

# KODIAK FIRE STATION



# **KODIAK FIRE STATION – SITE SELECTION AND PREDEVELOPMENT STUDY**

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## ACKNOWLEDGEMENTS

In Fall of 2019, the City of Kodiak retained ECI to assist with Site Selection and Predevelopment for replacement of the Kodiak Fire Station. ECI's team includes a team of experts listed below. This report summarizes results of that effort which culminated on May 25, 2021, with selection of 1240 Mill Bay Road as the site for a replacement station.

### **Owner**

City of Kodiak  
219 Lower Mill Bay Road  
Kodiak Alaska, 99615

### **Planner / Architect**

ECI/Hyer Inc., dba ECI  
3909 Arctic Blvd, Suite 100  
Anchorage, AK 99503

### **Fire Station Specialist**

Miller Hull Partnership  
Polson Building, 71 Columbia, 6th Floor  
Seattle, WA 98104

### **Civil Engineer**

Bristol Engineering Services  
111 W. 16th Avenue, Third Floor  
Anchorage, AK 99501

### **Environmental Engineer**

Bristol Environmental Remediation Services  
111 W. 16th Avenue, Third Floor  
Anchorage, AK 99501

### **Cost Estimator**

JMB Consulting  
4320 29<sup>th</sup> Avenue W  
Seattle, WA 98199

### **Geotechnical Engineer**

Golder Associates  
2121 Abbot Road, Suite 100  
Anchorage, AK 99507

## OVERVIEW

Kodiak has a critical need to construct a new Fire Station to protect its emergency response personnel and equipment. The existing Fire Station, located at 219 Lower Mill Bay Road, is beyond its useful life, located in the tsunami inundation zone and falls well short of best design practices for a fire station. The existing station was constructed in three phases (Phase 1 in early 60s; Phase 2 in late 60s; Phase 3 in late 70s or early 80s) and was never designed with a specific purpose of being a fire station. The building served as a public works building for several years before becoming a fire station. Replacement of the station has been a City desire for years, but the need became critical after a magnitude 7.9 earthquake on January 23, 2018. That event highlighted structural deficiencies that put emergency personnel and equipment at risk, making it likely that personnel and/or equipment may not be able to respond quickly after another major earthquake and/or tsunami. In addition, the building's mechanical systems fall well short of what would be required to keep personnel safe from harmful fumes from the apparatus bays (sleeping quarters are directly connected to the bays without a mechanical system to prevent cross-contamination).

In 2019, the City made replacement of the fire station a top priority. From September 2019 through May 2021, a site selection and predevelopment process took place to identify the best location for a new Fire Station, develop a space list for the new station and right-size the project to fit current and future needs. Over the course of a year-and-a half, and in spite of a pandemic, a new site was selected for a replacement Fire Station at 1240 Mill Bay Road. A space list totaling 21,750 square feet and a concept plan were established as the 'basis-of-design' for the new facility. The new station is to be designed as a 'Critical Facility', also known as an essential facility, able to respond immediately after an earthquake or other major event, and following best practices to keep emergency personnel and equipment safe from harm.

## BUILDING SPACE LIST AND CONCEPTUAL FLOOR PLANS

The space list for the replacement Fire Station was developed in consultation with the Chief and Deputy Chief and is based on best practices for modern fire stations, including the State of Washington “Healthy In, Healthy Out” guidelines. The station shall include a minimum of five drive-through apparatus bays, with a strong preference to add a sixth bay to improve operational efficiency. The station shall be constructed as a Critical Facility, Category IV, as defined by FEMA and ASCE 7, *Minimum Design Loads for Building and Other Structures*. Design of the new facility should balance efficient operations, safety and the desire for the new facility to have a strong civic presence.

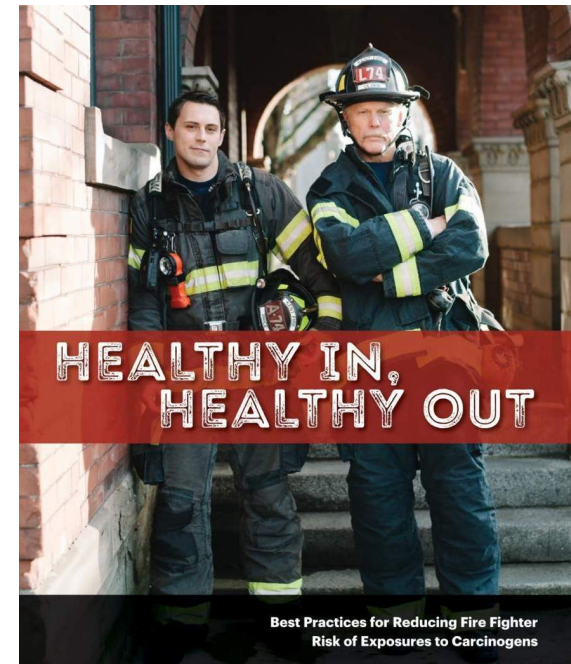
Apparatus Bays at the new facility shall be designed to accommodate safe return of emergency personnel from an event without contaminating the facility. Layout of the facility shall permit cleaning of personnel and equipment before it is brought into the primary parts of the building. The bays should also be supported by all the spaces necessary to reprovision equipment for quick turnaround.

Design of the apparatus bays, in conjunction with the hose drying tower, should anticipate personnel training needs. The concept design includes a service mezzanine that, in conjunction with the tower, allows for indoor training during inclement weather.

The “House” side of the station includes administrative offices, a training room and station living quarters for personnel. The training room should be designed so that it can be used as a backup emergency operations center should the need arise. Likewise, the small conference room should have adequate power and data to serve as a backup dispatch center. Living quarters include individual sleeping rooms for six emergency personnel, shared toilets/showers, a fitness room and appropriately sized kitchen and dining/living/lounge areas.

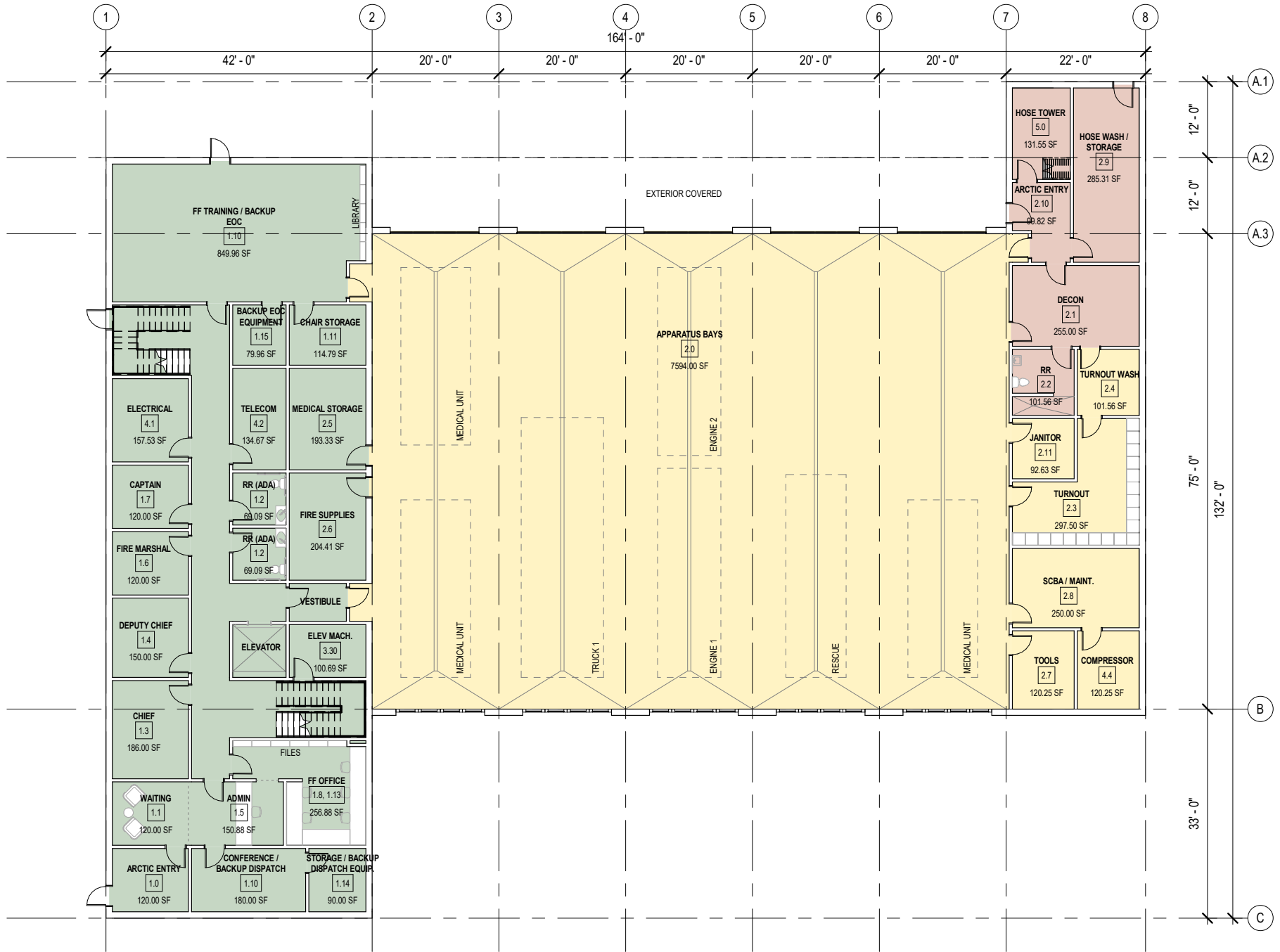
An order-of-magnitude cost estimate was created for the site. A total project budget of \$24.4M is recommended for a five-bay station at the site, with a recommended \$700k additive alternate for a sixth apparatus bay. This budget includes design, project administration, permits, construction, inspections and furnishing of the station.

The space list and concept floor plans are included on the following pages.

