

Lower Gwynedd Township, Montgomery County

Public Works Building Strategic Plan



FINAL - 2022

PREPARED BY:



GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES



LOWER GWYNEDD TOWNSHIP PUBLIC WORKS BUILDING STRATEGIC PLAN

PREPARED FOR:

LOWER GWYNEDD TOWNSHIP, MONTGOMERY COUNTY, PA

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GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

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Chapter 1 Introduction & Purpose of this Plan:

Lower Gwynedd Township wishes to explore the option of constructing a new public works facility in order to consolidate the existing Department of Public Works (DPW) operations from the multiple locations in which they are currently stored throughout the Township. Over the years, the Township's DPW has expanded in a piecemeal fashion, acquiring space in various Township-owned buildings and filling them as the expansion of services and equipment continued to follow the Township's growth. In recent years, the lack of both indoor and outdoor storage for equipment and the decentralized arrangement of DPW facilities sparked interest and formed the impetus to study the potential creation of a new consolidated and centralized public works facility for all of the department's storage and operational needs. In 2021, the Board of Supervisors and Township staff determined that this idea had enough potential to merit further study, in the form of a Strategic Plan.



In the context of developing a potential public works facility, this Strategic Plan focuses on the following four main objectives:

- Examine and perform a **SWOT analysis of existing DPW conditions**.
- Develop and refine **DPW's goals** for a potential public works facility.
- Determine the **spatial requirements** needed to fulfill those goals.
- Develop **recommendations** for how achieve these goals.



Chapter 2 Existing Conditions:

Lower Gwynedd Background:

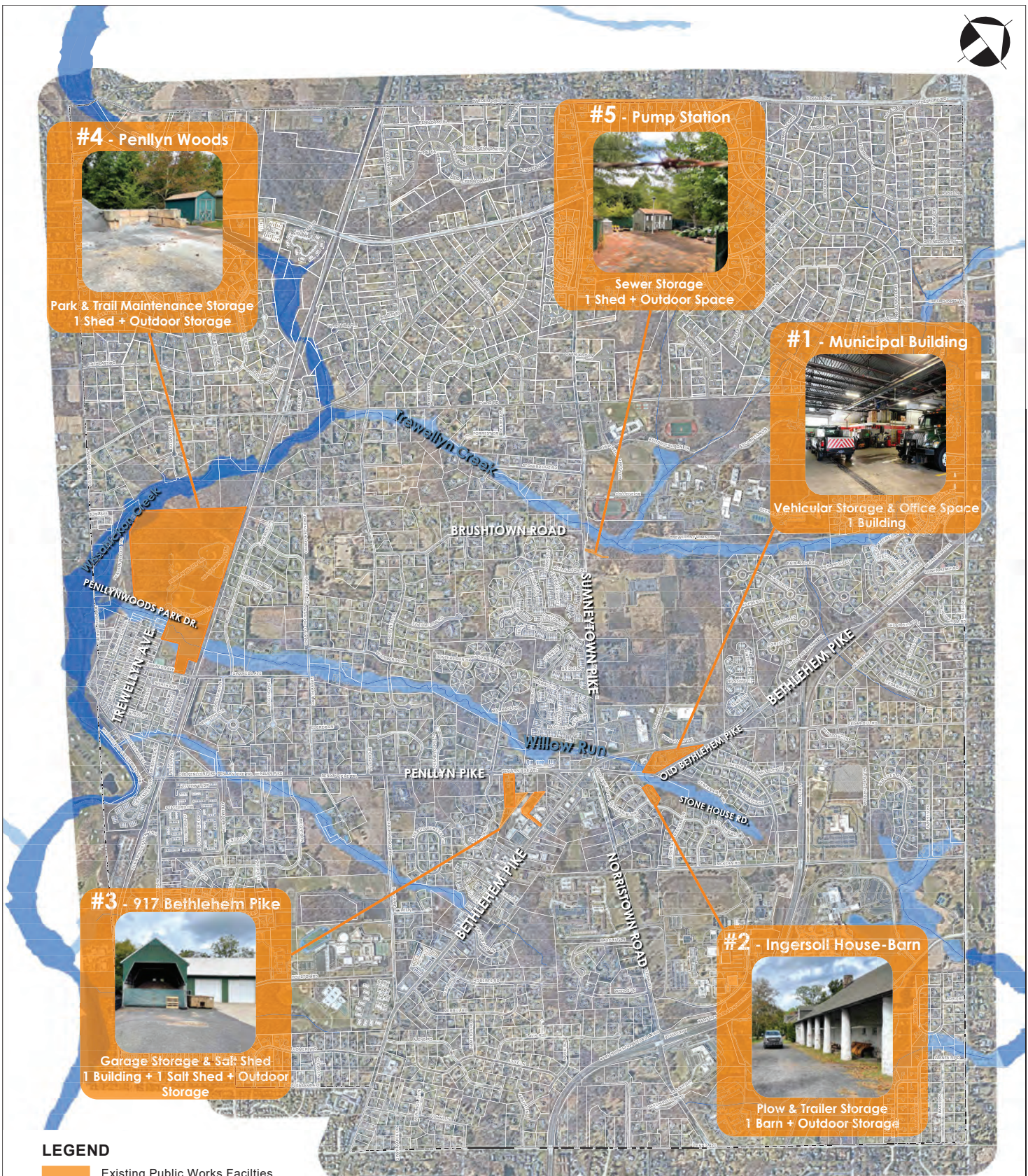
Lower Gwynedd Township is located in the southeastern quadrant of Montgomery County. It is bordered by the Townships of Upper Gwynedd, Montgomery, Horsham, Upper Dublin, and Whitpain as well as Ambler Borough. While fairly compact geographically at just under 9 square miles, the population is sizable and showing modest growth at 11,497 people, as of July 2019. The Township has roughly 4,500 households, revealing a trend in families and senior living arrangements within the municipality. The Township is largely built out and has seen a decline in development in recent years. While this trend could always change, it comes with a forecast of mild population growth estimates, with the 2040 Delaware Valley Regional Planning Commission (DVRPC) population estimate for Lower Gwynedd Township at 12,368 people.



Existing DPW Facilities

DPW's operations and storage are currently located in five different locations throughout the Township. As seen on the Existing Public Works Facilities Map, the DPW facilities are primarily clustered in the center of the Township with the majority of these located near the intersections of N. Bethlehem, Sumneytown, and Penllyn Pikes and Norristown Road. The Municipal building, Ingersoll house barn, and 917 Bethlehem Pike house the vast majority of DPW's storage and operational capacity and are all within a half mile radius from this main intersection. Penllyn Woods and the Pump Station are the two outliers, with the former in the southwestern portion of the township and the latter located roughly a mile up Sumneytown Pike from the Township building.

On September 22nd, 2021, the project team toured all existing public works facilities with DPW Director, Fred Zollers. Five DPW facilities or storage locations were visited. During each visit, Fred pointed out the general storage objectives of each site while describing any issues DPW typically faces with each location. See Appendix A for Site Visit Notes & Photos.



#4 - Penllyn Woods



Park & Trail Maintenance Storage
1 Shed + Outdoor Storage

#5 - Pump Station



Sewer Storage
1 Shed + Outdoor Space

#1 - Municipal Building



Vehicular Storage & Office Space
1 Building

#3 - 917 Bethlehem Pike







Garage Storage & Salt Shed
1 Building + 1 Salt Shed + Outdoor Storage

#2 - Ingersoll House - Barn



Plow & Trailer Storage
1 Barn + Outdoor Storage

LEGEND

-  Existing Public Works Facilities
-  Creeks & Streams
-  Floodplains
-  Parcels

EXISTING PUBLIC WORKS FACILITIES

LOWER GWYNEDD PUBLIC WORKS BUILDING STRATEGIC PLAN

LOWER GWYNEDD TOWNSHIP, MONTGOMERY COUNTY, PA

G & A
 GILMORE & ASSOCIATES, INC.
 65 East Butler Avenue, Suite 100
 New Britain, PA 18901

NOVEMBER 2021



917 Bethlehem Pike



917 Bethlehem Pike currently contains houses the following:

- Three-door garage containing large vehicles, equipment, and supplies
- Salt Shed
- Covered Outdoor Storage Structures
- Dumpsters
- Storage Shed (Used by Police Department)
- Concrete Outdoor Storage Bins
- Removed Tree Stumps & ground stump material
- Gas Pump
- Paved areas for maneuvering and outdoor storage

This location contains the largest area, both building and outdoor, of storage that DPW currently has available. It also houses the gas pump and the salt shed and must serve as a fueling station for all Township vehicles and a necessary stop for salt trucks. Given its secluded location, it is also able to house miscellaneous outdoor material like stumps and ground stump material. The garage building is also large enough to house larger vehicles such as the sewer jet truck.

Ingersol House and Barn



The Ingersol house barn currently houses the following:

- Fully enclosed barn storage for mowers, equipment, and various materials
- Partially enclosed storage for snowplows
- Outdoor storage for trailers
- Brine tank storage

The Ingersoll house barn is conveniently located near the municipal building and houses, primarily mowing and construction equipment, as well as plows and trailers. The looped gravel drive and private exit to Stone House Road do help snowplows and other vehicles disperse from the building fairly easily. The barn is currently running out of storage space. A portion of the existing storage is a garage that is covered, but only enclosed by a fabric door. This location is also located in a floodplain and houses the brine tank, which could make it inaccessible in times of severe flooding. Additionally, the house and barn are of some historic value and may be sold by the Township in the future.

