



CITY OF HARRISBURG

SOUTH DAKOTA

Community Facilities Assessment Study

SUBMISSION DATE: FEBRUARY 12, 2021



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City of Harrisburg

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CITY OF
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SECTION 1

Project Overview

PROJECT NARRATIVE

As a current resident or a transient individual in the area, the rapid growth of the City of Harrisburg is apparent. This data is not solely visual, but the record growth is statistically recorded in the 2019 to 2044 Comprehensive Plan, effective May 15, 2019. In 2025 it is expected that Harrisburg will have a population of 10,040. The population projected growth rates are currently being exceeded and linearly, a demand for city amenities, public services, and emergency services.

The purpose of the Harrisburg Community Facilities Assessment is to provide preliminary programming of the City Departments and buildings to determine space needs, investigating three sites for emergency services, and developing a comprehensive facility to aid in the growth of Harrisburg. The investigative study will function as a master plan to demonstrate the building size and costs of a “City Center” or “Community Center”. The study represents the general overall size and cost associated with creating a city center with dual purpose of an emergency community shelter applying standards set by FEMA and the ICC. The preliminary floor plans and elevations were completed based on programming and not a full construction design process. These designs are not final and solely for the purpose of concept and example for use in project consideration.

The Assessment was initiated by the City of Harrisburg to ensure the safety of citizens and visitors in the event of an emergency. The City of Harrisburg is located within ZONE IV (250 mph) Wind Zone and shall provide shelter to residents for a 2-hour duration in the event of an emergency. Most often, these shelters are created to supply a dual purpose to encompass the cost of construction and create a functional building for times that are not emergency related. There are three current shelters in Harrisburg: in the High School, within the Alternative learning building, and in the new elementary school. The investigated sites for the new shelter are further explained in this document with intent to provide the most coverage to at-risk population while providing a dual purpose as a city facility.

Two funding options were investigated as optional support for a project with a safe room or shelter. The first funding mechanism was the Hazard Mitigation Planning Grant (HMPG). This funding is only available when a natural disaster is declared, and the City of Harrisburg would most likely not qualify for it as funds are not currently available. If there are more disasters declared within the state, funds will likely be replenished. If the City of Harrisburg chooses to seek a HMPG in the future, applications

are submitted to the state for review and the state will determine which projects progress to the federal level. The second funding mechanism is Building Resilient Infrastructure and Communities (BRIC). BRIC is a larger and more collaborative program that maintains flexibility of combining multiple building programs to create a cohesive project for safety as well as overall community benefit. This assessment will focus on the BRIC program as it is encompassing to the current needs of the City of Harrisburg.

Based on the shelter and risk assessment standards set by FEMA, three proposed shelter locations were investigated by at-risk population served. The locations were narrowed to two properties currently for sale in the city and one city owned. At-risk population includes residential without basements, elementary schools without a shelter, local business’s, and visitors to parks or Central Park. Quantifying the amount of needed shelter includes balance of how many people will be using each space throughout a typical day and equating the size of space needed per person based on code. Using calculations to predict the number of users at the worst-case scenario and calculating peak use times throughout the day were vital to sizing the safe room to the most appropriate size.

The existing shelters provide a strong centroid of service to the West side of Harrisburg, but much of the new developments, Central Park, and Southern Harrisburg do not have adequate shelter coverage. It is expected that in the case of an emergency, a five-minute travel time is required to get to a shelter. This equates to ¼ mile radius for a walking distance with a ½ mile radius for vehicular transportation. The following radius maps visualize where emergency shelter exists and the amount of coverage the proposed sites would contribute. The current shelter coverage is dense in one area and not adequate for the growth or current population of Harrisburg.

The study concludes that Central Park is an adequate location for the storm shelter and serves the highest amount of at-risk population. The location does not overlap with other shelter coverage and provides a unique opportunity for the city to condense the sprawled departments into one multi-functional facility located central to growth. As departments outgrow their current spaces and increased population demands more civic services, having a cohesive building to condense city departments and community services creates a functional long-term plan.

CITY LIMITS



HARRISBURG CITY LIMITS

LOCATION, DEMOGRAPHICS, & FUTURE GROWTH

In 2018, Harrisburg, SD had a population of 5.76k people with a median age of 28.9 and a median household income of \$78,694. Between 2017 and 2018 the population of Harrisburg, SD grew from 5,429 to 5,760, a 6.1% increase and its median household income declined from \$80,648 to \$78,694, a -2.42% decrease.

The 5 largest ethnic groups in Harrisburg, SD are White (Non-Hispanic) (94.6%), Two+ (Non-Hispanic) (3.85%), Black or African American (Non-Hispanic) (0.538%), White (Hispanic) (0.451%), and Two+ (Hispanic) (0.434%). NaNk% of the people in Harrisburg, SD speak a non-English language, and 99.4% are U.S. citizens.

The median property value in Harrisburg, SD is \$190,700, and the homeownership rate is 85.6%. Most people in Harrisburg, SD commute by Drove Alone, and the average commute time is 18.2 minutes. The average car ownership in Harrisburg, SD is 2 cars per household.

From 2017 to 2018, employment in Harrisburg, SD grew at a rate of 13.2%, from 2.96k employees to 3.35k employees.

The most common job groups, by number of people living in Harrisburg, SD, are Office & Administrative Support Occupations (634 people), Sales & Related Occupations (320 people), and Management Occupations (292 people). This chart illustrates the share breakdown of the primary jobs held by residents of Harrisburg, SD.

These figures are very important when projecting the future needs of the community. Based on the population history is continually growing at an immense rate. In the year 2000, not even 1,000 residents were apart of the Harrisburg community. Now there are over 6,000. This influx of population growth means that the city has to react quickly to meet the demands of its citizens. The community has an incredible opportunity to develop both economically and civically to create community pride and engagement.

The population by age is also important to note, because about a 1/4 of the population are children under the age of 18, and half the population is under 45. This indicates that there are many amenities that these age groups (young families with children) both need and want, educationally and recreationally. Harrisburg has a great opportunity to create a beautiful and resilient family community.

PROJECTED GROWTH CHART

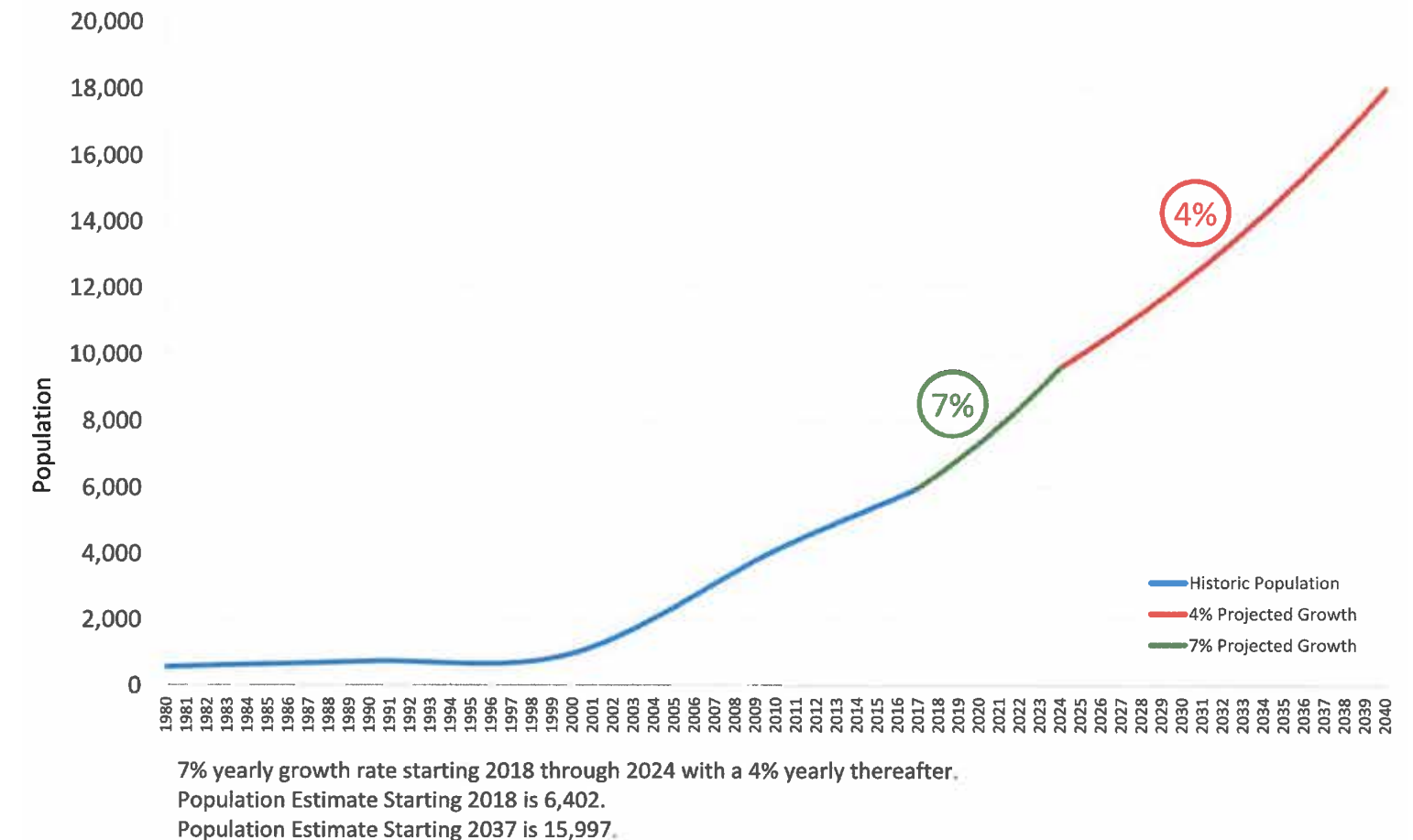


Table 1. Population History (Source: United States Census Bureau)

YEAR	POPULATION	% INCREASE
1960	313	NA
1970	338	7.99%
1980	558	65.09%
1990	727	30.29%
2000	958	31.77%
2010	4,089	326.83%
2016 (Special Census)	5,698	39.35%

Table 3. Population by Age (Source: State Data Center, US Census Bureau)

	Under 18	18-44	45-64	65 & Over	Total
1980	211	238	67	42	558
1990	275	336	79	37	727
2000	319	443	154	42	958
2010	1,392	2,082	534	81	4,089

*Graphs were utilizing information from the 2018 Harrisburg Comprehensive Plan provided by the City of Harrisburg.

ZONING

NR: Natural Resource

The purpose of this district is to preserve lands best suited for natural drainage areas, public open space, outdoor recreation, and nature corridors from encroachment by incompatible uses. This district will serve to provide protection from floods and erosion, protect views, preserve natural settings for wildlife habitats, add to the aesthetic quality of the community, offer outdoor recreation opportunities, and lessen urban density.

Permitted Uses

Accessory Structures, Cemeteries, Drainage ways, Electrical Substations, Fences, Golf Courses, Outdoor Recreation Facilities, Public Open Space/Green ways, Public Parks and Playgrounds, Public Utility Facilities, Telecommunications Facilities on an existing support structure.

An Outdoor Recreation Facility is defined in Chapter 9.02 of the Harrisburg zoning ordinances as, an outdoor facility develops for group recreational purposes, such as baseball, football, or soccer fields, swimming pools, skating rinks, golf driving ranges, or

miniature golf facilities. Such facilities typically have accessory structures for concession sales, equipment lease, rent, sales, or storage, restrooms, dressing rooms, or storage of maintenance equipment.

The City Center proposal does not classify as an Outdoor Recreation Facility and would require a rezone and new parcel. It is recommended that the building site be fully evaluated by the City of Harrisburg, community forums, and a contracted professional to understand if this location is the best site. The new building will support the Natural Resources surrounding it with the Parks and Recreation department as well as other city services. Overall, the project site is variable and should be located at a site that has the most service to at risk population and this site serves that purpose. The end site location shall be determined by the City of Harrisburg and this document shall be used as a cost and space needs reference in determining the future of the project.

DESIGN CONSIDERATIONS

- Travel Distance
- Occupant Type
- Multiple Shelter locations or one
- Along perimeter for access

Site Risk Category

IV – 250 mph Wind Zone

Category Shelter Duration – 2 hours

Flood Zone

Low Risk – 2% - X Zone 500 yr

Occupancy

Assembly Group: A-3

Construction Type

III-A, Protected Combustible

Allowable Building Height

65’ | 4 Stories Sprinkled.

Allowable Area Factor

56,000 S.F.

Occupant Load

2-hr Tornado Shelter

Minimum required usable shelter floor area in s.f. per occupant -

Standing Space - 5 s.f. (net)

Wheel Chair Space - 10 s.f. (net)

Bedridden Space – 30 s.f. (net)

Reduce by 15% for an 85% design load rule.

Minimum 1 Wheelchair per 200 shelter occupants

1004.5 Maximum Floor Area Allowances - Assembly

Concentrated (chairs only – not fixed) – 7 s.f. (net)

Standing Space – 5 s.f. (net)

Unconcentrated – 15 s.f. (net)



CITY OF
HARRISBURG

SECTION 2

Pre-Disaster Mitigation

FUNDING OPTIONS

FUNDING OPTIONS

- FEMA Grant Program
- City General Funds
- Harrisburg Foundation
- Community Support

The funding of this project dictates the function and program of the building. The realization of the project hinges upon the ability for the city to apply for, and qualify for a portion of the funding to be from a FEMA grant program. Because the project is multi-functional and will support civic spaces as well as a safe room for shelter, a portion of the funding would also come from City General funds, Harrisburg Foundation and private community donation.

1. HMGP (Hazard Mitigation Grant Program)

This program is meant to lessen or eliminate the effects of future disaster. The money for this program is available only when a disaster has been declared. Applications can be submitted prior to a declaration being declared, but the funding isn't "in the pot" without a disaster. Unfortunately, all the money in the current pot has been utilized at this time. It will be replenished if/when there is another natural disaster such as floods, tornadoes, etc. Consequently, the city would not be eligible to receive funding until the pot is replenished, but there is no definitive timeline when that will occur.

If Harrisburg chose to go this route, the City could submit an application to be approved when another natural disaster occurs. Having application materials ready would ensure timely submission while funds are high.



 **Tornadoes**



 **Inland Flooding**



 **Winter Storms**



FEMA

FUNDING OPTIONS

2. BRIC (Building Resilient Infrastructure and Communities)

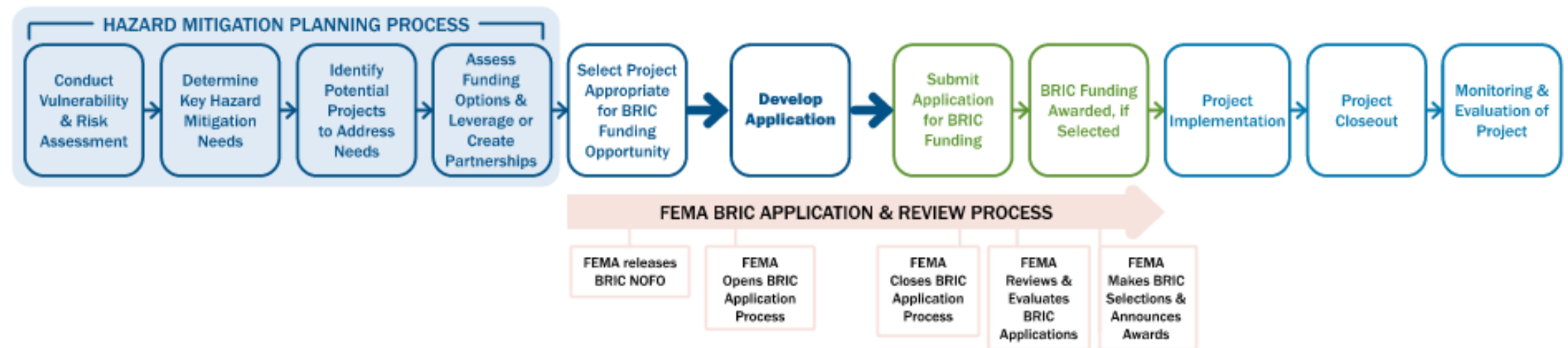
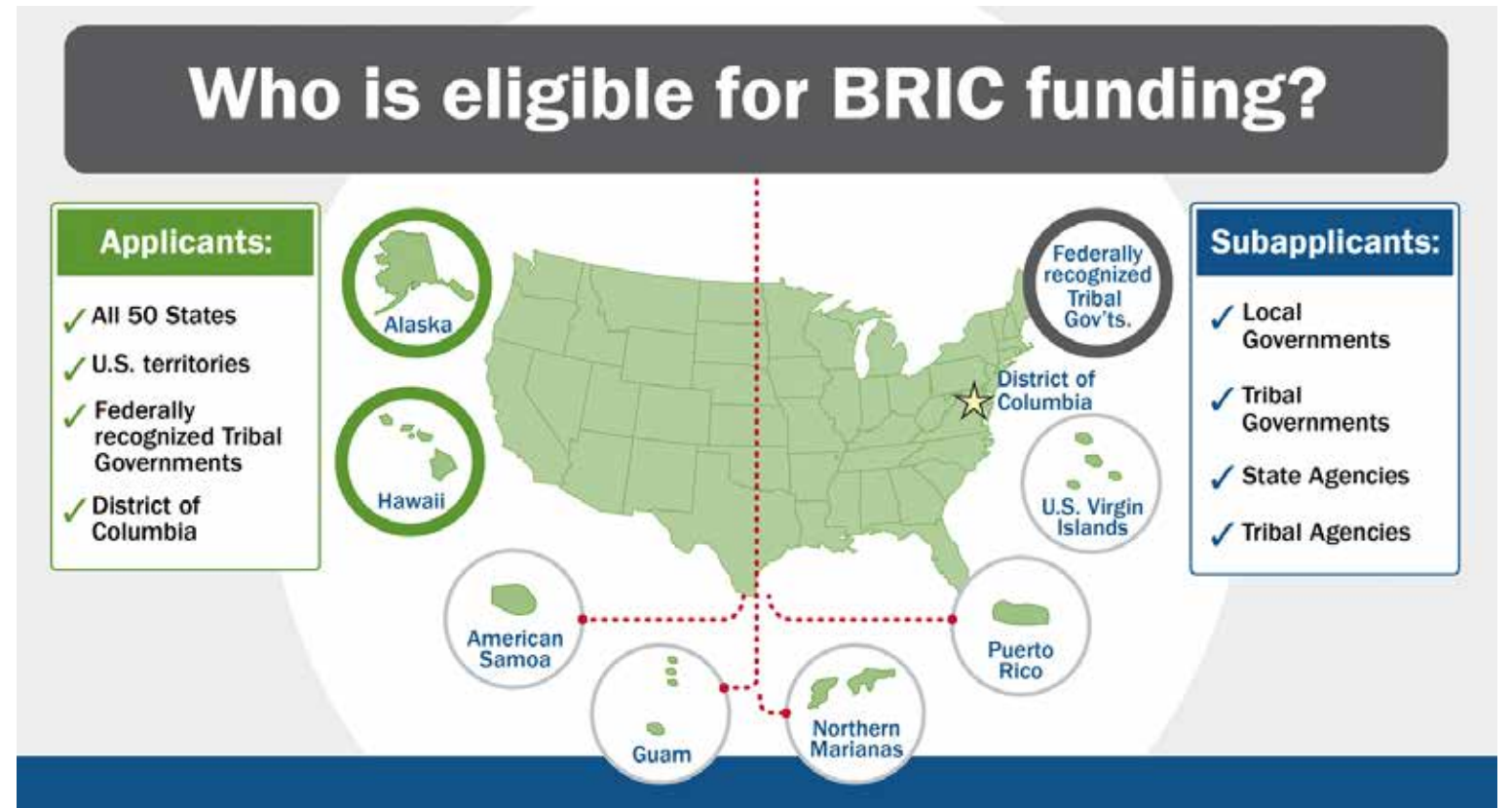
Another option that is currently available is the BRIC Program. FEMA makes federal funds available through the new Building Resilient Infrastructures and Communities (BRIC) grant program to states, local communities, tribes and territories (SLTTs) for pre-disaster mitigation activities. BRIC is a new FEMA pre-disaster hazard mitigation program that replaces the existing Pre-Disaster Mitigation (PDM) program. The Disaster Recovery Reform Act, Section 1234; amended Section 203 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford Act) and authorizes BRIC. The BRIC priorities are to:

