



PUBLIC SAFETY BUILDING FEASIBILITY REPORT

For the

TOWN OF SWANSBORO NORTH CAROLINA

Prepared by:



ARCHITECTURE
ENGINEERING

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Overall Project Summary

The Town of Swansboro, Onslow County, North Carolina is located on the Intracoastal Waterway at the mouth of the White Oak River. The Town is 1.3 square miles in land area and includes 3,605 year-round residents¹. Fire and police dispatch calls are routed from Onslow County E-911 in Jacksonville, North Carolina. The County population is expected to grow almost 12% by 2030² with expectations the coastal communities will enjoy much of that growth.

The Town is served by a combined sworn and volunteer fire service of 38 members stationed at 609 West Corbett Avenue. The department services the Swansboro and White Oak Fire Districts. The fire service employs 3 firefighters operating in multiple shifts, on a 48-hours on/96-hours off basis. The department chief is Jacob Randall.

Law enforcement is provided by a sworn police force of 13 full time and 4 reserve officers. Currently all police operations are housed at 609 West Corbett Avenue in a facility shared with the fire department. The police department employs shifts of 2 patrol officers and 1 supervisor operating on a 12-hour basis. The department chief is Dwayne Taylor.

The combined fire and police station is now known as the Swansboro Public Safety Facility. It was constructed in 1989 and additions were placed in 2014 and in 2016.

The facility is situated on a single parcel of land totaling 3.98 acres. Per Onslow County GIS records, the parcel ID is 040096. Several town-owned municipal structures occupy the parcel including Town Hall, the Public Works Department and related vehicle parking.

The Town of Swansboro, along with many other coastal communities, have suffered from tropical storms and hurricanes. Since 2013 (10 years) the region has seen 11 such named storms including Hurricanes Arthur (2014), Hermine (2016), Matthew (2016), Florence (2018), and Dorian (2019)³. Specifically, during Florence the Swansboro team was required to evacuate their current facility after only the first day of the storm. Preparing for and responding to these potentially catastrophic events has led the Town to evaluate their facilities, develop an Emergency Operations Plan (EOP), and prepare to design an Emergency Operations Center (EOC) with improvements to enhance the safety of their first responders. It is the goal of the Town to construct an EOC and associated spaces capable of resisting a Category 4 hurricane (131 – 155mph).

It is important to state that all public safety facilities (fire, police, 911, rescue, etc.) are considered Level IV essential facilities by the NC Building Code 2018. As such, higher design standards are applied to allow them to survive and function as intended during emergency events. Other codes and standards from NFPA and FEMA also apply. The results of adhering to such standards is a facility that is secure, resilient, and continuously operational, allowing the public to trust they will be protected and well served under extreme circumstances. Such facilities are expensive, but their public value is immeasurable.

Notes:

1 – https://www.northcarolina-demographics.com/cities_by_population

2 – <https://www.osbm.nc.gov/facts-figures/population-demographics/state-demographer/countystate-population-projections/population-growth-2020-2030>

3 – <https://coast.noaa.gov/hurricanes/>

This report will investigate four options to develop an EOC, enhance current fire and police space and develop a budget for planning purposes. Options will include adding space to the existing facility, two options for building a free-standing new facility to replace the existing facility and building a new free-standing facility on an alternate site.

The engagement between the Town of Swansboro and Becker Morgan Group occurred from December 6 to May 24, 2023, for the purposes of the Feasibility Study, contained herein. This report will address the present and future sites, the present and future space uses and needs, options to achieve those needs and budget that reflects the options presented.

1. Site Summary

The purpose of this narrative is to summarize the civil-related improvements associated with any new public safety building construction at 609 West Corbett Avenue, Swansboro, North Carolina. This summary includes recommendations for design, water, and sewer availability, permits, site constraints, and options to meet building and parking requirements.

The Town of Swansboro owns the subject area including one parcel totaling ~3.98 acres, all within B-2 (General Business) zoning (Parcel: 040096, PIN: 536410471278). The subject facility (Swansboro Public Safety) is approximately 10,946 square feet (sf) at grade and provides 55 parking spaces. Parking requirements are 1 space per employee. Current parking serves all buildings on site.

Setbacks for B-2 are 25 ft front, 10 ft rear, 0 ft side (West Corbett Avenue), and 10 feet side yard (Sabiston Heights) at corners. The maximum building height is 35 feet. Town regulations require adherence to landscaping and lighting requirements.

Becker Morgan Group noted that the right-of-way for South Fifth Street, located off Sabiston Drive, intrudes into the overall Town parcel and action is required to resolve and return the section of the ROW to the Town.

Currently the site includes a one-story pre-engineered metal building with four apparatus bays facing West Corbett Avenue (NC Highway 24). Site features include generator, HVAC equipment, rain barrel, underground propane tank, overhead power, antenna, and a flagpole. The vehicle slab elevation is ~30 ft above sea-level and falls quickly to +25 ft and less to the east of the building. Per the relevant FIRM map (panel 3720536400L) the site is in an X-zone, indicative of a low flood risk.

Site soils consist of Norfolk (fine sandy loam), which have a high infiltration rate and very rapid permeability. There are no wetlands located on site.

Runoff from impervious areas sheet flows to a central drainage basin where it infiltrates into the sandy soils, and at overtopping conditions conveys via an inlet and pipe to a catch basin on west side of NC Highway 24. The general area drains to the White Oak River across NC Highway 24. The existing stormwater management facility has an NCDEQ issued permit.

Utilities are as follows. Electricity Provider – Duke Energy, Natural Gas – Piedmont Natural Gas, Water – ONWASA, and Sewer – Town of Swansboro. Capacities have not been verified but are assumed sufficient.

Existing Site Constraints

- Significant topography, potentially limiting locations for additional pavements and internal driveways and adding complexity to new building construction.
- Existing structures limit placement of new building and site features. Occupied structures require phasing to ensure Owner's continued and uninterrupted use. Removed structures may involve subsurface storage tanks, foundations, slabs and utilities that must be located and mitigated.
- Existing utilities may or may not be in conflict with proposed structures, pavements and proposed utilities.
- Stormwater management features should remain intact but new improvements may trigger an expansion of such structures.
- Proper public safety accessibility and priority require careful planning during design and phases of construction.