Municipal Building



The Municipal Building currently houses the following:

- Garage for vehicle Storage and maintenance
- Auto mechanic's office, equipment storage, and maintenance areas
- Various indoor storage areas
- 3 individual offices
- 1 shared office
- Break/lunchroom
- 1 bathroom
- Office supply closet

The Municipal Building houses a garage and DPW offices and support facilities and is connected to the Township Administration and Police Buildings. While this proximity to other township services can be helpful for coordination, it severely limits the expansion and uses of this facility. The garage space houses mostly smaller vehicles, as well as the mechanic's office and storage, additional miscellaneous storage and all of the department's office and support facilities. The breakroom is currently too small with an awkward layout to be fully utilized by the DPW's 13 staff

members. Similarly, the single bathroom and limited office space cannot adequately support the department's staff.

Pump Station Site



- Shed for sewer materials and equipment
- Miscellaneous outdoor storage

The pump station site is a small fenced-in lot which currently houses a small shed for sewer items and miscellaneous outdoor storage. Its driveway intersects awkwardly with a trail and Sunneytown Pike and may be a challenge for larger vehicles that need to enter and exit here.

Penllyn Woods Storage



Penllyn Woods Park currently house the following:

- The Community Building with some Parks & Recreation storage in the attic
- Cinders pile in outdoor concrete bin storage
- Two storage sheds (one is only used by local athletic leagues)

Penllyn Woods currently houses outdoor storage for the cinders pile that is used for trail maintenance and a shed used for parks and recreation maintenance equipment. The entire park is subject to flooding and any items that are stored here would likely be inaccessible by the department during any flooding or severe storm event.

The following locations were not visited but are also used as secondary Township-owned storage locations:

Individual Park Storage Sheds and Bins

According to Township staff, each Township-owned Park has its own storage shed that holds parks and recreation supplies and equipment. The recreation director stated that despite all parks having a shed, many of them are owned and used by separate athletic associations and not the Township itself. This limits the amount of equipment and materials that can actually be stored indoors within each park.

McCormick House and Garage

The McCormick house and garage are Township-owned structures located on Wister Avenue, adjacent to Lower Gwynedd Park. The house and garage are not currently used for any Township storage and the garage space is leased to and used by a landscaping company. While there is no current plan to use the house and garage for Township purposes, the opportunity may exist in the future, particularly as satellite storage, for park materials and equipment.



Full site visit notes and photos can be found in Appendix A.

Key-Person Interviews

In order to gather first-hand feedback and information of the current and desired future public works facilities, the team selected three (3) key persons to interview. Given the nature of the strategic plan and its focus on public works, the Township Public Works Director, Fred Zollers, was a natural fit. The Township Manager, Craig McAnally, was included to provide insight from an overall, organizational standpoint. The Parks and Recreation Director, Sandi Feight, was included to gain a fuller picture of the P&R department's storage and functional needs, particularly in regard to park and trail maintenance. Full interview notes for all three of the Key-Person Interviews can be found in Appendix B.

Township Manager – Craig McAnally

The project team interviewed Craig on September 22nd, 2021. The discussion introduced the team to the existing and dispersed public works facilities. Discussion also focused on the future administration and functional needs of a facility for public works employees and the Township as a whole.

The following are key elements of a future building mentioned or discussed in the interview:

- A Secondary Location for Emergency Management
- Additional Vehicle Bays & Lifts
- Gender Neutral Showers and Restrooms
- Overnight Sleeping Areas
- A Larger, Nicer Breakroom

Beyond this, Craig discussed anticipated staffing changes (retirements, future hires etc.) and how those may or may not become a factor in a future public works building. Overall, he does not anticipate any current or future Township Administration staff moving into a future DPW site. The current Public Works staff are as follows:

- 13 Current DPW Employees
- A Few Seasonal Interns/Summer Employees

A future need for a dedicated office for the Township Tax Collector was discussed. Craig and the team determined that two viable options were to have the Tax Collector use one of the empty offices at Penllyn Woods or an office within the McCormick House. Of these two, Penllyn Woods seemed to be the better current option for accommodating an office space.

Township Parks & Recreation Director – Sandi Feight

The project team interviewed Sandi on October 6th, 2021, via zoom. The discussion centered around existing storage at individual parks and in Public Works storage areas as well as the anticipated future storage needs of the Parks and Recreation department. As far as a future DPW facility is concerned, Sandi stated that the utility of a centralized storage location for her department would largely depend on where any new public works facility is located. As it currently stands, much of the park maintenance and materials storage can be handled within individual parks. However, it was determined that some indoor storage in a future public works facility would be helpful.

The Parks and Recreation Department’s key storage needs for a future public works site are as follows:

Existing	Future
Portable Stage	Shade Structures
Chair Rack (s)	Pickleball Equipment
Tennis Nets	Adirondack Chairs
Outdoor Storage Bins (Gravel, Screenings Etc.)	Infill Conditioner & Field Spraying Palates

Sandi and the team estimated that it would be ideal to give Parks and Recreation roughly 1,600 square feet of indoor storage space to accommodate existing and future needs.

Township Public Works Director – Fred Zollers

The project team interviewed Fred on September 22nd, 2021. The discussion with Fred reiterated and elaborated on many of the same key points that came up in the Township Manager’s interview. The need for a bunkroom or sleeping quarters, a better lunchroom, showers, bathrooms, and additional vehicle bays were all discussed. Fred also elaborated on the tasks

that the department currently does and does not handle. For example, DPW does handle some inlet top replacement and some pipe replacements but does not handle road paving currently.

Beyond the building functionality, this interview also focused heavily on the lack of indoor and outdoor storage and particularly, the lack of functional, easy-to-use storage areas. For example, the need to move everything out of a space to get one piece of equipment out was mentioned in reference to several existing DPW storage areas. Key storage needs that were mentioned in the interview include:

- A garage with multiple doors
- A large amount of additional indoor storage
- Sign and sign part storage
- Sewer repair parts storage
- Additional miscellaneous perimeter storage for a building
- Locked tool room
- Flammable liquids and paint storage
- A large amount of outdoor storage

DPW’s key functional space needs for a future public works building are as follows:

Desired Functional Building Space
4 Individual Offices
Communal Office/Workspace
Larger Kitchen and Breakroom
Bunkrooms
Shower
Larger Locker Room
Individual Gender-Neutral Bathrooms
Larger Welding Area

Inventory of Current Public Works Items & Storage

As part of the stakeholder interview process, the Public Works Director and staff members were asked to provide an inventory of the current and estimated future department items that would need to be stored as well as dimensions for each item. Along with this inventory, Fred and his staff noted where each item could be stored; Indoor, outdoor covered, and outdoor uncovered.

A spreadsheet of the existing public works items for storage can be found in Appendix C.

Chapter 3 - SWOT Analysis:

SWOT is an acronym that stands for “Strengths, Weaknesses, Opportunities, and Threats”. It’s a simple strategic tool that involves listing out specific factors or features of an organization by specific categories:

Strengths: **Helpful** aspects of DPW that originate **internally**

Weaknesses: **Harmful** aspects of DPW that originate **externally**

Opportunities: **Helpful** aspects of DPW that originate **externally**

Threats: **Harmful** aspects of DPW that originate **externally**

While this method is more commonly used to develop and guide an organization or business itself, recent case studies have proved it additionally effective for organizations who are in the early stages of developing new buildings or campuses. Essentially, the SWOT process encourages participants to look at a variety of potential factors early on to help:

1. Determine if a building project is viable.
2. Develop a framework for successful building project moving forward.

As part of the strategic plan, a SWOT analysis was performed that examines the Township, the Department of Public Works, and their combined potential to create a new public works facility. In terms of a potential Township public works facility, the SWOT elements were examined as follows:

Strengths: What staff and positive skills, attributes, and internal resources does Lower Gwynedd Township and the DPW bring to the development of a New Public Works Facility?

Weaknesses: What qualities, factors, and lacking or non-existent internal resources will make the development of a new Public Works Facility challenging?

Opportunities: What positive outcomes and next steps might result from Lower Gwynedd developing a new Public Works Facility.

Threats: What factors outside of the organization are likely to or might threaten or pose challenges to the development of a new public works facility?

HELPFUL

HARMFUL

INTERNAL ORIGIN

Strengths

- Experienced, dedicated Public Works and Parks & Recreation Staff.
- PW department owns a wide variety of equipment and quantity of equipment
- De-centralized storage allows for backup locations and plans when issues arise.
- Existing sheds allow for localized storage for park maintenance needs.
- Mowing, street paving, and other tasks have already been outsourced, reducing department workload.
- In-house auto mechanic for vehicle maintenance

Weaknesses

- Expansion and potential new properties are limited by the Township Budget.
- Existing facilities cannot comfortably accommodate non-male employees.
- Outdoor\non-climate-controlled storage can lead to equipment damage and faster deterioration.
- Lack of support facilities for PW Staff - sleeping areas, showers, laundry, multiple restrooms, and office space.
- No shower or washer and dryer for PW employees.
- Some existing storage requires staff to drag heavy materials up flights of stairs.
- Brine storage and Penllyn Woods storage are both located within a floodplain.
- Decentralized storage can lead to confusion and errors during emergencies.

EXTERNAL ORIGIN

Opportunities

- An emergency management center could be created in the PW building, separate from the admin. building.
- Electric vehicle charging stations could be added to a future campus to reduce reliance on fossil fuels.
- A future building could be oriented to allow for the use of solar panels - reducing reliance on fossil fuels.
- Increased storage could allow more work to be done in-house.
- Trends for less severe winters may reduce need for plowing and icing equipment storage and labor.
- Potential sale of the sewer system could reduce workload and storage needs.
- The Penllyn Woods Community Building could serve as the Tax Collector's office.

