

City of Bel Aire, Kansas

Public Works Facility Master Plan

September 07, 2023



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Section 1.1

Introduction

The City of Bel Aire, Kansas is located on the northeast boundary of the City of Wichita. One of nineteen cities in Sedgwick County. Bel Aire is the fifth largest community in the county with an estimated population of 8,200. Well-known for its quality of life, low crime rate and close proximity to Wichita, Bel Aire offers a community which many people desire. Bel Aire is also one of the fastest growing cities in Sedgwick County with an average of 100 new residential homes being constructed each year. USD 259 maintains the Northeast Magnet High School and Isely elementary. Two private schools call Bel Aire home being Sunrise Christian Academy and Resurrection Catholic School. The city limits hit K254 on the north, 37th Street on the south, 127th street on the east and Oliver on the west.

The city provides the following traditional governmental services to its citizens: police protection, public works, parks facilities, recreation, sewer utility, water utility, senior center and municipal court services. Bel Aire is half owner in the Chisholm Creek Utility Authority (CCUA) with Park City which provides sewer treatment / water treatment to both cities. Bel Aire receives half its potable water from CCUA and the other half from Wichita with the capability of adding additional water from both sources. Gas service is through Kansas Gas, electric with Evergy, AT & T phone, Waste Connections trash and Cox cable.

The current Public Works facility is located at 4103 North Woodlawn consisting of roughly 7 acres. The current public works building is 32 years old encompassing approximately 7,200 square feet. Due to the new growth occurring on the east side of Bel Aire, it is anticipated that the Public Works Department will require additional equipment, vehicles, shop and facility capacity to accommodate the increased need. With that foresight, the city acquired two lots in Sunflower Commerce Park for future needs. Approximately 13 acres in size. This master plan study looks at the functional and programmatic requirements for the Public Works Department twenty years in the future as well as study the values of locating future public works facilities on both the existing public works complex site and the two lots at Sunflower Commerce Park.

Section 1.2

Executive Summary

This master plan study looks at the future needs of the Bel Aire Public Works Department 20 years into the future. The City of Bel Aire's projected population growth rate is 10 percent per year. Given that criteria, along with insight and direction from the public works director and associated staff, the anticipated expansion of operational needs for the public works department would generally reflect the current operational needs of peer cities like Andover and Derby, Kansas. The operational staff is projected to grow from 9 current staff to 30 total future staff. Consequently, the equipment and facility needs are projected to also increase accordingly. While the future equipment needs are identified later in this report, the future Bel Aire Public Works Complex is projected to need the following physical plant facilities:

1. 10,287 square foot administrative facility
2. 9,100 square foot vehicle maintenance facility with a 2,270 square foot mezzanine
3. 9,000 square foot equipment storage facility with 2,000 square foot covered storage area

Additionally, the complex is project to need the following site amenities and support structures:

1. Concrete circulation drives
2. Gravel yard
3. 8' tall chain-link perimeter fencing
4. Rolling security gates
5. 1.5 acres debris yard
6. 1,500 square foot open-sided pole barn
7. New fuel center with underground tanks
8. Bulk material storage areas
9. Brine production and storage
10. Salt storage building
11. Concrete yard ramp
12. Salt spreader racks
13. Generator

Correspondingly, the two proposed site options for future public works operations were evaluated with these operational, equipment and facility requirements in mind.

Section 2.1

SITE ANALYSIS

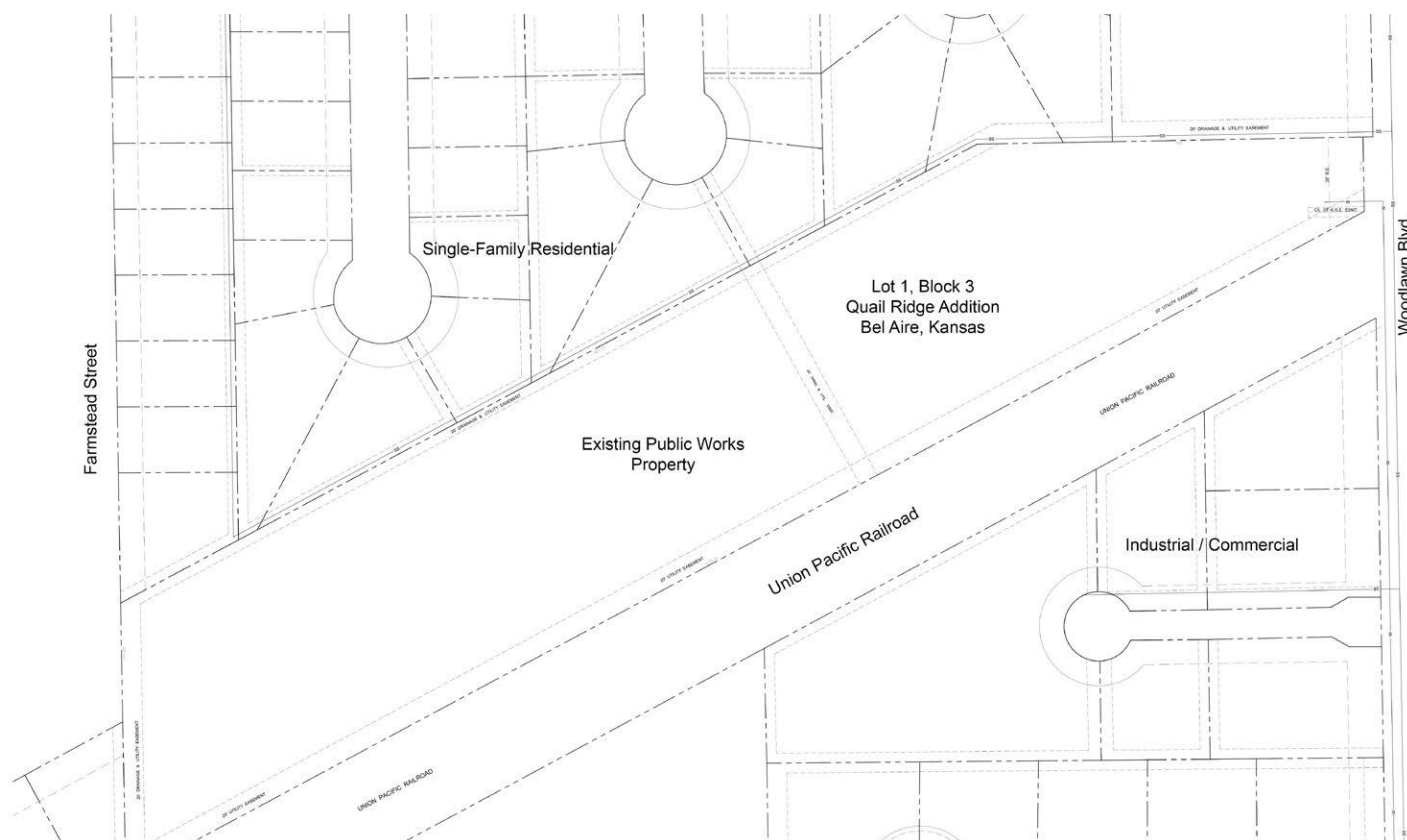
Existing Public Works Site

Address: 4105 N. Woodlawn Blvd.

