MATANUSKA-SUSITNA BOROUGH INFORMATION MEMORANDUM **IM No. 23-045**

SUBJECT: A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY ALLOCATING THE REMAINING $6,668,638.74 IN AMERICAN RESCUE PLAN FUNDING FOR THREE PROJECTS ASSOCIATED WITH THE PALMER-WASILLA WATER SYSTEM INTERCONNECT PROJECT.

AGENDA OF: February 21, 2023

Assembly Action:

Adopted Without Objection 3-7-23

MANAGER RECOMMENDATION: Present to the Assembly for consideration.

APPROVED BY MICHAEL BROWN, BOROUGH MANAGER: MWB

Route To:	Department/Individual	Initials	Remarks
	Originator-P.Graham		
	Finance Director		
	Borough Attorney		
	Borough Clerk	2/13/23	

ATTACHMENT(S): Fiscal Note: YES X NO _____
Amended Spending Plan descriptions (3 pages)
Letters from City of Palmer (2 pages)
Letters from City of Wasilla (2 Pages)
Feasibility Study from Palmer & Wasilla (15 pages)
Resolution Serial No. 23-019 (1 pp)

SUMMARY STATEMENT:

In May 2021 the U.S. Department of the Treasury announced the launch of the Coronavirus State and Local Fiscal Recovery Funds, established by the American Rescue Plan Act of 2021. To support the immediate pandemic response, bring back jobs, and lay the groundwork for a strong and equitable recovery the American Rescue Plan Act of 2021 was designed to deliver $350 billion in emergency funding for eligible state, local, territorial, and Tribal governments.

The Matanuska-Susitna Borough received a total allocation of $21,039,307 in two parts, 50% in May 2021 and the remaining 50% in May 2022.

The Borough Attorney and Finance Director reviewed all the allowable and unallowable uses for the funding and worked with staff to develop a spending plan for the initial installment.

On August 3, 2021, the Assembly adopted Ordinance Serial Number 21-073 and its accompanying Resolution Serial Number 21-075, and Informational Memorandum Serial Number 21-145, accepting the grant funding and approving the initial spending plan.

On February 15, 2022, the Assembly adopted Resolution Serial No. 22-023 and its accompanying Informational Memorandum Serial No. 22-042, approving a second allocation of $1,119,673.00 for the purchase of Heavy Equipment for the Solid Waste Division.

On June 21, 2022, the Assembly adopted Ordinance Serial No.22-079, and its accompanying Resolution Serial No. 22-061, and Informational Memorandum Serial No. 22-142, accepting the second installment of $10,519,653.50.

On September 6, 2022, the Assembly adopted Resolution Serial No. 22-074 and its accompanying Informational Memorandum Serial No. 22-179, approving a third allocation in the amount of $8,140,000.00 for the purchase and installation of a restroom with water and sewer connections and Landfill Improvements. This approval left a balance of $6,668,638.74 available for future allocation.

This legislation will approve the allocation of the remaining $6,668,638.74 for three projects in partnership with the City of Palmer and the City of Wasilla. The first project will provide partial funding for the design of a Palmer-Wasilla Water System Interconnect, that when constructed will connect the two systems. The other two projects will provide the necessary boosters and PVR station connections for each city. The feasibility study conducted by HDL Engineering is included with the new spending plan.

RECOMMENDATION OF ADMINISTRATION: Approve the legislation as presented.

MATANUSKA-SUSITNA BOROUGH
FISCAL NOTE

Agenda Date: February 21, 2023

SUBJECT: A RESOLUTION OF THE MATANUSKA-SUSITNA BOROUGH ASSEMBLY ALLOCATING THE REMAINING $6,668,638.74 IN AMERICAN RESCUE PLAN FUNDING FOR THREE PROJECTS ASSOCIATED WITH THE PALMER-WASILLA WATER SYSTEM INTERCONNECT PROJECT.

FISCAL ACTION (TO BE COMPLETED BY FINANCE)	FISCAL IMPACT (YES) NO
AMOUNT REQUESTED $6,668,638.74	FUNDING SOURCE ARPA Funds
FROM ACCOUNT # 475.000.000 4xx.xxx	PROJECT 47534
TO ACCOUNT :	PROJECT #
VERIFIED BY: [signature]	CERTIFIED BY:
DATE: 2-9-23	DATE:

EXPENDITURES/REVENUES: (Thousands of Dollars)

OPERATING	FY2023	FY2024	FY2025	FY2026	FY2027	FY2028
Personnel Services						
Travel						
Contractual						
Supplies						
Equipment						
Land/Structures						
Grants, Claims						
Miscellaneous						
TOTAL OPERATING						
CAPITAL						
REVENUE						

FUNDING: (Thousands of Dollars)

General Fund						
State/Federal Funds	6,668.6					
Other						
TOTAL	6,668.6					

POSITIONS:

Full-Time						
Part-Time						
Temporary						

ANALYSIS: (Attach a separate page if necessary)

PREPARED BY: ______ PHONE: ______

DEPARTMENT: ______ DATE: ______

APPROVED BY: [signature: Cheyenne Heindel] DATE: 2/14/23

IM No. 23-045
Resolution Serial No. 23-019

APPROVED BY THE ASSEMBLY: ***Approved/Actual***

1. Revenue Recovery Bed Tax Losses $1,032,350/***$1,032,350***

The COVID-19 pandemic caused a significant loss in Bed Tax Revenues. In Fiscal Year 2019 the revenues collected were $1,428,373 and from fiscal year 2017 through 2019 the Borough saw an average increase in revenues of 8.9%. The actual amount collected from January 1 – December 31, 2020 was $590,006. The Borough utilized its average growth of 8.9% to calculate lost revenues as it exceeded the assumed growth of 4.1%. Based upon the calculator for lost revenue provided by the State of Alaska, the borough can apply for the amount above.