Threats

- Increased flooding and natural disasters as a result of climate change.
- It's difficult to predict the needs and desires of future staff and population.
- Increased development and rising property values in the Township when looking at acquiring new properties.
- It may make financial sense to outsource more PW tasks in the future, limiting the need for staff, equipment, and storage.
- Impending staff retirements may shift priorities and needs in the future.
- Stealing, vandalism, and trespassing threats will all need to be mitigated in a new off-site location.

Some key weaknesses and threats include the constraints of a Township budget, how hiring potential is limited by the existing facilities, the lack of support facilities for staff, and the lack of robust Emergency Management facilities. Particularly when a future Public Works building is examined through the lens of the present and future of the Township, it will be imperative to accept the realities of a growing township that will demand more services and to understand and mitigate the significant threats that climate change may pose to facilities, storage, and providing these necessary services. A big challenge of the project will be the need to anticipate, and in some cases, predict future service and spatial needs; particularly, as population development trends and the services that public works do and do not provide, can vary greatly moving forward.



Some key strengths and opportunities include dedicated staff, the existing breadth and depth of equipment, and the number of current tasks and needs that have been outsourced away from DPW's responsibilities in recent years. The opportunities of a new building and potentially even a property, for the Township and DPW are numerous. These include the establishment of a much-needed secondary emergency management center, providing comfortable and functional accommodations for DPW's valued current and future staff members, as well as countless chances to incorporate sustainable features into the new building and site.



Chapter 4 - Recommendations & Analysis of Needs and Desires:

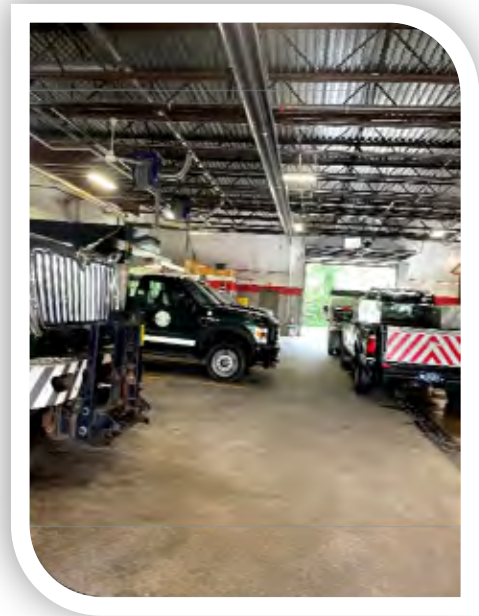
Future Public Works Spatial Needs/Desires Analysis

Methodology

In order to reach an estimate of the amount of land that would be required for a new public works building, in addition to the building and outdoor space required, multiple factors were considered. Spatial needs were categorized into the following groups:

Indoor – Vehicular Areas

This category refers to areas that are used for the indoor storage, maintenance, and maneuvering of vehicles. Eventually, this category will take shape as one or several large garages. Vehicle storage bays, vehicle maintenance bays, vehicle lifts, and vehicle wash bays will also need to be accommodated in one of these garages. This specific type of indoor storage and spatial use was divided into a separate category in order to apply an appropriate multiplier (in this case x 1.5) to estimate the required maneuvering space. This list is based upon all existing and potential future vehicles and their dimensions, provided by DPW in their inventory.



Indoor – General Storage

This category refers to all indoor storage, with the exception of vehicles. This list is generated directly from the inventory provided from DPW with additional area added for maneuvering around specific items and storage requests that were made during the Key-Person Interview and site visit processes. In particular, tool storage, mechanical storage, flammable liquid storage, a janitor's closet, and an estimate of Parks & Recreation's needed storage were added to the provided inventory. For the purpose of providing a conservative estimate, all materials included in the inventory that were labeled for indoor storage as well as outdoor or outdoor covered storage were included in this indoor storage category. A circulation multiplier of x.5 was added to all existing and future indoor storage to estimate the required circulation needs.

Building Area

This category refers to functional building space that is not used for storage. These items were derived from requests made throughout the Key-Person Interviews and site visit processes in combination with additional area or spaces added as the project team deems them helpful to ensure for a functional and comfortable building for all employees. These spaces include offices, restrooms, showers, a lunchroom, and a workbench area as well as a conference room that could function as an Emergency Management center. A circulation multiplier of x.25 was applied to all estimated building area to ensure that adequate maneuvering space is accounted for.

Outdoor Area

The outdoor area refers to outdoor storage bins, outdoor storage areas, as well as outdoor functional space. These items were derived from the existing DPW sites visited during the site visits. Their dimensions were taken or estimated, and the total was included in this category, under the assumption that a future public works facility would combine all existing storage and facility space onto one site. These spaces include outdoor storage bins, the salt shed, dumpsters, generators and parking spaces for employees and visitors. A multiplier of x 3 was applied to all outdoor storage areas. This large multiplier helps to conservatively estimate for the needs of vehicle maneuvering not only in and out of multiple garage doors, but to access the salt shed, gas pumps, dumpsters, and storage bins. A 20' buffer applied to the rectangular shape of the estimated building area was calculated and included in the outdoor area calculation to estimate the required circulation space immediately outside of and connecting to the building.



Buffering

Buffering refers to the area required for any planting, berming, fencing, or the maintenance of existing trees, brush, or land to ensure adequate space and screening for adjacent land uses. This number was estimated by developing a rectangular shape from the total estimated building and outdoor space and applying a 50' buffer to it. The area of this 50' was then calculated and added to the total estimated land area needed.

Stormwater Management

Stormwater management accounts for any basins, rain gardens, constructed wetlands, or other features that will be used to control, detain, and ideally infiltrate the stormwater on the site, particularly that which will be running off of the new impervious areas created. The Stormwater management area was estimated by multiplying the estimated total of the indoor space, outdoor space, and buffering areas and multiplying by 25%.



From each of these categories, an estimated total was gathered and each was added together to reach an estimated total area.

Estimated Total Public Works Area Needed		
Category	Square Feet	Acres
Indoor Vehicular Storage	33,298	
Indoor General Storage	13,920	
<u>Building Space</u>	<u>4,859</u>	
Building/Indoor Space Total	52,076	1.20
Building Outdoor Circulation Space	19,748	
<u>Outdoor Space subtotal</u>	<u>83,320</u>	
Outdoor Space Total	103,068	2.37
<u>Indoor/ Building & Outdoor Subtotal</u>	<u>155,144</u>	
Buffering Area Total	88,892	2.04
<u>Indoor/Outdoor Space and Buffering Subtotal</u>	<u>244,036</u>	
Stormwater Management Area	61,009	1.40
Subtotal	305,045	7.00
Lot Irregularities/Contingency	76,261	
<u>TOTAL:</u>	<u>381,307</u>	<u>8.75</u>

The estimated total area needed for a new public works building is just under **9 Acres** and the estimated area needed for a building is **1.2 Acres or 52,076 SF**.

A multiplier of 25% was added to the overall area subtotal to account for any lot irregularities and contingencies. It should be noted that this number is an estimate that used budgetary dimensions for many of the necessary building and site elements, particularly outside of the exiting storage inventory. While more or less land or building area may be deemed necessary to achieve a final design, this number will be appropriate for planning, budgeting, and feasibility purposes.

Breakdown spreadsheets for each spatial category can be found in Appendix D.

Recommendations:

- **Keep longevity in mind as the planning and development process moves forward.**
While initial area estimates and even early budgetary estimates may feel high, it's important to remember that any new building is an investment built to serve DPW 20-50 years into the future. Additional space, for storage, vehicles, and employees ensures that DPW can grow with and meet the current and future service needs of the Township for years to come.
- **Weigh the Pros and Cons of the location of a potential public works site carefully.**
Moving from a decentralized to centralized approach will make certain things easier, but it may also pose a challenge when considering the logistics of servicing all areas of the Township efficiently. While a centralized location may seem ideal, depending on what storage and services remain in other locations, it may make sense to broaden the location options. Similarly, the increasing frequency of severe storms and flooding will necessitate a thorough look at nearby bodies of water or floodplains. Particularly when considering adding a secondary Emergency Management center to the facility, guaranteed accessibility in times of natural disaster or severe weather will be imperative.
- **Plan for thorough buffering and select native plants to achieve this, where feasible.**
No matter where a future public works site is located, the outdoor storage, outdoor maintenance, and use of large trucks, vehicles and equipment at odd hours will make the facility use incompatible with almost all neighboring residential, commercial and institutional uses. Plan to protect existing vegetation on a site wherever possible to maintain existing buffers. Also select appropriate native plants in combination with berms and fencing to achieve visual and sound separation from neighboring uses.
- **Consider Green Stormwater Management approaches and pervious paving wherever possible.**
A new public works facility will easily involve over 2 acres of new impervious area. Plan for a site that's large enough to accommodate features like infiltration basins, rain gardens, or constructed wetlands to manage stormwater in the most sustainable methods.
- **Consider forming a Public Works building steering committee.**
If the project advances, it is worth considering the idea of forming a Building Steering Committee. This Committee should be comprised of a several stakeholders with relevant and varied experiences who can work with an architect, construction manager, or other design and construction professionals to ensure that the Township and Public Works goals and needs are met.
- **Consider where certain storage areas or uses would be better off being relocated to existing Township building and properties.**
As was revealed through the Key-Person Interviews and site visits, while the Township is short on functional storage space, it is not short on buildings, parks and properties. The



Penllyn Woods Community Building was one example, where multiple unused offices were identified. A tax collector's office was discussed as one potential use for one of these offices.