Legal Description: Lot 1, Block 3 Quail Ridge Addition, Bel Aire, Kansas

Lot Size: 310,984 SF (7.14 Acres)

- Existing Public Works Building: 7,200 SF
- Material Storage Building: 1,450 SF
- Above Ground Fuel Center
- Bulk Material Storage Areas
- Access to Farmstead & Woodlawn Blvd.
- South Adjacency: Union Pacific Railroad
- North Adjacency: Single-Family Residential
- Floodplain: Zone AE adjacent Railroad Right-of-way
- Zoning: NA
- Parcel has utility services (water - Woodlawn, sewer - along north property line)
- Water pump station to remain at east end of property
- Property slopes generally from north to south and west to east
- Adjacent residences are between 5 - 10 feet higher in elevation



Section 2.1

SITE ANALYSIS

Existing Public Works Site



Section 2.2

SITE ANALYSIS

Sunflower Commerce Park Site

Address: NA

Legal Description: Lot 6, Block B Sunflower Commerce Park Addition, Bel Aire, Kansas

Lot Size: 363,308 SF (8.34 Acres)

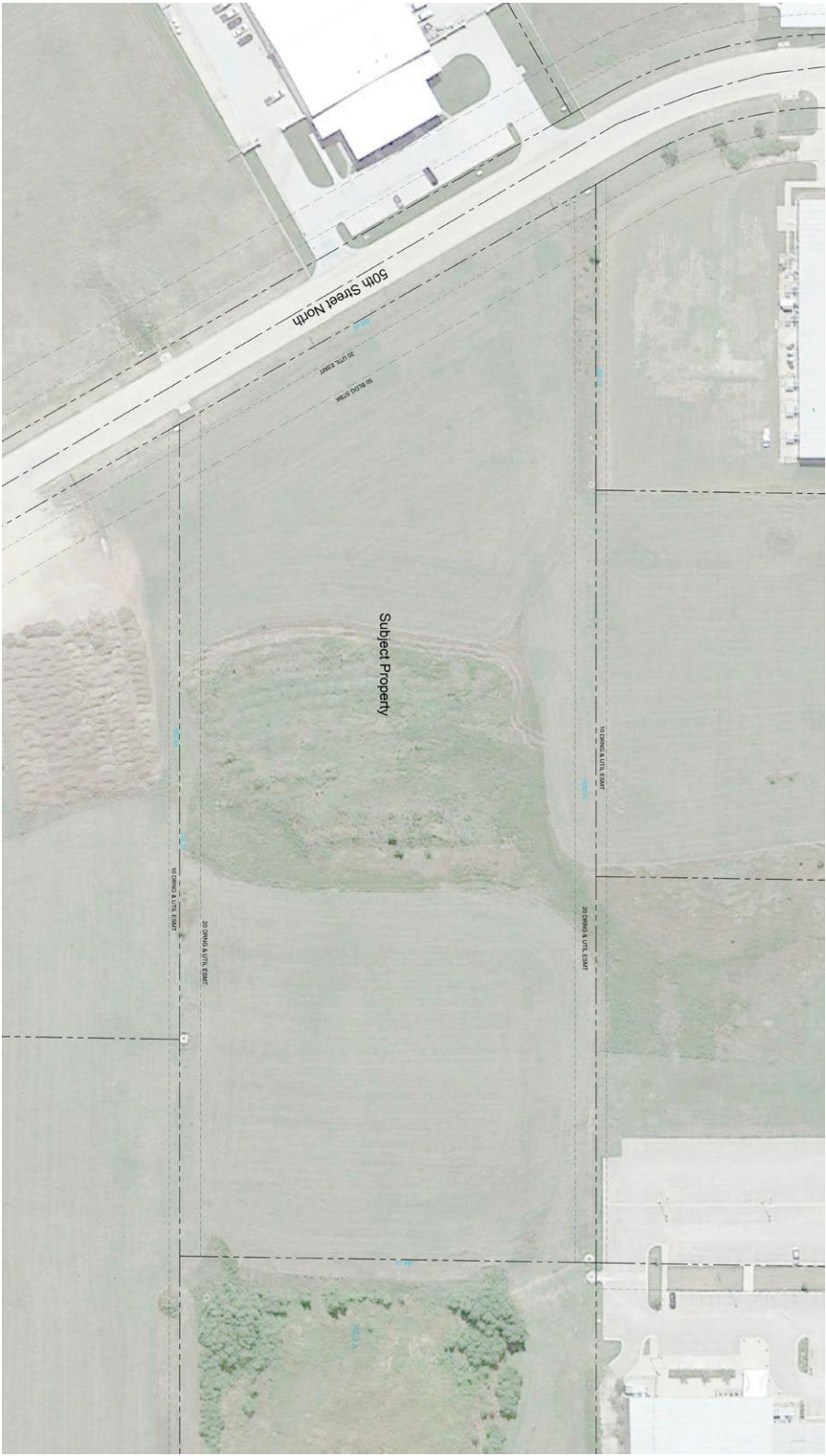
- Shovel-Ready Site
- Access Webb Road & 53rd Street via 50th Street (Concrete Street)
- North Adjacency: Industrial / Commercial
- South Adjacency: Industrial / Commercial
- West Adjacency: Drainage Reserve (Regional Stormwater Detention)
- Floodplain: NA
- Zoning: Industrial
- Parcel has utility services (water - 50th Street, sewer - 50th Street)
- Property slopes generally from west to east towards detention area
- Approximately 12' of fall across property



Section 2.2

SITE ANALYSIS

Sunflower Commerce Park Site



Section 3.1

FACILITY PROGRAM

Administration Building Program

The Public Works administration building will provide for general administration, training and operations of the public works department within one building. Generally, the building shell will be an enhanced metal building frame with a sloped metal roof, metal wall panel and a veneer masonry wainscot. The locker room areas will include masonry wall construction and the general office areas will include standard gypsum and metal stud wall construction. The training room area will be designed with storm shelter qualities and built within the shell of the overall metal building frame. It is anticipated that the administration building will be built immediately adjacent to and connected to the vehicle maintenance buildings.

