	014207	Ingersoll-Rand portable diesel air compressor	1993	5	\$ 9,870.00	\$ 9,870.00	\$ -
40	014211	Conveyor Rebuild-Pallet Support Wheels	1993	5	\$ 10,764.28	\$ 10,764.28	\$ -
40	014257	OskKosh Truck ARFF vehicle: A-2	1995	10	\$ 335,944.00	\$ 335,944.00	\$ -
40	014285	Ez-Liner Pickup Striper	1995	20	\$ 32,990.00	\$ 30,515.75	\$ 1,649.50
40	014363	30 cubic yard Garbage Compacting Unit	1996	10	\$ 14,205.00	\$ 14,205.00	\$ -
40	014614	1993 18' Welded Aluminum river boat	1999	10	\$ 5,500.00	\$ 5,500.00	\$ -
40	014615	Above ground fuel system - 2 tanks	1999	0	\$ 82,593.37	\$ -	\$ -
40	014623	Urea truck - CIP#345-22 - Unit 10	1999	10	\$ 288,697.73	\$ 288,697.73	\$ -
40	014624	Runway de-icer mixing/holding tanks-CIP345-22	1999	20	\$ 32,881.00	\$ 23,838.73	\$ 1,644.05
40	014625	HiSpd rnwy plow trck w/10yd-CIP345-24:Unit 13	1999	20	\$ 234,708.00	\$ 170,163.30	\$ 11,735.40
40	014626	16' Plow w/quick hitch - CIP#345-24	1999	20	\$ 18,426.00	\$ 13,358.85	\$ 921.30
40	014627	22' Plow w/quick hitch - CIP#345-24	1999	20	\$ 22,257.00	\$ 16,136.33	\$ 1,112.85
40	014628	26' Plow w/quick hitch - CIP#345-24	1999	20	\$ 23,943.00	\$ 17,358.68	\$ 1,197.15
40	014901	2003 Freightliner dump truck - Unit #33	2004	20	\$ 133,791.00	\$ 63,550.73	\$ 6,689.55
40	014902	Spreader attached to Sand Truck - Unit #33	2004	20	\$ 19,367.11	\$ 9,199.42	\$ 968.36
40	014903	Snow blower - Unit #39	2004	20	\$ 396,038.00	\$ 188,118.05	\$ 19,801.90
40	014906	Parking lot concession	2004	10	\$ 60,000.00	\$ 57,000.00	\$ 6,000.00
40	015043	Boiler	1994	10	\$ 5,740.00	\$ 5,740.00	\$ -
40	015159	HiSpd rnwy plow trck w/10yd-CIP345-27:Unit 11	1998	20	\$ 234,708.00	\$ 181,898.70	\$ 11,735.40
40	015160	HiSpd rnwy plow trck w/10yd-CIP345-27:Unit 12	1998	20	\$ 234,708.00	\$ 181,898.70	\$ 11,735.40
40	015161	16' Plow w/quick hitch - CIP#345-27	1998	20	\$ 18,426.00	\$ 14,280.15	\$ 921.30
40	015162	22' Plow w/quick hitch - CIP#345-27	1998	20	\$ 22,257.00	\$ 17,249.18	\$ 1,112.85
40	015163	26' Plow w/quick hitch - CIP#345-27	1998	20	\$ 23,943.00	\$ 18,555.83	\$ 1,197.15
40	015519	1997 SRE Loader (345-17) #22	2001	10	\$ 300,237.00	\$ 300,237.00	\$ -
40	015619	Six wheel drive motor grader #42 - CIP# 345-45	2002	15	\$ 191,977.00	\$ 147,182.41	\$ 12,798.47
40	015620	Six wheel drive motor grader #41 - CIP# 345-41	2002	15	\$ 174,948.00	\$ 134,126.80	\$ 11,663.20
40	015621	2000 GMC Safari minivan - CIP# 345-44	2002	9	\$ 23,678.94	\$ 23,678.94	\$ -
40	015673	20in Heavy duty floor model drill press	2003	10	\$ 3,443.80	\$ 3,443.80	\$ 172.19
40	015677	Security access equipment - CIP345-25	2003	5	\$ 94,000.00	\$ 94,000.00	\$ -
40	015813	Henke bull blade #9197	2006	20	\$ 21,996.00	\$ 8,248.50	\$ 1,099.80
40	015814	Proto tool cabinet (blue)	2006	30	\$ 5,000.00	\$ 1,250.03	\$ 166.67
40	015815	2004 Chevy Trailblazer #37	2006	15	\$ 26,317.00	\$ 13,158.53	\$ 1,754.47
40	015816	Griptester MK2 Friction measuring device	2006	12	\$ 43,750.00	\$ 27,343.73	\$ 3,645.83
40	015817	Self propelled articultd whl loader caterpillar #20	2006	15	\$ 355,067.00	\$ 177,533.48	\$ 23,671.13
40	015818	2004 Elgin Geovac street sweeper #17	2006	12	\$ 165,993.00	\$ 103,745.63	\$ 13,832.75
40	015819	Cmptrzd runway condition reporting system	2006	12	\$ 27,450.00	\$ 17,156.25	\$ 2,287.50
40	015820	MBOshkosh HiSpd runway broom #24	2004	15	\$ 345,919.00	\$ 219,082.07	\$ 23,061.27
40	015821	MBOshkosh HiSpd runway broom #25	2004	15	\$ 345,919.00	\$ 219,082.07	\$ 23,061.27
40	015822	MBOshkosh HiSpd runway broom #26	2004	15	\$ 345,919.00	\$ 219,082.07	\$ 23,061.27
40	015823	Skidsteer	2004	15	\$ 46,045.00	\$ 29,161.87	\$ 3,069.67
40	015824	Aircraft rescue firefighting vehicle A-1	2004	20	\$ 644,748.00	\$ 306,255.30	\$ 32,237.40
40	015825	2002 Ford Expedition (blue)	2004	15	\$ 27,024.98	\$ 17,115.87	\$ 1,801.67
40	015826	Chemical truck	2006	15	\$ 40,079.00	\$ 20,039.48	\$ 2,671.93
40	015882	2005 Ford Explorer 4dr XLS Sport (White)	2007	8	\$ 25,748.00	\$ 20,920.25	\$ 3,218.50
40	015956	Badge Printer-CIP345-59	2008	5	\$ 7,400.00	\$ 7,400.00	\$ 740.00
40	016064	Gate Operator 2010 Hysecurity	2010	10	\$ 17,770.50	\$ 6,219.68	\$ 1,777.05
40	016162	2010 Yamaha 70hp outboard engine	2011	7	\$ 8,848.00	\$ 3,160.00	\$ 1,264.00
40	018868	Fingerprint scanner and laptop	2012	5	\$ 7,502.50	\$ 2,250.75	\$ 1,500.50
40	018869	Asphalt Grinder with 6inch cutter	2012	5	\$ 16,297.00	\$ 4,889.10	\$ 3,259.40
40	018908	2006 Cat asphalt roller	2013	20	\$ 20,200.00	\$ 505.00	\$ 505.00
40	14257A	Refurbished rotating airport runway beacon	1995	10	\$ 7,340.20	\$ 7,340.20	\$ -
40	14257B	Articulated wheel loader #21	1995	10	\$ 240,095.00	\$ 240,095.00	\$ -
40	14257C	Self-propelled snow blower #38	1995	10	\$ 259,230.00	\$ 259,230.00	\$ -

City and Borough of Juneau
Juneau International Airport
Listing of Capital Assets @ 06/30/13
Report last updated 09.09.13

Object Code	Asset ID	Description	Fiscal Year Acquired	Useful Life	Total Costs	Accumulated Depreciation	Current Year Depreciation
40	14286A	Airport radio system - CIP349-46	2004	7	\$ 90,805.12	\$ 90,805.12	\$ -
40	14286B	Chemical spreader truck - CIP349-46 - Unit #3	2004	3	\$ 39,444.46	\$ 39,444.46	\$ -
40	14906A	Parking lot concession addtl	2005	9	\$ 240,000.00	\$ 226,666.70	\$ 26,666.67
40	15819A	Tes MK3 decelerometer pkg for rptg system	2006	15	\$ 4,060.00	\$ 2,030.03	\$ 270.67
		subtotal equipment			\$ 6,607,076.52	\$ 4,796,790.06	\$ 297,680.44
50	014907	Yandukin Way two-way reconfig - CIP345-49	2004	15	\$ 71,140.06	\$ 45,055.37	\$ 4,742.67
50	015744	Cessna/Alex Holden Way recon - CIP345-53	2005	20	\$ 340,997.56	\$ 144,923.98	\$ 17,049.88
50	015827	Parallel taxiway reconstruction-CIP345-55	2006	15	\$ 3,513,249.00	\$ 1,756,624.50	\$ 234,216.60
50	015881	Rehabilitate Access Road-CIP345-63	2007	7	\$ 387,607.03	\$ 359,920.80	\$ 55,372.43
		subtotal infrastructure			\$ 4,312,993.65	\$ 2,306,524.65	\$ 311,381.58
		Grand total			\$ 84,260,168.12	\$ 54,940,100.69	\$ 2,814,148.95

Water Utility Assets

	<u>Asset ID</u>	<u>Description</u>		<u>Total Costs</u>
2	011466	A-J Tunnel Reservoir	\$	732,452.71
2	011467	A-J Tunnel Reservoir	\$	15,902.47
1	011468	Hospital Water Supply Improvements	\$	660,985.36
9	011469	Juneau-Douglas Water Network Design	\$	60,423.13
9	011470	Service Area No. 5 Wa System Preliminary Dsgn	\$	155,583.08
1	011471	Hidden Lakes Water System	\$	407,235.17
5	011472	Douglas Water Main Replacement	\$	145,684.74
5	011473	Channel Heights Subdivision Water System	\$	208,704.64
5	011474	First Street Water Main Replacement	\$	25,933.91
5	011475	9th & Egan Drive Water Connection	\$	23,113.72
5	011477	12th & Erwin Street Water Connection	\$	47,002.00
1	011479	Last Chance Basin Well 1 & 3 Connection	\$	78,165.70
5	011480	Lemon Creek Water Extension (Davis Ave Wtrln)	\$	175,144.23
5	011481	Gastineau Channel Bridge Water Crossing	\$	137,156.40
5	011482	West Juneau Water Improvements	\$	252,987.41
5	011483	Vanderbilt Hill Water Extension	\$	1,199,433.89
5	011484	Northwest Mendenhaven Water System	\$	127,899.19
5	011514	Douglas Highway Water Extension	\$	287,250.00
1	011515	Salmon Creek to Mendenhall Wa Study & Hosp Wa	\$	90,200.00
5	011526	Nowell-Nome Water Loop	\$	37,875.00
5	011529	Pinewood Park Water Distribution System	\$	1,160,452.25
5	011538	Outer Drive Water and Sewer	\$	45,000.00
5	011545	Douglas-Lawson Creek Water	\$	77,100.00
5	011546	1st Street Water - Douglas	\$	8,000.00
5	011547	Mallard Street Paving	\$	96,756.70
1	011548	Meadow Grove Water Project	\$	508,687.27
5	011566	Harbor View Urban Renewal	\$	144,005.00
3	011582	Pump Station @ Evergreen Entrance	\$	28,000.00
5	011853	Auke Bay access road wtr connect	\$	32,804.67
5	011854	Juneau Water System Valving	\$	139,578.20
5	011855	Channel Marina Water extension	\$	61,529.26
5	011856	Front Street Reconstruction	\$	265,979.98
5	011857	Switzer Creek Water Extension	\$	848,055.35
5	011858	Switzer To Airport water system	\$	208,100.35
5	011859	Douglas Water Improvements	\$	34,825.28
5	011860	Airport to Auke Bay water Extension	\$	1,422,702.15
5	011861	Switzer Creek to Airport Water extension	\$	1,754,174.20
2	011862	Auke Lake Reservoir	\$	1,075,844.74
5	011865	Crest Avenue	\$	151,460.27
5	011866	Glacier Spur Water Distribution	\$	1,036,965.75
5	011867	Airport Distribution System	\$	1,609,370.52
5	011868	East Valley Water Distribution System	\$	2,097,208.62
5	011869	Juneau Waterline Replacement	\$	92,689.82
5	011870	Gastineau Channel Water Crossing	\$	178,504.62
5	011872	12TH Harbor Way Water Connect	\$	247,700.90
5	012554	Extension	\$	175,703.88
5	012571	Water Extensions FY87 Fund 239	\$	206,994.00
5	012701	S & S Water System	\$	651,212.00
5	012707	Auke Bay Water Connection	\$	30,944.04
5	012708	Mendenhaven Water Improvements	\$	184,079.59
9	012725	Lemon Creek Maint Shop Land	\$	143,235.00
9	012726	Lemon Creek Facility Improvements	\$	7,965.15
5	012727	Water Extension Lines	\$	145,032.00
2	012728	East Valley Reservoir	\$	1,847,683.25
2	012729	Lemon Creek Reservoir	\$	1,412,877.00
5	012730	Water Line Inspection Fees	\$	67,816.13
5	012928	Lower Valley Water	\$	1,155,152.00
5	012929	Stephan Richards Road Water Project	\$	1,132,520.00
5	012930	Coho Park Vault Water Project	\$	14,800.00
5	012980	Water pipelines - Salmon Creek	\$	1,069,884.00
5	012981	Water Extensions 1990	\$	163,668.00
5	012982	Water Line Replacement Taku-Poplar-Columbia	\$	10,000.00
2	012983	Douglas Water Reservoir	\$	2,069,968.75
5	012984	Water Connect	\$	119,216.00
5	012985	N Douglas Water Crossing	\$	859,313.27
5	012986	N Douglas 3 Mile to JD Bridge	\$	1,517,265.00
5	012987	Mendenhall Mid-Valley Water Dist	\$	2,030,944.00
5	012988	Auke Bay Water System	\$	954,586.96
5	012989	Mendenhall Peninsula Water System	\$	2,844,933.00
3	012990	Pumphouse Salmon Creek	\$	1,310,609.00
1	012992	Water Rights - Penn Stock	\$	1,000,000.00
5	013255	Replace water and sewer line	\$	40,000.00
5	013347	Water Extensions 1991	\$	108,422.47
5	013348	W. Valley Industrial Water Ph.II.	\$	278,315.29
5	013377	Water extension FY04	\$	118,777.19
5	013378	Gastineau Ave Reconstruction - CIP 412-71	\$	350,249.11
5	013493	6th Street Reconstruction	\$	60,000.00
3	014024	Salmon Pump Station 493-79	\$	28,705.84
5	014025	N Douglas 3 Mile 493-68	\$	3,505,216.17
5	014026	S & S Water System Connection 493-69	\$	201,664.20
5	014027	Backloop Water Phase I. 493-74	\$	1,886,470.96
5	014028	Backloop Water Phase II. 493-75	\$	1,756,667.22
5	014029	S Franklin Street Connection 493-77	\$	207,364.21
8	014031	Major Repairs to Bldg due to Fire Damage	\$	48,053.72
9	014032	Paint exterior of Lemon Creek Shop	\$	5,200.00

8	014039	Networking Project	\$	28,068.77
5	014110	Water Extensions 1992	\$	156,589.85
5	014185	Gold Creek Water Improvements - CIP 493-60	\$	3,458,894.58
5	014206	West 7th&Distin Ave Retaining Wall-CIP#411-71	\$	6,360.00
5	014218	Water Extensions 1993	\$	125,833.43
9	014267	Replace Lemon Creek Shop roof	\$	34,000.00
5	014268	Water Extensions 1995	\$	91,638.77
5	014269	Crow Hill/Linellen Heights/5th St. 493-72	\$	4,205,544.21
5	014287	Auke Way Water Line - CIP#494-08	\$	9,216.99
5	014288	Hooter Lane Water/Swr Construction-CIP#494-10	\$	9,666.00
5	014356	Relocation of 12in.Water Line @ Calhoun Ave.	\$	10,276.27
3	014357	Highland/Starr Hill elev improv-CIP404-493-78	\$	1,423,676.55
5	014383	Waydleich Crk to Indian Pt - CIP404-493-70	\$	1,779,531.09
9	014384	AW Water Telemetry - CIP404-483-57	\$	1,784,019.06
1	014385	Last Chance Basin/Salmon Crk-CIP404-493-83	\$	53,818.67
5	014393	12th/Glacier to Egan - CIP402-412-29	\$	7,500.00
9	014394	Retaining wall reconstruction - CIP402-412-16	\$	30,000.00
5	014395	Water Extensions 1996	\$	126,178.83
5	014463	Foster Ave./Sitka St. water replacement	\$	56,348.60
5	014665	Waterline-N.Lena to Tee Harbor - CIP#494-12	\$	1,813,046.45
5	014684	Water extensions for FY99	\$	177,025.15
9	015036	Cantilever gate & fence	\$	5,451.00
5	015037	Lena Point water distribution-CIP#493-73	\$	2,697,572.20
3	015038	Salmon Crk press redcg valve-PhaseB-CIP493-87	\$	5,393.49
3	015039	Salmon Crk in-line pumps-PhaseA-CIP493-81	\$	83,913.37
5	015040	Decker Way & Third St. water svc installation	\$	21,000.00
5	015044	Water Extensions 1994	\$	98,587.15
5	015045	N. Franklin St.Reconstruction-CIP#411-70	\$	141,000.00
3	015130	Mountainside Est Pmp Sta Recon-CIP#494-03	\$	455,440.79
1	015131	Basin Wells 3 & 4 - CIP# 493-86	\$	202,352.19
5	015132	Aspen Avenue/Pinewd Dr Water Line-CIP# 494-15	\$	690,401.30
5	015155	James Boulevard recon - CIP#412-37	\$	40,000.00
5	015156	Judy Lane/Coleman St recon - CIP#412-44	\$	72,200.00
8	015157	Auxiliary power, Lemon Creek Shop -CIP#494-11	\$	73,076.51
5	015164	Calhoun Ave sidewalk recon-CIP# 412-20	\$	79,552.00
5	015165	Water Extensions for FY98	\$	176,527.24
5	015321	Water Extension for FY97	\$	150,852.94
5	015378	White Subdivison - CIP 412-32	\$	160,000.00
5	015379	Nelson/Fifth Street Reconstruction - CIP 412-41	\$	25,000.00
5	015380	Gold Street Reconstruction - CIP 412-52	\$	275,000.00
4	015381	Salmon creek disinfection project - CIP 494-01	\$	3,697,004.47
5	015382	Bonnie Brae water and sewer system - CIP 494-02	\$	378,657.49
5	015392	Wilma Ave water extension - CIP 494-29	\$	8,197.33
5	015393	Indoor Shooting Range water - CIP 494-30	\$	129,655.00
5	015422	2000 Water Extensions	\$	139,705.84
6	015429	Fire hydrant replacement - CIP W007-92	\$	10,385.60
9	015430	Upgrade water utility SCADA - CIP W494-16	\$	384,509.00
5	015435	Marine Park Traffic Circle Design - CIP 374-69	\$	28,899.75
5	015489	N Behrends Ave/Highland Area CIP 412-54	\$	83,540.00
5	015523	Water Extensions FY01	\$	119,381.02
5	015543	Water extension FY02	\$	109,872.61
8	015545	MDS9740 Master station	\$	10,107.00
2	015588	AW resvr imprv & inspection - CIP494-22	\$	71,191.00
5	015589	Calhoun Ave bridge water line - CIP494-21	\$	234,123.73
4	015590	Water disinfection system - CIP494-18	\$	198,883.22
5	015591	Willoughby/Main water intertie - CIP494-24	\$	190,314.22
5	015662	Water extension FY03	\$	132,457.83
5	015663	Highlands Reconstruction II - CIP 412-84	\$	64,000.00
5	015664	Glacier/Willoughby Reconstruction - CIP 412-46	\$	1,092,000.59
5	015665	Simpson Ave/W Juneau Water Improvements -CIP494-20	\$	286,083.00
5	015751	Riverwood Sub Drainage Improv I - CIP412-87	\$	35,000.00
1	015752	Lena Point Reservoir - CIP494-19	\$	2,460,064.94
5	015753	Last Chance Basin improv - CIP494-25	\$	1,424,449.01
3	015754	Salmon Creek Pump Station improv - CIP494-26	\$	169,515.54
5	015755	Water extensions FY05	\$	155,964.64
5	015829	Water extensions FY06	\$	186,908.02
4	015831	Domestic Water Filtration System-CIP494-05	\$	53,055.09
8	015832	Lemon Crk Storage Fac and OfficRmdl-CIP494-23	\$	496,487.12
5	015833	Highlands Reconstruction III - CIP412-95	\$	293,406.00
5	015886	Water extensions FY07	\$	148,182.00
8	015918	40KW Generator	\$	9,155.00
5	015924	Water extensions FY08	\$	122,948.00
5	015962	Goldbelt Ave Reconstruction-CIP412-98	\$	400,000.00
5	015963	Seward/@nd St Reconstruction-CIP412-99	\$	1,200,000.00
5	016008	Casey Shattuck Sub Ph I - CIP422-18	\$	220,112.00
5	016009	4th St Douglas SwrMainRpl-CIP484-78	\$	245,000.00
5	016010	W Juneau Water sys improv-CIP494-33	\$	880,735.97
5	016047	Water extensions FY09	\$	152,021.00
5	016126	Water extensions FY10	\$	122,993.00
5	016127	Riverside Drive improv - CIP422-02	\$	50,000.00
5	016128	Valley Blvd reconstruction - CIP422-19	\$	10,000.00
1	016131	Mill Tunnel Reservoir System Improv-CIP494-40	\$	150,864.00
5	016164	N. Tee Harbor Waterline - CIP494-27	\$	3,119,508.66
5	016165	Water extensions FY11	\$	94,487.51
5	016166	Casey Shattuck Sup. Ph II - CIP R72-026	\$	400,000.00
5	016167	Downtown Side Streets Recon - CIP R72-16	\$	390,000.00
5	016168	W 9th Street LID 94 - CIP R72-027	\$	30,000.00
5	018863	Airport to Loop Road Water Extension	\$	2,469,155.74
9	018864	Remodel water utlity offices	\$	43,044.76
8	018865	Salmon creek B-Pak 250 PPD Cell	\$	36,352.00

5	018866	Water extensions FY12	\$	95,876.59
5	018887	3rd St Douglas WtrSwr Improv	\$	<u>1,299,958.00</u>
5	14392A	Alder/Hemlock/Spruce - CIP402-412-30	\$	94,230.00
5	15134A	LID80-Greenwood Subdiv-W&S improv-CIP#494-14	\$	260,196.00
9	15372A	Lemon Creek street maint warehouse - CIP 374-39	\$	65,000.00
				\$ 93,510,329.79

Wastewater Assets

Object Code	Dept Number	Division Number	Class Code	Asset ID	Description	Category	Fiscal Year Acquired	Useful Life	Total Costs	Accumulated Depreciation	Current Year Depreciation
30	51	73	4	011567	Harbor View Urban Renewal	??	1986	30	\$ 225,239		
11	51	73	2		PW Water & Wastewater Utility Energy Audit	3-way split	2009	10	\$ 12,267		
11	51	73	2		CBJ Public Works Energy Audit RFP E09-126	3-way split	2009	5	\$ 12,267		
			1		West Juneau Haulers Dump Site	Collection	1995	40	\$ 100,000	70700	4040
30	51	73	1	014260	Leasehold Improvement creating addtl cells	Collection	1995	5	\$ 73,902		
30	51	73	1	015539	Landfill fence	Collection	2002	15	\$ 13,139	9197.58	875.96
40	51	73	1		915 Jet and vacuum truck 1993 Vac-Con	Collection	1993	10	\$ 167,493		
40	51	73	1		569 5 yd dumptruck 1995 Chevy	Collection	1995	10	\$ 50,000		
40	51	73	1	014352	Pro-Scout Lateral Camera w/case & adaptor	Collection	1996	8	\$ 13,545	13545	0
40	51	73	1		Massey Ferguson Tractor w/loader, backhoe, trailer	Collection	1996	10	\$ 26,000		
40	51	73	1		885 Backhoe 1997 Cat	Collection	1997	15	\$ 118,800		
40	51	73	1		094 Trailmax T-40 2 axle, 10-ton trailer 1998 Trailer	Collection	1998	10	\$ 13,501		
40	51	73	1		467 1 ton 4wd pickup 1999 Chevy	Collection	1999	8	\$ 28,367		
40	51	73	1	014679	Collections Flow-tote flowmeter (1 of 3)	Collection	1999	10	\$ 3,614	3613.97	0
40	51	73	1	014680	Collections Flow-tote flowmeter (2 of 3)	Collection	1999	10	\$ 3,614	3613.96	0
40	51	73	1	014681	Collections Flow-tote flowmeter (3 of 3)	Collection	1999	10	\$ 3,614	3613.96	0
40	51	73	1	015387	Collections Moore crane on utility truck #598	Collection	2000	10	\$ 6,642	6642	0
40	51	73	1	015388	Collections utility crane truck #598 Chev White	Collection	2000	10	\$ 35,699	35699	0
40	51	73	1	015389	Pump w/trailer 6inch Thompson pump 160	Collection	2000	10	\$ 25,702	25702	0
40	51	73	1		195 Roller from Streets 1988 Bomag	Collection	2001	13	\$ 16,500		
40	51	73	1	015537	Pipe Ranger wheeled transporter	Collection	2002	10	\$ 13,401	13401	670.05
40	51	73	1	015542	2001 4x4 Dodge truck w/dump body - Unit# 532	Collection	2002	10	\$ 32,298	32298	1614.9
40	51	73	1		924 Jet and vacuum truck 2004 Vactor	Collection	2003	12	\$ 232,168		
40	51	73	1	015762	Aluminum trench shield	Collection	2005	10	\$ 8,874	6655.5	887.4
40	51	73	1	015763	Aluminum trench shield	Collection	2005	10	\$ 8,874	6655.5	887.4
40	51	73	1	015764	Aluminum trench shield	Collection	2005	10	\$ 8,874	6655.5	887.4
40	51	73	1	015838	Cues granite XP software-video inspec of swr mains	Collection	2006	10	\$ 21,909	14240.85	2190.9
40	51	73	1	015839	Stainless steel sand spreader on Dodge #529	Collection	2006	7	\$ 5,826	5410.08	832.32
40	51	73	1		555 1 ton Dump Flatbed 2006 Chevy	Collection	2006	10	\$ 33,173		
40	51	73	1	015883	Collections Cues camera van unit #575	Collection	2007	9	\$ 26,948	16468.21	2994.22
40	51	73	1	015884	Collections Sander #043	Collection	2007	10	\$ 6,495	3572.25	649.5
40	51	73	1		414 Ranger pickup 2007 Ford Ranger	Collection	2007	7	\$ 19,333		
40	51	73	1		413 Ranger pickup 2007 Ford Ranger	Collection	2007	7	\$ 19,333		
40	51	73	1		586 Utilities Crane Truck, F550 2007 Ford	Collection	2007	15	\$ 79,121		
40	51	73	1	015920	Ultra shorty camera	Collection	2008	10	\$ 7,390	3325.5	739
40	51	73	1	015921	Flo-Dar Marsh McBirney flow meter	Collection	2008	5	\$ 7,850	7064.96	1569.99
40	51	73	1		477 F350 pick up 1 ton w snowplow & Tommy lift 2008 Ford F350	Collection	2008	8	\$ 32,648		
40	51	73	1		98 5 ton trailer 2009 Trailer	Collection	2009	12	\$ 5,675		
40	51	73	1		316 Yanmar Excavator 2008 Excavator	Collection	2009	12	\$ 35,035		
40	51	73	1		480 F350 utility truck w/ crane 2010 Ford F350	Collection	2010	7	\$ 54,615		
40	51	73	1		481 F350 pick up w/snowplow & sander 2011 Ford F350	Collection	2011	10	\$ 46,709		
40	51	73	1		420 2011 Ford Ranger Extra-Cab 4X4	Collection	2011	10	\$ 22,449		
30	51	73	1	015145	1997 Sewer extensions	Collection	1997	20	\$ 6,683	5179.33	334.15
30	51	73	1	015146	1998 Sewer extensions	Collection	1998	20	\$ 16,080	11658.29	804.02
30	51	73	1	014685	1999 Sewer extensions	Collection	1999	20	\$ 23,226	15677.28	1161.28
30	51	73	1	015421	2000 Sewer Extensions	Collection	2000	30	\$ 20,527	8553	684.24
30	51	73	1	015522	Sewer Extensions FY01	Collection	2001	30	\$ 18,520	7099.3	617.33
30	51	73	1	015584	Sewer extensions FY02	Collection	2002	30	\$ 25,292	8852.13	843.06
30	51	73	1	015688	Sewer extensions FY03	Collection	2003	30	\$ 29,910	9471.6	997.01
30	51	73	1	013525	Sewer extensions FY04	Collection	2004	30	\$ 28,435	8056.73	947.85
30	51	73	1	015760	Sewer extensions FY05	Collection	2005	30	\$ 25,245	6311.18	841.49
30	51	73	1	015835	Sewer extensions FY06	Collection	2006	30	\$ 31,650	6857.44	1054.99
30	51	73	1	015885	Sewer extensions FY07	Collection	2007	30	\$ 36,373	6668.37	1212.43
30	51	73	1	015923	Sewer extensions FY08	Collection	2008	30	\$ 42,669	6400.31	1422.29
30	51	73	1	016048	Sewer extensions FY09	Collection	2009	30	\$ 59,915	6990.1	1997.17
30	51	73	1	016125	Sewer extensions FY10	Collection	2010	30	\$ 67,932	5661	2264.4
30	51	73	1	016169	Sewer extensions FY11	Collection	2011	30	\$ 89,508	4475.39	2983.59