- incentivize public infrastructure projects;
- incentivize projects that mitigate risk to one or more lifelines;
- incentivize projects that incorporate nature-based solutions; and,
- incentivize adoption and enforcement of modern building codes.

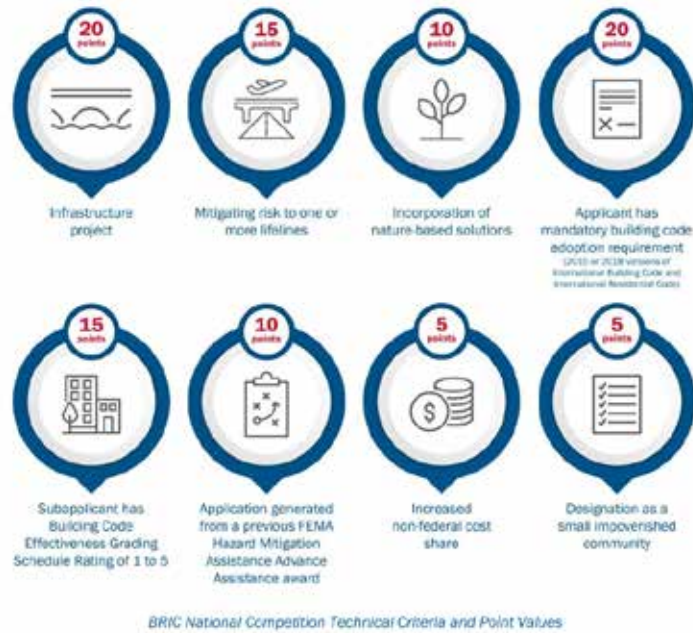
The Building Resilient Infrastructure and Communities (BRIC) program makes federal funds available to states and local communities for pre-disaster mitigation activities. The guiding

principles of the program are to:

- (1) support state and local governments, tribes, and territories through capability and capacity-building to enable them to identify mitigation actions and implement projects that reduce risks posed by natural hazards;
- (2) encourage and enable innovation while allowing flexibility, consistency, and effectiveness;
- (3) promote partnerships and enable high-impact investments to reduce risk from natural hazards with a focus on critical services and facilities, public infrastructure, public safety, public health, and communities;
- (4) provide a significant opportunity to reduce future losses and minimize impacts on the Disaster Relief Fund;



FUNDING OPTIONS



assistance. This includes activities in the following sub-categories: building codes activities, partnerships, project scoping, mitigation planning and planning-related activities, and other activities;

(2) Mitigation Projects – cost-effective projects designed to increase resilience and public safety; reduce injuries and loss of life; and reduce damage and destruction to property, critical services, facilities, and infrastructure; and

(3) Management Costs – financial assistance to reimburse the Recipient and subrecipient for eligible and reasonable indirect costs, direct administrative costs, and other administrative expenses associated with a specific mitigation measure or project in an amount up to 15 percent of the total amount of the grant award, of which not more than 10 percent of the total award amount may be used by the Recipient and 5 percent by the sub-recipient for such costs.

FEMA will also provide non-financial Direct Technical Assistance to communities to build a community’s capacity and capability to improve its resiliency to natural hazards and to ensure stakeholders are capable of building and sustaining successful mitigation

(5) support the adoption and enforcement of building codes, standards, and policies that will protect the health, safety, and general welfare of the public, take into account future conditions, and have long-lasting impacts on community risk reduction, including for critical services and facilities and for future disaster costs.

To achieve these principles, FEMA will provide financial assistance to eligible BRIC Applicants for the following activities:

(1) Capability- and Capacity-Building (C&CB) – activities which enhance the knowledge, skills, expertise, etc., of the current workforce to expand or improve the administration of mitigation

programs, submitting high-quality applications, and implementing new and innovative projects that reduce risk from a wide range of natural hazards.



Summary

-Unlike the HMGP funding, most of the funding for BRIC (\$446,400,000 of \$500,000,000) is nationally competitive. There is only \$600,000 allocated to states individually.

-The deadline for this is January 29, 2021, but it sounds like you would be going in for the next fiscal year based on where the City is at in the planning process. If they want to go in earlier, they should start now.

-While the eligibility for BRIC is extensive and funds are more competitive, our study shows that Harrisburg has a need for shelter to protect human lives. Additionally it combines many services to its community with multi functional civic use. If the community were to choose to use BRIC as a funding options there are many exciting possibilities for the design and function of the building so it would be more competitive for BRIC.

FEMA SAFE ROOM OVERVIEW

Safe rooms have a single purpose: to protect the lives of the population vulnerable during a tornado or hurricane.

FEMA has outlined specific guides for safe room standards and requirements. Safe rooms should be designed and constructed in accordance with the provisions of ICC 500. In addition, FEMA provides Recommended Criteria that are more conservative than code and standard minimum requirements. Based on field investigation and research, FEMA believes these Recommended Criteria are necessary to provide near-absolute protection during extreme-wind events.

Community safe room: Any safe room not defined as a residential safe room. These safe rooms include not only public but also private safe rooms for business and other types of organizations. Tornado and hurricane community safe rooms are buildings or portions thereof that have been designed and constructed to the criteria set forth in this publication.

Internal safe room: A specially designed and constructed room or area within or attached to a larger building. An internal safe room (room or area) should be designed and constructed or retrofitted to be structurally independent of the larger building, but provide the same wind and wind-borne debris protection as a standalone safe room.

Based on these definitions, the safe room designated in the design is considered an internal community safe room open to the general public and attached to a large facility.

Community safe rooms may be designed and constructed to serve a single property or facility, such as a school, hospital campus, or a manufactured housing park, or to serve multiple properties, such as those in a neighborhood. Conversely, residential safe rooms serve only occupants in dwelling units and may be sited



anywhere on a property (e.g., inside of a home, in a backyard, garage, etc.) as long as the door is located within a 150-foot travel path from an exterior door of the dwelling unit (if located outside).

The site selection criteria that pertain to the functionality of a safe room are closely associated with the risk and vulnerability assessment criteria. Risk and vulnerability considerations that must be considered include:

- The size and geographic distribution of the at-risk population
- The vulnerability of the at-risk population with respect to the buildings they normally occupy
- The vulnerability of the at-risk population with respect to their ability to reach the safe room in a timely manner during an emergency.

FEMA provides criteria to determine whether or not a community needs a safe room. FEMA recommends a comprehensive risk assessment process that includes the following considerations:

- Type of extreme-wind hazard (tornado, hurricane or both)
- Threat or probability and potential severity of the hazard based on historic occurrences
- Vulnerability of the building or buildings in the community intended to be served by a community safe room
- Size of the population that is vulnerable
- Community-specific consequences that may result from the hazard's occurrence



RISK ASSESSMENT FOR A SAFE ROOM

Many factors may influence the decision to construct a safe room. They include:

- The likelihood of an area being threatened by an extreme-wind event
- The vulnerability of a structure to an extreme-wind event
- The risk or potential losses (including deaths and injuries) associated with an extreme-wind event.
- The cost of constructing a safe room

In addition to the above factors, the following indirect factors may influence the decision to build a safe room:

- The safe room is required by Section 423.3 or 423.4 of the 2015 IBC
- The potential for death or injury may be reason enough to build a safe room at a given site

- The benefit-cost ratio (BCR) of a safe room may be a factor in the decision, or a minimum BCR may be required by the funding source

- Residents feel unsafe without a safe room
- A business wants to provide protection for its workers
- A safe room would allow faster business recovery after an extreme-wind event by protecting employees from injuries or fatalities

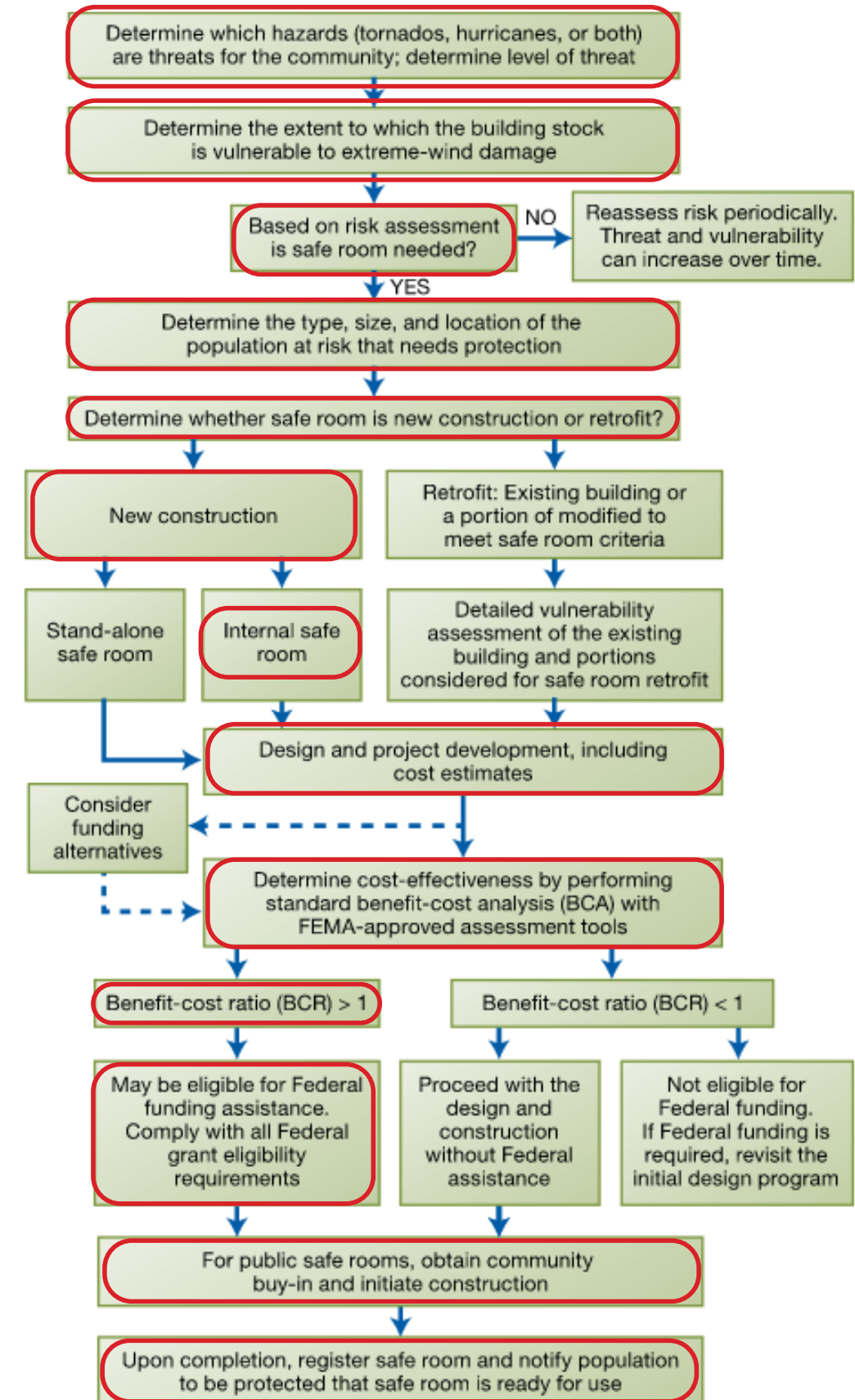
- The building is a government-owned building that is required to have a safe room

- Local ordinances require a safe room

- There may be insurance benefits associated with having a safe room

The flowchart presents the decision-making process that should take place when considering whether to install a safe room.

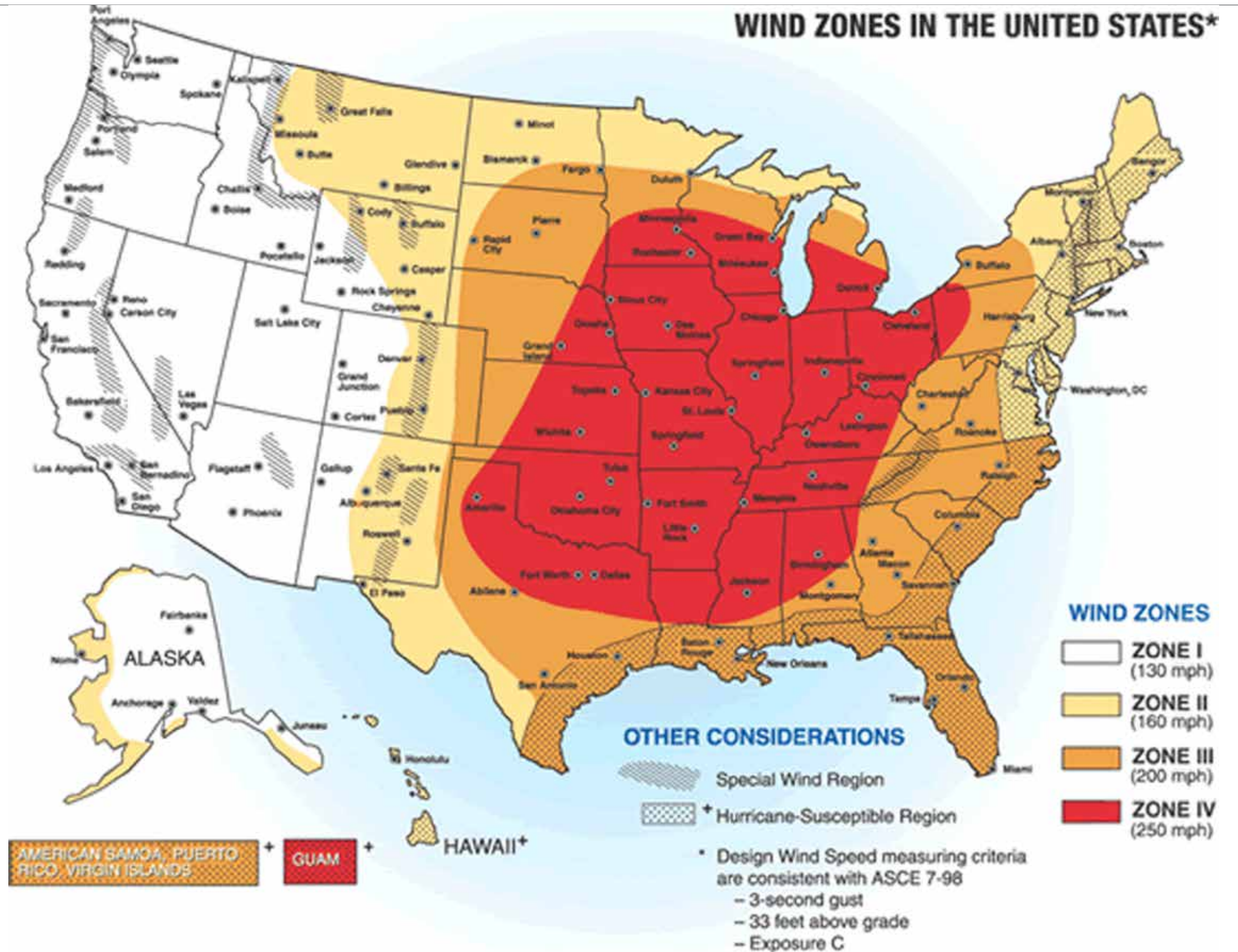
HARRISBURG RISK ASSEMENT



WIND LOADS

As stated by the International Code Council, “The purpose of the standard is to establish minimum requirements to safeguard the public health, safety and general welfare relative to the design, construction and installation of storm shelters constructed for protection from high winds associated with tornadoes and hurricanes.”