Design/Permitting Assumptions:

No Traffic Impact Analysis (TIA) is anticipated as less than 200 trips/day are expected. Site is not within FEMA floodplain or wetlands, thus no permitting impact. Proposed uses are permitted within the present zoning class, so rezoning is not required. As a new vehicular entrance is not being proposed, no NCDOT permitting is required. Soil types and observed drainage suggests suitable infiltration rates for stormwater facility design.

The following permits are expected. Town of Swansboro – Site Plan (TRC) and Building Permit, NCDEQ – Erosion Control Permit (including submittal of eNOI documents), and NCDEQ – State Stormwater (Coastal County, High Density requirements).

In summary, there are few negative factors limiting development of the current site other than the constraints of having several active operational buildings on the present site.

New Site

Logically, consideration should be given to developing a 'green field' site, or a site that is otherwise unimproved. Factors related to this option include the cost of land acquisition, availability of suitable utilities, proper site characteristics (elevation, topography, vegetation, wetlands, zoning restrictions), access to significant roadways, absence of neighboring hazards or threats (industrial, chemical, heavy transportation, environmental, etc.), and extent of present or abandoned structures. Proper due diligence is necessary as led through the engagement of legal and real estate professionals. Further, engineering disciplines (land survey, environmental assessment, geotechnical, etc.) may be needed as part of this due diligence process.

2. Architecture Summary

The purpose of the feasibility study is to determine how a new Emergency Operations Center (EOC) could be integrated into the present Public Safety operations while providing enhanced safety and security during storm events and expanding space for fire and police operations. This requires understanding how the current space is used, what additional spaces are required, and how that integration could benefit the Town in providing significant efficiencies by sharing space.

Should such integration not provide the desired degree of efficiencies or structural integrity incorporating the current facility, what space would be required to provide a completely new facility as a replacement for the current facility or either in a 'green field' site?

Background

The current Public Safety Building is 10,946 sf of ground floor area. The original section of the fire department is an 80 ft x 100 ft building. It was constructed in 1989 and is a one-story pre-engineered metal structure on a concrete slab with large sectional overhead doors. To that an elevated mezzanine of about 3,000 sf was added for use as storage. Later, wood framed additions were placed in 2014 (1,354 usf) to accommodate police activities and another addition in 2016 (1,079 usf) for additional fire bunk rooms. Note, usable square footage (usf) or net area is the actual area of space measured within the demising exterior walls, while gross square footage includes usable areas plus all circulation, structure, voids, and wall thicknesses.

The fire and police chiefs have reported certain space inadequacies and insufficiencies they believed needed to be addressed.

Initial Space Program

Becker Morgan Group provided then-Fire Chief David Degnan and Police Chief Dwayne Taylor space needs surveys in February 2023. Their responses provided data as to the number of staff, the functional areas required, and their physical space needs. We independently developed allocations for the Emergency Operations Center (EOC) space and reviewed fire and police spaces using several methods including industry standards for EOC, fire and police stations; our experience in design of public safety and other public buildings; and code prescriptions for occupied areas. We used staffing numbers to produce requirements for support spaces such as break and toilet rooms and rule-of-thumb loads to determine the mechanical, electrical and data room sizes.

In conjunction with the department surveys, Becker Morgan Group staff visited the site and Public Safety Building. Using a copy of drawings prepared for the latest additions (Swansboro Public Safety Facility Bunk Room Addition - October 4, 2016), and a site plan completed by Bell & Phillips Surveying, PLLC – June 24, 2014, we determined the space functions and areas of the present building.

Using both existing space uses/areas and survey results, Becker Morgan Group developed a spreadsheet to quantify the areas for the EOC, Fire and Police departments.

Our initial space summaries were provided to Town Manager Paula Webb on February 8, 2023, and discussed at meetings on 02/08, 02/22, 03/07, 04/05 and 05/24/2023. From 04/19/2023 forward new Fire Chief Jacob Randall provided valuable comments and input regarding space needs and future plans.

When going through the process of data gathering, site inspections and meeting conversations, it was clear the three primary departments (EOC, Fire, Police) had certain common needs and certain unique ones. Expected shortcomings were confirmed.

Within the current building the Fire Department has 7,568 usf (including 4,280 usf for apparatus bays) and the Police Department has 1,654 usf. The two departments share an additional 1,298 usf including public entry, a large meeting room, toilets/showers, and some utility spaces.

The space needs surveys revealed needs for both departments that reflected functional deficiencies due to a lack of space, or activities contrary to currently accepted methods of operating. Further these deficiencies are exacerbated by an increase in calls for response or an increase in staffing resulting primarily from population growth.

Shortcomings within the fire section include offices for command staff, workspace for firefighters, EMS storage, separate spaces for PPE (clean, soiled and backup), breathing air system (SCBA) and decontamination. These spaces should be separated from the vehicle bays to ensure minimum exposure to carcinogens and other harmful substances. Sleeping accommodations and toilet facilities do not comport with present standards with regards to size, number, and gender. Becker Morgan Group confirmed the Fire Department's cooking and eating areas were minimally sized given the number of present and projected staff.

Shortcomings within the police section include proper and secure handling of detainees and related evidence, weapons and munitions storage, duty gear storage and device charging. Among the spaces that could be shared, lockers/toilets/showers are not adequate, and do not address gender concerns. There is no conference space other than the large Training Room, and the shared physical fitness space is housed within the apparatus bay. Presently, a shared corridor between fire and police allows for possible interface between detainees and other public safety staff. For example, if a detainee were to get free in the station, one is not strictly contained to the police section. There is the possibility of escaping into the fire section. This causes an operational security imbalance that should be addressed.

