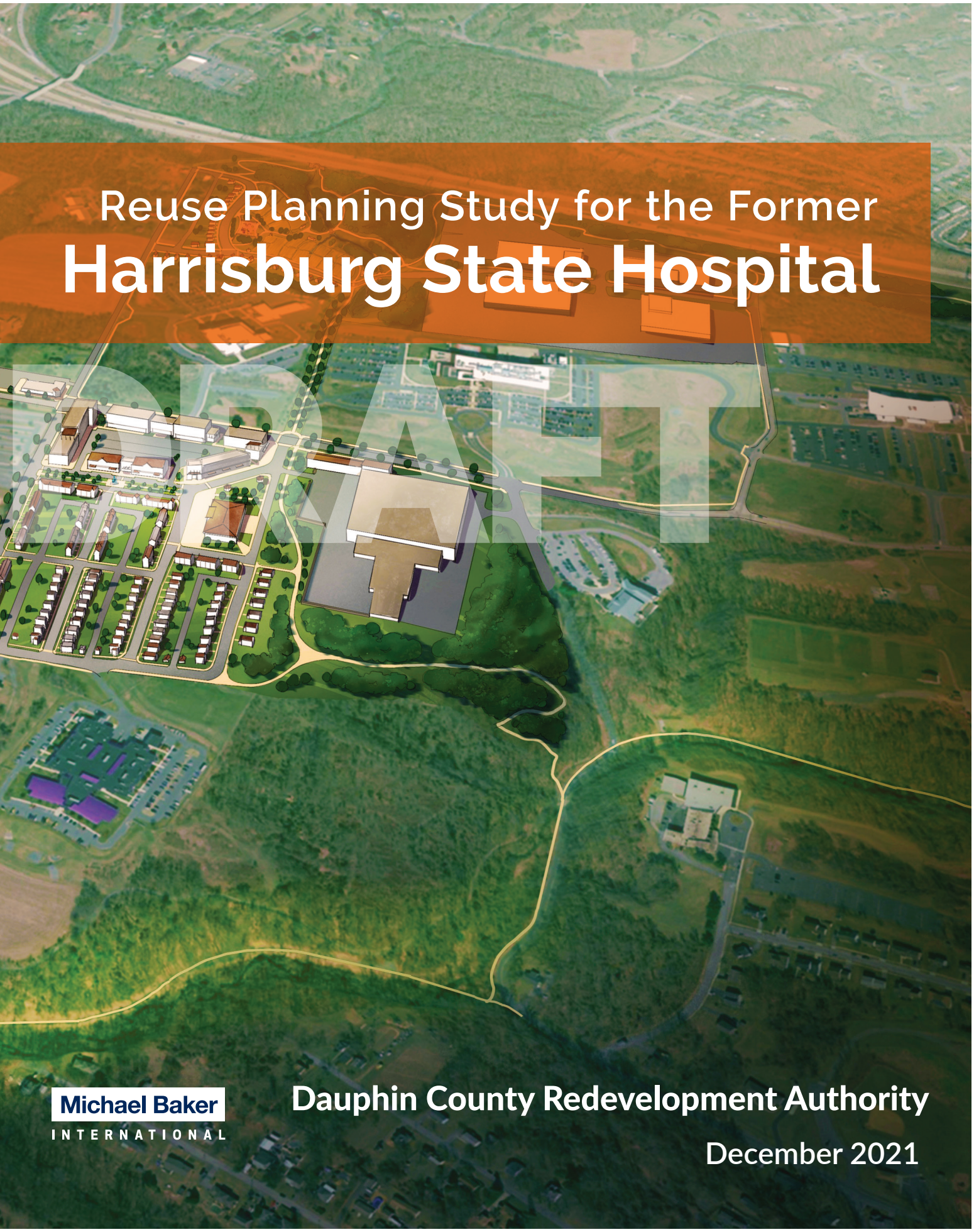

Reuse Planning Study for the Former
Harrisburg State Hospital

Michael Baker
INTERNATIONAL

Dauphin County Redevelopment Authority

December 2021

STATEMENT REGARDING REUSE PLANNING STUDY

The conceptual site reuses presented for the former Harrisburg State Hospital lots were derived through stakeholder input, current market demands and evaluation of physical limitations of the site at the time the study was conducted. The information and concepts presented in the planning study represent potential opportunities for redevelopment of the former Harrisburg State Hospital and are not be construed as "recommended", "preferred" or "endorsed" end-uses.

ACKNOWLEDGEMENTS

PROJECT PARTNERS

Dauphin County Redevelopment Authority
Susquehanna Township
Dauphin County
Pennsylvania Department of General Services
Pennsylvania Department of Transportation

STAKEHOLDERS

Susquehanna Township
Dauphin County
Tri-County Regional Planning Commission
Harrisburg Regional Chamber
Susquehanna Township School District
Capital Region Water
Pennsylvania Department of Environmental Protection
CBRE Group, Inc.
Alpha Consulting Engineers
Traffic Planning and Design
McNees Wallace & Nurick
Snyder, Secary & Associates, LLC
Harrisburg Young Professionals

FUNDING ACKNOWLEDGEMENTS

DCRA awarded a $300,000 Brownfield Assessment Grant in 2019 by the United States Environmental Protection Agency.

The Pennsylvania Department of Transportation funded a $136,000 master plan in tandem to support development of the Reuse Planning Study.

CONSULTANT TEAM

The Michael Baker International and Community Networking Resources Consultant Team was selected via competitive bid in 2019.

"A brownfield is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. It is estimated that there are more than 450,000 brownfields in the U.S. Cleaning up and reinvesting in these properties increases local tax bases, facilitates job growth, utilizes existing infrastructure, takes development pressures off of undeveloped, open land, and both improves and protects the environment."

— United States Environmental Protection Agency
Office of Brownfields and Land Revitalization

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INTRODUCTION

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01

INTRODUCTION

For more than 150 years, the former Harrisburg State Hospital (HSH) site was home to the first publicly owned mental health institution in Pennsylvania. The site was first developed as the Pennsylvania State Lunatic Hospital and Union Asylum in 1851 and, over the course of many decades, grew to a 132-acre Beaux Arts style campus featuring 57 historic Colonial Revival style buildings. As a center for in-patient treatment for a large 12-county region, the HSH became a model for mental health treatment across the Northeastern United States. The campus is nestled in the southwestern corner of Susquehanna Township, Dauphin County featuring a mature tree canopy, the Asylum Run creek, and convenient proximity to the statewide transportation network, local trails, and the City of Harrisburg.

With a decades long-shift to deinstitutionalization in the latter half of the twentieth century, patient counts fell significantly throughout the 1980s and 1990s and, in 2006, the Commonwealth of Pennsylvania formally closed HSH. Over the past 15 years, the Pennsylvania Department of General Services (DGS), the State agency that owns and manages the property, has been actively vacating the site. Remaining uses are located in 17 of the 57 buildings and include storage and maintenance uses, DGS office space, leased office space to the drug, alcohol, and mental health treatment non-profit Gaudenzia, and Pennsylvania State Police (PSP) training space. Remaining state operations continue to be relocated off-site throughout the Harrisburg region. The only remaining use programmed to remain is Gaudenzia, setting the stage for the next chapter in the site's long and important history in the Harrisburg Capital Region.

SALE OF COMMONWEALTH-OWNED PROPERTY

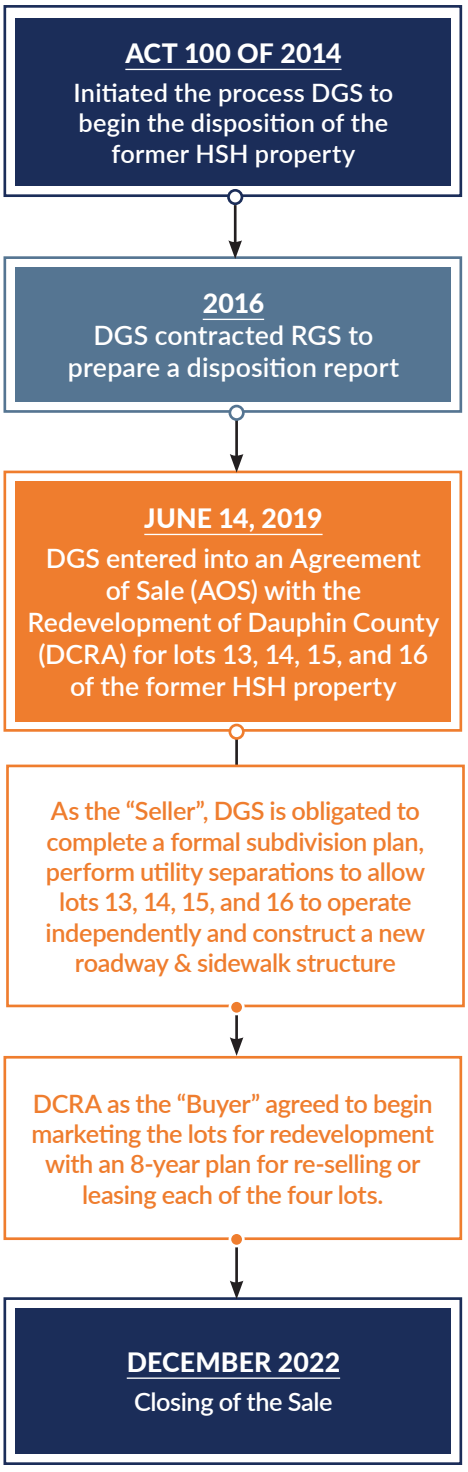
When Act 100 of 2014 was passed by the Pennsylvania General Assembly and signed into law, DGS was provided the legal authority to begin the disposition, or sale, process for the Commonwealth-owned site. The property, inclusive of four lots, is often referred to as the DGS Annex property and encompasses 295 acres.

DGS contracted a consultant firm in 2016 to prepare a due diligence report as an initial step in the disposition process. Completed in 2017, the Department of General Services Annex Disposition Report (*DGS Annex Disposition Report*) is an extensive study that provides a detailed summary of environmental conditions, a utility separation analysis, real estate market potential for redevelopment, a highest and best use analysis, and recommendations for final disposition. Completion of the due diligence phase for DGS led to a formally executed Agreement of Sale in June of 2019 between DGS and the Dauphin County Redevelopment Authority (DCRA). Given the magnitude of coordinating the redevelopment of the 295-acre site, DGS and regional stakeholders saw and continue to see value in returning the site to the local community to ensure its reuse aligns with the economic development goals of the County, Susquehanna Township, and the City of Harrisburg. DCRA serves as the redevelopment branch of Dauphin County and is charged with eliminating blight to support reinvestment in the local economy.

As the Seller, DGS is responsible for completing a formal subdivision plan, utility separations to allow the four lots to operate independently, and new roadway and sidewalk construction. As the Buyer, DCRA is responsible for marketing the four-lot area (Lots 13, 14, 15, and 16) and devising a redevelopment plan for implementation within 8 years of closing. Closing for the sale is slated for December 2022 provided these conditions are met.

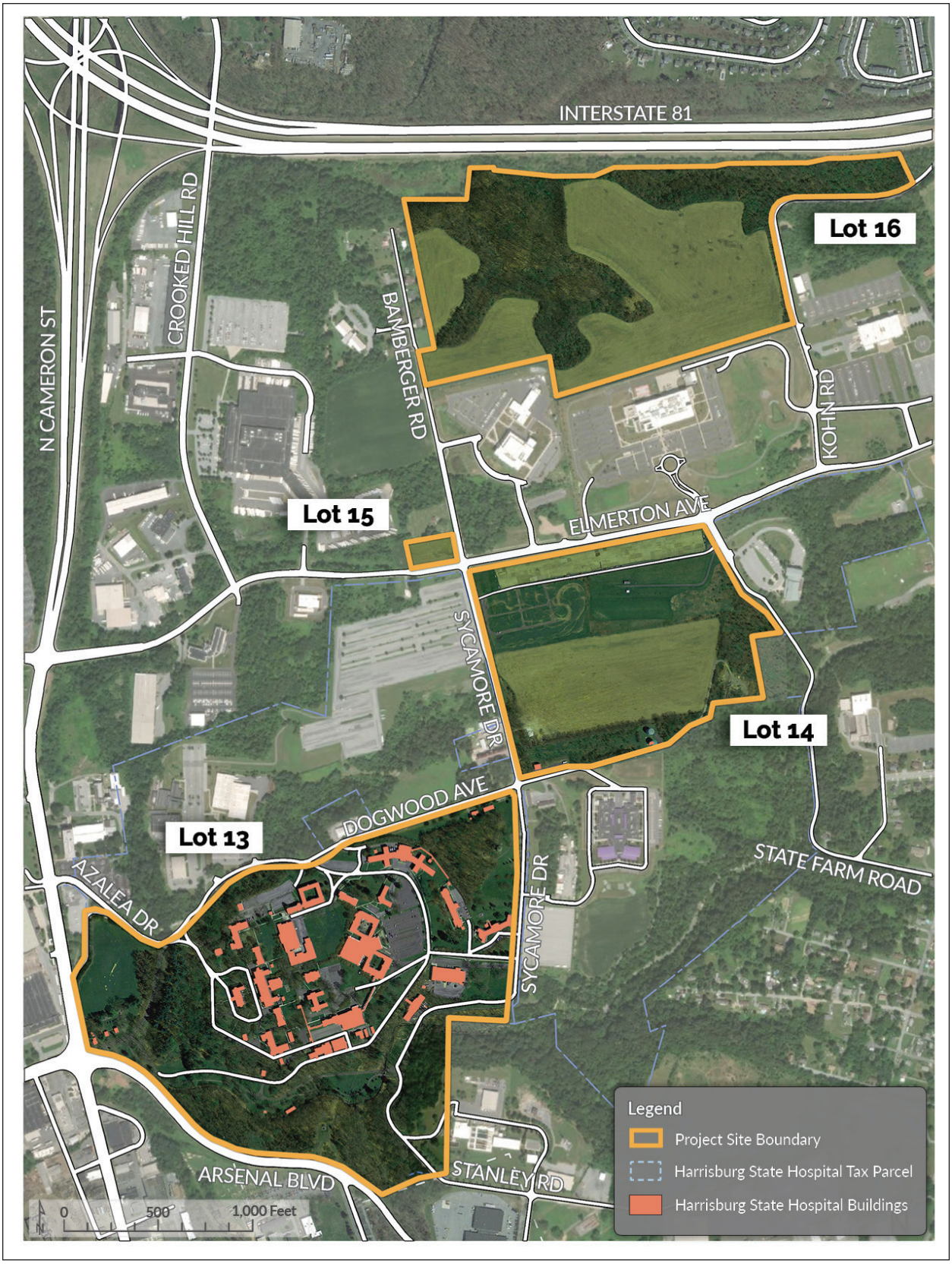
Since executing the Agreement of Sale, DCRA has initiated this current Reuse Planning Study as part of its commitment to market the site for redevelopment. The *DCRA Reuse Planning Study* for the Former Harrisburg State Hospital (*DCRA Reuse Planning Study*), as a plan for redevelopment, provides DCRA with the following:

- Updated Market Analysis
- Vision for Redevelopment
- Preferred Development Alternative by Lot
- Financial Pro Forma Analysis by Lot
- Public Infrastructure Improvements Plan



Disposition Process at a Glance

The study also provides DCRA with implementation steps to successfully market and sell each of the four lots in accordance with the preferred development alternative by lot.



DGS Annex Property

LOTS FOR DEPOSITION

The DGS Annex Property, which includes the former Harrisburg State Hospital (HSH) site, is comprised of the following four (4) lots that are slated to be conveyed to DCRA by December 2022.

Lot 13

132-acre parcel of land located north and east of Arsenal Boulevard and south of Azalea Drive and Dogwood Drive. This property is the former HSH site and includes 44 building structures that will be included in the disposition. There are 13 buildings not included in the disposition that will remain under DGS ownership as part of the parcel subdivision process.

Lot 14

68.5-acre parcel located east of Sycamore Drive, west of State Farm Drive and south of Elmerton Avenue. The Dauphin County Community Gardens and the Harrisburg Area Flying Society lease/operate space on Lot 14.

Lot 15

1.5-acre parcel of land located on the northwestern corner of Bamberger Road and Elmerton Avenue. There are currently no building improvements on the site. The site is maintained by Pennsylvania Department of Agriculture which leases the land for agricultural purposes.

Lot 16

92.6-acre parcel of land located to the east of Bamberger Road, the west of Kohn Road, south of I-81 and north of the Pennsylvania State Employees Credit Union (PSECU) and Pennsylvania Emergency Management Agency (PEMA) office campuses. The site is currently utilized for agricultural purposes but contains some low-lying uncultivable areas that are forested. There are currently no building improvements on the site and approximately 22 acres of the site includes an unpermitted municipal solid waste landfill.

STUDY PROCESS

The *DCRA Reuse Planning Study* was prepared over a 14-month period from July 2020 to August 2021 following a four-phase approach as follows.

PHASE 1

Visioning and Due Diligence

The first six months of the planning process focused on visioning and existing conditions due diligence analysis. As a kick-off, Phase 1 commenced with an initial stakeholder meeting to review the *DGS Annex Disposition Report* findings and to begin the reuse visioning process with private and public sector stakeholders throughout the region. The kick-off was followed by an interactive two-day urban design workshop with key stakeholders to establish a vision for the future. Design renderings were created in real-time to illustrate the potential uses that could fit on the 295-acres of land and identify the preferred land uses under the new real estate landscape of 2020.

Post visioning, the draft design concepts were tested against an updated due diligence process. As the 2017 *DGS Annex Disposition Report* includes significant analysis on existing conditions, the *DCRA Reuse Planning Study* focused more on constraints impacting buildability and reuse potential of the sites. Additionally, the conditions of the Lot 13 historic buildings were evaluated for plausible reuse based on the updated market study and financial considerations. **Based on due diligence findings, the draft concept plans from the September 2020 visioning event were further refined to reflect market conditions, constraints, and opportunities.**

PHASE 3

Infrastructure Plan and Financial Analysis

With the preferred alternative concept plans finalized by lot, Phase 3 of the *DCRA Reuse Planning Study* included an infrastructure plan and financial analysis of the proposed reuse plan. The infrastructure plan is focused predominately on on-site and off-site roadway improvements that will be required to support the concept plans as proposed, as well as multimodal connections to leverage Harrisburg's existing network of interconnectivity via CAT, the Capital Area Greenbelt, and proposed improvements along Paxton Creek. Utilities were also explored at a high level as DGS will be performing utility separation across the four lots as part of the Agreement of Sale terms.

Based on the concept plans and infrastructure plan, planning level construction cost estimates were then prepared to project the total investment needed to bring the reuse plan to life, including costs to be borne by the private sector (acquisition, site preparation, and vertical construction) and costs to be borne by DCRA and other public sector partners (Lot 13 building demolition, off-site roadway improvements, and multimodal connectivity improvements). Additionally, a financial pro forma was prepared utilizing local intelligence and the results of the 2020 due diligence market study to compare all costs of development for each lot with the expected returns over an assumed period. The pro forma includes a projected return on investment and internal rate of return to help measure profitability and risk.

PHASE 2

PARTNER COORDINATION AND FINALIZED CONCEPT PLANS

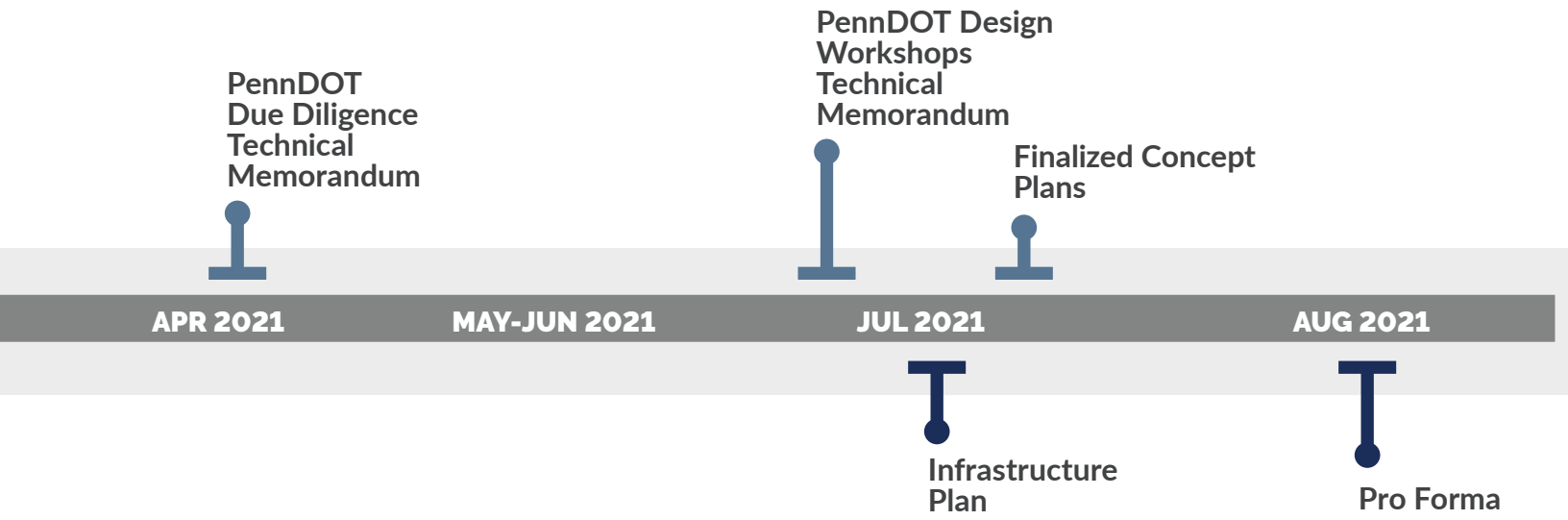
In early 2021, PennDOT - stakeholder throughout the process - expressed interest in Lot 14 as the potential site for the relocation of the Capital Area Transit (CAT) operations facility currently located at 901 North Cameron Street in the City of Harrisburg. The new CAT facility proposed for Lot 14 would serve as a multimodal transportation hub and catalyst for the successful redevelopment of Lot 14 and associated DGS Annex Property.

To validate the opportunity to attract CAT as an anchor tenant for Lot 14 and evaluate how the new use, not previously identified in the *DCRA Reuse Planning Study* process, would fit within the draft concept plans, DCRA and PennDOT agreed to complete a parallel visioning and due diligence process for Lot 14. This parallel study process, funded by PennDOT under two consultant agreements with Michael Baker International and Stantec, was completed from March-July of 2021. All project partners, including PennDOT, CAT, DGS, DCRA, Dauphin County, and Susquehanna Township, were included in the process to ensure the proposed CAT facility is developed in harmony with Lots 13, 15, and 16 and that there is a unified approach for the required multimodal transportation improvements.

PHASE 4

Recommendations

The *DCRA Reuse Planning Study* process concluded with recommendations for implementation, including considerations related to future land use, transportation, and infrastructure improvements.




HARRISBURG AREA
FLYING SOCIETY INC
MEMBERS ONLY
ENGINE RUNNING 8 A.M.-9P.M.
NO EXCEPTIONS

EXISTING CONDITIONS

02

IN THIS SECTION

02

EXISTING CONDITIONS

The majority of the DGS Annex Property is located in Susquehanna Township with a very small portion of Lot 13 located in the City of Harrisburg. The complete 295-acre site is within Dauphin County and within a single parcel: 62-026-004. The parcel encompasses 466.2 acres of land. The parcel will be subdivided to establish individual parcels for each of the four lots, as well as a parcel(s) for the 171.2 areas of land that will remain under DGS ownership.

The DGS Annex Property is strategically positioned at the northern gateway into Harrisburg. Off ramps from Interstate 81 and US Route 22 connect with N Cameron Street, a major connector into downtown Harrisburg. Along Cameron Street is a mix of legacy industrial uses as well as major destinations, including the Pennsylvania Farm Show Complex and Expo Center and Harrisburg Area Community College. Situated north of Lot 13 and immediately adjacent to the other three lots is Elmerton Avenue. Elmerton Avenue was developed as a low-density employment hub featuring large office buildings with extensive setbacks from the roadway. Predominantly home to state agencies offices, Elmerton Avenue does not currently support its host municipality in terms of taxable real estate and is not connected to retail and dining establishments. As noted in recent Susquehanna Township planning efforts, discussed in the Planning Context section, Elmerton Avenue has untapped potential as a major hub for activity. Access to downtown Harrisburg, the state-wide transportation network, and an existing hub for employment creates endless potential for site redevelopment.

ZONING AND PLANNING CONTEXT

Existing Zoning and Land Use

Three lots (Lots 13, 14, and 16) are zoned Conservation under Susquehanna Township's Zoning Ordinance, with Lot 15 zoned as Low-Density Residential.

The C-Conservation District is designed to protect areas in the Township for the preservation and conservation of the natural environment, and permit and encourage the retention of forested and open land; floodplain areas of streams, creeks and drainageways; and non-intensive land uses located to constitute a harmonious and appropriate part of the physical development of the Township.

The Low-Density Residential District is designed to accommodate existing and future low-density residential developments on land served by public water and public sewer.

The southwest corner of Lot 13 falls within the City of Harrisburg and is zoned Open Space Recreation, intended to preserve open space and environmental resources while also providing opportunities for recreation.

Existing Susquehanna Township Zoning Districts

Planning Context

In 2018, the Township adopted its *Sustainable Susquehanna 2030 Comprehensive Plan*. As a first ring suburban community that is built-out and adjacent to the City of Harrisburg, the Plan outlines the importance of redevelopment and reinvestment in several underutilized commercial and institutional sites, including the DGS Annex Properties. Strategy 5 of the Plan encourages the Township to work proactively with the future owner of the site (DCRA) to prepare a reuse strategy.