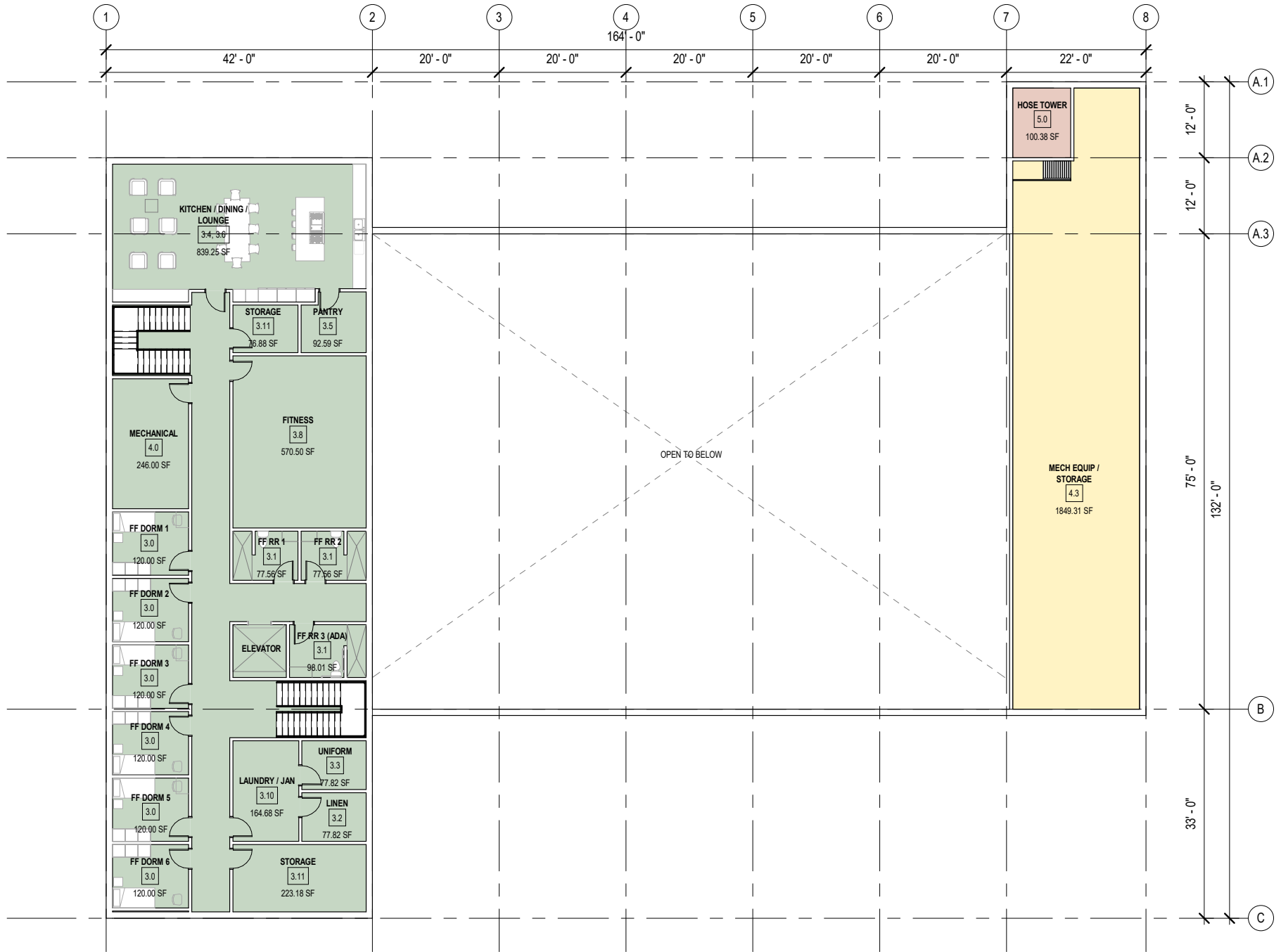


Kodiak Fire Station -- Space List							
		5/5/2021	Qty	Area (sf)	Net Area (sf)	Subtotals (sf)	Notes
<b>Station Administrative</b>							
1.0	Public Arctic Entry (Sally Port)		1	120	120		
1.1	Small Waiting Area		1	120	120		2 chairs
1.2	Restrooms		2	80	160		Also support training room
1.3	Office - Chief		1	180	180		
1.4	Office - Deputy Chief		1	150	150		
1.5	Office (Open) - Admin Assistant		1	100	100		
1.6	Office - Fire Marshal		1	150	150		Anticipated future position
1.7	Office - Captain		1	120	120		
1.8	Office - Firefighters: 4 workstations		1	160	160		
1.9	Small Meeting Room / Backup Dispatch		1	240	240		For interviews, small meetings, visitors, teleconferences and Zooms.
1.10	FF Training / Backup EOC		1	875	875		Primary need is for a training room, but this room could also serve as a Standby Emergency Operations Center; consider divider wall.
1.11	Table and Chair Storage		1	120	120		
1.12	Library (Alcove or Closet at Training)		1	48	48		4 @ 36" wide by 6' tall shelves
1.13	Files		1	80	80		
1.14	Backup Dispatch Equipment		1	80	80		
1.15	Backup EOC Equipment		1	80	80		
Subtotal - Administrative Area						2,783	sf
<b>Station Operations</b>							
2.0	Apparatus Bay -drive-thru, 20' wide 75' deep		5	1500	7,500		14' wide x 16' high doors - verify height for ladder truck. 5-bay configuration requires double-stacking ambulance and rescue vehicles. Mass casualty - provide curtain so two bays can be used for drive-thru and drop off; rest of floor used as triage.
2.0	Apparatus Bay -drive-thru, Additional, 20' wide 75' deep		0	1400	0		These two additional bays would allow each apparatus it's own bay, and/or allow response trailers to be stored indoors.
2.1	Clean up /Decon/Extractor/Dryer/Shower		1	240	240		Shared space for Decon/Extractor/Dryer storage and Decontamination shower/restroom - well ventilated to remove harmful chemical off-gassing
2.2	Toilet Room with Shower		1	110	110		Near Apparatus Bay
2.3	Turn Out Alcove		20	20	400		
2.4	Wash Down Alcove (wash off turn out gear)		1	60	60		
2.5	Ambulance/Medical Storage		1	200	200		
2.6	Fire Supplies Storage		1	200	200		
2.7	Maintenance / Small Tool Workshop		1	120	120		
2.8	SCBA Fill Station / Bottle Storage / Maintenance		1	250	250		
2.9	Hose Washer & Dryer Storage		1	200	200		

	5/5/2021	Qty	Area (sf)	Net Area (sf)	Subtotals (sf)	Notes
2.10	Staff Arctic Entry	1	120	120		
2.11	Hose Tower x 3 Stories	3	120	360		
2.12	Apparatus Bay Janitorial	1	80	80		
Subtotal - Operations					9,840	sf
<b>Station Living Quarters</b>						
3.0	Sleep Rooms	6	120	720		1 person per room 3 lockers per room (to accommodate shifts) 6 rooms needed for current staffing; 2 additional are suggested
3.1	Shared Restroom/Showers	3	110	330		Shared between 2 sleeping rooms each
3.2	Linen Closet	1	30	30		
3.3	Uniform Closet	1	60	60		
3.4	Kitchen	1	260	260		Large gas stove/oven, microwave , extra size commercial refrigerator with freezer, sinks, garbage disposal, dishwasher,
3.5	Pantry	1	80	80		
3.6	Dining/Living/Lounge	1	600	600		
3.7	Storage - Main	1	300	300		Original program included a family room, but a greater need for storage was confirmed with Chief and Deputy Chief
3.8	Fitness	1	600	600		
3.9	Toilet rooms with showers	0	100	0		Program item removed after discussion with Chief and Deputy Chief
3.10	Laundry Room and Janitorial	1	150	150		
3.11	Storage - Clean	1	80	80		
Subtotal - Living Quarters					3,210	sf
<b>Building Services</b>						
4.0	Boiler/Mechanical	1	400	400		
4.1	Electrical	1	120	120		
4.2	Telecom Room	1	120	120		
4.3	Mechanical / Mezzanine	1	1200	1200		
4.4	Compressor Room	1	120	120		
4.5	Stairs	x 2 stories	2	440	880	
4.6	Elevator	x2 stories	2	80	160	
4.7	Elevator Machine Room	1	80	80		
Subtotal - Building Services					3,080	sf
<b>Net Area - Fire Station</b>					<b>18,913</b>	sf
Allowance for Walls & Circulation			15%		2,837	
<b>Total Gross Area - Fire Station</b>					<b>21,750</b>	sf