Within the original section of the Fire Department is the elevated mezzanine used for miscellaneous storage. That space was deemed structurally inadequate by engineer Alex R. Wood, PE, in his 2019 report. Along with the structural deficiencies there are envelop concerns that have led to moisture damage. Becker Morgan Group will not consider the area in any calculations of required space but will plan to relocate certain storage needs to the ground floor.

Building services, such as mechanical, electrical and data, are marginally adequate and generally not secure. The spaces do not provide any ability for expansion.

The surveys (without considering the shared spaces) suggest the Police Department requires 2,802 usf (69% increase) of space, and the Fire Department needs 9,658 usf (28% increase) of space.

The EOC/shared spaces require 2,008 usf and will contain a separate entrance, an office to be staffed by the Town Manager and Town Clerk during times of activation, an operations center for 30 people that can double as a Training Room, a break-out conference room, toilets, showers and sleeping spaces, a kitchen, and significant space for telecommunications, electrical/UPS and mechanical. Many of the spaces anticipated could be used during times of non-activation by the other departments or for Town needs and will be factored as such within the space needs study.

In summary, a facility of 14,788 sf of usable area will be required to satisfy the space requirements of all three departments. Compared with the current facility, the need represents a 4,368 usf (42% increase) in usable, or net area.

See Table 1 – Space Allocations under Supplementary Information for the full spreadsheets.

Options

Becker Morgan Group has prepared four site plan diagram options that capture the space needs in differing ways. In all options the EOC will be designed as a highly secure and hardened facility capable of resisting Category 4 hurricane conditions.

Option A is a concept that identifies all the critical functions of each department and places them in a new secure building or in the more recent additions that do meet current code. The remaining existing spaces would largely be used for less critical functions such as physical fitness, storage, and minor work areas. This option should provide the least costly alternative while improving safety and addressing the EOC component fully. This option would include certain structural enhancements to the existing, original metal building frame housing fire apparatus. If this option is selected improvements to the mezzanine will be required, ensuring there is no future leakage or damage to the renovated spaces below. Such enhancements cannot bring the original building to current standards but would extend the utility of the present structure to a future date. It is worth noting the fire apparatus bay houses a significant investment in equipment that will be in the most vulnerable area.

Option B is a concept to build a new facility in place of the present Public Safety Facility. This would require demolishing the existing facility and building back a new free-standing building at the same location. This building would incorporate all the needs of each department. Limited parking in the town center is an important consideration during festivals and the summer season. Rebuilding in the current location allows continued use of the existing parking while also allowing potential expansion of the Town Hall. Phasing or providing temporary quarters might have to be considered to maintain continuous operations. This option should provide the middle ground in terms of costs as existing utilities, pavements, and stormwater management features are largely in place and adequate.

Option C is a concept that also builds a new facility, however, investigates using another location on the town owned site. This eliminates the need to provide temporary quarters or the acquisition of new land while maintaining continuous operation at the existing facility. Once the newly constructed facility is complete, operations can be relocated from the existing building and the building can be demolished or repurposed. To minimize impacts on the existing storm water management system, we need to minimize impervious area additions. Thus, we would recommend demolition of the present public safety building. Depending on the final design, expansion to the Town Hall or new Public Safety Facility could be limited. Larger fire apparatus require additional area to maneuver properly applying further constraints on the exact location of the new facility. Consideration, for impact on daily activities at Town Hall due to regular movement of large fire apparatus should be considered. This option should also provide middle ground in terms of costs, but may require extension or improvements to existing utilities, and pavements.

Option D is a concept that provides a new free-standing building that incorporates all the needs of each department constructed on a 'greenfield' site; an off-campus location. This option is likely the costliest. Along with the site concerns noted previously in the New Site section, careful consideration will need to be given to site selection regarding impacts and expenses of land acquisition, utilities, drainage, flood plain, and wetlands. While determining the appropriate site, a deployment analysis should be conducted to examine the potential effect on response time and ISO ratings. This could present the opportunity to strengthen the ISO Class rating or at least preserve the current Class 4 rating. This rating has a direct effect on community insurance rates. Any site considered would likely be within a few miles of the present site, near significant roadways, suggesting a higher land value should be expected.

All proposed construction will be designed to meet the requirements of the 2018 NC Building Code (NCBC) and NFPA standards applicable to the fire service. The EOC will meet NFPA 1221 *Standard for the Installation, Maintenance, and Use of Emergency Services Communications Systems* and the North Carolina 911 Board standards.

3. Engineering Summary

Structural

The proposed new construction will be designed in accordance with ASCE 7 *Minimum Design Loads for Buildings and Other Structures*.

Occupancy Category and Design Flood Class

The building will be classified as a Risk Category IV facility, buildings designated as essential facilities.

Wind Loading

The building will be designed for wind forces with a minimum Basic Wind Speed (3-second gust) of 154 mph, Exposure Category C. An Importance Factor of 1.15 will be used.

Seismic Loading

The building will be designed for seismic forces based on the Equivalent Lateral Force Procedure. All dead loads, partition loads, and operating loads of permanent equipment will be included in the weight of the building for seismic load calculations.

Roof Loading

The building will be designed for a Ground Snow Load of 10 psf with an Importance Factor of 1.2. The minimum Flat Roof Snow Load will be 12 psf. The minimum Roof Live Load will be 20 psf or 300 lb. concentrated load.

Floor Loading

The minimum floor live loading will be as specified in the 2018 NCSBC and ASCE 7.

Existing Structure

The present building (c. 1989) shall be improved as noted in the report dated November 8, 2019, and prepared by Alex R. Wood, PE.

Mechanical, Electrical and Plumbing Engineering

The project will be designed in accordance with the following codes and Standards:

1. 2018 North Carolina Building Code
2. 2018 North Carolina Mechanical Code
3. 2018 North Carolina Plumbing Code
4. 2018 North Carolina Energy Code
5. National Electrical Code (NFPA 70)
6. National Fire Alarm Code (NFPA 72)
7. Illuminating Engineering Society of North America (IESNA),

Mechanical systems will include heating and air conditioning provided by one of several methods depending upon budget, owner input and preference. Two preferred alternatives include variable volume split or packaged rooftop DX cooling units and variable refrigerant flow with dedicated outdoor air system. Critical facilities require a modular approach to any selected system to allow for additional capacity during periods of EOC activation, and redundancy to facilitate maintenance and limit impacts of component failure. In the equipment bays overhead LP gas-fired infrared radiant heaters are an excellent option.