2. Revenue Recovery Talkeetna Sewer and Water Sales Tax $756,926/***$756,926***

The COVID-19 pandemic caused a significant loss in Talkeetna Sewer and Water Sales Tax Revenues. In Fiscal Year 2019 the revenues collected were $1,083,732. Since this was a new tax in fiscal year 2018 the average growth was 562.5% Because of the lack of historical data, the Borough is utilizing the assumed growth of 4.1%. The actual amount collected from January 1 – December 31, 2020 was $394,134. Based upon the calculator for lost revenue provided by the State of Alaska, the borough can apply for the amount above.

3. Revenue Recovery Pool Fee Losses $531,129/***$531,129***

The COVID-19 pandemic caused a significant loss in Pool Fee Revenues due to facility closures. In Fiscal Year 2019 the revenues collected were $376,677. Since both pools had seen closures due to major renovations during fiscal years 2018 and 2019 historical revenues were skewed, the Borough is utilizing the assumed growth of 4.1%. The actual amount collected from January 1 – December 31, 2020 was $204,873. Based upon the calculator for lost revenue provided by the State of Alaska, the borough can apply for the amount above.

4. Revenue Recovery Ice Arena Fee Losses $90,677/***$90,677***

The COVID-19 pandemic caused a significant loss in Ice Arena Fee Revenues due to facility closures. In Fiscal Year 2019 the revenues collected were $426,430. Since the Ice Arena had seen a closure due to major renovations during fiscal years 2018 historical revenues were skewed, the Borough is utilizing the assumed growth of 4.1%. The actual amount collected from January 1 – December 31, 2020 was $362,245. Based upon the calculator for lost revenue provided by the State of Alaska, the borough can apply for the amount above.

5. Revenue Recovery Borough Gym Rental Revenue Losses $36,661/***$36,661***

The COVID-19 pandemic caused a significant loss in Borough Gym Rental Revenues due to facility closure. In Fiscal Year 2019 the revenues collected were $32,100 and from fiscal year 2017 through 2019 the Borough saw an average increase in revenues of 9.3%. The actual amount collected from January 1 – December 31, 2020 was $0. The Borough utilized its average growth of 9.3% to calculate lost revenues as it exceeded the assumed growth of 4.1%. Based upon the

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calculator for lost revenue provided by the State of Alaska, the borough can apply for the amount above.

6. Big Lake, Butte and Snowshoe Elementary Water System Replacements $2,592,608/***Pending***

The COVID-19 pandemic emphasized the importance of water and sewer systems. The Big Lake Elementary Water System has failed and been repaired multiple times. It needs funding to complete repairs to bring the system into safe full operations. Butte and Snowshoe Elementary water systems are experiencing similar issues. The amount above reflects to cost to improve the systems.

7. Willow Cabin Well and Septic $100,000/***$70,644.26***

The Willow Log Cabin restoration is an ongoing project to refurbish the Cabin for use as a cultural preservation center, museum, and make it useable and open to the public. In addition to preserving local history and being available for meeting space, the refurbished building is intended to be a point for tourists. A well and septic systems is needed for visitors, patrons, and tourists.

8. Equipment - Central Landfill $1,119,673/***Pending***

The Solid Waste Division of the Public Works Department is in need of an Excavator and a Waste Shredder for the development of a first of its kinds tire reuse and recycling program that will save the landfill approximately $2,700,000.00 over ten years. The program is eligible for a clean water loan, and therefore is an eligible use of the American Rescue plan funding.

9. Talkeetna Multi-User Flush Restroom $350,000/***Pending***

Remove and replace existing restroom facility with a precast concrete building providing multi-user flush capability. New facility shall be connected to existing water and sanitary sewer system, as well as power and heat.

10. Central Landfill Entrance Improvements $4,000,000/***Pending***

This project will completed entrance improvements including tipping facility, earthwork, scales and scale house.

11. Central Landfill Development/Excavation $2,040,000/***Pending***

This project will complete the excavation of the Construction and Demolition (C&D) cell and the Municipal Solid Waste (MSW) Cell 5; and continue exploring options for reducing excavation costs such as production of road traction material or commercial sale of gravel as new contract process.

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12. Central Landfill Leachate Management $600,000/***Pending***

This project will develop a leachate evaporation system for the landfill, funding will cover the Design and Permitting portion of the project.

13. Talkeetna Water System Infrastructure Improvements $1,150,000/***Pending***

Talkeetna water system serves over 200 customer accounts. The source of the drinking water is an aquifer that is tapped by two 160' deep groundwater wells. The source groundwater has high concentrations of arsenic and manganese. The pump house has issues during peak demand and may be unable to sustain domestic service during emergency response. These funds will be used to help improve the public water system infrastructure, including replacement and extension of transmission and distribution pipe, new source water well, installation of a water storage tank, and upgrade of facilities to improve drinking water quality.

Pending Assembly Approval -February 21. 2023

14A. Palmer-Wasilla Water System Interconnect $1,924,468.74

The Cities of Palmer and Wasilla have requested assistance on funding the design of an interconnect between the City of Palmer Water System and the City of Wasilla Water System. This interconnect will provide system resiliency by allowing the transfer of water between each system, and provide municipal piped water to an area of the Mat-Su to encourage denser housing development. This available funding will be used for partial design costs of the system interconnect.

14B. Palmer-Trunk Road Booster and PVR Station Construction $2,552,310.00
14C. Wasilla- Old Matanuska Road Booster and PVR Station Construction $2,191,860.00

Each City will use the funding for the required Booster and PVR Station Construction, as described in the Feasibility Study conducted by HDL Engineering and attached to Informational Memorandum 23-.

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John Moosey
City Manager

City of Palmer
231 W. Evergreen Ave.
Palmer, Alaska 99645-6952
(907) 761-1317
E-mail: jmoosey@palmerak.org
www.palmerak.org

February 3, 2023

Mike Brown, Borough Manager
Matanuska-Susitna Borough
350 E. Dahlia Ave
Palmer, AK 99645

RE: Project Funding Request - Connection of Water Distribution Systems

Dear Mr. Brown,

The City of Wasilla and the City of Palmer is part of the fastest growing area of the State of Alaska. Each City continues to try and keep up with the demand and costs associated with various infrastructure that serves many of the Matsu Residents. We are excited about the possible partnership with the Mat-Su Borough on the project to connect water distribution systems.