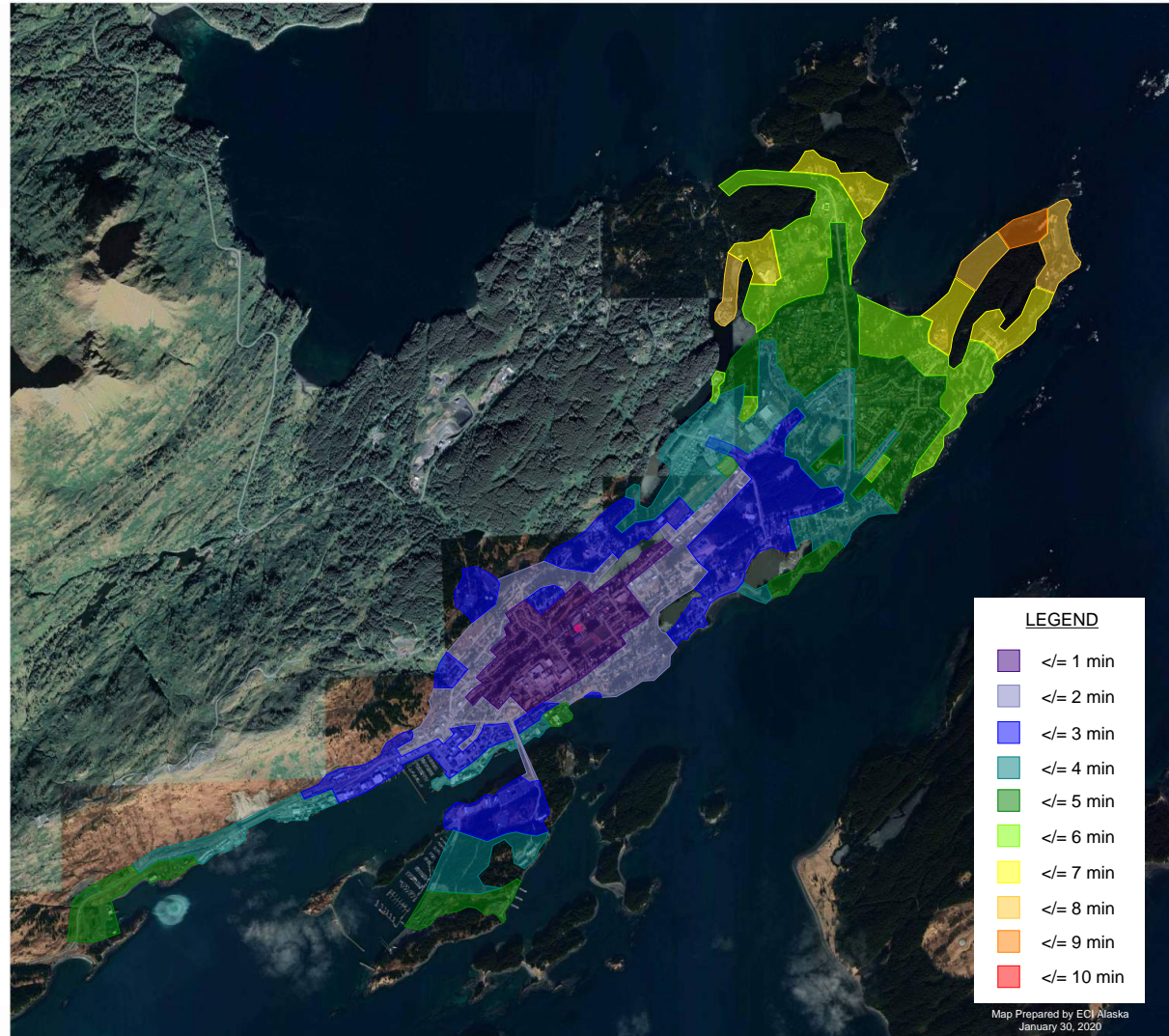


## SELECTED SITE

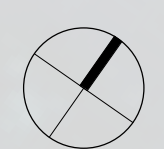
The site selected for the Fire Station, 1240 Mill Bay Road, was acquired from Ms. Kim in early 2021. The property fronts on Mill Bay Road and has ample frontage to support an apron serving up to six drive-thru apparatus bays while also accommodating necessary parking and return vehicle access. It is located well clear of the tsunami inundation zone and allows for excellent emergency response times. The site backs onto the access drive to Baranof Park. Mill Bay Road and much of the existing site sit several feet above this access drive, and an existing retaining wall currently exists near the south of the site. In order to create enough site depth for the front apron, station and working yard, a new retaining wall is proposed at the south of the site. At Council's request, the budget plans for a covered stair connection and walkway from Baranof Park to Mill Bay Road.



Kodiak Fire Station  
(3) 1240 Mill Bay Road Travel Time Mapping



Disclaimer: Travel times were sourced from Google Maps for all sites. This information may vary from actual conditions.



## SITE SELECTION PROCESS

Site selection and predevelopment for a replacement Fire Station took place between September 2019 and June 2021:

### 2019

- September: In September 2019, the City issued an RFP for site selection for future Fire Station and Ambulance Garage with an October 4<sup>th</sup> deadline. Five proposals were received. Concurrently, the City began working with Architect Brian Meissner, ECI, on a space program and site selection for the new Fire Station.
- October: The October workshop focused on development of an initial space list for the fire station and identification of government owned sites to add to the list of private sites from the RFP. During this site visit several government owned sites were added to the list. All sites were visited as part of an initial assessment.
- November: The November workshop focused on review of the identified sites and finalization of a site selection matrix, along with review of the initial space list. At this time, the space list included seven drive-thru apparatus bays at request of the Chief and with endorsement of Council. This resulted in a total building size of 24,300 square feet, which set the basis for site evaluation. Another key outcome of the November workshop was a Council decision that emergency response travel time be the most important criteria in site selection. The Council requested that the team review emergency responses to determine where most calls occur, and to map response time for each of the sites.
- At the November 12, 2019 session, the Council requested that a Steering Committee for site selection of the new fire station be formed to guide the Council's decision making process. The Mayor, two Council members and 2 at-large members of the public were appointed on January 1, 2020.
- In December 2019, the Borough Manager suggested that the City consider yet another site owned by the Borough and located at Egan Way and Rezanof Drive.

### 2020

- February: Due to inclement weather, the Steering Committee missed its January meeting and met on February 11, 2020. Due diligence on site selection continued. At this time, results of a study on Fire & EMS call response locations and travel times were evaluated for merits of each site and to gauge whether the location achieved an acceptable response time of five minutes or less. This resulted in three sites rising to a shortlist: Rezanof, Existing Station and Coon Field. Rezanof was viewed as the preferred site due to location, but site availability was still in question. Significant concerns existed about the Existing Station location within the worst case tsunami inundation zone, and Coon Field's displacement of a ballfield.

- March: The COVID-19 pandemic slowed progress on site selection while the City focused its resources towards managing the emerging emergency.
- July– September: City staff continued to await authorization from the KIB Assembly to conduct an environmental assessment to determine feasibility of the Rezanof property to become the future site of the new Fire Station. The City held out hope for this property due to the beneficial features of the location, especially placing it out of the inundation zone, achievement of response times of five minutes or less to all locations in the City, including the economic epicenter at ports, harbors and seafood processing facilities. Ultimately the KIB denied the City’s request in January 2021, which unfortunately cost the project a lot of time and resources.
- On November 10, 2020, the City Council and Fire Station Steering Committee received a presentation from ECI and Miller/Hull Partnership on ‘Healthy In, Healthy Out’ which addressed the importance of Fire Station location and best practices for reducing exposure to carcinogens by creating red, yellow and green zones in the station. Sustainable and healthy environments for firefighters, fire response times, and civic identity were the focus of the workshop.

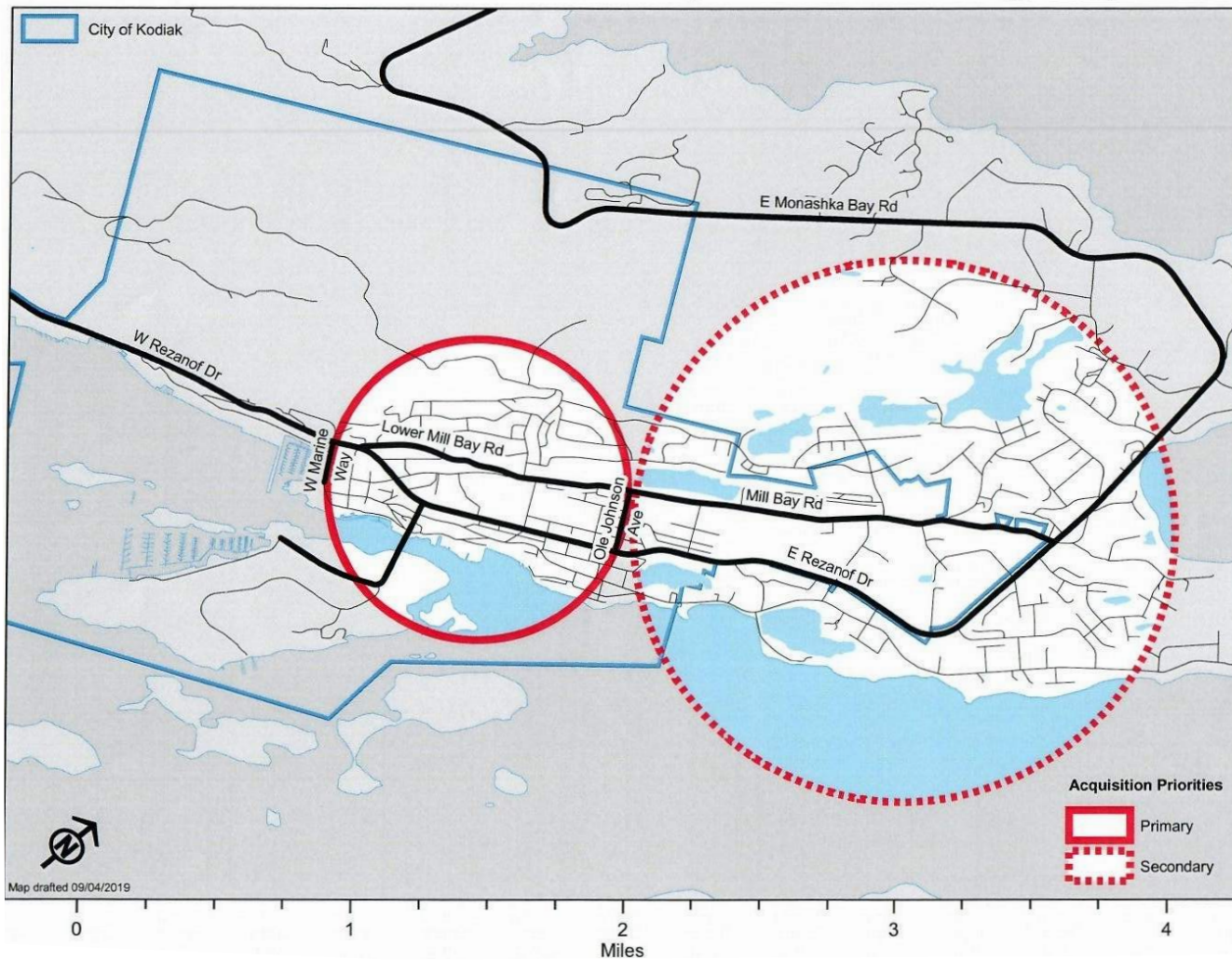
## **2021**

- January through March: The team conducted a site due diligence investigation for the three shortlisted sites. This included coordination of a Phase I ESA, utility, traffic, geotechnical and site civil investigations at the Rezanof site, which were performed by Bristol Engineering Services. ECI was assisted by the Miller Hull Partnership, designers of national award-winning fire stations. ECI worked with the Fire Chief to explore site layout options for the three sites and developed a cost estimate for each option. A summary presentation was provided to the City Council in February 2021. Deliverables included site concept layouts, including a site plan overlaid on drone footage previously gathered by ECI. Another deliverable was an order-of-magnitude estimate for site development costs including: hazardous material abatement and demolition of existing buildings, traffic safety improvements, utility relocation costs and site preparation costs. The February and March Council workshops had two key results: 1) a request that the team find ways to tighten up the building program to see if costs could be reduced; and 2) a growing recognition that each of the three shortlisted sites had a potential fatal flaw.
- April and May: ECI and Miller Hull worked with the Chief and Deputy Chief to refine the space list and develop concept floor plans for the station. This process resulted in a smaller baseline building containing a minimum of five drive-thru apparatus bays with a strong preference for a sixth bay to improve operations. Training functions were integrated with a hose drying tower and service mezzanine, and front-of-house functions were reviewed with a critical eye towards space efficiency. A smaller baseline building of 21,750 emerged.
- During this time, the City Council adopted state and federal legislative priorities to include the New Fire Station and the City

Manager entered the project description and request through the Alaska State Legislatures CAPSIS portal. Priorities were also provided to the AK Congressional Delegation for possible 'earmarks'. We were notified in late April 2021 that the project had been included in Rep. Don Young's top 10 list of priority capital projects for Alaska.