Ventilation will be provided such that the occupied portions of the building will be positively pressurized to prevent infiltration from sources of contamination. Vehicle exhaust systems using CO sensors and tied into area ventilation are needed. Additional outside air must be available to support needs during activation.

Electrical systems should be fed by underground feeders wherever possible due to the cost savings and their physical reliability. Panelboards and feeders will be designed with approximately 25% spare capacity. Parallel hybrid MOV type transient voltage surge suppression (SPD) devices will be provided at the main switchgear and in all sensitive load distribution and low voltage branch circuit panelboards throughout the facility.

Lighting will be LED lighting throughout the facility. The lighting controls for this project will include occupancy sensors.

The emergency standby power system will provide power for emergency egress and exit lighting upon utility power failure. The existing emergency generator capacity will need to be evaluated to confirm whether it is suitable for the upgraded facility. If this is not the case, an emergency standby power system will be provided for the facility. The system will consist of a diesel fueled engine-generator set and automatic power transfer switches (ATS).

An automatic, intelligent, addressable fire detection and alarm system will be provided to monitor individually addressable manual and automatic detection devices where required by NFPA 72.

A complete EIA/TIA 568 and 569 compliant telecommunications cabling system will provide a pre-wired voice/data system for the facility. The horizontal cabling system will consist of Category 6 (CAT 6) unshielded twisted pair (UTP) cable and CAT 6 jacks. The system will be complete with all fiber and copper cables terminated at each end.

Other significant systems include access control; public address; cable/closed circuit television; room-based audio/visuals; fire station alerting; and an emergency shut-off for all cooking circuits including stoves, coffee pots and microwaves and all countertop receptacles in kitchen/cooking area for use when fire fighters need to leave quickly.

Plumbing systems are generally straightforward and reliable as services are municipally available including domestic water and sewer. Special to this occupancy includes supply for a local fire hydrant, vehicle wash down, and capacities for EOC use. It is recommended supplemental drinking water be provided. To support extended power outages consideration should be given to propane for water heating, clothes drying and cooking.

4. Proposed Budget

The many assumptions made and the difference in time between planning and construction make providing estimates of probable construction early in the design process challenging. Early estimates must include a relatively large margin of error due to these factors.

It is particularly noteworthy that at the time of this report construction costs are escalating as the economy expands rapidly while the effects of the global pandemic subside. We understand, for example, that steel prices have increased approximately 30% since 2021. These increases have been attributed to issues with the continuity of the supply chain, the availability of labor and certain anomalies in production. We recommend engaging a professional cost estimator or qualified general contractor to assist in monitoring project costs during further design.

The summary of probable construction costs, based on the program of spaces for each option, is included under Supplementary Information as Table 2 – Cost Breakdowns.

Based on our recent experience with public safety construction, we estimate the costs of the facility to be approximately \$475/sf for all spaces. This accounts for approximately 12% of inflation and contingency for the building construction. The EOC is required to not only survive a major hurricane but is also expected to remain operational throughout the duration of the emergency. For the purposes of this budget exercise, we suggest allowing \$200/sf for renovated areas.

Site construction is budgeted separately and varies greatly due to availability of services, extent of vegetation or wetlands, excavation, fill, grading, and paving required. Additional construction expenses could include demolition of existing above or below-grade structures, improvements to the site, potential emergency generator/UPS systems, communications/technology, and furnishings/equipment for the building.

Additionally, we have provided estimates for soft costs and contingency that includes a range for economic uncertainty. We did not provide an estimate for the acquisition of any additional land.

Budget Summary

Option A – \$4.2M in building construction, renovation and demolition costs, 13,658 usable square footage. Site improvements of \$500,000; additional/potential costs of \$374,000 and soft cost of \$535,000. Total budget range (+/- 15%) = \$5.4M to \$7.3M.

Option B – \$8.8M in building construction, renovation, demolition, and temporary quarters costs, 14,788 usable square footage. Site improvements of \$500,000; additional/potential costs of \$533,000 and soft cost of \$908,000. Total budget range (+/- 15%) = \$9.2M to \$12.4M.

Option C – \$8.7M in building construction, renovation and demolition costs, 14,788 usable square footage. Site improvements of \$750,000; additional/potential costs of \$376,000 and soft cost of \$917,000. Total budget range (+/- 15%) = \$9.3M to \$12.6M.

Option D – \$8.8M in building construction and renovation costs, 14,788 usable square footage. Site improvements of \$1,500,000; additional/potential costs of \$376,000 and soft cost of \$1.01M. Total budget range (+/- 15%) = \$9.9M to \$13.4M. Note, budget summary does not include land acquisition.

Funding

The initial expectations for full project costs are in the range of \$5 - 14 million. It will be the Town's obligation to secure funding, administer design and construction above the \$6 million identified and available. The Town may obligate taxpayers through bonds, capital improvements program, or other means. Loans from the U.S. Department of Agriculture are available for up to 40-year terms with no down payment required. Other grants may also be available through the Golden Leaf Foundation, FEMA, and other sources.

Recommendation

Each of the four options provided address many of the needs for each department, however there are both advantages and disadvantages.

Option A is the most budget conscious decision although it doesn't allow the entire facility to be brought up to current standards or code, exposing the Town to greater risk (failure in service) during a major storm event.

Option B offers a middle ground solution that provides a new public safety facility on the already town-owned campus. For both Options A and B relocation measures will have to be considered.

Option C will address all needs of each department however, Town Hall and the new Public Safety Facility expansion would be impacted.

