

# Doylestown Township

PLAY • EXPLORE • PRESERVE



JUNE 21, 2022

## Community Recreation Center

FEASIBILITY STUDY

**MK  
SD**  
architects

**BALLARD \* KING**  
& ASSOCIATES LTD



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**“Every successful  
individual knows that  
his or her achievement  
depends on a community  
of persons working  
together.”**

**PAUL RYAN**

# EXECUTIVE SUMMARY

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The goal of the **Doylestown Township Parks and Recreation Community Center Feasibility Study** was to prepare a needs analysis and evaluation of the community and its citizens as they relate to a new Community Recreation Center. For this study, Doylestown Township retained the services of **Ballard King Consulting** to collect data, conduct stake holder meetings and develop a market study. They retained the services of **MKSD architects** to develop a building program, site plans, conceptual floors plans, as well as opinions of cost. This information would be utilized to select a concept to move the project forward into design and construction. A Building Committee composed of Doylestown Township Administration and Board of Supervisors members who served to guide the process on behalf of the Township.

An initial kick off meeting was held on October 15, 2020 with the design team and building committee to lay the ground work for expectations, goals and the schedule. Initially the building size was suggested by the township to be approximately 12,000 s.f. Ballard King reviewed information to be utilized for the study and provided by the Township. It was established that 1 on 1 stakeholder meetings and focus group meetings would be held to gather information on the needs of the community. An open community meeting would also be held on Feb 25th, 2021 to gather additional information and comments from the public. The results of those meetings are described in the meeting minutes and notes within the study.

After the various meetings were completed, MKSD created a list of the top priorities for the types of spaces that would adequately serve the needs of the community. That building program would become the basis for the building design. The key to the building's success is a program that will allow for multi-use functions for everything from sports, arts and crafts, private events, dog training and educational program needs, among many others. MKSD also included support spaces within the program for areas such as mechanical space, janitor closets, storage and a kitchenette. MKSD developed three complete program options of various sized buildings for the Township to review, the largest of which was over 17,000 s.f. Once the basic program was established, MKSD also developed a spatial relationship diagram to communicate how the spaces will work together within the building.

The initial location for the site was identified as the New Britain Road Site. It was requested that MKSD also analyze the existing sports courts adjacent to the Municipal Building as an option that may be more cost effective due to location of existing utilities. Because of the cost, it was decided that the team would focus efforts on the Tennis Court site and the sports courts would be relocated.

With the site selected and the programs established, MKSD developed three floor plan options for the Committees review and comment. Opinions of Cost were also developed. MKSD noted comments made with regard to the plans with the intent of updating the plans to the desires of the Township. Both the site plans, floor plans and the opinion of costs as well as the Center Operations Analysis developed by Ken Ballard, were presented at Public Visioning meeting on June 15, 2021.

After feedback from the public visioning meeting minor modifications were made to the presentation and renderings of the building were presented for the first time at a building committee meeting on August 10, 2021. The renderings depicted the exterior design and the committee was pleased with the appearance of the building and its relationship to the existing Township Building. At this meeting, the Township's Sustainable and Environmental Accolades were discussed, particularly the Ready for 100 Resolution and how the building could be prepared to meet that goal.

At the Board of Supervisors meeting on September 28, 2021, MKSD and Ken Ballard presented the project timeline, site plans and reason for the site selection, four options for floor plans, four opinions of construction cost and operating expenses and revenue, exterior design concepts, sampling potential uses for the spaces in the building and a LEED Checklist.

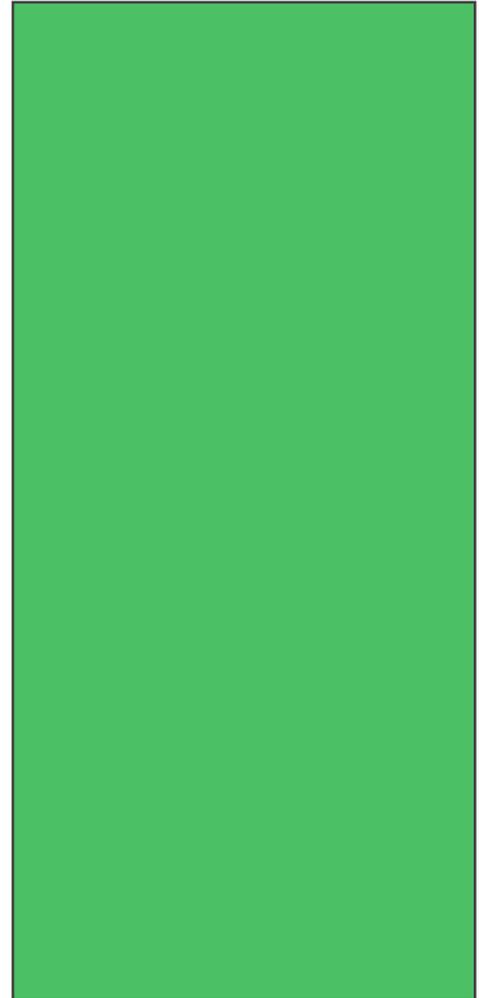
After a time for public comments and questions, the Board of Supervisors voted to select the design/floor plan that depicted a larger gym, one multi-purpose room that could be divided into three smaller spaces and a patio to the west side of the building facing the park and adjacent to the multi-purpose room. This plan was a combination of Options 2 and 3. With this direction, MKSD moved forward with developing the hybrid option and the opinion of cost associated with it after the meeting.

The selection of a floor plan option and approval by the Board of Supervisors brought the Feasibility Study portion of this project to a close. The information developed in the study enabled the Building Committee and the Board of Supervisors to come to a consensus on how to move forward with this important project. Through the commitment of the stakeholders involved, Township Administration, the open forums that enabled Township Residents to bring their ideas forward and the creativity and experience of the professionals involved, the study will form the foundation to move this project forward into design and construction and result in a Recreation Center that will be a functional and life enhancing part of the Doylestown Township Community.

# GUIDING PRINCIPLES

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- Must meet the financial expectations of the Township for capital and operations.
- Must have a strong community focus.
- Needs to serve all age groups.
- Supports diversity, equity and inclusion.
- Provides a location for Township parks and recreation activities and programs.
- Serves both active and passive recreation needs.
- Should serve as rental facility.
- Should be able to function as an emergency shelter.
- Minimize its impact on the park.
- Must have strong multiuse capabilities.
- Must be environmentally sound.
- Should be expandable.



“We are constituted so that simple acts of kindness, such as giving to charity or expressing gratitude, have a positive effect on our long-term moods. The key to the happy life, it seems, is the good life: a life with sustained relationships, challenging work, and connections to community.”

PAUL BLOOM

# FEASIBILITY STUDY TIMELINE AND LIST OF MEETING DATES

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DATE	MEETING
August 31, 2020	Doylestown Township approves Agreement with MKSD architects for Feasibility Study
October 15, 2020	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
November 23, 2020	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
December 08, 2020	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
December 22, 2020	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
January 05, 2021	Individual Interviews with the Board of Supervisors: Barbara Lyons, Jennifer Herring, and Ryan Manion
January 06, 2021	Individual Interviews with the Board of Supervisors: Dan Wood and Nancy Santacecilia
January 12, 2021	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
January 26, 2021	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
February 02, 2021	Committee Interviews with Telecommunications Advisory Board (Arthur Zapolski), Ways and Means Committee (Bob Salanik), and Environmental Advisory Council (Jim Baldassarre)
February 03, 2021	Committee Interview with Park and Recreation Board (Paul DiNella)
February 09, 2021	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
February 10, 2021	Focus Group Meeting: Neighbors
February 18, 2021	Committee Interview with Friends of Kids' Castle (Joe Salvati)
February 23, 2021	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
February 23, 2021	Focus Group Meeting: Program Partners
February 25, 2021	Public Meeting
March 02, 2021	Focus Group Meeting: Potential Community Partners
March 03, 2021	Focus Group Meeting: Athletic Partners

<b>DATE</b>	<b>MEETING</b>
<b>March 09, 2021</b>	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
<b>March 12, 2021</b>	Meeting with Township Administration
<b>March 30, 2021</b>	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
<b>April 26, 2021</b>	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
<b>May 09, 2021</b>	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
<b>June 08, 2021</b>	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
<b>June 15, 2021</b>	Presentation to the Board of Supervisors by MKSD architects and Ballard*King
<b>August 10, 2021</b>	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
<b>September 24, 2021</b>	Meeting with Township's Building Committee, MKSD architects, and Ballard*King
<b>September 28, 2021</b>	Presentation to the Board of Supervisors by MKSD architects and Ballard*King – Board Approves the Feasibility Study and to progress the project to the design phases.

# MARKET ANALYSIS SUMMARY

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## Section I – Market Analysis

As part of the planning effort for the proposed new Doylestown Community Center, **Ballard\*King & Associates (B\*K)** has completed a market analysis for the project. This is a summary of that report. The entire report can be found in the Appendix.

### Demographics

The following is a summary of the demographic characteristics within areas identified as the Primary and Secondary Service Areas. The Primary Service Area is Doylestown Township. The Secondary Service Area is the Central Bucks School District.

B\*K accesses demographic information from Environmental Systems Research Institute (ESRI) who utilizes 2010 Census data and their demographers for 2020-2025 projections. In addition to demographics, ESRI also provides data on housings, recreation, and entertainment spending and adult participation in activities. B\*K also uses information produced by the National Sporting Goods Association (NSGA) to overlay onto the demographic profile to determine potential participation in various activities.

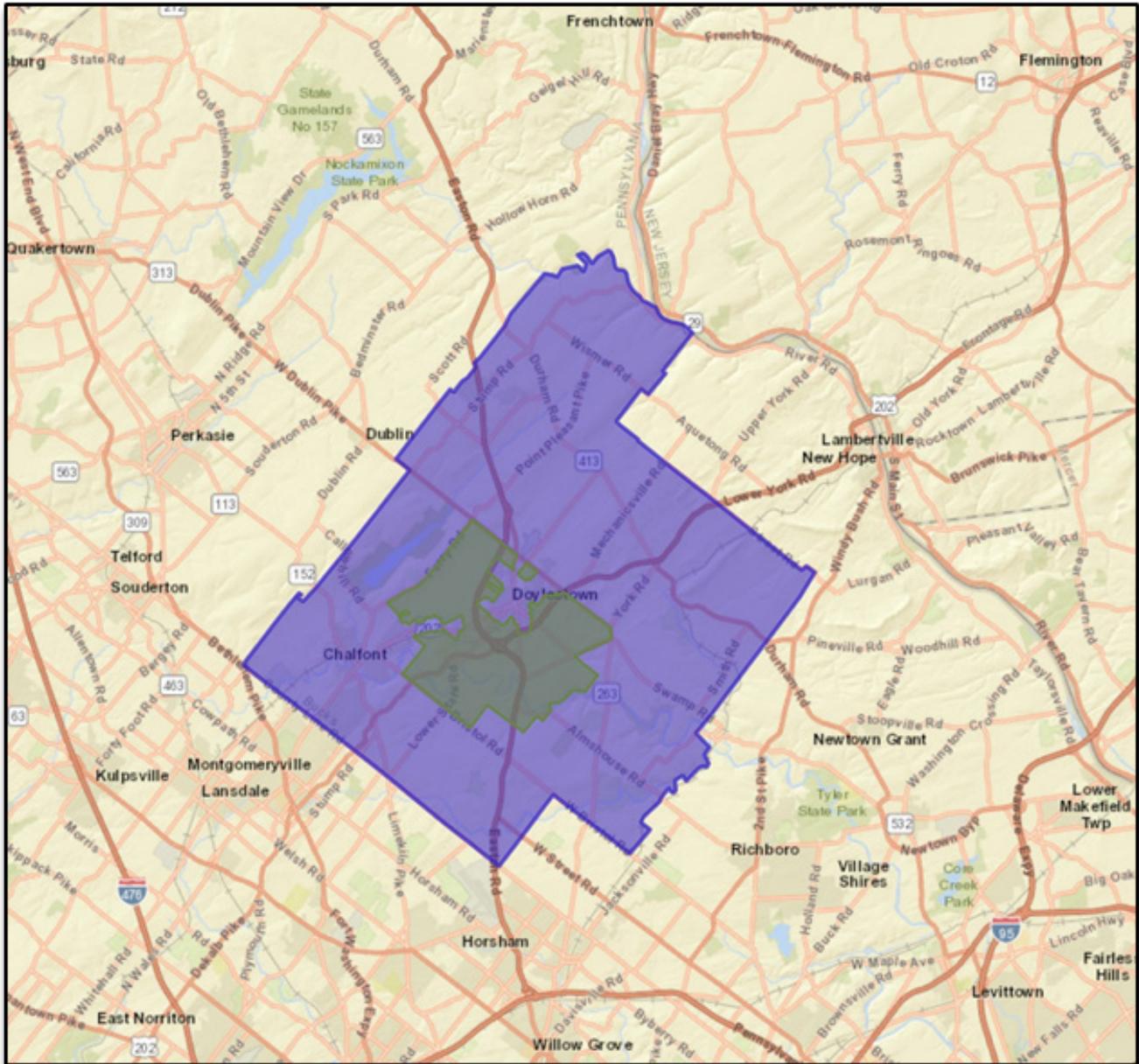
**Service Areas:** The information provided includes the basic demographics and data for the Primary and Secondary Service Areas with comparison data for the State of Pennsylvania and the United States.

Secondary Service Areas are defined as the distance people will travel on a regular basis (a minimum of once a week) to utilize recreation facilities. Use by individuals outside of this area will be much more limited and will focus more on special activities or events.

Service areas can flex or contract based upon a facility's proximity to major thoroughfares. Other factors impacting the use as it relates to driving distance are the presence of alternative service providers in the service area. Alternative service providers can influence participation, membership, daily admissions and the associated penetration rates for programs and services.

Service areas can vary in size with the types of components in the facility.

## Map A – Service Area Maps



- Green Boundary – Primary Service Area (Doylestown Township)
- Blue Boundary – Secondary Service Area (Central Bucks School District)

## Demographic Summary

	Primary Service Area	Secondary Service Area
<b>Population:</b>		
2010 Census	17,565 <sup>1</sup>	114,563 <sup>2</sup>
2020 Estimate	17,830	120,085
2025 Estimate	18,013	122,290
<b>Households:</b>		
2010 Census	6,329	41,356
2020 Estimate	6,568	43,975
2025 Estimate	6,672	44,986
<b>Families:</b>		
2010 Census	4,444	30,608
2020 Estimate	4,541	32,164
2025 Estimate	4,591	32,779
<b>Average Household Size:</b>		
2010 Census	2.53	2.69
2020 Estimate	2.48	2.66
2025 Estimate	2.47	2.65
<b>Ethnicity (2020 Estimate):</b>		
Hispanic	4.0%	4.3%
White	92.0%	90.0%
Black	3.1%	2.0%
American Indian	0.2%	0.2%
Asian	2.0%	4.7%
Pacific Islander	0.1%	0.0%
Other	0.9%	1.3%
Multiple	1.8%	1.7%
<b>Median Age:</b>		
2010 Census	45.3	42.0
2020 Estimate	48.4	43.9
2025 Estimate	50.0	44.6
<b>Median Income:</b>		
2020 Estimate	\$117,250	\$112,982
2025 Estimate	\$125,122	\$121,529

<sup>1</sup>From the 2000-2010 Census, the Primary Service Area experienced a .03% decrease in population.

<sup>2</sup>From the 2000-2010 Census, the Secondary Service Area experienced a 12.7% increase in population.

The following summarizes the demographic characteristics of the service areas.

- The Primary Service Area, at just over 17,500, has a reasonably small population base to support a community center. The Secondary Service Area at over 120,000 has a significant population and is better positioned to support a significant community center. In fact, the population base is larger than what can be supported by a community center in Doylestown.
- The population of both service areas are projected to continue to grow over the next five years.
- The median age in both service areas is older than the state and national numbers.
- There is a significant number of households with children in the Secondary Service Area but lower numbers in the Primary Service Area.
- Both service areas have significantly higher median household income levels than the state and national numbers.
- The service areas have a higher cost of living than the state and national figures but there are high rates of expenditures on recreation activities.
- In the future, there are projected to be decreases in the youth population and increases in the senior age groups in both service areas.
- There is very little ethnic or racial diversity in any of the service areas.
- The tapestry segments in each of the service areas indicates a population while older, is still active in a lot of recreational activities.

## **Sports Participation Trends**

In addition to analyzing the demographic realities of the service areas, it is possible to project possible participation in recreation and sport activities.

Participation Numbers: On an annual basis, the National Sporting Goods Association (NSGA) conducts an in-depth study and survey of how Americans spend their leisure time. This information provides the data necessary to overlay rate of participation onto the Primary Service Area to determine market potential. The information contained in this section of the report, utilizes the NSGA's most recent survey. For that data was collected in 2019 and the report was issued in June of 2020.

B\*K takes the national average and combines that with participation percentages of the Primary, and Secondary Service Area based upon age distribution, median income, region and National number. Those four percentages are then averaged together to create a unique participation percentage for the service area. This participation percentage when applied to the population of the Primary, and Secondary Service Area then provides an idea of the market potential for certain recreation activities.

**Table A –Participation Rates in the Primary Service Area**

	Age	Income	Region	Nation	Average
Aerobics	15.6%	20.0%	15.7%	15.8%	16.8%
Basketball	7.1%	9.6%	8.5%	8.4%	8.4%
Exercise Walking	37.5%	37.6%	35.3%	35.6%	36.5%
Exercise w/ Equipment	20.0%	22.9%	18.8%	19.5%	20.3%
Pickleball	8.4%	0.9%	0.9%	0.7%	2.7%
Pilates	1.8%	2.2%	2.3%	2.0%	2.1%
Running/Jogging	13.5%	18.6%	14.7%	15.4%	15.5%
Table Tennis/Ping Pong	3.0%	3.8%	2.5%	3.3%	3.2%
Tennis	3.8%	5.0%	4.4%	4.1%	4.3%
Volleyball	3.1%	5.0%	2.9%	3.5%	3.6%
Weightlifting	12.1%	15.6%	12.1%	12.6%	13.1%
Workout @ Club	12.9%	15.6%	13.7%	13.2%	13.8%
Yoga	9.8%	11.2%	10.7%	10.6%	10.6%
Did Not Participate	23.3%	19.1%	22.8%	22.4%	21.9%

- Age:** Participation based on individuals ages 7 & Up of the Primary Service Area.
- Income:** Participation based on the 2020 estimated median household income in the Primary Service Area.
- Region:** Participation based on regional statistics (Mid-Atlantic).
- National:** Participation based on national statistics.
- Average:** Average of the four columns.

**Table B –Participation Rates in the Secondary Service Area**

	Age	Income	Region	Nation	Average
Aerobics	15.7%	20.0%	15.7%	15.8%	16.8%
Basketball	7.9%	9.6%	8.5%	8.4%	8.6%
Exercise Walking	36.4%	37.6%	35.3%	35.6%	36.2%
Exercise w/ Equipment	19.6%	22.9%	18.8%	19.5%	20.2%
Pickleball	7.4%	0.9%	0.9%	0.7%	2.5%
Pilates	1.9%	2.2%	2.3%	2.0%	2.1%
Running/Jogging	14.4%	18.6%	14.7%	15.4%	15.8%
Table Tennis/Ping Pong	3.2%	3.8%	2.5%	3.3%	2.4%
Tennis	3.9%	5.0%	4.4%	4.1%	4.4%
Volleyball	3.4%	5.0%	2.9%	3.5%	3.7%
Weightlifting	12.3%	15.6%	12.1%	12.6%	13.1%
Workout @ Club	12.8%	15.6%	13.7%	13.2%	13.8%
Yoga	10.0%	11.2%	10.7%	10.6%	10.6%
Did Not Participate	23.1%	19.1%	22.8%	22.4%	21.8%

**Age:** Participation based on individuals ages 7 & Up of the Secondary Service Area.

**Income:** Participation based on the 2020 estimated median household income in the Secondary Service Area.

**Region:** Participation based on regional statistics (Mid-Atlantic).

**National:** Participation based on national statistics.

**Average:** Average of the four columns.

## Cultural Arts & Other Rates of Participation

The National Endowment for the Arts (NEA) is the source that B\*K uses to provide insight into how Americans are spending their time with art and art-like activities. All the participation numbers in this section of the report are national participation numbers and reflective of national trends.

The Survey of Public Participation in the Arts (SPPA) is the nation's largest, most representative survey of adult patterns of arts participation in the United States. The NEA completes its survey on only an occasional basis with the last three years being 2008, 2012 and 2017. Important footnotes and key take away findings from the 2017 survey instrument include:

- In comparison to the 2012 findings the 2017 findings are much more positive.
  - o Adults attending visual or performing arts activities grew by 3.6%.
  
- An area of substantial growth in the 2017 findings is reading poetry.
  - o 18-24 year old's who read poetry doubled.
  - o Women showed notable gains.
  - o Hispanic readers increased from 4.9% to 9.7%.
  
- The top three forms of arts attendance in the performing arts are:
  - o Outdoor performing arts festivals.
  - o Musicals.
  - o Other performing arts events.

### Specific Data Summary by Discipline:

#### Dance

- Attendance
  - o 6.3% of adults attended a dance performance other than ballet.
  - o 3.1% of adults attended a ballet performance.

#### Literature

- Reading
  - o 11.7% of adult read poetry an increase of 76% from 2012.
  - o 3.7% of adults read a play an increase of 28.2% from 2012.
  - o 52.7% of adults read a book not required for work.
  - o 41.8% of adults read a novel or short story a decrease of 7.6% from 2012.

## Museums

- Attendance
  - o 23.7% of adults visited an art museum or art gallery an increase of 12.9% from 2012.

## Music

- Attendance
  - o 8.6% of adults attended a classical music performance.
  - o 8.6% of adults attended a jazz concert.

## Opera

- Attendance
  - o 2.2% of adults attended an opera performance.

## Theater

- 16.5% of adults attended a musical theater performance.

## Recreation Facility Trends

There continues to be very strong growth in the number of Americans participating in recreation and leisure activities. The Physical Activity Council in its 2019 study indicated that 36% of Americans (age 6 and older) participated at least once a week in an active high calorie burning activity. However, the study also indicated that 27% of Americans were inactive. International Health and Racquet Sports Association (IHRSA) reported that membership in U.S. health clubs has increased by 28% since 2010, and memberships in health clubs reached an all-time high of 64.2 million in 2019. Statistics also indicate that approximately 1 out of every 5 people of the U.S. population (or 21.2%) belong to or utilize a health club. On the other side, most public recreation centers attract between 20% and 30% of a market area (more than once) during the course of a year. All of this indicates the relative strength of a market for a community-based recreation facility. However, despite these increases the American population as a whole continues to lead a rather sedentary life with an average of 25% of adults across the country reporting that they engage in no physical activity (according to The Center for Disease Control in 2018). It is important to note that this percentage has been declining steadily since a high in 2008 of 36%.

One of the areas of greatest participant growth over the last 10 years is in fitness related activities such as yoga, exercise with equipment, aerobic exercise and weightlifting. This is also the most volatile area of growth with specific interest areas soaring in popularity for a couple of years only to be replaced by a new activity for the coming years. Also showing particularly strong growth numbers are running/jogging while swimming participation remains consistently high despite recent drops in overall numbers. It is significant that many of the activities that can take place in an indoor recreation setting are ranked in the top fifteen in overall participation by the National Sporting Goods Association.

Due to the increasing recreational demands, there has been a shortage in most communities of the following spaces:

- Gymsnasiums
- Pools (especially leisure pools)
- Weight/cardiovascular equipment areas- especially functional training space
- Indoor running/walking tracks
- Meeting/multipurpose (general program) space
- Senior's program space
- Pre-school and youth space
- Teen use areas
- Fieldhouses (turf and hard court)

As a result, many providers have attempted to include these amenities in public community recreation facilities. With the growth in youth sports and the high demand for school gyms, most communities are experiencing an acute lack of gymnasium space. Weight/cardiovascular space and more specifically functional training space is also in high demand and provides a facility with the potential to generate significant revenues.

The success of most community-based recreation providers is dependent on meeting the recreational needs of a variety of individuals. The fastest growing segment of society is the senior population and meeting the needs of this group is especially important now and will only grow more so in the coming years. Indoor walking tracks, exercise areas, warm water pools, pickleball courts and classroom spaces are important to this age group. Marketing to the younger more active senior (usually age 55-70) is paramount, as this age group has the free time available to participate in leisure activities, the desire to remain fit, and more importantly the disposable income to pay for such services.

Youth programming has always been a cornerstone for recreation services and will continue to be so with an increased emphasis on teen needs and providing a deterrent to juvenile crime. With a continuing increase in single parent households and two working parent families, the needs of school age children for before and after school child-care continues to grow as does the need for preschool and daycare programming.

## **Market Review**

In addition to the demographic characteristics, recreation participation, and trends analysis, one of the other greatest impacts on the market for a planned new Doylestown Community Center is the presence of other similar providers in the area.

Within the Primary and Secondary Service Areas, there are currently a number of indoor sports, recreation, and fitness facilities to serve the population base. These include:

## Public Facilities

Many of the communities around Doylestown Township have community or recreation centers of some size and magnitude.

**Northampton Recreation Center** – this facility features a large gymnasium, four classrooms, dance studio, kitchen, multipurpose room, and party room. The center offers a wide variety of recreation programs and services.

**Montgomery Community & Recreation Center** – the center has a large gymnasium with an elevated track, weight/cardio area, group exercise room, classrooms/community room, kitchen, youth lounge, senior lounge and outdoor splashpad. This center also has a wide range of programs and services.

**Horsham Community Center** – this is a smaller center that has three meeting rooms and a kitchen that can be utilized for meetings, events, and some recreation programs. Programming is limited.

**Plumstead Community Building** – this is also a very small center with a community room and small kitchen. It primarily serves as a rental center.

## Non-Profit Facilities

There are two main non-profit recreation facilities in the area.

**Doylestown YMCA** – this is the most comprehensive recreation facility in the market area with a 6 lane/25-meter pool, gym, fitness center and group exercise studio.

**Central Bucks Senior Center** – located in Doylestown, this facility serves ages 55+. The center has a number of classrooms, library, plus a large community room. There is a daily nutrition program in addition to a variety of recreation, fitness/wellness, cultural activities, and social services programs that are offered.

## Private Facilities

There is a very large number of private sports and fitness facilities in the greater Doylestown market. Most of these have a strong adult fitness orientation. The private facilities can be grouped into three major categories

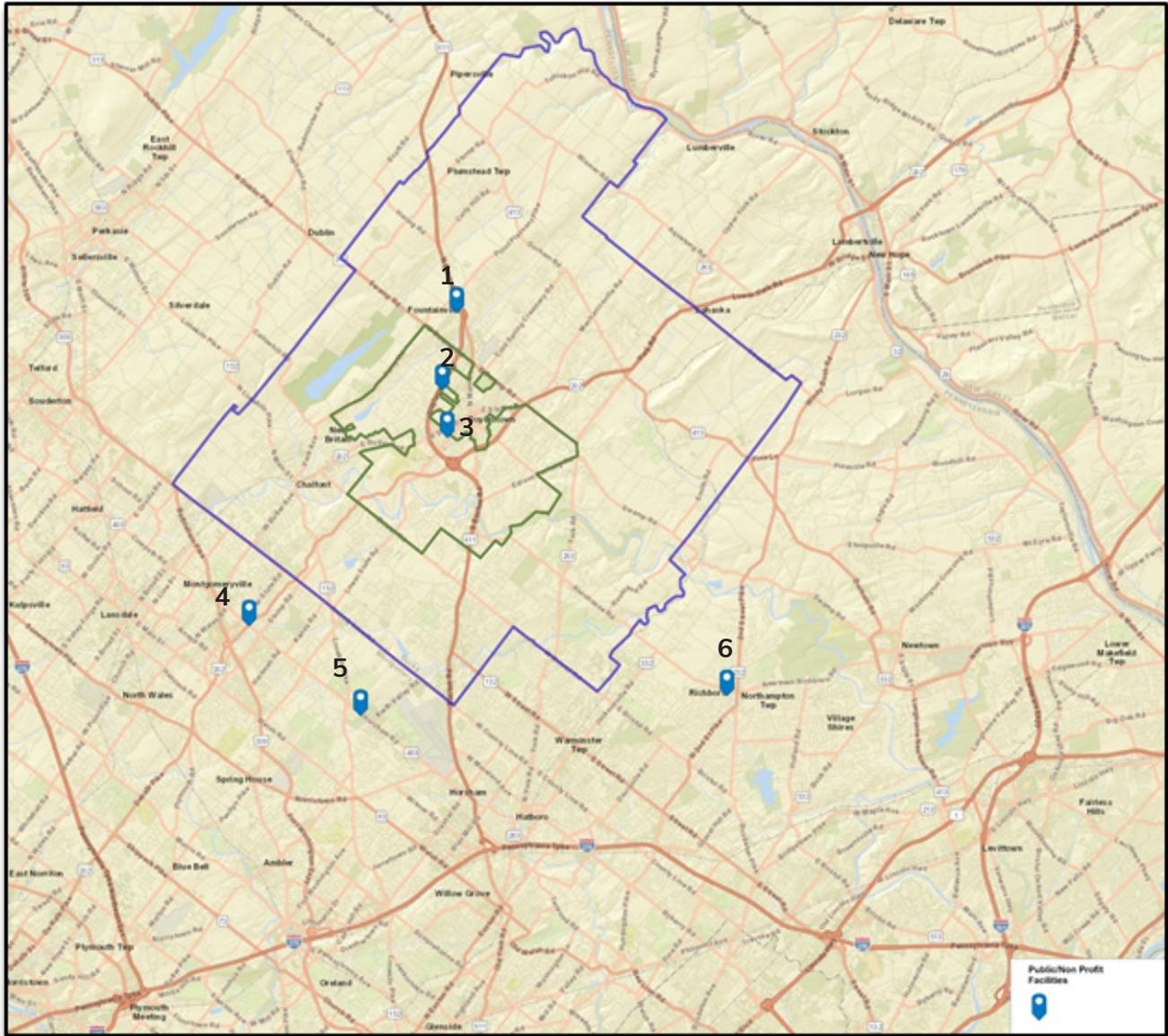
**Full-Service Fitness Centers** – these are larger facilities with multiple amenities. This includes providers such as LA Fitness, Planet Fitness, Cornerstone Health & Fitness, and Philadelphia Sports Clubs.

**Boutique Fitness Facilities** – these tend to be smaller, more specialized fitness providers with a specific market focus. This includes facilities such as, Pure Barre, B3 Personal Training, Orangetheory Fitness, Sandy Dog CrossFit, and Sun Dog Yoga.

**Specialty Facilities** – this type of facility does not have a fitness orientation but provides a location for specific sports to occur. This includes facilities such as Doylestown Rock Gym, Doylestown Tennis Club, Sky Zone, and Camp Curiosity.

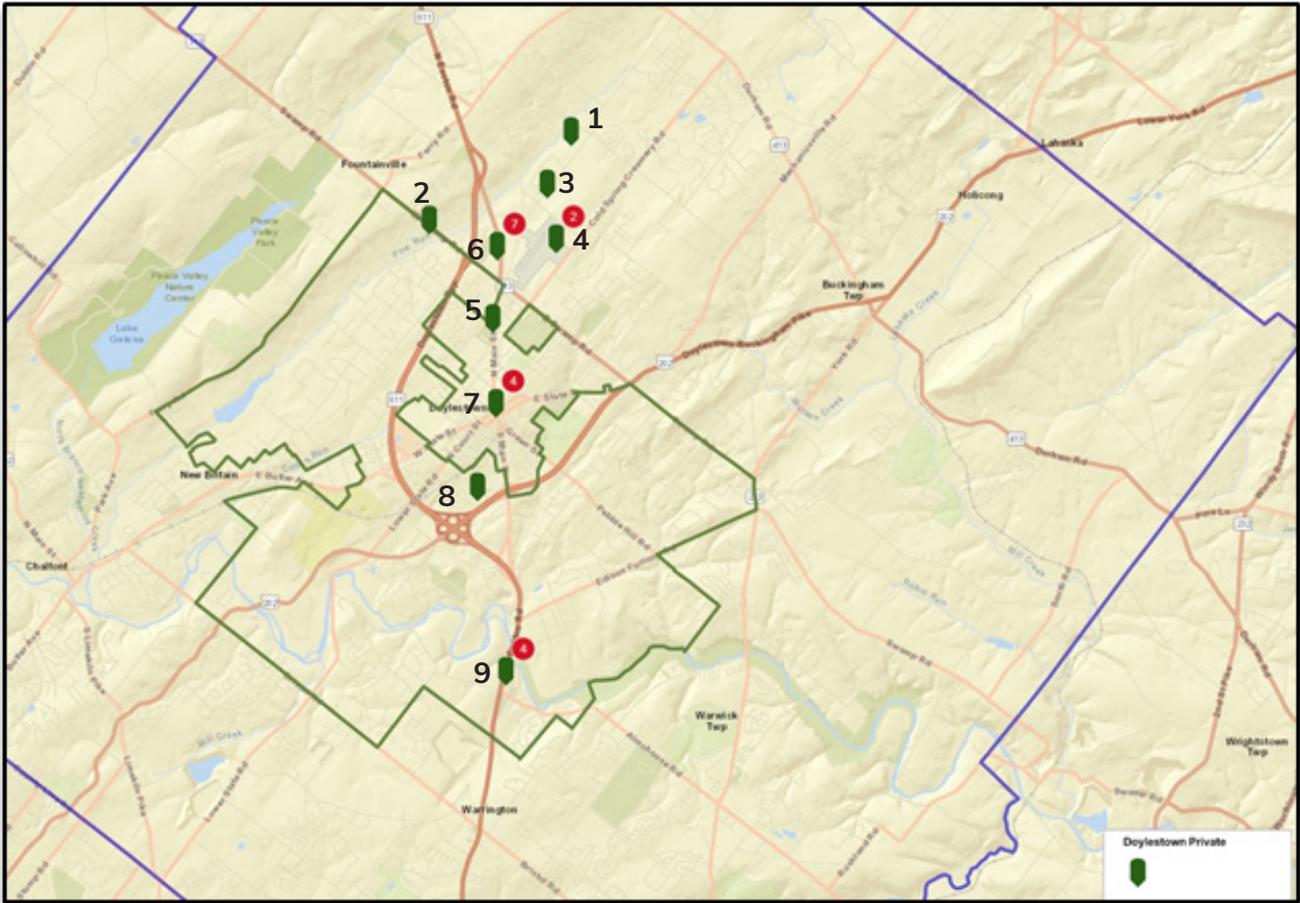
This is a representative listing of alternative recreation facilities in the area and is not meant to be a total accounting of all service providers. There may be other facilities located in the area that have an impact on the Doylestown Township market as well.

## Map A – Public/Non-Profit Community/Recreation Centers



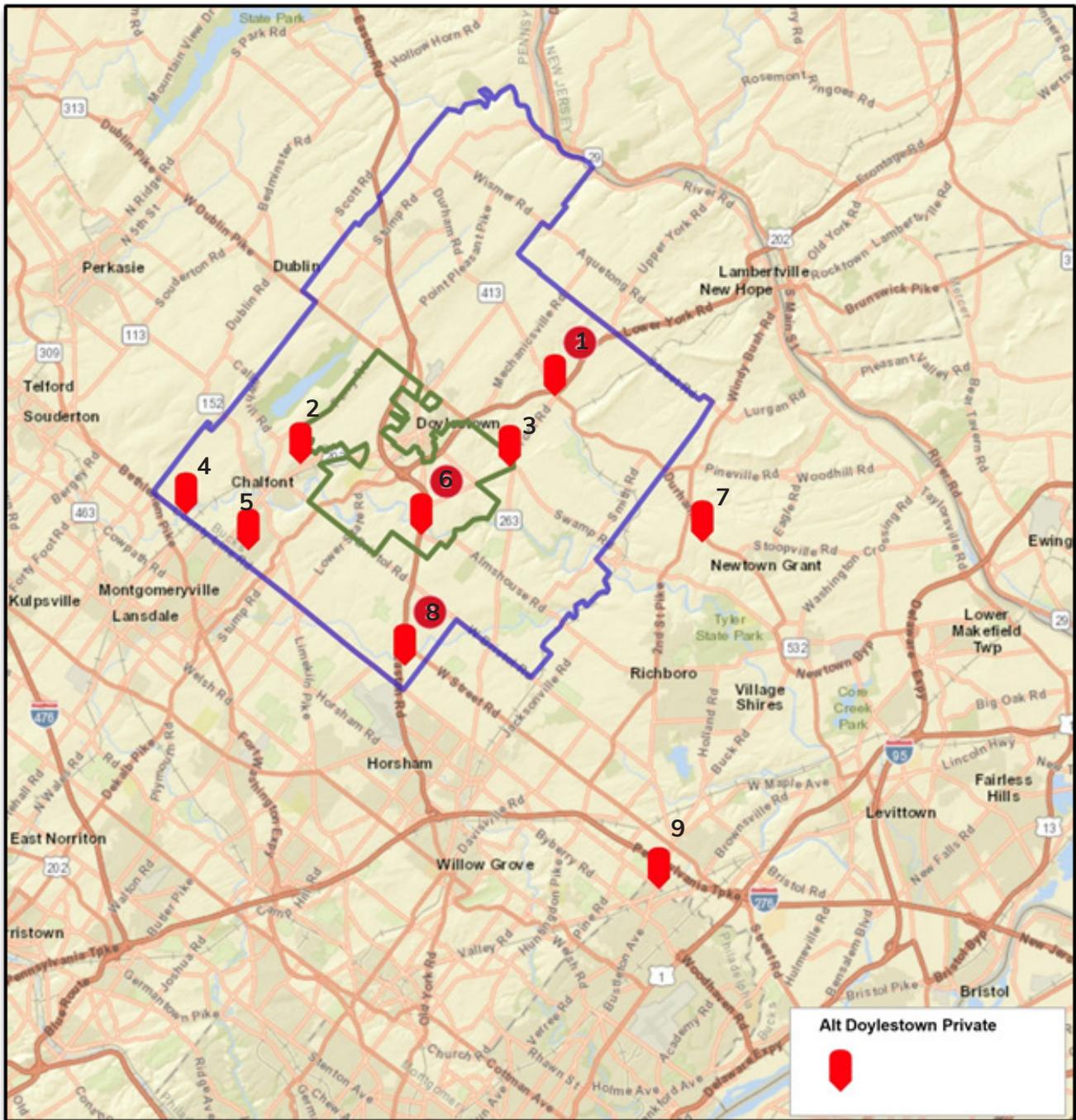
1. Plumstead Township Community Building
2. Central Bucks Senior Center
3. Doylestown YMCA
4. Montgomery Township Community & Recreation Center
5. Horsham Township Community Center
6. Northampton Township Recreation Center

Map B – Private Providers in Doylestown



- |                                       |                           |                         |
|---------------------------------------|---------------------------|-------------------------|
| 1. Camp Curiosity & Curiosity Academy | 6. B3 Personal Training   | 7. Flip Dog Pilates     |
| 2. Zone4 Fun                          | CrossFit Sine Pari        | Pilates Couture         |
| 3. Doylestown Tennis Club             | Doylestown Fitness Center | Quantum Performance Fit |
| 4. Espiral Pilates & Fitness          | Doylestown Rock Gym       | Sun Dog Yoga            |
| Sandy Dog CrossFit                    | Montone Fitness Coaching  | 8. Mesa Lifestyle Yoga  |
| 5. Planet Fitness                     | Next Level Fitness        | 9. Barre 3              |
|                                       | Total Fitness Zone        | Breathing Dragon Yoga   |
|                                       |                           | Club Pilates            |
|                                       |                           | Pure Barre              |

Map C – Private Providers Outside Doylestown



- |    |  |    |  |
|----|--|----|--|
| 1. | CrossFit- Solebury Club<br>The Solebury Club | 6. | CKO Kickboxing<br>Orangetheory Fitness |
| 2. | Revolve Fitness                              | 7. | Transcend Fitness Club                 |
| 3. | Cornerstone Health/Fit                       | 8. | LA Fitness                             |
| 4. | Sky Zone                                     |    | The Edge Fitness Club                  |
| 5. | Philadelphia Sports Clubs                    | 9. | The Edge Fitness Club                  |

**Other Indoor Recreation and Fitness Facility Providers Conclusion:** In the Doylestown Township market there are a significant number of recreation and fitness providers in place. There are a number of other public facilities in close proximity (Montgomery Community & Recreation Center being the most prominent), but they tend to serve their more immediate market, but there is a very large number of private fitness facilities in the area and the Doylestown YMCA is a significant provider in the market as well.

After analyzing these other existing providers, there is still a strong market for a Doylestown Community Center that has a focus on more conventional recreation programming and the Township market specifically.

## **Market Conclusion:**

Below are listed some of the market opportunities and challenges that exist with the Doylestown Community Center project.

### **Opportunities**

- The Secondary Service Area has more than a large enough population base to support a significant community center.
- There is a significant number of households with children. This will enhance use of the center.
- The area has a significantly higher median household income level which should provide more disposable income for recreation purposes.
- The population will continue to grow over the next five years which will add additional users for the facility.
- The Township has lost the use of its' indoor recreation space in the past few years and this has been replaced with temporary buildings. Having a permanent home for recreation programs is a high priority.
- Partnerships with other community organizations could enhance the programs and services that are offered at the center.
- A public Doylestown Community Center improves the quality of life in the Township and helps to bring more unity to a diverse population base.

## Challenges

- The demographic characteristics indicate an older median age. This will have somewhat of a negative impact on the rate of participation in recreational activities at a community center.
- There are projected to be decreases in the youth population and increases in the senior age groups in the coming years.
- There are significant number of other indoor recreation and fitness providers in the greater market area including the YMCA and private providers.
- The Township should plan that the Primary Service Area market will be the main focus of the center not the Secondary Service Area.

“The need for connection  
and community is  
primal, as fundamental  
as the need for air, water  
and food.”

DEAN ORNISH

# SITE OPPORTUNITIES AND CHALLENGES

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## ANALYSIS OF NEW BRITAIN RD VS. COURTS

Doylestown Township considered two possible locations for the new Community Center.

The first location considered was off New Britain Road at the northwest corner of Central Park (refer to Site Selection: New Britain Road vs. Court Location plan). After the Township analyzed the site with the Township Engineer, there were concerns that developing at this site would overburden the existing parking lot and operations at the sports fields. Additionally, new utility lines would need to be installed at this site which would consume the modest budget of the project.

The second location considered was at the existing sports courts adjacent to the Municipal Building (refer to Site Selection: New Britain Road vs. Court Location plan). This site will allow for more parking and the ease of utilizing the nearby existing utilities. The Township approved of the Community Center being built in this location. The Township plans on building new sports courts as part of a separate project. Please refer to the Proposed Site Plan for the approved site layout.

### NEW BRITAIN ROAD LOCATION

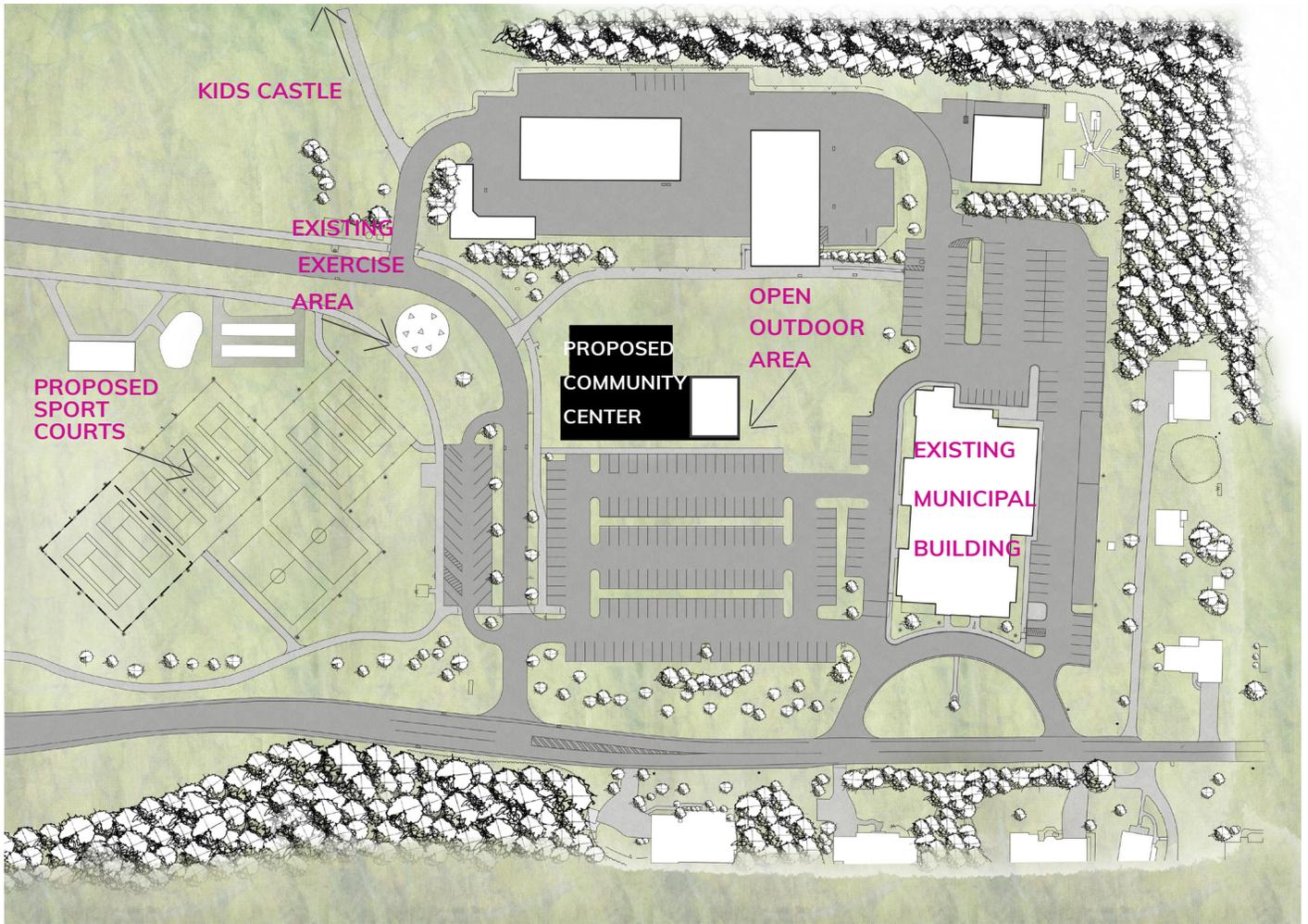
- Lack of Utilities (sewer, electric)
- Far from Park & Recreation Offices
- Far from Public Works (Facilities Operations)
- Lack of Adequate Parking (for size of building being considered 20K +/- sq. ft.)
- Site requires retaining wall
- Will lose new field to accommodate parking
- Concern for Viewshed by EAC & neighbors
- Concern about impact on Harts Woods

### COURT LOCATION

- Utilities Easily Accessible (water, sewer, electric, & gas)
- Close to Park & Recreation Offices
- Close to Public Works (Facilities Operations)
- Additional parking can be accommodated
- Relocation of court space available
- Will lose Field 1 to accommodate new courts



**SITE SELECTION: NEW BRITAIN ROAD VS. COURT LOCATION**



## PROPOSED SITE PLAN

**OPINIONS OF PROBABLE COSTS FOR SITEWORK by PENNONI**

<b>DOYLESTOWN TOWNSHIP PARK RECREATION AND COMMUNITY CENTER</b>						Project: DOYTX21017
Construction Quantity Takeoffs & Cost Estimate						
Date Created: April 14th, 2021						
Date Revised:						
DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL COST		
<b>A SITE DEMOLITION</b>						
1 Mobilization and Demobilization	1	LS	\$ 25,000	\$	25,000	
2 Maintenance and Protection of Traffic	1	LS	\$ 5,000	\$	5,000	
3 Pavement Removal (Parking Lots and Tennis Courts)	5,600	SY	\$ 10	\$	56,000	
4 Curb Removal	1,050	LF	\$ 15	\$	15,750	
5 Utility Line Removal	50	LF	\$ 10	\$	500	
6 Site Light and Conduit Removal	30	EA	\$ 1,000	\$	30,000	
7 Tree Removal	20	EA	\$ 1,000	\$	20,000	
8 Sign Removal	4	EA	\$ 50	\$	200	
<b>SUBTOTAL</b>					<b>\$152,450</b>	
<b>B SITE CONSTRUCTION</b>						
1 Curb	3,000	LF	\$ 15	\$	45,000	
2 ADA Curb Ramps	6	EA	\$ 3,000	\$	18,000	
3 Traffic Signs	10	EA	\$ 250	\$	2,500	
4 Concrete Sidewalk	5,000	SF	\$ 10	\$	50,000	
5 Concrete Pad	250	SF	\$ 10	\$	2,500	
6 Plaza Allowance	1	LS	\$ 20,000	\$	20,000	
7 Brick Pavers	1,000	SF	\$ 20	\$	20,000	
8 Concrete Stairs	100	LF	\$ 15	\$	1,500	
9 Concrete Wall	100	SF	\$ 100	\$	10,000	
10 Block Segmented Wall	100	SF	\$ 100	\$	10,000	
11 Ashpalt Paving	4,000	SY	\$ 40	\$	160,000	
12 Ashpalt Mill and Overlay	4,000	SY	\$ 15	\$	60,000	
13 Way Finding Signage	3	EA	\$ 500	\$	1,500	
14 Bench	6	EA	\$ 500	\$	3,000	
15 Trash Recepticle	4	EA	\$ 500	\$	2,000	
16 Bike Rack	2	EA	\$ 500	\$	1,000	
17 Building Pad	1,400	SY	\$ 15	\$	21,000	
18 Earthwork (Cut/Fill)	1,000	CY	\$ 10	\$	10,000	
19 Earthwork (Material Hauled Off-Site)	1,000	CY	\$ 15	\$	15,000	
20 ADA Parking Markings and Signage	1	LS	\$ 5,000	\$	5,000	
21 Pavement Markings	1	LS	\$ 5,000	\$	5,000	
<b>SUBTOTAL</b>					<b>\$463,000</b>	
<b>C STORMWATER MANAGEMENT</b>						
1 Storm Inlets (Type M & C)	10	EA	\$ 3,000	\$	30,000	
2 Stormwater Infiltration Basin	1	LS	\$ 75,000	\$	75,000	
3 2' X 2' Yard Drain	4	EA	\$ 500	\$	2,000	
4 Outlet Structure	1	EA	\$ 3,000	\$	3,000	
5 Rip Rap Outlet	2	EA	\$ 1,000	\$	2,000	
6 12" HDPE Pipe		LF	\$ 60	\$	-	
7 18" HDPE Pipe		LF	\$ 80	\$	-	
8 24" HDPE Pipe		LF	\$ 100	\$	-	
9 4" SCH 40 Perforated PVC Pipe		LF	\$ 20	\$	-	
10 8" SCH 40 PVC Pipe		LF	\$ 40	\$	-	
11 12" RCP Pipe		LF	\$ 100	\$	-	
12 24" RCP Pipe		LF	\$ 250	\$	-	
13 48" Storm Manhole		EA	\$ 3,000	\$	-	
14 Stormwater Allowance	1	LS	\$ 50,000	\$	50,000	
15 Existing Connections	1	LS	\$ 2,500	\$	2,500	
<b>SUBTOTAL</b>					<b>\$164,500</b>	

**DOYLESTOWN TOWNSHIP PARK RECREATION AND COMMUNITY CENTER** Project: DOYTX21017

Construction Quantity Takeoffs & Cost Estimate

Date Created: April 14th, 2021

Date Revised:

DESCRIPTION	QUANTITY	UNITS	UNIT COST	TOTAL COST
<b>D UTILITIES</b>				
1 Fire Hydrant	1	EA	\$ 10,000	\$ 10,000
2 6" DIP	350	LF	\$ 50	\$ 17,500
3 8" DIP	350	LF	\$ 60	\$ 21,000
4 Water Vault	1	LS	\$ 10,000	\$ 10,000
5 8" SDR 35	350	LF	\$ 50	\$ 17,500
6 48" Sanitary Manhole	1	EA	\$ 3,000	\$ 3,000
7 Sanitary Cleanout	2	EA	\$ 250	\$ 500
8 Electric Service	1	LS	\$ 5,000	\$ 5,000
9 Gas Relocation and Services	1	LS	\$ 20,000	\$ 20,000
10 Sanitary Sewer Testing	1	LS	\$ 1,000	\$ 1,000
11 Water Service Testing	1	LS	\$ 1,000	\$ 1,000
12 Existing Connections	1	LS	\$ 10,000	\$ 10,000
<b>SUBTOTAL</b>				<b>\$116,500</b>
<b>E LANDSCAPING</b>				
1 Tree Planting	30	EA	\$ 750	\$ 22,500
2 Parking Lot Landscaping	1	LS	\$ 30,000	\$ 30,000
3 Building Landscaping	1	LS	\$ 30,000	\$ 30,000
4 Fine Grading W/ 6" Top Soil	6,000	SY	\$ 5	\$ 30,000
5 Seeding Restoration	6,000	SY	\$ 5	\$ 30,000
6 Landscape Allowance	1	LS	\$ 10,000	\$ 10,000
<b>SUBTOTAL</b>				<b>\$152,500</b>
<b>F LIGHTING</b>				
1 Site Lighting	1	LS	\$ 10,000	\$ 10,000
2 Walkway Lighting	1	LS	\$ 20,000	\$ 20,000
3 Parking Lot Lighting	1	LS	\$ 65,000	\$ 65,000
<b>SUBTOTAL</b>				<b>\$95,000</b>
<b>G EROSION AND SEDIMENT CONTROL</b>				
1 Chain Link Fence	1,600	LF	\$ 15	\$ 24,000
2 Orange Construction Fence	1,000	LF	\$ 10	\$ 10,000
3 Tree Protection	10	EA	\$ 500	\$ 5,000
4 Filter Bag Inlet Protection	10	EA	\$ 350	\$ 3,500
5 Rock Construction Entrance	1	EA	\$ 3,125	\$ 3,125
6 Concrete Washout	2	EA	\$ 975	\$ 1,950
7 Compost Filter Sock	500	LF	\$ 12	\$ 6,000
8 Construction Matting	1	LS	\$ 2,500	\$ 2,500
<b>SUBTOTAL</b>				<b>\$56,075</b>
<b>1 SUBTOTAL</b>				<b>\$1,200,025</b>
<b>1 15% CONTINGENCY</b>				<b>\$180,004</b>
<b>TOTAL</b>				<b>\$1,380,029</b>

**NOTES:**

- 1) ESTIMATE DEVELOPED FROM PROVIDED SKETCH LAYOUT PREPARED BY DOYLESTOWN TOWNSHIP, DATED 2021-04-07.
- 2) EXISTING CONDITIONS EVALUATED FROM SURVEY AND AVAILABLE UTILITIES AS-BUILT PLAN PREPARED BY PICKERING, CORTS & SUMMERSON, DATED 2018-03-01.
- 3) MATERIAL QUANTITIES ARE APPROXIMATE AND ESTIMATED BASED UPON PRELIMINARY SKETCH LAYOUT, AVAILABLE RECORD PLANS AND EXPERIENCE WITH SIMILAR SCALE PROJECTS. THESE QUANTITIES AND UNIT COST ARE SUBJECT TO CHANGE AS THE DESIGN IS DEVELOPED.
- 4) ADDITIONAL STORMWATER EVALUATION WILL BE REQUIRED TO DETERMINE ADEQUATE STORMWATER MANAGEMENT BMPs AND COST.
- 5) UTILITY ROUTING ASSUMES TIE-IN LOCATIONS ON WELLS ROAD FOR WATER SERVICE, SANITARY SEWER AND ELECTRIC SERVICE.

**“I was taken by the power  
that savoring a simple  
cup of coffee can have  
to connect people and  
create community.”**

**HOWARD SCHULTZ**

# PROGRAM OF SPACES

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## Building

The Doylestown Township Community Recreation Center is an approximately 18,000 s.f. one story building that will accommodate a multitude of community recreation and social functions. The building will consist of multi-use spaces that can be used year round for everything from basketball and fitness classes to community events for all ages to private events such as parties.

## Entry

The entry will be centrally located directly off of the parking area. The entry will be covered to shield guests from weather and also shade the interior as the building entry faces south. The double doors of the vestibule and entry will allow for high traffic to easily flow in and out of the building as well as allow for larger items to be brought into the building with ease.

## Lobby

The Lobby will be located directly off of the vestibule. This will be the location of welcoming visitors into the building. It will provide immediate visual connection to the welcome desk for visitors. The lobby is sized large enough to allow for some soft seating for small gatherings or as a waiting area. It has the potential to be a showcase for telling the story of the community through photographs and other artifacts on display. The lobby leads directly the other building spaces.

## Welcome Desk and Office

The welcome desk and office are located adjacent to the lobby space. The wall between the office and lobby will have a glass wall for visibility. The office can accommodate 3 desks as well as office equipment and supplies.

## Multi-Purpose Rooms

The Multipurpose room can be divided into 3 separate rooms with the use of movable partitions. Each room can function independently. Each room will have storage, counters and their own AV equipment. Large windows will look out the front of the building. The multi-purpose room opens onto a covered outdoor space. The multi-purpose room will also need access to a kitchenette and storage.

## Catering and Teaching Kitchen

A kitchen will be provided to allow access for caterers to serve food into



the facility. There will be a freezer, fridge, triple bowl sink, counters, storage, microwave, dishwasher and stovetop/oven. The kitchen can also function as a teaching space. This space should be easily accessible to the multipurpose rooms.

### Gymnasium

The full size gym will be 84 x 50 and with a safety zone around the court as well as area for spectators. It will accommodate volleyball, pickleball and basketball. It will be divisible with a rolling curtain suspended in the center of the room. Wall padding will be provided for safety. Acoustical block will be used to dampen reverberation and for durability. The gym will also have access to storage.



### Covered Patio

The building will have a covered patio adjacent to the multipurpose rooms.

### Support Spaces

The building will have adequate support spaces, such as mechanical space, electrical space, storage areas and rooms, janitor closet and storage as well as toilet rooms.



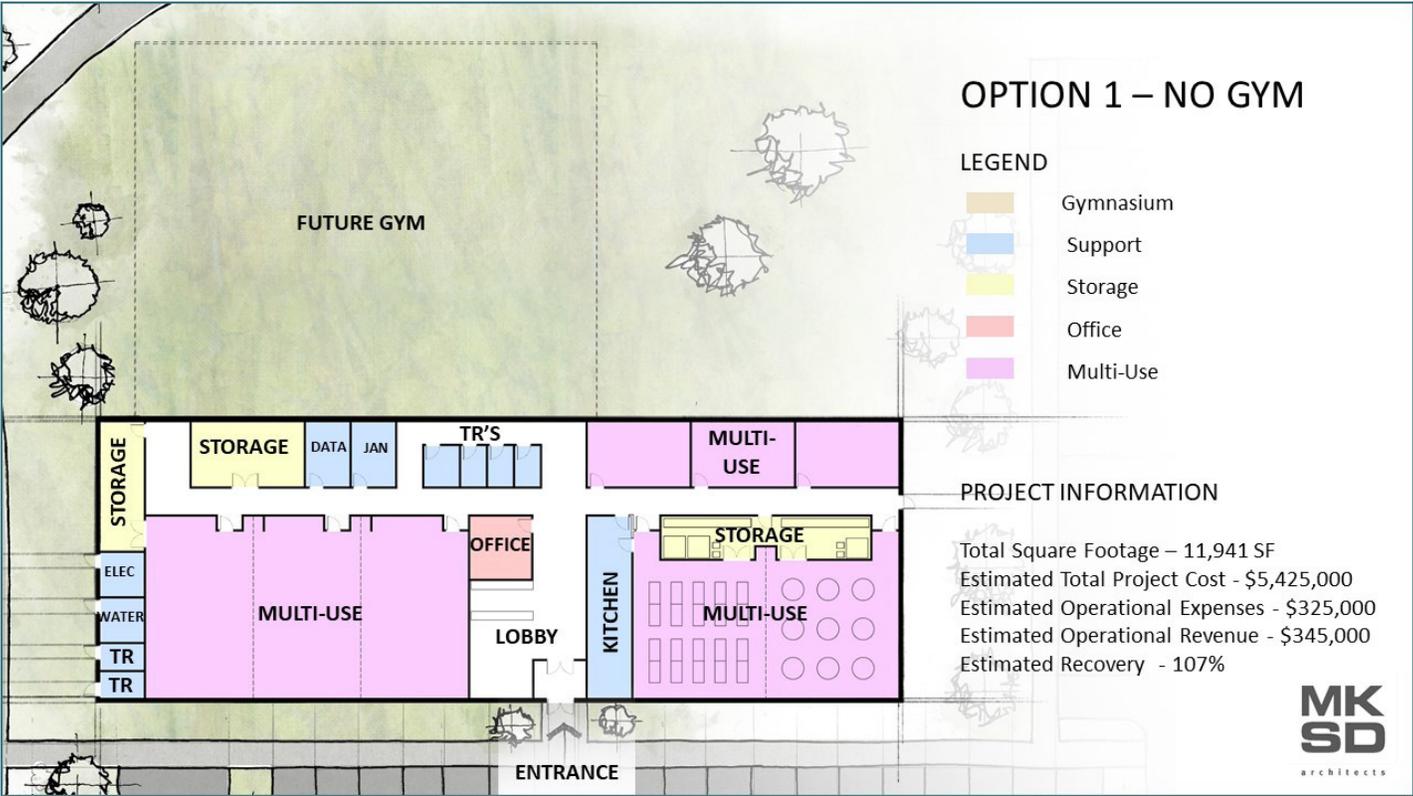
# OPTION 1 – NO GYM

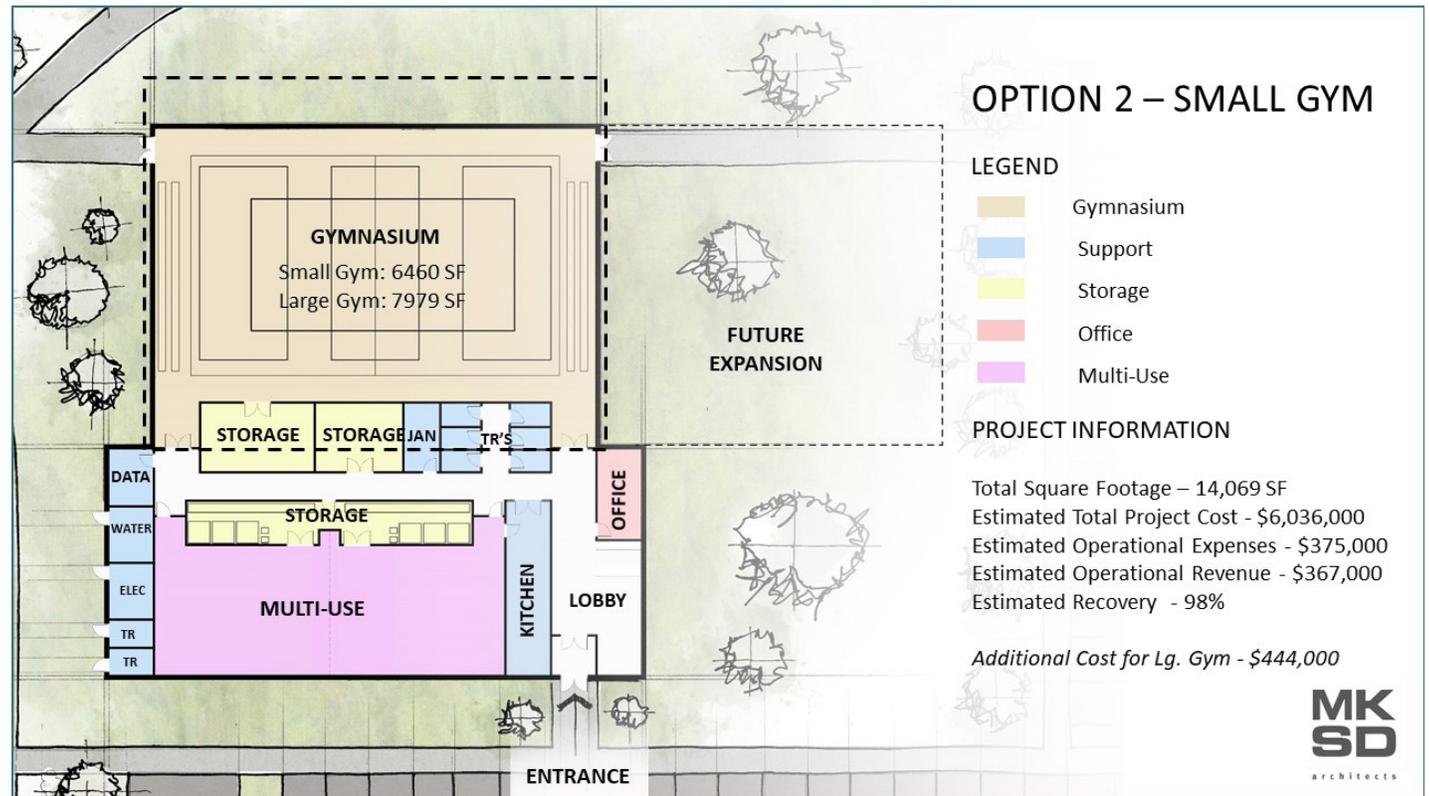
## LEGEND

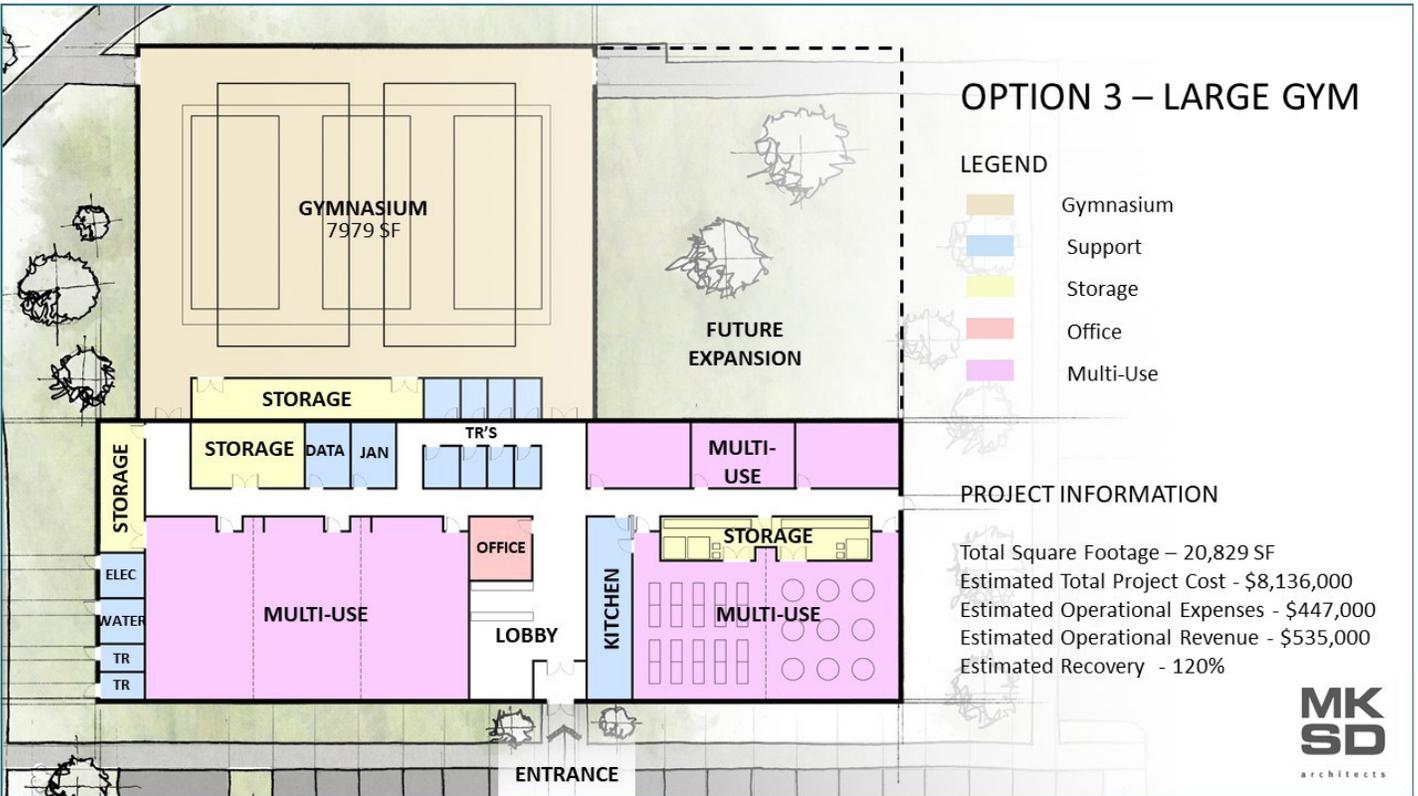
- Gymnasium
- Support
- Storage
- Office
- Multi-Use

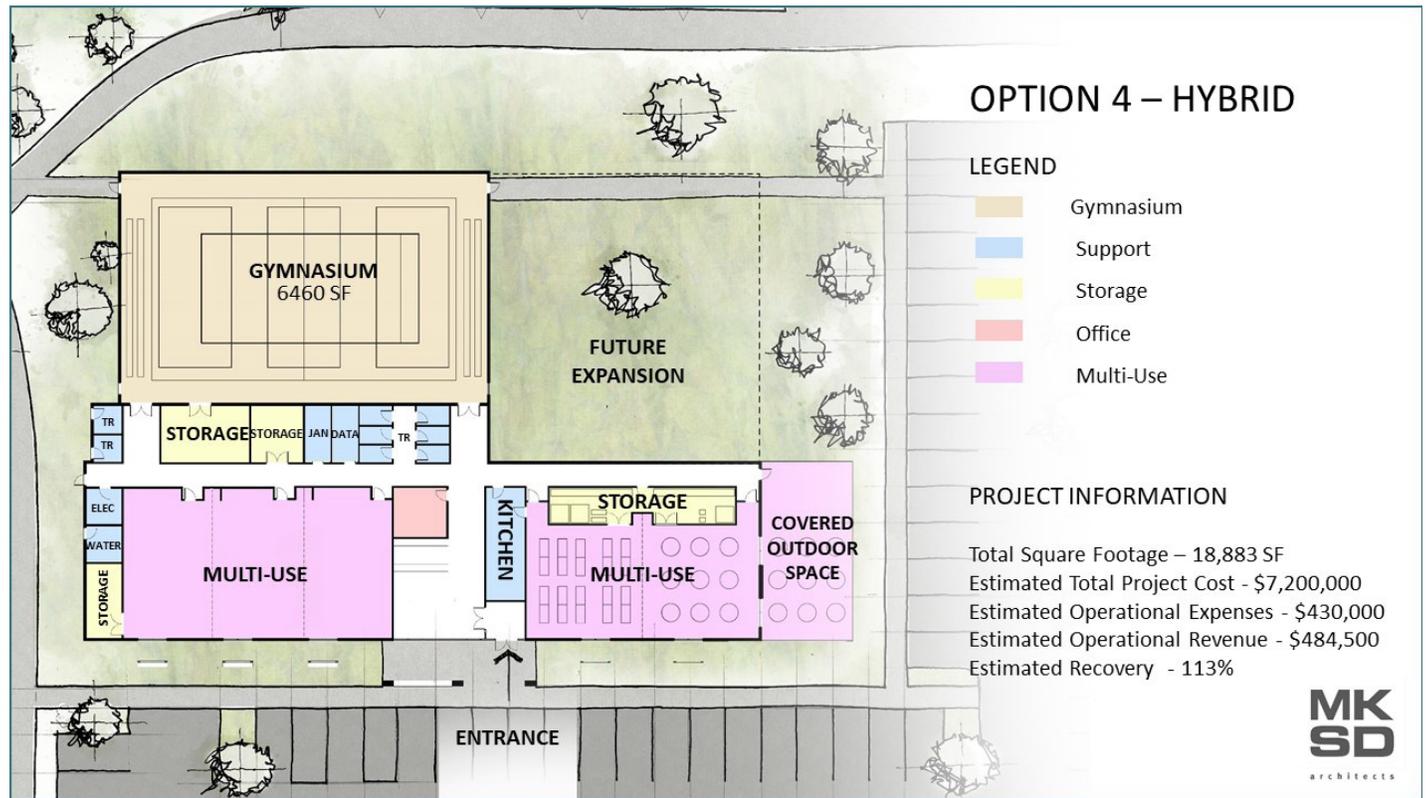
## PROJECT INFORMATION

Total Square Footage – 11,941 SF  
 Estimated Total Project Cost - \$5,425,000  
 Estimated Operational Expenses - \$325,000  
 Estimated Operational Revenue - \$345,000  
 Estimated Recovery - 107%









**PROGRAM WORKSHEET : 20.158 Doylestown Township Community Center**

DEPARTMENT/SPACE	# of Spaces	NSF	TOTAL NSF	NOTES
<b>1.0 Business Operations</b>				
Welcome & Shared Office Space	1	148	148	Open Office for 2 people, counters, storage
<b>2.0 Multi-Use Space</b>				
Multi-Purpose Room 1-3	1	2938	2,938	
Storage room	1	213	213	
<b>3.0 Gymnasium</b>				
Gymnasium	1	7936	7,936	Basketball court, volleyball court, pickelball
Gym Storage	1	440	440	
<b>4.0 General Building</b>				
Main Vestibule	1	88	88	Canopy for weather protection, visible from desk for security
Lobby	1	736	736	include vending machines? Lockers?
Catering/Warming Kitchen	1	240	240	Access to corridor and MP room for food service, equip. to be determined
Family TR ADA shwr/tlt room	1	78	78	shower only if required for an emergency shelter
Women's individual Toilet	3	47	140	
Men's individual Toilet	3	47	140	
Outdoor Access individual Toilet rooms	2	60	120	lockable, non-gender, high abuse materials (these may not count toward code required due to exterior access, but can count for the outdoor pavilion)
Janitor closet	1	80	80	cleaning supplies, paper, mop sink, vacuum, etc, near exterior trash bins, include incoming sprinkler service
Electrical Room	1	125	125	
Data Closet	1	128	128	
General Building Storage	1	444	444	
Water	1	122	122	
<b>SF Subtotal:</b>			<b>14,115</b>	
<b>Grossing Factor</b>			<b>1.14</b>	
<b>TOTAL BUILDING SF AREA</b>			<b>16,091</b>	

**“Without a sense of  
caring there can be no  
sense of community.”**

**ANTHONY D'ANGELO**

# RENDERINGS





**ENTRANCE VIEW**

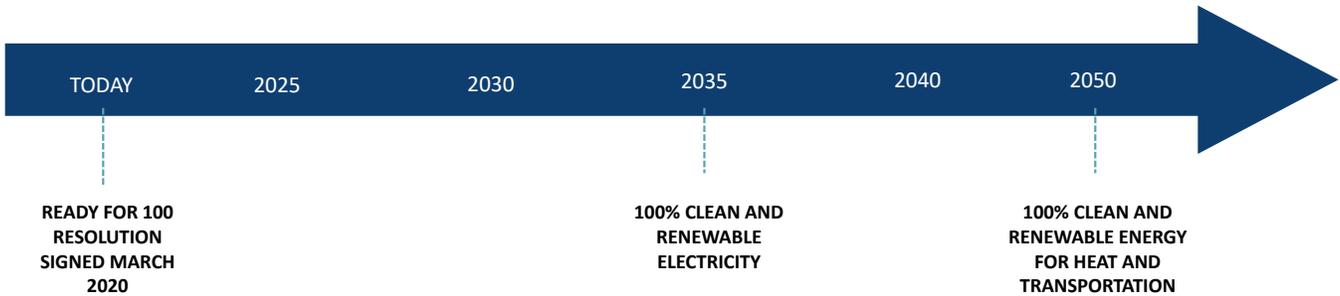


**GYM VIEW**

# ENERGY INITIATIVES - REACH FOR 100

On March 17, 2020, Doylestown Township passed Ready for 100 (Resolution 2208: A Resolution Setting Forth the Goals for Doylestown Township to use 100% Renewable Energy for All Purposes No Later than 2050). In addition to the goal for 100% renewable energy for heat and transportation by 2050, the Township committed to the goal of 100% clean renewable electricity by 2035. The Township requested that geothermal heat pumps and solar energy be investigated for the new Community Center.