30	51	73	1	018866	Sewer extensions FY12	Collection	2012	30 \$	95,877	1597.95	1597.95
			1		Total improvements	Collection		\$	617,841	119509.4	19763.25
40	51	73	1	014265	Trench Shoring box	Collection	1995	10 \$	7,204	7204	0
40	51	73	1	014343	REE-11 Remote Control Svc Crane w/Boom Kit	Collection	1996	7 \$	6,087	6087	0
11	51	73	1	014198	LawsonCk Pump St.Electrical Mod. Design/Study	Collection / Lift Station	1993	20 \$	7,612	7421.7	380.6
20	51	73	2		West Juneau Lift Station	Collection / Lift Station	1974	40 \$	900,000		
20	51	73	2		DOT Lift Station	Collection / Lift Station	1975	40 \$	900,000		
20	51		2		Lakewood Lift Station - Red Samm/Godfrey	Collection / Lift Station	1978	40 \$	900,000		
20	51		2		Park Place Lift Station -	Collection / Lift Station	1978	50 \$	900,000		
20	51	73	2	011506	Auke Bay Coast Guard Sewer Pump Station	Collection / Lift Station	1980	20 \$	51,795	51795.05	0
20	51		2		Slim Williams Way Lift Station	Collection / Lift Station	1980	40 \$	900,000		
20	51		2		Skaters Lift Station	Collection / Lift Station	1980	50 \$	900,000		
20			2		Forest Grove Lift Station	Collection / Lift Station	1985	40 \$	900,000		
20			2		Horizon Drive lift station	Collection / Lift Station	1985	50 \$	900,000		
20			2		Misty Lane lift station	Collection / Lift Station	1985	50 \$	900,000		
20			2		Blueberry Hill Lift Station - Youngquist	Collection / Lift Station	1985	50 \$	900,000		
20			2		Sunny Point Lift Station - Triplette	Collection / Lift Station	1985	50 \$	900,000		
20			2		James Blvd Lift Station	Collection / Lift Station	1994	50 \$	900,000		
20			2		Airport Lift Station	Collection / Lift Station	1995	50 \$	900,000		
20			2		Tall Timbers Lift Station	Collection / Lift Station	1995	50 \$	900,000	27083.38	2166.67
20			2		South Franklin Lift Station	Collection / Lift Station	1995	50 \$	900,000		
20	51	73	2	015488	Lift Station Tank-Lemon A wet well-CIP 484-56	Collection / Lift Station	2001	30 \$	12,995		
20	51	73	2		A.J. Lift Station	Collection / Lift Station	2000	50 \$	900,000		
20	51	73	2		Lemon A Lift Station	Collection / Lift Station	2001	40 \$	900,000		
20	51	73	2		Outer Drive Lift Station	Collection / Lift Station	1974/2005	40 \$	900,000		
20	51	73	2		Bayview Lift Station CIP 484-69	Collection / Lift Station	2007	50 \$	450,000	272119	36632.68
20	51	73	2		Salmon Creek Lift Station	Collection / Lift Station	2008	50 \$	900,000		
20	51	73	2	015999	Dredge Lake Lift Station & Forcemain	Collection / Lift Station	2009	40 \$	58,113	5084.91	1452.83
20	51	73	2		Twin Lakes Lift Station	Collection / Lift Station	2013	50 \$	900,000		
30	51	73	2	015027	Reroof wastewater pump station, gen bldg	Collection / Lift Station	1994	10 \$	6,008	106375	5750
30	51	73	2	014353	Replace water svc pipe to West Juneau Lift St	Collection / Lift Station	1996	20 \$	11,531	9513.41	576.57
30	51	73	2	015135	Sewer Lift Stat Pump/Louver Upg-CIP# 484-52	Collection / Lift Station	1998	10 \$	20,017	20017.2	0
30	51	73	2	015138	S.Franklin 20in pressure main valve for sewer	Collection / Lift Station	1998	30 \$	8,260	3992.29	275.33
30	51	73	2	015140	Lawson Crk Lift Sta (expansion)-CIP# 484-47	Collection / Lift Station	1998	40 \$	72,981	26455.69	1824.53
30	51	73	2	015385	S.Franklin pump station roof repair	Collection / Lift Station	2000	30 \$	12,699	5291.25	423.3
30	51	73	2		Montana Creek lift station	Collection / Lift Station	2002	50 \$	900,000		
30	51	73	2	015678	Replacement of expansion joints in bridge	Collection / Lift Station	2003	25 \$	20,055	7620.9	802.2
30	51	73	2	015682	Settling basin-Lemon A	Collection / Lift Station	2003	30 \$	48,400	15326.64	1613.33
30	51	73	2	015756	Lemon Creek Lift Station recon - CIP484-58	Collection / Lift Station	2005	20 \$	629,925	236221.8	31496.24
30	51	73	2	015922	Gruening Park lift station bypass	Collection / Lift Station	2008	20 \$	9,750	2193.75	487.5
30	51	73	2		Concrete Way Lift Station - Bob Scott/Trucano	Collection / Lift Station	2008	50 \$	900,000		
40	51	73	2	011592	Collections - Cat 3406T Diesel Generator Set	Collection / Lift Station	1986	20 \$	32,732	32731.86	0
40	51	73	2	013178	Electrical Load Bank	Collection / Lift Station	1991	5 \$	13,977	13976.88	0
40	51	73	2	014022	Magnetek TDX750 Emergency Generator	Collection / Lift Station	1992	8 \$	11,495	11495.2	0
30	51	73	2	014674	Goathill & LID74 sewer phase II - CIP484-48	Collection / Lift Station / Local	1999	40 \$	1,064,255	359186.13	26606.38
20	51	73	2	015768	Backloop I lift station hatch replacement	Collection / Lift Station(s)	2005	15 \$	57,364		
30	51	73	2	012764	Electrical Work To Lift Stations	Collection / Lift Station(s)	1989	15 \$	11,272		
30	51	73	2	014673	Channel Drive sewer extension - CIP484-45	Collection / Lift Station(s) / Local	1999	40 \$	1,932,675	652277.75	48316.87
30	51	73	2	014685	1999 Sewer extensions	Collection / Lift Station(s) / Local	1999	20 \$	23,226	15677.28	1161.28
30	51	73	2	015587	Bk Lp sewer-Lee St. to Goat Hill - CIP484-50	Collection / Lift Station(s) / Local	2002	30 \$	2,077,942	727279.56	69264.72
20	51	73	1	011532	Auke Bay Sewer System	Collection / Local	1976	40			
30	51		1		White Sub. - White	Collection / Local	1980	80 \$	642,000		
			1		Blueberry Hill sub. - Youngquist	Collection / Local	1985	80 \$	939,000		
			1		Sunny Point sub. - Triplette	Collection / Local	1985	80 \$	529,250		
			1		Brigadoon sub.	Collection / Local	1995	80 \$	600,000	4981.46	433.17
20	51	73	1		Bayview Force Main CIP 484-69	Collection / Local	2007	100 \$	650,000		
30	51	73	1	011539	Mendenhall Sewer System - Phase I	Collection / Local	1974	40 \$	2,375,741		

30	51	73	1	011534	Mendenhall Sewer Phase II	Collection / Local	1976	40 \$	2,851,590		
30	51		1		Lakewood sub. - Red Samm/Godfrey	Collection / Local	1978	80 \$	2,095,500		
30	51		1		Park Place sub. -	Collection / Local	1978	80 \$	264,250	14000	0
30	51		1		Riverwood sub. - Red Samm	Collection / Local	1978	80 \$	1,668,000		
30	51		1		Mendenhaven sewer construction	Collection / Local	1979	80 \$	2,336,000	63087.91	0
30	51	73	1	011504	Auke Bay Boat Harbor Sewer Service	Collection / Local	1980	30 \$	14,000		
30	51	73	1	011505	Dunn Street Sewer	Collection / Local	1980	30 \$	17,305		
30	51	73	1	011509	Mendenhall Acres Sewer	Collection / Local	1981	30 \$	18,955		
30	51	73	1		Bayview sewer construction	Collection / Local	1983	80 \$	923,500		
30	51	73	1	011487	Behrends Avenue Sewer Replacement	Collection / Local	1984	30 \$	33,576		
30	51	73	1	011489	Juneau Sewer Repairs	Collection / Local	1984	30 \$	91,628		
30	51	73	1	011490	David Street Water and Sewer	Collection / Local	1984	30 \$	24,963		
			1		Mountainside sewer construction	Collection / Local	1985	80 \$	1,410,250		
			1		Bonnie Brae sewer construction	Collection / Local	1985	80 \$	1,446,000		
30	51	73	1	011495	Kimberly Street Sewer	Collection / Local	1986	30 \$	5,840	112204.08	4400.16
30	51	73	1	011565	Admiral Way Sewer Replacement	Collection / Local	1986	30 \$	26,108		
30	51	73	1	011888	Nowell Avenue Sewer Repair	Collection / Local	1987	30 \$	15,000		
30	51	73	1	011889	Front St Reconstruction	Collection / Local	1987	30 \$	132,005	13646.6	0
30	51	73	1		Greenwood sub. - Hanson	Collection / Local	1988	80 \$	513,750	570422	0
30	51	73	1		Erin Manor I - Grant	Collection / Local	1988	80 \$	1,824,250	11272	0
30	51	73	1		CrowHill sub. - Godfrey	Collection / Local	1988	80 \$	399,500	8628.92	0
30	51	73	1	012741	Inflow/Infiltration Improvements Men. Tr. Pl.	Collection / Local	1989	20 \$	570,422	30500	0
30	51	73	1	013142	Lemon Creek Sewer - Completion	Collection / Local	1990	40 \$	358,930	8912.28	457.04
30	51	73	1	013256	5th Street Reconstruction	Collection / Local	1990	20 \$	30,500	143325	7350
30	51	73	1		Chelsea Court - Duran	Collection / Local	1990	80 \$	127,500	12870	660
30	51	73	1	013491	6th Street Reconstruction	Collection / Local	1991	40 \$	60,000	6008	0
30	51	73	1	014200	AK State Museum Storm/Sanitary Sewer separatr	Collection / Local	1993	30 \$	13,711	3076	166.27
30	51	73	1	014204	Riverside Drive Reconstruction-CIP#411-36	Collection / Local	1993	20 \$	147,000	523353.35	28289.37
30	51	73	1	014205	West 7th&Distin Ave Retaining Wall-CIP#411-71	Collection / Local	1993	20 \$	13,200	56748.75	3067.5
30	51	73	1	015028	AK State Museum San/Strm Sewer Separation	Collection / Local	1994	30 \$	4,988		
30	51	73	1	015034	Behrends Ave/Highlands Sewer-CIP#484-40	Collection / Local	1994	20 \$	565,787	7840	448
30	51	73	1	015046	Cordova St.Reconstruction-CIP#411-32	Collection / Local	1994	20 \$	61,350	7572.78	432.73
30	51	73	1	15045A	N. Franklin St.Reconstruction-CIP#411-70	Collection / Local	1994	20 \$	115,000	73902.32	0
30	51	73	1	14288A	Hooter Lane Water/Swr Construction-CIP#494-10	Collection / Local	1995	30 \$	13,440		
30	51	73	1	014256	Foodland Sewer Service Replacement	Collection / Local	1995	30 \$	12,982		
30	51	73	1	014392	Alder/Hemlock/Spruce - CIP402-412-30	Collection / Local	1996	20 \$	91,105	75161.63	4555.25
30	51	73	1	014484	Mendenhall Valley paving LID 77 - CIP#412-26	Collection / Local	1997	20 \$	50,000	38750	2500
30	51	73	1	014672	Backloop Sewer Phase I - CIP484-46	Collection / Local	1999	40 \$	3,663,357	1236382.92	91583.92
30	51	73	1	015134	LID80-Greenwood Subdiv-W&S improv-CIP#494-14	Collection / Local	1998	40 \$	139,140	50438.25	3478.5
30	51	73	1	015136	Artic sewer pipe at West 7th and Carroll Way	Collection / Local	1998	40 \$	23,091	8370.71	577.29
30	51	73	1	015139	Douglas Hwy sewer line improv-CIP# 484-49	Collection / Local	1998	40 \$	23,729	8601.98	593.24
30	51	73	1	015145	1997 Sewer extensions	Collection / Local	1997	20 \$	6,683	5179.33	334.15
30	51	73	1	015146	1998 Sewer extensions	Collection / Local	1998	20 \$	16,080	11658.29	804.02
30	51	73	1	15155A	James Boulevard recon - CIP#412-37	Collection / Local	1998	40 \$	100,000	36250	2500
30	51	73	1	15156A	Judy Lane/Coleman St recon - CIP#412-44	Collection / Local	1998	40 \$	76,700	27803.75	1917.5
30	51	73	1	15164A	Calhoun Ave sidewalk recon-CIP# 412-20	Collection / Local	1998	40 \$	30,120	10918.5	753
30	51	73	1		Montana Creek Phase I sewer construction	Collection / Local	1999	80 \$	1,478,750		
30	51	73	1	015383	Trafalgas Street sewer expansion - CIP 484-61	Collection / Local	2000	30 \$	382,738	159474.38	12757.95
30	51	73	1	015384	H Street repair, Douglas, between	Collection / Local	2000	30 \$	39,871	16613.13	1329.05
30	51	73	1	015386	Gee Street, sewer repair, from to	Collection / Local	2000	30 \$	29,629	12345.38	987.63
30	51	73	1	015421	2000 Sewer Extensions	Collection / Local	2000	30 \$	20,527	8553	684.24
30	51	73	1	15380A	Gold Street Reconstruction - CIP 412-52	Collection / Local	2000	20 \$	170,000	106250	8500
30	51	73	1		SSG Sub. 1-5 Costco, Home Depot, Areas	Collection / Local	2000	80 \$	2,439,000		
30	51	73	1		Bellview sub. - Madsen/Hueman	Collection / Local	2000	80 \$	852,500		
30	51	73	1		Montana Creek Phase II sewer construction	Collection / Local	2001	80 \$	-		
30	51	73	1	015433	N. Behrends Ave/Highland Area CIP 412-54	Collection / Local	2001	30 \$	72,252	27696.6	2408.4
30	51	73	1	015522	Sewer Extensions FY01	Collection / Local	2001	30 \$	18,520	7099.3	617.33
30	51	73	1		Montana Creek III sewer construction	Collection / Local	2002	80 \$	-		
30	51	73	1	015540	Manhole and sewer line refurb.	Collection / Local	2002	10 \$	23,650	23650	1182.5
30	51	73	1	015584	Sewer extensions FY02	Collection / Local	2002	30 \$	25,292	8852.13	843.06
30	51	73	1		Montana Creek Phase IV sewer construction	Collection / Local	2003	80 \$	-		
30	51	73	1	015681	Salmon Creek Lane manhole repair and mtn	Collection / Local	2003	20 \$	11,290	5362.75	564.5

30	51	73	1	015683	Glacier/Willoughby reconstruction - CIP412-46	Collection / Local	2003	20	\$	588,219	279404.03	29410.95
30	51	73	1	015688	Sewer extensions FY03	Collection / Local	2003	30	\$	29,910	9471.6	997.01
30	51	73	1	15435A	Marine Park Traffic Circle Design - CIP374-69	Collection / Local	2004	40	\$	117,800	25032.5	2945
30	51	73	1	13778A	Gasintea Ave Reconstruction - CIP412-71	Collection / Local	2004	40	\$	20,010	4252.04	500.24
30	51	73	1	013525	Sewer extensions FY04	Collection / Local	2004	30	\$	28,435	8056.73	947.85
30	51	73	1	015760	Sewer extensions FY05	Collection / Local	2005	30	\$	25,245	6311.18	841.49
30	51	73	1	015835	Sewer extensions FY06	Collection / Local	2006	30	\$	31,650	6857.44	1054.99
30	51	73	1	015841	Cessna Drive Reconstruction-CIP484-54	Collection / Local	2006	20	\$	216,534	70373.62	10826.71
30	51	73	1	015842	Decoy Blvd Reconstruction-CIP422-03	Collection / Local	2006	20	\$	16,477	5355.03	823.85
30	51	73	1	015885	Sewer extensions FY07	Collection / Local	2007	30	\$	36,373	6668.37	1212.43
30	51	73	1	015923	Sewer extensions FY08	Collection / Local	2008	30	\$	42,669	6400.31	1422.29
30	51	73	1	015964	Goldbelt Ave Reconstruction - CIP412-98	Collection / Local	2008	40	\$	107,786	12125.93	2694.65
30	51	73	1	015965	Seward/2nd St Reconstruction - CIP412-99	Collection / Local	2008	40	\$	227,013	25538.99	5675.33
30	51	73	1		Concrete Way - Bob Scott/Trucano	Collection / Local	2008	80	\$	217,500		
30	51	73	1	16008A	Casey Shattuck Sub Ph I - CIP422-18	Collection / Local	2009	40	\$	333,677	29196.76	8341.93
30	51	73	1	16009A	4th St Douglas SwrMainRplcmnt - CIP484-78	Collection / Local	2009	40	\$	213,475	18679.08	5336.88
30	51	73	1	016013	Totem Park sewer replcmnt - CIP484-81	Collection / Local	2009	40	\$	936,416	81936.4	23410.4
30	51	73	1	016048	Sewer extensions FY09	Collection / Local	2009	30	\$	59,915	6990.1	1997.17
30	51	73	1		West Mendenhall Phase I CIP 484-84	Collection / Local	2009	80	\$	1,632,000		
30	51	73	1		Hamilton sub. - Harris	Collection / Local	2009	80	\$	101,250		
30	51	73	1		North Douglas Sewer Phase II CIP 484-86	Collection / Local	2009	80	\$	1,500,000		
30	51	73	1	016125	Sewer extensions FY10	Collection / Local	2010	30	\$	67,932	5661	2264.4
30	51	73	1	016129	Riverside Drive improv - CIP422-02	Collection / Local	2010	20	\$	55,000	6875	2750
30	51	73	1	016130	Valley Blvd Reconstruction - CIP422-19	Collection / Local	2010	20	\$	10,000	1250	500
30	51	73	1		Montana Creek West Phase I sewer construction	Collection / Local	2010	80	\$	433,500		
30	51	73	1		West Mendenhall Phase II CIP 484-84	Collection / Local	2010	80	\$	1,000,000		
30	51	73	1		All Season sub. - Corrigan	Collection / Local	2010	80	\$	272,000		
30	51	73	1		Steelhead sub. - Low Pete	Collection / Local	2010	80	\$	193,750		
30	51	73	1		West Mendenhall Phase III Pederson Hill CIP 484-91	Collection / Local	2011	80	\$	1,340,000		
30	51	73	1	016169	Sewer extensions FY11	Collection / Local	2011	30	\$	89,508	4475.39	2983.59
30	51	73	1	16167A	Dwtn Side Streets Recon 2,3,4 Str - CIP R72-16	Collection / Local	2011	40	\$	302,968	11361.3	7574.2
30	51	73	1	018866	Sewer extensions FY12	Collection / Local	2012	30	\$	95,877	1597.95	1597.95
30	51	73	1		North Douglas Sewer Phase V CIP 484-86	Collection / Local	2012	80	\$	1,587,416		
30	51	73	1		Glacier Village sub. - Grant	Collection / Local	2003	80	\$	600,500		
30	51	73	1		Vista Del Sol - Duran	Collection / Local	2013	80				
30	51	73	1		Erin Manor II - Grant	Collection / Local	2013	80	\$	-		
30	51	73	1		Erin Manor III - Grant	Collection / Local	2014	80	\$	-		
30	51	73	1		Auke Ridge Way - R/S Const.	Collection / Local	2014	80	\$	177,750		
30	51	73	1		Montana Creek West Phase 2A sewer construction	Collection / Local	2014	80	\$	140,000		
20	51	73	1	011532	Auke Bay Sewer System	Collection / Local	1976	40	\$	1,008,000	\$ 919,800.00	\$ 25,200.00
30	51	73	1	011500	Aurora Basin Sw & Wa Improvements	Collection / Local	1981	30	\$	53,567	23714.85	832.1
11	51	73	1	014190	West Mendenhall Valley Sewer Study-CIP484-42	Collection / Local	1993	20	\$	31,871	31074.23	1593.55
30	51	73	1		Auke Lake Sewer CIP U76-006	Collection / Local / Force Mains	2014	50	\$	300,000		
30	51	73	2	015757	North Douglas Sewer - CIP484-60	Collection / Local / Lift Station	2005	30	\$	3,754,326	938581.43	125144.19
30	51	73	1	011508	Lemon Creek Sewer Access	Collection / Raw Property	1980	30	\$	63,088	18955.43	0
20	51	73	1	014258	MWWTP Jet Truck - Garage	Collection / Real Property	1995	20	\$	80,800		
30	51	73	1	018873	Hot tar roof system to Collections bldg	Collection / Real Property	2012	20	\$	12,993	324.83	324.83
30	51	73	1	011494	West Valley Sewer Interceptor Preliminary Dgn	Collection / Trunk	1986	20	\$	51,106	12750	500
30	51	73	1	015137	Recon of manhole Egan Dr(Mar Pk & muni bldg)	Collection / Trunk	1998	40	\$	8,200	2972.5	205
30	51	73	1	015521	MVWWTP By-pass pipe project	Collection / Trunk	2001	50	\$	63,718	14655.26	1274.37
30	51	73	1	015759	S Franklin Swr Force Main Upgrd - CIP484-66	Collection / Trunk	2005	20	\$	2,066,508	774940.58	103325.41
10	51	73	2	011601	Pump Station (Foss) Property-So. Franklin	Collection Lift Station Raw Property	1974	0	\$	2,138	0	0
10	51	73	2	011603	Sewer Pump Station/Twin Lakes Property	Collection Lift Station Raw Property	1974	0	\$	9,600	0	0
20	51	73	2	011497	Collections Lemon Creek WW Trmnt Plnt Exp & Interc	Collection Lift Station(s) / Trunk / Local	1981	40				

20	51	73	2	011497	Collections Lemon Creek WW Trmnt Plnt Exp & Interc	Collection Lift Station(s) / Trunk / Local	1981	40	\$	4,349,010	3424845.38	108725.25
20	51	73	2		Maier Drive Lift Station & Force Main CIP 484-84	Collection/Lift Station/Force Main/Local	2007	50	\$	558,000		
30	51	73	2	015757	North Douglas Sewer Phase I -includes BB/FC lift sta's CIP484-6	Collection/Local/Lift Station/Force Main	2001	70	\$	2,254,210		
30	51	73	2		North Douglas Sewer CIP Phase III 484-86 Tower lift station, etc.	Collection/Local/Lift Station/Force Main	2009	70	\$	1,204,452		
30	51	73	2		North Douglas Sewer CIP Phase IV 484-86 Eagle lift station, etc.	Collection/Local/Lift Station/Force Main	2010	70	\$	1,781,598		
20	51	73	4	15372B	Lemon Creek street maint warehouse - CIP 374-39	Hazardous Waste / Real Property	2000	30	\$	65,000	28681.95	3824.26
40	51	73	3	012745	Consolidated Sterilizer Model L6	Surplused	1989	10	\$	6,200	\$	-
40	51	73	1		Unit 425 1999 Chevy 1 Ton 4WD \$ 28367.23	Surplused	1999	10	\$	-		
40	51	73	1		Unit 466 1999 Chevy 3/4 Ton 4WD \$ 35,500	Surplused	1999	10	\$	-		
30	51	73	3	015487	Raised MTC Covers CIP 484-44	Treatment	2001	20	\$	16,995	9772.13	849.75
11	51	73	3		CBJ Sludge Treatment and Disposal Facility Plan	Treatment	1989	20	\$	50,000		
11	51	73	3	014016	Sludge Disposal Closure Plan	Treatment	1992	20	\$	4,060	\$	4,060.10 \$
11	51	73	3	014196	Mendenhall Roof & Wall plans & specs	Treatment	1993	20	\$	5,035	\$	4,909.13 \$
11	51	73	3		JDTP CSO & Facility Plan -CDI Engineering RFP#E03-344	Treatment	2005	5	\$	62,500		
11	51	73	3		MWWTP Facility Plan	Treatment	2006	5	\$	-		
			3		JDTP Clarifier Mechanism Replacement DESIGN RFP E06-007	Treatment	2006	20	\$	22,744		
11	51	73	3		JD WWTP Incinerator Condition Report- Infilco	Treatment	2008	5	\$	7,500		
11	51	73	3		JD WWTP Incinerator Condition Report- IFCO RFP E09-231	Treatment	2009	5	\$	12,300		
11	51	73	3		MWWTP Process Review RFP E09-166	Treatment	2009	5	\$	13,180		
11	51	73	3		CBJ FOG's and Facilities Study Tetrattech	Treatment	2012	5	\$	150,000		
11	51	73	3		JDTP S.W. Permit Renewal & Ash pond Closure Plan E13-115	Treatment	2012	5	\$	-		
11	51	73	3		CBJ Biosolids Management System Alternatives Study	Treatment	2012	5	\$	-		
11	51	73	3		JDWWTP Design Services fro Incinerator Rehab MR E09-171	Treatment	2010		\$	24,900		
20	51	73	3	011488	MWWTP Storage Building	Treatment	1984	30	\$	26,604	\$	25,274.09 \$
20	51	73	3	011493	Juneau-Douglas Wastewater Treatment Plant Rpr	Treatment	1986	30	\$	21,584	\$	19,065.96 \$
20	51	73	3	011496	Auke Bay Treatment Plant Rehabilitation	Treatment	1986	30	\$	51,986	\$	45,920.79 \$
20	51	73	3	011973	New Doors Where??	Treatment	1987	10	\$	8,441	\$	8,441.00 \$
20	51	73	3	012556	J-D Treatment Plant Repairs	Treatment	1988	30	\$	160,234	\$	130,857.69 \$
20	51	73	3	014259	MWWTP Wall repair and siding improvements	Treatment	1995	20	\$	70,251	\$	61,469.98 \$
20	51	73	3	014485	JD WTP thickening incinerator - CIP#484-41	Treatment	1997	25	\$	9,020,861	\$	5,592,933.98 \$
20	51	73	3	014486	MWWTP - CIP#483-51	Treatment	1997	35	\$	22,687,216	\$	10,047,195.64 \$
20	51	73	3	014671	MWWTP Metal siding - CIP484-55 RFP E97-275	Treatment	1999	20	\$	244,937	\$	165,332.21 \$
30	51	73	3	013144	Structural Wall Repair J/D Aeration Basin	Treatment	1990	7	\$	315,606	\$	315,605.75 \$
30	51	73	3	013145	J/D Outfall Line Repair	Treatment	1990	20	\$	535,583	\$	535,583.29 \$
30	51	73	3	013159	Leasehold Improvement Creating Sludge Pit	Treatment	1990	5	\$	25,311	\$	25,311.32 \$
30	51	73	3	014017	Fence Improvement @ J/D Plant	Treatment	1992	5	\$	6,725	\$	6,725.00 \$
30	51	73	3	014193	JDTP New Metal Roof and Supports on Control Bldg	Treatment	1993	30	\$	99,899	\$	64,934.42 \$
30	51	73	3	015026	Paving near Auke Bay Treatment Plant	Treatment	1994	20	\$	4,935	\$	4,564.88 \$
30	51	73	3	015487	Raised MTC Covers CIP 484-44	Treatment	2001	20	\$	16,995	\$	9,772.13 \$
30	51	73	3	015538	Mendenhall plant fencing	Treatment	2002	15	\$	7,884	\$	5,518.49 \$
30	51	73	3	015585	1997 Incinerator repair - CIP484-59	Treatment	2002	15	\$	102,361	\$	71,652.42 \$
30	51	73	3	015586	Auke Bay sewer treatment extension - CIP484-53	Treatment	2002	30	\$	1,043,223	\$	365,128.16 \$
30	51	73	3	015758	J-D Treatment Plant improv - CIP484-62 RFP E99-166	Treatment	2003	20	\$	1,718,182	\$	816,136.64 \$
30	51	73	3		JDTP Inc Heat Exchanger Replacement RFP 04-102	Treatment	2003	7	\$	253,115		
20	51	73	3	013524	JD Plant Incinerator roof - CIPU484-64	Treatment	2004	20	\$	215,087	\$	91,411.89 \$
30	51	73	3	013526	Air cooling line to Thickened Sludge tank	Treatment	2004	10	\$	28,705	\$	24,399.59 \$
30	51	73	3		JDTP Headworks Improvements Project RFP E09-174	Treatment	2006	10	\$	203,000		
30			3		JDTP Clarifier Mechanism Replacement RFP E06-152	Treatment	2007	20	\$	592,218		
30	51	73	3		JDTP Areation Basin & Digester Structural Repairs	Treatment	2008	15	\$	20,000		
30	51	73	3		CBJ Wastewater Treatment Plant Safety Improvements MR-E09-	Treatment	2010	20	\$	21,200		
30	51	73	3		JDTP Design,Install, Program SCADA & Autodialer Upgrade	Treatment	2011	10	\$	27,559		