The building components will include the following square foot areas:

- Lobby	675
- Reception	200
- Administration work area	200
- Conference room	635
- Six private offices (@ 156 SF)	936
- Break room	435
- Women’s restrooms	300
- Men’s restrooms	300
- Women’s locker room	730
- Men’s locker room	1,200
- Laundry	130
- Training room	1,240
- General storage	300
- Janitorial	220
- Mechanical/electrical room	260
- Building grossing	3,269
Total:	10,300

Section 3.2

FACILITY PROGRAM

Vehicle Maintenance Building Program

The Public Works vehicle maintenance building will provide for general vehicle and equipment maintenance and operations. Generally, the building shell will be a metal building frame with a sloped metal roof, metal wall panel and limited interior concrete masonry wainscot in vehicle areas. The maintenance support areas will continue the metal building finishes to the interior of the building. The vehicle wash bay will be within an enclosed building envelope. It is anticipated that the vehicle maintenance building will be built immediately adjacent to and connected to the administration building.

The building components will include the following square foot areas:

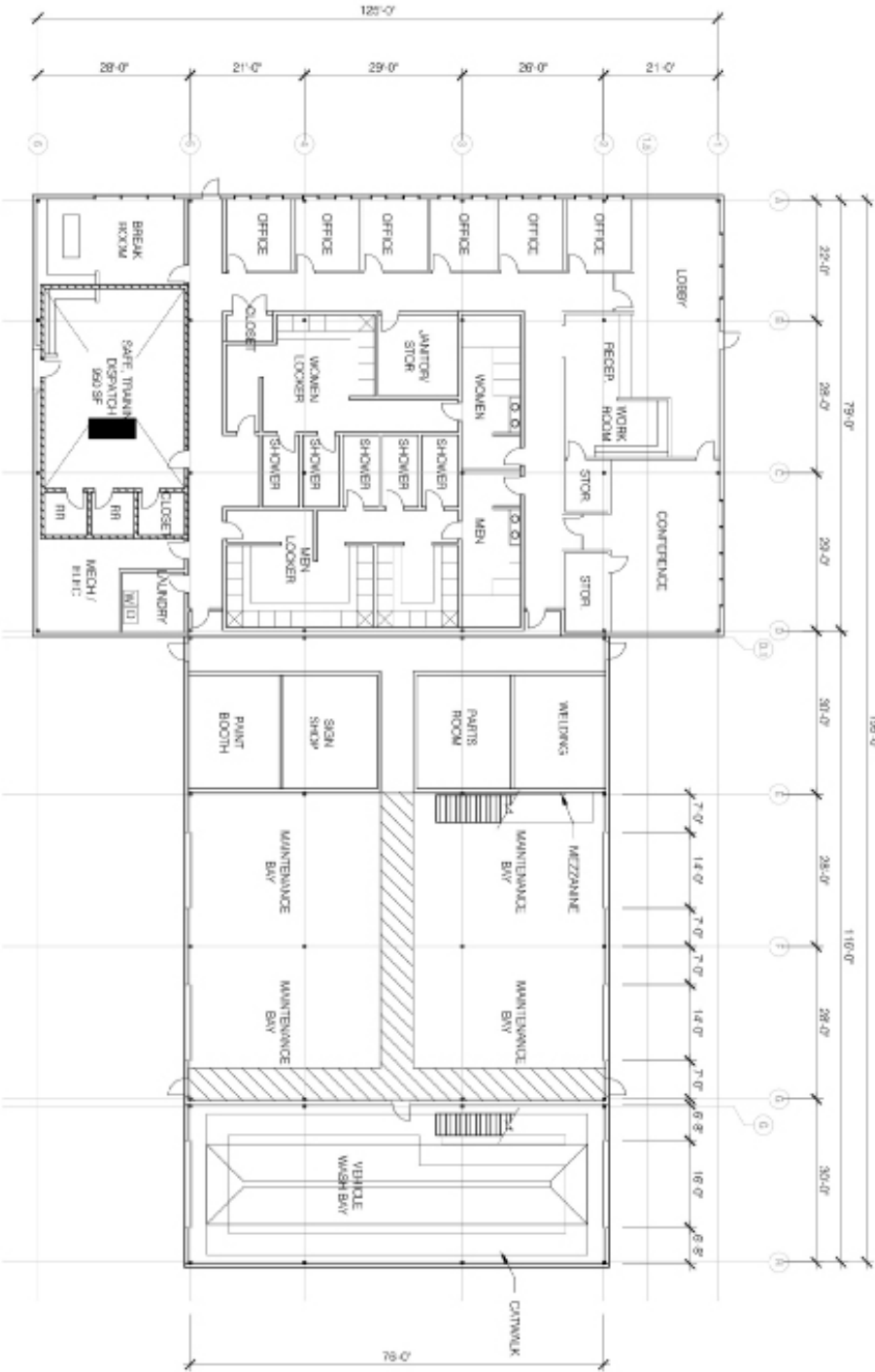
-	Four Maintenance Bays	4,345
-	Welding	355
-	Parts Room	360
-	Sign Shop	360
-	Paint Booth	355
-	Wash Bay	2,250
-	Mezzanine Storage	2,270
-	Building grossing	1,075
Total:		11,370

Section 3.3

FACILITY PROGRAM

Administration & Vehicle Maintenance
Building Plan

Building Area	
Administration:	10,300 SF
Vehicle Maintenance:	9,100 SF
Mezzanine:	2,270 SF
Total:	21,670 SF



Section 3.4

FACILITY PROGRAM

Existing Public Works Building Program

The existing Public Works building will provide for general equipment and vehicle storage at the existing public works campus. Generally, the existing building shell is a metal building frame with a sloped metal roof, metal wall panel. The renovation will include patch and replace damaged metal roof and wall panels as well as the concrete floor. Upgrade the HVAC and plumbing systems as well as power and lighting.