Under the 2009, 2012, and 2015 IBC and IRC, whenever storm shelters are constructed, whether stand alone or part of a structure, the ICC 500 standard must be met. In addition, Sections 423.3 and 423.4 of the 2015 IBC requires ICC 500 storm shelters to be incorporated when any of the following are constructed: K-12 school buildings with an occupant load of 50 or more; 911 call stations; fire, rescue, ambulance, and police stations; and emergency operation centers. The requirement applies only in the 250 mile per hour (mph) tornado wind speed zone (see Figure B3-1 for wind speed zone details), and some exceptions are allowed.



TRAVEL TIME

For tornado safe rooms only intended for the portion of the public that falls within a given tornado protection (or intended occupant) zone (see Figure A4-2), safe room operators may consider coordinating with local officials to develop community-wide strategies for tornado protection awareness. This approach may prevent confusion and overcrowding. The map indicates a 1/2-mile radius for occupants walking to the safe room, a 1/2-mile radius typically applies to occupants driving to the site. For most adults, a 5-minute walking distance is about 1/4 mile. Whether walking or driving to tornado safe room, anticipated travel time is the limiting factor, and while a safe room may be intended to serve occupants within a specific radius, travel time to the safe room depends upon the path prospective occupants take to reach the facility. Therefore, it may also be advisable to inform the residents of the best travel routes to the safe room location and provide corresponding signage.

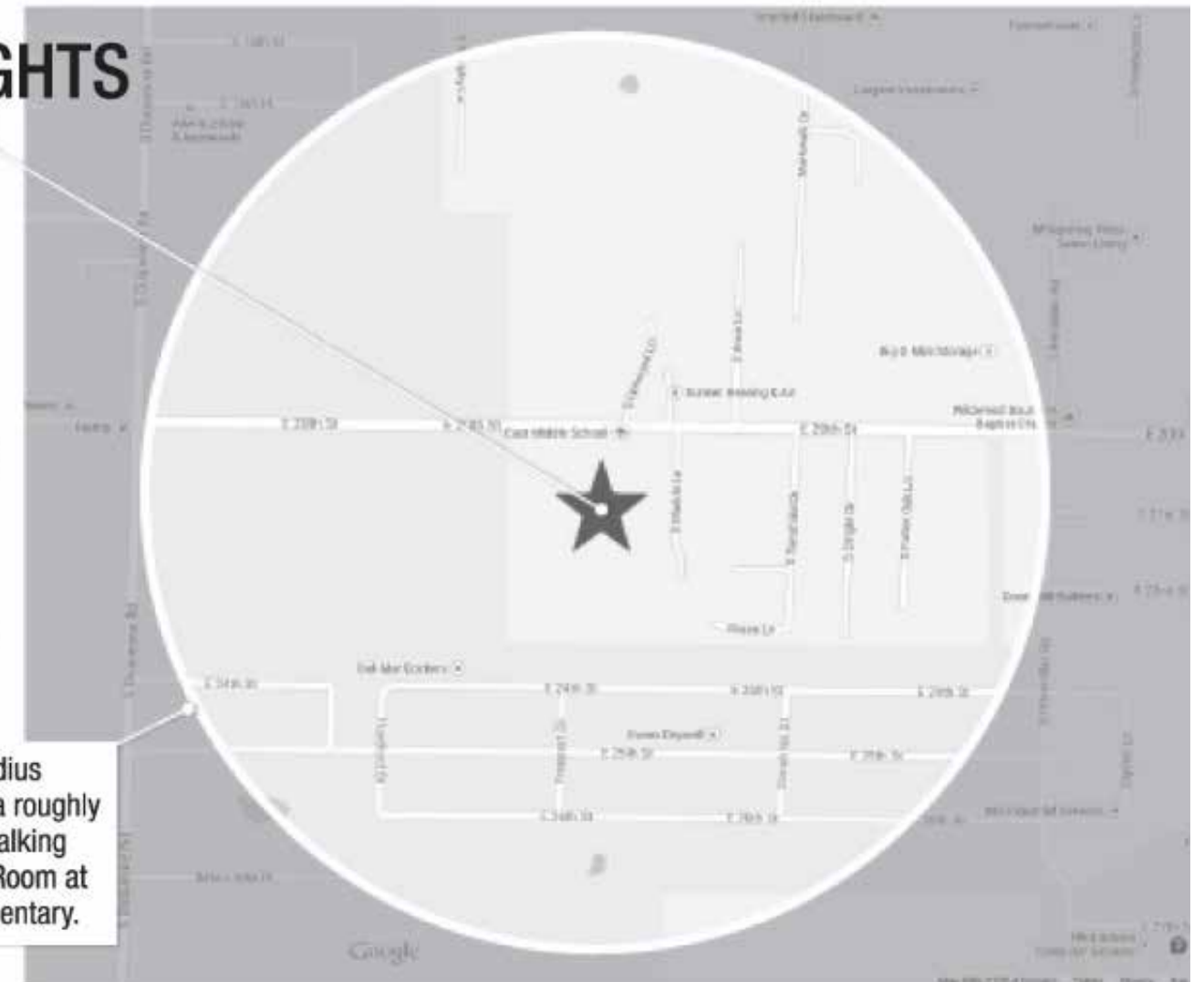
TORNADO PROTECTION ZONE MAP

SOARING HEIGHTS ELEMENTARY

4594 E. 20th St.
Joplin, MO 64804
Jasper County

Due to the estimated time necessary to safely reach the Safe Room after a weather warning has been issued and the Safe Room's maximum capacity of 732 persons, including the student body and staff, the Safe Room is not designed to provide shelter for those who live beyond this protection zone.

The TPZ: 1/2 mile radius
Around the school – a roughly five-minute or less walking distance to the Safe Room at Soaring Heights Elementary.



OCCUPANCY & DURATION

The ICC 500 criteria for maximum population density for community safe rooms are included here to benefit planners who may not have access to ICC 500 and to provide specific context for the commentary.

the usable safe room floor area is to use the following percentages derived from FEMA’s National Facility Survey and adjusted based on recommendations from ICC 500 committee members:

Tornado safe rooms: ICC 500 Section 501.1.1 requires a minimum of 5 square feet per person for standing or seated occupants for tornado community safe rooms. This requirement is the same as that provided in past editions of FEMA P-361 and is an appropriate minimum for a tornado community safe room. For wheelchair-user and bedridden occupants, the required usable floor area per occupant is higher (10 and 30 square feet per occupant, respectively).

- Reduce the gross floor area of safe rooms with concentrated furnishings or fixed seating by at least 50 percent
- Reduce the gross floor area of safe rooms with unconcentrated furnishings and without fixed seating by at least 35 percent
- Reduce the gross floor area of safe rooms with open plan furnishings and without fixed seating by at least 15 percent.

Determining usable space in a community safe room area is not always straightforward because of the configuration of the interior. Either of the calculation methods described in this section can be used to determine the usable space. For almost all spaces, the usable space is less than the building footprint because of interior columns, walls, or partitions; critical support elements (e.g., generator, mechanical, electrical, and plumbing equipment); bathroom or kitchen fixtures; permanently mounted desks, chairs, or tables; or the storage area required to store portable desks, chairs, and tables. One method for determining

Occupancy duration in a tornado is typically 2 hours, much less than expected for a hurricane safe room. This short timespan allows for fewer provisions to provide occupancy comfort including sanitation, water supply, ventilation, and backup power. However, it is not unusual for tornado safe room occupancy duration to exceed 2 hours.

TORNADO SAFE ROOM OCCUPANT	MINIMUM USABLE FLOOR AREA ^(a) IN SQUARE FEET PER SAFE ROOM OCCUPANT
Standing or seated	5
Wheelchair-user	10
Medical bed-user	30

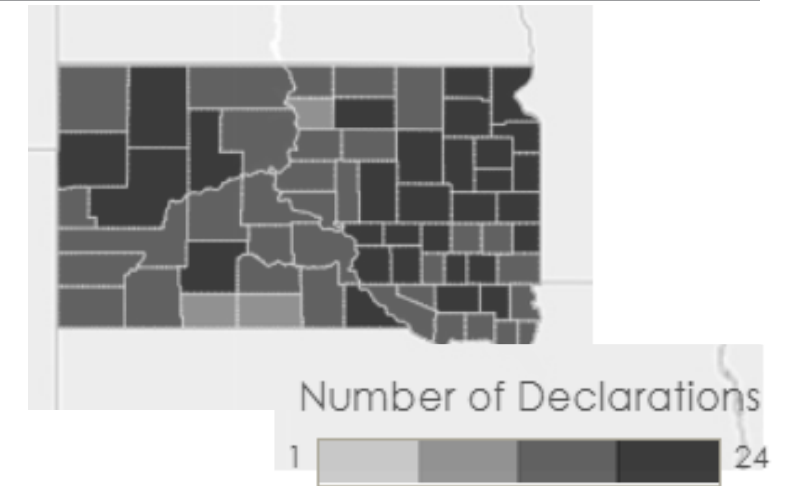
HISTORY OF DISASTERS

As the City of Harrisburg grows it becomes increasingly important to ensure that their citizens have adequate shelter and provisions. When it comes to natural disasters, it is not a question of *if*, but *when*. And it is the responsibility of its civic leaders to plan for the safety of citizens in the event of emergency.

These graphs and timelines, provided by FEMA show the number of disaster declarations recorded since 1969. Harrisburg is no stranger to severe weather - mainly winter storms, tornadoes and flooding. The adjacent graphics depict the disaster declarations with the most recent being COVID-19 pandemic. In 2019 many sever storms occurred and two disasters were declared.

With the uncertainty of a changing climate leading to more extreme weather patterns it is increasingly important for the city to have provisions for their citizens to protect them in the case of a natural disaster.

Year of Declaration Date	Declaration Title	Disaster Number
1969	FLOODING	257
1976	DROUGHT	3015
1984	SEVERE STORMS & FLOODING	717
1993	SEVERE STORMS, TORNADOES & FLOODING	999
1995	FLOODING	1052
1997	SEVERE FLOODING, SEVER WINTER STORMS, HEAVY RAINS ..	1173
	SEVERE WINTER STORMS AND BLIZZARD CONDITIONS	1156
2005	HURRICANE KATRINA EVACUATION	3234
2010	SEVERE STORMS AND FLOODING	1938
2013	SEVERE STORMS, TORNADO, AND FLOODING	4125
	SEVERE WINTER STORM AND SNOWSTORM	4115
2014	SEVERE STORMS, TORNADOES, AND FLOODING	4186
2019	SEVERE STORMS, TORNADOES, AND FLOODING	4469
	SEVERE WINTER STORM, SNOWSTORM, AND FLOODING	4440
2020	COVID-19	3475
	COVID-19 PANDEMIC	4527



Tornado Index, #5

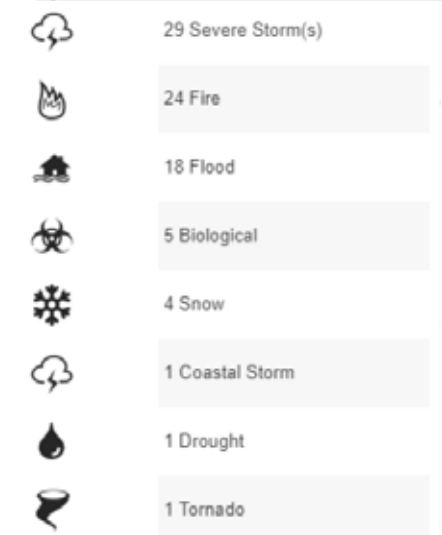


The tornado index value is calculated based on historical tornado events data using USA.com algorithms. It is an indicator of the tornado level in a region. A higher tornado index value means a higher chance of tornado events.

Other Weather Extremes Events

A total of 12,159 other weather extremes events within 50 miles of Lincoln County were recorded from 1950 to 2010. The following is a break down of these events:

Type Count	Type Count	Type Count	Type Count	Type Count
Avalanche: 0	Blizzard: 111	Cold: 72	Dense Fog: 1	Drought: 20
Dust Storm: 0	Flood: 880	Hail: 6,015	Heat: 12	Heavy Snow: 99
High Surf: 0	Hurricane: 0	Ice Storm: 20	Landslide: 0	Strong Wind: 143
Thunderstorm Winds: 4,208	Tropical Storm: 0	Wildfire: 4	Winter Storm: 154	Winter Weather: 159
Other: 261				



ASSESSING RISK: WIND ZONE

The ICC 500 wind speed maps should be used for safe room design even when the base building in which the safe room is constructed was built in accordance with the ASCE 7 wind speed map.

The City of Harrisburg lies in the Zone IV 250 mph making it vulnerable to extreme wind events.

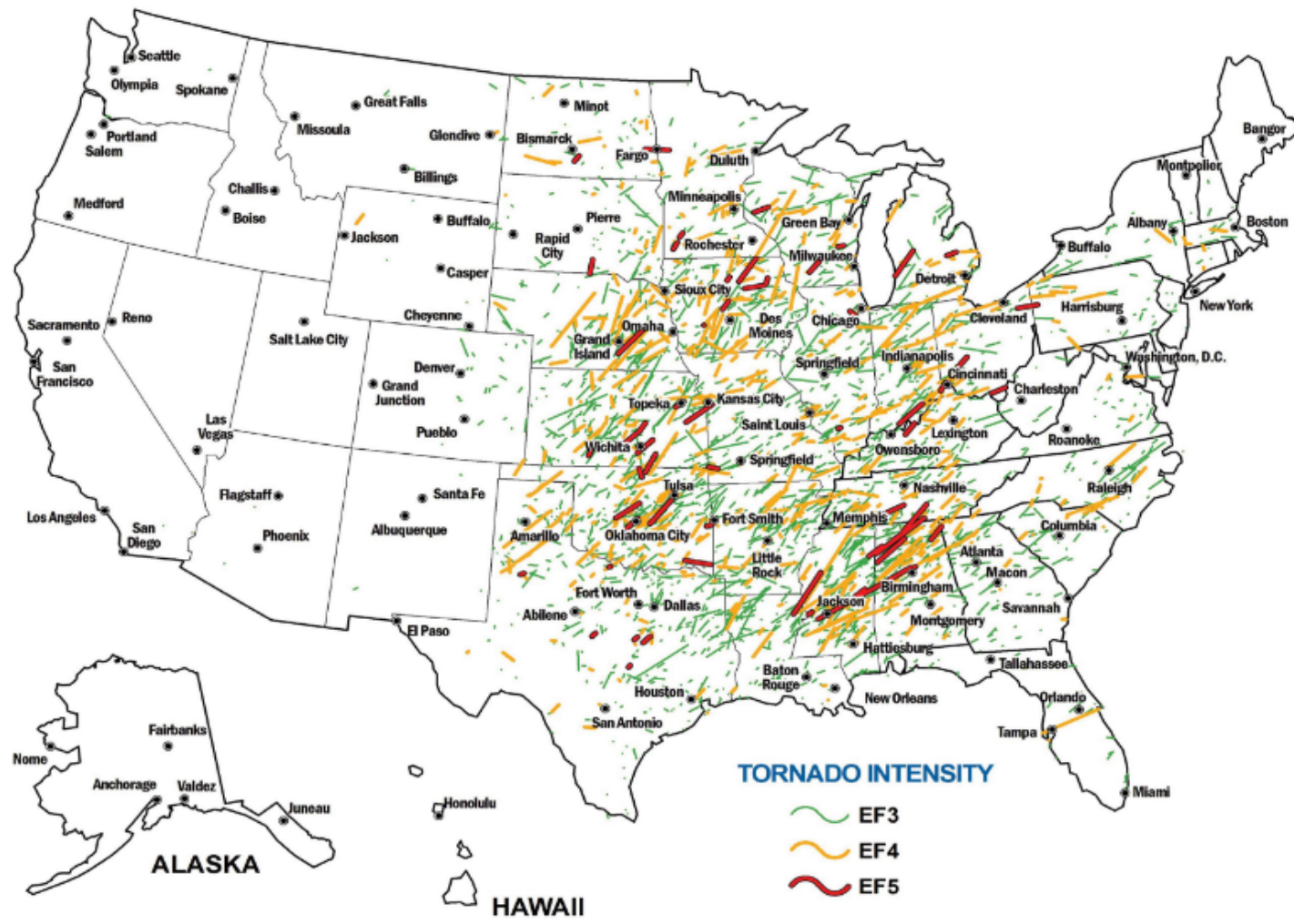
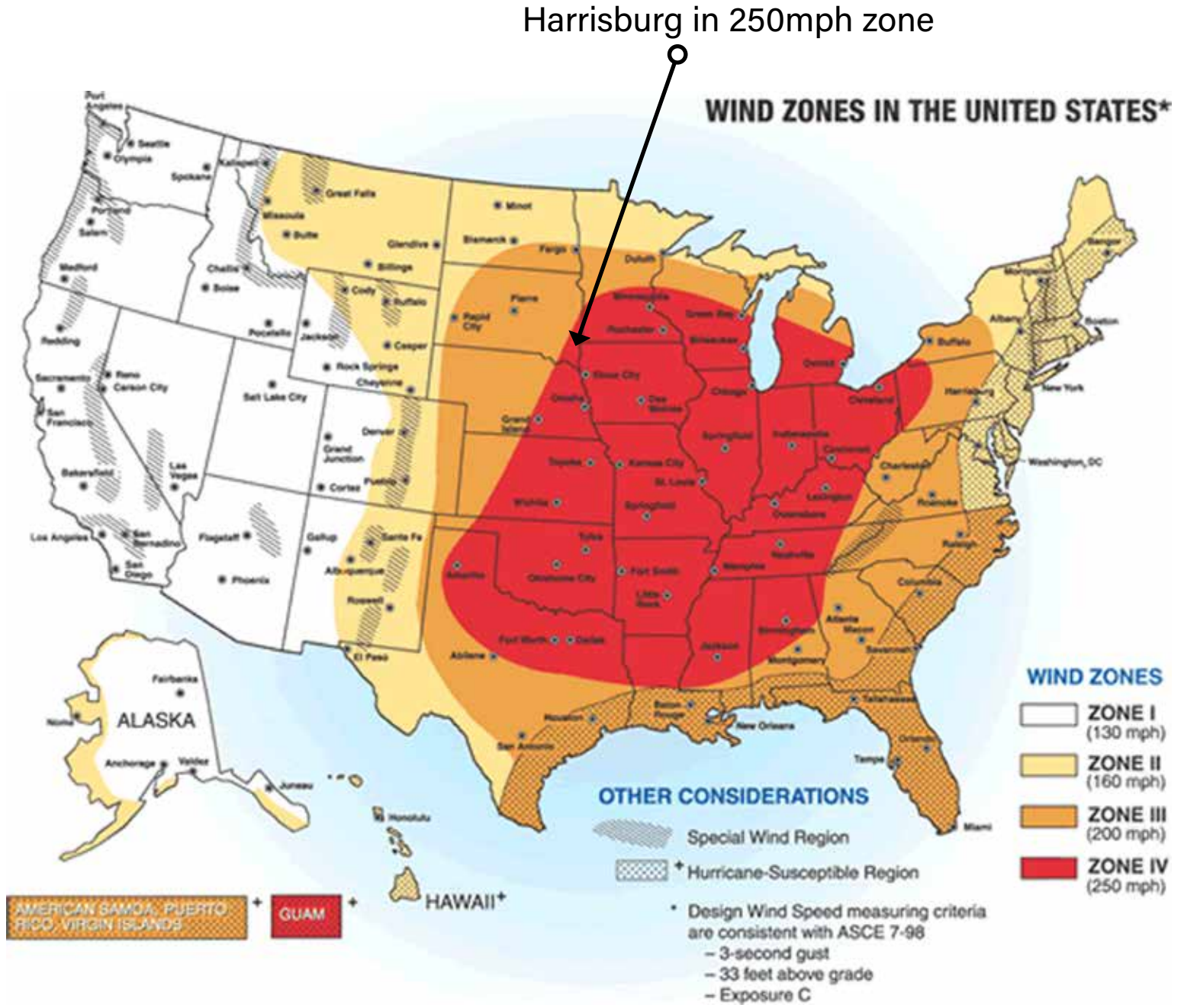