In parallel with the *DCRA Reuse Planning Study*, Susquehanna Township has begun a Township-wide rewrite of its current Zoning Ordinance and Subdivision and Land Development Ordinance (SLDO) standards and regulations. The Township's current Zoning Ordinance (last updated in 2003) and SLDO (last updated in 2006) are rooted in their original 1970's Euclidean zoning and suburban-style development standards and they have been further complicated through numerous text and Zoning Map amendments.

To correct these issues, the Township and its consultant, Michael Baker, are rewriting the ordinances to achieve the following objectives. Adoption is anticipated for the first quarter of 2022.

Develop design standards that promote a unique sense of place

Prioritize complete streets, emphasizing walkable, bikeable, & livable communities

Create vibrant, mixed-use areas with increased density along key corridors

Preserve open space & environmentally sensitive areas

Strengthen infill development opportunities

The *DCRA Reuse Planning Study*, which commenced in July 2020 and is being funded through a U.S. Environmental Protection Agency (USEPA) Brownfield Assessment Grant, is precluded from making specific policy recommendations concerning zoning. However, Susquehanna Township is utilizing DCRA's reuse plan process to inform this important zoning rewrite that will reshape long-term community planning and economic growth at the local level.

As of August 2021, the Township's the current proposed zoning for the four DGS Annex Lots is as follows:

- Lot 13: CENTER-4
- Lot 14: COMMERCIAL BUSINESS, plus Elmerton Avenue Corridor Overlay District
- Lot 15: URBAN NEIGHBORHOOD-4, plus Elmerton Avenue Corridor Overlay District
- Lot 16: URBAN NEIGHBORHOOD-4

Susquehanna Township Proposed Zoning for DGS Annex Property

CENTER (CTR)

The CTR district promotes urban redevelopment and renewal opportunities by permitting a mix of commercial retail, service, employment, entertainment, residential, and civic uses in a walkable setting. Apartments, townhomes, attached dwellings, live-work units, and offices are suitable within the parameters of the lot requirements. The CTR district includes three transect variants (CTR-3, CTR-4, and CTR-5) based on scale and intensity of the mixed-use development, allowing smaller setbacks, lot coverage, and building form amenable to ground floor retail.

URBAN NEIGHBORHOOD (UN)

The purpose of the UN district is to accommodate high-density development and a range of housing types and compatible non-residential uses. Area suitability is based on direct access to a collector roadway with carrying capacity to handle existing and future traffic, availability of public water and sewer, existing development patterns, and growth potential. A range of options are provided to develop residential communities of various styles and densities, to promote greenways, and to protect natural resources. The district includes two transect variants (UN-3 and UN-4) based on scale and intensity of development.

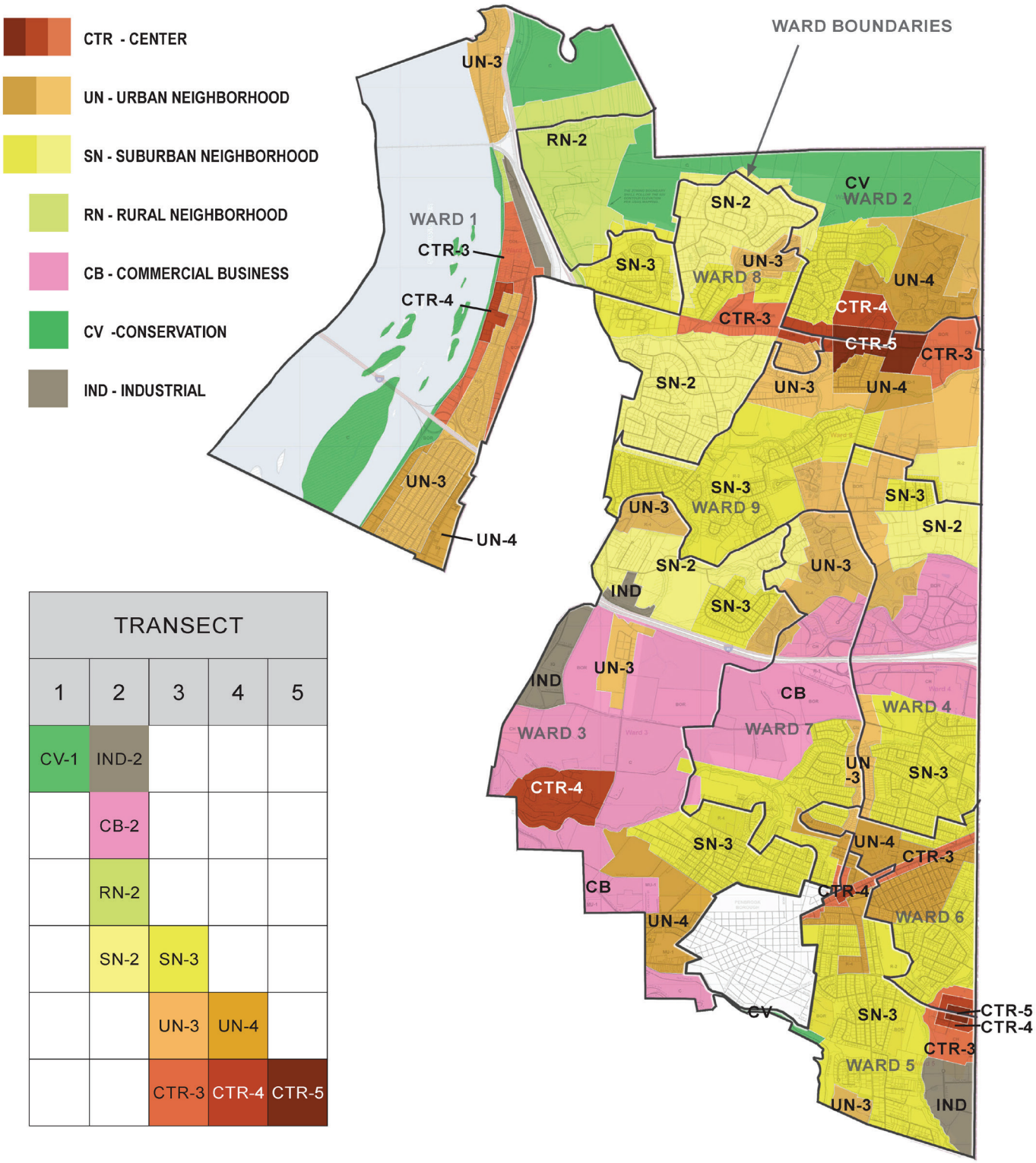
COMMERCIAL BUSINESS (CB)

The purpose of the CB district is to provide a wide range of retail, service and employment uses at a scale, intensity, or in a format that requires a high level of vehicle accessibility and visibility typically along corridors or major intersections, and is not easily integrated with other land uses or development patterns. Planned versions of this district can yield campus or mixed-use district patterns that are oriented to internal open space systems or other focal points of development.

Among other uses prescribed in the draft Zoning Ordinance, are “Transit Facilities” and “Transit Bus Stops” uses that would be permitted by right in all applicable proposed zoning districts. In addition to the primary zoning districts, the draft Zoning Ordinance also includes a series of corridor overlay districts that establishes additional requirements to those specified in the underlying fixed zoning district(s). These overlay districts, which include the Elmerton Avenue Corridor Overlay District, include additional requirements for access management, setbacks, uses, and lot coverage, and are applicable to lots that abut onto key corridors for redevelopment.

Susquehanna Township’s Zoning Ordinance Rewrite Approach

The Township’s Zoning Ordinance rewrite process was driven by defining and characterizing the Township’s existing and planned future land use patterns into distinct neighborhood character zones using the Rural to Urban Transect method. The Rural to Urban Transect characterizes land use into one of six possible land use forms as defined by the SmartCode The transect approach was initially used in the Township’s most recent Comprehensive Plan and was specifically applied to the Township’s priority corridors, including Elmerton Avenue. The zoning ordinance rewrite process expanded on this initial approach and applied the transect to the entire township’s landscape. This resulted in the creation of new proposed primary zoning district and subdistrict (transect) classifications, which are illustrated on the map to the right.



Susquehanna Township's Proposed Urban to Rural Transect

CURRENT USES

Lot 13

Approximately 15 of the buildings on the site are currently being utilized as office space for DGS. Gaudenzia, a drug alcohol, and mental health treatment organization, leases two buildings (Building 21-Anderson Hall and Building 22-Green Building) for their operations. The Pennsylvania State Police also utilize some of the buildings for training. The rest of the site consists primarily of mowed grass and sidewalks.

Aerial Images of the Four DGS Annex Property Lots

Lot 14

Lot 14 is approximately 69-acres and is bounded by Elmerton Avenue to the north, State Farm Drive to the east, Dogwood Avenue to the south, and Sycamore Drive to the west in Susquehanna Township, Dauphin County, Pennsylvania. The site is currently managed by the Pennsylvania Department of Agriculture (PDA),but is also utilized by other entities. There are four building improvements located on the site, which include two open-air buildings used in association with the Harrisburg Area Flying Society, a small building on the northwestern corner of the site utilized by AT&T Telephone Company, and a 1,470-square-foot building on the southwestern end of the site utilized by the Department of General Services (DGS). The majority of the site consists of land under agricultural use, but also contains mowed grass, gravel roads and a material stockpiling and dumping area. There is a water-well on the northern end of the site used in association with Dauphin County Community Gardens and a UGI natural gas regulator station on the northwestern end of the site. There are two water towers operated by DGS on the southeastern end of the site.

Lot 15

Lot 15 is approximately 1.5-acres and is located at the intersection of Bamberger Road and Elmerton Avenue in Susquehanna Township, Dauphin County, Pennsylvania. Currently, there are no building improvements on the site. The site is maintained by PDA, who leases the land for agricultural purposes. The usage history of the site has been reconstructed from reviews of historic aerial photographs, historic topographic maps, and information provided by DGS. According to these sources, the site has consisted of undeveloped land under agricultural use from as early as 1892.

Lot 16

Lot 16 is approximately 93-acres and is bounded by Interstate 81 to the north, Kohn Road to the east, the Pennsylvania State Employees Credit Union (PSECU) and Pennsylvania Emergency Management Agency (PEMA) buildings to the south, and residential properties along Bamberger Road to the west in Susquehanna Township, Dauphin County, Pennsylvania. The site is currently utilized for agricultural purposes but contains some low-lying uncultivable areas that are forested. There are currently no building improvements on the site, and approximately 22 acres of the site includes an unpermitted municipal solid waste landfill. Based on annotated feedback from stakeholders, the landfill features debris from the 1972 Hurricane Agnus clean-up, such as trees, building materials, furniture, and related items destroyed during the flood. There are five monitoring wells present on the eastern side of the site in association with the landfill.

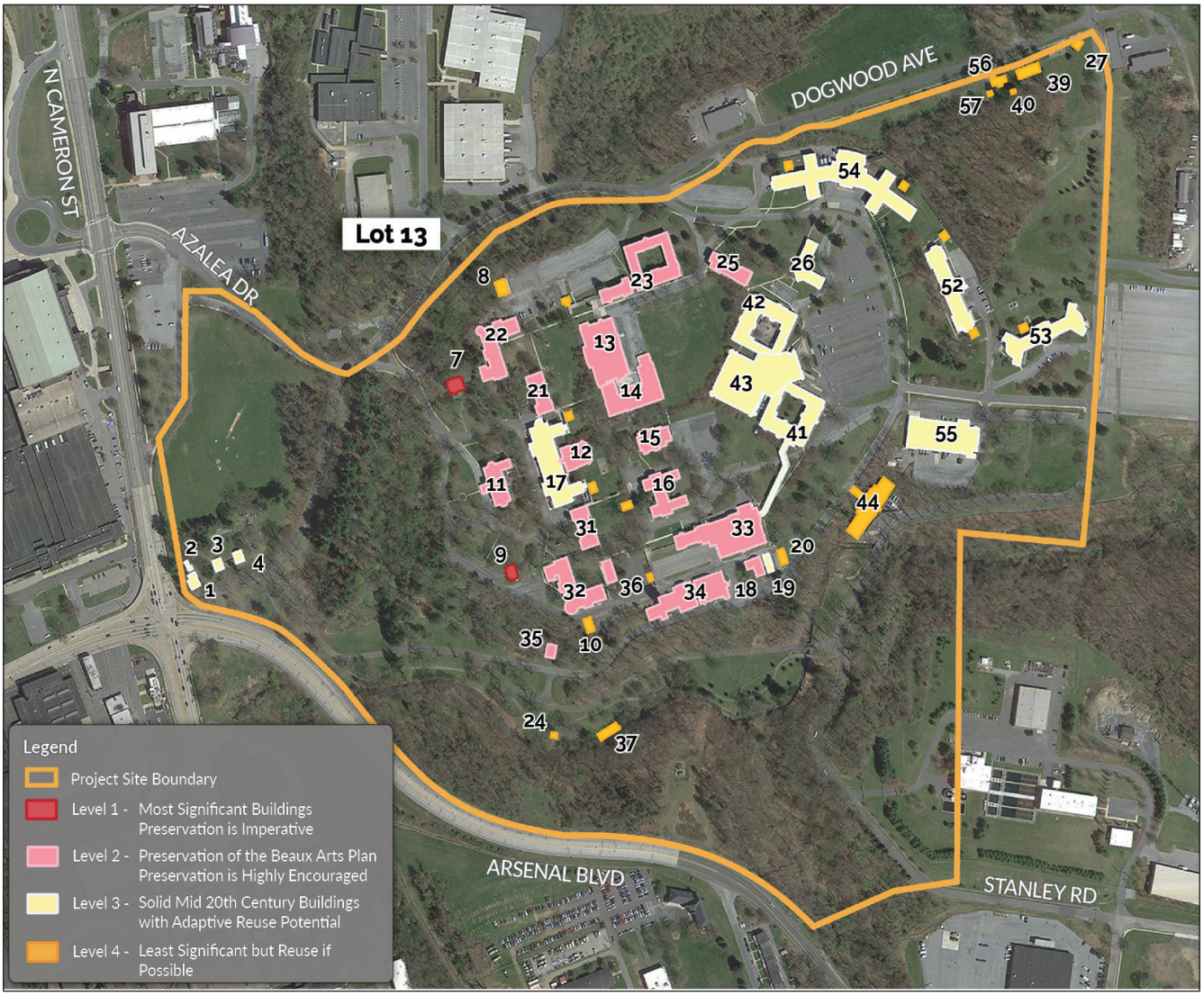
The usage history of the site has been reconstructed from reviews of historic aerial photographs, historic topographic maps, and information provided by the site owner representative. According to these sources, the site consisted of undeveloped agricultural land from as early as 1892. Sometime between 1956 and 1968, the eastern end of the site was used as an unpermitted landfill and continued until sometime between 1970 and 1974. The property is currently managed by the PA Department of Agriculture who leases the land for agricultural use.

HISTORIC BUILDINGS

The *DGS Annex Disposition Report* included a thorough evaluation of the historic status of buildings on Lot 13 utilizing a committee composed of historic consultant Delta Development Group, Inc., the Historic Harrisburg Association, and the Committee for the Future of the Harrisburg State Hospital. Much of the campus is included in a National Registry Historic District and listed in that Database under Reference Number 8600057, PA Lunatic Hospital.

After reviewing each building's physical location, architectural features, historic use, and interrelatedness as part of the HSH campus, four levels of significance were developed by the Committee. Level One and Level Two buildings were the most strongly recommended for retention in order to preserve the historic importance of the HSH. Although part of the history of HSH campus, Level Three and Level Four have relatively less significance. In short, the Committee recommended that the Level One buildings be preserved, and that the preservation of the Level Two buildings be a high priority for reuse.

From a legal perspective, conclusions from the *DGS Annex Disposition Report* indicate that only Level 1 buildings must remain and cannot be demolished.



Lot 13 Historic Building Status (as provided in the *DGS Annex Disposition Report*)

Many of the buildings on Lot 13 have deteriorated extensively since the *DGS Annex Disposition Report* and are beyond their useful life. In order to facilitate site redevelopment, there will likely be recommendations for demolition of several of the buildings on Lot 13.According to an interview with the historic consultant from Delta Development, only the Level One buildings cannot be demolished. Level Two Buildings can be demolished if determined to be structurally unsound by a qualified historic structural engineer. Level Three and Four Buildings can be demolished without restriction.

It is recommended that the Building Survey Sheets used in the *DGS Annex Disposition Report* be updated by DGS to reflect current conditions prior to the transfer of the property to DCRA. It is also recommended that any buildings recommended for demolition be evaluated by a qualified historic structural engineer prior to implementation of a demolition plan. It should be noted that all buildings on the former Allentown State Hospital site were of similar historical context and were demolished by the Commonwealth without restriction as part of preparing that property for disposition.

Data Stone

Admin Building, Main Entrance

Building 7, Dixmont Cottage

Building 17, Petry Admissions

Recent Photos of Lot 13 Buildings

VISIONING
03

IN THIS SECTION

03 VISIONING

Stakeholder engagement was a critical component of this study and was conducted during multiple phases of the development process. During the initial phase, one-on-one interviews were conducted with a wide array of local and regional stakeholders including governmental and other public agencies, real estate brokers, and area businesses. These interviews were utilized to update the market study with local context and knowledge not always available through baseline analysis.

In addition to the interviews, the DCRA Reuse Planning Study included an upfront visioning process with stakeholders. Finally, ongoing meetings and work sessions with the Project Partners occurred regularly during study development.

Through all stakeholder engagement the following topics were addressed:

- Visioning for site reuse and community needs
- Constraints limiting potential redevelopment
- Types of marketable end uses
- Incompatible land uses
- Real estate trends

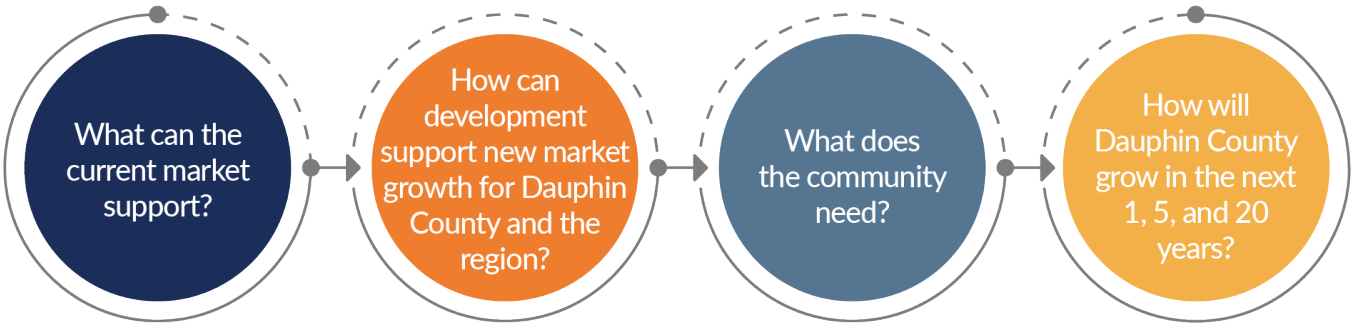
STAKEHOLDER VISIONING

Process Overview

The DGS Annex Property's reuse potential was explored during a two-day visioning workshop that engaged stakeholders in a facilitated design charrette process. An array of public and private sector stakeholders were invited to join and discuss ideas for the four lots and test alternate visions and uses for future development.

The workshop was held on September 1-2, 2020 as a hybrid event that allowed in-person and online attendance. An opening presentation included an overview of the property's constraints and opportunities and a summary of the 2016 market study.

To initiate the visioning process, workshop facilitators asked stakeholders to think about their goals for each lot and consider the following questions:



Visioning Process at a Glance

Charrette Framework

Existing Conditions from an Urban Design Vantage Point

Through facilitation, the urban design team presented the following existing conditions to attendees to provide a framework for visioning.

Transportation access is a challenge.

Throughout the workshop, stakeholders were prompted to consider how development would impact traffic flow and volume on the existing streets. Establishing clear gateways and improved access at multiple points is important to support movement throughout this large site. An interconnected street network that provides users access from multiple directions and allows options for travel throughout the site is ideal to support thriving and marketable development. Lot 14 is the geographic center of the site and is key to achieving coherent connectivity between the four lots.

- The four lots share only a single street in common: Bamberger Drive/Sycamore Drive, which is the roadway spine that accesses all four lots.
- To the north, I-81 impedes direct access, particularly for Lot 16.
- Cameron Street to the west is a major connector, but high traffic volume limits opportunities for pedestrian crossings.

Environmental conditions can be assets.

The community gardens on Lot 14, landfill on Lot 16, and topography on Lots 13 and 16 are constraints but are also opportunities to enhance existing assets and tie new development to the area's natural beauty and history. The workshop considered each of these constraints and discussed preferred ways to address challenges through future development.

- Stakeholders were asked to consider the community gardens' high rate of usage which brings people to the site regularly, and to think about where the gardens should be located as the four lots are redeveloped.
- The topography provides a natural framework of open space which is needed for stormwater management and can also serve recreational needs and create market value for adjacent development.
- Specific to Lot 16, the lack of topography on the 22-acre landfill area makes this a potential location to remediate the land and gain a substantial amount of developable area with visibility from the highway.
- Lot 14 has the fewest constraints and is most available for development, making it crucial as a catalyst for development as well as connectivity.

There is substantial history on Lot 13.

There has long been a common belief that the buildings on Lot 13 are protected from demolition due to historic value or listing. However, a detailed historic evaluation of the buildings was conducted for DGS in 2017. This evaluation determined that only Buildings 7 and 9 must be preserved. (Please see pages 26-27 of this report for further explanation.)

Stakeholders were asked to consider not only the end uses, but the vision and identity of place that draws new development and supports lasting and sustaining places. The historic campus provides striking views towards Downtown Harrisburg, which no nearby site can rival. Although all possible futures for the historic buildings were open for discussion, the workshop sessions asked attendees to think creatively about the character they desire for Lot 13.

Four possible character areas were presented for the lot, based on the natural topography and frontage:

- As a gateway to the overall DGS Annex Property (along Cameron Street)
- As a historic campus
- As a new hilltop development
- As Sycamore Street frontage

District identity.

The differing conditions and distance between each of the four lots means that development will be experienced as a series of districts:

- Northern (Lot 16)
- Central (Lots 14 and 15)
- Hilltop (Lot 13)

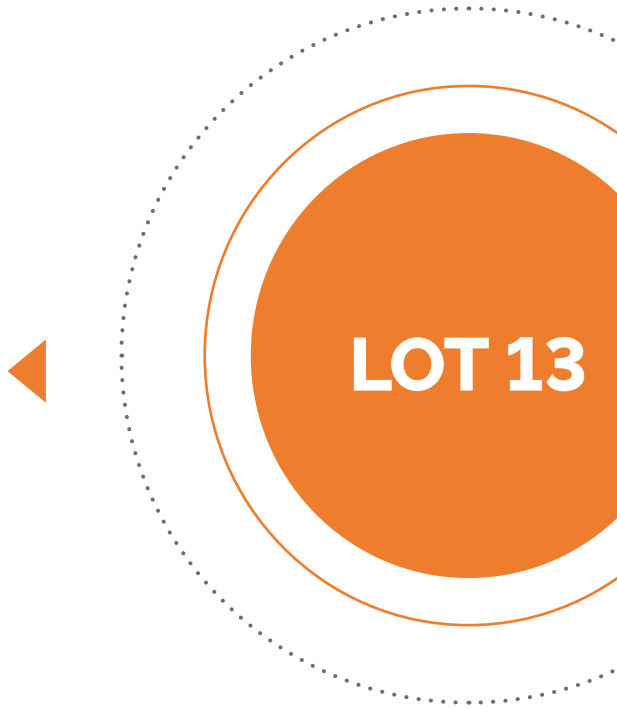
Stakeholders were asked to consider what each district should include, what will make them a destination, and what will encourage people to travel between them.

VISIONING TAKEAWAYS

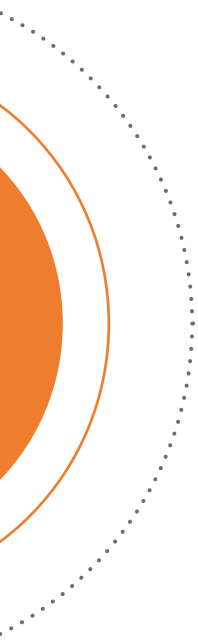
The two-day workshop was structured as a series of shorter sessions focused on each specific Lot, accompanied by follow-up sessions to bring together the various ideas and priorities. During the Lot-specific sessions, stakeholders split into two breakout groups and conducted small group discussions to explore potential uses, access and connectivity needs, and visions for the area's future growth. The groups then reconvened to share their thoughts and establish a framework for planning uses and access across the entire site. Each breakout group proposed different uses and visions, and two alternate concepts emerged for stakeholders to compare. There were substantial similarities in goals, and ideas from each group were often complementary and helped guide the initial draft concept plan prepared following the workshop in December 2020.

Key Takeaways from Workshop Session Discussions

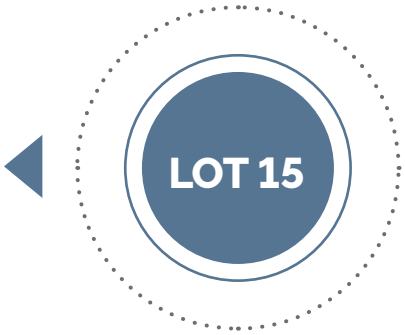
- The gateway area along Cameron Street is desired for a hotel and restaurant.
- The historic campus is an asset and there is a desire to pursue adaptive reuse of the more attractive, architecturally significant buildings located within the campus core. One option would be to create a pedestrianized campus with enhanced central greenspace. Alternately, focus on the raised pedestrian paths next to the road and build upon the existing tunnels to create multi-level tiered connections.
- Towards the east, the hillside slopes downward towards Sycamore Drive. This is an ideal place for blocks of residential development that follow the topography with trail access and amenities. Senior living was also discussed as a reuse for the existing buildings.
- A grocery store is desired in this area.
- The intersection of Dogwood Avenue and Sycamore Drive is a key intersection to forge a clear connection between development on Lot 14 and Lot 16.