The existing operations areas include standard gypsum and wood stud wall framing. The renovation will include reuse and remodel of the existing operations area with new finishes including wainscot wall tile to add durability to the existing gypsum finishes. The operations area will also receive upgraded HVAC, plumbing, power and lighting systems. The storage mezzanine will receive new durable finishes, lighting and a removable rail system. The renovation will also include the addition of a limited interior concrete masonry wainscot in equipment, shop and vehicle areas. It is anticipated that the existing public works building will remain independent of other structures on the Public Works Complex.

The building components will include the following square foot areas:

-	Six Storage Bays	5,385
-	Maintenance Shop	328
-	Locker Room	220
-	Restroom	55
-	Dispatch	180
-	Breakroom	263
-	Conference Room	136
-	Two Private Offices (@ 112 SF)	224
-	Mezzanine Storage	990
-	Building grossing	449
Total:		8,230

Section 3.5

FACILITY PROGRAM

Vehicle Storage Building Program

VEHICLE STORAGE BUILDING PROGRAM

The Public Works vehicle storage building will provide for general vehicle and equipment storage. Generally, the building shell will be a metal building frame with a sloped metal roof, metal wall panel and limited interior concrete masonry wainscot in vehicle areas. It is anticipated that the vehicle storage building will be built independent of other structures on the Public Works Complex.

The building components will include the following square foot areas:

-	Storage Bay	9,000
-	Covered Storage Bay	2,000

Total:	11,000
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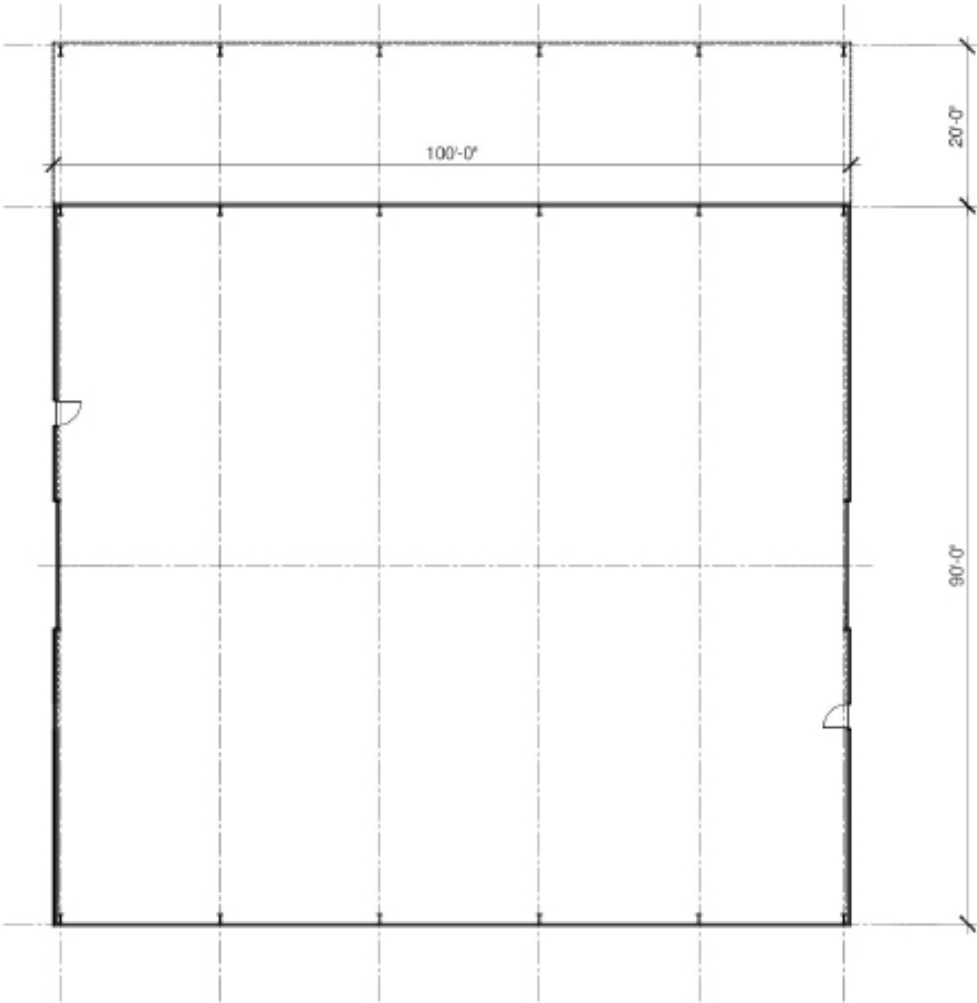
Section 3.5

FACILITY PROGRAM

Vehicle Storage Building Plan

Building Area
Indoor: 9,000 SF
Outdoor: 2,000 SF

Total: 11,000 SF



Section 3.6

FACILITY PROGRAM

Public Works Facilities Elements

- Images shown to convey general intent & character of facility components. Final structures & systems will be determined at the time of final design.



Open-Sided Pole Barn Storage



Salt Storage



Brine Production & Storage



Fuel Center

Section 3.6

FACILITY PROGRAM

Public Works Facilities Elements

- Images shown to convey general intent & character of facility components. Final structures & systems will be determined at the time of final design.



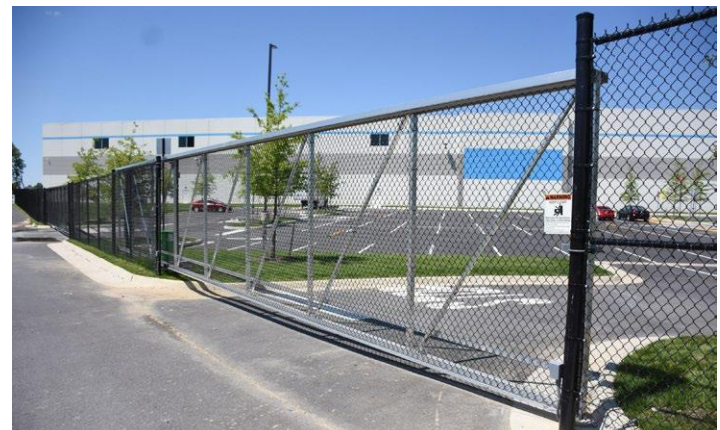
Bulk Material Storage - Concrete Bin Block