Figure A2-2. Recorded EF3, EF4, and EF5 tornadoes in the United States from 1950 to 2013
 (SOURCE: NOAA NATIONAL WEATHER SERVICE, STORM PREDICTION CENTER, WWW.SPC.NOAA.GOV/GIS/SVRGIS/)



Harrisburg in 250mph zone

* Design Wind Speed measuring criteria are consistent with ASCE 7-98
 - 3-second gust
 - 33 feet above grade
 - Exposure C

ASSESSING RISK: POPULATION

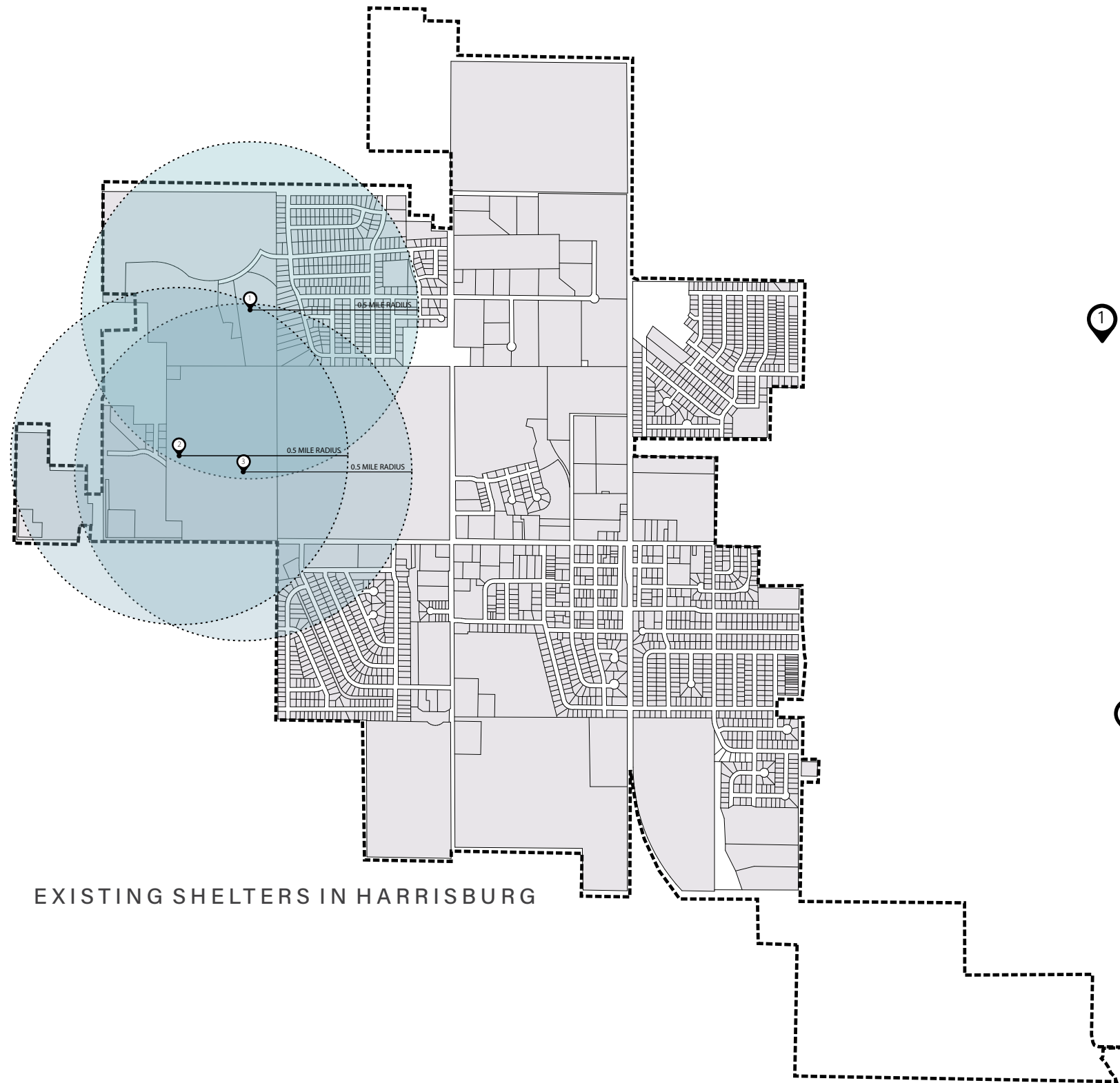
In order to calculate the population at risk in the City of Harrisburg we limited our data to reflect two at risk groups in this section: residents and students. Most homes built in the South Dakota have a basement which we know (being made of concrete and underground) to be the safest spot in a home during a tornado. Therefore, we only included residents that would not have access to their own basement during the event of a tornado. With data provided from the City of Harrisburg we were able to compile the number of apartments/town homes and slab on grade homes (homes without a basement) to include in our “at risk” population. The City also knew of 300 new units being built in 2021 for housing developments. Additionally, we included two schools that do not currently have a tornado shelter in the at risk population. Section 423 of 2015 International Building Code has a new requirement that construction for new schools and additions to existing schools have tornado shelters. These shelters must comply with the ICC if the project is located in the zone where the minimum required design wind speed for a tornado shelter is 250 mph, which Harrisburg currently is. The High School and new Elementary School were recently built under this new code standard. However, Liberty Elementary and the Middle School were built before this code went into effect and do not have the same safety guides. Therefore we have included these two student body populations in our “at risk” group.

RESIDENTS WITHOUT BASEMENT ACCESS FOR TORNADO SHELTER	
APARTMENT/TOWN HOME UNITS	837
SLAB ON GRADE HOMES	94
FUTURE DEVELOPMENT	200 apartments 100 new houses
TOTAL UNITS	1,131
PEOPLE PER UNIT	2.9
TOTAL RESIDENTS WITHOUT BASEMENT ACCESS	3,280
SCHOOLS WITHOUT TORNADO SHELTER	
	STUDENT BODY
LIBERTY ELEMENTARY	500
MIDDLE SCHOOL	500
TOTAL STUDENTS	1000
AT RISK POPULATION	
TOTAL RESIDENTS	3,280
TOTAL STUDENTS	1000
TOTAL AT RISK POPULATION	4,280

ASSESSING RISK: EXISTING SHELTERS + SERVICING RADIUS

This City of Harrisburg does have a few existing shelters in town, however none are to capacity. They are located at the addition to the high school, the alternative learning building, and the new elementary school has a shelter. These three shelters are all located in newly built schools because as of 2015 the IBC adopted the code dictating that all schools in the 250 mph wind zone would have a shelter. Due to this, the shelters in Harrisburg are merely a byproduct of the school and not strategically placed for their serviceability to the community. The three shelters service most of the same areas which therefore reinforces the City’s need for a community safe room.

As of its Fiscal Year 2015 HMA Unified Guidance, FEMA requires that tornado safe rooms be sited so that occupants have a maximum walking travel time of 5 minutes or a maximum driving travel distance of approximately 0.5 mile to reach the safe room. The actual travel route or pathway should not be restricted, bottlenecked, or obstructed by barriers such as multi-lane highways, railroad tracks, bridges, or similar facilities or by topographic features. When determining travel time, potential traffic congestion (including parking constraints) that may occur when potential at-risk occupant are moving to the safe room after a storm watch/warning notification has issued should be considered. Additionally, the walking speed of occupants going to the safe room should be considered. Using a 3 mph walking speed, a 5 minute of walking travel time corresponds to approximately ¼ mile.



EXISTING SHELTERS IN HARRISBURG



1 FREEDOM ELEMENTARY SCHOOL



2 ALTERNATIVE HIGH SCHOOL BUILDING



3 HIGH SCHOOL



CITY OF
HARRISBURG

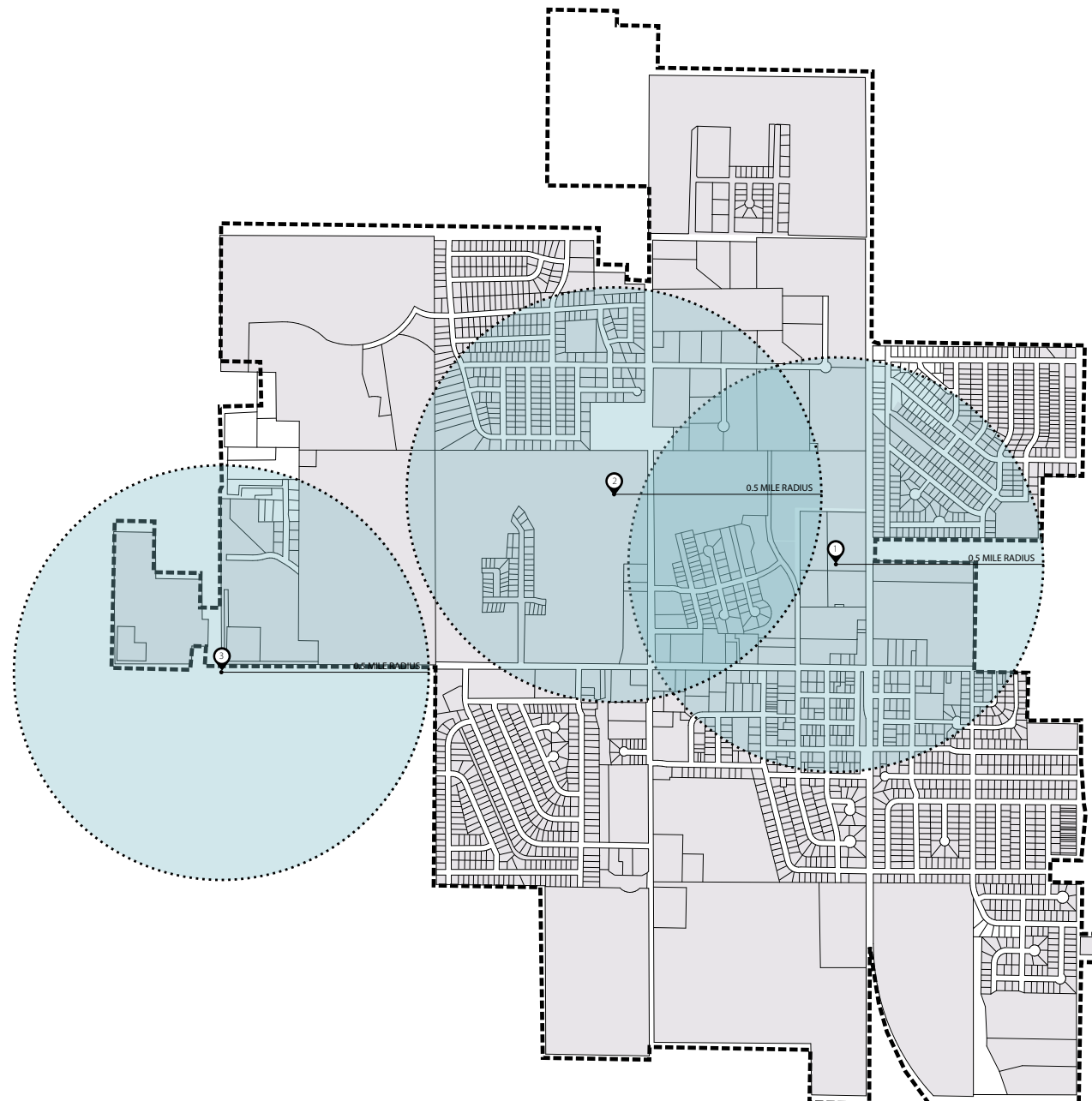
SECTION 3

Proposed Site Locations

PROPOSED SHELTER LOCATIONS

The location of a safe room on a building site is an important consideration of the design process. The safe room should be located such that all persons designated to take refuge can reach the safe room quickly; this is of particular importance for tornado safe rooms due to time constraints. Safe rooms located at one end of a building or one end of a community, office complex, or school may be difficult for some users to reach timely. Routes to the safe room should be easily accessible and well-marked. Safe room routes should also be safely accessed without obstruction or through unsafe structures.

The City of Harrisburg has selected three locations that are city-owned or for sale as plausible locations. These three locations have been analyzed for amount of population served during an emergency. The three locations are highlighted in the adjacent map and upon proceeding with this project, a final site should be determined with the existing shelter locations in mind. The Central park location has been determined to provide the most emergency shelter and is used as an underlay for the project. This building design and location are fluid to progress and follow a full design process after this study. The intent of this study is to identify the shelter safety needs in the City of Harrisburg.