30	51	73	3		JDTP Incinerator Building Drive Through RFPE13-022	Treatment	2012	30	\$	172,523				
30	51	73	3		JDTP Areation & Digester Basin Grit Removal E12-181	Treatment	2012	5	\$	-				
40	51	73	3		Unit 108 1989 CASE Skid Steer with Forks, bucket and back att.	Treatment	1989	15	\$	45,000				
40	51	73	3	012754	Boiler & Installation	Treatment	1989	10	\$	17,923	\$	17,923.00	\$	-
40	51	73	3	013152	Snail Belt & Appurtenances	Treatment	1990	2	\$	6,500	\$	6,500.00	\$	-
40	51	73	3	014191	Rebuild Grit Conveyor @ JD Plant	Treatment	1993	3	\$	7,374	\$	7,373.64	\$	-
40	51	73	3	014199	MWTP D-125 Backhoe atachment for Case Skid Loader	Treatment	1993	10	\$	9,720	\$	9,720.00	\$	-
40	51	73	3	014192	JDWWTP Return Pumps and VFDs	Treatment	1993	10	\$	84,279	\$	84,278.79	\$	-
40	51	73	3	014481	JD Plant incintor platform&hot gas exhaust	Treatment	1997	20	\$	8,000	\$	6,200.00	\$	400.00
40	51	73	3	014675	Yeomans submersible pump - backup	Treatment	1999	15	\$	3,109	\$	2,798.01	\$	207.26
40	51	73	3	014677	Centrifuge polymer system	Treatment	1999	12	\$	9,450	\$	9,450.00	\$	-
40	51	73	3		Unit 104 1983 Caterpillar Electril Powered Fork Lift - USED	Treatment	1999							
40	51	73	3	014678	MWWTP Balderson pallet forks (1 set) 48in.	Treatment	1999	10	\$	3,300	\$	3,300.00	\$	-
40	51	73	3	014683	Unit 910 1996 VOLVO GM Autocar Truck w/sldgbox CIP484-43	Treatment	1999	10	\$	123,997	\$	123,997.00	\$	-
40	51	73	3	14683A	Mend Press bldg improv and BFP install -CIP484-43	Treatment	1999	25	\$	830,663	\$	448,558.02	\$	33,226.52
40	51	73	3		Unit 435 2000 Ford Ranger Extra-Cab 4X4	Treatment	1999	10	\$	18,900				
40	51	73	3	015390	MWWTP Ingersoll Rand air compressor elect 1 of 2	Treatment	2000	10	\$	3,738	\$	3,737.65	\$	-
40	51	73	3	015391	MWWTP Ingersoll Rand air compressor ele 2 of 2	Treatment	2000	10	\$	3,738	\$	3,737.65	\$	-
40	51	73	3		MWWTP Grinder Installation IFB No. E00-412	Treatment	2000	10	\$	7,200				
40	51	73	3		Unit 105 2001 Mitsubishi propane powered fork lift	Treatment	2001	15	\$	25,000				
40	51	73	3	015457	Northstar CICS Autodialer syst-Auke Bay	Treatment	2001	10	\$	14,834	\$	14,833.97	\$	-
40	51	73	3	015541	MWWTP Cutting cartridge-muffin monster grinder	Treatment	2002	10	\$	9,736	\$	9,736.00	\$	486.80
40	51	73	3		Unit 427 2002 Chevrolet S-10 Extended Cab	Treatment	2002		\$	20,058				
40	51	73	3	015679	MWWTP 12in Submersible pump 50 horsepower	Treatment	2003	15	\$	20,600	\$	13,046.64	\$	1,373.33
40	51	73	3	015686	MWWTP Flowserve vertical turbine pump 1	Treatment	2003	10	\$	8,919	\$	8,473.05	\$	891.90
40	51	73	3	015687	MWWTP Flowserve vertical turbine pump 1	Treatment	2003	10	\$	8,919	\$	8,473.05	\$	891.90
40	51	73	3		Unit 535 2003 Dodge 3500	Treatment	2003	10	\$	35,000				
40	51	73	3		Unit 529 2004 Meyers C-8.5 Blade Plow Package	Treatment	2004	10	\$	4,118				
40	51	73	3		Unit 529 2004 Dodge 3500 1 ton 4WD	Treatment	2004	10	\$	22,915				
40	51	73	3	015840	MWWTP-ChlorineGasReplc Difuser UV Light-CIP484-65	Treatment	2004	20	\$	1,294,553	\$	550,184.94	\$	64,727.64
40	51	73	3		Unit 529B 2005 Hiway MP8 Propac Stainless Steel Sander	Treatment	2005	10	\$	5,826				
40	51	73	3	015761	Portable doppler flowmeter Model SX30-1-016A	Treatment	2005	10	\$	5,388	\$	4,041.23	\$	538.83
40	51	73	3	015765	JDTP Refrigtrd composite peristaltic type sampler	Treatment	2005	10	\$	5,150				
40	51	73	3	015766	JDTP Refrigtrd composite peristaltic type sampler	Treatment	2005	10	\$	5,150				
40	51	73	3	015767	MWWTP Refrigtrd composite peristaltic type sampler	Treatment	2005	10	\$	5,150				
40	51	73	3		Unit 311 2006 Bobcat V518 cab VersaHandler	Treatment	2006	10	\$	62,117				
40	51	73	3	015836	Rebuild putzmeister pump	Treatment	2006	10	\$	8,780	\$	5,707.33	\$	878.05
40	51	73	3	015919	Magnum spill buster system	Treatment	2008	5	\$	6,278	\$	5,650.20	\$	1,255.60
40	51	73	3		Unit 909 International 15 yd Stellar Container Dump Truck - USED	Treatment	2007		\$	-				
40	51	73	3	015980	MWWTP-COmnrtr/blwr,decantrs,grs removal-CIP484-63	Treatment	2008	20	\$	1,562,308	\$	351,519.35	\$	78,115.41
40	51	73	3	015981	MWWTP-Belt Filter Press improv- CIP484-83	Treatment	2008	20	\$	292,609	\$	65,837.07	\$	14,630.46
40	51	73	3		Unit 925 2007 International Sludge Tanker Truck - USED	Treatment	2009		\$	91,878				
40	51	73	3	016000	Fuel oil system	Treatment	2009	20	\$	71,977	\$	12,596.05	\$	3,598.87
40	51	73	3	016003	25HP Pump and motor	Treatment	2009	10	\$	11,714	\$	4,099.90	\$	1,171.40
40	51	73	3	016005	Magnum spill buster system	Treatment	2009	5	\$	6,282	\$	4,397.40	\$	1,256.40
40	51	73	3	016132	MWWTP Cutting cartridge-muffin monster grinder	Treatment	2010	10	\$	26,002	\$	6,500.50	\$	2,600.20
40	51	73	3	016133	Flir i60 infrared camera	Treatment	2010	10	\$	7,260	\$	1,815.00	\$	726.00
40	51	73	3	016171	Marlow pump	Treatment	2011	10	\$	8,295	\$	1,244.19	\$	829.46
40	51	73	3	016172	Marlow pump	Treatment	2011	10	\$	8,295	\$	1,244.19	\$	829.46
40	51	73	3		Unit 469 2011 Ford F-250 3/4 ton Pick-up 4WD	Treatment	2011	10	\$	28,995				
40	51	73	3		Unit 419 2011 Ford Ranger Extra-Cab 4X4	Treatment	2011		\$	22,449				
40	51	73	3		Unit 468 2011 Ford F250 w/ Boss V-Blade Plow	Treatment	2011		\$	29,033				
40	51	73	3		Unit 475 2011 Ford F350 w Boss V-Blade Plow	Treatment	2011		\$	32,210				
40	51	73	3	018871	Seepex poly pump	Treatment	2012	15	\$	6,963	\$	232.11	\$	232.11
40	51	73	3	018872	Piped two tanks together	Treatment	2012	10	\$	25,942	\$	1,297.08	\$	1,297.08
30	51	73	3	015145	1997 Sewer extensions	Treatment	1997	20	\$	6,683	\$	5,179.33	\$	334.15
30	51	73	3	015146	1998 Sewer extensions	Treatment	1998	20	\$	16,080	\$	11,658.29	\$	804.02
30	51	73	3	014685	1999 Sewer extensions	Treatment	1999	20	\$	23,226	\$	15,677.28	\$	1,161.28
30	51	73	3	015421	2000 Sewer Extensions	Treatment	2000	30	\$	20,527	\$	8,553.00	\$	684.24
30	51	73	3	015522	Sewer Extensions FY01	Treatment	2001	30	\$	18,520	\$	7,099.30	\$	617.33
30	51	73	3	015584	Sewer extensions FY02	Treatment	2002	30	\$	25,292	\$	8,852.13	\$	843.06
30	51	73	3	015688	Sewer extensions FY03	Treatment	2003	30	\$	29,910	\$	9,471.60	\$	997.01
30	51	73	3	013525	Sewer extensions FY04	Treatment	2004	30	\$	28,435	\$	8,056.73	\$	947.85
30	51	73	3	015760	Sewer extensions FY05	Treatment	2005	30	\$	25,245	\$	6,311.18	\$	841.49

30	51	73	3	015835	Sewer extensions FY06	Treatment	2006	30	\$	31,650	\$	6,857.44	\$	1,054.99
30	51	73	3	015885	Sewer extensions FY07	Treatment	2007	30	\$	36,373	\$	6,668.37	\$	1,212.43
30	51	73	3	015923	Sewer extensions FY08	Treatment	2008	30	\$	42,669	\$	6,400.31	\$	1,422.29
30	51	73	3	016048	Sewer extensions FY09	Treatment	2009	30	\$	59,915	\$	6,990.10	\$	1,997.17
30	51	73	3	016125	Sewer extensions FY10	Treatment	2010	30	\$	67,932	\$	5,661.00	\$	2,264.40
30	51	73	3	016169	Sewer extensions FY11	Treatment	2011	30	\$	89,508	\$	4,475.39	\$	2,983.59
30	51	73	3	018866	Sewer extensions FY12	Treatment	2012	30	\$	95,877	\$	1,597.95	\$	1,597.95
20	51		3	11500	Lemon Creek WW Trtmnt Plnt Exp & Intercept/ Collections	Treatment / Collection Trunk	1981	40						
20	51	73	3	011511	J-D Wastewater Treatment & Interceptor System	Treatment / Collection Trunk	1977	40	\$	7,823,000	\$	6,942,912.50	\$	195,575.00
30	51	73	3	011498	Lemon Creek WW Trtmnt Plnt Exp & Interce/Coll	Treatment / Collection Trunk	1981	40	\$	3,300,000	\$	2,598,750.00	\$	82,500.00
10	51	73	3	011602	J-D Treatment Plant Property	Treatment Raw Property	1968	0	\$	620,261	\$	-	\$	-
10	51	73	3	011604	Auke Bay Treatment Plant Property	Treatment Raw Property	1969	0	\$	1,451	\$	-	\$	-
10	51	73	3	011607	Mendenhall Valley Sewage Treatment Plant Property	Treatment Raw Property	1971	0	\$	61,942	\$	-	\$	-
40	51	73	3	012436	WEIL BOILER-Mendenhall Treatmt plant	TreatmentEquipment	1988	10	\$	14,933	\$	14,933.02	\$	-
30	51	73	3	014018	Leasehold Improvement creating addtl cells	Treatment-Thane Landfill	1992	5	\$	70,573	\$	70,573.41	\$	-
30	51	73	3	014195	Leasehold Improvement creating addtl cells	Treatment-Thane Landfill	1993	5	\$	55,980	\$	55,980.07	\$	-
10	51	73	5	012768	Land for Lemon Creek Shop	water	1989	0	\$	155,171	\$	-	\$	-
30	51	73	5	012711	Paved Parking Area @ Lemon Creek Shop	Water / Property	1989	20	\$	13,647		201898.13		8973.25
30	51	73	5	012769	Improvements to Lemon Creek Shop	Water / Real Property	1989	20	\$	8,629		32250		1500
40	51	73	5	016004	Samsung SE210LC-03 excavator & two buckets	WW Dept- 3 way split	2008	10	\$	65,600		22960		6560
20	51		3	11511	J-D Wastewater Treatement Plant & Intersepter System		1977	40				6,942,912.00		195,575.00
	51	73	3		JDTP Inc CO monitor and MVWWTP Blower RFP E01-222		2002	15	\$	272,067				
	51	73	3		MWWTP Outfall Improvements RFP E02-115		2002	20	\$	66,500				

SIX-YEAR DEPARTMENT IMPROVEMENT PLANS									
Division	Project	Priority	FY15	FY16	FY17	FY18	FY19	FY20	Future
Docks & Harbors									
Docks									
	Steamship Wharf Cathodic Protection	1	\$ 300,000						
	Auke Bay Passenger For Hire Facility	2	\$ 800,000	\$ 4,600,000					
	Downtown Restrooms	3	\$ 500,000						
Docks Total:			\$ 1,600,000	\$ 4,600,000	\$ -	\$ -	\$ -	\$ -	\$ -
Harbors									
	Statter Harbor - Phase II (Launch Ramp)	1	\$ 200,000						
	Aurora Harbor Rebuild	2	\$ 11,000,000						
	Old Douglas Harbor Rebuild	3	\$ 3,000,000						
	Statter Harbor - Phase III (Boat Haul-Out)	4		\$ 450,000					
	Aurora Harbormaster Building and Shop	5							\$ 3,000,000
	Direct Market Fish Sales Facility	6							\$ 1,000,000
Harbors Total:			\$ 14,200,000	\$ 450,000	\$ -	\$ -	\$ -	\$ -	\$ 4,000,000
Docks & Harbors Total:			\$ 15,800,000	\$ 5,050,000	\$ -	\$ -	\$ -	\$ -	\$ 4,000,000
6 Year Improvement Totals:									
			\$ 15,800,000	\$ 5,050,000	\$ -	\$ -	\$ -	\$ -	\$ 4,000,000

**ASSEMBLY AGENDA/MANAGER'S REPORT
THE CITY AND BOROUGH OF JUNEAU, ALASKA**

Cell Tower Master Plan & Ordinance Review

ATTACHMENTS:

Description	Upload Date	Type
☐ Staff Memo re: Wireless Communications Planning	3/6/2014	Cover Memo
☐ Project Timeline re: Wireless Communications Planning	3/6/2014	Exhibit
☐ Wireless Communication Facility - DRAFT Master Plan	3/7/2014	Exhibit

MEMORANDUM

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

DATE: March 5, 2014

TO: Committee of the Whole

FROM: Hal H. Hart, Director ~~HHH~~
Community Development Dept.

RE: Case No.: Text Case: TXT2009-00007
Draft Wireless Telecommunication Ordinance + Master Plan

ATTACHMENTS

Attachment A Adoption Timeline

PROPOSAL

Due to a proliferation of new cell phone towers and relatively minimal development standards for regulating such infrastructure, the Assembly directed the Community Development Department (CDD) to develop 1) a Master Plan that provides a comprehensive outlook and policies of the wireless telecommunication development in Juneau, and 2) an Ordinance to regulate the placement, design, and permitting process of future towers/ antennas.

BACKGROUND

In 2008, a proposed (but never built) cell phone tower was approved by the Planning Commission, appealed to the Assembly by the public, and found to be compliant with applicable codes. This appeal was a sign that better understanding and greater control of cell tower/ antenna development was needed for Juneau.

In 2009, CDD started drafting a new cell tower/antenna ordinance by culling other community's ordinances for expertise. Over the next few years, CDD presented the draft ordinance to the Planning Commission for discussion and editing. The CBJ Attorney made substantial edits to make the draft ordinance easier to understand for the public and development industry.



In early 2012, the CBJ partnered with CityScape Consultants¹ to help finalize the draft ordinance, as well as create a new “Wireless Telecommunications Master Plan”. The purpose of the Plan is to provide a comprehensive understanding of the wireless telecommunication regulatory industry, establish policies, show existing/future service area maps, and inventory existing towers. By early 2013 continuing work by CDD on the draft Ordinance and Master Plan ceased due to the immediacy of adopting new flood maps. With these maps now in effect, CDD and CityScape have returned their focus to work on the two documents.

Draft Wireless Telecommunication Master Plan

The Wireless Telecommunication Master Plan consist of four chapters:

- 1) Implementing Policies,
- 2) History of the Wireless Telecommunication Industry,
- 3) Engineering Analysis & Service Area Maps, and
- 4) Inventory of Towers.

Chapter 1 lists the purpose and policies that aim to protect the public safety, preserve the environment, protect neighborhood harmony, etc. but also support the establishment of land use regulations. These regulations are provided in the draft wireless telecommunication ordinance titled “Personal Wireless Service Facility Development Standards”. Chapter 2 discusses how the cell phone technology and cell tower infrastructure have evolved over the years, changes in service signal engineering, and the generations of cell phone technology (i.e. 2G, 4G). Chapter 3 discusses the complex engineering of the cell/data service modeling. Theoretical service area maps are provided in this chapter and show how topography and frequency types affect service coverage. The last chapter lists the existing wireless telecommunication sites in the CBJ (towers/antenna). Only a few of these are used by national or local telecommunication companies, such as Verizon, GCI, etc. Other sites are used for radio (i.e. AM/ FM) purposes, and some are used for emergency or transportation purposes such as the Juneau Police Department and Juneau International Airport, respectively.

Timeline Adoption: Draft Master Plan & Ordinance (staff is currently making edits)

The Assembly has approved a timeline to adopt the draft Master Plan and associated Ordinance by May. 19, 2014. See attached timeline. This timeline layouts presentations for the policymakers and general public. The timeline calls for the Master Plan discussion of policy related issues to proceed first, followed by the discussion on the Ordinance and its implementation related issues second.

Special work meetings will take place to encourage collaborative discussion amongst the public and policymakers. CDD will provide public notice through various media, such as a new internet website, mailings, and local newspaper, as well as neighborhood meetings to increase public outreach in creating a new plan fitting for Juneau.

¹ According to CityScape’s website, they specialize in Wireless Master Plan and Ordinance services for governmental entities. More information can be obtained at their website: <http://www.cityscapegov.com/>

February 25, 2014 Planning Commission Director's Report

CDD presented the Draft Master Plan and adoption schedule during the Director's Report portion of the Regular Planning Commission hearing on Tuesday, February 25, 2014. The Commission provided some initial comments and requested a special COW meeting on Tuesday, March 11th for further discussion on the topic. Their initial comments during the Director's Report are grouped and shown below:

- Viewshed map and discussion
- Visual impacts and design
- Further discussion on camouflaging towers
- Tower inventory produced in a friendly and succinct way
- Identify remaining heights of towers (some show was unknown in Master Plan)
- Distinguish users and owners of a cell tower
- Do the 1996 FCC regulations still apply (referring to the Telecommunications Act of 1996)
- How are health issues addressed?
- How will industry input be incorporated?

2014 Wireless Telecommunication Facilities Adoption Timeline (Cell Towers/ Antennas)

Project Manager

Eric Feldt, Planner II, CFM

Ph: 586-0764

Email: Eric_Feldt@ci.juneau.ak.us

Project Supervisor

Travis Goddard, CDD Planning Manager

Ph: 586-0756

Email: Travis_Goddard@ci.juneau.ak.us

Date	Time	Body	Action
February 25th	7:00pm	Planning Commission	Introduction of Master Plan for discussion
March 10th	7:00pm	Assembly	Introduction of Master Plan for discussion
March 20th Assembly Chambers	6:00 to 8:30pm	Neighborhood Meeting	Public meeting to educate and receive input on the Master Plan and Ordinance
March 11th	6:00 to 7:00pm	PC (COW)	Master Plan discussion
March 25th	5:00 to 7:00pm	PC (COW)	Master Plan discussion & Ordinance Introduction
March 27th UAS Glacierview Room	6:00 to 8:30pm	Neighborhood Meeting	Public meeting to educate and receive input on the Ordinance and Master Plan
April 15th	7:00pm	PC Special Meeting	Action on Ordinance and Master Plan
April 28th	7:00pm	Assembly Hearing	Introduction of Ordinance and Master Plan
May 5th (SPECIAL)	6:00pm	Assembly COW	Continue discussion
May 19th	5:00pm	Assembly	Take action on Ordinance & Master Plan

Planning Commission (PC)

Assembly Meetings

Neighborhood Meetings

C i t y a n d B o r o u g h o f J u n e a u , A K

DRAFT Wireless Telecommunications Master Plan



March 7, 2014

Prepared for:

The City and Borough of Juneau
155 South Seward Street
Juneau, AK 99081

Prepared by:

CityScape Consultants, Inc.
7050 W Palmetto Park Rd #15-652
Boca Raton, Florida 33433
www.cityscapegov.com

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Chapter 1 Wireless Telecommunications Master Plan

Purpose

The Wireless Telecommunications Master Plan (WMP) serves as a planning tool for the City & Borough of Juneau (CBJ) that guides the future development of wireless telecommunication facilities. This plan provides a short history of wireless communication technology, explanation of current technology, service area maps, and an inventory of telecommunication sites in the borough. The WMP meets the goals and objectives of the 2013 CBJ Comprehensive Plan. Specific land use permitting requirements for wireless communication facilities are provided in the CBJ Land Use Code, Title 49. These permitting requirements are consistent with the policies provided in the WMP.

Background

Wireless communication technology has been rapidly evolving during the past 20 years with the increase in cell phone and internet use and the advent of smart phones. Demand for data (internet) service coverage has grown tremendously due to the popularity of smart phones. This high demand for data service has strained existing telecommunication facilities and resulted in a surge of new infrastructure, such as towers and antenna arrays.

Due to the remote location of Juneau and its regional and state importance, the use of wireless technologies is critical and heavily relied upon. In the past 10 years, Juneau has seen an increase in new towers and antenna arrays. Juneau experiences a summer seasonal spike in cellular and data usage from the more than one million cruise ship tourists who visit annually. Also, high marine use places another unique service demand: the need for cell and data service over waterways. Further, the mountainous terrain presents another challenge in service coverage.

Since 2005, the public has shown a growing concern in new towers, health effects from radio frequency emissions, and trends in wireless infrastructure. New towers have become most controversial in residential neighborhoods. The permitting process for new wireless infrastructure may be unclear and unpredictable for developers and general public. To better understand wireless technology and improve the permitting process, the CBJ and Cityscape Consultants, Inc. (CityScape) partnered to create the *Wireless Telecommunications Master Plan* and associated *Personal Wireless Service Facility Development Standards*.

The need for CBJ to manage the development of wireless telecommunication infrastructure is indicated by the following policies of the 2013 Comprehensive Plan:

POLICY 12.11. TO PLAN FOR AND TO ESTABLISH LAND USE CONTROLS ON WIRELESS COMMUNICATIONS FACILITIES IN A MANNER THAT IS APPROPRIATE FOR THE COMMUNITY AND WITHIN THE PARAMETERS ESTABLISHED BY FEDERAL LAW.

- 12.11 – SOP2 Avoid potential injury to persons and properties from tower failure and windstorm hazards through structural standards and setback requirements.
- 12.11 – DG1 Encourage developers and tenants of WCF to locate them, to the extent possible, in areas where the adverse impact on the community is minimal.
- 12.11 – DG2 Encourage the location and co-location of WCF on existing structures to minimize the need for additional structures.
- 12.11 – IA1 Conduct a planning process and adopt a CBJ *Wireless Master Plan*.
- 12.11 – IA2 Adopt new Specified Use Provisions in the Land Use Code that provide a uniform and comprehensive framework for evaluating proposals for WCF.
- 12.11 – IA3 Establish standards for location, structural integrity, and compatibility with surrounding neighborhoods to minimize the impacts of WCFs on surrounding land uses.
- 12.11 – IA4 Establish predictable and balanced codes governing the construction and location of WCF.
- 12.11 – IA5 Ensure that any new local regulation or restriction on WCFs responds to the policies embodied in federal law.
- 12.11 – IA6 Include provisions that encourage the use of locations identified in the CBJ *Wireless Master Plan* as preferred locations for wireless communications infrastructure in any ordinance that regulates WCFs.
- 12.11 – IA7 Use zoning restrictions to encourage concealment technologies for new wireless communication infrastructure to lessen adverse effects to surrounding neighborhoods.

The *Wireless Telecommunications Master Plan* and *Personal Wireless Service Facility Development Standards* help achieve conformance with those policies and consistency with the 2013 Comprehensive Plan.

Wireless Telecommunications Master Plan Policies

The policies and implementing actions shown below shall guide the development of Wireless Communication Facilities (WCF).

Public Health & Safety

Ensuring the safety and health of the public with the development of wireless communication facilities is critical. Many antenna array are placed on tall towers near buildings and roads. Having towers and antenna array meet local building codes will minimize tower failure during high wind and snow/ ice conditions. Further, antenna arrays send radio waves when distributing cell and data signal. This emits levels of electromagnetic frequencies that, if not controlled, can be harmful. The Federal Communication Commission (FCC) establishes a maximum emission level to preserve human health and safety. Also, with the construction of new and improved towers reaching above the treeline, it is important that the Federal Aviation Administration (FAA) and the Juneau International Airport (JIA) are notified to ensure aviation safety and compliance with aviation regulations.

POLICY 1. TO ENSURE THE PROTECTION OF THE HEALTH AND SAFETY OF THE PUBLIC WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

POLICY 2. TO PROTECT AVIATION SAFETY BY COORDINATING WITH FEDERAL AVIATION ADMINISTRATION (FAA) WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

Implementing Actions:

1. Require permits for all wireless communication facilities to ensure building and land use code compliance.
2. Adopt standards that establish a minimum setback distance that towers must be located away from adjacent property lines or buildings (i.e., fall zones).
3. Require compliance with minimum FCC radio frequency emission standards.
4. Adopt standards that allow for the development of wireless communication facilities in remote areas for emergency communication.

Natural Environment

Wireless communication facilities shall be located and designed in a way that avoids harming sensitive environments. Best Management Practices shall be used to lessen impacts. The placement of wireless communication facilities shall avoid highly sensitive wetlands, riparian vegetation, eagle nests, and other protected areas. Coordination with State and Federal agencies that manage sensitive environments shall be ensured with the development of wireless communication facilities.

POLICY 3. TO PROTECT THE NATURAL ENVIRONMENT WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

Implementing Actions:

1. Ensure that new wireless communication facilities are located away from, or built using BMPs to minimize impacts to, sensitive environments such as wetlands, anadromous streams, eagle nests, etc.
2. Coordinate with State and Federal jurisdictions when wireless communication facilities may impact sensitive environments.
3. Ensure that wireless communication facilities are located away from geophysical hazards, such as flood zones, or are built to withstand such forces.

Neighborhood Harmony

Property value and neighborhood harmony shall be preserved with the development of wireless communication facilities. The fabric and overall feel of residential neighborhoods shall be preserved with new and improved wireless communication facilities through the adoption of design standards. The permitting process shall include incentives to support preferred development methods. Having a clear permitting process for the public to follow and participate in will improve decision making. Encourage the development of camouflaging wireless communication facilities to reduce impacts to residential neighborhoods.

POLICY 4. TO PROTECT THE PUBLIC INTEREST, PROPERTY VALUE, AND NEIGHBORHOOD HARMONY WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

Implementing Action

- The CBJ shall adopt regulations that are predictable for the public to ensure fair and timely participation.
- The CBJ shall adopt regulations that require new wireless communication facilities in residential zones to be designed in a manner that minimizes impacts to residences.
- In residential neighborhoods, the CBJ shall seek experts in the industry for determining effects to property value from new wireless communications facilities, where necessary.
- The CBJ shall provide permitting incentives for new towers that encourage designs and locations that have minimal intrusions toward residential property.
- The CBJ shall encourage the use of public lands, buildings, and structures as locations for future wireless communications infrastructure to minimize impacts to private property.
- The CBJ shall adopt regulations that encourage wireless communication facilities to be designed to blend in with the surrounding environment.
- The CBJ shall encourage concealed technologies for new or rebuilt wireless communication facilities.

Land Use Efficiency

Due to the shortage of buildable land, especially residential, the CBJ shall encourage developers to utilize existing structures for future collocations or attachments of antenna array. This will reduce the need for new towers and increase the efficiency of land use. Existing towers shall be reinforced to allow for future collocations.

POLICY 5. PROMOTE LAND USE EFFICIENCY WITH THE COLLOCATION OF WIRELESS COMMUNICATION FACILITIES TO EXISTING STRUCTURES.

Implementing Action

- The CBJ shall incentivize the collocation of antenna arrays onto existing towers and structures to reduce the need for new towers.
- The CBJ shall establish incentives for reconstructing existing structures to accommodate future antenna arrays.

Scenic Corridors/ Viewsheds

Unique scenic corridors and viewshed in the borough have been mapped in the 2013 Comprehensive Plan. These areas capture the quintessential feeling of Juneau and Alaska and, therefore, shall be preserved.

POLICY 6. TO PRESERVE THE SCENIC VIEWSHEDS AND CORRIDORS LISTED IN THE 2013 COMPREHENSIVE PLAN WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

Implementing Action:

- Wireless communication infrastructure shall be located outside of, or blend in with existing vegetation, the mapped scenic viewsheds and corridors of the 2013 Comprehensive Plan.

Intergovernmental Coordination

Due to the various uses of wireless communication facilities, the CBJ shall coordinate with other State and Federal agencies, such as the FAA and FCC, for assuring safe locations and designs.

POLICY 7. TO COORDINATE WITH STATE AND FEDERAL GOVERNMENT ENTITIES WITH THE DEVELOPMENT OF WIRELESS COMMUNICATION FACILITIES.

Amendment and Updating

The Assembly shall update the Wireless Telecommunications Master Plan every ten years or more frequently depending on the growth of wireless communication infrastructure. This update shall include the re-modeling of the service coverage maps (as provided in Chapter 3 of the WMP) and constitute as a substantial change to the Master Plan.

Amending the WMP, or minor change, shall be done on an as-needed basis at the Director's discretion. An amendment shall not have the effect of changing any policies or substantially revise any service coverage maps within the Master Plan.

Chapter 2 The Telecommunications Industry

Introduction

Telecommunications is the transmission, emission and/or reception of radio signals, whether it is in the form of voice communications, digital images, sound bytes or other information, via wires and cables; or via space, through radio frequencies, satellites, microwaves, or other electromagnetic systems. Telecommunications includes the transmission of voice, video, data, broadband, wireless and satellite technologies and others.

Traditional landline telephone service utilizes an extensive network of copper interconnecting lines to transmit and receive a phone call between parties. Fiber optic and T-1 data lines increase the capabilities by delivering not only traditional telephone, but also high-speed internet and, in some situations cable television, and are capable of substantially more. This technology involves an extensive network of fiber optic lines situated either above or below ground locations.

Wireless telephony, also known as wireless communications, includes mobile phones, pagers, and two-way enhanced radio systems and relies on the combination of landlines, cable and an extensive network of elevated antennas most typically found on communication towers to transmit voice and data information. The evolution of this technology is known as first, second, third, fourth and fifth generation (1G through 5G) of wireless deployment.

Wireless handsets



1G 1984 Mobria Cell Phone
Image: J. Bundy

During the early 1980's, the first generation (1G) of 800 megahertz (MHz) band cellular systems was launched nationwide. The 1G portable cell phones were boxy in shape and operated much like an AM and FM radio station. The 800 MHz frequency allows the radio signal from the base station to travel between three and five miles depending on topography and line of site between the base stations. Customers using a cell phone knew when they traveled outside of the service area because a static sound on the phone similar to the sound of a weak AM or FM radio station was heard through the handset. The signal either faded or remained crackling until the subscriber was within range of a transmitting base station.

Originally, the 800 MHz band only supported an analog radio signal. Later technological advancements allowed 800 MHz systems to also support digital customers which allows for an increased number of subscriber transmissions per base station.

The 1990's marked the deployment of the 1900 MHz band Personal Communication Systems (PCS). This second generation (2G) of wireless technology primarily supported a digital signal, which audibly was clearer than the analog signal. The handsets were a fraction of the size of the 1G cell phones and the first handsets provided expanded services such as paging and the ability

to send text messaging through the handheld unit. However 2G had some network functionality trade-offs. The technology of 2G included a static free signal but with a higher rate of disconnects or dropped calls thus the deployment of 2G required significantly more base stations for several reasons. First, the propagation signal in 1900 MHz is limited to a 2-4 mile range so the number of required base stations almost tripled just to provide basic 2G coverage in the same geographic area as a 1G service area. Second, the industry was reluctant to share tower space with a competitor and many service providers resisted collocating on the same tower. Third, subscriber base and usage grew rapidly and the industry needed more sites to improve network coverage demands by their customers.



2G Motorola Phone
Image: amazon.com



2G Nokia Phone
Image: htcevoforum.net



2G Motorola Phone
Image: superstock.com

Third and fourth generation (3G and 4G) wireless handsets offer a wide variety of tools and services including access to e-mail, news, music and videos; built in cameras and videos; global positioning services (GPS); internet commerce; and thousands of applications from games to flashlights for downloading onto the handset. These applications require large amounts of bandwidth and service providers continue to upgrade existing base stations and add additional

base stations to improve and increase network capacity. To improve network functionality service providers purchased licenses to operate in the 1700-1800, and 2100-2400 MHz frequencies.



2G Phone (left)
4G Phone (right)
Image: answers.com

The operating footprint is similar to the 1900 MHz footprint and helped to increase bandwidth in smaller geographic areas. With the advances of 4G the service providers are purchasing licenses in the 700 MHz frequencies. The 700 MHz platform has a service area similar to 800 MHz and will allow the service providers to broadcast a larger propagation footprint. The need for additional infrastructure for 3G and 4G is significant nationwide and continuous deployment of new base stations will be necessary as the industry transitions to fifth and sixth generation (5G and 6G) utilizing the 700, 800, 1700-1900, and 2100-2400 MHz frequencies. LTE is used as a marketing name and is not reflective of the actual download speed as defined as 3G and 4G.