## SUSTAINABILITY: READY FOR 100



Doylestown Township promotes sustainable development within the Township by encouraging all new development to design to LEED (Leadership in Energy and Environmental Design) standards. LEED is an initiative by the U.S. Green Building Council. Projects that pursue LEED certification earn points for green building strategies across several categories, like sustainable sites, water efficiency, energy and atmosphere, and indoor air quality. With this commitment, the Township requested the Community Center be built per LEED standards. MKSD presented possible green building strategies to the Board of Supervisors on September 28, 2021. The follow is a list of these possible green building strategies.

### Water Efficiency

- Minimize irrigation thru selection of landscaping
- Utilize Energy STAR appliances
- Utilize water sense fixtures
- Install water metering for irrigation, plumbing fixtures, hot water, reclaimed water, etc.

### Energy & Atmosphere

- ✓ Purchase off-site renewable energy
- Install energy management/ metering system
- Design to higher standard than required by code
- Install Photovoltaic (solar) panels

## Materials & Resources

- Provide recycled, responsible, bio-based, etc. materials
- Minimize waste generated through construction and demolition

## Indoor Air Quality

- ✓ Provide a building vestibule
- Select materials and products with low VOC's
- Design Mechanical and Electrical Systems per code or higher
- Increase Sound Transmission Class ratings



# SOLAR FEASIBILITY STUDY

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A Solar Array Feasibility Study was completed in May of 2022 by The Stone House Group. The Executive Summary is included here and the full report can be found in the Appendix.

## Executive Summary

THE STONE HOUSE GROUP (SHG) partnered with Doylestown Township, MKSD architects, and HB Engineers to provide a feasibility study to identify potential solar photovoltaic (PV) installations to provide on-site renewable electricity to a proposed Parks & Recreation Community Center (Community Center), and to recommend next steps for project development. SHG is an energy management and sustainable design consulting firm dedicated to strengthening the mission of institutions, corporations, and governmental entities. We believe your institution's mission should be supported, not undermined, by your facilities. To this end, the buildings and grounds must be safe, well maintained, and function dependably and efficiently, using minimal yet appropriate resources.

SHG conducted an analysis of the Community Center and adjacent roof area to identify the options for solar installations that include the type, size, orientation, and location of proposed solar equipment. This study took into consideration information collected during an on-site visit, data provided by the Department of Facilities Management, architectural drawings, and other technical and economic considerations specific to the site and the Pennsylvania energy and incentive marketplace. The report provides technical and financial analysis regarding the feasibility of several solar arrays. This report recommends whether a solution appears feasible specific sites, will assess the potential for alternative financing approaches and recommends "next steps" in project development.

A total of four (4) preferred PV layout options were identified through this study ranging from installation of solar panels only on the proposed Community Center (Option #1, 75 kW) to installation of solar panels on the proposed Community Center, all existing roofs, and a new solar canopy system (Option #2, 457 kW). Modeling suggests that the most cost effective and efficient solar layout is Option #3 to install solar panels on the proposed Community Center and roofs of adjacent service buildings with corrugated metal roofs. Our estimates indicate that Option #3 will provide electric savings throughout the term of the PPA contract with 25-year total savings estimated at approximately \$500,000. The estimated starting PPA rate for Option #3 is \$0.0775/kWh with annual escalation at 1.5%. The solar array will generate enough electricity to offset all electric consumption at the proposed Community Center and will offset 25% of electric usage at the Doylestown Township Administration Building. This size solar array will offset approximately 6,689 lbs. of CO2 emissions per year.

# GEOHERMAL REPORT

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Doylestown Township had Geothermal Conductivity Testing completed in April 2022 by Taylor GeoServices, Inc., an Earth and Water Resource Consultants and CW Cook Inc. The introduction to that final report is included here and the full report can be found in the Appendix. The memorandum on the following page is a rough order of magnitude cost opinion for geothermal HVAC and energy recovery ventilators for the new Community Center.

Doylestown Township decided not to pursue geothermal renewable energy for the new Community Center.

## Introduction

This report provides documentation of the testing procedures used to determine the formation thermal conductivity (FTC) for the geothermal well field located at the future location of the Doylestown Township Community Center in Doylestown, Pennsylvania. Formation thermal conductivity is a critical parameter in geothermal system design. Published ranges for thermal conductivity in consolidated rock exist. However, these ranges vary significantly and do not consider site-specific parameters such as rock density and type, groundwater flow rates, and borehole resistance. Therefore, site-specific formation thermal conductivity testing enables the proper design of a geothermal well field. The test was successful, and the required parameters were determined to be:

Parameter	Result	Units
Thermal Conductivity	1.4	Btu/hr-ft-°F
Disfusivity	0.94	ft <sup>2</sup> /day
Borehole Resistance	0.24	hr-ft-°F/Btu
Estimated Formation Heat Capacity	36.6	BTU/ft <sup>3</sup> - °F
Earth Temperature	54.9	°F

# MEMORANDUM



DATE: December 09, 2021  
ATTN: David Tomko  
COMPANY: Doylestown Township  
FROM: Ryan Kennedy (rk@mksdarchitects.com)  
JOB NUMBER: 20.158

**SILVIA HOFFMAN**  
AIA, LEED AP

**TODD CHAMBERS**  
AIA, NCARB

**JILL HEWES**  
AIA, LEED AP

REFERENCE: Doylestown Township Parks & Recreation Community Center Project

Per the Memorandum from Aaron Walizer, Assistant Project Manager of Doylestown Township, dated October 18, 2021, the Environmental Advisory Council (EAC) requested a cost estimate for using geothermal HVAC and energy recovery ventilators in the new Community Center.

The following is the opinion of probable cost for the additional systems and fees:

<u>Item</u>	<u>Probable Cost</u>
Geothermal Wells	\$250,000
HVAC Upcharge for Geothermal System	\$300,000
Additional Mechanical Space (assuming 400SF)	\$60,000
Air Energy Recovery Ventilators (upcharge)	\$80,000
Test Wells (approximate two (2) tests needed)	\$36,000
Additional Professional Fee	\$26,000
<b>Total</b>	<b>\$752,000</b>

1209 Hausman Road  
Suite A  
Allentown, PA 18104

610.366.2081

mksdarchitects.com

“There is no power for  
change greater than a  
community discovering  
what it cares about.”

MARGARET J WHEATLEY

# OPERATIONAL CONSIDERATIONS

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## Doylestown Community Center Operations Analysis Assumptions

This operations analysis has been completed for the planned new Doylestown Community Center. The following are the basic parameters for the project.

- An operations plan for four possible facility options has been developed.

**Option 1 – No Gym** - A community center with two multi-purpose rooms, a divisible larger multi-purpose room, kitchen, three meeting rooms, lobby, restrooms, storage and office space. Approximately 11,914 SF.

**Option 2 – Small Gym** - A community center with two multi-purpose rooms, kitchen, gym (6,460 SF), lobby, restrooms, storage, and office space. Approximately 14,069 SF.

**Option 3 – Large Gym** - A community center with two multi-purpose rooms, a divisible larger multi-purpose room, kitchen, three meeting rooms, gym (7,979 SF), lobby, restrooms, storage and office space. Approximately 20,829 SF.

**Option 4 – Hybrid** - A community center with two multi-purpose rooms, a divisible larger multi-purpose room, outdoor patio, kitchen, gym (6,460 SF), lobby, restrooms, storage, and office space. Approximately 18,833 SF.

**Option 5 – Approved** - A community center with a divisible larger multi-purpose room, kitchen, gym (7,656 SF), outdoor patio, lobby, restrooms, storage and office space. Approximately 16,864 SF.

- The first year of operation will be 2023 or later.
- The minimum wage will be at least \$12.00 an hour by 2023.
- This operational budget represents expenses and revenues for the center and all program accounts.
- The center will be maintained and cleaned by Public Works staff.
- The presence of other providers in the market will remain the same.
- The center will be operated by Doylestown Township.
- The site for the center will be next to the Township Administration Building.
- This operations estimate is based on a program plan and preliminary concept plan for the facility only. This operations plan will need to be updated once a final concept design has been developed.
- There will be a high level of rentals and recreation programming in the center.
- No partnerships with other organizations have been shown in this operations plan.
- The operational numbers do not include any site or park maintenance.
- Alcohol will be limited and controlled in the multi-purpose rooms.

**Projected Hours of Operation:**

Days	Hours
Monday – Friday	8:00am – 9:00pm
Saturday	8:00am – 6:00pm
Sunday	Noon - 6:00pm
Total Hours Per Week	81

**Note:** Hours are subject to change based on the season (longer hours in the winter, shorter during the summer), by programming needs, use patterns and rental considerations.

**Projected Fee Schedule:** Revenue projections and attendance numbers were calculated from this fee model. This is the projected rate for 2023 based on the possible opening date for the center. There is a fee differential of approximately 25% between Township residents and non-residents.

*Gym Options Only*

Category	Daily Gym Admission		20 Admissions	
	Res.	Non. Res.	Res.	Non. Res.
Adults	\$10.00	\$12.50	\$170.00	\$213.00
Youth (2-17)	\$ 7.00	\$ 9.00	\$119.00	\$153.00
Senior (55+)	\$ 5.00	\$ 6.00	\$ 85.00	\$102.00

**Note:** 20 Admission rate is an approximate 15% discount over the daily fee.

**Fitness** \$15.00/\$19.00 daily fee per class

**Doylestown Community Center**

**Operational Budget Summary**

	<b>Small Gym</b>	<b>Large Gym</b>	<b>No Gym</b>	<b>Hybrid</b>	<b>Approved</b>
	<b>14,069 SF</b>	<b>20,829 SF</b>	<b>11,914 SF</b>	<b>18,833 SF</b>	<b>16,864 SF</b>
<b>Category</b>	<b>Option 2</b>	<b>Option 3</b>	<b>Option 1</b>	<b>Option 4</b>	<b>Option 5</b>
Expenses	\$ 374,875	\$ 451,660	\$ 324,049	\$ 429,757	\$ 404,342
Revenues	\$ 366,272	\$ 535,225	\$ 345,316	\$ 484,536	\$ 464,555
Difference	(8,604)	83,565	21,267	54,778	60,213
Recovery %	98%	119%	107%	113%	115%

This budget represents the second full-year of operation.

# OPINION OF PROBABLE COST

Doylestown Township  
Parks Recreation

New Community Center

June 15, 2021

Estimate Of Probably Construction Cost							
Construction Costs	Quantity	Unit	Total Unit Price	Small Gym	Large Gym	No Gym	Comments
General, HVAC, Plumbing, Electrical, Fire Suppression		SF	\$ 250	\$ 3,517,250	\$ 5,207,250	\$ 2,985,250	Rough order of magnitude estimate
Site	1	LS	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	Provided by Township
<b>Construction Cost Subtotal</b>				<b>\$ 4,717,250</b>	<b>\$ 6,407,250</b>	<b>\$ 4,185,250</b>	
Soft Costs	Quantity	Unit	Total Unit Price	Grand Total	Grand Total	Grand Total	
Professional Fees (Architect/Engineers/B*K)	1	LS	Varies	\$ 193,449	\$ 286,399	\$ 164,189	
Site Civil Eng. Prof Fees (Land Development, Planning/Zoning, Landscape Architecture Services)	1	LS	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	Provided by Township
Construction Manager Fees	1	LS	\$ 100,000	\$ 100,000	\$ 100,000	\$ 100,000	Provided by Township
Geotechnical & Phase I Site Assessment	1	LS	Varies	\$ 14,152	\$ 19,222	\$ 12,556	Estimate
Furniture, Fixtures & Equipment	1	LS	Varies	\$ 66,042	\$ 89,702	\$ 58,594	Estimate (assume \$40,000 for furniture, \$20,000 for residential grade appliances)
Permits Fees (Ie Buck Co. Conservation Dist., NPDES)	1	LS	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	Provided by Township
Builder's Risk Insurance	1	LS	\$ 5,500	\$ 5,500	\$ 5,500	\$ 5,500	Provided by Township
Construction Testing	1	LS	\$ 37,738	\$ 37,738	\$ 37,738	\$ 37,738	Estimate
Testing, Adjusting, and Balancing	1	LS	\$ 18,869	\$ 18,869	\$ 18,869	\$ 18,869	Estimate
Security & Technology	1	LS	Varies	\$ 130,000	\$ 150,000	\$ 125,000	Provided by Township
Utility Costs	1	LS	\$ 50,000	\$ 50,000	\$ 50,000	\$ 50,000	Provided by Township
Emergency Back-up Generator	1	LS	\$ 40,000	\$ 40,000	\$ 40,000	\$ 40,000	Provided by Township
Sewer and Water Tap-In Fees	1	LS	\$ 35,000	\$ 35,000	\$ 35,000	\$ 35,000	Provided by Township
Legal Fees	1	LS	\$ 10,000	\$ 10,000	\$ 10,000	\$ 10,000	Estimate
Printing	1	LS	\$ 5,000	\$ 5,000	\$ 5,000	\$ 5,000	Estimate
<b>Soft Cost Subtotal</b>				<b>\$ 865,749</b>	<b>\$ 1,007,429</b>	<b>\$ 867,445</b>	
Total Project Cost							
Subtotal (Construction + Soft Costs)				\$ 5,582,999	\$ 7,414,679	\$ 5,052,695	
Escalation	0.5	Years	3.5%	\$ 97,702	\$ 129,757	\$ 88,422	
Contingency (Design & Construction)	1	LS	10.0%	\$ 558,300	\$ 741,468	\$ 505,270	
				<b>\$ 6,239,001</b>	<b>\$ 8,285,904</b>	<b>\$ 5,646,387</b>	*Does not include above-referenced owner/ consultant supplied fees (as indicated above in yellow)

\*\*The Opinion of Probable Cost of the Work is an estimate of the probable cost based on historic data and professional opinion, however, this Opinion of Cost is not a guarantee. Estimates are subject to change based on industry climate and actual costs may vary.

Estimate Of Probably Construction Cost (10.01.21)					
Construction Costs	Quantity	Unit	Total Unit Price	Option 2.75 - Large Gym	Comments
General, HVAC, Plumbing, Electrical, Fire Suppression	15,775	SF	\$ 250	\$ 3,943,750	Rough order of magnitude estimate
Patio	1,000	SF	\$ 125	\$ 125,000	
Site	1	LS	\$ 1,200,000	\$ 1,200,000	Estimate provided by Township
<b>Construction Cost Subtotal</b>				<b>\$ 5,268,750</b>	
Soft Costs	Quantity	Unit	Total Unit Price	Grand Total	
Professional Fees (Architect/Engineers/B*K)	5.5%	%	\$ 223,781	\$ 223,781	
Site Civil Eng. Prof Fees (Land Development, Planning/Zoning, Landscape Architect Services)	1	LS	\$ 150,000	\$ 150,000	Estimate provided by Township
Construction Manager Fees	1	LS	\$ 100,000	\$ 100,000	Estimate provided by Township
Geotechnical & Phase I Site Assessment	1	LS	\$ 12,500	\$ 12,500	Estimate
Insurance, Taxes, Fringes	1	LS	\$ -	\$ -	Deleted by Township
Furniture, Fixtures & Equipment	1	LS	\$ 45,000	\$ 45,000	Estimate (assume \$10,000/room for furniture, \$15,000 for residential grade appliances)
Land Development Fees	1	LS	\$ -	\$ -	Deleted by Township
Loan/Finance Fees	1	LS	\$ -	\$ -	Deleted by Township
Permit Fees (ie Bucks Co Conservation, NPDES)	1	LS	\$ 10,000	\$ 10,000	Estimate provided by Township
Builder's Risk Insurance	1	LS	\$ 5,500	\$ 5,500	Estimate provided by Township
Construction Testing	1	LS	\$ 35,000	\$ 35,000	Estimate
Testing, Adjusting, and Balancing	1	LS	\$ 18,000	\$ 18,000	Estimate
Security & Technology	1	LS	\$ 130,000	\$ 130,000	Estimate
Emergency Back-Up Generator	1	LS	\$ 40,000	\$ 40,000	Estimate provided by Township
Utility Costs	1	LS	\$ 50,000	\$ 50,000	Estimate provided by Township
Sewer and Water Tap-In Fees	1	LS	\$ 35,000	\$ 35,000	Estimate provided by Township
Legal Fees	1	LS	\$ 10,000	\$ 10,000	Estimate
Printing	1	LS	\$ 5,000	\$ 5,000	Estimate
<b>Soft Cost Subtotal</b>				<b>\$ 869,781</b>	
Total Project Cost					
Subtotal (Construction + Soft Costs)				\$ 6,138,531	
Escalation	0.5	Years	3.5%	\$ 107,424	
Contingency (Design & Construction)	1	LS	7.5%	\$ 460,390	
				<b>\$ 6,706,345</b>	<b>*Does not include above-referenced owner/ consultant supplied fees (as indicated above in yellow)</b>

This Opinion of Probable Cost of the Work is an estimate of the probable cost based on historical data and professional opinion; however, this Opinion of Cost is not a guarantee. Estimates are subject to change based on industry climate and actual costs may vary.

Township or other consultant provided information

“Community is the  
foundation to success.”

KRISTEN JONES

# CONCLUSIONS AND NEXT STEPS

At the September 28, 2021 Board of Supervisors' meeting, the Board made the following votes:

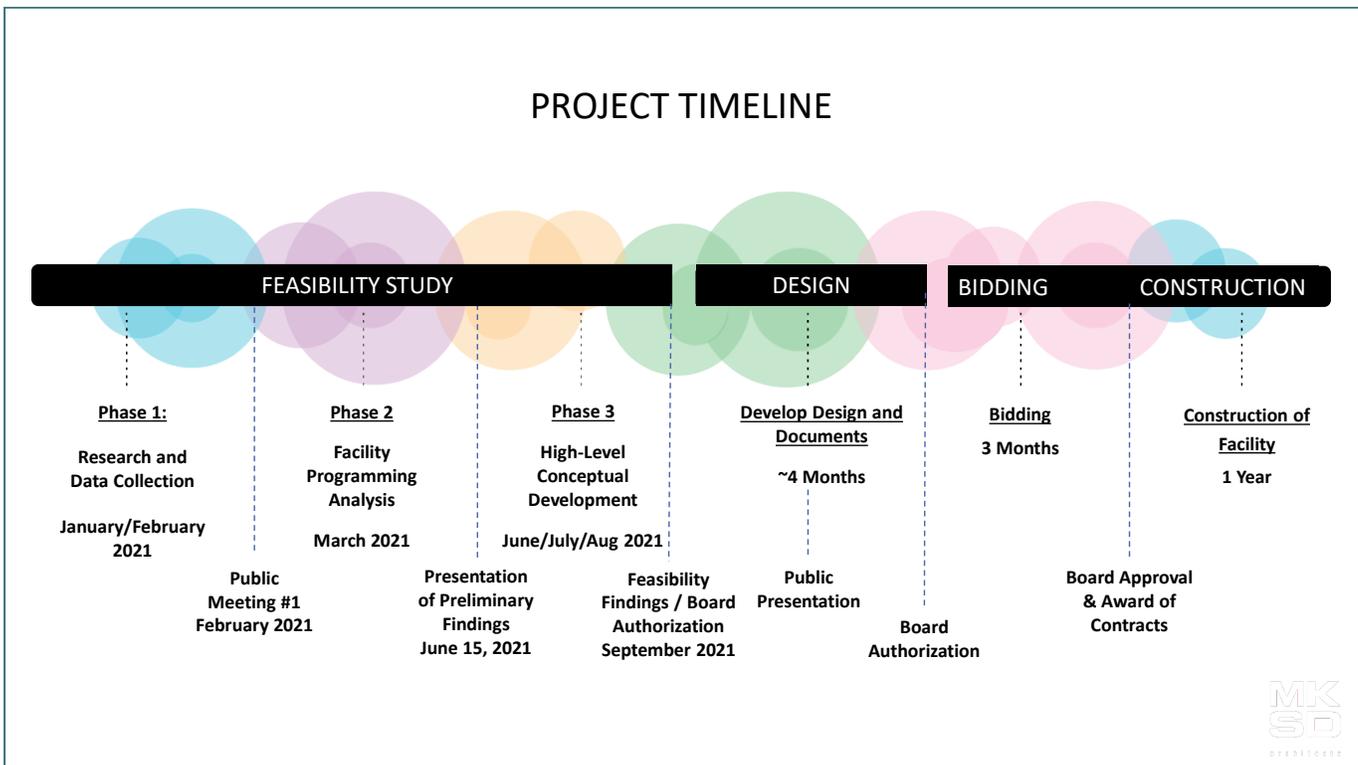
- Doylestown Township will build a new community center – Motion passed 5-0.
- The Township selected Option 2.5 (Option 2 with the large gymnasium) plus an exterior patio – Motion passed 3-2.
- The Community Center will be constructed on the existing sports courts – Motion passed 5-0.

Upon the above approvals, MKSD architects was authorized to proceed to the Design Development Phase of the project.

The following is a summation of the operational information for the chosen building option, prepared by Ballard\*King & Associates.

- Estimated Expenses \$ 404,342
- Estimated Revenues \$ 464,555

Please refer to the timeline below for the preliminary schedule for the project.



On Tuesday, February 15, 2022, MKSD architects gave a public presentation describing their design development including their opinion of probable cost, the need for geothermal and solar studies, floor plans, finishes, renderings and sustainable initiatives.

A copy of the presentation is on the following pages.

# WELCOME

New Recreation Community Center  
Tuesday, February 15, 2022  
7:00 pm



Doylestown Township  
Preserving the past. Embracing the future.



1

## INTRODUCTION Design Team



Silvia Hoffman, AIA  
MKSD Architects  
Partner



Ryan Kennedy, AIA  
MKSD Architects  
Project Architect



Megan Henry,  
Assoc. AIA  
MKSD Architects  
Project Designer



Kevin Buxton, PE,  
LEED  
HB Engineers, Inc.  
Partner



2

# AGENDA

- Introduction
- Opinion of Probable Cost
- Project Timeline
- Site Plan
- Floor Plan
- Finishes
- Renderings
- Sustainable Initiatives
- Conclusion



**Doylestown Township**  
Preserving the past. Embracing the future.



3

# OPINION OF PROBABLE COST

Construction Costs	Opinion of Probable Cost - October 01, 2021				Opinion of Probable Cost - January 18, 2022				Δ	Comments
	Quantity	Unit	Total Unit Price	Option 2.75 - Large Gym	Quantity	Unit	Total Unit Price	Current Option		
General, HVAC, Plumbing, Electrical, Fire Suppression	15,775	SF	\$ 250	\$ 3,943,750	16,004	SF	\$ 250	\$ 4,001,000	\$ 57,250	Added square footage per 12/16/21 design meeting
Patio	1,000	SF	\$ 125	\$ 125,000	1,184	SF	\$ 200	\$ 236,800	\$ 111,800	Increased unit price due to enclosed patio per 12/16/21 design meeting
Site	1	LS	\$ 1,200,000	\$ 1,200,000	1	LS	\$ 1,200,000	\$ 1,200,000	\$ -	Estimate provided by Township
<b>Construction Cost Subtotal</b>				<b>\$ 5,268,750</b>				<b>\$ 5,437,800</b>	<b>\$ 169,050</b>	
Soft Costs	Quantity	Unit	Total Unit Price	Grand Total	Quantity	Unit	Total Unit Price	Current Option	Δ	Comments
Professional Fees (Architect/Engineers/B*K)	1	Actual	\$ 220,000	\$ 220,000	1	Actual	\$ 220,000	\$ 220,000	\$ -	
Site Civil Eng. Prof Fees (Land Development, Planning/Zoning, Landscape Architect Services)	1	LS	\$ 150,000	\$ 150,000	1	LS	\$ 150,000	\$ 150,000	\$ -	Estimate provided by Township
Construction Manager Fees	1	LS	\$ 100,000	\$ 100,000	1	LS	\$ 100,000	\$ 100,000	\$ -	Estimate provided by Township
Geotechnical & Phase I Site Assessment	1	LS	\$ 12,500	\$ 12,500	1	LS	\$ 12,500	\$ 12,500	\$ -	Estimate
Insurance, Taxes, Filings	1	LS	\$ -	\$ -	1	LS	\$ -	\$ -	\$ -	Deleted by Township
Furniture, Fixtures & Equipment	1	LS	\$ 45,000	\$ 45,000	1	LS	\$ 45,000	\$ 45,000	\$ -	Estimate (assume \$10,000/room for furniture, \$15,000 for residential grade appliances)
Land Development Fees	1	LS	\$ -	\$ -	1	LS	\$ -	\$ -	\$ -	Deleted by Township
Loan/Finance Fees	1	LS	\$ -	\$ -	1	LS	\$ -	\$ -	\$ -	Deleted by Township
Permit Fees (E Bucks Co Conservation, NPDES)	1	LS	\$ 10,000	\$ 10,000	1	LS	\$ 10,000	\$ 10,000	\$ -	Estimate provided by Township
Builder's Risk Insurance	1	LS	\$ 5,500	\$ 5,500	1	LS	\$ 5,500	\$ 5,500	\$ -	Estimate provided by Township
Construction Testing	1	LS	\$ 35,000	\$ 35,000	1	LS	\$ 35,000	\$ 35,000	\$ -	Estimate
Testing, Adjusting, and Balancing	1	LS	\$ 18,000	\$ 18,000	1	LS	\$ 18,000	\$ 18,000	\$ -	Estimate
Security & Technology	1	LS	\$ 130,000	\$ 130,000	1	LS	\$ 130,000	\$ 130,000	\$ -	Estimate
Emergency Back-Up Generator	1	LS	\$ 40,000	\$ 40,000	1	LS	\$ 100,000	\$ 100,000	\$ 60,000	Increased cost due to Township's purchase of higher kW generator
Utility Costs	1	LS	\$ 50,000	\$ 50,000	1	LS	\$ 50,000	\$ 50,000	\$ -	Estimate provided by Township
Sewer and Water Tap-In Fees	1	LS	\$ 35,000	\$ 35,000	1	LS	\$ 35,000	\$ 35,000	\$ -	Estimate provided by Township
Legal Fees	1	LS	\$ 10,000	\$ 10,000	1	LS	\$ 10,000	\$ 10,000	\$ -	Estimate
Printing	1	LS	\$ 5,000	\$ 5,000	1	LS	\$ 5,000	\$ 5,000	\$ -	Estimate
<b>Soft Cost Subtotal</b>				<b>\$ 866,000</b>				<b>\$ 926,000</b>	<b>\$ 60,000</b>	
Total Project Cost										
Subtotal (Construction + Soft Costs)				\$ 6,134,750				\$ 6,363,800	\$ 229,050	
Escalation	0.5	Years		\$ 107,258	0.5	Years		\$ 111,367	\$ 4,008	
Contingency (Design & Construction)	1	LS		\$ 460,106	1	LS		\$ 477,285	\$ 17,179	
				<b>\$ 6,702,214</b>				<b>\$ 6,952,452</b>	<b>\$ 250,237</b>	

This Opinion of Probable Cost of the Work is an estimate of the probable cost based on historical data and professional opinion; however, this Opinion of Cost is not a guarantee. Estimates are subject to change based on industry climate and actual costs may vary.

Doylestown Township provided information

4

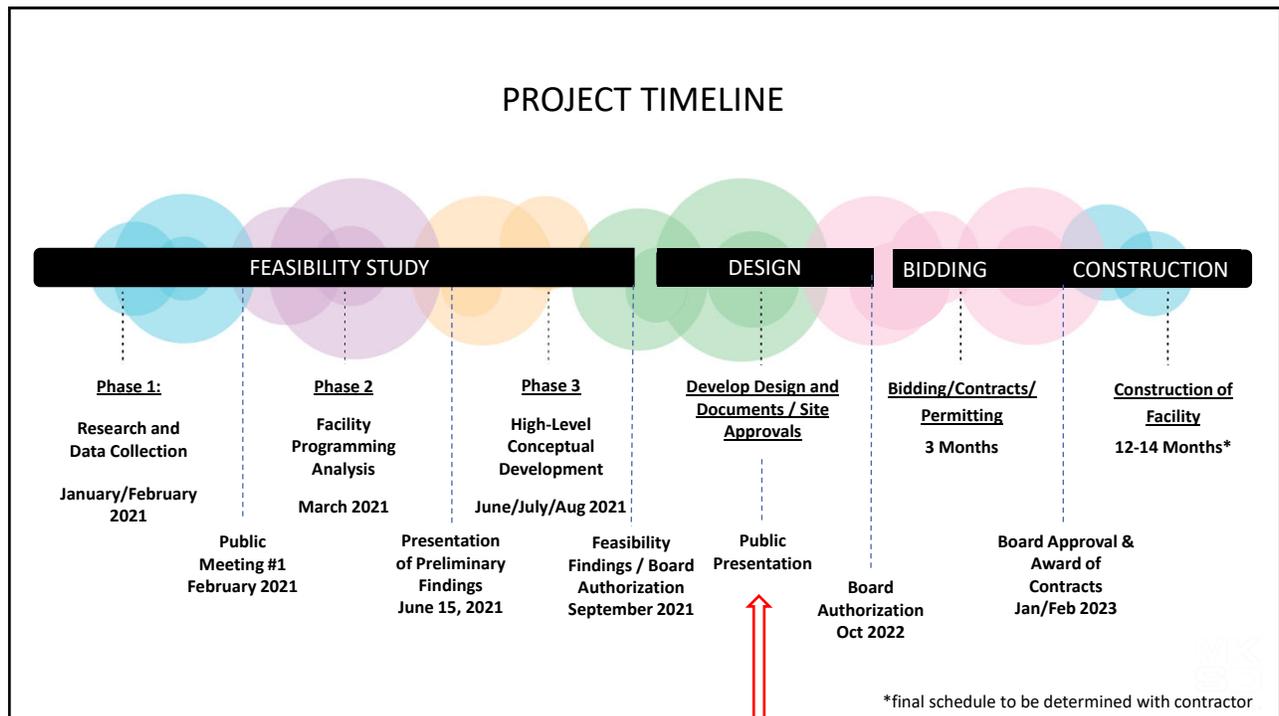
## GEOTHERMAL

- Test boring
- Request by the EAC
- Test boring will assess the potential for the use of geothermal heat pumps
- Fee for Test Boring - \$ 24,834

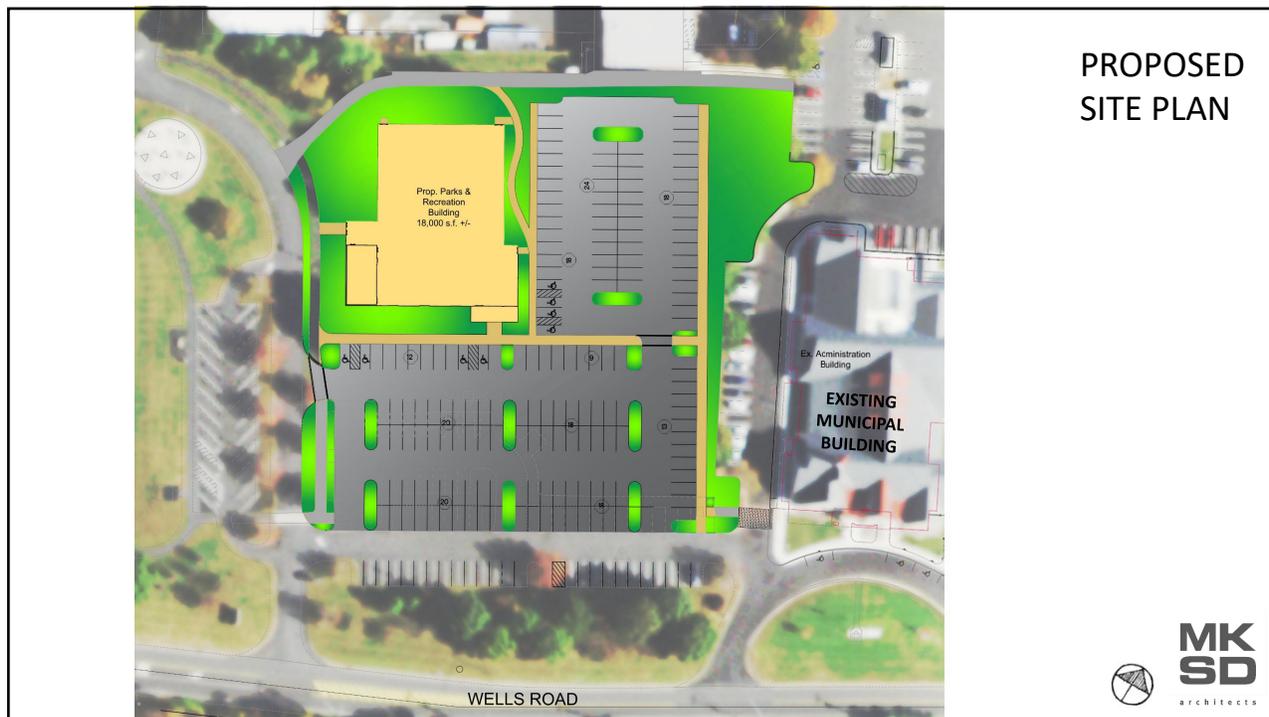
## SOLAR (PHOTOVOLTAICS)

- Feasibility Study for Solar Renewable Electricity by The Stone House Group
- Requested by EAC
- Study will assess potential for required size, location, production, financial requirements
- Fee for Feasibility Study - \$ 18,000
- Report will be complete within 6 weeks of approval

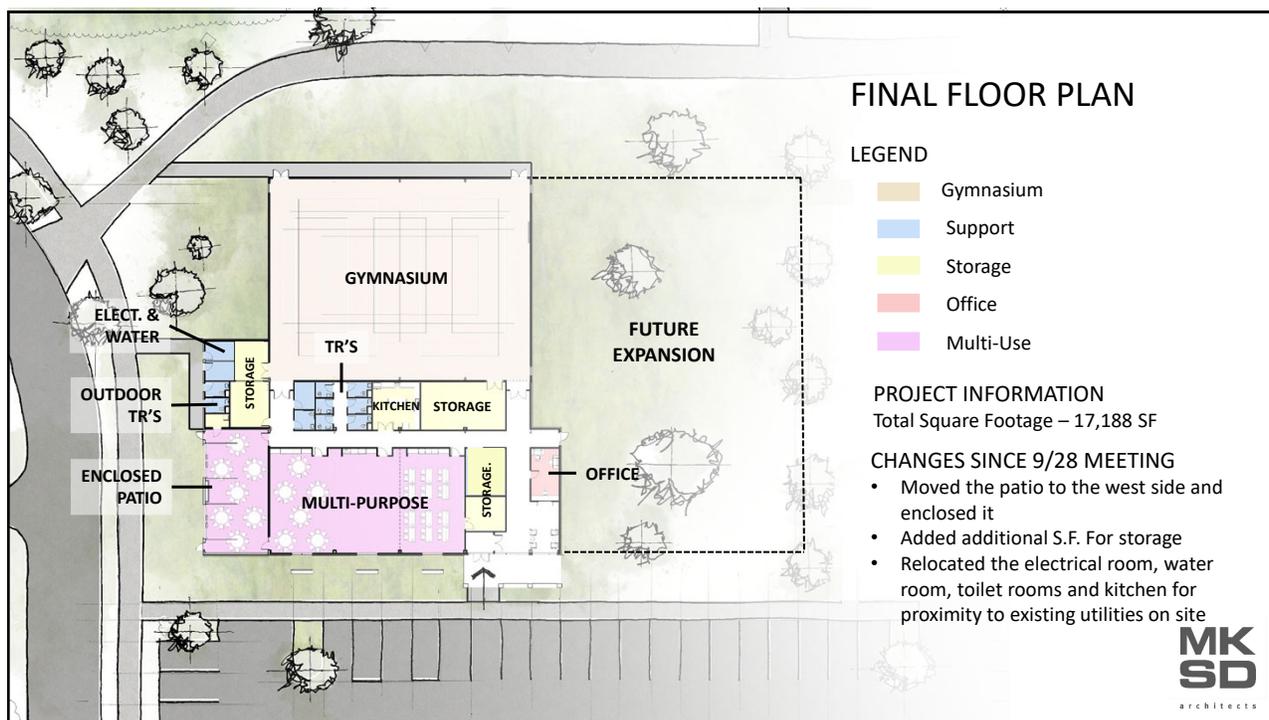
5



6



7



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## FINISH SELECTIONS - FLOORING

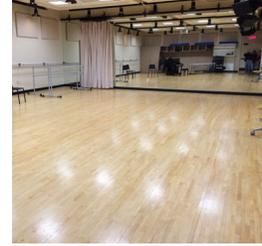
FIELD LUXURY VINYL TILE



RESTROOM TILE



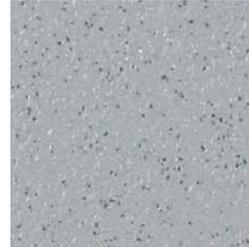
GYM FLOORING



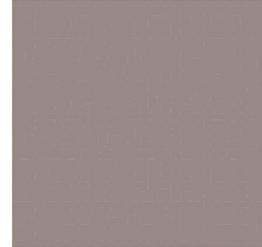
ACCENT LUXURY VINYL TILE



KITCHEN FLOORING



WALL BASE



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## FINISH SELECTIONS - MILLWORK

COUNTERTOPS



CABINETS



KITCHEN CABINETS



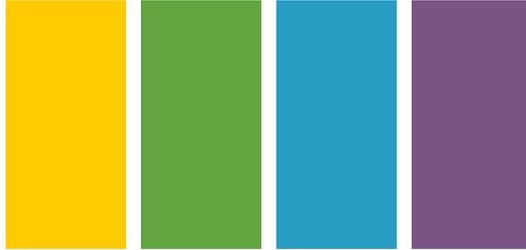
10

## FINISH SELECTIONS - PAINT

FIELD COLOR



ACCENT COLORS



11



12



13



14



15



16



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## SUSTAINABILITY: CURRENT ACCOLADES

- Doylestown Township Environmental Advisory Council
- 2015 Sustainable PA Community Gold Certification
- 2019 Bowman's Hill Wildflower Preserve Land Ethics Award
- Power Purchase Agreements
- Green Points Program Ordinance No. 395
  - Design commercial buildings to LEED standards
- Ready for 100
  - 100% clean and renewable electricity by 2035; energy by 2050
  - Carbon-free and Pollution-free

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## SUSTAINABILITY: LEED ACTION ITEMS

### Location & Transportation

- ✓ Previously developed site
- ✓ Located near public transit and bike paths
- ✓ Located near diverse uses
- Provide bike storage
- Minimize parking
- Provide electric vehicle parking spaces w/ charging equip.

### Sustainable Sites

- ✓ Maintain open, vegetated area
- Rainwater collection, pervious landscaping, etc.
- Heat island reduction (i.e. roof material selection)

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## SUSTAINABILITY: LEED ACTION ITEMS

### Water Efficiency

- Minimize irrigation thru selection of landscaping
- Utilize Energy STAR appliances
- Utilize water sense fixtures

### Energy & Atmosphere

- ✓ Purchase off-site renewable energy
- Design to higher standard than req'd by code
- Install Photovoltaic (solar) panels
- Geothermal System

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## SUSTAINABILITY: LEED ACTION ITEMS

### Materials & Resources

- ✓ Provide recycled, responsible, bio-based, etc. materials
- ☐ Minimize waste generated through construction and demolition

### Indoor Air Quality

- ✓ Provide a building vestibule
- ✓ Select materials and products with low VOC's
- ☐ Design Mech. And Elec. Systems per code or higher
- ☐ Increase Sound Transmission Class ratings

21



22

“Being a Queen is not all about singing., and being a diva is not all about singing. It has much to do with your service to people. And your social contributions to your community and your civil contributions as well. ”

ARETHA FRANKLIN

# APPENDIX

---

## FOCUS GROUP NOTES

### Doylestown Township Community Center

### Board of Supervisors Questions & Responses

Nancy Santacecilia

Interview: January 06, 2021 at 4:45 PM

**General Information:** Nancy has been on the BOS for 1 year. She joined the board specifically for the Community Center.

#### Questions:

1. What important needs should be served with a new community center in Doylestown Township?

- a. Should the center focus on basic community needs?
- b. Should it be a venue for special events and other activities?

Current services and offerings of Township do not meet the needs of the residents. There are no adult leagues, insufficient number of fields, and no teen programs. Township seniors are active, and the existing facility is limited in offerings.

Nancy would like to see the Center be an emergency shelter.

2. What is the capital funding limit for the project?

- a. Township funding

The Township should identify the needs of the residents and let that dictate the funding limit. Nancy would like to see a cost benefit analysis.

3. What specific components should be included in this center?

- a. What are the priorities?

Walking track

Multiple gyms

Multiuse rooms

Kitchen

Veranda

Environmentally conscious

Outdoor space to commemorate veterans

Iconic area to take photographs

Wifi technology to accommodate conferences and meetings

4. What are the operational expectations for the facility?

- a. Fees and charges for use?
- b. Cost recovery expectations?  
Currently at 70/30.

5. Are there any site issues/concerns with the project?

Nancy is very concerned about the site location. There is an issue on size of the space and it is randomly placed. Center should be located near other facilities.

Parking/traffic will be insufficient because soccer fields fill the existing lot.

6. What priority should the Township place on the development of a new community center?

- a. Very high
- b. High
- c. Medium
- d. Low

7. Other issues or concerns regarding the project?

- a. What are the deal breakers for you?

Text

- b. Partnerships

School District, Delaware Valley University, Doylestown Hospital (VIA), Bar Association,

Cheer group, Bucks lacrosse, Penn Community Bank, Fred Beans, other developers, Public Officials for funding, Big Brothers/Sisters

- c. Funding

- d. Programs and services

She is concerned that a true assessment has not been done for the planning of the Center. She speculates that the 12,000 sf was not justified with the current needs.

Nancy does not want Ed Ebenbach representing the Telecommunications Committee during interview. Ryan Manion should not represent the Parks and Recreation Committee.

**Barbara Lyons**

**Interview:** January 05, 2021 at 4:00 PM

**General Information:**

**Questions:**

1. What important needs should be served with a new community center in Doylestown Township?

- a. Should the center focus on basic community needs?
- b. Should it be a venue for special events and other activities?

Programs should be provided Parks & Recreation because it is funded by tax money. The Center should support community groups (indoor sports). Township provides ample athletic fields.

Center should be a facility for the residents first. The building should not solely be for sports leagues.

Facility should support special functions. Perhaps there can be an adjacent outdoor space.

2. What is the capital funding limit for the project?

- a. Township funding

The funding limit has changed over the past few years. The building should be self-sustainable, including the staffing costs.

Barbara is not opposed to spending more money, but this may require fundraising (e.g. sponsorships for bleachers, sell name of building).

Barbara is comfortable going 10-15% over \$4M.

3. What specific components should be included in this center?

- a. What are the priorities?

Kitchen

Gym/Multipurpose Room that serves athletics and large gatherings.

Lounge space to meet and greet.

Toddler room

Instructional rooms

Good wifi and technology

Yoga room

Partitions a must for versatility

Facility should appeal to all ages

Township may entertain the idea of alcohol being allowed for rentals (additional revenue).

4. What are the operational expectations for the facility?

- a. Fees and charges for use?
- b. Cost recovery expectations?

Refer to #2 above.

5. Are there any site issues/concerns with the project?

Current site is most amenable for utilities.

The current site is not near the municipal building (positive).

The current site is the ideal site for the building.

6. What priority should the Township place on the development of a new community center?

- a. Very high
- b. High
- c. Medium
- d. Low

High priority. A promise was made to the community when the Administration and Police building was built.

7. Other issues or concerns regarding the project?

- a. What are the deal breakers for you?

Barbara is not set on the facility being self-sustainable. Other members may disagree.

- b. Partnerships

Cornerstone Gym, Doylestown Hospital, Doylestown Athletic Leagues

- c. Funding

- d. Programs and services

## Dan Wood

**Interview:** January 06, 2021 at 5:30 PM

**General Information:** Dan has been on the BOS for 1 year.

### Questions:

1. What important needs should be served with a new community center in Doylestown Township?

- a. Should the center focus on basic community needs?
- b. Should it be a venue for special events and other activities?

Parks & Rec Committee is driving the needs of the community center. The biggest need is hosting capabilities. Dan is aware of other members' and committees' wish list.

He would like to see the facility be utilized in an emergency (e.g. charge devices, get warm).

2. What is the capital funding limit for the project?

- a. Township funding

Dan recollects \$4M being discussed in the 5-year budget.

3. What specific components should be included in this center?

- a. What are the priorities?

Gymnasium (one basketball court needed, ideally 2 but unrealistic for budget)

Activity rooms (e.g. adult education and STEM programs)

No fitness rooms needed.

Exterior bike rack and repair station. This site is a logical place due to it being on one end of the 202 bike path.

Not a component, but he would like to see the use of renewable energy (e.g. solar). He stated he and EAC would like LEED certification. Dan referenced a Township ordinance that requires 100% renewable energy by 2050.

4. What are the operational expectations for the facility?

- a. Fees and charges for use?
- b. Cost recovery expectations?

Ideally the Center would cover its operational expenses, or most of them. He understands that the construction will be financed.

5. Are there any site issues/concerns with the project?

There are not many neighbors (positive) and it is in Central Park (positive).

Parking may become an issue due to the Center's proximity to the soccer fields. People already park in the grass during busy times.

Dan has some concerns about traffic getting in and out of the parking lot (referenced Triangle Park on New Briton Road, two traffic circles being installed in the future).

6. What priority should the Township place on the development of a new community center?

- a. Very high
- b. High
- c. Medium
- d. Low

High priority. List of priorities (in order of highest to lowest) is roads, pensions, and community center.

7. Other issues or concerns regarding the project?

- a. What are the deal breakers for you?

Needs to be energy efficient.

Needs to have a court.

- b. Partnerships

Boy Scouts and Girl Scouts, bicycling groups, Doylestown Borough

- c. Funding

- d. Programs and services

Dan is concerned about the impact on the local YMCA and Cornerstone Gym.

## Ryan Manion

Interview: January 05, 2021 at 4:45 PM

### General Information:

### Questions:

1. What important needs should be served with a new community center in Doylestown Township?

- a. Should the center focus on basic community needs?
- b. Should it be a venue for special events and other activities?

The community needs more indoor athletic spaces (basketball, lacrosse, soccer)

The Township needs to generate additional revenue.

Considered an indoor turf field but realized its cost.

The Township doesn't need to cater to large scale events.

The Center should accommodate residents in an emergency.

2. What is the capital funding limit for the project?

- a. Township funding

The building will be financed so there isn't a specific cap.

Ryan would like to see multiple scenarios that state "if the building costs 'x' it will generate 'x' revenue".

The BOS works well when there are options.

3. What specific components should be included in this center?

- a. What are the priorities?

Elevated track

2 basketball courts

Rooms to support programs (karate, cooking, CPR training)

Not sure on the need for a kitchen (ask Karen Sweeney about P&R programs)

Center should have showers and lockers.

4. What are the operational expectations for the facility?

- a. Fees and charges for use?
- b. Cost recovery expectations?

The Center should generate revenue and cover all costs.

5. Are there any site issues/concerns with the project?

Site is ideal. Does not want to see the building near the Municipal Building.

There is a large berm due to 202 so it is isolated from neighbors.

The street is not too busy.

Chief Logan (police) should be interviewed for input.

6. What priority should the Township place on the development of a new community center?

- a. Very high
- b. High
- c. Medium
- d. Low

As a resident it is a high priority.

As a Supervisor, it is a good news story similar to the amphitheater.

Ryan is curious about what the community will say.

7. Other issues or concerns regarding the project?

- a. What are the deal breakers for you?

Facility to generate revenue

- b. Partnerships

Ryan recommends talking to the YMCA to see what their challenges and needs are.

- c. Funding

There is a possibility for a sponsor.

- d. Programs and services

## Jennifer Herring

Interview: January 05, 2021 at 5:30 PM

### General Information:

### Questions:

1. What important needs should be served with a new community center in Doylestown Township?

- a. Should the center focus on basic community needs?
- b. Should it be a venue for special events and other activities?

There is a need for sports leagues. Flexible classroom space is needed.

Community garden desired.

Building and site must have environmental focus (e.g. solar, geothermal, skylights). Jen would need more information to determine if LEED was an appropriate endeavor.

2. What is the capital funding limit for the project?

- a. Township funding

\$4M ceiling was used for the budget.

The board should be provided with options (good, better, best).

3. What specific components should be included in this center?

- a. What are the priorities?

No need for fitness space.

Classroom/multiuse space needed.

Emergency shelter.

1 basketball court gymnasium

Catering kitchen (not commercial)

Flexibility is a must

Center should cater to all ages.

4. What are the operational expectations for the facility?

- a. Fees and charges for use?
- b. Cost recovery expectations?

Jen doesn't expect the building to pay for itself (80% operational expenses). The Center will be an investment for the community.

5. Are there any site issues/concerns with the project?

Proposed location provides room for expansion in the future.

If the Center would go near Kids Castle it would be too constrictive.

The site doesn't have any connection to the Municipal Building.

6. What priority should the Township place on the development of a new community center?

- a. Very high
- b. High
- c. Medium
- d. Low

Currently during the pandemic, low. Post-pandemic, high.

7. Other issues or concerns regarding the project?

- a. What are the deal breakers for you?

Cost

- b. Partnerships

Environmental Advisory Council

- c. Funding

The Township has a green points program which results in a reduction of fees as an incentive to energy efficiency. This should be examined.

- d. Programs and services

## Boards and Committees Questions and Responses

Paul DiNella – Parks & Recreation

Interview: February 3, 2021 at 5:30 PM

### Questions:

1. How does/can the new community recreation center project intersect with the role/capability of your board/committee?

The new center will support existing programs and fill the needs for the future.

2. How would you describe the value Doylestown Township residents (as a whole) place on their park and recreation system?

Residents place a high value on the P&R system. They like open space and there is good participation in events.

3. Do you think the parks and recreation system is balanced in terms of the types of parks, facilities/amenities, programs, and services?

P&R strives for balance amongst all ages; however, an indoor venue is missing from the Township. There are adequate outdoor facilities.

4. Presently there is no indoor recreation space for the provision of programs and services (i.e. active, educational gathering, wellness, etc.) – Would the Doylestown Township community benefit from having access to a community recreation center (**Yes** or **No**)

a. If yes,

1. What are three important Park and Recreation opportunities?

Multi-season, multiuse, participation of everyone in the township, upgraded technology and meeting spaces.

2. What are three challenges you anticipate?

Staffing/personnel, there needs to be a full-time position to manage spaces/rentals; site parking and security, site lighting is deficient in this area of the Central Park.

b. If no, how would it be a disadvantage?

5. What would be the most important community recreation center elements/spaces that should be included to best serve the community in a balanced and holistic manner (i.e. specific facility spaces, gathering opportunity, instruction/educational opportunities, technology & connectivity, rentals and events, diversified opportunities, emergency use capability)?

Meeting multiuse spaces, technology for teaching space. Gym is needed (high school sized court) and enough space along the perimeter of the court for spectators. Court should be able to be divided into smaller areas. Storage for gym equipment needed. Facility should not just be sports. Kitchen space, exterior restrooms, potentially an outdoor pavilion.

6. What important needs should be served with a new community center in Doylestown Township?

- a. Should the center focus on basic community needs?
- b. Should it be a venue for special events and other activities?

The township needs space for its existing programs, then second priority is rentals and events. Residents need open access to use facility.

7. What do you anticipate as potential revenue opportunities for the facility?

- a. Fees and charges for use?
- b. Cost recovery expectations?

Paul understands that the building will not be cheap and does not expect the building to pay for itself (75%?). There may be some marketing opportunities.

8. What priority should the Township place on the development of a new community center?

- a. Very high – there is no space currently. Project should be future-focused.
- b. High
- c. Medium
- d. Low

9. Other issues or concerns regarding the project?

- a. What are the deal breakers for you?  
Need full-sized gym. Doesn't want building to be a business.
- b. Partnerships  
Athletic associations already approached the Township.
- c. Funding  
\$4M shouldn't be hard number. Build what is needed.
- d. Programs and services

10. Any other thoughts you would like to share?

Don't rent too much to pay for itself, should be open to the residents.

Allow for growth of programs.

Township toured Upper Providence, Horsham, and Northampton facilities.

Potentially the building should have unfinished spaces for future project (e.g. 2nd floor/mezzanine)

There were previous focus group meetings and community meetings prior to this feasibility study.  
Encourages team to evaluate comments ascertained from those meetings.

**Joe Salvati – Friends of Kids Castle**

**Interview:** February 18, 2021 at 10:00 AM

**Questions:**

1. How does/can the new community recreation center project intersect with the role/capability of your board/committee?

2. How would you describe the value Doylestown Township residents (as a whole) place on their park and recreation system?

The P&R system is valued, but residents may undervalue the benefits of a new community center. It could raise property values. Use of the parks increased dramatically during pandemic.

3. Do you think the parks and recreation system is balanced in terms of the types of parks, facilities/ amenities, programs, and services?

4. Presently there is no indoor recreation space for the provision of programs and services (i.e. active, educational gathering, wellness, etc.) – Would the Doylestown Township community benefit from having access to a community recreation center (Yes or No)

a. If yes,

1. What are three important Park and Recreation opportunities?
2. What are three challenges you anticipate?

b. If no, how would it be a disadvantage?

5. What would be the most important community recreation center elements/spaces that should be included to best serve the community in a balanced and holistic manner (i.e. specific facility spaces, gathering opportunity, instruction/educational opportunities, technology & connectivity, rentals and events, diversified opportunities, emergency use capability)?

Multiuse court with height adjustable basketball goals, spaces for classes (art club, chess club). Diversity of spaces is key for a diverse community of residents.

6. What important needs should be served with a new community center in Doylestown Township?

- a. Should the center focus on basic community needs?
- b. Should it be a venue for special events and other activities?  
It should be balanced.

7. What do you anticipate as potential revenue opportunities for the facility?

- a. Fees and charges for use?
- b. Cost recovery expectations?

Success of community center is not to turn a profit. It is measured by its service to the diverse groups of the community. There are opportunities for the facility to be rented, but the residents should be the priority.

8. What priority should the Township place on the development of a new community center?

- a. Very high – This facility could impact community similar to Kids Castle. It enriches community for generations. This facility could fill a gap within the Township.
- b. High
- c. Medium
- d. Low

9. Other issues or concerns regarding the project?

- a. What are the deal breakers for you?
- b. Partnerships
- c. Funding
- d. Programs and services

10. Any other thoughts you would like to share?

The community center is important to get people in one location. There are many groups who value indoor facilities for billiards or ping pong.

A better location for the community center would be next to the Municipal Building. There would be better security due to its proximity to the Police.

The building should be built with the future in mind. Plan for a larger footprint in the future.

Don't whittle the project down into dollars and cents to something that doesn't serve the Township but fits its budget.

Joe participated in the numerous comprehensive plans. If nothing evolves from this process it would be a great disserve to the community.

Children/adults with special needs should be considered when designing the new building.

## Bob Salanik – Ways & Means

Interview; February 2, 2021 at 4:45 PM

### Questions:

1. How does/can the new community recreation center project intersect with the role/capability of your board/committee?

W&M works with financing (similar to what was done with the new Municipal building). W&M deals with the capital and financial side of the facilities.

2. How would you describe the value Doylestown Township residents (as a whole) place on their park and recreation system?

Gym space is hard to get in the area.

3. Do you think the parks and recreation system is balanced in terms of the types of parks, facilities/amenities, programs, and services?

Currently out of balance. Not enough indoor facilities for dog training, classes. There is an abundance of soccer, baseball, football fields.

4. Presently there is no indoor recreation space for the provision of programs and services (i.e. active, educational gathering, wellness, etc.) – Would the Doylestown Township community benefit from having access to a community recreation center (Yes or No)

a. If yes,

1. What are three important Park and Recreation opportunities?

Basketball, volleyball, pickleball

2. What are three challenges you anticipate?

Cost, public might get sticker shock

b. If no, how would it be a disadvantage?

5. What would be the most important community recreation center elements/spaces that should be included to best serve the community in a balanced and holistic manner (i.e. specific facility spaces, gathering opportunity, instruction/educational opportunities, technology & connectivity, rentals and events, diversified opportunities, emergency use capability)?

Kitchen would be nice for organizations and to raise money. Summer recreation space would be useful.

6. What important needs should be served with a new community center in Doylestown Township?

a. Should the center focus on basic community needs?

Yes

- b. Should it be a venue for special events and other activities? Yes

Funding of the facility could come from tournaments.

7. What do you anticipate as potential revenue opportunities for the facility?

- a. Fees and charges for use?
- b. Cost recovery expectations?

Tax neutral – 50% capacity in first year, 60% in second year, then eventually up to 80%. This facility is not a profit center.

Township currently provides a lot of services for little profit (70/30). W&M would like to see 60/40.

When gym is rented, in lieu of custodial staff, potentially hire someone from local university.

8. What priority should the Township place on the development of a new community center?

- a. Very high
- b. High
- c. Medium
- d. Low

9. Other issues or concerns regarding the project?

- a. What are the deal breakers for you?

Not interested if there is not a 1-2 court gym. Does not see facility having a fitness center because there are many in the area.

- b. Partnerships

Warrington Township. There is a property directly adjacent to their Township.

- c. Funding

Advertising and naming rights. W&M met with Central Bucks Athletics and they potentially will provide funding for space.

- d. Programs and services

10. Any other thoughts you would like to share?

Suggested an unfinished space in building for future growth.

Site location was discussed. Preferred location is New Britain Road; however, concerned about traffic due to fields. There is an existing dog park that would be a potential location for the building.

\$4M is not a hard ceiling for the project. Design the building for what is needed and then concentrate on revenue.

## Jim Baldassarre – EAC

**Interview:** February 2, 2021 at 5:30 PM

**General Information:** EAC is an advisory board. Central Park is currently aesthetically and ecologically sound. EAC wants to be involved in the design process of the facility.

### Questions:

1. How does/can the new community recreation center project intersect with the role/capability of your board/committee?

- a. The EAC has a mission to educate and inform on environmental issues. This includes lectures and regional summits, demonstrations and workshops, and written materials provide on the township website and newsletter. A new community center should enable the mission of education.

We think there are great opportunities to use this new facility to model best practices in environmental building and sustainability, and demonstrate various practical benefits: best building practices, solar electric, EV charging, use of pervious paving materials, native plants, green roof, etc.

- b. Township committed to “Ready for 100” which is committed to renewable energy by 2035/2050. The Township should be fossil fuel free and utilizing solar and geothermal.

LEED certification is not a priority. Due to renewable energy/environmentally sound building, the facility should be able to pay for itself.

2. How would you describe the value Doylestown Township residents (as a whole) place on their park and recreation system?

- a. Very high. People love these parks
- b. Likes aesthetics of Municipal Building

3. Do you think the parks and recreation system is balanced in terms of the types of parks, facilities/amenities, programs, and services?

- a. Balance could mean a lot of different things. We seem to have balance between active and passive opportunities. We want to maintain a balance of large, centralized parks with smaller neighborhood parks. We want to ensure a balance of uses for different demographic groups (kids, families, seniors, birdwatchers, dog walkers, etc). Finally, we want a balance of undisturbed/naturalistic areas and developed areas. We seem to have ever more developed and paved over areas, signage, sports equipment etc. We should be mindful of continual development within the parks.

4. Presently there is no indoor recreation space for the provision of programs and services (i.e., active, educational gathering, wellness, etc.) - Would the Doylestown Township community benefit from having access to a community recreation center (Yes or No)?

We don't agree with the premise of the question. We have numerous spaces, including the new TWP building, the YMCA, the library, school buildings, and many private facilities. There are potential benefits but also drawbacks.

a. If yes,

i. What are three important Park and Recreation opportunities

Arts and crafts activities, flower shows and similar, programs for seniors (eg exercise, yoga), sports, performance space/music venue

ii. What are three challenges you anticipate?

Cost of the building, parking and traffic, maintenance and cleaning (especially if there is a kitchen)

b. If no, how would it be a disadvantage?

We have some concern about the size of the building. This will dramatically change the nature of the park.

5. What would be the most important community recreation center elements/spaces that should be included to best serve the community in a balanced and holistic manner (i.e. specific facility spaces, gathering opportunity, instruction/educational opportunities, technology & connectivity, rentals and events, diversified opportunities, emergency use capability)?

a. As above. The facility should not be primarily a sports facility. We prefer the idea of a multipurpose room which might be used for sports or performance space, social gathers and education. Should be accessible for all ages. Technology should be adequate to enable lectures and education. If there is a kitchen, it needs to be clear who is responsible for cleaning and maintenance. Rentals would seem appropriate. The building requirements for a real emergency use would seem to be beyond the scope of this type of building.

b. Regarding written comment on emergency use, EAC would like to see costs and benefits because there are different levels of "emergency use" facility.

6. What important needs should be served with a new community center?

This is not a YES/NO question. Both seem possible.

a. Should the center focus on basic community needs?

b. Should it be a venue for special events and other activities?

7. What do you anticipate as potential revenue opportunities for the facility?

a. Fees and charges for use? Rental use for private groups seems acceptable.

b. Cost recovery expectations? We think that solar electric system could more than pay for itself over a reasonable period of time, especially if it is considered at the time of planning.

8. What priority should the Township place on the development of a new community center?

- a. Very high
- b. High
- c. Medium  
Medium
- d. Low

9. Other issues or concerns regarding the project?

- a. What are the deal breakers for you?

We are not in favor of a facility which is primarily a sports facility.

- b. Partnerships
- c. Funding
- d. Programs and services

We would like a closer interaction with Parks and Rec as this goes forward. The EAC was not able to attend the initial public meeting and we were not aware of the size of the proposed structure.

10. Any other thoughts you would like to share?

- a. We have some concern about the size of the proposed structure (15,000 sq ft?) and the effect this will have on the character of the park. This will be a permanent change and needs to be carefully considered. We need to make every effort to minimize the impact on the park and surrounding areas, considering auto traffic, foot traffic, noise, trash etc.

Preserve wetlands.

Referenced Haverford Township and the "teachable" building.

## Art Zapolski – TAB

**Interview:** February 2, 2021 at 4:00 PM

**General Information:** TAB is all volunteer. Art has been on the board for 5 years. TAB provides video, broadcasting, and public access to events. TAB has no opinions on questions 3, 4, and 7.

### Questions:

1. How does/can the new community recreation center project intersect with the role/capability of your board/committee?

TAB wants the ability to broadcast in each space of Township buildings. Art sees TABs input on facility after the schematic design phase. If outdoor spaces are part of this project, there should also be broadcasting/recording capabilities there too.

2. How would you describe the value Doylestown Township residents (as a whole) place on their park and recreation system?

Parks are the “crown jewel” of the Township. The park’s ambiance should be maintained.

3. Do you think the parks and recreation system is balanced in terms of the types of parks, facilities/amenities, programs, and services?

No comment

4. Presently there is no indoor recreation space for the provision of programs and services (i.e. active, educational gathering, wellness, etc.) – Would the Doylestown Township community benefit from having access to a community recreation center (Yes or No)

a. If yes,

1. What are three important Park and Recreation opportunities?
2. What are three challenges you anticipate?

b. If no, how would it be a disadvantage?

No comment

5. What would be the most important community recreation center elements/spaces that should be included to best serve the community in a balanced and holistic manner (i.e. specific facility spaces, gathering opportunity, instruction/educational opportunities, technology & connectivity, rentals and events, diversified opportunities, emergency use capability)?

TAB would ask for the building to be designed first, then they would provide support for amenities.

6. What important needs should be served with a new community center in Doylestown Township?

a. Should the center focus on basic community needs?

- b. Should it be a venue for special events and other activities?

If there is an outdoor venue, have it mic'd for bands.

Acoustics are paramount in large spaces. Municipal building had to be retrofitted due to poor acoustics.

What type of space would TAB need? Similar size of control room in Municipal Building.

- 7. What do you anticipate as potential revenue opportunities for the facility? No comment

- a. Fees and charges for use?
- b. Cost recovery expectations?

- 8. What priority should the Township place on the development of a new community center?

- a. Very high
- b. High
- c. Medium – this is based on the priorities of the Township
- d. Low

- 9. Other issues or concerns regarding the project?

- a. What are the deal breakers for you?
- b. Partnerships
- c. Funding
- d. Programs and services

- 10. Any other thoughts you would like to share?

## Township Staff Questions and Responses

**Sinclair Salisbury – Building Code Official**

**Chief Dean Logan - Police**

**Stephanie Mason - Township Manager**

**Dave Tomko - Director of Operations**

**Lisa Pearsall – Recreation Program Manager**

**Karen Sweeney - Director of Parks & Recreation**

**Margaret Trageser – Karen's secretary and front desk**

**Chris Mason – Park Superintendent**

**Rick Schea – Township Fire Marshal and Facilities Manager**

### Questions:

1. How does a new community center in Central Park potentially impact your job responsibilities?

DT – operationally they need more abilities to know what is going on in a building that is away from the operations center.

RS – easily maintained, durable, plenty of storage is critical

SS – accessible, include plenty of storage

KS – this was discussed at the last meeting

SS – most organizations put up storage sheds

CM – will there be exterior restrooms?

KB – yes, it was discussed

KS – Chris brought up playground, there is an existing one that is end of life, perhaps replace it near the community center

DL – access control and monitoring, already have existing system in municipal building, use same company

DT – needs to be on the front end of the design

RS – same with the BAS and CAT cabling, need a shelter to provide another space for police department

DT – need generator that runs the entire building, do we bring in IT vendor early?

SS – this building should be a back up facility and part of the continuity plan

RS – all buildings are on generators

SS – will restrooms have showers, kitchen?

KB – this will increase our fixture count, catering kitchen, not commercial

DL – only need data back up at new facility, not complete township building, work from home

SM – we are talking about a place for the BOS to meet

RS – there may be 7 employees working in the building during a catastrophe, not entire staff in the building

DL – design this building per Karen’s request, don’t tie too much into it for disaster, we only need it for computer databases, this will increase the cost too much and nothing will happen

SS – as emergency coordinator, needs to be designed for Karen’s use and also back up facility

KB – any concerns of access to site off New Britain Road?

DT – no site issue, but parking issues yes. All of central park has a parking issue

SM – access via the bike trail has come up during the focus groups, residents are looking for a link to the existing trail

KS – existing park has 380-400 parking spaces, building to occupy ~40 spaces, Sensory Trail is not heavy occupied, fields will require parking, BOS should see what the park needs (parking wise), MP rooms need to be sound proof, prefer no operable partitions, would like not to see one large MP room, need to divide space, this project hits P&R the most for scheduling, need balance between resident time and renting it out to sports

DL – if you are going to build a gym, think about wrestling space (2 wrestling mats with walking space and visitor space)

KS – concert indoor? Polling should stay where it is.

SH – wrestling mats take up a lot of space, can use hoist but expensive

KS – put that on the rental list

DT – Perhaps design the steel to hold the hoist, but it could be in the future, “must have, would be nice to have, could have in the future”

- a. What are the concerns/issues that you have with the project as a result?
2. What important needs should be served with a new community center in Doylestown Township?
    - a. Should the center focus on basic community needs?
    - b. Should it be a venue for special events and other activities?

3. What specific components should be included in this center?

KB – are there other spaces that we should be considering?

KS – walking, exercise, wellness, pickleball, does it benefit to have a fitness center?

RS – HVAC system should be on the roof so it is not tampered with, security is key, getting large ice dams on Municipal Building

DT – this is a pre-engineered building

SH – let’s not say that yet, could be custom

- a. What are the priorities?
- 
4. Are there any site issues/concerns with the project?
    - MT – will the building have multiple exits?
    - KB – yes, but all visitors will enter through one controlled entrance for security and safety
    - DT – Sprinkler building
    - SS – follow the code
    - RS – sprinkler the building
- 
5. How often would you and/or your employees use the center if it had the amenities that were desired?
    - a. Several times a week
    - b. Once a week
    - c. Several times a month
    - d. Once a month
    - e. Never
- 
6. Other issues or concerns regarding the project?
    - KS – lobby should be gathering space
    - DT – ease of maintenance and durability, spend more money up front for ease of maintenance, hose down restrooms
    - KS – what level of operational expense recovery is realistic?

## Neighbors Focus Group Session Questions and Comments

### Questions:

1. With the planned site for a possible new Doylestown Township Community Center at the New Britain Road access point to Central Park, what concerns do you have with this location?
  - a. Access
  - b. Traffic
  - c. Parking
  - d. Noise
  - e. Other
2. How can we best mitigate these concerns?
3. Do you believe there is a need for a public indoor community center in Doylestown Township?
  - a. To meet your specific needs?
  - b. To meet overall community needs?
  - c. To provide a venue for special events?
  - d. To provide facilities that are not currently available or are inadequate?
4. Where do you currently go for your indoor recreation needs?
  - a. Are these facilities adequate?
  - b. If not why not?
  - c. What other indoor recreation facilities are available in the area?
  - d. What do you currently pay for use of these facilities?
5. What specific components should be included in this center?
6. Are you willing to pay to use such a facility?
  - a. Fees and charges for use
7. How often would you use such a center if it had the amenities that you desire?
  - a. Several times a week
  - b. Once a week
  - c. Several times a month
  - d. Once a month
  - e. Never
8. What priority should the Township place on the development of a new community center?
  - a. Very high
  - b. High
  - c. Medium

d. Low

9. Other issues or concerns regarding the project?

**Wrap-Up** – what is next?

**Attendees:**

**Christen Pionzio (CP)**

**Kathy Brown (KBr)**

**Chris Kelley (CK)**

**Wayne Howell (WH)**

**Jorge Troncoso (JT)**

**Scott Geller (SG)**

**Daniel Stalheim (DS)**

**Chris Suessenguth (CS)**

**Lori Gildea (LG)**

**Ken Ballard (KB)**

**Ryan Kennedy (RK)**

CK – Why is the building located where it is?

KB – The Township provided the design team with the site.

CK – How much parking will the new building take up?

KB – A portion of the designated area shown as G-40. It is understood that more parking is needed in this area of the park to accommodate the new building.

CS – What is happening in the former Activity Center?

KB – Not known to the design team.

KBr – The Maintenance Department occupies that building now.

JT – Concerned about accessibility to the new community center and park. Is there plan to expand the bike path to DelVal?

KB – That would most likely be a separate project. The site work related to this project relates to the community center.

LG – Lives in Morgan Hill Neighborhood. She would like to see a wider shoulder on New Britain Road for safer travel to the park.

CK – There is a walking path off of Wells Road and people drive on it to get to the soccer field parking. There needs to be gates to prevent this. CS agrees.

JT – Will there be a game room for pool?

KB – We will get to that question shortly.

DS – Is [G-40] the site?

KB – Yes.

CP – Referenced neighboring community centers.

KB – Upper Providence is a similar size.

SG – Concerned about traffic and traffic speed on New Britain Road. Concerned about light pollution at night.

KB – It is unknown if this will be a 1 or 2 story building.

?? – Parking will be an issue. What about a parking garage? What about underground parking?

KB – Budget doesn't support that.

CS – What about building the building over the parking lot?

KB – Perhaps

DS – Has there been a traffic study done yet?

KB – No, more information is needed regarding the building before that can happen.

DS – Will the building have restricted access to township residents?

KB – The building's top priority will be to serve residents, but will serve non-residents as well.

DS – What about vandalism?

KB – Typically amenities reduce vandalism.

CS – There is little to no vandalism now.

DS – Talking about neighboring communities.

KB – What specific components should be included in this center?

JT – Game room and pool tables. No fitness center needed due to Y and other private fitness centers.

CS – Could there be a gym? What does Upper Prov have?

KB – Yes to the gym. Upper Prov has single court gym.

SG – If there are indoor training areas, it would welcome outside organizations. This would increase revenue and traffic. SG wants gymnasium but doesn't want traffic. Extra revenue would be nice, but residents need priority.

DS – Why is this a project?

KB – As far as the design team understands, the Township doesn't have room for their existing programs.