- This is the most developable area of the DGS Annex Property. Participants strongly felt that Lot 14 needs to include tax-generating uses.
- Lot 14 is an ideal site for flex space, an e-commerce fulfillment center, and related functions. It would meet existing market demand for these uses.
- The community gardens are well-suited to this site. Consider keeping them here. A development deal could add the land to the tax rolls with an arrangement where the Township manages them and, in return, the gardens are considered part of the developer's open space requirements.
- The sloped eastern edge could allow more community garden expansion with terraced garden plots or groves of fruit trees to complement the garden. There is more demand for community garden plots than the current space can meet.
- Lot 14 should connect to Lot 16, the Greenbelt, and Veteran's Park with trails and sidewalks.



- The small site is most suited for commercial use.
- A food outlet or convenience shop, such as a gas station, are desirable uses.



- The landfill is a concern. It's not believed to contain hazardous materials, but public awareness still sees this as an undesirable and contaminated site. Conducting due diligence to understand the content of the landfill and buildability is a key first step to evaluate the risk.
- With existing homes located across the street (Bamberger Road), additional housing should be considered.
- The School District is interested in expanding and is in need of more green space for athletic fields. The District has expressed interest in this Lot 16.
- In terms of connections to Lot 16, participants discussed connecting to Logan Park located north of I-81. There is a rumored pedestrian underpass. Additionally, a connection east toward the High School was discussed.
- The steeply sloped portion of the Lot is suited for walking trails, which are desired in general.
- Bamberger Road is a primary access road, but Kohn Road may also be improved and used as secondary access. Kohn Road may also be a better primary access point from Elmerton Avenue into Lot 16.
- The existing cricket fields could be removed from Lot 13's Cameron Street gateway and relocated to Lot 16, provided there is good bicycle access.

WORKSHOP CONCLUSIONS AND DRAFT CONCEPTS

The workshop discussions and breakout groups explored two different options. The following draft concepts plans that were prepared during the two-day urban design work sessions are presented.

The workshop discussions overlapped in many ways, and the two concepts shared many similar goals, visions, and design components. These initial concepts were further refined during subsequent stages of the planning process.

Summary of Findings from the September 2020 Stakeholder Urban Design Workshop

Concept 1: Interconnected Neighborhood Mixed-Use Districts

The first option focused on interconnected neighborhood uses on each of the three larger lots. A mix of residential uses across the entire site would diversify the area's opportunities, views, and market potential. The design also provides for new spaces to support related retail, office, and hospitality uses. This concept focused on preserving the historic campus and integrating the existing passageways into a series of pedestrian paths and spaces. In conjunction with the community gardens, which would remain on Lot 14, a new park on Lot 16 would offer amenities and gathering space for the surrounding proposed residential housing.

Concept 1 proposes connectivity enhancements between the four lots using Bamberger Road/Sycamore Drive as a central spine with Complete Street improvements to facilitate bike and pedestrian movement between the neighborhoods. A new multimodal connection was discussed as a potential addition midblock from Lot 14 to Lot 16. This transit stop would provide access directly into Lot 14's proposed mixed-use neighborhood development.

Photo Source: www.hilton.com

Lot 13 Boutique Destination with Hotel/Conference Space

The idea of an Italian hill town is reflected in a road network that curves around the hill, with a straight uphill drive that provides a dramatic view into the site and terminates on a small green with the historic chapel in the center. As on Lot 14, a regular block pattern would keep the scale walkable and pedestrian-oriented, regardless of the final uses on each block. The campus area would be preserved and treated as a "boutique destination" with internal pedestrian spaces and pathways. The chapel is proposed as a conference space at the top of the main drive in a park, setting up views and establishing the campus as a destination.

Lot 14 Mixed-Use Development

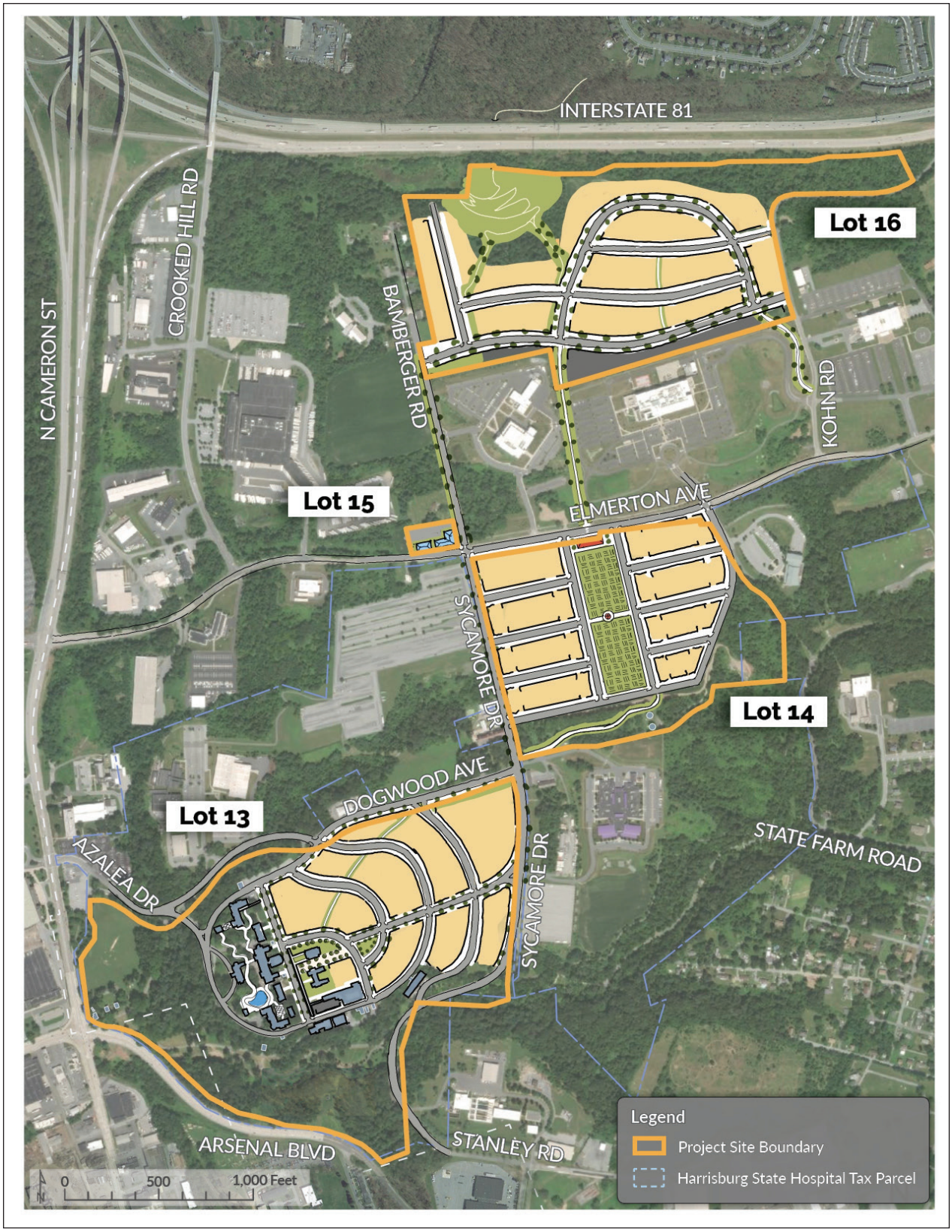
The community gardens would be reoriented towards the center of the site, creating an attractive amenity within the development and allowing the high-visibility frontage along Elmerton Avenue to be used for mixed-use development. A mix of ground floor retail, office, and upper-level housing units are envisioned, where the topography is relatively flat and there is easy access via Elmerton Avenue.

Lot 15 Commercial Use

Small commercial buildings would complement the adjacent mixed-use development on Lot 14 and act as a gateway into the development. On-street parking would minimize the need for large parking lots and allow smaller walkable block patterns.

Lot 16 Park and Potential School District Uses

The street network would loop to follow topography and create internal views of the neighborhood. A park space would be established in the northern portion of the site where the slopes are steep and would include trails along the creek that connect under the highway towards Logan Park. There was also discussion of utilizing Lot 16 as a possible school site. If the need for a new school or school use is identified, it could be accommodated on the western end of the site.



Workshop Concept 1

Concept 2: Three Distinct Districts

The second concept plan focuses on distinct districts with separate uses on the three most developable lots (Lots 13, 14, and 16). Along with residential and commercial uses, this concept identifies school facilities and athletic field expansion needs, senior housing, a strong desire for taxable land uses, and an interest in providing light industrial and/or flex space to meet high market demand. This concept also preserves the historic campus on Lot 13, but explores other ways to market it and connect to the Greenbelt.

Like Concept 1, Concept 2 also proposes enhanced connectivity between the lots along Bamberger Road/Sycamore Drive as a central spine with Complete Street treatments that would facilitate bike and pedestrian movement between the neighborhoods.

Lot 13 Grocery Store, Senior Living Campus, and Boutique Conference Center

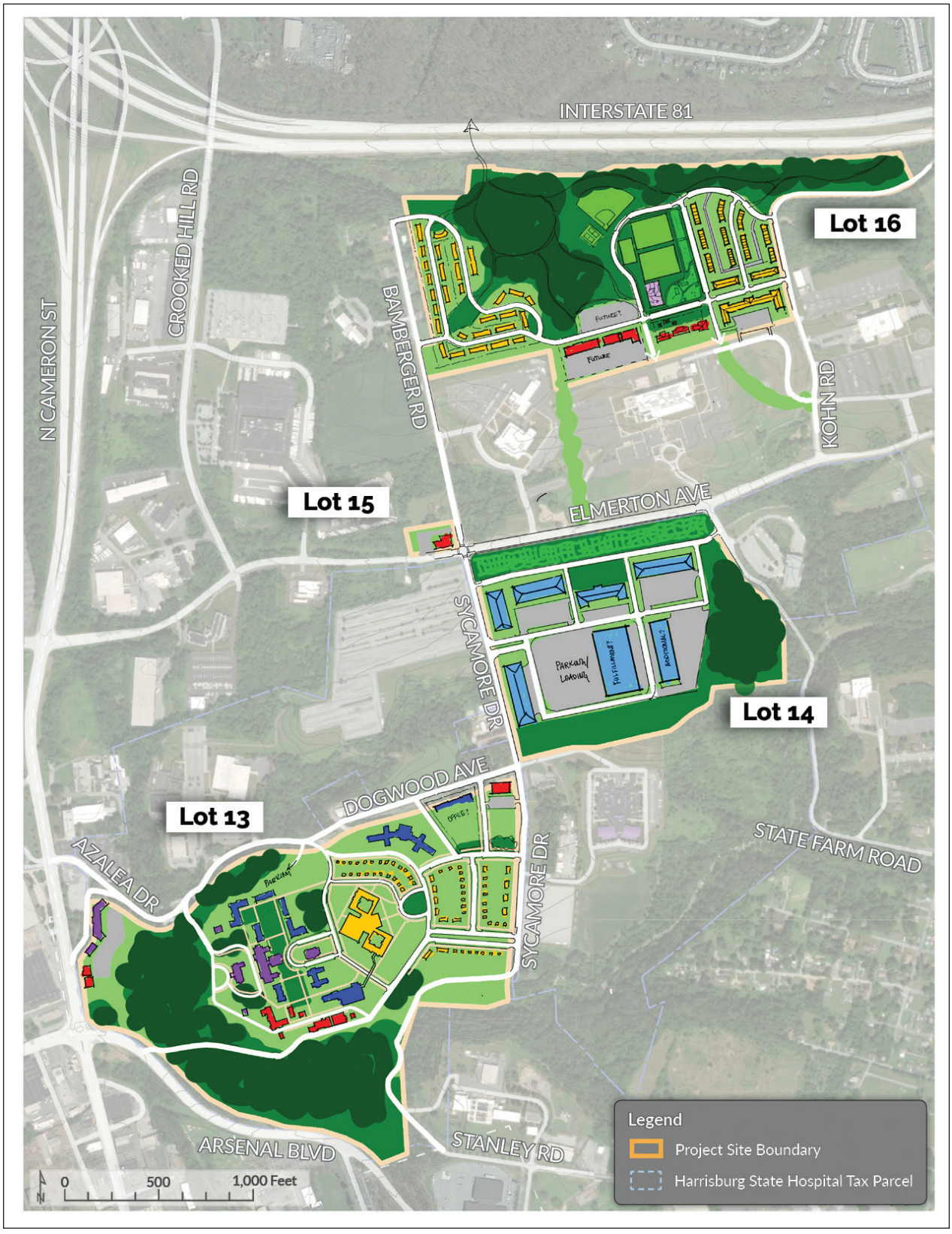
The northeast corner of Lot 13 would be a mixed-use block featuring a grocery store at the corner to anchor the site and serve residents from Lot 16 and surrounding neighborhoods. Lot 13 would also feature a range of housing types, a senior living facility, and a series of office and retail spaces within the historic campus. Through adaptive reuse, the beautiful architecture of the historic campus would serve as a hilltop destination with conference space, a charter school, and small offices. Medical offices, for example, would potentially be marketed for this location to serve seniors. Concept 2 envisions small dining establishments next to the Capital Area Greenbelt. Along Cameron Street, a hotel and restaurant are envisioned to meet existing demand and complement the PA Farm Expo Complex events.

Lot 14 Light Industrial

The workshop group strongly supported light industrial and loading space on Lot 14. There is current demand for these uses and the location along Elmerton Avenue is well situated along a major road, close to the U.S. Postal Service office on Crooked Hill Road. As these uses are not often neighborhood-oriented, Concept 2 shows a campus format with a series of smaller buildings along the roads and parking delegated to the interior of the lot. Without neighborhood uses along Sycamore Drive, the walkable connection between lots would depend on attractive architecture, a comfortable sidewalk, and street trees to make the connection pleasant. The community gardens are kept on Lot 14, and the group discussed how the gardens could contribute to the open space requirements and natural stormwater system required for development.

Lot 16

Envisioned for multipurpose fields identified by the School District and local athletic organizations as a need in the area. Pairing the fields with an indoor sports facility and associated businesses such as concessions, eateries, or even offices for sports classes, therapy, training, and related uses was also discussed by the workshop group. Residential units on both sides of Lot 14 would ensure “eyes” on the park for safety. On Lot 16, a regular street grid at the edges is envisioned, softening towards the center and including a park drive.



Workshop Concept 2

Lot 16 Existing Conditions

REAL ESTATE MARKET ANALYSIS

04

IN THIS SECTION

04

REAL ESTATE MARKET ANALYSIS

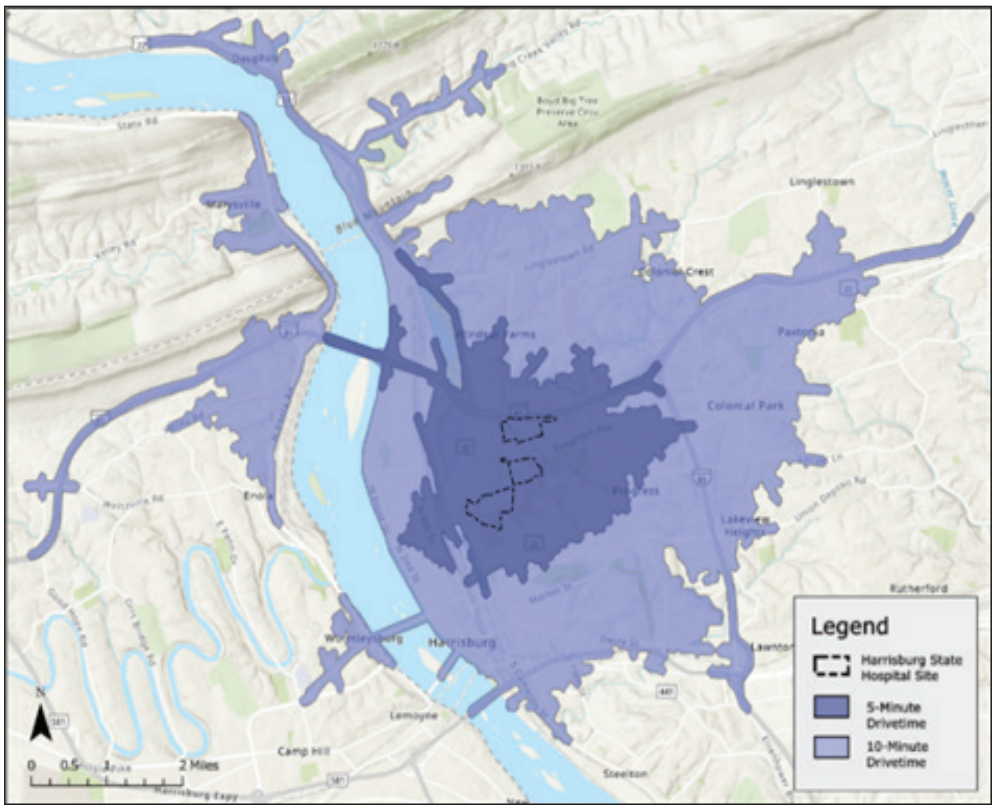
An updated Market Analysis for Lots 13, 14, 15, and 16 was conducted for the DCRA Reuse Planning Study in the fall of 2020 and, accordingly, all data is from November 2020. The approach for the analysis was based on validating market opportunities that were previously identified through a 2017 Market Analysis completed under the *DGS Annex Disposition Report* and the September 2020 visioning process completed for the DCRA.

1. Highest and Best Use Recommendations from the *DGS Annex Disposition Report*.

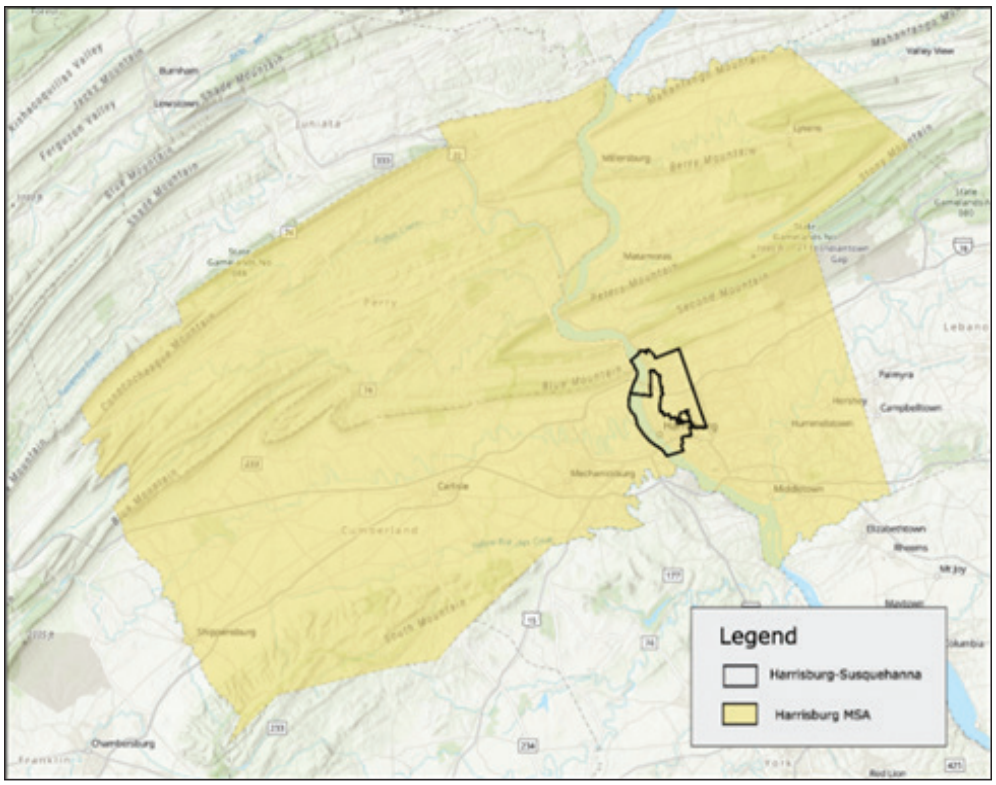
2. Visioning Recommendations generated by stakeholders as part of the DCRA Reuse Planning Study, as summarized in this study.

The market areas studied include the immediate area surrounding the DGS Annex Property (retail gap analysis), Susquehanna Township and the City of Harrisburg, Dauphin County, and the Harrisburg-Carlisle Metropolitan Statistical Area (MSA). Together, these areas represent the “Study Area” and are consistent with the Study Area defined by the DGS Annex Disposition Report.

The updated 2020 market analysis findings suggest that light industrial, residential, hospitality, and sport facilities are viable future land uses on the DGS Annex Property based on current market conditions. Accordingly, these uses are potential candidates for co-locating with the proposed CAT facility on Lot 14 (refer to Section ABC). Key findings from the 2020 Market Study are summarized below.



5-Minute and 10-Minute Drive-Times from the HSH Project Site



Harrisburg-Susquehanna Market Area and Harrisburg MSA

INDUSTRIAL

The DGS Annex Property could support industrial warehouse uses given its proximity to the regional transportation network. Based on information provided by the regional economic development agency, there has been ongoing interest in the lots for industrial use. The cluster analysis and employment trends also support this finding, with the Harrisburg MSA's strongest clusters including Distribution and Electronic Commerce and Transportation and Logistics.

Employment in Dauphin County's Transportation and Warehousing industry increased by **53%** between 2010 and 2019 growing to

11,231
EMPLOYEES

In the Harrisburg market, **the average building square footage** for standard warehousing is typically multi-story and approximately

50,000
SQUARE FEET

THE HARRISBURG EAST SUBMARKET HAS AN ABUNDANCE OF FLEX SPACE.

This has created vacancy rates as high as **20.7%** in recent years (3rd quarter 2018) and high market availability.

More recently,
VACANCY RATES HAVE FALLEN BACK TO

11.5%

In comparison, the Lehigh Valley's flex space vacancy rate is current **6.6%** and has remained stable over the past several years.

Flex space in the **Harrisburg market still commands a rent premium** compared to other industrial real estate types due to its ability to serve both the office and industrial markets.

Harrisburg's industrial market remains stable due to Harrisburg's strong location and the accelerated growth of e-commerce.

In addition to warehousing, printing services and food manufacturing are strong economic clusters in the Harrisburg market that could have potential application on the DGS Annex Property (e.g., specialized industrial space).

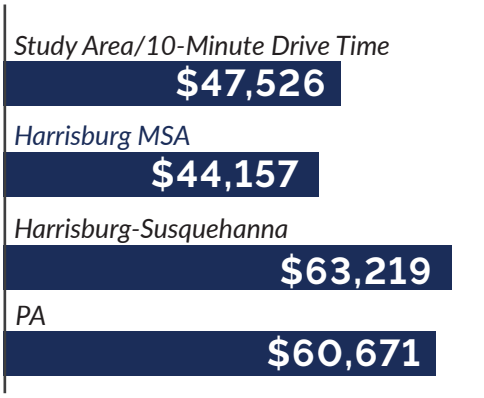
The Harrisburg East submarket, while smaller, is comparable to the performance of the overall Harrisburg market. However, being the smaller of the two submarkets, it has not seen the growth of the Harrisburg West submarket.

Specialized industrial space has been a strong performer in both the Harrisburg East and Harrisburg West submarkets, although **no new structures were delivered within the past 12 months** and **only 9,240 square feet are under construction in the Harrisburg West submarket.**

HOUSING

Based on current population growth trends projected through 2030, the 15-Minute Drive Time Study Area could absorb approximately 232 housing units.

The market analysis showed market demand for multifamily housing, workforce housing, and affordable housing.



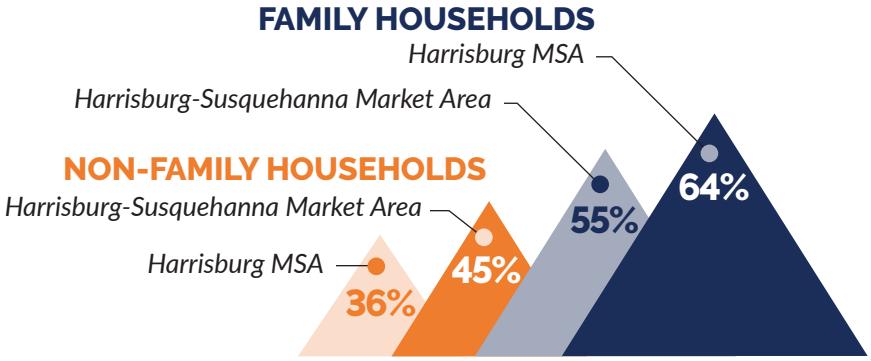
Median Household Income (2020)

Median household income in the Study Area is lower than in the MSA as a whole and the Pennsylvania state average due to the high proportion of households

EARNING LESS THAN

$35K

ANNUALLY



Research suggests non-family households prefer smaller homes and are more likely to rent, demonstrating market demand for multi-family housing in the Study Area. Recent multi-family developments have performed well in the Market Area, and the **vacancy rate is currently at 3.6%**.

Consistent with household data, the Study Area has a higher proportion of renter-occupied housing units.

46% **STUDY AREA**

31% **HARRISBURG MSA**

Dauphin County has a **3,480-unit gap in affordable housing** for households with incomes less than or equal to 30 percent of the U.S. Department of Housing and Urban Development (HUD) Area Median Family Income.

LONG-TERM CARE

Based on the continued growth of senior households aged 65 years and older, the Study Area could potentially support the addition of one new long-term care facility with approximately 120 beds. However, new construction activity in the pipeline will over-absorb this demand for the mid-term.