- **Plan for a significant amount of future building area to be put towards vehicle storage and maintenance.**

If the Township intends to maintain DPW's current level of vehicles, indoor storage, and maintenance, with the potential for expansion in the future, it will be important to keep in mind that a large percentage of this will be going towards these areas. In current estimates, indoor vehicular areas make up 8% of the entire site and 64% of the total building area.

- **Consider options to reduce the amount of required indoor storage space through vertical storage options.**

While certain assumptions were made in storage estimates, such as stacked shelves for smaller generators and salt spreaders, there may be additional opportunities to reduce the required floor square footage for other storage items. Particularly for smaller materials and equipment listed under more general storage areas, strategic shelving could reduce the required square footage while creating extra shelving space for future expansion.

- **Plan for gender inclusivity in a future Public Works building.**

Providing gender-segregated, or better yet, gender-neutral restrooms, showers and changing areas will give DPW the opportunity to expand their workforce and hire non-male employees in the future. One space efficient way to accomplish this would be to offer one large gender-neutral locker room with three (or more) adjoining separate shower and changing rooms that are also gender-neutral. Another important consideration would be allocating space for separate gender-neutral



restrooms. Despite currently having all male employees, these two spatial considerations can help to ensure a comfortable and inclusive work environment for all future employees.

- **Consider strategizing about which DPW services will remain in-house, and which will be outsourced over the next few decades before developing a building design.**

During the Key-Person Interviews and site visit processes alone, several services such as mowing, sewer, road paving, and vehicle maintenance were all brought up for potential outsourcing or a return to in-house service. These shifts could have a significant effect on the storage and circulation needs of a future building. Particularly with retirements or staffing changes on the horizon, it could be an opportune moment to examine and strategize which tasks will and will not remain in-house moving forward.

Chapter 5 Conceptual Sketch Plan

While this plan intentionally examines the specifications of a future DPW facility from a broad, conceptual level, it is still important to consider the physical form that these needs, and desires will require. The Township does not yet have a site selected for a future facility, so a sample lot was created to examine what a physical layout of the estimated features might look like. The result is a conceptual sketch plan that takes areas from the estimates and spreadsheets found in Chapter 4 and Appendix C and uses them to create a proposed layout for potential public works facility.

Key Areas to Consider:

Indoor Vehicular Storage:

As the provided DPW storage inventory (found in Appendix B) proved, the Township owns, or anticipates that it will own, approximately twenty vehicles. Some of these are well above standard vehicle sizing such as a sewer jet truck, and will require a significant amount of storage, maintenance, and maneuvering space. Resultingly, the conceptual plan shows indoor vehicular storage at **about 33,600 square feet**. If the Township's current and future vehicular investments are to be protected to ensure longevity, indoor storage and adequate maintenance space will be needed.

Outdoor Vehicle Maneuvering Space:

Similar to indoor vehicular storage, significant outdoor vehicular maneuvering space will be required to allow vehicles of a wide variety of sizes to enter and exit the building, turn around, and access trailers, the salt shed, bins, and other outdoor storage areas. Resultingly, the paved vehicular maneuvering space totals about **34,400 square feet**, particularly around the indoor vehicular storage building.

Front, Side, and Rear Yard Setbacks:

Per Township Ordinance requirements, front & side and rear yard setbacks were shown on the conceptual sketch at 50' and 75', respectively. This meets the requirements for Township Zoning, but furthermore it anticipates potential conflicts with adjacent uses by providing adequate buffering space. Regardless of where a future Public Works building ends up being located and constructed, the hours of use, operation of heavy equipment and vehicles, outdoor storage, and intense maintenance needs will likely be disruptive and unsightly for all residential and most commercial uses. The Township should anticipate that a significant portion of a potential lot (shown on the sketch at about **133,850 square feet**) as well as a portion of the construction budget, will need to be set aside to provide adequate buffering.

Stormwater Basin:

Stormwater management will be an important spatial consideration, regardless of the sizing or layout of the eventual facilities. With nearly **135,500 square feet** of impervious surfaces proposed for the conceptual sketch plan, the sketch accordingly accounts for **39,400 square feet** of stormwater management area. While it is recommended that the Township consider impervious pavers, green roofs, and similar solutions to reduce the eventual impervious coverage, the stormwater management area was estimated with the understanding that this is not always possible or feasible.

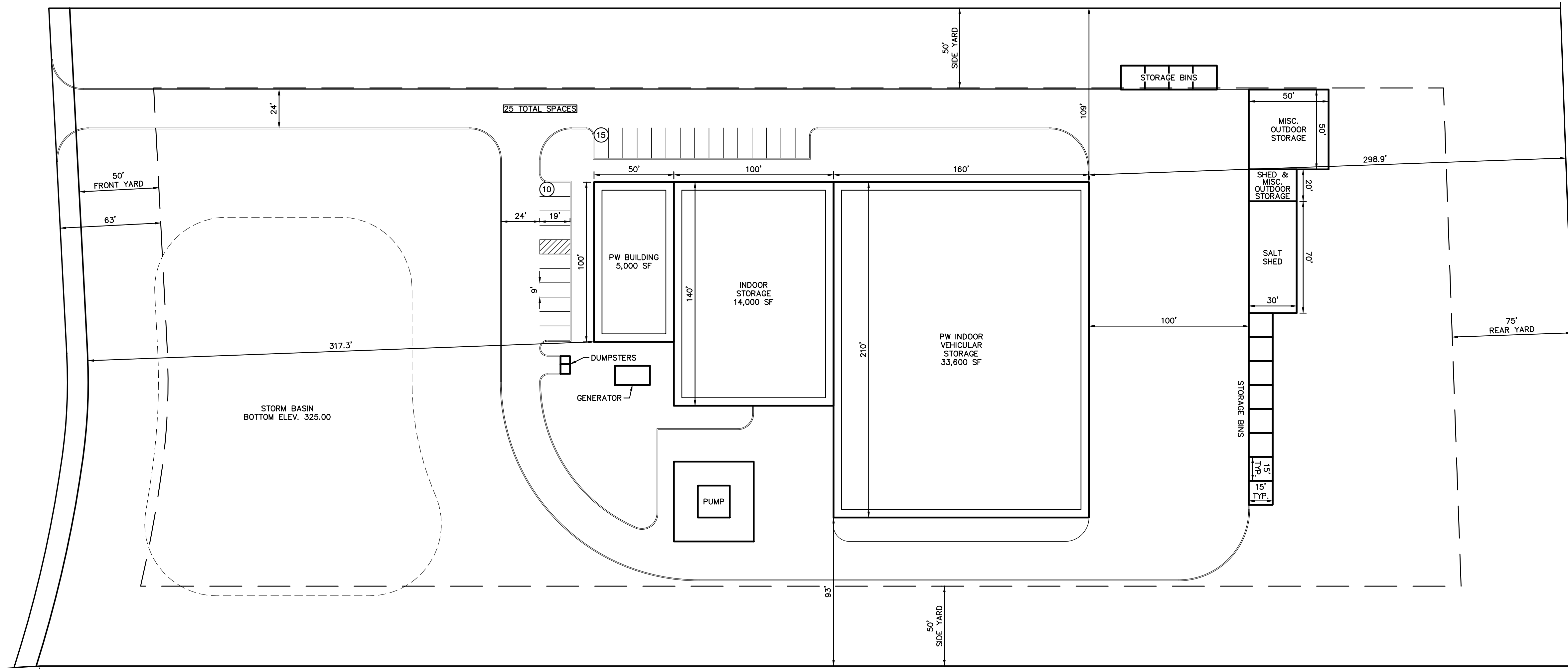
ZONING INFORMATION:

ZONING DISTRICT: MD MUNICIPAL DISTRICT

PROPOSED USE: MUNICIPAL (ALLOWED BY RIGHT)

STANDARD	REQUIRED	PROPOSED
MIN. LOT AREA	40,000 SF	391,751 SF
MIN. LOT WIDTH	200 FT ⁽¹⁾	317.3 FT
MIN. FRONT YARD	50 FT	317.3 FT
MIN. SIDE YARD	50 FT ⁽²⁾	93.0 FT
MIN. REAR YARD	75 FT ⁽³⁾	298.9 FT
MAX. BUILDING COVERAGE	30%	14.1%
		(55,300 SF)
MAX. IMPERVIOUS COVERAGE	50%	35.7%
		(139,738 SF)
MAX. BUILDING HEIGHT	45 FT ⁽⁴⁾	44.5 FT

- (1) MEASURED AT BUILDING LINE
- (2) THERE SHALL BE TWO (2) SIDE YARDS ON EACH LOT, NEITHER OF WHICH SHALL BE LESS THAN 50 FEET WIDE
- (3) ANY REAR YARD NOT ADJACENT TO A SINGLE-FAMILY RESIDENTIAL DISTRICT SHALL NOT BE LESS THAN 50 FEET IN DEPTH
- (4) THE MAXIMUM HEIGHT FOR A STRUCTURE ATTACHED TO OR INDEPENDENT OF A BUILDING SHALL BE 60 FEET



LEGEND

	EXISTING	PROPOSED
PROPERTY LINE	---	---
BUILDING SETBACK	---	---
CURB	---	---
EDGE OF PAVE	---	---
PARKING COUNTS		(12)

PENNSYLVANIA ONE CALL SYSTEM, INC.