- Council Work Session on May 10, 2021: ECI presented options and costs for the Old Library Site and Coon Field. They requested same information for the KIB Egan Way & Rezanof Site and discussed need for public input through an open house and survey. After action on this direction included the drafting of the survey and scheduling of the open house.
- Following May 10, 2021 work session, members of the Council walked the newly acquired Ms. Kim property and directed City staff to work with ECI to develop a fit test, site layout and cost comparison for Ms. Kim's site. The smaller footprint (five to six apparatus bays versus seven) allowed the team to re-evaluate Ms. Kim's site, 1240 Mill Bay Road, which had been a favorite of the Chief early in the process but was dismissed because it was too small to support a seven-bay station. The smaller building proved a good fit on the site which had recently been acquired by the City. During their May 25, 2021, Council selected the Ms. Kim property as the location for the new Fire Station.

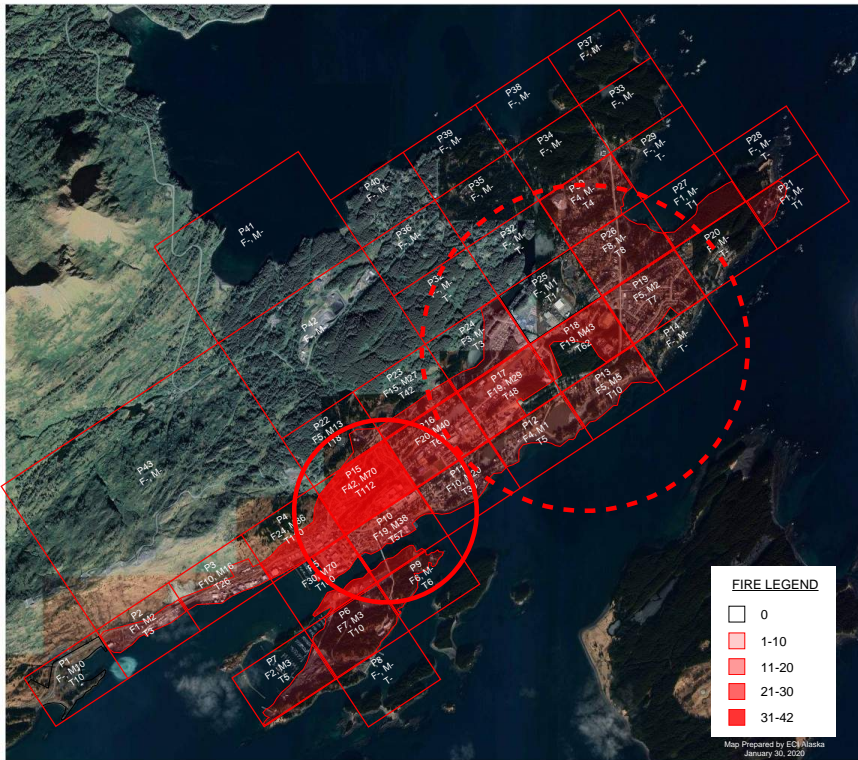
To help identify potential sites, the process started with a Request for Information (RFI) to identify available parcels. Concurrent with the RFI, the site selection team reviewed City and other government owned sites to identify potential parcels. To achieve the best possible emergency response times, the RFI identified Primary and Secondary areas of acquisition priorities which were identified on a map that accompanied the RFI.



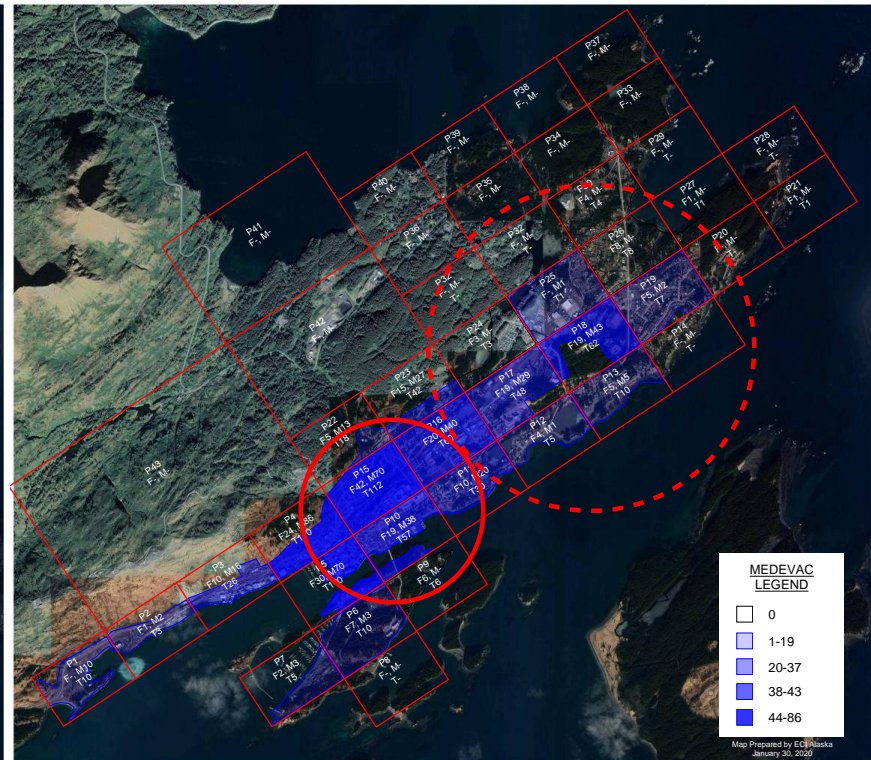


Response time is critical for emergency services, and the National Fire Protection Association sets a target of 5 minutes or less for emergency response. With assistance from the Deputy Fire Chief, the site selection team used 2018 emergency call data to map occurrences of Fire and Medevac calls. The resulting maps became known as 'Heat Maps' that were used to evaluate the best location for a new station.

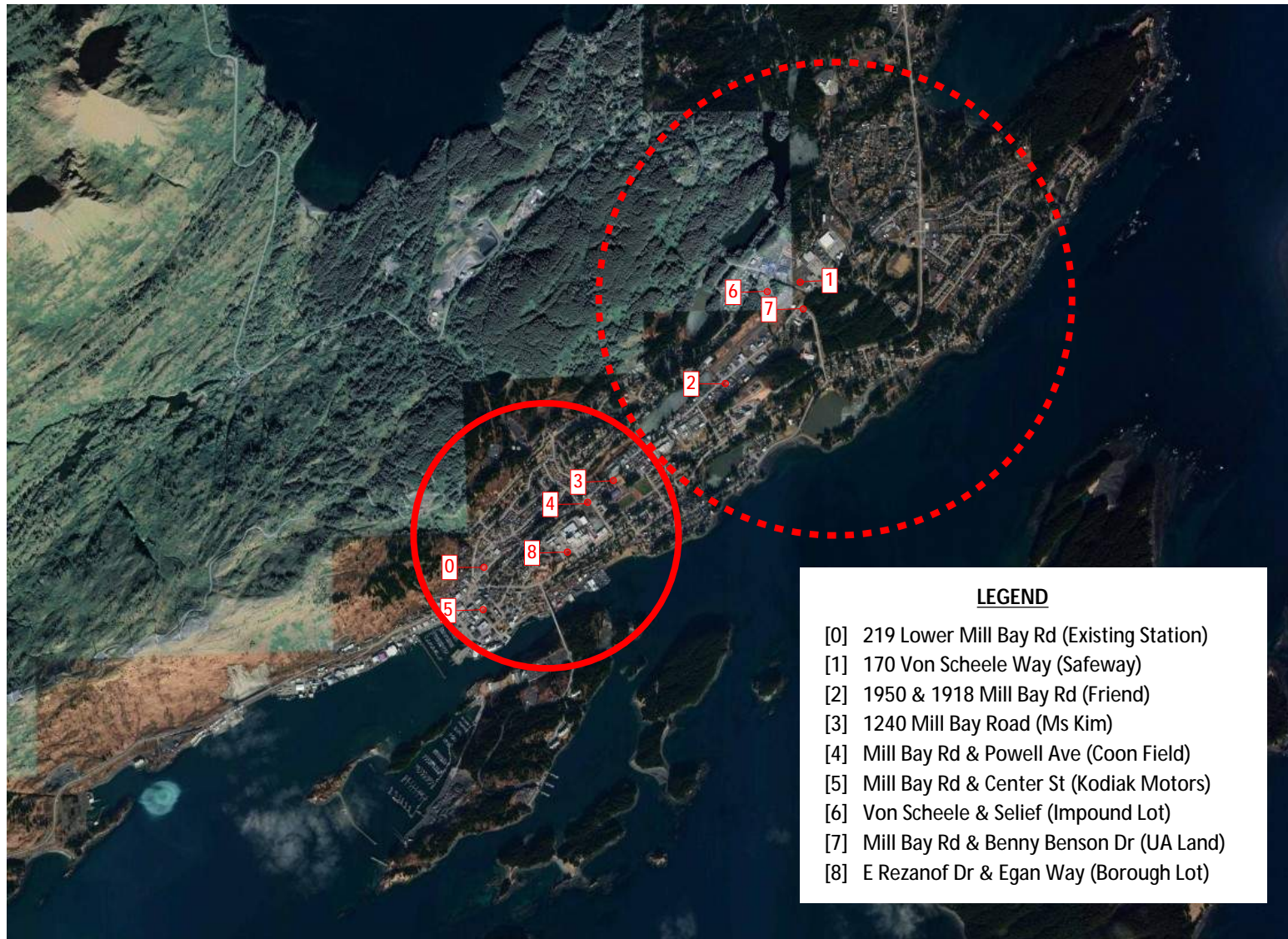
Kodiak Fire Station  
2018 FIRE Instance Mapping