Option D, the costliest option, does not impact day-to-day operations during construction although there are a multitude of unknowns associated with a new site.

After consideration of the available information, research and group discussion, we recommend Option B.

Supplementary Information

Table 1 – Space Allocations

	Space Titles	Exg USF	Unit SF	Qty	Option A Total USF	Req'd	Option B-D Total USF	Notes
	Police	1,654			2,802		2,702	
p f	Entry / Vestibule	78	100	1	100	x	0	1,9
p f	Administrative Assistant	143	120	1	120	x	120	4
p	Chief Office	208	220	1	220	x	220	
p	Lieutenant Office	150	120	1	120	x	120	
p	Storage	121	100	0	0		0	
p	Officer Record		50	1	50	x	50	
p	Criminal Records (Stored Electronically)		50	0	0	x	0	
p	Office		120	0	0		0	
p	Weapons / Munitions storage / Tactical gear		144	1	144	x	144	
p	Duty Gear		120	1	120	x	120	
p	PD Storage	142	142	1	142	x	142	
p	Detective Office	175	180	1	180	x	180	
p	Interview (hard)	64	64	1	64	x	64	
p	Officer walk up/evid prep	111	80	1	80	x	80	
p	Evidence Processing		64	1	64	x	64	
p	Evidence / Narc / Arms / Large storage	30	150	1	150	x	150	
p	Kitchenette		50	1	50	x	50	2
p	Patrol Division Sgt (space for 2)	99	140	1	140	x	140	
p	PD Duty Room	242	168	1	168	x	168	
p	Squad Room		120	1	120	x	120	
p	Photography/Fingerprint area / Intox	91	120	1	120	x	120	
p	Receiving		100	1	100	x	100	
p	Sally Port		400	1	400	x	400	
p	Holding (attended) toilet		50	1	50	x	50	
p	Single Person Bathroom		50	2	100	x	100	
	Fire	7,568			8,278		9,658	
f	Chief Office	167	150	1	150	x	150	
f	Captain Office (Rotating)		125	1	125	x	100	
f	Fire Marshall Office (Future)		125	1	125	x	100	
f	Personnel Records / Storage	187	100	1	100	x	100	
f	Assist Chief Office	286	100	1	100	x	100	
f	Common Work Area / Radio	100	150	1	150	x	150	
f	Misc. / Office Storage	500	100	1	100	x	100	5
f	EMS Storage		80	1	80	x	80	
	Apparatus Bay							
f	Engine Bays	4280	1070	4	4280	x	5760	
f	SCBA - Tank Storage/refill		88	1	88	x	88	
f	PPE Turnout	327	300	1	300	x	300	
f	Decontamination		100	1	100	x	100	
f	Decon Toilet		0	1	0		0	
f	Tool Room	92	150	1	150	x	150	
	House							
p f e	Kitchen	291	300	1	300	x	300	4
p f e	Day Room	455	300	1	300	x	300	4
p f e	Bunk Rooms Compartments	528	78	12	936	x	936	
f e	Shared Bunk Room		175	0	0		0	
p f e	Gym/Fitness		400	1	400	x	400	1
	Female Locker/Shwr room	118	336		0		0	7
	Male Locker/Shwr room	118	336		0		0	7
p f e	Unisex Bathrooms / Showers		80	4	320	x	320	5
p f e	Janitors closet		64	1	64	x	64	4
p f e	Washer / Dryer	73	60	1	60	x	60	4
f	Radio Room	46	50	1	50	x	0	8
	EOC	1,298			2,008		2,008	
p f e	Entry / Vestibule		100	1	100	x	100	4
p f e	Lobby/Waiting	173	100	1	100	x	100	4
p f e	Training Room / EOC	1059	800	1	800	x	800	4
p f e	Conference Room / Quiet Room		200	1	200	x	200	4
e	EOC Office / PIO		120	1	120	x	120	
f e	Bunk Rooms Compartments (Mainly Fire Use)		78	6	468	x	468	5
e	Single Person Bathroom		50	2	100	x	100	
e	Storage		120	1	120	x	120	
	Building Systems							
p f e	Electrical		120	1	120	x	120	4
p f e	Mechanical		100	0	0	x	0	10
p f e	Riser/Sprinkler room	6	50	1	50	x	50	4
p f e	Generator(s)			1	0	x	0	11
p f e	Data / Telecom	60	400	1	400	x	250	4
	Useable Area Required	10,520				13,658	14,788	Delta = 4,268
	Grossing Factor	25%					25%	41%
	GF Area	3,431					3,697	
	Gross Area Projected							Delta =
	Existing Gross Area	13,951					18,485	4,534
p = police	1 = shared b/w police and fire only	7 = eliminate and replacing with unisex bathroom / showers						
f = fire	2 = shared b/w police and EOC only	8 = in options B-D radio room to be located in common work area						
e = EOC	3 = shared b/w fire and EOC only	9 = additional entry would be required in option A based on existing layout						
r = renovated	4 = shared b/w all depart. during activation	10 = depending on final system could be located on mezzanine or rooftop						
c = critical	5 = typically fire use, shared during activation	11 = located at exterior of building, no interior space required						
n = new	6 = could be located on apparatus bay mezz.							