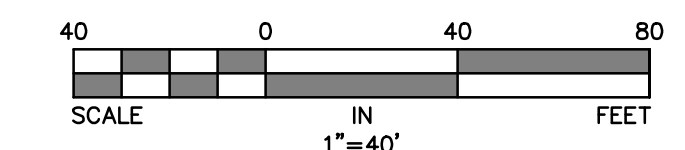
925 Fawn Run Road
West Mifflin, Pennsylvania
15122 - 1078



BEFORE YOU DIG ANYWHERE IN PENNSYLVANIA CALL 1-800-242-1776
NON-MEMBERS MUST BE CONTACTED DIRECTLY
PA LAW REQUIRES THREE WORKING DAYS NOTICE TO UTILITIES BEFORE YOU EXCAVATE, DRILL, BLAST OR DEMOLISH

LOCATIONS OF EXISTING UNDERGROUND UTILITIES/FACILITIES SHOWN HEREON HAVE BEEN DEVELOPED FROM RECORDS, FIELD MARKOUTS BY UTILITY OWNERS, AND/OR ABOVE-GROUND OBSERVATION OF THE SITE. NO EXCAVATIONS WERE PERFORMED IN THE PREPARATION OF THESE DRAWINGS; THEREFORE ALL UTILITIES SHOWN SHOULD BE CONSIDERED APPROXIMATE IN LOCATION, DEPTH, AND SIZE. THE POTENTIAL EXISTS FOR OTHER UNDERGROUND UTILITIES/FACILITIES TO BE PRESENT WHICH ARE NOT SHOWN ON THE DRAWINGS. ONLY THE VISIBLE LOCATIONS OF UNDERGROUND UTILITIES/FACILITIES AT THE TIME OF FIELD SURVEY SHALL BE CONSIDERED TRUE AND ACCURATE. COMPLETENESS OR ACCURACY OF UNDERGROUND UTILITIES/FACILITIES ARE NOT GUARANTEED BY GILMORE & ASSOCIATES INC.

ALL CONTRACTORS WORKING ON THIS PROJECT SHALL VERIFY LOCATION AND DEPTH OF ALL UNDERGROUND UTILITIES/FACILITIES PRIOR TO START OF WORK AND SHALL COMPLY WITH THE REQUIREMENTS OF P.L. 852, NO. 287 DECEMBER 10, 1974 AS LAST AMENDED ON APRIL 28, 2018 PENNSYLVANIA ACT 50. GILMORE & ASSOCIATES INC. HAS NOT OBTAINED A PA-ONE CALL SERIAL NUMBER FOR DESIGN PURPOSES.



GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
66 EAST BRATTLE AVENUE, SUITE 100, NEW BRITAIN, PA 17828 | (717) 344-5300 • www.gilmore-associates.com

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REV.	DESCRIPTION	DATE	BY

SKETCH PLAN
LOWER GWYNEDD TOWNSHIP PUBLIC WORKS BUILDING
LOWER GWYNEDD TOWNSHIP, MONTGOMERY COUNTY, PENNSYLVANIA

SKETCH PLAN

GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES

PROJECT No.: 2021-09032

OWNERS INFO:
LOWER GWYNEDD TOWNSHIP
1130 NORTH BETHLEHEM PIKE
SPRING HOUSE, PA 19477
(215) 646-5302

MUNICIPAL FILE No.: N/A
TAX MAP PARCEL No.: N/A

TOTAL AREA: 8.993 AC. TOTAL LOTS: 1
DATE: 11/22/2021 SCALE: 1"=40'
DRAWN BY: BMS CHECKED BY: JWH

SHEET NO.: 1 OF 1

C:\MUNICIPAL\2021\109032-LGT_Public Works Building--Strategic Plan\DESIGN\CAD\Production Drawings\21-09032-SKETCH2.dwg Layout: 24 x 36 BORDER Plotted By: baluder, on Fri Dec 10, 2021 at 12:00pm

SKETCH PLAN

Chapter 6 - Appendices:

Appendix A – Site Visit Photos & Notes

Appendix B – Key-Person Interview Notes

Appendix C – Public Works Current & Future Inventory of Items for Storage

Appendix D – Estimated Building & Lot Calculations

Appendix A - Site Visit Photos and Notes

LGT – Public Works Strategic Plan

Project #: 2109032

9/23/2021

Facility Site Visits W/ F. Zollers: Notes

9/22/2021 at 11:00 am.

Ingersoll House Barn:

- Current plow storage is not so much a spatial issue as it is a height of the barn door issue – currently they have to be pulled out with another machine before attaching to trucks because trucks are too tall for barn door height.
- Dump truck and plow could share bays in the future.
- 8 plows are currently stored at the barn.
- Trailers can stay outside
- Nothing is currently stored upstairs in the barn.
- Brine storage is currently located within the floodplain – *This is a weakness for SWOT analysis.*

Pump Station:

- Sewer Stuff is currently stored in the shed.
- Some of the outdoor storage is used for miscellaneous items.

917 Bethlehem Pike:

- Green shed is police – Fred does not know what is currently stored in there.
- Driveway for this site exits next to Silverstream on Penllyn Pike.
- Garage houses 3 bays
- Salt Shed - of standard size, which is unlikely to change
- 7 outdoor concrete storage bins requested – roughly 15'x15' for P&R materials (including mulch, milling, topsoil (covered) other outdoor materials) within a park potentially. 7th bin to be a double bay (roughly 30'x15') for playground mulch.
- Gas for vehicles is located here and gets refilled every other week.
- The Township handles tree maintenances that doesn't require a crane, including climbing
- Currently stumps and grinded stump materials are stored at this site and hauled away when they have work requiring a contractor that they can pay to haul away.
- May be worth incorporating some temporary storage space for this as they do some of their own stump grinding.
- The Township does not handle any leaf collection for residents.
- Currently they have one mulch bin (not located at 917 Bethlehem, not sure where this is currently located?)

Penllyn Woods:

- Cinders pile which is stored here is currently used for trail maintenance all over the Township.
- Confirm where the floodplain is on this site – *Current storage is not within the floodplain, but the site access is impacted by a floodplain and likely to cause access issues in the future. SWOT Analysis Weakness.*
- *SWOT Analysis opportunity – The Penllyn Woods Community Building is an opportunity to provide an office for the Tax Collector.*

Admin. Building:

- Need dedicated space for woodshop tools and work bench.
- Larger lockers than what they currently have are needed.
- Storage racks for spare tires are needed.
- Future storage needs to be more accessible than the current vertical storage.
- 1 pull-thru area for vehicles is currently needed.
- 20' wide striped bays for vehicle storage and maintenance are desired.
- Currently they are 12' wide bays.
- Laundry facilities are needed.
- A linen closet – pillows, blankets, towels is needed.
- The PW department does not currently have uniform services.
- Janitor's closet is needed.
- Outdoor space for a generator is needed.
- A wash bay for trucks that allows them to wash the undercarriages is needed. – *Does this drain to sanitary sewer or need a separate system?*

Ingersoll House Barn





Pump Station



917 Bethlehem Pike



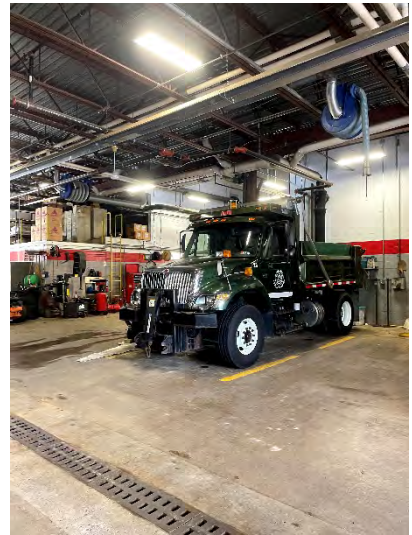
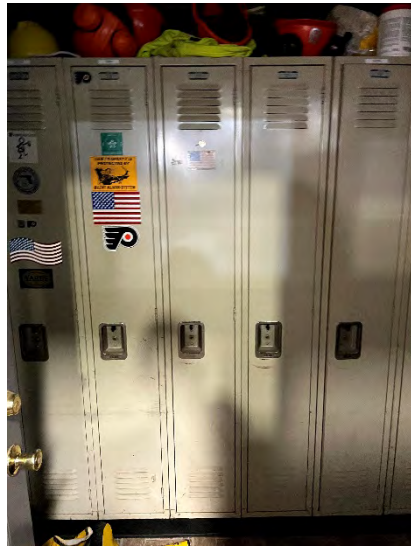