11,645
Net Change in Population 65 or Older
(2020-2030)

29%
Expected Growth

9.6%
Expected Growth of Older Empty Nesters
(65-74yrs old)

**19.3% retire at age 74.*

In addition, there are other limiting factors for long-term care at the HSH Project Site:

- The income levels of the local consumer base may not be high enough to attract a long-term care provider.
- The buildings that comprised the former HSH campus may pose a challenge in terms of branding. In the long-term care industry, a building with a reputation of poor operations is difficult to overcome, even with new ownership. The Harrisburg Baby Boomer generation remembers the former HSH as a mental health hospital, a legacy that would likely be a deterrent during site selection evaluation by the industry.

Overall, long-term care was not found to be a likely viable reuse for the DGS Annex Property.

HOSPITALITY

The DGS Annex Property is located next to one of the largest visitor attractions in the Harrisburg MSA, the Pennsylvania Farm Show Complex (PA Farm Show Complex). Currently, there are no hotels in walking distance to the complex, which are needed to better serve visitors.

Industry representatives have indicated that there is demand for a mid-tier, full-service hotel within walking distance, particularly if programming for the complex is expanded to year-round events. A boutique hotel in the historic HSH buildings on Lot 13 could also fulfill this gap by serving the luxury tier.

$205.70
AVERAGE RATE FOR ROOMS IN LUXURY UPSCALE HOTELS
(2011-2019)

15.8% ▲
GROWTH IN AVERAGE DAILY RATE
between 2014-2014 and 2017-2019

Key findings with respect to the hospitality real estate market include the following:

1. There are three upscale class hotels located in close proximity to the DGS Annex Property, with a fourth hotel recently constructed at the Shoppes of Susquehanna (Home2 Suites by Hilton Harrisburg North). The hotel is classified as upper midscale class. These properties have absorbed overall area demand but have not met the localized demand for the PA Farm Show Complex.

2. Pre-COVID-19, market indicators for Harrisburg were strong, showing growth in occupancy, average daily rate, and revenue per available room. However, the hospitality industry has reached 10 years of consecutive growth and is likely nearing a period of softening market demand. Historically, hotel industry downturns have occurred every 10 years, often triggered by external factors like the 2008 financial collapse and the September 11, 2001 terrorist attacks. In 2020, the COVID-19 pandemic has triggered a current market downturn.

3. The timing for a market resurgence is three to four years and will be driven in part by how the global pandemic unfolds. As of August 2021, the new Delta variant of COVID-19 continues to present uncertainty with market recovery.

SPORTS AND RECREATION

An interview with the Visit Hershey & Harrisburg and Hershey Harrisburg Sports & Events Authority was conducted to understand market demand for regional sports and recreation facilities.

Interview findings are highlighted below.

There continues to be unmet demand for a multi-use sports complex in the Harrisburg region, substantiated through a 2019 feasibility study commissioned by the Harrisburg Sports & Events Authority.

There is demand for the following:

- Indoor multi-use facility and exposition facility (50,000 – 75,000 square feet) featuring two to three full size basketball and volleyball courts
- Four synthetic turf fields for baseball and softball
- Multi-use field for soccer and lacrosse
- Indoor practice facilities to include pitching and catching tunnels, batting cages, etc.
- A multi-use facility would drive demand for new hotel and food services uses to accommodate travel sporting events as well as existing PA Farm Show Complex events

Visit Hershey & Harrisburg and Hershey Harrisburg Sports & Events Authority suggested the rear portion of Lot 13 may be an ideal location for the proposed sports complex, providing immediate access to the PA Farm Show Complex.


CAPITAL

CAPITAL AREA TRANSIT FACILITY NEEDS REQUIREMENT

05

IN THIS SECTION

05

CAPITAL AREA TRANSIT FACILITY NEEDS AND REQUIREMENTS

As summarized in the Introduction section of this study, PennDOT's Bureau of Public Transportation (Bureau) expressed interest in Lot 14 as the potential site for the relocation of their Capital Area Transit (CAT) operations facility currently located at 901 North Cameron Street in the City of Harrisburg. The current CAT operations facility was originally constructed in 1904 and is nearing the end of its useful life. The facility's original task was to maintain the fleet of trolleys that operated throughout the Harrisburg area. In the late 1930's, the transit facility shifted from operating trolleys to operating buses. As a result, the existing CAT facility was retrofitted to dispatch and maintain the modern bus fleet it operates today. CAT operates 24 hours a day, 365 days a year, with a staff of over 200 employees. CAT offers two primary services - fixed route and paratransit transportation.

In tandem with the DCRA Reuse Planning Study, the Bureau and Project Partners evaluated the feasibility of a CAT multimodal transportation hub on Lot 14. During a workshop conducted to gain input from primary stakeholders – including PennDOT, CAT, DCRA and Susquehanna Township – design and placement of a potential CAT Facility on Lot 14 were evaluated.

Options for the potential facility were considered both in the context of Lot 14 itself and in connection with the overall redevelopment among all four of the lots. Several desired attributes for the redevelopment of Lot 14 were expressed by stakeholders including the need for a robust mixed-use development plan that includes the CAT facility as part of a larger Transit-Oriented Development; a facility design that incorporates high-quality design standards; and construction of transportation and pedestrian connections to the other four lots in redevelopment.

Generally, stakeholders agreed that a CAT Facility built to include these desired attributes could be an asset to the overall redevelopment effort. However, placement of the CAT Facility and a Transit-Oriented Development on Lot 14 is just one of the redevelopment options presented during the Planning Study and no preferred or recommended redevelopment option for Lot 14 has been identified.

BACKGROUND

Recognizing the end-of-life expectancy of the 901 North Cameron Street facility, the Bureau, in collaboration with CAT, conducted two recent studies[2] that:

1. Evaluated and substantiated the need for relocating and modernizing the current CAT operations facility located at 901 North Cameron Street in the City of Harrisburg; and
2. Identified and prioritized viable sites that could accommodate CAT's operations and facility needs. These needs include an administrative facility, maintenance building, storage yard, and other ancillary accommodations necessary for repairs, general maintenance, and operations for CAT's bus fleet including a compressed natural gas (CNG) refueling station.

The Bureau's study findings confirmed that the current CAT facility has been adversely impacted by age, usage, and flooding, and is in need of major improvements including flood-proofing and acquisition of adjacent properties to accommodate its growth and expansion needs. Floodproofing would require elevating the current site by approximately six to eight feet and expansion would increase the current acreage from seven to approximately 10 acres. Ancillary to this analysis, the Bureau developed a conceptual layout for a new operations and maintenance facility on CAT's existing North Cameron Street location and ultimately determined that a minimum of 14 acres to a maximum of 20 acres was needed to support the site configuration and bus movements. The current site does not meet this site condition.

In addition to evaluating the feasibility of building a new and expanded facility on CAT's current North Cameron Street site, the Bureau also prepared a separate conceptual site design and floor plan to meet CAT's optimal facility need requirements. The optimal facility conceptual design assumes CAT's new facility will be a Level III type facility as defined by the American Public Transportation Association (APTA).

The optimal design requirements specify a 250,000 square foot building accommodating a projected bus fleet of 150 vehicles with the following elements:

- General maintenance (24 total bays for regular and articulated bus vehicles) including bus and chassis wash, maintenance, service, inspection, and painting
- Fueling station (including future CNG)
- Fare collection
- Bus storage
- Customer service and administration

Table 1. Total Space Needs Based on a Conceptual Layout

Area	
Administration	14,000 sq. ft.
Maintenance and Storage	235,875 sq. ft.
Total Space Needs	**249,875 sq. ft.**
Actual Square Footage	**256,000 sq. ft.** (150 bus fleet)

[2] E04329 Work Order #06, CAT Operations Facility Programming (August 2019) and E04329 Work Order #11, CAT Bus Operations Facility Relocation Assessment (March 2020)

LOT 14 DUE DILIGENCE

In parallel with the *DCRA Reuse Planning Study*, the Bureau completed a due diligence technical memorandum to vet the potential of locating the proposed 256,000 square foot facility on Lot 14, which was previously identified as a preferred site by the Bureau and CAT. The due diligence study evaluated:

- CAT Facility Needs and Requirements
- Real Estate Market Analysis
- Lot 14 Environmental Conditions
- Stormwater
- Multimodal Infrastructure Needs and Connectivity Analysis
- Land Use and Zoning Requirements
- Preliminary Roadway Plan Review

As part of this due diligence, the Bureau and the Project Partners scheduled and facilitated a design workshop specific to Lot 14 in April 2021. The purpose of the workshop was to have the Project Partners confirm the feasibility and viability of locating CAT's proposed new transit facility on Lot 14 and to provide connectivity with Lots 13, 15, and 16 to support the overall redevelopment of the DGS Annex Property. The refined plan concepts based on the 2020 workshop results were shared with the Bureau, and the Bureau then shared their ideas and requirements regarding the new CAT facility placement, which included:

- Contrary to public belief, the facility is not expected to be a major traffic generator because vehicles will leave the facility early and return in the late evening. The proposed CAT facility will service approximately 80 vehicles a day and retain approximately 160-180 employees.
- Transit ridership is slowly returning and is expected to continue to increase as COVID-19 restrictions are lifted. According to a series of surveys conducted at transit agencies across the state, approximately 60% of transit users are transit-dependent (no access to a car). In the capital region, many of the users are state employees or associated downtown workers.
- Lot 14 is a desirable location for the CAT facility because the transit service ordinarily shuttles individuals from outside of Harrisburg into the city. CAT will benefit from being closer to its ridership base and from having access to all parts of the service area.
- Anecdotally, active transportation usage has increased by a significant margin compared to pre-pandemic averages.

Workshop Outcomes

SITING AND ZONING FOR LOT 14

Participants agreed that redevelopment of the DGS Annex Property should embrace an urban form that utilize the lots to the fullest extent, noting that this goal can only be achieved if Susquehanna Township rewrites its zoning ordinance (Refer to Planning Context sub-section). Recent zoning ordinance discussions proposed a large setback along Elmerton Avenue to maintain the rural character and open green space. Through this workshop, participants agreed that an urban transit-oriented development concept is more desirable on this lot, and the large setback requirement should not apply on Lots 14 and 15. Locating the CAT facility internal to the site, with other uses fronting Elmerton Avenue, was determined to be the best use for the site. Based on feedback from the Bureau, the CAT facility will use a compact footprint and will need 8-to-12-acre parcel of land.

ACCESS FOR LOT 14

CAT hours of operation occur throughout the day, with activity concentrated in the morning and evening hours. Controlled access to the facility is ideal, in order to separate CAT traffic from the other uses proposed on Lot 14. Additionally, multimodal access is important to the Township and to the Bureau, and the Bureau is committed to expanding multimodal paths and access to the existing Greenbelt.

SETTING THE STANDARD

Susquehanna Township and CAT will cooperate during the design phase of facility construction to ensure that it is built to high architectural and design standards. Both parties have a desire for an aesthetically pleasing facility which will conform with the Township's character. This facility should be a catalytic public investment. Sidewalks, street network, multimodal trails and access, and high-quality design need to be part of the first phase of development . The early redevelopment of the site catalyzed by the CAT facility will set the standard high for future Lot 14 uses that likely will be developed in subsequent phases by other parties.

PARKING

Due to the urban form of the concept plan, accessibility for other uses will be an important provision for Lot 14. There is a limited proposed parking area on the site, which can be supplemented at adjacent parking locations such as the PA Department of Agriculture Elmerton Parking Lot situated to the west of Lot 14 and adjacent to Sycamore Drive.

Based on the outcome of the due diligence and in close coordination with the Project Partners, the new CAT facility will be a catalytic opportunity for the successful redevelopment of Lot 14, mutually benefiting DCRA, the Bureau, and CAT.

DEVELOPMENT CONCEPTS

06

IN THIS SECTION

06

DEVELOPMENT CONCEPTS

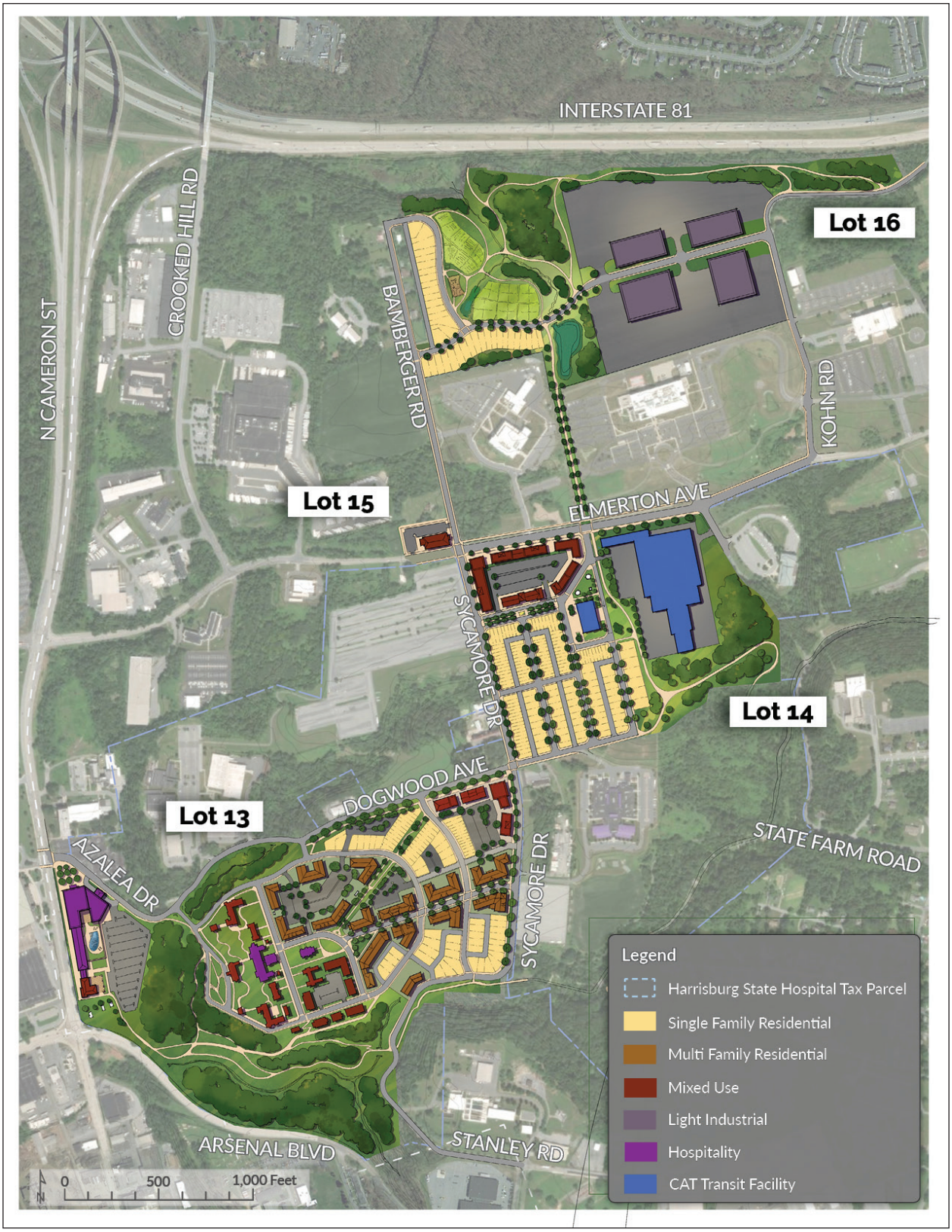
The development concepts prepared for full site redevelopment are a product of the ideas and visions shared during the workshop, the current needs supported by the market study, and assessment of financial feasibility. The development concepts also consider the market feasibility of uses in conjunction with one another, and reflects new demand creation.

The development concept plans include a mix of uses across the four lots and emphasize connections both physically and economically between all four. By providing complementary uses, each lot development draws in new markets to support development throughout the rest of the site. The development concept also creates a distinct district identity on each lot:

- Lot 13 is a mixed-use neighborhood with various types of housing combined with destination hospitality and entertainment venues and an employment center.
- Lot 14 is a mixed-use high-density residential and commercial center that could incorporate transit-oriented development.
- Lot 15 is a commercial out parcel.
- Lot 16 includes a neighborhood in a park setting, the Community Gardens, and a flex-space business park.

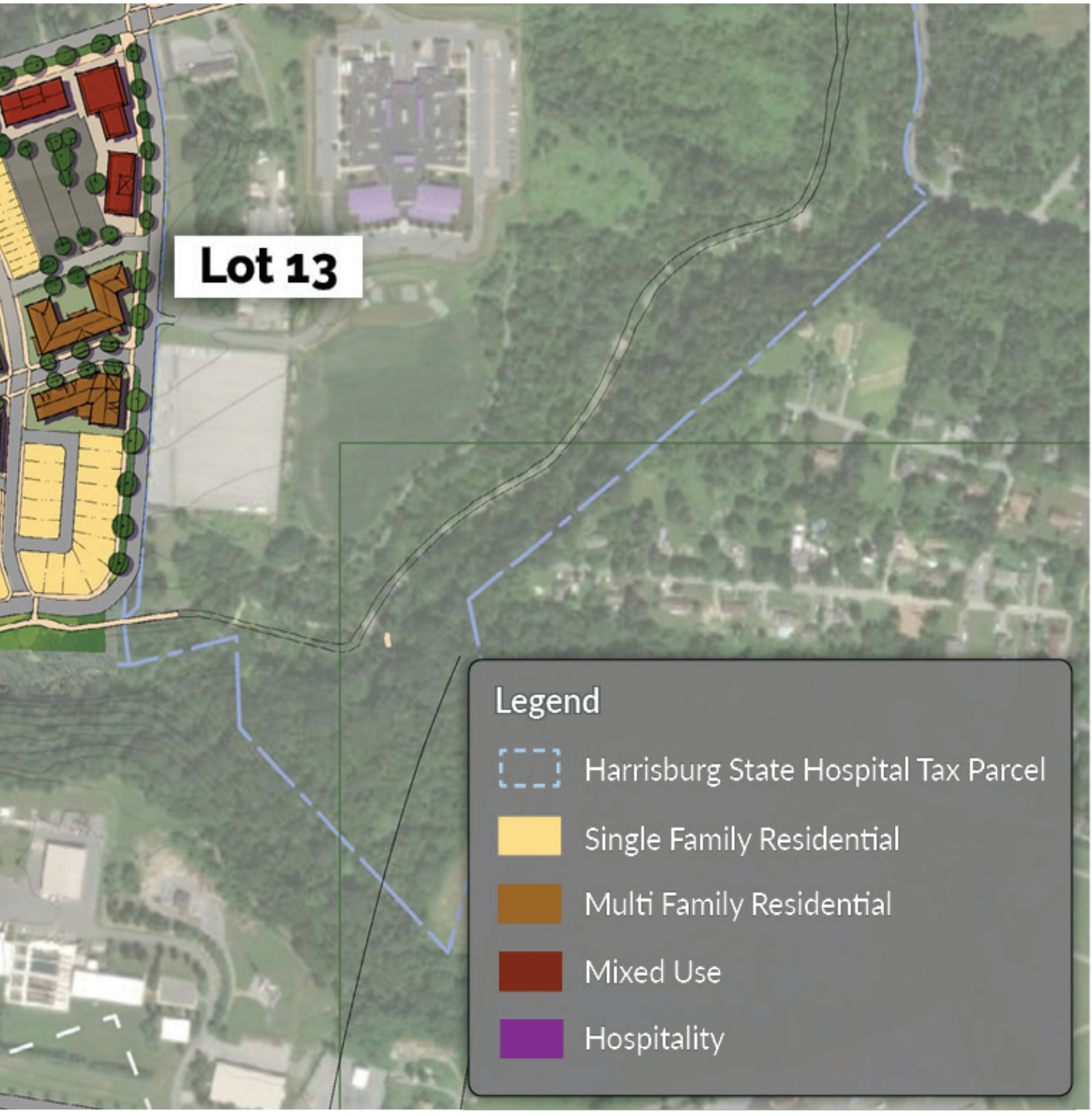
Elmerton Avenue and Azalea Drive/Dogwood Avenue are the primary east-west connections, drawing traffic into the site from Harrisburg to the west and Susquehanna Township to the east. These routes are essential gateways to the new development and are supported by improved street design and new buildings fronting onto these streets.

Similarly, Bamberger Road/Sycamore Drive is a central north-south route connecting all four lots. This is a primary connection through the development and is also shown as a front address for new development.



Full Development Concept of the DGS Annex Property

LOT 13 DEVELOPMENT CONCEPT


Lot 13
Legend
Harrisburg State Hospital Tax Parcel
Single Family Residential
Multi Family Residential
Mixed Use
Hospitality

Lot 13 Overview

Lot 13 is the most challenging site of all four, as it features the most shifts in topography and the remaining campus of HSH with dozens of buildings. While the buildings speak to the rich history of the site, they present challenges in regard to building condition, sheer size, location, and future adaptability for reuse. Larger footprint buildings are harder to retrofit into housing or grouping of office because of possible lack of ventilation and limited natural light at the center of the floor plans. In conjunction with reuse potential and current building condition, in total 23 buildings are recommended for preservation and reuse. For demolition, 21 buildings have been identified. Please refer to the Existing Buildings and Infrastructure Plan for more information.

Of the buildings to be preserved, most are grouped toward the western portion of the lot. This grouping allows for a masterplan design around them to create a larger block, where a boutique hotel takes on the more prominent building, flanked by co-working office.

Toward the center and eastern portion of the site, the existing conditions and location of the buildings do not allow for integration with the new vision of creating a series of walkability blocks. In this area, many buildings are being recommended for demolition. In their place, future development will create a series of blocks where multi-family housing of different scales can be built.

As proposed, the new street pattern takes on the topography and resembles Italian hilltop towns, where the roads encircle the center chapel and allow buildings to have better access to the level street. The grouping of existing trees to the east of the lot near Dogwood Avenue and Sycamore Drive are protected and integrated into a commercial corner where neighborhood retail be developed.

Development Capacity

Land uses proposed on Lot 13 include a mix of residential units, a range of hospitality functions, new retail and dining, and flexible office space in both new buildings and adaptive reuse of existing buildings. The campus preserves a substantial number of the architecturally relevant buildings, along with the character and aesthetic qualities of the historic arboretum with existing trees, view sheds, and trails.

- **Commercial: Over 85,000 SF of New Development**
  New commercial buildings at the corner of Sycamore Drive and Dogwood Avenue are visible from both roads and serve development on all lots. Potential uses include a grocery store at the corner, which will support the residential units being proposed and draw shoppers from adjacent neighborhoods that have no nearby grocery. Adjacent buildings, 2-4 stories in height, may have ground floor retail or office space on the first floor. So as to not compete with retail uses within the campus, this is an ideal location for convenience and service-oriented shops, as opposed to café and dining that are ideally located within the walkable campus district. At Cameron Road on the western side of Lot 13, a new restaurant will complement a new hotel and serve the frequent the Pennsylvania Farm Show Complex and Expo Center visitors, among others.

- **Office: Over 10,000 SF New Development**
  The new mixed-use buildings include several floors of flexible space, which is ideal for small offices over retail or entirely office uses. Located near the corner of Sycamore Drive and Dogwood Avenue, the new office buildings are visible from both roads and allow jobs for small businesses with walkable access to new housing within the development, dining and eateries nearby, and transit access on Lot 14.

- **Hospitality: Two Hotels and Conference Space**
  Along Cameron Street, a large hotel is sited with walkable access to the Pennsylvania Farm Show Complex and Expo Center. This is a highly visible site with a built-in market tied to the local events, and further supported by the addition of a new restaurant next to it. The hotel and restaurant are downhill from the rest of Lot 13 and separated by heavy tree coverage and steep topography, so this area has a different character and is more connected economically to Cameron Street destinations. The hotel will have easy trail access through to the Greenbelt and other trails that lead to the hilltop campus, so hotel guests can easily patronize new retail and destinations there as well. Within the historic campus, building 11 is proposed as a boutique hotel which will offer guests access to a spa and conference space. This allows a wider hospitality market to be met and provide a range of experiences and price points for visitors. The boutique hotel sits at the edge of the campus and has views over the trees that span all the way to Downtown Harrisburg.