Material & Implement Loading Ramp



Salt Spreader Racks



Automatic Rolling Gates

Section 3.7

FACILITY PROGRAM

Current Public Works Equipment / Vehicles

Fleet ID	Year	Model	Fleet Name	Category
1037	2008	66901	Western	Truck Snow Plow Blade
1042	2020	Pro Plus	Western	Truck Snow Plow Blade
1043	2020	FSMA X 9 X HYD X SS	Western	Truck Material Spreader
1040	2006	Buck Dandy	Water Hauler	Water Tank Trailer
1017	2005	747-FR200	S.E.C.A	Sewer Cleaner Trailer
1014	1998	B600T	S.D.P.	Small Sewer Cleaner
	2017	2100 Plus	Vacto	Sewer Truck
1018	2006	TL100A	New Holland	Large Tractor
1021	2014	AR-14	Multiquip	Roller Compactor
1033	1999	MV-156-84-56/3041210	Monroe	Truck Material Spreader
1026	2013	AFM4211	Landpride	Small Tractor Mower
1019	2006	RC5015	Landpride	Large Tractor Mower
1025	2015	L4701HST	Kubota	Small Tractor
1045	2016	310HLSL	John Deere	Backhoe
1012	2003	770CH	John Deere	Motor Grader
1023	2008	DM10	John Bean	Chemical Sprayer
1003	2023	HV607	International	Large Dump Truck
1005	2018	7400	International	Large Dump Truck
1022	2007	Spin Doctor	Hurco	Water Valve Turner
1034	2008	8X304SS	Henderson	Truck Material Spreader
1035	2004	8X304SSXDUALHYD	Henderson	Truck Material Spreader
1024	2015	EZ Liner 250	Graco	Paint Striper
1006	2006	F-350	Ford	Parks Dump Truck
1007	2014	F-150	Ford	Director's Truck
1008	2007	F-550	Ford	Bucket Truck
1009	2020	F-550	Ford	Small Dump Truck
1004	2007	F-550	Ford	Utility Crane Tuck
1001	2015	F-250	Ford	4 Door Truck
1002	2008	F-350	Ford	Flatbed Truck
1028	2022	LZS749AKC604A1	Exmark	Zero Turn Mower
1029	2009	LZAS25KC604	Exmark	Zero Turn Mower
1044	2022	LZS749AKC604A1	Exmark	Zero Turn Mower
1010	2008	Pelican	Elgin	Street Sweeper
1016	2008	FX30	Ditch Witch	Vacuum Trailer
1041	2018	Hauler 1200	Cushman	Utility Cart
1020	2009	SS125-1250	Crafco	Crack Sealer
1011	2022	3500	Chevrolet	Flat Bed Truck
1013	2004	420D	Caterpillar	Backhoe
1015	2019	S595	Bobcat	Skid Steer
1030	2006	14 Planer	Bobcat	Rotary Planar
1046	2022	E35i	Bobcat	Mini Excavator
1047	2021	Patcher II	Crafco	Mastic Machine
	2017	2100 Plus	Vactor	Sewer Truck

Section 3.8

FACILITY PROGRAM

Projected Additional Public Works Equipment / Vehicles

Fleet ID	Year	Model	Fleet Name	Category
--	--	RC5015	Landpride	Small Tractor Mower
--	--	RC5015	Landpride	Small Tractor Mower
--	--	S595	Bobcat	Skid Steer
--	--	TL100A	New Holland	Tractor
--	--	TL100A	New Holland	Tractor
--	--	310HLSL	John Deere	Backhoe
--	--	LZS749AKC604A1	EZ Mark	Zero Turn Mower
--	--	LZS749AKC604A1	EZ Mark	Zero Turn Mower
--	--	LZS749AKC604A1	EZ Mark	Zero Turn Mower
--	--	LZS749AKC604A1	EZ Mark	Zero Turn Mower
--	--	F-350	Ford	Truck
--	--	F-350	Ford	Truck
--	--	F-350	Ford	Truck
--	--	F-350	Ford	Truck
--	--	F-350	Ford	Truck
--	--	26' Unit	--	Equipment Trailer
--	--	24' Unit	--	Equipment Trailer