KB – Do you believe there is a need for a public indoor community center in Doylestown Township?

DS – No.

Many other voices – Yes

CS – We don't have this now, we don't need it.

CK – What programs are requested now from P&R?

KBr – Science classes, painting, STEM, babysitting, acting. All need space and have no place now since the “red” building went away. KBr would like a space for birthday parties, receptions, business meetings.

CK – What about a multimedia room for meetings?

KB – Sure

SG – The building should not be called a Recreation Center due to attracting outside organizations.

KB – Would you use this facility?

JT – Yes. [Others said yes as well]

CS – What amenities did Upper Prov have?

KB – Multipurpose Room, Kitchen, Gymnasium, Classroom.

KB – Building should have lobby.

KB – It will as long as there is more than one amenity.

CS – Will this building be 24 hours?

KB – No. It will be staffed with specific hours that relate to the amenities. Perhaps 7 days a week. The feasibility study will look at operating costs to run the facility.

DS – Is this project still in a Go/No Go? Is the site definite?

KB – The Township will decide after the feasibility study.

DS – How many people were invited to tonight’s meeting?

KB – Around 200 neighbors.

CS – Safety is biggest concern.

CK – Parking should be figured out first.

KB – Parking will be analyzed based on the amenities and zoning requirements.

CS – What will the building look like? Could it look like municipal building?

JT – Do we have a say in the architecture?

KB – Township will decide.

CK – Are these buildings typically 2 stories?

KB – The gym is already 2 stories, so sometimes.

CS – Could there be an elevated track?

KB – Yes this is possible.

WH – Has a traffic study been completed as well as a speed count?

RK – A civil engineer will be hired by the Township and they will determine this.

DS – Our two top concerns are traffic and vandalism.

## Community Partners Group Stakeholder Questions and Responses

(JB) Jim Bishop, Cornerstone Clubs

(CN) Chris Nardo, C&N Bank

(GN) Greg Nardi, Bar Association

(ZM) Zane Moore, YMCA Bucks

(BAP) Barbara Ann Price, Village Improvement Association of Doylestown

### Questions:

1. Who do you represent?
  - a. Jim Bishop – Cornerstone Clubs for 26 years. An active community partner that offers community classes and activities on Township's grounds.
  - b. Chris Nardo – C&N Bank. He is a resident.
  - c. Zane Moore – President and CEO of YMCA Bucks. They are an active partner with the Township.
  - d. Greg Nardi – Bar Association
  - e. Barbara Ann Price – Village Improvement Association

The site for the building was presented. There were no comments.

2. What is the purpose and make-up of your organization?
3. What are the specific needs of your organization for an indoor community center facility?
  - a. Ongoing
  - b. Special events/activities
  - c. Other
4. Where do members of your organization currently go for your indoor recreation needs?
  - a. Are these facilities adequate?
  - b. If not, why not?
  - c. What other indoor recreation facilities are available in the area?
  - d. What do you currently pay for use of these facilities?
5. Do you believe there is a need for a new community center facility in Doylestown Township?
  - a. To meet your specific needs?
  - b. To meet overall community needs?
  - c. To provide a venue for special events?
  - d. To provide facilities that are not currently available or are inadequate?

6. What specific components should be included in this facility?
7. How do you see your needs being met with such a facility?
8. Are you interesting in partnering to help develop such a facility?
  - a. What might the partnership look like?
9. What priority should the Township place on the development of a new community center?
  - a. Very high
  - b. High
  - c. Medium
  - d. Low
10. Other issues or concerns regarding the project?
  - a. What are the deal breakers for you?

ZM – Was a community needs assessment completed?

KB – Yes. The Township wants to replace what was lost from the red barn. They would like to expand the program offerings.

ZM – Does the Township desire to own its own facility in lieu of using community institutions like Cornerstone or the Y?

KB – Both. The Township wants to have a home for their programs but still partner with community businesses.

CN – There is never enough indoor space for soccer and lacrosse. All other program spaces can be provided by Cornerstone, the Y, and Central Bucks School District. What is the vision for the building?

KB – 10-13k sf building, modest, no indoor pool.

JB – The community would benefit from a large and universal gymnasium for sports leagues. Cornerstone is willing to enhance relationship with Township.

ZM – Concur with JB, one gym should be in the Township.

KB – Are there any other spaces needed?

CN – If there is extra space, perhaps all-weather fields, storage for outdoor equipment.

ZM – The Township should be cautious with the post-Covid world. There have been/will be new challenges/opportunities for indoor space. The Township should be open to change. The Y just built an addition for certain programs that aren't possible during Covid, but now being used for other programs (virtual school areas, e-Sports).

KB – Understood. Hears a need for multipurpose spaces.

CN – An all-purpose space for large employee gathers (~50 employees) with multimedia capabilities and monitors. Spaces need to be flexible.

GN – Indoor and outdoor classrooms are needed.

KB – We heard requests for an emergency shelter. No comments.

KB – Are there any concerns for this project? No response.

KB – Is this a worthy project for the Township?

ZM – I don't know. Slow down to understand true needs to post-COVID world, the world is changing.

BAP – Change is coming. Prudent to wait. Hospital is busy with children's village, possibly expanding for elder care. What are needs for the future?

CN – Perhaps push the project to the 4th quarter of 2021.

BAP – Where did the square footage come from?

KB – Township backed in from how much they are willing to spend.

## **Athletic Partners Group Stakeholder Questions and Responses**

**[AB] Art Bass, DAA**

**[BM] Barb Matase, USPBA Regional Ambassador**

**[JM] Jeff Marcinkowski, DAA**

**[KB] Kristian Bates, PA Rush Soccer**

**[Ken] Ken Ballard**

### **Questions:**

1. What athletic organization do you represent?

- a. Jeff M & Art – DAA Basketball which serves 850 children (during non-Covid years). Provides all year seasons for most sports, other sports include baseball, field hockey, softball, indoor volleyball. DAA serves 4000 families – 60% from Township, rest are from Doylestown Borough, Chalfont, Buckingham. Serves 600 for volleyball.
- b. Barb – District Ambassador for Pickleball. Teaches and runs tournaments. High and growing demand for PB.
- c. Kristian – Rush “Lenape Valley” Soccer – established in 1965. Majority of players from Central Bucks School Districts. 2000 players altogether, indoor Nov-March, non-profit, 70% kids from Doylestown, Buckingham.

2. What is the size and make-up of your organization? (# of teams, # of members, etc.)

3. What are the specific needs of your organization for an indoor community center facility?

- a. Ongoing
- b. Special events/activities
- c. Other

# MEMORANDUM



architects

DATE: February 09, 2022  
ATTN: David Tomko  
COMPANY: Doylestown Township  
FROM: Ryan Kennedy (rk@mksdarchitects.com)  
JOB NUMBER: 20.158

**SILVIA HOFFMAN**  
AIA, LEED AP

**TODD CHAMBERS**  
AIA, NCARB

**JILL HEWES**  
AIA, LEED AP

REFERENCE: Doylestown Township Parks & Recreation Community Center Project

The following is a monthly synopsis of the design team's progress for the above-mentioned project:

## [For Issuance at Board of Supervisors' Meeting 02/15/2022]

- **MKSD architects met with the Doylestown Township Building Committee on February 03, 2022. The building committee for the Township consists of Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, Ed Ebenbach and Rick Schea.**
- **Topics of discussion included the following:**
  - **Solar Feasibility Study – MKSD provided a proposal for the feasibility study.**
  - **Geotechnical Services – MKSD provided an Award Recommendation Letter for these services.**
  - **Geothermal Test Borings – MKSD provided an Award Recommendation Letter for these services.**
- **MKSD continues to progress the Design Development documents.**
- **MKSD architects will present to the BOS on February 15, 2022.**

## [For Issuance at Board of Supervisors' Meeting 01/18/2022]

- **MKSD architects met with the Doylestown Township Building Committee on January 13, 2022. The building committee for the Township consists of Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, and Ed Ebenbach.**
- **Topics of discussion included the following:**
  - **Geothermal heat pump system – MKSD will provide an RFP for test wells.**
  - **Photovoltaic panels – MKSD will provide a proposal for a feasibility study**
  - **Revised floor plans per the December 16, 2021 meeting.**
  - **Opinion of Probable Cost – MKSD will update per the additional square footage added and enclosing the patio during the December 16, 2021 meeting.**
- **MKSD architects will present to the BOS on February 15, 2022.**

## [For Issuance at Board of Supervisors' Meeting 12/21/2021]

- **MKSD architects met with the Doylestown Township Building Committee on December 02 and 16, 2021. The building committee for the Township consists of**

1209 Hausman Road  
Suite A  
Allentown, PA 18104

610.366.2081

mksdarchitects.com

Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, and Ed Ebenbach.

- Topics of discussion included the following:
  - Geothermal heat pump system
  - Photovoltaic panels for electricity production
  - Required subsurface testing for the building (geotechnical, stormwater infiltration)
  - General layout of the floor plan
  - Desired finish materials floor and walls
  - Desired gymnasium equipment
  - Licensing the kitchen with the Bucks County Health Department
- MKSD architects will continue to meet with the Building Committee on a biweekly basis.
- MKSD architects intends to present the Design Development documents to the Board of Supervisors at the January 18, 2022 meeting.

[For Issuance at Board of Supervisors' Meeting 11/16/2021]

- MKSD architects met with the Doylestown Township Building Committee on October 20, 2021 and November 04, 2021. The building committee for the Township consists of Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, and Ed Ebenbach.
- Topics of discussion included reviewing the revised floor plans based on the comments and Board of Supervisors' vote 9/28/21, considerations for a generator, utilities (electrical, sanitary, water, telecom), use of the kitchen, desired gymnasium equipment, and sustainability (in response to the EAC's letter).
- MKSD architects will continue to meet with the Building Committee on a biweekly basis.
- MKSD architects intends to present the Design Development documents to the Board of Supervisors during the regularly scheduled meeting January 18, 2022.

[For Issuance at Board of Supervisors' Meeting 10/19/2021]

- MKSD architects and Ballard\*King met with the Doylestown Township Building Committee on September 24, 2021. The building committee for the Township consists of Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, and Ed Ebenbach. The purpose of the meeting was to prepare for the Special Board of Supervisors' Meeting on September 28, 2021.
- MKSD architects and Ballard\*King presented to the Board of Supervisors on September 28, 2021. The Supervisors selected a design option and the design team will move forward with the project.

[For Issuance at Board of Supervisors' Meeting 09/21/2021]

- No meetings since the last report.
- Design team continued to prepare for the Board of Supervisors' meeting September 28, 2021.

[For Issuance at Board of Supervisors' Meeting 08/17/2021]

- MKSD architects and Ballard\*King have met with the Doylestown Township Building Committee on August 10, 2021. The building committee for the Township consists of Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, and Ed Ebenbach.
- MKSD and Ballard\*King are preparing for a presentation to the Board of Supervisors' and the residents in September. The presentation will be a continuation of the June meeting to the Supervisors and residents. MKSD will present a fourth option for the floor plan, renderings, and sustainability options.

[For Issuance at Board of Supervisors' Meeting 07/20/2021]

- MKSD architects and Ballard\*King presented to the Doylestown Township Board of Supervisors on June 15, 2021.
- MKSD had a conference call with Stephanie Mason, Dave Tomko, and Karen Sweeney on July 8 to debrief from the 6/15 meeting and prepare for the next presentation in September.
- MKSD intends to meet with the Building Committee in August to present the draft presentation for the September BOS meeting.

[For Issuance at Board of Supervisors' Meeting 06/15/2021]

- MKSD architects and Ballard\*King have met with the Doylestown Township Building Committee on June 8, 2021. The building committee for the Township consists of Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, and Ed Ebenbach.
- MKSD and Ballard\*King are preparing for the presentation to the Board of Supervisors' and the residents on June 15. The presentation will consist of the project's background, timeline, site location, multiple options, cost estimates, and operational revenue and expense estimates.
- Ballard\*King prepared and presented the Operations Analysis and Operations Budget. The Analysis consists of assumptions regarding the operations, hours of the building, fee schedule, and programming of the building. The Budget is a through breakdown of assumed expenses, revenue, rentals, and staffing.

[For Issuance at Board of Supervisors' Meeting 05/18/2021]

- MKSD architects and Ballard\*King have met with the Doylestown Township Building Committee on April 20 and May 4, 2021. The building committee for the Township consists of Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, and Ed Ebenbach.
- MKSD presented three programs/schematic plans at the meeting on April 20<sup>th</sup>. Option 1 included a program with three multi-purpose rooms and an 8,000 square foot gymnasium. Option 2 included a program with two multi-purpose rooms and a 6,400 square foot gymnasium. Option 3 was three multi-purpose rooms and no gymnasium. All three options were analyzed assuming the site will be at the existing tennis courts adjacent to the municipal building. Based on the projected project costs, the Township requested MKSD to develop Option 3.
- MKSD presented two revisions to Option 3 at the May 4<sup>th</sup> meeting. After discussion on the desire for a gymnasium, the Township asked MKSD to develop and present three options at the June 15 Board meeting. The first option will be a plan with two multi-purpose rooms and the 6,400 square foot gymnasium. The second option will be three multi-purpose rooms with the 8,000 square foot gymnasium. The last option will be three-multipurpose rooms and no gymnasium. Ballard\*King will present operational and payback costs for these three options at the Board meeting.

[For Issuance at Board of Supervisors' Meeting 04/20/2021]

- MKSD architects and Ballard\*King have met with the Doylestown Township Building Committee on March 23, March 25, and April 6, 2021. The building committee for the Township consists of Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, and Ed Ebenbach.
- Based on the feedback from the stakeholder, focus group, and public meetings, MKSD architects presented two program options for the building on March 23. Both options included a lobby, gymnasium, multi-purpose room, catering/warming kitchen, and ancillary spaces. The second option included an additional multi-purpose room and outdoor storage.
- Based on the feedback from the March 23<sup>rd</sup> meeting, MKSD architects presented a third program option at the March 25<sup>th</sup> meeting. This option eliminated the

outdoor storage and added a multi-purpose room. The total square footage for this option is 17,262.

- The Township requested a rough order of magnitude cost opinion for the project (construction costs plus soft costs). MKSD architects provided a cost opinion.
- The Township requested MKSD architects to investigate moving the building to the existing tennis courts.
- The Township requested MKSD architects provide two layouts. The first layout will be the program presented at the March 25<sup>th</sup> meeting. The second option will exclude a gymnasium and enlarge one of the multi-purpose room. These layouts will be presented at the April 20<sup>th</sup> design meeting. These two options will be presented by MKSD architects and Ballard\*King on June 15 to the Board of Supervisors.

[For Issuance at Board of Supervisors' Meeting 03/16/2021]

- MKSD architects and Ballard\*King have met with the Doylestown Township Building Committee on February 23, 2021 and March 9, 2021. The building committee for the Township consists of Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, and Ed Ebenbach.
- The February 23<sup>rd</sup> design meeting discussed the project assessment and feasibility study, specifically the public input portion of the project.
- MKSD architects and Ballard\*King held the fifth and final Boards & Committees interview on February 18, 2021.
- The Neighbors' Focus Group meeting occurred on February 10, 2021. Twelve neighbors participated in the meeting.
- The Potential Community Partners meeting took place on February 23, 2021. One potential partner participated in the meeting.
- The Potential Athletic Partners meeting took place March 3, 2021. Four participants representing three organizations participated in the meeting.
- Potential Program Partners meeting took place March 2, 2021. Six organizations were represented in this meeting.
- The first of two public meetings took place February 25, 2021. Approximately 45 township residents participated in the meeting.
- All meetings/interviews were recorded and in the Township's possession.
- The last focus group meeting will take place March 12, 2021 with the Township's Administration.
- At the March 9<sup>th</sup> design meeting, the topic of discussion focused on the potential program of the building. MKSD and Ballard\*King will provide options for the design team to review and provide comment.

[For Issuance at Board of Supervisors' Meeting 02/16/2021]

- MKSD architects and Ballard\*King have met with the Doylestown Township Building Committee on January 26, 2021 and February 9, 2021. The building committee for the Township consists of Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, and Ed Ebenbach.
- The meetings discussion pertained to the project assessment and feasibility study, specifically the public input portion of the study.
- MKSD architects and Ballard\*King held 4 of the 5 Boards & Committees interviews on February 2<sup>nd</sup> and 3<sup>rd</sup>. The last interview will take place February 18<sup>th</sup>.
- The Neighbors' focus group meeting will take place on February 10, 2021.
- The following is the schedule for the remaining interviews/meetings:
  - Potential Community Partners: February 16 & 22, 2021 at 7:00 PM
  - Potential Athletic Partners: February 17, 2021 at 7:00 PM
  - Program Partners: February 23, 2021 at 7:00 PM
  - Public Meeting (1 of 2): February 25, 2021 at 7:00 PM

- Township Administration: TBD
- The interview/focus group meeting questions are being prepared by Ken Ballard of Ballard\*King.
- The final Needs Analysis and Feasibility Study is scheduled to be delivered to the Board of Supervisors in late April 2021.

[For Issuance at Board of Supervisors' Meeting 01/19/2021]

- MKSD architects and Ballard\*King have met with the Doylestown Township Building Committee on December 22, 2020 and January 12, 2021. The building committee for the Township consists of Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, and Ed Ebenbach.
- The majority of the discussion at the bi-weekly meetings pertains to the project assessment and feasibility study.
- The first step in the project assessment and feasibility study is to conduct interviews with various stakeholders and focus groups. The first stakeholder interviews were conducted with the Board of Supervisors on January 5<sup>th</sup> and 6<sup>th</sup>, 2021. The following is the schedule for the remaining interviews/meetings:
  - Boards & Committees: February 2, 3, and 4, 2021
  - Neighbors: February 10, 2021 at 7:00 PM
  - Potential Community Partners: February 16, 2021 at 7:00 PM
  - Potential Athletic Partners: February 17, 2021 at 7:00 PM
  - Program Partners: February 23, 2021 at 7:00 PM
  - Public Meeting (1 of 2): February 25, 2021 at 7:00 PM
  - Township Administration: TBD
- The interview questions are being prepared by Ken Ballard of Ballard\*King.
- The final Needs Analysis and Feasibility Study is scheduled to be delivered to the Board of Supervisors in late April 2021.

[For Issuance at Board of Supervisors' Meeting 12/15/2020]

- MKSD architects and Ballard\*King have met with the Doylestown Township Building Committee on October 15, November 23, and December 8, 2020. The building committee for the Township consists of Barbara Lyons, Ryan Manion, Stephanie Mason, David Tomko, Karen Sweeney, and Ed Ebenbach.
- The majority of the discussions at the meetings pertain to schedule and the project assessment and feasibility study. Specifically, the project parameters have been discussed which include capital funding, operational expenses, site, site amenities, and expectations on public input and methods.
- The design team is currently preparing for the stakeholder, focus group, and community meetings that will take place January and February 2021.
- The final Needs Analysis and Feasibility Study is scheduled to be delivered to the Board of Supervisors in late April 2021.



## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 1**

October 15, 2020

Distributed: October 26, 2020  
Meeting Location: Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
**David Tomko, Director of Operations**  
**Ryan Manion, Board of Supervisors**  
**Barbara Lyons, Board of Supervisors**  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Silvia Hoffman**  
**Ryan Kennedy**

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### I. General:

- a. Introductions were made between the Township and design team.
- b. Communication Flow – MKSD requested that all correspondences from the Township to the design team copy Ryan Kennedy. On correspondences from the design team to the Township, Stephanie Mason, David Tomko, and Karen Sweeney will be the main points of contact.
- c. MKSD requested an update on the status of the site/civil consultant. David Tomko stated that proposals were received and are being reviewed.
- d. MKSD presented the preliminary schedule, which does not include input for the site/civil consultant. The following is a brief outline of the schedule discussed:
  1. Assessment and Feasibility Study                      October 2020 – February 2021
  2. Design Development Phase                              February 2021 – March 2021
  3. Construction Documents Phase                        March 2021 – June 2021
  4. Bidding Phase    June 2021 – August 2021
  5. Construction Phase                                        September 2021 – August 2022

### II. Project Assessment and Feasibility Study

- a. Project Assessment Questions
  1. Township Project Team – Ken Ballard talked about the Township’s project teams and their roles. The teams will be the building committee, managers, and Board of Supervisors. Decisions will start with the building committee.
  2. Existing Information Validation – Ken Ballard noted that the RFP was specific regarding desired amenities, square footage of the building, and type of construction. Ken asked if these three factors are locked or is there room for flexibility based on future feedback. The Township stated additional amenities will be considered and the square footage of 12,000 square feet could possibly increase



(maximum of 15,000 sf based on site size). The type of construction (pre-engineered building) was based on the available funds.

3. Project Parameters/Limits

- Capital Funding – The Township stated that the project has a \$4 million limit. This limit includes all soft costs.
- Operational Expenses – Ken Ballard asked if the Township has an expectation for operation expenses, either a percentage or dollar value. Stephanie Mason asked what is realistic based on the Township proposed program. Ken stated that “dry sites” (no pools) can expect 50-75% with fitness equipment. Without fitness equipment at a dry site, expectations are less than 50%. Stephanie Mason mentioned that there is no expectation for fitness equipment. The Township foresees group instructional fitness classes and outside organizations renting parts of the facility. Karen Sweeney noted that the facility should be multifunctional to allow multiple groups to use the facility. Ballard\*King will be able to provide more information based on the decided amenities and programs.
- Site – Ken Ballard asked if the site location was finalized. The Township stated the site has been determined and will not change.
- Site Amenities – Ken Ballard asked about anticipated site amenities. The Township stated the possibility of a covered outdoor space, relocated tot lot, and restrooms accessible from the exterior of the building for people using the park.
- Public Input Expectations and Methods – The Township will help drafting the plan for public input. The Township mentioned that there is a Park & Recreation Comprehensive Master Plan that will be adopted by the Township in the next few months. The Township stated that the design team could review the draft master plan for information regarding this project. Based on the Township’s current COVID-19 response, the meeting with the public will most likely be virtual.

4. Project Schedule – Ken Ballard noted that based on the time of the year, it is unknown if having the public meetings between Thanksgiving and the Christmas holiday would be prudent. This will be discussed at future meetings.

b. Feasibility Study Steps

1. Market for the Center – Ken Ballard requested that the Township fill out the Project Information Needs form that was attached to the agenda. This will allow Ballard\*King to understand the township’s demographics and what facilities exist in Doylestown Township that are comparable to the Community Center.
2. Public Input – Ken Ballard requested the Township begin to think about who would be involved in the community and stakeholder meetings and focus groups

III. Next Meeting:

- a. To be determined.

IV. Next Steps

- a. Doylestown Township to provide Project Information Needs.



- b. Doylestown Township to provide Parks & Recreation Comprehensive Master Plan.

**Notice to attendees and recipients of meeting minutes:**

If any of the items included in the minutes are incomplete or incorrect, please promptly notify MKSD in writing. Failure to advise of such corrections within one week of issue date constitutes acceptance of all information contained therein as it is represented.



## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 2**

November 23, 2020

Distributed: November 24, 2020  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
**David Tomko, Director of Operations**  
**Ryan Manion, Board of Supervisors**  
**Barbara Lyons, Board of Supervisors**  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Silvia Hoffman**  
**Ryan Kennedy**

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### I. General:

- a. MKSD requested an update on the status of the site/civil consultant. David Tomko stated that proposals were received and are being reviewed. Proposals for construction manager have been received and are being reviewed.
- b. MKSD presented a revised schedule for the Feasibility Study. The meetings with stakeholders, focus groups, and the public will take place in January 2021. The following is a brief outline of the schedule discussed:

1. Research and Data Collection	January – Mid-February 2021
2. Facility Programming Analysis	Mid-February – March 2021
3. Conceptual Design Phase	March 2021
4. BOS Review and Approval	April 2021
- c. The meetings for the Feasibility Study should be planned on being virtual. Stephanie referenced a Virtual Room that their consultant for another project prepared.

### II. Project Assessment and Feasibility Study

- a. Project Assessment Questions
  1. Township Project Team – Ken Ballard talked about the Township’s project teams and their roles. The teams will be the building committee, managers, and Board of Supervisors. Decisions will start with the building committee. By the next meeting the Township should have a list of people for the stakeholder and focus groups.
  2. Ken Ballard provided information on the meeting details.
    - Stakeholder meetings/interviews should be one-on-one.
    - Focus group meetings should be between 12-15 people and should include specific groups (e.g. seniors, neighbors, people with children). Length of meeting should be 1-1.25 hours maximum. Groups should be invited specifically.



- Community meeting is open to the public and should be a maximum of 2 hours in length.
  - 2-3 people from design team should be present at the stakeholder and focus group meetings.
  - If the Township invites a sports group, only 1-2 representatives should from the sports organization should attend.
  - It is recommended to send the interview/meeting questions in advance to allow the participants to prepare their remarks.
- b. Feasibility Study Steps
1. Market for the Center – Ken Ballard asked what the primary and secondary markets for the Community Center are. Doylestown Township is the primary market and Central Bucks School District is the secondary market.

III. Next Design Team Meetings:

- a. December 8, 2020 at 3:30
- b. December 22, 2020 at 3:30
- c. January 12, 2021 at 3:30
- d. January 26, 2021 at 3:30

IV. Next Steps

- a. Ballard\*King to review information received from Township.
- b. Doylestown Township to determine who will be invited to stakeholder and focus group meetings.

**Notice to attendees and recipients of meeting minutes:**

If any of the items included in the minutes are incomplete or incorrect, please promptly notify MKSD in writing. Failure to advise of such corrections within one week of issue date constitutes acceptance of all information contained therein as it is represented.





## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 3**

December 08, 2020

Distributed: December 10, 2020  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
**David Tomko, Director of Operations**  
**Ryan Manion, Board of Supervisors**  
**Barbara Lyons, Board of Supervisors**  
**Karen Sweeney, Dir. of Parks & Recreation**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Ryan Kennedy**

Distribution

Ed Ebenbach, Budget Analyst  
Silvia Hoffman

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### I. General:

- a. MKSD requested an update on the status of the site/civil consultant. David Tomko stated that proposals were received and are being reviewed. Proposals for construction manager have been received and are being reviewed.
- b. The Township requested a project update monthly from MKSD. The report should be sent to the Township every Friday before the third Tuesday of the month.

### II. Project Assessment and Feasibility Study

- a. Input on Project – MKSD stated that the purpose of this meeting would be to establish the “who” of the stakeholder and focus group meetings.
  1. Karen Sweeney provided a draft of the proposed stakeholder and focus meeting entities (attached to minutes for reference). Ken Ballard stated that the groups are well organized.
  2. Ken Ballard stated the Potential Community Partners should send one or two representatives from their organization.
  3. The Township stated that the Chamber of Commerce should be added to the Potential Community Partners.
  4. Barbara Lyons stated that Mr. Lyons should be included on this list. She will follow up with him.
  5. Referencing the Program Partners, Karen Sweeney stated karate and kitchen groups should be included on this list.
  6. The Township asked if organizers of the local car shows should be included.
  7. Ken Ballard stated that Focus Groups do not have to include all community organizations. There is an opportunity for those not invited to attend the community meetings. It is important to get a good cross section of the community at the Focus Group meetings.



8. Ken Ballard stated that the focus groups will be presented with 5-6 questions to respond to.
9. The conversation at the focus group and community meetings should be building-centric (e.g. no conversation about the fields). The groups should be focused on what their interest is in the indoor space.
10. Karen Sweeny asked if veteran's groups should be invited. Ryan Manion agreed.
11. Ken Ballard stated it is important that the Community Center has a balanced role in the community (e.g. craft fairs, open gym). The Community Center serves a wide range of needs and expectations.
12. The "Stakeholder Forum/Neighbors" group should be reclassified as a Focus Group. Each "Neighbor" should have 1-2 representatives attend the meeting.
13. The stakeholder meetings should be individual meetings. Karen Sweeny asked if the stakeholders should get the questions ahead of time. Ken Ballard agreed and stated that he would provide the questions.
14. Stephanie Mason recommended Barbara Lyons prepare an introductory letter to set the expectations and parameters of the meetings. The letter will also include the questions that will be asked during the meetings, and Ken Ballard will prepare the questions for the letter. The Township is responsible to prepare the letter.
15. There are two public community meetings on the schedule. Ken Ballard stated that the first meeting should occur in late January. The second public meeting should occur towards the end of the feasibility study.
16. Ryan Kennedy asked Ken Ballard who from the design team should be at the meetings. Ken Ballard stated a representative from MKSD should be present to introduce the project. Ken Ballard will lead the questions and subsequent discussion.
17. The Township stated that the public meetings will require attendees to sign up in advance.
18. The Township stated they would like to add Doylestown Borough to the "Community Partners" list.
19. Stephanie Mason stated that she will contact the committees listed in "Board & Committee" to notify them to select their representative.
20. Karen Sweeney stated she will revise the draft document and reissue before the next Design Meeting on December 22, 2020.
21. Ryan Kennedy stated the stakeholder meetings should take place on the same day in succession. The Township should contact the stakeholders to see what days work with their schedule in early January 2021.

III. Next Design Team Meetings:

- a. December 22, 2020 at 3:30
- b. January 12, 2021 at 3:30
- c. January 26, 2021 at 3:30

IV. Next Steps

- a. Ballard\*King to provide questions for the meetings and provide to the Township.
- b. Doylestown Township to write introductory letter.
- c. Doylestown Township to revise the meeting list per the meeting and redistribute.

DOYLESTOWN TOWNSHIP  
NEW PARKS & RECREATION COMMUNITY CENTER  
MKSD PROJECT NO. 20.158



Attachments:

*Draft Proposed Meetings for Discussion (Stakeholder/Partner/Focus Group)* by Karen Sweeney

**Notice to attendees and recipients of meeting minutes:**

If any of the items included in the minutes are incomplete or incorrect, please promptly notify MKSD in writing. Failure to advise of such corrections within one week of issue date constitutes acceptance of all information contained therein as it is represented.



## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 4**

December 22, 2020

Distributed: December 22, 2020  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
David Tomko, Director of Operations  
Ryan Manion, Board of Supervisors  
**Barbara Lyons, Board of Supervisors**  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Silvia Hoffman**  
**Ryan Kennedy**

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### I. General:

- a. The list of proposed meetings was discussed. The list, prepared by Karen, was distributed by MKSD prior to the meeting via email. It was discussed that MKSD will use their Zoom account for the meetings.

### II. Meeting #1 Stakeholder Interviews – Board of Supervisors

- a. Board of Supervisor interviews will take place 1/5/21 and 1/6/21 at 4:00 PM and 4:45 PM.
- b. Ken Ballard will send out a revised list of questions for the Board of Supervisors the week of 12/28. Ken will send the questions directly to the Township for distribution.
- c. Stephanie will send an email to all Supervisors with an introduction and the letter prepared by Karen. MKSD will follow up with all Supervisors to schedule their interview on either 1/5/21 or 1/6/21 at 4:00 PM or 4:45 PM.

### III. Meeting #2 Stakeholder Interviews – Boards & Committees

- a. The five Boards & Committees will be Telecommunications, Park & Recreation, Environmental Advisory Council, Friends of Kids Castle Committee, and Ways & Means Committee. Their regularly scheduled meetings are 1/11, 1/12, 1/12, 1/25, and 1/27 respectively. Each of these committees will receive their questions and select their representative at their regularly schedule meeting; therefore, the interviews will take place the first week of February.
- b. Ken Ballard will send out a revised list of questions for these boards and committees.
- c. Karen will revise the distributed letter for this group.
- d. Dates and times for individual interviews to be determined at 1/12 design team meeting.

### IV. Meeting #3 Stakeholder Interview – Neighbors

- a. This stakeholder interview will be one interview with all neighbors.



- b. Karen will revise the distributed letter for this group.
  - c. Zoom meeting will take place 2/10/2021 at 7:00 PM.
  
- V. Meeting #4 Focus Group - Potential Community Partners
  - a. Karen will prepare letter for this group.
  - b. Zoom meeting will take place 2/16/2021 at 7:00 PM.
  
- VI. Meeting #5 Focus Group - Potential Athletic Partners
  - a. Karen will prepare letter for this group.
  - b. Zoom meeting will take place 2/17/2021 at 7:00 PM.
  
- VII. Meeting #6 Focus Group - Program Partners
  - a. Karen will prepare letter for this group.
  - b. Zoom meeting will take place 2/23/2021 at 7:00 PM.
  
- VIII. Meeting #7 Public Meeting (1 of 2)
  - a. The Township will notify the residents of this meeting.
  - b. Zoom meeting will take place 2/25/2021 at 7:00 PM.
  
- IX. Next Design Team Meetings:
  - a. January 12, 2021 at 3:30 PM
  - b. January 26, 2021 at 3:30 PM
  
- X. Next Steps
  - a. Township will email all Supervisors to announce interviews. MKSD will follow up with scheduling interviews.
  - b. Ken Ballard will provide list of questions for the Supervisors, Boards & Committees, and Neighbor meetings. Questions for Supervisors will be emailed to Township the week of 12/28/2020. Boards & Committees' questions due before 1/11/2021 Telecommunication meeting.
  - c. Karen will revise the letter for the groups listed above
  - d. The Township will publicize the public meeting.
  - e. MKSD will schedule the meetings in Zoom.

**Attachments:**

*Proposed Meetings for Discussion – 2<sup>nd</sup> Draft* by Karen Sweeney  
*Letter – Draft* by Karen Sweeney

**Notice to attendees and recipients of meeting minutes:**

If any of the items included in the minutes are incomplete or incorrect, please promptly notify MKSD in writing. Failure to advise of such corrections within one week of issue date constitutes acceptance of all information contained therein as it is represented.



## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 5**

January 12, 2021

Distributed: January 14, 2021  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
**David Tomko, Director of Operations**  
**Ryan Manion, Board of Supervisors**  
Barbara Lyons, Board of Supervisors  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Silvia Hoffman**  
**Ryan Kennedy**

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- I. Site/Civil/Construction Manger:
- a. Ryan Kennedy asked if there was an update on the site/civil or construction manager progress. The Township stated there was no update.
- II. Board of Supervisor Interviews:
- a. MKSD and Ballard\*King stated that the Board of Supervisor interviews took place January 5<sup>th</sup> and 6<sup>th</sup>. During the interviews a few of the Supervisors provided their suggestions on additional groups that should be invited to the Focus Group Meetings. Ryan Kennedy stated he will send the group a list of these suggestions after the meeting.
- III. Stakeholder Meeting – Boards & Committees
- a. The Township stated the questions for the Boards & Committees has been finalized and will be distributed to each board and committee at their regularly scheduled January meeting.
  - b. At the meeting each board and committee will select one member to be the designated representative. This representatives name and contact information will be relayed to MKSD in order to schedule the interview.
  - c. The members will have an option to have their interview on February 2, 3, or 4 at 4:00, 4:45, or 5:30 PM.
- IV. Remaining Stakeholder and Focus Group Meetings
- a. The Township is preparing the mailers for the remaining meetings.
  - b. Ken Ballard will prepare the list of questions for the Neighbors', Potential Community Partners, Potential Athletic Partners, and Program Partners meetings.
  - c. The following is the schedule for the remaining meetings:
    1. Neighbors – 2/10 at 7PM
    2. Potential Community Partners – 2/16 at 7PM



3. Potential Athletic Partners – 2/17 at 7PM
4. Potential Partners – 2/23 at 7PM

V. Public Meeting

- a. The Public Meeting will take place on 2/25 at 7PM.
- b. MKSD and Ballard\*King will discuss the best method for interviewing the public.

VI. Additional Interviews

- a. Karen Sweeney asked if Township Administration will be interviewed. Ken Ballard stated it would be beneficial to hear their comments after the other interviews. The Administration interviews will take place in early March 2021.
- b. Karen Sweeney will provide a list of administration personnel that should be part of the interview process.

VII. Next Design Team Meetings:

- a. January 26, 2021 at 3:30 PM
- b. February 09, 2021 at 3:30 PM
- c. February 23, 2021 at 3:30 PM

VIII. Next Steps

- a. Ken Ballard will provide list of questions for the remaining meetings.
- b. The Township will prepare the announcement for the remaining meetings.
- c. Karen Sweeney will provide a list of administration personnel that should be interviewed.
- d. MKSD and Ballard\*King will discuss the best method for hosting the public meeting.

Attachments:

None

**Notice to attendees and recipients of meeting minutes:**

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## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 6**

January 26, 2021

Distributed: January 29, 2021  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
**David Tomko, Director of Operations**  
**Ryan Manion, Board of Supervisors**  
**Barbara Lyons, Board of Supervisors**  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

Silvia Hoffman  
**Ryan Kennedy**

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### I. Board of Supervisor Interviews:

- a. [From 01/12/2021 Meeting] MKSD and Ballard\*King stated that the Board of Supervisor interviews took place January 5<sup>th</sup> and 6<sup>th</sup>. During the interviews a few of the Supervisors provided their suggestions on additional groups that should be invited to the Focus Group Meetings. Ryan Kennedy stated he will send the group a list of these suggestions after the meeting.
- b. [Update 01/26/2021] Ryan Kennedy sent the list of groups to the Township. The Township reviewed the list and added groups.

### II. Stakeholder Meeting – Boards & Committees

- a. Ryan Kennedy stated that 3 of the 5 interviews have been scheduled. The Township stated that the Kids Castle and Ways & Means meetings are this week. MKSD will reach out to the chairs of each committee to get the contact information for the designated representative.

### III. Remaining Stakeholder and Focus Group Meetings

- a. Ken Ballard prepared the list of questions for the Neighbors', Potential Community Partners, Potential Athletic Partners, and Program Partners meetings. The Township reviewed the questions.
- b. The following is the schedule for the remaining meetings:
  1. Neighbors – 2/10 at 7PM
    - The invitation letter was sent out 1/25.
    - Attendees will RSVP with MKSD.
  2. Potential Community Partners – 2/16 at 7PM
    - Letter has been written and will be sent soon.
  3. Potential Athletic Partners – 2/17 at 7PM
    - Letter has been written and will be sent soon.



4. Potential Program Partners – 2/23 at 7PM
  - Letter has been written and will be sent soon.

IV. Public Meeting

- a. The Public Meeting will take place on 2/25 at 7PM.
- b. MKSD and Ballard\*King discussed the best method for interviewing the public.
  1. Ryan Manion suggested Zoom Webinar. Ken Ballard stated that the attendees should be able to speak. MKSD and Ballard\*King will investigate the functions of Zoom.
  2. Stephanie asked how the invitations should be disseminated (e.g. press release, social media, website). Barbara Lyons stated there should be an article in the Herald.
  3. Ken Ballard stated there should be a general link that anyone can access, sign up, and get an access code to get on the Zoom call.
  4. Ken Ballard stated the meeting would start with a PowerPoint presentation to explain the project. This would include a site diagram for those who are not familiar with the project. Ken Ballard stated that questions could be asked with a polling function.
  5. Ken Ballard stated if the attendance is more than 40 participants, it may be helpful to use breakout spaces to talk to the public in groups of 10 or less. Using breakout spaces will require moderators in each room.

V. Additional Interviews

- a. [From 01/21/2021 Meeting] Karen Sweeney asked if Township Administration will be interviewed. Ken Ballard stated it would be beneficial to hear their comments after the other interviews. The Administration interviews will take place in early March 2021.
- b. [Update 01/26/2021] Karen Sweeney formulated a list of the Administrative personnel that should be part of the interview process. Karen Sweeney asked if this meeting should be a focus group or individual meetings. Ken Ballard stated if the group is small enough (8 currently on the list) it could be a focus group.

VI. Next Design Team Meetings:

- a. February 09, 2021 at 3:30 PM
- b. February 23, 2021 at 3:30 PM

Attachments:

None

**Notice to attendees and recipients of meeting minutes:**

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## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 7**

February 09, 2021

Distributed: February 14, 2021  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
**David Tomko, Director of Operations**  
**Ryan Manion, Board of Supervisors**  
Barbara Lyons, Board of Supervisors  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

Silvia Hoffman  
**Ryan Kennedy**

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### I. Stakeholder Meeting – Boards & Committees

- a. Ryan Kennedy stated that 4 of the 5 interviews were held the week of February 1. The interview with Friends of Kids Castle is 2/18.

### II. Remaining Stakeholder and Focus Group Meetings

- a. The following is the schedule for the remaining meetings:
  1. Neighbors – 2/10 at 7PM
    - The meeting will be recorded per a resident’s request. The Township had no objections. MKSD will send the recording to the Township after the meeting.
  2. Potential Community Partners – 2/16 and 2/22 at 7PM
    - Invitation was distributed by the Township.
    - A second meeting was scheduled for 2/22 at 7PM.
  3. Potential Athletic Partners – 2/17 at 7PM
    - Invitation was distributed by the Township.
  4. Potential Program Partners – 2/23 at 7PM
    - Invitation was distributed by the Township.

### III. Public Meeting

- a. The Public Meeting will take place on 2/25 at 7PM.
- b. Invitation was discussed. Karen Sweeney presented two options. The invitations have the same content but different fonts. The Township decided on the bolder font. The invitation will be sent out at the end of the week.
- c. MKSD and Ballard\*King discussed the proposed agenda.
  1. Introductions and background of the project. This part of the presentation could be presented by Barbara Lyons or Ryan Manion. Stephanie stated she would ask Barbara Lyons if she is willing to present.



2. The design team would present a plan of the site (via PowerPoint).
3. Ken Ballard will review the purpose of the feasibility study.
  - Market analysis
  - Public input
  - Component determination
  - Concept/site plan
  - Capital cost estimate
  - Operation Plan
4. The design team will present a general timeline for the project.
5. The presentation will proceed with poll questions via Zoom or another platform.
  - Ken will develop the questions and answers.
  - MKSD will investigate the polling software.
  - Potential polling questions include:
    - a. Is there a need for a community center?
    - b. Where do you currently go for indoor recreation needs?
    - c. What components need to be included?
    - d. How often would you use the facility?
    - e. What should the priority for a new community center?
6. The public will then be able to ask questions through the Zoom chat function. This portion will take approximately 30 minutes.
7. The presentation will conclude by reiterating the process and providing a general overview of the next steps in the project.
8. MKSD will record presentation and chat logs.
9. The Township and Design Team will have a practice session for this meeting on Friday, February 19, 2021 at 1PM EST.

IV. Next Design Team Meetings:

- a. February 19, 2021 at 1:00 PM (Public Meeting Practice Session)
- b. February 23, 2021 at 3:30 PM

**Attachments:**

Invitations to Public Visioning prepared by Township

**Notice to attendees and recipients of meeting minutes:**

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## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 8**

February 23, 2021

Distributed: February 26, 2021  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
**David Tomko, Director of Operations**  
Ryan Manion, Board of Supervisors  
**Barbara Lyons, Board of Supervisors**  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Silvia Hoffman**  
**Ryan Kennedy**  
**Megan Henry**  
**Susan Shipman**

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- I. Stakeholder Meeting – Boards & Committees
    - a. All five Boards & Committees have been interviewed.
  - II. Focus Group Meeting – Neighbors
    - a. Meeting was held 2/10. The meeting was recorded and in the Township’s possession.
  - III. Focus Group Meeting – Potential Community Partners
    - a. The two meetings were combined and rescheduled for 3/2 due to poor attendance.
  - IV. Focus Group Meeting – Potential Athletic Partners
    - a. Meeting was rescheduled to 3/3 due to poor attendance.
  - V. Focus Group Meeting – Potential Program Partners
    - a. Meeting will take place this evening.
  - VI. Focus Group Meeting – Township Administration
    - a. MKSD requested a date and time for this meeting. The Township agreed to 3/12 at 1:00 PM. MKSD will send out the Zoom link to all participants. There will not be any prepared questions for this meeting.
  - VII. Public Meeting
    - a. The Public Meeting will take place on 2/25 at 7PM.
    - b. MKSD and Ballard\*King discussed the proposed agenda.
      1. Silvia Hoffman will start the meeting and Megan Henry will preset the meeting’s guidelines and how to use Zoom.



2. Introductions and background of the project. This part of the presentation will be presented by Barbara Lyons.
3. Ken Ballard will review the purpose of the feasibility study.
  - Market analysis
  - Public input
  - Component determination
  - Concept/site plan
  - Capital cost estimate
  - Operation Plan
4. Silvia Hoffman will present a general timeline for the project.
5. The presentation will proceed with poll questions via Zoom.
  - Karen Sweeney would like to replace the question “Is a community center needed in the Township?”. Ken Ballard will propose another question to replace it.
6. The public will then be able to ask questions through the Zoom chat function. This portion will take approximately 30 minutes.
7. The presentation will conclude with Barbara Lyons providing a general overview of the next steps in the project.
8. MKSD will record the presentation and chat logs.

VIII. Next Design Team Meetings:

- a. March 9, 2021 at 3:30 PM
- b. March 23, 2021 at 3:30 PM
- c. April 6, 2021 at 3:30 PM

**Attachments:**

None

**Notice to attendees and recipients of meeting minutes:**

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## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 9**

March 09, 2021

Distributed: March 9, 2021  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
David Tomko, Director of Operations  
Ryan Manion, Board of Supervisors  
Barbara Lyons, Board of Supervisors  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Silvia Hoffman**  
**Ryan Kennedy**  
**Megan Henry**

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- I. Discussion took place as to the Township Administration Interviews set for March 12.
    - a. MKSD to send out an email to Administrators invited to get 'food for thought' for the discussion Friday. IE: what does this building mean to you and the community.
  
  - II. We are near the end of the phase 1 of the feasibility study and will start next week on the program for the facility. The facility should be approximately 15,000 s.f. max.
    - a. Currently Gymnasium space and meeting space are the main components that we have heard the community wants in the building.
    - b. Meeting space must be 'multi-use' and will be used for all age groups and a variety of functions such as:
      1. Activities
      2. Private events
      3. Parties
      4. Fitness functions
      5. Educational programs and other community needs.
    - c. Kitchen space was also a higher priority.
    - d. Will need storage space for athletic equipment accessible from gym and program storage space:
      1. Dog training equipment
      2. Arts and Crafts
      3. Tables and chairs
      4. Other storage needs (Karen will send to MKSD and B\*K a few program calendars)
    - e. Utility Spaces required:
      1. Janitor closet



2. Electrical closet
3. Data closet
4. Restrooms

- f. MKSD to explore the option for potential rentable storage space that is accessed from the outside of the building for various groups.
- g. MKSD to explore the option for outdoor accessed restrooms.
- h. MKSD to explore maintaining space for an outdoor 'pavilion' adjacent to the building with potential access from the warming kitchen. Outdoor covered space will increase the flexibility and appeal of the facility.
- i. It was decided that a concession stand or access to the warming kitchen is not necessary.
- j. Bleachers were discussed. MKSD will investigate the potential floor space impact of 2-3 rows of bleachers on one side.
- k. Flooring in the gym will be a critical decision item and must be able to adapt to both an athletic setting and a multi-use setting.

III. Emergency Shelter:

- a. MKSD will look into what it would take to qualify this building as an emergency shelter. A generator will potentially be part of the program.

IV. Next Design Team Meetings:

- a. March 23, 2021 at 3:30 PM
- b. April 6, 2021 at 3:30 PM

**Attachments:**

None

**Notice to attendees and recipients of meeting minutes:**

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## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 10**

March 23, 2021 & March 25, 2021

Distributed: March 30, 2021  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
**David Tomko, Director of Operations**  
**Ryan Manion, Board of Supervisors**  
**Barbara Lyons, Board of Supervisors**  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Silvia Hoffman**  
**Ryan Kennedy**  
**Megan Henry**

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### I. March 23, 2021 Meeting

- a. MKSD presented two potential program lists for the building. The first program includes a welcome desk, shared office space, gymnasium, gymnasium storage, one multi-purpose room, multi-purpose storage, lobby, catering/warming kitchen, restrooms, shower rooms, restrooms accessible from the exterior, janitor's closet, and electrical/data room. The second option has the same program as the first as well as an additional multi-purpose room, a viewing mezzanine above the gym, an outdoor covered area, and outdoor rentable storage. The base program will result in a total square footage of 15,479, and the second option will result in a total square footage of 20,243.
  1. Ken Ballard noted that the volleyball court should be 60' x 30' in lieu of 59' x 30'.
  2. Ken Ballard noted the potential bleacher location should be investigated based on the court layouts.
  3. Karen Sweeney prefers the movable bleachers that fold up against the wall. Karen would like to have a learning tennis court in this space (36' x 18').
  4. The Township noted that the multi-purpose room in their former facility was 40' x 60' (2,400 SF). The multi-purpose room being scheduled for option 1 is 1,500 SF. The room may need to grow larger based on programming. MKSD recommended that the multi-purpose room grow to 2,000 SF with an operable partition to create two 1,000 SF program spaces. The Township agreed. The additional multi-purpose room in the second option could be 1,000 SF.
  5. The Township noted that the original floor plan from the previous study had two multi-purpose rooms side by side. This was ideal, and there could be an operable partition dividing the space.
  6. The Township noted that program space was a higher priority than mezzanine space.



7. Dave Tomko suggested adding a second level to the building and perhaps not finishing it at first to save cost. MKSD explained the advantages of keeping the building as one story.
8. Dave Tomko asked what is the building's footprint and how does it affect the site and parking. Dave noted that parking is at a premium at this site. Stephanie noted the possibility on getting zoning relief on the size of the parking stalls (9' x 18' in lieu of 10' x 20'). MKSD noted that the civil engineer or township engineer needs to assist in laying out the site. The Township stated they could approve the civil engineer's proposal at the next Board of Supervisor's meeting.
9. When the building is placed on the site, there should be consideration as to future expansion.
10. The Township noted that the data room will need to be larger than 100 SF if the space will also storage A/V equipment.
11. The Township asked if the restrooms would be individual or gang restrooms. The Township stated they would prefer individual restrooms. MKSD stated this was more expensive but can be investigated.
12. Ken Ballard noted that costs should be looked at in terms of the project as opposed to solely the construction cost. MKSD stated that they can start to prepare a rough order of magnitude opinion of cost to the project if the program is agreed upon.
13. MKSD presented a spatial relationship diagram.
14. MKSD presented a revised schedule. MKSD will present two plans on April 6. Based on the comments received, MKSD will revise the plans by April 13. The second public meeting should take place late April or early May. The Feasibility Study can potentially be delivered to the Township in late May.
15. Another meeting will be scheduled for March 25 to present the programs to Barbara Lyons and Ryan Manion.

II. March 25, 2021 Meeting

- a. MKSD presented the program spreadsheet.
- b. Barbara Lyons noted that the Board agreed upon a maximum square footage of 15,000 SF. The Township noted that the previous study did not include square footage for corridors and circulation and ancillary spaces. MKSD noted that the square footages for most of the spaces presented are a minimum size required for the spaces to be functional.
- c. Stephanie Mason noted that the Township discussed borrowing \$4.2M for the project and had a maximum project cost of \$4.9M.
- d. The Township stated that there will not be any storage (interior or exterior) for outside organizations.
- e. The Township's Building Committee will meet privately to discuss how to proceed.
- f. Based on the discussion, MKSD will provide a third program option (per the attachment) that provides one Multi-Purpose room at 2,000 SF (with operable partition), increases the Multi-Purpose Storage, and includes a third Multi-Purpose Room at 1,000 SF. This third program option has a total square footage of 17,262.

III. Next Design Team Meetings:

- a. April 6, 2021 at 3:30 PM



**NEW BUSINESS 3/25**

Building committee to meet offline to discuss

**Attachments:**

- Programming presentation (includes programming spreadsheet and spatial relationship diagrams) – Revised after 3/25 meeting
- Revised project schedule

**Notice to attendees and recipients of meeting minutes:**

If any of the items included in the minutes are incomplete or incorrect, please promptly notify MKSD in writing. Failure to advise of such corrections within one week of issue date constitutes acceptance of all information contained therein as it is represented.



## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 12**

April 20, 2021

Distributed: April 26, 2021  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
**David Tomko, Director of Operations**  
Ryan Manion, Board of Supervisors  
**Barbara Lyons, Board of Supervisors**  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Silvia Hoffman**  
**Ryan Kennedy**  
**Megan Henry**

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### I. Site

- a. The Township recommended the design team look at the existing tennis courts adjacent to the Municipal Building as another option for the building's site.
- b. The Township received a construction cost estimate from the Township's Engineer for a 17,00 square foot building at the tennis court site. The estimate was approximately \$1.2M without contingency. Based on cost estimates in 2019 for the New Britain Road site, this site would be less expense to develop.

### II. Review of Programs

- a. MKSD presented the revised program worksheet.
  1. Option 1 is the same from previous meetings. It includes a full-sized basketball court and three multi-purpose rooms. The overall square footage is 16,948.
  2. Option 2 is similar to option 1 except the gymnasium is 6,392 square feet in lieu of option one's 8,058 square foot gymnasium and there are only two multi-purpose rooms. The overall square footage is 15,543.
  3. Option 3 was requested by the Township. This option has no gymnasium and includes 3 multi-purpose rooms. The overall square footage is 10,340.

### III. Review of Plans

- a. MKSD presented the schematic site plan. The plan depicts future expansion. The existing site can potentially hold option 1 plus an additional gymnasium in the future. The civil engineer will be able to verify.
- b. The floor plan of Option 1 was presented. Barbara Lyons stated a shower is not needed because there is one in the Municipal Building. Ken Ballard stated a shower is a good feature to have in the building based on the programs. The gymnasium can accommodate one full-



sized basketball court, two volleyball courts, and three pickleball courts. There is space around the periphery for movable bleachers/chairs.

- c. The floor plan for Option 2 was presented. MKSD noted that the gymnasium can accommodate one full-sized basketball court, one volleyball court, and three pickleball courts.
- d. The floor plan for Option 3 was presented. Barbara Lyons stated that this option is the most feasible based on project cost. The Township noted that the toilet rooms accessible from the exterior should be on the west side of the building. The kitchen should be accessible from the parking lot. The shared office space could be decreased to around 200 square feet. Dave Tomko noted that the toilet rooms should be near the Lobby. Karen Sweeney noted that multi-purpose room 3 should have its own storage.

IV. Review of Cost Opinions

- a. MKSD presented the cost opinion for Option 3. MKSD reiterated that the bottom-line cost lacks certain soft costs. The Township noted that Land Development and Municipal Approvals and Permits are not applicable because the Township will waive the fees.

V. Next Steps

- a. MKSD will revise the floor plan based on the conversation.

VI. Next Design Team Meetings:

- a. May 4, 2021 at 3:30 PM

**Attachments:**

Doylestown Township Parks & Recreation Community Center presentation, dated April 20, 2021.

**Notice to attendees and recipients of meeting minutes:**

If any of the items included in the minutes are incomplete or incorrect, please promptly notify MKSD in writing. Failure to advise of such corrections within one week of issue date constitutes acceptance of all information contained therein as it is represented.



## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 12**

May 04, 2021

Distributed: May 09, 2021  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
**David Tomko, Director of Operations**  
**Ryan Manion, Board of Supervisors**  
**Barbara Lyons, Board of Supervisors**  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Silvia Hoffman**  
**Ryan Kennedy**  
**Megan Henry**

Slate Structural Engineering (Structural Engineer)

**Steve Montgomery**

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### I. Site

- a. Per the last meeting's conversation, MKSD shifted the building to the west to provide more parking on the east side of the building.
- b. Ed Ebenbach noted that the municipal building's footprint was incorrect. Dave Tomko stated the Township will ask the civil engineer for a revised site plan.
- c. Barbara Lyons asked if the space on the site plan marked as "Future Expansion" would be a multi-purpose gymnasium. MKSD stated yes. The site plan is showing a phase 2 and phase 3, which would be gymnasiums.

### II. Review of Programs

- a. MKSD presented the selected program from the previous meeting (option 3 – no gymnasium) and an alternate plan.
  1. Option 3 – This program contains three multi-purpose room and no gymnasium. The total square footage is 9,986.
  2. Option 3 Alternate – Based on MKSD's conversations with pre-engineered building manufacturer's, this program/plan squared off the northeast corner of the building. This would provide additional space within the building and allow for more efficient construction. The total square footage for this option is 11,601.

### III. Review of Plans

- a. MKSD presented the plans for both options (option 3 and 3 alternate).
  1. Option 3 – Since the last meeting, the exterior toilet rooms were moved from the south side of the building to the northwest. This puts the restrooms in closer



proximity to the park. The internal toilet rooms were moved to the west side of the building, which puts them in proximity to the front desk.

- Barbara Lyons asked if the external toilets would solve the lack of toilet issue with Kid's Castle. Karen Sweeney stated no.
2. Option 3 Alternate – This option reconfigured the building. The main entrance and office would be centrally located, and the multi-purpose rooms would flank the main entrance. The electrical and water utility rooms are relocated to the west side of the building. The kitchen was relocated between the lobby and multi-purpose room 1. Since the pre-engineered building manufacturers stated there would cost and constructability efficiency with a rectangular building, the northeast side of the building was squared off. MKSD is showing three meeting rooms in this space, although this space could be unfinished for future use or used as storage. MKSD noted that in both options, the roof would be a single slope since the intention is to build a gymnasium in the future.

#### IV. Review of Cost Opinions

- a. MKSD presented the cost opinions.
  1. Option 3 is approximately \$4,624,000. This construction cost does not include all soft costs.
  2. Option 3 Alternate is approximately \$5,027,750. This construction cost does not include all soft costs.

#### V. Additional Discussion

- a. Ryan Manion asked if the project would be more viable if the gymnasium would be in the initial phase and the multi-purpose rooms would be in future phases. This is based on feedback received from the meetings with the community. Karen Sweeney stated no. The multi-purpose rooms are more in demand to support the Township's parks and recreation programs. Ryan Manion stated that the appeal of the project from the beginning was the gymnasium.
- b. MKSD asked what programs would be supported in a large multi-purpose room. Karen Sweeney stated martial arts, dance, pickleball, youth instruction, skill development, basketball (with roll-away goals), dog training, and archery.
- c. Ken Ballard noted that the appeal of the large multi-purpose room is the ability to rent the space. If the Township intends to use this space for programs/sports that involve moving balls, the finishes will need to be durable. These types of finishes may lack the appeal of an organization wanting to rent the space.
- d. Barbara Lyons asked MKSD if they would provide cost estimates to construct the gymnasium future expansions. MKSD stated yes and they would still use \$250 per square foot.
- e. Ryan Manion reiterated that the first phase of the project should have a gymnasium. MKSD presented a plan from a past meeting that had two smaller multi-purpose rooms and a small gymnasium (6,600 SF). The total square footage of the building was approximately 14,000.
- f. MKSD suggested that 2 or 3 schemes could be presented at the June 15, 2021 Board of Supervisors Meeting. The first scheme could be the previous plan with two multi-purpose rooms and a smaller gymnasium. The second option could be Option 3 Alternate with a larger gymnasium. The third option could be Option 3 Alternate with no gymnasium.



- g. Ed Ebenbach stated he would start working on the debt service for these three options.
- h. Ken Ballard will present the operational and payback costs for these three options.
- i. The next design meeting will be canceled due to the Township being closed for the Primary Election. It was agreed that the next meeting will be one week prior to the Board of Supervisors meeting on June 15, 2021.

VI. Next Steps

- a. MKSD will revise the floor plans based on the meeting's conversation and send out the revisions by the end of the week.

VII. Next Design Team Meeting:

- a. June 8, 2021 at 3:30 PM

**Attachments:**

Presentation Packet, dated 2021.05.04

**Notice to attendees and recipients of meeting minutes:**

If any of the items included in the minutes are incomplete or incorrect, please promptly notify MKSD in writing. Failure to advise of such corrections within one week of issue date constitutes acceptance of all information contained therein as it is represented.

# DOYLESTOWN TOWNSHIP PARKS & RECREATION COMMUNITY CENTER

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## **TABLE OF CONTENTS**

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**01 PROGRAMMING**

**02 SCHEMATIC FLOOR PLANS**

**03 OPINION OF COST**



# 01

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## PROGRAMMING



**PROGRAM WORKSHEET : 20.158 Doylestown Township Community Center (05.04.21)**

DEPARTMENT/SPACE	Opt 3: No Gym			Alt. Opt 3: No Gym			NOTES
	# of Spaces	NSF	TOTAL NSF	# of Spaces	NSF	TOTAL NSF	
<b>1.0 Business Operations</b>							
Welcome Desk/Check in	1	122	122	1	122	122	13' long counter, adjacent to the Office space
Shared Office Space	1	199	199	1	200	200	Open Office for 2 people, counters, storage
<b>2.0 Multi-Use Space</b>							
Multi-Purpose Room 1 & 2	2	985	1,970	2	993.5	1,987	
Multi-Purpose Storage 1 & 2	1	445	445	1	445	445	for tables, chairs, supplies, access from hall and MP room
Multi-Purpose Room 3	1	2911	2,911	1	2984	2,984	
Multi -Purpose storage 3	1	413	413	1	291	291	
Meeting Room	0	0	0	3	344.33	1,033	
<b>4.0 General Building</b>							
Main Vestibule	1	118	118	1	100	100	Canopy for weather protection, visible from desk for security
Lobby	1	572	572	1	654	654	include vending machines? Lockers?
Catering/Warming Kitchen	1	353	353	1	415	415	Access to corridor and MP room for food service, equip. to be determined
Individualwomen ADA shwr/tlt room	1	75	75	1	75	75	shower only if required for an emergency shelter
Women's individual Toilet	1	54	54	1	54	54	
Men's individual Toilet	2	54	108	2	54	108	
Outdoor Access individual Toilet rooms	2	54	108	2	60	120	lockable, non-gender, high abuse materials (these may not count toward code required due to exterior access, but can count for the outdoor pavilion)
Janitor closet	1	221	221	1	147	147	cleaning supplies, paper, mop sink, vaccuum, etc, near exterior trash bins, include incoming sprinkler service
Electrical Room	1	147	147	1	100	100	
Data Closet	1	141	141	1	147	147	potentially grow size for video
General Building Storage	1	162	162	1	350	350	
Water	0	0	0	1	100	100	
<b>SF Subtotal:</b>			<b>8,119</b>			<b>9,432</b>	
<b>Grossing Factor</b>			<b>1.23</b>			<b>1.23</b>	
<b>TOTAL BUILDING SF AREA</b>			<b>9,986</b>			<b>11,601</b>	

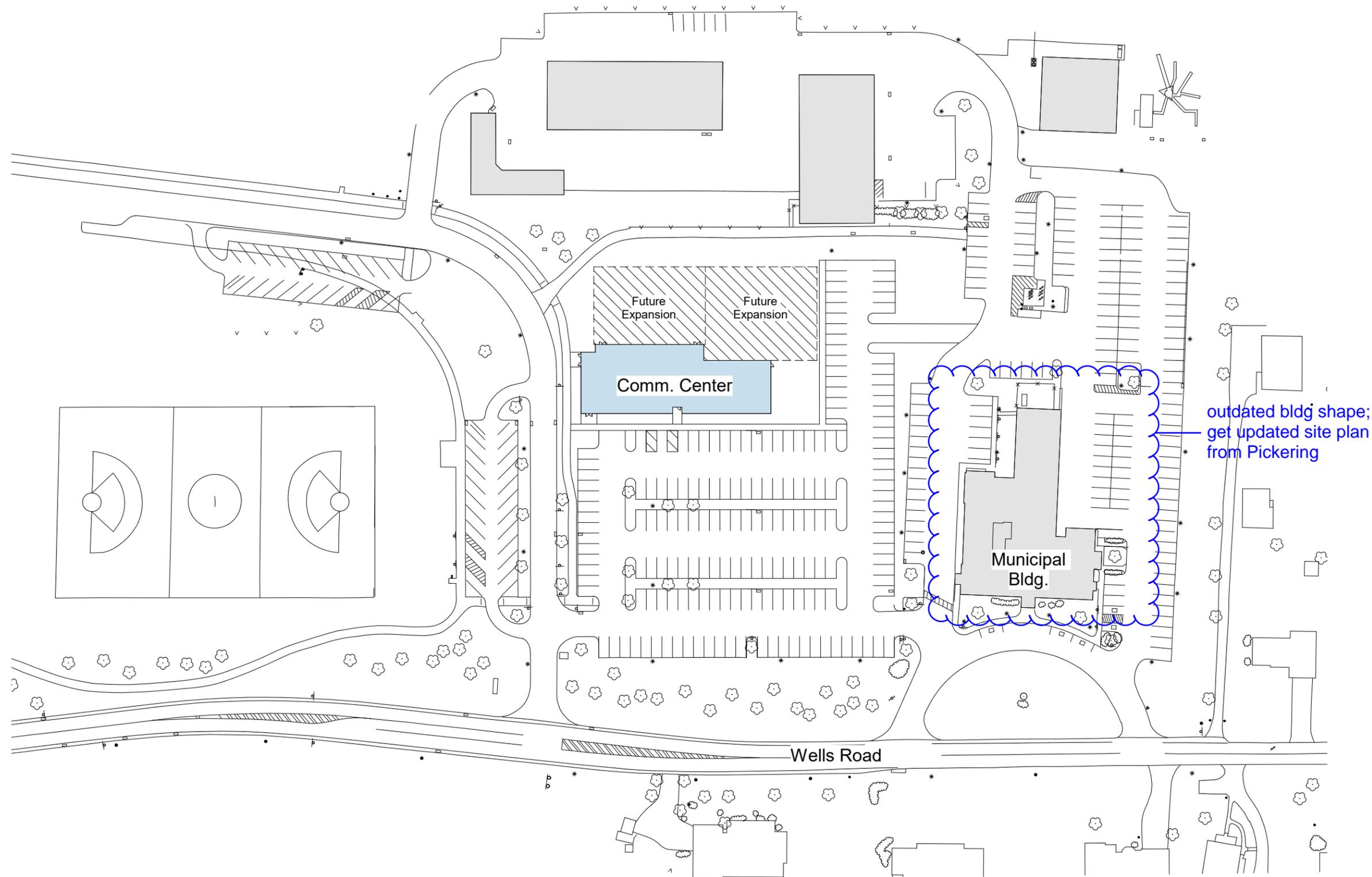


# 02

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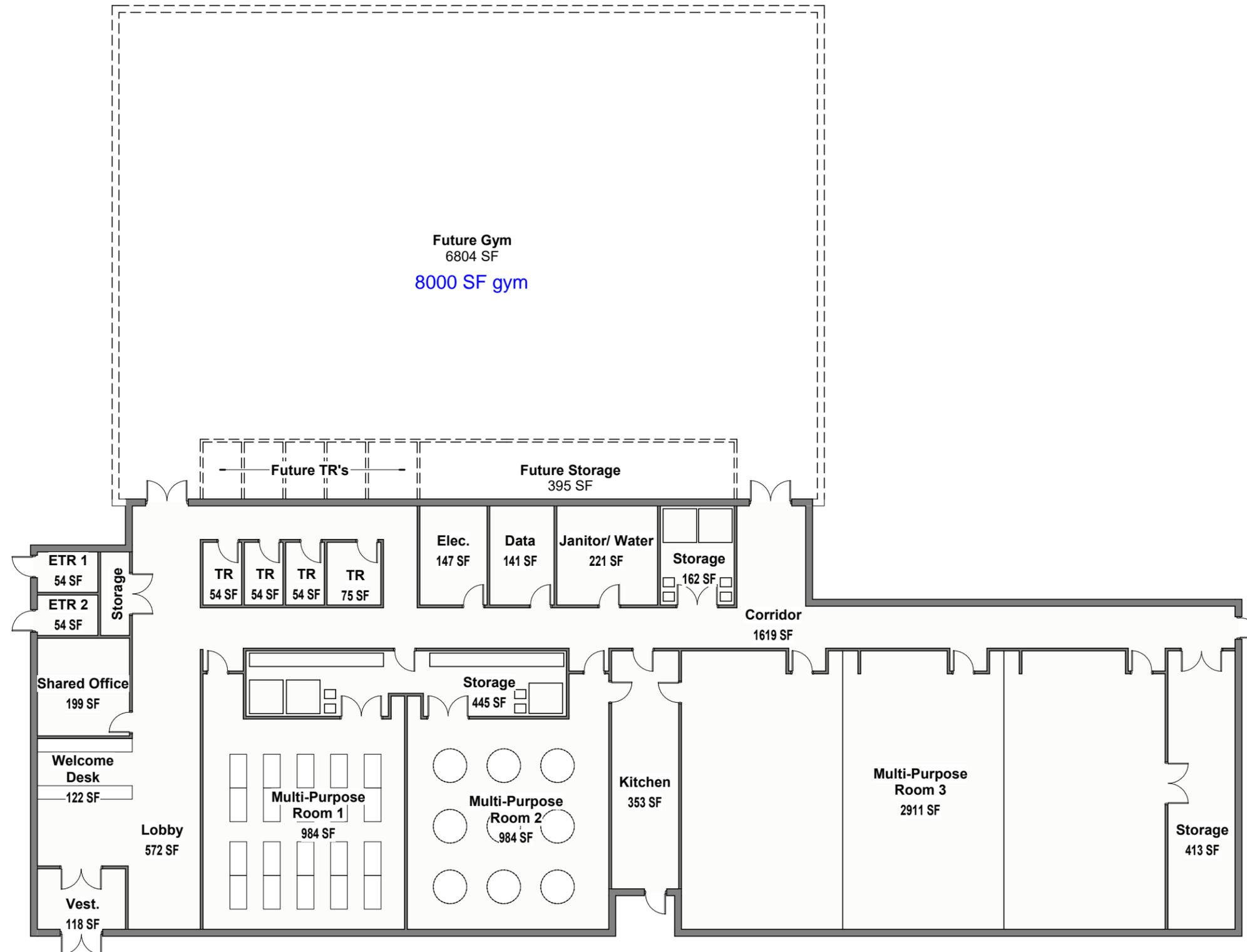
## SCHEMATIC FLOOR PLANS





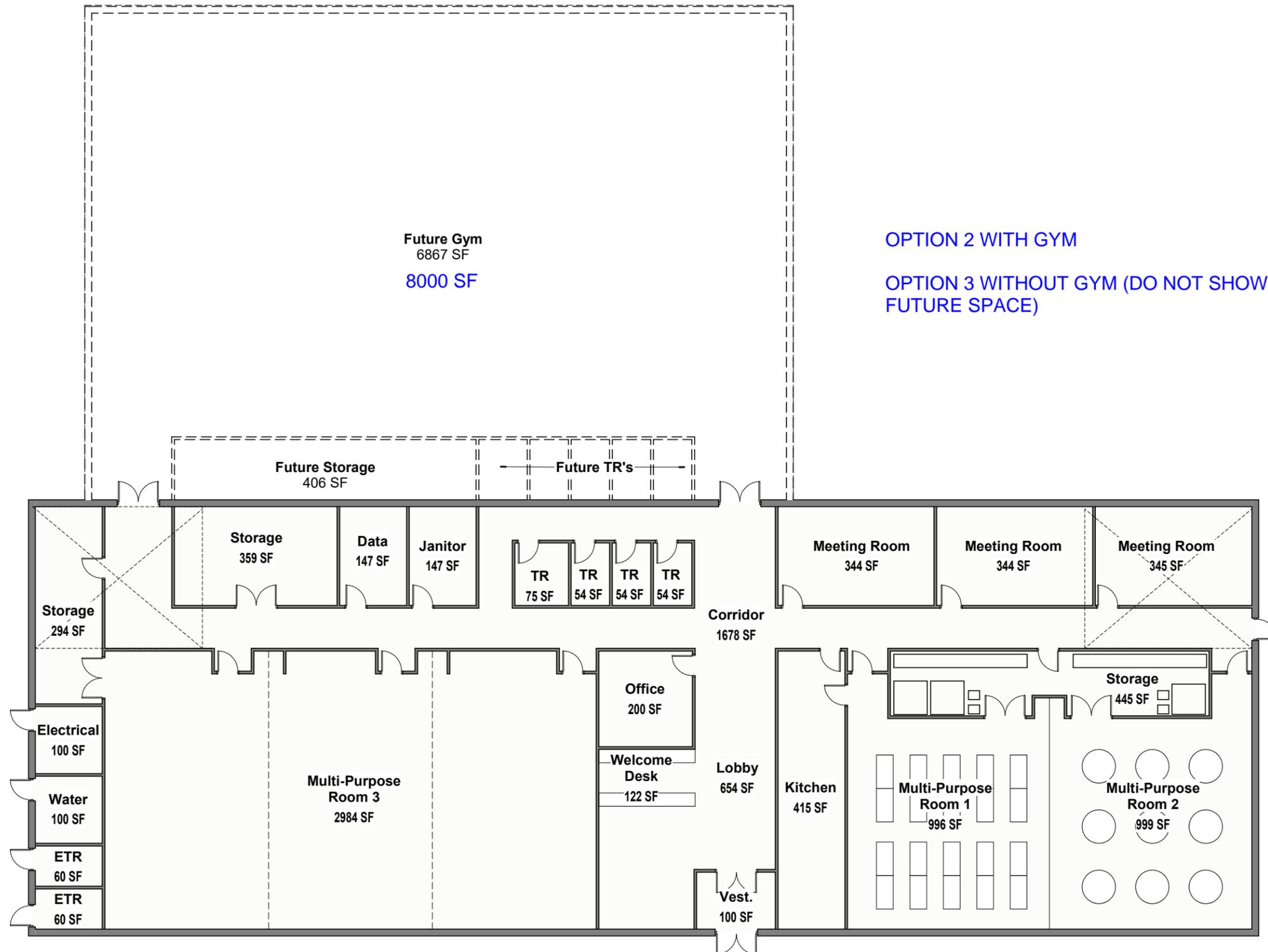
# SITE PLAN





# SCHEMATIC FLOOR PLAN





OPTION 2 WITH GYM

OPTION 3 WITHOUT GYM (DO NOT SHOW FUTURE SPACE)

# SCHEMATIC FLOOR PLAN



# 03

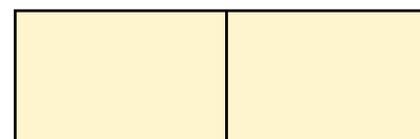
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## OPINION OF COST



Estimate Of Probably Construction Cost						
Construction Costs	Quantity	Unit	Total Unit Price	Grand Total Opt 3	Grand Total Alt	Comments
General, HVAC, Plumbing, Electrical, Fire Suppression	9,986	SF	\$ 250	\$ 2,496,500	\$ 2,900,250	Rough order of magnitude estimate
Site	1	LS	\$ 1,200,000	\$ 1,200,000	\$ 1,200,000	Estimate provided by the owner
<b>Construction Cost Subtotal</b>				<b>\$ 3,696,500</b>	<b>\$ 4,100,250</b>	
Soft Costs	Quantity	Unit	Total Unit Price	Grand Total	Grand Total	
Professional Fees (Architect/Engineers/B*K)	1	LS	\$ 163,000	\$ 163,000	\$ 163,000	
Civil Consultant	1	LS		\$ -	\$ -	Township to provide
Construction Manager Fees	1	LS	\$ 147,860	\$ 147,860	\$ 147,860	Estimate 4%
Geotechnical & Phase I Site Assessment	1	LS	\$ 11,090	\$ 11,090	\$ 11,090	Estimate
Insurance, Taxes, Fringes	1	LS		\$ -	\$ -	Township to provide
Furniture, Fixtures & Equipment	1	LS	\$ 60,000	\$ 60,000	\$ 60,000	Estimate (assume \$40,000 for furniture, \$20,000 for residential grade appliances)
Land Development Fees	1	LS		\$ -	\$ -	Civil consultant to provide
Loan/Finance Fees	1	LS		\$ -	\$ -	Township to provide
Municipal Approvals and Permits	1	LS		\$ -	\$ -	Township to provide
Builder's Risk Insurance	1	LS		\$ -	\$ -	Township to provide
Construction Testing	1	LS	\$ 29,572	\$ 29,572	\$ 29,572	Estimate
Testing, Adjusting, and Balancing	1	LS	\$ 14,786	\$ 14,786	\$ 14,786	Estimate
Security & Technology	1	LS		\$ -	\$ -	Vendor to provide
Utility Costs	1	LS		\$ -	\$ -	Civil consultant to provide
Sewer and Water Tap-In Fees	1	LS		\$ -	\$ -	Civil consultant to provide
Legal Fees	1	LS	\$ 10,000	\$ 10,000	\$ 10,000	Estimate
Printing	1	LS	\$ 5,000	\$ 5,000	\$ 5,000	Estimate
<b>Soft Cost Subtotal</b>				<b>\$ 441,308</b>	<b>\$ 441,308</b>	
Total Project Cost						
Subtotal (Construction + Soft Costs)				\$ 4,137,808	\$ 4,541,558	
Escalation	0.5	Years	3.5%	\$ 72,412	\$ 72,412	
Contingency (Design & Construction)	1	LS	\$ 413,781	\$ 413,781	\$ 413,781	10%
				<b>\$ 4,624,000</b>	<b>\$ 5,027,750</b>	<b>*Does not include above-referenced owner/ consultant supplied fees (as indicated above in yellow)</b>

This Opinion of Probable Cost of the Work is an estimate of the probable cost based on historical data and professional opinion; however, this Opinion of Cost is not a guarantee. Estimates are subject to change based on industry climate and actual costs may vary.