Kodiak Fire Station  
2018 MEDVAC Instance Mapping



In total, eight sites were identified for initial consideration, in addition to the Existing Station site. These sites were scored by the site selection team according to several categories, using scoring criteria developed by the Site Selection Committee. Evaluated sites are shown on this map:



In late 2019 initial scoring of the sites was shared with City Council with a goal of developing a short list of sites to be evaluated in more detail. During Council discussions, response time was elevated as the most important factor in determining the location of the new fire station. Initially, three sites were identified for further study, but each had one or more serious challenges such as site development costs and an owner reluctant to transfer the property (Rezanof), location within the tsunami inundation zone (Existing Station), and dislocation of a loved ballfield (Coon Field). Concurrent with evaluation of these sites, the team continued work with the Chief and Deputy Chief to right size the space program. This process opened the possibility of reducing the fire station size to five or six apparatus bays, rather than seven, which allowed the site at 1240 Mill Bay Road to be added to the shortlist.

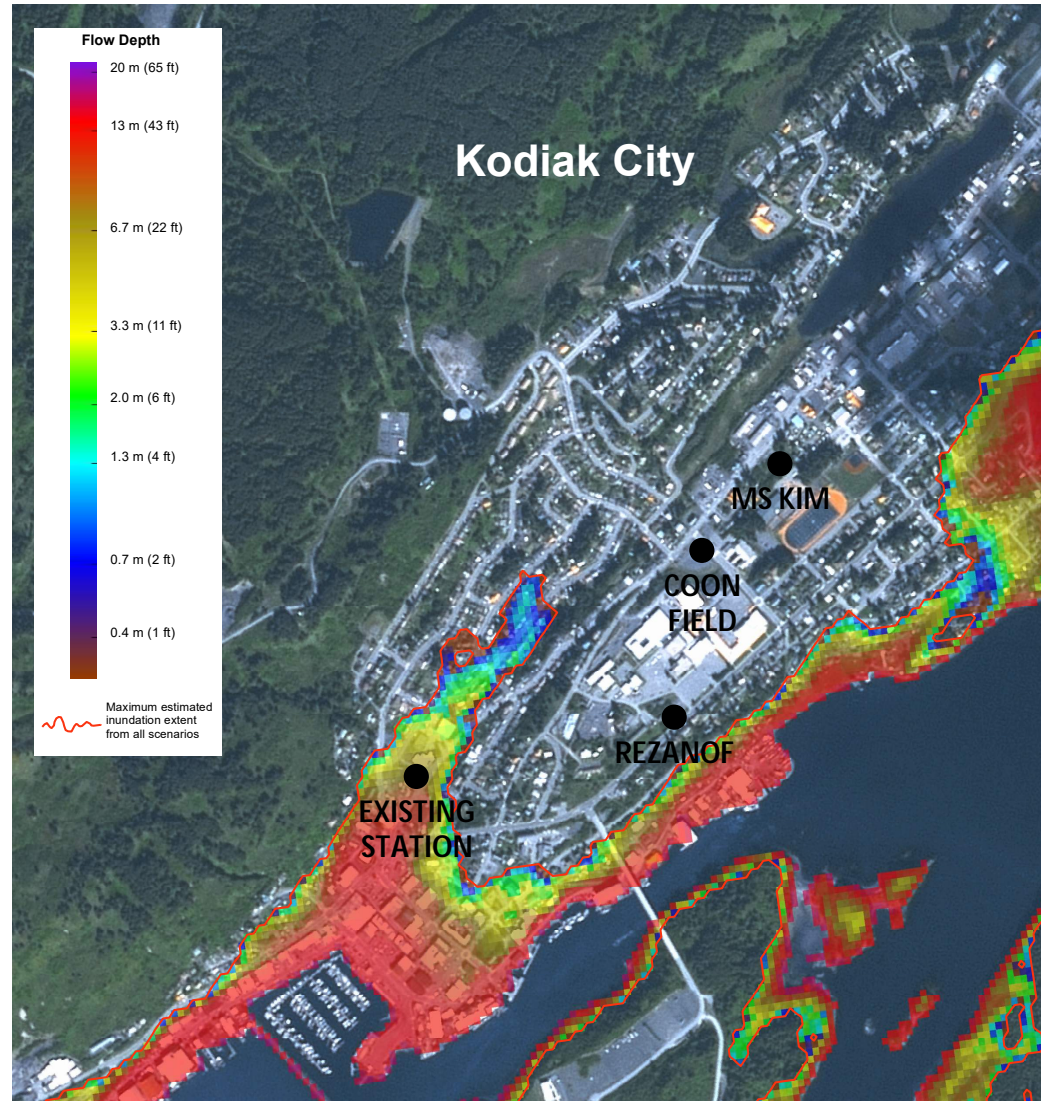
*Four sites with **Excellent or Good Response Time** and high initial scores were evaluated in detail*

Criteria Section	Site Number & Description								
	0 - Existing Station	1 - 170 Von Scheele Way (Safeway)	2 - 1950 & 1918 Mill Bay Road (Friend)	3 - 1240 Mill Bay Road (Ms Kim)	4 - Mill Bay Road and Powell Avenue (Coon Field)	5 - Mill Bay Road and Center Street (Kodiak Motors)	6 - Von Scheele & Selief (Impound Lot)	7 - Mill Bay & Benny Benson (UA Land)	8 - E Rezanof & Egan (Borough Lot)
<i>updated 06/25/2021</i>	score	score	score	score	score	score	score	score	score
Social and Land Use Factors	2020	2245	1665	1940	2070	1280	2005	2210	2250
Construction Factors	2550	2850	1835	2030	2150	1770	2790	2210	2080
Maintenance and Operating Factors	410	600	480	480	520	200	600	520	560
	4980	5695	3970	4450	4740	3250	5395	4940	4890
Emergency Response Time	Excellent	Poor	Fair	Good	Excellent	Fair	Poor	Poor	Excellent

*Site no longer available*

*Sites dropped from consideration due to **Poor Response Time** or other **Fatal Flaw***

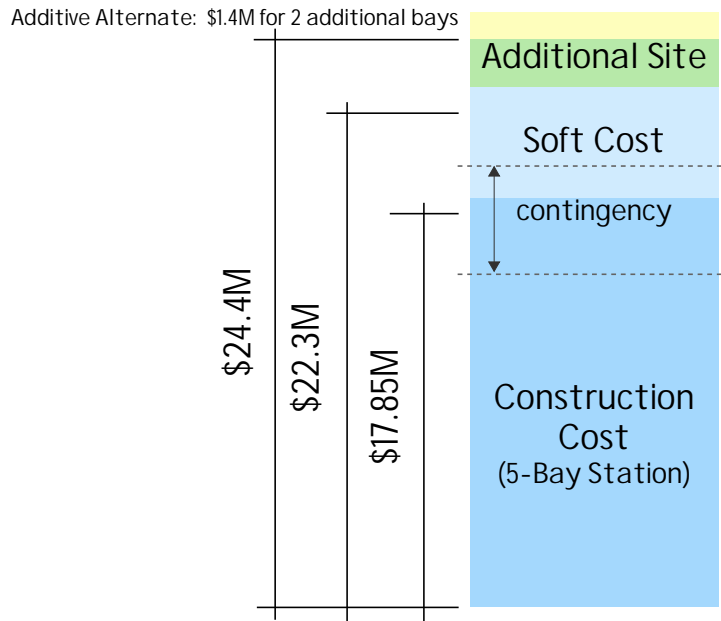
All four sites evaluated in more detail were ranked as “Excellent” for response time, but one, the Existing Station, had the potentially fatal flaw of being located within the tsunami inundation zone for a worst-case event. The four sites are shown on the following map:



Each site was evaluated using best available information to determine site development costs. A site plan was developed for each of the four sites to evaluate operational efficiency for Fire Station operations. Findings are summarized in the matrix on this page and site development costs are shown on the following two pages. At the end of this section we've included photos, a response time map and a conceptual site layout for each of the other shortlisted sites (information for the preferred site is provided earlier in this document).