Section 4.1

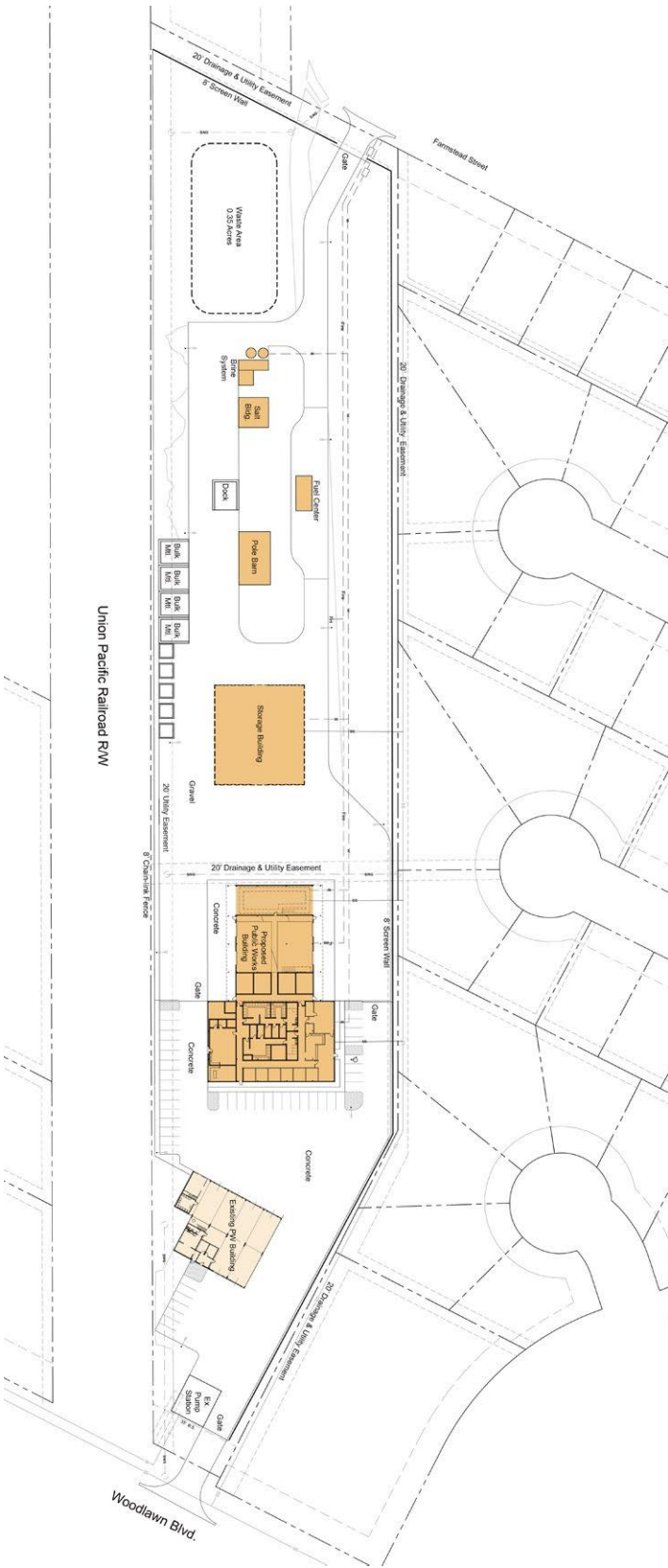
OPTION ANALYSIS

Existing Public Works Site Plan

Address: 4105 N. Woodlawn Blvd.
Legal Description: Lot 1, Block 3 Quail Ridge Addition,
Bel Aire, Kansas
Lot Size: 310,984 SF (7.14 Acres)

ELEMENTS

- Retain Existing PW Building & Remodel
- New PW Operations & Maintenance Building
- New Fuel Center - Underground Tanks
- Bulk Material Storage Areas
- Brine Production & Storage
- Salt Storage Building
- Open-Sided Pole Barn
- Future Enclosed Storage Building
- 8’ Screen Wall - North & West Property Line
- 8’ Chain-Link Fence - South Property
- Rolling Security Gates
- Concrete Yard Ramp
- Debris / Waste Yard - 0.35 Acres
- Concrete Pavement & Gravel Yard



Section 4.2

OPTION ANALYSIS

Existing Public Works Site Plan

Address: 4105 N. Woodlawn Blvd.

Legal Description: Lot 1, Block 3 Quail Ridge Addition,
Bel Aire, Kansas

Lot Size: 310,984 SF (7.14 Acres)

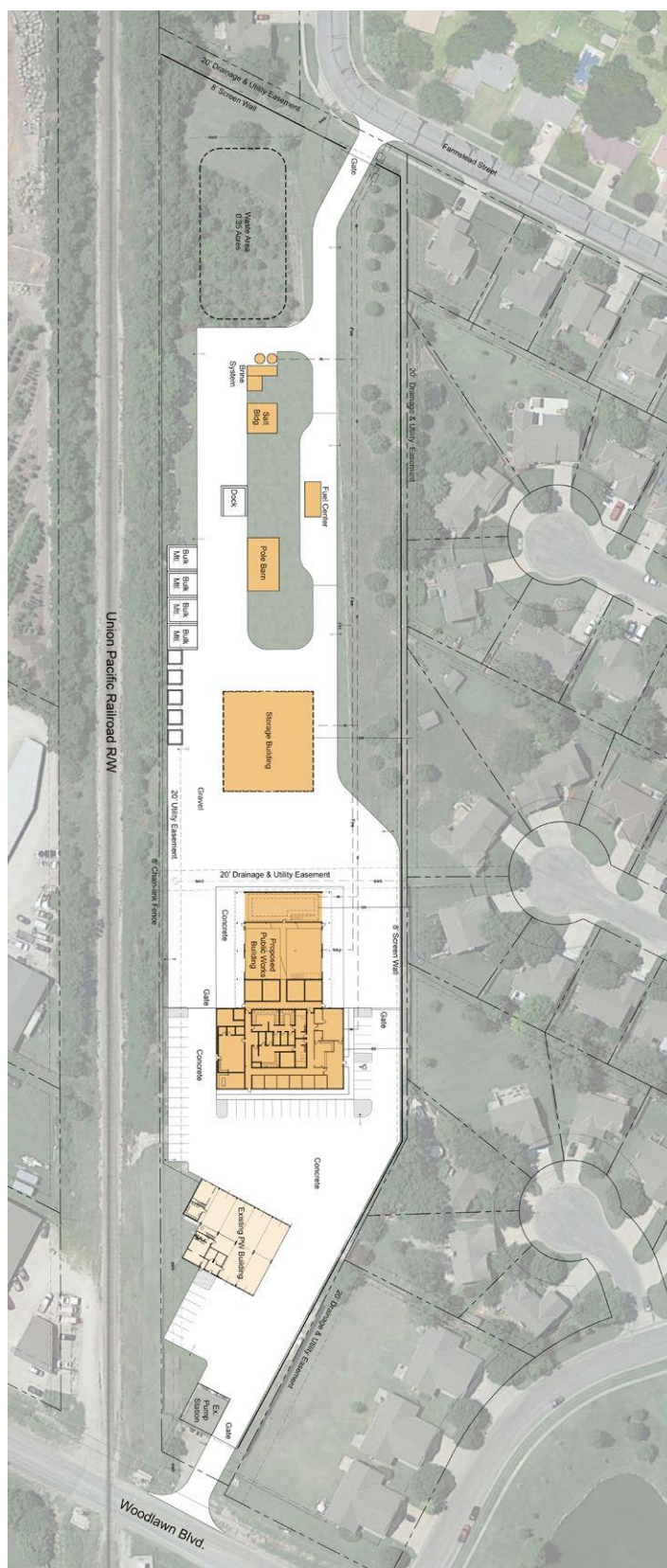
ANALYSIS

Site Strengths

- Retain Existing PW Building
- Accessibility of Utilities

Site Weaknesses

- Traffic Issues at Woodlawn & RR Crossing
- Narrow Site - Use & Circulation Limitations
- Proximity to Single-Family Residential
- Secondary Security Gate
- Site Size Limitations
- Limited Debris/Waste Area
- Limited Area for On-site Stormwater Detention
- Disruption Due to Construction Activities