Table 2 – Cost Breakdowns

OPTION A (renovation/addition)

Description	Qty	Units	Unit Cost	Sub T Total	Total	
Construction		USF	GSF			
Existing Bldg - Renovated	2,244	2,558	sf	\$200	\$511,632	
New Building	7,134	8,918	sf	\$475	\$4,235,813	
Existing Bldg - Unrenovated	4,280	4,280	sf	\$0	\$0	
*structural improvements		1	ea	\$100,000	\$100,000	
Existing Demolition (limited)		1	ea	\$50,000	\$50,000	
Relocation / 6 mos		\$7.50	sf	10,520	\$78,900	
Site Development		1.00	ac	\$500,000	\$500,000	
Emergency Generator		1	ea	\$100,000	\$100,000	
Furnishings & Equipment		1	ea	\$94,949	\$94,949	
subtotal	13,658	15,756			\$5,671,293	
Communications						
Radio, Security, IT, Comms		1	ea	\$100,000	\$100,000	
subtotal					\$100,000	
Soft Costs						
Professional Fees		9	%		\$510,416	
Permits / Survey / Services		5	ea	\$5,000	\$25,000	
subtotal					\$535,416	
Total Project Costs					\$6,306,710	
Summaries				+15%	0%	-15%
Total				\$7,252,716	\$6,306,710	\$5,360,703

OPTION B (new building, existing site)

Description	Qty	Units	Unit Cost	Sub T Total	Total	
Construction		USF	GSF			
New Building	14,788	18,485	sf	\$475	\$8,780,375	
Existing Demolition		1	ea	\$100,000	\$100,000	
Relocation / 12 mos		\$15.00	sf	10,520	\$157,800	
Site Development		1.00	ac	\$500,000	\$500,000	
Emergency Generator		1	ea	\$100,000	\$100,000	
Furnishings & Equipment		1	ea	\$175,608	\$175,608	
subtotal	14,788	18,485			\$9,813,783	
Communications						
Radio, Security, IT, Comms		1	ea	\$100,000	\$100,000	
subtotal					\$100,000	
Soft Costs						
Professional Fees		9	%		\$883,240	
Permits / Survey / Services		5	ea	\$5,000	\$25,000	
subtotal					\$908,240	
Total Project Costs					\$10,822,023	
Summaries				+15%	0%	-15%
Total				\$12,445,326	\$10,822,023	\$9,198,719

OPTION C (new building, new location on existing site)









Description	Qty	Units	Unit Cost	Sub T Total	Total
Construction					
	USF	GSF			
New Building	14,788	18,485	sf \$475	\$8,780,375	
Existing Demolition		1	ea \$100,000	\$100,000	
Relocation / 12 mos		\$15.00	sf -	\$0	
Site Development		1.00	ac \$750,000	\$750,000	
Emergency Generator		1	ea \$100,000	\$100,000	
Furnishings & Equipment		1	ea \$175,608	\$175,608	
subtotal	14,788	18,485			\$9,905,983
Communications					
Radio, Security, IT, Comms		1	ea \$100,000	\$100,000	
subtotal					\$100,000
Soft Costs					
Professional Fees		9	%	\$891,538	
Permits / Survey / Services		5	ea \$5,000	\$25,000	
subtotal					\$916,538
Total Project Costs					\$10,922,521
Summaries					
			+15%	0%	-15%
Total			\$12,560,899	\$10,922,521	\$9,284,143

OPTION D (new building, new site)

Description	Qty	Units	Unit Cost	Sub T Total	Total
Construction					
	USF	GSF			
New Building	14,788	18,485	sf \$475	\$8,780,375	
Land Acquisition			0 \$0	unknown	
Existing Demolition		0	ea \$100,000	\$0	
Relocation / 12 mos		\$15.00	sf 0	\$0	
Site Development		2.00	ac \$750,000	\$1,500,000	
Emergency Generator		1	ea \$100,000	\$100,000	
Furnishings & Equipment		1	ea \$175,608	\$175,608	
subtotal	14,788	18,485			\$10,555,983
Communications					
Radio, Security, IT, Comms		1	ea \$100,000	\$100,000	
subtotal					\$100,000
Soft Costs					
Professional Fees		9	%	\$950,038	
Permits / Survey / Services		6	ea \$10,000	\$60,000	
subtotal					\$1,010,038
Total Project Costs					\$11,666,021
Summaries					
			+15%	0%	-15%
Total			\$13,415,924	\$11,666,021	\$9,916,118