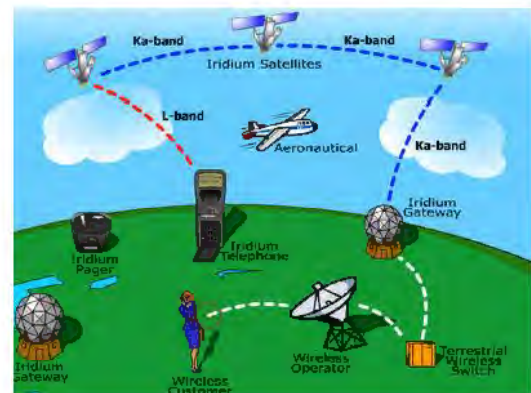
Unlike 1G and 2G (initial launch of cellular and PCS wireless service with the goal and objective of providing initial wireless coverage); 3G through 5G deployments will be focused on compressing more data in existing and future bandwidths. Fourth generation network technology (the platform for smartphones) emphasizes improving network capacity and

maximizing the use of bandwidth for faster and more efficient transfers of data. Fifth generation wireless will bring faster data transfers and additional wireless services such as using your phone for credit card transactions and other similar functions. Like all previous generations of wireless deployment, 5G will require more sites.

Satellite technologies

Satellite growth has surpassed the highest expectations of only a few years ago. The reason is simple - cost. Previously, relaying information, data, and other related materials were cumbersome and required many relay stations in very specific locations and relatively close together. Initially satellite use was expensive because of the rarity and limited amount of available airtime needed. Satellite airtime has become more affordable with the deployment of additional satellites and advanced technologies that allow more usage of the same amount of bandwidth. Competition always holds down cost, and that is what has occurred. In addition, satellite services are in the early stages of designing more localized networks; contributing to the already rapid growth.

Satellite technology has its limitations, which are all based on the Laws of Physics. Some licensees of satellite services such as SiriusXM Radio and satellite telephone services petitioned the Federal Communications Commission (FCC) and have been allowed additional deployment of land-based supplemental transmission relay stations for the ability to compete more aggressively with existing ground base services, and overcome obstacles typical to satellite technology. Subscribers found the delay in talk times unacceptable along with fade and signal dropout. The FCC is looking favorably upon this request, even though the existing land-based services are strongly objecting for various reasons. SiriusXM Radio was successful in obtaining ground base supplemental transmitters, and is rapidly becoming one of the largest users of ground base transmitters. This will place more demands on governmental agencies as another service begins to construct a land-based infrastructure.



Iridium Satellite Routing System

Image: wccp.com

Wireless facilities

Wireless communication facilities are comprised of four main apparatuses: 1) an electronic base station; 2) feed lines; 3) antenna or antenna array; and 4) an antenna support facility.

Base station and feed lines

Base stations are the wireless service provider's specific electronic equipment used to transmit and receive radio signals, and is usually mounted within a facility including, but not limited to: cabinets, shelters, pedestals or other similar enclosures generally used to contain electronic equipment for said purpose. Feed lines are the coaxial copper cables used as the interconnecting media between the transmission/receiving base station and the antenna. The base station and

feed lines shown in Figure 1 is a typical model for providers operating in the 1900 MHz frequencies and ground space for this equipment cabinet is around eight (8) square feet.



Figure 1: Example of 1900 MHz Wireless Infrastructure Ground Equipment

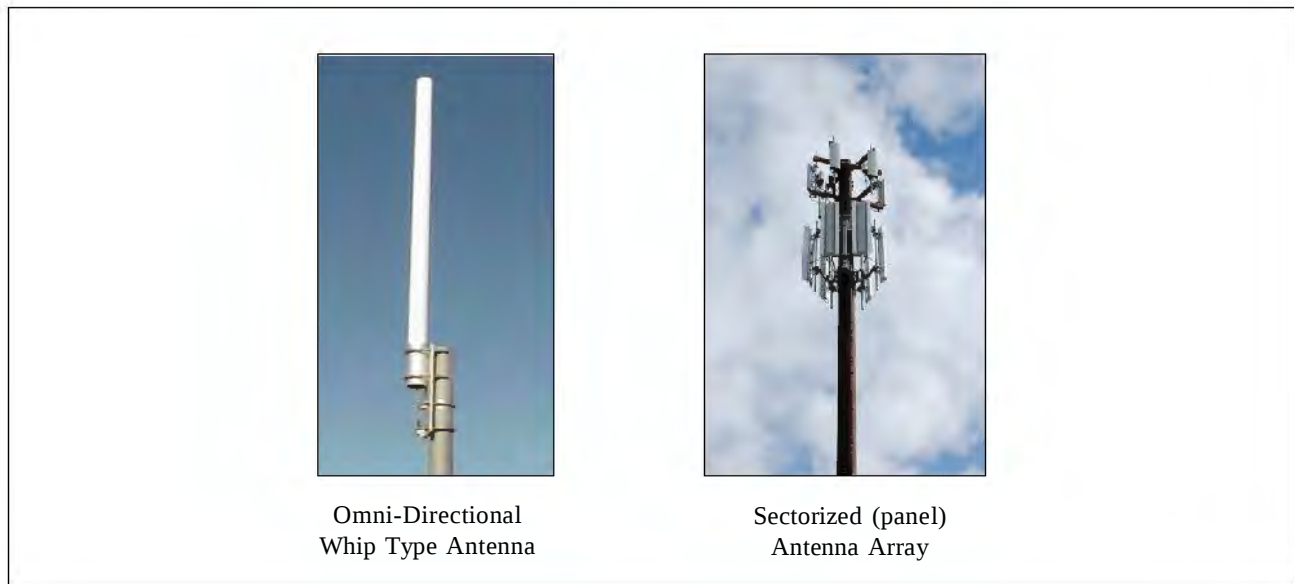
The electronics operating the 800 MHz wireless systems within the base station can generate substantial heat, therefore the base stations for providers operating in the 800 MHz frequencies are much larger and generally need an equipment cabinet a minimum of four hundred (400) square feet to house the equipment. The only noise that might be produced from the vicinity of any base station would be from an air conditioner or a backup generator that might be necessary in instances of no power or power failure. Figure 2 is a picture of an 800 MHz base station.



Figure 2: Example of 800 MHz Base Station

Antennas and antenna arrays for wireless telecommunications

Antennas can be a receiving and/or transmitting facility. Examples and purposes of antennas include: a single omni-directional (whip) antenna or grouped sectorized (also known as panel antennas). These antennas are used to transmit and/or receive two-way radio, Enhanced Specialized Mobile Radio (ESMR), cellular, Personal Communications Service (PCS), or Specialized Mobile Radio (SMR) signals. The single sectionalized or sectionalized panel antenna array is also used for transmitting and receiving cellular, PCS or ESMR wireless telecommunication signals.



Omni-Directional
Whip Type Antenna

Sectorized (panel)
Antenna Array

Figure 3: Examples of Directional and Panel Antennas

The antenna can also be concealed. Concealment techniques include: faux dormers; faux chimneys or elevator shafts encasing the antenna feed lines and/or equipment cabinet; and painted antenna and feed lines to match the color of a building or structure. A concealed attached facility is not readily identifiable as a wireless facility. Various examples of antennas attached to buildings and structures are shown in the following pictures.

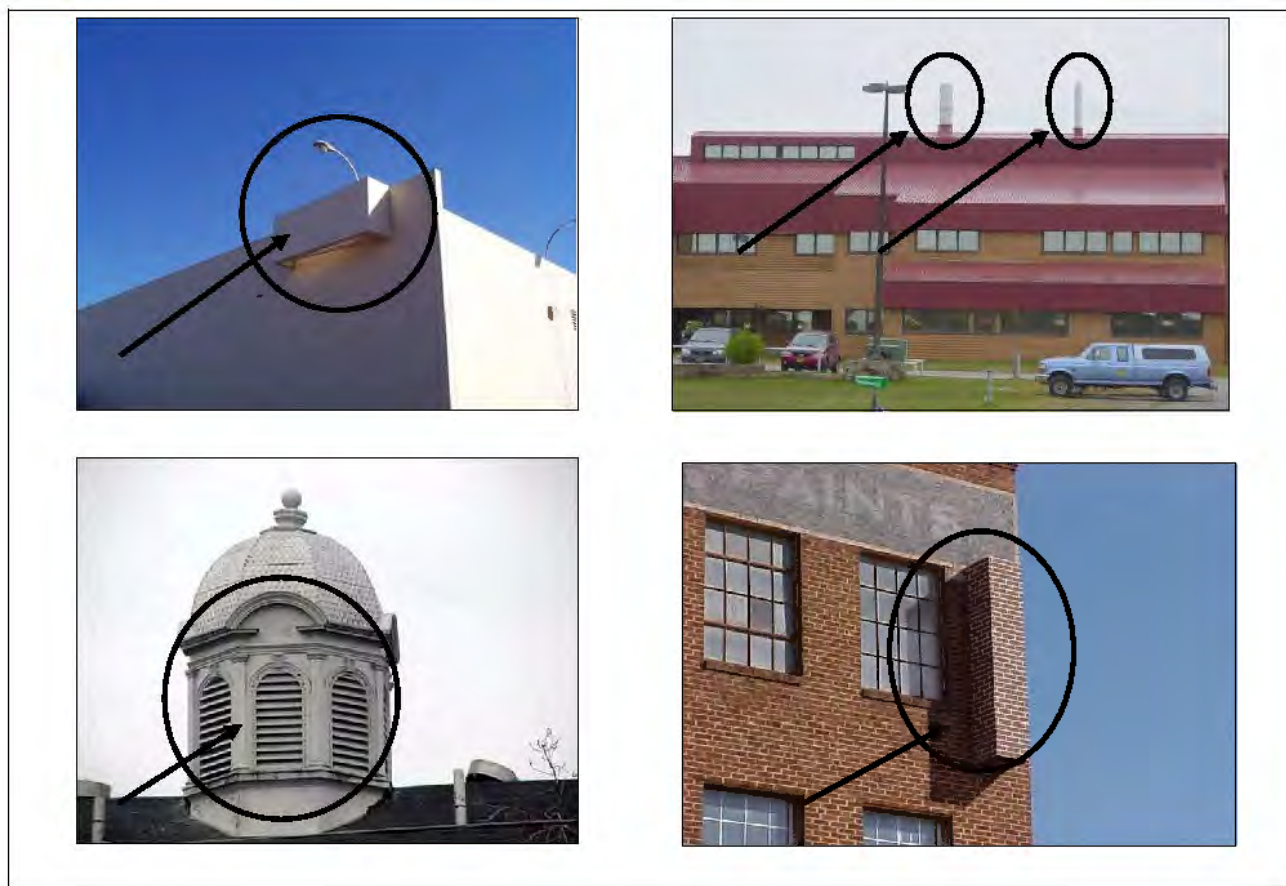


Figure 4: Examples of Concealment Techniques

Support facilities for the antenna

A variety of structures can be used for mounting the antenna(s) such as towers, buildings, water tanks, existing 911 tower facilities, tall signage and light poles; provided that, 1) the structure is structurally capable of supporting the antenna and the feed lines; and, 2) there is sufficient ground space to accommodate the base station and accessory equipment used in operating the network. Antenna support structures can also be concealed in some circumstances to visually blend-in with the surrounding area.

Figure 5 on the following page provides examples of several antenna support structures. The flagpole and light standard are concealed towers. The antennas are flush-mounted onto a monopole and a fiberglass cylinder is fitted over the antenna concealing them from view. The bell tower is a concealed lattice tower. The antennas are hidden above the bells and behind the artwork at the top of the structure.

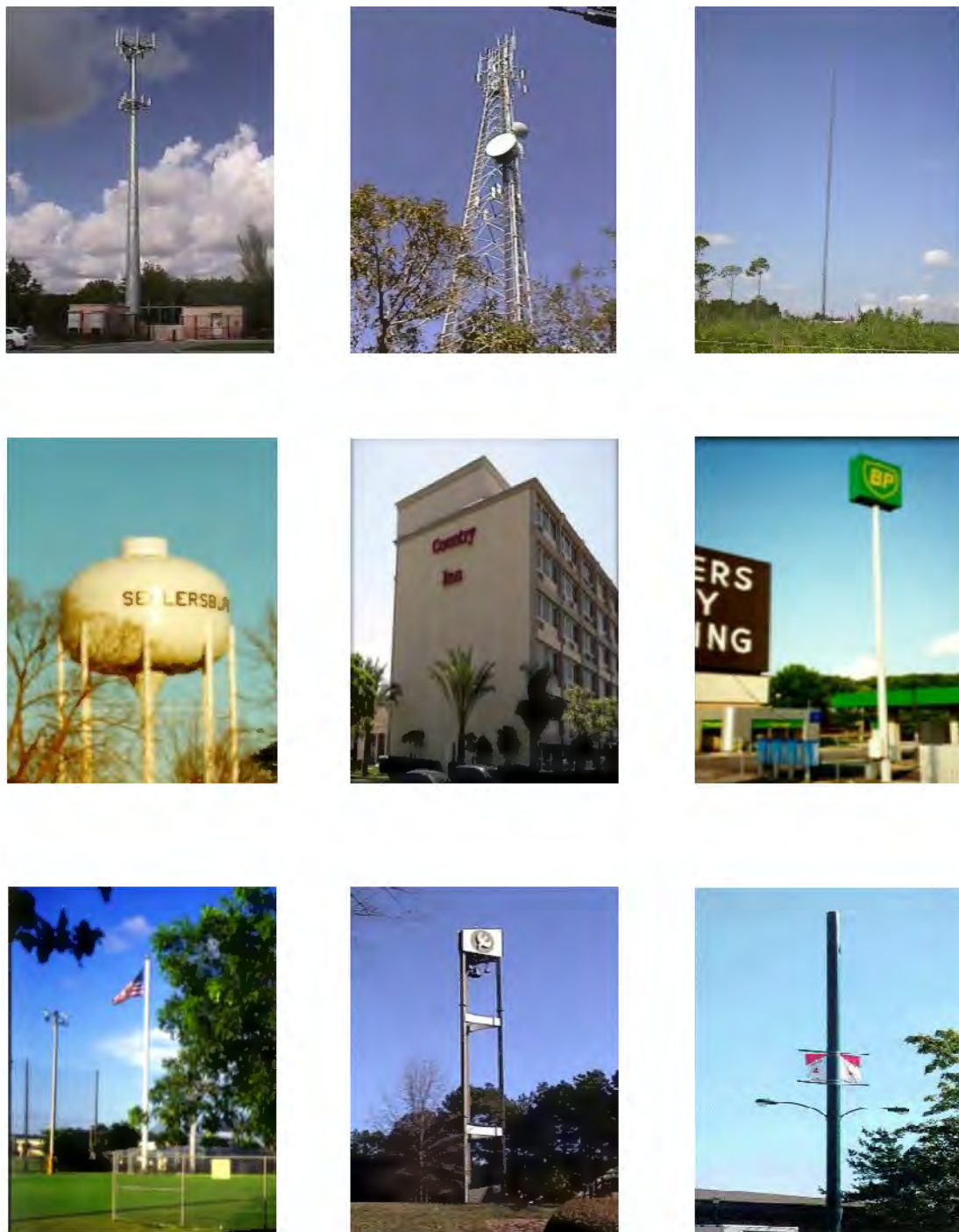
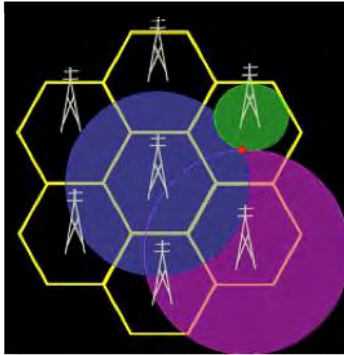


Figure 5: Examples of Antenna Support Facilities

Wireless infrastructure

To design the wireless networks, radio frequency (RF) engineers overlay hexagonal cells representing circles on a map creating a grid system. These hexagons represent an area equal to the proposed base station coverage area. The center of the hexagon pinpoints the theoretical



Hexagonal Grid with Circular Coverage from Base Stations
Image: 5freshminutes.IT

“perfect location” for a base station (antenna support facility). Next, coverage predictions are shown from the base station within the hexagon. The propagation pattern is generally circular and the size of the coverage area is affected by many variables such as antenna mounting elevation, topography, land cover, and size of the immediate subscriber base. The illustration to the left shows a smaller coverage area in green and the largest coverage area in pink. The difference in coverage areas could be relative to the antenna mounting elevations (a lower antenna mounting elevation on the tower in the green circle and a higher antenna mounting elevation on the tower in the pink shaded circle); or differences in network capacity or topography. The grid systems are unique to each service provider and maintained by each individual wireless provider’s engineering department.

Antenna network capacity

The number of base station sites in a grid network not only determines the limits of geographic coverage, but the number of subscribers (customers) the system can support at any given time. Each provider is different but a single carrier can only process or turn over a certain number of calls per minute, and at any particular time only a certain number of calls can occur simultaneously. This process is referred to as network capacity. As population, tourists and local wireless customers increase, excessive demand is put on the existing system's network capacity. When the network capacity reaches its limit, a customer will frequently hear a rapid busy signal, or get a message indicating all circuits are busy, or commonly a call goes directly to voicemail without the phone ring on the receiving end of the call.

As the wireless network reaches design network capacity, it causes the service area to shrink, further complicating coverage objectives. Network capacity can be increased several ways. The service provider can shift channels from an adjacent site, or the provider can add additional base stations with additional infrastructure.

A capacity base station has provisions for additional calling resources that enhance the network’s ability to serve more wireless phone customers within a specific geographic area as its primary objective. An assumption behind the capacity base station concept is that an area already has plenty of radio signals from existing coverage base stations, and the signals are clear. But there are too many calls being sent through the existing base stations resulting in capacity blockages at the base stations and leading to no service indications for subscribers when attempting to place a call.

According to data from SNL Kagan, the federal penetration rates of subscribers with wireless telephone service for the United States indicate a level of around eighty-four percent (84%) and it is predicted to be at one hundred percent (100%) by the end of 2013. This does not mean that every person will have a cell phone; rather, many people will have more than one phone creating the effect of one cell phone per person.

Thus, subscriber density for 3G and 4G is what controls the separation distance between base stations. The existing network design, based on local wireless penetration rates and usage, has each site facilitating the use of between 1750 and 2500 separate devices. As wireless devices increase in number *and* usage (particularly more intensive bandwidth usage like e-mail, Facebook, and mobile TV), each site will need to *decrease* its geographic area and serve a smaller number of subscribers in order to avoid overloading its systems.

Wireless broadband

Wireless broadband is analogous to the communications of voice via wireless phones but for the transmission of high speed wireless data along with standard voice communications. Wireless broadband is the transfer of data (wireless broadband) via radio waves between computers, hand held wireless phones and other wireless devices. First generation wireless deployments launched the analog hand held phones operating in the 800 MHz frequency. Second generation wireless deployments launched the digital wireless voice network in the 800 and 1900 MHz frequencies. Third and fourth generation wireless deployments add the capability of wireless data networks, now including the 2400 and 700 MHz frequencies, although many carriers are using their designated voice channels for broadband.

Traditional service providers such as AT&T, Verizon, and Sprint/Nextel have added wireless broadband to their platforms. Newer wireless handsets (smartphones) can communicate via voice (phone) and access the wireless broadband (internet). Additionally there are service providers such as Clearwire and other smaller regional services whose business plan is to provide wireless data/internet (broadband) (but not traditional voice service) to its subscriber base as an alternative to local cable and dial up internet service providers.

The infrastructure for wireless broadband is similar to that in use for wireless phones; i.e. an elevated antenna with a base station for each service provider. The service area can be reduced in order to maintain an acceptable download speed which will lead to the need for more infrastructure. For example, during maximum usage periods in order to cover a geographic area of approximately five square miles the following would be anticipated:

- 1G – Analog - 1 cell site
- 2G – Cell phone - Digital TDM – 6 cell sites
- 3G – Smartphone - Digital CDMA – 14 sites
- 4G – Universal personal communicator device - Digital CFDM or LTE - 36 sites

Complete fourth generation broadband network deployment is anticipated to begin in 2013 beginning in the urban markets.

Summary

Wireless handsets used for personal wireless services have changed significantly from the initial launch of the cellular phones in the 1980's. The infrastructure that is the backbone of these handsets has not changed as much from a visual perspective. The wireless networks still need elevated antennas above tree lines and rooftops to transmit and receive the communication information between wired and wireless devices. Moisture contained within leaves and pine needles absorb and refract the signal and create an unpredictable propagation variable. There are no antennas currently on the market that can manipulate nature and the laws of physics to eliminate the changes in the propagation characteristics from antennas placed within the tree line. Wireless antennas can function below the tree line but not at the same performance level as compared to antennas placed in the same location above the tree line. For this reason, the industry will continue to prefer placement of their antenna arrays above the tree line to achieve optimal propagation from the infrastructure and maximize their investment in the communities they are servicing. The antenna sizes used have changed minimally over the years. Recent inclusion of remote radio heads in the antenna will generally mean larger and more complex antennas as compared to the earlier 2G installations.

The structures on which the antennas mount have changed very little, other than generally becoming shorter in geographic areas where taller towers are permitted. The monopole and lattice towers remain the most widely used tower infrastructure nationwide for deployment practices. It is likely that diameters of monopoles will need to increase to allow additional space inside for more coaxial lines to accommodate additional antenna and antenna types. Concealment techniques continue to be used to mitigate the visual impact in areas of concern as identified by local governments.

Mergers and acquisitions (Sprint and Nextel for example) will bring about a temporary downsizing and consolidation of infrastructure for the companies involved but overall the industry will continue to need more and more infrastructure with transitions to 3G, 4G, 5G and beyond. The antenna elements will need to be closer together and above tree lines and rooftops.

Chapter 3 Engineering Analysis

Base station network design is founded on the principles of a grid system that is maintained by each wireless provider's engineering department. The hexagonal cells on the grid represent the radius equal to the proposed cells' coverage area. Common points of adjoining hexagons pinpoint the theoretical perfect location for a prospective new base station. For these reasons, deviation from these specified locations can significantly affect the wireless provider's deployment network.

Search area within proposed coverage areas

The search area for new wireless infrastructure is ideally specified in a document provided to site search consultants in pursuit of a lease for property on which to place their facilities, whether a new tower, a rooftop or some other existing structure that could accommodate wireless antennas. From an engineering perspective, any location within the proposed search area is considered to be acceptable for the provider, with certain considerations based on terrain and sometimes population balance.

Search Area Radii

Search areas for the 800 MHz frequencies and 1900 MHz (PCS) frequencies are computed in Tables 1 and 2. The tables utilize the "Okumura-Hata" propagation path loss formula for 800 MHz, and the "COST-231" formula for 1900 MHz. Maximum coverage radii for typical in-vehicle coverage is calculated for various tower heights, and is de-rated by twenty percent to account for a reasonable handoff zone, then divided by four to obtain a search area radius for each tower height. Thus, 800 MHz antenna mounted at the 100-foot elevation would have a search area radius of 0.72 miles, and 0.36 miles for 1900 MHz.

Okumura-Hata Coverage Predictions

Antenna mounting height	50'	80'	100'	115'	150'
Radius, miles	2.53	3.20	3.60	3.88	3.91
Allow for handoff	2.03	2.56	2.88	3.10	3.60
Search area, miles	0.51	0.64	0.72	0.78	0.90

Table 1: Okumura-Hata Coverage Predictions for 800 MHz

COST 231 Coverage Predictions

Antenna mounting height	50'	80'	100'	115'	150'
Radius, miles	1.33	1.64	1.82	1.95	2.32
Allow for handoff	1.07	1.31	1.46	1.56	1.79
Search area, miles	0.27	0.33	0.36	0.39	0.45

Table 2: COST 231 Coverage Predictions for 1900 MHz

Wireless search areas are usually circles of approximately one-quarter the radius of the proposed cell. In practice it is fairly simple to determine whether the search area radius is reasonable. The distance from the closest existing site is determined, halved, and a handoff overlap of about twenty percent is added. One fourth of this distance is the search area radius. CityScape provides the Coverage Prediction tables for antenna mounting elevations between 50 and 150 feet to allow communities the opportunity to evaluate this variable. Generally in areas where initial coverage is the objective taller towers allow the antenna to service a larger geographic coverage area and additional collocations by other service providers. Shorter tower limit the geographic coverage area and reduce the number of collocations resulting in a greater number of towers within each search area.

Tower height and antenna mounting elevation considerations

Taller structures (towers, rooftops, and water tanks) may offer more opportunity for collocation, which could theoretically decrease the number of additional towers and antennas required in an area, but capacity issues could circumvent any advantage of taller towers. The extent to which height may increase collocation opportunities must be verified by an RF engineering review on a case-by-case basis. In geographic areas where there is a larger wireless phone subscriber base or terrain concerns, build-out plans may require lower antenna mounting elevations, especially in densely populated areas. Antennas located at higher elevations on the antenna support facility are indicative of rural areas. In some cases, the wireless providers seek to limit the height in more populous geographic areas because they may need differing heights on a single tower to reduce the potential for interference between the same provider and/or a competing wireless provider.

Master plan design process

This chapter evaluates wireless coverage for the most populated areas of the City and Borough of Juneau (CBJ) and is accomplished by:

- Researching the inventory of existing antenna locations on support structures and buildings and evaluating the possible 800 MHz and 1900 MHz coverage from those sites; and
- Designing an engineered search radii template based on the average existing antenna mounting elevations and applying it over the jurisdictional boundary of the CBJ to evaluate theoretical build-out conditions; and
- Forecasting future infrastructure needs based on the status of the existing deployments and locations of the subscriber base.

Basic coverage predictions and wireless coverage handoff

CityScape provides a series of maps to help visualize the number of antenna locations that would be necessary to provide wireless communications coverage throughout the more urbanized areas of the CBJ. To accomplish this task, CityScape has created a series of root mean square (RMS)

theoretical coverage and handoff maps by randomly selecting existing antenna locations throughout the defined geographical boundary. This hypothetical network demonstrates the minimum number of base station locations required for one provider to provide complete coverage throughout the study area. In order to complete this analysis an antenna mounting elevation must be determined. CityScape has reviewed the existing tower inventory for the CBJ and determined the average tower height used for wireless telecommunications purposes to be around 88 feet. Thus, 88 feet was chosen for the mounting elevation for the theoretical RMS maps.

According to the Okumura-Hata propagation path loss formula in Table 1 coverage for 800 MHz, a reasonable coverage area for an antenna mounted at 80 feet for cellular deployment on flat terrain is about 3.20 miles. This means a single antenna mounted at 80 feet with flat terrain and minimal subscribers would provide a wireless signal to a 3.20 mile geographic radius. Using these three variables (flat terrain, 800 MHz and 80-foot antenna mounting elevations) CityScape has created a wireless network grid covering the CBJ. Figure 6 illustrates that it requires fifteen towers centrally located within the study area to provide complete 800 MHz cellular coverage. These sites represent a theoretical build-out for antennas mounted at the 88-foot elevation at equal dispersion, in a perfect radio frequency environment, with no consideration of topographic and population variables. The black dot within the circle indicates the antenna location. The smaller circle shown within the larger circle represents the limits of the search area for locating the tower. The fifteen cells would theoretically provide wireless service throughout the study area for one provider to address coverage objectives and not capacity objectives.

Referring to the “COST-231” formula for 1900 MHz a reasonable coverage area for an antenna mounted at 80 feet for a PCS site on flat terrain is approximately 1.82 miles. The coverage reduction from 3.2 miles to 1.64 miles reflects the variable change from 800 MHz to 1900 megahertz. Figure 7 illustrates it would take up to forty-nine antenna locations to cover the same geographic area as in Figure 6. These 1900 MHz PCS sites represent a theoretical build-out of one antenna mounted at the 88-foot elevation at equal dispersion for one PCS provider; *with no consideration of terrain or demographic variables.*

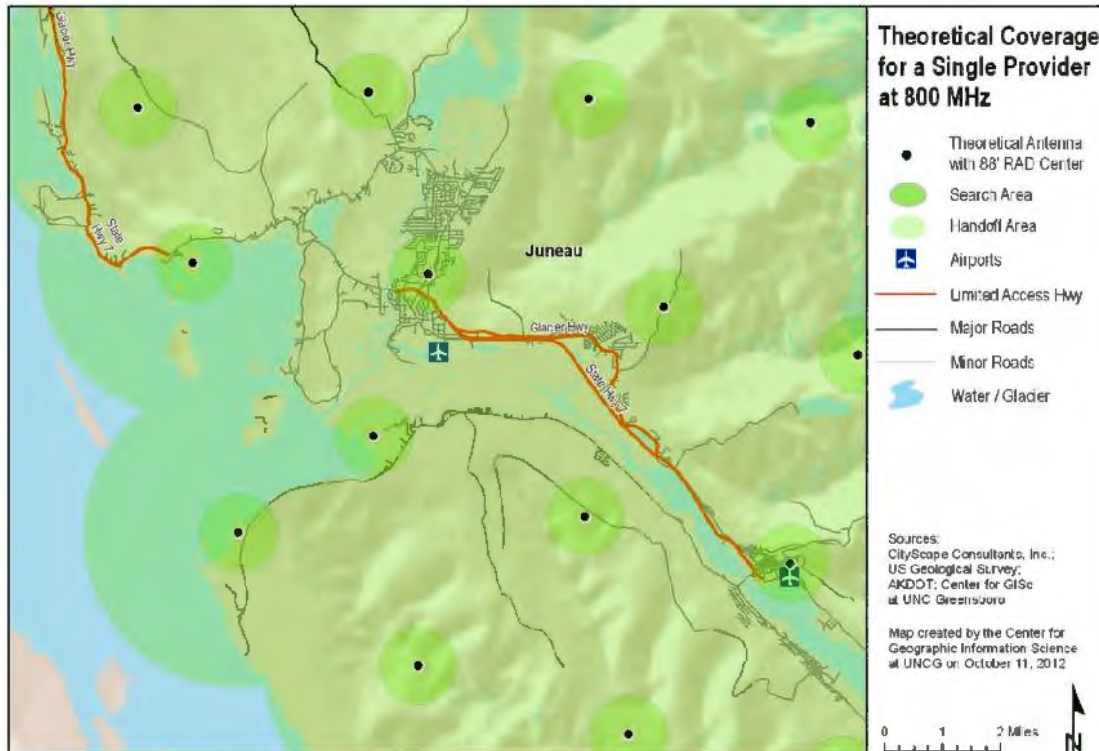


Figure 6: RMS 800 MHz Handoff and Search Areas at 88' Antenna Mounting Elevations



Figure 7: RMS 1900 MHz Handoff and Search Areas at 88' Antenna Mounting Elevations

Topographic variable on theoretical coverage

As previously described in flat terrain and sparsely populated areas, base station prediction is an easier art. The impact terrain has on a service area can be the most dramatic. Radio frequency propagation is line-of-sight technology. Line of sight works best with an unobstructed path between the base station and the handset. There are some variations of this principle. The analogy of a light bulb works well to explain how a wireless signal gets from point A to point B.

In this manner communication signals perform very similar to light. The areas closest to the light are illuminated the brightest. Adding a lampshade over the light bulb dims the light. Walls, closed doors, and other opaque object obscure the light. Similarly for best results in wireless communications there should be nothing in the transmission line of sight path between antenna point A and antenna point B, but that is usually impossible. Reflected or refracted signal will fill in some geographic areas but at a reduced power level.

Therefore, on flat terrain service areas with minimal vegetation, the coverage network from each antenna propagates in an even circular pattern. In areas with varying terrain conditions, the line of-sight coverage will be altered by higher and lower ground elevations. The CBJ has significant topographical variations so terrain greatly alters the theoretical maps.