During the January 2022 Wind-Storm Disaster, each of the city's water systems were damaged. Together we have been seeking ways to provide operational resiliency. In seeking to reach this goal, we believe that this project would also lead to the Borough's goal of providing more affordable housing.

Attached is a feasibility study conducted by HDL Engineering Consultants dated January 18, 2023.

The City of Palmer in partnership with the City of Wasilla requests $2,500,000 for the interconnect design with full project construction plans. This proposal will examine the options in partnership with your office. The completed work will assist the City of Palmer and the City of Wasilla in competing for Federal funding for the construction completion.

Thank you very much for your consideration.

Sincerely,

Mayor Steve Carrington

John Moosey, City Manager

City of Palmer

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RS 23-019

John Moosey
City Manager

City of Palmer
231 W. Evergreen Ave.
Palmer, Alaska 99645-6952
(907) 761-1317
E-mail: jmoosey@palmerak.org
www.palmerak.org

February 3, 2023

Mike Brown, Borough Manager
Matanuska-Susitna Borough
350 E. Dahlia Ave
Palmer, AK 99645

RE: Project Funding Request - Trunk Road Booster and PVR Station Construction

Dear Mr. Brown,

The City of Palmer currently serves commercial, residential and government facilities with both water and sewer outside our six-square mile city boundary. The City has made this its policy. We currently have the capacity to continue this practice.

The City in conjunction with the City of Wasilla has requested funding from the Matsu Borough for engineering and design of a water distribution system connection. This project will bring resiliency to both systems and provide the Borough an opportunity for affordable housing.

The City of Palmer is requesting funding from the Matsu Borough in the amount of $2,552,310 for the construction of the Trunk Road Booster and PVR Station. This project will provide the ability of the City of Palmer to deliver water to both Colony Middle and Colony High Schools. The HDL project cost estimate is attached.

Thank you very much for your consideration.

Sincerely,

Mayor Steve Carrington

John Moosey, City Manager

City of Palmer

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CITY OF WASILLA

MAYOR GLENDA D. LEDFORD
290 E. Herning Avenue
Wasilla, AK 99654-7091
Phone: (907) 373-9055
Fax: (907) 373-9096

February 6, 2023

Matanuska Susitna Borough
FEB 0 6 2022
Adminstration

Mike Brown, Borough Manager
Matanuska-Susitna Borough
350 E. Dahlia Ave
Palmer, AK 99645

RE: Project Funding Request – Connection of Water Distribution Systems

Dear Manager Brown,

The City of Wasilla and the City of Palmer are part of the fastest growing area of the State of Alaska. Each City continues to try and keep up with the demand and costs associated operating the infrastructure that serves many of the Matsu residents. We are excited about the possibility of partnering with the Matsu Borough on this project to connect our water distribution systems.

During the January 2022 Wind-Storm Disaster, each of the city's water systems were damaged. Water service was disrupted, and the community suffered. Together we have been seeking ways to provide operational resiliency. In working toward that goal, we also believe this project would intersect with the Borough's goal of providing more affordable housing. Municipal water service allows for higher density development which goes hand-in-hand with affordable housing models. For your convenience, attached you will find a copy of the feasibility study conducted by HDL Engineering Consultants dated January 18, 2023, for your review.

The City of Wasilla, in partnership with the City of Palmer, requests $2,500,000 for the interconnect planning and design to provide bid ready construction documents. This proposal will examine the options in partnerships with your office. The completed work will provide both City of Wasilla and the City of Palmer with a shovel ready project to compete for Federal funding for construction.

Thank you for your consideration and support.

Sincerely,

Glenda D Ledford

Mayor Glenda D. Ledford
City of Wasilla

Cc: file
Attachments: Feasibility Study - HDL Engineering Consultants - January 18, 2023.

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CITY OF WASILLA

MAYOR GLENDA D. LEDFORD
290 E. Herning Avenue
Wasilla, AK 99654-7091
Phone: (907) 373-9055
Fax: (907) 373-9096

February 6, 2023

Mike Brown, Borough Manager
Matanuska-Susitna Borough
350 E. Dahlia Ave
Palmer, AK 99645

RE: Project Funding Request – Old Matanuska Road Booster and PRV Station Construction

Dear Manager Brown,

The City of Wasilla and the City of Palmer are part of the fastest growing area of the State of Alaska. Each City continues to try and keep up with the demand and costs associated operating the infrastructure that serves many of the Matsu residents. We are excited about the possibility of partnering with the Matsu Borough on this project to connect our water distribution systems.

During the January 2022 Wind-Storm Disaster, each of the city's water systems were damaged. Water service was disrupted, and the community suffered. Together we have been seeking ways to provide operational resiliency. In working toward that goal, we also believe this project would intersect with the Borough's goal of providing more affordable housing. Municipal water service allows for higher density development which goes hand-in-hand with affordable housing models. For your convenience, attached you will find a copy of the feasibility study conducted by HDL Engineering Consultants dated January 18, 2023, for your review.

The City of Wasilla, in partnership with the City of Palmer, requests $2,191,860 for the Old Matanuska Road Booster and PRV Station Construction phase for Alternative 2. The completed work will provide both City of Wasilla and the City of Palmer with a shovel ready project to compete for Federal funding for construction.

Thank you for your kind consideration and support.

Sincerely,

Glenda D. Ledford

Mayor Glenda D. Ledford
City of Wasilla

Cc: file
Attachments: Feasibility Study - HDL Engineering Consultants - January 18, 2023.