Township or other consultant provided information





## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 13**

June 08, 2021

Distributed: June 15, 2021  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
**David Tomko, Director of Operations**  
Ryan Manion, Board of Supervisors  
**Barbara Lyons, Board of Supervisors**  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Silvia Hoffman**  
**Ryan Kennedy**  
Megan Henry  
**Isaac Buxton**

Slate Structural Engineering (Structural Engineer)

Steve Montgomery

- 
- I. Discussion of Presentation for BOS Meeting 6/15/21
- a. The meeting will be held at 7:00 PM on 6/15. The Township will send MKSD and B\*K a link to enter the meeting via Zoom.
  - b. Barbara Lyons will provide opening remarks regarding the background of the project.
  - c. The Township requested an existing site plan is presented to orient the Board and public. MKSD will add this to the presentation. The Township requested the new site plan include more labels to help orient the Board and public (e.g. "Wells Road", "Kids Castle", "Field 1").
  - d. The building options should be presented in the following order: No Gym (formerly Option 3, now Option 1), Small Gym (formerly Option 1, now Option 2), Large Gym (formerly Option 2, now Option 3). MKSD will update the presentation accordingly.
  - e. MKSD noted that the opinions of probable cost do not include all soft costs. The Township stated they will pull these numbers together and provide MKSD with the costs.
  - f. MKSD will add the square footages of the gyms on both options 2 and 3.
- II. Operations Analysis
1. Ken Ballard presented the Operations Analysis Assumptions list. The revised list is attached to the meeting minutes.
    - Ken Ballard noted the assumption that alcohol will be permitted in the multi-purpose room. Barbara Lyons requested that the assumption should include the language "limited and controlled".
  2. Ken Ballard presented the Operations Budget.
    - The Township noted that the expense "Insurance" can be removed due to it being handled with a central plan.



- The Township noted that trash pickup can be removed for the same reasoning at insurance.
- 3. Ken Ballard presented his assumption that there would be no full-time staff. The Township agreed.
- 4. The Township requested MKSD and B\*K to attend the Ways and Means budget meeting on 6/15 at 5:00 PM. A link will be sent to enter this meeting via Zoom.

III. Next Steps

- a. MKSD provide the Township with the PowerPoint presentation by Friday, June 11.
- b. After the BOS meeting, MKSD and B\*K will wait for the Township to provide approval to proceed with the feasibility study.

IV. Next Design Team Meeting:

- a. TBD

**Attachments:**

Operations Analysis (attached to minutes)  
Operations Budget (Excel spreadsheet)

**Notice to attendees and recipients of meeting minutes:**

If any of the items included in the minutes are incomplete or incorrect, please promptly notify MKSD in writing. Failure to advise of such corrections within one week of issue date constitutes acceptance of all information contained therein as it is represented.



## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 14**

August 10, 2021

Distributed: August 10, 2021  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
**David Tomko, Director of Operations**  
**Ryan Manion, Board of Supervisors**  
**Barbara Lyons, Board of Supervisors**  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Silvia Hoffman**  
**Ryan Kennedy**  
**Megan Henry**

HB Engineering (MEP Engineer)

**Kevin Buxton**

- 
- I. The purpose of the meeting is to discuss the upcoming presentation to the Board of Supervisors.
- a. The Township stated that the agenda for the September 21 meeting is full; therefore, a separate meeting will be held to discuss this project. The Township will propose September 28<sup>th</sup> or 29<sup>th</sup> to the Supervisors. The Township will confirm the date and time after their next meeting. MKSD will present in person and Ballard\*King will present via Zoom.
  - b. MKSDS stated the presentation will be similar to the June 15<sup>th</sup> meeting.
  - c. Ryan Manion will provide opening remarks at the presentation.
  - d. MKSD presented the Proposed Site Plan. The proposed community center's footprint was revised to reflect Option 4 ("Hybrid Option"). The Proposed Sport Courts location is included on this site plan. Stephanie Mason stated Dave Tomko will provide a separate PowerPoint slide to discuss the site location switch from New Britain Road to the existing tennis courts.
  - e. MKSD presented Option 4 – Hybrid. This option includes two multipurpose rooms and a small (6,460 SF) gymnasium. An outdoor space is included adjacent to the eastern multipurpose room.
    1. The Township requested more notes on the floor plan to explain the spaces' functions.
    2. Karen Sweeney will provide a list of activities that each multipurpose room can accommodate. This slide will be incorporated into the presentation.
    3. The Township asked which multipurpose room would be rented more. There was discussion about the west (larger) multipurpose room being more rentable. MKSD will look into moving the kitchen adjacent to this multipurpose room.
  - f. MKSD presented the exterior renderings.
    1. The Township prefers Option 1 (red accents).
    2. The Township requested the presentation to the BOS should include more views.



3. Dave Tomko asked if skylights could be provided in the gymnasium. MKSD stated it is an option.
  - g. MKSD discussed the cost escalation of a future gymnasium. The spreadsheet includes estimated costs of a small and large gymnasium for construction in 2022, 2027, 2032, 2037, and 2042. The cost estimates are based on a year escalation of 4.5%.
  - h. MKSD presented the Township's current sustainable accolades.
  - i. MKSD presented LEED action items that are possible for the new Community Center.
  - j. Kevin Buxton from HB Engineers discussed how the Township's resolution could be achieved. The new systems could achieve 100% renewable energy by purchasing clean energy agreements. This will satisfy the 2030 resolution. For the 2050 resolution, the building's heat would need to be renewable.
    1. Barbara Lyons stated the building should meet the resolution.
    2. Ryan Manion stated she would like to see what can be achieved now and how can the building be prepared to meet the resolution in 2030.
    3. The BOS presentation in late September should include a slide on what the building can achieve day one and how the systems can achieve the resolution in the future.
- II. Operations Analysis
1. Ken Ballard presented the Operations Analysis Assumptions list. The revised list is attached to the meeting minutes.
  2. Ken Ballard presented the Operations Budget for Option 4. Please note that the Operations Budget attached to these minutes have been further revised to include the outdoor area in Option 4.
- III. Next Design Team Meeting:
- a. TBD. MKSD to schedule next meeting in early September.

**Attachments:**

Revised Operations Analysis (attached to minutes)  
Revised Operations Budget (Excel spreadsheet)

**Notice to attendees and recipients of meeting minutes:**

If any of the items included in the minutes are incomplete or incorrect, please promptly notify MKSD in writing. Failure to advise of such corrections within one week of issue date constitutes acceptance of all information contained therein as it is represented.

## **Doylestown Community Center Operations Analysis Assumptions**

This operations analysis has been completed for the planned new Doylestown Community Center. The following are the basic parameters for the project.

- An operations plan for four possible facility options has been developed.

**Option 1 – No Gym** - A community center with two multi-purpose rooms, a divisible larger multi-purpose room, kitchen, three meeting rooms, lobby, restrooms, storage and office space. Approximately 11,914 SF.

**Option 2 – Small Gym** - A community center with two multi-purpose rooms, kitchen, gym (6,460 SF), lobby, restrooms, storage, and office space. Approximately 14,069 SF.

**Option 3 – Large Gym** - A community center with two multi-purpose rooms, a divisible larger multi-purpose room, kitchen, three meeting rooms, gym (7,979 SF), lobby, restrooms, storage and office space. Approximately 20,829 SF.

**Option 4 – Hybrid** - A community center with two multi-purpose rooms, a divisible larger multi-purpose room, outdoor patio, kitchen, gym (6,460 SF), lobby, restrooms, storage, and office space. Approximately 18,833 SF.

- The first year of operation will be 2023 or later.
- The minimum wage will be at least \$12.00 an hour by 2023.
- This operational budget represents expenses and revenues for the center and all program accounts.
- The center will be maintained and cleaned by Public Works staff.
- The presence of other providers in the market will remain the same.
- The center will be operated by Doylestown Township.
- The site for the center will be next to the Township Administration Building.
- This operations estimate is based on a program plan and preliminary concept plan for the facility only. This operations plan will need to be updated once a final concept design has been developed.
- There will be a high level of rentals and recreation programming in the center.
- No partnerships with other organizations have been shown in this operations plan.

- The operational numbers do not include any site or park maintenance.
- Alcohol will be limited and controlled in the multi-purpose rooms.

**Projected Hours of Operation:**

Days	Hours
Monday – Friday	8:00am – 9:00pm
Saturday	8:00am – 6:00pm
Sunday	Noon - 6:00pm
Total Hours Per Week	81

**Note:** Hours are subject to change based on the season (longer hours in the winter, shorter during the summer), by programming needs, use patterns and rental considerations.

**Projected Fee Schedule:** Revenue projections and attendance numbers were calculated from this fee model. This is the projected rate for 2023 based on the possible opening date for the center. There is a fee differential of approximately 25% between Township residents and non-residents.

*Gym Options Only*

Category	Daily Gym Admission		20 Admissions	
	Res.	Non. Res.	Res.	Non. Res.
Adults	\$10.00	\$12.50	\$170.00	\$213.00
Youth (2-17)	\$7.00	\$9.00	\$119.00	\$153.00
Senior (55+)	\$5.00	\$6.00	\$85.00	\$102.00

**Note:** 20 Admission rate is an approximate 15% discount over the daily fee.

**Fitness** \$15.00/\$19.00 daily fee per class



## **DESIGN TEAM MEETING MINUTES :: MEETING NO. 15**

September 24, 2021

Distributed: September 27, 2021  
Meeting Location: Zoom Conference Call

Distribution List (present attendees in **bold**):  
Doylestown Township (Owner)

**Stephanie Mason, Township Manager**  
David Tomko, Director of Operations  
**Ryan Manion, Board of Supervisors**  
**Barbara Lyons, Board of Supervisors**  
**Karen Sweeney, Dir. of Parks & Recreation**  
**Ed Ebenbach, Budget Analyst**

Ballard\*King & Associates (Consultant)

**Ken Ballard**

MKSD, LLC (Architect)

**Silvia Hoffman**  
**Ryan Kennedy**  
**Megan Henry**

HB Engineering (MEP Engineer)

**Kevin Buxton**

- 
- I. The purpose of the meeting is to discuss the upcoming presentation to the Board of Supervisors.
    - a. Ryan Manion will provide opening remarks.
    - b. MKSD integrated the Township's powerpoint slides regarding the site selection. MKSD will present the slides but note that the change in site was a directive from the Township.
    - c. MKSD will send the Township the presentation on Monday, September 27 in order for them to distribute the presentation to the Board of Supervisors.
    - d. The Township will provide handouts to the public of the options and opportunities (provided by Karen Sweeney) slides.
    - e. Ryan Manion suggested the design team analyze Option 2 ("Small Gym") with a large gym in terms of cost and operational expenses and revenue. The design team will call this Option 2.5.
    - f. Karen Sweeney provided the "General Sampling of Potential Opportunities Including Both External (Rental) and Internal (Township/Partner)". Barbara Lyons will present this slide.
    - g. MKSD added a slide before the exterior renderings to show the current municipal building and what building elements are being alluded to on the new community center. There were no comments on the renderings.
  - II. Operations Analysis
    - a. [Post Meeting Note] Ken Ballard provided an estimate of operational revenue and expenses for new Option 2.5.
  - III. Next Design Team Meeting:
    - a. TBD.

DOYLESTOWN TOWNSHIP  
NEW PARKS & RECREATION COMMUNITY CENTER  
MKSD PROJECT NO. 20.158



**Attachments:**

None

**Notice to attendees and recipients of meeting minutes:**

If any of the items included in the minutes are incomplete or incorrect, please promptly notify MKSD in writing. Failure to advise of such corrections within one week of issue date constitutes acceptance of all information contained therein as it is represented.

# WELCOME

Public Meeting for the New Recreation Community Center  
Tuesday, September 28, 2021  
7:00 pm



## Doylestown Township

Preserving the past. Embracing the future.



1

## INTRODUCTION

### Feasibility Study/ Design Team



Silvia Hoffman, AIA  
MKSD Architects  
Partner



Ryan Kennedy, AIA  
MKSD Architects  
Project Architect



Megan Henry,  
Assoc. AIA  
MKSD Architects  
Project Designer



Ken Ballard, CPRP  
Ballard King & Assoc.  
President



Kevin Buxton, PE,  
LEED  
HB Engineers, Inc.  
Partner



2

# AGENDA

- Introduction
- Project Timeline
- Site Selection
- Schematic Plan Options, Cost, and Operations
- Summary of Options
- Exterior Renderings
- Sustainability
- Conclusion

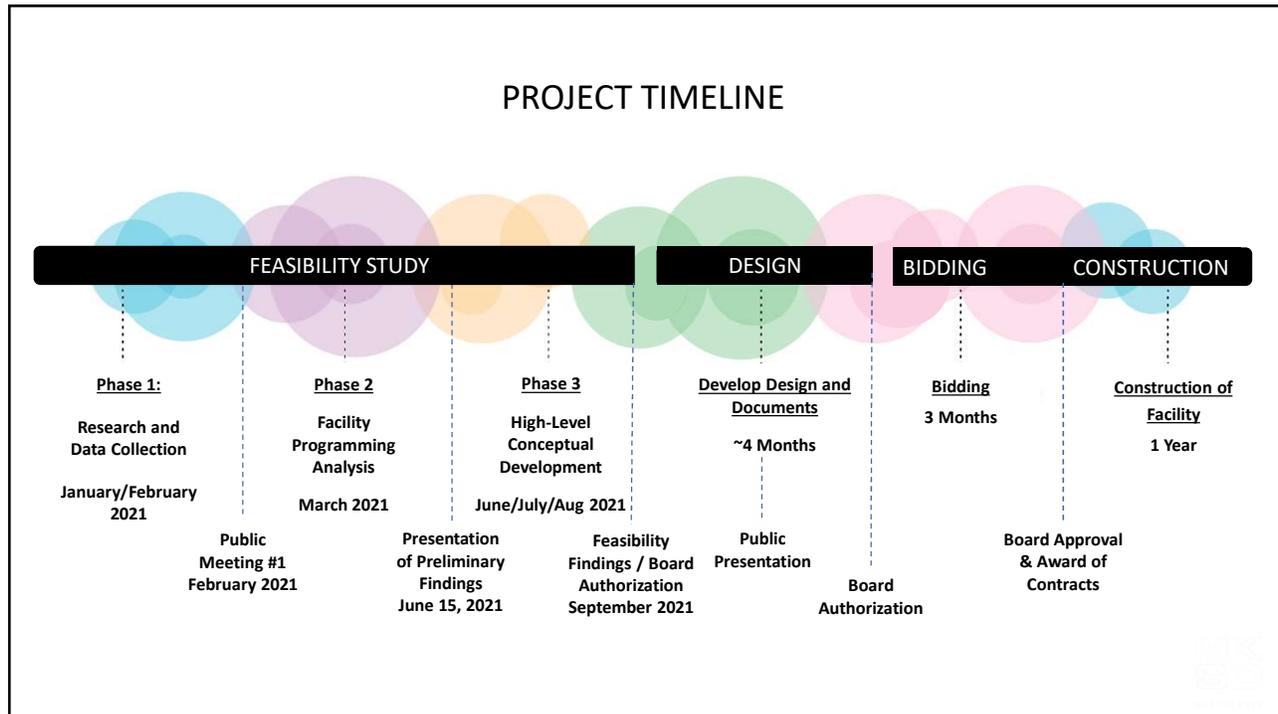


**Doylestown Township**  
Preserving the past. Embracing the future.



3

# PROJECT TIMELINE



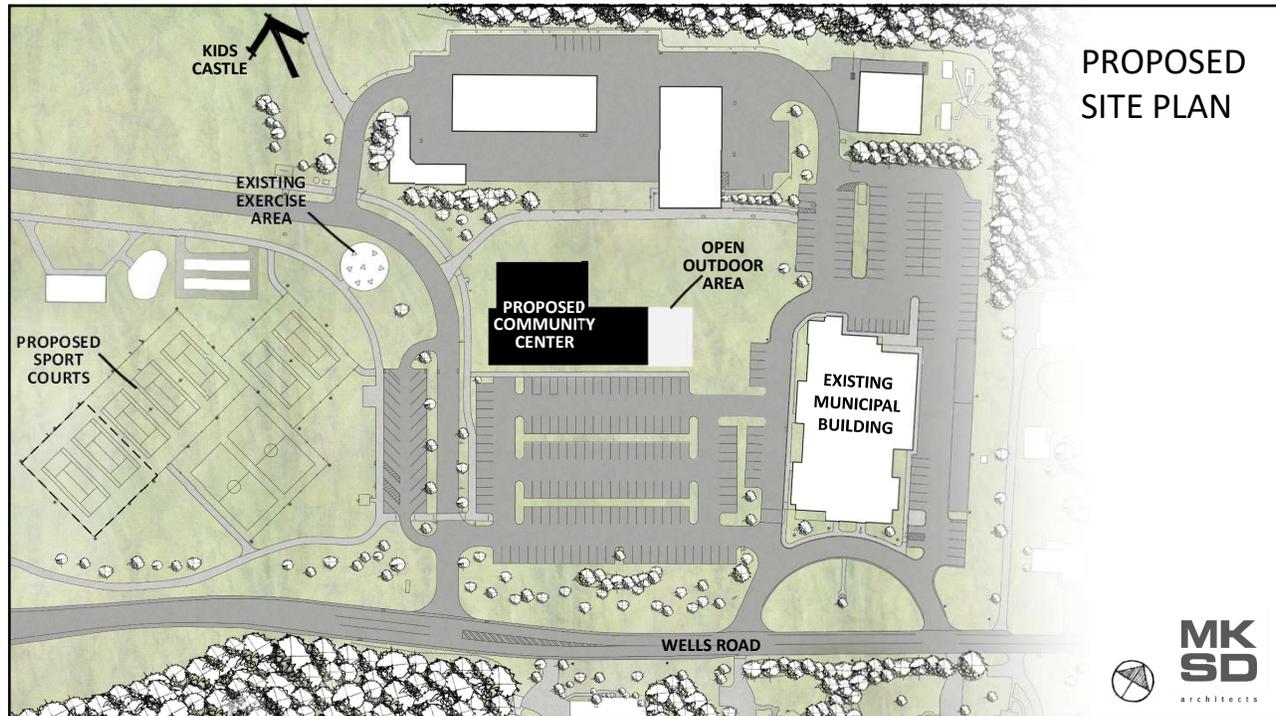
4



5

COMPARISON OF LOCATIONS	
NEW BRITAIN ROAD LOCATION	COURT LOCATION
<ul style="list-style-type: none"> <li>• Lack of Utilities (sewer, electric)</li> <li>• Far from Park &amp; Recreation Offices</li> <li>• Far from Public Works (Facilities Operations)</li> <li>• Lack of Adequate Parking (for size of building being considered 20K +/- sq. ft.)</li> <li>• Site requires retaining wall</li> <li>• Will lose new field to accommodate parking</li> <li>• Concern for Viewshed by EAC &amp; neighbors</li> </ul>	<ul style="list-style-type: none"> <li>• Utilities Easily Accessible (water, sewer, electric, &amp; gas)</li> <li>• Close to Park &amp; Recreation Offices</li> <li>• Close to Public Works (Facilities Operations)</li> <li>• Additional parking can be accommodated</li> <li>• Relocation of court space available</li> <li>• Will lose Field 1 to accommodate new courts</li> </ul>

6

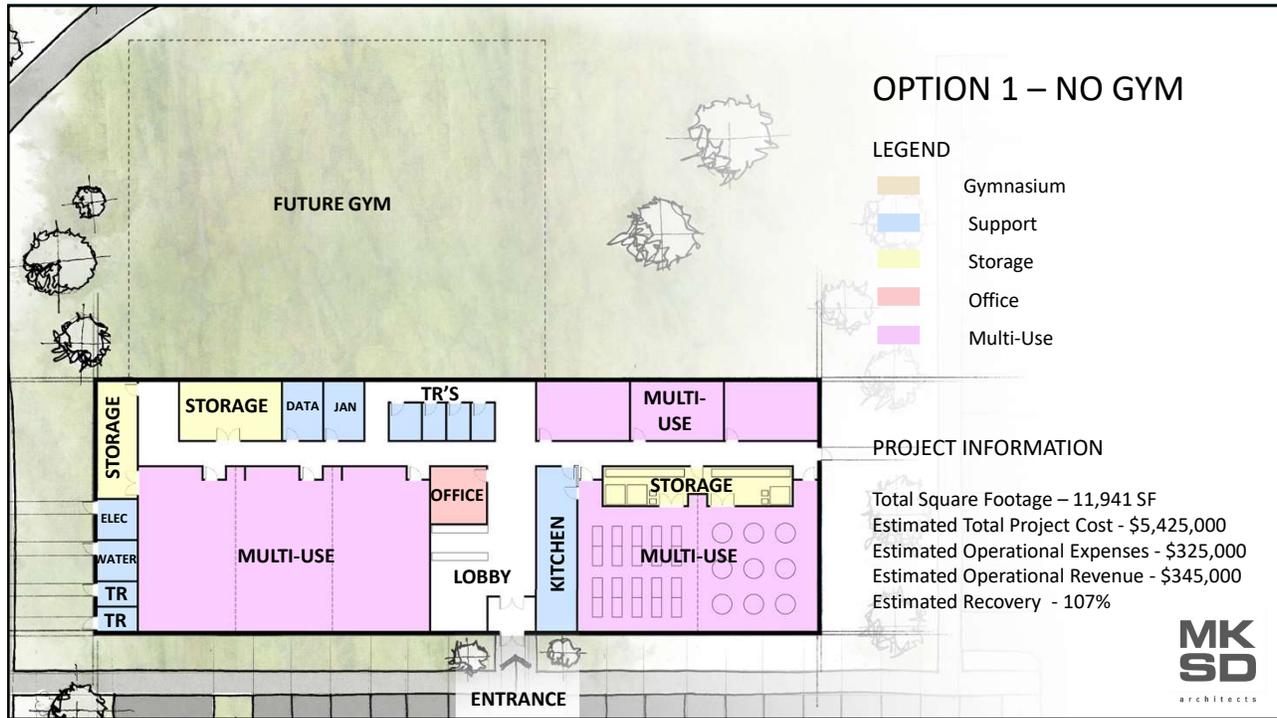


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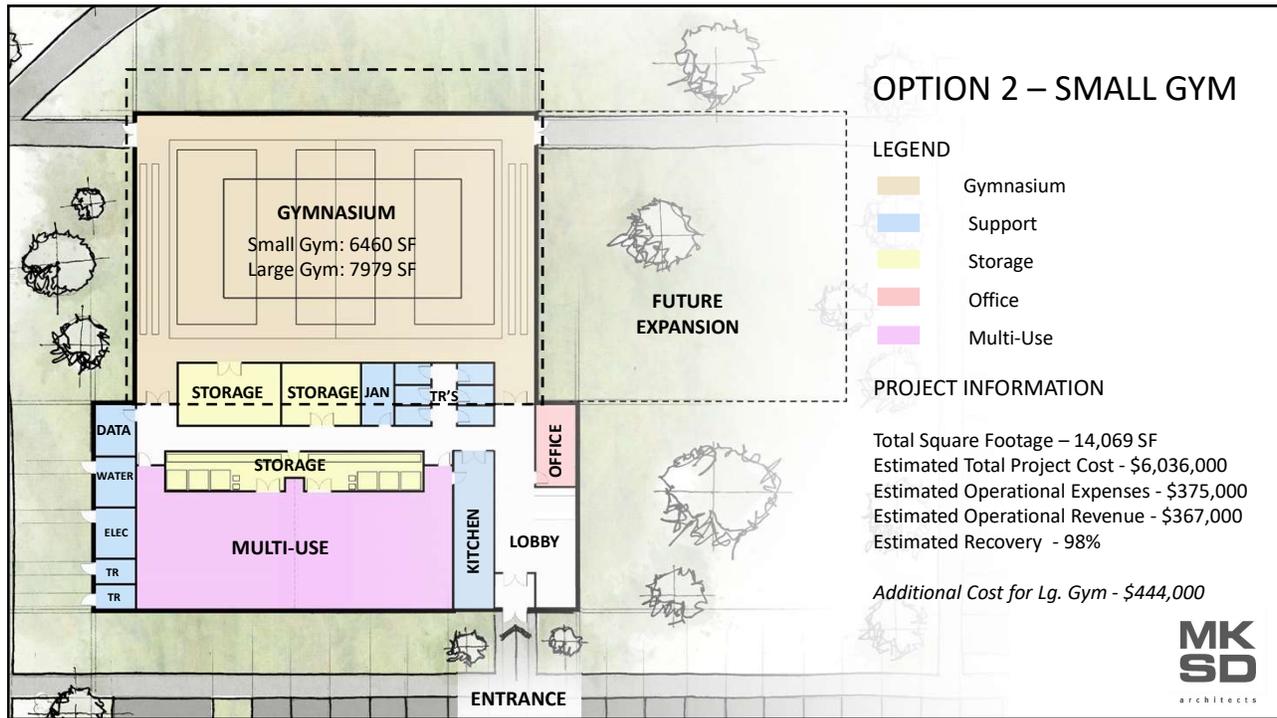
## BUILDING STUDY GOALS

- Develop a plan that supports multi-use recreation programs
- Responds to the market analysis
- Address input of residents, Building Committee, and Stakeholders
- Develop a program and building that balances value, cost, and sustainable initiatives for the Township
- Align with the goals of Ready for 100. Project goal to provide an HVAC system that can adapt in the future to meet the Sustainability Resolution.

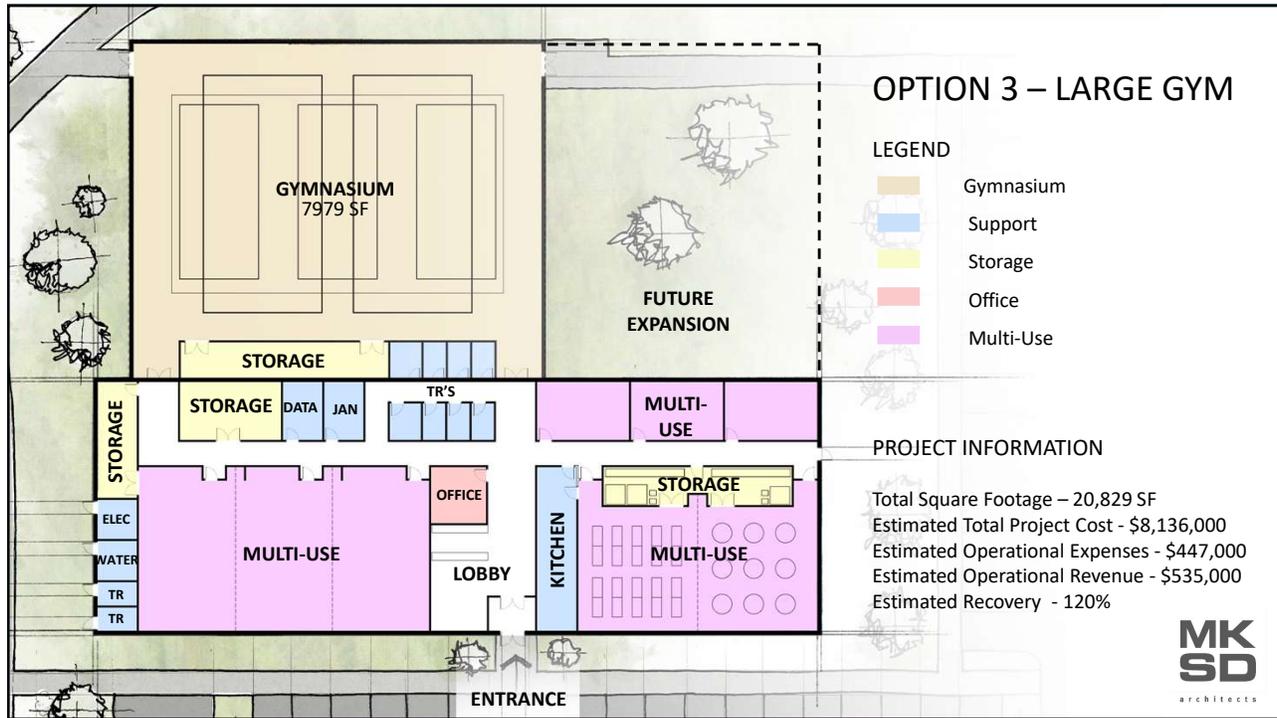
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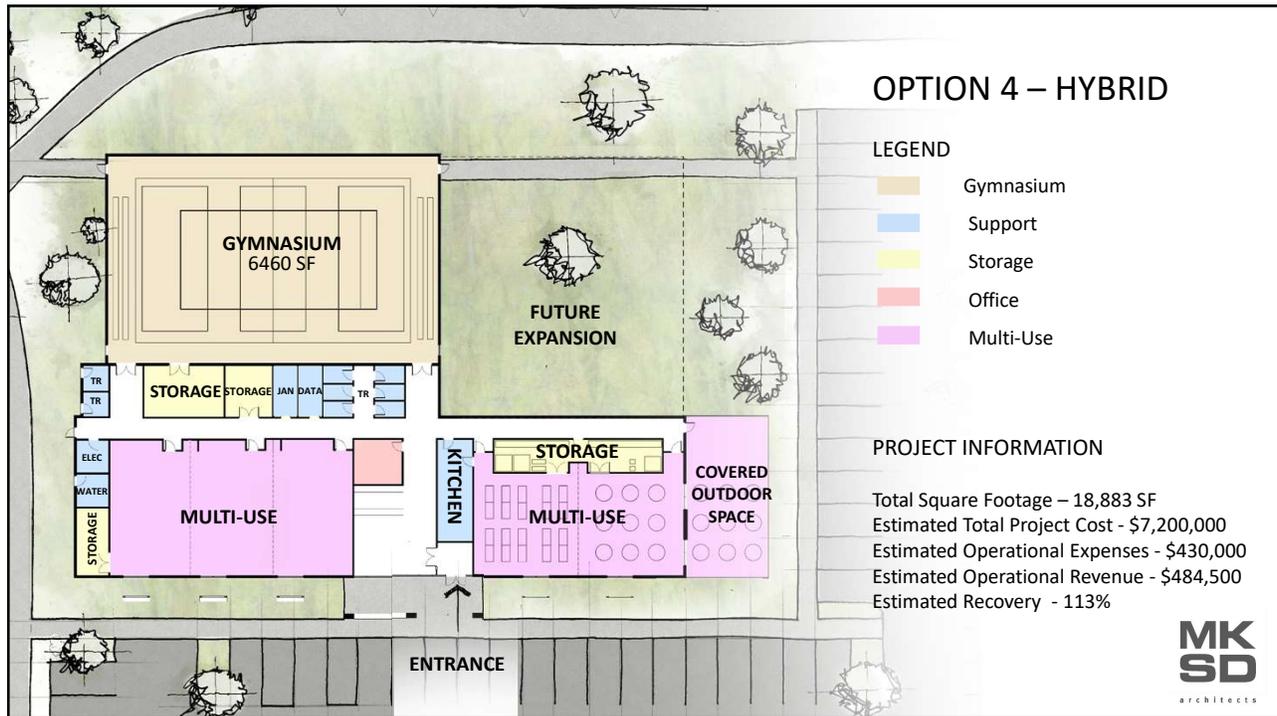
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### SUMMARY OF OPTIONS

	TOTAL SF	PROGRAM	ESTIMATED TOTAL PROJECT COST	ESTIMATED OPERATING EXPENSES	ESTIMATED OPERATING REVENUE	ESTIMATED RECOVERY PERCENT
OPTION 1 No Gym	11,941 SF	(1) Medium MP Room, (1) Large MP Room	\$5,425,000	\$325,000	\$345,000	107%
OPTION 2 Small Gym	14,069 SF	(1) Medium MP Room, (1) Small Gym	\$6,036,000	\$375,000	\$367,000	98%
OPTION 2.5 Large Gym	15,500 SF	(1) Medium MP Room, (1) Large Gym	\$6,480,000	\$392,500	\$407,500	104%
OPTION 3 Large Gym	20,829 SF	(1) Medium MP Room, (1) Large MP Room, (1) Large Gym	\$8,136,000	\$452,000	\$535,000	119%
OPTION 4 Hybrid	18,833 SF	(1) Medium MP Room, (1) Large MP Room, (1) Small Gym	\$7,200,000	\$430,000	\$484,500	113%



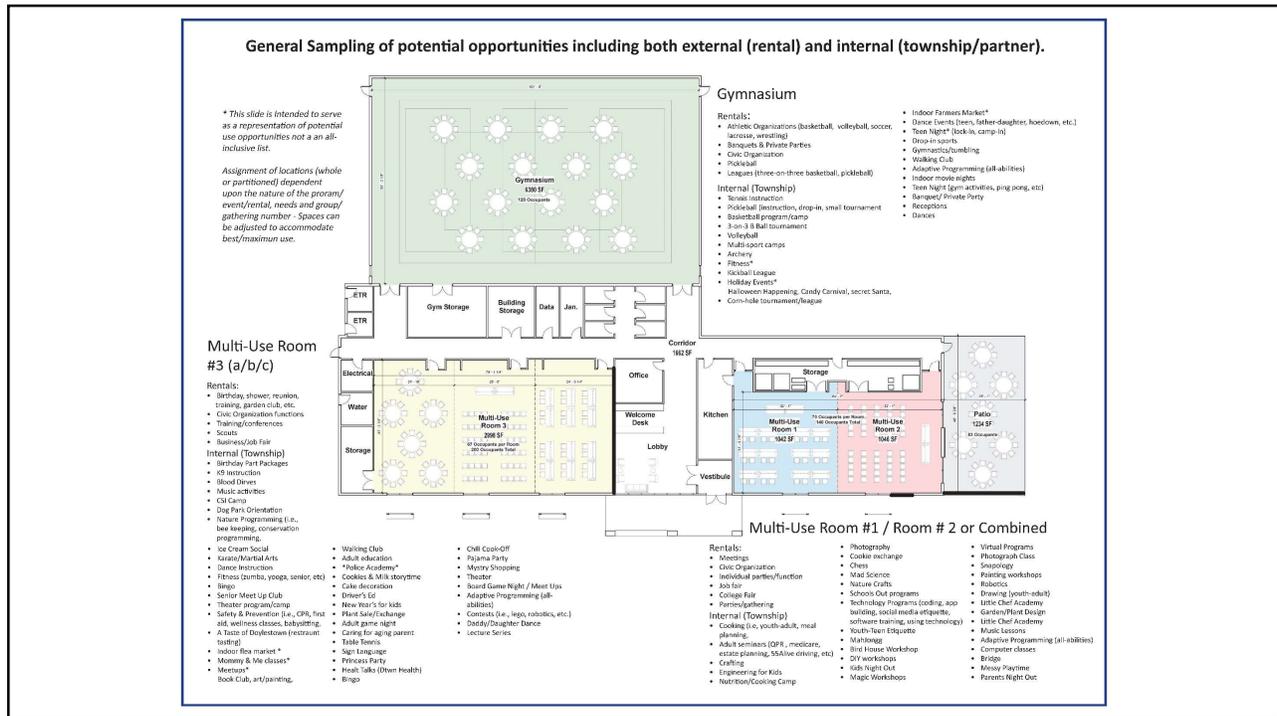
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### COST ESCALATION

Estimate Of Probable Construction Cost of Future Gymnasium					
Small Gymnasium (6,500 Sq.Ft.)		Unit Cost	Construction Cost	Soft Cost	Estimated Total
Build in 2022		\$ 250	\$ 1,625,000	\$ 568,750	\$ 2,200,000
Build in 2027		\$ 312	\$ 2,025,046	\$ 708,766	\$ 2,800,000
Build in 2032		\$ 388	\$ 2,523,575	\$ 883,251	\$ 3,500,000
Build in 2037		\$ 484	\$ 3,144,834	\$ 1,100,692	\$ 4,300,000
Build in 2042		\$ 603	\$ 3,919,035	\$ 1,371,662	\$ 5,300,000
Large Gymnasium (8,000 Sq.Ft.)		Unit Cost	Construction Cost	Soft Cost	Estimated Total
Build in 2022		\$ 250	\$ 2,000,000	\$ 700,000	\$ 2,700,000
Build in 2027		\$ 312	\$ 2,492,364	\$ 872,327	\$ 3,400,000
Build in 2032		\$ 388	\$ 3,105,939	\$ 1,087,079	\$ 4,200,000
Build in 2037		\$ 484	\$ 3,870,565	\$ 1,354,698	\$ 5,300,000
Build in 2042		\$ 603	\$ 4,823,428	\$ 1,688,200	\$ 6,600,000

This Opinion of Probable Cost of the Work is an estimate of the probable cost based on historical data and professional opinion; however, this Opinion of Cost is not a guarantee. Estimates are subject to change based on industry climate and

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## SUSTAINABILITY: CURRENT ACCOLADES

- Doylestown Township Environmental Advisory Council
- 2015 Sustainable PA Community Gold Certification
- 2019 Bowman's Hill Wildflower Preserve Land Ethics Award
- Power Purchase Agreements
- Green Points Program Ordinance No. 395
  - Design commercial buildings to LEED standards
- Ready for 100
  - 100% clean and renewable electricity by 2035; energy by 2050
  - Carbon-free and Pollution-free

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## SUSTAINABILITY: READY FOR 100



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## SUSTAINABILITY: LEED ACTION ITEMS

### Location & Transportation

- ✓ Previously developed site
- ✓ Located near public transit and bike paths
- ✓ Located near diverse uses
- Provide bike storage
- Minimize parking
- Provide electric vehicle parking spaces w/ charging equip.

### Sustainable Sites

- Maintain/restore open, vegetated area
- Vegetated roof
- Rainwater collection, pervious landscaping, etc.
- Heat island reduction (i.e. roof material selection)

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## SUSTAINABILITY: LEED ACTION ITEMS

### Water Efficiency

- Minimize irrigation thru selection of landscaping
- Utilize Energy STAR appliances
- Utilize water sense fixtures
- Install water metering for irrigation, plumbing fixtures, hot water, reclaimed water, etc.

### Energy & Atmosphere

- ✓ Purchase off-site renewable energy
- Install energy management/ metering system
- Design to higher standard than req'd by code
- Install Photovoltaic (solar) panels

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## SUSTAINABILITY: LEED ACTION ITEMS

### Materials & Resources

- Provide recycled, responsible, bio-based, etc. materials
- Minimize waste generated through construction and demolition

### Indoor Air Quality

- Provide a building vestibule
- Select materials and products with low VOC's
- Design Mech. And Elec. Systems per code or higher
- Increase Sound Transmission Class ratings

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Doylestown Community Center REVISED Operations Budget-10-18-21

**Doylestown Community Center**

**Operational Budget Summary**

	<b>Small Gym</b>	<b>Large Gym</b>	<b>No Gym</b>	<b>Hybrid</b>	<b>Approved</b>
	<b>14,069 SF</b>	<b>20,829 SF</b>	<b>11,914 SF</b>	<b>18,833 SF</b>	<b>16,864 SF</b>
<b>Category</b>	<b>Option 2</b>	<b>Option 3</b>	<b>Option 1</b>	<b>Option 4</b>	<b>Option 5</b>
Expenses	\$ 374,875	\$ 451,660	\$ 324,049	\$ 429,757	\$ 404,342
Revenues	\$ 366,272	\$ 535,225	\$ 345,316	\$ 484,536	\$ 464,555
Difference	(8,604)	83,565	21,267	54,778	60,213
Recovery %	98%	119%	107%	113%	115%

This budget represents the second full-year of operation.

Doylestown Community Center Operating Expenses				
Acct. #	Category	Small Gym Option 2	Large Gym Option 3	No Gym Option 1
	<u>Personnel</u>			
	Full-time	-	-	-
	Part-time	217,129	250,722	181,183
	Total	\$ 217,129	\$ 250,722	\$ 181,183
	<u>Other</u>			
210	Office Supplies	1,750	2,000	1,750
213	Small Equipment	500	500	500
238	Uniforms	400	500	300
270	Recreation Supplies	30,000	35,000	30,000
275	Programs & Services	3,500	4,000	3,500
302	Credit Card Fees	9,889	14,451	9,324
321	Telephone	3,000	3,000	3,000
325	Postage	750	1,000	500
331	Training - P&R Management	500	500	500
341	Advertising	7,500	10,000	7,500
342	Printing	2,000	3,000	2,000
361	Electricity (\$3.00 SF)	42,207	62,487	35,742
384	Technology & Computer Equipment/Maint.	10,000	10,000	10,000
420	Dues & Subscriptions	750	1,000	750
450	Contract Services (alarm, HVAC, etc.)	30,000	35,000	25,000
	Other	3,000	3,500	2,500
	Total	\$ 145,746	\$ 185,938	\$ 132,866
	<u>Capital</u>			
	Replacement Fund	\$ 12,000	\$ 15,000	\$ 10,000
	<b>Grand Total</b>	<b>\$ 374,875</b>	<b>\$ 451,660</b>	<b>\$ 324,049</b>

<b>Doylestown Community Center Revenues</b>			
	<b>Small Gym</b>	<b>Large Gym</b>	<b>No Gym</b>
<b>Category</b>	<b>Option 2</b>	<b>Option 3</b>	<b>Option 1</b>
<u>Fees</u>			
Daily Admissions	30,713	36,855	
20 Visit Admissions	21,607	26,050	
Group/Corporate	5,000	8,000	2,000
General Facility Rentals	104,400	183,000	130,500
<b>Total</b>	<b>\$ 161,720</b>	<b>\$ 253,905</b>	<b>\$ 132,500</b>
<u>Programs</u>			
General Programs	195,552	270,320	207,816
<b>Total</b>	<b>\$ 195,552</b>	<b>\$ 270,320</b>	<b>\$ 207,816</b>
<u>Other</u>			
Special Events	2,000	2,000	1,000
Vending (percentage of gross sales)	7,000	9,000	4,000
<b>Total</b>	<b>\$ 9,000</b>	<b>\$ 11,000</b>	<b>\$ 5,000</b>
<b>Grand Total</b>	<b>\$ 366,272</b>	<b>\$ 535,225</b>	<b>\$ 345,316</b>

Doylestown Community Center <b>Full-Time Staff</b>											
		Small Gym Option 2		Large Gym Option 3		No Gym Option 1		Hybrid Option 4		Approved Option 5	
Full Time Staff	Salary	Positions	Total	Positions	Total	Positions	Total	Positions	Total	Positions	Total
Park & Recreation Director (existing)	\$ 97,483	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Program Manager (existing)	\$ 51,670	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Facility Coordinator (new)	\$ 48,000	0	\$ -	0	\$ -	0	\$ -	0	\$ -	0	\$ -
Positions		0		0		0		0		0	
Salaries			\$ -		\$ -		\$ -		\$ -		\$ -
Benefits	40.00%		\$ -		\$ -		\$ -		\$ -		\$ -
<b>Total Full-Time Staff</b>			<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>		<b>\$ -</b>

Doylestown Community Center Part Time Staff																
Part-Time	Rate	Small Gym			Large Gym			No Gym			Hybrid			Approved		
		Option 2	Option 3	Option 4	Option 1	Option 2	Option 3	Option 4	Option 5	Option 6	Option 7	Option 8	Option 9	Option 10	Option 11	
		Hours	Weeks	Total	Hours	Weeks	Total	Hours	Weeks	Total	Hours	Weeks	Total	Hours	Weeks	Total
Front Desk/Building Sup	\$ 16.00	81	52	\$ 67,392	81	52	\$ 67,392	81	52	\$ 67,392	81	52	\$ 67,392.00	81	52	\$ 67,392
Gym Attendant	\$ 14.00	42	30	\$ 17,640	42	30	\$ 17,640	0	30	\$ -	42	30	\$ 17,640.00	42	30	\$ 17,640
Facility Attendant	\$ 15.00	63	52	\$ 49,140	75	52	\$ 58,500	35	52	\$ 27,300	70	52	\$ 54,600.00	65	52	\$ 50,700
Rental Attendant	\$ 14.00	19	52	\$ 13,832	25	52	\$ 18,200	25	52	\$ 18,200	25	52	\$ 18,200.00	21	52	\$ 15,288
Total		205		\$ 148,004	223		\$ 161,732	141		\$ 112,892	218		\$ 157,832.00	209		\$ 151,020
F.T.E.		5.13			5.58			3.53			5.45			5.23		
Program Staff				\$ 49,386			\$ 66,197			\$ 51,820			\$ 63,146			\$ 58,009
Total				\$ 197,390			\$ 227,929			\$ 164,712			\$ 220,978			\$ 209,029
Benefits	10.0%			\$ 19,739			\$ 22,793			\$ 16,471			\$ 22,098			\$ 20,903
<b>Total</b>				<b>\$ 217,129</b>			<b>\$ 250,722</b>			<b>\$ 181,183</b>			<b>\$ 243,076</b>			<b>\$ 229,932</b>

**Doylestown Community Center Revenue Worksheet**

**Option 2 & 4 - Small Gym/Hybrid**

Daily Fees	Fees	Number	Revenue
Adult	\$10.00	10	\$100.00
Youth	\$7.00	10	\$70.00
Senior	\$5.00	5	\$25.00
Total		25	\$195
			x 150 days/year
Grand Total			\$29,250
	% of users	% of fee increase	
Non. Res.	20%	25%	\$1,463
<b>Adjusted Total</b>			<b>\$30,713</b>

20 Admission	Fees	Number	Revenue
Adult	\$170	70	\$11,900
Youth	\$119	70	\$8,330
Senior	\$85	10	\$850
Total		150	\$21,080
	% of users	% of fee increase	
Non. Res.	10%	25%	\$527
<b>Adjusted Total</b>			<b>\$21,607</b>

Revenue Summary	
Daily	\$30,713
20 Admission	\$21,607
<b>Total</b>	<b>\$52,320</b>

**Doylestown Community Center Revenue Worksheet**

**Option 3 - Large Gym**

Daily Fees	Fees	Number	Revenue
Adult	\$10.00	12	\$120
Youth	\$7.00	12	\$84.00
Senior	\$5.00	6	\$30.00
Total		30	\$234
			x 150 days/year
Grand Total			\$35,100
	% of users	% of fee increase	
Non. Res.	20%	25%	\$1,755
<b>Adjusted Total</b>			<b>\$36,855</b>

20 Admission	Fees	Number	Revenue
Adult	\$170	85	\$14,450
Youth	\$119	85	\$10,115
Senior	\$85	10	\$850
Total		180	\$25,415
	% of users	% of fee increase	
Non. Res.	10%	25%	\$635
<b>Adjusted Total</b>			<b>\$26,050</b>

Revenue Summary	
Daily	\$36,855
20 Admission	\$26,050
<b>Total</b>	<b>\$62,905</b>

Doylestown Community Center **General Programs**

**Option 2 - Small Gym - These are representative programs**

**Program Calculations - Expenses**

Adult Leagues	Position	Staff	Rate/Game	Game/Wk	Weeks	Total
Basketball	Official	2	\$25.00	3	8	\$ 1,200
	Scorer	1	\$14.00	3	8	\$ 336
Volleyball	Official	1	\$20.00	3	8	\$ 480
Indoor Soccer (Futsal)	Official	2	\$20.00	3	8	\$ 960
<b>Total</b>						\$ 2,976

Youth Sports Camps	Position	Staff	Rate/Hr	Number	Hours	Total
Basketball	Coaches	2	\$25.00	1	16	\$ 800
Volleyball	Coaches	2	\$25.00	1	16	\$ 800
Other	Coaches	2	\$25.00	1	8	\$ 400
<b>Total</b>						\$ 2,000

Youth Sports Clinics	Position	Staff	Rate/Hr	Number	Hours	Total
Basketball	Coaches	2	\$25.00	1	4	\$ 200
Volleyball	Coaches	2	\$25.00	1	4	\$ 200
Other	Coaches	2	\$25.00	1	4	\$ 200
<b>Total</b>						\$ 600

Fitness	Rate/Class	Classes/Week	Number of Staff	Weeks	Total
Group Fitness Classes	\$ 30.00	6	1	48	\$ 8,640
<b>Total</b>					\$ 8,640

Pickleball Clinics	Position	Staff	Rate/Hr	Number	Hours	Total
Clinics	Coach	1	\$25.00	4	1.5	\$ 150
<b>Total</b>						\$ 150

Birthday Parties	Rate/Class	Classes/Week	Number of Hours	Weeks	Total
Parties	\$ 14.00	2	2	48	\$ 2,688
<b>Total</b>					\$ 2,688

General Recreation Classes	Rate/Class	Classes/Week	Number of Staff	Weeks	Total
Arts & Crafts Classes	\$ 16.00	2	1	32	\$ 1,024
Adult Classes	\$ 16.00	3	1	32	\$ 1,536
Senior Classes	\$ 16.00	2	1	32	\$ 1,024
Youth/Teen Classes	\$ 16.00	2	1	32	\$ 1,024
Summer/Break Day Camp					
Supervisor	\$ 16.00	40	1	10	\$ 6,400
Leader	\$ 14.00	40	3	10	\$ 16,800
Misc. Classes	\$ 16.00	2	1	32	\$ 1,024
<b>Total</b>					\$ 28,832

Contract/Other \$ 3,500

**Grand Total \$ 49,386**

**Program Calculations - Revenues**

Adult Leagues	Teams	Fee	Seasons	Total
Basketball	6	\$ 600	1	\$ 3,600
Volleyball	6	\$ 350	1	\$ 2,100
Indoor Soccer (Futsal)	6	\$ 500	1	\$ 3,000
<b>Total</b>				<b>\$ 8,700</b>

Youth Sports Camps	Participants	Fee	Seasons	Total
Basketball	20	\$ 175	1	\$ 3,500
Volleyball	20	\$ 175	1	\$ 3,500
Other	20	\$ 175	1	\$ 3,500
<b>Total</b>				<b>\$ 10,500</b>

Youth Sports Clinics	Participants	Fee	Number	Total
Basketball	20	\$ 50	1	\$ 1,000
Volleyball	20	\$ 50	1	\$ 1,000
Other	20	\$ 50	1	\$ 1,000
<b>Total</b>				<b>\$ 3,000</b>

Fitness	Rate/Class	Classes/Week	Participants	Weeks/sessions	Total
Group Fitness Classes	\$ 15.00	6	2	48	\$ 8,640
Group Fitness Classes (sessions)	\$ 200.00	3	10	6	\$ 36,000
<b>Total</b>					<b>\$ 44,640</b>

Pickleball	Rate/Class	Sessions/Week	Number of Part.	Weeks	Total
Open Play	\$ 10.00	3	25	30	\$ 22,500
Clinics	\$ 25.00	4	10	1	\$ 1,000
<b>Total</b>					<b>\$ 23,500</b>

Birthday Parties	Rate	Number	Weeks	Total
Parties	\$ 200.00	2	48	\$ 19,200
<b>Total</b>				<b>\$ 19,200</b>

General Recreation Classes	Rate/Class	Classes/Week	Participants	Weeks/sessions	Total
Arts & Crafts Classes	\$ 100.00	2	6	4	\$ 4,800
Adult Classes	\$ 100.00	2	6	4	\$ 4,800
Senior Classes	\$ 25.00	2	6	4	\$ 1,200
Youth/Teen Classes	\$ 75.00	2	6	4	\$ 3,600
Summer/Break Camp	\$ 175.00	1	30	10	\$ 52,500
Misc. Classes	\$ 100.00	2	6	4	\$ 4,800
<b>Total</b>					<b>\$ 71,700</b>

Contract/Other				\$ 5,000
Sub-Total				\$ 186,240
Non-Resident	20% of Reg.	25% Fee Increase		\$ 9,312

<b>Grand Total</b>				<b>\$ 195,552</b>
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Doylestown Community Center **General Programs**

**Option 3 - Large Gym - These are representative programs**

**Program Calculations - Expenses**

Adult Leagues	Position	Staff	Rate/Game	Game/Wk	Weeks	Total
Basketball	Official	2	\$25.00	3	16	\$ 2,400
	Scorer	1	\$14.00	3	16	\$ 672
Volleyball	Official	1	\$20.00	3	16	\$ 960
Indoor Soccer (Futsal)	Official	2	\$20.00	3	16	\$ 1,920
Total						\$ 5,952

Youth Sports Camps	Position	Staff	Rate/Hr	Number	Hours	Total
Basketball	Coaches	2	\$25.00	1	16	\$ 800
Volleyball	Coaches	2	\$25.00	1	16	\$ 800
Other	Coaches	2	\$25.00	1	8	\$ 400
Total						\$ 2,000

Youth Sports Clinics	Position	Staff	Rate/Hr	Number	Hours	Total
Basketball	Coaches	2	\$25.00	1	4	\$ 200
Volleyball	Coaches	2	\$25.00	1	4	\$ 200
Other	Coaches	2	\$25.00	1	4	\$ 200
Total						\$ 600

Fitness	Rate/Class	Classes/Week	Number of Staff	Weeks	Total
Group Fitness Classes	\$ 30.00	12	1	48	\$ 17,280
Total					\$ 17,280

Pickleball Clinics	Position	Staff	Rate/Hr	Number	Hours	Total
Clinics	Coach	1	\$25.00	6	1.5	\$ 225
Total						\$ 225

Birthday Parties	Rate/Class	Classes/Week	Number of Hours	Weeks	Total
Parties	\$ 14.00	2	2	48	\$ 2,688
Total					\$ 2,688

General Recreation Classes	Rate/Class	Classes/Week	Number of Staff	Weeks	Total
Arts & Crafts Classes	\$ 16.00	4	1	32	\$ 2,048
Adult Classes	\$ 16.00	6	1	32	\$ 3,072
Senior Classes	\$ 16.00	4	1	32	\$ 2,048
Youth/Teen Classes	\$ 16.00	4	1	32	\$ 2,048
Summer/Break Day Camp					
Supervisor	\$ 16.00	40	1	10	\$ 6,400
Leader	\$ 14.00	40	3	10	\$ 16,800
Misc. Classes	\$ 16.00	3	1	32	\$ 1,536
Total					\$ 33,952

Contract/Other \$ 3,500

**Grand Total \$ 66,197**

**Program Calculations - Revenues**

Adult Leagues	Teams	Fee	Seasons	Total
Basketball	6	\$ 600	2	\$ 7,200
Volleyball	6	\$ 350	2	\$ 4,200
Indoor Soccer (Futsal)	6	\$ 500	2	\$ 6,000
Total				\$ 17,400

Youth Sports Camps	Participants	Fee	Seasons	Total
Basketball	20	\$ 175	1	\$ 3,500
Volleyball	20	\$ 175	1	\$ 3,500
Other	20	\$ 175	1	\$ 3,500
Total				\$ 10,500

Youth Sports Clinics	Participants	Fee	Number	Total
Basketball	20	\$ 50	1	\$ 1,000
Volleyball	20	\$ 50	1	\$ 1,000
Other	20	\$ 50	1	\$ 1,000
Total				\$ 3,000

Fitness	Rate/Class	Classes/Week	Participants	Weeks/sessions	Total
Group Fitness Classes	\$ 15.00	12	3	48	\$ 25,920
Group Fitness Class (sessions)	\$ 200.00	6	10	6	\$ 72,000
Total					\$ 97,920

Pickleball	Rate/Class	Sessions/Week	Number of Part.	Weeks	Total
Open Play	\$ 10.00	3	25	30	\$ 22,500
Clinics	\$ 25.00	6	10	1	\$ 1,500
Total					\$ 24,000

Birthday Parties	Rate	Number	Weeks	Total
Parties	\$ 200.00	2	48	\$ 19,200
Total				\$ 19,200

General Recreation Classes	Rate/Class	Classes/Week	Participants	Weeks/sessions	Total
Arts & Crafts Classes	\$ 100.00	4	6	4	\$ 9,600
Adult Classes	\$ 100.00	6	6	4	\$ 14,400
Senior Classes	\$ 25.00	4	6	4	\$ 2,400
Youth/Teen Classes	\$ 75.00	4	6	4	\$ 7,200
Summer/Break Camp	\$ 175.00	1	30	10	\$ 52,500
Misc. Classes	\$ 100.00	3	6	4	\$ 7,200
Total					\$ 93,300

Contract/Other \$ 5,000

Sub-Total \$ 270,320

20% of Reg. 25% Fee Increase

Non-Resident \$ 13,516

**Grand Total \$ 283,836**

Doylestown Community Center **General Programs**

**Option 1 -No Gym - These are representative programs**

**Program Calculations - Expenses**

<b>Fitness</b>	<b>Rate/Class</b>	<b>Classes/Week</b>	<b>Number of Staff</b>	<b>Weeks</b>	<b>Total</b>
Group Fitness Classes	\$ 30.00	12	1	48	\$ 17,280
<b>Total</b>					<b>\$ 17,280</b>

<b>Birthday Parties</b>	<b>Rate/Class</b>	<b>Classes/Week</b>	<b>Number of Hours</b>	<b>Weeks</b>	<b>Total</b>
Parties	\$ 14.00	2	2	48	\$ 2,688
<b>Total</b>					<b>\$ 2,688</b>

<b>General Recreation Classes</b>	<b>Rate/Class</b>	<b>Classes/Week</b>	<b>Number of Staff</b>	<b>Weeks</b>	<b>Total</b>
Arts & Crafts Classes	\$ 16.00	4	1	32	\$ 2,048
Adult Classes	\$ 16.00	6	1	32	\$ 3,072
Senior Classes	\$ 16.00	4	1	32	\$ 2,048
Youth/Teen Classes	\$ 16.00	4	1	32	\$ 2,048
Summer/Break Day Camp					
Supervisor	\$ 16.00	40	1	10	\$ 6,400
Leader	\$ 14.00	40	2	10	\$ 11,200
Misc. Classes	\$ 16.00	3	1	32	\$ 1,536
<b>Total</b>					<b>\$ 28,352</b>

Contract/Other \$ 3,500

**Grand Total \$ 51,820**

**Program Calculations - Revenues**

<b>Fitness</b>	<b>Rate/Class</b>	<b>Classes/Week</b>	<b>Participants</b>	<b>Weeks/sessions</b>	<b>Total</b>
Group Fitness Classes	\$ 15.00	12	3	48	\$ 25,920
Group Fitness Class (sessions)	\$ 200.00	6	10	6	\$ 72,000
<b>Total</b>					<b>\$ 97,920</b>

<b>Birthday Parties</b>	<b>Rate</b>	<b>Number</b>	<b>Weeks</b>	<b>Total</b>
Parties	\$ 200.00	2	48	\$ 19,200
<b>Total</b>				<b>\$ 19,200</b>

<b>General Recreation Classes</b>	<b>Rate/Class</b>	<b>Classes/Week</b>	<b>Participants</b>	<b>Weeks/sessions</b>	<b>Total</b>
Arts & Crafts Classes	\$ 100.00	4	6	4	\$ 9,600
Adult Classes	\$ 100.00	6	6	4	\$ 14,400
Senior Classes	\$ 25.00	4	6	4	\$ 2,400
Youth/Teen Classes	\$ 75.00	4	6	4	\$ 7,200
Summer/Break Camp	\$ 175.00	1	20	10	\$ 35,000
Misc. Classes	\$ 100.00	3	6	4	\$ 7,200
<b>Total</b>					<b>\$ 75,800</b>

Contract/Other \$ 5,000

Sub-Total \$ 197,920

Non-Resident 20% of Reg 25% Fee Increase \$ 9,896

**Grand Total \$ 207,816**

Doylestown Community Center **General Programs**

**Option 4 - Hybrid - These are representative programs**

**Program Calculations - Expenses**

Adult Leagues	Position	Staff	Rate/Game	Game/Wk	Weeks	Total
Basketball	Official	2	\$25.00	3	8	\$ 1,200
	Scorer	1	\$14.00	3	8	\$ 336
Volleyball	Official	1	\$20.00	3	8	\$ 480
Indoor Soccer (Futsal)	Official	2	\$20.00	3	8	\$ 960
Total						\$ 2,976

Youth Sports Camps	Position	Staff	Rate/Hr	Number	Hours	Total
Basketball	Coaches	2	\$25.00	1	16	\$ 800
Volleyball	Coaches	2	\$25.00	1	16	\$ 800
Other	Coaches	2	\$25.00	1	8	\$ 400
Total						\$ 2,000

Youth Sports Clinics	Position	Staff	Rate/Hr	Number	Hours	Total
Basketball	Coaches	2	\$25.00	1	4	\$ 200
Volleyball	Coaches	2	\$25.00	1	4	\$ 200
Other	Coaches	2	\$25.00	1	4	\$ 200
Total						\$ 600

Fitness	Rate/Class	Classes/Week	Number of Staff	Weeks	Total
Group Fitness Classes	\$ 30.00	12	1	48	\$ 17,280
Total					\$ 17,280

Pickleball Clinics	Position	Staff	Rate/Hr	Number	Hours	Total
Clinics	Coach	1	\$25.00	4	1.5	\$ 150
Total						\$ 150

Birthday Parties	Rate/Class	Classes/Week	Number of Hours	Weeks	Total
Parties	\$ 14.00	2	2	48	\$ 2,688
Total					\$ 2,688

General Recreation Classes	Rate/Class	Classes/Week	Number of Staff	Weeks	Total
Arts & Crafts Classes	\$ 16.00	4	1	32	\$ 2,048
Adult Classes	\$ 16.00	6	1	32	\$ 3,072
Senior Classes	\$ 16.00	4	1	32	\$ 2,048
Youth/Teen Classes	\$ 16.00	4	1	32	\$ 2,048
Summer/Break Day Camp					
Supervisor	\$ 16.00	40	1	10	\$ 6,400
Leader	\$ 14.00	40	3	10	\$ 16,800
Misc. Classes	\$ 16.00	3	1	32	\$ 1,536
Total					\$ 33,952

Contract/Other \$ 3,500

**Grand Total \$ 63,146**

**Program Calculations - Revenues**

Adult Leagues	Teams	Fee	Seasons	Total
Basketball	6	\$ 600	1	\$ 3,600
Volleyball	6	\$ 350	1	\$ 2,100
Indoor Soccer (Futsal)	6	\$ 500	1	\$ 3,000
<b>Total</b>				\$ 8,700

Youth Sports Camps	Participants	Fee	Seasons	Total
Basketball	20	\$ 175	1	\$ 3,500
Volleyball	20	\$ 175	1	\$ 3,500
Other	20	\$ 175	1	\$ 3,500
<b>Total</b>				\$ 10,500

Youth Sports Clinics	Participants	Fee	Number	Total
Basketball	20	\$ 50	1	\$ 1,000
Volleyball	20	\$ 50	1	\$ 1,000
Other	20	\$ 50	1	\$ 1,000
<b>Total</b>				\$ 3,000

Fitness	Rate/Class	Classes/Week	Participants	Weeks/sessions	Total
Group Fitness Classes	\$ 15.00	12	3	48	\$ 25,920
Group Fitness Class (sessions)	\$ 200.00	6	10	6	\$ 72,000
<b>Total</b>					\$ 97,920

Pickleball	Rate/Class	Sessions/Week	Number of Part.	Weeks	Total
Open Play	\$ 10.00	3	25	30	\$ 22,500
Clinics	\$ 25.00	4	10	1	\$ 1,000
<b>Total</b>					\$ 23,500

Birthday Parties	Rate	Number	Weeks	Total
Parties	\$ 200.00	2	48	\$ 19,200
<b>Total</b>				\$ 19,200

General Recreation Classes	Rate/Class	Classes/Week	Participants	Weeks/sessions	Total
Arts & Crafts Classes	\$ 100.00	4	6	4	\$ 9,600
Adult Classes	\$ 100.00	6	6	4	\$ 14,400
Senior Classes	\$ 25.00	4	6	4	\$ 2,400
Youth/Teen Classes	\$ 75.00	4	6	4	\$ 7,200
Summer/Break Camp	\$ 175.00	1	30	10	\$ 52,500
Misc. Classes	\$ 100.00	3	6	4	\$ 7,200
<b>Total</b>					\$ 93,300

Contract/Other				\$ 5,000
Sub-Total				\$ 261,120
	20% of Reg.	25% Fee Increase		
Non-Resident				\$ 13,056

<b>Grand Total</b>				<b>\$ 274,176</b>
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Doylestown Community Center **General Programs**

**Option 5 - Approved - These are representative programs**

**Program Calculations - Expenses**

Adult Leagues	Position	Staff	Rate/Game	Game/Wk	Weeks	Total
Basketball	Official	2	\$25.00	3	16	\$ 2,400
	Scorer	1	\$14.00	3	16	\$ 672
Volleyball	Official	1	\$20.00	3	16	\$ 960
Indoor Soccer (Futsal)	Official	2	\$20.00	3	16	\$ 1,920
Total						\$ 5,952

Youth Sports Camps	Position	Staff	Rate/Hr	Number	Hours	Total
Basketball	Coaches	2	\$25.00	1	16	\$ 800
Volleyball	Coaches	2	\$25.00	1	16	\$ 800
Other	Coaches	2	\$25.00	1	8	\$ 400
Total						\$ 2,000

Youth Sports Clinics	Position	Staff	Rate/Hr	Number	Hours	Total
Basketball	Coaches	2	\$25.00	1	4	\$ 200
Volleyball	Coaches	2	\$25.00	1	4	\$ 200
Other	Coaches	2	\$25.00	1	4	\$ 200
Total						\$ 600

Fitness	Rate/Class	Classes/Week	Number of Staff	Weeks	Total
Group Fitness Classes	\$ 30.00	10	1	48	\$ 14,400
Total					\$ 14,400

Pickleball Clinics	Position	Staff	Rate/Hr	Number	Hours	Total
Clinics	Coach	1	\$25.00	6	1.5	\$ 225
Total						\$ 225

Birthday Parties	Rate/Class	Classes/Week	Number of Hours	Weeks	Total
Parties	\$ 14.00	2	2	48	\$ 2,688
Total					\$ 2,688

General Recreation Classes	Rate/Class	Classes/Week	Number of Staff	Weeks	Total
Arts & Crafts Classes	\$ 16.00	2	1	32	\$ 1,024
Adult Classes	\$ 16.00	4	1	32	\$ 2,048
Senior Classes	\$ 16.00	2	1	32	\$ 1,024
Youth/Teen Classes	\$ 16.00	2	1	32	\$ 1,024
Summer/Break Day Camp					
Supervisor	\$ 16.00	40	1	10	\$ 6,400
Leader	\$ 14.00	40	3	10	\$ 16,800
Misc. Classes	\$ 16.00	2	1	32	\$ 1,024
Total					\$ 29,344

Contract/Other \$ 2,800

**Grand Total \$ 58,009**

**Program Calculations - Revenues**

Adult Leagues	Teams	Fee	Seasons	Total
Basketball	6	\$ 600	2	\$ 7,200
Volleyball	6	\$ 350	2	\$ 4,200
Indoor Soccer (Futsal)	6	\$ 500	2	\$ 6,000
<b>Total</b>				<b>\$ 17,400</b>

Youth Sports Camps	Participants	Fee	Seasons	Total
Basketball	20	\$ 175	1	\$ 3,500
Volleyball	20	\$ 175	1	\$ 3,500
Other	20	\$ 175	1	\$ 3,500
<b>Total</b>				<b>\$ 10,500</b>

Youth Sports Clinics	Participants	Fee	Number	Total
Basketball	20	\$ 50	1	\$ 1,000
Volleyball	20	\$ 50	1	\$ 1,000
Other	20	\$ 50	1	\$ 1,000
<b>Total</b>				<b>\$ 3,000</b>

Fitness	Rate/Class	Classes/Week	Participants	Weeks/sessions	Total
Group Fitness Classes	\$ 15.00	10	3	48	\$ 21,600
Group Fitness Class (sessions)	\$ 200.00	5	10	6	\$ 60,000
<b>Total</b>					<b>\$ 81,600</b>

Pickleball	Rate/Class	Sessions/Week	Number of Part.	Weeks	Total
Open Play	\$ 10.00	3	25	30	\$ 22,500
Clinics	\$ 25.00	6	10	1	\$ 1,500
<b>Total</b>					<b>\$ 24,000</b>

Birthday Parties	Rate	Number	Weeks	Total
Parties	\$ 200.00	2	48	\$ 19,200
<b>Total</b>				<b>\$ 19,200</b>

General Recreation Classes	Rate/Class	Classes/Week	Participants	Weeks/sessions	Total
Arts & Crafts Classes	\$ 100.00	2	6	4	\$ 4,800
Adult Classes	\$ 100.00	4	6	4	\$ 9,600
Senior Classes	\$ 25.00	2	6	4	\$ 1,200
Youth/Teen Classes	\$ 75.00	2	6	4	\$ 3,600
Summer/Break Camp	\$ 175.00	1	30	10	\$ 52,500
Misc. Classes	\$ 100.00	2	6	4	\$ 4,800
<b>Total</b>					<b>\$ 76,500</b>

Contract/Other \$ 4,000

Sub-Total \$ 236,200

20% of Reg. 25% Fee Increase

Non-Resident \$ 11,810

**Grand Total \$ 248,010**

Doylestown Community Center - Rentals

Option 2 - Small Gym

Revenues	Rate/Hr.	Number of Hrs.	Weeks	Total
Multi-Purpose Room 1 or 2	\$ 110	4	50	\$ 22,000
Multi-Purpose Room 1 & 2 (entire room/4 hrs) (Prime Time-Weekends)	\$ 1,000	1	35	\$ 35,000
Kitchen	\$ 50	6	50	\$ 15,000
Gymnasium (full)	\$ 80	12	30	\$ 28,800
Gymnasium (half)	\$ 40	3	30	\$ 3,600
<b>Total</b>				<b>\$ 104,400</b>

**Total Rental Revenues \$ 104,400**

Option 3 - Large Gym

Revenues	Rate/Hr.	Number of Hrs.	Weeks	Total
Multi-Purpose Room 3 (per section)	\$ 90	6	50	\$ 27,000
Multi-Purpose Room 3 (entire room/4 hrs) (Prime Time-Weekends)	\$ 1,300	1	35	\$ 45,500
Multi-Purpose Room 1 & 2	\$ 90	2	50	\$ 9,000
Kitchen	\$ 50	10	50	\$ 25,000
Meeting Room	\$ 40	12	50	\$ 24,000
Gymnasium (full)	\$ 100	15	30	\$ 45,000
Gymnasium (half)	\$ 50	5	30	\$ 7,500
<b>Total</b>				<b>\$ 183,000</b>

**Total Rental Revenues \$ 183,000**

Option 1 - No Gym

Revenues	Rate/Hr.	Number of Hrs.	Weeks	Total
Multi-Purpose Room 3 (per section)	\$ 90	6	50	\$ 27,000
Multi-Purpose Room 3 (entire room/4 hrs) (Prime Time-Weekends)	\$ 1,300	1	35	\$ 45,500
Multi-Purpose Room 1 & 2	\$ 90	2	50	\$ 9,000
Kitchen	\$ 50	10	50	\$ 25,000
Meeting Room	\$ 40	12	50	\$ 24,000
<b>Total</b>				<b>\$ 130,500</b>

**Total Rental Revenues \$ 130,500**

**Option 4 - Hybrid**

Revenues	Rate/Hr.	Number of Hrs.	Weeks	Total
Multi-Purpose Room 3 (per section)	\$ 90	6	50	\$ 27,000
Multi-Purpose Room 3 (entire room/4 hrs) (Prime Time-Weekends)	\$ 1,300	1	35	\$ 45,500
Outdoor Patio (off of Multi-Purpose Room 2)	\$ 30	4	22	\$ 2,640
Multi-Purpose Room 1 & 2	\$ 90	2	50	\$ 9,000
Kitchen	\$ 50	10	50	\$ 25,000
Gymnasium (full)	\$ 80	12	30	\$ 28,800
Gymnasium (half)	\$ 40	3	30	\$ 3,600
Total				\$ 141,540

**Total Rental Revenues \$ 141,540**

**Option 5 - Approved**

Revenues	Rate/Hr.	Number of Hrs.	Weeks	Total
Multi-Purpose Room 3 (per section)	\$ 90	4	50	\$ 18,000
Multi-Purpose Room 3 (entire room/4 hrs) (Prime Time-Weekends)	\$ 1,300	1	35	\$ 45,500
Outdoor Patio (off of Multi-Purpose Room)	\$ 30	4	22	\$ 2,640
Kitchen	\$ 50	8	50	\$ 20,000
Gymnasium (full)	\$ 100	15	30	\$ 45,000
Gymnasium (half)	\$ 50	5	30	\$ 7,500
Total				\$ 138,640

**Total Rental Revenues \$ 138,640**

**General Staff Part Time Hours**

**Option 2 - Small Gym**

Front Desk/Building Supervisor	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	8am-1pm	5	1	5	25
		1pm-5pm	4	1	5	20
		5pm-9pm	4	1	5	20
	Saturday	8am-1pm	5	1	1	5
		1pm-6pm	5	1	1	5
	Sunday	Noon-6pm	6	1	1	6
Total						81

Gym Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	3pm-6pm	3	1	5	15
		6pm-9pm	3	1	5	15
	Saturday	Noon-6pm	6	1	1	6
	Sunday	Noon-6pm	6	1	1	6
Total						42

Facility Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	7am-Noon	5	1	5	25
		5pm-10pm	5	1	5	25
	Saturday	7am-Noon	5	1	1	5
		5pm-8pm	3	1	1	3
	Sunday	10am-Noon	2	1	1	2
		5pm-8pm	3	1	1	3
Total						63

Rental Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Friday	8pm-11pm	3	1	1	3
	Sat./Sun.	3pm-11pm	8	1	2	16
Total						19

**General Staff Part Time Hours**

**Option 3 - Large Gym**

Front Desk/Building Supervisor	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	8am-1pm	5	1	5	25
		1pm-5pm	4	1	5	20
		5pm-9pm	4	1	5	20
	Saturday	8am-1pm	5	1	1	5
		1pm-6pm	5	1	1	5
	Sunday	Noon-6pm	6	1	1	6
<b>Total</b>						<b>81</b>

Gym Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	3pm-6pm	3	1	5	15
		6pm-9pm	3	1	5	15
	Saturday	Noon-6pm	6	1	1	6
	Sunday	Noon-6pm	6	1	1	6
<b>Total</b>						<b>42</b>

Facility Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	7am-Noon	6	1	5	30
		4pm-10pm	6	1	5	30
	Saturday	7am-1pm	6	1	1	6
		5pm-8pm	3	1	1	3
	Sunday	10am-1pm	3	1	1	3
		5pm-8pm	3	1	1	3
<b>Total</b>						<b>75</b>

Rental Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Friday	8pm-11pm	3	1	1	3
	Sat./Sun.	Noon-11pm	11	1	2	22
<b>Total</b>						<b>25</b>

**General Staff Part Time Hours**

**Option 1 - No Gym**

Front Desk/Building Supervisor	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	8am-1pm	5	1	5	25
		1pm-5pm	4	1	5	20
		5pm-9pm	4	1	5	20
	Saturday	8am-1pm	5	1	1	5
		1pm-6pm	5	1	1	5
	Sunday	Noon-6pm	6	1	1	6
Total						81

Gym Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	3pm-6pm	3	0	5	0
		6pm-9pm	3	0	5	0
	Saturday	Noon-6pm	6	0	1	0
	Sunday	Noon-6pm	6	0	1	0
Total						0

Facility Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	7am-9am	2	1	5	10
		5pm-8pm	3	1	5	15
	Saturday	7am-9am	2	1	1	2
		5pm-8pm	3	1	1	3
	Sunday	10am-Noon	2	1	1	2
		5pm-8pm	3	1	1	3
Total						35

Rental Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Friday	8pm-11pm	3	1	1	3
	Sat./Sun.	Noon-11pm	11	1	2	22
Total						25

**General Staff Part Time Hours**

**Option 4 - Hybrid Option**

Front Desk/Building Supervisor	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	8am-1pm	5	1	5	25
		1pm-5pm	4	1	5	20
		5pm-9pm	4	1	5	20
	Saturday	8am-1pm	5	1	1	5
		1pm-6pm	5	1	1	5
	Sunday	Noon-6pm	6	1	1	6
Total						81

Gym Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	3pm-6pm	3	1	5	15
		6pm-9pm	3	1	5	15
	Saturday	Noon-6pm	6	1	1	6
	Sunday	Noon-6pm	6	1	1	6
Total						42

Facility Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	7am-Noon	5	1	5	25
		4pm-10pm	6	1	5	30
	Saturday	7am-1pm	6	1	1	6
		5pm-8pm	3	1	1	3
	Sunday	10am-1pm	3	1	1	3
		5pm-8pm	3	1	1	3
Total						70

Rental Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Friday	8pm-11pm	3	1	1	3
	Sat./Sun.	Noon-11pm	11	1	2	22
Total						25

**General Staff Part Time Hours**

**Option 5 - Approved Option**

Front Desk/Building Supervisor	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	8am-1pm	5	1	5	25
		1pm-5pm	4	1	5	20
		5pm-9pm	4	1	5	20
	Saturday	8am-1pm	5	1	1	5
		1pm-6pm	5	1	1	5
	Sunday	Noon-6pm	6	1	1	6
Total						81

Gym Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	3pm-6pm	3	1	5	15
		6pm-9pm	3	1	5	15
	Saturday	Noon-6pm	6	1	1	6
	Sunday	Noon-6pm	6	1	1	6
Total						42

Facility Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Mon-Fri	7am-Noon	5	1	5	25
		5pm-10pm	5	1	5	25
	Saturday	7am-1pm	6	1	1	6
		5pm-8pm	3	1	1	3
	Sunday	10am-1pm	3	1	1	3
		5pm-8pm	3	1	1	3
Total						65

Rental Attendant	Days	Time	Total Hours	Employees	Days	Total Hrs. Week
	Friday	8pm-11pm	3	1	1	3
	Sat./Sun.	2pm-11pm	9	1	2	18
Total						21

Doylestown Community Center **Fulltime Wage Calculator**

Position	2021	2022	2023
P & R Director	\$ 91,887.33	\$ 94,643.95	\$ 97,483.27
Program Coordinator	\$ 48,704.34	\$ 50,165.47	\$ 51,670.43

# MARKET ANALYSIS

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## Section I – Market Analysis

As part of the planning effort for the proposed new Doylestown Community Center, **Ballard\*King & Associates (B\*K)** has completed a market analysis for the project.