Using the same random grid antenna locations identified in Figure 6 and Figure 7; Figures 8 and 9 illustrate how wireless service coverage is affected when the topographic variables are added to the propagation formulas. The areas in tan identify geographic area that would have no coverage due to the topography.

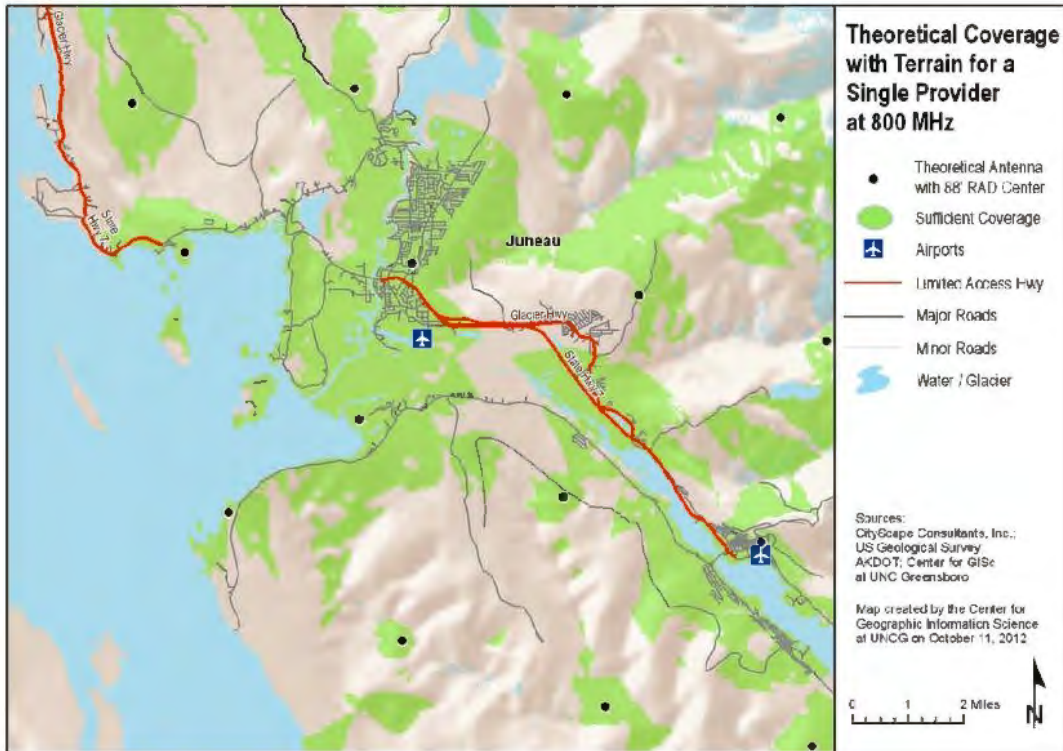


Figure 8: 800 MHz Handoff at 88' Antenna Mounting Elevations with Terrain

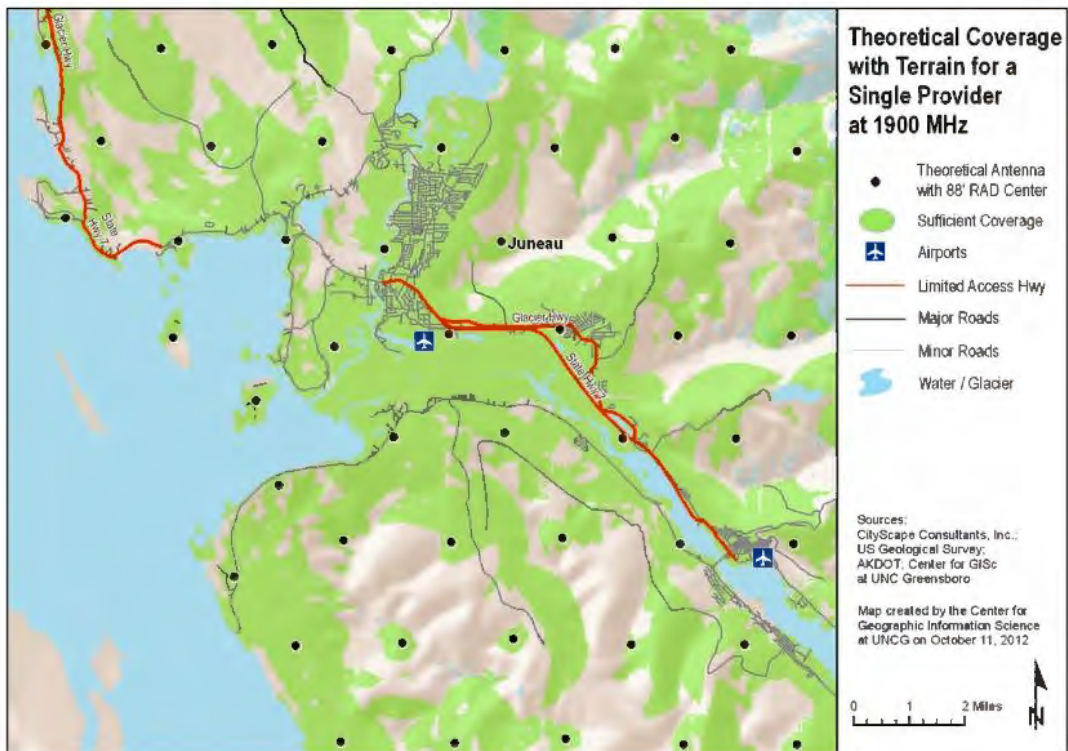


Figure 9: 1900 MHz Handoff with 88' Antenna Mounting Elevations with Terrain

Signal strength on theoretical coverage

Signal strength

The theoretical maps to this point in the master plan illustrate general coverage area from identified sites. Propagation mapping is a process that illustrates the level of coverage from an individual antenna site. Signal strength, in this application, is a term used to describe the level of operability of a handheld portable phone. The stronger the signal between the elevated antenna and the handheld wireless phone, the more likely the phone and all the built-in features will work. A reduced signal decreases the opportunity for satisfactory service caused by dropped calls or failed calls on the wireless device. Distance between the wireless handset and the elevated antennas, in addition to existing obstructions such as topography, buildings, and the physical location of the person using the handset (indoors or outdoors) are variables that affect signal strength.

The level of propagation signal strength is shown through the gradation of colors from yellow to blue. The geographic areas in yellow identify superior signal strength; green equates to areas with average signal strength; shades of blue symbolize acceptable signal strength; and tan shades show marginal or no signal strength. Generally, the closer the proximity to the antenna, the brighter shades of yellow within the geographic service area; which means the better quality of wireless service between the elevated antenna and the wireless handset. As distance increases between the handset and the antenna the green, blue, and tan shades appear indicating geographic service areas with good, marginal, sporadic, or no signal strength, respectively. Table 3 below provides further explanation of the color-coding relative to propagation signals.

Signal Strength Color	Signal Strength Title	Signal Strength Description
Yellow	Superior	Signal strength strong enough to receive signal in many buildings
Green	Average	Signal strength strong enough to receive signal in a car, but not inside most buildings
Blue	Acceptable	Signal strength strong enough to receive signal outside for many handsets, but no expectation of receiving a signal in a car or building

Table 3: Signal Strength

Seasonal variables

Vegetative land cover also affects radio frequency propagation. For example, pine needles absorb radio frequency emissions that distort the propagation from the antenna. Leaf foliage has a similar effect on propagation. Geographic land areas predominately covered by deciduous vegetation will have improved network coverage in the winter when the leaves are off the trees.

Using the same random antenna locations identified in Figure 6 and Figure 7; Figures 10 and 11 illustrate the various levels of signal coverage from the theoretical antenna locations including the foliage (clutter) variable. While the industry standards identify green and blue shades as “average” and “acceptable” coverage; customers tend to indicate otherwise. Most early twenty-first century wireless subscribers are demanding superior signal strength (yellow) in their residences, schools, offices, outdoor spaces and places frequented for shopping and entertainment. As consumers continue the trend of terminating traditional land line phone services and using the wireless handset as the primary mode of communication having signal strength inside buildings is paramount to meeting these expectations. The industries “average” and “acceptable” coverage variables do not meet customer demands and expectations. Figures 10 and 11 show many geographic areas with yellow/superior signal strength throughout most of the valley indicating generally a good level of coverage from these random locations.

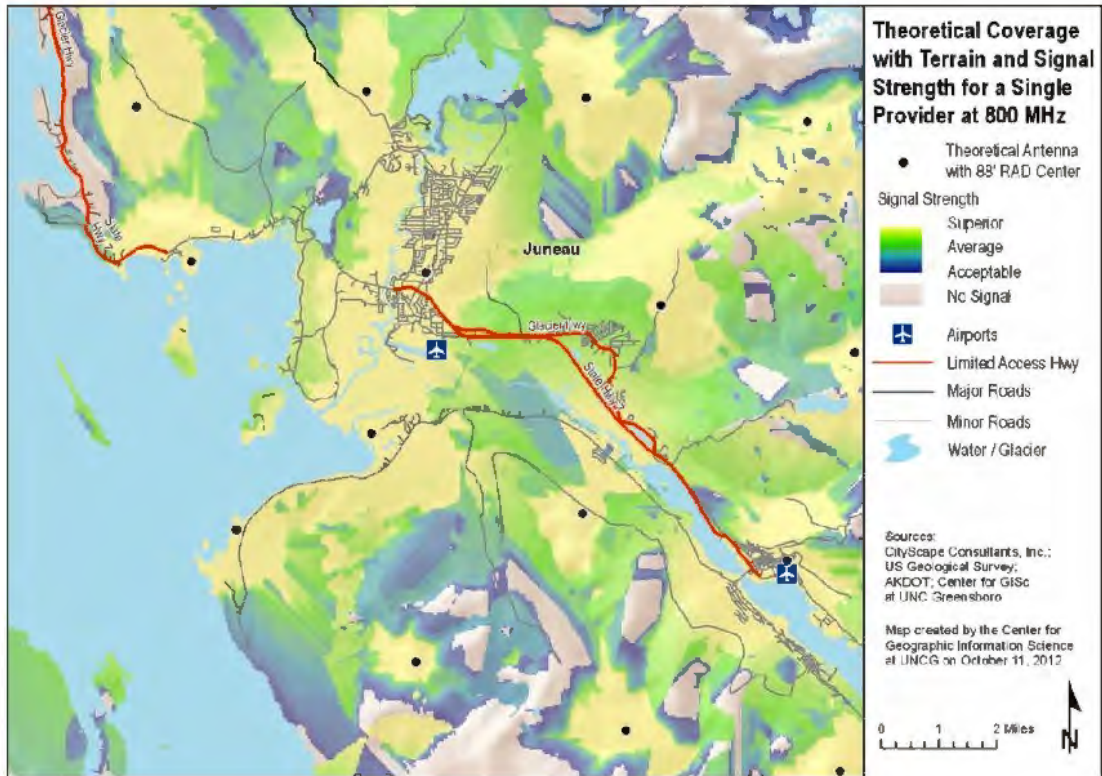


Figure 10: RMS Coverage and Signal Strength for a Single Theoretical 800 MHz Wireless Provider

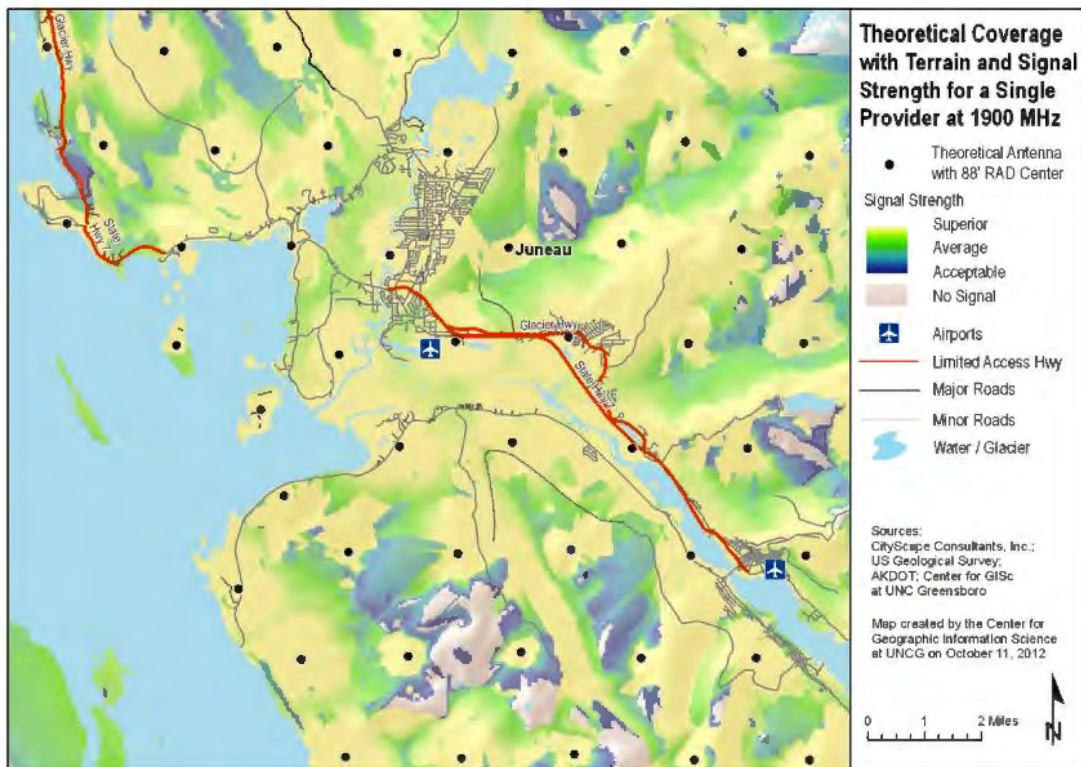


Figure 11: RMS Coverage and Signal Strength for a Single Theoretical 1900 MHz Wireless Provider

The industry and infrastructure

Prior to the granting of the cellular licenses in 1980 for the first phase of deployment, the United States was divided into 51 regions by Rand McNally and Company. These regions are described as Metropolitan Trading Areas (MTA). The spectrum auction conducted by the Federal Government for the 1900 MHz bands for 2G (PCS), further divided the United States into 493 geographic areas called Basic Trading Areas (BTA). The CBJ is located in the “Alaska” MTA (a.k.a. MTA 49) and the “Juneau-Ketchikan, AK” BTA (a.k.a. BTA 221).

Presently throughout the CBJ AT&T and Alaska Communications Systems are licensed to operate in the A and B blocks of cellular services allocated in the 800 MHz band.

Personal Communications Services (PCS) licensees and service providers for wireless phone and broadband operating in the 1700 - 2200 MHz bands include: AT&T Wireless; Alaska Communication Systems; MTA Wireless; T-Mobile; GCI and Sprint Nextel.

The recent transition to digital broadcasting (DTV) from the 700 MHz frequency has enabled the FCC to reassign the 700 MHz band for public safety radio communications and licensed wireless service providers. Public safety entities include police, fire, ambulance, rescue, and other emergency responders will use the spectrum to improve public safety networks. Licensed service providers and local and regional providers of wireless voice and/or data services will use 700 MHz to improve in-building network coverage.

The following service providers have purchased licenses to offer more advanced services in the 700 MHz frequencies: AT&T Wireless; Access 700, LLC; Echostar; Triad 700; and Verizon Wireless.

Per Section 704 of the Telecommunications Act of 1996, all service providers will require uninterrupted and continuous handoff service throughout the CBJ.

Combined there are ten known service providers that will each want to compete for the subscriber base the CBJ. Each of these wireless voice and data providers will need towers and/or above ground antenna mounting locations to improve network coverage and capacity equating to an ongoing need to deploy more infrastructure, especially in areas of greater residential density.

Existing antenna locations

Mapping the existing antenna sites creates a base map from which observations and analysis are derived relative to current and future deployment patterns. The CBJ provided existing facility locations to CityScape and other locations were attained from tower owners and the FCC database. Multiple facilities were found through various antenna locator search engines or found in the field during the site assessment process. Once these sites were mapped CityScape assessed each of the existing antenna locations throughout the CBJ study area to identify the following: 1) the location of existing telecommunications facilities currently within the CBJ; and 2) the availability of future potential collocations on the existing structures.

The assessment is achieved through actual site visits to each of the base station locations. The wireless infrastructure assessment for CBJ identifies 60 existing wireless communication facilities within the study area. Antennas mounted on towers and buildings are symbolized with a black dot. These antenna locations are identified in Figures 12 and 13. Figure 12 illustrates all the sites on a larger scale map and Figure 13 illustrates sites number 2-60 on a smaller scale map.

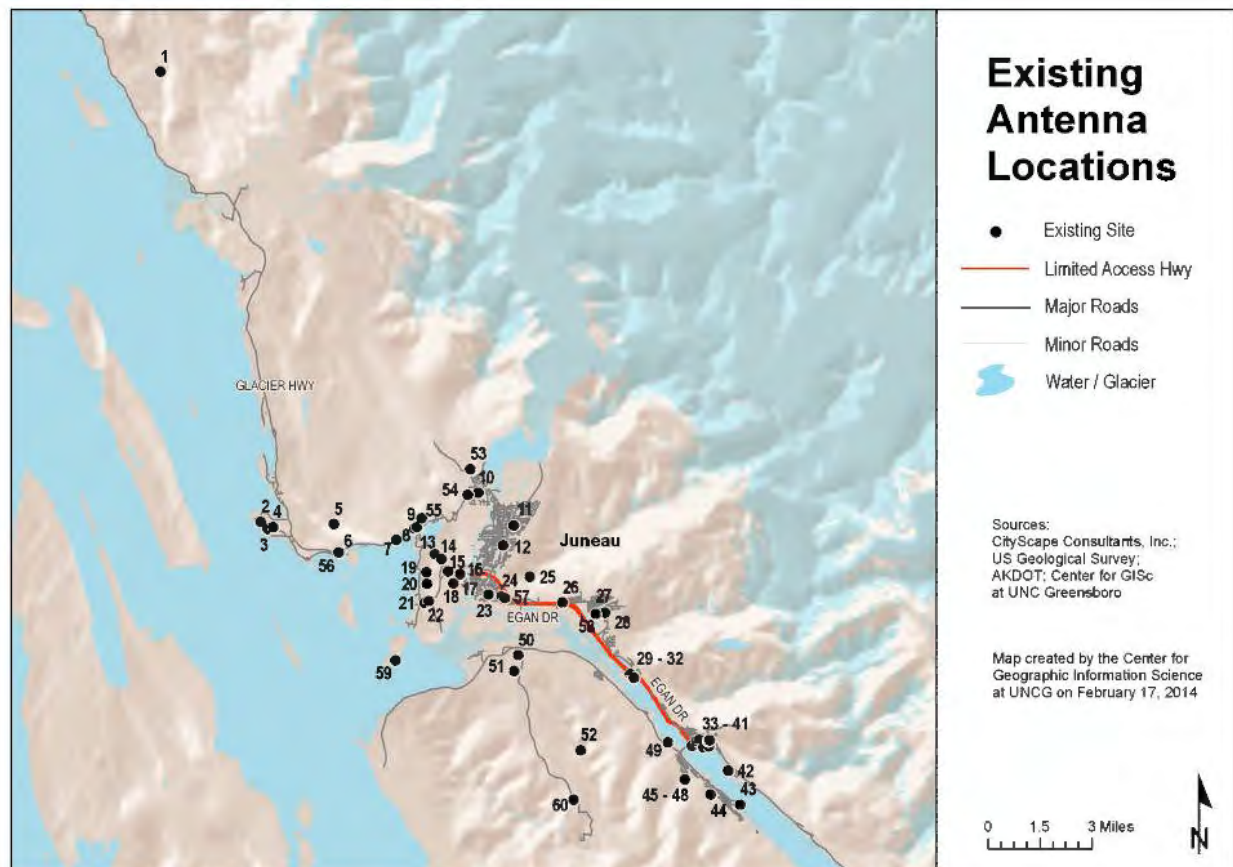


Figure 12: Existing Antenna Locations (large scale map)

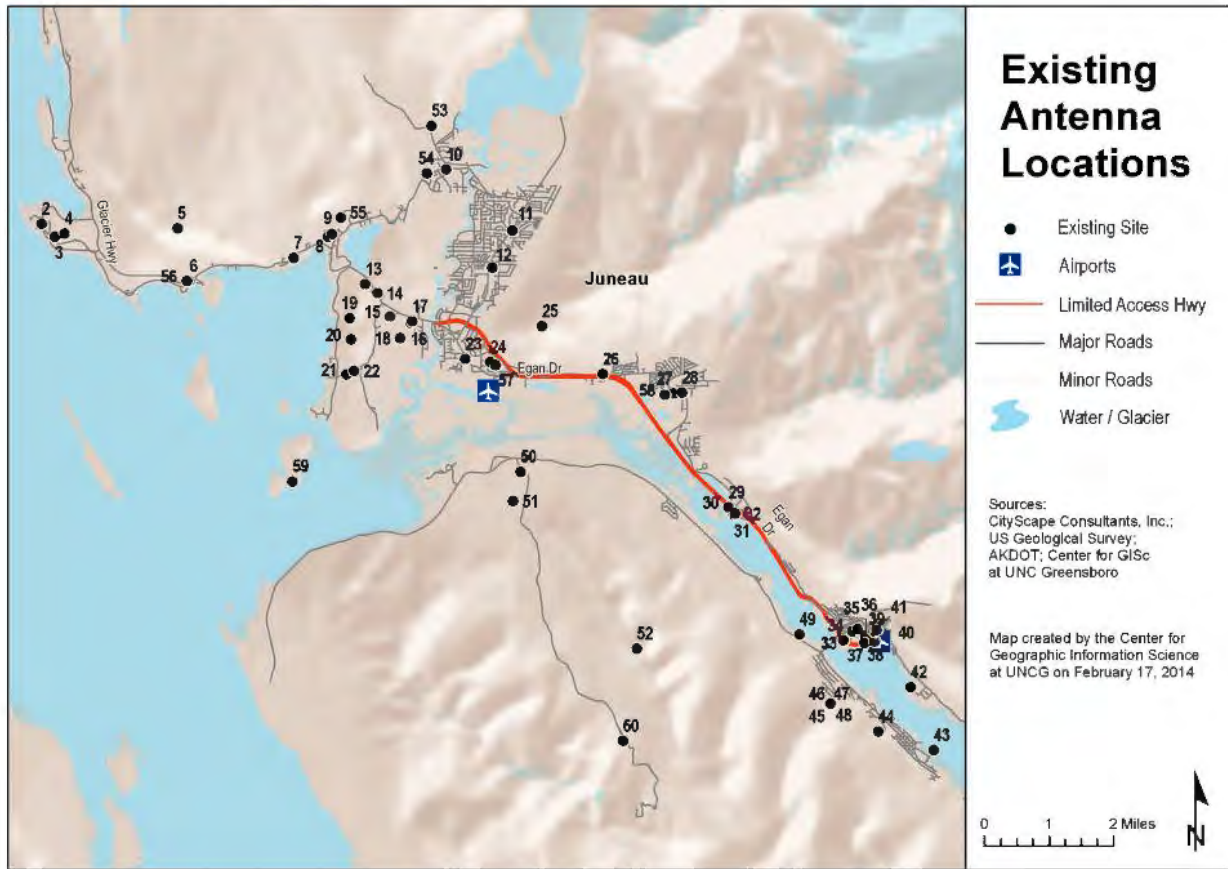


Figure 13: Existing Antenna Locations (small scale map)

Generally, the wireless infrastructure deployment patterns (antenna and tower locations) are concentrated in the downtown and airport areas with most of the remaining sites located parallel the major thoroughfares. Very few of the towers are located on the mountaintops. The FAA and other public safety agencies predominantly use the sites found in these locations.

Table 4 provides a summary of the total number of sites assessed within the CBJ study area by type, height, and ownership. CityScape and the CBJ have identified 60 total sites and some of these sites are home to multiple structures. While doing the research on each of these properties CityScape identified some discrepancies between the height approved for certain antenna structured by the FCC and the actual height approved by the CBJ. This is likely because the tower applicant requested the Antenna Structure Registration permit prior to applying for approval by the CBJ for the new facility. In most cases the tower height approved by the CBJ is lower than what was approved by the FCC. In these cases both approved heights are listed in the infrastructure inventory in Chapter four; however, only the approved tower height by the CBJ is used in the summary provided in Table 4.

60 Total Number of Existing Antenna Locations Identified within Study Area	60 Total Facilities Identified Within CBJ Study Area
Guy Towers	5
Monopoles	7
Lattice Towers	22
Wooden Pole Towers	8
Painted Monopoles	5
Rooftop Guy Towers	4
Rooftop Lattice Towers	2
Rooftop Attached Antenna	2
Other	1
Unknown	4
Total	60
Heights of Infrastructure Identified within Study Area	
> = 35' < 82'	18
> = 90 < = 110'	14
> = 130' < 160'	9
> = 175' < 199'	3
> = 200' < 350+'	4
Unknown	12
Total	60
Ownership of Infrastructure Identified within Study Area	
ACS (service provider)	2
AlaskaCom (service provider)	4
AT&T (service provider)	2
Atlas Tower USA	2
Broadcast Companies	5
Cingular (service provider)	4
CBJ (public safety)	7
GCI (service provider)	1
Global Tower Partners (tower owner)	6
Government other than CBJ (Federal/State)	12
Other	3
SBA (tower owner)	1
Unknown	10
Total	60

Table 4: Summary of Identified Antenna Locations

Theoretical coverage from existing antenna locations

The next step in the evaluation process is to examine the coverage from all known existing antenna locations to determine if any area of the CBJ has unsatisfactory or no service at all. CityScape theorizes how existing antenna locations might be used by the wireless industry.

For example, CityScape asks the following questions. First, “would network coverage gaps be visible if a single Cellular (800 MHz) and PCS (1900 MHz) provider utilized the identified antenna locations?” And second, “does the CBJ have adequate existing infrastructure suitable for providers to meet complete network coverage objectives?”

Figures 14 and 15 are RMS maps that demonstrate the theoretical coverage for a single 800 MHz service provider with antenna mounted at the top mounting position of all known support structures currently used for 800 MHz. Figure 14 does not include the terrain variable and 15 does include the variable of topography.

Figures 16 and 17 are RMS maps that illustrate the propagation (level of signal strength) for a single 1900 MHz network service provider from the top mounting elevation of all known support structures currently used for 1900 MHz. Figure 16 is without the terrain variable and Figure 17 includes the terrain variable.

Figures 18 and 19 are propagation maps that illustrate the approximate quality of service coverage from the sites identified in Figures 14 and 15. These maps include topography, urban density (population and vegetative ground cover) and know tower height variables.

Please note, of the 60 antenna/tower locations only around 25 of the sites are utilized for wireless telecommunication purposes. Generally the public safety, government and broadcast towers do not have any of the wireless service providers equipment on them and it is unlikely that the public service agencies will allow future collocations by the industry. For this reason only the locations used by the wireless telecommunications industry are shown on this sequence of maps. Additionally, CityScape can generally determine the operating frequency of the service provider by the equipment at each site. The maps in this sequence also differentiate between the 700/800 MHz service providers and the 1700 - 2100 MHz service providers to give a more realistic perception of the generalize coverage.

The map sequence illustrate relatively good coverage from the existing towers for 800 MHz provided a single service provider had equipment at each of the sites identified; and it demonstrates that for 1900 MHz many areas throughout the valley have marginal network coverage and capacity. It is very important to keep in mind that no one single 800 MHz or 1900 MHz wireless provider has equipment at all of these sites. For this reason the coverage pattern by the individual wireless providers is not as widespread throughout much of the CBJ valley as shown on these map. However, the zoning policies in place presently appear to allow facilities in these locations and thus do not appear to be creating a barrier to entry.