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HDL ENGINEERING Consultants LLC

MEMORANDUM

Date: January 18, 2023

To: City of Palmer
City of Wasilla

From: Chris Bowman, PE

Subject: Feasibility Study
Palmer-Wasilla Water System Interconnect

Civil Engineering

Geotechnical Engineering

Transportation Engineering

Aviation Engineering

W/WW Engineering

Environmental Services

Surveying & Mapping

Construction Administration

Material Testing

In spring 2022, the Cities of Palmer and Wasilla approached HDL to explore the feasibility of connecting their water systems. The primary goals to be achieved by this potential water connection are:

- ✓ Provide system resiliency by allowing the transfer of water between each City's system;
- ✓ Open areas of the Matanuska-Susitna Borough (MSB) to denser development by providing access to municipal piped water service;
- ✓ Connect existing MSB facilities to municipal piped water service, increasing their ability to serve as possible emergency shelters in the case of natural disaster.

The intent of this memorandum is to present the initial findings of the feasibility study. Included is a conceptual-level analysis of two potential connection alternatives; as well as a rough order of magnitude (ROM) cost to construct the proposed improvements.

Existing Facilities and System Background

The Palmer and Wasilla water systems consist of buried pipe distribution systems, water storage reservoirs, pressure boosting/reducing facilities, and water wells. The attached Figure 1 illustrates the existing major system components and extents of Palmer and Wasilla's water systems along with the approximate boundaries of each system's area for potential service. A brief description of each system follows:

Palmer Water System

Palmer's water system has three separate pressure zones that increase in elevation as required to maintain acceptable water pressure throughout its service area. The majority of Palmer's water system is located within two pressure zones (Pressure Zones 1 and 2), with the remainder located within Pressure Zone 3 which encompasses the Cedar Hills subdivision and several small properties located east of the Glenn Highway. Water is produced within Pressure Zone 1 and stored at Reservoirs 1 and 4. Pressure booster stations co-located at each reservoir

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202 West Elmwood Avenue, Palmer, Alaska 99645 907.746.5230

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increase service pressure and pump water to the next highest reservoir in the system. Correspondingly, a series of pressure reducing valves (PRV) allow water to flow back from a higher pressure zone to a lower one. Palmer's water/sewer system master plan and subsequent updates have all recommended the construction of a new water reservoir northwest of the Trunk Road/Bogard Road Roundabout, creating a new, higher Pressure Zone 3; and isolating the current Zone 3 as an independent pressure zone – the Cedar Hills Pressure Zone.

In 2015, an 18" diameter high-density polyethylene (HDPE) water main extension was constructed from near Reservoir 1 to just west of 49th State Street at Colony High School (Bogard Road Water Extension). However, this extension is not currently in use and requires construction of the currently planned Bogard Road Booster Station to increase the water pressure from Pressure Zone 2 to Pressure Zone 3 to serve properties along the alignment. The intent is for this water main to eventually be extended to the new Pressure Zone 3 Reservoir.

Wasilla Water System

The Wasilla system also has multiple pressure zones, with the Primary Pressure Zone encompassing the majority of customers. Water is primarily produced within the higher, Spruce Pressure Zone and stored at a water reservoir near the Lucille Street and Spruce Avenue intersection. From there, water is distributed by gravity to the Primary Pressure Zone with storage provided via the Bumpus and East Susitna water reservoirs. Water pressure from the Primary Pressure Zone can be boosted to serve higher areas of the system. From the Primary Pressure Zone, water passes through a series of PRV's to serve the Fairview Loop area and The Ranch subdivision where it reaches the lowest point of Wasilla's system.

Proposed Connection

Two alternatives to connect the Palmer and Wasilla systems were evaluated for their ability to meet the stated goals. Each alternative is described in further detail below and illustrated on the attached Figure 2.

Alternative 1

Alternative 1 connects Palmer's Bogard Water Extension to Wasilla's Spruce Reservoir with a new transmission main running west on Bogard road to its intersection with Wasilla-Fishhook Road, turns southwest to Spruce Avenue and west from there to the reservoir, a distance of approximately 44,000 linear feet. The Spruce Reservoir operates with a High Water Level (HWL) that nearly matches Palmer's future Pressure Zone 3. At a minimum, construction of the proposed Bogard Road Booster Station will be required to pump water from Palmer to the Spruce Reservoir. Flow from Wasilla to Palmer could be maintained by the static head pressure from the Spruce Reservoir.

In January 2021, HDL completed design services for the Bogard Road Booster Station,. However, design parameters for this facility would need to be adjusted to convey water along the route of this proposed connection and to meet typical water demand, pressures, and needed fire flows for the combined service area.

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The total project cost estimate to complete Alternative 1, including design, land acquisition, administrative, and construction costs is approximately **$32,250,000**. A detailed cost estimate is attached to this memorandum.

Although not included in the overall cost presented above, it is recommended that a new Zone 3 reservoir be eventually constructed within Palmer's service area to reduce operational costs and provide a resilient source of water storage and pressure. The additional cost to construct this improvement is approximately **$8,400,000.**

Alternative 2

The southeast terminus of Wasilla's water system is less than 2 miles from the closest point of connection to Palmer's system at Trunk Road. Although the proximity of these two locations makes a direct connection between them an initially attractive option it was not selected for further development. This closest point of connection point lies at the lowest elevation within Wasilla's system with several PRV's between the end of the system and Wasilla's water reservoirs. Because of this, several pressure booster stations would be required to convey water between the water systems.

The proposed Alternative 2 seeks to mitigate these challenges by constructing a new transmission main from Palmer's water system near Trunk Road to Wasilla's water system on Fairview Loop via Blue Lupine/Hyer Road, this alignment length is approximately 14,000 linear feet.

The advantage of this alignment is that it bypasses several of the PRVs at the lower elevations of Wasilla's system. This will allow for more efficient transmission of water between the two systems while minimizing the necessary upgrades to existing infrastructure.

Alternative 2 requires the installation of pressure booster pumps at the existing PRV facility on Old Matanuska Road and installation of a new PRV at the existing booster station on Enterprise Drive to allow water from Palmer to fill the East Susitna and Bumpus Reservoirs in Wasilla. Additionally, a new booster station/PRV facility will need to be constructed at the point of connection to Palmer's water system on Trunk Road to facilitate water flow between Wasilla's system and Palmer's Reservoir 4.