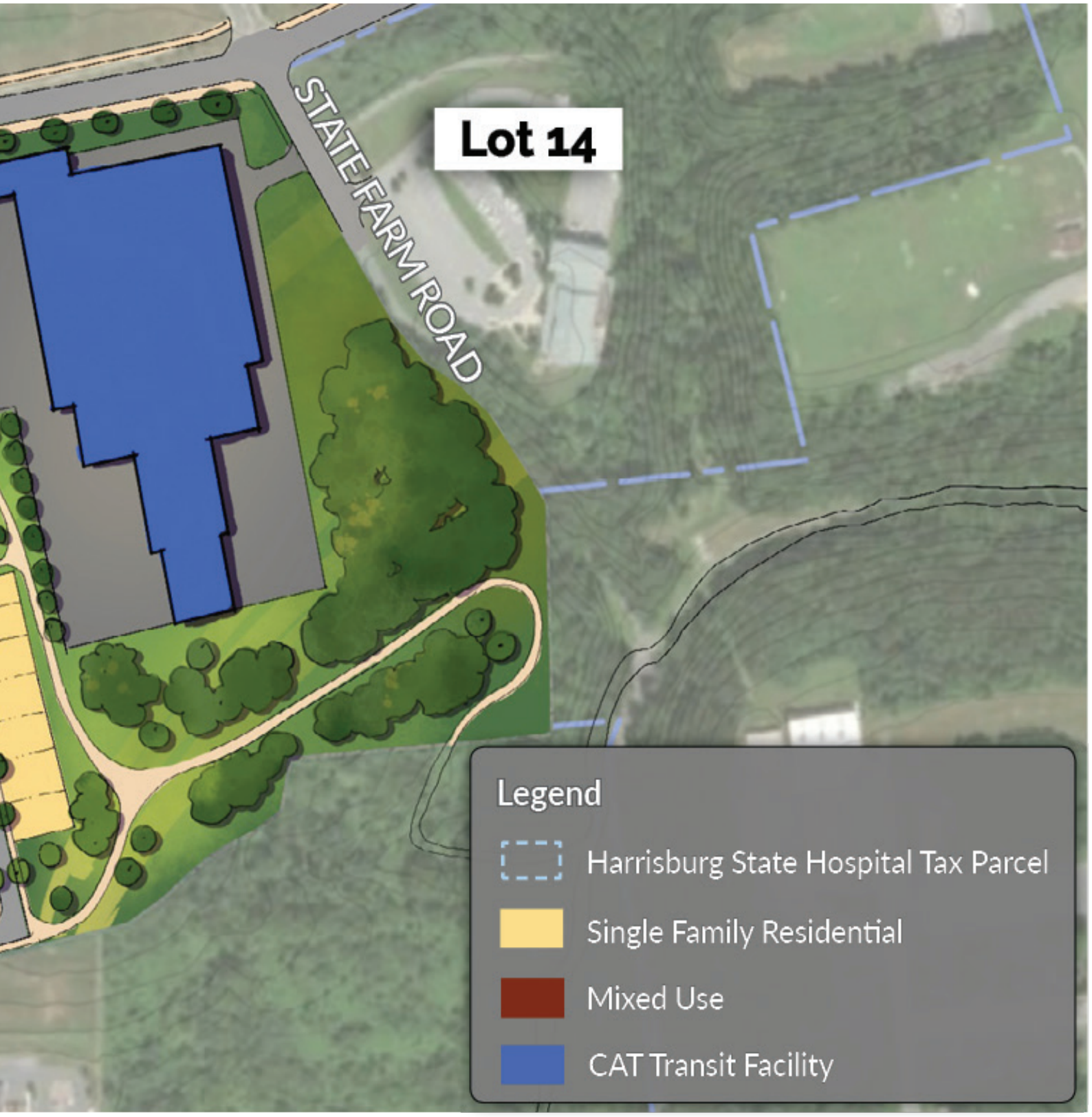
- **Residential: 450 Units**
  The interconnected street grid creates a series of walkable blocks that can accommodate a range of residential units to suit market needs. Small single-family homes cater to households looking to down-size, first-time home buyers, and fill the "missing middle" housing market with attainable prices for workforce housing. Townhouses offer an alternate unit type for a similar market and provide choices in unit size. Townhouses are clustered towards the northeastern corner, supporting more density close to adjacent development on Lot 14. From Sycamore Drive, a new entry road will lead into the site. This is an ideal location for higher density apartment buildings. The plan also includes a large cluster of apartments towards the top of the hill. The added height here allows these apartments to have views over the trees to Harrisburg without overshadowing existing neighborhoods.

Open Space and Connectivity

The Greenbelt is a substantial asset to the region, and passes directly through Lot 13. The trail is enhanced with a series of connecting trails that lead through the trees and up the hill to connect the Greenbelt users to new retail, hospitality, and office destinations. Trail connections from the campus core, the hotel along Cameron Street, and the residential blocks along Sycamore Drive allow multiple access points to the Greenbelt from the new development. Along Azalea Drive/Dogwood Avenue, the existing slope is preserved, and this area is used for a multimodal path lined by existing trees.

Within the campus core, a pedestrian area is designated between building 11 (proposed as a boutique hotel) and buildings 12 and 17. The chapel is set within a new public green space that terminates views up the hill. Throughout the larger residential blocks, sized due to the substantial slope, green pedestrian passageways are provided to allow walkable connectivity even where roads are not possible.

LOTS 14 AND 15 DEVELOPMENT CONCEPT


Lot 14
STATE FARM ROAD
Legend
Harrisburg State Hospital Tax Parcel
Single Family Residential
Mixed Use
CAT Transit Facility

Lots 14 and 15 Overview

Development on Lots 14 and 15 is depicted and discussed together. The small size of Lot 15, and location on a busy corner, is conducive to a commercial out parcel use such as a convenience store or casual restaurant, perhaps with a drive-through function. The larger size and flat topography of Lot 14, however, makes this site the most readily developable. Located in the center of the group of four lots and along two well-used roads, this is a highly visible area with great opportunity to develop a catalyst project that changes the public's perception of the area, establishes a new identity for the site, and drives the marketing to support growth and generate new markets for the other lots.

The Lot 14 concept plan is a transit-oriented neighborhood including mixed-use development, residential blocks, a trail network connecting to the Greenbelt, and a CAT transit facility that brings transit service and workers to the site. Small blocks with an interconnected street grid provide multiple entrance points and reduce traffic congestion at any one point along the edge. Commercial and office uses along Elmerton are well located to attract workers and customers. A range of workforce housing including townhouses and single-family homes allow residents to buy homes close to work and/or close to the transit station. A new entry road into the middle of the development aligns with a multimodal path connection to Lot 16, and establishes a gateway intersection with new development on both sides. The road leads into a public plaza with a transit station and park space. From Sycamore Drive, a boulevard entrance with 1-way traffic on each side also allows easy access for buses, ride sharing and ride hailing drop off and pick up zones, and personal vehicles.

Development Capacity

Land uses proposed in Lots 14 and 15 include residential, office, ground floor commercial, and a transit facility which includes a bus station and a CAT maintenance facility. These lots are most readily developable and are likely to be the first lots to be built, so the form and quality of the architecture, attractive and walkable streetscape, and interconnected access for cars and multimodal users is critical to establish a desirable and marketable identity for the new district. As a transit-oriented neighborhood, there is also the potential to negotiate shared use of the Elmerton Lot across Sycamore Drive for additional park and ride space.

- **Commercial: Over 120,000 SF New Development**
  Commercial uses are located along Elmerton Avenue. Ground floor retail lines the entire block, which allows opportunities for different types of frontage that attracts different users. On Elmerton Avenue, commercial buildings have high visibility. On the new internal streets, commercial buildings are easily walkable and bikeable from the transit station and nearby residences. Local shops, cafes, and dining establishments are ideal here and can include outdoor seating facing the park and boulevard. Parking is hidden within the block, and includes a large shared parking lot that reduces individual parking needs per building. Parking requirements can also be offset by the presence of the transit station. Transit-oriented neighborhoods promote the accessibility of reliable transit lines to reduce car dependency and parking needs.

- **Office: Over 300,000 SF New Development**
  The mixed-use buildings include 2-3 floors of office space over the commercial uses. Daytime workers will use the services and products, particularly from convenience-oriented shops and eateries. Office locations here are visible locations with easy transit access, which is a desirable trait for many companies, and connections into Harrisburg are easy and convenient.

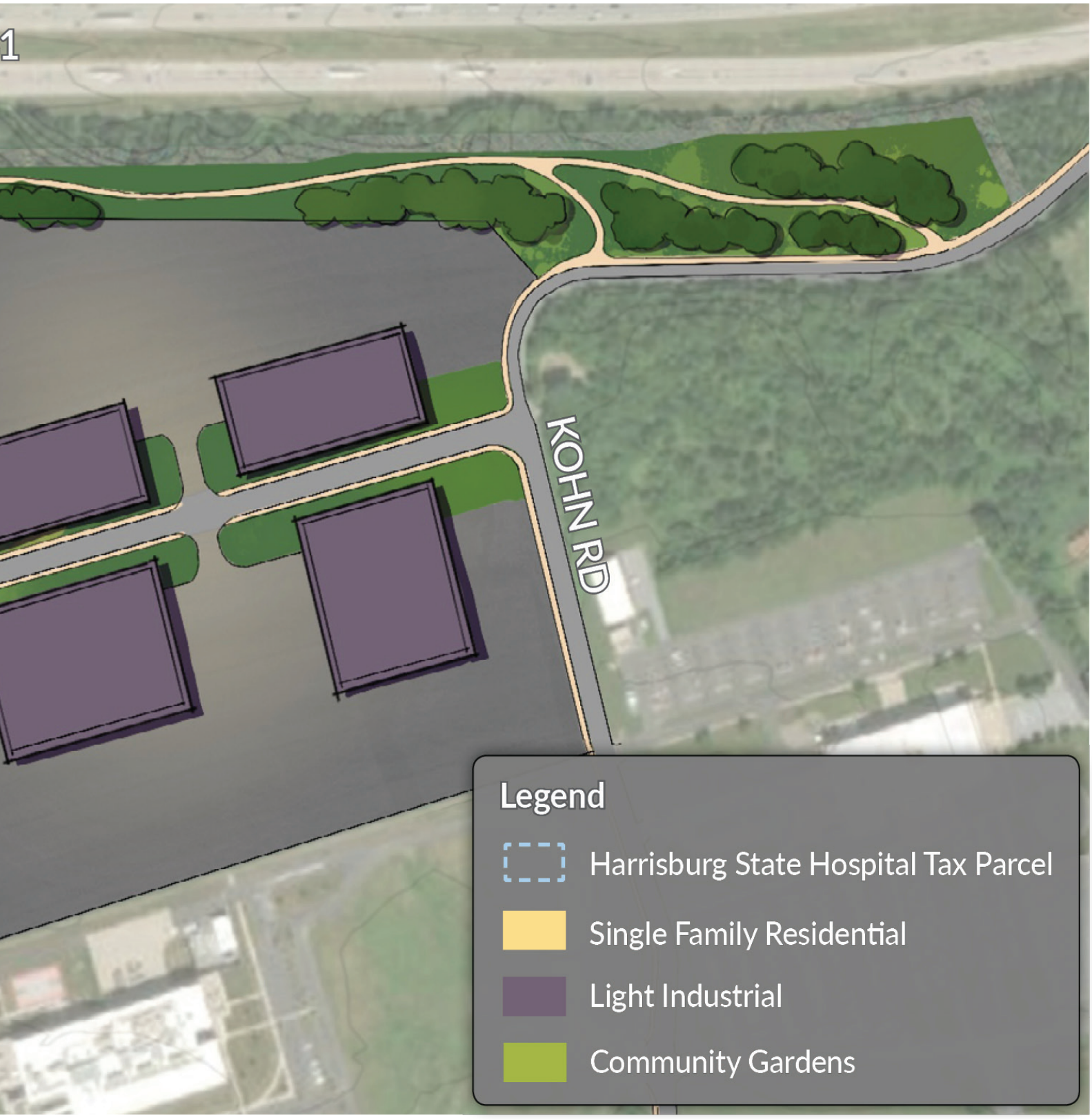
- **Residential: 172 Units**
  Several blocks of residential units fill a large portion of Lot 14, bringing density and new rooftops to support other uses on site. With trail access to the Greenbelt and compact walkable streets, this housing development makes the district into a true neighborhood with users to activate it day and night. Along Sycamore Drive, housing is set back from the street to allow a wide sidewalk and row of trees to buffer the units from traffic noise and congestion. A mix of townhomes and small workforce single-family homes bring families and workers to the area. The sloped woodland and multimodal trail allow room for exercise stations and a playground to further attract residents.

- **CAT Transit Facility**
  The CAT facility is a catalyst project on Lot 14 that can drive greater access to and interest in the rest of the development. CAT is looking to relocate their existing Cameron Street maintenance facility here, where it has easy access in multiple directions, and can also be a new, modernized, and sustainable example of best practices. The CAT facility will include administration space along Elmerton Avenue, ensuring a public-facing front façade. Landscaping and architectural walls will separate maintenance functions from the residential neighborhood. The multimodal trail runs along this wall, lined with trees, further separating noise and operations from the nearby homes. The back of the CAT facility leads to a sloped woodland area with trails , and it has its own dedicated entrance from the east to keep buses out of regular traffic. A transit station is also included though as a separate building. This is much more public facing and sits in a park and plaza space in the center of the site. Buses following service routes can loop through Lot 14, have dedicated spaces to stop and pick up, and service the new development.

Open Space And Connectivity

A multimodal trail is a central element through Lot 14. It connects to Lot 13, crosses Elmerton Avenue, bisects Lot 14 alongside the CAT facility, and leads south to connect into the Greenbelt. It also branches off into a multimodal trail along Dogwood Avenue to connect directly to Lot 13. Although the community gardens are relocated, a central green space provides a meeting point and open space within the heart of the development. Towards the southeastern corner, there is some topography. This area is left as woodland space for the trail system to wind through. Trees along the outside of the CAT facility shield it from view from the multimodal path, so the whole path is lined by trees and often in shade. All streets in Lot 14 should include sidewalks and street trees to provide safe, interconnected pedestrian movement, shade the sidewalks, and add real estate value.

LOT 16 DEVELOPMENT CONCEPT


KOHN RD
Legend
Harrisburg State Hospital Tax Parcel
Single Family Residential
Light Industrial
Community Gardens

Lot 16 Overview

Development on Lot 16 needs to consider the existing residential uses to the west, the noise from the highway to the north, and the environmental conditions. It's a fairly developable site, with substantial acreage that is relatively flat and has high visibility from the highway. Lot 16 has access from both the east and the west, and could allow pedestrian connections to the north under the highway. The location is not visible from the Elmerton Avenue corridor though, and feels somewhat isolated from surrounding uses. Residential and park development on Lot 16 will depend on improved street and multimodal connectivity to clearly direct users into the site. Meanwhile, with proper street improvements, this is also an ideal site for larger manufacturing or industrial uses on the landfill site, where topography creates a natural buffer from the neighborhoods while allowing excellent visibility from the highway.

Development Capacity

Land uses proposed on Lot 16 are primarily residential to the west and light industrial to the east. The steep slopes and existing landfill are substantial constraints, but these uses support the site's overall connectivity, marketability, and bring in taxable uses. The sloped area is an ideal place for a natural park space with trails along the creek. The Dauphin County Community Gardens are relocated here from Lot 14 and can step down the milder slopes to create a terraced series of individual garden plots, sited within a larger park with nearby water features, trees for shade, and other park amenities that give gardeners places to rest.

- **Light Industrial: Over 330,000 SF new development**
  On the landfill site, light industrial uses are proposed to make use of the highway visibility, distance from residential neighborhoods, and suitability of loading and industrial functions on the existing landfill. There is demand for fulfillment centers and similar types of uses that rely on truck traffic. With road improvements to Kohn Road, traffic to and from this area can move easily and be unencumbered by neighborhood and commuter traffic. The site can accommodate two to four different light industrial uses, depending on size (potentially more if smaller businesses are interested), and buildings can be 1-2 stories in this location without impacting views from surrounding neighborhoods.

- **Residential: 57 units**
  On the west side of the Lot, Bamberger Road already has a school and single family homes. Adding more housing is complementary to these uses and minimizes extensive new traffic along Bamberger Road. Two access points lead into a new street network that winds around the park. Although housing is close to the light industrial, the park and topography create natural barriers between the two uses. The park is an attractive front address and amenity for the housing. A new central road runs through Lot 16, but a narrower residential street right-of-way and curb bumpouts at the park will keep truck traffic concentrated to the east and avoid turning the residential streets into a cut-through.

Open Space and Connectivity

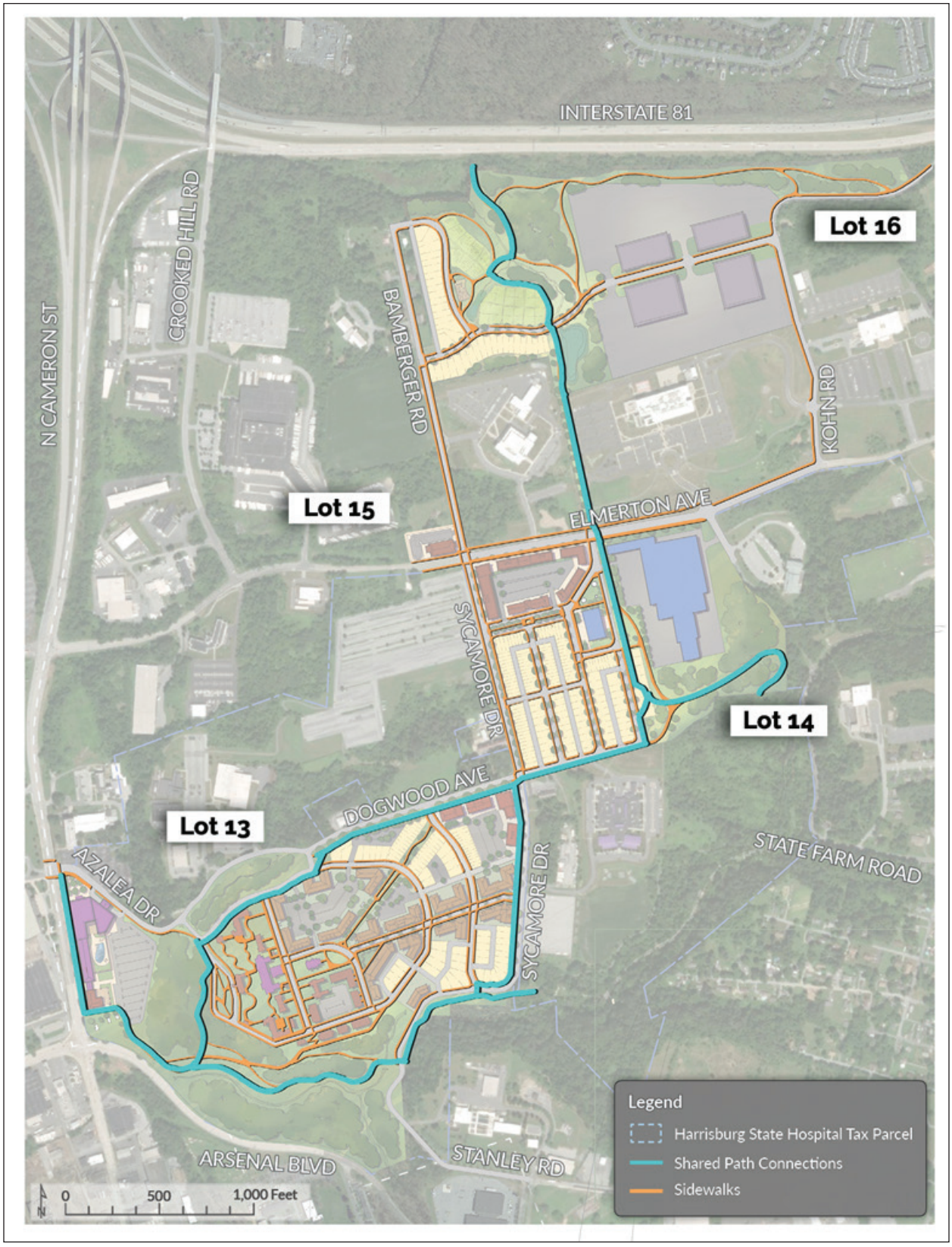
Lot 16 includes a 39-acre park with trails, creeks, the relocated Dauphin County Community Gardens, stormwater retention, and a multimodal path. Towards the west, a playground caters to new and existing housing and the existing school across Bamberger Drive, and makes the park a community destination to enjoy. Trails run north and east along the highway, adding substantial new pedestrian connectivity to adjacent neighborhoods and facilitating walking and biking access to and from the new housing and the jobs offered by the light industrial uses. Leading south, a natural basin with native plantings can hold varying amounts of stormwater during storms, and a midblock multimodal path leads into the center of the Lot 14 development.

SITEWIDE CONNECTIVITY AND OPEN SPACE

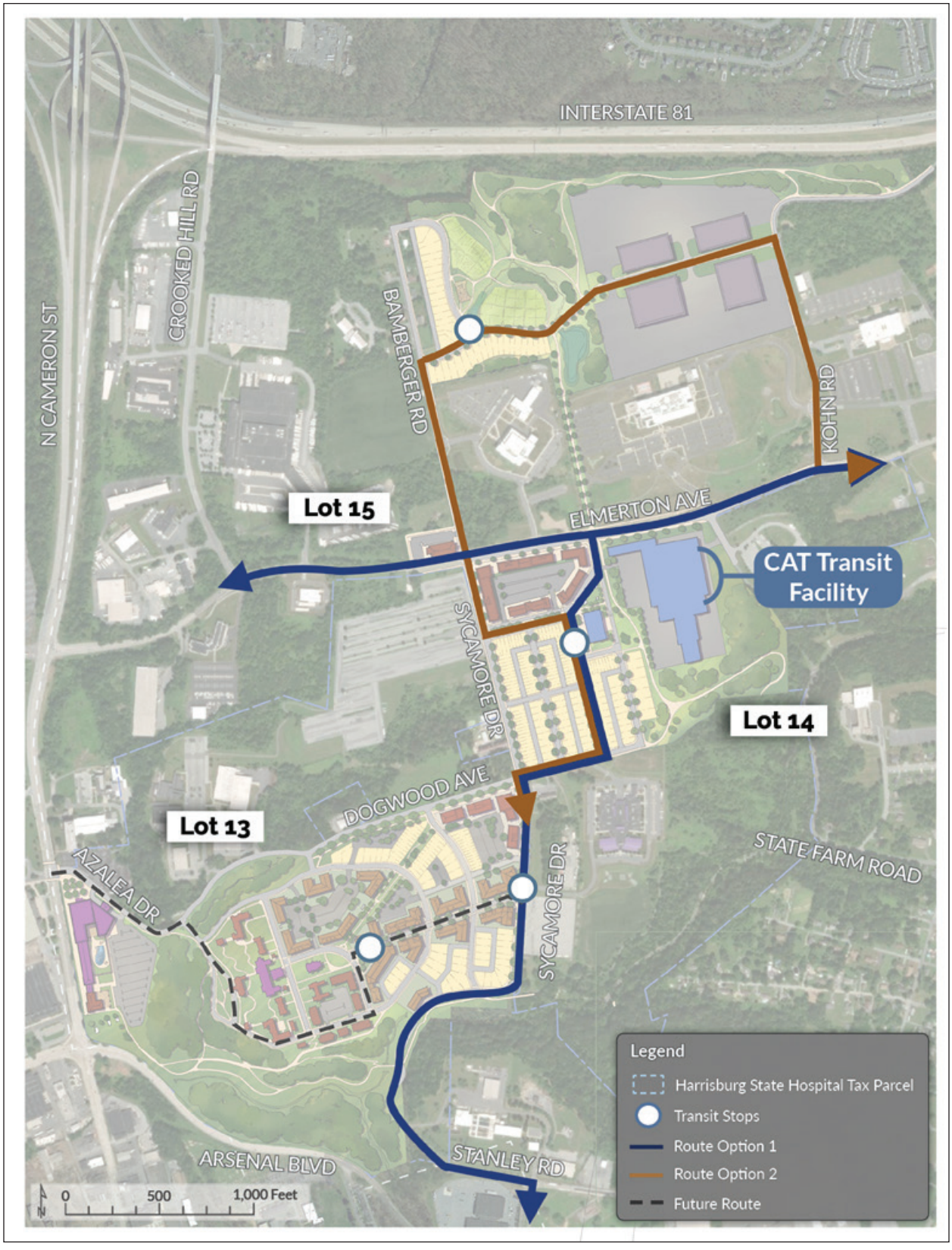
Overall, the concept provides open space in each of the three larger lots and establishes a series of internal parks and open spaces to serve each development district. The new park with the relocated Dauphin County Community Gardens and trails (Lot 16), the central plaza and woodland slopeside trails (Lot 14), and the hilltop park and pedestrian campus green, midblock pedestrian walkways, and the preserved slopes, trees, and Greenbelt trail (Lot 13) create a series of green spaces throughout the entire site.

Sidewalks are included along all mixed use and residential streets in the redevelopment. Outside the lots, street improvements on Bamberger Road, Sycamore Drive, Elmerton Avenue, and Azalea/Sycamore Drive include continuous sidewalks and demarcated crosswalks at all major intersections. Multimodal paths are provided from the Lot 16 park, through a new offsite multimodal trail, through the center of Lot 14 and directly next to the transit station, and along Sycamore Drive until it meets the Greenbelt. Additional spurs connect from Lot 14 to the Greenbelt, and run along Dogwood/Azalea Drive to the historic campus on the hilltop before following new trails back downhill to the Greenbelt. The new paths make accessing all new development easy, safe, and enjoyable from the Greenbelt and allow active transportation options throughout the area.

The bus route will drive along Elmerton and serve the new development as well. Bus service to the Community Gardens will use Bamberger Drive and include a stop at the park entrance. Bus service to Lots 14 and 16 can enter and exit using the new road to the transit station, along with the boulevard and/or a facilitated turn onto Dogwood Avenue as suits the route. It will stop at the transit station, which includes a bus-only lane, and includes spaces for riders to wait indoors. Bus service will then run south along an upgraded Sycamore Drive, and continue into Downtown Harrisburg. A stop is located at the entrance to Lot 16. In the future, a route into the historic campus may be added.



Multimodal Connections Concept Plan



Transit Concept Plan

ABOUT THE COMMUNITY GARDENS

The Dauphin County Community Gardens are currently located on Lot 14 along Elmerton Avenue's roadway frontage, extending from Sycamore Drive to State Farm Road. In total, the Gardens span eight acres and feature 318 individual garden plots available for rent to County residents. Most plots are 30x30 feet in size ($15 per plot) with a few 10x10 plots ($5 per plot) reserved for children ages 12 and under.

The Community Gardens were first established in 1977 and are located on DGS-owned land leased by Dauphin County. As leaseholder, Dauphin County manages the Gardens each summer, overseeing garden registration and general maintenance.

Embedded in the community for more than 40 years, the Community Gardens have become much more than a simple park and recreational asset for the County. The Gardens provide access to healthy, sustainable fresh food for both seniors and low-income households in the community, with the County reporting more than 60% of active gardeners are over the age of 65 and 45% are from low-income households. The Gardens are also a hub for community gathering, creating a strong bond between plot neighbors from a wide variety of racial and ethnic backgrounds.