HARRISBURG CITY LIMITS - PROPOSED SHELTERS

PROPOSED SHELTER LOCATIONS



1 CENTRAL PARK



2 CREEKSIDE

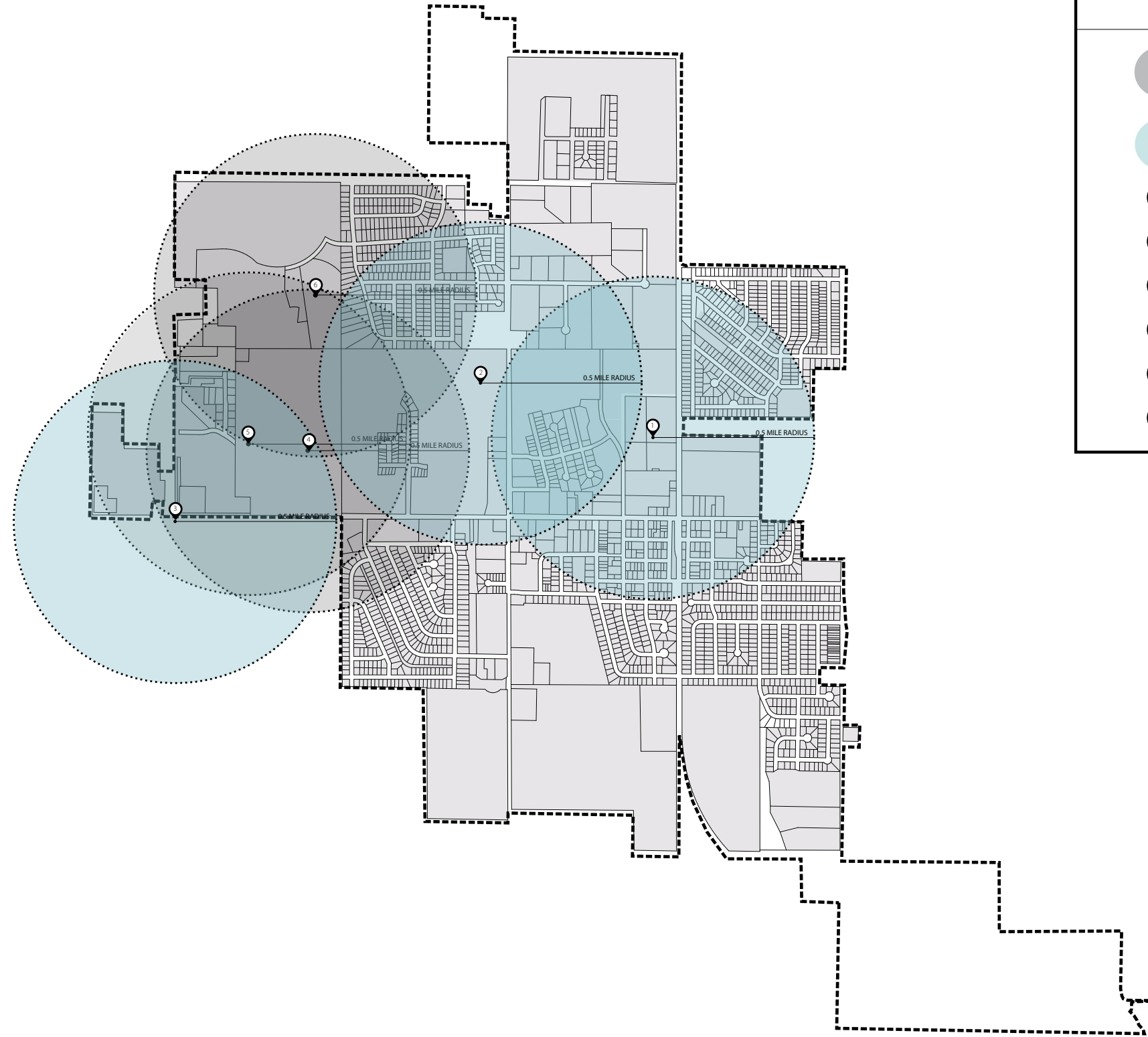


3 WILLOW & MINNESOTA

EXISTING + PROPOSED SHELTER LOCATIONS

The adjacent map illustrates the proposed safe room locations in relation to the existing shelters. The following pages will demonstrate the general coverage and the most covered site is further evaluated based on at-risk population.

It becomes visually apparent that site 2 and 3 do not have full coverage as they overlap with existing shelter radius. The existing shelters cover a portion of site 2 and 3.



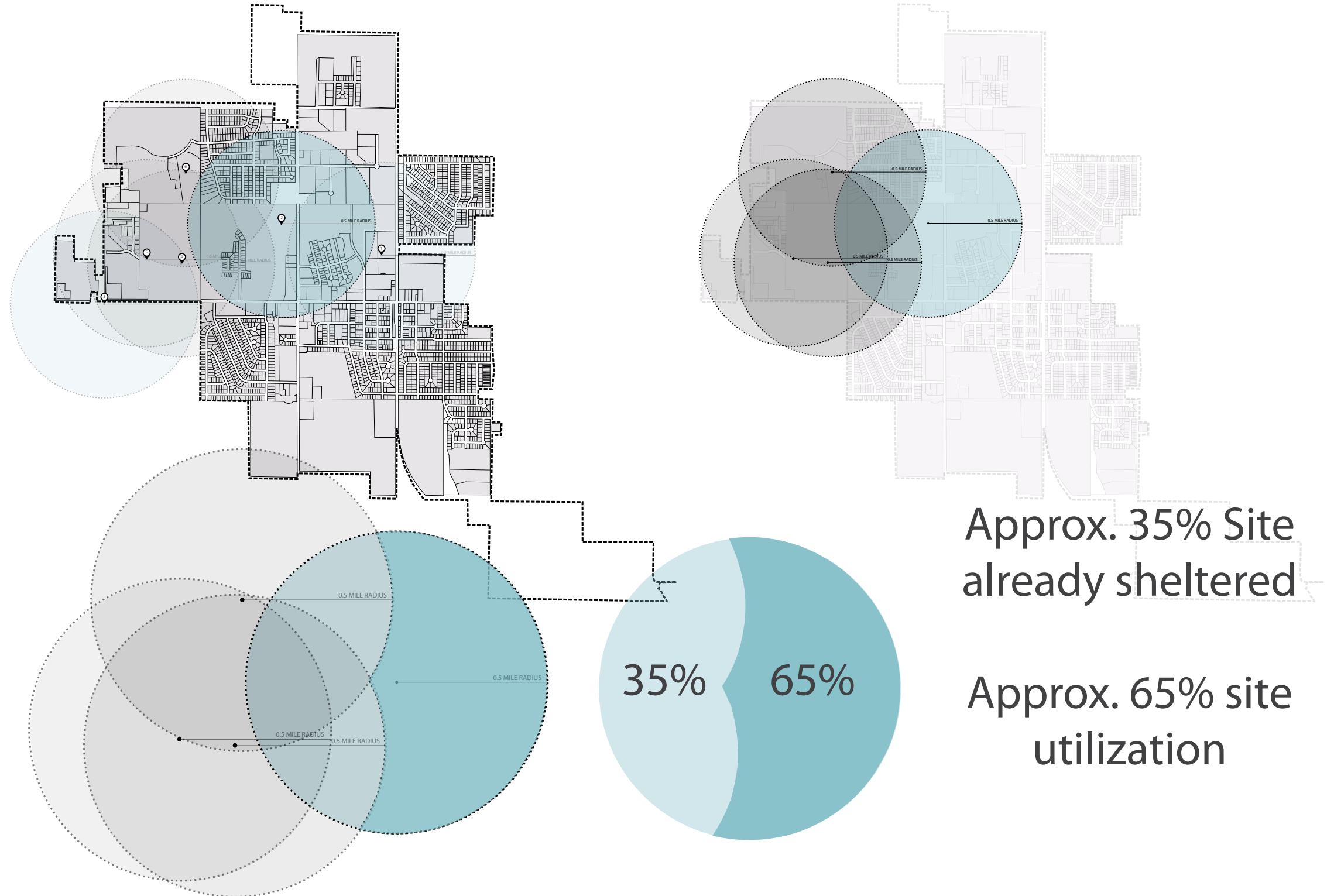
ZONING LEGEND

- Existing Shelters at 0.5 mile radius
- Proposed location of shelter with 0.5 mile radius
- 1 Central Park
- 2 Creekside
- 3 Willow & Minnesota
- 4 High School
- 5 Alternative High School Building
- 6 Freedom Elementary



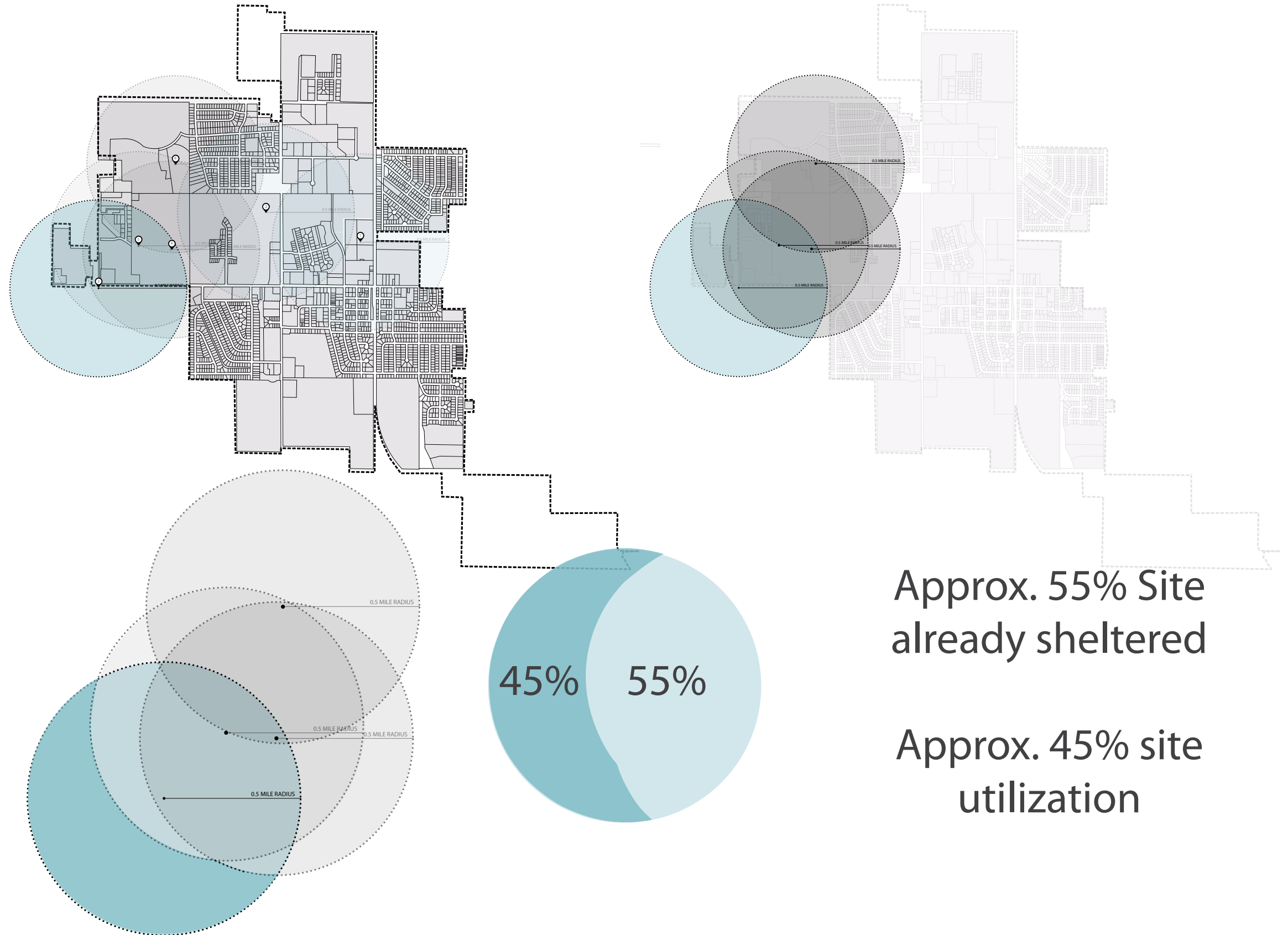
OPTION 1: CREEKSIDE

The Creekside radius is about 35% covered by the existing shelters on the site. While it would service many residence in the area, it would not encompass any schools or very many businesses. Additionally, the Central Park radius covers all but a small portions of what the Creekside shelter would cover.



OPTION 2: WILLOW

The Willow and Minnesota property is even more so covered by the existing shelters. What is not covered from the existing shelters does not yet lie in city limits. While the city will continue to grow it is important to see that the Willow property does not cover a large portion of residential, park or business units.

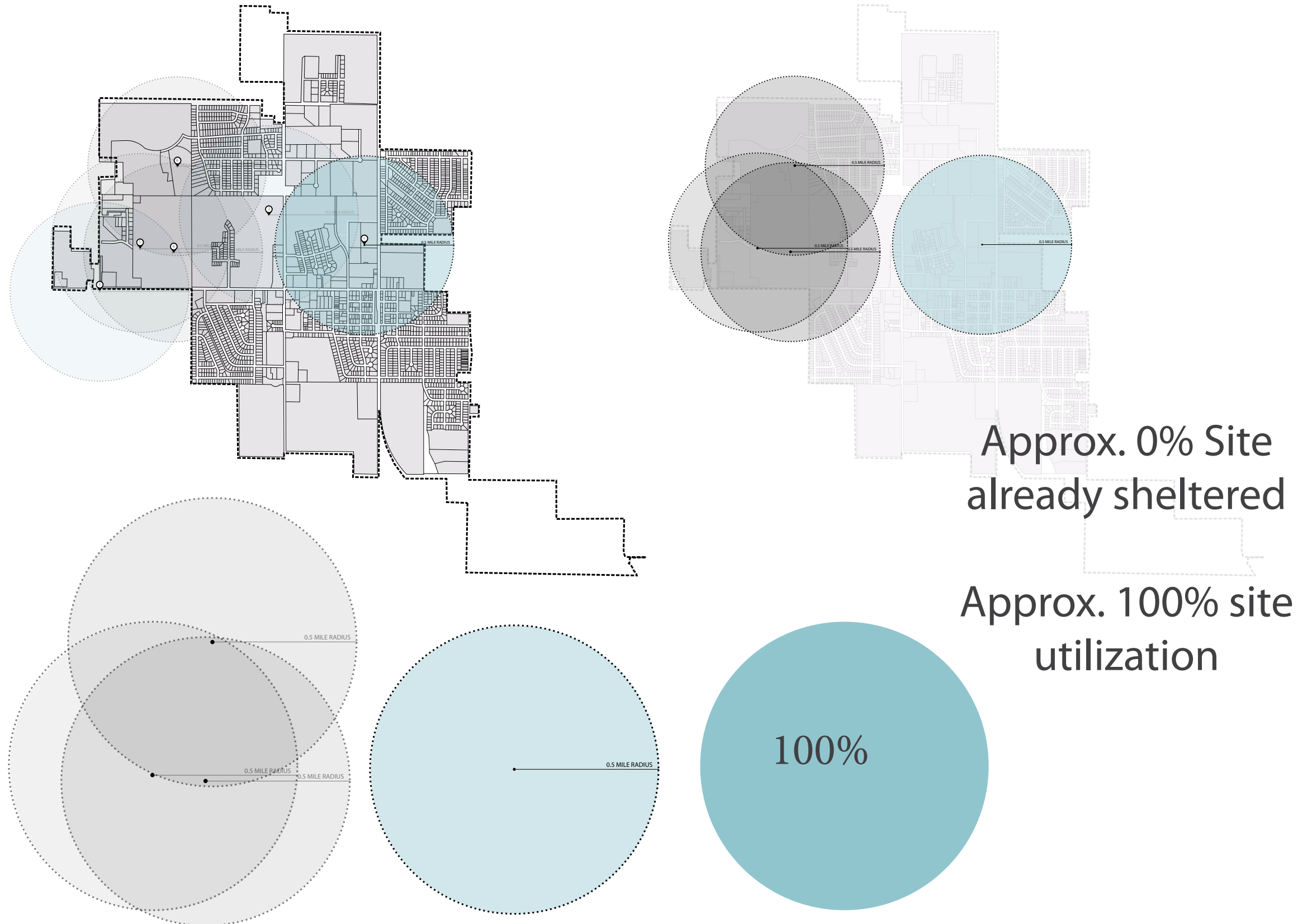


Approx. 55% Site already sheltered

Approx. 45% site utilization

OPTION 3: CENTRAL PARK

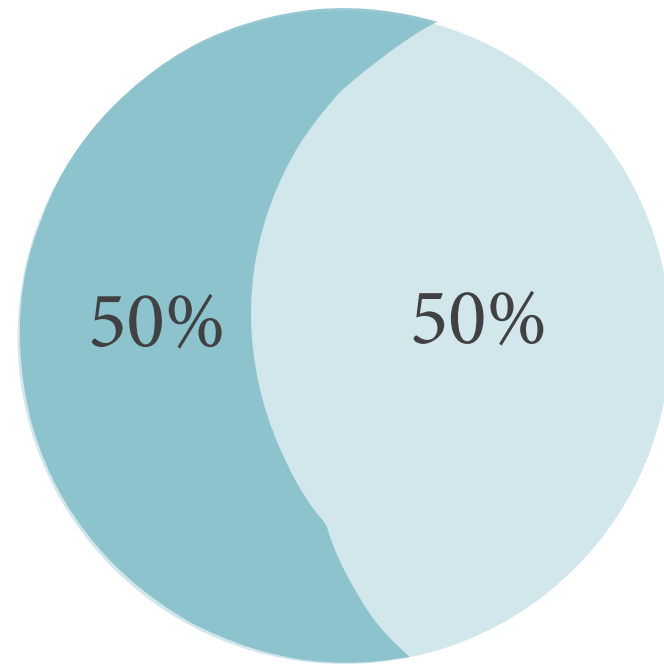
The central park location is composed of 100% new shelter coverage for at risk population. This leads it to be the best contender of the plausible sites. The site location not only services a new population but also would be available for Liberty Elementary users, residential units without basements, commercial businesses, and all recreational users of Central Park. Central Park and Liberty Elementary hold large populations at a given time and the person count is substantial in the event of an emergency. Additionally, Central Park is already owned by the City and would there for be a good choice for a city building.



SHELTER COMPARISONS

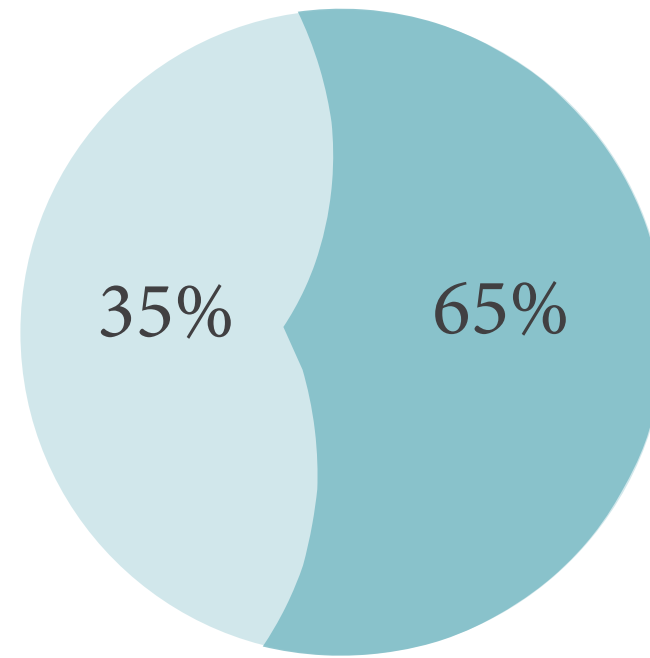
The three plausible sites are highlighted to show the amount of new shelter area versus existing. Based on the shelter utilization and overlap the Central park results in the best service to the community.