The total project cost estimate to complete Alternative 2, including design, land acquisition, administrative, and construction costs, is approximately **$14,900,000**. A detailed cost estimate is attached to this memorandum.

Land Development

A primary goal of this feasibility study is to open undeveloped land for the construction of affordable housing. HDL used recent satellite imagery of the combined Palmer-Wasilla water service area to identify undeveloped tracts of land that appeared to be 10 acres or larger. These undeveloped areas were cross-checked with the MSB parcel viewer to identify all privately-owned parcels. Many of the privately held

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parcels of land that were identified in this manner are within ½ mile the proposed routes for the evaluated alternatives.

Further, the connection of MSB and MSB School District (MSBSD) facilities to piped municipal water would increase their resiliency against disruption by natural disaster and allow them to increase their ability to serve as emergency shelters during times of need. Additionally, MSB/MSBSD could realize decreased operations and maintenance (O&M) costs over time with a municipal water connection. For this study, HDL identified MSB/MSBSD facilities located within ¾ mile of the proposed alternative alignments for potential connection.

Developable land areas and MSB/MSBSD facilities are summarized below and identified on the attached Figure 2.

Summary

Both presented alternatives meet the general goals identified by this feasibility study. While there are advantages and disadvantages to each, it will be up to policymakers to ultimately decide which alternative is preferred for the long term development of their respective water systems.

The advantages of Alternative 1 are offset by the high cost of design and construction. The length and scope of this proposed connection will likely present challenges in all phases of coordination, design, and construction.

For a substantially lower projected cost, Alternative 2 could provide the needed resiliency and redundancy for both the cities of Palmer and Wasilla and will be able to adequately convey water from one system to another, albeit with a lower overall potential for increased development and connection of MSB/MSBSD facilities.

A brief comparison of the benefits provided by each alternative is presented below in Table 1.

Table 1: Comparison of Alternatives

	Expansion of Area Served	Adjacent MSB/MSBSD Facilities	Adjacent Land Suitable for Housing Development	ROM Cost Estimate
Alternative 1	Large	4	~290 acres	$32,250,000*
Alternative 2	Minor	1	~170 acres	$14,900,000

* Cost excludes construction of new Zone 3 reservoir.

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Closure

The findings presented in this memorandum are based on limited desktop analysis using available information and record drawings provided by Palmer and Wasilla. Alternatives were evaluated for their ability to transfer water between water systems using basic engineering principles. Further analysis will be required prior to design to determine potential O&M issues, operational schemes, and agreements between each entity. Cost estimates are made strictly for budgeting purposes and are based on the current bidding and construction climate and broad based assumptions outlined in this report.

Attach: Figure 1: Existing Systems (1 page)
Figure 2: Palmer-Wasilla Interconnect Concept (1 page)
Alternative 1 ROM Cost Estimate (4 pages)
Alternative 2 ROM Cost Estimate (4 Pages)

CC: David Lundin, PE, HDL

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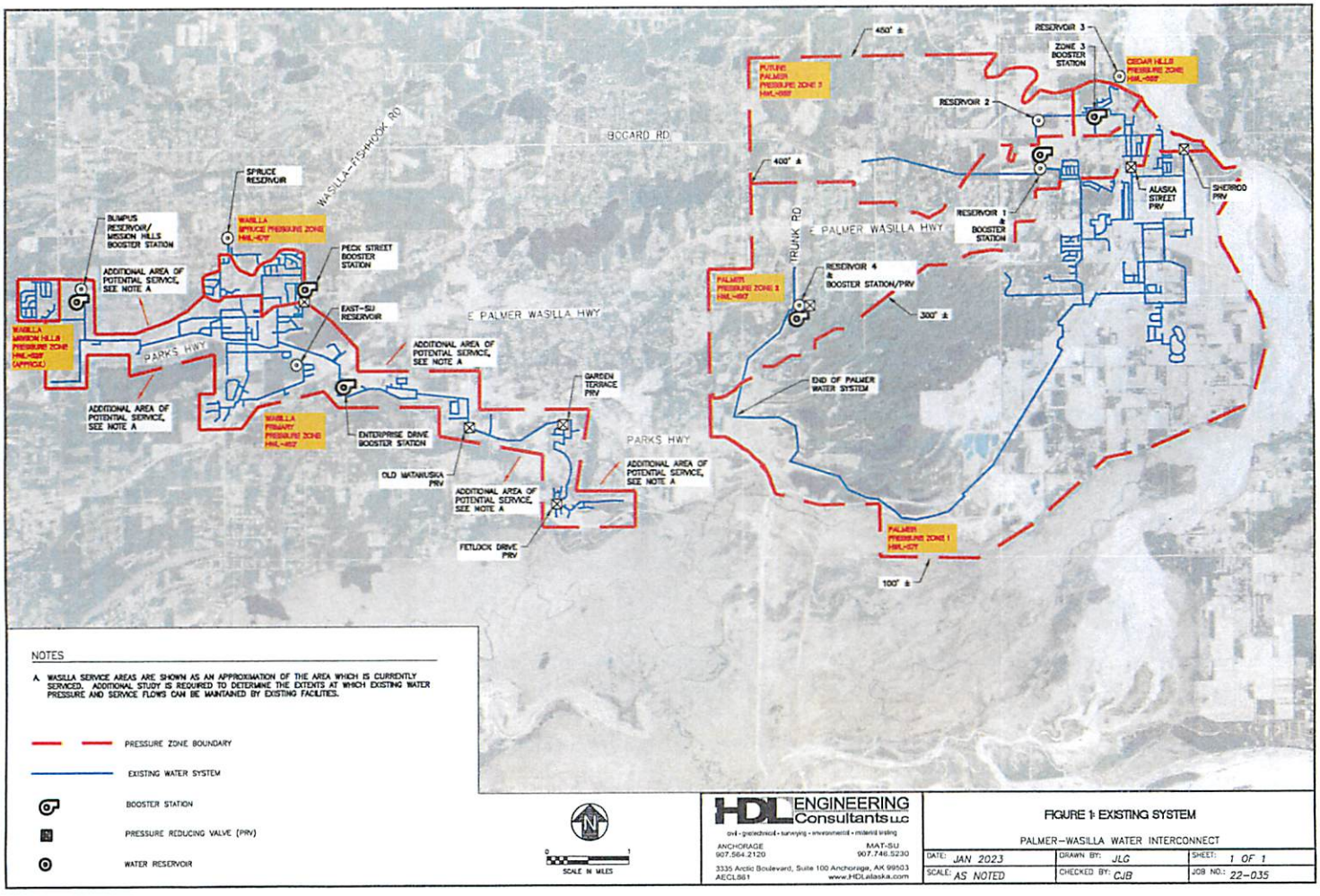