318
Individual Garden Plots

60%
Active Gardeners are Over the Age of 65

45%
From Low-Income Households

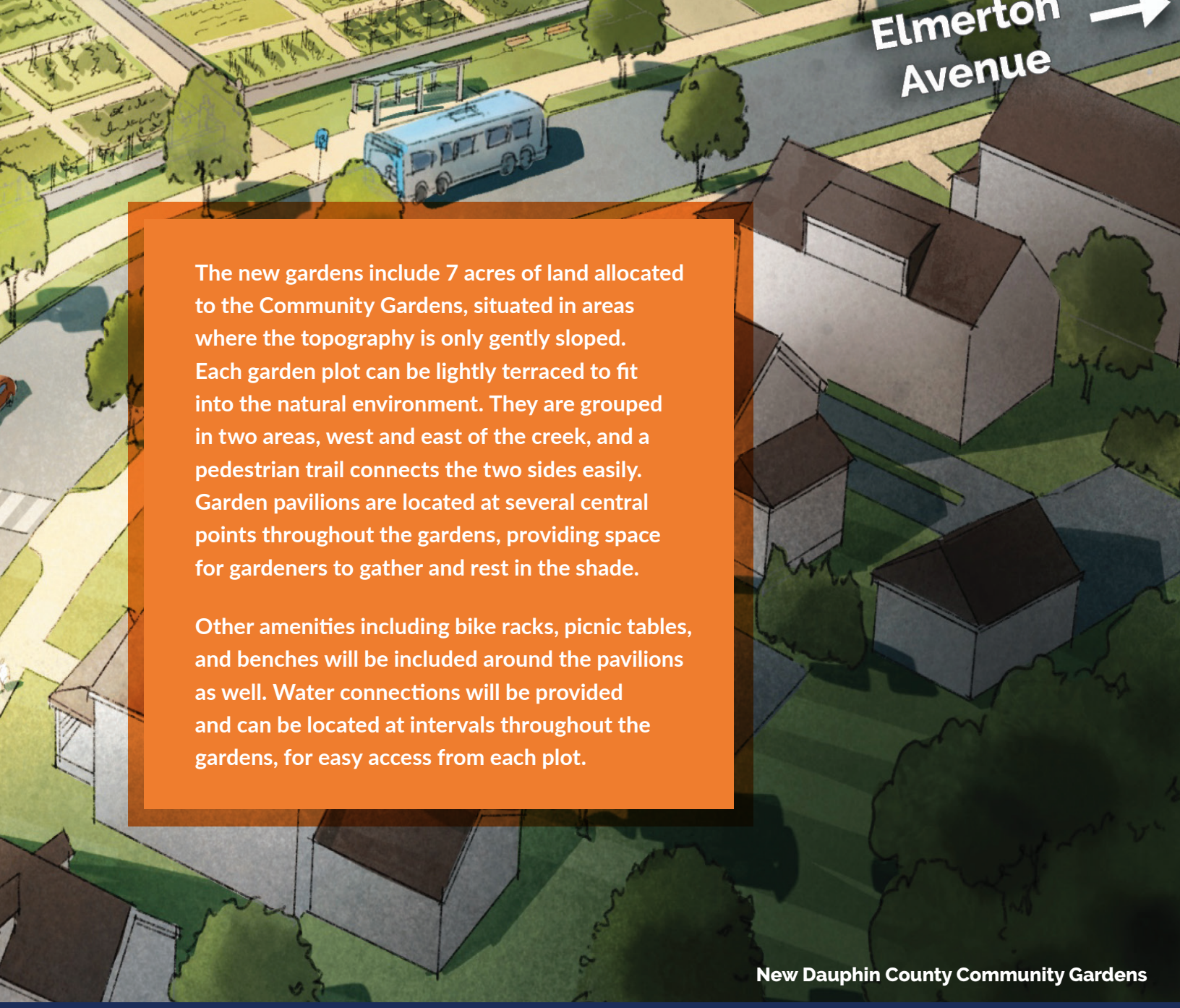
Existing Conditions of Community Gardens

Planning for the Future

Proposed New Location of the Community Gardens

Based on the planning effort and visions for the future, the development concept recommends relocating the Community Gardens from Lot 14 to Lot 16. Not only will relocation position Lot 14 for highest and best use redevelopment, but the relocation will also provide more space and more amenities to gardeners.

As proposed, the gardens are relocated to the western portion of Lot 16 in a new 39-acre public park providing trails, a playground, and community gathering location. The creek provides natural drainage, and garden plots are shown organically arranged around the creek and slope. This site is easily accessible from Bamberger Road, on foot or by bike through the expanded multimodal path network, and is more protected from noise and pollution than the current location along Elmerton Avenue. The existing trees provide shade nearby.



The new gardens include 7 acres of land allocated to the Community Gardens, situated in areas where the topography is only gently sloped. Each garden plot can be lightly terraced to fit into the natural environment. They are grouped in two areas, west and east of the creek, and a pedestrian trail connects the two sides easily. Garden pavilions are located at several central points throughout the gardens, providing space for gardeners to gather and rest in the shade.

Other amenities including bike racks, picnic tables, and benches will be included around the pavilions as well. Water connections will be provided and can be located at intervals throughout the gardens, for easy access from each plot.

New Dauphin County Community Gardens

Transportation access is facilitated by a bus stop along the new road through Lot 16. The bus will stop directly in front of the Community Gardens and include a covered shelter with benches. High-visibility crosswalks at the main intersection near the park and garden protect pedestrians crossing to and from the bus stop on the opposite side of the street, new residential lots, and trail network. A multimodal path sited midblock leads directly from the park and garden entry to the Lot 14 development, which includes further bus service and a larger transit station. For those who drive, on-street parking is provided along both of the two new roads that will serve the community gardens. The large industrial lots nearby may offer an opportunity to have shared parking access for gardeners on weekends.

In addition to relocating the existing 7 acres of community garden, there is room to expand further through the 39 acres of open space and add additional terracing for small plots as well as expanding small plots along the trail at the northern end of the Lot. By placing the garden within a larger park network, it becomes an amenity for more people to enjoy and provides a more enjoyable, comfortable and multifunctional place for gardeners to spend their time.

EXISTING BUILDINGS AND INFRASTRUCTURE PLAN

07

IN THIS SECTION

07

EXISTING BUILDINGS AND INFRASTRUCTURE PLAN

LOT 13 EXISTING BUILDING RECOMMENDATIONS

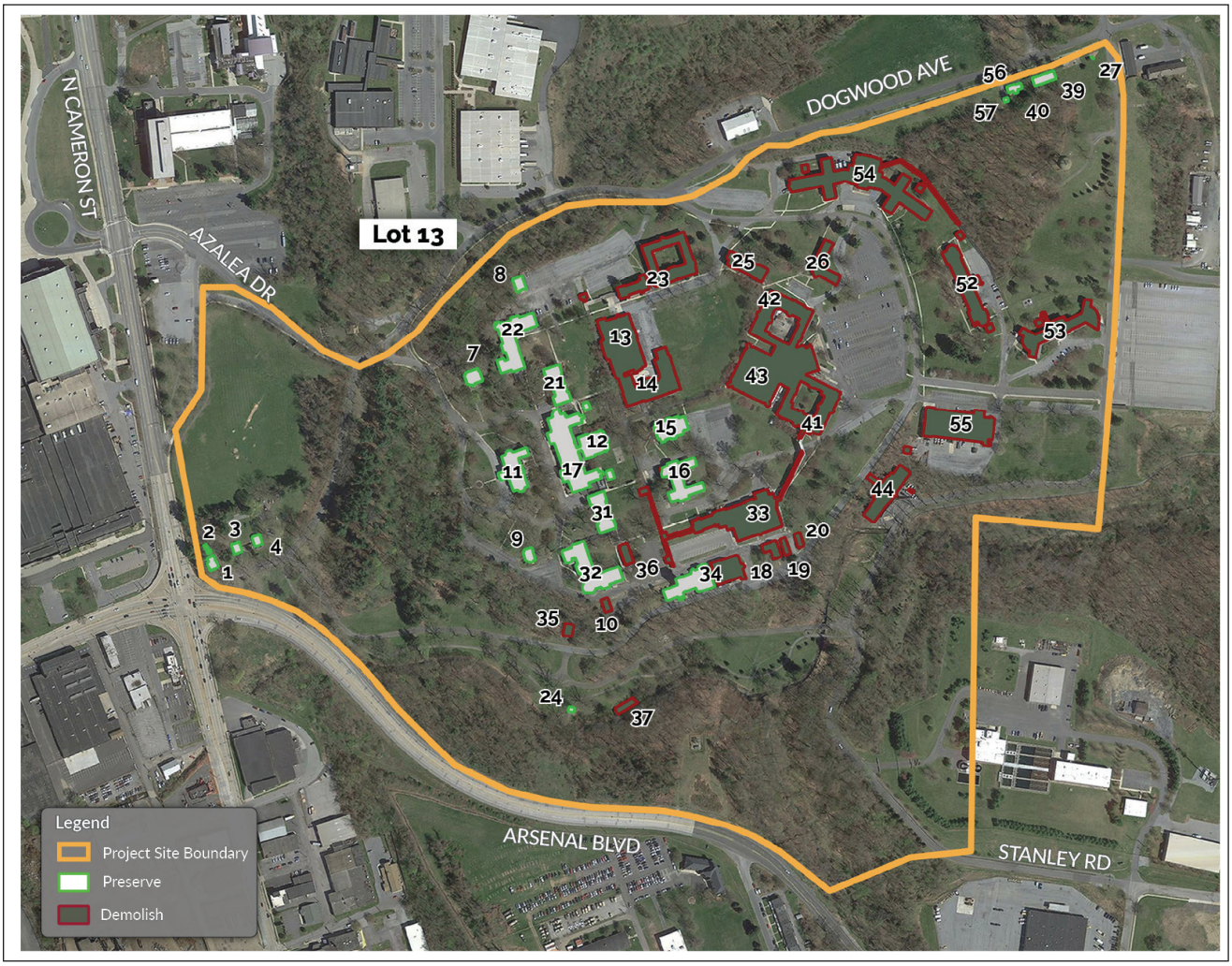
Condition of the Existing Buildings

One of the most significant hurdles to redevelopment of Lot 13 is the questionable usefulness of the existing buildings located on the former HSH campus. An appraisal conducted as part of the *DGS Annex Disposition Report* provided the following conclusion regarding the existing buildings:

> *"We have determined the market value of Lot 13 as vacant at $2,650,000. After making cost adjustment for utility separation, asbestos abatement, and applying the minimum demolition cost, Lot 13 yields a negative value of (**$8,050,000**) as vacant. The analysis concludes the utility separation and demolition cost exceed the value as vacant. Therefore, the most likely path is to adapt and reuse the existing structures.*
>
> *Additionally, we developed a market value as improved based on comparable sales. After consideration to comparable improved sales we determined the market value at $3,650,000. After adjustment for Utility Separation ($1,400,000) and Asbestos Abatement ($3,200,000), the value conclusion yields a negative value of (**$950,000**). The negative value as improved is less negative than the value as vacant.*
>
> *It is our opinion, and we certify, that the market value of the Fee Simple interest in the subject property, as of October 4, 2016, is: Negative Nine Hundred Fifty Thousand Dollars (-$950,000)."*

The *DGS Annex Disposition Report* ultimately implied that the demolition costs were prohibitive in the context of redevelopment of Lot 13 and concluded it would be less expensive to rehabilitate and reuse most of the existing buildings. However, this recommendation from 2017 did not include a structural analysis of the buildings or an opinion-of-cost on the rehabilitation of the buildings. The recommendation was also not made in the context of a redevelopment plan based on a Highest and Best Use evaluation for Lot 13.

During the *DCRA Reuse Planning Study*, the market analysis and stakeholder interviews were used to develop a preferred concept plan for Lot 13. The uses identified for Lot 13 would be best accomplished if the majority of the buildings were removed and the site were returned to an undeveloped "pad-ready" lot. In addition, updated building condition information provided by DGS and building tours conducted by the consultant team revealed that the condition of many of the buildings on Lot 13 have deteriorated significantly over the past several years. Many of the buildings are inhabitable, contain mold and/or asbestos, and are configured in way that would not lend them to reuse.



Map of Building to be Preserved and Demolished

Based on the findings of the *DCRA Reuse Planning Study*, the following tables provide a listing of the buildings that are recommended for reuse in the redevelopment plan for Lot 13 as well as a listing of the buildings that are recommended for demolition. Reuse and demolition recommendations were developed with consideration of the following criteria:

1. Historical significance
2. Apparent structural stability
3. Value in achieving the concept plan developed for Lot 13

The table listing demolition recommendations includes 2017 estimates for both demolition and the asbestos abatement that would be required prior to demolition. Demolition is estimated to total $3.6 million and abatement $2.7 million. These cost estimates were included in the financial pro forma completed as part of the Financial Analysis.

Table 2. Lot 13 Buildings Recommended for Reuse (Preserve)

Building	DGS Building#	Historic Status	Reuse Note
Gate House (Building #1)	1	3	Park/Trail Facilities
Gate House Garage (Building #2)	2	3	Park/Trail Facilities
Anderson Residence (Building #3)	3	3	Park/Trail Facilities
Eaton Cottage (Building #4)	4	3	Park/Trail Facilities
Dixmont Cottage (Building #7)	7	1	Historic Preservation
Paint/Sandblast Shop (Building #8)	8	4	Park/Trail Facilities
Dix Library (Building #9)	9	1	Historic Preservation
Maintenance Storage Garage Keep this building or #32	10	4	Transportation Infrastructure
Administration Building (Building #11)	11	2	
Logan Building (Building #12)	12	2	
Chapel (Building #15)	15	2	
Slothower (Building #16)	16	2	
Petry (Building #17)	17	3	
Anderson Hall (Building #21)	21	2	
Green Building (Building #22)	22	2	
Sewer House (Building #24)	24	4	Park/Trail Facilities
Pump House (Building #27)	27	4	Park/Trail Facilities
Shamrock Hall (Building #31)	31	2	
Beechmont (Building #32) Keep this building or #10	32	2	Transportation Infrastructure
Laundry (Building #34)	34	2	
Picnic Pavilion (Building #39)	39	4	
Picnic Grounds Toilet (Building #40)	40	4	
Dairy Barn Residence/Paton Residence (Building #56)	56	3	Park/Trail Facilities
Garage (Building #57)	57	3	Park/Trail Facilities

All buildings listed in the table above are included in deposition.

Table 3. Lot 13 Buildings Recommended for Demolition

Building	DGS Building#	Historic Status	2017 Demolition Cost	2017 Asbestos Abatement
Central Kitchen (Building #13)	13	2	$226,328	$676,600
Pifer Building (Building #14)	14	2	$62,836	$39,090
Paint/Grounds Shop (Building #18)	18	2	$26,928	$8,800
Storage Shed (Building #19)	19	4	$4,720	NO ACM
Storage Shed (Building #20)	20	4	$4,080	$600
Cedercrest (Building #23)	23	2	$314,040	$113,638
Lanco Lodge (Building #25)	25	2	$97,136	$362,694
Hemlock Hall (Building #26)	26	3	$64,332	$138,843
Cherrywood (Building #33)	33	2	$389,940	$4,250
Morgue (Building #35)	35	2	$16,624	$75,131
Clothes Tree (Building #36)	36	2	$23,040	$13,038
Paint Shop (Building #37)	37	4	$13,824	$2,750
Computer Center (Building #41)	41	3	$291,320	$3,125
Computer Center (Building #42)	42	3	$291,320	$3,125
Willow Oak (Building #43)	43	3	$385,028	$22,144
Power Plant (Building #44)	44	4	$52,908	$118,900
Hilltop (Building #52)	52	3	$93,532	$95,431
Hillcrest (Building #53)	53	3	$236,656	$2,075
Eaton (Building #54)	54	3	$407,212	$38,900
Maintenance (Building #55)	55	3	$158,704	$163,813

All buildings listed in the table above are included in deposition.

Additional Building Preservation and Demolition Recommendations for Lot 13

- It is recommended that a complete structural evaluation of buildings that are recommended for reused be conducted before a final reuse/demolition decision be made. The structural evaluation should be completed by an entity qualified to evaluate historic buildings.
- It is recommended that updated asbestos abatement and demolition costs be obtained once a final determination is made regarding buildings to be demolished.
- A comprehensive public funding strategy should be developed to accomplish demolition and, ultimately, to position Lot 13 as “pad-ready” for redevelopment. A phased approach may be required.

TRANSPORTATION IMPROVEMENTS

Traffic Analysis

To determine at a high level the potential traffic impacts at each of the lots, trip generation was performed to project anticipated trips at each of the lot developments. Trip generation for the proposed developments is based on projected trip generation from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition. Building and parking sizes were estimated, and site trips were generated for the entire day.

Table 4. Lot Trip Generation

			LAND TRIPS			LOT SUMMARY		
			Weekday			Weekday		
Lot	DESCRIPTION	NOTES	ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
13	Low Density Residential	Single Family	219	219	438	7,100	7,094	14,194
		Townhouses	279	278	557			
	Apartments	-	904	903	1807			
	Mixed Use	Commercial	976	975	1951			
		Grocery	534	534	1068			
		Office	548	548	1096			
	Hotel	Hotel	717	717	1434			
		Sports Complex	1730	1729	3459			
		Commercial	457	456	913			
	Historic Campus	Hotel & Conference	717	717	1434			
	Park	-	19	18	37			
14	Low Density Residential	Single Family	224	224	448	4,693	4,691	9,384
		Townhouses	479	479	958			
	Mixed Use	Commercial	1892	1891	3783			
		Office	1543	1543	3086			
	Park	-	8	8	16			
	CAT	-	401	400	801			
	CAT Transit Center	-	146	146	292			
15	Mixed Use	Commercial	388	387	775	388	387	775
16	Low Density Residential	Single Family	310	310	620	1,157	1,156	2,313
	Park	-	16	15	31			
	Community Garden	-	3	3	6			
	Industrial	-	828	828	1656			

A full breakdown of the trip generation for each of the lots is included in Appendix B, detailing trip breakdowns for each of the peak hours, as well as the utilized ITE trip descriptions.

Trip Generation

Lot 13 is expected to consist of a mix of low-density residential housing (both single-family homes and townhouses), as well as apartments and mixed-use development (commercial, office space, and a grocery store). Hotel space and a sports complex, as well as a park, are also expected here. Based on the expected site uses and predicted building sizes, the lot is expected to generate 14,194 trips per day (7,100 entering trips and 7,094 exiting trips). The majority of these trips can be expected to utilize Cameron Street and Arsenal Boulevard as entering/exit points.

Lot 14 is expected to consist of a mix of low-density residential housing (both single-family homes and townhomes), as well as mixed-use development (both commercial and office space). In addition to a public park, this lot is also expected to become the home for a new CAT facility, as well as a transit center. Based on the expected site uses and predicted building sizes, the lot is expected to generate 9,384 trips per day (4,693 entering trips and 4,691 exiting trips). While all trips entering/exiting the lot will be utilizing Elmerton Avenue, the majority of the trips from the western portion of the property can be expected to access the lot through Sycamore Drive, while the eastern portion (owned by CAT) will be exclusively accessing the lot directly from Elmerton Avenue.

Lot 15 is expected to consist solely of commercial space and is expected to generate 775 trips per day (388 entering trips and 387 exiting trips). Access points are available from both Elmerton Avenue and Bamberger Road.

Lot 16 is expected to consist of single-family homes, a park and community garden, and industrial space. The lot, based on the size and anticipated land uses, is expected to generate 2,313 trips per day (1,157 entering trips and 1,156 exiting trips). Similar to Lot 14, all traffic entering/exiting this lot will be utilizing Elmerton Avenue, with the majority of trips from the western portion of the property accessing via Bamberger Road, and the majority of trips from the eastern portion of the property accessing via Kohn Road.

CAT Facility Preliminary Transportation Improvement Recommendations

Based on the expected land uses and anticipated levels of traffic as a result of future growth at each of the four lots, a high-level overview of the existing transportation network was reviewed to determine anticipated transportation impacts on the network, as well as preliminary improvements that will likely be needed. As shown in the trip generation table, all lots are expected to add a significant amount of traffic to the existing road network, some of which are, at times, at full capacity (e.g., Cameron Street). Improvements are necessary to ensure that adequate levels of capacity are maintained post-development.

Focusing specifically on the CAT Facility at Lot 14, anticipated to be the first development to be constructed, the following improvements have been recommended:

- Construct three full-access, medium-volume, stop-controlled driveways to Sycamore Drive.
- Construct one full-access, medium-volume, stop-controlled driveway (spine road) to Elmerton Avenue.
- Construct a northbound left turn lane at the intersection with Elmerton Avenue.
- Construct an Elmerton Avenue westbound left turn lane at the Lot 14 driveway stop-controlled intersection.
- Revise the Farm Show signal system to account for additional traffic accessing the CAT Facility site at Lot 14 along Elmerton Avenue. The signal system currently consists of six signalized intersections.
- Construct one full-access, medium-volume, stop-controlled bus driveway to State Farm Road.
- Construct a shared-use path at Lot 14, tying into the existing Greenbelt trail connection at Dogwood Avenue.
- Stripe out bike lane lines on the Lot 14 internal street network, Elmerton Avenue, State Farm Road, Sycamore Drive, Azalea Drive, and Dogwood Avenue.
- Construct sidewalk to increase pedestrian connectivity on the Lot 14 internal street network, Elmerton Avenue, State Farm Road, Sycamore Drive, Azalea Drive, and Dogwood Avenue. The sidewalk placement is described in more detail in the following section.

Lot 14 will consist of five driveways, with three accessing Sycamore Drive, one providing access to Elmerton Avenue, and a final one providing access to State Farm Road for bus use only. All driveways are expected to be medium-volume driveways and will be stop-controlled. A left turn lane is recommended at the driveway accessing Elmerton Avenue, as a large percentage of the trips are expected to access Cameron Street via Elmerton Avenue.

Due to Elmerton Avenue currently being a two-lane roadway, making improvements at select intersections are important to maintain capacity along the corridor. Constructing a westbound left turn lane at the Lot 14 driveway would allow for vehicle storage, letting through traffic on Elmerton Avenue proceed while vehicles are waiting to make turns into Lot 14. The introduction of additional CAT facility traffic would require adjustments to be made to the existing signal system along Elmerton Avenue. Signal timings and adjustments would need to be made to ensure that traffic flow is not interrupted as a result of the additional traffic.

While the following transportation improvements have been recommended for the CAT Facility on Lot 14, additional improvements are necessary for adjacent roadways as a result of the additional development traffic being added to the road network. These improvements are outlined in the following section, and a cost breakdown has been provided as well.


6
6TH STREET
UPTOWN PLAZA
1111

Cost Estimates for Lot 14
(CAT Facility Infrastructure and Site Improvements) and Impacted Roads

A cost breakdown of roadway and site improvements related to the development of the Lot 14 for the CAT Facility was developed. Pedestrian connectivity, roadway enhancements, signalized intersection improvements, and improved roadside safety features to adjacent or nearby roadways were reviewed and accessed. All of these upgraded features are related to the development of the CAT Facility on Lot 14. It should be noted that all sidewalks bordering the perimeter of Lot 14 were tabulated in the adjacent roadway section. For example, sidewalks along the eastern side of Lot 14 were associated with the Sycamore Drive section. All internal sidewalks within Lot 14 were associated with Lot 14 section.

Table 5. Lot 14 Site Improvements

LOT 14 (CAT Facility Infrastructure and Site Improvements)
• Full depth pavement construction was proposed along the spine road, which will link Elmerton Avenue with Dogwood Avenue through Lot 14. This 1,560 ft. stretch has a 32 ft. typical section (5' Bike Lane – 11' Lane – 11' Lane – 5' Bike Lane). A 5 ft. concrete sidewalk will run parallel to the road on the western side.
• Full depth pavement construction was proposed on the access road, which links Sycamore Drive to the spine road on Lot 14. This 1,005 ft. stretch will have a 32 ft. typical section (5' Bike Lane – 11' Lane – 11' Lane – 5' Bike Lane). A 5 ft. concrete sidewalk was quantified on both sides of the roadway.
• Full depth pavement construction was proposed for 675 ft. around the western CAT facility, connecting the access road and the spine road mentioned before. This road will have a 32 ft. typical section (5' Bike Lane – 11' Lane – 11' Lane – 5' Bike Lane). A 5 ft. concrete sidewalk was quantified on both sides of the roadway.
• State Farm Road enhancements were quantified in this section. In total, 400 ft. of full depth reconstruction, proposed roadway curb, and proposed 5 ft width sidewalk on both sides of the road were tabulated.
• A shared use path was proposed at Lot 14, which ties into the existing Greenbelt at Dogwood Avenue. This shared use path was assumed to be 5 ft. wide and 3,030 ft. in length.
• ADA curb ramps were proposed related to the development of the CAT Facility. In total, 17 ADA curb ramps were accounted for at the intersections of roadways, parking lots, and trail connections (all within the Lot 14 perimeter).
• Concrete sidewalks around the western CAT facility were accounted for under the item "Concrete/Sidewalk Area." Approximately 1,320 SY of concrete sidewalks were quantified for this area.
• Parking lot pavement was quantified for the two CAT Facility parking lots at the western and eastern sides of the main CAT Facility. Approximately 30,000 SY of full depth pavement was estimated for this section. Proposed curb borders both parking lots. Furthermore, sidewalk was assumed to be bordering the two parking lots. This item was included within the "Sidewalk (Assumed 5 ft. Wide)" item for Lot 14.
• Pavement markings were proposed along all constructed roads within Lot 14, along State Farm Road, and within the parking lot. The pavement markings will consist of white hot thermoplastic shoulder/bike lane lines, a yellow hot thermoplastic double yellow line to separate traffic. The parking spaces will be striped with white hot thermoplastic pavement markings in the two lots.