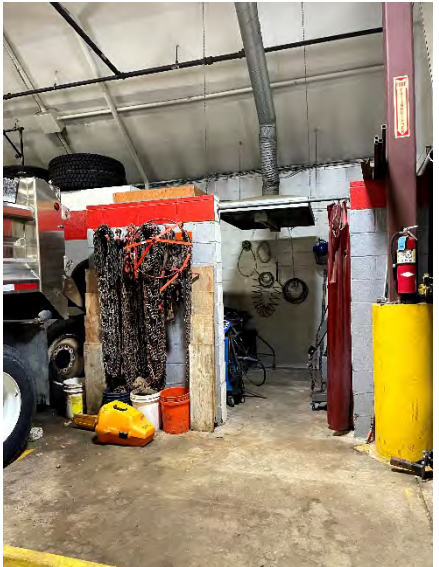


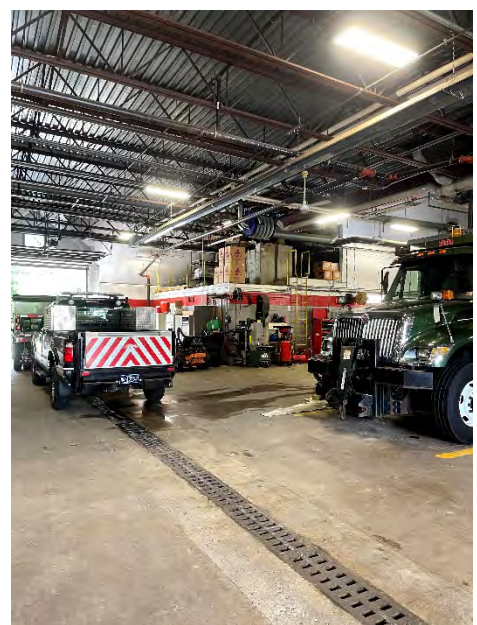
Penllyn Woods

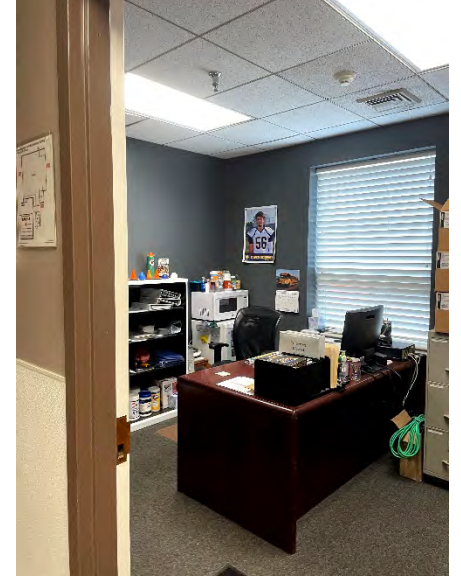
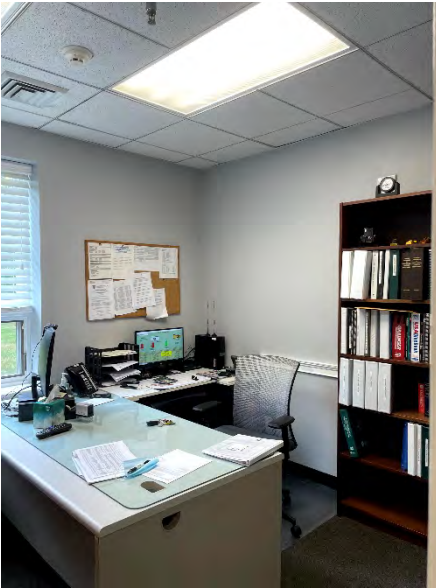
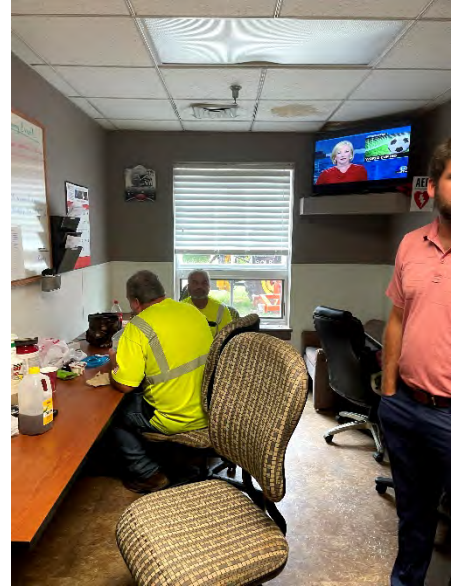


Administration Building









Appendix B - Key Person Interview Notes

KPI - Township manager, Craig McAnally

KPI - Director of Public Works, Fred Zollers

KPI - Parks and Recreation Director, Sandi Feight

Key Person Interview with Township Manager, Craig McAnally

Attendees: Craig McAnally, Jim Hersh, Judy Stern Goldstein, Emily Paskewicz

9/22/2021 at 9:00 am.

- A big question will be is 10 acres enough for everything that public work's needs.
- Currently PW, P+R Maintenance, and Sewer are all combined and handled together.
- Ideally, he sees all PW storage on one site.
- The farmhouse behind the Admin. Bldg. currently switches off between summer and winter storage needs and is largely miscellaneous storage.
- Park picnic tables stay out all year long.
- Most parks have their own storage sheds for things like gators and athletic equipment.
- He does not see a need for additional P&R storage at the moment.
- Township needs an office for a park superintendent.
- Most P&R offices are located in the Admin. Building.
- P&R director does not use the Penllyn Woods Community building office.
- PW employees need overnight accommodations. Currently they all have cots but nowhere to use them.
- PW definitely needs a kitchen, oven, warming area, and a larger, nicer breakroom facility
- The current breakroom is setup as one weird long room.
- A secondary location for emergency management is needed and would likely be within any new public works building.
- Currently North Penn Fire or Wissahickon Fire Co. would be considered the secondary location for emergency management.
 - *JSG suggested a conference room within a new facility that's wired for all types of Wi-Fi and emergency communication.*
- Population growth is likely to add the need for emergency management in the future.
- There's not a ton of new building taking place, but they are maintaining and continuing to maintain more.
- Township is potentially looking to sell the sewer system.
- Township is already outsourcing grass cutting.
- The sewer authority was disbanded 5-6 years ago.
- They handle Pump stations and PW handles flushing public lines.
- Water comes from Ambler and North Wales.
- Currently PW shares showers with police locker rooms, when needed.
 - *JSG - Showers will need to be provided for both genders or in the form of gender neutral single locking room/stalls.*
 - *JSG - recommends 2-3 neutral separate showers.*
- Currently there is only 1 lift and bay for the in-house mechanic.
 - *JSG - Most municipalities have at least 3 bays.*
 - *JSG - The strategic plan will analyze and provide basic spatial requirements of what the Township is likely to need in the future.*
- Plows are currently stored in the barn behind the Admin. Building.

- Does not see the need for a new separate ambulance bay or substation at this time.
- Gas pumps, the salt shed, and brine shed are all located at 917 Bethlehem Pike.
- Township has 13 PW employees and a few seasonal interns and summer help-type employees.
- Would like to add an HR person in the near future.
- 2 Township staffers will be retiring soon.
- Ideally Zoning and Code Enforcement departments should be kept together.
- A property maintenance code is currently in the process of going through.
- A new staffer may end being a dedicated property maintenance person within code enforcement.
- The Tax collector is currently offsite but may request space within the Township building in the future.
- He does not foresee any admin. going to any new PW specific site.
- Penllyn Woods Community building is currently used for P&R programming and the attic storage is used for seasonal and yearly type P&R storage needs.
- He has considered putting the tax collector's office in the Wissahickon Substation
 - *Team suggested putting future Tax Collectors in Penllyn Woods community building, given that it currently has 2 unused offices.*
- Penllyn Pike & Wister Ave. – McCormick House - Historic Home Owned by the Township that is currently largely just storage and a garage and driveway space that is currently leased to a landscaping company.
- McCormick House is another option for where to house a tax collector's office.
- Township is currently maintaining trails with a gator and is not currently plowing them when it snows.

Key Person Interview with Public Works Director, Fred Zollers

Attendees: Fred Zollers, Jim Hersh, Judy Stern Goldstein, Emily Paskewicz

9/22/2021 at 10:00 am.

- Currently has 13 employees
- Currently there are 3 individual offices and 1 shared office for PW employees.
- Would like to see 4 individual, dedicated offices in the future.
- A shared computer/communal office area with mailboxes and an area for form storage for the remainder of PW employees is desired in the future.
- A kitchen/lunchroom/common area combined is desired.
- Gender segregated bunkrooms are also desired.
- The cots that staff have are not used currently because there's nowhere to set them up.
- A shower/locker room is also needed.
 - *Team recommends 1 shared locked room with 3 (or more) individual combined changing/shower/bathroom stalls with individually locking doors.*
 - *JSG – Ratio would typically be 1 shower/changing room combo per 6 employees.*
- Separate bathrooms for daily use are also needed.
- A garage with multiple doors is also desired.
- Currently everything in most of the garages needs to be moved to get one thing out.
 - *Fred to get the team a list of all his items that need storage and how large everything is/ a rough idea of how much space requires.*
 - *Team also needs to know what can be stored, indoor, and outdoor uncovered, and outdoor covered.*
- 14' wide maintenance bays to 20' wide bays (for a large truck) will be needed.
- Need at least 2 vehicle lifts.
- Lots of indoor storage is needed.
- Storage for larger vehicle parts is also needed within a garage space.
- Signs/Sign Parts/Sewer Repair Parts and tools also all require storage.
- Need space for a separate welding area, currently it's roughly 10x15' – 10x20' or larger would be desirable.
- Will also need a lot of miscellaneous storage around the perimeter of any new building – picturing roughly 20x20
- Will need a locked up, separate tool room and mechanical storage area.
- No paint booth is needed.
- Flammable liquid and paint storage will be needed. – Currently this is just a cabinet that's running out of space.
- Athletic field dragging equipment and top field mix is currently stored in a centralized location and is likely to remain that way.
- Ingersoll field currently stores infield mix only on-site.
- Road paving is currently contracted out.
- The PW department does handle some inlet top replacement.
- Pipe replacements are on a case-to-case basis.

- There is a major need for more outside storage.

LGT – Public Works Strategic Plan

Project #: 2109032

Interview W/ Sandi Feight, Lower Gwynedd Township Parks & Recreation Director

Attendees: Sandi Hicks, Jim Hersh, Judy Stern Goldstein, Emily Paskewicz

10/6/21 at 10:00 am.