Section 4.3

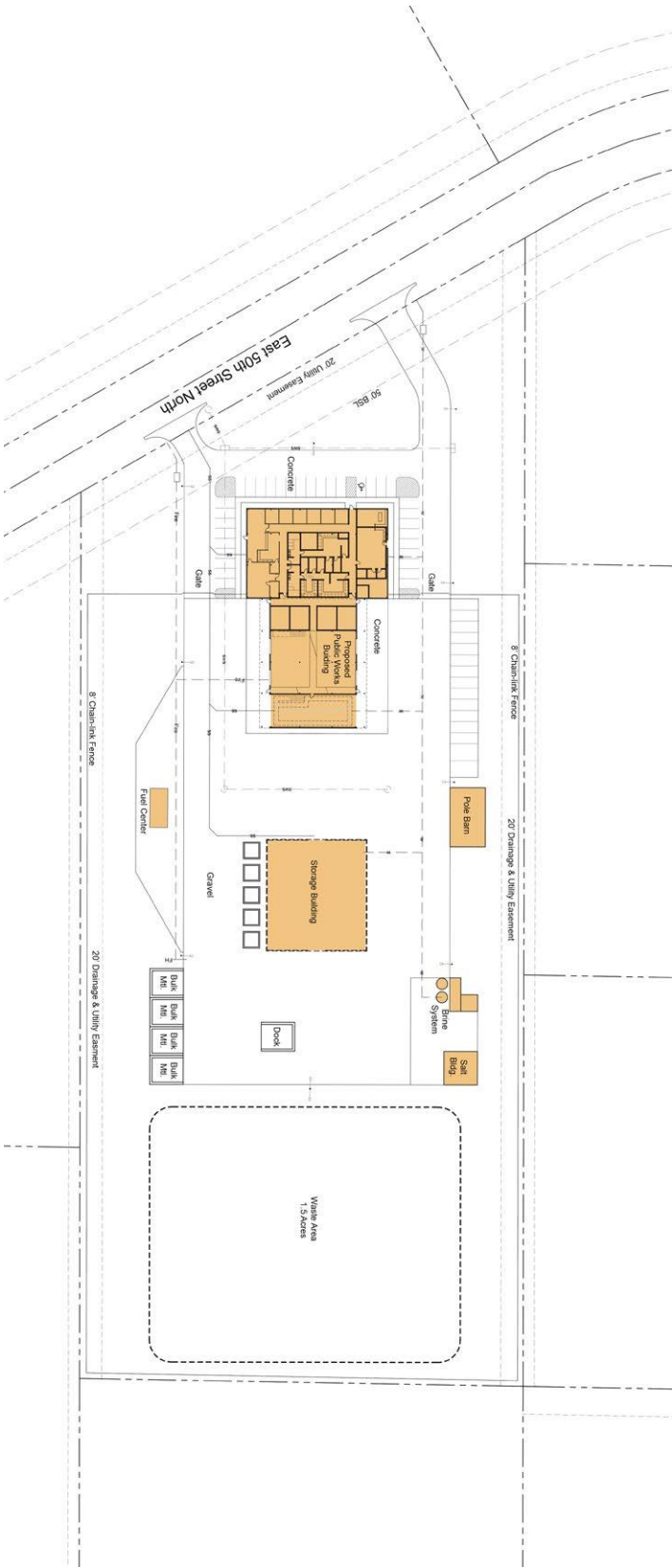
OPTION ANALYSIS

Sunflower Commerce Park Site Plan

Address: NA
Legal Description: Lot 6, Block B Sunflower Commerce
Park Addition, Bel Aire, Kansas
Lot Size: 363,308 SF (8.34 Acres)

ELEMENTS

- New PW Operations & Maintenance Building
- New Fuel Center - Underground Tanks
- Bulk Material Storage Areas
- Brine Production & Storage
- Salt Storage Building
- Open-Sided Pole Barn
- Future Enclosed Storage Building
- 8’ Chain-Link Fence
- Rolling Security Gates
- Concrete Yard Ramp
- Debris Yard - 1.5 Acres
- Concrete Pavement & Gravel Yard



Section 4.4

Sunflower Commerce Park Site Plan

Address: NA

Legal Description: Lot 6, Block B Sunflower Commerce
Park Addition, Bel Aire, Kansas

Lot Size: 363,308 SF (8.34 Acres)