### Demographics

The following is a summary of the demographic characteristics within areas identified as the Primary and Secondary Service Areas. The Primary Service Area is Doylestown Township. The Secondary Service Area is the Central Bucks School District.

B\*K accesses demographic information from Environmental Systems Research Institute (ESRI) who utilizes 2010 Census data and their demographers for 2020-2025 projections. In addition to demographics, ESRI also provides data on housings, recreation, and entertainment spending and adult participation in activities. B\*K also uses information produced by the National Sporting Goods Association (NSGA) to overlay onto the demographic profile to determine potential participation in various activities.

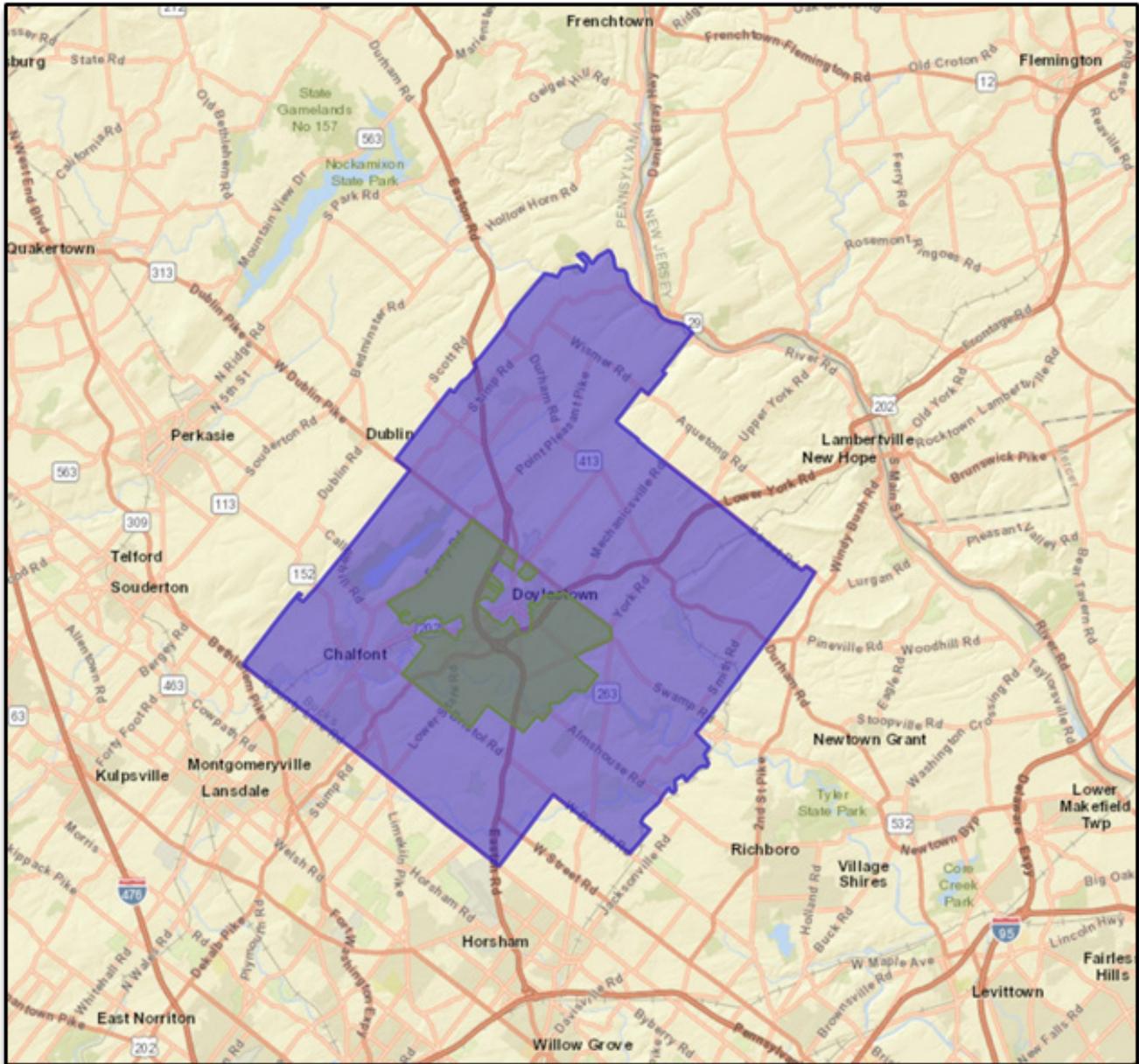
**Service Areas:** The information provided includes the basic demographics and data for the Primary and Secondary Service Areas with comparison data for the State of Pennsylvania and the United States.

Secondary Service Areas are defined as the distance people will travel on a regular basis (a minimum of once a week) to utilize recreation facilities. Use by individuals outside of this area will be much more limited and will focus more on special activities or events.

Service areas can flex or contract based upon a facility's proximity to major thoroughfares. Other factors impacting the use as it relates to driving distance are the presence of alternative service providers in the service area. Alternative service providers can influence participation, membership, daily admissions and the associated penetration rates for programs and services.

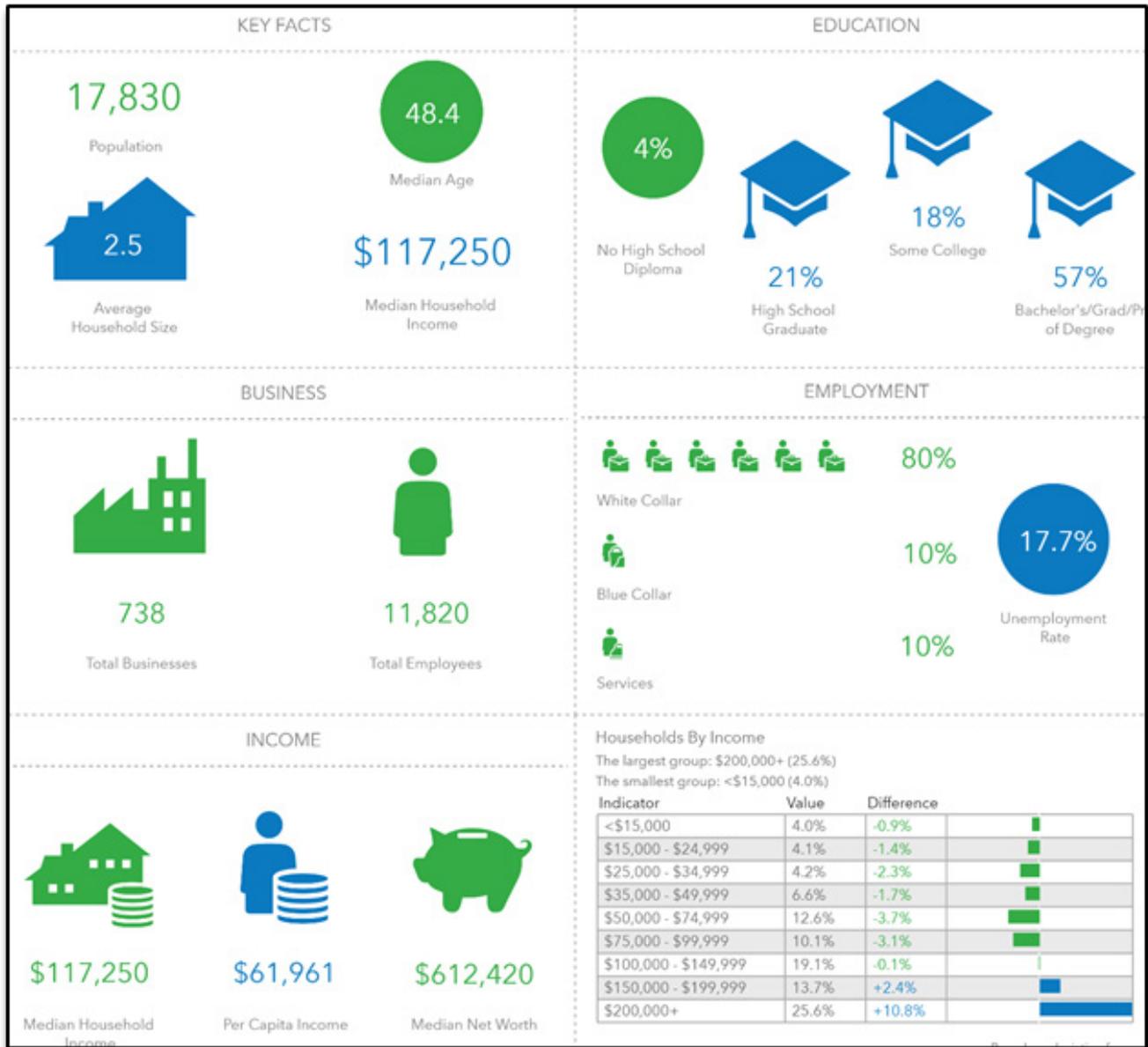
Service areas can vary in size with the types of components in the facility.

## Map A – Service Area Maps



- Green Boundary – Primary Service Area (Doylestown Township)
- Blue Boundary – Secondary Service Area (Central Bucks School District)

# Infographic A



- Household by Income comparison uses the Primary Service Area and compares it to Bucks County.

## Demographic Summary

	Primary Service Area	Secondary Service Area
<b>Population:</b>		
2010 Census	17,565 <sup>1</sup>	114,563 <sup>2</sup>
2020 Estimate	17,830	120,085
2025 Estimate	18,013	122,290
<b>Households:</b>		
2010 Census	6,329	41,356
2020 Estimate	6,568	43,975
2025 Estimate	6,672	44,986
<b>Families:</b>		
2010 Census	4,444	30,608
2020 Estimate	4,541	32,164
2025 Estimate	4,591	32,779
<b>Average Household Size:</b>		
2010 Census	2.53	2.69
2020 Estimate	2.48	2.66
2025 Estimate	2.47	2.65
<b>Ethnicity (2020 Estimate):</b>		
Hispanic	4.0%	4.3%
White	92.0%	90.0%
Black	3.1%	2.0%
American Indian	0.2%	0.2%
Asian	2.0%	4.7%
Pacific Islander	0.1%	0.0%
Other	0.9%	1.3%
Multiple	1.8%	1.7%
<b>Median Age:</b>		
2010 Census	45.3	42.0
2020 Estimate	48.4	43.9
2025 Estimate	50.0	44.6
<b>Median Income:</b>		
2020 Estimate	\$117,250	\$112,982
2025 Estimate	\$125,122	\$121,529

<sup>1</sup> From the 2000-2010 Census, the Primary Service Area experienced a .03% decrease in population.

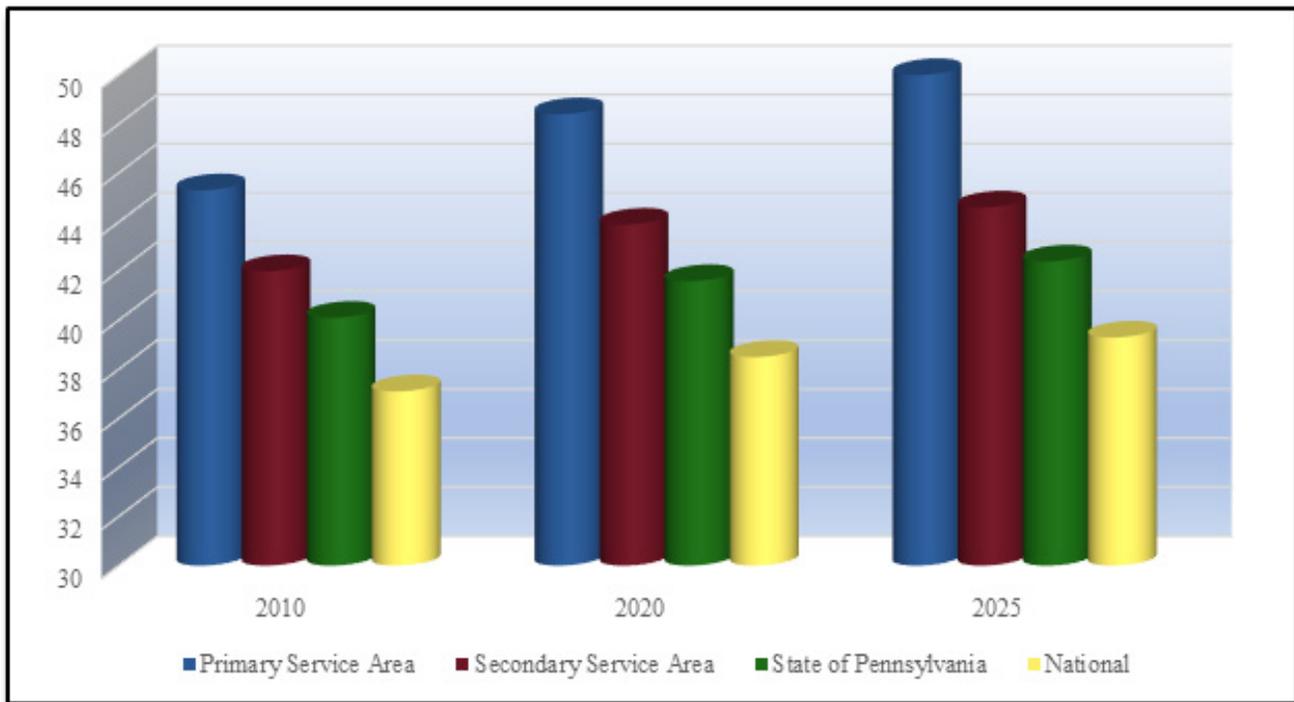
<sup>2</sup> From the 2000-2010 Census, the Secondary Service Area experienced a 12.7% increase in population.

**Age and Income:** The median age and household income levels are compared with the national number as both of these factors are primary determiners of participation in recreation activities. The lower the median age, the higher the participation rates are for most activities. The level of participation also increases as the median income level goes up.

**Table A – Median Age:**

	2010 Census	2020 Projection	2025 Projection
Primary Service Area	45.3	48.4	50.0
Secondary Service Area	42.0	43.9	44.6
State of Pennsylvania	40.1	41.6	42.4
Nationally	37.1	38.5	39.3

**Chart A – Median Age:**



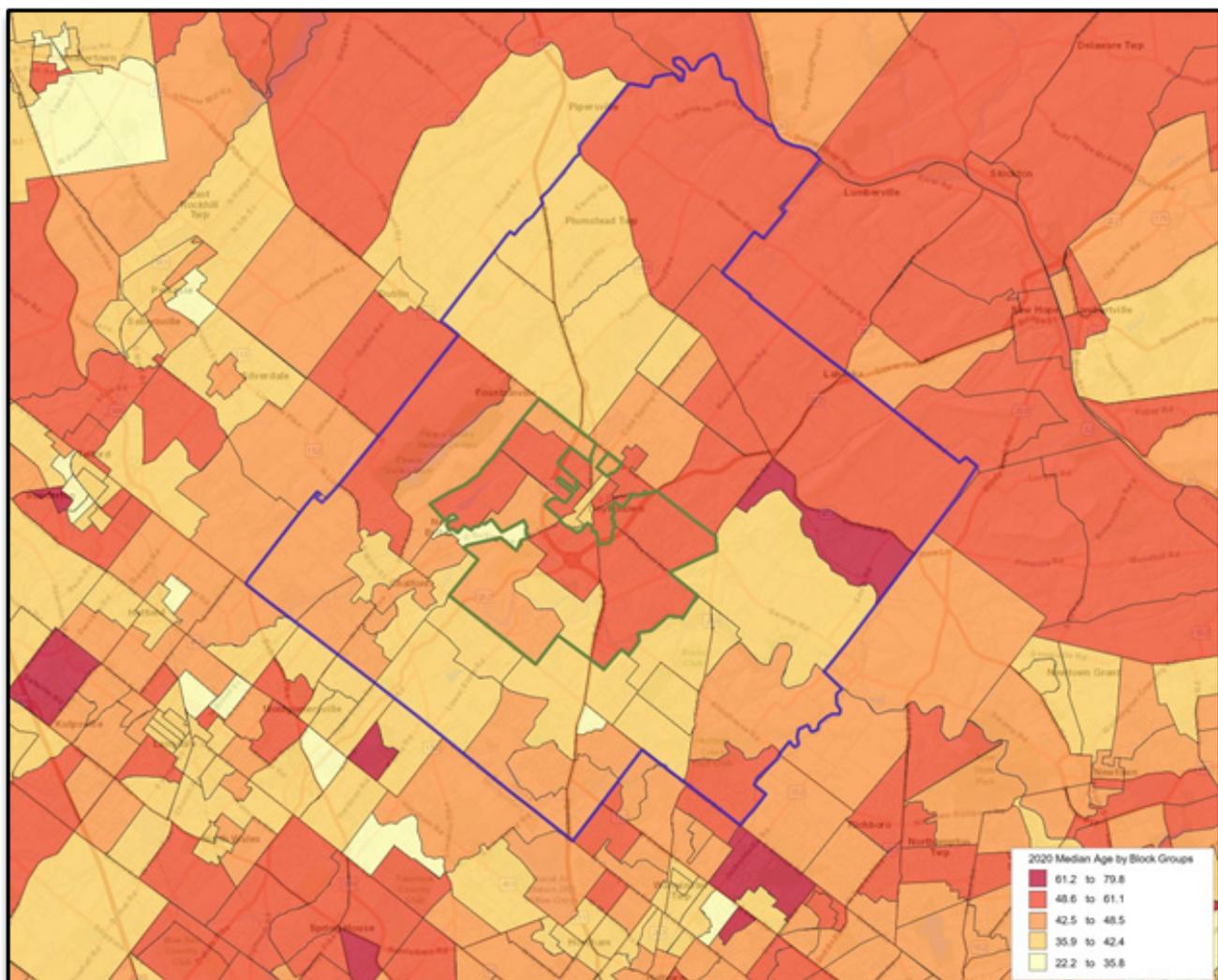
The median age in the Primary and Secondary Service Area is greater than the State of Pennsylvania and the National number. A lower median age typically points to the presence of families with children. Community Centers draw a wide range of users and age groups.

**Households with Children:** The following chart provides the number of households and percentage of households in the Primary and Secondary Service Area with children.

<b>Table B – Households with Children:</b>		
	<b>Number of Households</b>	<b>% of Households</b>
	<b>With Children</b>	<b>With Children</b>
Primary Service Area	1,947	30.8%
Secondary Service Area	15,279	36.9%
State of Pennsylvania	---	29.9%

The information contained in Table-B helps further outline the presence of families with children. As a point of comparison in the 2010 Census, 33.4% of households nationally had children present.

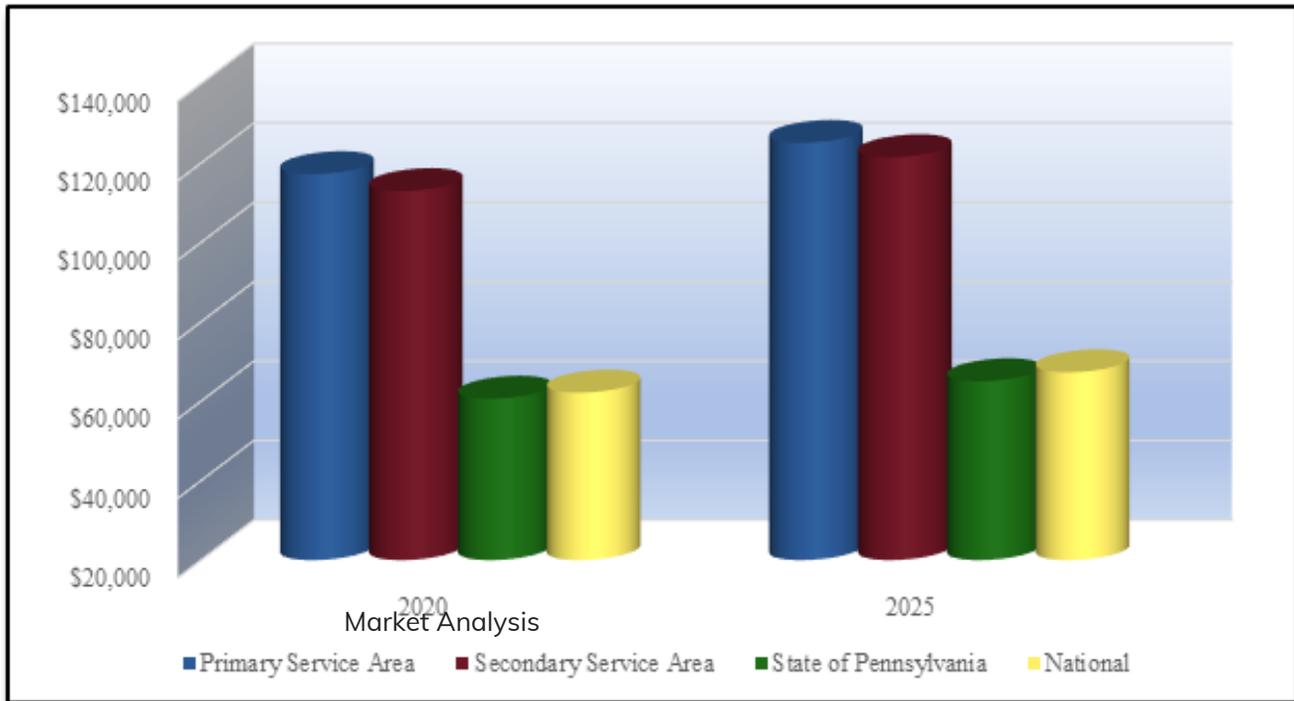
**Map B – Median Age by Block Group**



**Table C – Median Household Income:**

	2020 Projection	2025 Projection
Primary Service Area	\$117,250	\$125,122
Secondary Service Area	\$112,982	\$121,526
State of Pennsylvania	\$ 60,671	\$ 65,067
Nationally	\$ 62,203	\$ 67,325

**Chart B – Median Household Income:**



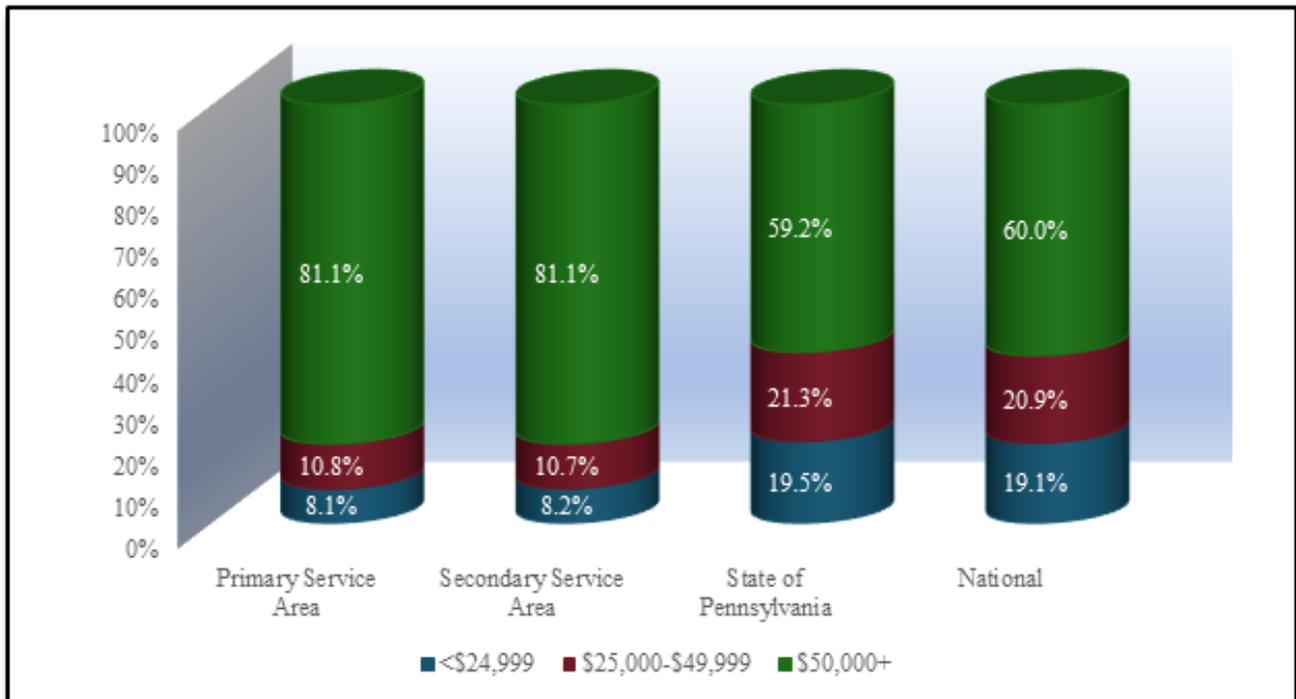
Based on 2020 projections for median household income the following narrative describes the service areas:

In the Primary Service Area, the percentage of households with median income over \$50,000 per year is 81.1% compared to 59.0% on a national level. Furthermore, the percentage of the households in the service area with median income less than \$25,000 per year is 8.1% compared to a level of 14.3% nationally.

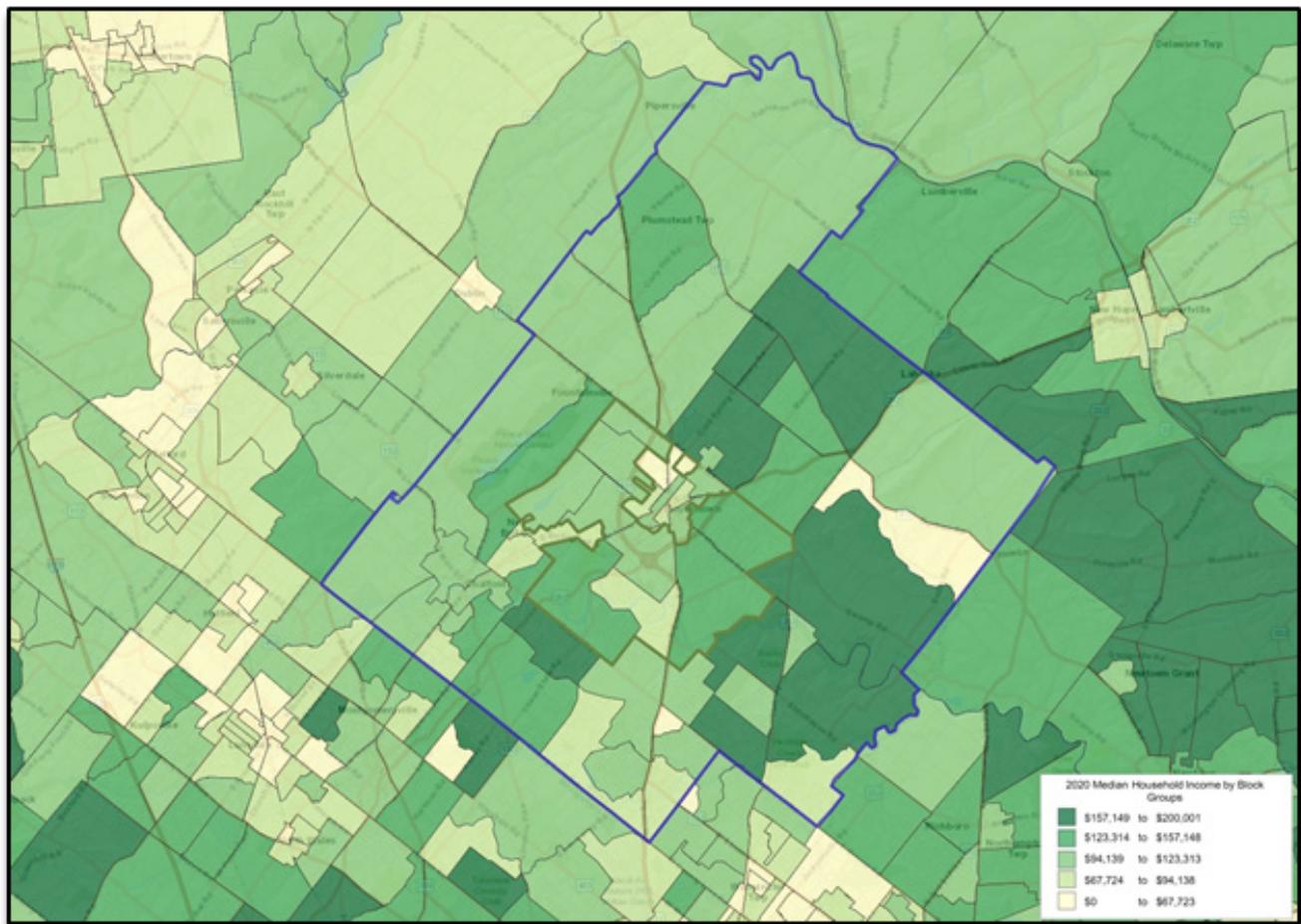
In the Secondary Service Area, the percentage of households with median income over \$50,000 per year is 81.1% compared to 59.0% on a national level. Furthermore, the percentage of the households in the service area with median income less than \$25,000 per year is 8.2% compared to a level of 14.3% nationally.

While there is no perfect indicator of use of a community center, the percentage of households with more than \$50,000 median income is a key factor. Therefore, these numbers are significant and balanced with the overall cost of living.

**Chart C – Median Household Income Distribution**



Map C – Household Income by Block Group



**Household Budget Expenditures:** In addition to studying Median Age and Median Income, it is important to examine Household Budget Expenditures. In particular, reviewing housing information; shelter, utilities, fuel and public services along with entertainment & recreation can provide a snapshot into the cost of living and spending patterns in the services areas. The table below looks at that information and compares the service areas.

**Table D – Household Budget Expenditures<sup>3</sup>:**

Primary Service Area	SPI	Average Amount Spent	Percent
Housing	172	\$41,726.85	31.4%
Shelter	174	\$33,781.73	25.4%
Utilities, Fuel, Public Service	163	\$ 7,945.11	6.0%
Entertainment & Recreation	173	\$ 5,630.57	4.2%

Secondary Service Area	SPI	Average Amount Spent	Percent
Housing	162	\$39,311.66	31.2%
Shelter	164	\$31,800.45	25.3%
Utilities, Fuel, Public Service	154	\$ 7,511.22	6.0%
Entertainment & Recreation	164	\$ 5,331.85	4.2%

State of Pennsylvania	SPI	Average Amount Spent	Percent
Housing	95	\$23,045.68	31.2%
Shelter	94	\$18,252.99	24.7%
Utilities, Fuel, Public Service	98	\$ 4,792.69	6.5%
Entertainment & Recreation	98	\$ 3,169.57	4.3%

**SPI:** Spending Potential Index as compared to the National number of 100.

**Average Amount Spent:** The average amount spent per household.

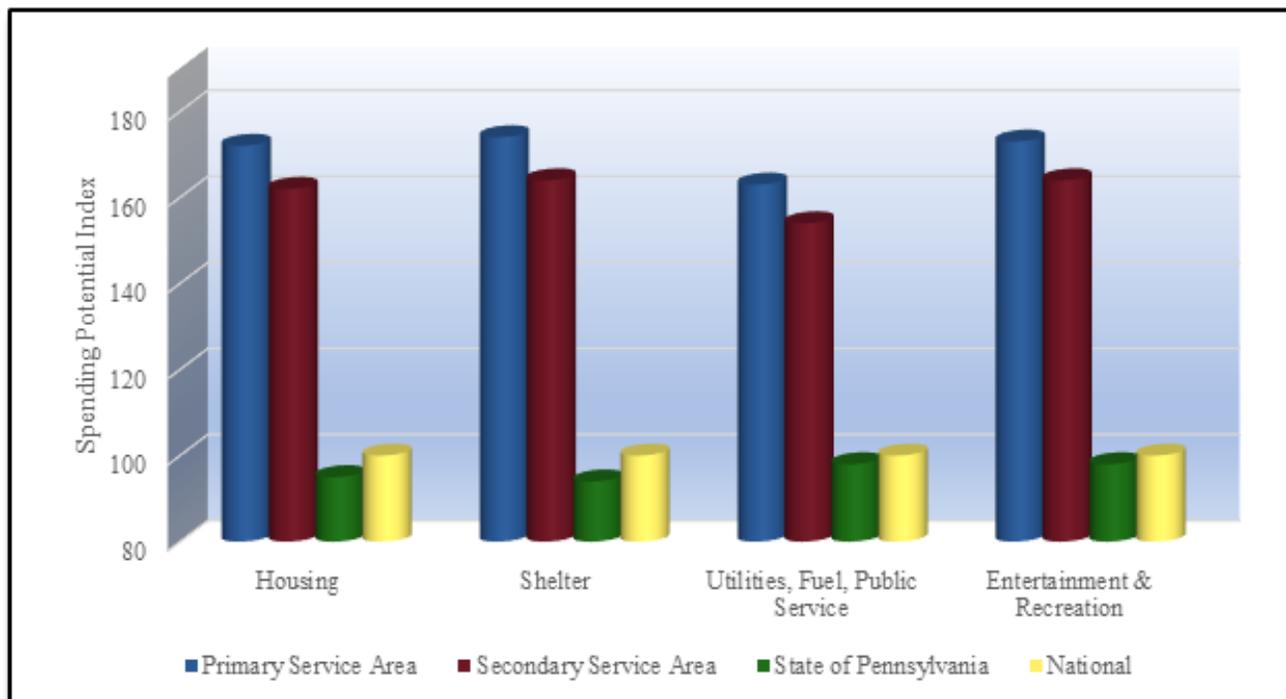
**Percent:** Percent of the total 100% of household expenditures.

Note: Shelter along with Utilities, Fuel, Public Service are a portion of the Housing percentage.

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<sup>3</sup>Consumer Spending data are derived from the 2016 and 2017 Consumer Expenditure Surveys, Bureau of Labor Statistics. ESRI forecasts for 2020 and 2025.

**Chart D – Household Budget Expenditures Spending Potential Index:**



The consistency between the median household income and household budget expenditures is important. It also points to the fact that compared to a National level the dollars available, the money being spent in the Primary Service Area is greater. While the cost of living is high, the rate of expenditures on entertainment and recreation could point to the ability to pay for programs and services offered at a recreation facility of any variety.

The total number of housing units in the Primary Service Area is 6,636 and 95.4% are occupied, or 6,329 housing units. The total vacancy rate for the service area is 4.6%. Of the available units:

- For Rent 1.7%
- Rented, not Occupied 0.1%
- For Sale 0.9%
- Sold, not Occupied 0.3%
- For Seasonal Use 0.6%
- Other Vacant 1.0%

The total number of housing units in the Secondary Service Area is 43,144 and 95.9% are occupied, or 41,356 housing units. The total vacancy rate for the service area is 4.1%. Of the available units:

- For Rent 1.0%
- Rented, not Occupied 0.1%
- For Sale 1.1%
- Sold, not Occupied 0.4%
- For Seasonal Use 0.6%
- Other Vacant 1.0%

Recreation Expenditures Spending Potential Index: Finally, it is important to examine the overall propensity for households to spend dollars on recreation activities. The following comparisons are possible.

**Table E – Recreation Expenditures Spending Potential Index<sup>4</sup>:**

Primary Service Area	SPI	Average Spent
Fees for Participant Sports	192	\$189.03
Fees for Recreational Lessons	197	\$285.27
Social, Recreation, Club Membership	194	\$464.40
Exercise Equipment/Game Tables	177	\$116.52
Other Sports Equipment	194	\$13.81

Secondary Service Area	SPI	Average Spent
Fees for Participant Sports	182	\$179.93
Fees for Recreational Lessons	193	\$279.73
Social, Recreation, Club Membership	183	\$437.91
Exercise Equipment/Game Tables	173	\$113.73
Other Sports Equipment	183	\$12.99

State of Pennsylvania	SPI	Average Spent
Fees for Participant Sports	92	\$90.46
Fees for Recreational Lessons	91	\$131.29
Social, Recreation, Club Membership	94	\$225.47
Exercise Equipment/Game Tables	99	\$64.97
Other Sports Equipment	92	\$6.52

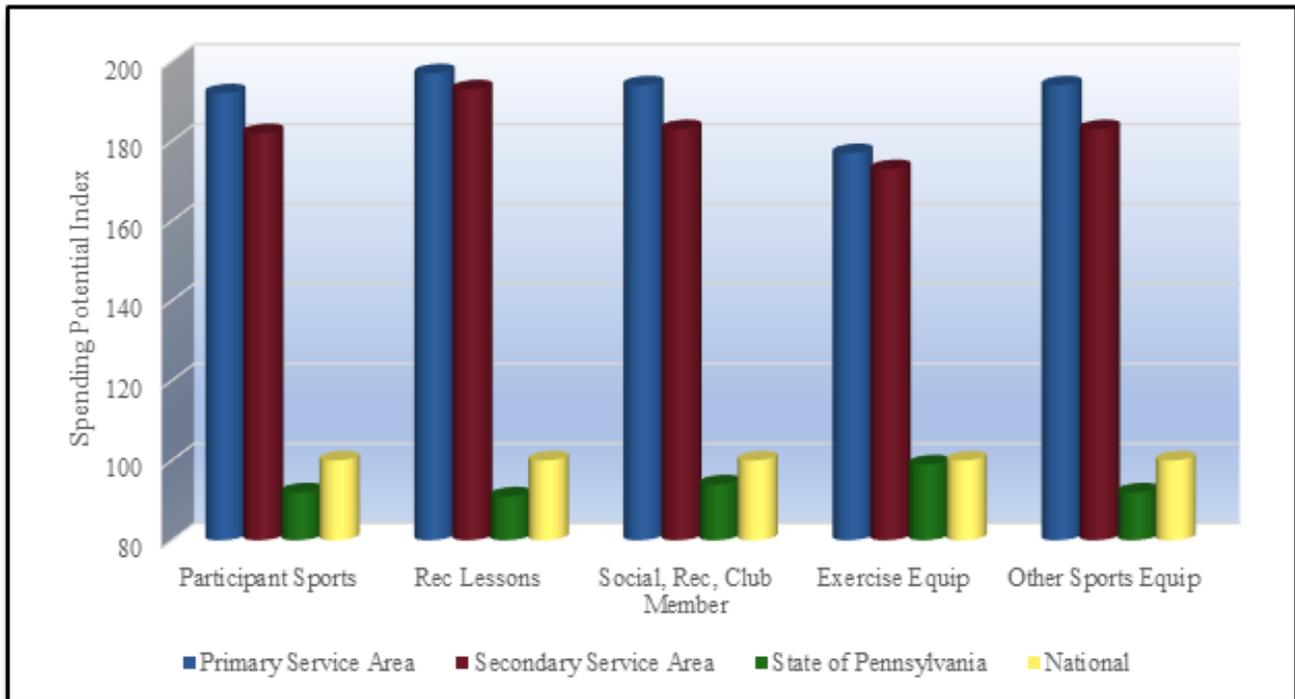
**Average Amount Spent:** The average amount spent for the service or item in a year.

**SPI:** Spending potential index as compared to the national number of 100.

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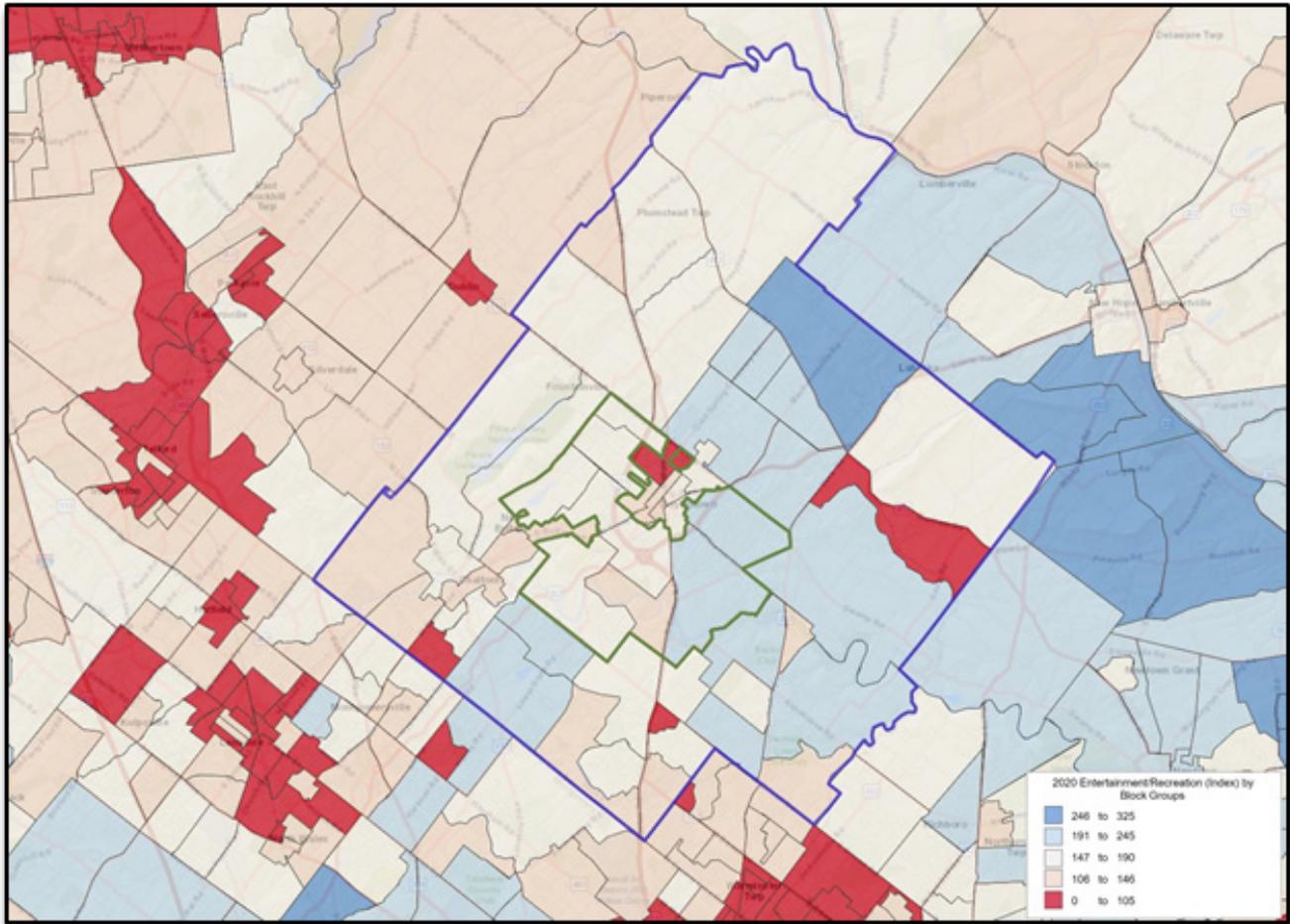
<sup>4</sup>Consumer Spending data are derived from the 2016 and 2017 Consumer Expenditure Surveys, Bureau of Labor Statistics.

Chart E – Recreation Spending Potential Index:



Again, there is a great deal on consistency between median household income, household budget expenditures and now recreation and spending potential.

Map D – Recreation Spending Potential Index by Block Group



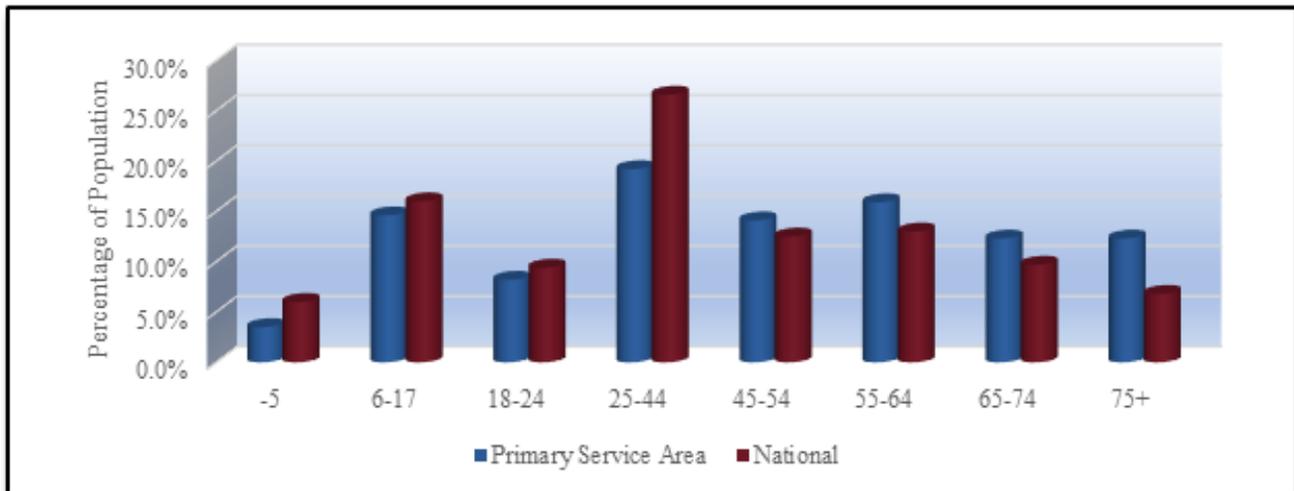
**Population Distribution by Age:** Utilizing census information for the Primary and Secondary Service Areas, the following comparisons are possible.

**Table F – 2020 Primary Service Area Age Distribution** (ESRI estimates)

Ages	Population	% of Total	Nat. Population	Difference
0-5	620	3.5%	6.0%	-2.5%
5-17	2,579	14.6%	16.0%	-1.4%
18-24	1,477	8.2%	9.4%	-1.2%
25-44	3,417	19.2%	26.6%	-7.4%
45-54	2,523	14.1%	12.4%	+1.7%
55-64	2,839	15.9%	13.0%	+2.9%
65-74	2,188	12.3%	9.8%	+2.5%
75+	2,182	12.3%	6.8%	+5.5%

- Population:** 2020 census estimates in the different age groups in the Primary Service Area.
- % of Total:** Percentage of the Primary Service Area population in the age group.
- National Population:** Percentage of the national population in the age group.
- Difference:** Percentage difference between the Primary Service Area population and the national population.

**Chart F – 2020 Primary Service Area Age Group Distribution**



The demographic makeup of the Primary Service Area, when compared to the characteristics of the national population, indicates that there are considerable differences with a larger population in the 45 and older age groups. A smaller population in the younger age groups 0-5, 6-17, 18-24 and 25-44. The greatest positive variance is in the 75+ age group with +5.5%, while the greatest negative variance is in the 25-44 age group with -7.4%.

**Table G – 2020 Secondary Service Area Age Distribution (ESRI estimates)**

Ages	Population	% of Total	Nat. Population	Difference
0-5	5,592	4.6%	6.0%	-1.4%
5-17	20,624	17.3%	16.0%	+1.3%
18-24	9,528	8.0%	9.4%	-1.4%
25-44	25,796	21.4%	26.6%	-5.2%
45-54	18,402	15.3%	12.4%	+2.9%
55-64	17,707	14.8%	13.0%	+1.8%
65-74	12,033	10.0%	9.8%	+0.2%
75+	10,398	8.7%	6.8%	+1.9%

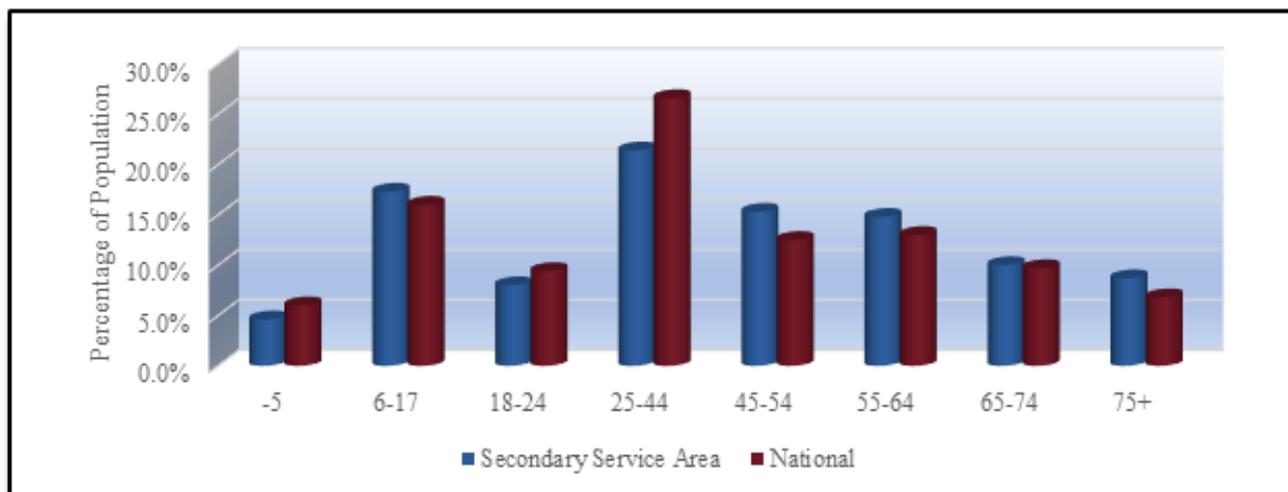
**Population:** 2020 census estimates in the different age groups in the Secondary Service Area.

**% of Total:** Percentage of the Secondary Service Area population in the age group.

**National Population:** Percentage of the national population in the age group.

**Difference:** Percentage difference between the Secondary Service Area population and the national population.

**Chart G – 2020 Secondary Service Area Age Group Distribution**



The demographic makeup of the Secondary Service Area, when compared to the characteristics of the national population, indicates that there are some differences with a smaller population in the 0-5, 18-24, and 25-44 age groups. There is a larger population in age groups 5-17, 45-54, 55-64, 65-74 and 75+. The greatest positive variance is in the 75+ age group with +1.9%, while the greatest negative variance is in the 25-44 age group with -5.2%.

**Population Comparison by Age Over Time:** Utilizing census information from the Primary, Secondary Service Area, the following comparisons are possible.

**Table H – 2020 Primary Service Area Population Estimates** (U.S. Census Information and ESRI)

Ages	2010 Census	2020 Projection	2025 Projection	Percent Change	Percent Change Nat'l
0-5	695	620	630	-9.4%	+2.1%
5-17	3,046	2,579	2,321	-23.8%	+0.7%
18-24	1,399	1,477	1,386	-0.9%	+0.5%
25-44	3,556	3,417	3,692	+3.8%	+13.0%
45-54	3,166	2,523	2,160	-31.8%	-9.9%
55-64	2,393	2,839	2,702	+12.9%	+15.4%
65-74	1,612	2,188	2,460	+52.6%	+69.8%
75+	1,698	2,182	2,657	+56.5%	+50.2%

**Chart H – Primary Service Area Population Growth**

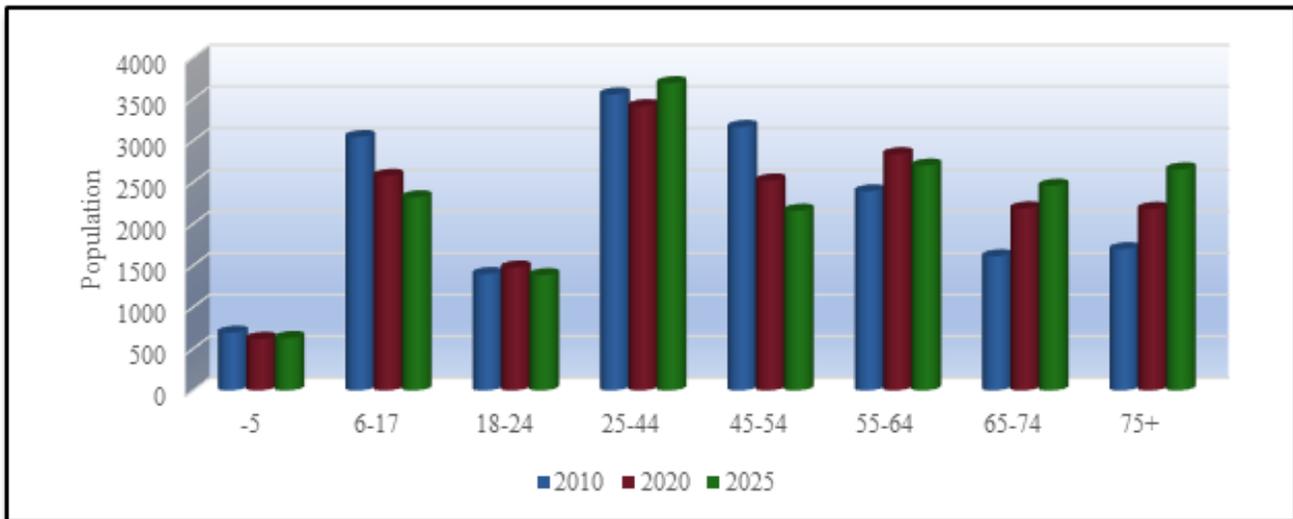


Table-H illustrates the growth or decline in age group numbers from the 2010 census until the year 2025. It is projected age categories 25-44, 55-64, 65-74 and 75+ will see an increase in population. The population of the United States as a whole is aging, and it is not unusual to find negative growth numbers in the younger age groups and significant net gains in the 45 plus age groupings in communities which are relatively stable in their population numbers.

**Table I – 2020 Secondary Service Area Population Estimates** (U.S. Census Information and ESRI)

Ages	2010 Census	2020 Projection	2025 Projection	Percent Change	Percent Change Nat'l
0-5	5,897	5,592	5,715	-3.1%	+2.1%
5-17	23,113	20,624	19,445	-15.9%	+0.7%
18-24	8,111	9,528	8,757	+8.0%	+0.5%
25-44	25,878	25,796	27,851	+7.6%	+13.0%
45-54	20,851	18,402	16,434	-21.2%	-9.9%
55-64	14,000	17,707	17,580	+26.3%	+15.4%
65-74	8,795	12,033	13,773	+56.6%	+69.8%
75+	7,911	10,398	12,630	+59.7%	+50.2%

**Chart I – Secondary Service Area Population Growth**

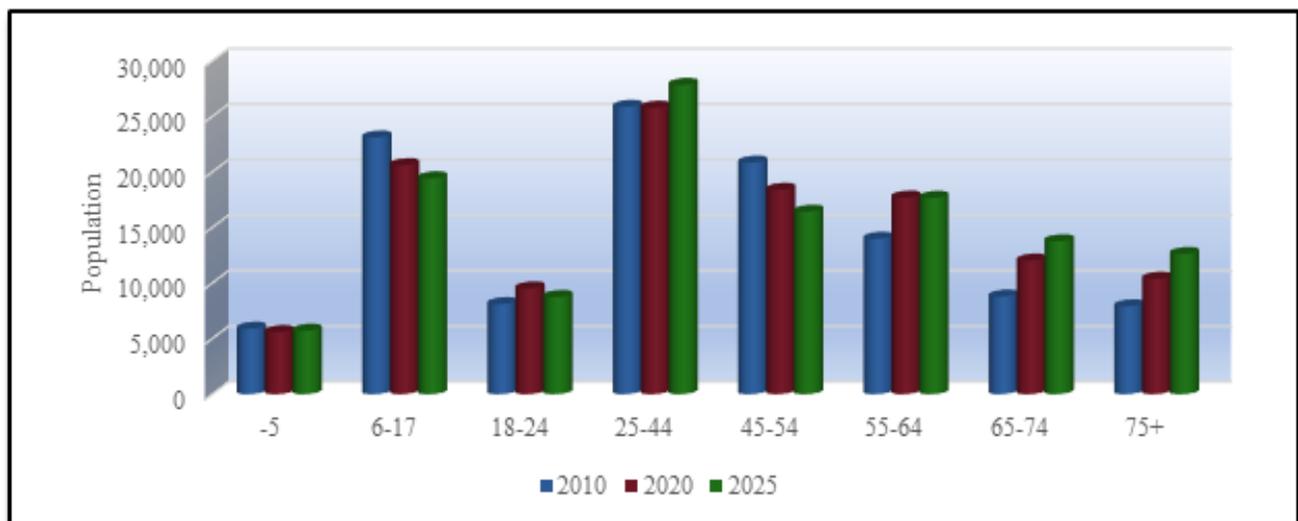


Table-I illustrates the growth or decline in age group numbers from the 2010 census until the year 2025. It is projected age categories 18-24, 25-44, 55-64, 65-74 and 75+ will see an increase in population. The population of the United States as a whole is aging, and it is not unusual to find negative growth numbers in the younger age groups and significant net gains in the 45 plus age groupings in communities which are relatively stable in their population numbers.

**Ethnicity and Race:** Below is listed the distribution of the population by ethnicity and race for the Primary and Secondary Service Area for 2020 population projections. Those numbers were developed from 2010 Census Data.

**Table J – Primary Service Area Ethnic Population and Median Age 2020**

(Source – U.S. Census Bureau and ESRI)

Ethnicity	Total Population	Median Age	% of Population	% of PA Population
Hispanic	717	28.4	4.0%	8.2%

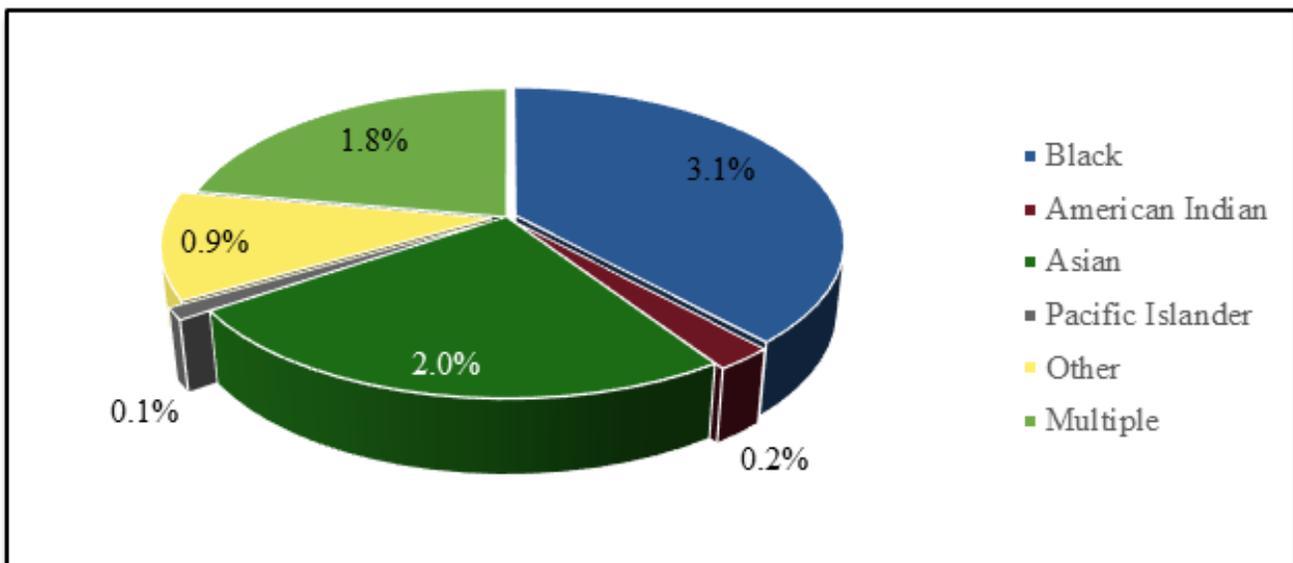
**Table K – Primary Service Area by Race and Median Age 2020**

(Source – U.S. Census Bureau and ESRI)

Race	Total Population	Median Age	% of Population	% of PA Population
White	16,393	49.8	92.0%	78.5%
Black	544	31.6	3.1%	11.4%
American Indian	35	31.3	0.2%	0.3%
Asian	359	38.9	2.0%	3.8%
Pacific Islander	14	32.5	0.1%	0.0%
Other	165	27.6	0.9%	3.4%
Multiple	315	22.6	1.8%	2.5%

2020 Primary Service Area Total Population: 17,830 Residents

**Chart J – 2020 Primary Service Area Population by Non-White Race**



**Table L – Secondary Service Area Ethnic Population and Median Age 2020**

(Source – U.S. Census Bureau and ESRI)

Ethnicity	Total Population	Median Age	% of Population	% of PA Population
Hispanic	5,197	27.8	4.3%	8.2%

**Table M – Secondary Service Area by Race and Median Age 2020**

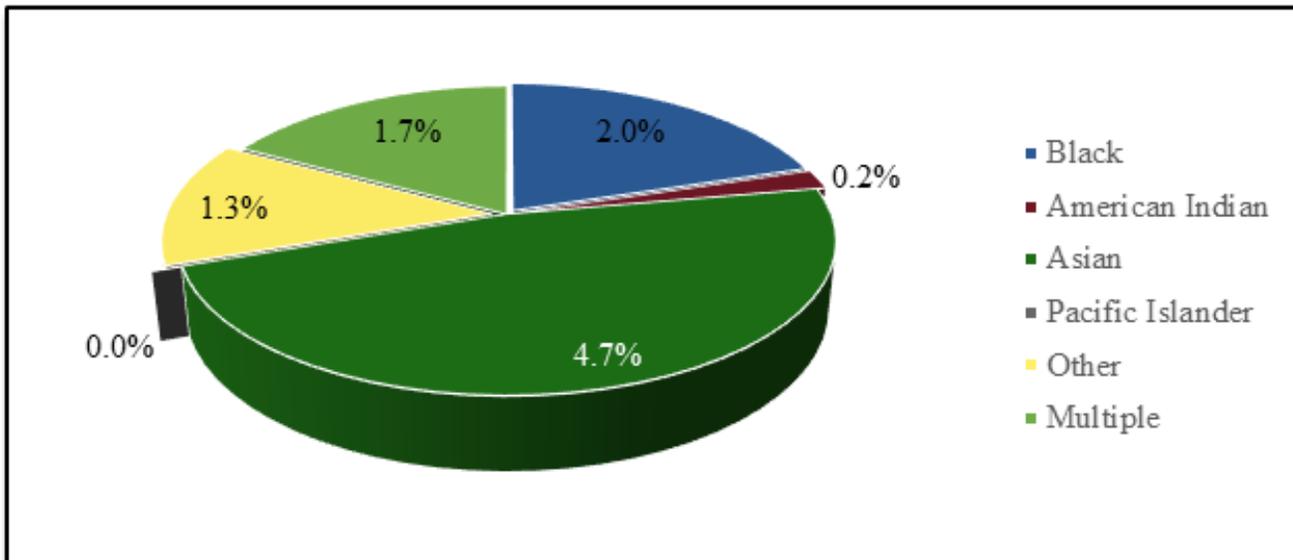
(Source – U.S. Census Bureau and ESRI)

Race	Total Population	Median Age	% of Population	% of PA Population
White	108,124	5.5	90.0%	78.5%
Black	2,454	37.4	2.0%	11.4%
American Indian	195	31.0	0.2%	0.3%
Asian	5,678	35.9	4.7%	3.8%
Pacific Islander	52	36.2	0.0%	0.0%
Other	1,506	27.5	1.3%	3.4%
Multiple	2,075	18.8	1.7%	2.5%

2020 Secondary Service Area Total Population:

120,085 Residents

**Chart K – 2020 Secondary Service Area Population by Non-White Race**



## Tapestry Segmentation

Tapestry segmentation represents the 4th generation of market segmentation systems that began 30 years ago. The 65-segment Tapestry Segmentation system classifies U.S. neighborhoods based on their socioeconomic and demographic compositions. While the demographic landscape of the U.S. has changed significantly since the 2000 Census, the tapestry segmentation has remained stable as neighborhoods have evolved.

The following pages and tables outline the top 5 tapestry segments in each of the service areas and provides a brief description of each. This information combined with the key indicators and demographic analysis of each service area help further describe the markets that the Primary and Secondary Service Area looks to serve with programs, services, and special events.

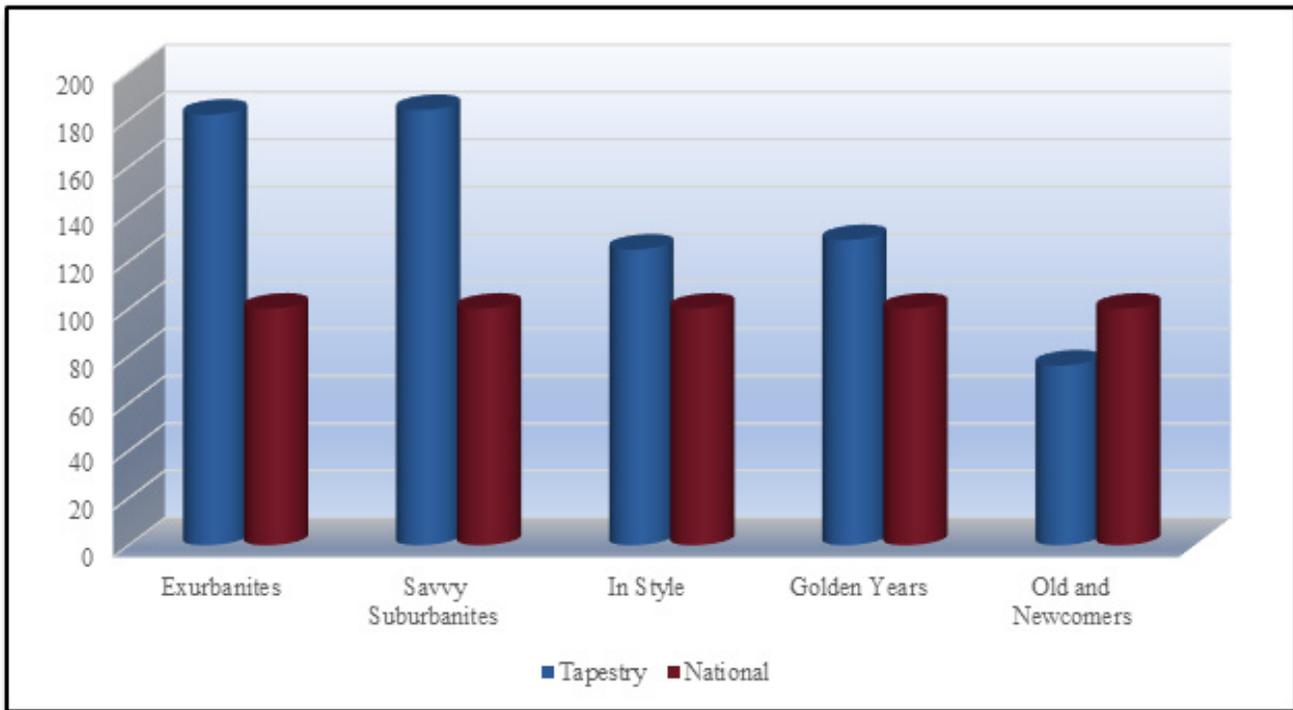
For comparison purposes the following are the top 10 Tapestry segments, along with percentage in the United States:

1. Green Acres (6A)	3.2%
2. Southern Satellites (10A)	3.1%
3. Savvy Suburbanites (1D)	3.0%
4. Soccer Moms (4A)	2.9%
5. Middleburg (4C)	2.9%
	<hr/>
	15.1%
6. Salt of the Earth (6B)	2.9%
7. Up and Coming Families (7A)	2.5%
8. Midlife Constants (5E)	2.5%
9. Comfortable Empty Nesters (5A)	2.4%
10. Old and Newcomers (8F)	2.3%
	<hr/>
	12.6%

**Table N – Primary Service Area Tapestry Segment Comparison** (ESRI estimates)

	Primary Service Area		Demographics	
	Percent	Cumulative Percent	Median Age	Median HH Income
Exurbanites (1E)	61.6%	61.6%	49.6	\$98,000
Savvy Suburbanites (1D)	17.5%	79.1%	44.1	\$104,000
In Style (5B)	13.2%	92.3%	41.1	\$66,000
Golden Years (9B)	7.6%	99.9%	51.0	\$61,000
Old and Newcomers (8F)	0.0%	99.9%	38.5	\$39,000

**Chart L – Primary Service Area Tapestry Segment Entertainment Spending:**



**Exurbanites (1E)** – Although approaching retirement, this group shows no sign of slowing down. Live an affluent lifestyle, active in the community and give to charities. Stay fit and enjoy being social and hard working. Favorite activities include lifting weights, jogging, hiking, kayaking and golf. This is the top market for watching college basketball and professional football.