Site Plan Diagrams

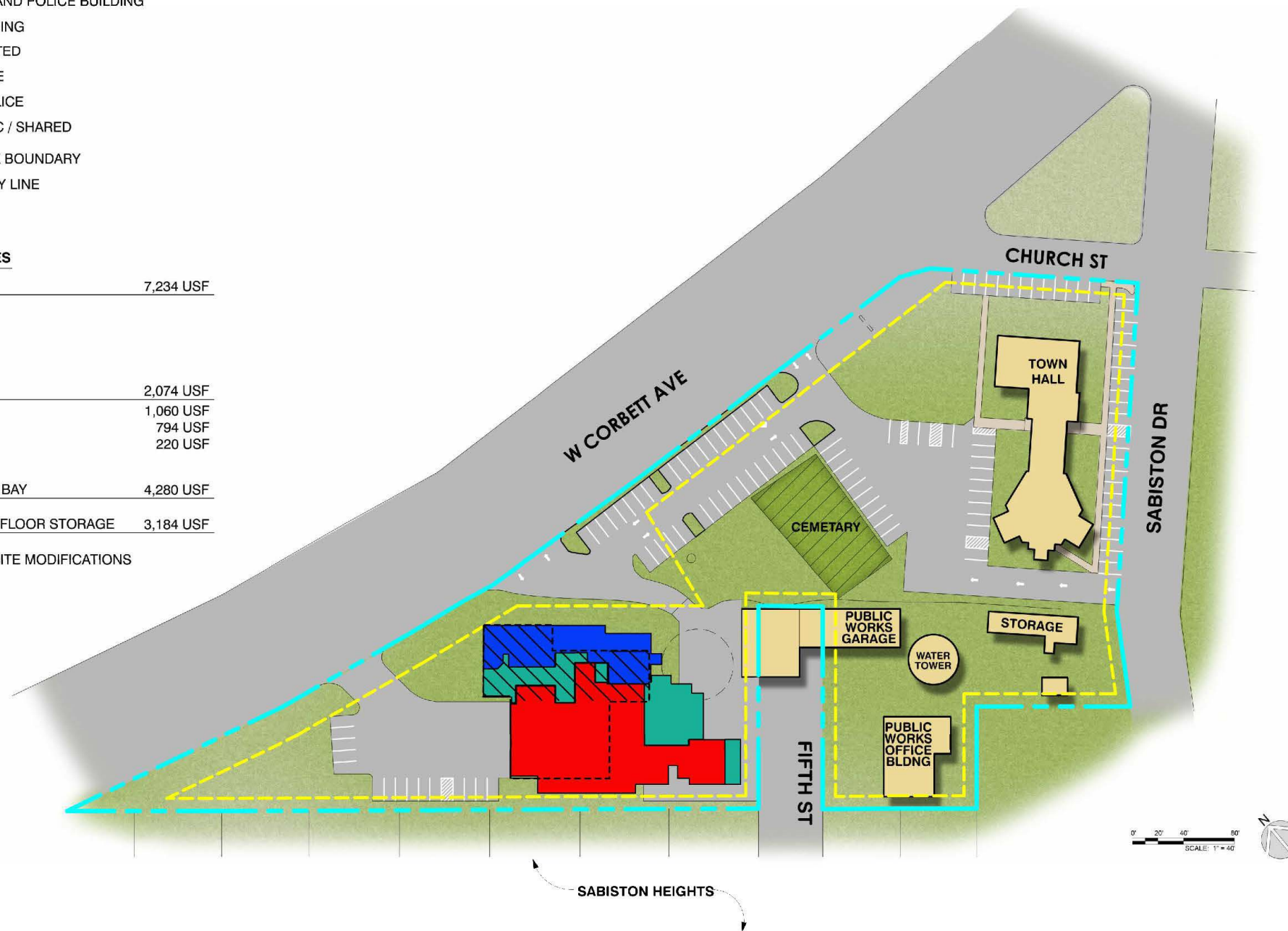
LEGEND

-  EXISTING FIRE AND POLICE BUILDING
-  EXISTING BUILDING
-  TO BE RENOVATED
-  PROPOSED FIRE
-  PROPOSED POLICE
-  PROPOSED EOC / SHARED
-  SET BACK BOUNDARY
-  PROPERTY LINE

SQUARE FOOTAGES









NEW A	7,234 USF
POL	
FIR	
EOC	
RENOVATION	2,074 USF
POLICE	1,060 USF
FIRE	794 USF
EOC / SHARED	220 USF
EXISTING FIRE APP BAY	4,280 USF
EXISTING SECOND FLOOR STORAGE	3,184 USF

NOTE: REQUIRED SITE MODIFICATIONS
NOT SHOWN



OPTION A

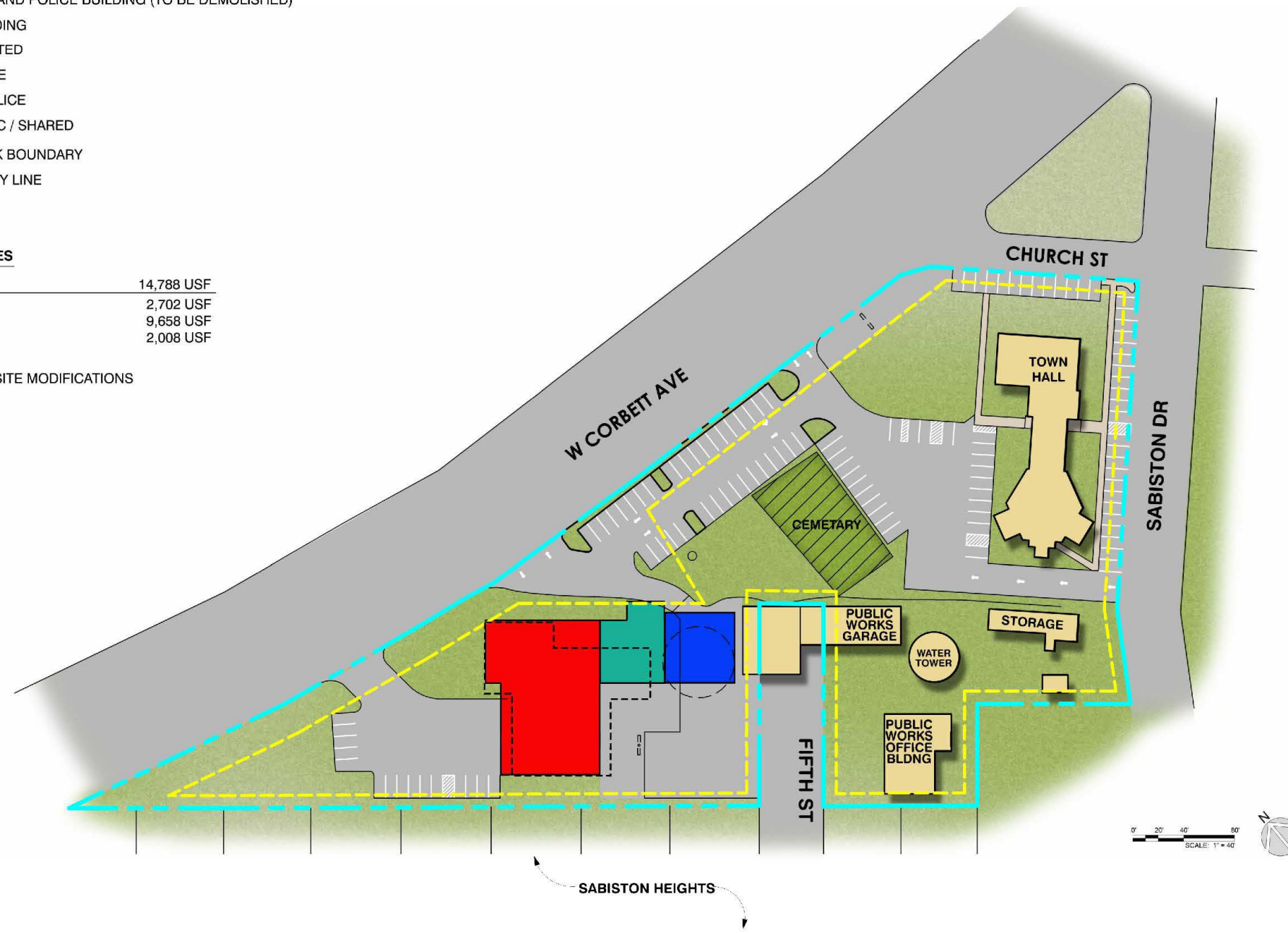
LEGEND

-  EXISTING FIRE AND POLICE BUILDING (TO BE DEMOLISHED)
-  EXISTING BUILDING
-  TO BE RENOVATED
-  PROPOSED FIRE
-  PROPOSED POLICE
-  PROPOSED EOC / SHARED
-  SET BACK BOUNDARY
-  PROPERTY LINE