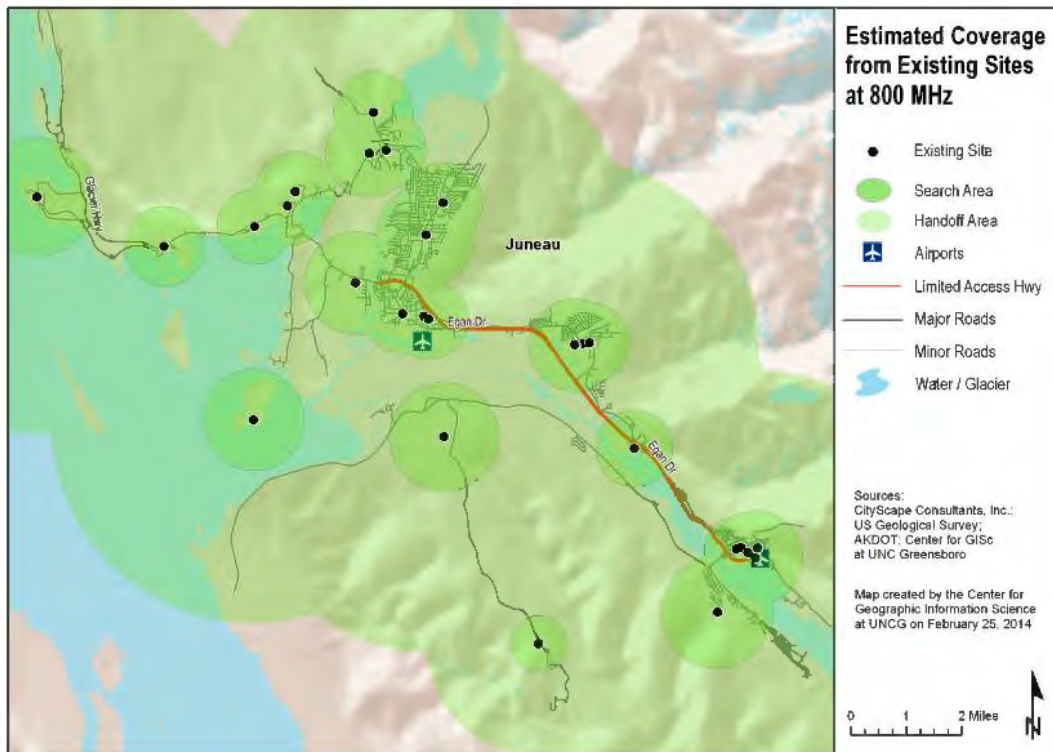


Figure 14: RMS Coverage for a Single Theoretical 800 MHz Wireless Provider without Terrain

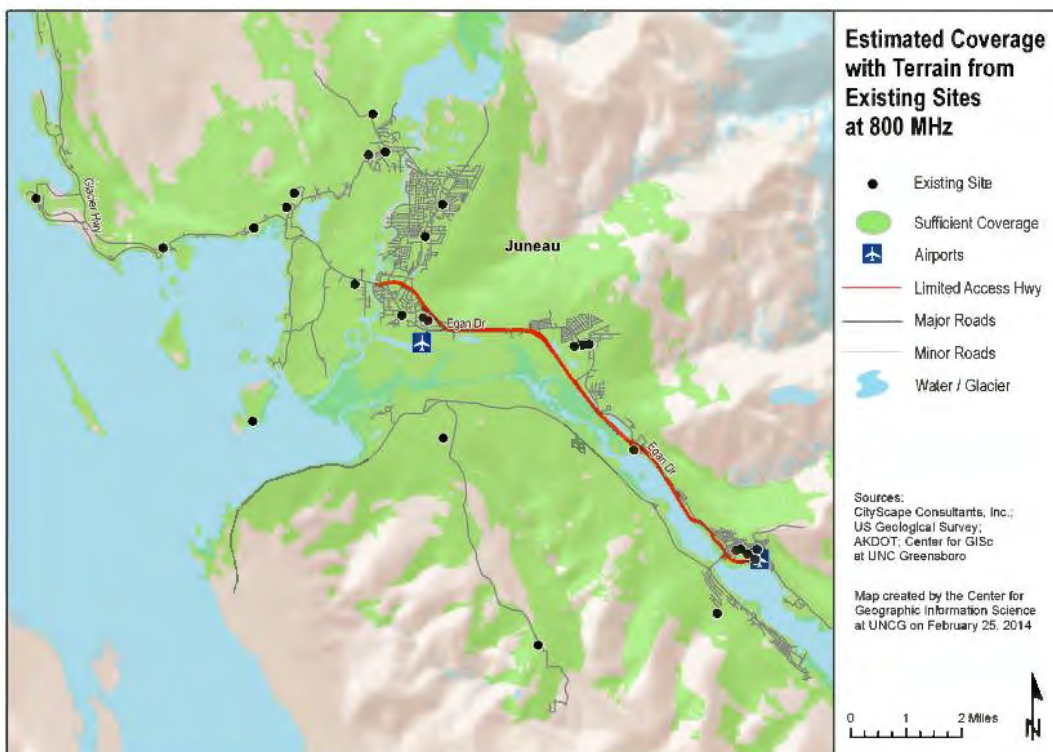


Figure 15: RMS Coverage for a Single Theoretical 800 MHz Wireless Provider with Terrain

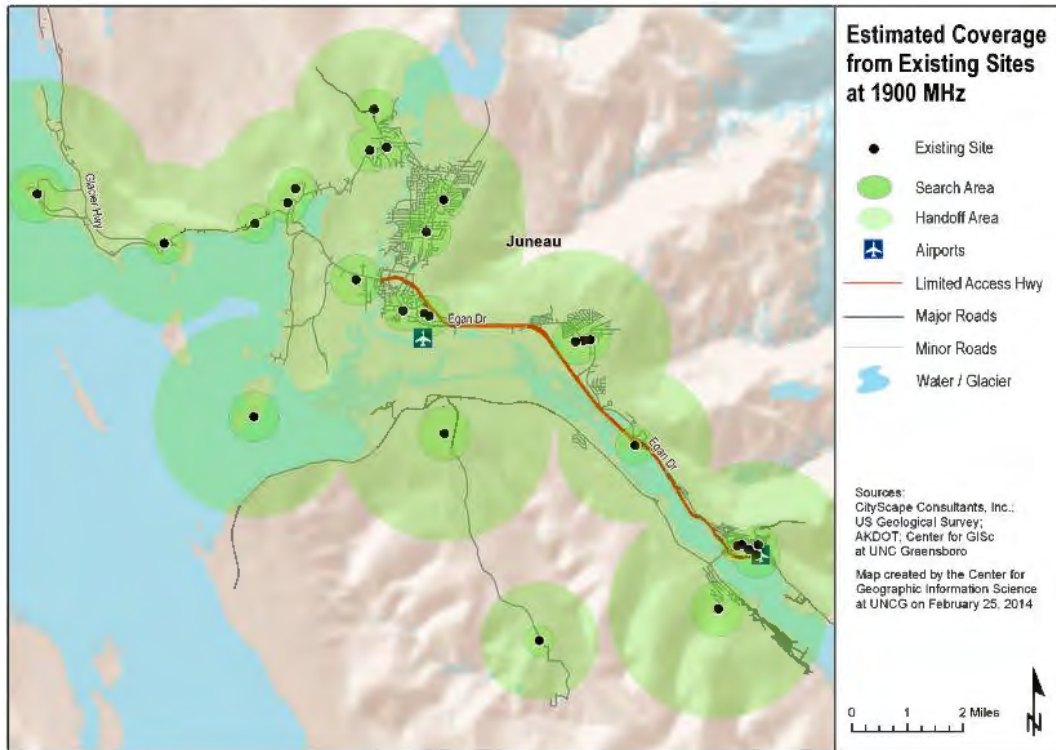


Figure 16: RMS Coverage for a Single Theoretical 1900 MHz Wireless Provider without Terrain

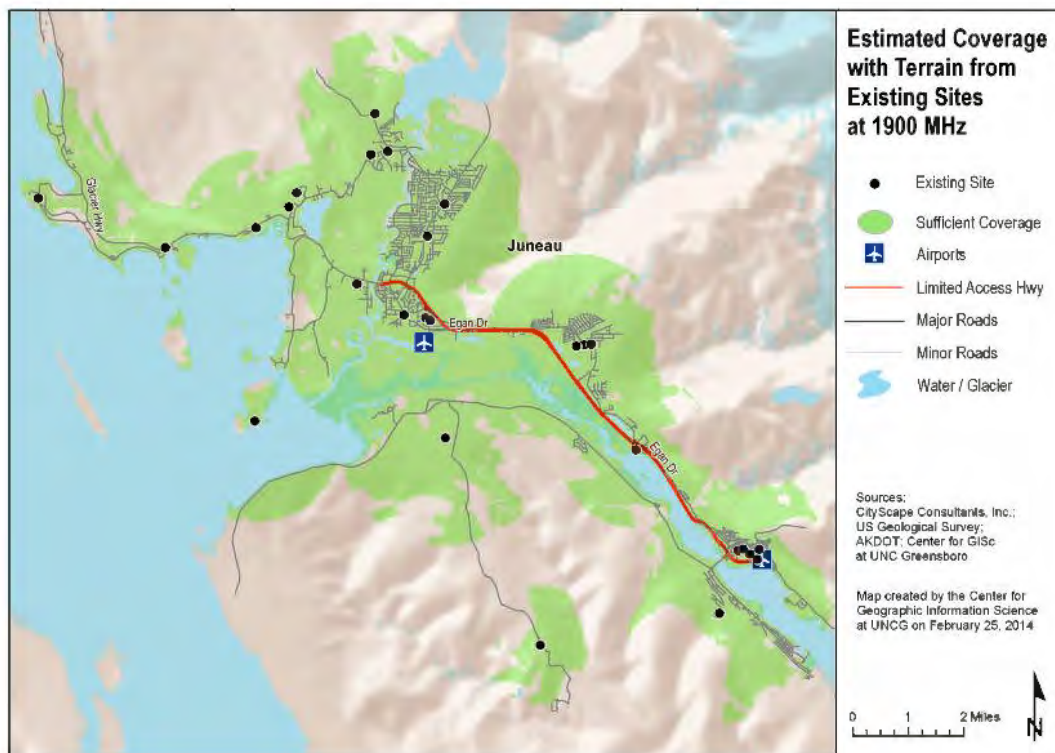


Figure 17: RMS Coverage for a Single Theoretical 1900 MHz Wireless Provider with Terrain

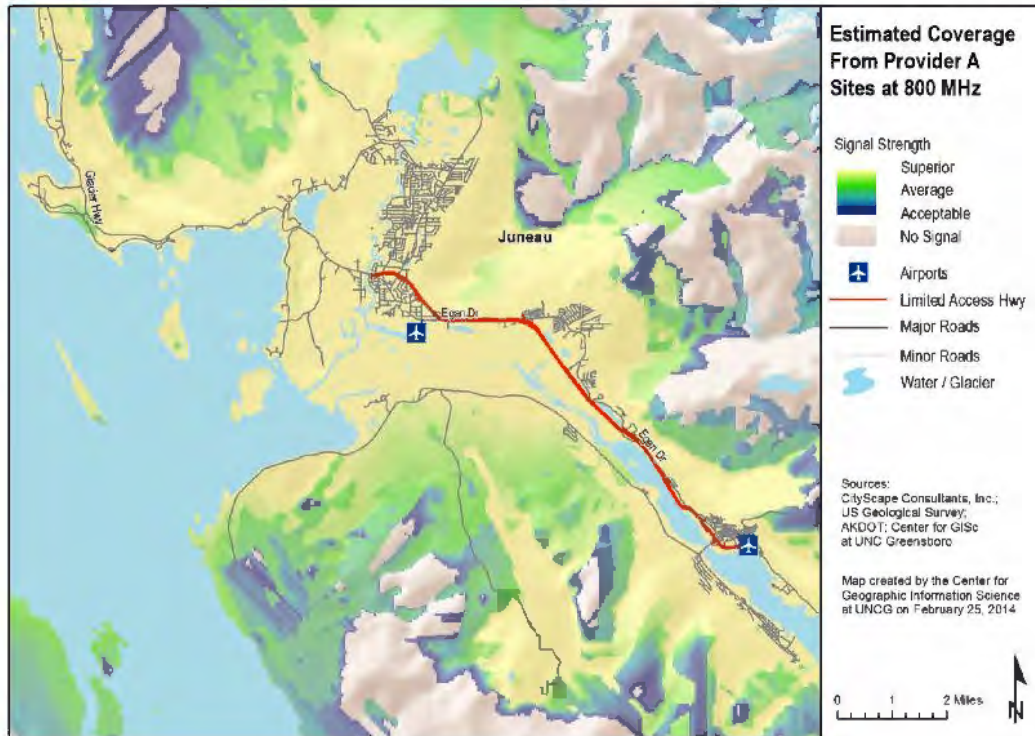


Figure 18: Coverage for a Single Wireless Provider from Existing Antenna Locations with Terrain and Signal strength and Urban Density for 800 MHz

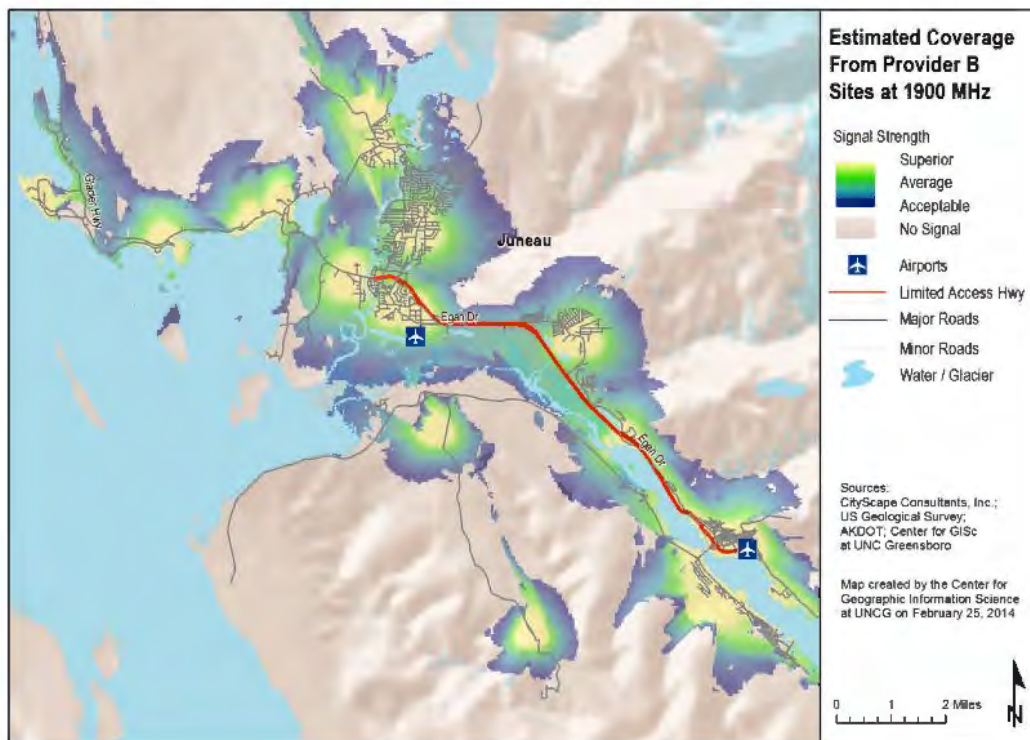


Figure 19: Coverage for a Single Wireless Provider from Existing Antenna Locations with Terrain and Signal Strength and Urban Density for 1900 MHz

Future tower site projections

Up to this point the Master Plan has focused on existing wireless base station coverage, however current network coverage is only one aspect of wireless service. The primary objective of the first phase of network development is to create coverage over a large service area. When network coverage is achieved wireless service providers begin to monitor the number of calls. Once the number of simultaneous calls reaches a predetermined maximum number, and the facility cannot support the subscriber base, the wireless network exceeds the capacity design of the system. Exceeding network capacity equates to overloading the network which results in lost service, dropped calls, rapid busy signals, and the inability to make calls. To overcome problems caused by over-capacity challenges, additional antenna and base stations are required.

According to 2009 data the federal penetration rates of subscribers with wireless telephone service for the United States indicate a level of around 77 percent. Cell phone service is projected to have increased to about 80 percent by the end of 2010, and may exceed that with the success of “smartphones.”

Carriers use base population estimates for their network design. Population density is what controls the separation distance between base stations. The existing network design, based on local wireless penetration rates and usage, has each site facilitating the use of between 1750 and 2500 separate devices. As wireless devices increase in number AND usage (particularly more intensive bandwidth usage like email, facebook, and mobile tv), each site will need to *decrease* its geographic area and serve a smaller number of subscribers in order to avoid overloading its systems. In other words, the 1750 to 2500 users per site will shrink significantly over the next 10 years, with estimates ranging from 500 to 1200 devices per site, depending on the particular carrier, services offered, and number of overall subscribers. Concurrent with the shrinkage of number of users per site will be an increase in the total number of sites needed in order to provide service to subscribers.

Each wireless phone and/or broadband network has unique deployment needs, and might need antennas at varying heights. Just because one provider locates on a building, does not mean that building height will work for the next provider. Additionally, the rapid change in how people are using technology will continue to impact the existing network infrastructure. More and more devices on the market can transfer data via cell signals (Kindles, iPads, Nintendo DS, etc.) The addition of wireless objects such as these coupled with the ongoing popularity of text messaging will require new antenna locations not due to increased wireless network traffic, but the evolution of high speed wireless broadband devices, even if the population is not growing at a similar rate.

As a result of the present growth models and the current wireless market penetration rate, and the rate of wireless network evolution from 3G to 5G, CityScape’s prediction for future antenna deployment is based on network growth from the existing antenna locations. Currently in the CBJ there are about twenty-five antenna locations used for wireless telecommunication purposes. Each year in the future the number of new collocations, antenna attachments, and tower facilities will vary. Subscriber demand on the network will control future deployments.

To effectively and efficiently provide network coverage throughout the Valley over the next ten years CityScape anticipates it will require about twenty-nine new antenna locations *following conventional deployment practices* to provide a comprehensive network to fill in the service coverage and capacity gaps. Yearly increases cannot be anticipated to increase evenly as customer demand on the network will control future deployments. As a rule of thumb the CBJ could anticipate an average (of any combination) of approximately two new tower sites and/or two to four collocations and/or antenna attachments per year over the next ten years. This estimation is based on the mathematics of the population density; subscriber base and usage; transient movement through the CBJ and how many calls a base station can simultaneously serve at any given time.

This projection model is based on new tower heights at the 88-foot mounting elevation on a tower estimated to be around 130' to allow for maximum collocation opportunities and the reduction of multiple towers within the same geographic search areas. The geographic areas of where these new facilities will be needed are shown by a brown dot in Figure 20.

Unique to the CBJ is another deployment scenario that offers a very different approach to wireless deployment. After studying the geographic area, CityScape had determined the vast majority of the Valley could be served by deploying "rim shots". Rim shot are directional signals from the transmitting antenna aimed toward the valley floor from an elevation on a tower located in the surrounding hillside. The towers are not proposed to be located on or near the mountain tops; rather from the 200' - 500' elevations above mean sea level to blend into the hillside.

This pattern of deployment is presently evidenced at one tower site in the CBJ. On the Global Tower Company tower located at the water reservoir site the collocations are all mounted on one side of the tower to provide a directional signal to the downtown Juneau area. CityScape believes this pattern of rim shots can be duplicated throughout the CBJ and would be an effective deployment method resulting in less required infrastructure throughout the Valley. CityScape estimates it would take approximately eighteen new antenna locations utilizing this *alternative deployment pattern* to meet the same coverage objectives of the proposed twenty-nine facilities anticipated for a more conventional deployment. The rim shot deployment pattern is shown in Figure 21.

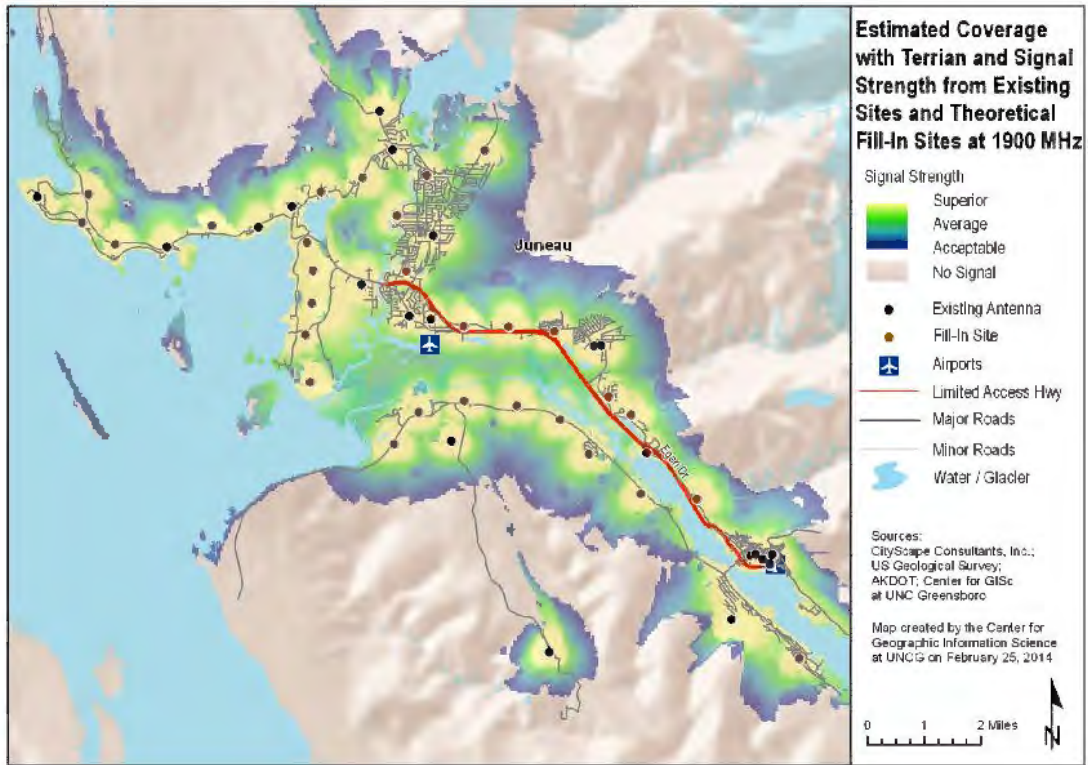


Figure 20: Projected New Infrastructure Infill Sites for Conventional Deployment

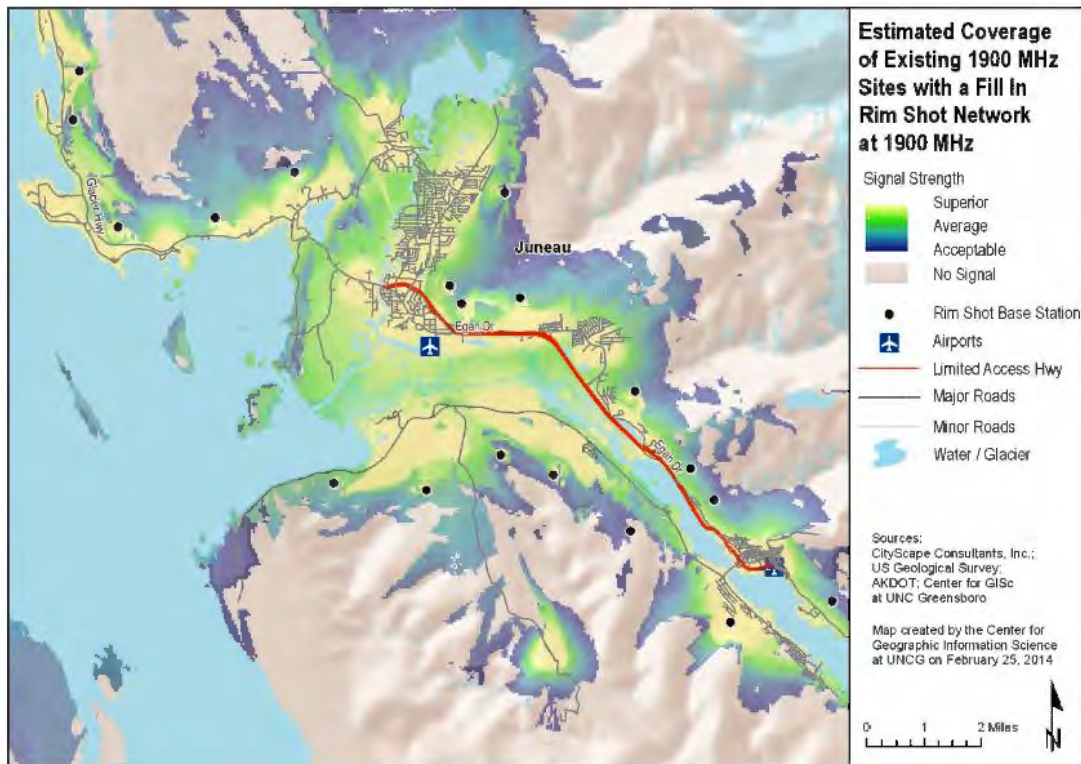


Figure 21: Projected New Infrastructure Infill Sites for Rim Shot Deployment

Chapter 4 Federal Telecommunications Act, Rulings and Policies

Wireless infrastructure and local zoning

With the deployment of first generation wireless, there were only two competing wireless cellular (800 MHz) providers. But with the deployment of 2G, and six competing PCS (1900 MHz) providers, the wireless marketplace became furiously competitive. “Speed to market” and “location, location, location” became the slogans for the competing 1G and 2G providers. The concept of collocation or sharing base stations was not part of the initial tower deployment strategy as each provider sought to have the fastest deployment and largest customer base resulting in a quick return on their cost of deployment. This resulted in an extraneous amount of new tower construction without the benefit of local land use management.

Coincidentally, as local governments began to adopt development standards for the wireless communications industry, the industry strategy changed again. The cost associated with each provider developing an autonomous inventory of base stations put a financial strain on their ability to deploy their networks. As a result, most of the wireless providers divested their internal real estate departments and tower inventories. This change gave birth to a new industry of vertical real estate; and it includes a consortium of tower builders, tower owners, site acquisition and site management firms.

No longer was a tower being built for an individual wireless service provider, but for a multitude of potential new tenants who would share the facility without the individual cost of building, owning and maintaining the facility. Sharing antenna space on the tower between wireless providers is called collocation.

This industry change could have benefited local governments who adopted new tower ordinances requiring collocation as a way to reduce the number of new towers. But, *initially* it did not; because the vertical real estate business model for new towers is founded on tall tower structures intended to support as many wireless providers and other wireless services as possible. As a result, local landscapes became dotted with all types of towers and communities began to adopt regulations to restrict or even prohibit tall communication towers within their jurisdictional boundaries.

Wireless deployment came to a halt in many geographical areas as all involved in wireless deployment became equally frustrated with the situation. Second generation wireless providers had paid a large sum of money for the rights to provide wireless services. Collectively the 2G wireless providers paid over twenty-three billion dollars to the US Treasury (which at that time helped the Federal government pay off the annual deficit by 1998) for the licenses to build and operate these networks. Furthermore, the license agreements between the wireless providers and the FCC mandated the networks be deployed within a specific time period and at that time many local government agencies were prohibiting the deployments through new zoning standards.

Robert F. Roche of the Cellular Telecommunications Industry Association (CTIA) stated in The Unpredictable Certainty: White Papers (1997)

“...the wireless paradigm has resulted in more than 200,000 new jobs, and almost \$19 billion in private-sector investment...and in spite of these gains and the promise of another \$50 billion in investment over the next 10 years, there are impediments to this success...Some local jurisdictions are preventing the deployment of antennas, either through outright bans, extensive delays, or application of unscientific “local technical standards” to radio frequency emissions...”

Roche further suggests the CTIA should:

“...1) urge President Clinton to direct federal agencies to make available federal land and sites for telecommunications infrastructure; 2) urge the FCC to develop national standards on radio frequency emissions over local standards; and 3) urge the FCC to advocate the primacy of national telecommunications policy over local policies that are hostile to competition...”

This perplexing situation prompted the adoption of Section 704 of the Federal Telecommunication Act of 1996.

Federal Telecommunications Act of 1996

The Federal Communications Commission (FCC) policies impacting deployment of wireless facilities are, with certain exceptions, unchanged since the enactment of the 1996 Telecommunications Act. The overall concept as passed by Congress was to facilitate the creation of a wireless infrastructure to parallel the wired infrastructure that existed in the United States. The FCC’s mandate has been to work towards accomplishing that goal, and the current Commission in particular has paid great attention to moving that task forward.

Section 704 of the Federal Telecommunications Act of 1996 retains local governments’ zoning authority over the deployment of wireless telecommunication facilities subject to several specific requirements.

First, zoning regulations and decisions may not unreasonably discriminate among the wireless providers, and may not prohibit or have the effect of prohibiting the deployment of wireless infrastructure. For example, some communities adopted development standards restricting the distance between towers to three miles. In some geographic locations with sparse populations this may have been adequate for 1G deployment; however the Laws of Physics make it impossible for 2G wireless deployments to meet this spacing requirement. Unknowingly some communities inadvertently prohibited the deployment of 2G.

Second, local governments must act on applications for new wireless infrastructure within a “reasonable” amount of time

Third, the local government must provide in writing a reason for any denials and the decision must be supported by substantial evidence.

Fourth, local government cannot deny an application for a new wireless facility or the expansion of an existing facility on the grounds that radio frequency emissions are harmful to the environment or to human health (provided federal standards are met by the wireless provider).

Additionally, the FCC provided two Fact Sheets to further explain the goals and objectives of the Act. Included in Fact Sheet 1 is the suggestion for local government to the use of third party professional review of site applications. Specifically stated, “Local zoning authorities may wish to retain a consulting engineer to evaluate the proposals submitted by wireless communications licensees. The consulting engineer may be able to determine if there is some flexibility as to the geographic location of the tower.”

The full text of Section 704 of the 1996 Telecommunication Act is provided in Appendix A.

Federal Communications Commission Declaratory Ruling November 18, 2009

In states where there is no specific state statutory obligation on local jurisdictions (which includes the Commonwealth of Virginia) the FCC’s Declaratory Ruling will apply and impose upon local jurisdictions a timeline in which it must act upon wireless siting applications. The November 18, 2009 *Declaratory Ruling*¹ regarding timelines for local government to act upon a wireless siting application specifies a local government agency has thirty (30) days from receipt of an application for a new tower or collocation to determine if the application is complete or incomplete. Additionally the FCC provided the following deadlines for the local government decision process:

Collocation – local government agencies have ninety (90) days from the date the application is filed to render a decision for approval or denial of the collocation.

New towers – government agencies have one hundred fifty (150) days from the date the application is filed to provide a decision on the proposed request.

If a jurisdiction fails to act on an application within those timelines, an applicant will have the opportunity to file suit in federal court and seek judicial determination of the application. Several jurisdictions challenged the FCC’s authority to impose a “shot clock” on such local zoning decisions. On January 23, 2012, the Fifth Circuit Court of Appeals decided *City of Arlington, Texas v. FCC*, 668 F.3d 229 (5th Cir. 2012), and found that the FCC was legally empowered to impose the “shot clock” on local governments in jurisdictions without state statutory provisions that are more restrictive. There have been some other federal district court cases that have addressed the “shot clock” issue tangentially but are not relevant for this discussion. Of note and importance because of recent Congressional action was the FCC’s definition in the *Declaratory Ruling* of what constitutes a collocation application, which the FCC defined as “a substantial increase in the size of the tower” as set forth in the National Programmatic Agreement.²

¹ *Declaratory Ruling*, FCC 09-99 (Released November 18, 2009)

² . A “[s]ubstantial increase in the size of the tower” occurs if:

(1) [t]he mounting of the proposed antenna on the tower would increase the existing height of the tower by more than 10%, or by the height of one additional antenna array with separation from the

Having established a procedural timeline for action on wireless siting applications, the FCC has recently also enacted regulations that impose additional burdens on applicants seeking to construct new towers for wireless services. Effective **June 18, 2012**, new federal procedural obligations (unrelated to any local procedural obligations) imposed on any applicant who is:

- (1) planning to build *any* new tower that would have to register through the FCC's Antenna Structure Registration (ASR) system (typically towers that exceed 200 feet in height, but sometimes less). The only exceptions are for (a) towers to be built on sites for which some other federal agency has responsibility for environmental review or (b) cases in which an emergency waiver has been granted; or
- (2) modifying an existing registered tower by (a) increasing its overall height by more than 10% or 20 feet, or (b) adding lighting to a previously unlit structure, or (c) modifying existing lighting from a more preferred configuration to a less preferred configuration; or
- (3) amending a pending application involving either of the foregoing situations and the amendment would (a) change the type of structure, or (b) change the structure's coordinates, or (c) increase the overall height of the structure or (d) change from a more preferred to a less preferred lighting configuration or (e) an Environmental Assessment is required.

If an applicant's proposed tower or tower modifications fall into one of these categories, an applicant must follow new processes and procedures with the FCC in order to obtain approval of its proposed facility, including:

- (1) Filing a partially-completed Form 854 in the FCC's ASR system. This will consist of information previously required on Form 854, plus tower lighting information **and** specification of the date on which the applicant wants the FCC to post the application on the Commission's website for comments; and

nearest existing antenna not to exceed twenty feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to avoid interference with existing antennas; or (2) [t]he mounting of the proposed antenna would involve the installation of more than the standard number of new equipment cabinets for the technology involved, not to exceed four, or more than one new equipment shelter; or (3) [t]he mounting of the proposed antenna would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable; or (4) [t]he mounting of the proposed antenna would involve excavation outside the current tower site, defined as the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site.