The Central Park site is further investigated in the following pages.

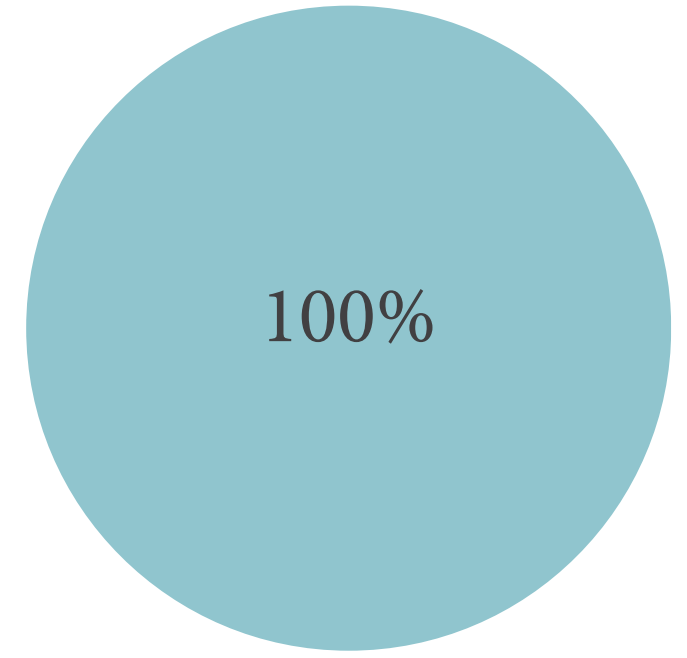


OPTION 2:
WILLOW & MINNESOTA

LEAST AMOUNT OF NEW
SHELTER COVERAGE.



OPTION 1:
CREEKSIDE

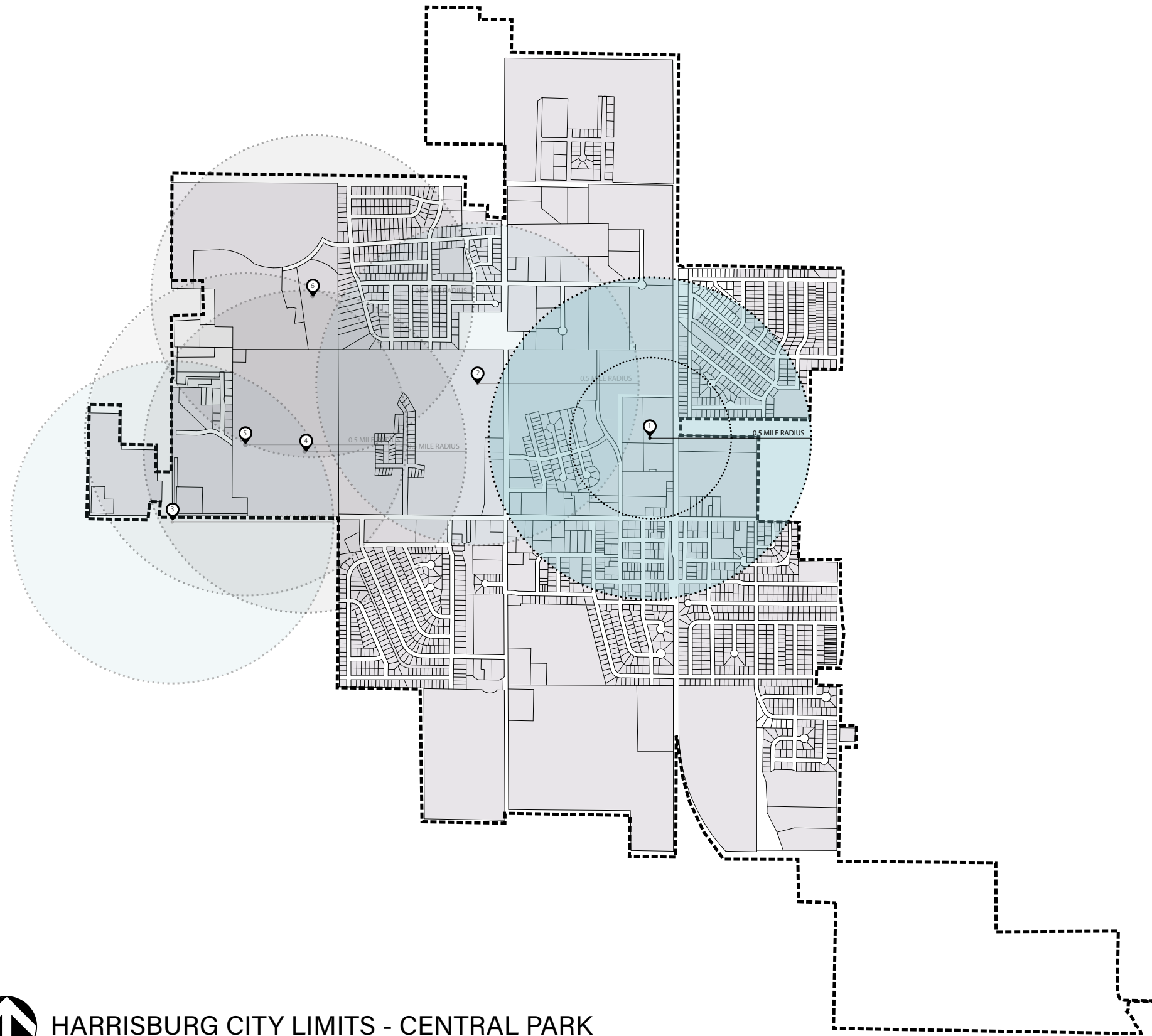


OPTION 3:
CENTRAL PARK

MOST AMOUNT OF NEW
SHELTER COVERAGE

PROPOSED LOCATION: CENTRAL PARK

The Central Park location provides shelter to a new portion of Harrisburg. The diagram represents a 1/2 mile radius of service. The radius resembles a 5 minute vehicular transportation time to the shelter. This means, that everyone within the 1/2 mile radius would be able to get to the shelter within 5 minutes. A 1/4 mile radius represents a 5 minute pedestrian transportation service area. The highly concentrated areas include the Liberty Elementary and Central Park recreational users and these are located within a 2-minute walk.

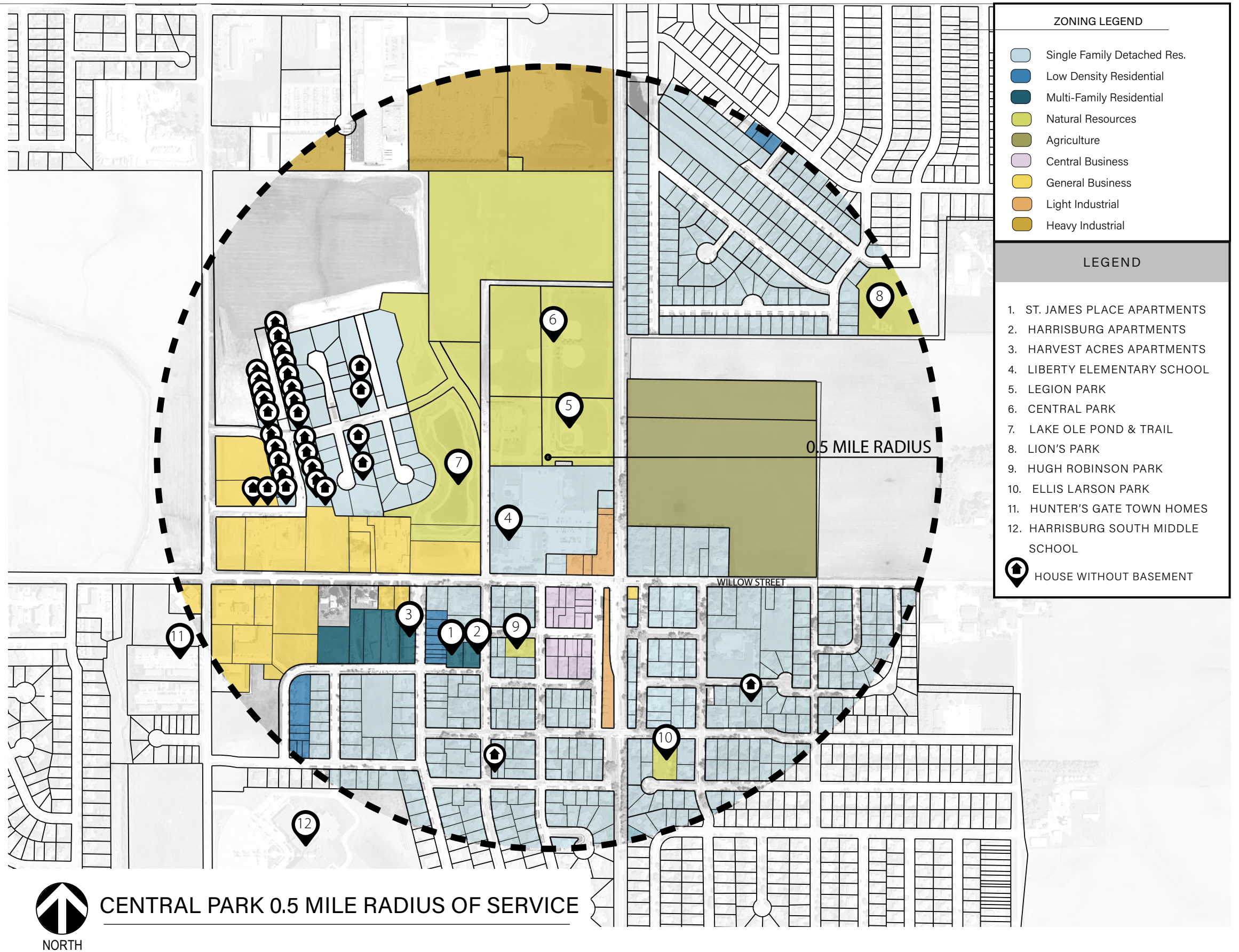


CENTRAL PARK : PROXIMITY

The adjacent map represents the zoning and surrounding uses. The shelter would service residential, public parks, central businesses, elementary students, and recreational users. The map identifies the approximate number and location of homes without basements, apartments, schools, and parks which was based on the data provided by the City. The location of the building is flexible based on the City of Harrisburg but the general area is of the best service to the community and centrally located.

Each new school will contain a safe room and cover new areas of growth. Liberty Elementary does not have many areas to expand in and providing a shelter local to the large mass of students should be a priority.

The City of Harrisburg has gone through many cycles of growth and creating a central service to the community would alleviate the costs to run multiple facilities. The combined City Center would increase the communication between departments and formalize the service to the public.



CENTRAL PARK : POPULATION AT RISK

The following table calculates the potential population that could be at risk in the 0.5 mile radius selected. The location selected has a large amount of homes without basements as well as apartment units to consider. Businesses were tabulated in the area to service staff and guests during the event of emergency. Central Park is an ideal location because it has a large outdoor ball park that many people would be exposed in the event of a tornado. The location also provides a designated shelter for Liberty Elementary which would bring it to the same safety levels that are currently administered by the IBC for schools.

Overall this location would provide shelter to over a thousand people in the community.

RESIDENTIAL & BUSINESS WITHOUT BASEMENT ACCESS FOR TORNADO SHELTER	
APARTMENT/TOWNHOME UNITS	122
SLAB ON GRADE HOMES	32
BUSINESSES	47
TOTAL UNITS	201
PEOPLE PER UNIT	2.9
TOTAL WITHOUT BASEMENT ACCESS	583
SCHOOLS & PARKS WITHOUT TORNADO SHELTER	
BALL FIELDS & PUBLIC PARKS	300
LIBERTY ELEMENTARY	500
TOTAL STUDENTS	800
TOTAL AT RISK POPULATION	
RESIDENTIAL & BUSINESS	583
TOTAL STUDENTS & SPECTATOR	800
TOTAL AT RISK POPULATION	1,383 people

CENTRAL PARK: OCCUPANCY BASED ON TIME OF DAY

This graph further tabulates the approximate amount of occupants likely to use a shelter at a given point in the day. While our total at risk occupants in the area is 1,383 people, we know that there would not be 500 children in the elementary school at 5pm. This graph allows us to calculate the worst case plausible scenario in order to determine our occupant load for the shelter.

Based on this table the worst case scenario would be 1,083 occupants that could need shelter in the event of a disaster. We can then determine that our shelter area would need to be approximately 5,000 square feet with the occupant load factor. This sets the ground work for appropriately sizing our shelter to meet the needs of the people in that radius.

OCCUPANCY BASED ON TIME OF DAY				
	OCCUPANTS	MORNING	AFTERNOON	EVENING
BALL FIELDS	300	-	-	300
RESIDENTIAL	447	447	-	447
ELEMENTARY	500	500	500	-
BUSINESS	136	136	136	-
TOTALS	1,383	1,083	636	747

Occupancy Load Calculation:

1,083 x 5 square feet per person = 5,415 square feet

1 wheelchair for every 200 people = 6 wheelchair occupants @ 10 square feet per person = 60 s.f.

Total: 5,475 square feet

15% = 821.25

Total: 4,654 square feet of needed shelter space

CENTRAL PARK: SITE CONTEXT

The proposed City Center is currently placed on the site based on preliminary site design completed by Stockwell. The site offers a couple options for placement and shall be coordinated as the project progresses. The location must be considerate of ease of access to parking, access to a main road for the Sheriff's Substation emergency response, and service to the recreational surroundings. Multiple options on site are available and coordination should occur with the master plan being produced.





CITY OF
HARRISBURG

SECTION 4

Preliminary Programming & Concept Design

MASTER SITE PLAN

The City of Harrisburg has compiled a list of space needs for their community. Many of these spaces are currently dispersed throughout the community, while others are facilities that do not yet exist in the community but will be a vital part of its growth. The intent is to compile and consolidate these program under one building as a “Civic Center” or “Community Center”. Additionally, the building will serve the dual purpose of providing a safe room, critical to the community.

The City of Harrisburg has contracted with Stockwell to create a master plan for Central Park and the adjacent drawing represents our placement based on the development. This allows for adequate parking for the building, space for a community gym and shelter, and for the building to function as a central management area to the City and recreational facilities. The combined city services create a facility that is easily accessible by the community. Other site locations recommended were at the pool location, local to Liberty Elementary, and the currently shown plan.



*A current site plan conflict is present where the building is shown. The open green space and pedestrian path should be of consideration in this building placement.

As the project progresses the building location shall be coordinated and location verified to be the most beneficial to at-risk population and long term use.

The Civic Center is a vital piece to the community to control a central service to residents and avoid peice-mealing the services throughout city limits.