- There was discussion about whether or not Mitch (Parks Superintendent) should be interviewed separately.
 - o It was determined that between Sandi and Fred we had gotten enough information about what Mitch is likely to need in a general place to maintain specific parks.
- Sandi clarified that most park sheds are actually owned by athletic associations and not used by Parks and Rec for their storage needs.
 - o Oxford Park shed is not owned by P&R
 - o Ingersoll Shed is not owned by P&R
 - o Ambler Park – has nothing currently
 - o Penllyn – has nothing currently
 - o Penllyn Woods – this is only park that contains P&R Storage currently (Workman and Trike are both stored here).
 - o Most P&R Storage is currently at 917 Bethlehem Pike, the Ingersoll House, and some storage in the Admin. Building.
- Judy asked if, in a perfect world, would Sandi want to see everything stored centrally.
 - o Sandi responded that it would depend where the central location is.
- P&R Board has been discussing Pickle ball – at one point wanted to replace storage sheds in Penllyn Woods with pickle ball courts. Unfortunately, that's the only on-site parks maintenance storage and because it would be within a conservation easement, development of pickle ball would be challenging. It would also require far more parking and create weekend challenges based on how much parking the park has currently. Penllyn Woods currently only has about 30 parking spaces.
- Sandi feels that it would make sense to still have some storage at Penllyn woods.
- She requested outdoor storage bins for gravel, screening, diamond hexes, and potentially old road millings as well for trail maintenance.
- Currently the township borrows a lot of materials from other municipalities or businesses, but feels that it would be good to plan to own and store more of these items in the future.
- Currently needs indoor, climate controlled storage for:
 - o Stage (5 pieces, Z frame, roughly 4' x6' each) this can get leaned up against a wall.
 - o Chair Rack
 - o Tennis Nets (Seasonally)
- Long term she would like storage for:
 - o Adirondack Chairs
 - o Future Shade Structures
 - o Future Pickle Ball Equipment.
- Estimated about 40' x 40' of storage space needed to include all existing and future items.

- Currently the Township has 3 playgrounds that will likely need major upgrades in the near future.
- Would like to keep the upstairs storage space at the Penllyn Woods Community Building.
- Community Day, Fall Fest, and Pike Fest – All require dragging 6'x3' upright stored items up flights of stairs. It would be good to eliminate this.
- May like to see an individual storage shed for a lacrosse field and lacrosse items in the future.
- Clarified later that P&R does own some of the sheds, but athletic associations like little league are the ones who actually use them for storage.
- Ideally the equipment for field dragging should be stored in one park and towed back and forth.
- Mentioned Towamencin Township as having a nice public works garage.
- Mentioned a need for a meeting space in the PW building.
- Mentioned need for restrooms and more space in new building.
- Mitch probably needs storage for about 2 palates for infill conditioner and 2-3 Palates for Spraying. This storage area will need to be inside and secured.
- The Township currently contracts out mowing... however there is a potential to move the mowing in-house in the future which would necessitate additional storage.
- The P&R department handles all field maintenance in house.

Appendix C - Public Works Current & Future Inventory
of Items for Storage

Lower Gwynedd Public Works

Vehicle #	type description	size	storage
12	pick up	19'10"x13'3"	indoor
14	pick up	20'x13'8"	indoor
15	pick up	19'x13'4"	indoor
16	dump truck	20'x13'7"	indoor
17	utility	20'x13'4"	indoor
19	pick up	20'10"x13'10"	indoor
20	pick up	19'4"x13'2"	indoor
21	SUV	19'3"x13'3"	indoor
22	dump truck	27'4"x12'8"	indoor
23	dump truck	22'2"x12'6"	indoor
24	pick up	19'3"x13'3"	indoor
25	dump truck	22'9"x12'4"	indoor
26	pick up	20'x13'2"	indoor
27	bucket truck	25'x13'6"	indoor
28	dump truck	21'6"x12'5"	indoor
29	dump truck	20'x13'6"	indoor
30	sewer jet truck	32'9"x12'3"	indoor
	Back hoe	25'x11'	indoor
	Back hoe	25'x11'	indoor
	Mini excavator	18'6"x9'	indoor
	zero turn mower	9'x5'	indoor
	zero turn mower	9'x5'	indoor
	zero turn mower	9'x5'	indoor
	zero turn mower	9'x5'	indoor
	John deere Gator	9'4"x5'2"	indoor
	Toro Workman	10'10"x5'5"	indoor
	compressor trailer	12'7"x4'10"	indoor
	crackseal trailer	15'x6'2"	indoor
	skid steer loader	10'4"x6'4"	indoor
	airrator	6'8"x4'	indoor
	roller	8'10"x5'4"	indoor
	Toro Z spray	6'4"x4'7"	indoor
	John Deere Tractor	18'4"x12'	indoor
	John Deere Tractor	12'3"x6'8"	indoor
	mower deck	11'4"x7'	indoor/under roof
	mower deck	9'x7'3"	indoor/under roof
	flail axe	6'x3'8"	indoor
	toro	8'x5'5"	indoor
	leaf vac	7'10x5'	indoor
	brine tank	9'5"x8'6"	indoor/outdoor
	brine tank	9'x8'3"	indoor/outdoor
	paint machine	6'x3'6"	indoor
T-1	trailer	34'4"x8'9"	indoor/under roof/outdoor
T-2	trailer	25'x8'9"	indoor/under roof/outdoor

T-3	trailer	26'x8'7"	indoor/under roof/outdoor
T-4	trailer	20'6"x8'4"	indoor/under roof/outdoor
T-5	trailer	16'2"x8'	indoor/under roof/outdoor
T-6	trailer	26'6"x8'8"	indoor/under roof/outdoor
	salt spreader	8"x19"	indoor
	salt spreader	8"x19"	indoor
	salt spreader	8"x19"	indoor
	salt spreader	8"x19"	indoor
	salt spreader	8"x19"	indoor
	salt spreader	8"x19"	indoor
	snow plow	11'1"x8'	indoor/under roof
	snow plow	11'1"x8'	indoor/under roof
	snow plow	11'1"x8'	indoor/under roof
	snow plow	11'1"x8'	indoor/under roof
	snow plow	11'1"x8'	indoor/under roof
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	snow plow	11'1"x8'	indoor/under roof
	snow plow	11'1"x8'	indoor/under roof
	snow plow	11'1"x8'	indoor/under roof
	snow plow	11'1"x8'	indoor/under roof
	generator	18"x30"	indoor
	generator	18"x30"	indoor
	generator	18"x30"	indoor
	generator	18"x30"	indoor
	generator	18"x30"	indoor
	generator	18"x30"	indoor
	generator	18"x30"	indoor
	generator	18"x30"	indoor
	snow blower	39"x5'	indoor
	snow blower	39"x5'	indoor
	snow blower	39"x5'	indoor
	pressure washer	39"x46"	indoor
	pressure washer	39"x46"	indoor
	generator	28"x34"	indoor

future additions

	street sweeper	25'x12'	indoor
	dump truck	30'x13"	indoor
	barricade railer	25'x9'	indoor
	work trailer	25'x9'	indoor
	pick up	20'x13'6"	indoor
	wheel loader	30'x12'	indoor

general storage

30'x30'

Appendix D - Estimated Building & Lot Calculations

Estimated Total Public Works Area Needed

Category	Square Feet	Acres
Indoor Vehicular Storage	33,298	
Indoor General Storage	13,920	
Building Space	4,859	
Building/Indoor Space Total	52,076	1.20
Building Outdoor Circulation Space	19,748	
<u>Outdoor Space subtotal</u>	<u>83,320</u>	
Outdoor Space Total	103,068	2.37
<u>Indoor/ Building & Outdoor Subtotal</u>	<u>155,144</u>	
Buffering Area Total	88,892	2.04
<u>Indoor/Outdoor Space and Buffering Subtotal</u>	<u>244,036</u>	
Stormwater Management Area	61,009	1.40
Subtotal	305,045	7.00
Lot Irregularities/Contingency	76,261	
<u>TOTAL:</u>	<u>381,307</u>	<u>8.75</u>

Estimated PW Indoor Vehicular Area Needed

Vehicle #	Description	size	Quantity	Spatial Assumptions Made	Storage Needed (SF)
12	pick up	19'10"x13'3"	1	24' L x 18' W. Storage Bay	432
14	pick up	20'x13'8"	1	24' L x 18' W. Storage Bay	432
15	pick up	19'x13'4"	1	24' L x 18' W. Storage Bay	432
16	dump truck	20'x13'7"	1	24' L x 18' W. Storage Bay	432
17	utility	20'x13'4"	1	24' L x 18' W. Storage Bay	432
19	pick up	20'10"x13'10"	1	25'L. x 18'W. Storage Bay	450
20	pick up	19'4"x13'2"	1	24' L x 18' W. Storage Bay	432
21	SUV	19'3"x13'3"	1	24' L x 18' W. Storage Bay	432
22	dump truck	27'4"x12'8"	1	32' L. X 17' W. Storage Bay	391
23	dump truck	22'2"x12'6"	1	27 W. x 17' L. Storage Bay	459
24	pick up	19'3"x13'3"	1	24' L x 18' W. Storage Bay	432
25	dump truck	22'9"x12'4"	1	24 W. x 17' L. Storage Bay	408
26	pick up	20'x13'2"	1	24' L x 18' W. Storage Bay	432
27	bucket truck	25'x13'6"	1	29 W. x 18' L. Storage Bay	522
28	dump truck	21'6"x12'5"	1	26' L. X 17' W. Storage Bay	442
29	dump truck	20'x13'6"	1	24' L. x 18' W. Storage Bay	432
30	sewer jet truck	32'9"x12'3"	1	37' L. x 17' W. Storage Bay	629
Vehicle Maintenance Bays					
	Truck Wash Bay	20' x 100'	1	2,000	2,000
	Maintenance and Vehicule Lift Bays	20' x 28'	3	560	1,680
Future Vehicle Additions					
	street sweeper	25'x12'	indoor	29' x16' for manuevering space	464
	dump truck	30'x13"	indoor	34' x 17' for manuevering space	578
	pick up	20'x13'6"	indoor	24' x 18' for manuevering space	432
	wheel loader	30'x12'	indoor	34 x 16' for manuevering space	544
Subtotal					13,319
Circulation Area (Subtotal x 1.5)					19,979
TOTAL INDOOR VEHICULAR AREA NEEDED:					33,298