47 C.F.R. Part 1, App. B—Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, Definitions, Subsection C.

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- (2) Publishing a notice (“in a local newspaper or by other means”) regarding the application on or before the date the applicant has designated in its application for posting of the application on the FCC’s website. The comment period will be open for 30 days, during which time members of the public can ask the FCC for further environmental review.
 - (3) If, after the comment period, FCC staff concludes that no additional environmental review is required, the applicant will then move on to Table 1, Step 1 of the process. In that step, the applicant will have to amend its application to reflect (a) the FAA’s study number and issue date (if those haven’t already been provided in the initial application), (b) the date of the local public notice, and (c) a certification that the proposed construction will have no significant environmental impact; OR,
 - (4) If, after considering the initial filing and any public comments, the FCC decides that more review is required, it will require the submission of an Environmental Assessment. If an Environmental Assessment is required, the FCC will first have to issue a Finding of No Significant Impact before the applicant can proceed to Step Two with the necessary amendment of its application.

All of the foregoing processes were adopted after FCC consideration of multiple petitions by parties concerned about the effect of tower construction on the environment, including the effect on migratory birds and tower strikes by such birds.

These new provisions will significantly extend the timeline for federal approval of new construction or modification of towers that meet the conditions above³, which may have the effect in some instances of slowing the deployment of wireless facilities where the proposed facilities fall into one of the three (3) categories above.

Applicants may also seek local approval of their proposal at the same time the federal processes are underway on parallel paths, and thus it is unclear at this time what impact the federal processes may have on the processing and adjudication by local government of wireless siting applications.

In addition to the FCC’s recent actions, Congress also recently involved itself in wireless siting issues by including language in recent legislation signed by the President on February 22, 2012 that impacts local governments’ consideration of wireless siting applications.

The Middle Class Tax Relief & Job Creation Act of 2012 – HR 3630

In Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012, Congress further eroded local government’s jurisdiction over wireless facilities through the following language:

(a) FACILITY MODIFICATIONS.—

³ The new requirements are imposed on proposals for either new towers or modifications that, generally speaking, do constitute a “substantial change” as that term is defined by the FCC.

(1) IN GENERAL.—Notwithstanding section 704 of the Telecommunications Act of 1996 (Public Law 104–104) or any other provision of law, a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.

(2) ELIGIBLE FACILITIES REQUEST.—For purposes of this subsection, the term “eligible facilities request” means any request for modification of an existing wireless tower or base station that involves—

- (A) collocation of new transmission equipment;
- (B) removal of transmission equipment; or
- (C) replacement of transmission equipment.

(3) APPLICABILITY OF ENVIRONMENTAL LAWS.—Nothing in paragraph (1) shall be construed to relieve the Commission from the requirements of the National Historic Preservation Act or the National Environmental Policy Act of 1969.

Note that Section 6409 applies where an application for modification of an existing wireless facility does not involve a “substantial change” to the physical dimensions of such tower or base station.

Congress did not define “substantial change” in the legislation. In order to determine what constitutes “substantial change”, the only currently available definition arises from the FCC’s National Programmatic Agreement (see footnote 2), which is also the definition endorsed by the wireless industry.

Under this new Congressional requirement, local governments must approve any application for collocation, removal or replacement of wireless equipment if the proposed modifications to an existing facility do not involve a “substantial change” (and as noted above, the only currently available definition of “substantial change” is that defined by the FCC in the National Programmatic Agreement). This further degradation of local governmental authority over wireless facilities (and the willingness of wireless providers to suggest to local governments that this new statutory mandate provides a basis to immediately grant their application) is impacting wireless deployment by emboldening the wireless industry to increase deployment efforts despite local government concerns. Although this is recent legislation and there does not yet appear to be any reported decisions involving Section 6409, Cityscape is aware of at least one lawsuit being commenced citing Section 6409 as jurisdictional authority (despite the fact that the applicant who has sought judicial relief was *granted* authority by the local government to modify their facility with certain conditions).

Since the CBJ adopted the Personal Wireless Services Facility Development Standards the Federal government has adopted additional policies that should be integrated into the existing regulations in order to harmonize them with applicable federal law. For example, the timeline as described in the “shot clock” *Declaratory Ruling* should be integrated to indicate that collocation applications shall be reviewed and adjudicated by the CBJ within ninety days of completed submission, and an application for a new facility shall be reviewed and adjudicated by the CBJ within one hundred fifty days of complete application submission.

Furthermore, the CBJ's regulations should recognize the provisions of Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012 to permit equipment collocations, removals and replacements on existing eligible facilities that do not "substantially change" the physical dimensions of the tower structure, via well-defined collocation and related approval processes that meet the ninety (90) day shot clock standards.

Additionally the existing Ordinance utilizes too many terms that mean the same or very similar definitions throughout the document. For example, the use of the terms "antenna support structure" and "tower" are used interchangeably. The CBJ should pick one term to eliminate confusion.

Chapter 5 Inventory

Purpose of the inventory

Procedure

CityScape conducted an assessment of the existing antenna locations throughout the CBJ by driving to all locations. Data for the assessments was obtained from a number of sources including actual permits obtained from the CBJ for wireless infrastructure, research of FCC registered site locations, direct information from existing wireless service providers and tower owners active in the CBJ, the CBJ GIS, and through actual site visits to each location.

Inventory catalog existing antenna(s) and towers

Pictures of existing antennas mounted on towers and rooftops are included in the inventory catalog. Existing antenna site locations are identified numerically in Figure 21.

Structural evaluation

Based on a visual inspection of antenna arrays already on existing antenna support structures, CityScape has made a judgment as to whether each support structure is likely to physically accommodate more antennas. The number of estimated collocations is referenced as future antenna collocation possibilities. The suggested collocation is based on visual observations only. In this consideration, adding antennas equates to adding another wireless antenna platform consisting of several antennas and associated heavy coaxial cable. Prior to mounting new antennas and related equipment, the structure must be examined and analyzed by a structural engineer for its ability to support the proposed addition.

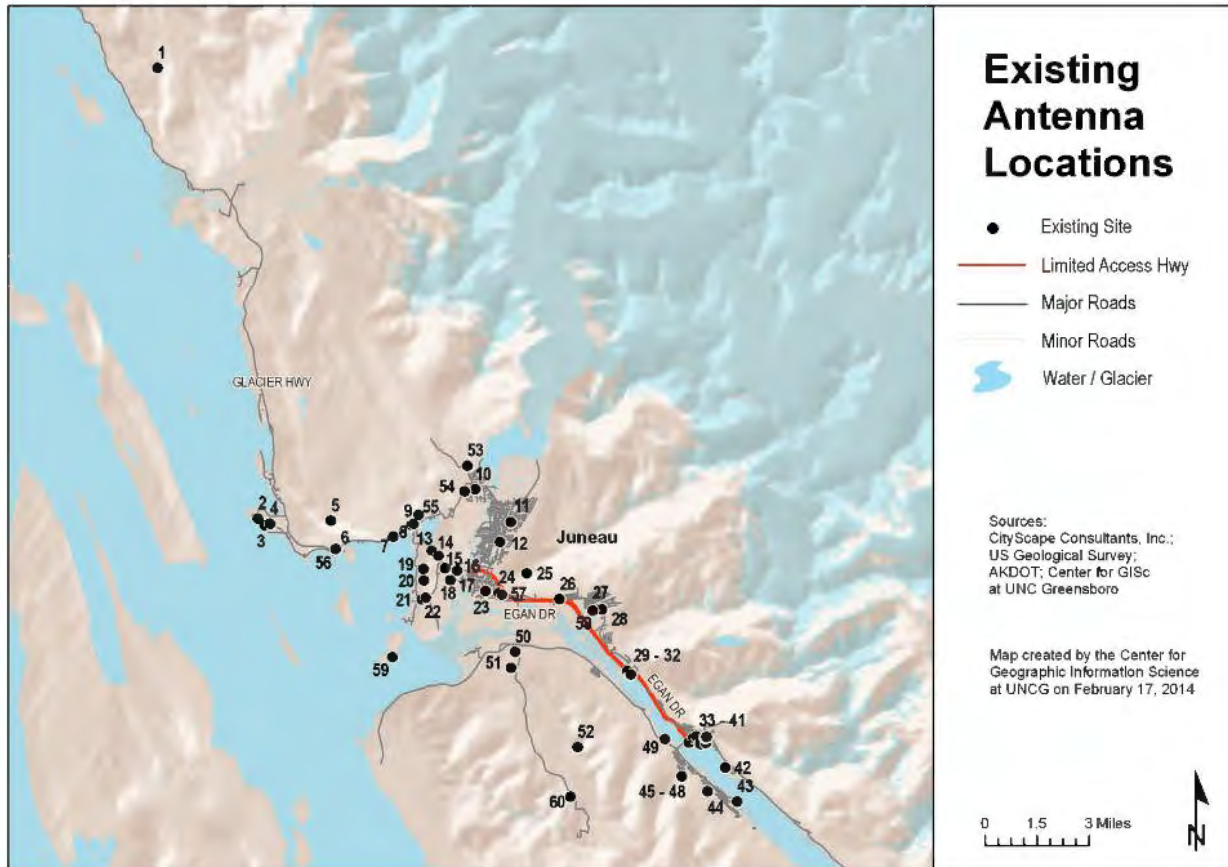
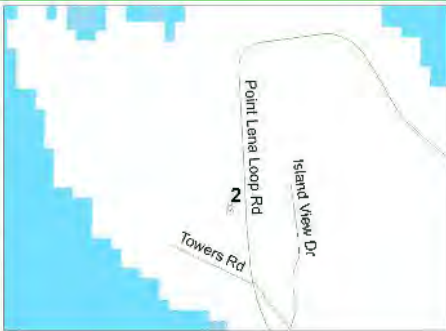


Figure 21: Existing Inventory

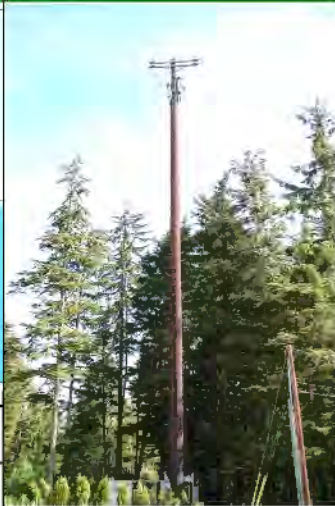
Site 1		Site Map	Site Photo
Owner:	AT&T/AlaskaCom		
Identification:	Bessie Mountain		
Address:	Unknown		
Latitude:	58-34-42.82 N		
Longitude:	-134-51-16.49 W		
Access:	Air		
Site Details			
Type:	Lattice used primarily for microwave backhaul.		
Height:	60' per the CBJ		
Collocations:	Existing: Yes, approximately 2	Future: 2	
Observations:	Site was not assessed by CityScape Consultants, Inc.		
Comments:	Photo provided by the CBJ.		

Site 2		Site Map	Site Photo
Owner:	AlaskaCom		
Identification:	FCC: 1005565		
Address:	17103 Lena Loop Rd.		
Latitude:	58-23-27.8 N		
Longitude:	-134-46-6.5 W		
Access:	Vehicle		
Site Details			
Type:	Lattice used for microwave backhaul and collocations.		
Height:	FCC antenna structure registration indicates 220'.		
Collocations:	Existing: Yes, approximately 2	Future: 3	
Observations:	Ground space available for base stations; site secured by fence and locked gate.		
Comments:	Lattice tower will provide great opportunities for collocation.		

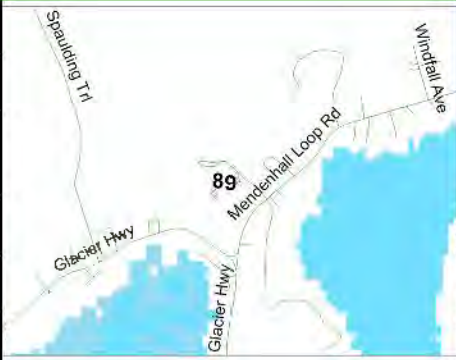
Site 3		Site Map	Site Photo
Owner:	City and Borough of Juneau		
Identification:	FCC: 1247302		
Address:	17099 Point Lena Loop Road		
Latitude:	58-23-17.5 N		
Longitude:	-134-45-45.8 W		
Access:	Vehicle		
Site Details			
Type:	Lattice used primarily for microwave backhaul		
Height:	80' per the CBJ.		
Collocations:	Tower is not available for collocation.		Future 3
Observations:	Site was not assessed by CityScape Consultants Inc. Photo provided by the CBJ.		
Comments:	The CBJ should establish a policy for use of this tower by the wireless industry.		

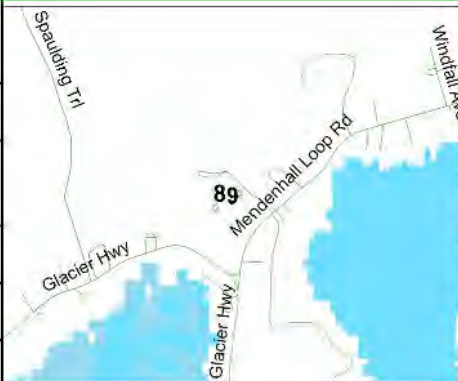
Site 4		Site Map	Site Photo
Owner:	State of Alaska		
Identification:	FCC: 1241297		
Address:	Lena Point		
Latitude:	58-23-20 N		
Longitude:	-134-45-31 W		
Access:	Vehicle		
Site Details			
Type:	Guy		
Height:	185'		
Collocations:	No		Future 0
Observations:	Site is not accessible to the public.		
Comments:	Tower is used for air traffic safety and not available for collocations.		

Site 5		Site Map	Site Photo
Owner:	Unknown		Photograph Unavailable
Identification:	Auke Mountain		
Address:	Unknown		
Latitude:	58-23-25.98 N		
Longitude:	-134-42-37.01 W		
Access:	Unsure		
Site Details			
Type:	Not Available		
Height:	60'		
Collocations:	Existing: Unsure	Future: Unsure	
Observations:	Site was not found or assessed by CityScape Consultants Inc.		
Comments:	Site Provided to CityScape by the CBJ; very little information is available.		

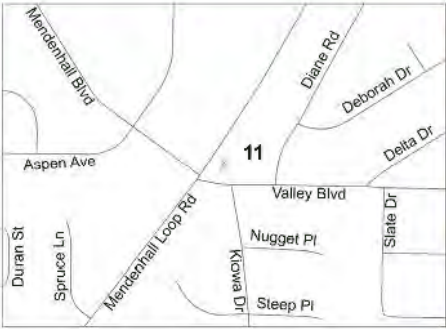
Site 6		Site Map	Site Photo
Owner:	New Cingular Wireless		
Identification:	FCC: 1282723		
Address:	14080 Glacier Highway		
Latitude:	58-22-43.35 N		
Longitude:	-134-42-17.71 W		
Access:	Vehicle		
Site Details			
Type:	Wood Pole		
Height:	FCC indicates 98'; CBJ indicates 100'		
Collocations:	Existing: Yes, approximately 2	Future: 1-2	
Observations:	FCC identification on tower but no other tower ownership or contact information on site.		
Comments:	Site is clean with easy access directly off of Glacier Highway.		

Site 7		Site Map	Site Photo
Owner:	New Cingular Wireless PCS, LLC		
Identification:	FCC: 1282723		
Address:	12401 Glacier Highway		
Latitude:	58-23-3.2 N		
Longitude:	-134-39-37 W		
Access:	Vehicle		
Site Details			
Type:	Wood Pole		
Height:	90' per the CBJ		
Collocations:	Existing: Yes, approximately 2	Future 2	
Observations:	No site ownership identification and no FAA ASR number posted.		
Comments:	Site is on a small hill and easily accessible from Glacier Highway.		

Site 8		Site Map	Site Photo
Owner:	First Student		
Identification:	Unknown		
Address:	12364 Glacier Highway		
Latitude:	58-23-20.94 N		
Longitude:	-134-38-45.52 W		
Access:	Vehicle		
Site Details			
Type:	Rooftop Tower		
Height:	Unknown		
Collocations:	Existing: Yes, approximately 2	Future: none	
Observations:	The rooftop tower appears to be used for both dispatch and a wireless collocation		
Comments:	Ownership of the tower is assumed to be by the business owner.		

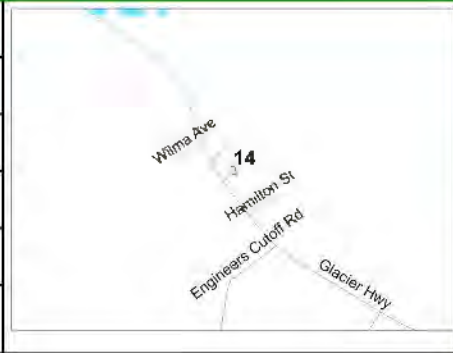
Site 9		Site Map	Site Photo
Owner:	GCI Communications Corp		
Identification:	FCC: 1263789		
Address:	12364 Glacier Highway		
Latitude:	58-23-23 N		
Longitude:	-134-38-39 W		
Access:	Vehicle		
Site Details			
Type:	Monopole		
Height:	100' per the CBJ		
Collocations:	Existing: Yes, 2		Future: 1
Observations:	Site has FAA and ownership information.		
Comments:	Tower has wires from the tower to a nearby tree and wrapping around the tree and leading to a nearby utility pole.		

Site 10		Site Map	Site Photo
Owner:	Unknown		
Identification:	Not posted on site		
Address:	9741 Mendenhall Loop Road		
Latitude:	54-24-16.51 N		
Longitude:	-134-35-44.21 W		
Access:	Vehicle		
Site Details			
Type:	Wood Pole		
Height:	100' per the CBJ.		
Collocations:	Existing: 1 tenant	Future: 1	
Observations:	No tower ownership identification on the site and outside storage of non-tower related items are in the green shelter.		
Comments:	Site is easily accessible.		

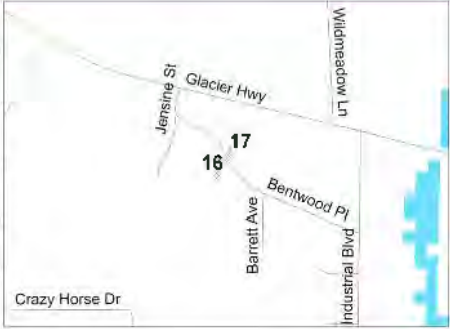
Site 11		Site Map	Site Photo
Owner:	ACS Wireless, Inc.		
Identification:	FCC: 1241641		
Address:	8503 Valley Boulevard		
Latitude:	58-23-29.5 N		
Longitude:	-134-33-53 W		
Access:	Vehicle		
Site Details			
Type:	Brown Monopole		
Height:	100'		
Collocations:	Existing: 1 Tenant	Future: 0 - 1	
Observations:	No tower ownership or FAA identification posted on site.		
Comments:	Site is secured with a fence and locking gate and is easily accessible by vehicle.		

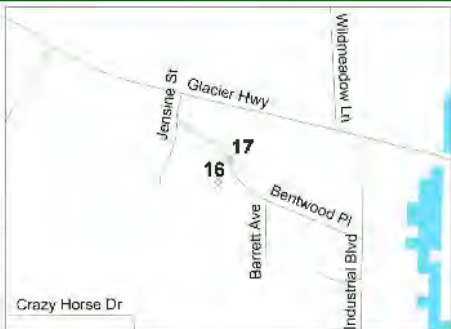
Site 12		Site Map	Site Photo
Owner:	Global Tower, LLC		
Identification:	FCC: 1242713		
Address:	8748 Trinity Drive		
Latitude:	58-22-55.8 N		
Longitude:	-134-34-26.3 W		
Access:	Vehicle		
Site Details			
Type:	Monopole		
Height:	163' per the FCC antenna structure registration and the CBJ indicates 150' tower height.		
Collocations:	Existing: Yes, 4	Future: none	
Observations:	Tower has reinforced metal strips to increase structural capacity of the tower.		
Comments:	Tower is used by multiple service providers indicating this is a good location for a site. It is likely another tower will be needed in the vicinity to accommodate future service providers.		

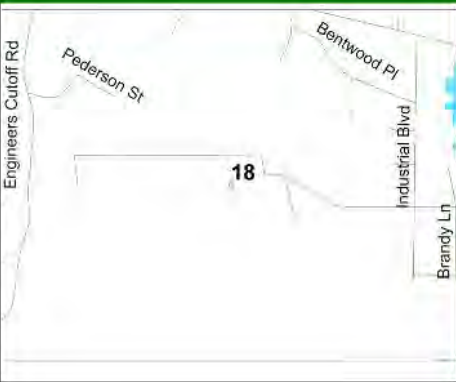
Site 13		Site Map	Site Photo
Owner:	City and Borough of Juneau		
Identification:	FCC: 1205353		
Address:	10745 Glacier Highway		
Latitude:	58-22-42.8 N		
Longitude:	-134-37-46.4 W		
Access:	Vehicle		
Site Details			
Type:	Guy tower used for public safety		
Height:	150' per the CBJ.		
Collocations:	Existing: No, public safety equipment only	Future: 1	
Observations:	FAA identification is posted on the tower.		
Comments:	The CBJ should to decide if they are going to lease space on tower for collocations.		

Site 14		Site Map	Site Photo
Owner:	Calvary Fellowship		
Identification:	FCC: 1250045		
Address:	Glacier Highway		
Latitude:	58-22-35.8 N		
Longitude:	-134-37-27.4 W		
Access:	Vehicle		
Site Details			
Type:	Tree with broadcast equipment		
Height:	FCC indicates approval for 82'; the CBJ indicates a height of 90'.		
Collocations:	Existing: No	Future: 0	
Observations:	Tree branches removed and equipment mounted onto tree		
Comments:	Regulations should be amended to prevent future similar installations.		

Site 15		Site Map	Site Photo
Owner:	State of Alaska		
Identification:	FCC: 1003201		
Address:	2760 Sherwood Lane		
Latitude:	58-22-17 N		
Longitude:	-134-37-8 W		
Access:	Vehicle		
Site Details			
Type:	Lattice used primarily for microwave backhaul		
Height:	142' per the FCC antenna structure registration.		
Collocations:	Existing: No	Future: 0	
Observations:	Tower is secured with a fence and locked gate. FAA identification not posted on tower.		
Comments:	Tower is located at the DMV and an unlikely candidate for collocations.		

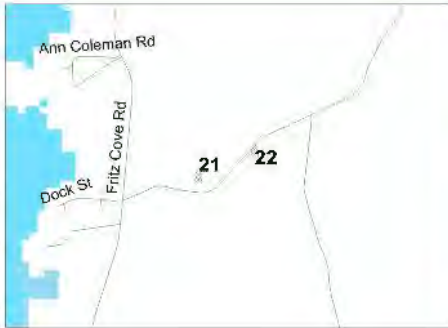
Site 16		Site Map	Site Photo
Owner:	Alascom, Inc.		
Identification:	FCC: 1005560		
Address:	10087 Jensine Street		
Latitude:	58-21-11.8 N		
Longitude:	-134-36-35.4		
Access:	Vehicle		
Site Details			
Type:	Lattice Tower		
Height:	158' per the FCC antenna structure registration.		
Collocations:	Existing: Yes, approximately 2	Future: 2	
Observations:	Site is secured with a fence and locked gate.		
Comments:	The lattice tower is a very good tower for future collocations.		

Site 17		Site Map	Site Photo
Owner:	AlaskaCom		
Identification:	Not available		
Address:	10087 Jensine Street		
Latitude:	58-22-12.23 N		
Longitude:	-134-36-33.77 W		
Access:	Vehicle		
Site Details			
Type:	Small Guy tower next to lattice tower		
Height:	60' per the CBJ (although it appears shorter)		
Collocations:	Existing: No	Future: 0	
Observations:	Shorter tower is to the right of the lattice tower identified as Site 16.		
Comments:	Height and type of tower structure made it not a good option for collocation.		

Site 18		Site Map	Site Photo
Owner:	Unsure		
Identification:	FAA Tower		
Address:	10020 Crazy Horse Drive		
Latitude:	58-21-59.71 N		
Longitude:	-134-36-51.78 W		
Access:	Vehicle		
Site Details			
Type:	Monopole		
Height:	60' per the CBJ.		
Collocations:	Existing: No		Future: 0
Observations:	No tower ownership posted on tower.		
Comments:	Signage at the site indicates the tower is used for air traffic control purposes.		

Site 19		Site Map	Site Photo
Owner:	Unknown		
Identification:	Fritz Cove		
Address:	Fritz Cove Road		
Latitude:	58-22-15.19 N		
Longitude:	-134-38-9.75 W		
Access:	Unsure		
Site Details			
Type:	Unsure		
Height:	90' per the CBJ		
Collocations:	Existing: Unsure		
Observations:	CityScape Consultants, Inc. was not able to assess this site.		
Comments:	Site information provided by the CBJ. The ridgeline photo shows three towers but CityScape could not find access to this facility.		

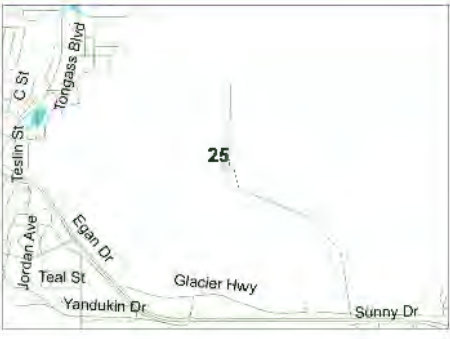
Site 20		Site Map	Site Photo
Owner:	City and Borough of Juneau		
Identification:	FCC: 1247301		
Address:	Pederson Hill		
Latitude:	58-21-58 N		
Longitude:	-134-38-7.5 W		
Access:	Vehicle		
Site Details			
Type:	Guy Tower		
Height:	40' per the CBJ		
Collocations:	Existing: No	Future: 0	
Observations:	The tower (a.k.a. "Mendenhall Peninsula") is used by the CBJ for public safety communications.		
Comments:	Site was not assessed by CityScape Consultants. The photo was provided by the CBJ.		

Site 21		Site Map	Site Photo
Owner:	Unsure		
Identification:	FAA Tower		
Address:	1600 Engineers Cut Off		
Latitude:	58-21-29.64 N		
Longitude:	-134-38-13.44 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Tower		
Height:	60' per the CBJ.		
Collocations:	Existing: No		Future: 0
Observations:	Tower will likely be exclusively used by the FAA.		
Comments:	Signage at the site indicates the tower is used for air traffic control purposes.		

Site 22		Site Map	Site Photo
Owner:	Unsure		
Identification:	FAA Tower		
Address:	Engineers Cut Off		
Latitude:	58-21-32.51 N		
Longitude:	-134-38-2.22 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Tower		
Height:	Unknown		
Collocations:	Existing: No	Future: 0	
Observations:	Tower is likely used exclusively by the FAA		
Comments:	Signage at the site indicates the tower is used for air traffic control purposes.		

Site 23		Site Map	Site Photo
Owner:	ACS Wireless Inc.		
Identification:	FCC: 1275626		
Address:	9229 Cessna Drive		
Latitude:	58-21-43.4 N		
Longitude:	-134-35-10.7 W		
Access:	Vehicle		
Site Details			
Type:	Wood Pole		
Height:	100' per FCC antenna structure registration.		
Collocations:	Existing: Yes, 2	Future: 2	
Observations:	Future collocations will likely require structural reinforcements of the tower.		
Comments:	Actually 2 wood poles side by side. The shorter pole hosts a microwave dish.		

Site 24		Site Map	Site Photo
Owner:	Global Tower, LLC		
Identification:	FCC: 1236722		
Address:	8725 Mallard Street		
Latitude:	58-21-41.08 N		
Longitude:	-134-34-32.7 W		
Access:	Vehicle		
Site Details			
Type:	Wood Pole		
Height:	FCC antenna structure registration indicates 80'; the CBJ indicates 70'.		
Collocations:	Existing: Yes, approximately 2	Future: 0-1	
Observations:	Future collocations will likely require structural reinforcements of the tower.		
Comments:	Equipment shelter(s) match principal building on site.		

Site 25		Site Map	Site Photo
Owner:	Unknown		Picture Unavailable
Identification:	Heintzleman Ridge		
Address:	Unknown		
Latitude:	58-22-10.97 N		
Longitude:	-134-33-13.7 W		
Access:	Unknown		
Site Details			
Type:	Unknown		
Height:	Unknown		
Collocations:	Existing: Unknown	Future: Unknown	
Observations:	CityScope Consultants, Inc. did not assess this site.		
Comments:	Site location was provided by the CBJ and was not found by CityScope Consultants, Inc.		

Site 26		Site Map	Site Photo
Owner:	State of Alaska		
Identification:	FCC: 1244555		
Address:	6860 Glacier Highway		
Latitude:	58-21-32.8 N		
Longitude:	-134-31-39.4 W		
Access:	Vehicle		
Site Details			
Type:	Lattice used primarily for microwave backhaul		
Height:	70' per the FCC antenna structure registration		
Collocations:	Existing: No	Future: 0	
Observations:	Tower is easily accessible from Glacier Highway and would likely have to be rebuilt to accommodate collocations.		
Comments:	Tower is owned by the State and used by the AK Marine Highway System.		

Site 27		Site Map	Site Photo
Owner:	Global Tower, LLC		
Identification:	FCC: 1242712		
Address:	5594 Tonsgard Court		
Latitude:	58-21-17.8 N		
Longitude:	-134-29-49.4 W		
Access:	Vehicle		
Site Details			
Type:	Wood Pole		
Height:	FCC antenna structure registration identifies tower height at 105'; the CBJ indicates 80'.		
Collocations:	Existing: Yes, 3	Future: 0-2	
Observations:	Tower property identified.		
Comments:	Future collocations will likely require structural reinforcements of the tower.		

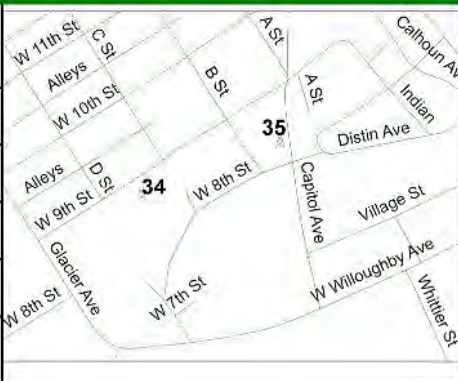
Site 28		Site Map	Site Photo
Owner:	Unknown		
Identification:	Unknown		
Address:	5541 Glacier Highway		
Latitude:	58-21-18.58 N		
Longitude:	-134-29-37 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Tower		
Height:	100' per the CBJ.		
Collocations:	Existing: Yes, 2	Future: 3	
Observations:	No tower ownership information provided on site.		
Comments:	Site is easily accessible off Glacier Highway.		

Site 29		Site Map	Site Photo
Owner:	Alaska Broadcast Communications, Inc.		
Identification:	FCC: 1029038		
Address:	3161 Channel Drive		
Latitude:	58-19-46 N		
Longitude:	-134-28-23 W		
Access:	Vehicle		
Site Details			
Type:	Lattice used for radio broadcasting		
Height:	325' per the FCC antenna structure registration.		
Collocations:	Existing: No	Future: 3	
Observations:	A good site for future collocations.		
Comments:	Presently a broadcast tower for KINO		

Site 30		Site Map	Site Photo
Owner:	Alaska Broadcast Communications, Inc.		
Identification:	Unknown		
Address:	3161 Channel Drive		
Latitude:	58-19-46 N		
Longitude:	-134-28-23 W		
Access:	Vehicle		
Site Details			
Type:	Short lattice tower next to Site 29		
Height:	80'		
Collocations:	Existing: No	Future: 0	
Observations:	Tower used for microwave backhaul to support broadcast signal.		
Comments:	Use of shorter tower for collocation is very unlikely.		