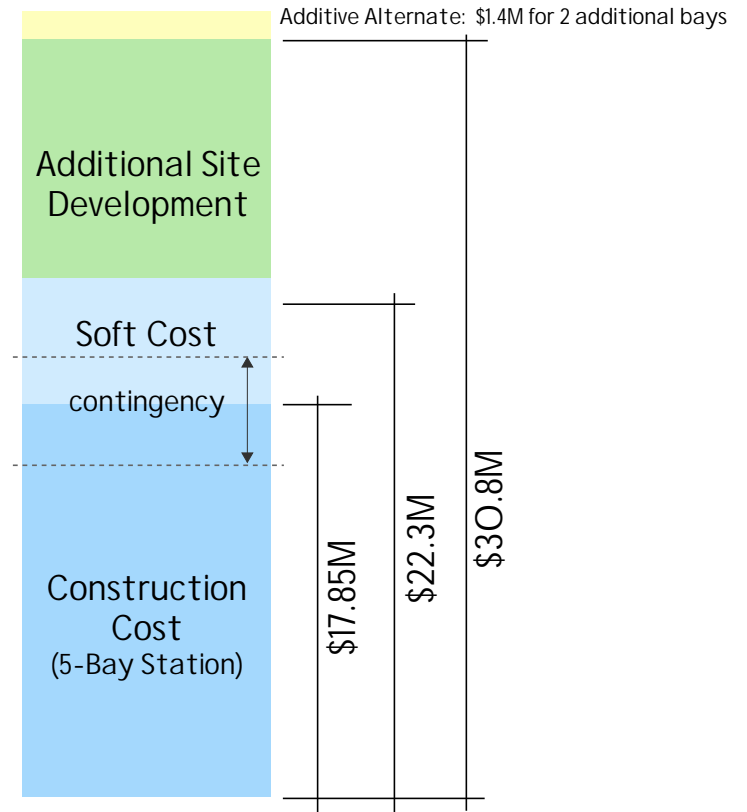
	Existing Station	1240 Mill Bay Road (Ms Kim)	Mill Bay Road and Powell Avenue (Coon Field)	E Rezanof & Egan (Borough Lot)
<b>Operational</b>				
Operational Efficiency	Excellent	Excellent	Good	Excellent
Civic Presence (Front)	Excellent	Good	Excellent	Excellent
Working Yard Screening (Rear)	Excellent	Excellent	Mediocre	Excellent
Street Access (Roll Trucks)	Good	Excellent	Good	Good
Return Access	Good	Excellent	Good	Good
<b>Cost and Risk Factors</b>				
Site Acquisition	City Owned	City Owned	Multiple Owners	Borough Owned
Station Impacts During Construction	Relocate Station	None	None	None
Total Development Cost	High	Lowest	High	Highest
Tsunami Inundation Zone	Yes	No	No	No
<b>Development Cost Factors</b>	Station Temporary Relocation Existing Station Demolition Raise Site Pad & Construct Retaining Walls Harden Building or Tsunami Resiliency	Retaining wall and fill to make entire site usable	Complicated Site Acquisition Relocate Coon Field Construct New Road Signalized Intersection Raise Site Approximately 4' Water Main Relocation Storm Sewer Relocation	Building Demo & Abatment Soil Abatement Underground Tank Abatement Power Line Relocation Water Main Relocation Sewer Line Depth Increase Major Excavation Retaining Walls Signalized Intersection

### MS KIMS SITE



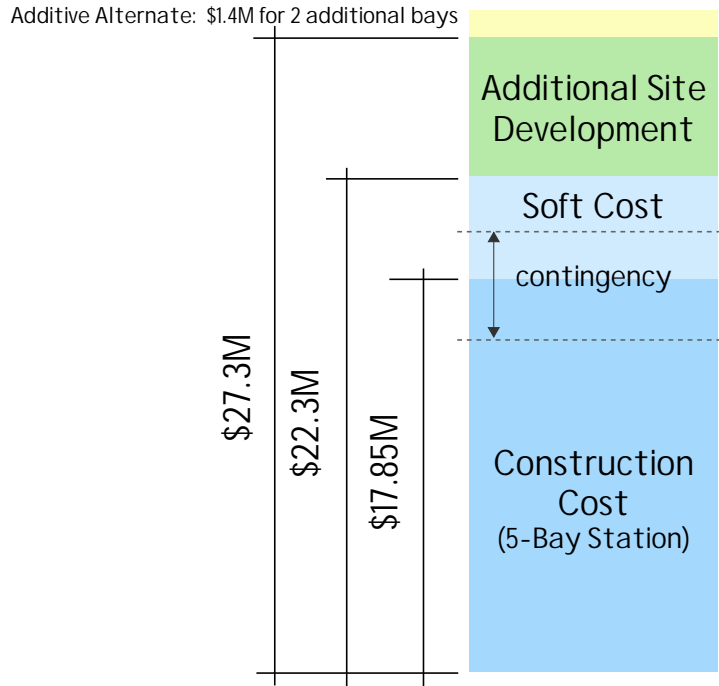
- Additional Site Development**  
 Retaining Wall: \$1,100,000  
 Additional Earthwork: \$700,000  
 Sidewalks and Misc: \$300,000

### REZANOF SITE



- Additional Site Development**  
 Building Abatement/Demo: \$1,570,000  
 Site Abatement: \$560,000  
 Signalized Intersection: \$625,000  
 Relocated Utilities: \$1,250,000  
 Retaining Walls & Site Grading: \$4,460,000

### OLD LIBRARY SITE

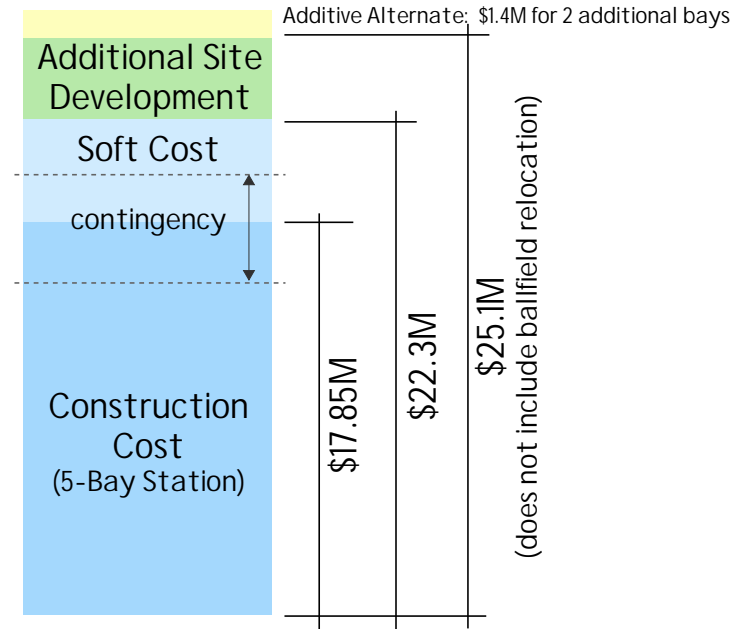


#### Additional Site Development

- \*Station Temporary Relocation: \$1,770,000
- Demo Existing Station: \$570,000
- Site Retaining Walls & Additional Grading: \$1,570,000
- Harden Building for Tsunami Resiliency: \$1,195,000

\* Assumes relocation to existing EMS warehouse off Von Scheele

### COON FIELD SITE



#### Additional Site Development

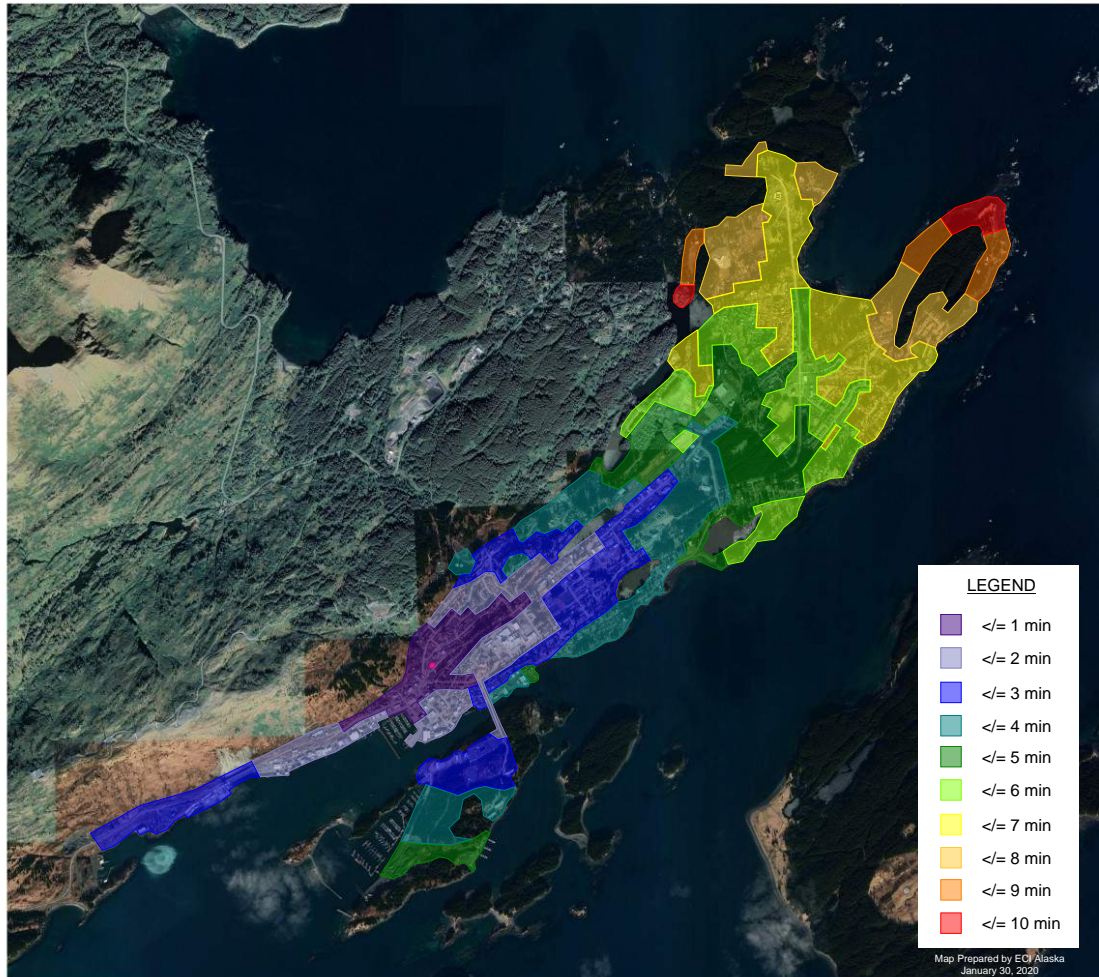
- Realigned Road: \$1,957,000
- Signalized Intersection: \$625,000
- Relocated Utilities: \$215,000