ELMERTON AVENUE

- No full depth pavement construction was assumed to be necessary on Elmerton Avenue during the Lot 14 CAT Infrastructure and Site Improvements phase of the project.
- Mill and overlay of the roadway were assumed from approximately 350 ft. west of the Sycamore Drive and Elmerton Avenue intersection to the intersection of Elmerton Avenue and Kohn Road.
- Concrete curb was proposed on both sides of the roadway on Elmerton Avenue where mill and overlay will occur to increase vehicular/pedestrian safety and improve drainage.
- Pavement markings were proposed along Elmerton Avenue in the limits of mill and overlay. The pavement markings will consist of white hot thermoplastic shoulder/bike lane lines, a yellow hot thermoplastic double yellow line to separate traffic and various turn lane white hot thermoplastic lines along the route.
- Roadway signage was proposed along Elmerton Avenue to include approximately 30 Type B signs, each being 9 SF, were accounted for in this assumption for the lump sum cost. The unit cost of each of the signs is approximately $40/SF.
- ADA ramps were proposed along Elmerton Avenue. A total of 16 ramps were accounted for to be installed or replaced (intersection of Elmerton Avenue and Sycamore Drive and at the intersection of Elmerton Avenue & State Farm Road).
- Sidewalk was proposed along the south side of Elmerton Avenue in the limits of mill and overlay and also on the north side of Elmerton Avenue in between Kohn Road and PSECU Way to increase pedestrian connectivity. The sidewalk was assumed to be 5 ft. in width with a concrete surface. The existing sidewalk along the north side of Elmerton Avenue is to remain within the project limits.
- Existing traffic signal improvements were accounted for at the intersection of Elmerton Avenue and State Farm Road in this section. Furthermore, an upgrade was proposed at the intersection of Elmerton Avenue and Sycamore Drive to the existing signals.
- All existing guide rail was assumed to be replaced along this stretch of Elmerton Avenue and, pending the grading of Lot 14, new guide rail was also proposed to increase vehicular safety within the clear zone.

SYCAMORE DRIVE

- No full depth pavement construction was assumed to be necessary on Sycamore Drive during the Lot 14 CAT Infrastructure and Site Improvements phase of the project.
- Mill and overlay of the roadway were assumed from the intersection of Sycamore Drive and Elmerton Avenue to the intersection of Sycamore Drive and Azalea Drive.
- Concrete curb was proposed on both sides of the roadway on Sycamore Drive where mill and overlay will occur to increase vehicular/pedestrian safety and improve drainage.
- Pavement markings were proposed along Sycamore Drive in the limits of mill and overlay. The pavement markings will consist of white hot thermoplastic shoulder/bike lane lines, a yellow hot thermoplastic double yellow line to separate traffic and various turn lane white hot thermoplastic lines along the route.
- Roadway signage was proposed along Sycamore Drive. Approximately 15 Type B signs, each being 9 SF, were accounted for in this assumption for the lump sum cost. The unit cost of each of the signs is approximately $40/SF.
- ADA ramps were proposed along Sycamore Drive at the intersection of Sycamore Drive and Azalea Drive and at the intersection of Sycamore Drive and the Lot 14 spine road Entrance/Exit.
- Sidewalks were proposed along the eastern and western side of Sycamore Drive within the limits of mill and overlay. The sidewalk was assumed to be 5 ft. in width with a concrete surface.
- All existing guide rail was assumed to be replaced along this stretch of Sycamore Drive and, pending the grading of Lot 14, new guide rail was also proposed to increase vehicular safety within the clear zone.

Table 5. (continued) Lot 14 Site Improvements

DOGWOOD AVENUE	AZALEA DRIVE	CAMERON STREET
• Full depth pavement construction was accounted for Dogwood Avenue for the proposed 450 ft. stretch proposed along the southern perimeter of Lot 14. • Mill and overlay of the roadway were assumed from the intersection of Sycamore Drive and Dogwood Avenue to the existing end limits of Dogwood Avenue, approximately 500 ft. to the west. • Concrete curb was proposed on both sides of the roadway on Dogwood Avenue where mill and overlay and full depth pavement construction will occur to increase vehicular/pedestrian safety and improve drainage. • Pavement markings were proposed along Dogwood Avenue in the limits of mill and overlay and full depth pavement construction. The pavement markings will consist of white hot thermoplastic shoulder/bike lane lines and a yellow hot thermoplastic double yellow line to separate traffic. • Roadway signage was proposed along Dogwood Avenue. Approximately 10 Type B signs, each being 9 SF, were accounted for in this assumption for the lump sum cost. The unit cost of each of the signs is approximately $40/SF. • No ADA ramps were proposed in the Dogwood Avenue section. This is because all the ADA ramps at the Dogwood Avenue and Sycamore Drive intersection were accounted for in the Sycamore Drive section. • Sidewalks were proposed along the north and south sides of Dogwood Avenue within the limits of mill and overlay and full depth construction. The sidewalk was assumed to be 5 ft. in width with a concrete surface. • No guide rail was assumed for Dogwood Avenue.	• No full depth pavement construction was assumed to be necessary on Azalea Drive during the Lot 14 CAT Infrastructure and Site Improvements phase of the project. • Mill and overlay of the roadway were assumed from the intersection of Cameron Street and Azalea Drive to the intersection of Azalea Drive and Sycamore Drive. • Concrete curb was not proposed on Azalea Drive. Existing conditions are to remain. • Pavement markings were proposed along Azalea Drive in the limits of mill and overlay. The pavement markings will consist of white hot thermoplastic shoulder/bike lane lines, a yellow hot thermoplastic double yellow line to separate traffic and various turn lane white hot thermoplastic lines along the route. • Roadway signage was proposed along Azalea Drive. Approximately 30 Type B signs, each being 9 SF, were accounted for in this assumption for the lump sum cost. The unit cost of each of the signs is approximately $40/SF. • A total of 8 ADA ramps were accounted for at the intersection of Cameron Street and Azalea Drive. • Sidewalks were not proposed on the north side of Azalea Drive. The existing sidewalk along the south side of Azalea Drive is to remain within the project limits. • One proposed signalized intersection was accounted for at the intersection of Azalea Drive and Sycamore Drive. • All existing guide rail was assumed to be replaced along this stretch of Azalea Drive and new guide rail was also proposed to increase vehicular safety within the clear zone.	Traffic signal equipment upgrades and a traffic adaptive system were proposed at the intersection of Cameron Street and Azalea Drive.

Based on the assumptions made and traffic improvements developed, the following preliminary cost estimates were developed for Lot 14 (CAT Facility Infrastructure and Site Improvements) and the impacted roadways:

Table 6. Lot 14 Cost Estimate

ITEM DESCRIPTION	SUBTOTAL
Lot 14 (CAT Facility Infrastructure and Site Improvements)	$16,500,000
Elmerton Avenue Roadway Concept	$2,206,900
Sycamore Street Roadway Concept	$1,043,100
Dogwood Avenue Roadway Concept	$874,800
Azalea Drive Roadway Concept	$810,800
Cameron Street Roadway Concept	$316,800
TOTAL PRELIMINARY COST ESTIMATE	**$21,752,300**

A full breakdown of the preliminary cost estimates (including full item descriptions, estimated quantities, and construction subtotal costs) are provided in Appendix B.

Sitewide Roadway Improvement Recommendations for Lots 13, 14, 15, and 16

An overview of the existing transportation network was reviewed to determine anticipated transportation impacts on the network as a result of future development on the four lots. A list of preliminary improvements that will likely be needed was generated for each of the lots, as well as the surrounding roadways to ensure adequate levels of capacity are maintained post-development. The following traffic improvements for each of the lots and surrounding roadways have been recommended.

Table 7. Roadway Improvement Recommendations

LOT 13	LOT 14	LOT 15	LOT 16
Lot 13 will provide access to Cameron Street, Arsenal Boulevard, and Sycamore Drive utilizing existing driveways/ roadways. Due to the high number of trips accessing this lot (over 14,000 expected), signalizing these three existing intersections would help better manage vehicles entering/leaving the site. • Signalize the intersection of Azalea Drive and unnamed driveway east of Cameron Street (current triangle intersection). • Signalize the intersection of Azalea Drive & Dogwood Avenue/Circle Drive. • Signalize the intersection of Sycamore Drive/ Dogwood Avenue.	On Lot 14, the driveway accessing Elmerton Avenue is expected to serve as the main driveway for CAT's facilities, and signalization would make it easier for users of the facility, as well as the residential/ mixed use users, to enter/ exit the driveway. Due to the preliminary drawings showing this Elmerton Avenue driveway being located directly across from PSECU's right-in/ right-out driveway, improvements would need to be made to convert the driveway to a full-access driveway. • Signalize the intersection of Elmerton Avenue and the Lot 14 Driveway/ PSECU right-in/right-out driveway. • Reconstruct the PSECU right-in/right-out driveway to become a full-access, low-volume driveway.	Lot 15 will consist of two driveways, one accessing Elmerton Avenue and the other accessing Bamberger Road. The Elmerton Avenue driveway is recommended to be a right-in/right-out driveway due to the lot's location at the signalized intersection of Elmerton Avenue & Bamberger Road/ Sycamore Drive. As traffic volumes are higher on Elmerton Avenue, vehicle queues can develop, which could prevent vehicles from turning left out of the property. Safety would be enhanced by preventing left turns in/out of the property via Elmerton Avenue. Due to the lower volumes on Bamberger Road, a full-access driveway would be more appropriate.	Lot 16 will consist of three driveways, with two accessing Bamberger Road and the third accessing Kohn Road to the west. All driveways are expected to receive medium volumes of traffic and, due to the low traffic volumes on Kohn Road and Bamberger Road, are recommended to be stop-controlled driveways. Due to the western portion of the lot being utilized for industrial needs, a high amount of heavy vehicle traffic is expected to utilize the eastern driveway to Kohn Road. • Construct 2 full-access, medium-volume, stop-controlled driveways to Bamberger Road. • Construct one full-access, medium-volume, stop-controlled driveway to Kohn Road.

KOHN ROAD

Kohn Road is a local two-lane road owned by Susquehanna Township and listed as a major collector roadway. With an average annual daily traffic of 2,300 vehicles the roadway is lightly traveled within the study area. With the addition of Lot 16 and one of its driveways accessing Kohn Road, including the industrial properties, traffic can be expected to increase dramatically. As Lot 16 is expected to generate over 2,000 trips throughout the day and a significant portion are expected to utilize Kohn Road, especially the industrial facilities, a southbound left turn lane at the intersection of Kohn Road and Elmerton Avenue would be beneficial to more efficiently move traffic through the intersection.

- Construct a southbound left turn lane at the Elmerton Avenue intersection (assume 200' + taper).

ELMERTON AVENUE

Elmerton Avenue is a two-lane, state-owned road, and listed as a major collector roadway, according to PennDOT's federal functional classification map. Existing traffic along the roadway is moderate, with an average annual daily traffic of 8,300 vehicles according to PennDOT's historical traffic counts conducted between State Farm Drive and Kohn Road. The development of all four lots is expected to increase traffic, particularly at Lot 14, Lot 15, and Lot 16, as they all have driveways accessing Elmerton Avenue. Due to this and Elmerton Avenue currently being a two-lane roadway, making improvements at select intersections are important to maintain capacity along the corridor. The introduction of this new signalized intersection would require adjustments to be made to the existing signal system along Elmerton Avenue. Signal timings and adjustments would need to be made to ensure that traffic flow is not interrupted with this new signal.

- Revise the Farm Show signal system to account for additional traffic accessing the lots along Elmerton Avenue and the new signalized intersection at Lot 14. The signal system currently consists of six signalized intersections.

CAMERON STREET

Cameron Street is a four-lane, state-owned road, and listed as a principal arterial highway on PennDOT's federal functional classification map. Traffic along the roadway is extremely high, with an average annual daily traffic of 33,400 vehicles. In addition to the normal traffic conditions along Cameron Street, the Pennsylvania Farm Show Complex & Expo Center (located opposite Elmerton Avenue at Cameron Street) hosts special events throughout the year that greatly impact the traffic system, with additional traffic and queuing present along Cameron Street and the adjacent side streets. Any additional development along the corridor would be additive to the current traffic conditions, with the system being close to maximum capacity. As Lot 13 contains an access point to Cameron Street via Azalea Drive, signal timings adjustments will need to be made to the signal system along Cameron Street to ensure an efficient flow of traffic.

- Revise the Harrisburg Master 3 signal system to account for Lot 13 traffic utilizing the Arsenal Boulevard/ Pine Drive/17th Street intersection and along Cameron Street. The signal system currently consists of 12 signalized intersections.

AZALEA DRIVE

Azalea Drive is a two-lane local road, serving as a connection between the buildings within Lot 13 and Cameron Street, as well as an extended driveway for the various surrounding buildings owned by the state. Current traffic along Azalea Drive is small and limited to mostly the surrounding state-owned buildings and facilities. The development of the properties at Lot 13, however, can be expected to greatly increase the traffic demand along the roadway. Providing an eastbound left turn lane at the proposed eastern signalized intersection at Lot 13 will provide storage for turning vehicles, allowing for a more efficient signalized intersection.

- Construct an eastbound left turn lane at the current triangle intersection (proposed signalized intersection).

Total Transportation Improvement Recommendations

As stated previously, an overview of the existing transportation network was reviewed to determine anticipated transportation impacts on the network as a result of development on the four lots. A list of preliminary improvements that will likely be needed was generated for each of the lots, as well as the surrounding roadways to ensure that adequate levels of capacity are maintained post-development. The following traffic improvements for each of the lots and surrounding roadways have been recommended:

Table 8. Total Transportation Improvement Recommendations

LOT 13	LOT 14	LOT 15	LOT 16
• Signalize the intersection of Azalea Drive and unnamed driveway east of Cameron Street (current triangle intersection). • Signalize the intersection of Azalea Drive & Dogwood Avenue/Circle Drive. • Signalize the intersection of Sycamore Drive/ Dogwood Avenue. Lot 13 is will provide access to Cameron Street, Arsenal Boulevard, and Sycamore Drive utilizing existing driveways/roadways. Due to the high number of trips accessing this lot (over 14,000 expected), signalizing these three existing intersections would help better manage vehicles entering/leaving the site.	• Signalize the intersection of Elmerton Avenue and the Lot 14 Driveway/PSECU right-in/right-out driveway. • Reconstruct the PSECU right-in/ right-out driveway to become a full-access, low-volume driveway. The driveway accessing Elmerton Avenue is expected to serve as the main driveway for CAT's facilities, and signalization would make it easier for users of the facility, as well as the residential/mixed use users, to enter/ exit the driveway. Due to the preliminary drawings showing this Elmerton Avenue driveway being located directly across from PSECU's right-in/ right-out driveway, improvements would need to be made to convert the driveway to a full-access driveway.	• Construct a right-in/right-out, low-volume driveway to Elmerton Avenue. • Construct a full-access, medium-volume, stop-controlled driveway to Bamberger Road. Lot 15 will consist of two driveways, one accessing Elmerton Avenue and the other accessing Bamberger Road. The Elmerton Avenue driveway is recommended to be a right-in/right-out driveway due to the lot's location at the signalized intersection of Elmerton Avenue & Bamberger Road/ Sycamore Drive. As traffic volumes are higher on Elmerton Avenue, vehicle queues can develop, which could prevent vehicles from turning left out of the property. Safety would be enhanced by preventing left turns in/out of the property via Elmerton Avenue. Due to the lower volumes on Bamberger Road, a full-access driveway would be more appropriate.	• Construct 2 full-access, medium-volume, stop-controlled driveways to Bamberger Road. • Construct one full-access, medium-volume, stop-controlled driveway to Kohn Road. Lot 16 will consist of three driveways, with two accessing Bamberger Road and the third accessing Kohn Road to the west. All driveways are expected to receive medium volumes of traffic and, due to the low traffic volumes on Kohn Road and Bamberger Road, are recommended to be stop-controlled driveways. Due to the western portion of the lot being utilized for industrial needs, a high amount of heavy vehicle traffic is expected to utilize the eastern driveway to Kohn Road.

KOHN ROAD	ELMERTON AVENUE	CAMERON STREET	AZALEA DRIVE
• Construct a southbound left turn lane at the Elmerton Avenue intersection (assume 200' + taper). Kohn Road is a local two-lane road owned by Susquehanna Township and listed as a major collector roadway. With an average annual daily traffic of 2,300 vehicles the roadway is lightly traveled within the study area. With the addition of Lot 16 and one of its driveways accessing Kohn Road, including the industrial properties, traffic can be expected to increase dramatically. As Lot 16 is expected to generate over 2,000 trips throughout the day and a significant portion are expected to utilize Kohn Road, especially the industrial facilities, a southbound left turn lane at the intersection of Kohn Road and Elmerton Avenue would be beneficial to more efficiently move traffic through the intersection.	• Revise the Farm Show signal system to account for additional traffic accessing the lots along Elmerton Avenue and the new signalized intersection at Lot 14. The signal system currently consists of six signalized intersections. Elmerton Avenue is a two-lane, state-owned road, and listed as a major collector roadway, according to PennDOT's federal functional classification map. Existing traffic along the roadway is moderate, with an average annual daily traffic of 8,300 vehicles according to PennDOT's historical traffic counts conducted between State Farm Drive and Kohn Road. The development of all four lots is expected to increase traffic, particularly at Lot 14, Lot 15, and Lot 16, as they all have driveways accessing Elmerton Avenue. Due to this and Elmerton Avenue currently being a two-lane roadway, making improvements at select intersections are important to maintain capacity along the corridor. The introduction of this new signalized intersection would require adjustments to be made to the existing signal system along Elmerton Avenue. Signal timings and adjustments would need to be made to ensure that traffic flow is not interrupted with this new signal.	• Revise the Harrisburg Master 3 signal system to account for Lot 13 traffic utilizing the Arsenal Boulevard/Pine Drive/17th Street intersection and along Cameron Street. The signal system currently consists of 12 signalized intersections. Cameron Street is a four-lane, state-owned road, and listed as a principal arterial highway on PennDOT's federal functional classification map. Traffic along the roadway is extremely high, with an average annual daily traffic of 33,400 vehicles. In addition to the normal traffic conditions along Cameron Street, the Pennsylvania Farm Show Complex & Expo Center (located opposite Elmerton Avenue at Cameron Street) hosts special events throughout the year that greatly impact the traffic system, with additional traffic and queuing present along Cameron Street and the adjacent side streets. Any additional development along the corridor would be additive to the current traffic conditions, with the system being close to maximum capacity. As Lot 13 contains an access point to Cameron Street via Azalea Drive, signal timings adjustments will need to be made to the signal system along Cameron Street to ensure an efficient flow of traffic.	• Construct an eastbound left turn lane at the current triangle intersection (proposed signalized intersection). Azalea Drive is a two-lane local road, serving as a connection between the buildings within Lot 13 and Cameron Street, as well as an extended driveway for the various surrounding buildings owned by the state. Current traffic along Azalea Drive is small and limited to mostly the surrounding state-owned buildings and facilities. The development of the properties at Lot 13, however, can be expected to greatly increase the traffic demand along the roadway. Providing an eastbound left turn lane at the proposed eastern signalized intersection at Lot 13 will provide storage for turning vehicles, allowing for a more efficient signalized intersection.

Pedestrian/Bicycle Facility Preliminary Recommendations

An overview of the existing transportation network was reviewed to determine anticipated transportation impacts on the network as a result of future development on the four lots. A list of preliminary improvements that will likely be needed was generated for each of the lots, as well as the surrounding roadways to ensure adequate levels of capacity are maintained post-development. The following traffic improvements for each of the lots and surrounding roadways have been recommended.

Table 9. Pedestrian/Bicycle Facility Preliminary Recommendations

LOT 13	LOT 14

• The construction of 5-foot sidewalk on both sides of all roadways within the lot, as well as the following existing roadways:
  • Dogwood Avenue
  • Azalea Drive
  • Pine Road
  • Stanley Road
• The installation of crosswalks at the intersection of Sycamore Drive and Dogwood Avenue.
• The construction of a 5-foot shared use path (bicycle/multimodal path) within the lot, tying into the existing Capital Area Greenbelt network, as well as the proposed shared use path at Lot 14.
	• The construction of 5-foot sidewalk on both sides of all roadways within the lot, as well as the following existing roadways:
	  • Elmerton Avenue
	  • Sycamore Drive
	• The installation of crosswalks at the intersections of Elmerton Avenue and Bamberger Road/Sycamore Drive, and Elmerton Avenue and the Lot 14/PSECU driveways.
	• The construction of a 5-foot shared use path (bicycle/multimodal path) within the lot, tying into the Lot 13 shared use path at the intersection of Sycamore Drive and Dogwood Avenue and the existing shared use path around the PSECU Corporate Headquarters property at the proposed Lot 14/Elmerton Avenue/PSECU right-in/right-out driveway.

LOT 15	LOT 16

• The construction of 5-foot sidewalk on both sides of Elmerton Avenue and Bamberger Road.	• The construction of 5-foot sidewalks on both sides of all roadways within each lot, as well as the following existing roadways.
	  • Elmerton Avenue
	  • Bamberger Road
	  • Kohn Road
	• The installation of crosswalks at the driveway entrances at Bamberger Road and Kohn Road.
	• The construction of a 5-foot shared use path (bicycle/ multimodal path) within the lot, tying into the existing shared use path around the PSECU Corporate headquarters property and the proposed park/community garden.

Cost Estimates

Preliminary cost estimates were generated at each of the lots and impacted roadways to provide a sense and order of magnitude on the expected costs these transportation improvements will require. These costs include items such as pavement reconstruction, pavement markings, installation of sidewalk, ramps, and curbs, as well as traffic signal equipment and construction costs. In order to generate preliminary cost estimates, various assumptions on the site layouts/improvements were required. To further develop the cost estimates the following assumptions were made for each of the lots:

Table 10. Cost Estimate Assumptions

LOT 13	LOT 14
• Full depth construction was assumed with a proposed typical section of 32 ft. (5' Bike Lane – 11' Lane – 11' Lane – 5' Bike Lane) • Concrete curb was proposed on both sides of the roadway and along the perimeter of the parking lots • Concrete sidewalk (5 ft wide) was proposed for both sides of all roadways and along the perimeter of parking lots • Pavement marking assumptions were two outside white thermoplastic pavement marking lines for the bike/shoulder line and one double yellow thermoplastic pavement marking line for the separation of traveled direction. White thermoplastic pavement marking lines for parking lot pavement markings were assumed. • ADA Curb Ramps at all intersecting roadways and trail crossings • Roadway structure culverts over waterways • Pedestrian bridge structure required on trails over waterways • Full depth pavement construction for the parking lot areas for residential and commercial use with 5 ft concrete sidewalk and concrete curb • Assume shared use path throughout Lot 13 for multimodal connectivity • Proposed roadway and trail connection wayfinding signage	The Lot 14 cost estimate contains the CAT Facility roadway infrastructure detailed below: • Full depth construction to a proposed typical section of 32 ft. (5' Bike Lane – 11' Lane – 11' Lane – 5' Bike Lane) • Concrete curb was proposed on both sides of the roadway and along the perimeter of the parking lots • Concrete sidewalk (5 ft wide) was proposed for both sides of all roadways and along the perimeter of parking lots • Pavement marking assumptions were two outside white thermoplastic pavement marking lines for the bike/shoulder line and one double yellow thermoplastic pavement marking line for the separation of traveled direction. White thermoplastic pavement marking lines for parking lot pavement markings. • ADA curb ramps at all intersecting roadways and trail crossings • Full depth pavement construction for the parking lot areas for residential and commercial use • Shared use path throughout Lot 14 for multimodal connectivity • Proposed roadway and trail connection wayfinding signage

LOT 15	LOT 16
• Concrete curb was proposed along the perimeter of the parking lots • Concrete sidewalk area was proposed along the perimeter of parking lots • Pavement marking assumptions were two outside white thermoplastic pavement marking lines for the bike/shoulder line and one double yellow thermoplastic pavement marking line for the separation of traveled direction. White thermoplastic pavement marking lines for parking lot pavement markings. • ADA curb ramps at all intersecting roadways and trail crossings • Full depth pavement construction for the parking lot areas for residential and commercial use • Assume shared use path throughout Lot 14 for multimodal connectivity • Proposed roadway and trail connection wayfinding signage	• Full depth construction to a proposed typical section of 32 ft. (5’ Bike Lane – 11’ Lane – 11’ Lane – 5’ Bike Lane) • Concrete curb was proposed on both sides of the roadway and along the perimeter of the parking lots • Concrete sidewalk (5 ft wide) was proposed for both sides of all roadways and along the perimeter of parking lots • Pavement marking assumptions were two outside white thermoplastic pavement marking lines for the bike/shoulder line and one double yellow thermoplastic pavement marking line for the separation of traveled direction. White thermoplastic pavement marking lines for parking lot pavement markings. • Roadway structure culverts over waterways • Pedestrian bridge structures required on trails over waterways • ADA curb ramps at all intersecting roadways and trail crossings • Full depth pavement construction for the parking lot areas for residential and commercial use • Assume shared use path throughout Lot 14 for multimodal connectivity • Proposed roadway and trail connection wayfinding signage