Estimated PW Indoor General Storage Needed

Vehicle #	Description	size	Coverage Needed	Spatial Assumptions Made	Storage Needed (SF)
	Back hoe	25'x11'	indoor	25' L x 13' W. Storage Bay	325
	Back hoe	25'x11'	indoor	25' L x 13' W. Storage Bay	325
	Mini excavator	18'6"x9'	indoor	19' L x 10' W Storage Bay	380
1	zero turn mower	9'x5'	indoor		
2	zero turn mower	9'x5'	indoor	45 SF. Each x 4 = 180 SF Total +	
3	zero turn mower	9'x5'	indoor	manuevering room	200
4	zero turn mower	9'x5'	indoor		
	John deere Gator	9'4"x5'2"	indoor	10' x 6' for manuevering room	60
	Toro Workman	10'10"x5'5"	indoor	11' x 6' + 4' of manuevering space	70
	compressor trailer	12'7"x4'10"	indoor	13' x 5' + 5' of manuevering space	70
	crackseal trailer	15'x6'2"	indoor	15' x 7' + 5' of manuevering space	105
	skid steer loader	10'4"x6'4"	indoor	11' x 7' + manuevering space	100
	airrator	6'8"x4'	indoor	7' x 4' + 2' of manuevering space	30
	roller	8'10"x5'4"	indoor	9' x 6' + 6' of manuevering space	54
	Toro Z spray	6'4"x4'7"	indoor	7' x 5' + 5' of manuevering space	40
	John Deere Tractor	18'4"x12'	indoor	14' W. x 20' L - storage + manuevering	280
	John Deere Tractor	12'3"x6'8"	indoor	9' W. X 14' L. - Storage + manuevering	130
	mower deck	11'4"x7'	indoor/under roof	deck on an upper shield + 1' of	
	mower deck	9'x7'3"	indoor/under roof	manuevering	145
	flail axe	6'x3'8"	indoor	6' x4' + 1' of manuevering space	25
	toro	8'x5'5"	indoor	8' x 6' x + 2' of manuevering space	48
	leaf vac	7'10x5'	indoor	8 x5' + 2' of manuevering space	42
	brine tank	9'5"x8'6"	indoor/outdoor	20 x 10' Outdoor Area, per Existing	200
	brine tank	9'x8'3"	indoor/outdoor		
	paint machine	6'x3'6"	indoor	6' x 4'	24
T-1	trailer	34'4"x8'9"	indoor/under roof/outdoor	35' x 11' + 5' of manuevering space	390
T-2	trailer	25'x8'9"	indoor/under roof/outdoor	26' x 11' + 4' of manuevering space	290
T-3	trailer	26'x8'7"	indoor/under roof/outdoor	26' x 11' + 4' ofmanuevering space	290
T-4	trailer	20'6"x8'4"	indoor/under roof/outdoor	21' x 11' + 5' of manuevering space	231
T-5	trailer	16'2"x8'	indoor/under roof/outdoor	17' x 10' + 5' of manuevering space	175
T-6	trailer	26'6"x8'8"	indoor/under roof/outdoor	27' x 11' +3' of manuevering	300
1	salt spreader	8"x19"	indoor		
2	salt spreader	8"x19"	indoor		
3	salt spreader	8"x19"	indoor	1.5 SF. Estimated Each, Potentially	
4	salt spreader	8"x19"	indoor	stored vertically in rows of 3 - 1 row = 5	
5	salt spreader	8"x19"	indoor	SF. (another 5 SF on top)	5
6	salt spreader	8"x19"	indoor		
1	snow plow	11'1"x8'	indoor/under roof		
2	snow plow	11'1"x8'	indoor/under roof		

3	snow plow	11'1"x8'	indoor/under roof		
4	snow plow	11'1"x8'	indoor/under roof		
5	snow plow	11'1"x8'	indoor/under roof		
6	snow plow	11'1"x8'	indoor/under roof		
7	snow plow	11'1"x8'	indoor/under roof		
8	snow plow	11'1"x8'	indoor/under roof	13'x8' per plow x 14 plows	1,500
9	snow plow	11'1"x8'	indoor/under roof		
10	snow plow	11'1"x8'	indoor/under roof		
11	snow plow	11'1"x8'	indoor/under roof		
12	snow plow	11'1"x8'	indoor/under roof		
13	snow plow	11'1"x8'	indoor/under roof		
14	snow plow	11'1"x8'	indoor/under roof		
1	generator	18"x30"	indoor		
2	generator	18"x30"	indoor		
3	generator	18"x30"	indoor		
4	generator	18"x30"	indoor	4 SF. Each, assumes two rows of four stacked vertically. 4x 4 = 16 sf per Row	16
5	generator	18"x30"	indoor		
6	generator	18"x30"	indoor		
7	generator	18"x30"	indoor		
8	generator	18"x30"	indoor		
1	snow blower	39"x5'	indoor		
2	snow blower	39"x5'	indoor	17 SF Each x 3 = +4' of maneuvering	55
3	snow blower	39"x5'	indoor		
1	pressure washer	39"x46"	indoor		
2	pressure washer	39"x46"	indoor	13 SF each. + 2' mauevering space	30
	generator	28"x34"	indoor	7 sf + 3' of maneuvering space	10
	Locked Tool Storage	10' x 10'	Indoor	100 SF.	100
	Mechanical Storage Area	10' x10'	Indoor	100 SF.	100
	Flammable Liquid/Paint Storage	6' x 5'	Indoor	30 SF	30
	Janitor's Closet	6'x5'	Indoor	30 SF.	30
Storage Subtotal					6,205
<u>future additions</u>					
	barricade railer	25'x9'	indoor	25' x 11' for maneuvering space	275
	work trailer	25'x9'	indoor	25' x 12' for maneuvering space	300
	general storage	30'x30'	Indoor	900 SF.	900
	Parks & Rec. General Storage	40' x 40'	Indoor	Estimated indoor existing and future storage for parks & Rec. needs	1,600
Future Additions Subtotal					3,075
Circulation Area (Storage Subtotal + Future Additions Subtotal) x .5					4,640
TOTAL INDOOR GENERAL STORAGE NEEDED					13,920

Estimated PW Building Area Needed

	Quantity	Size Assumptions	Square Footage	Total SF
Individual Offices	4	10' x 15'	150	600
Communal PW Staff Workspace	1	20' x 15'	300	300
Conference Room/ EM Center	1	50 SF + 25 SF per person (15)	425	425
Communal Lunch Room	1	75 SF + 25 SF per seated Person (15)	450	450
Bunkroom/Sleeping Area - Male	1	6' x 9' per Cot w/ Maneuvering Space x 10	540	540
Bunkroom/Sleeping Area - Female	1	6' x9' per Cot w/ Maneuvering Space x 5	270	270
Single - Stall Restrooms	3	8'x8'	64	192
Single - Stall Shower/ Changing areas	3	10' x 8'	80	240
Locker Room	1	10' x 15'	150	150
HVAC/Mechanical/Electrical	1	15 x 20	300	300
Workbench	1	10' x 10'	100	100
Welding Area	1	10'x20'	200	200
Linen Closet/Laundry Room	1	10' x 12'		120
<u>Subtotal</u>				<u>3,887</u>
Circulation Areas				
Building Circulation Area		Building Space Subtotal x .25		972
<u>Total Estimated Building Area</u>				<u>4,859</u>

Estimated PW Outdoor Area Needed

	Quantity	Size	Square Footage	Total
Storage Bins - Single Bay	6	15' x 15'	225	1,350
Storage Bins - Double Bays	1	15' x 30'	450	450
P&R Requested Storage Bins	4	15' x 15'	225	900
Salt Shed Building	1	Roughly 70' x 30'	2100	2,100
Single Gas Pump	1	20'x20' for Pump	400	400
Garage Circulation Area	1	40' x 80'	3,200	3,200
Outdoor, Paved, Parking Spaces	20	10' x 20'	450	9,000
Existing Sewer Lot Storage	1	Shed & Miscellaneous Outdoor Storage	600	600
Miscellaneous Outdoor Storage	1	50' x 50'	2500	2,500
Large Dumpster	1	6x6	36	36
Small Dumpster	1	6x5	30	30
Generator & Concrete Pad	1	22 x 12	264	264
<u>Outdoor Storage\Functional Space Subtotal</u>				<u>20,830</u>
Outdoor Circulation Space Needed (Outdoor Space Subtotal x 3)				62,490
<u>OUTDOOR AREA NEEDED TOTAL</u>				<u>83,320</u>