**Savvy Suburbanites (1D)** – Families include empty nesters and those with adult children still at home. Make well-informed researched purchases. Well-educated that enjoy cultural and sporting events and being physically active. Invest heavily in sports gear and exercise equipment.

**In Style (5B)** – This group embraces the urban lifestyle. They are fully connected to digital devices and support the arts and charities/causes. Most do not have children. Meticulous planners. Residents stay fit by exercising, eating a healthy diet to control their weight, buying low-fat foods and taking vitamins.

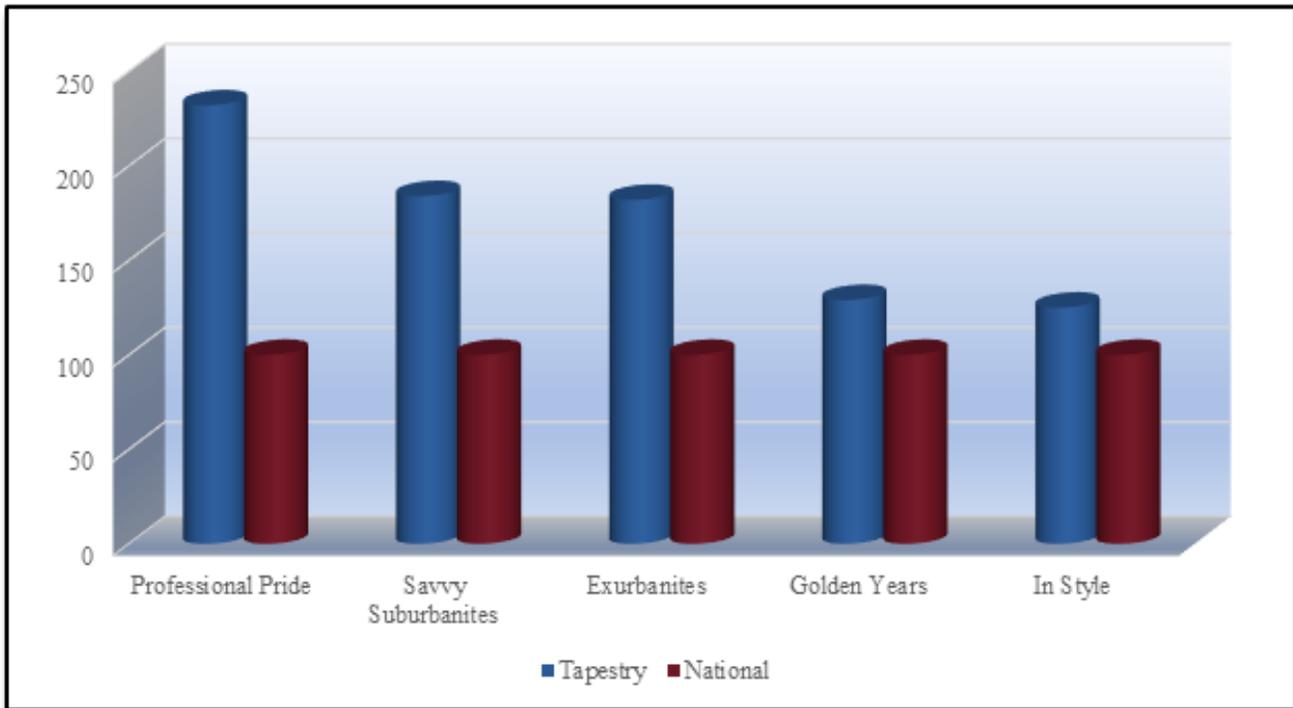
**Golden Years (9B)** – Independent and active seniors. Some still working to allow them to pursue leisure interests such as travel, sports, dining out, museums and concerts. Involved and physically fit.

**Old and Newcomers (8F)** – Singles living on a budget. Just beginning careers or taking college/adult education classes. Strong supporters of environmental organizations.

**Table O – Secondary Service Area Tapestry Segment Comparison** (ESRI estimates)

	Secondary Service Area		Demographics	
	Percent	Cumulative Percent	Median Age	Median HH Income
Professional Pride (1B)	28.9%	28.9%	40.5	\$127,000
Savvy Suburbanites (1D)	19.6%	48.5%	44.1	\$104,000
Exurbanites (1E)	11.5%	60.0%	49.6	\$98,000
Golden Years (9B)	8.4%	68.4%	51.0	\$61,000
In Style (5B)	7.6%	76.0%	41.1	\$66,000

**Chart M – Secondary Service Area Tapestry Segment Entertainment Spending:**



**Professional Pride (1B)** – Goal oriented couples working long hours. They are well-organized and scheduled with commitments to their children’s activities. Exercise often at health clubs.

**Savvy Suburbanites (1D)** – Families include empty nesters and those with adult children still at home. Make well-informed researched purchases. Well-educated that enjoy cultural and sporting events and being physically active. Invest heavily in sports gear and exercise equipment.

**Exurbanites (1E)** – Although approaching retirement, this group shows no sign of slowing down. Live an affluent lifestyle, active in the community and give to charities. Stay fit and enjoy being social and hard working. Favorite activities include lifting weights, jogging, hiking, kayaking and golf. This is the top market for watching college basketball and professional football.

**Golden Years (9B)** – Independent and active seniors. Some still working to allow them to pursue leisure interests such as travel, sports, dining out, museums and concerts. Involved and physically fit.

**In Style (5B)** – This group embraces the urban lifestyle. They are fully connected to digital devices and support the arts and charities/causes. Most do not have children. Meticulous planners. Residents stay fit by exercising, eating a healthy diet to control their weight, buying low-fat foods and taking vitamins.

## Demographic Summary

The following summarizes the demographic characteristics of the service areas.

- The Primary Service Area, at just over 17,500, has a reasonably small population base to support a community center. The Secondary Service Area at over 120,000 has a significant population and is better positioned to support a significant community center. In fact the population base is larger than what can be supported by a community center in Doylestown.
- The population of both service areas are projected to continue to grow over the next five years.
- The median age in both service areas is older than the state and national numbers.
- There is a significant number of households with children in the Secondary Service Area but lower numbers in the Primary Service Area.
- Both service areas have significantly higher median household income levels than the state and national numbers.
- The service areas have a higher cost of living than the state and national figures but there are high rates of expenditures on recreation activities.
- In the future, there are projected to be decreases in the youth population and increases in the senior age groups in both service areas.
- There is very little ethnic or racial diversity in any of the service areas.
- The tapestry segments in each of the service areas indicates a population while older, is still active in a lot of recreational activities.

## **Sports Participation Trends**

In addition to analyzing the demographic realities of the service areas, it is possible to project possible participation in recreation and sport activities.

Participation Numbers: On an annual basis, the National Sporting Goods Association (NSGA) conducts an in-depth study and survey of how Americans spend their leisure time. This information provides the data necessary to overlay rate of participation onto the Primary Service Area to determine market potential. The information contained in this section of the report, utilizes the NSGA's most recent survey. For that data was collected in 2019 and the report was issued in June of 2020.

B\*K takes the national average and combines that with participation percentages of the Primary, and Secondary Service Area based upon age distribution, median income, region and National number. Those four percentages are then averaged together to create a unique participation percentage for the service area. This participation percentage when applied to the population of the Primary, and Secondary Service Area then provides an idea of the market potential for certain recreation activities.

**Table A –Participation Rates in the Primary Service Area**

	Age	Income	Region	Nation	Average
Aerobics	15.6%	20.0%	15.7%	15.8%	16.8%
Basketball	7.1%	9.6%	8.5%	8.4%	8.4%
Exercise Walking	37.5%	37.6%	35.3%	35.6%	36.5%
Exercise w/ Equipment	20.0%	22.9%	18.8%	19.5%	20.3%
Pickleball	8.4%	0.9%	0.9%	0.7%	2.7%
Pilates	1.8%	2.2%	2.3%	2.0%	2.1%
Running/Jogging	13.5%	18.6%	14.7%	15.4%	15.5%
Table Tennis/Ping Pong	3.0%	3.8%	2.5%	3.3%	3.2%
Tennis	3.8%	5.0%	4.4%	4.1%	4.3%
Volleyball	3.1%	5.0%	2.9%	3.5%	3.6%
Weightlifting	12.1%	15.6%	12.1%	12.6%	13.1%
Workout @ Club	12.9%	15.6%	13.7%	13.2%	13.8%
Yoga	9.8%	11.2%	10.7%	10.6%	10.6%
Did Not Participate	23.3%	19.1%	22.8%	22.4%	21.9%

**Age:** Participation based on individuals ages 7 & Up of the Primary Service Area.

**Income:** Participation based on the 2020 estimated median household income in the Primary Service Area.

**Region:** Participation based on regional statistics (Mid-Atlantic).

**National:** Participation based on national statistics.

**Average:** Average of the four columns.

**Table B –Participation Rates in the Secondary Service Area**

	<b>Age</b>	<b>Income</b>	<b>Region</b>	<b>Nation</b>	<b>Average</b>
Aerobics	15.7%	20.0%	15.7%	15.8%	16.8%
Basketball	7.9%	9.6%	8.5%	8.4%	8.6%
Exercise Walking	36.4%	37.6%	35.3%	35.6%	36.2%
Exercise w/ Equipment	19.6%	22.9%	18.8%	19.5%	20.2%
Pickleball	7.4%	0.9%	0.9%	0.7%	2.5%
Pilates	1.9%	2.2%	2.3%	2.0%	2.1%
Running/Jogging	14.4%	18.6%	14.7%	15.4%	15.8%
Table Tennis/Ping Pong	3.2%	3.8%	2.5%	3.3%	2.4%
Tennis	3.9%	5.0%	4.4%	4.1%	4.4%
Volleyball	3.4%	5.0%	2.9%	3.5%	3.7%
Weightlifting	12.3%	15.6%	12.1%	12.6%	13.1%
Workout @ Club	12.8%	15.6%	13.7%	13.2%	13.8%
Yoga	10.0%	11.2%	10.7%	10.6%	10.6%
Did Not Participate	23.1%	19.1%	22.8%	22.4%	21.8%

- Age:** Participation based on individuals ages 7 & Up of the Secondary Service Area.
- Income:** Participation based on the 2020 estimated median household income in the Secondary Service Area.
- Region:** Participation based on regional statistics (Mid-Atlantic).
- National:** Participation based on national statistics.
- Average:** Average of the four columns.

**Anticipated Participation Number:** Utilizing the average percentage from Table-A and B above plus the 2010 census information and census estimates for 2020 and 2025 (over age 7) the following comparisons are available.

**Table C –Participation Growth or Decline for Indoor Activities in Primary Service Area**

	Average	2010 Population	2020 Population	2025 Population	Difference
Aerobics	16.8%	2,768	2,839	2,868	99
Basketball	8.4%	1,387	1,422	1,436	50
Exercise Walking	36.5%	6,024	6,178	6,241	216
Exercise w/ Equipment	20.3%	3,350	3,436	3,470	120
Pickleball	2.7%	448	460	464	16
Pilates	2.1%	344	353	356	12
Running/Jogging	15.5%	2,566	2,631	2,658	92
Table Tennis/Ping Pong	3.2%	522	535	541	19
Tennis	4.3%	712	731	738	26
Volleyball	3.6%	597	612	619	21
Weightlifting	13.1%	2,160	2,215	2,237	77
Workout @ Club	13.8%	2,285	2,343	2,367	82
Yoga	10.6%	1,743	1,787	1,806	63
Did Not Participate	21.9%	3,614	3,707	3,744	130

**Note:** These figures do not necessarily translate into attendance figures for various activities or programs. The “Did Not Participate” statistics refers to all 57 activities outlined in the NSGA 2019 Survey Instrument.

**Table D –Participation Growth or Decline for Indoor Activities in Secondary Service Area**

	Average	2010	2020	2025	Difference
		Population	Population	Population	
Aerobics	16.8%	17,723	18,778	19,129	1,406
Basketball	8.6%	9,073	9,614	9,793	720
Exercise Walking	36.2%	38,237	40,514	41,271	3,034
Exercise w/ Equipment	20.2%	21,319	22,589	23,011	1,692
Pickleball	2.5%	2,600	2,755	2,806	206
Pilates	2.1%	2,207	2,339	2,382	175
Running/Jogging	15.8%	16,643	17,633	17,963	1,321
Table Tennis/Ping Pong	2.4%	2,501	2,650	2,699	198
Tennis	4.4%	4,605	4,879	4,970	365
Volleyball	3.7%	3,900	4,132	4,210	309
Weightlifting	13.1%	13,870	14,696	14,971	1,101
Workout @ Club	13.8%	14,605	15,475	15,764	1,159
Yoga	10.6%	11,228	11,897	12,119	891
Did Not Participate	21.8%	23,059	24,432	24,889	1,830

**Note:** These figures do not necessarily translate into attendance figures for various activities or programs. The “Did Not Participate” statistics refers to all 57 activities outlined in the NSGA 2019 Survey Instrument.

**National Summary of Sports Participation:** The following chart summarizes participation for various sports activities utilizing information from the 2019 National Sporting Goods Association survey.

**Table E – Sports Participation Summary**

Sport	Nat'l Rank <sup>5</sup>	Nat'l Participation (in millions)
Exercise Walking	1	106.5
Exercising w/ Equipment	2	58.3
Hiking	3	48.1
Swimming	4	48.0
Aerobic Exercising	5	47.4
Running/Jogging	6	46.0
Camping	7	40.7
Workout @ Club	8	39.6
Weightlifting	9	37.8
Bicycle Riding	10	37.8
Yoga	12	31.8
Basketball	14	25.2
Billiards/Pool	15	20.7
Golf	17	17.9
Soccer	20	14.2
Baseball	22	12.2
Tennis	23	12.2
Volleyball	25	10.6
Softball	26	10.1
Table Tennis	27	9.9
Football (touch)	30	8.9
Football (tackle)	34	7.3
Football (flag)	35	6.5
Martial Arts MMA	37	6.0
Gymnastics	39	5.9
Pilates	40	5.9
Skateboarding	42	5.3
Cheerleading	48	3.7
Wrestling	50	3.3
Lacrosse	52	2.8
Pickleball	57	2.0

**Nat'l Rank:** Popularity of sport based on national survey.

**Nat'l Participation:** Population that participate in this sport on national survey.

<sup>5</sup>This rank is based upon the 57 activities reported on by NSGA in their 2019 survey instrument.

**National Participation by Age Group:** Within the NSGA survey, participation is broken down by age groups. As such B\*K can identify the top 3 age groups participating in the activities reflected in this report.

**Chart F – Participation by Age Group:**

Activity	Largest	Second Largest	Third Largest
Aerobics	35-44	25-34	45-54
Baseball	7-11	12-17	25-34
Basketball	12-17	25-34	18-24
Bicycle Riding	55-64	45-54	12-17
Billiards/Pool	25-34	34-44	45-54
Bowling	25-34	35-44	18-24
Cheerleading	12-17	7-11	18-24
Exercise Walking	55-64	65-74	45-54
Exercise w/ Equipment	25-34	45-54	55-64
Football (flag)	7-11	12-17	25-34
Football (tackle)	12-17	18-24	7-11
Football (touch)	12-17	25-34	7-11
Gymnastics	7-11	12-17	25-34
Lacrosse	12-17	7-11	18-24
Martial Arts MMA	7-11	25-34	12-17
Pickleball	12-17	65-74	18-24
Pilates	25-34	35-44	45-54
Running/Jogging	25-34	35-44	45-54
Skateboarding	12-17	18-24	7-11
Soccer	7-11	12-17	25-34
Softball	12-17	7-11	25-34
Swimming	55-64	12-17	7-11
Tables Tennis	25-34	18-24	12-17
Tennis	25-34	35-44	12-17
Volleyball	12-17	25-34	18-24
Weightlifting	25-34	45-54	35-44
Workout at Clubs	25-34	35-44	45-54
Wrestling	12-17	25-34	7-11
Yoga	25-34	35-44	45-54
Did Not Participate	45-54	55-64	65-74

**Largest:** Age group with the highest rate of participation.

**Second Largest:** Age group with the second highest rate of participation.

**Third Largest:** Age group with the third highest rate of participation.

**National Sports Participation Trends:** Below are listed several sports activities and the percentage of growth or decline that each has experienced nationally over the last ten years (2010-2019).

**Table G – National Activity Trend (in millions)**

	2010 Participation	2019 Participation	Percent Change
Kayaking	5.6	10.7	90.9%
Yoga	20.2	31.8	57.6%
Running/Jogging	35.5	46.0	29.7%
Gymnastics	4.8	5.9	23.8%
Aerobic Exercising	38.5	47.4	23.2%
Weightlifting	31.5	37.8	20.0%
Cheerleading	0.0	3.7	18.0%
Wrestling	2.9	3.3	15.0%
Exercise Walking	95.8	106.5	11.2%
Workout @ Club	36.3	39.6	9.1%
Lacrosse	2.6	2.8	7.5%
Pilates	5.5	5.9	7.1%
Exercising w/ Equipment	55.3	58.3	5.5%
Ice/Figure Skating	8.2	8.6	5.3%
Soccer	13.5	14.2	5.2%
Volleyball	10.6	10.6	0.2%
Hockey (ice)	3.3	3.3	0.0%
Tennis	12.3	12.2	-0.6%
Baseball	12.5	12.2	-2.0%
Football (flag)	0.0	6.5	-2.9%
Football (touch)	0.0	8.9	-4.0%
Bicycle Riding	39.8	37.8	-5.1%
Martial Arts / MMA	0.0	6.0	-5.8%
Basketball	26.9	25.2	-6.2%
Softball	10.8	10.1	-6.8%
Swimming	51.9	48.0	-7.4%
Golf	21.9	17.9	-18.3%
Football (tackle)	9.3	7.3	-21.3%
Mountain Biking (off road)	7.2	5.6	-21.7%
Table Tennis/Ping Pong	12.8	9.9	-22.4%

**2010 Participation:** The number of participants per year in the activity (in millions) in the United States.

**2019 Participation:** The number of participants per year in the activity (in millions) in the United States.

**Percent Change:** The percent change in the level of participation from 2010 to 2019.

## Cultural Arts & Other Rates of Participation

The National Endowment for the Arts (NEA) is the source that B\*K uses to provide insight into how Americans are spending their time with art and art-like activities. All the participation numbers in this section of the report are national participation numbers and reflective of national trends.

The Survey of Public Participation in the Arts (SPPA) is the nation's largest, most representative survey of adult patterns of arts participation in the United States. The NEA completes its survey on only an occasional basis with the last three years being 2008, 2012 and 2017. Important footnotes and key take away findings from the 2017 survey instrument include:

- In comparison to the 2012 findings the 2017 findings are much more positive.
  - o Adults attending visual or performing arts activities grew by 3.6%.
  
- An area of substantial growth in the 2017 findings is reading poetry.
  - o 18-24 year old's who read poetry doubled.
  - o Women showed notable gains.
  - o Hispanic readers increased from 4.9% to 9.7%.
  
- The top three forms of arts attendance in the performing arts are:
  - o Outdoor performing arts festivals.
  - o Musicals.
  - o Other performing arts events.

### Specific Data Summary by Discipline:

#### Dance

- Attendance
  - o 6.3% of adults attended a dance performance other than ballet.
  - o 3.1% of adults attended a ballet performance.

#### Literature

- Reading
  - o 11.7% of adult read poetry an increase of 76% from 2012.
  - o 3.7% of adults read a play an increase of 28.2% from 2012.
  - o 52.7% of adults read a book not required for work.
  - o 41.8% of adults read a novel or short story a decrease of 7.6% from 2012.

## Museums

- Attendance
  - o 23.7% of adults visited an art museum or art gallery an increase of 12.9% from 2012.

## Music

- Attendance
  - o 8.6% of adults attended a classical music performance.
  - o 8.6% of adults attended a jazz concert.

## Opera

- Attendance
  - o 2.2% of adults attended an opera performance.

## Theater

- 16.5% of adults attended a musical theater performance.

## Comparison of Public Participation in Arts Between 2012-2017:

**Table A - Adult Reading Comparison 2012-2017**

Books	2012	2017	Statistically Significant Change
All Adults	54.6%	52.7%	No
Male	44.7%	44.3%	No
Female	63.7%	60.5%	Yes

Literature <sup>6</sup>	2012	2017	Statistically Significant Change
All Adults	47.0%	44.2%	Yes
Male	37.0%	35.2%	No
Female	56.1%	52.5%	Yes

Novels or Short Stories	2012	2017	Statistically Significant Change
All Adults	45.2%	41.8%	Yes
Male	35.1%	33.0%	No
Female	54.6%	50.0%	Yes

Poetry	2012	2017	Statistically Significant Change
All Adults	6.7%	11.7%	Yes
Male	5.2%	8.7%	Yes
Female	8.0%	14.5%	Yes

Plays	2012	2017	Statistically Significant Change
All Adults	2.9%	3.7%	Yes
Male	2.3%	2.9%	No
Female	3.4%	4.5%	Yes

<sup>6</sup> Novels or short stories, poetry, or plays.

**Table B - Adult Visual Arts Comparison 2012-2017**

Visit Art Museum or Gallery	2012	2017	Statistically Significant Change
All Adults	21.0%	23.7%	Yes
Male	18.7%	21.1%	Yes
Female	23.1%	26.2%	Yes

Toured Parks, Buildings, or Neighborhoods <sup>7</sup>	2012	2017	Statistically Significant Change
All Adults	23.9%	28.3%	Yes
Male	23.1%	26.6%	Yes
Female	24.6%	29.9%	Yes

Attended Craft Fairs or Visual Arts Festivals	2012	2017	Statistically Significant Change
All Adults	22.4%	23.8%	No
Male	18.2%	19.5%	No
Female	26.4%	27.8%	No

<sup>7</sup>For historic nature or design value.

**Table C - Adult Performing Arts Comparison 2012-2017**

<b>Jazz Music</b>	<b>2012</b>	<b>2017</b>	<b>Statistically Significant Change</b>
All Adults	8.1%	8.6%	No
Male	7.9%	8.7%	No
Female	8.3%	8.5%	No

<b>Classical Music</b>	<b>2012</b>	<b>2017</b>	<b>Statistically Significant Change</b>
All Adults	8.8%	8.5%	No
Male	8.0%	6.8%	No
Female	9.5%	10.3%	No

<b>Latin, Spanish, or Salsa</b>	<b>2012</b>	<b>2017</b>	<b>Statistically Significant Change</b>
All Adults	5.1%	5.9%	No
Male	4.8%	5.5%	No
Female	5.2%	6.2%	No

<b>Opera</b>	<b>2012</b>	<b>2017</b>	<b>Statistically Significant Change</b>
All Adults	2.1%	2.2%	No
Male	1.8%	1.5%	No
Female	2.4%	2.8%	No

<b>Ballet</b>	<b>2012</b>	<b>2017</b>	<b>Statistically Significant Change</b>
All Adults	2.8%	3.1%	No
Male	2.1%	2.2%	No
Female	3.4%	4.0%	No

<b>Dance other than Ballet</b>	<b>2012</b>	<b>2017</b>	<b>Statistically Significant Change</b>
All Adults	5.6%	6.3%	No
Male	4.6%	4.4%	No
Female	6.6%	8.0%	No

<b>Musical Plays</b>	<b>2012</b>	<b>2017</b>	<b>Statistically Significant Change</b>
All Adults	15.2%	16.5%	No
Male	12.9%	12.8%	No
Female	17.3%	19.9%	Yes

<b>Non-Musical Plays</b>	<b>2012</b>	<b>2017</b>	<b>Statistically Significant Change</b>
All Adults	8.3%	9.4%	No
Male	7.3%	8.2%	No
Female	9.2%	10.5%	No

<b>Outdoor Performing Arts Festivals</b>	<b>2012</b>	<b>2017</b>	<b>Statistically Significant Change</b>
All Adults	20.8%	24.2%	Yes
Male	19.8%	24.1%	Yes
Female	21.8%	24.4%	Yes

**Historical Comparisons Between 2002 and 2017:**

**Table D - Historical Perspective Comparisons**

<b>Adult Reading</b>	<b>2002</b>	<b>2008</b>	<b>2012</b>	<b>2017</b>
Any Type	56.6%	54.3%	54.6%	52.7%
Novel/Short Story	45.1%	47.0%	45.2%	41.8%
Poetry	12.1%	8.3%	6.7%	11.7%
Plays	3.6%	2.6%	2.9%	3.7%

<b>Visual Art</b>	<b>2002</b>	<b>2008</b>	<b>2012</b>	<b>2017</b>
Art Museums/Galleries	26.5%	22.7%	21.0%	23.7%
Historic or Notable Parks, Monuments, Buildings	31.6%	24.9%	23.9%	28.3%
Craft Fairs or Visual Arts Festivals	33.4%	24.5%	22.4%	23.8%

Performing Arts	2002	2008	2012	2017
Jazz	10.8%	7.8%	8.1%	8.6%
Classical Music	11.6%	9.3%	8.8%	8.6%
Latin Music	-	4.9%	5.1%	5.9%
Opera	3.2%	2.1%	2.1%	2.2%
Ballet	3.9%	2.9%	2.8%	3.1%
Other Dance	6.3%	5.2%	5.6%	6.3%
Musical Plays	17.1%	16.7%	15.2%	16.5%
Non-Musical Plays	2.3%	9.4%	8.3%	9.4%
Outdoor Performing	-	20.8%	20.8%	24.2%
Arts Festivals				

#### Attending Arts Activities

**Table E – Comparisons of percentage of U.S. Adult Attending a Performing Arts Activity at Least Once in the Past 12-Months**

Music	2008	2012	2017	Rate of Change	
				2008-2012	2012-2017
Jazz	7.8%	8.1%	8.6%	+0.3%	+0.5%
Classical Music	9.3%	8.8%	8.6%	-0.5%	-0.2%
Opera	2.1%	2.1%	2.2%	+0.0%	+0.1%
Latin Music	4.9%	5.1%	5.9%	+0.2%	+0.8%
Outdoor Performing	20.8%	20.8%	24.2%	+0.0%	+3.4%
Arts Festival					

Plays	2008	2012	2017	Rate of Change	
				2008-2012	2012-2017
Musical Plays	16.7%	15.2%	16.5%	-1.5%	+1.3%
Non-Musical Plays	9.4%	8.3%	9.4%	-1.1%	+1.1%

Dance	2008	2012	2017	Rate of Change	
				2008-2012	2012-2017
Ballet	2.9%	2.7%	3.1%	-0.2%	+0.4%
Other Dance	5.2%	5.6%	6.3%	+0.4%	+0.7%

- Following a sharp decline in overall arts attendance that occurred from 2002-2008, participation rates held steady from 2008-2012, and have increased into 2017.
- Changes in the U.S. demographic composition appear to have contributed to attendance in performing arts attendance. Still, various subgroups of Americans have maintained or increased attendance rates for individual art forms.

**Table F – Comparison of Percentage of U.S. Adults Attending Visual Arts Activities and Events**

	Rate of Change				
	2008	2012	2017	2008-2012	2012-2017
Art Museums/Galleries	22.7%	21.0%	23.7%	-1.7%	+2.7%
Parks/Historical Buildings	24.5%	22.4%	28.3%	-2.1%	+5.9%
Craft/Visual Arts Festivals	24.9%	23.9%	23.8%	-1.0%	-0.1%

- Visual arts attendance has declined significantly from 2002 to 2012, but rebounded in 2017.

**Reading Books and Literature**

**Table G – Reading Activity**

	Rate of Change				
	2008	2012	2017	2008-2012	2012-2017
Read any Book, non-required	54.3%	54.6%	52.7%	+0.3%	-1.9%
Literature	50.2%	47.0%	44.2%	-3.2%	-2.8%
Novels and Short Stories	47.0%	45.2%	41.8%	-1.8%	-3.4%
Plays	2.6%	2.9%	3.7%	+0.3%	+0.8%
Poetry	8.3%	6.7%	11.7%	-1.6%	+5.0%

## Arts Participation in the Last 12 Months:

### Consuming Art Through Electronic Media

**Table H – Percentage of U.S. Adults Who Used Electronic Media to Consume Books or other Artistic, Arts-Related, and Literary Content Arts: 2017**

	Percentage
Used Electronic Media to Consume Artistic or Arts Related Content	74%
Read Any Books Using Electronic Media	23%
Listen to Any Audiobooks	16%

**Table I – Percentage of Adults Who Used Electronic Media to Consume Art in the past 12 months**

	Percentage
Other Music <sup>8</sup>	65%
Classical Music or Opera	21%
Jazz	20%
Programs Info. About Book Writers	19%
Lain, Spanish, or Salsa	19%
Theater Productions (musical or stage play) <sup>9</sup>	16%
Paintings, Sculpture, Pottery or Other Visual Art	16%
Dance Performances or programs	14%
Programs and Info. About Visual Arts	14%

### Making and Sharing Art

**Table J – Percentage of American Adults Who Made Art in the Last 12 Months**

	Percentage
Any Art	54%
Performing Arts	40%
Visual Arts	33%
Creative Writing	7%

- Performing Arts include singing, playing any musical instrument, dancing, or acting.
- Visual Arts include painting, drawing, sculpting or making prints, taking photographs, creating films, creating animations, digital arts, making potter, ceramics or jewelry, doing leatherwork, metalwork or woodwork, weaving, crocheting, quilting, knitting or sewing, scrapbooking, etc.
- Creative Writing includes fiction, nonfiction, poetry or plays.

**Table K – Percentage of American Adults Who Did Performing Arts**

	Percentage
Singing	25%
Dancing	24%
Playing Musical Instrument	11%
Creating or Performing Music in Other Ways	3%
Acting	2%
Using Electronic Media to Edit or Remix Music	2%

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<sup>8</sup>Rock, pop, country, folk, rap or hip-hop

<sup>9</sup>Musicals, plays or information about theatre

**Table L – Percentage of American Adults Who Did Visual Arts**

	Percentage
Taking Photographs	14%
Painting, Drawing, Sculpting, or Making Prints	13%
Weaving, Crocheting, Quilting, Needleworking, Knitting or Sewing	12%
Editing Photographs	10%
Doing Scrapbooking, Origami, or Other Paper-Based Art	7%
Doing Leatherwork, Metalwork, or Woodwork	7%
Creating Films or Videos	5%
Making Pottery, Ceramics, or Jewelry	4%
Designing or Creating Animations, Digital Art, Computer Graphics or Video Games	3%

**Table M – Among Adults Who Made Art, Percentage Who Did So At Least Once a Week**

	Percentage
Sing	70.2%
Use Electronic Media to Edit or Remix Music	48.5%
Play Any Musical Instrument	46.6%
Take Photographs	45.2%
Edit Photographs	38.5%
Create or Perform Any Music In Other Ways	37.5%
Creating Writing	34.3%
Design or Create Animations, Digital Art, Computer Graphics or Video Games	32.2%
Weave, Crochet, Quilt, Needlework, Knot or Sew	26.2%
Create Films or Videos	22.9%
Dance	22.6%
Paint, Draw, Sculpt or Make Prints	22.5%
Act	20.8%
Do Leatherwork, Metalwork, or Woodwork	20.6%
Do Scrapbooking, Origami, or Other Paper-Based Art	14.0%
Make Pottery, Ceramics or Jewelry	9.8%

**Table N – Location of Adults who Sang, Made Music, Danced or Acted**

	Percentage
Private Home	63%
Church, Synagogue, or Other Place of Worship	40%
Restaurant, Bar, Nightclub or Coffee Shop	24%
Some Other Location	18%
Park or Open-Air Facility	16%
School, Public Library or Community Center	13%
Theatre, Concert Hall or Auditorium	13%

**Table O – Location of Adults who Made Any Visual Arts**

	Percentage
Private Home	78%
Park or Open-Air Facility	25%
Some Other Location	21%
School, Public Library or Community Center	18%
Restaurant, Bar, Nightclub or Coffee Shop	9%
Church, Synagogue, or Other Place of Worship	8%
Museum or Gallery	8%

**Table P – Reason for Engaging in Art-Making**

	Percentage
To Spend Time with Family or Friends	62%
To Feel Creative or Creatively Inspired	47%
To Learn or Experience Something New	39%
To Have or Record an Experience at a Specific Location	22%
To Participate in Your Local Community	22%
For Health Reasons	19%
To Celebrate Your Own or Your Family's Cultural Heritage	18%

**Table Q – Reason for Performing Arts**

	Percentage
To Spend Time with Family or Friends	64%
To Feel Creative or Creatively Inspired	38%
To Learn or Experience Something New	30%
To Participate in Your Local Community	20%
For Health Reasons	19%
To Celebrate Your Own or Your Family's Cultural Heritage	17%
To Have or Record an Experience at a Specific Location	12%

**Table R – Reason for Making Visual Arts**

	Percentage
To Feel Creative or Creatively Inspired	61%
To Spend Time with Family or Friends	59%
To Learn or Experience Something New	49%
To Have or Record an Experience at a Specific Location	38%
To Participate in Your Local Community	20%
To Celebrate Your Own or Your Family's Cultural Heritage	19%
For Health Reasons	13%

**Participating in Arts Learning****Table S – Percentage of Adults Who Took Formal Art Lessons or Classes in Past 12 Months**

	Percentage
Any Type of Art	9.5%
Visual Arts <sup>10</sup>	3.6%
Music	2.7%
Art History or Appreciation	2.1%
Dance	1.9%
Creative Writing	1.7%
Computer Animation or Digital Art	1.8%
Photography or Filmmaking	1.6%
Acting or Theatre	0.6%

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<sup>10</sup>Drawing, Painting, Pottery, Weaving or Graphic Design

**Table T – Percentage of Adults Who Took Informal Art Lessons or Classes in Past 12 Months**

	Percentage
Any Type of Art	17.2%
Music	10.3%
Visual Arts	6.3%
Photography or Filmmaking	5.3%
Art History or Appreciation	4.9%
Dance	3.5%
Creative Writing	3.1%
Acting or Theatre	1.8%
Computer Animation or Digital Art	N/A

***Participating in Arts Availability***

**Table U – Percentage of Adults Who Agree About Availability of Arts and Culture Activities in Their Neighborhood or Community**

	Percentage
Many Different Arts and Cultural Activities	66%
Opportunities to Take Part in Arts and Cultural Activities	65%
Easy to Find Information about Arts and Cultural Activities	69%

Arts participation information provides a general background on the possible popularity of different cultural arts activities that may occur at a new Doylestown Community Center and should provide some sense of what types of these activities should be offered and promoted at the facility.

## Recreation Facility Trends

There continues to be very strong growth in the number of Americans participating in recreation and leisure activities. The Physical Activity Council in its 2019 study indicated that 36% of Americans (age 6 and older) participated at least once a week in an active high calorie burning activity. However, the study also indicated that 27% of Americans were inactive. International Health and Racquet Sports Association (IHRSA) reported that membership in U.S. health clubs has increased by 28% since 2010, and memberships in health clubs reached an all-time high of 64.2 million in 2019. Statistics also indicate that approximately 1 out of every 5 people of the U.S. population (or 21.2%) belong to or utilize a health club. On the other side, most public recreation centers attract between 20% and 30% of a market area (more than once) during the course of a year. All of this indicates the relative strength of a market for a community-based recreation facility. However, despite these increases the American population as a whole continues to lead a rather sedentary life with an average of 25% of adults across the country reporting that they engage in no physical activity (according to The Center for Disease Control in 2018). It is important to note that this percentage has been declining steadily since a high in 2008 of 36%.

One of the areas of greatest participant growth over the last 10 years is in fitness related activities such as yoga, exercise with equipment, aerobic exercise and weightlifting. This is also the most volatile area of growth with specific interest areas soaring in popularity for a couple of years only to be replaced by a new activity for the coming years. Also showing particularly strong growth numbers are running/jogging while swimming participation remains consistently high despite recent drops in overall numbers. It is significant that many of the activities that can take place in an indoor recreation setting are ranked in the top fifteen in overall participation by the National Sporting Goods Association.

Due to the increasing recreational demands, there has been a shortage in most communities of the following spaces:

- Gymnasiums
- Pools (especially leisure pools)
- Weight/cardiovascular equipment areas- especially functional training space
- Indoor running/walking tracks
- Meeting/multipurpose (general program) space
- Senior's program space
- Pre-school and youth space
- Teen use areas
- Fieldhouses (turf and hard court)

As a result, many providers have attempted to include these amenities in public community recreation facilities. With the growth in youth sports and the high demand for school gyms, most communities are experiencing an acute lack of gymnasium space. Weight/cardiovascular space and more specifically functional training space is also in high demand and provides a facility with the potential to generate significant revenues.

The success of most community-based recreation providers is dependent on meeting the recreational needs of a variety of individuals. The fastest growing segment of society is the senior population and meeting the needs of this group is especially important now and will only grow more so in the coming years. Indoor walking tracks, exercise areas, warm water pools, pickleball courts and classroom spaces are important to this age group. Marketing to the younger more active senior (usually age 55-70) is paramount, as this age group has the free time available to participate in leisure activities, the desire to remain fit, and more importantly the disposable income to pay for such services.

Youth programming has always been a cornerstone for recreation services and will continue to be so with an increased emphasis on teen needs and providing a deterrent to juvenile crime. With a continuing increase in single parent households and two working parent families, the needs of school age children for before and after school child-care continues to grow as does the need for preschool and daycare programming.

**Recreation Facilities Market Orientation:** Based on the demographic makeup of the service areas and the trends in indoor recreation amenities, there are specific market areas that need to be addressed with such recreation focused facilities. These include:

**General:**

**1. Drop-in recreation activities** - Critical to the basic operation of virtually all recreation facilities is the availability of the center for drop-in use by its members. This requires components that support drop-in use and the careful scheduling of programs and activities to ensure that they do not dominate the center and exclude the drop-in user. The sale of memberships, potentially the strongest revenue source for a center, requires a priority for drop-in use.

**2. Instructional programming** - The other major component of a center's operation is a full slate of programs in a variety of disciplines. The center should provide instruction for a broad-based group of users in a number of program areas. The primary emphasis should be on teaching basic skills with a secondary concern for specialized or advanced instruction.

**3. Special events** - There should be a market for special events including kid's birthday parties, community organization functions, sports tournaments, and other special activities. The development of this market will aid significantly in the generation of additional revenues and these events can often be planned for before or after regular operating hours or during slow use times of the year. Care should be taken to ensure that special events do not adversely impact the everyday operations of the center.

**4. Community rentals** - Another aspect of a center's operation could be providing space for rentals by civic groups or organizations as well as the general public. Gyms and multi-purpose rooms can be used as a large community gathering space and can host a variety of events from seminars, parties, receptions, arts and crafts sales and other events. It is important that a well-defined rental fee package is developed, and the fee schedule followed closely. Rentals should not be done at the expense of drop-in use or programming in the center.

**5. Social welfare programs** – An emerging area for many centers is the use of space for social service activities and programs. Special population activities, teen and senior assistance programs, childcare and other similar uses are now common in many facilities.

**Specific Market Segments Include:**

**1. Family Unit** - Within this market an orientation toward family activities is not essential but still deserves consideration. The ability to have family members of different ages participate in a variety of activities together or individually, is the challenge.

**2. Pre-school children** - The needs of pre-school age children need to be met with a variety of activities and programs designed for their use. From drop-in child watch for center users to specialized pre-school classes, a number of these programs can be developed. Interactive programming involving parents and toddlers can also be beneficial. It is significant that this market usually is active during the mid-morning time frame, providing an important clientele to the facility during an otherwise slow period of the day. For parents with small children who wish to participate in their own activities, child watch (babysitting services) is often necessary during the morning and early evening time slots.

**3. School age youth** - Recreation programming has tended to concentrate on this market segment and this age group should be emphasized at the center as well. This group requires a wide variety of programs and activities that are available after school, during the summer, or during weekend hours. Instructional programs and competitive sports programs are especially popular, as well camps and drop-in use of the facility.

**4. Teens** - A focus of some recreation projects is on meeting the needs of teenagers in the community. There is a great debate among recreation providers throughout the country on how to best provide recreation programming for this age group. Some believe that dedicated teen space is required to meet their needs while others find that it is the activities and approach that is more important. Serving the needs of this age group will often require the use of many areas of the center at certain “teen” times of use.

**5. Adults** – Having a facility that has a strong appeal to this age group will be critical. Needs and interests can be broad but tend to focus on fitness and wellness as well as sports activities and leagues. They also usually have an interest in social activities and events as well. Realizing that this likely to be a major user group, having a center that meets their needs as well as programs and services that support them will need to be a priority.

**6. Seniors** - As the population of the United States and the service areas continue to age, meeting the needs of an older senior population will be essential. As has been noted, a more active and physically oriented senior is now demanding services to ensure their continued health. Social programs as well as pickleball, weight and cardiovascular conditioning, and group fitness classes have proven to be popular with this age group. Again, the fact that this market segment will usually utilize a facility during the slower use times of early to mid-day also is appealing. Providing services for this age group should be more of a function of time than space.

**7. Business/corporate** - This market has a variety of needs from fitness/wellness and instruction, to recreation and social. The more amenities and services that can be offered at one location the more appeal there is to this market segment. The business community should be surveyed to determine their specific needs and expectations.

**8. Special needs population** - This is a secondary market, but with the A.D.A. requirements and the existence of a number of recreation components, the amenities could be present to develop programs for this population segment. Association with health care providers and/or other social service agencies will be necessary to fully reach this market.

**9. Special interest groups** - This is a market that needs to be explored to determine the use potential from a variety of groups. These could include school functions, social service organizations and adult and youth sports teams. While the needs of these groups can be great, their demands on a center can often be incompatible with the overall mission of the facility. Care must be taken to ensure that special interest groups are not allowed to dictate use patterns for the center.

## **Market Review**

In addition to the demographic characteristics, recreation participation, and trends analysis, one of the other greatest impacts on the market for a planned new Doylestown Community Center is the presence of other similar providers in the area.

Within the Primary and Secondary Service Areas, there are currently a number of indoor sports, recreation, and fitness facilities to serve the population base. These include:

### **Public Facilities**

Many of the communities around Doylestown Township have community or recreation centers of some size and magnitude.

**Northampton Recreation Center** – this facility features a large gymnasium, four classrooms, dance studio, kitchen, multipurpose room, and party room. The center offers a wide variety of recreation programs and services.

**Montgomery Community & Recreation Center** – the center has a large gymnasium with an elevated track, weight/cardio area, group exercise room, classrooms/community room, kitchen, youth lounge, senior lounge and outdoor splashpad. This center also has a wide range of programs and services.

**Horsham Community Center** – this is a smaller center that has three meeting rooms and a kitchen that can be utilized for meetings, events, and some recreation programs. Programming is limited.

Plumstead Community Building – this is also a very small center with a community room and small kitchen. It primarily serves as a rental center.

### **Non-Profit Facilities**

There are two main non-profit recreation facilities in the area.

**Doylestown YMCA** – this is the most comprehensive recreation facility in the market area with a 6 lane/25-meter pool, gym, fitness center and group exercise studio.

**Central Bucks Senior Center** – located in Doylestown, this facility serves ages 55+. The center has a number of classrooms, library, plus a large community room. There is a daily nutrition program in addition to a variety of recreation, fitness/wellness, cultural activities, and social services programs that are offered.

### **Private Facilities**

There is a very large number of private sports and fitness facilities in the greater Doylestown market. Most of these have a strong adult fitness orientation. The private facilities can be grouped into three major categories

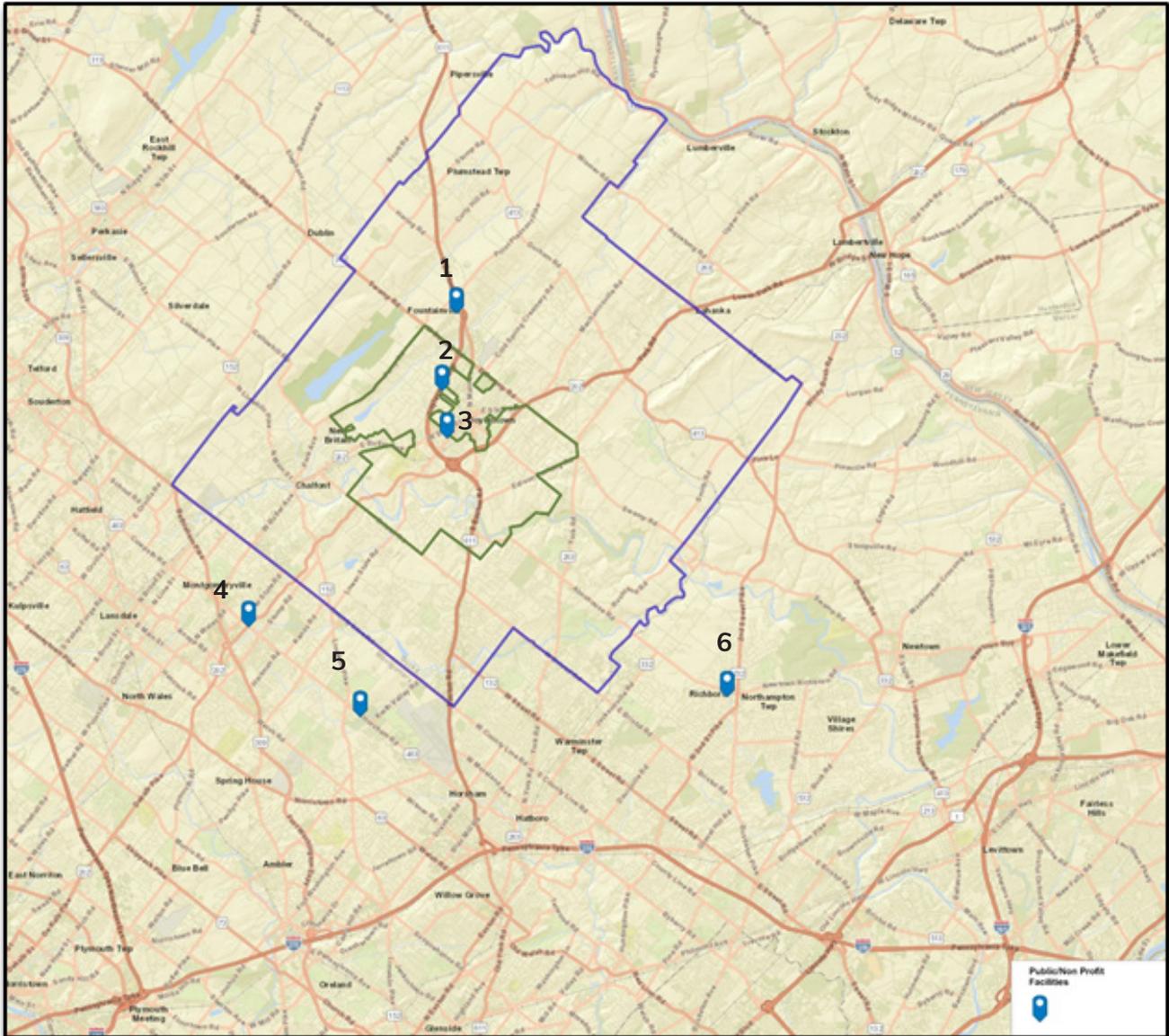
**Full-Service Fitness Centers** – these are larger facilities with multiple amenities. This includes providers such as LA Fitness, Planet Fitness, Cornerstone Health & Fitness, and Philadelphia Sports Clubs.

**Boutique Fitness Facilities** – these tend to be smaller, more specialized fitness providers with a specific market focus. This includes facilities such as, Pure Barre, B3 Personal Training, Orangetheory Fitness, Sandy Dog CrossFit, and Sun Dog Yoga.

**Specialty Facilities** – this type of facility does not have a fitness orientation but provides a location for specific sports to occur. This includes facilities such as Doylestown Rock Gym, Doylestown Tennis Club, Sky Zone, and Camp Curiosity.

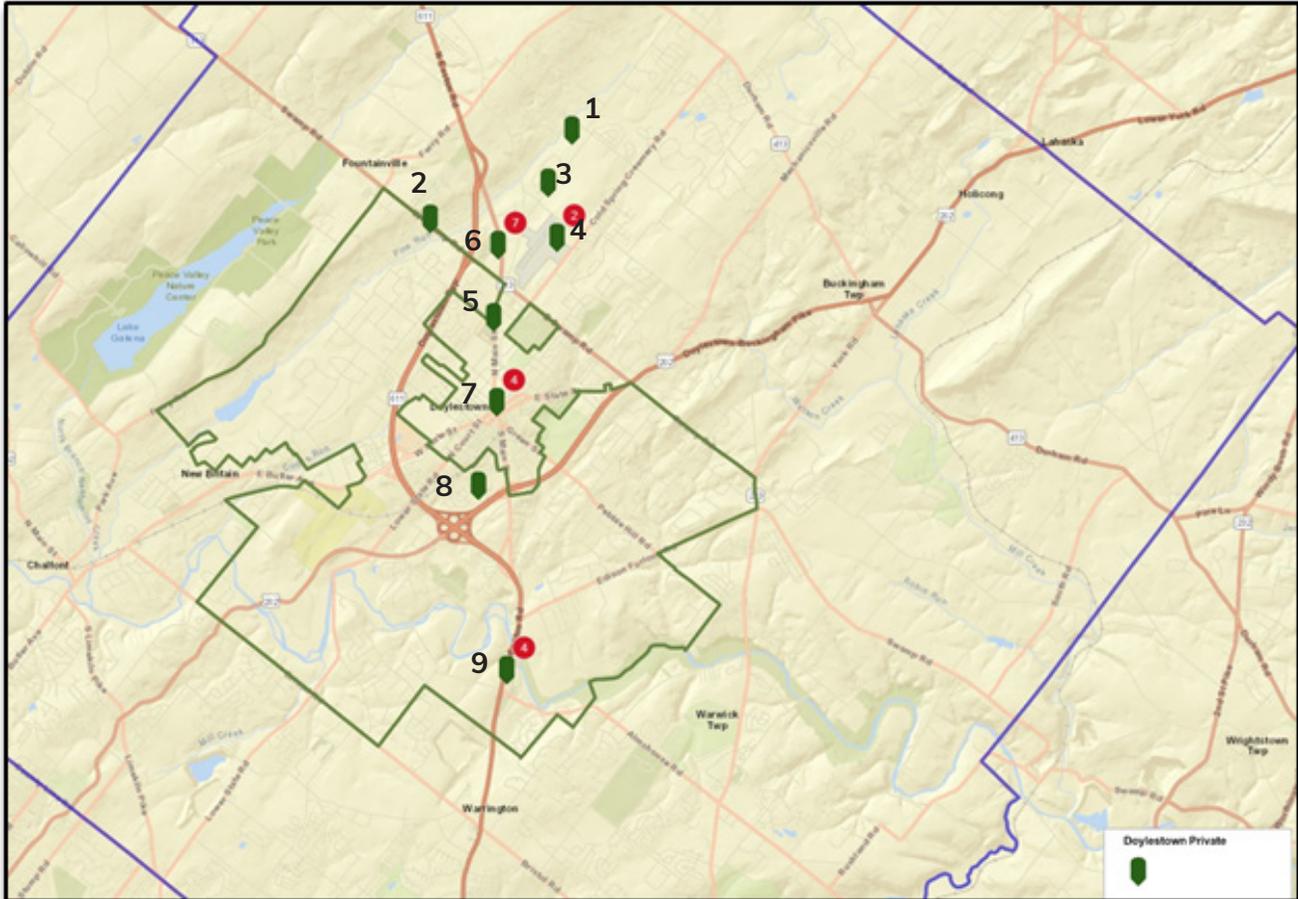
This is a representative listing of alternative recreation facilities in the area and is not meant to be a total accounting of all service providers. There may be other facilities located in the area that have an impact on the Doylestown Township market as well.

## Map A – Public/Non-Profit Community/Recreation Centers



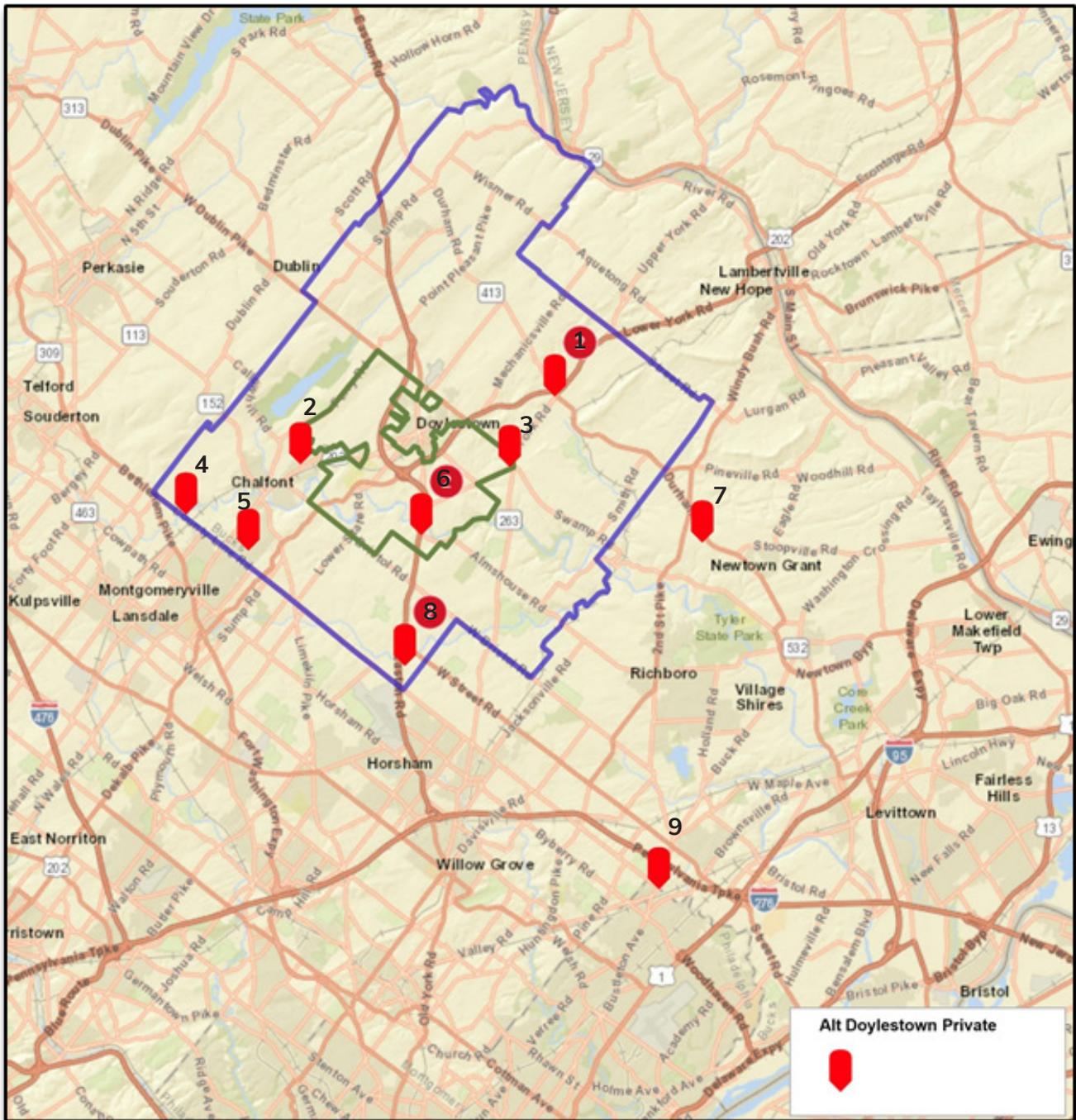
1. Plumstead Township Community Building
2. Central Bucks Senior Center
3. Doylestown YMCA
4. Montgomery Township Community & Recreation Center
5. Horsham Township Community Center
6. Northampton Township Recreation Center

Map B – Private Providers in Doylestown



- |                                       |                           |                         |
|---------------------------------------|---------------------------|-------------------------|
| 1. Camp Curiosity & Curiosity Academy | 6. B3 Personal Training   | 7. Flip Dog Pilates     |
| 2. Zone4 Fun                          | CrossFit Sine Pari        | Pilates Couture         |
| 3. Doylestown Tennis Club             | Doylestown Fitness Center | Quantum Performance Fit |
| 4. Espiral Pilates & Fitness          | Doylestown Rock Gym       | Sun Dog Yoga            |
| Sandy Dog CrossFit                    | Montone Fitness Coaching  | 8. Mesa Lifestyle Yoga  |
| 5. Planet Fitness                     | Next Level Fitness        | 9. Barre 3              |
|                                       | Total Fitness Zone        | Breathing Dragon Yoga   |
|                                       |                           | Club Pilates            |
|                                       |                           | Pure Barre              |

Map C – Private Providers Outside Doylestown



- |    |  |    |  |
|----|--|----|--|
| 1. | CrossFit- Solebury Club<br>The Solebury Club | 6. | CKO Kickboxing<br>Orangetheory Fitness |
| 2. | Revolve Fitness                              | 7. | Transcend Fitness Club                 |
| 3. | Cornerstone Health/Fit                       | 8. | LA Fitness                             |
| 4. | Sky Zone                                     | 9. | The Edge Fitness Club                  |
| 5. | Philadelphia Sports Clubs                    |    |  |

**Other Indoor Recreation and Fitness Facility Providers Conclusion:** In the Doylestown Township market there are a significant number of recreation and fitness providers in place. There are a number of other public facilities in close proximity (Montgomery Community & Recreation Center being the most prominent), but they tend to serve their more immediate market, but there is a very large number of private fitness facilities in the area and the Doylestown YMCA is a significant provider in the market as well.

After analyzing these other existing providers, there is still a strong market for a Doylestown Community Center that has a focus on more conventional recreation programming and the Township market specifically.

## **Market Conclusion:**

Below are listed some of the market opportunities and challenges that exist with the Doylestown Community Center project.

### **Opportunities**

- The Secondary Service Area has more than a large enough population base to support a significant community center.
- There is a significant number of households with children. This will enhance use of the center.
- The area has a significantly higher median household income level which should provide more disposable income for recreation purposes.
- The population will continue to grow over the next five years which will add additional users for the facility.
- The Township has lost the use of its' indoor recreation space in the past few years and this has been replaced with temporary buildings. Having a permanent home for recreation programs is a high priority.
- Partnerships with other community organizations could enhance the programs and services that are offered at the center.
- A public Doylestown Community Center improves the quality of life in the Township and helps to bring more unity to a diverse population base.

### **Challenges**

- The demographic characteristics indicate an older median age. This will have somewhat of a negative impact on the rate of participation in recreational activities at a community center.
- There are projected to be decreases in the youth population and increases in the senior age groups in the coming years.
- There are significant number of other indoor recreation and fitness providers in the greater market area including the YMCA and private providers.
- The Township should plan that the Primary Service Area market will be the main focus of the center not the Secondary Service Area.



# DOYLESTOWN TOWNSHIP

## Solar Array Feasibility Study

31 May 2022

Completed by:

**THE STONE HOUSE GROUP**

301 BROADWAY, SUITE 500

BETHLEHEM, PA 18015

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## Executive Summary

THE STONE HOUSE GROUP (SHG) partnered with Doylestown Township, MKSD architects, and HB Engineers to provide a feasibility study to identify potential solar photovoltaic (PV) installations to provide on-site renewable electricity to a proposed Parks & Recreation Community Center (Community Center), and to recommend next steps for project development. SHG is an energy management and sustainable design consulting firm dedicated to strengthening the mission of institutions, corporations, and governmental entities. We believe your institution's mission should be supported, not undermined, by your facilities. To this end, the buildings and grounds must be safe, well maintained, and function dependably and efficiently, using minimal yet appropriate resources.

SHG conducted an analysis of the Community Center and adjacent roof area to identify the options for solar installations that include the type, size, orientation, and location of proposed solar equipment. This study took into consideration information collected during an on-site visit, data provided by the Department of Facilities Management, architectural drawings, and other technical and economic considerations specific to the site and the Pennsylvania energy and incentive marketplace. The report provides technical and financial analysis regarding the feasibility of several solar arrays. This report recommends whether a solution appears feasible specific sites, will assess the potential for alternative financing approaches and recommends "next steps" in project development.

A total of four (4) preferred PV layout options were identified through this study ranging from installation of solar panels only on the proposed Community Center (Option #1, 75 kW) to installation of solar panels on the proposed Community Center, all existing roofs, and a new solar canopy system (Option #2, 457 kW). Modeling suggests that the most cost effective and efficient solar layout is Option #3 to install solar panels on the proposed Community Center and roofs of adjacent service buildings with corrugated metal roofs. Our estimates indicate that Option #3 will provide electric savings throughout the term of the PPA contract with 25-year total savings estimated at approximately \$500,000. The estimated starting PPA rate for Option #3 is \$0.0775/kWh with annual escalation at 1.5%. The solar array will generate enough electricity to offset all electric consumption at the proposed Community Center and will offset 25% of electric usage at the Doylestown Township Administration Building. This size solar array will offset approximately 6,689 lbs. of CO<sub>2</sub> emissions per year.

## Scope of Work & Process

THE STONE HOUSE GROUP evaluated the feasibility of installing roof-mounted solar array on south facing roofs of the proposed Community Center. Since the south facing roofs of the proposed facility would only generate a portion of the electricity utilized at the facility, roofs of nearby Facilities, Transportation, and Storage facilities were considered for solar installations. Additionally, the potential to install a solar canopy structure that would provide cover for snow removal equipment was also considered. The purpose of this study is to make a determination of the economic feasibility of installing solar

The following list summarizes tasks completed by SHG during this feasibility study:

- Site analysis (including sufficiency of geology, elevations, absence of shading, and alignment)
- Identify optimal system specifications (type, size, orientation, and location of all proposed equipment for the site)
- Identify recommended locations for solar array installation
- Provide recommendation for the optimal use of the electricity generated by the system (supporting Township facilities or selling power back to the grid)
- Provide detailed and comprehensive estimates of equipment and construction costs
- Provide estimates for ongoing maintenance costs
- Provide financial analyses of simple payback calculations and anticipated revenue generation based on prevailing market offers from providers
- Provide 25-year total savings estimates and 25-year net present value savings estimates

## Solar Technology, Policies, and Incentives

### Overview of Photovoltaic (PV) Solar Systems

PV cells convert energy in sunlight directly into electrical energy through the use of semi conductors, diodes and collection grids. Several PV Cells are then linked together in a single frame of module to become a solar panel.

This conversion is done so without any moving parts and without generating any noise or pollution. Solar panels must be mounted in an un-shaded location. Rooftops, carports and ground-mounted arrays are common mounting locations. The angle of inclination of the PV panels, the amount of sunlight available, the orientation of the panels, the amount of physical space available and the efficiency of the individual panels are all factors that affect the amount of electricity that is generated.

Under full sun, each panel produces direct current (DC) electricity (about 20-30% efficiency), although this efficiency depends on the type of collector, the tilt and azimuth of the collector, the temperature and the level of sunlight. An inverter is required to convert the DC to alternating current (AC) of the desired voltage compatible with building and utility power systems. The balance of the system consists of conductors/conduit, switches, disconnects and fuses. Grid-connected, "behind the meter" PV systems feed power into a facility's electrical system.

PV system installation typically includes the installation of a remote web-based monitoring system that will display real-time data such as instantaneous kWh generation, cumulative kWh generation, dollars saved, on-going environmental savings associated with the system and current weather data.

### Net Metering

Net metering is a billing mechanism that credits solar energy system owners for the electricity they add to the grid. For example, if a commercial customer has a PV system on the facility's rooftop, it may generate more electricity than the business utilizes during daylight hours. If the business is net-metered, the electricity meter will run backwards to provide a credit against what electricity is consumed at night or other periods where the customer's electricity use exceeds the system's output. Customers are only billed for their "net" energy use. Exported solar electricity serves nearby customers' loads.

In 2006 the Pennsylvania Public Utilities Commission (PUC) adopted net-metering rules and interconnection standards for net-metered systems and other forms of distributed generation (DG) pursuant to the Alternative Energy Portfolio Standards (AEPS) Act of 2004. In 2007, H.B. 1203 amended AEPS and expanded net metering. Revised rules consistent with these amendments were adopted by the

Pennsylvania Public Utilities Commission (PUC), effective November 29, 2008. The PUC updated the net-metering rules (Docket No. M-2011-2249441) in 2012 approving the use of third-party ownership models (i.e., system leases or retail power purchase agreements).

Systems eligible for net metering in PA include those that generate electricity using photovoltaics (PV), solar-thermal energy, wind energy, hydropower, geothermal energy, biomass energy, fuel cells, combined heat and power (CHP), municipal solid waste, waste coal, coal-mine methane, other forms of distributed generation (DG) and certain demand-side management technologies.

In Pennsylvania, investor-owned utilities must offer net metering to i) residential customers that generate electricity with systems up to 50 kilowatts (kW) in capacity; ii) nonresidential customers with systems up to 3 megawatts (MW) in capacity; and iii) customers with systems greater than 3 MW but no more than 5 MW who make their systems available to the grid during emergencies, or where a micro-grid is in place in order to maintain critical infrastructure.

All of the proposed systems identified in this study are eligible for Net Metering, which allows electricity generated by solar panels to be sent back into the utility grid during times when the solar panels are generating more power than is required to power the building. None of the systems identified in this study are net excess power generators throughout a calendar year. Our team does not recommend installing systems that generate more power than a building will use in a calendar year, but taking advantage of Net Metering during some of the year is a helpful tool.

## **Solar Alternative Energy Credits**

(Commonly referred to as Solar Renewable Energy Credits or SREC's)

Pennsylvania's Alternative Energy Portfolio Standard (AEPS), created by S.B. 1030 on November 30, 2004, required each electric distribution company (EDC)\* and electric generation supplier (EGS) to retail electric customers in Pennsylvania to supply 18% of electricity using alternative-energy resources by 2020, and beyond 2020. Pennsylvania's standard provides for a solar set-aside, mandating a certain percentage of electricity generated by photovoltaics (PV). Pennsylvania's AEPS also includes demand-side management, waste coal, coal-mine methane and coal gasification as eligible technologies.

The PA Public Utility Commission (PUC) has adopted the following 15-year compliance schedule to implement Pennsylvania's AEPS. The compliance year (CY) for the standard runs from June 1 to May 31 and is followed by a 3-month true-up period. The table below refers to each compliance year according to the year in which it ends (e.g., CY 2008 ran from June 1, 2007 to May 31, 2008).

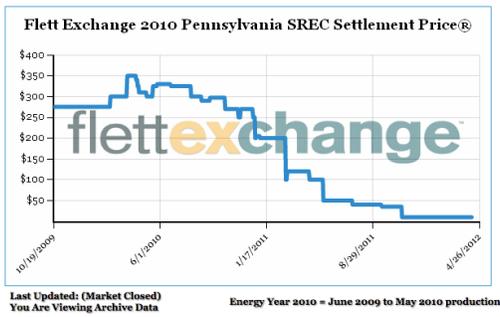
Compliance Year (CY)	Tier I (including Solar PV)**	Tier II	Solar PV
CY 2007	1.5%	4.2%	0.0013%
CY 2008	1.5%	4.2%	0.0030%
CY 2009	2.0%	4.2%	0.0063%
CY 2010	2.5%	4.2%	0.0120%
CY 2011	3.0%	6.2%	0.0203%
CY 2012	3.5%	6.2%	0.0325%
CY 2013	4.0%	6.2%	0.0510%
CY 2014	4.5%	6.2%	0.0840%
CY 2015	5.0%	6.2%	0.1440%
CY 2016	5.5%	8.2%	0.2500%
CY 2017	6.0%	8.2%	0.2933%
CY 2018	6.5%	8.2%	0.3400%
CY 2019	7.0%	8.2%	0.3900%
CY 2020	7.5%	8.2%	0.4433%
CY 2021	8.0%	10.0%	0.5000%

Figure 1. Pennsylvania’s Alternative Energy Credit requirements from 2007 – 2021. The “Solar Carve Out” is a specific requirement that solar electricity contributes the state’s power generation mix each year. (Source: [www.dsireusa.org](http://www.dsireusa.org))

Compliance is based on alternative energy credits (AECs). An AEC is equal to a megawatt-hour of qualified generation, and credits are the property of the generator unless expressly transferred. Banking of excess credits is allowed for up to two years, thus an AEC’s useful life is three years, the year it was produced and the two subsequent years for which it can be banked. AECs are tracked by the PJM GATS system.

## Current PA SREC Market

Pennsylvania’s SREC market had been oversupplied, but closing of state borders ended a process for out-of-state solar arrays to sell their SREC’s in the Pennsylvania Market. This has led to a slight increase in PA SREC prices. PA SREC’s reached a high price of \$350/SREC in 2010 and declined to \$5/SREC when the market was oversupplied in 2017. Currently, PA SREC’s are selling for \$42/SREC, which provides a decent financial incentive to install solar arrays in Pennsylvania. The future outlook for PA SREC’s remains stable with no anticipated changes to state legislation that would substantially change the price of SREC’s.



Figures 2 & 3: (Left) PA SREC prices from 2009 – 2012. This graph shows the peak of SREC prices in PA, followed by declining prices over time. (Right) PA SREC prices from 2021 – 2022. This graph shows current SREC prices in PA, which are approximately \$40/SREC. (Sourced: FlettExchange and SREC Trade)

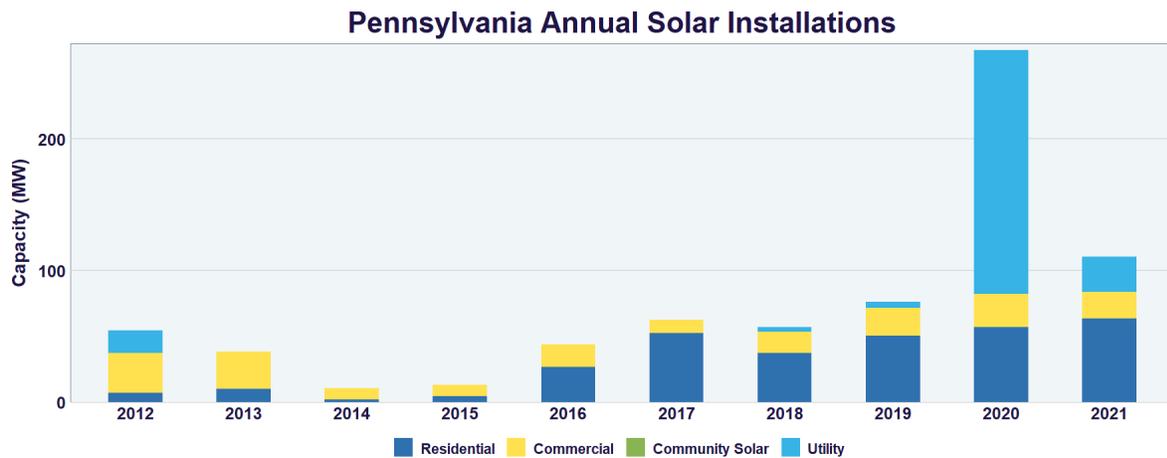


Figure 4: Total annual solar installations in Pennsylvania, by MW and by year. (Source: www.seia.org).

## Federal Tax Incentives

Federal tax incentives include investment tax credits and accelerated depreciation (MACRS), both of which are critical to the economic viability of solar installations. These two incentives can contribute between one-third and one-half of the total value of the project.

The federal Business Energy Investment Tax Credit (ITC) has been amended a number of times, most recently in December 2020. The table below shows the value of the investment tax credit for each technology by year. The expiration date for solar technologies and wind is based on when construction begins. For all other technologies, the expiration date is based on when the system is placed in service (fully installed and being used for its intended purpose).

Technology	12/31/18	12/31/19	12/31/20	12/31/21	12/31/22	12/31/23	12/31/24	12/31/25	Future Years
PV, Solar Water Heating, Solar Space Heating/Cooling, Solar Process Heat	30%	30%	26%	26%	26%	22%	22%	22%	10%
Hybrid Solar Lighting, Fuel Cells, Small Wind	26%	26%	26%	26%	26%	22%	N/A	N/A	N/A
Large Wind	18%	18%	18%	18%	N/A	N/A	N/A	N/A	N/A

Figure 5: Tax credit values, by year for specific alternative and renewable energy technologies. The Solar PV tax credit will remain at 22% from 2023 through 2025, and then will decline to 10%. (Source: [www.dsireusa.org](http://www.dsireusa.org))

## Power Purchase Agreements (PPA’s)

A solar power purchase agreement (PPA) is a financial agreement where a developer arranges for the design, permitting, financing and installation of a solar energy system on a customer’s property at little to no cost. A PPA model involves Doylestown Township entering into a 15 - 25 year agreement with a private sector solar developer to build a PV system on the Township’s property. Under this model, Doylestown Township has no capital investment. The private sector solar developer will invest all of the capital necessary to design, build, own, operate and maintain the system for 15 - 25 years. They also retain the financial benefits of the project, such as the Federal Tax Credits, Accelerated Depreciation, and the SRECs. Doylestown Township would agree to buy the electricity generated from the system for a 15 - 25 year period, generally at a price that is less than what the Township pays for electricity. This guarantees Doylestown Township a savings without any capital outlay. Additionally, benefits of Federal Tax Credits that the Township is not eligible to directly receive can be shared with the Township by partnering with a taxable entity (a solar developer).

The solar developer remains responsible for the operation and maintenance of the system for the duration of the agreement. At the end of the PPA contract term, the Township may be able to extend the PPA, have the developer remove the system or choose to buy the solar energy system from the developer.

The minimum size for a solar project PPA model, based on the requirements of the entities that provide the financing for PPAs, is around 250 kW. This size threshold exists primarily due to the fixed transaction costs associated with financing the project. According to the SEIA, approximately 90% of all solar project completed at non-profit locations are financed via a PPA.