Table 11. Roadway Cost Estimate Assumptions

ELMERTON AVENUE	BAMBERGER ROAD	KOHN ROAD
• Mill and overlay for the existing 32 ft. roadway cross section • Full depth widening (33 ft.) to a proposed typical section of 65 ft. (5' Bike Lane – 11' lane – 11' Lane – 11' Lane – 11' Lane – 11' Lane – 5' Bike Lane) • Concrete curb was proposed on both sides of the roadway and along the perimeter of the parking lots • Concrete sidewalk (5 ft wide) was proposed for both sides of all roadways and along the perimeter of parking lots • Assume ADA curb ramps at all intersecting roadways and trail crossings • Pavement marking assumptions were two outside white thermoplastic pavement marking lines for the bike/shoulder line and one double yellow thermoplastic pavement marking line for the separation of traveled direction. White thermoplastic pavement marking lines for parking lot pavement markings. • All existing guide rail was assumed to be replaced along Elmerton Avenue and to be extended. New guide rail was also proposed between State Farm Road and Kohn Road to increase vehicular safety within the clear zone. • Proposed roadway and trail connection wayfinding signage	• 1,500 ft. of mill and overlay for the existing 30 ft. roadway cross section • 1,200 ft. of full depth widening (2 ft.) to a proposed typical section of 32 ft. (5' Bike Lane – 11' lane – 11' Lane – 5' Bike Lane) • Concrete curb was proposed on both sides of the roadway and along the perimeter of the parking lots • Concrete sidewalk (5 ft wide) was proposed for both sides of all roadways and along the perimeter of parking lots • ADA curb ramps at all intersecting roadways and trail crossings • Pavement marking assumptions were two outside white thermoplastic pavement marking lines for the bike/shoulder line and one double yellow thermoplastic pavement marking line for the separation of traveled direction. White thermoplastic pavement marking lines for parking lot pavement markings. • Roadway structure culvert over waterway • Proposed roadway and trail connection wayfinding signage	• 3,600 ft. of mill and overlay for the existing 21 ft. roadway • 3,600 ft. of full depth widening (11 ft.) to a proposed typical section of 32 ft. (5' Bike Lane – 11' lane – 11' Lane – 5' Bike Lane) • Concrete curb was proposed on both sides of the roadway and along the perimeter of the parking lots • Concrete sidewalk (5 ft wide) was proposed for both sides of all roadway and along the perimeter of parking lots • ADA curb ramps at all intersecting roadways and trail crossings • Pavement marking assumptions were two outside white thermoplastic pavement marking lines for the bike/shoulder line and one double yellow thermoplastic pavement marking line for the separation of traveled direction. White thermoplastic pavement marking lines for parking lot pavement markings. • Proposed roadway and trail connection wayfinding signage

SYCAMORE DRIVE

- 3,100 ft. of mill & overlay for the existing 23 ft roadway cross section
- 3,100 ft. of full depth widening (9 ft.) to a proposed typical section of 32 ft. (5' Bike Lane – 11' lane – 11' Lane – 5' Bike Lane)
- Pavement marking assumptions were two outside white thermoplastic pavement marking lines for the bike/shoulder line and one double yellow thermoplastic pavement marking line for the separation of traveled direction. White thermoplastic pavement marking lines for parking lot pavement markings.
- Concrete curb was proposed on both sides of the roadway and along the perimeter of the parking lots
- Concrete sidewalk (5 ft wide) was proposed for both sides of all roadway and along the perimeter of parking lots
- ADA curb ramps at all intersecting roadways and trail crossings
- All existing guide rail was assumed to be replaced. New guide rail was also proposed to be extended to increase vehicular safety within the clear zone.
- Proposed roadway and trail connection wayfinding signage

DOGWOOD ROAD

- 500 ft. of mill and overlay for the existing 26 ft. roadway cross section
- 500 ft. of full depth widening (6 ft.) to a proposed typical section of 32 ft. (5' Bike Lane – 11' lane – 11' Lane – 5' Bike Lane)
- Concrete curb was proposed on both sides of the roadway and along the perimeter of the parking lots
- Pavement marking assumptions were two outside white thermoplastic pavement marking lines for the bike/shoulder line and one double yellow thermoplastic pavement marking line for the separation of traveled direction. White thermoplastic pavement marking lines for parking lot pavement markings.
- Concrete sidewalk (5 ft wide) was proposed for both sides of all roadway and along the perimeter of parking lots
- ADA curb ramps at all intersecting roadways and trail crossings
- Proposed shared use path and trail connection to the Greenbelt
- Update/improve roadway signage and trail connections

AZALEA DRIVE

- 4,165 ft. of mill and overlay for the existing 26 ft. roadway cross section
- 400 ft. full depth widening for proposed 200 ft. turn lane and 200 ft. taper lane - 12 ft. wide
- Concrete sidewalk (5 ft wide) proposed for the west side of roadway and along the perimeter of parking lots
- Pavement marking assumptions were two outside white thermoplastic pavement marking lines for the bike/shoulder line and one double yellow thermoplastic pavement marking line for the separation of traveled direction. White thermoplastic pavement marking lines for parking lot pavement markings.
- ADA curb ramps at all intersecting roadways and trail crossings
- 3 new proposed traffic signals assumed along Azalea Drive
- Pedestrian bridge structure over waterway
- Replace and extend existing guide rail
- Proposed roadway and trail connection wayfinding signage

Table 11. (Continued) Roadway Cost Estimate Assumptions

PINE ROAD	STANLEY ROAD
• 4,300 ft of mill and overlay for the existing 18 ft. roadway cross section • 4,300 ft. of full depth widening (8 ft.) to a proposed typical section of 24 ft. (12' lane – 12' Lane) • Roadway structure and pedestrian bridge structure over waterway • Concrete curb proposed on both sides of the roadway and along the perimeter of the parking lots • Pavement marking assumptions were two outside white thermoplastic pavement marking lines for the bike/shoulder line and one double yellow thermoplastic pavement marking line for the separation of traveled direction. White thermoplastic pavement marking lines for parking lot pavement markings. • Concrete sidewalk (5 ft wide) proposed for both sides of all roadways and along the perimeter of parking lots • ADA curb ramps at all intersecting roadways and trail crossings • All existing guide rail was assumed to be replaced. New guide rail was also proposed to be extended to increase vehicular safety within the clear zone. • Proposed roadway and trail connection wayfinding signage	• 1,550 ft. of mill and overlay for the existing 20 ft. roadway cross section • 1,550 ft. of full depth widening (4ft.) to a proposed typical section of 24 ft. (12' lane – 12' Lane) • Concrete curb proposed on both sides of the roadway and along the perimeter of the parking lots • Pavement marking assumptions were two outside white thermoplastic pavement marking lines for the bike/shoulder line and one double yellow thermoplastic pavement marking line for the separation of traveled direction. White thermoplastic pavement marking lines for parking lot pavement markings. • Concrete sidewalk (5 ft wide) proposed for both sides of all roadways and along the perimeter of parking lots • ADA curb ramps at all intersecting roadways and trail crossings • All existing guide rail was assumed to be replaced. New guide rail was also proposed to be extended to increase vehicular safety within the clear zone. • Proposed Signalized Intersection (7th Street) • Proposed roadway and trail connection wayfinding signage

Based on the assumptions made and traffic improvements developed, the following preliminary cost estimates were developed for each of the lots and impacted roadways:

Table 12. Cost Estimates

ITEM DESCRIPTION	SUBTOTAL
Lot 13	$37,100,000
Lot 14	$28,400,000
Lot 15	$1,900,000
Lot 16	$54,700,000
Kohn Road Roadway Concept	$3,300,000
Elmerton Avenue Roadway Concept	$6,000,000
Cameron Street Roadway Concept	$400,000
Bamberger Roadway Concept	$2,900,000
Sycamore Drive Roadway Concept	$2,900,000
Azalea Drive Roadway Concept	$4,000,000
Dogwood Avenue Roadway Concept	$1,200,000
Pine Road Roadway Concept	$2,900,000
Stanley Road Roadway Concept	$1,700,000
TOTAL PRELIMINARY COST ESTIMATE	**$147,400,000**

A full breakdown of the preliminary cost estimates (including full item descriptions, estimated quantities, and construction subtotal costs) are provided in Appendix B.

UTILITY INFRASTRUCTURE

While HSH is serviced by local utilities at specific points of connection, the utilities throughout the site that serve each building are "private," owned by DGS. RGS Associates, Inc performed a separation analysis for the DGS existing utilities and provided the approach in a report *Utility Separation Analysis for Department of General Services, Annex Land Planning* dated October 21, 2016. The following tables summarize the major findings of RGS Associates' research into the utility separation for the DGS Annex Grounds.

WATER DISTRIBUTION SYSTEM

Existing Conditions

- Capital Region Water provides service (fire and domestic) for Lot 13, the PennDOT Materials Testing Lab (Lot 7), and Technology Park (Lot 6).
- Metered service for these facilities originates from Arsenal Boulevard at Herr Street.
- All service lines and facilities beyond the meter pits are owned and maintained by the DGS.
- Capital Region Water also has an inactive water meter vault along State Farm Drive (located within Lot 14).
- Two existing 500,000-gallon above ground storage tanks are located within Lot 14.
- One existing 400,000-gallon water tower is located within Lot 13.

Separation Analysis

Lot 13	Lot 14	Lot 7
• Maintain the metered service from Arsenal Boulevard as well as the above ground storage tanks located within Lot 14 to continue to provide service to Lot 13. • Terminate service connections to Technology Park, The Main Garage (Building 51), the Old Dairy Barn (Building 69), PennDOT Materials Testing Lab (Building 70) and Strafford House (Building 5), Blacksmith Shop (Building 30), and the USDA Building.	• Reserve a Utility Easement in favor of Lot 13 in the vicinity of the existing water tanks. • Reserve a Utility Easement in favor of Lot 7 (for PennDOT Materials Testing Lab) from State Farm Drive to Lot 7. • Provide service to Technology Park from an existing water line located adjacent to the Pennsylvania Veterinary Laboratory (Building 75). • Provide service to the Strafford House (Building 5) utilizing the new line installed for Technology Park. • Provide service to Main Garage (Building 51) and Old Dairy Barn (Building 69) by connecting to the existing Capital Region Water main within Elmerton Avenue and utilizing the existing DGS-owned line located within Sycamore Drive. Installation of new line within Dogwood Avenue would also be required. • Reserve a Utility Easement in favor of Lot 13 in the vicinity of the Strafford House (Building 5).	• Utilize the existing water meter vault located at State Farm Drive as well as the existing DGS-owned service lines within Lot 14 to provide service to the PennDOT Materials Testing Lab (Building 70). • Provide to an additional connection from State Farm Drive for fire service to Building 70.

SANITARY SEWER SYSTEM

Existing Conditions

- The existing sanitary sewer system within Lot 13 is owned and maintained by DGS (privately-owned).
- The eventual point of discharge from the property is located along Asylum Run and is received by Capital Region Water and Susquehanna Township Authority.
- In addition to the private DGS-owned sanitary sewer system receiving flows from all facilities within Lot3#1, two existing structures located within Lot 6 to the north are also conveyed through the campus. These are The Main Garage (Building 51) and the Old Dairy Barn (Building 69).

Separation Analysis

- Install a gravity sewer line within Sycamore Drive to the Susquehanna Township Sewer Authority interceptor which parallels the Capital Area Greenbelt and Asylum Run.
- Install a low-pressure force main within Dogwood Avenue with the point of origin at the Main Garage (Building 51). Extend said line to a new gravity system to be located in Sycamore Drive.
- Install grinder pumps at the Main Garage (Building 51), the Old Dairy Barn (Building 69), and the Blacksmith Shop (Building 30).
- Reserve a Utility Easement across Lot 13 in favor of Lot 6. This is required to maintain existing sanitary sewer service in the vicinity of the Strafford House (Building 5). Similarly, reserve a Utility Easement across Lot 6 in favor of Lot 13. This is required since other sewer service from Lot 13 (notably Building 7) is conveyed through this common sewer line.

ELECTRICAL DISTRIBUTION SYSTEM

Existing Conditions

- Existing electrical service from PPL for Lot 13 originates along the south side of the property from Arsenal Boulevard via an existing substation.
- All electric lines within Lot 13 (including the Power Plant – Building 44) are owned and maintained by DGS.
- Electrical service to the Main Garage (Building 51) within Lot 6 is provided from the Power Plant (Building 44).

Separation Analysis

- Existing electrical service to the Main Garage (Building 51), Implement Shed (Building 28) and the Blacksmith Shop (Building 30) should be terminated.
- Install a proposed service to the Main Garage. Said service would originate at the intersection of Sycamore Drive and Dogwood Avenue.

FIBER OPTIC SYSTEM

Existing Conditions

- Currently, 48-strand fiber optic lines serve as an interconnection between the numerous state departments located within the City of Harrisburg and Susquehanna Township. These fiber optic lines pass through Lot 13, Lot 6, Lot 7 and Lot 14.
- The fiber optic lines enter Lot 13 at a point along Arsenal Boulevard along the southern limits of the property.
- The primary control point for the fiber optic for Lot 13 (and surrounding properties) is in the Administration Building (Building 11).
- Fiber optic lines are located throughout the Lot 13 existing tunnel network.
- Two lines that pass-through Lot 14 which serve other Commonwealth agencies.

Separation Analysis

- Fiber optic lines located within the Lot 13 tunnel network could remain in place.
- An underground bypass line would begin with splicing into the existing fiber optic line at the southern limits of the property where service enters from Arsenal Boulevard and extend to the PennDOT Materials Testing Lab (Building 70). A reservation of Utility Easement within Lot 13 in favor of DGS is required.
- A second underground fiber optic bypass line would entail splicing into the line at Azalea Drive in front of Technology Park. A new underground conduit would extend along the northern side of Dogwood Avenue to the PennDOT Materials Testing Lab where it would need to reconnect to the Commonwealth's fiber optic loop.
- The existing fiber optic line which extends from the PennDOT Materials Testing Lab and along the southeastern perimeter of Lot 14 will remain in-place. A reservation Utility Easement within Lot 14 in favor of DGS is required.
- The existing fiber optic line within Lot 14, which is immediately south of the Dauphin County Community Gardens, will be decommissioned once the Hillcrest Building (Building 53) located within Lot 13 is vacated.

STEAM HEATING SYSTEM

Existing Conditions

- Many of the existing buildings within Lot 13 are heated with steam which originates at the existing Power Plant (Building 44).
- The Main Garage (Building 51) also receives steam heat and is located within Lot 6.
- Disconnection of the existing steam lines serving the Main Garage (Building 51) would be necessary.
- An alternate source of heating would need to be installed within the Main Garage. As proposed, hanging gas heaters accompanied by a 1,000 gallon propane tank would be required.

Separation Analysis

- Disconnection of the existing steam lines serving the Main Garage (Building 51) would be necessary.
- An alternate source of heating would need to be installed within the Main Garage. Hanging gas heaters accompanied by a 1,000-gallon propane tank would be required.

GAS DISTRIBUTION SYSTEM

Existing Conditions

- For Lot 13, existing gas service is provided by UGI.
- The primary service extends from the north and is located within Sycamore Drive. This service connects directly to the Power Plant (Building 44).
- Gas service within the campus area is no longer active and all lines were abandoned in place.

Separation Analysis

- For this utility service, no separation would be necessary. All other surrounding land uses have independent, standalone services that are not reliant on lines serving Lot 13.

STORMWATER MANAGEMENT

Existing Conditions

- The four lots currently has no stormwater management facilities and only conveys stormwater with no management of rate, infiltration, or quality of runoff. As the lots are developed, the developer(s) will need to consider the new impervious area created and manage the stormwater runoff in accordance Township ordinances.

Separation Analysis

- For this utility service, no separation would be necessary.

TOTAL ESTIMATED UTILITY SEPARATION COST

According to DGS, the estimated total utility separation cost for Lot 13 is $3,855,931. This cost is escalated to the mid-point of construction 6/1/2022. Although not readily available for inclusion in this report, DGS is currently finalizing costs for the remaining work to be completed as part of the final utility separation.

PROPOSED UTILITIES

The utility improvements that will are recommended to develop the lots after DGS has completed their work for the utility separation are outlined in the Utilities Connection Analysis Table below and will include Electrical, Natural Gas, Sanitary Sewer, Domestic Water, and Stormwater Management. The proposed utilities for each lot will be constructed independent from each other; however, they will share a connection within the main lines that will be owned by the utility provider within the Township, City, and State roadway right-of-way. The utilities proposed are for schematic purposes and shall be further refined as part of preliminary design. Letters of service for utility capacity were not complete as part of this project and proposed loadings/capacities for utilities were not calculated. The proposed utilities in the analysis were estimated based on the conceptual use of the lot and surrounding existing utility sizes.

The following is a list of utility providers for the four lots:

ELECTRICAL

PPL Electric Utilities
1801 Brookwood Street
Harrisburg PA 17104
Phone: 610-774-5151

STEAM HEATING

Department of General Services
414 North Office Building
Harrisburg, PA 17125
Phone: 717-787-3893

NATURAL GAS

UGI Utilities, Inc
240 North 3rd Street Suite101
Harrisburg, PA 17101
Phone: 800-276-2722

SANITARY SEWER

Capital Region Water
100 Pine Drive
Harrisburg, PA 17103
Phone: 888-510-0606

Susquehanna Township Authority
1900 Linglestown Road
Harrisburg, PA 17110
Phone: 717-233-7143

DOMESTIC WATER

Capital Region Water
100 Pine Drive
Harrisburg, PA 17103
Phone: 888-510-0606

Table 13. Utilities Connection Analysis & Recommendations

UTILITY	LOT 13	LOT 14
Electrical	• Install a proposed service to the Main Garage. Said service would originate at the intersection of Sycamore Drive and Dogwood Avenue.	• A new connection into Elmerton Avenue or Sycamore Drive is required for Lot 14.
Heating	• Most of the existing buildings within Lot 13 are heated with steam which originates at the existing Power Plant (Building 44). An alternate source of heating would need to be installed.	• A new heating source is required for Lot 14.
Natural Gas	• For Lot 13, existing gas service is provided by UGI. • Gas service within Lot 13 is no longer active and all lines were abandoned in place.	• A new gas source is required to tie into Elmerton Avenue.
Sanitary Sewer	• For Lot 13, the sanitary sewer system is serviced by Capital Region Water. • Install a gravity sewer line within Sycamore Drive to the Susquehanna Township Sewer Authority interceptor which parallels the Capital Area Greenbelt and Asylum Run. • Install a low-pressure force main within Dogwood Avenue with the point of origin at the Main Garage (Building 51). Extend said line to a new gravity system to be located in Sycamore Drive. • Install grinder pumps at the Main Garage (Building 51), the Old Dairy Barn (Building 69) and the Blacksmith Shop (Building 30). • Reserve a Utility Easement across Lot 13 in favor of Lot 6. This is required to maintain existing sanitary sewer service in the vicinity of the Strafford House (Building 5). Similarly, reserve a Utility Easement across Lot 6 in favor or Lot 13. This is required since other sewer service from Lot 13 (notably Building 7) is conveyed through this common sewer line.	• For Lot 14, the sanitary sewer system is serviced by Capital Region Water. • Install a grinder pump to direct flow to the Susquehanna Township Sewer Authority interceptor via the force main through Sycamore Drive.
Domestic Water	• Maintain the metered service from Arsenal Boulevard as well as the above ground storage tanks located within Lot 14 to continue to provide service to Lot 13. • Terminate service connections to Technology Park, The Main Garage (Building 51), the Old Dairy Barn (Building 69), PennDOT Materials Testing Lab (Building 70) and Strafford House (Building 5), Blacksmith Shop (Building 30) and the USDA Building.	• Reserve a Utility Easement in favor of Lot 13 in the vicinity of the existing water tanks. • Reserve a Utility of Easement in favor of Lot 7 (for PennDOT Materials Testing Lab) from State Farm Drive to Lot 7. • Install a water meter and connection into Elmerton Drive.
Estimated Connection Cost	• The estimated cost for utility connections for Lot 13 is $5,430,000.	• The estimated cost for utility connections for Lot #14 is $3,400,000.

Refer to Appendix B for a Summary of the Utility Connection Analysis.

UTILITY	LOT 15	LOT 16
Electrical	• A new connection into Elmerton Drive is required for Lot 15.	• A new connection into Bamberger Road is required for future residential uses. • A new connection into Kohn Road is required for future industrial uses. This new connection could possibly occur along the proposed multimodal path.
Heating	• A new heating source is required for Lot 15.	• A new heating source is required for Lot 16.
Natural Gas	• A new gas source is required to tie into Elmerton Drive.	• A new gas source is required to tie into Bamberger Road.
Sanitary Sewer	• For Lot 15, the sanitary sewer system is serviced by Susquehanna Township Authority. • Install a sanitary line along Elmerton Avenue to connect to the existing system at the Crooked Hill Road and Elmerton Avenue intersection.	• For Lot 16, the sanitary sewer system is serviced by Susquehanna Township Authority. • Install a sanitary line east connecting into the existing system along Kohn Road.
Domestic Water	• Install water meter and connection into Elmerton Drive.	• Install a water meter along Bamberger Road for residential uses. • Install a water meter along Kohn Road for industrial uses. This new system could be installed along the proposed multimodal path into Elmerton Drive for both residential and industrial.
Estimated Connection Cost	• The estimated cost for utility connections for Lot 15 is $390,000.	• The estimated cost for utility connections for Lot 16 is $2,960,000.

Refer to Appendix B for a Summary of the Utility Connection Analysis.

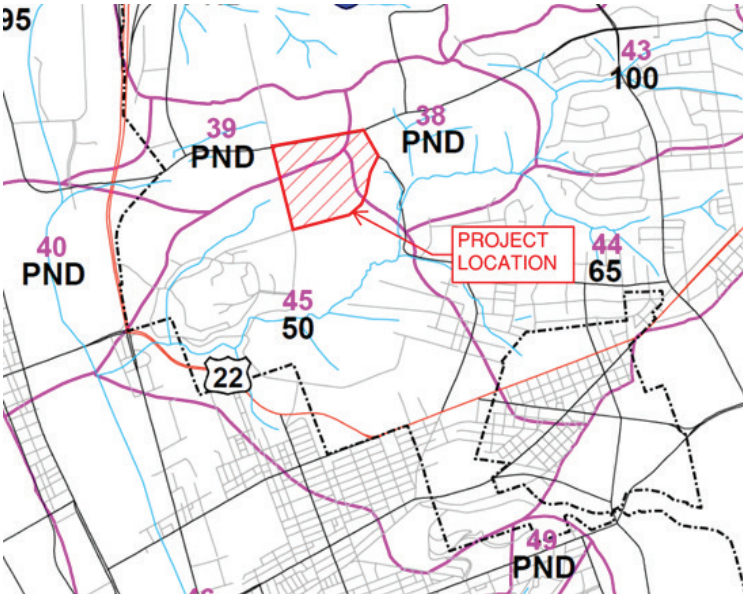
Stormwater Management

It is recommended that stormwater be managed as close to the source of the runoff as possible. For example, use infiltration swales, underground detention/retention, and pervious paving to manage parking lot runoff rather than conveying to a large basin to manage runoff.

The project will require a General NPDES Permit if earth disturbance activities exceed one acre. The General NPDES Permit will be reviewed by the Dauphin County Conservation District (Conservation District) for the Pennsylvania Department of Environmental Protection (PaDEP). The Township and County will require a land development plan which will include a stormwater management plan and require a stormwater management report. The Post Construction Stormwater Management (PCSM) plan and report required for the NPDES permit will double for the stormwater management plan and report for the Township and County review.

All stormwater management design and calculations will be designed to the minimum requirements of the PaDEP NPDES General Permit. Rate Control will be required for the 1, 2, 5, 10, 25, 50, and 100 Year storm events. Additionally, Volume Control will be required for the increase in runoff volume from the existing to proposed condition. PaDEP will not recognize the County Act 167 plan as it is older than five years old, dated April 2010. However, the Township and County have additional requirements exceeding the NPDES General Permit. The following is a list of additional requirements set forth by the Township and County:

- As part of the Act 167 plan, Paxton Creek has been subdivided into a series of smaller subwatersheds and have a release rate associated with them. The release rate is the percent reduction from existing rate for the 2, 10, and 25 Year events. The project is located within subwatersheds 38, 39, and 45. Subwatershed 38 and 39 are Provisional No Detention. Subwatershed 45 has a reduction of fifty (50) percent for the 2, 10, and 25 Year events. Stormwater can be transferred from one subwatershed to another as long as the effect of the transfer does not alter the peak rate discharge onto adjacent lands or there is an easement provided from the affected landowner(s). See the figure below for project location within the subbasins:



Project within subbasins in the Paxton Creek Watershed

- Stormwater runoff for the proposed site will be captured in a stormwater management basin(s) to manage the outflow meeting the requirements set by the Township, County, and PaDEP.
- All existing non-forested pervious areas shall be considered meadow and twenty (20) percent of the pre-development impervious areas shall be considered meadow (good condition) for pre-development hydrologic calculations.
- Drainage areas tributary to sinkholes or closed depressions in areas underlain by limestone or carbonate geologic features shall be excluded from the modeled point of analysis defining pre-development flows. If left undisturbed during construction activities, areas draining to closed depressions may also be removed from peak runoff rates in the post-development analysis. New, additional contributing runoff shall not be directed to existing sinkholes or closed depressions.
- Stormwater management facilities excavated to carbonate rock (limestone) must either be fitted with an impervious clay liner, or over-excavated four feet and refilled with suitable material.
- The Township and County ordinances both provide precipitation values, Manning's 'n', Curve Numbers, and runoff coefficients to be used in the analysis of the existing and proposed site. These values will be utilized to complete the Pre vs Post stormwater analysis.
- Per the County Act 167 plan Paxton Creek does not have Total Maximum Daily Load (TMDL) requirements for water quality.

The below calculated fees are based on ten (10) acres of disturbance. If the limit-of-disturbance is greater than ten (10) acres a Phase 1 archaeological assessment will be required adding additional costs to the project.

Table 14. Stormwater Management Fees

AUTHORITY	FEE	DESCRIPTION
Susquehanna Township	$500.00	*Administrative Fees*
Susquehanna Township	$2,000.00	*Escrow Account*
Dauphin County Conservation District	$5,540.00	*ESPC Plan Review Fee ($2,740.00 + $280.00 per Acre)*
Dauphin County Conservation District	$500.00	*NPDES Filing Fee (Dauphin County Clean Water Fund)*
Pennsylvania Department of Environmental Protection	$1,000.00	*Disturbed Acre (PA Clean Water Fund) ($100.00 per Acre)*
TOTAL	**$9,540.00**