# EXISTING STATION SITE

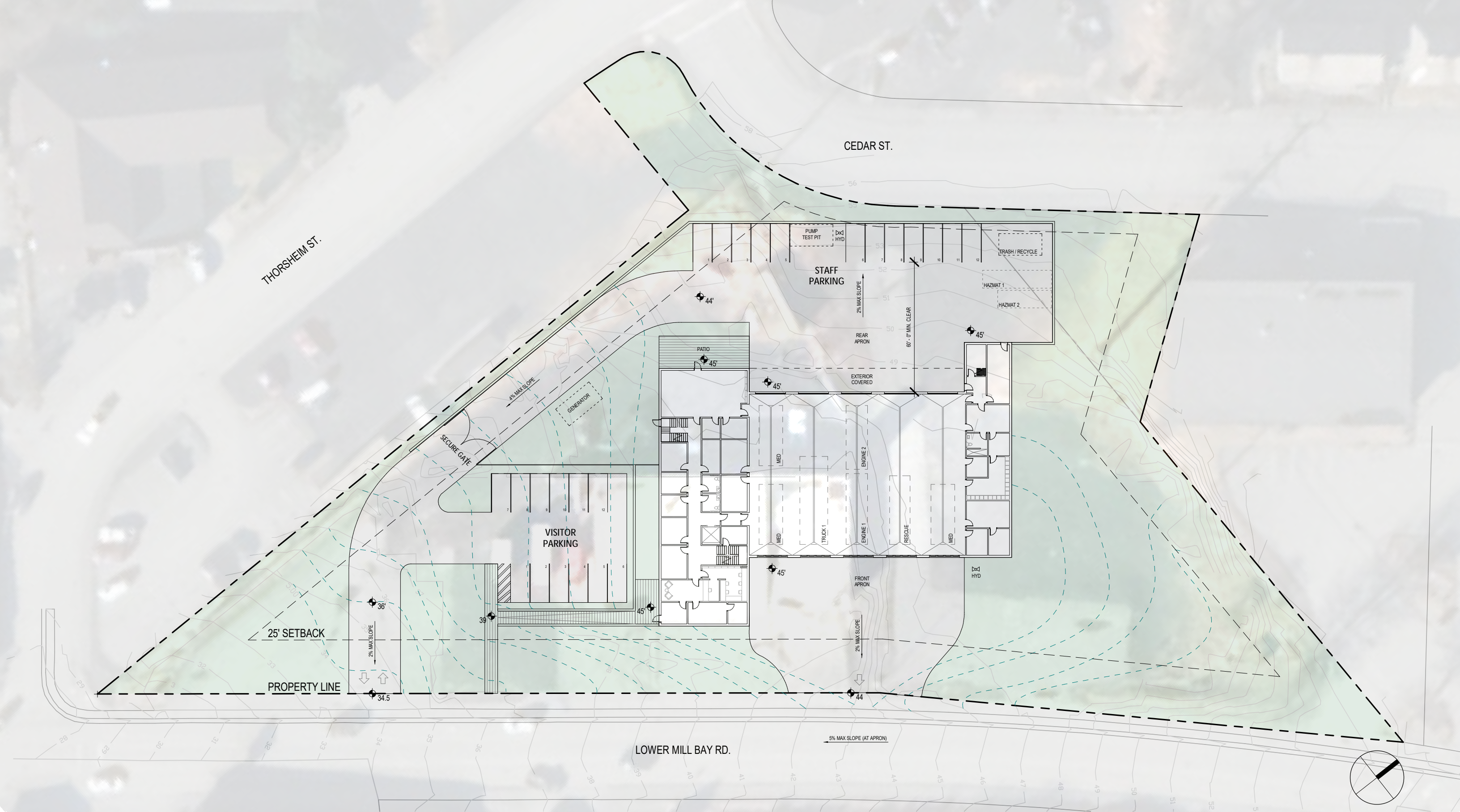




Kodiak Fire Station  
(0) 219 Lower Mill Bay Rd Travel Time Mapping



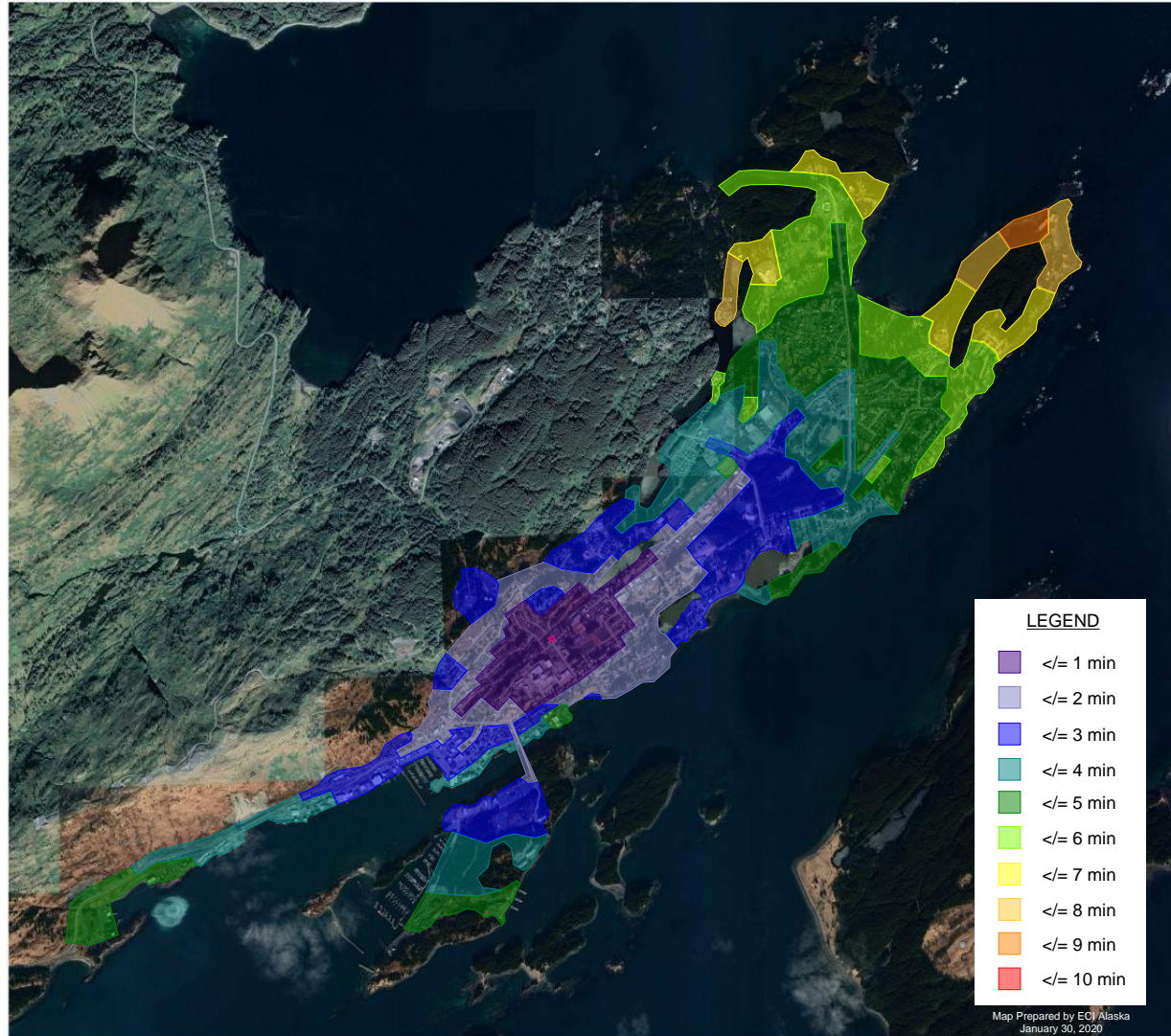
Disclaimer: Travel times were sourced from Google Maps for all sites. This information may vary from actual conditions.