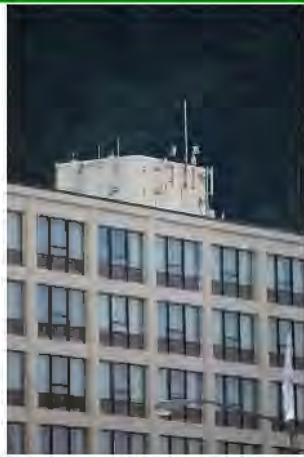
Site 31		Site Map	Site Photo
Owner:	New Cingular Wireless		
Identification:	FCC: 1283764		
Address:	3156 Channel Drive		
Latitude:	58-19-40 N		
Longitude:	-134-28-15 W		
Access:	Vehicle		
Site Details			
Type:	Monopole Tower		
Height:	FCC antenna structure registration indicates a height of 98; the CBJ indicates 92'.		
Collocations:	Existing: No	Future: 2	
Observations:	Tower ownership property identified.		
Comments:	This tower is a good facility for future collocations.		

Site 32		Site Map	Site Photo
Owner:	State of Alaska		
Identification:	Unsure		
Address:	3132 Channel Drive		
Latitude:	58-19-41.04 N		
Longitude:	-134-28-12.54 W		
Access:	Vehicle		
Site Details			
Type:	Lattice used primarily for microwave backhaul		
Height:	50' per the CBJ.		
Collocations:	Existing: No	Future: 0	
Observations:	The base station equipment for the is tower is located within the adjacent building.		
Comments:	Tower is owned by the AK DOT and Public Facilities and collocation is unlikely.		

Site 35		Site Map	Site Photo
Owner:	New Cingular Wireless		
Identification:	FCC: 1265743		
Address:	740 Capitol Ave		
Latitude:	58-18-8.5 N		
Longitude:	-134-25-2.9 W		
Access:	Vehicle		
Site Details			
Type:	Monopole Tower Painted Brown		
Height:	FCC antenna structure registration indicates 50'; CBJ indicates 40'.		
Collocations:	Existing: 1 Tenant	Future: 0-1	
Observations:	FAA identification not found on tower or on tower site.		
Comments:	Low tower height will not likely support additional collocations.		

Site 36		Site Map	Site Photo
Owner:	Unknown		
Identification:	Unknown		
Address:	410 W. Willoughby Avenue		
Latitude:	58-18-3.71 N		
Longitude:	-134-24-50.4 W		
Access:	Vehicle		
Site Details			
Type:	Potential Location for a Concealed Rooftop Attachment		
Height:	Unknown		
Collocations:	None	Future: Unlimited	
Observations:	The metal tubing along side the building going up to rooftop is similar to concealment rooftop infrastructure found in Wasilla, AK.		
Comments:	This type installation would be a good use of rooftop antenna concealment.		

Site 37		Site Map	Site Photo
Owner:	KTOO		
Identification:	Unknown		
Address:	Egan Drive & Whittier Street Latitude:		
58-17-57.7 N Longitude:	-		
134-24-51.49 W Access:			
Vehicle			
Site Details			
Type:	Short Lattice Rooftop Tower; Rooftop Satellite Dishes		
Height:	Unknown		
Collocations:	Existing: Maybe 1 tenant	Future: 0	
Observations:	Short lattice rooftop tower (not shown in picture) appears to have 1 collocation.		
Comments:	Potential for collocation is minimal.		

Site 38		Site Map	Site Photo
Owner:	Goldbelt Hotel		
Identification:	Unknown		
Address:	51 Egan Drive		
Latitude:	58-17-59.01 N		
Longitude:	-134-24-46.31 W		
Access:	Vehicle		
Site Details			
Type:	Rooftop Attachments		
Height:	Unknown		
Collocations:	Existing: Yes, approximately 2	Future: Unlimited	
Observations:	Antenna attachments appear to be only on the parapet.		
Comments:	Rooftop could likely support a new structure on which additional attachments could be placed.		

Site 39		Site Map	Site Photo
Owner:	State of Alaska		
Identification:	Unknown		
Address:	120 E. 4th Street		
Latitude:	58-18-6.12 N		
Longitude:	-134-24-38.45 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Rooftop Tower with Small Dish		
Height:	Unknown		
Collocations:	Existing: No	Future: Unlimited	
Observations:	A good location for future collocations.		
Comments:	The existing rooftop tower could be concealed by a faux architectural feature.		

Site 40		Site Map	Site Photo
Owner:	Federal Government		
Identification:	District Courthouse		
Address:	Main Street & East 4th Street		
Latitude:	58-18-5.33 N		
Longitude:	-134-24-36.58 W		
Access:	Vehicle		
Site Details			
Type:	Guy Rooftop Mount		
Height:	Unknown		
Collocations:	Existing: No	Future: Unlimited rooftop attachments	
Observations:	A good location for future collocations.		
Comments:	The existing rooftop tower could be concealed by a faux architectural feature.		

Site 41		Site Map	Site Photo
Owner:	Unknown		
Identification:	Thomas B. Stewart Legislative Building		
Address:	206 4th Street		
Latitude:	58-18-8.1 N		
Longitude:	-134-24-33.55 W		
Access:	Vehicle		
Site Details			
Type:	Rooftop Attachments		
Height:	Unknown		
Collocations:	Existing: Yes, approximately 2	Future: Unlimited	
Observations:	Antenna attachments not clearly visible for most angles of the street.		
Comments:	The existing rooftop attachments could be concealed by a faux architectural feature.		

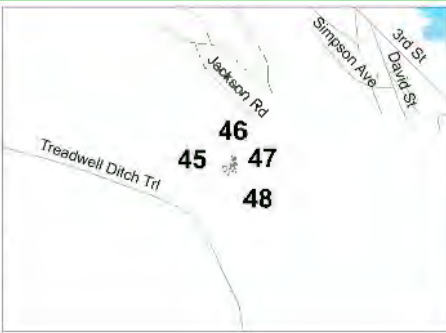
Site 42		Site Map	Site Photo
Owner:	SBA Towers III, LLC		
Identification:	FCC: 1278455		
Address:	1076 Jacobsen Drive		
Latitude:	58-17-22.2 N		
Longitude:	-134-23-40.1 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Tower		
Height:	130' per the FCC antenna structure registration.		
Collocations:	Existing: No	Future: 4	
Observations:	Tower appears vacant.		
Comments:	Typically if a tower is abandoned then the local government has policies in place to require the removal of the facility. This tower is in a good location for future collocations but visually a different type and lower height would benefit the viewshed.		

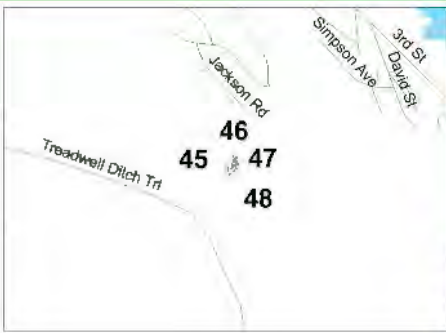
Site 43		Site Map	Site Photo
Owner:	US Coast Guard		
Identification:	Unknown		
Address:	Savikko Road		
Latitude:	58-16-31.44 N		
Longitude:	-134-23-3.91 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Tower		
Height:	Unknown		
Collocations:	Existing: No	Future: 0	
Observations:	A good location for collocation but the tower would need to rebuilt.		
Comments:	The US Coast Guard may not be willing to lease space on their tower.		

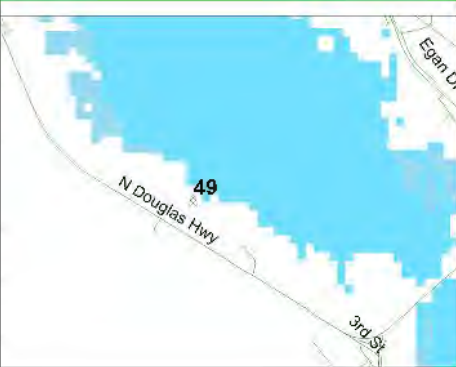
Site 44		Site Map	Site Photo
Owner:	City and Borough of Juneau		
Identification:	Crow Hill		
Address:	4000 Crow Hill Drive		
Latitude:	58-16-45.95 N		
Longitude:	-134-24-29.02 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Tower		
Height:	80' per the CBJ.		
Collocations:	Existing: No	Future: 2	
Observations:	CityScape Consultants, Inc. did not assess this site. The site photo was provided by the CBJ.		
Comments:	The CBJ should establish a policy for use of this tower by the wireless industry.		

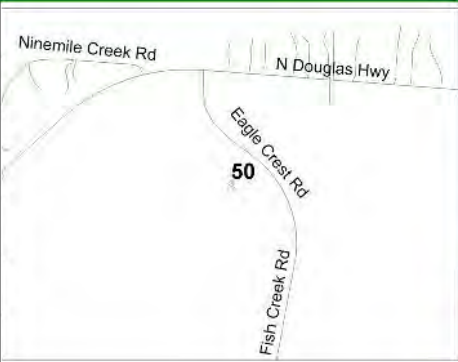
Site 45		Site Map	Site Photo
Owner:	Unknown		
Identification:	Water Reservoir		
Address:	3000 Jackson Road		
Latitude:	58-17-7.24 N		
Longitude:	-134-25-44.98 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Tower		
Height:	150' per the CBJ.		
Collocations:	Existing: Yes, approximately 2	Future: 3	
Observations:	A good opportunity for collocations.		
Comments:	Tower ownership is not provided on this site. The CBJ should require nameplate ownership signage.		

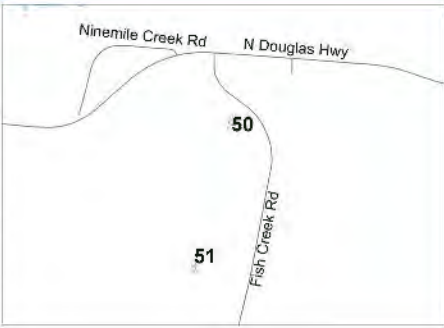
Site 46		Site Map	Site Photo
Owner:	Global Tower, LLC		
Identification:	FCC: 1282197		
Address:	3000 Jackson Road		
Latitude:	58-17-7.44 N		
Longitude:	-134-25-43.36 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Tower		
Height:	185' per the FCC antenna structure registration.		
Collocations:	Existing: Yes, 2	Future: 3	
Observations:	A good location for collocations. The antenna on this tower is mounted "directionally".		
Comments:	Directionally mounted antenna on towers at a similar ground elevation may be a solution to having fewer towers in the valley.		

Site 47		Site Map	Site Photo
Owner:	Unknown		
Identification:	Water Reservoir		
Address:	3000 Jackson Road		
Latitude:	58-17-7.9 N		
Longitude:	-134-25-43.2 W		
Access:	Vehicle		
Site Details			
Type:	Monopole Tower		
Height:	90' per the CBJ.		
Collocations:	Existing: No	Future: 0	
Observations:	This tower could be removed provided the equipment could be mounted on one of the other existing towers within the compound.		
Comments:	CBJ policy should promote collocation over multiple towers on the same zone lot with ample space available for collocations.		

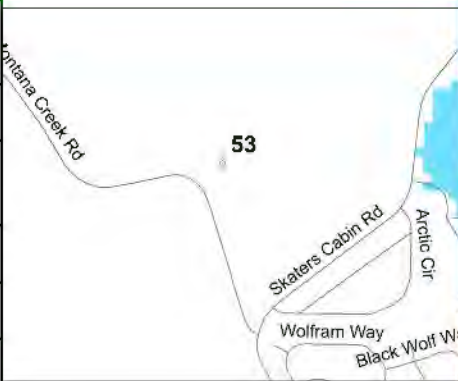
Site 48		Site Map	Site Photo
Owner:	Unknown		
Identification:	Water Reservoir		
Address:	3000 Jackson Road		
Latitude:	58.17.8 N		
Longitude:	-134-25-43 W		
Access:	Vehicle		
Site Details			
Type:	Wood Pole		
Height:	50' per the CBJ.		
Collocations:	Existing: No	Future: 0-1	
Observations:	This tower could be removed provided the equipment could be mounted on one of the other existing towers within the compound.		
Comments:	CBJ policy should promote collocation over multiple towers on the same zone lot with ample space available for collocations.		

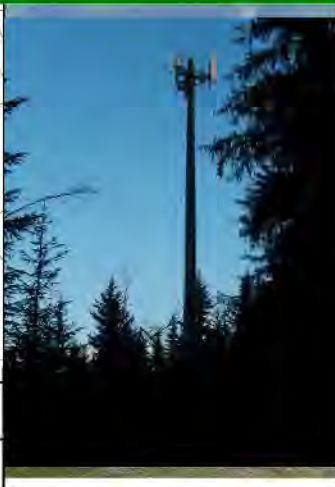
Site 49		Site Map	Site Photo
Owner:	Alaska-Juneau Communications, Inc.		
Identification:	FCC: 1028325		
Address:	North Douglas Highway		
Latitude:	58-18-4 N		
Longitude:	-134-26-32 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Tower		
Height:	FCC antenna structure registration indicates height of 278'; the CBJ indicates 300'.		
Collocations:	Existing: No	Future: 5	
Observations:	The equipment within and around the tower compound needs improvement. Copper cables between the tower base and equipment shelter are in areas overgrown with vegetation.		
Comments:	Ongoing site maintenance should be required through the zoning ordinance.		

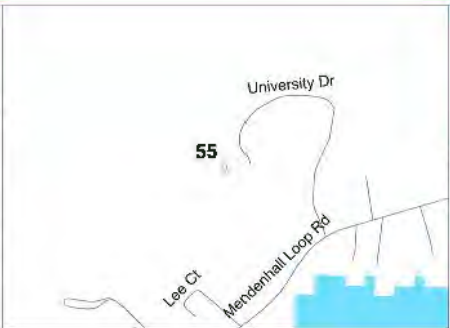
Site 50		Site Map	Site Photo
Owner:	United States		
Identification:	Unknown		
Address:	4000 Eagle Crest Road Latitude:		
58-20-12.6 N Longitude:			
134-33-43.4 W Access:			
Vehicle & Foot			
Site Details			
Type:	Guy Tower		
Height:	Unknown		
Collocations:	Existing: No	Future: 0	
Observations:	Site is nicely developed with long boardwalks to preserve ground cover.		
Comments:	Facility is used for monitoring and recording weather conditions. Collocations are unlikely.		

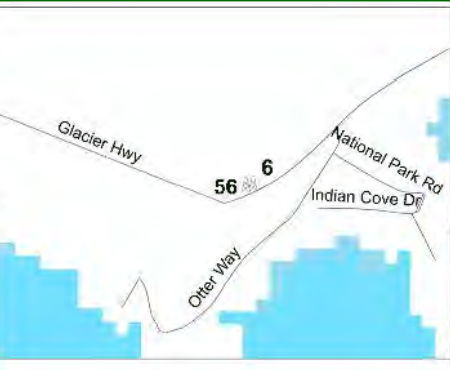
Site 51		Site Map	Site Photo
Owner:	Atlas Tower, LLC		
Identification:	FAA: 1284253		
Address:	Fish Creek Road		
Latitude:	58-19-50 N		
Longitude:	-134-33-54.9 W		
Access:	Vehicle		
Site Details			
Type:	Monopole painted green		
Height:	175' per the FAA.		
Collocations:	Existing: 1 tenant	Future: 3	
Observations:	The tower appears to be new.		
Comments:	Painted green tower appear to be visually effective in the natural setting. A light was added to this pole by the applicant at the request of local helicopter companies; this light conflicts with the issued Conditional Use permit for the facility.		

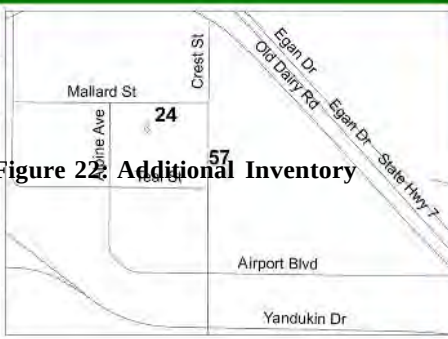
Site 52		Site Map	Site Photo
Owner:	CBJ		
Identification:	Unknown		
Address:	Saddle Mountain		
Latitude:	58-17-50.7 N		
Longitude:	-134-30-41.2 W		
Access:	Airplane		
Site Details			
Type:	Lattice Towers		
Height:	40'; 40'; and 35' per the CBJ.		
Collocations:	Existing: None	Future: 4	
Observations:	CityScape Consultants, Inc. did not assess this site. The site photo was provided by the CBJ.		
Comments:	The CBJ should establish a policy for use of this tower by the wireless industry.		

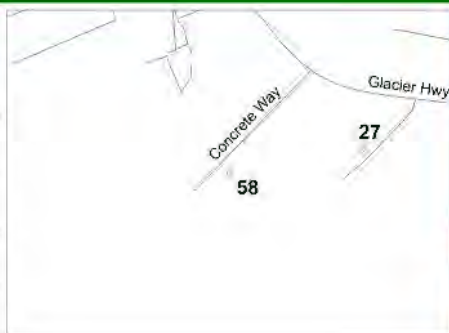
Site 53		Site Map	Site Photo
Owner:	Alaska Wireless Network		
Identification:	FCC: 1284253		
Identification:	FCC: 1284234		
Address:	Fish Creek Road		
Address:	5600 Montana Creek Road		
Latitude:	58-49-50 N		
Latitude:	58-49-51.54 N		
Longitude:	134-36-7.59 W		
Access:	Vehicle		
Site Details			
Type:	Monopole painted green		
Height:	Monopole painted green antenna structure registration.		
Height:	Existing: 100'; FCC approved 104' per the antenna structure registration.		
Collocations:	Existing: 1 tenant	Future: 0-2	
Observations:	The tower appears to be new.		
Comments:	CityScape Consultants, Inc. did not assess this site. The site photo was provided by the CBJ.		
Comments:	Painted green tower appears to be visually effective in the natural setting.		
Comments:	Tower built for GCI as the launch tenant. Site is also known as Coogan. Painted green tower appear to be visually effective in the natural setting.		

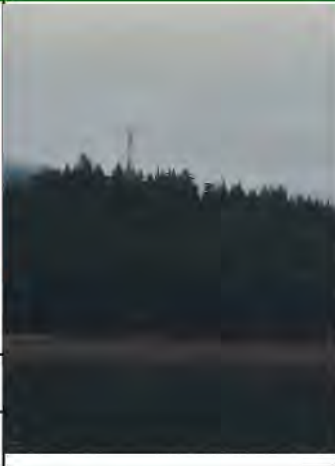
Site 52		Site Map	Site Photo
Owner:	City and Borough of Alaska		
Identification:	FCC: 1284964		
Identification:	Unknown		
Address:	10200 Mendenhall Saddle Mountain		
Address:	Saddle Mountain		
Latitude:	58-24-53.79 N		
Latitude:	58-24-53.79 N		
Longitude:	-134-36-44.26 W		
Access:	Vehicle		
Site Details			
Type:	Monopole towers		
Height:	Existing: 100'; FCC approved 130' per the antenna structure registration.		
Collocations:	Existing: None	Future: 0-4	
Observations:	CityScape Consultants, Inc. did not assess this site. The site photo was provided by the CBJ.		
Comments:	The CBJ should establish a policy for use of site towers by the wireless industry.		
Comments:	Tower built for Verizon as the launch tenant. Site is also known as Glacier.		

Site 55		Site Map	Site Photo
Owner:	AT&T Towers		
Identification:	FCC: 1286087		
Address:	4300 University Drive		
Latitude:	58-23-36.59 N		
Longitude:	-134-38-25.59 W		
Access:	Vehicle		
Site Details			
Type:	Monopole		
Height:	CBJ approved 100'; FCC approved 110' per the FCC antenna structure registration.		
Collocations:	Existing: 1 tenant	Future: 0-1	
Observations:	CityScope Consultants, Inc. did not assess this site. The site photo was provided by the CBJ.		
Comments:	Site is also known as Auke Bay.		

Site 56		Site Map	Site Photo
Owner:	Cellco Partnership		
Identification:	FCC: 1285072		
Address:	14080 Glacier Highway		
Latitude:	58-22-43.32 N		
Longitude:	-134-42-21.24 W		
Access:	Vehicle		
Site Details			
Type:	Painted Monopole		
Height:	CBJ approved 100'; FCC approved 69' per the FCC antenna structure registration.		
Collocations:	Existing: 1 tenant	Future: 0-2	
Observations:	CityScope Consultants, Inc. did not assess this site. The site photo was provided by the CBJ.		
Comments:	Tower built for Verizon as the launch tenant. Site is also known as Auke Bay Alt #3. The tower at site 6 which is 100' should have accommodated this collocation.		

Site 57		Site Map	Site Photo
Owner:	Global Tower, LLC		
Identification:	FCC: 1236722		
Address:	Crest Street		
Latitude:	58-21-38.75 N		
Longitude:	-134-34-24.41 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Tower		
Height:	CBJ approved 100'; FCC approved 70' per the FCC antenna structure registration		
Collocations:	Existing: 1 tenant	Future: 0-2	
Observations:	CityScape Consultants, Inc. did not assess this site. The site photo was provided by the CBJ.		
Comments:	Tower built for Verizon as the launch tenant. Had site 24 (70') been modified or constructed originally 15' - 20' taller then this site (#57) would not have been necessary.		

Site 58		Site Map	Site Photo
Owner:	Atlas Tower USA		
Identification:	FCC: 1284968		
Address:	5753 Concrete Way		
Latitude:	58-21-16.36 N		
Longitude:	-134-30-3.06 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Towers		
Height:	CBJ approved 130'; FCC approved 135' per the FCC antenna structure registration.		
Collocations:	Existing: 1 tenant	Future: 0-3	
Observations:	CityScape Consultants, Inc. did not assess this site. The site photo was provided by the CBJ.		
Comments:	Tower built for Verizon as the launch tenant. Site also known as Lemon Creek. Had site 27 (70') been modified or constructed originally 15' - 20' taller then this site (#58) would not have been necessary.		

Site 59		Site Map	Site Photo
Owner:	Atlas Tower USA		
Identification:	FCC: 1287767		
Address:	Unknown		
Latitude:	58-20-2.32 N		
Longitude:	-134-39-34.46 W		
Access:	Vehicle		
Site Details			
Type:	Lattice Tower		
Height:	155' per CBJ and the FCC antenna structure registration.		
Collocations:	Existing: 1 tenant	Future: 0-4	
Observations:	CityScape Consultants, Inc. did not assess this site. The site photo was provided by the CBJ.		
Comments:	Tower built for Verizon as the launch tenant.		

Site 60		Site Map	Site Photo
Owner:	AT&T		
Identification:	FCC: 1288896		
Address:	3000 Fish Creek Road		
Latitude:	58-16-36.01 N		
Longitude:	-134-31-0.88 W		
Access:	Vehicle		
Site Details			
Type:	Wood Pole		
Height:	50' per the CBJ and the FCC antenna structure registration		
Collocations:	Existing: 1 tenant	Future: 0-1	
Observations:	CityScape Consultants, Inc. did not assess this site. The site photo was provided by the CBJ.		
Comments:	Given the low height if this tower is it not likely to support any additional collocations.		

Appendix A

SEC. 704. FACILITIES SITING; RADIO FREQUENCY EMISSION STANDARDS.

(a) NATIONAL WIRELESS TELECOMMUNICATIONS SITING POLICY- Section 332(c) (47 U.S.C. 332(c)) is amended by adding at the end the

following new paragraph:

`(7) PRESERVATION OF LOCAL ZONING AUTHORITY-

`(A) GENERAL AUTHORITY- Except as provided in this paragraph, nothing in this Act shall limit or affect the authority of a State or local government or instrumentality thereof over decisions regarding the placement, construction, and modification of personal wireless service facilities.

`(B) LIMITATIONS-

`(i) The regulation of the placement, construction, and modification of personal wireless service facilities by any State or local government or instrumentality thereof--

`(I) shall not unreasonably discriminate among providers of functionally equivalent services; and

`(II) shall not prohibit or have the effect of prohibiting the provision of personal wireless services.

`(ii) A State or local government or instrumentality thereof shall act on any request for authorization to place, construct, or modify personal wireless service facilities within a reasonable period of time after the request is duly filed with such government or instrumentality, taking into account the nature and scope of such request.

`(iii) Any decision by a State or local government or place,

construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in a written record.

`(iv) No State or local government or instrumentality thereof may regulate the placement, construction, and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the Commission's regulations concerning such emissions.

`(v) Any person adversely affected by any final action or failure to act by a State or local government or any instrumentality thereof that is inconsistent with this subparagraph may, within 30 days after such action or failure to act, commence an action in any⁷ court of competent jurisdiction. The court shall hear and decide such action on an expedited basis. Any

person adversely affected by an act or failure to act by a State or local government or any instrumentality thereof that is inconsistent with clause (iv) may petition the Commission for relief.

`(C) DEFINITIONS- For purposes of this paragraph--

`(i) the term `personal wireless services' means commercial mobile services, unlicensed wireless services, and common carrier wireless exchange access services;

`(ii) the term `personal wireless service facilities' means facilities for the provision of personal wireless services; and

`(iii) the term `unlicensed wireless service' means the offering of telecommunications services using duly authorized devices which do not require individual licenses, but does not mean the provision of direct-to-home satellite services (as defined in section 303(v)).'.

(b) RADIO FREQUENCY EMISSIONS- Within 180 days after the enactment of this Act, the Commission shall complete action in ET Docket 93-62 to prescribe and make effective rules regarding the environmental effects of radio frequency emissions.

(c) AVAILABILITY OF PROPERTY- Within 180 days of the enactment of this Act, the President or his designee shall prescribe procedures by which Federal departments and agencies may make available on a fair, nondiscriminatory basis, property, rights-of-way, and easements under their control for the placement of new telecommunications services that are dependent, in whole or in part, upon the utilization of Federal spectrum rights for the transmission or reception of such services. These procedures may establish a presumption that requests for the use of property, rights-of-way, and easements by duly authorized providers should be granted absent unavoidable direct conflict with the department or agency's mission, or the current or planned use of the property, rights-of-way, and easements in question. Reasonable fees may be charged to providers of such telecommunications services for use of property, rights-of-way, and easements. The Commission shall provide technical support to States to encourage them to make property, rights-of-way, and easements under their jurisdiction available for such purposes.

**ASSEMBLY AGENDA/MANAGER'S REPORT
THE CITY AND BOROUGH OF JUNEAU, ALASKA**

Spuhn Island Cell Tower Update

ATTACHMENTS:

Description	Upload Date	Type
☐ Memo re Spuhn Island Cell Tower	3/6/2014	Cover Memo

MEMORANDUM

CITY/BOROUGH OF JUNEAU

City & Borough Manager's Office
155 S. Seward St., Juneau, Alaska 99801

Rob.Steedle@ci.juneau.ak.us



Voice (907) 586-5240

Fax (907) 586-5385

DATE: March 6, 2014

TO: Mayor and Assembly

FROM: Rob Steedle
Deputy City Manager

SUBJECT: Mitigating the Visual Impacts of the Spuhn Island Cell Tower Lights

At the January 27, 2014 Assembly meeting, you directed staff to find options for mitigating the distress experienced by some residents due to the lighting on the Spuhn Island cell tower. We have identified six options, presented in a table appended to this brief memo. It is important to note that discussion about these alternatives has been limited to a few CBJ staff members, and has not yet included the regulatory agencies or the tower and property owners. The assumptions used are untested, and the cost estimates are very rough. Should the Assembly find that one or more of the alternatives worthy of further consideration, we would refine the cost estimates for those alternatives and initiate discussion with the appropriate owners and agencies.

You also asked for ownership information. Atlas Tower LLC, a Colorado company, owns the tower. Atlas Tower is leasing the parcel from Spuhn Island Development, LLC, a Juneau company. The five-year lease began in February 2012, and five renewal periods of five years each remain.

You asked staff to consider the suggestion made by Mr. Doug Mertz that the CBJ facilitate a "community mediation" concerning this issue. We do not believe that community mediation is an approach that makes sense in this particular case. The tower's owner has a legal right to maintain that tower in its location, a location that it chose after detailed analysis. It is very unlikely that Atlas Tower would be interested in coming to the table for mediation, and CBJ has no grounds to compel them to do so.

We would appreciate further direction after you have reviewed the alternatives.

Spuhn Island Cell Tower Options

	<u>Option</u>	<u>Viability</u>	<u>Time</u>	<u>Cost</u>	<u>Notes</u>
1	replace tower with a new tower on CBJ land on Spuhn Island	medium	1 year	\$ 550,000	new location may not be acceptable to Atlas Tower and Verizon; visual impacts may still be objectionable <u>Tasks:</u> 1) negotiate relocation with Verizon and Atlas Tower 2) work with FAA on requirements for new location 3) negotiate easement, if needed, for utilities 4) negotiate easement, if needed, for refueling and maintenance 5) construct tower 6) demolish existing tower 7) compensate Spuhn Island Development LLC for lease termination
2	replace tower with a new tower on CBJ land on Mendenhall Peninsula ridge	medium	1 year	\$ 550,000	new location may not be acceptable to Atlas Tower and Verizon; visual impacts may be objectionable to another group of residents <u>Tasks:</u> 1) locate suitable site for power, access 2) negotiate relocation with Verizon and Atlas Tower 3) negotiate easement with FAA and determine lighting requirements 4) construct tower 5) demolish existing tower 6) compensate Spuhn Island Development LLC for lease termination
3	lower height of tower to the height of surrounding trees	very low	2 years	\$ 325,000	probably unacceptable to Atlas Tower and Verizon due to impaired signal; CBJ has risk exposure if aviation accident occurs <u>Tasks:</u> 1) negotiate modification with Verizon and Atlas Tower 2) contract with Atlas Tower/Verizon for propagation studies 3) negotiate lighting removal with FCC/FAA 4) modify tower
4	advocate to FAA for new lighting standards	very low	10 years	\$ 175,000	<u>Tasks:</u> 1) engage FAA in dialogue about feasibility of lower intensity lighting in certain situations 2) when approved, pay for purchase and installation of new light controller
5	install custom lighting not meeting FAA standards	very low	2 years	\$275,000	unacceptable to FCC/FAA (i.e., illegal); CBJ has risk exposure if aviation accident occurs; possibility of fines <u>Tasks:</u> 1) contract with manufacturer for custom light control system 2) negotiate with Verizon and Atlas Tower
6	purchase property, remove tower when lease ends	very low	3 years	\$ 250,000	lease stipulates that Atlas Tower has first right of refusal, unlikely that they will refuse to purchase property given their investment in it <u>Tasks:</u> 1) negotiate with Spuhn Island Development LLC