NOTES

A. WASILLA SERVICE AREAS ARE SHOWN AS AN APPROXIMATION OF THE AREA WHICH IS CURRENTLY SERVICED. ADDITIONAL STUDY IS REQUIRED TO DETERMINE THE EXTENTS AT WHICH EXISTING WATER PRESSURE AND SERVICE FLOWS CAN BE MAINTAINED BY EXISTING FACILITIES.

PRESSURE ZONE BOUNDARY

EXISTING WATER SYSTEM

BOOSTER STATION

PRESSURE REDUCING VALVE (PRV)

WATER RESERVOIR

SCALE IN MILES

HDL ENGINEERING Consultants LLC
civil • geotechnical • surveying • environmental • materials testing
ANCHORAGE 907.564.2120
MAT-SU 907.746.5230
3335 Arctic Boulevard, Suite 100 Anchorage, AK 99503
AECL861
www.HDLalaska.com

FIGURE 1: EXISTING SYSTEM

PALMER–WASILLA WATER INTERCONNECT

DATE: JAN 2023	DRAWN BY: JLG	SHEET: 1 OF 1
SCALE: AS NOTED	CHECKED BY: CJB	JOB NO.: 22-035

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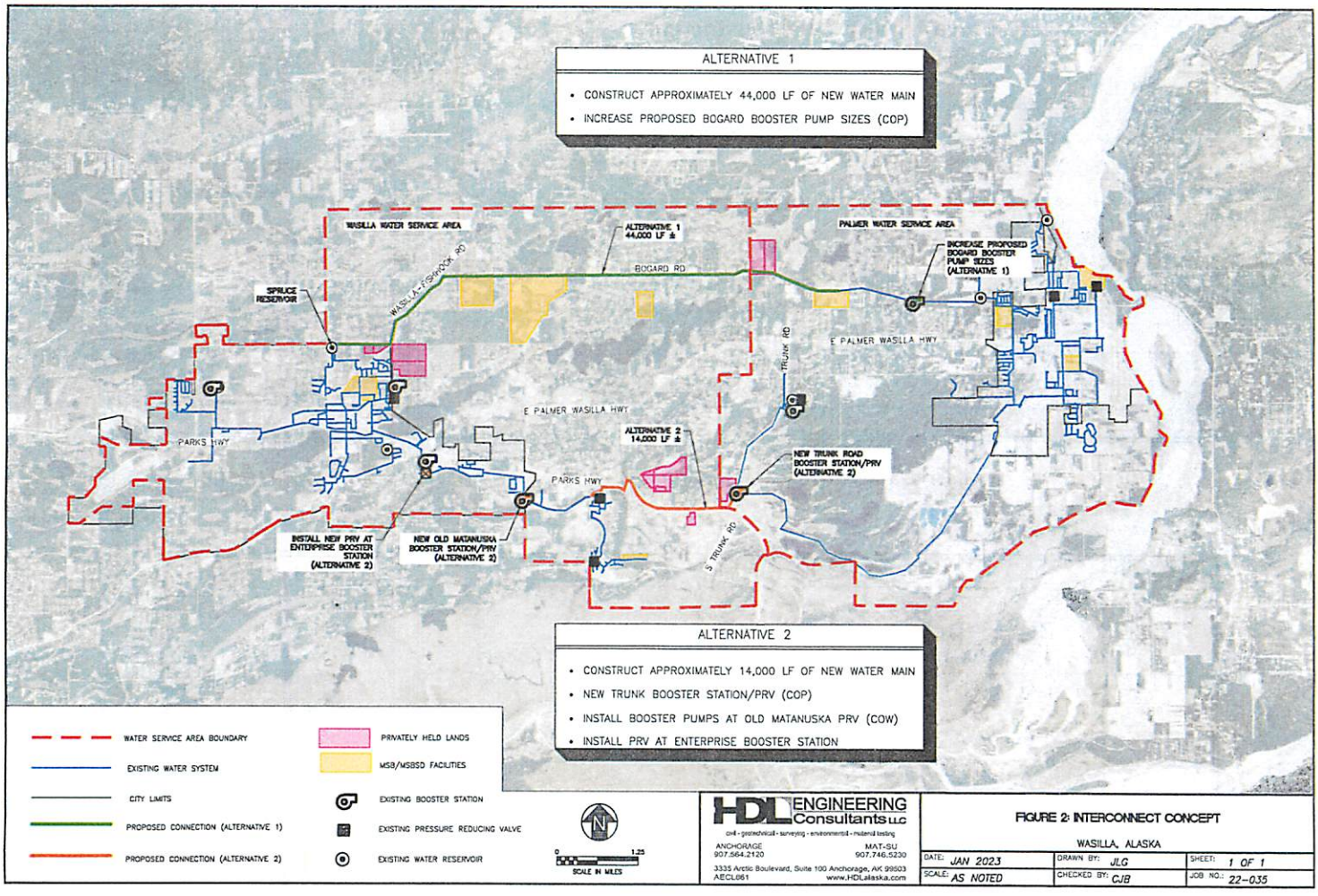