ANALYSIS

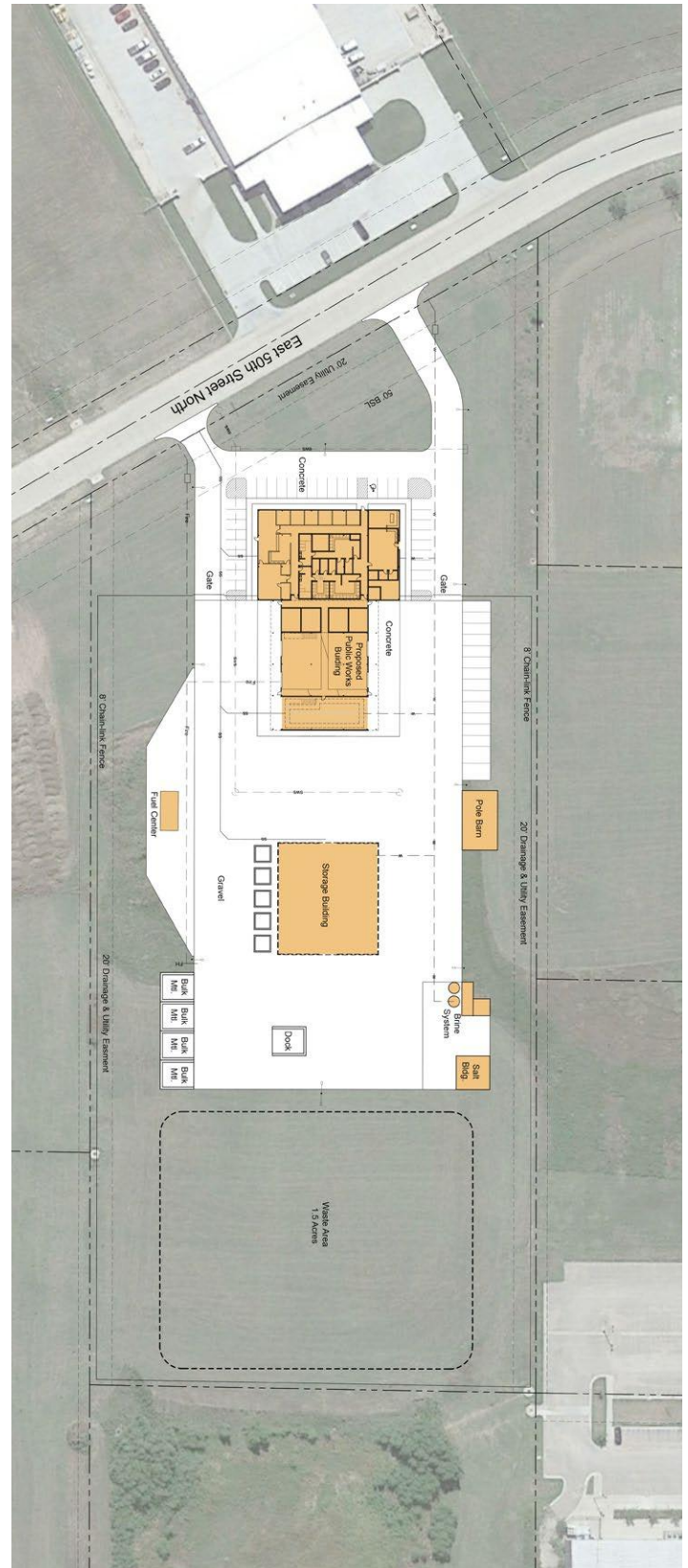
Site Strengths

- Shovel-Ready Site
- Good Access to Two Arterials via Concrete Street
- Accessibility of Utilities
- Regional Stormwater Detention
- Similar Adjacent Land Uses
- Expandability
- Potential Co-Location of Other City Services
- Can Operate at Current Location during Construction of New Facility
- Allows the Potential Re-use of Existing PW Building & Site for Satellite Operations

Site Weaknesses

- Marketability of Property for Sale

OPTION ANALYSIS



Section 5.1

CONCEPTUAL BUDGET SUMMARY

Existing Public Works Site

SITE:	
Site Clearing and Preparation	\$ 179,625.00
Earthwork & Grading	\$ 226,400.00
Utilities	\$ 266,250.00
Pavements	\$ 1,053,740.00
Fences & Walls	\$ 331,525.00
Landscape & Irrigation	\$ 148,150.00
Concrete	\$ 50,000.00
<u>Site electrical</u>	<u>\$ 171,500.00</u>
Subtotal	\$ 2,427,190.00
BUILDINGS:	
Existing Equipment Storage building renovation (8,230 SF)	\$ 658,400.00
New Administration building (10,300 SF)	\$ 3,151,800.00
New Vehicle Maintenance building w/ mezzanine (9,100 SF + 2,270 SF)	\$ 2,343,000.00
<u>New Equipment Storage building (9,000 SF indoor + 2,000 SF outdoor)</u>	<u>\$ 753,000.00</u>
Subtotal	\$ 6,906,200.00
MISCELLANEOUS STRUCTURES:	
Pole Barn Storage building (1,500 SF)	\$ 52,500.00
Salt Spreader Racks (2 new)	\$ 7,500.00
Fuel Center	\$ 250,000.00
Brine Operation	\$ 250,000.00
Salt Storage Building	\$ 30,000.00
<u>Building Generator (80 Kw)</u>	<u>\$ 40,000.00</u>
Subtotal	\$ 630,000.00
SITE/BUILDING STRUCTURES TOTAL	\$ 9,963,390.00
PROJECT ADMINISTRATION:	
General Conditions (10%)	\$ 996,339.00
Overhead & Profit (6%)	\$ 597,803.40
Construction Contingency (5%)	\$ 498,169.50
<u>Escalation/Inflation (8% per year) (1-year)</u>	<u>\$ 797,071.20</u>
Project Administration Subtotal	\$ 2,889,383.10
Soft costs total (Arch, Civil, Struct., MEP, Survey, Geotech, Permit, Test, Comm)	\$ 896,705.10
TOTAL PROJECT AMOUNT	\$13,749,478.20
CONTINGENCIES:	
Owner contingency (5%)	\$ 498,169.50
<u>Design contingency (20%)</u>	<u>\$ 1,992,678.00</u>
Total contingency amount	\$ 2,490,847.50
TOTAL PROJECT BUDGET	\$16,240,325.70

Section 5.2

CONCEPTUAL BUDGET SUMMARY

Sunflower Commerce Park Site

SITE:	
Site Clearing and Preparation	\$ 73,250.00
Earthwork & Grading	\$ 226,400.00
Utilities	\$ 248,250.00
Pavements	\$ 826,525.00
Fences & Walls	\$ 117,500.00
Landscape & Irrigation	\$ 177,190.00
Concrete	\$ 50,000.00
<u>Site electrical</u>	<u>\$ 142,500.00</u>
Subtotal	\$ 1,861,615.00
BUILDINGS:	
New Administration building (10,300 SF)	\$ 3,151,800.00
New Vehicle Maintenance building w/ mezzanine (9,100 SF + 2,270 SF)	\$ 2,343,000.00
<u>New Equipment Storage building (9,000 SF indoor + 2,000 SF outdoor)</u>	<u>\$ 753,000.00</u>
Subtotal	\$ 6,247,800.00
MISCELLANEOUS STRUCTURES:	
Pole Barn Storage building (1,500 SF)	\$ 52,500.00
Salt Spreader Racks (2 new)	\$ 7,500.00
Fuel Center	\$ 250,000.00
Brine Operation	\$ 250,000.00
Salt Storage Building	\$ 30,000.00
<u>Building Generator (80 Kw)</u>	<u>\$ 40,000.00</u>
Subtotal	\$ 630,000.00
SITE/BUILDING STRUCTURES TOTAL	\$ 8,739,415.00
PROJECT ADMINISTRATION:	
General Conditions (10%)	\$ 873,941.50
Overhead & Profit (6%)	\$ 524,364.90
Construction Contingency (5%)	\$ 436,970.75
<u>Escalation/Inflation (8% per year) (1-year)</u>	<u>\$ 699,153.20</u>
Project Administration Subtotal	\$ 2,534,430.35
Soft costs total (Arch, Civil, Struct., MEP, Survey, Geotech, Permit, Test, Comm)	\$ 786,547.35
TOTAL PROJECT AMOUNT	\$12,060,392.70
CONTINGENCIES:	
Owner contingency (5%)	\$ 436,970.75
<u>Design contingency (20%)</u>	<u>\$ 1,747,883.00</u>
Total contingency amount	\$ 2,184,853.75
TOTAL PROJECT BUDGET	\$14,245,246.45