STOCKWELL

SITE PLAN
SCALE: 1" = 200'-0"
NORTH

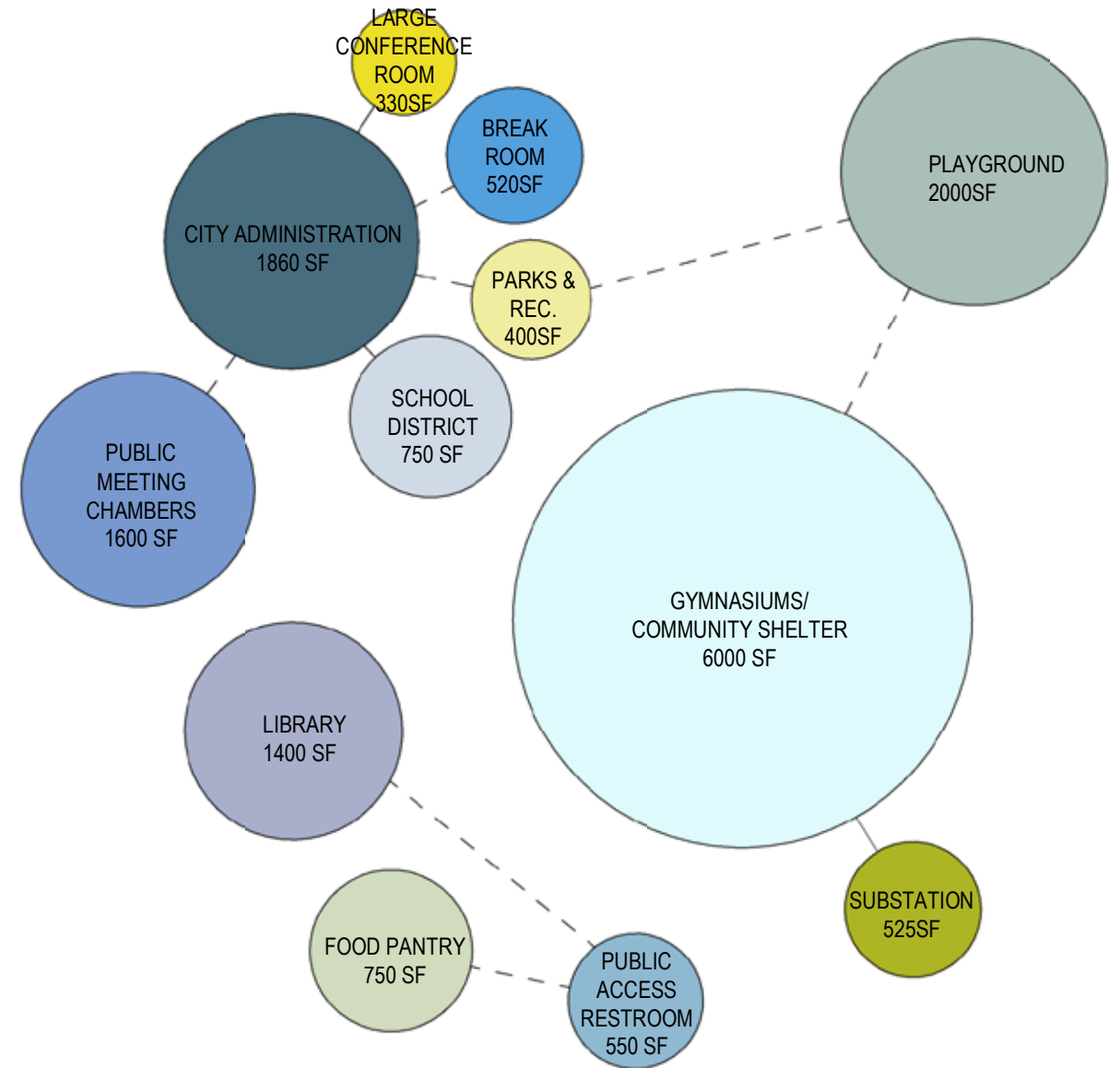
PROGRAM REQUIREMENTS

Projected Space needs			
ROOM	Use	S.F.	Total Size (s.f.)
Circulation, Mech., Restrooms	Building Services and transportation	2500	
Event Restrooms	For use during outdoor events .	550	
Food Pantry	single vesibule entry for privacy and separation from City Center	750	
Public Library	Create a more publicly accessible library	1400	
Meeting Chambers	Space for board meetings such as City Council, Planning & Zoning, School board, Parks & Rec.	1600	
City Administration	Offices, Conference space, Workroom, Finance Office, City Storage	3300	
Breakroom & kitchen	Serve all building departments as a flexible space for lunch and breaks.	520	
School District Administration	Office space for administrative staff or transient desks	750	
Parks & Recreation	area for future department	220	
Gym Court/Safe Room	A safe room adequate for persons within a 1/2 mi radius of location. Dual purpose as a gym court for use outside emergencies.	6,010	
Conference Room	Large Central Conference Space for City Admin, School Board, or Parks.	330	
Playground	Space for indoor or outdoor playground for kids to use during ball games or for weekly recreation.	2,000	
Lyon County Sheriff's Substation	Substation office for Lyon County Sheriff's department staff	525	
		20,455	

Planning & Building Services - Personnel Growth				
	EXISTING	CURRENT NEED	PROJECTED GROWTH	TOTAL NEED
FULL TIME EMPLOYEES	1	3	+3	4 FTE's 3 PTE's 7 EMPLOYEES
PART TIME EMPLOYEES	3	3	3	

No unique technology or storage requirements.

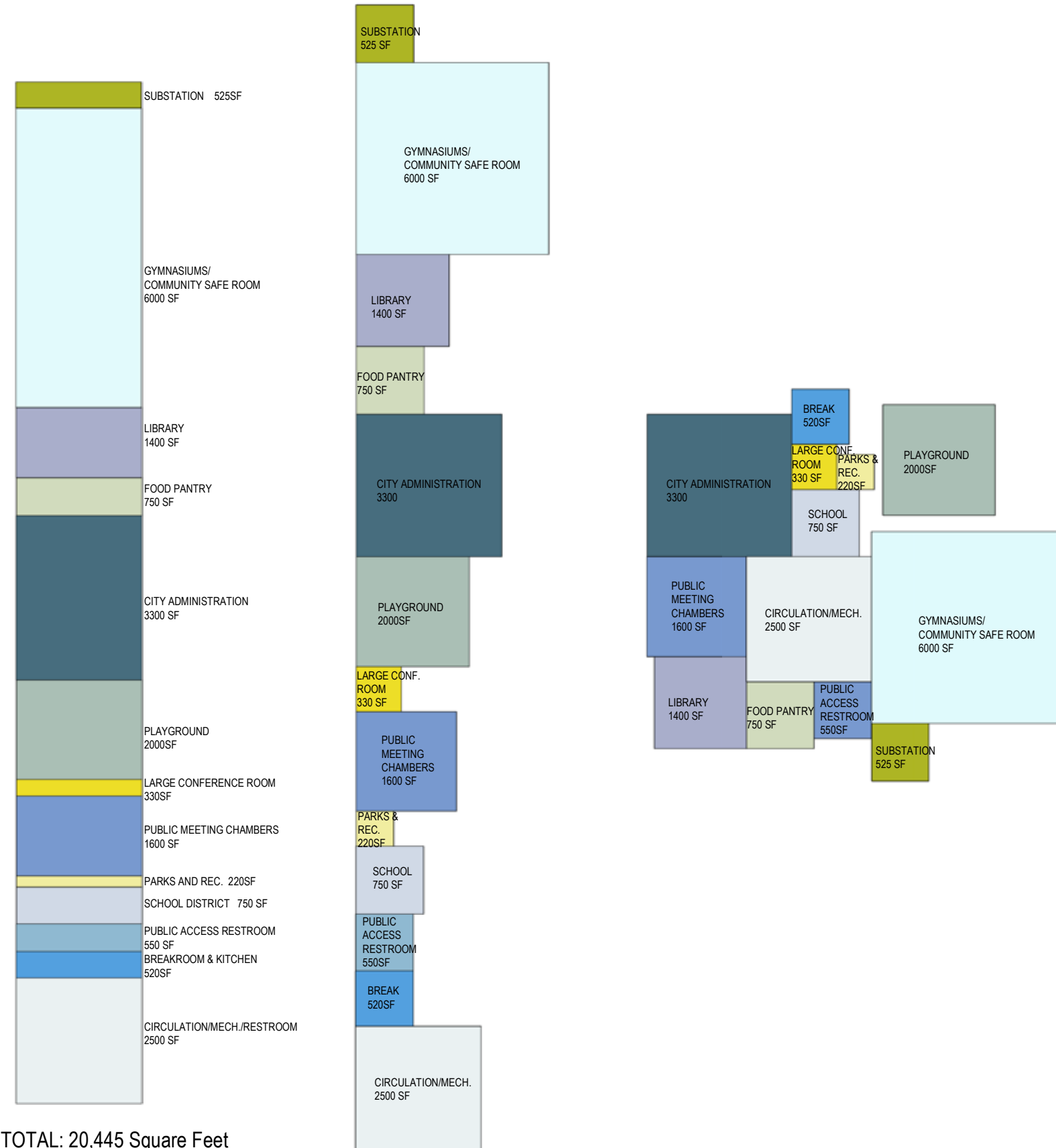
Finance Office - Personnel Growth				
	EXISTING	CURRENT NEED	PROJECTED GROWTH	TOTAL NEED
FULL TIME EMPLOYEES	2	2	+2	4
PART TIME EMPLOYEES	0	0	0	1



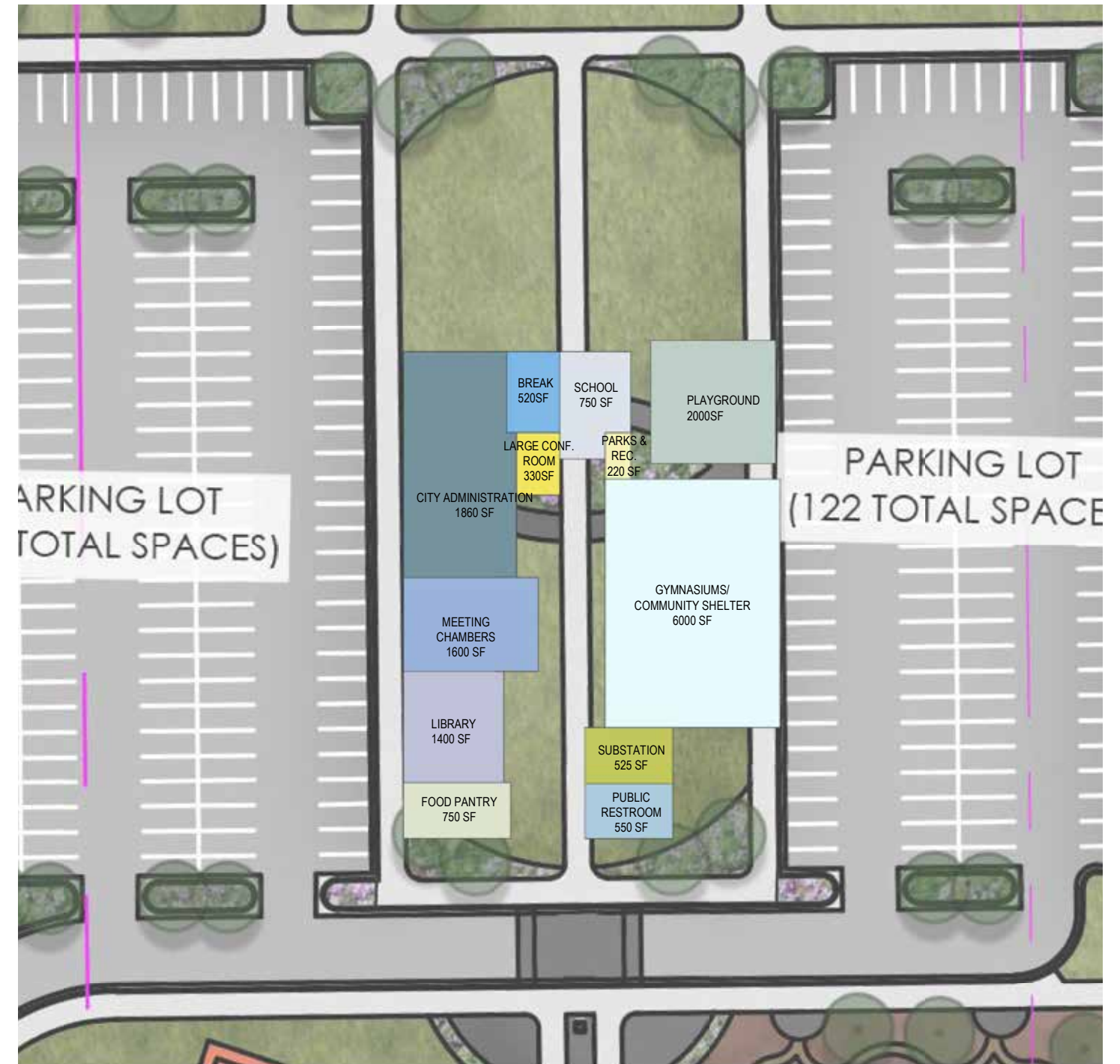
PROGRAM ADJACENCIES

Parks & Recreation - Personnel Growth				
	EXISTING	CURRENT NEED	PROJECTED GROWTH	TOTAL NEED
FULL TIME EMPLOYEES	0	1	+1	1


PROGRAM LAYOUT + MASSING



TOTAL: 20,445 Square Feet

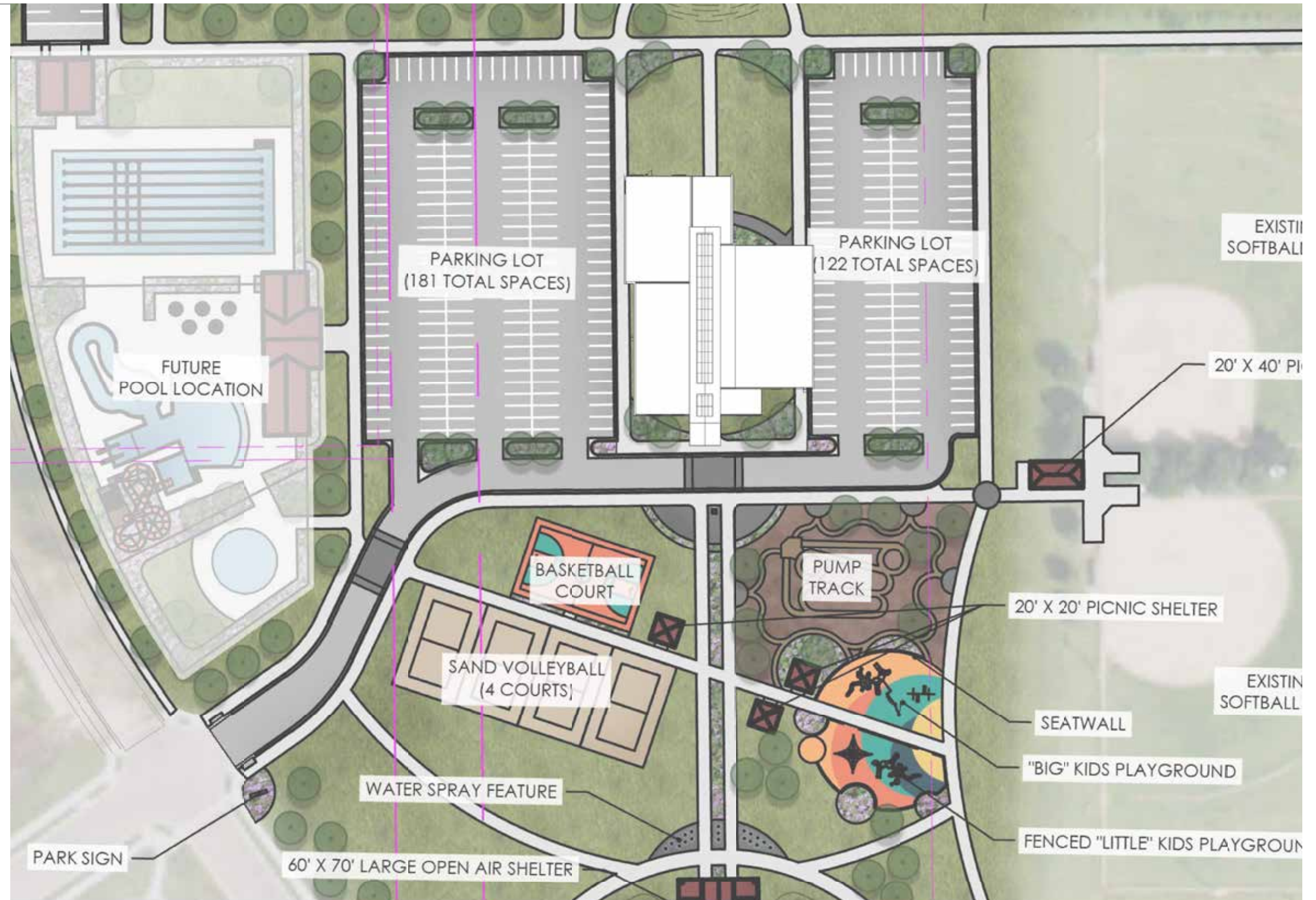


PROGRAMMING DIAGRAM 2
SCALE: 1" = 50'-0"

 NORTH

SITE CONTEXT

This is an enlarged site plan to show how the building would have direct access to enough parking in the event of an emergency. This is something that is often overlooked in shelter design. The location of the building on this site is ideal because the city is already flattening this parking lot, and on the other side of the building there is park access and view for city employees so people in offices aren't looking at a parking lot all day. The building has a potential to be a huge asset to the community both recreationally and economically, especially in this centrally located area.



PROGRAMMING SITE CONTEXT

SCALE: 1" = 80'-0"

NORTH

FLOOR PLANS - OPTION 1

Floor Plan Option 1 focuses the main entry to public use with the library, meeting chambers, gymnasium/ safe room, and food pantry with a private entry.

A full office space is provided for the city administration, school district administration, and a parks and recreation office.

The Sheriff's Substation is easily accessible from inside the building and to the exterior for emergency response and reserved parking.

An outdoor playground is located to the North east of the building and could easily be enclosed for a winter recreational option. This is not included in the cost estimate but could be explored as a future option as the project progresses.

The floor plans are produced for reference and to account for space needs. the Design is not final and a full process of construction documentation should be followed to finalize the concept.