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Palmer-Wasilla Water System Interconnect
ROM Cost Estimate

ALTERNATIVE 1

Date Prepared: 12-January-2023

ITEM		DESCRIPTION		TOTAL PRICE
1		**Alternative 1 Water Main Construction**		
		Construction Subtotal		$22,113,000.00
		Total Admin/Engineering Costs		$8,181,810.00
		Total Project Cost		$30,294,810.00
2		**Booster/PRV Station Construction**		
		Construction Subtotal		$1,741,500.00
		Total Admin/Engineering Costs		$208,980.00
		Total Project Cost		$1,950,480.00

Grand Total (Required Improvements) **$32,245,290.00**

ITEM		DESCRIPTION		TOTAL PRICE
3		**Zone 3 Reservoir Construction**		
		Construction Subtotal		$6,125,000.00
		Total Admin/Engineering Costs		$2,266,250.00
		Total Project Cost		$8,391,250.00

Grand Total (Recommended Improvements) **$40,636,540.00**

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PALMER-WASILLA WATER SYSTEM INTERCONNECT
ROM COST ESTIMATE

Alternative 1 Water Main Construction

Item No.	Work Description	Estimated Quantity	Unit Price	Total Bid Price
1	Clearing Linear Foot	44,140	$ 40.00	$ 1,765,600.00
2	Surface Restoration Linear Foot	44,140	$ 40.00	$ 1,765,600.00
3	Install Fire Hydrant Each	44	$ 10,000.00	$ 440,000.00
4	Install 18-Inch Gate Valve Each	88	$ 15,000.00	$ 1,320,000.00
5	F&I 18-Inch SDR11 HDPE Water Main Incl. Dewatering Linear Foot	44,140	$ 200.00	$ 8,828,000.00
6	Bore and Jack 30" Sch 10 Steel Casing Linear Foot	500	$ 750.00	$ 375,000.00

Mob/Demob/Bonding @ 5%	$ 724,710.00
Storm Water Polution Prevention Plan @ 3%	$ 434,826.00
Construction Survey @ 3%	$ 434,826.00
Traffic Control @ 2%	$ 289,884.00
Subtotal Construction, Rounded	$16,380,000.00
Construction Contingency @ 35%	$ 5,733,000.00
Total Estimated Construction Cost	**$22,113,000.00**
Easment/Land Acquisition @ 5%	$ 1,105,650.00
City Administration @ 3%	$ 663,390.00
Design @ 12%	$ 2,653,560.00
Environmental/Permitting, Survey, and Geotech @ 5%	$ 1,105,650.00
Construction Management @ 12%	$ 2,653,560.00
Total Admin/Engineering Costs	$ 8,181,810.00
Total Estimated Project Cost	**$30,294,810.00**

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PALMER-WASILLA WATER SYSTEM INTERCONNECT
ROM COST ESTIMATE

Booster/PRV Station Construction

Item No.	Work Description	Estimated Quantity	Unit Price	Total Bid Price
1	Civil/Site Work (Already Completed) Lump Sum	1	$ -	$ -
2	Pipe Connections Lump Sum	1	$ 15,000.00	$ 15,000.00
3	Booster/PRV Building Lump Sum	1	$ 350,000.00	$ 350,000.00
4	Building Mechanical Systems Lump Sum	1	$ 250,000.00	$ 250,000.00
5	Building Electrical Systems Lump Sum	1	$ 250,000.00	$ 250,000.00
6	SCADA Equipment Lump Sum	1	$ 175,000.00	$ 175,000.00
7	Utility Extensions Lump Sum	1	$ 100,000.00	$ 100,000.00

Mob/Demob/Bonding @ 5%	$ 57,000.00
Storm Water Polution Prevention Plan @ 3%	$ 34,200.00
Construction Survey @ 3%	$ 34,200.00
Traffic Control @ 2%	$ 22,800.00
Subtotal Construction, Rounded	$ 1,290,000.00
Construction Contingency @ 35%	$ 451,500.00
Total Estimated Construction Cost	**$ 1,741,500.00**
Construction Management @ 12%	$ 208,980.00
Total Estimated Project Cost	**$ 1,950,480.00**

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PALMER-WASILLA WATER SYSTEM INTERCONNECT
ROM COST ESTIMATE

Zone 3 Reservoir Construction

Item No.	Work Description	Estimated Quantity	Unit Price	Total Bid Price
1	8-Foot Chain Link Fence Linear Feet	1,200	$ 25.00	$ 30,000.00
2	20-Foot Cantilever Gate Lump Sum	1	$ 8,000.00	$ 8,000.00
3	Yard Piping/Valving Lump Sum	1	$ 35,000.00	$ 35,000.00
4	Hydrant Each	1	$ 10,000.00	$ 10,000.00
5	Tank Insulation, Painting, Siding, Etc.	1	$ 500,000.00	$ 500,000.00
6	Earthwork Cubic Yard	100,000	$ 15.00	$ 1,500,000.00
7	F&I 1 Million Gallon Welded Steel Tank Per Gallon	1,000,000	$ 2.25	$ 2,250,000.00

Mob/Demob/Bonding @ 5%	$	216,650.00
Storm Water Polution Prevention Plan @ 3%	$	129,990.00
Construction Survey @ 3%	$	129,990.00
Traffic Control @ 2%	$	86,660.00
Subtotal Construction, Rounded	$	4,900,000.00
Construction Contingency @ 25%	$	1,225,000.00
Total Estimated Construction Cost	**$**	**6,125,000.00**
Easment/Land Acquisition @ 5%	$	306,250.00
City Administration @ 3%	$	183,750.00
Design @ 12%	$	735,000.00
Environmental/Permitting, Survey, and Geotech @ 5%	$	306,250.00
Construction Management @ 12%	$	735,000.00
Total Admin/Engineering Costs	$	2,266,250.00
Total Estimated Project Cost	**$**	**8,391,250.00**

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Palmer-Wasilla Water System Interconnect
ROM Cost Estimate