### **Benefits of PPA's to Solar Customers:**

**No or low upfront capital costs:** The developer handles the upfront costs of designing, procuring and installing the solar PV system. Without any upfront investment, the host customer is able to adopt solar and begin saving money as soon as the system becomes operational. Further, Developers can take advantage of tax credits that the Township could not obtain as a non-profit organization.

**Reduced energy costs:** Solar PPAs provide a fixed, predictable cost of electricity for the duration of the agreement and are structured in one of two ways. Under the fixed escalator plan, the price the customer pays rises at a predetermined rate, typically 0% - 2.5%. This is often lower than projected utility price increases. The fixed price plan, on the other hand, maintains a constant price throughout the term of the PPA saving the customer more as utility prices rise over time.

**Limited risk:** The developer is responsible for construction, system performance and operating risks. The solar customer's risk is that at some point during the contract, electric prices become lower than contracted solar PPA pricing.

## **Direct Purchase**

Doylestown Township could purchase a solar array directly from a solar Engineering, Procurement, and Construction (EPC) firm. The Township would not be able to take advantage of Federal tax credits of accelerated depreciation incentives. The Township would realize electric savings and would generate SREC's that could be sold to a broker or on the open SREC market. The Township would be responsible for ongoing operations, maintenance, and insurance costs for the solar facility. Direct purchase options are generally not recommended for non-profit institutions.

## Doylestown Township – Energy Cost & Consumption Summary

### Annual Electric

The figure below shows estimated annual electric consumption at the proposed Parks & Recreation Community Center ranging between 275,000 kWh’s per year – 350,000 kWh’s per year. These estimates were developed using energy data from the Department of Energy’s Portfolio Manager that survey’s average energy consumption per square foot for different types of buildings. In April 2021, average energy consumption for Social or Meeting Halls was 56.1 kBTU per square foot, which is approximately 275,000 kWh’s per year for the 16,800 square foot proposed Community Center. Using a 25% safety factor, we developed a high estimate for electric consumption at approximately 350,000 kWh’s per year. For the purposes of this assessment, we have assumed that the proposed facility will consume 310,00 kWh’s per year with monthly demand ranging from 40 kW during spring months up to 150 kW during winter months. This analysis assumes that the proposed Community Center utilizes electricity for heating and cooling.



**Doylestown Township Parks & Recreation Community Center**  
**Estimated Annual Electric Consumption**

<b>Community Center Square Footage</b>	
Gym	7,675
Storage	330
Hall	2,250
Multi-purpose	6,528
<b>Total</b>	<b>16,783</b>
<b>Rounded</b>	<b>16,800 GSF</b>

Low Estimate	April 2021 Portfolio Manager (CBECS), EUI for Social/Meeting Hall	56.1	kBTU/GSF
High Estimate	Estimated EUI (CBECS + 25% Safety Factor)	70.125	kBTU/GSF

Source:

<https://portfoliomanager.energystar.gov/pdf/reference/US%20National%20Median%20Table.pdf>

<b>Low Estimate</b>	
Estimated Annual Energy Usage	942 MMBTU
Estimated Annual Energy Usage	276,225 kWh's

<b>High Estimate</b>	
Estimated Annual Energy Usage	1,178 MMBTU
Estimated Annual Energy Usage	345,281 kWh's

Figure 6: Summary of annual electric data.

The proposed facility will pay on of PECO’s General Service rates. Using available, publish rate tariffs, we estimate that the proposed facility will pay approximately \$0.07/kWh of electric consumption and \$10.15/kW of electric demand. The estimated annual electric cost for the proposed Community Center is \$35,000 per year.

Additionally, our team analyze the potential to interconnect some on-site solar arrays at both the proposed Community Center and at the Administration Building. Based on data provided, the Administration Building consumes approximately 450,000 kWh’s per year.

## Summary of Findings

### Recommended Installation Locations

**Option #1, Community Center Only:** Install solar panels on the two south facing roofs of the proposed Parks & Recreation Community Center. The total size of this solar array is 75.2 kW (DC), generating 99,350 kWh's per year. This solar array would generate 32% of the electric needs for the proposed Community Center.

**Option #2, Right-sized for Community Center:** This includes the panels described in Option #1, and solar panels installed on the roofs of some adjacent facilities. The total size of this solar array is 236.7 kW (DC), generating 310,000 kWh's of solar power per year. This solar array would generate 100% of the electric needs for the proposed Community Center.

**Option #3, Maximize Rooftop Solar:** This includes the panels described in Option #2, and solar panels installed on the roofs of all adjacent facilities. The total size of this solar array is 330.8 kW (DC), generating 426,900 kWh's of solar power per year. This solar array would generate 100% of the electric needs for the proposed Community Center and approximately 25% of the electric needs of the Administration Building.

**Option #4, Rooftop & Solar Canopy:** This includes the panels described in Option #3, and an elevated solar canopy system that would generate on-site power and shield vehicles from falling snow. The total size of this solar array is 456.8 (DC), generating 582,200 kWh's of solar power per year. This solar array would generate 100% of the electric needs for the proposed Community Center and approximately 60% of the electric needs of the Administration Building.

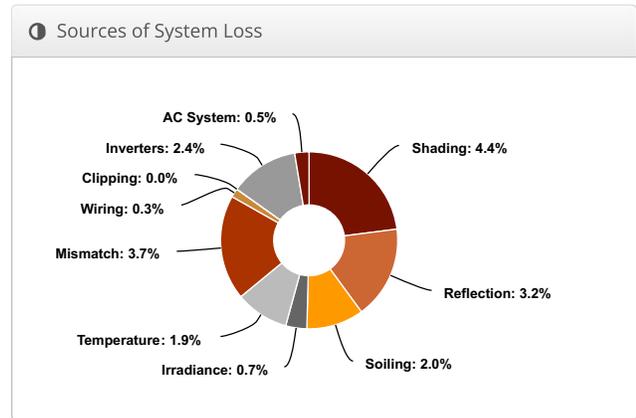
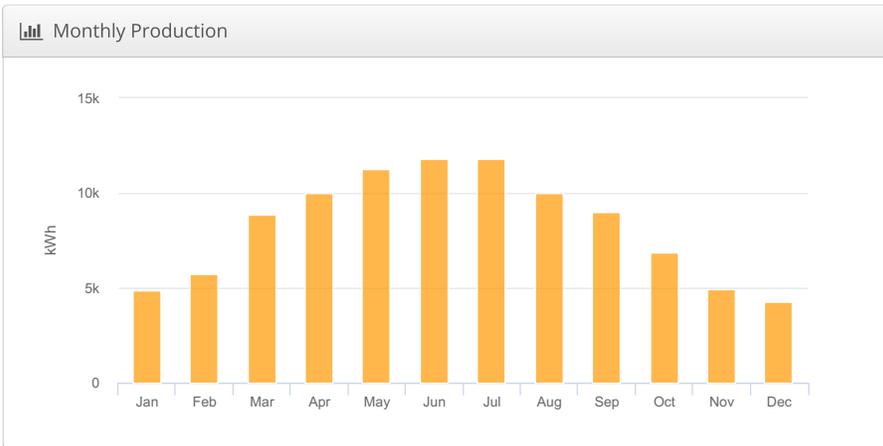
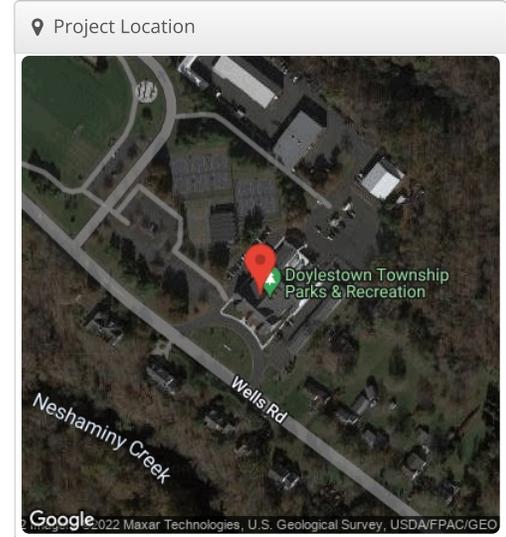
The following pages include Helioscope reports that show panel locations for each option as well as monthly and annual solar production.

## Option #1 Doylestown Township Community Center, 425 Wells Rd. Doylestown, PA

Report	
Project Name	Doylestown Township Community Center
Project Address	425 Wells Rd. Doylestown, PA
Prepared By	James Hayes hayes@theshg.com

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System Metrics	
Design	Roof Only
Module DC Nameplate	75.2 kW
Inverter AC Nameplate	70.0 kW Load Ratio: 1.07
Annual Production	99.35 MWh
Performance Ratio	82.4%
kWh/kWp	1,322.0
Weather Dataset	TMY, 10km grid (40.25,-75.15), NREL (prospector)
Simulator Version	5059dd9741-c5e0721255-7687e1d04d-81a823811a



Annual Production			
	Description	Output	% Delta
Irradiance (kWh/m <sup>2</sup> )	Annual Global Horizontal Irradiance	1,476.8	
	POA Irradiance	1,605.0	8.7%
	Shaded Irradiance	1,534.5	-4.4%
	Irradiance after Reflection	1,484.7	-3.2%
	Irradiance after Soiling	1,455.0	-2.0%
	<b>Total Collector Irradiance</b>	<b>1,455.1</b>	<b>0.0%</b>
Energy (kWh)	Nameplate	109,356.9	
	Output at Irradiance Levels	108,553.6	-0.7%
	Output at Cell Temperature Derate	106,527.5	-1.9%
	Output After Mismatch	102,617.0	-3.7%
	Optimal DC Output	102,307.8	-0.3%
	Constrained DC Output	102,300.8	0.0%
	Inverter Output	99,845.6	-2.4%
	<b>Energy to Grid</b>	<b>99,346.3</b>	<b>-0.5%</b>
Temperature Metrics			
	Avg. Operating Ambient Temp		14.4 °C
	Avg. Operating Cell Temp		21.8 °C
Simulation Metrics			
	Operating Hours	4682	
	Solved Hours	4682	

Condition Set												
Description	Condition Set 1											
Weather Dataset	TMY, 10km grid (40.25,-75.15), NREL (prospector)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
Temperature Model	Sandia Model											
Temperature Model Parameters	Rack Type	a	b	Temperature Delta								
	Fixed Tilt	-3.56	-0.075	3°C								
	Flush Mount	-2.81	-0.0455	0°C								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	2	2	2	2	2	2	2	2	2	2	2	2
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	0.50%											
Module Characterizations	Module	Uploaded By		Characterization								
	JAM72S20-450/MR (1000V) (2021) (JA Solar)	HelioScope		Spec Sheet Characterization, PAN								
Component Characterizations	Device	Uploaded By		Characterization								
	Sunny Tripower 10000TL (SMA)	HelioScope		Spec Sheet								

Components		
Component	Name	Count
Inverters	Sunny Tripower 10000TL (SMA)	7 (70.0 kW)
Strings	10 AWG (Copper)	14 (1,182.1 ft)
Module	JA Solar, JAM72S20-450/MR (1000V) (2021) (450W)	167 (75.2 kW)

Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	10-18	Along Racking

Field Segments									
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Fixed Tilt	Landscape (Horizontal)	15°	218.60762°	1.0 ft	1x1	91	65	29.3 kW
Field Segment 1 (copy)	Fixed Tilt	Landscape (Horizontal)	15°	218.60762°	1.0 ft	1x1	102	102	45.9 kW

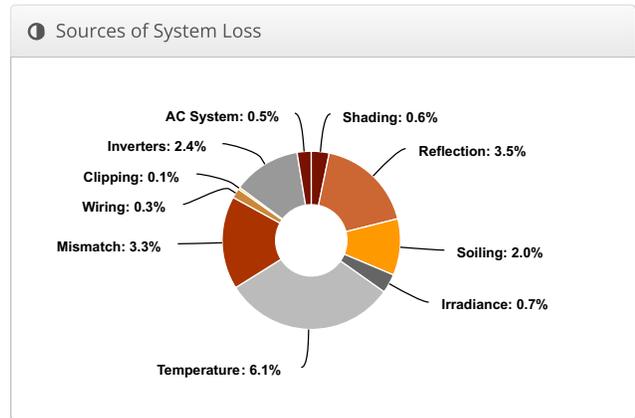
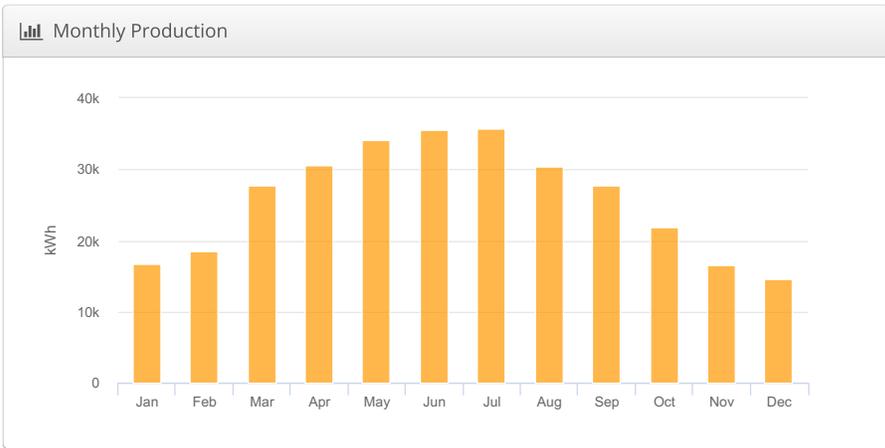
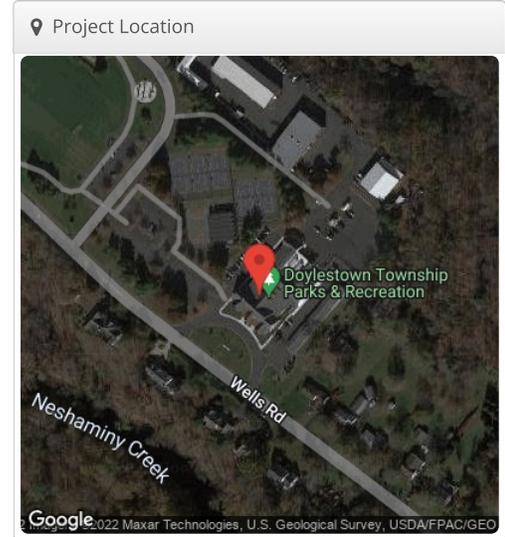


## Option #2 Doylestown Township Community Center, 425 Wells Rd. Doylestown, PA

Report	
Project Name	Doylestown Township Community Center
Project Address	425 Wells Rd. Doylestown, PA
Prepared By	James Hayes hayes@theshg.com

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System Metrics	
Design	Right Sized
Module DC Nameplate	236.7 kW
Inverter AC Nameplate	190.0 kW Load Ratio: 1.25
Annual Production	310.0 MWh
Performance Ratio	82.0%
kWh/kWp	1,309.8
Weather Dataset	TMY, 10km grid (40.25,-75.15), NREL (prospector)
Simulator Version	77eaf2cdb5-02f2a7f506-20068b956b-d70d5f9ff0



Annual Production			
	Description	Output	% Delta
Irradiance (kWh/m <sup>2</sup> )	Annual Global Horizontal Irradiance	1,476.8	
	POA Irradiance	1,597.8	8.2%
	Shaded Irradiance	1,587.7	-0.6%
	Irradiance after Reflection	1,532.3	-3.5%
	Irradiance after Soiling	1,501.7	-2.0%
	<b>Total Collector Irradiance</b>	<b>1,501.7</b>	<b>0.0%</b>
Energy (kWh)	Nameplate	355,511.3	
	Output at Irradiance Levels	353,098.5	-0.7%
	Output at Cell Temperature Derate	331,521.7	-6.1%
	Output After Mismatch	320,577.7	-3.3%
	Optimal DC Output	319,471.1	-0.3%
	Constrained DC Output	319,249.6	-0.1%
	Inverter Output	311,582.5	-2.4%
	<b>Energy to Grid</b>	<b>310,024.6</b>	<b>-0.5%</b>
Temperature Metrics			
	Avg. Operating Ambient Temp		14.4 °C
	Avg. Operating Cell Temp		28.5 °C
Simulation Metrics			
	Operating Hours		4682
	Solved Hours		4682

Condition Set												
Description	Condition Set 1											
Weather Dataset	TMY, 10km grid (40.25,-75.15), NREL (prospector)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
Temperature Model	Sandia Model											
Temperature Model Parameters	Rack Type	a	b	Temperature Delta								
	Fixed Tilt	-3.56	-0.075	3°C								
	Flush Mount	-2.81	-0.0455	0°C								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	2	2	2	2	2	2	2	2	2	2	2	2
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	0.50%											
Module Characterizations	Module	Uploaded By		Characterization								
	JAM72S20-450/MR (1000V) (2021) (JA Solar)	HelioScope		Spec Sheet Characterization, PAN								
Component Characterizations	Device	Uploaded By		Characterization								
	Sunny Tripower 10000TL (SMA)	HelioScope		Spec Sheet								

### Components

Component	Name	Count
Inverters	Sunny Tripower 10000TL (SMA)	19 (190.0 kW)
Strings	10 AWG (Copper)	38 (3,501.7 ft)
Module	JA Solar, JAM72S20-450/MR (1000V) (2021) (450W)	526 (236.7 kW)

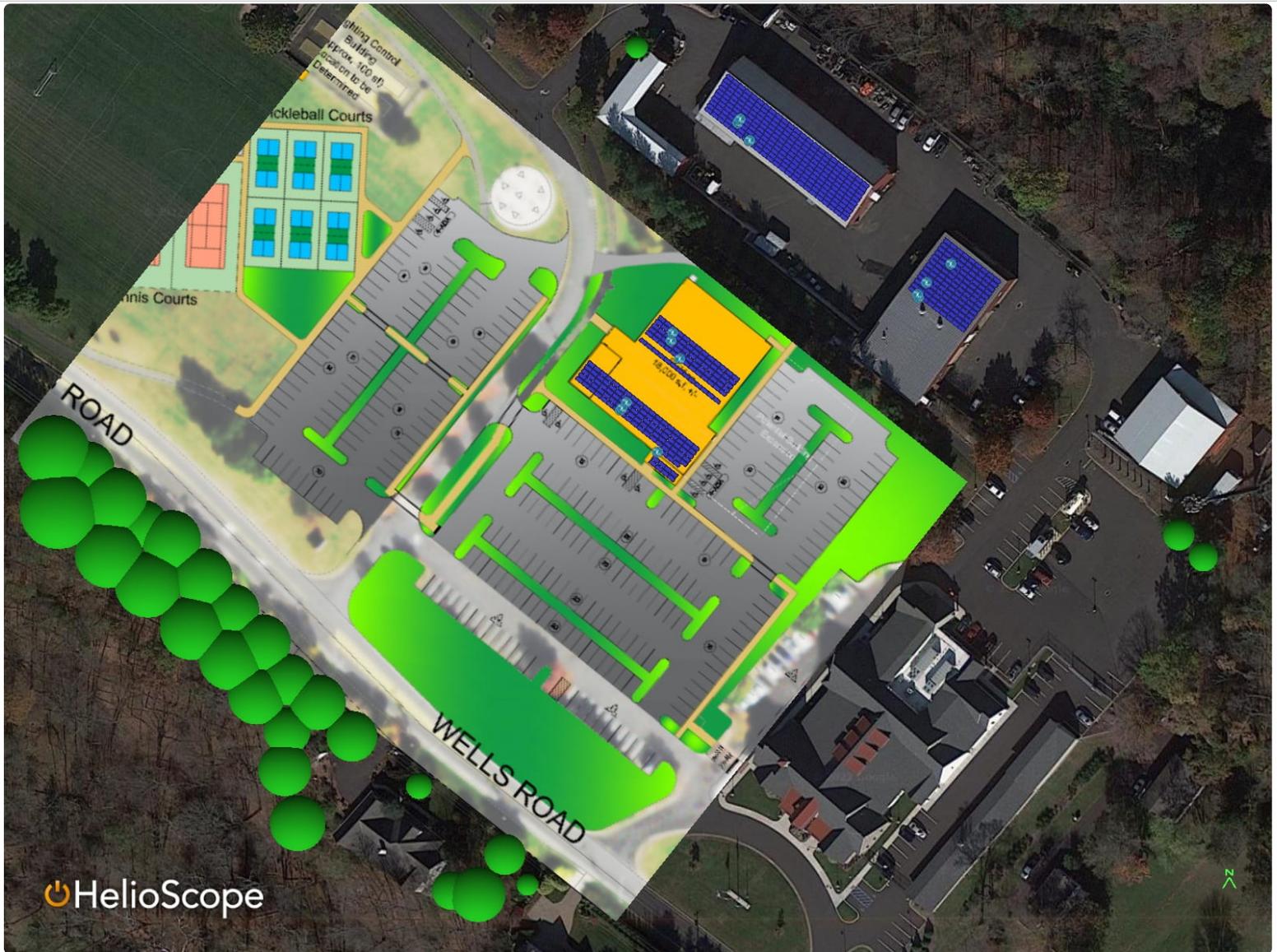
### Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	10-18	Along Racking

### Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Flush Mount	Landscape (Horizontal)	15°	218.60762°	1.0 ft	1x1	78	78	35.1 kW
Field Segment 1 (copy)	Flush Mount	Landscape (Horizontal)	15°	218.60762°	1.0 ft	1x1	101	101	45.5 kW
Field Segment 5	Fixed Tilt	Landscape (Horizontal)	10°	217.94418°	1.0 ft	1x1	117	117	52.7 kW
Field Segment 6	Flush Mount	Landscape (Horizontal)	15°	218.32698°	0.5 ft	1x1	230	230	103.5 kW

### Detailed Layout



## Option #3

Doylestown Township Community Center, 425 Wells Rd. Doylestown, PA

### Report

Project Name	Doylestown Township Community Center
Project Address	425 Wells Rd. Doylestown, PA
Prepared By	James Hayes hayes@theshg.com

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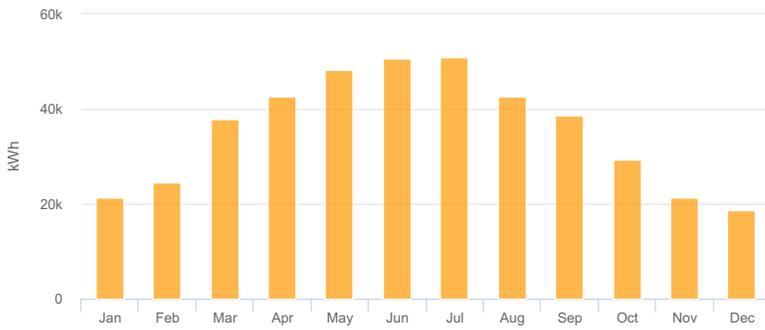
### System Metrics

Design	New & Existing Roofs
Module DC Nameplate	330.8 kW
Inverter AC Nameplate	270.0 kW Load Ratio: 1.23
Annual Production	426.9 MWh
Performance Ratio	81.5%
kWh/kWp	1,290.6
Weather Dataset	TMY, 10km grid (40.25,-75.15), NREL (prospector)
Simulator Version	74f40761b4-0ffb43e590-6bd9ec2216-6a27a66da7

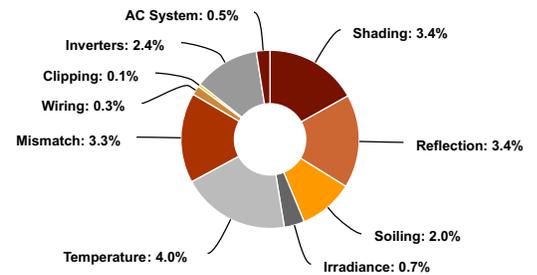
### Project Location



### Monthly Production



### Sources of System Loss



### Annual Production

	Description	Output	% Delta
Irradiance (kWh/m <sup>2</sup> )	Annual Global Horizontal Irradiance	1,476.8	
	POA Irradiance	1,583.9	7.2%
	Shaded Irradiance	1,529.9	-3.4%
	Irradiance after Reflection	1,477.5	-3.4%
	Irradiance after Soiling	1,448.0	-2.0%
	<b>Total Collector Irradiance</b>	<b>1,447.9</b>	<b>0.0%</b>
Energy (kWh)	Nameplate	478,956.4	
	Output at Irradiance Levels	475,403.0	-0.7%
	Output at Cell Temperature Derate	456,537.8	-4.0%
	Output After Mismatch	441,490.8	-3.3%
	Optimal DC Output	439,982.5	-0.3%
	Constrained DC Output	439,558.9	-0.1%
	Inverter Output	428,999.6	-2.4%
	<b>Energy to Grid</b>	<b>426,854.6</b>	<b>-0.5%</b>
<b>Temperature Metrics</b>			
	Avg. Operating Ambient Temp		14.4 °C
	Avg. Operating Cell Temp		24.9 °C
<b>Simulation Metrics</b>			
	Operating Hours	4682	
	Solved Hours	4682	

### Condition Set

Description	Condition Set 1											
Weather Dataset	TMY, 10km grid (40.25,-75.15), NREL (prospector)											
Solar Angle Location	Meteo Lat/Lng											
Transposition Model	Perez Model											
Temperature Model	Sandia Model											
Temperature Model Parameters	Rack Type	a	b	Temperature Delta								
	Fixed Tilt	-3.56	-0.075	3°C								
	Flush Mount	-2.81	-0.0455	0°C								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	2	2	2	2	2	2	2	2	2	2	2	2
Irradiation Variance	5%											
Cell Temperature Spread	4° C											
Module Binning Range	-2.5% to 2.5%											
AC System Derate	0.50%											
Module Characterizations	Module	Uploaded By	Characterization									
	JAM72S20-450/MR (1000V) (2021) (JA Solar)	HelioScope	Spec Sheet Characterization, PAN									
Component Characterizations	Device	Uploaded By	Characterization									
	Sunny Tripower 10000TL (SMA)	HelioScope	Spec Sheet									

### Components

Component	Name	Count
Inverters	Sunny Tripower 10000TL (SMA)	27 (270.0 kW)
Strings	10 AWG (Copper)	54 (5,693.1 ft)
Module	JA Solar, JAM72S20-450/MR (1000V) (2021) (450W)	735 (330.8 kW)

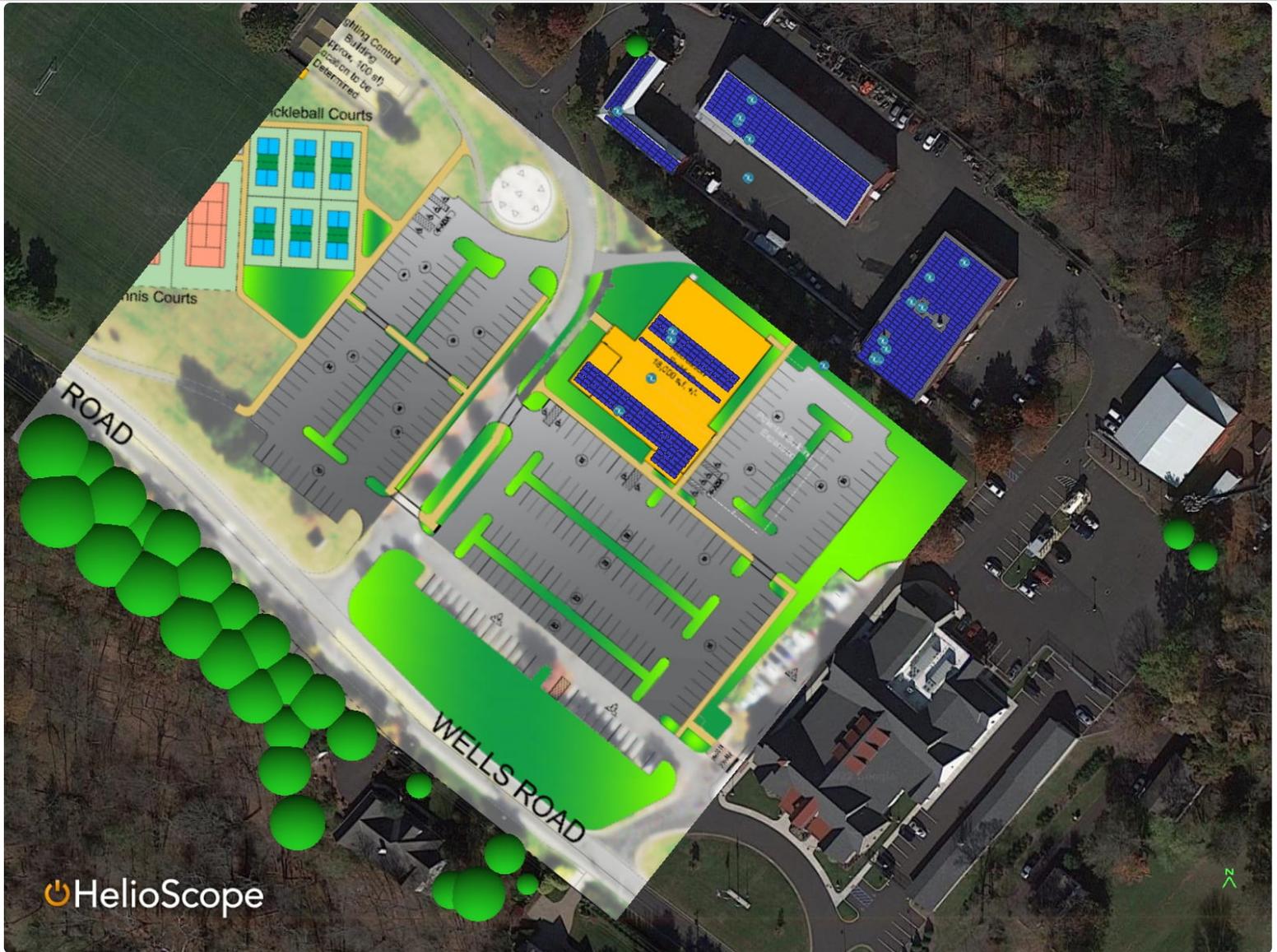
### Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	10-18	Along Racking

### Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Fixed Tilt	Landscape (Horizontal)	15°	218.60762°	1.0 ft	1x1	91	65	29.3 kW
Field Segment 1 (copy)	Fixed Tilt	Landscape (Horizontal)	15°	218.60762°	1.0 ft	1x1	102	102	45.9 kW
Field Segment 5	Fixed Tilt	Landscape (Horizontal)	10°	217.94418°	0.5 ft	1x1	283	283	127.4 kW
Field Segment 6	Flush Mount	Landscape (Horizontal)	15°	218.32698°	0.5 ft	1x1	230	230	103.5 kW
Field Segment 7	Flush Mount	Landscape (Horizontal)	12°	219.24513°	0.5 ft	1x1	31	31	14.0 kW
Field Segment 8	Flush Mount	Landscape (Horizontal)	12°	306.34982°	0.5 ft	1x1	24	24	10.8 kW

### Detailed Layout



## Option #4

Doylestown Township Community Center, 425 Wells Rd.

Doylestown, PA

### Report

Project Name	Doylestown Township Community Center
Project Address	425 Wells Rd. Doylestown, PA
Prepared By	James Hayes hayes@theshg.com

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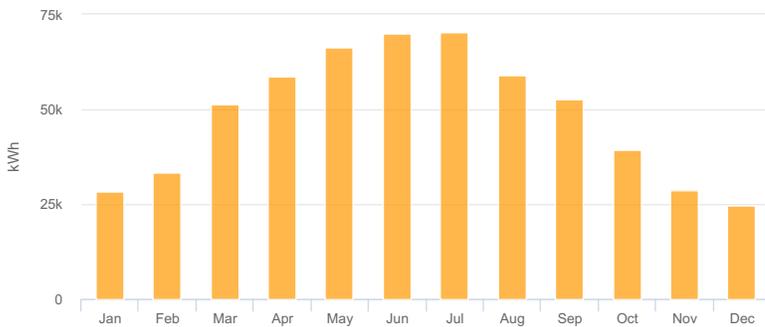
### System Metrics

Design	Roofs & Snow Protection Structure
Module DC Nameplate	456.8 kW
Inverter AC Nameplate	370.0 kW Load Ratio: 1.23
Annual Production	582.2 MWh
Performance Ratio	82.0%
kWh/kWp	1,274.7
Weather Dataset	TMY, 10km grid (40.25,-75.15), NREL (prospector)
Simulator Version	74f40761b4-0ffb43e590-6bd9ec2216-6a27a66da7

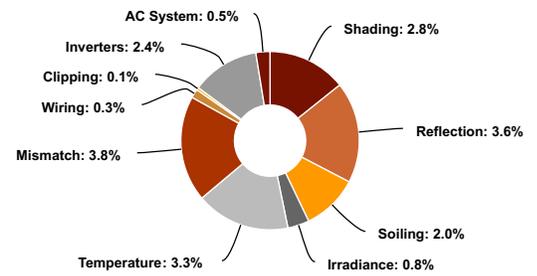
### Project Location



### Monthly Production



### Sources of System Loss



### Annual Production

	Description	Output	% Delta
Irradiance (kWh/m <sup>2</sup> )	Annual Global Horizontal Irradiance	1,476.8	
	POA Irradiance	1,554.0	5.2%
	Shaded Irradiance	1,510.7	-2.8%
	Irradiance after Reflection	1,456.4	-3.6%
	Irradiance after Soiling	1,427.3	-2.0%
	<b>Total Collector Irradiance</b>	<b>1,427.3</b>	<b>0.0%</b>
Energy (kWh)	Nameplate	652,028.2	
	Output at Irradiance Levels	647,058.2	-0.8%
	Output at Cell Temperature Derate	625,448.0	-3.3%
	Output After Mismatch	601,985.1	-3.8%
	Optimal DC Output	600,081.1	-0.3%
	Constrained DC Output	599,539.1	-0.1%
	Inverter Output	585,137.5	-2.4%
	<b>Energy to Grid</b>	<b>582,211.8</b>	<b>-0.5%</b>
Temperature Metrics			
	Avg. Operating Ambient Temp		14.4 °C
	Avg. Operating Cell Temp		24.0 °C
Simulation Metrics			
	Operating Hours	4682	
	Solved Hours	4682	

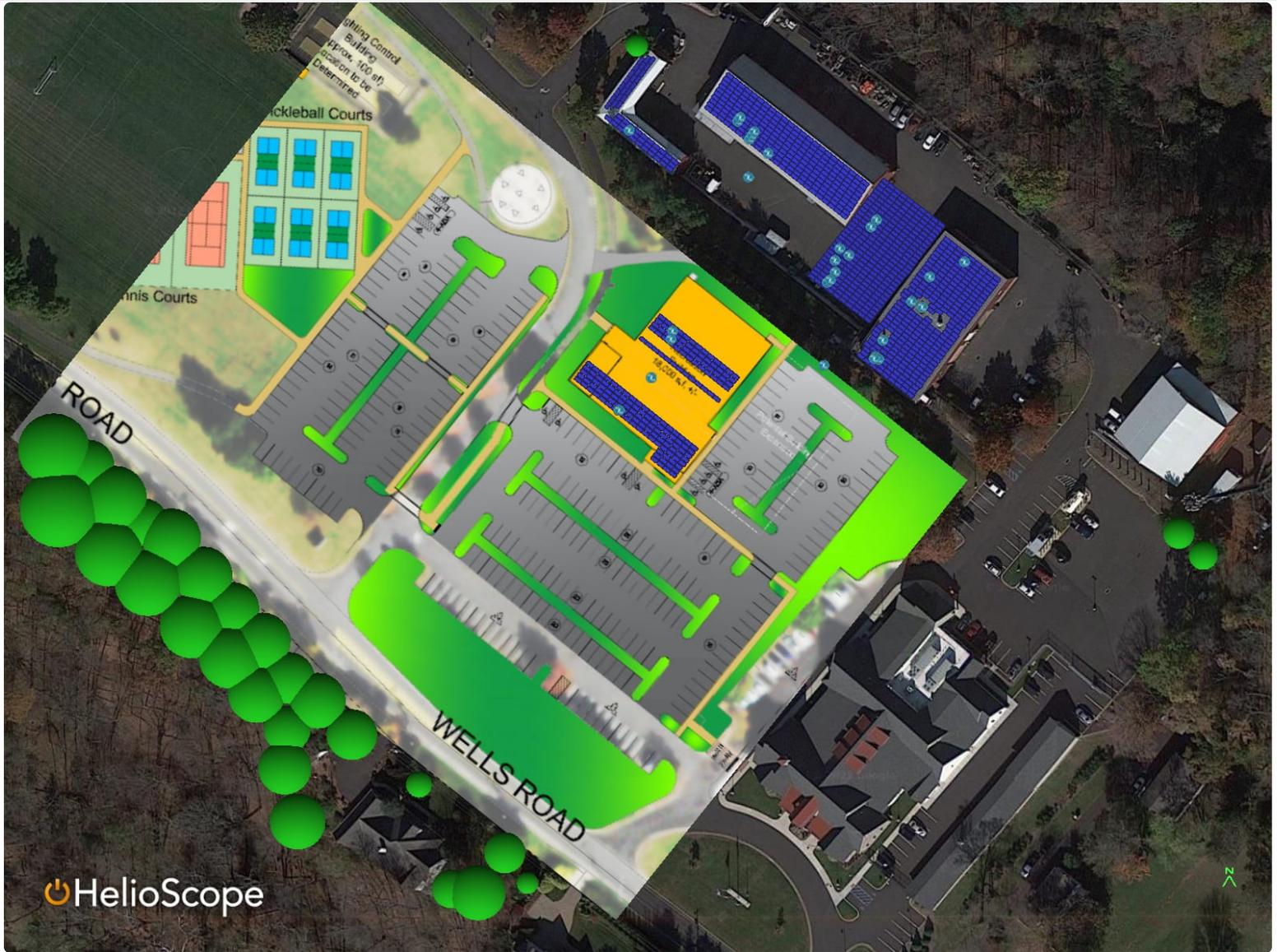
Condition Set													
Description	Condition Set 1												
Weather Dataset	TMY, 10km grid (40.25,-75.15), NREL (prospector)												
Solar Angle Location	Meteo Lat/Lng												
Transposition Model	Perez Model												
Temperature Model	Sandia Model												
Temperature Model Parameters	Rack Type	a		b		Temperature Delta							
	Fixed Tilt	-3.56		-0.075		3°C							
	Flush Mount	-2.81		-0.0455		0°C							
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D	
	2	2	2	2	2	2	2	2	2	2	2	2	
Irradiation Variance	5%												
Cell Temperature Spread	4° C												
Module Binning Range	-2.5% to 2.5%												
AC System Derate	0.50%												
Module Characterizations	Module				Uploaded By		Characterization						
	JAM72S20-450/MR (1000V) (2021) (JA Solar)				HelioScope		Spec Sheet Characterization, PAN						
Component Characterizations	Device				Uploaded By		Characterization						
	Sunny Tripower 10000TL (SMA)				HelioScope		Spec Sheet						

Components		
Component	Name	Count
Inverters	Sunny Tripower 10000TL (SMA)	37 (370.0 kW)
Strings	10 AWG (Copper)	74 (7,420.6 ft)
Module	JA Solar, JAM72S20-450/MR (1000V) (2021) (450W)	1,015 (456.8 kW)

Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	10-18	Along Racking

Field Segments										
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power	
Field Segment 1	Fixed Tilt	Landscape (Horizontal)	15°	218.60762°	1.0 ft	1x1	91	65	29.3 kW	
Field Segment 1 (copy)	Fixed Tilt	Landscape (Horizontal)	15°	218.60762°	1.0 ft	1x1	102	102	45.9 kW	
Field Segment 5	Fixed Tilt	Landscape (Horizontal)	10°	217.94418°	0.5 ft	1x1	283	283	127.4 kW	
Field Segment 6	Flush Mount	Landscape (Horizontal)	15°	218.32698°	0.5 ft	1x1	230	230	103.5 kW	
Field Segment 7	Flush Mount	Landscape (Horizontal)	12°	219.24513°	0.5 ft	1x1	31	31	14.0 kW	
Field Segment 8	Flush Mount	Landscape (Horizontal)	12°	306.34982°	0.5 ft	1x1	24	24	10.8 kW	
Field Segment 9	Carport	Landscape (Horizontal)	0°	217.53879°	0.5 ft	1x1	280	280	126.0 kW	

Detailed Layout



## Summary of Financial & Environmental Benefits

As previously described, solar projects have two common purchase options: Direct Purchase and Power Purchase Agreement (PPA). The following is a summary of the financial benefits for each proposed Option. All financial models assume annual degradation of PV performance of 0.5%, annual utility escalation rate of 2.0%, annual operations & maintenance cost escalation of 3.0%, annual PPA rate escalation of 1.5%, and present value discount rate of 5.0%.

Estimates for Option #1 indicate a starting PPA rate of \$0.135/kWh, which is higher than estimated electric costs for the proposed Community Center. During the first year of operation, the solar array would increase operating costs by approximately \$5,000.

Estimates for Option #2 indicate a starting PPA rate of \$0.0825/kWh, which is slightly higher than estimated electric costs for the proposed Community Center. During the first year of operation, the solar array would increase operating costs by approximately \$1,400.

Of all options, Option #3 is the most cost effective, providing estimated electric savings throughout the term of the PPA contract with 25-year total savings estimated at approximately \$500,000. The estimated starting PPA rate for Option #3 is \$0.0775/kWh with annual escalation at 1.5%. This size solar array will offset approximately 6,689 lbs. of CO<sub>2</sub> emissions per year.

Estimates for Option #4 indicate a starting PPA rate of \$0.08/kWh, which is slightly higher than estimated electric costs for the proposed Community Center. During the first year of operation, the solar array would increase operating costs by approximately \$1,000.

The following pages provide details of technical and financial performance for each option.

# Option #1: PV SYSTEM DETAILS

## GENERAL INFORMATION

Facility: Meter #1  
 Address: 425 Wells Rd Doylestown PA 18901

## SOLAR PV SYSTEM RATING

Power Rating: 75,150 W-DC  
 Power Rating: 65,460 W-AC-CEC

## SOLAR PV EQUIPMENT DESCRIPTION

Solar Panels: (167) JA Solar JAM72S20-450/MR (1000V) (2021)  
 Inverters: (7) SMA Sunny Tripower 10000TL

## ENERGY CONSUMPTION MIX

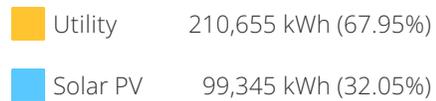
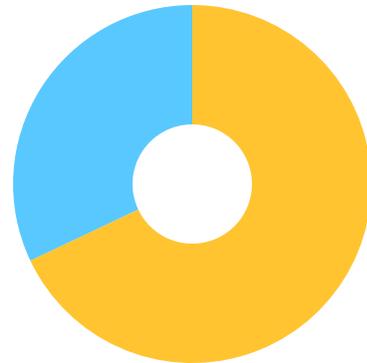
Annual Energy Use: 310,000 kWh

## SOLAR PV EQUIPMENT TYPICAL LIFESPAN

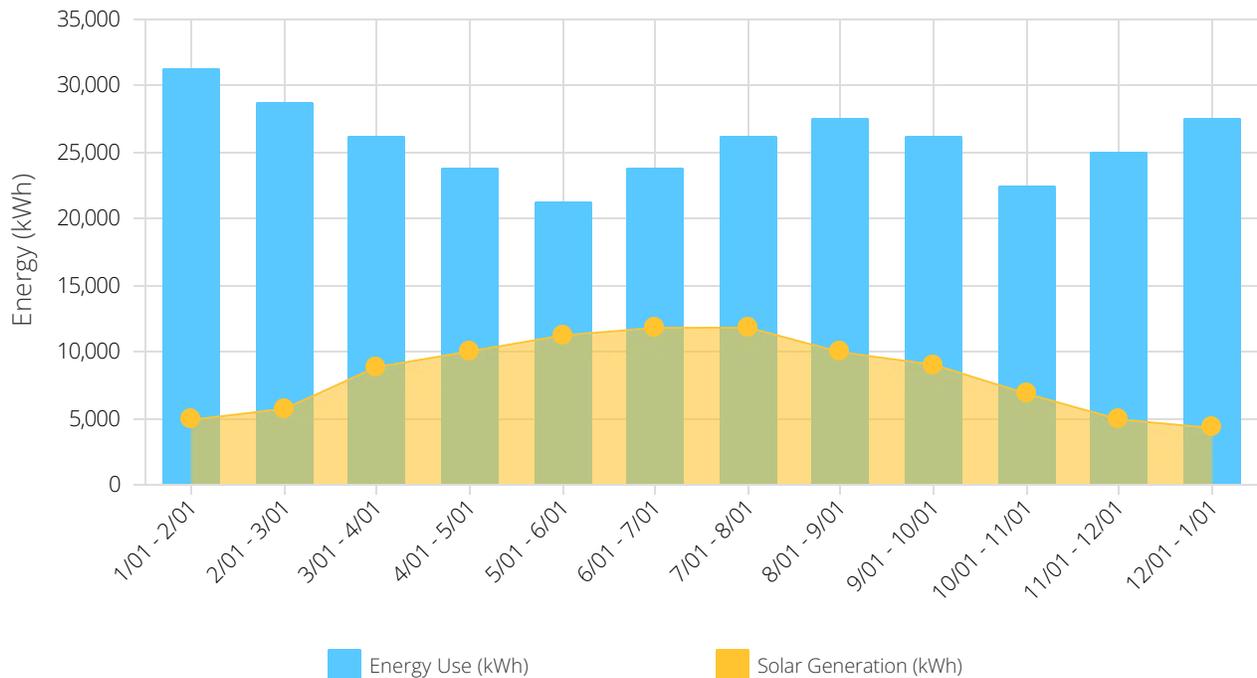
Solar Panels: Greater than 30 Years  
 Inverters: 15 Years

### Solar PV System Cost and Incentives

Solar PV System Cost \$206,663



## MONTHLY ENERGY USE VS SOLAR GENERATION



# Projected Utility Rates

The table below shows the rates associated with your current utility rate schedule (GS - Jan 2023). Your estimated electric bills after solar are shown on the following page.

Customer Charges				Energy Charges				Demand Charges			
Season	Charge Type	Rate Type	GS - Jan 2023	Season	Charge Type	Rate Type	GS - Jan 2023	Season	Charge Type	Rate Type	GS - Jan 2023
S1	Flat Rate	per billing period	\$57.84	S1	Flat Rate	Import	\$0.00151	S1	Flat Rate	Import	\$8.92
				S1	Flat Rate	Import	\$0.07155	S1	Flat Rate	Import	\$1.23

# Projected Electric Bill

The table below shows your annual electricity costs based on the most current utility rates and your previous 12 months of electrical usage.

**RATE SCHEDULE:** PECO - GS - Jan 2023

Time Periods	Energy Use (kWh)	Max Demand (kW)	Charges			
			Other	Energy	Demand	Total
1/1/2021 - 2/1/2021 S1	31,250	145	\$58	\$2,283	\$1,472	\$3,813
2/1/2021 - 3/1/2021 S1	28,750	150	\$58	\$2,100	\$1,523	\$3,681
3/1/2021 - 4/1/2021 S1	26,250	105	\$58	\$1,918	\$1,066	\$3,042
4/1/2021 - 5/1/2021 S1	23,750	80	\$58	\$1,735	\$812	\$2,605
5/1/2021 - 6/1/2021 S1	21,250	40	\$58	\$1,552	\$406	\$2,016
6/1/2021 - 7/1/2021 S1	23,750	65	\$58	\$1,735	\$660	\$2,453
7/1/2021 - 8/1/2021 S1	26,250	90	\$58	\$1,918	\$914	\$2,890
8/1/2021 - 9/1/2021 S1	27,500	110	\$58	\$2,009	\$1,117	\$3,184
9/1/2021 - 10/1/2021 S1	26,250	110	\$58	\$1,918	\$1,117	\$3,093
10/1/2021 - 11/1/2021 S1	22,500	75	\$58	\$1,644	\$762	\$2,463
11/1/2021 - 12/1/2021 S1	25,000	70	\$58	\$1,826	\$711	\$2,595
12/1/2021 - 1/1/2022 S1	27,500	110	\$58	\$2,009	\$1,117	\$3,184
Total	310,000	-	\$694	\$22,648	\$11,678	\$35,020

# Projected Electric Bill with Solar Array

RATE SCHEDULE: PECO - GS - Jan 2023

Time Periods	Energy Use (kWh)	Max Demand (kW)	Charges			
Bill Ranges & Seasons	Total	NC / Max	Other	Energy	Demand	Total
1/1/2021 - 2/1/2021 S1	26,371	145	\$58	\$1,927	\$1,472	\$3,457
2/1/2021 - 3/1/2021 S1	23,030	150	\$58	\$1,683	\$1,523	\$3,264
3/1/2021 - 4/1/2021 S1	17,409	105	\$58	\$1,272	\$1,066	\$2,396
4/1/2021 - 5/1/2021 S1	13,719	75	\$58	\$1,002	\$762	\$1,822
5/1/2021 - 6/1/2021 S1	10,011	32	\$58	\$731	\$325	\$1,114
6/1/2021 - 7/1/2021 S1	11,954	56	\$58	\$873	\$569	\$1,500
7/1/2021 - 8/1/2021 S1	14,433	61	\$58	\$1,054	\$619	\$1,732
8/1/2021 - 9/1/2021 S1	17,526	101	\$58	\$1,280	\$1,026	\$2,364
9/1/2021 - 10/1/2021 S1	17,221	87	\$58	\$1,258	\$883	\$2,199
10/1/2021 - 11/1/2021 S1	15,663	63	\$58	\$1,144	\$640	\$1,842
11/1/2021 - 12/1/2021 S1	20,081	70	\$58	\$1,467	\$711	\$2,236
12/1/2021 - 1/1/2022 S1	23,237	110	\$58	\$1,698	\$1,117	\$2,873
<b>Total</b>	<b>210,655</b>	<b>-</b>	<b>\$694</b>	<b>\$15,390</b>	<b>\$10,713</b>	<b>\$26,797</b>

ANNUAL ELECTRICITY SAVINGS: \$8,223

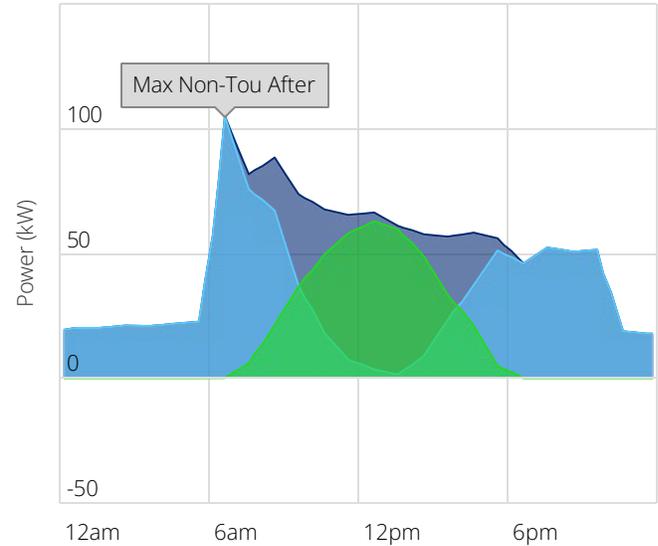
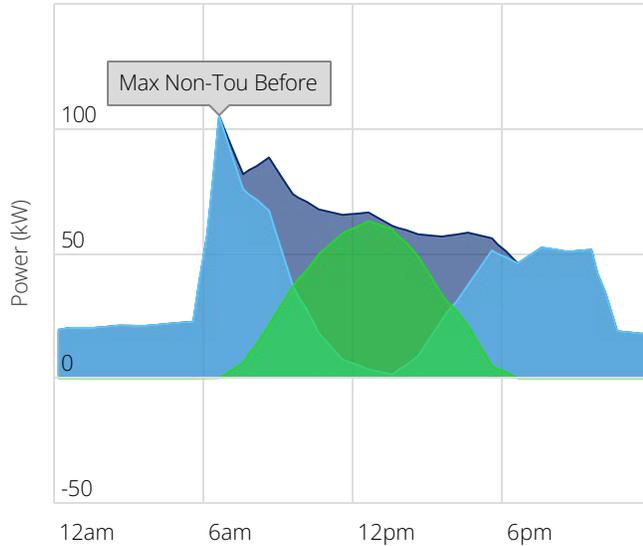
# Sample Demand Profile

Date Range: 3/1 - 4/1

**Max NC Demand:** The charts below show when the maximum non-coincident (NC) demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Max Demand 3/1 - 3/8

Max Demand 3/8 - 4/1



**Legend:** ■ Demand Before ■ Solar PV ■ Energy Storage ■ Demand After

**Max On-Peak Demand:** The charts below show when the maximum on-peak demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Charts Not Applicable

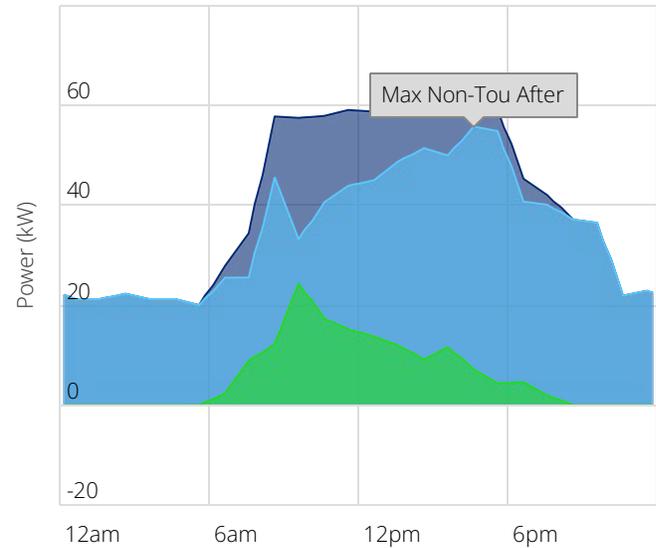
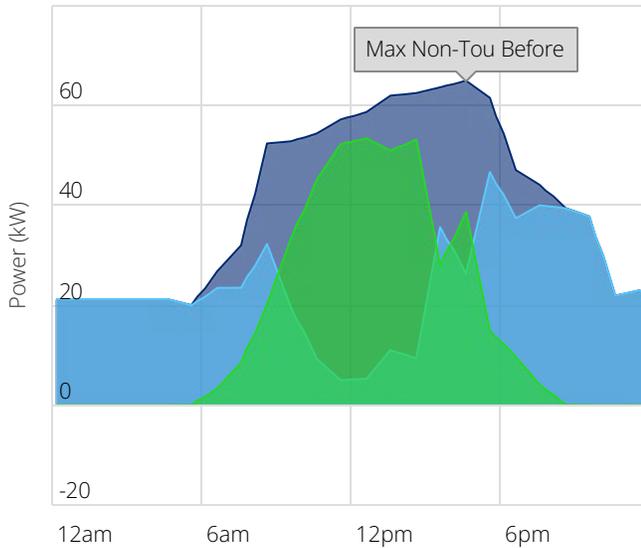
# Sample Demand Profile

Date Range: 6/1/2021 - 7/1/2021

**Max NC Demand:** The charts below show when the maximum non-coincident (NC) demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Max Demand Before 6/2/2021

Max Demand After 6/3/2021



**Legend:** ■ Demand Before ■ Solar PV ■ Energy Storage ■ Demand After

**Max On-Peak Demand:** The charts below show when the maximum on-peak demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Charts Not Applicable

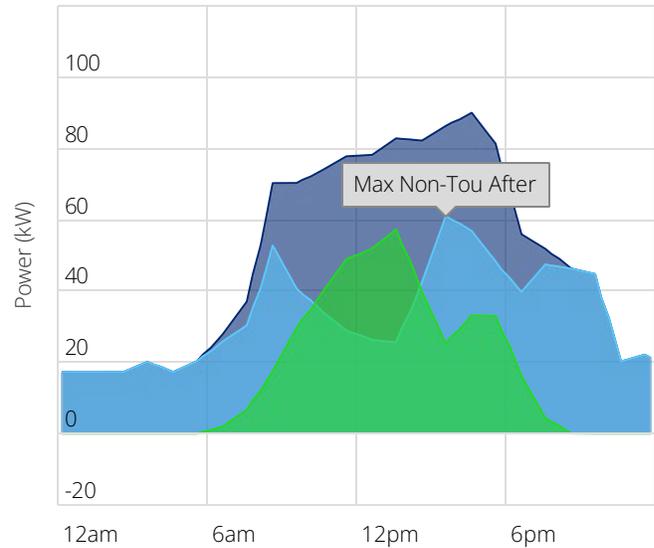
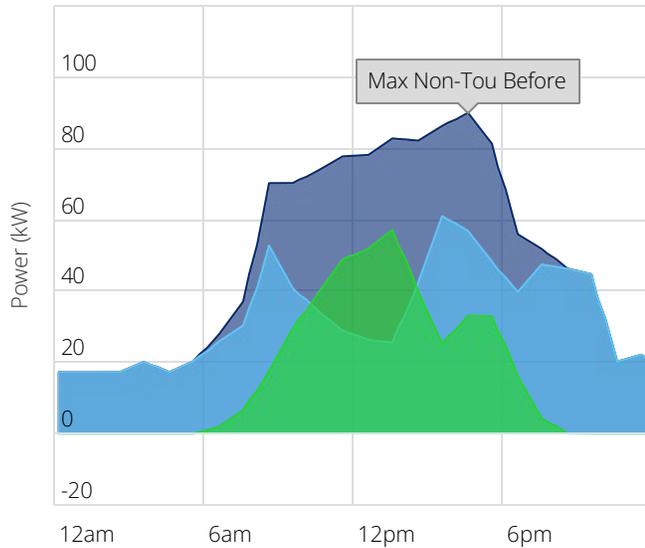
# Sample Demand Profiles

Date Range: 7/1/2021 - 8/1/2021

**Max NC Demand:** The charts below show when the maximum non-coincident (NC) demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Max Demand Before 7/19/2021

Max Demand After 7/19/2021



**Legend:** Demand Before (dark blue), Solar PV (green), Energy Storage (orange), Demand After (light blue)

**Max On-Peak Demand:** The charts below show when the maximum on-peak demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Charts Not Applicable

# Option #1, PPA Model

## Assumptions and Key Financial Metrics

Total Payments	\$361,999	PV Degradation Rate	0.80%	Energy Cost Escalation Rate	2.0%
Federal Income Tax Rate	0.0%	State Income Tax Rate	0.0%	End of Term Buyout Payment	\$0
PPA Escalation Rate	1.5%	Starting PPA Rate	\$0.135	Upfront Payment	\$0
Term	25 Years				

Years	PPA Payments	Electric Bill Savings	Total Cash Flow	Cumulative Cash Flow
Upfront	-	-	-	-
1	-\$13,412	\$8,223	-\$5,189	-\$5,189
2	-\$13,504	\$8,320	-\$5,184	-\$10,373
3	-\$13,596	\$8,418	-\$5,178	-\$15,552
4	-\$13,688	\$8,516	-\$5,171	-\$20,723
5	-\$13,779	\$8,616	-\$5,164	-\$25,887
6	-\$13,870	\$8,715	-\$5,155	-\$31,042
7	-\$13,961	\$8,815	-\$5,146	-\$36,187
8	-\$14,051	\$8,916	-\$5,135	-\$41,323
9	-\$14,141	\$9,017	-\$5,124	-\$46,446
10	-\$14,231	\$9,119	-\$5,112	-\$51,558
11	-\$14,320	\$9,221	-\$5,098	-\$56,656
12	-\$14,408	\$9,324	-\$5,084	-\$61,740
13	-\$14,496	\$9,427	-\$5,069	-\$66,809
14	-\$14,583	\$9,531	-\$5,053	-\$71,862
15	-\$14,670	\$9,634	-\$5,035	-\$76,897
16	-\$14,756	\$9,738	-\$5,017	-\$81,915
17	-\$14,841	\$9,843	-\$4,998	-\$86,912
18	-\$14,925	\$9,948	-\$4,978	-\$91,890
19	-\$15,009	\$10,053	-\$4,956	-\$96,846
20	-\$15,092	\$10,158	-\$4,934	-\$101,780
21	-\$15,173	\$10,263	-\$4,910	-\$106,690
22	-\$15,254	\$10,369	-\$4,886	-\$111,575
23	-\$15,334	\$10,475	-\$4,860	-\$116,435
24	-\$15,413	\$10,580	-\$4,833	-\$121,268
25	-\$15,491	\$10,686	-\$4,805	-\$126,073
26	-	\$10,792	\$10,792	-\$115,281
27	-	\$10,898	\$10,898	-\$104,383
28	-	\$11,003	\$11,003	-\$93,380
29	-	\$11,109	\$11,109	-\$82,271
30	-	\$11,214	\$11,214	-\$71,057
Totals:	-\$361,999	\$290,943	-\$71,057	-

# Option #1, Cash Purchase

## Assumptions and Key Financial Metrics

IRR - Term	2.1%	Net Present Value	(\$62,441)	Payback Period	23.0 Years
ROI	34.3%	PV Degradation Rate	0.80%	Discount Rate	5.0%
Energy Cost Escalation Rate	2.0%	Federal Income Tax Rate	0.0%	State Income Tax Rate	0.0%
Total Project Costs	\$206,663				

Years	Project Costs	O&M / Equipment Replacement	Incentive Amount	Electric Bill Savings	Total Cash Flow	Cumulative Cash Flow
Upfront	-\$206,663	-	-	-	-\$206,663	-\$206,663
1	-	-	\$1,987	\$8,223	\$10,209	-\$196,453
2	-	-\$376	\$1,971	\$8,320	\$9,915	-\$186,538
3	-	-\$387	\$1,955	\$8,418	\$9,986	-\$176,552
4	-	-\$399	\$1,939	\$8,516	\$10,057	-\$166,495
5	-	-\$411	\$1,923	\$8,616	\$10,128	-\$156,367
6	-	-\$423	\$1,907	\$8,715	\$10,200	-\$146,167
7	-	-\$436	\$1,892	\$8,815	\$10,271	-\$135,895
8	-	-\$449	\$1,876	\$8,916	\$10,343	-\$125,552
9	-	-\$462	\$1,860	\$9,017	\$10,415	-\$115,137
10	-	-\$476	\$1,844	\$9,119	\$10,487	-\$104,650
11	-	-\$490	\$1,828	\$9,221	\$10,559	-\$94,091
12	-	-\$505	\$1,812	\$9,324	\$10,631	-\$83,460
13	-	-\$520	\$1,796	\$9,427	\$10,703	-\$72,757
14	-	-\$536	\$1,780	\$9,531	\$10,775	-\$61,982
15	-	-\$552	\$1,764	\$9,634	\$10,847	-\$51,135
16	-	-\$25,068	-	\$9,738	-\$15,330	-\$66,465
17	-	-\$585	-	\$9,843	\$9,258	-\$57,207
18	-	-\$603	-	\$9,948	\$9,345	-\$47,862
19	-	-\$621	-	\$10,053	\$9,432	-\$38,431
20	-	-\$640	-	\$10,158	\$9,518	-\$28,912
21	-	-\$659	-	\$10,263	\$9,604	-\$19,308
22	-	-\$679	-	\$10,369	\$9,690	-\$9,618
23	-	-\$699	-	\$10,475	\$9,776	\$158
24	-	-\$720	-	\$10,580	\$9,860	\$10,018
25	-	-\$742	-	\$10,686	\$9,945	\$19,963
26	-	-\$764	-	\$10,792	\$10,028	\$29,991
27	-	-\$787	-	\$10,898	\$10,111	\$40,102
28	-	-\$810	-	\$11,003	\$10,193	\$50,295
29	-	-\$835	-	\$11,109	\$10,274	\$60,570
30	-	-\$860	-	\$11,214	\$10,355	\$70,924
Totals:	-\$206,663	-\$41,491	\$28,135	\$290,943	\$70,924	-

# ENVIRONMENTAL BENEFITS



OVER THE NEXT 20 YEARS, YOUR SYSTEM WILL DO MORE THAN JUST SAVE YOU MONEY. ACCORDING TO THE EPA'S GREENHOUSE GAS EQUIVALENCIES CALCULATOR, YOUR SOLAR PV SYSTEM WILL HAVE THE IMPACT OF REDUCING:



1,557

Ibs of CO2 Offset



3,538,669

Miles Driven By Cars



23,346

Trees Planted

# Option #2: PV SYSTEM DETAILS

## GENERAL INFORMATION

Facility: Meter #1  
 Address: 425 Wells Rd Doylestown PA 18901

## SOLAR PV SYSTEM RATING

Power Rating: 236,700 W-DC  
 Power Rating: 206,180 W-AC-CEC

## SOLAR PV EQUIPMENT DESCRIPTION

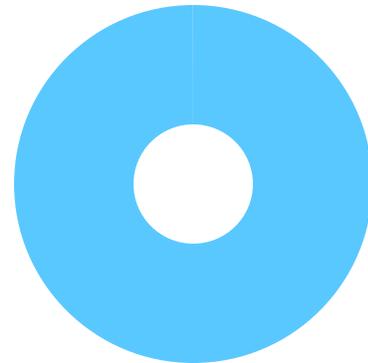
Solar Panels: (526) JA Solar JAM72S20-450/MR (1000V) (2021)  
 Inverters: (19) SMA Sunny Tripower 10000TL

## ENERGY CONSUMPTION MIX

Annual Energy Use: 310,000 kWh

## SOLAR PV EQUIPMENT TYPICAL LIFESPAN

Solar Panels: Greater than 30 Years  
 Inverters: 15 Years



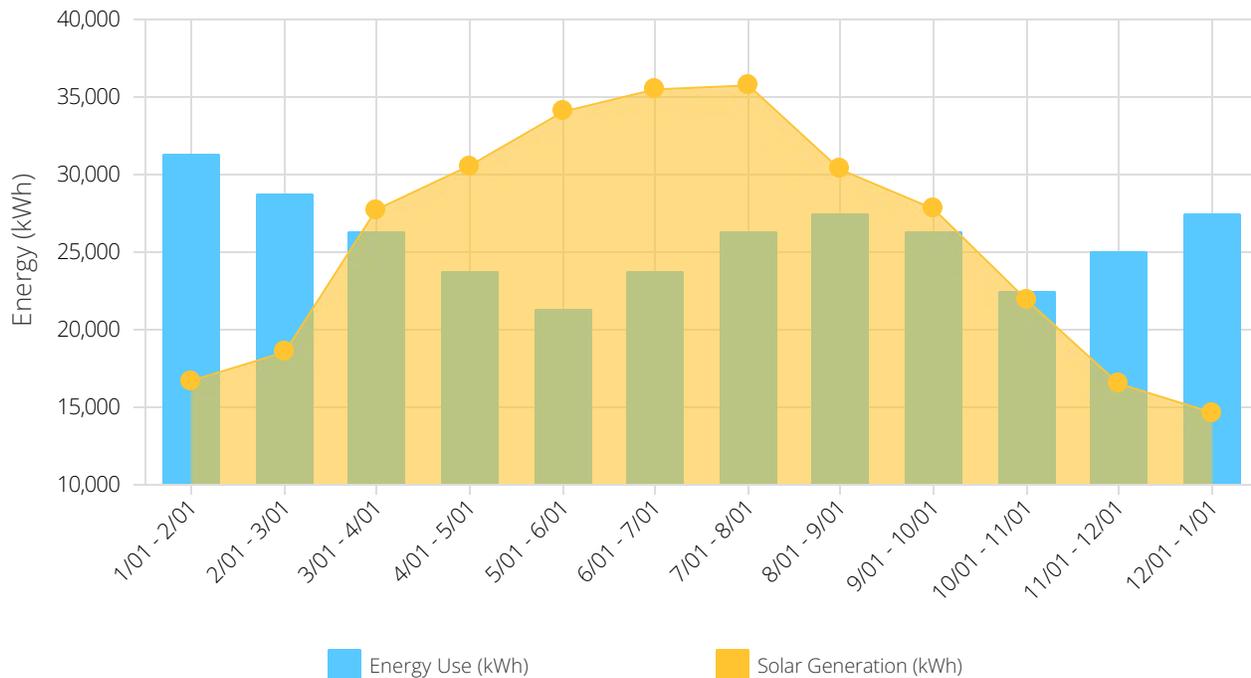
### Solar PV System Cost and Incentives

Solar PV System Cost	\$629,622
Federal Tax Credit	-\$163,702
Incentive Amount	-\$87,799
Federal - 100% Bonus Depreciation	-

**Net Solar PV System Cost \$378,121**

Utility	-25 kWh (0.00%)
Solar PV	310,025 kWh (100.00%)

## MONTHLY ENERGY USE VS SOLAR GENERATION



# Projected Electric Bill with Solar

RATE SCHEDULE: PECO - GS - Jan 2023

Time Periods	Energy Use (kWh)	Max Demand (kW)	Charges			
Bill Ranges & Seasons	Total	NC / Max	Other	Energy	Demand	Total
1/1/2021 - 2/1/2021 S1	14,542	145	\$58	\$1,062	\$1,472	\$2,593
2/1/2021 - 3/1/2021 S1	10,205	150	\$58	\$746	\$1,523	\$2,327
3/1/2021 - 4/1/2021 S1	-1,487	105	\$58	\$109	\$1,066	\$1,015
4/1/2021 - 5/1/2021 S1	-6,825	75	\$58	\$499	\$762	\$321
5/1/2021 - 6/1/2021 S1	-12,807	31	\$58	\$936	\$315	\$563
6/1/2021 - 7/1/2021 S1	-11,738	45	\$58	\$858	\$457	\$343
7/1/2021 - 8/1/2021 S1	-9,497	46	\$58	\$694	\$467	\$169
8/1/2021 - 9/1/2021 S1	-2,826	87	\$58	\$206	\$883	\$735
9/1/2021 - 10/1/2021 S1	-1,535	73	\$58	\$112	\$741	\$687
10/1/2021 - 11/1/2021 S1	614	60	\$58	\$45	\$609	\$712
11/1/2021 - 12/1/2021 S1	8,483	70	\$58	\$620	\$711	\$1,388
12/1/2021 - 1/1/2022 S1	12,847	110	\$58	\$939	\$1,117	\$2,113
<b>Total</b>	<b>-24</b>	<b>-</b>	<b>\$694</b>	<b>\$1</b>	<b>\$10,124</b>	<b>\$10,817</b>

ANNUAL ELECTRICITY SAVINGS: \$24,203

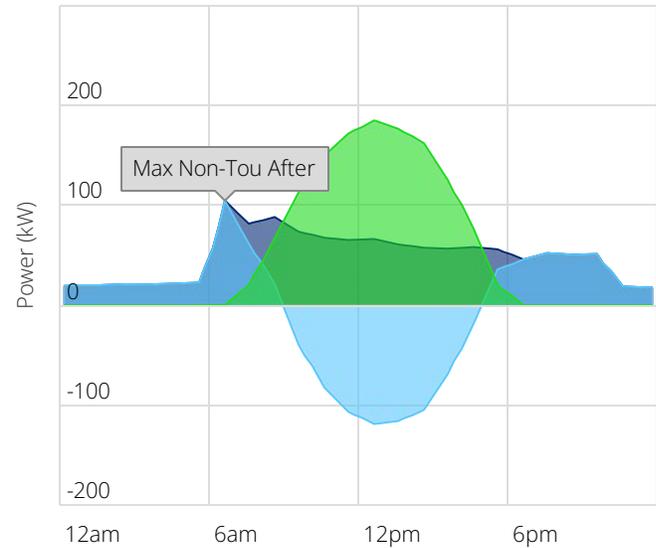
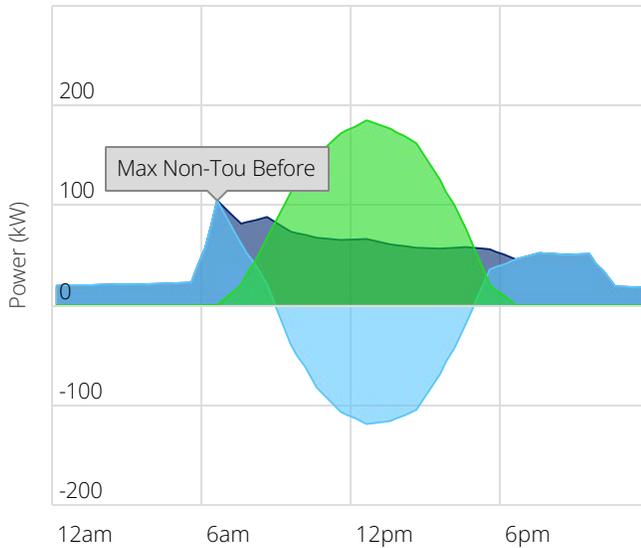
# Sample Demand Profile

Date Range: 3/1/2021 - 4/1/2021

**Max NC Demand:** The charts below show when the maximum non-coincident (NC) demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Max Demand Before 3/8/2021

Max Demand After 3/8/2021



**Legend:** Demand Before (dark blue), Solar PV (green), Energy Storage (yellow), Demand After (light blue)

**Max On-Peak Demand:** The charts below show when the maximum on-peak demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Charts Not Applicable