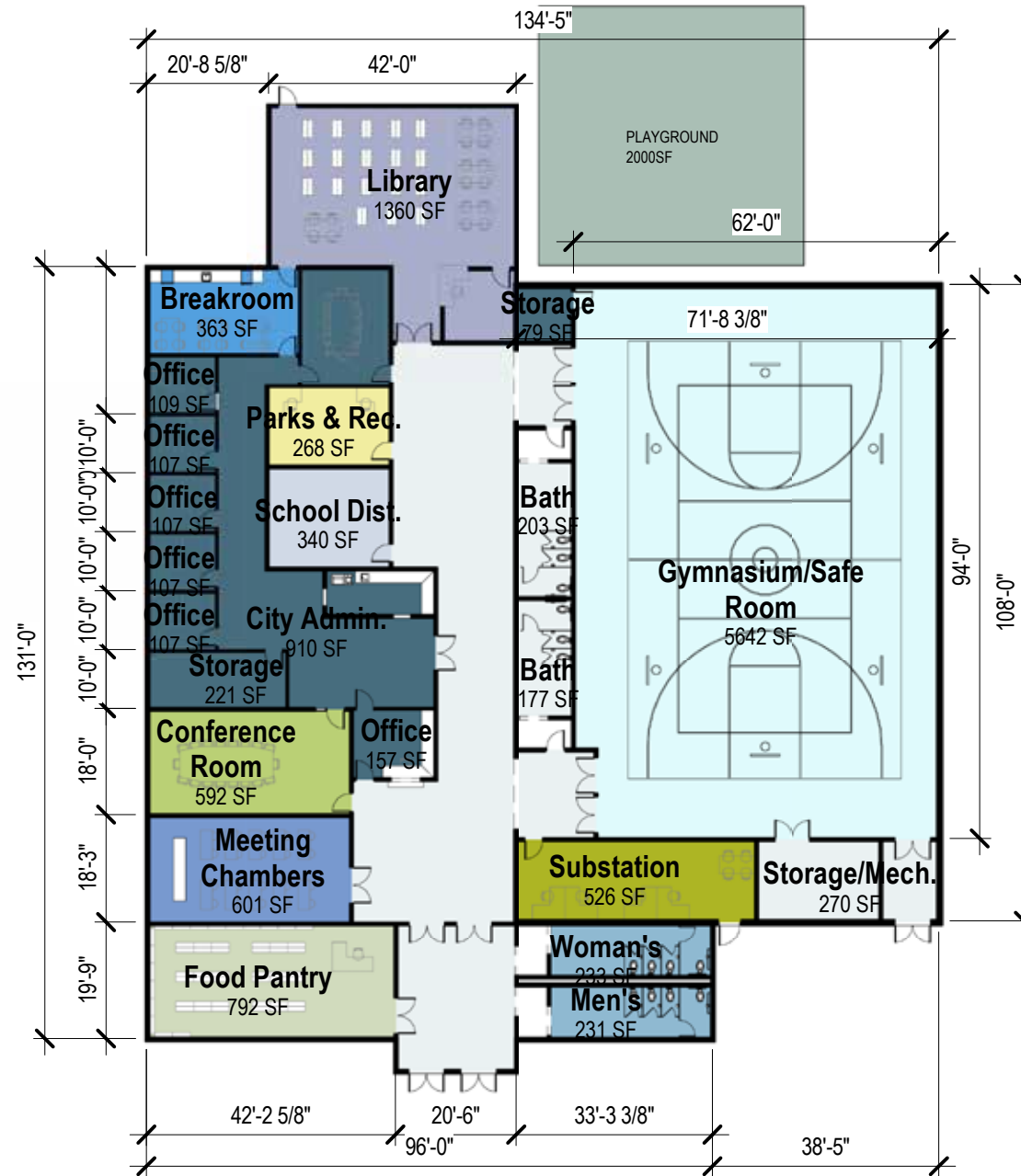
FLOOR PLAN - OPTION 2

Floor Plan Option 2 focuses the main entry to city services with community services to the north and east including the library, gymnasium/safe room, and a outdoor playground. The food pantry is still easily accessible with a discreet entrance.

A full office space is provided for the city administration, school district administration, and a parks and recreation office. The break room is less than option one and tucked into the office space.

The Sheriff's Substation is easily accessible from inside the building and to the exterior for emergency response and reserved parking.

The floor plans are produced for reference and to account for space needs. the Design is not final and a full process of construction documentation should be followed to finalize the concept.



1ST LEVEL - PRESENTATION

SCALE: 1" = 30'-0"

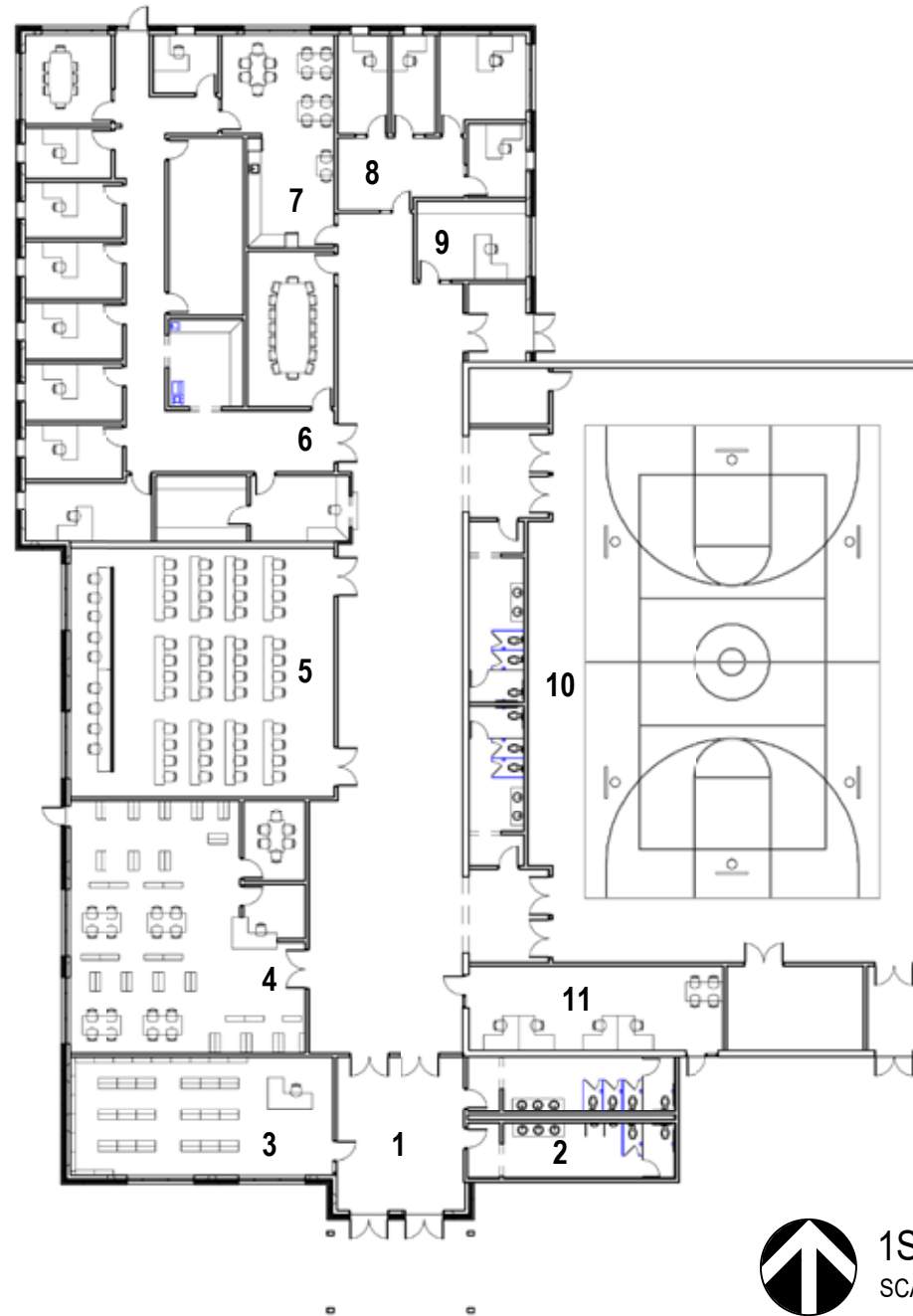
NORTH

RECOMMENDED FLOOR PLAN

The two options are provided to indicate that the design of the building is simply a preliminary concept and subject to change based on the desires of the City. As designers, we can easily manipulate and rework the design of the building to fit the needs of the client. A City Center would require many community voices be heard to ensure the proper use and function of tax payer dollars.

We have provided these two design options to simply to start the conversation. Both options have a public access bathroom that could remain open to the public for baseball games and park activities and the food pantry located off the front vestibule for ease of access. Both options show that the substation is directly attached to the shelter because emergency services are also held to the same building code as schools.

Based on the two options, we preferred the organization of option 1 because it prioritized the public services such as the food pantry and library to the front of the facility. It also has a much larger chamber space which will be important as the city grows.



- Preliminary Plan - Rooms
- 1 Vestibule
 - 2 Event Restrooms
 - 3 Food Pantry
 - 4 Public Library
 - 5 Meeting Chambers
 - 6 City Administration
 - Offices
 - Conference
 - Workroom
 - Finance office
 - City Storage
 - 7 Breakroom & Kitchen
 - 8 School District Administration
 - 9 Parks & Recreation
 - 10 Gym Court/Safe Room
 - Storage
 - Restrooms
 - 11 Lyon County Sheriff's Substation



1ST LEVEL-Preliminary Floor Plan

SCALE: 1" = 30'-0"

3D IMAGERY

The exterior design was created as an example and for reference of what the project would entail. Main focus of a community or city facility include -

- Prominent front entry for ease of access
- A separate entrance for the Lyon County Sheriff's Substation for emergency response
- A gym that acts as a safe room. A separate entrance is included to provide immediate entrance in the case of emergency

The building will be of fire resistance rating most likely composed of masonry, CMU, and/or pre-cast concrete. This create a storm resilient structure. Some areas of the building, such as the main entry and circulation may create a welcoming environment for the community and city staff to enjoy. The exterior design will become a piece of Harrisburg and should resemble a structure for the community.

Upon project progression, a full exterior design shall be completed. The image is solely for reference and concept.



COST ESTIMATE: OPTION 1 (WITH CITY ADMINISTRATION)

PLAN ESTIMATE

SITE & ELEVATOR	COUNT	SIZE	\$/SF	COST				
Sitework	1	1 allow	\$ 40,000	\$ 40,000				
Front Entry Canopy	1	1 s.f.	\$ 15,000	\$ 15,000				
Sidewalks	1	1500 s.f.	\$ 6	\$ 9,000				
				TOTAL \$/s.f.	\$ 64,000			
STRUCTURE	COUNT	SIZE	\$/SF	COST				
General								
Entry Vestibule	1	486 s.f.	\$ 100.00	\$ 48,600				
Northeast Vestibule	1	111 s.f.	\$ 100.00	\$ 11,100				
Circulation	1	2661 s.f.	\$ 100.00	\$ 266,100				
Women's Restroom	1	278 s.f.	\$ 130.00	\$ 36,140				
Men's Restroom	1	277 s.f.	\$ 130.00	\$ 36,010				
Breakroom & Kitchen	1	515 s.f.	\$ 130.00	\$ 66,950				
		4328 s.f.			Subtotal	\$ 107.42 /s.f.	\$ 464,900	
Food Pantry								
Pantry	1	767 s.f.	\$ 110.00	\$ 84,370				
		767 s.f.			Subtotal	\$ 110.00 /s.f.	\$ 84,370	
Public Library								
Library	1	1270 s.f.	\$ 110.00	\$ 139,700				
Meeting Room	1	122 s.f.	\$ 110.00	\$ 13,420				
Office	1	85 s.f.	\$ 110.00	\$ 9,350				
		1477 s.f.			Subtotal	\$ 110.00 /s.f.	\$ 162,470	
Meeting Chambers								
Meeting Chambers	1	1598 s.f.	\$ 130.00	\$ 207,740				
		1598 s.f.			Subtotal	\$ 130.00 /s.f.	\$ 207,740	
City Administration								
Circulation	1	733 s.f.	\$ 100.00	\$ 73,300				
Office	7	135 s.f.	\$ 110.00	\$ 14,850				
Small Office	1	93 s.f.	\$ 110.00	\$ 10,230				
Large Office	1	189 s.f.	\$ 110.00	\$ 20,790				
Finance Officer & Storage	1	316 s.f.	\$ 120.00	\$ 37,920				
Workroom	1	160 s.f.	\$ 125.00	\$ 20,000				
Small Conference	1	189 s.f.	\$ 125.00	\$ 23,625				
Large Conference	1	329 s.f.	\$ 125.00	\$ 41,125				
		2144 s.f.			Subtotal	\$ 112.80 /s.f.	\$ 241,840	
School District Administration								
Office	1	123 s.f.	\$ 110.00	\$ 13,530				
Office	1	108 s.f.	\$ 110.00	\$ 11,880				
Office	1	189 s.f.	\$ 110.00	\$ 20,790				
Office	1	105 s.f.	\$ 110.00	\$ 11,550				
School Admin	1	210 s.f.	\$ 125.00	\$ 26,250				
		735 s.f.			Subtotal	\$ 114.29 /s.f.	\$ 84,000	
Parks & Recreation								
Office	1	212 s.f.	\$ 120.00	\$ 25,440				
		212 s.f.			Subtotal	\$ 120.00 /s.f.	\$ 25,440	
Gym Court/Safe Room								
Gym Court	1	6010 s.f.	\$ 150.00	\$ 901,500				
Womens Restroom	1	195 s.f.	\$ 150.00	\$ 29,250				
Mens Restroom	1	170 s.f.	\$ 150.00	\$ 25,500				
Storage	1	108 s.f.	\$ 115.00	\$ 12,420				
Storage/Mech.	1	282 s.f.	\$ 115.00	\$ 32,430				
Vestibule	1	105 s.f.	\$ 150.00	\$ 15,750				
		6870 s.f.			Subtotal	\$ 148.01 /s.f.	\$ 1,016,850	
Lincoln County Sheriff's Substation								
Substation	1	526 s.f.	\$ 145.00	\$ 76,270				
		526 s.f.			Subtotal	\$ 145.00 /s.f.	\$ 76,270	
				TOTAL	18,657 s.f.	\$/s.f. \$ 101.78	\$ 1,898,980	
SYSTEMS & SERVICES		SIZE	\$/SF	COST				
Mechanical, Electrical, Plumbing		18657 s.f.	\$ 40.00	\$ 746,280				
					MEP/s.f.	\$ 40.00	\$746,280	
					TOTAL	18657 s.f.		
					Cost / s.f.	\$ 145.21	\$ 2,709,260	
					Contingency	10.00%	\$270,926	
					CM / Contractor fees / Gen Con	12.00%	\$357,622	
					A/E Design	7.00%	\$ 189,648	
					Owner provided Furniture	allow	\$75,000	
					Owner provided Equipment	allow	\$0	
				SUBTOTAL	18,657 sf	\$ 193.09	\$3,602,457	

COST ESTIMATE: OPTION 2 (CITY ADMINISTRATION NOT INCLUDED)

PLAN ESTIMATE

SITE & ELEVATOR	COUNT	SIZE	\$/SF	COST				
Sitework	1	1 allow	\$ 40,000	\$ 40,000				
Front Entry Canopy	1	1 s.f.	\$ 15,000	\$ 15,000				
Sidewalks	1	1500 s.f.	\$ 6	\$ 9,000				
					TOTAL \$/s.f.	\$ 64,000		
STRUCTURE	COUNT	SIZE	\$/SF	COST				
General								
Entry Vestibule	1	486 s.f.	\$ 100.00	\$ 48,600				
Northeast Vestibule	1	111 s.f.	\$ 100.00	\$ 11,100				
Circulation	1	2000 s.f.	\$ 100.00	\$ 200,000				
Women's Restroom	1	278 s.f.	\$ 130.00	\$ 36,140				
Men's Restroom	1	277 s.f.	\$ 130.00	\$ 36,010				
Breakroom & Kitchen	1	515 s.f.	\$ 130.00	\$ 66,950				
		3667 s.f.			Subtotal	\$ 108.75 /s.f.	\$ 398,800	
Food Pantry								
Pantry	1	767 s.f.	\$ 110.00	\$ 84,370				
		767 s.f.			Subtotal	\$ 110.00 /s.f.	\$ 84,370	
Public Library								
Library	1	1270 s.f.	\$ 110.00	\$ 139,700				
Meeting Room	1	122 s.f.	\$ 110.00	\$ 13,420				
Office	1	85 s.f.	\$ 110.00	\$ 9,350				
		1477 s.f.			Subtotal	\$ 110.00 /s.f.	\$ 162,470	
Meeting Chambers								
Meeting Chambers	1	1598 s.f.	\$ 130.00	\$ 207,740				
		1598 s.f.			Subtotal	\$ 130.00 /s.f.	\$ 207,740	
School District Administration								
Office	1	123 s.f.	\$ 110.00	\$ 13,530				
Office	1	108 s.f.	\$ 110.00	\$ 11,880				
Office	1	189 s.f.	\$ 110.00	\$ 20,790				
Office	1	105 s.f.	\$ 110.00	\$ 11,550				
School Admin	1	210 s.f.	\$ 125.00	\$ 26,250				
		735 s.f.			Subtotal	\$ 114.29 /s.f.	\$ 84,000	
Parks & Recreation								
Office	1	212 s.f.	\$ 120.00	\$ 25,440				
		212 s.f.			Subtotal	\$ 120.00 /s.f.	\$ 25,440	
Gym Court/Safe Room								
Gym Court	1	6010 s.f.	\$ 150.00	\$ 901,500				
Womens Restroom	1	195 s.f.	\$ 150.00	\$ 29,250				
Mens Restroom	1	170 s.f.	\$ 150.00	\$ 25,500				
Storage	1	108 s.f.	\$ 115.00	\$ 12,420				
Storage/Mech.	1	282 s.f.	\$ 115.00	\$ 32,430				
Vestibule	1	105 s.f.	\$ 150.00	\$ 15,750				
		6870 s.f.			Subtotal	\$ 148.01 /s.f.	\$ 1,016,850	
Lincoln County Sheriff's Substation								
Substation	1	526 s.f.	\$ 145.00	\$ 76,270				
		526 s.f.			Subtotal	\$ 145.00 /s.f.	\$ 76,270	
				TOTAL	15,852 s.f.	\$/s.f. \$ 104.54	\$ 1,657,140	
SYSTEMS & SERVICES		SIZE	\$/SF	COST				
Mechanical, Electrical, Plumbing		15852 s.f.	\$ 38.00	\$ 602,376				
					MEP/s.f.	\$ 38.00	\$602,376	
					TOTAL	15852 s.f.		
					Cost / s.f.	\$ 146.58	\$ 2,323,516	
					Contingency	10.00%	\$232,352	
					CM / Contractor fees / Gen Con	12.00%	\$306,704	
					A/E Design	7.00%	\$ 162,646	
					Owner provided Furniture	allow	\$75,000	
					Owner provided Equipment	allow	\$0	
					SUBTOTAL	15,852 sf	\$ 195.57	\$3,100,218