ALTERNATIVE 2

Date Prepared: 17-January-2023

ITEM		DESCRIPTION		TOTAL PRICE
1		**Alternative 2 Water Main Construction**		
		Construction Subtotal		$7,344,000.00
		Total Admin/Engineering Costs		$2,717,280.00
		Total Project Cost		$10,061,280.00
2		**Old Matanuska Rd. Booster/PRV Station**		
		Construction Subtotal		$1,660,500.00
		Total Admin/Engineering Costs		$531,360.00
		Total Project Cost		$2,191,860.00
3		**Trunk Rd. Booster/PRV Station**		
		Construction Subtotal		$1,863,000.00
		Total Admin/Engineering Costs		$689,310.00
		Total Project Cost		$2,552,310.00

Grand Total, Rounded **$14,900,000**

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PALMER-WASILLA WATER SYSTEM INTERCONNECT
ROM COST ESTIMATE

Alternative 2 Water Main Construction

Item No.	Work Description	Estimated Quantity	Unit Price	Total Bid Price
1	Clearing Linear Foot	14,101	$ 40.00	$ 564,040.00
2	Surface Restoration Linear Foot	14,101	$ 40.00	$ 564,040.00
3	Install Fire Hydrant Each	14	$ 10,000.00	$ 140,000.00
4	Install 18-Inch Gate Valve Each	28	$ 15,000.00	$ 420,000.00
5	F&I 18-Inch SDR11 HDPE Water Main Incl. Dewatering Linear Foot	14,101	$ 200.00	$ 2,820,200.00
6	Bore and Jack 30" Sch 10 Steel Casing Linear Foot	200	$ 750.00	$ 150,000.00
7	F&I New PRV at Enterprise Dr. Booster Station Each	1	$ 150,000.00	$ 150,000.00

Mob/Demob/Bonding @ 5%	$ 240,414.00
Storm Water Polution Prevention Plan @ 3%	$ 144,248.40
Construction Survey @ 3%	$ 144,248.40
Traffic Control @ 2%	$ 96,165.60
Subtotal Construction, Rounded	$ 5,440,000.00
Construction Contingency @ 35%	$ 1,904,000.00
Total Estimated Construction Cost	**$ 7,344,000.00**
Easment/Land Acquisition @ 5%	$ 367,200.00
City Administration @ 3%	$ 220,320.00
Design @ 12%	$ 881,280.00
Environmental/Permitting, Survey, and Geotech @ 5%	$ 367,200.00
Construction Management @ 12%	$ 881,280.00
Total Admin/Engineering Costs	$ 2,717,280.00
Total Estimated Project Cost	**$10,061,280.00**

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PALMER-WASILLA WATER SYSTEM INTERCONNECT
ROM COST ESTIMATE

Old Matanuska Road Booster/PRV Station Construction/Modification

Item No.	Work Description	Estimated Quantity	Unit Price	Total Bid Price
1	Civil/Site Work Lump Sum	1	$ 25,000.00	$ 25,000.00
2	Pipe Connections Lump Sum	1	$ 15,000.00	$ 15,000.00
3	Booster/PRV Building Lump Sum	1	$ 350,000.00	$ 350,000.00
4	Building Mechanical Systems Lump Sum	1	$ 250,000.00	$ 250,000.00
5	Building Electrical Systems Lump Sum	1	$ 250,000.00	$ 250,000.00
6	SCADA Equipment Lump Sum	1	$ 175,000.00	$ 175,000.00
7	Utility Extensions Lump Sum	1	$ 15,000.00	$ 15,000.00

Mob/Demob/Bonding @ 5%	$ 54,000.00
Storm Water Polution Prevention Plan @ 3%	$ 32,400.00
Construction Survey @ 3%	$ 32,400.00
Traffic Control @ 2%	$ 21,600.00
Subtotal Construction, Rounded	$ 1,230,000.00
Construction Contingency @ 35%	$ 430,500.00
Total Estimated Construction Cost	**$ 1,660,500.00**
City Administration @ 3%	$ 49,815.00
Design @ 12%	$ 199,260.00
Environmental/Permitting, Survey, and Geotech @ 5%	$ 83,025.00
Construction Management @ 12%	$ 199,260.00
Total Admin/Engineering Costs	$ 531,360.00
Total Estimated Project Cost	**$ 2,191,860.00**

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PALMER-WASILLA WATER SYSTEM INTERCONNECT
ROM COST ESTIMATE

Trunk Road Booster/PRV Station Construction

Item No.	Work Description	Estimated Quantity	Unit Price	Total Bid Price
1	Civil/Site Work Lump Sum	1	$ 95,000.00	$ 95,000.00
2	Pipe Connections Lump Sum	1	$ 75,000.00	$ 75,000.00
3	Booster/PRV Building Lump Sum	1	$ 350,000.00	$ 350,000.00
4	Building Mechanical Systems Lump Sum	1	$ 250,000.00	$ 250,000.00
5	Building Electrical Systems Lump Sum	1	$ 250,000.00	$ 250,000.00
6	SCADA Equipment Lump Sum	1	$ 175,000.00	$ 175,000.00
7	Utility Extensions Lump Sum	1	$ 25,000.00	$ 25,000.00

Mob/Demob/Bonding @ 5%	$ 61,000.00
Storm Water Polution Prevention Plan @ 3%	$ 36,600.00
Construction Survey @ 3%	$ 36,600.00
Traffic Control @ 2%	$ 24,400.00
Subtotal Construction, Rounded	$ 1,380,000.00
Construction Contingency @ 35%	$ 483,000.00
Total Estimated Construction Cost	**$ 1,863,000.00**
Easement/Land Acquisition @ 5%	$ 93,150.00
City Administration @ 3%	$ 55,890.00
Design @ 12%	$ 223,560.00
Environmental/Permitting, Survey, and Geotech @ 5%	$ 93,150.00
Construction Management @ 12%	$ 223,560.00
Total Admin/Engineering Costs	$ 689,310.00
Total Estimated Project Cost	**$ 2,552,310.00**

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