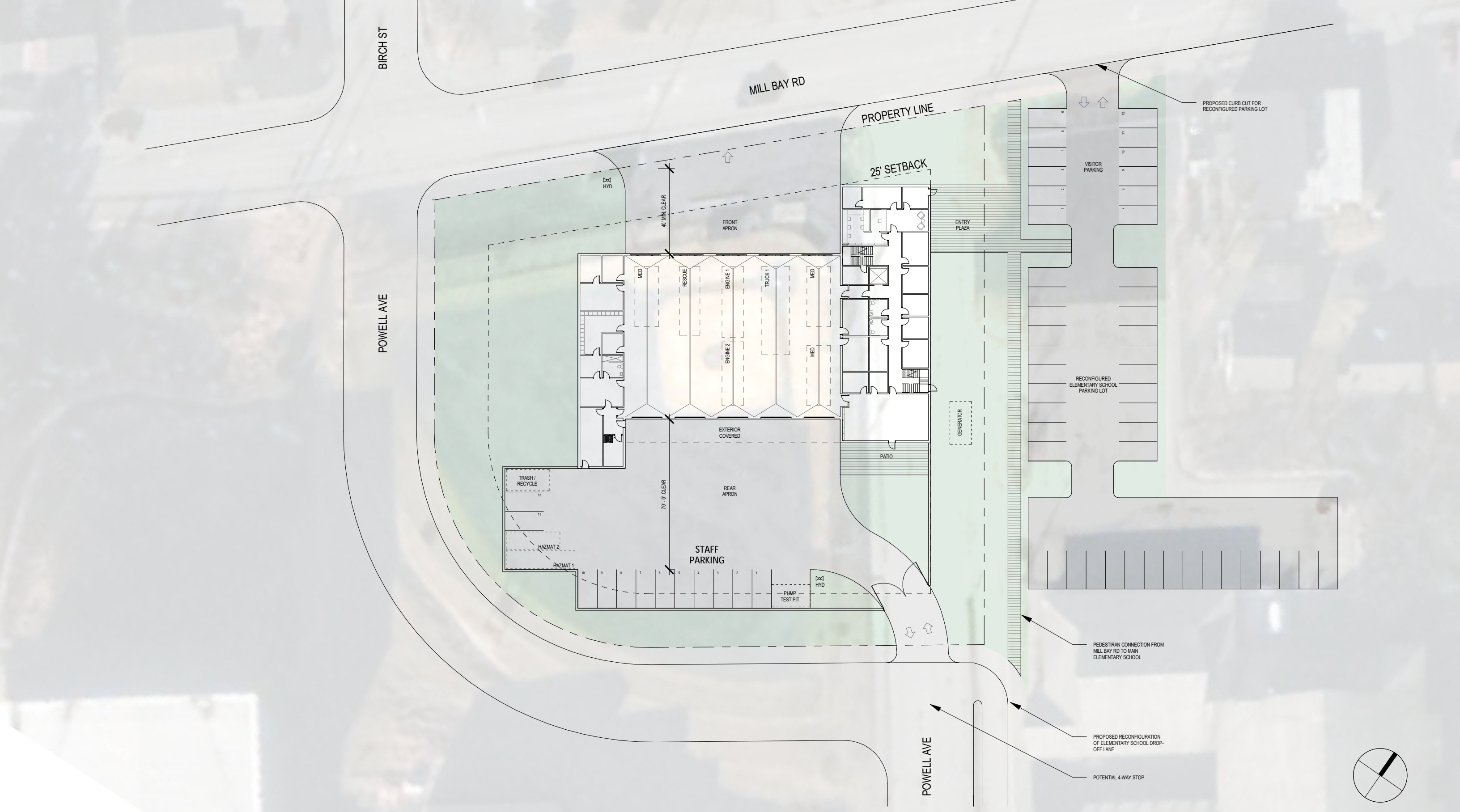
# COON FIELD SITE



Kodiak Fire Station  
(4) Mill Bay Rd & Powell Ave Travel Time Mapping



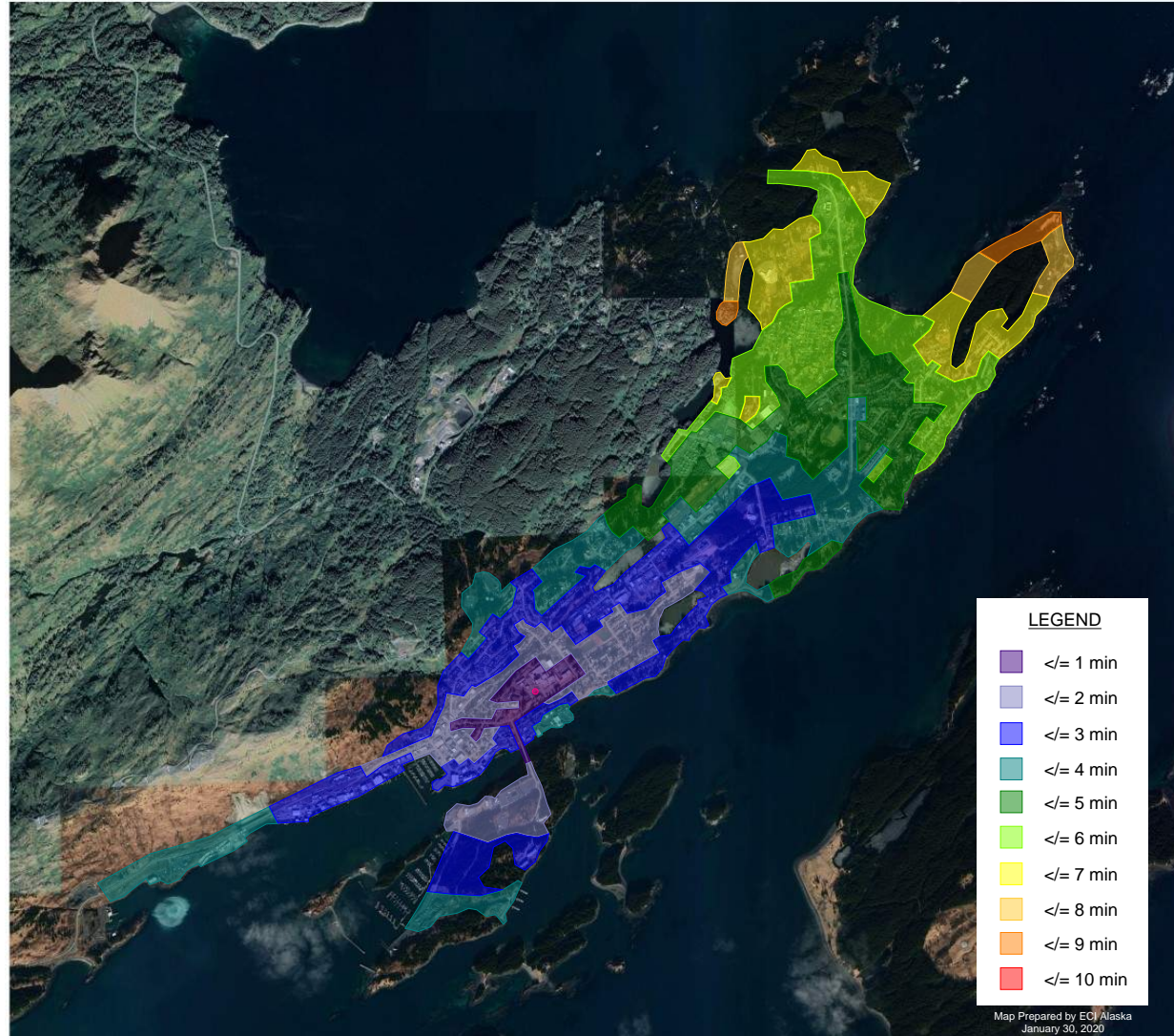
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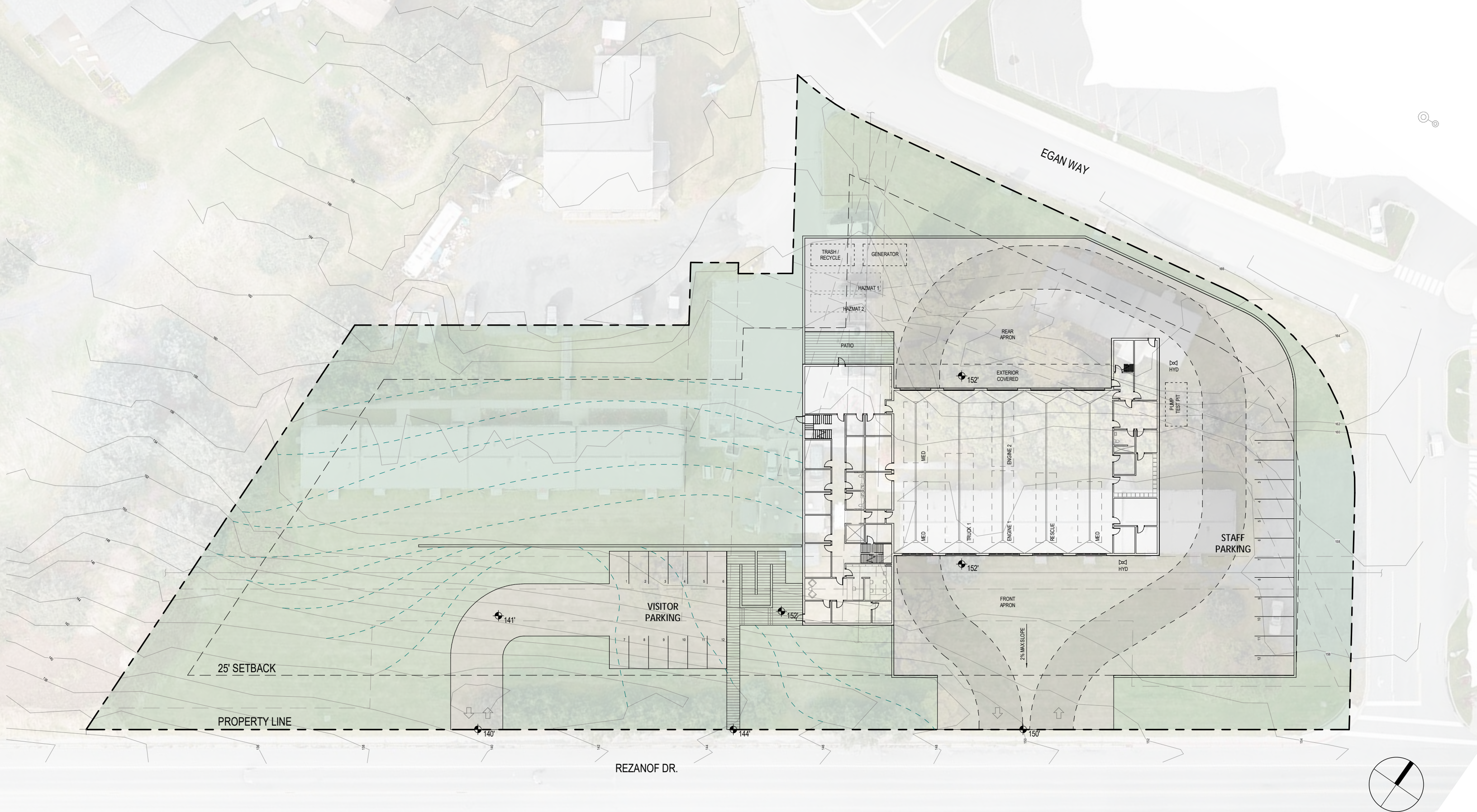
# REZANOF SITE



Kodiak Fire Station  
(8) E Rezanof Dr & Egan Way Travel Time Mapping



Disclaimer: Travel times were sourced from Google Maps for all sites. This information may vary from actual conditions.





## NEXT STEPS

This report is intended to serve as the basis-of-design for a replacement of the Kodiak Fire Station. Next steps planned for the second half of 2021 include:

1. Site Investigations for the selected site at 1240 Mill Bay Road.
  - a. Phase 1 Site Environmental Assessment
  - b. Site Topographic Survey
  - c. Geotechnical Investigations
2. Schematic Design (35%)
  - a. Detailed Building Program, to include room requirements and equipment lists
  - b. Detailed building floor plans
  - c. Building elevations and sections
  - d. 3-dimensional renderings of the new station
  - e. Building system descriptions (architectural, structural, mechanical and electrical)
  - f. Civil and landscape plans for the site, including connections to Baranof Park
  - g. Detailed cost estimate
3. Develop a Funding Plan and overall Project Schedule