SQUARE FOOTAGES









NEW BUILDING	14,788 USF
POLICE	2,702 USF
FIRE	9,658 USF
EOC / SHARED	2,008 USF

NOTE: REQUIRED SITE MODIFICATIONS
NOT SHOWN



OPTION B

LEGEND

-  EXISTING FIRE AND POLICE BUILDING (TO BE DEMOLISHED)
-  EXISTING BUILDING
-  TO BE RENOVATED
-  PROPOSED FIRE
-  PROPOSED POLICE
-  PROPOSED EOC / SHARED
-  SET BACK BOUNDARY
-  PROPERTY LINE

SQUARE FOOTAGES

NEW BUILDING	14,788 USF
POLICE	2,702 USF
FIRE	9,658 USF
EOC / SHARED	2,008 USF

NOTE: REQUIRED SITE MODIFICATIONS
NOT SHOWN



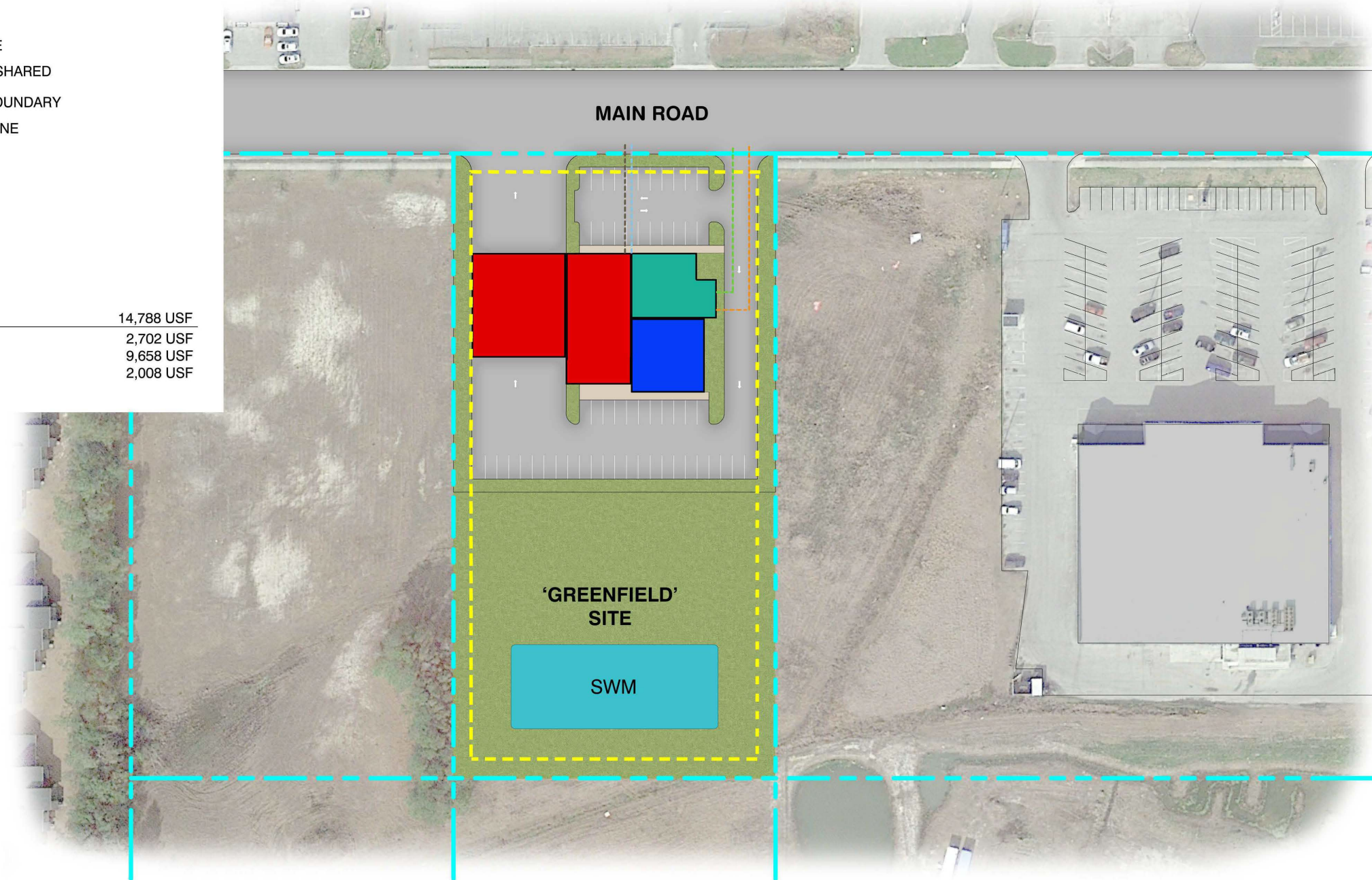
OPTION C

LEGEND

- EXISTING FIRE AND POLICE BUILDING
- EXISTING BUILDING
- TO BE RENOVATED
- PROPOSED FIRE
- PROPOSED POLICE
- PROPOSED EOC / SHARED
- SET BACK BOUNDARY
- PROPERTY LINE
- SEWER LINE
- WATER LINE
- POWER LINE
- DATA LINE

SQUARE FOOTAGES

NEW BUILDING	14,788 USF
POLICE	2,702 USF
FIRE	9,658 USF
EOC / SHARED	2,008 USF



OPTION D