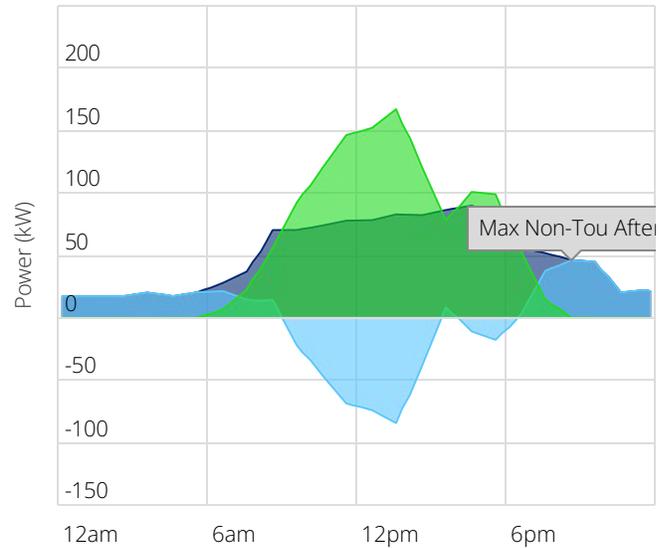
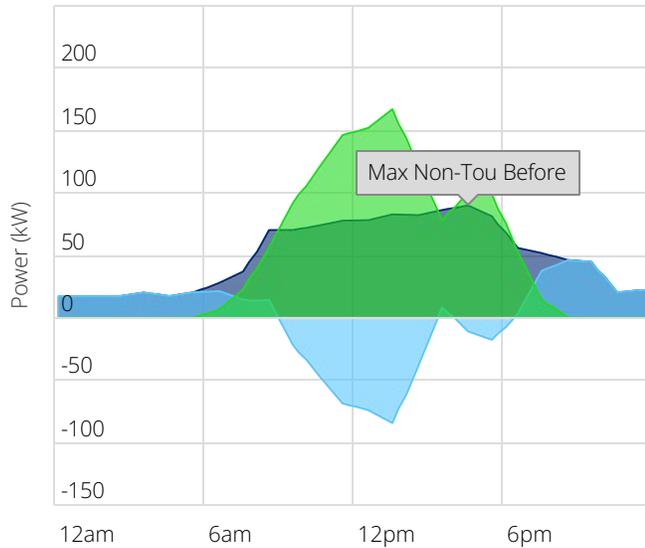
# Sample Demand Profile

Date Range: 7/1/2021 - 8/1/2021

**Max NC Demand:** The charts below show when the maximum non-coincident (NC) demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Max Demand Before 7/19/2021

Max Demand After 7/19/2021



**Legend:** Demand Before (dark blue), Solar PV (green), Energy Storage (orange), Demand After (light blue)

**Max On-Peak Demand:** The charts below show when the maximum on-peak demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Charts Not Applicable

# Option #2, PPA Model

## Assumptions and Key Financial Metrics

Total Payments	\$690,355	PV Degradation Rate	0.80%	Energy Cost Escalation Rate	2.0%
Federal Income Tax Rate	0.0%	State Income Tax Rate	0.0%	End of Term Buyout Payment	\$0
PPA Escalation Rate	1.5%	Starting PPA Rate	\$0.0825	Upfront Payment	\$0
Term	25 Years				

Years	PPA Payments	Electric Bill Savings	Total Cash Flow	Cumulative Cash Flow
Upfront	-	-	-	-
1	-\$25,577	\$24,203	-\$1,374	-\$1,374
2	-\$25,753	\$24,489	-\$1,264	-\$2,638
3	-\$25,928	\$24,777	-\$1,151	-\$3,789
4	-\$26,103	\$25,068	-\$1,036	-\$4,825
5	-\$26,278	\$25,359	-\$919	-\$5,744
6	-\$26,452	\$25,653	-\$799	-\$6,543
7	-\$26,625	\$25,948	-\$677	-\$7,220
8	-\$26,797	\$26,244	-\$553	-\$7,772
9	-\$26,968	\$26,542	-\$426	-\$8,198
10	-\$27,139	\$26,842	-\$297	-\$8,496
11	-\$27,309	\$27,143	-\$166	-\$8,661
12	-\$27,477	\$27,445	-\$32	-\$8,694
13	-\$27,645	\$27,748	\$103	-\$8,591
14	-\$27,811	\$28,052	\$241	-\$8,349
15	-\$27,976	\$28,358	\$382	-\$7,967
16	-\$28,140	\$28,665	\$525	-\$7,443
17	-\$28,302	\$28,972	\$670	-\$6,773
18	-\$28,463	\$29,280	\$817	-\$5,956
19	-\$28,623	\$29,590	\$967	-\$4,989
20	-\$28,781	\$29,899	\$1,119	-\$3,870
21	-\$28,937	\$30,210	\$1,273	-\$2,598
22	-\$29,091	\$30,520	\$1,429	-\$1,169
23	-\$29,244	\$30,831	\$1,588	\$419
24	-\$29,394	\$31,143	\$1,749	\$2,168
25	-\$29,542	\$31,454	\$1,912	\$4,079
26	-	\$31,765	\$31,765	\$35,845
27	-	\$32,077	\$32,077	\$67,922
28	-	\$32,388	\$32,388	\$100,309
29	-	\$32,698	\$32,698	\$133,008
30	-	\$33,009	\$33,009	\$166,017
Totals:	-\$690,355	\$856,371	\$166,017	-

# Option #2, Cash Purchase

## Assumptions and Key Financial Metrics

IRR - Term	1.9%	Net Present Value	(\$200,644)	Payback Period	23.4 Years
ROI	30.9%	PV Degradation Rate	0.80%	Discount Rate	5.0%
Energy Cost Escalation Rate	2.0%	Federal Income Tax Rate	0.0%	State Income Tax Rate	0.0%
Total Project Costs	\$629,622				

Years	Project Costs	O&M / Equipment Replacement	Incentive Amount	Electric Bill Savings	Total Cash Flow	Cumulative Cash Flow
Upfront	-\$629,622	-	-	-	-\$629,622	-\$629,622
1	-	-	\$6,200	\$24,203	\$30,403	-\$599,219
2	-	-\$1,184	\$6,151	\$24,489	\$29,456	-\$569,762
3	-	-\$1,219	\$6,101	\$24,777	\$29,660	-\$540,103
4	-	-\$1,256	\$6,052	\$25,068	\$29,864	-\$510,239
5	-	-\$1,293	\$6,002	\$25,359	\$30,068	-\$480,171
6	-	-\$1,332	\$5,952	\$25,653	\$30,273	-\$449,898
7	-	-\$1,372	\$5,903	\$25,948	\$30,479	-\$419,419
8	-	-\$1,413	\$5,853	\$26,244	\$30,684	-\$388,735
9	-	-\$1,456	\$5,804	\$26,542	\$30,890	-\$357,845
10	-	-\$1,499	\$5,754	\$26,842	\$31,097	-\$326,748
11	-	-\$1,544	\$5,704	\$27,143	\$31,303	-\$295,445
12	-	-\$1,591	\$5,655	\$27,445	\$31,509	-\$263,936
13	-	-\$1,638	\$5,605	\$27,748	\$31,715	-\$232,221
14	-	-\$1,687	\$5,556	\$28,052	\$31,921	-\$200,300
15	-	-\$1,738	\$5,506	\$28,358	\$32,126	-\$168,174
16	-	-\$68,290	-	\$28,665	-\$39,626	-\$207,800
17	-	-\$1,844	-	\$28,972	\$27,128	-\$180,672
18	-	-\$1,899	-	\$29,280	\$27,381	-\$153,290
19	-	-\$1,956	-	\$29,590	\$27,633	-\$125,657
20	-	-\$2,015	-	\$29,899	\$27,884	-\$97,772
21	-	-\$2,075	-	\$30,210	\$28,134	-\$69,638
22	-	-\$2,138	-	\$30,520	\$28,383	-\$41,256
23	-	-\$2,202	-	\$30,831	\$28,630	-\$12,626
24	-	-\$2,268	-	\$31,143	\$28,875	\$16,249
25	-	-\$2,336	-	\$31,454	\$29,118	\$45,367
26	-	-\$2,406	-	\$31,765	\$29,360	\$74,727
27	-	-\$2,478	-	\$32,077	\$29,599	\$104,326
28	-	-\$2,552	-	\$32,388	\$29,836	\$134,161
29	-	-\$2,629	-	\$32,698	\$30,070	\$164,231
30	-	-\$2,708	-	\$33,009	\$30,301	\$194,532
Totals:	-\$629,622	-\$120,017	\$87,799	\$856,371	\$194,532	-

# ENVIRONMENTAL BENEFITS

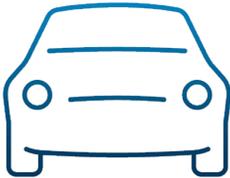


OVER THE NEXT 20 YEARS, YOUR SYSTEM WILL DO MORE THAN JUST SAVE YOU MONEY. ACCORDING TO THE EPA'S GREENHOUSE GAS EQUIVALENCIES CALCULATOR, YOUR SOLAR PV SYSTEM WILL HAVE THE IMPACT OF REDUCING:



4,858

Ibs of CO2 Offset



11,043,091

Miles Driven By Cars



72,856

Trees Planted

# Option #3: PV SYSTEM DETAILS

## GENERAL INFORMATION

Facility: Meter #1  
 Address: 425 Wells Rd Doylestown PA 18901

## SOLAR PV SYSTEM RATING

Power Rating: 330,750 W-DC  
 Power Rating: 288,103 W-AC-CEC

## SOLAR PV EQUIPMENT DESCRIPTION

Solar Panels: (735) JA Solar JAM72S20-450/MR (1000V) (2021)  
 Inverters: (27) SMA Sunny Tripower 10000TL

## ENERGY CONSUMPTION MIX

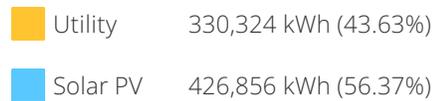
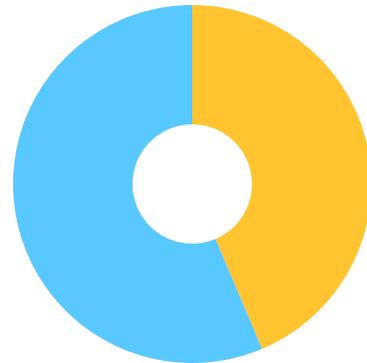
Annual Energy Use: 757,180 kWh

## SOLAR PV EQUIPMENT TYPICAL LIFESPAN

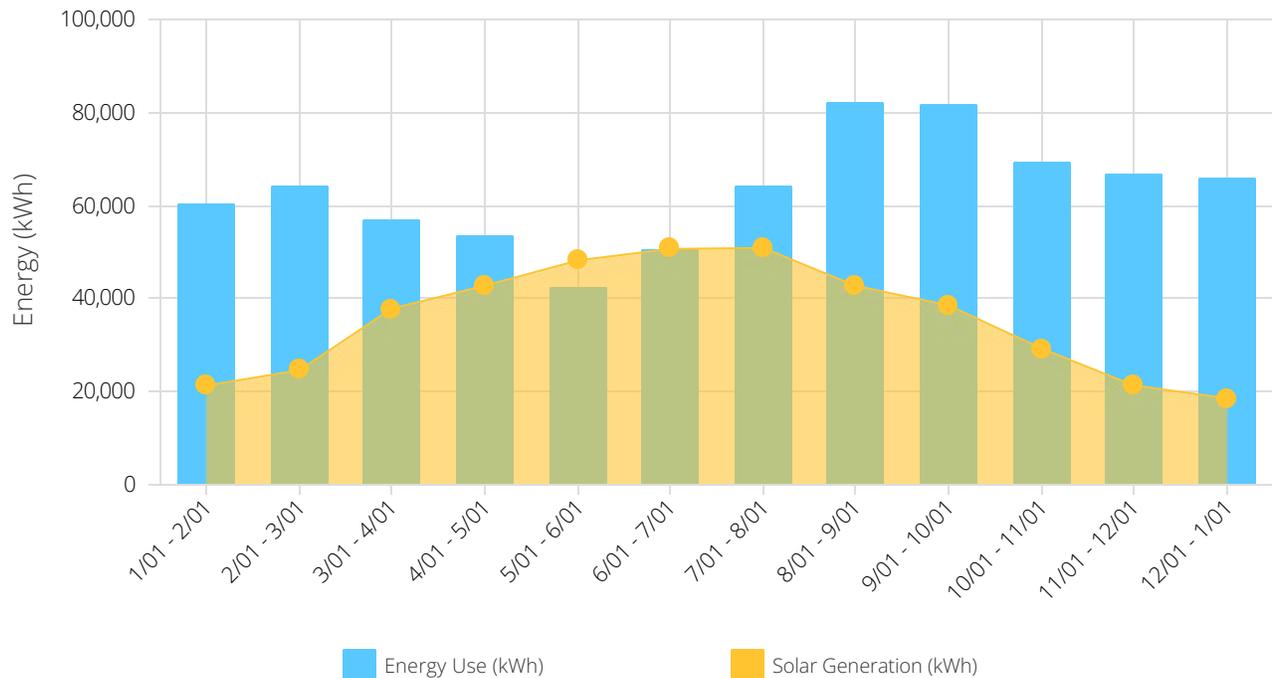
Solar Panels: Greater than 30 Years  
 Inverters: 15 Years

### Solar PV System Cost and Incentives

Solar PV System Cost \$879,795



## MONTHLY ENERGY USE VS SOLAR GENERATION



# Projected Electric Bill with Solar Array

RATE SCHEDULE: PECO - GS - Jan 2023

Time Periods	Energy Use (kWh)	Max Demand (kW)	Charges			
Bill Ranges & Seasons	Total	NC / Max	Other	Energy	Demand	Total
1/1/2022 - 2/1/2022 S1	39,040	220	\$58	\$2,852	\$2,234	\$5,144
2/1/2022 - 3/1/2022 S1	39,429	220	\$58	\$2,881	\$2,234	\$5,172
3/1/2022 - 4/1/2022 S1	18,867	170	\$58	\$1,378	\$1,726	\$3,163
4/1/2021 - 5/1/2021 S1	10,818	135	\$58	\$790	\$1,371	\$2,219
5/1/2021 - 6/1/2021 S1	-6,062	95	\$58	\$443	\$965	\$580
6/1/2021 - 7/1/2021 S1	-238	128	\$58	\$17	\$1,300	\$1,340
7/1/2021 - 8/1/2021 S1	13,285	119	\$58	\$971	\$1,208	\$2,237
8/1/2021 - 9/1/2021 S1	39,235	210	\$58	\$2,866	\$2,133	\$5,057
9/1/2021 - 10/1/2021 S1	43,196	186	\$58	\$3,156	\$1,889	\$5,102
10/1/2021 - 11/1/2021 S1	40,200	150	\$58	\$2,937	\$1,523	\$4,518
11/1/2021 - 12/1/2021 S1	45,363	155	\$58	\$3,314	\$1,574	\$4,946
12/1/2021 - 1/1/2022 S1	47,197	185	\$58	\$3,448	\$1,879	\$5,385
<b>Total</b>	<b>330,330</b>	<b>-</b>	<b>\$694</b>	<b>\$24,133</b>	<b>\$20,035</b>	<b>\$44,862</b>

ANNUAL ELECTRICITY SAVINGS: \$33,743

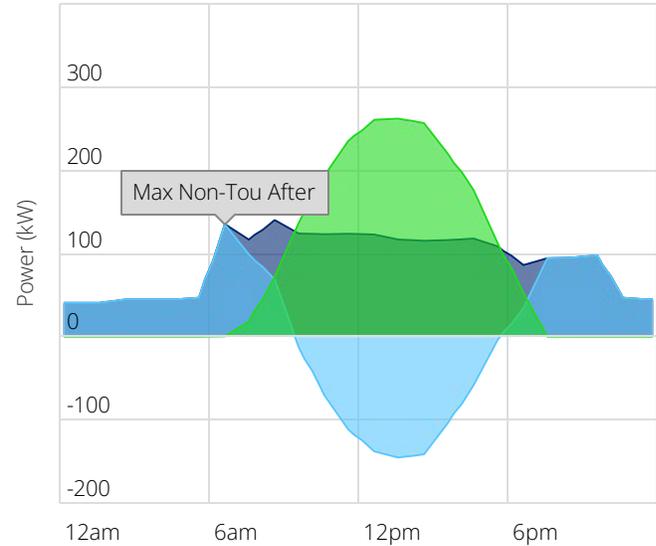
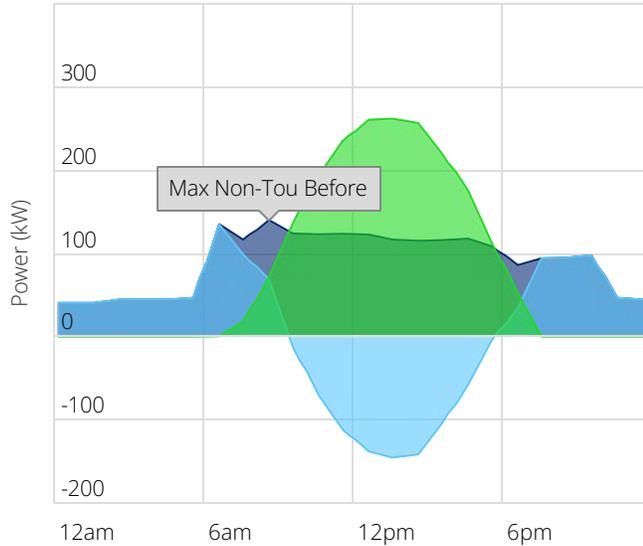
# Sample Demand Profile

Date Range: 4/1/2021 - 5/1/2021

**Max NC Demand:** The charts below show when the maximum non-coincident (NC) demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Max Demand Before 4/12/2021

Max Demand After 4/12/2021



**Legend:** Demand Before (dark blue), Solar PV (green), Energy Storage (orange), Demand After (light blue)

**Max On-Peak Demand:** The charts below show when the maximum on-peak demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Charts Not Applicable

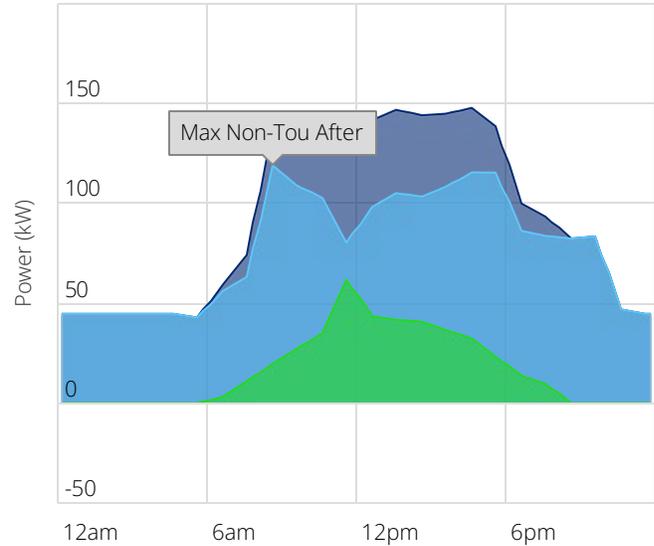
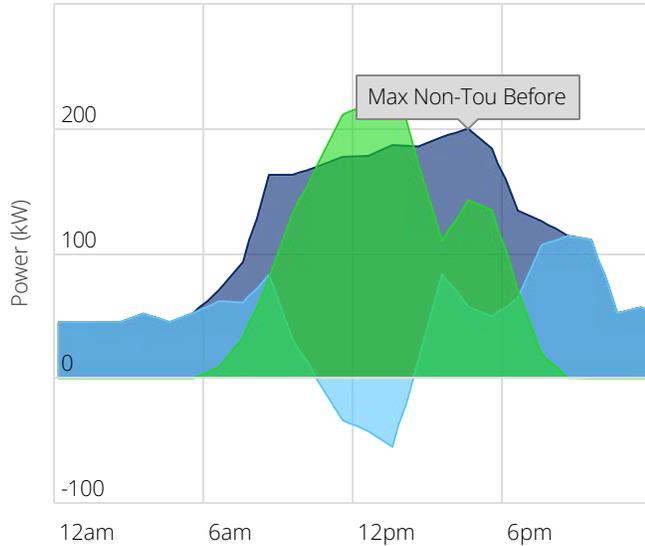
# Sample Demand Profile

Date Range: 7/1/2021 - 8/1/2021

**Max NC Demand:** The charts below show when the maximum non-coincident (NC) demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Max Demand Before 7/19/2021

Max Demand After 7/8/2021



**Legend:** Demand Before (dark blue), Solar PV (green), Energy Storage (orange), Demand After (light blue)

**Max On-Peak Demand:** The charts below show when the maximum on-peak demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Charts Not Applicable

# Option #3, PPA Model

## Assumptions and Key Financial Metrics

Total Payments	\$892,902	PV Degradation Rate	0.80%	Energy Cost Escalation Rate	3.0%
Federal Income Tax Rate	30.0%	State Income Tax Rate	8.0%	End of Term Buyout Payment	\$0
PPA Escalation Rate	1.5%	Starting PPA Rate	\$0.0775	Upfront Payment	\$0
Term	25 Years				

Years	PPA Payments	Electric Bill Savings	Total Cash Flow	Cumulative Cash Flow
Upfront	-	-	-	-
1	-\$33,081	\$33,743	\$662	\$662
2	-\$33,309	\$34,478	\$1,169	\$1,831
3	-\$33,536	\$35,226	\$1,690	\$3,521
4	-\$33,762	\$35,987	\$2,225	\$5,746
5	-\$33,988	\$36,763	\$2,776	\$8,522
6	-\$34,212	\$37,553	\$3,341	\$11,862
7	-\$34,436	\$38,357	\$3,921	\$15,784
8	-\$34,659	\$39,176	\$4,517	\$20,301
9	-\$34,881	\$40,009	\$5,129	\$25,429
10	-\$35,101	\$40,857	\$5,756	\$31,185
11	-\$35,321	\$41,720	\$6,400	\$37,585
12	-\$35,539	\$42,598	\$7,060	\$44,645
13	-\$35,755	\$43,491	\$7,736	\$52,381
14	-\$35,971	\$44,400	\$8,429	\$60,810
15	-\$36,184	\$45,323	\$9,139	\$69,949
16	-\$36,396	\$46,263	\$9,866	\$79,815
17	-\$36,606	\$47,217	\$10,611	\$90,427
18	-\$36,814	\$48,188	\$11,373	\$101,800
19	-\$37,021	\$49,174	\$12,153	\$113,953
20	-\$37,225	\$50,176	\$12,951	\$126,903
21	-\$37,427	\$51,193	\$13,767	\$140,670
22	-\$37,626	\$52,227	\$14,601	\$155,270
23	-\$37,824	\$53,276	\$15,453	\$170,723
24	-\$38,018	\$54,342	\$16,324	\$187,047
25	-\$38,210	\$55,423	\$17,213	\$204,260
26	-	\$56,521	\$56,521	\$260,781
27	-	\$57,634	\$57,634	\$318,416
28	-	\$58,764	\$58,764	\$377,180
29	-	\$59,909	\$59,909	\$437,089
30	-	\$61,070	\$61,070	\$498,159
Totals:	-\$892,902	\$1,391,061	\$498,159	-

# Option #3, Cash Purchase

## Assumptions and Key Financial Metrics

IRR - Term	8.1%	Net Present Value	\$208,537	Payback Period	9.7 Years
ROI	104.7%	PV Degradation Rate	0.80%	Discount Rate	5.0%
Energy Cost Escalation Rate	3.0%	Federal Income Tax Rate	30.0%	State Income Tax Rate	8.0%
Total Project Costs	\$879,795				

Years	Project Costs	O&M / Equipment Replacement	Incentive Amount	Electric Bill Savings	Federal Tax Effect	Total Cash Flow	Cumulative Cash Flow
Upfront	<b>-\$879,795</b>	-	-	-	-	<b>-\$879,795</b>	<b>-\$879,795</b>
1	-	-	\$8,537	\$33,743	\$274,672	\$316,952	<b>-\$562,843</b>
2	-	<b>-\$1,654</b>	\$8,469	\$34,478	\$73,480	\$114,773	<b>-\$448,069</b>
3	-	<b>-\$1,703</b>	\$8,400	\$35,226	\$44,088	\$86,011	<b>-\$362,058</b>
4	-	<b>-\$1,754</b>	\$8,332	\$35,987	\$26,453	\$69,018	<b>-\$293,040</b>
5	-	<b>-\$1,807</b>	\$8,264	\$36,763	\$26,453	\$69,673	<b>-\$223,367</b>
6	-	<b>-\$1,861</b>	\$8,196	\$37,553	\$13,226	\$57,114	<b>-\$166,253</b>
7	-	<b>-\$1,917</b>	\$8,127	\$38,357	-	\$44,568	<b>-\$121,686</b>
8	-	<b>-\$1,975</b>	\$8,059	\$39,176	-	\$45,260	<b>-\$76,425</b>
9	-	<b>-\$2,034</b>	\$7,991	\$40,009	-	\$45,966	<b>-\$30,459</b>
10	-	<b>-\$2,095</b>	\$7,922	\$40,857	-	\$46,685	\$16,226
11	-	<b>-\$2,158</b>	\$7,854	\$41,720	-	\$47,417	\$63,643
12	-	<b>-\$2,223</b>	\$7,786	\$42,598	-	\$48,162	\$111,804
13	-	<b>-\$2,289</b>	\$7,718	\$43,491	-	\$48,920	\$160,724
14	-	<b>-\$2,358</b>	\$7,649	\$44,400	-	\$49,691	\$210,415
15	-	<b>-\$2,429</b>	\$7,581	\$45,323	-	\$50,476	\$260,891
16	-	<b>-\$97,001</b>	-	\$46,263	-	<b>-\$50,739</b>	\$210,152
17	-	<b>-\$2,576</b>	-	\$47,217	-	\$44,641	\$254,793
18	-	<b>-\$2,654</b>	-	\$48,188	-	\$45,534	\$300,327
19	-	<b>-\$2,733</b>	-	\$49,174	-	\$46,440	\$346,767
20	-	<b>-\$2,815</b>	-	\$50,176	-	\$47,360	\$394,127
21	-	<b>-\$2,900</b>	-	\$51,193	-	\$48,293	\$442,421
22	-	<b>-\$2,987</b>	-	\$52,227	-	\$49,240	\$491,660
23	-	<b>-\$3,076</b>	-	\$53,276	-	\$50,200	\$541,860
24	-	<b>-\$3,169</b>	-	\$54,342	-	\$51,173	\$593,034
25	-	<b>-\$3,264</b>	-	\$55,423	-	\$52,160	\$645,193
26	-	<b>-\$3,362</b>	-	\$56,521	-	\$53,159	\$698,352
27	-	<b>-\$3,463</b>	-	\$57,634	-	\$54,172	\$752,524
28	-	<b>-\$3,566</b>	-	\$58,764	-	\$55,197	\$807,722
29	-	<b>-\$3,673</b>	-	\$59,909	-	\$56,236	\$863,957
30	-	<b>-\$3,784</b>	-	\$61,070	-	\$57,287	\$921,244
Totals:	<b>-\$879,795</b>	<b>-\$169,281</b>	\$120,885	\$1,391,061	\$458,373	\$921,244	-

# ENVIRONMENTAL BENEFITS



OVER THE NEXT 20 YEARS, YOUR SYSTEM WILL DO MORE THAN JUST SAVE YOU MONEY. ACCORDING TO THE EPA'S GREENHOUSE GAS EQUIVALENCIES CALCULATOR, YOUR SOLAR PV SYSTEM WILL HAVE THE IMPACT OF REDUCING:



6,689

Ibs of CO2 Offset



15,204,611

Miles Driven By Cars



100,311

Trees Planted

# Option #4: PV SYSTEM DETAILS

## GENERAL INFORMATION

Facility: Meter #1  
 Address: 425 Wells Rd Doylestown PA 18901

## SOLAR PV SYSTEM RATING

Power Rating: 456,750 W-DC  
 Power Rating: 397,857 W-AC-CEC

## SOLAR PV EQUIPMENT DESCRIPTION

Solar Panels: (1015) JA Solar JAM72S20-450/MR (1000V) (2021)  
 Inverters: (37) SMA Sunny Tripower 10000TL

## ENERGY CONSUMPTION MIX

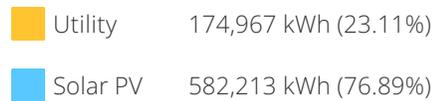
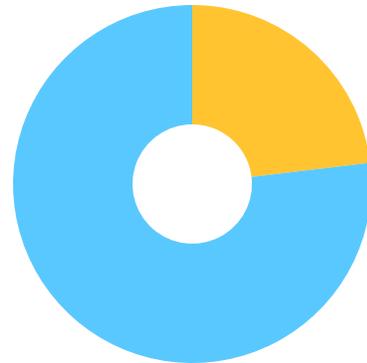
Annual Energy Use: 757,180 kWh

## SOLAR PV EQUIPMENT TYPICAL LIFESPAN

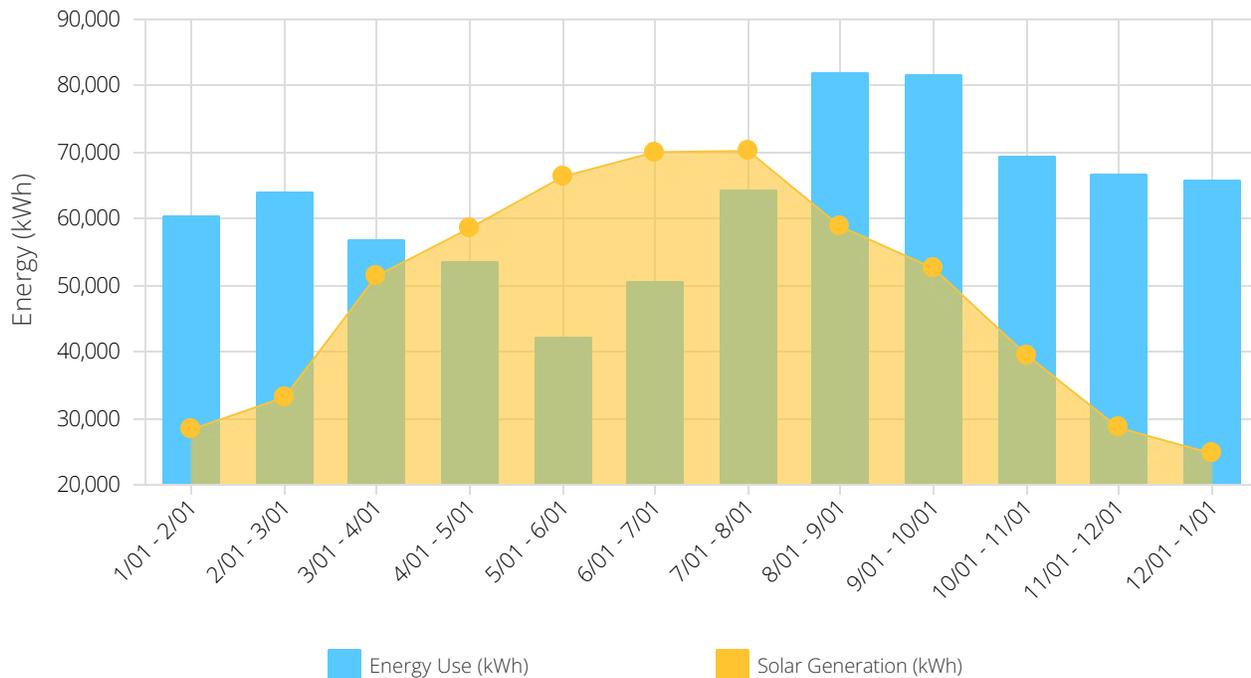
Solar Panels: Greater than 30 Years  
 Inverters: 15 Years

### Solar PV System Cost and Incentives

Solar PV System Cost \$1,509,795



## MONTHLY ENERGY USE VS SOLAR GENERATION



# Projected Electric Bill with Solar Array

RATE SCHEDULE: PECO - GS - Jan 2023

Time Periods	Energy Use (kWh)	Max Demand (kW)	Charges			
Bill Ranges & Seasons	Total	NC / Max	Other	Energy	Demand	Total
1/1/2022 - 2/1/2022 S1	32,032	220	\$58	\$2,340	\$2,234	\$4,632
2/1/2022 - 3/1/2022 S1	30,907	220	\$58	\$2,258	\$2,234	\$4,550
3/1/2022 - 4/1/2022 S1	5,303	170	\$58	\$387	\$1,726	\$2,172
4/1/2021 - 5/1/2021 S1	-5,004	134	\$58	\$366	\$1,361	\$1,053
5/1/2021 - 6/1/2021 S1	-24,191	82	\$58	\$1,767	\$833	\$877
6/1/2021 - 7/1/2021 S1	-19,601	121	\$58	\$1,432	\$1,229	\$145
7/1/2021 - 8/1/2021 S1	-6,036	114	\$58	\$441	\$1,158	\$775
8/1/2021 - 9/1/2021 S1	23,161	200	\$58	\$1,692	\$2,031	\$3,781
9/1/2021 - 10/1/2021 S1	29,187	179	\$58	\$2,132	\$1,818	\$4,008
10/1/2021 - 11/1/2021 S1	29,985	150	\$58	\$2,191	\$1,523	\$3,772
11/1/2021 - 12/1/2021 S1	38,154	155	\$58	\$2,787	\$1,574	\$4,419
12/1/2021 - 1/1/2022 S1	41,073	185	\$58	\$3,001	\$1,879	\$4,937
<b>Total</b>	<b>174,970</b>	<b>-</b>	<b>\$694</b>	<b>\$12,783</b>	<b>\$19,599</b>	<b>\$33,076</b>

ANNUAL ELECTRICITY SAVINGS: \$45,530

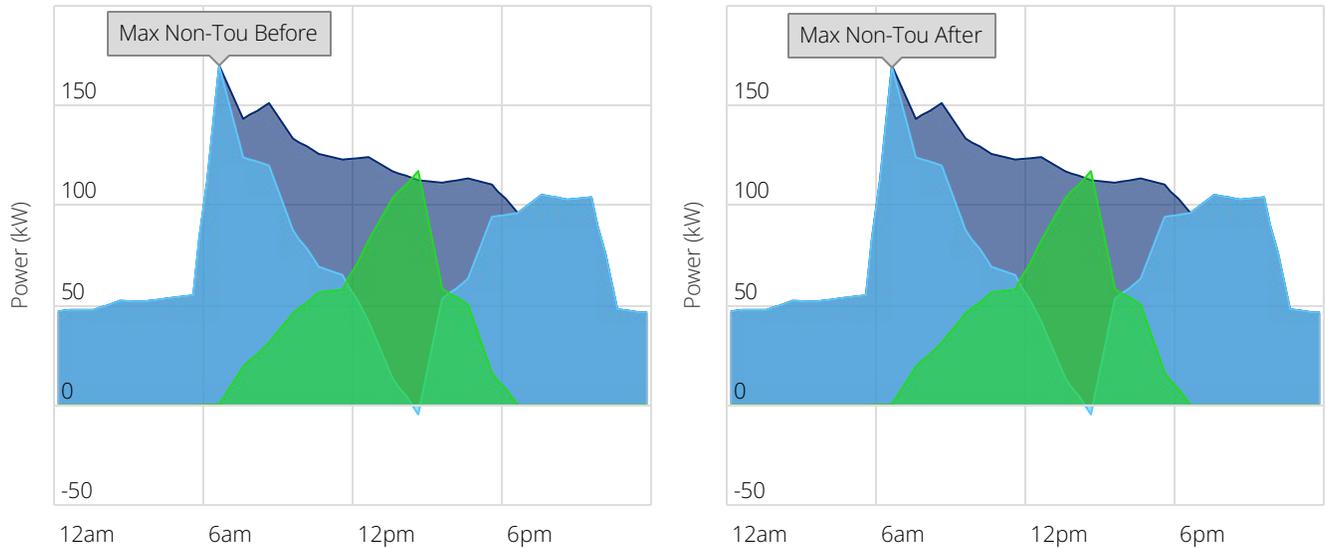
# Sample Demand Profile

Date Range: 3/1/2022 - 4/1/2022

**Max NC Demand:** The charts below show when the maximum non-coincident (NC) demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Max Demand Before 3/7/2022

Max Demand After 3/7/2022



**Legend:** ■ Demand Before ■ Solar PV ■ Energy Storage ■ Demand After

**Max On-Peak Demand:** The charts below show when the maximum on-peak demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Charts Not Applicable

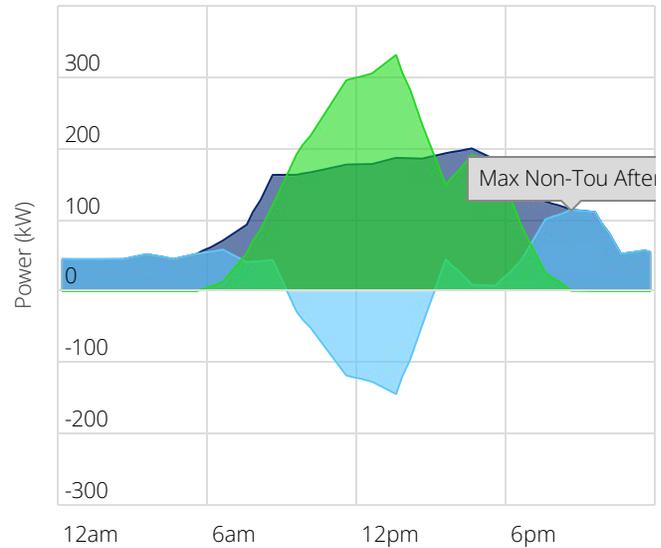
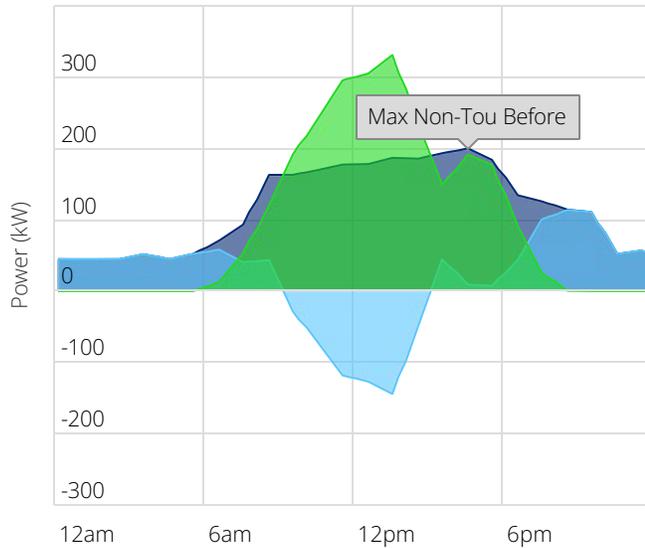
# Sample Demand Profile

Date Range: 7/1/2021 - 8/1/2021

**Max NC Demand:** The charts below show when the maximum non-coincident (NC) demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Max Demand Before 7/19/2021

Max Demand After 7/19/2021



**Legend:** Demand Before (dark blue), Solar PV (green), Energy Storage (orange), Demand After (light blue)

**Max On-Peak Demand:** The charts below show when the maximum on-peak demand for this facility occurred before and after the hybrid Solar PV with Storage system simulation.

Charts Not Applicable

# Option #4, PPA Model

## Assumptions and Key Financial Metrics

Total Payments	\$1,257,168	PV Degradation Rate	0.80%	Energy Cost Escalation Rate	2.0%
Federal Income Tax Rate	0.0%	State Income Tax Rate	0.0%	End of Term Buyout Payment	\$0
PPA Escalation Rate	1.5%	Starting PPA Rate	\$0.08	Upfront Payment	\$0
Term	25 Years				

Years	PPA Payments	Electric Bill Savings	Total Cash Flow	Cumulative Cash Flow
Upfront	-	-	-	-
1	-\$46,577	\$45,530	-\$1,047	-\$1,047
2	-\$46,897	\$46,069	-\$828	-\$1,875
3	-\$47,217	\$46,612	-\$605	-\$2,480
4	-\$47,536	\$47,157	-\$378	-\$2,858
5	-\$47,853	\$47,706	-\$147	-\$3,005
6	-\$48,170	\$48,258	\$89	-\$2,917
7	-\$48,485	\$48,813	\$329	-\$2,588
8	-\$48,798	\$49,371	\$573	-\$2,015
9	-\$49,111	\$49,932	\$821	-\$1,194
10	-\$49,421	\$50,495	\$1,074	-\$120
11	-\$49,730	\$51,061	\$1,331	\$1,211
12	-\$50,037	\$51,629	\$1,592	\$2,803
13	-\$50,342	\$52,200	\$1,858	\$4,660
14	-\$50,645	\$52,773	\$2,128	\$6,788
15	-\$50,946	\$53,348	\$2,402	\$9,190
16	-\$51,244	\$53,924	\$2,680	\$11,870
17	-\$51,540	\$54,503	\$2,963	\$14,833
18	-\$51,833	\$55,083	\$3,250	\$18,082
19	-\$52,123	\$55,664	\$3,541	\$21,623
20	-\$52,411	\$56,247	\$3,836	\$25,459
21	-\$52,695	\$56,831	\$4,135	\$29,595
22	-\$52,976	\$57,415	\$4,439	\$34,033
23	-\$53,254	\$58,000	\$4,746	\$38,780
24	-\$53,528	\$58,586	\$5,058	\$43,838
25	-\$53,798	\$59,172	\$5,374	\$49,212
26	-	\$59,758	\$59,758	\$108,969
27	-	\$60,343	\$60,343	\$169,313
28	-	\$60,928	\$60,928	\$230,241
29	-	\$61,513	\$61,513	\$291,754
30	-	\$62,096	\$62,096	\$353,850
Totals:	-\$1,257,168	\$1,611,018	\$353,850	-

# Option #4, Cash Purchase

## Assumptions and Key Financial Metrics

IRR - Term	0.1%	Net Present Value	(\$706,177)	Payback Period	29.4 Years
ROI	2.2%	PV Degradation Rate	0.80%	Discount Rate	5.0%
Energy Cost Escalation Rate	2.0%	Federal Income Tax Rate	0.0%	State Income Tax Rate	0.0%
Total Project Costs	\$1,509,795				

Years	Project Costs	O&M / Equipment Replacement	Incentive Amount	Electric Bill Savings	Total Cash Flow	Cumulative Cash Flow
Upfront	-\$1,509,795	-	-	-	-\$1,509,795	-\$1,509,795
1	-	-	\$11,644	\$45,530	\$57,174	-\$1,452,621
2	-	-\$2,284	\$11,551	\$46,069	\$55,337	-\$1,397,284
3	-	-\$2,352	\$11,458	\$46,612	\$55,717	-\$1,341,567
4	-	-\$2,423	\$11,365	\$47,157	\$56,099	-\$1,285,467
5	-	-\$2,496	\$11,272	\$47,706	\$56,482	-\$1,228,985
6	-	-\$2,570	\$11,178	\$48,258	\$56,866	-\$1,172,119
7	-	-\$2,647	\$11,085	\$48,813	\$57,251	-\$1,114,868
8	-	-\$2,727	\$10,992	\$49,371	\$57,636	-\$1,057,231
9	-	-\$2,809	\$10,899	\$49,932	\$58,022	-\$999,209
10	-	-\$2,893	\$10,806	\$50,495	\$58,408	-\$940,801
11	-	-\$2,980	\$10,713	\$51,061	\$58,794	-\$882,007
12	-	-\$3,069	\$10,620	\$51,629	\$59,180	-\$822,828
13	-	-\$3,161	\$10,526	\$52,200	\$59,565	-\$763,263
14	-	-\$3,256	\$10,433	\$52,773	\$59,950	-\$703,313
15	-	-\$3,354	\$10,340	\$53,348	\$60,334	-\$642,979
16	-	-\$132,954	-	\$53,924	-\$79,030	-\$722,009
17	-	-\$3,558	-	\$54,503	\$50,945	-\$671,064
18	-	-\$3,665	-	\$55,083	\$51,418	-\$619,646
19	-	-\$3,775	-	\$55,664	\$51,890	-\$567,757
20	-	-\$3,888	-	\$56,247	\$52,359	-\$515,398
21	-	-\$4,005	-	\$56,831	\$52,826	-\$462,572
22	-	-\$4,125	-	\$57,415	\$53,290	-\$409,281
23	-	-\$4,248	-	\$58,000	\$53,752	-\$355,529
24	-	-\$4,376	-	\$58,586	\$54,210	-\$301,319
25	-	-\$4,507	-	\$59,172	\$54,665	-\$246,655
26	-	-\$4,642	-	\$59,758	\$55,115	-\$191,539
27	-	-\$4,782	-	\$60,343	\$55,562	-\$135,978
28	-	-\$4,925	-	\$60,928	\$56,003	-\$79,974
29	-	-\$5,073	-	\$61,513	\$56,440	-\$23,535
30	-	-\$5,225	-	\$62,096	\$56,871	\$33,337
Totals:	-\$1,509,795	-\$232,769	\$164,882	\$1,611,018	\$33,337	-

# ENVIRONMENTAL BENEFITS



OVER THE NEXT 20 YEARS, YOUR SYSTEM WILL DO MORE THAN JUST SAVE YOU MONEY. ACCORDING TO THE EPA'S GREENHOUSE GAS EQUIVALENCIES CALCULATOR, YOUR SOLAR PV SYSTEM WILL HAVE THE IMPACT OF REDUCING:



9,123

Ibs of CO2 Offset



20,738,427

Miles Driven By Cars



136,820

Trees Planted

## **Bidding Process Recommendations**

Our recommendation is for Doylestown Township is proceed with the potential implementation of solar projects on existing facility roofs by authorizing the development of a Request for Proposals (RFP) from qualified solar providers. We recommend that the RFP be written for PPA Providers to provide solar array sizing, annual production, PPA rate, PPA annual escalation, and other contractual terms specified by PPA providers. The results of this Feasibility Study indicate that the installation of solar photovoltaic arrays will reduce the Township's operating costs and carbon emissions.

## **Potential Next Steps**

Assuming Doylestown Township decides to proceed with an RFP to identify PPA providers, the following is a list of items to be addressed:

1. Draft and issue a solar RFP;
2. Conduct pre-bid meeting with site visit for the Bidders;
3. Review bid responses and selection of bidder(s);
4. Revise system design(s) during negotiations with preferred bidder;
5. Develop Indicative Term Sheet summarizing financial terms of the PPA;
6. Negotiate Power Purchase Agreement contract with selected bidder;
7. Continued project management from the issuance of contracts, through local land use permitting, interconnection permitting, final system design, construction of solar arrays, and until the solar installations have been approved for interconnection and the installation are commissioned.

# **GEOHERMAL CONDUCTIVITY TESTING FINAL REPORT**

**DOYLESTOWN TOWNSHIP COMMUNITY CENTER  
GEOHERMAL TEST WELL GTW-121**

**Doylestown, Pennsylvania**

April 2022

*Prepared for:*



425 A South Ridge Road  
Sellersville, PA 18960

Prepared by:



38 Bishop Hollow Road, Suite 200  
Newtown Square, PA 19073

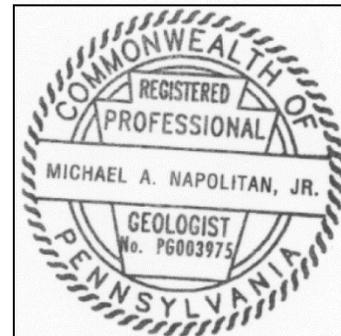
**GEOHERMAL CONDUCTIVITY TESTING REPORT**  
**DOYLESTOWN TOWNSHIP COMMUNITY CENTER**  
**GEOHERMAL TEST WELL GTW-121**  
**Doylestown, PA**

SIGNATURE OF PROFESSIONAL GEOLOGIST

Professional Geologist:       **Michael Napolitan, P.G.**  
Title:                               **Geologist**

Consultant:                       **Taylor GeoServices, Inc.**  
  **38 Bishop Hollow Road**  
  **Suite 200**  
  **Newtown Square, PA 19073**  
  **Phone: (610) 325-5570**

Prepared For:                   **CW Cook, Inc.**  
  **425 A South Ridge Road**  
  **Sellersville, PA 18960**



*Michael A. Napolitan Jr.*

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Signature of Professional Geologist  
PA License Number: **PG003975**

**April 19, 2022**

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*Date*

*Expiration Date: 9/30/2023*

**GEOHERMAL CONDUCTIVITY TESTING REPORT**

**DOYLESTOWN TOWNSHIP COMMUNITY CENTER  
GEOHERMAL TEST WELL GTW-121  
Doylestown, PA**

Introduction ..... 1  
Site Description ..... 1  
Well Installation and Drilling Conditions ..... 3  
Formation Thermal Conductivity Testing Procedures..... 4  
Test Results and Conclusions ..... 4  
Table 1: Formation Thermal Conductivity Test Results ..... 4

**Figures:**

Figure 1 Site Location..... 2  
Figure 2 Site Geology ..... 3

**Appendices:**

Well Log.....Appendix A  
Formation Thermal Conductivity Raw Test Data.....Appendix B

## Introduction

This report provides documentation of the testing procedures used to determine the formation thermal conductivity (FTC) for the geothermal well field located at the future location of the Doylestown Township Community Center in Doylestown, Pennsylvania. Formation thermal conductivity is a critical parameter in geothermal system design. Published ranges for thermal conductivity in consolidated rock exist. However, these ranges vary significantly and do not consider site-specific parameters such as rock density and type, groundwater flow rates, and borehole resistance. Therefore, site-specific formation thermal conductivity testing enables the proper design of a geothermal well field. The test was successful, and the required parameters were determined to be:

<b>Parameter</b>	<b>Result</b>	<b>Units</b>
Thermal Conductivity	1.4	Btu/hr-ft-°F
Disfusivity	0.94	ft <sup>2</sup> /day
Borehole Resistance	0.24	hr-ft-°F/Btu
Estimated Formation Heat Capacity	36.6	BTU/ft <sup>3</sup> -°F
Earth Temperature	54.9	°F

## Site Description

The well site, GTW-121, is located at N 40.283620° and W 75.135540° (WGS 84). The physical location was near the existing tennis and basketball courts near the parking lot adjacent to the township building.

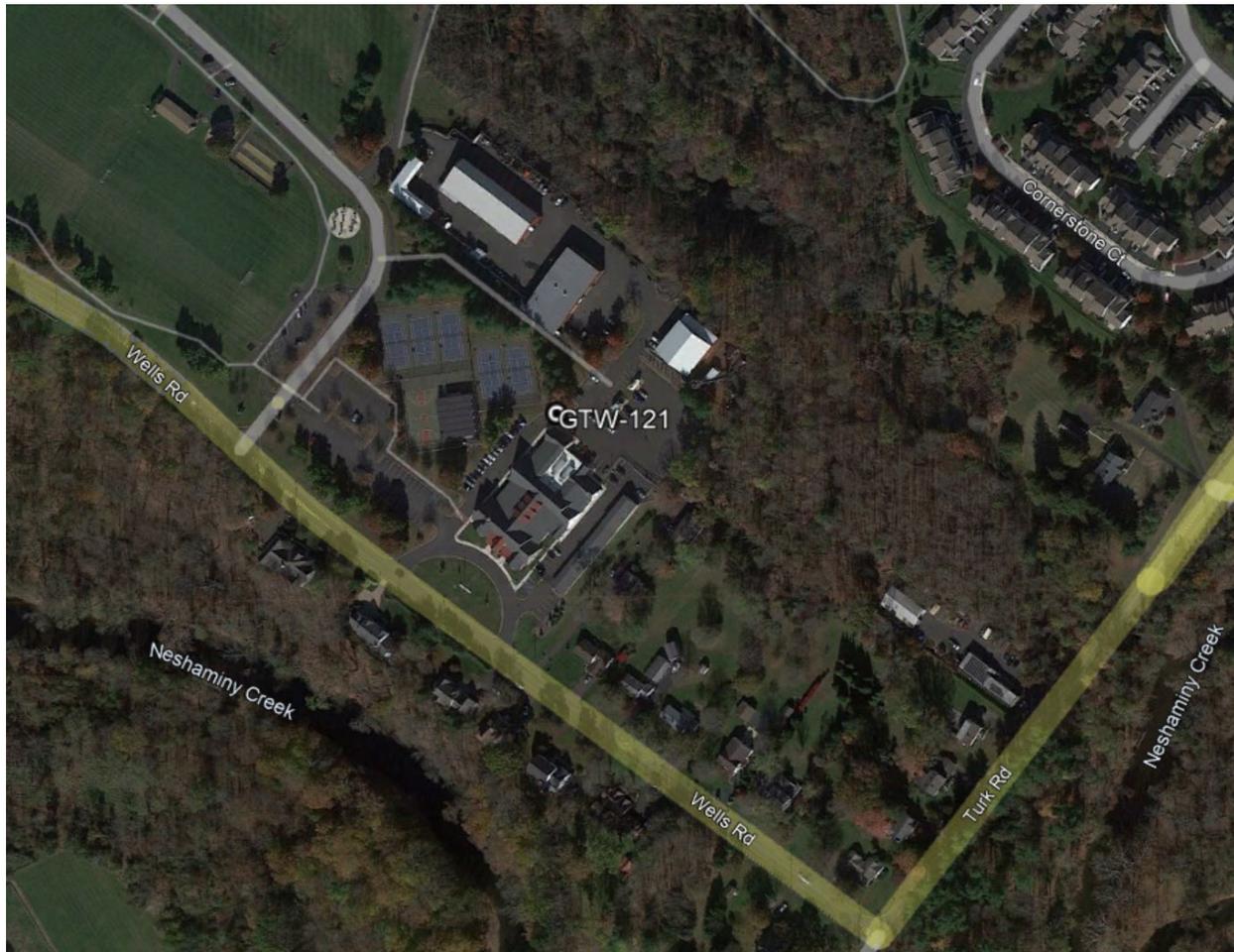
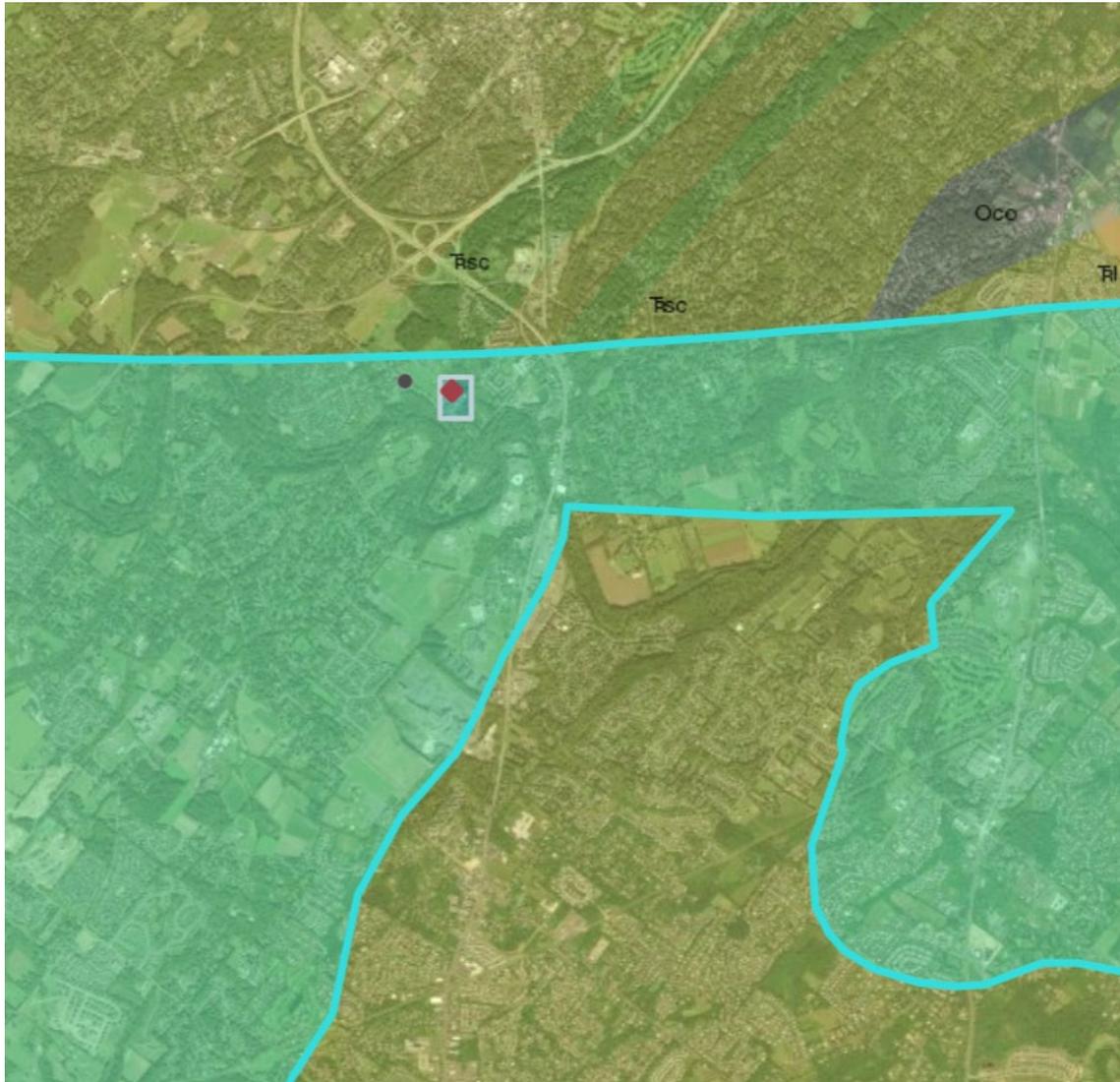


Figure 1 Site Location (Source Google Earth)

According to the Geologic Map of Pennsylvania, The Lockatong Formation crops out in the Newark basin. It consists of dark-gray to black argillite with some zones of black shale and, locally, thin layers of impure limestone and calcareous shale. The bedding is moderate to well developed and is flaggy to thick. It is approximately 3,800 feet thick.<sup>1</sup>

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<sup>1</sup> Fleeger, G. M., McElroy, T. A., and Moore, M. E., 2004, Hydrogeologic and well-construction characteristics of the rocks of Pennsylvania: Pennsylvania Geological Survey, 4th ser., Water Resource Report 69, CD-ROM..



**Figure 2 Site Geology** ( Pa [https://www.gis.dcnr.state.pa.us/pageode/](https://www.gis.dcnr.state.pa.us/pageode/GEODE) GEODE (state.pa.us))

### **Well Installation and Drilling Conditions**

CW Cook, Inc. of Sellersville, Pennsylvania, drilled and completed the geothermal well on May 29, 2022. The 6-inch diameter borehole was completed to the requested total depth of 504 ft into the argillite bedrock. A water-bearing zone was noted at 210 ft and produced 1 GPM.

For the final construction of the geothermal loop, a 1.25-inch diameter HDPE geothermal pipe with a factory-installed U-bend was installed to a depth of 504 feet. The annular space between the loop and the borehole was tremie grouted with thermal grout for the entire depth of the borehole. A completed driller's well log is located in Appendix A.

### Formation Thermal Conductivity Testing Procedures

Formation thermal conductivity testing was performed in general accordance with the American Society of Heating, Refrigeration, and Air-Conditioning Engineers (ASHRAE) HVAC Applications Handbook. The borehole was allowed to stabilize for seven days after drilling and installation. The test was started on April 6, 2022, and completed on April 8, 2022. This test was successful, and data collected from GTW-121 were analyzed for this report. The average power was **9699 watts (19.2 W/ft) with variations within the recommended 10% deviation.** TGS utilized data logging equipment to monitor the required model input parameters. TGS employed the analytical line source method, a steady-state model that is the recommended method of ASHRAE. The outputs from the model are included in Appendix B.

### Test Results and Conclusions

The line source method calculations resulted in a thermal conductivity value of **1.4 BTU/hr-ft-°F**. From the drilling logs, the formation consists primarily of argillite of the Lockatong Formation with unconsolidated overburden. The heat capacity value of **36.6 BTU/ft<sup>3</sup>-°F** was calculated from literature and reported data<sup>2</sup>. The specific heat capacity was then used to calculate the Thermal Diffusivity of **0.94 ft<sup>2</sup>/day**. The deep earth temperature of **54.9 °F** was determined by pumping water through the loop for at least thirty minutes before starting the heating elements. Additionally, the borehole resistance was calculated to be **0.24 BTU/ft<sup>3</sup>- °F** using the line source model with convolution to match the calculated to the observed data using linear regression.

**Table 1: Formation Thermal Conductivity Test Results**

Well	Thermal Conductivity (BTU/hr-ft-°F)	Borehole Resistance BTU/ft <sup>3</sup> - °F	Thermal Diffusivity (ft <sup>2</sup> /day)	Deep Earth Temperature (°F)	Est. Average Heat Capacity (BTU/ft <sup>3</sup> -°F)
GTW-121	<b>1.4</b>	<b>0.24</b>	<b>0.94</b>	<b>54.9</b>	<b>36.6</b>

<sup>2</sup> Kavanaugh and Rafferty, *Ground-Source Heat Pumps- Design of Geothermal Systems for Commercial and Institutional Buildings*, ASHRAE, 1997

## **Appendix A**

## 500 ft Geothermal Loop

### Doylestown Township Community Center, Doylestown, PA



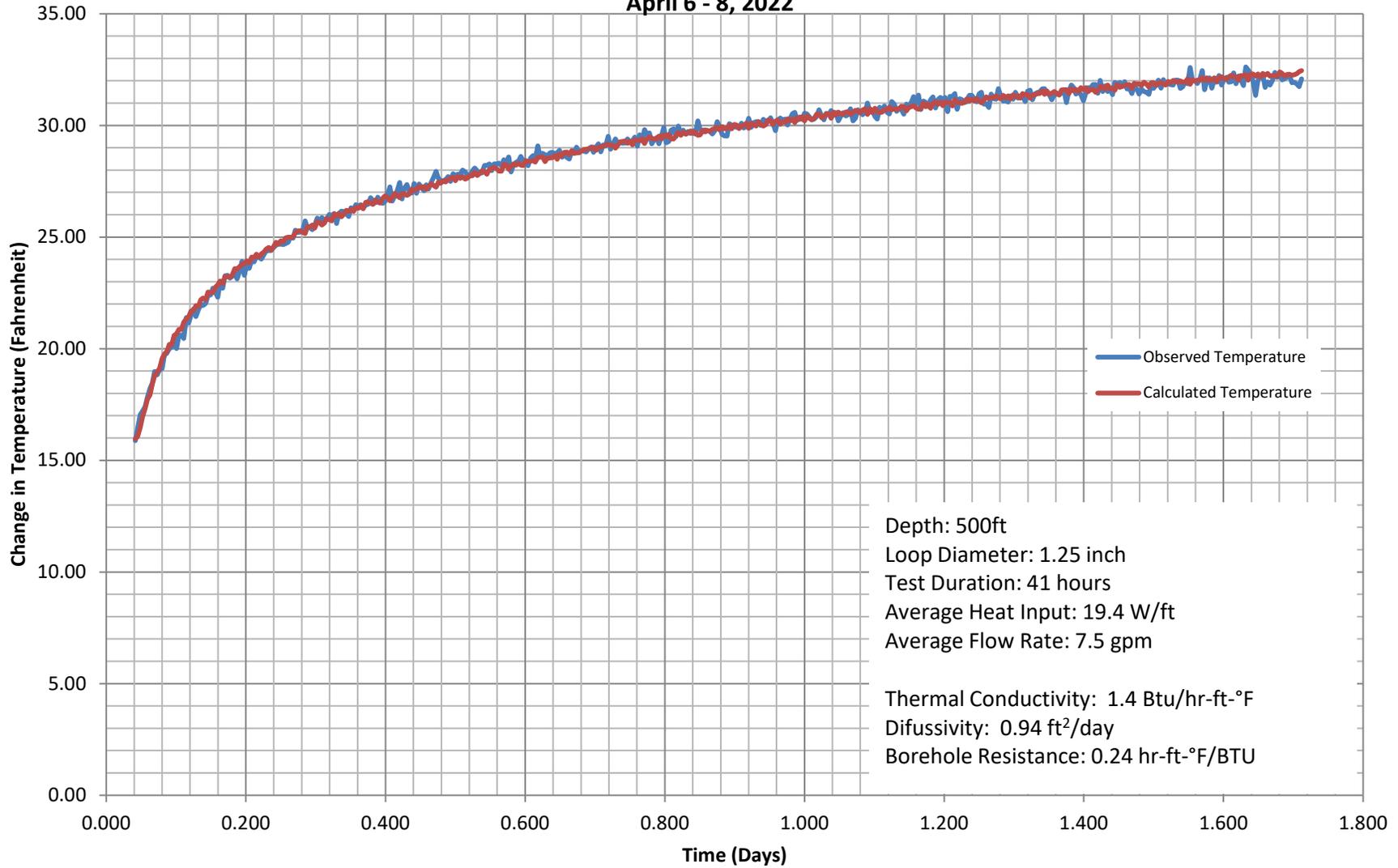
Borehole Diameter	6 in	
Borehole Depth	504 ft	
Loop Diameter	1.25 in	
Loop Length	1010 ft	
Water Bearing Zone 1	210-220 ft	
Water Yield	1 gpm	
Grout 1.0 mix	46 bags	Bentonite
	22 bags	GeoPro Graphite

Geology	Top	Base
Overburden	0	7
Softer Lockatong	7	230
Lockatong	230	340
Lockatong	340	360
Lockatong	360	440
Lockatong/graphite	440	450
Lockatong	450	504

## **Appendix B**



**Formation Conductivity Testing**  
**Line Source with Borehole Resistance Model**  
**Doylestown Township Community Center**  
**Doylestown Township, PA**  
**April 6 - 8, 2022**



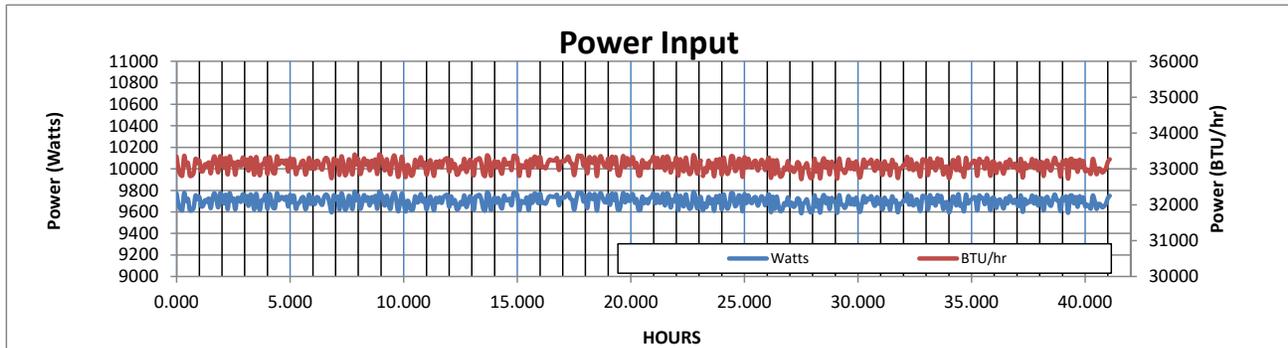
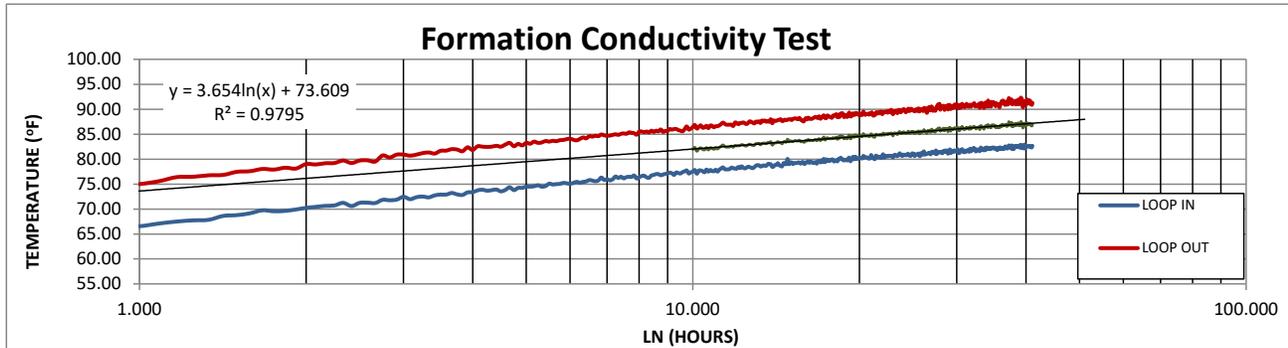
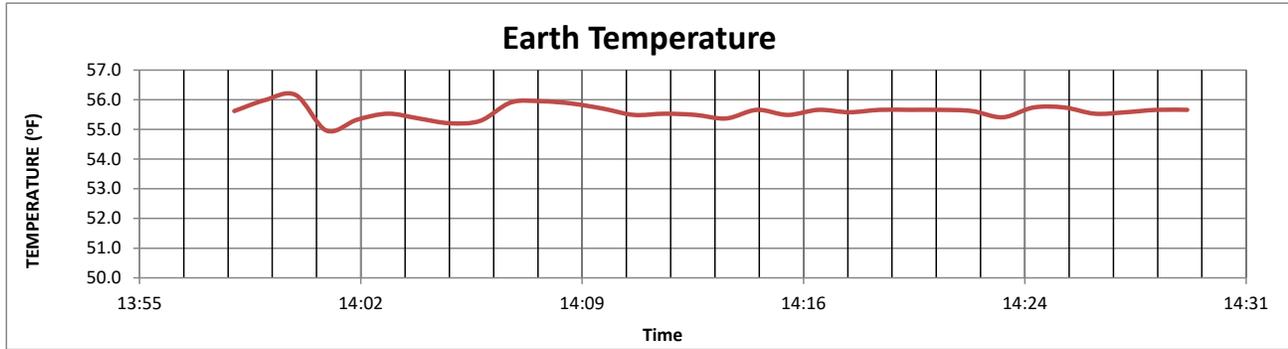
## 500 ft Geothermal Loop Doylestown Community Center, Doylestown, PA

### Model Input

<b>TGS Well ID:</b>	GTW-121	
<b>Borehole Depth:</b>	500 ft	
<b>Estimated Formation Heat Capacity:</b>	36.6 BTU/ft <sup>3</sup> °F	
<b>Average Power:</b>	9699 watts	
<b>Average Power Input:</b>	19.4 W/ft	66.2 BTU/hr/ft
<b>Average Flow Rate</b>	7.5 (GPM)	
<b>Average Delta T (In-Out)</b>	8.9 (°F)	
<b>Peak Peak Power Deviation</b>	2.1%	
<b>Power Deviation</b>	0.5%	
<b>Total Delta T (T<sub>o</sub>-T<sub>f</sub>)</b>	32.8 (°F)	

### Model Output

<b>Thermal Conductivity:</b>	1.4 BTU/hr-ft-°F
<b>Estimated Thermal Diffusivity:</b>	0.9 ft <sup>2</sup> /day
<b>Min Earth Temp:</b>	54.9 °F
<b>Max Earth Temp:</b>	58.0 °F
<b>Ave Earth Temp:</b>	55.6 °F
<b>Test Interval for Analysis (hours)</b>	<b>Start</b> <b>End</b>
	10              41



**500 ft Geothermal Loop**

Doylestown Community Center, Doylestown, PA

Date/Time	Temp In	Temp Out	Average Temp
Apr-4, 2022 1:58:17 PM	57.67	55.6	56.6
Apr-4, 2022 1:59:17 PM	58.04	56.0	57.0
Apr-4, 2022 2:00:17 PM	55.83	56.2	56.0
Apr-4, 2022 2:01:17 PM	54.88	55.0	54.9
Apr-4, 2022 2:02:17 PM	55.33	55.3	55.3
Apr-4, 2022 2:03:17 PM	55.41	55.5	55.5
Apr-4, 2022 2:04:17 PM	55.17	55.4	55.3
Apr-4, 2022 2:05:17 PM	55.17	55.2	55.2
Apr-4, 2022 2:06:17 PM	55.33	55.3	55.3
Apr-4, 2022 2:07:17 PM	56.08	55.9	56.0
Apr-4, 2022 2:08:17 PM	55.99	56.0	56.0
Apr-4, 2022 2:09:17 PM	55.78	55.9	55.8
Apr-4, 2022 2:10:17 PM	55.66	55.7	55.7
Apr-4, 2022 2:11:17 PM	55.41	55.5	55.5
Apr-4, 2022 2:12:17 PM	55.49	55.5	55.5
Apr-4, 2022 2:13:17 PM	55.45	55.5	55.5
Apr-4, 2022 2:14:17 PM	55.33	55.4	55.4
Apr-4, 2022 2:15:17 PM	55.62	55.7	55.6
Apr-4, 2022 2:16:17 PM	55.53	55.5	55.5
Apr-4, 2022 2:17:17 PM	55.58	55.7	55.6
Apr-4, 2022 2:18:17 PM	55.58	55.6	55.6
Apr-4, 2022 2:19:17 PM	55.66	55.7	55.7
Apr-4, 2022 2:20:17 PM	55.74	55.7	55.7
Apr-4, 2022 2:21:17 PM	55.66	55.7	55.7
Apr-4, 2022 2:22:17 PM	55.74	55.6	55.7
Apr-4, 2022 2:23:17 PM	55.37	55.4	55.4
Apr-4, 2022 2:24:17 PM	55.70	55.7	55.7
Apr-4, 2022 2:25:17 PM	55.70	55.7	55.7
Apr-4, 2022 2:26:17 PM	55.62	55.5	55.6
Apr-4, 2022 2:27:17 PM	55.74	55.6	55.7
Apr-4, 2022 2:28:17 PM	55.66	55.7	55.7
Apr-4, 2022 2:29:17 PM	55.70	55.7	55.7

500 ft Geothermal Loop									
Doylestown Community Center, Doylestown, PA									
Time (Hours)	Date/Time (EDT)	Loop Temps °F		Current (A)	Voltage (V)	Power (W)	Mean Temp (°F)	Air Temp (°F) AT	Box Temp (°F) BT
		In	Out						
0.000	Apr-6, 2022 3:40:05 PM	58.16	66.76	38.46	254.07	9772	62.46	52.90	53.97
0.083	Apr-6, 2022 3:45:05 PM	57.71	66.35	38.23	252.89	9668	62.03	53.60	55.05
0.167	Apr-6, 2022 3:50:05 PM	58.93	67.69	38.10	252.67	9625	63.31	53.35	55.21
0.250	Apr-6, 2022 3:55:05 PM	61.45	69.51	38.02	252.89	9615	65.48	53.02	55.53
0.333	Apr-6, 2022 4:00:05 PM	62.05	70.11	38.45	254.29	9777	66.08	53.47	55.74
0.417	Apr-6, 2022 4:05:05 PM	62.41	71.12	38.02	255.16	9702	66.77	53.68	56.20
0.500	Apr-6, 2022 4:10:05 PM	63.71	72.09	38.33	253.63	9721	67.90	53.68	56.73
0.583	Apr-6, 2022 4:15:05 PM	64.75	73.38	38.03	252.82	9616	69.07	53.47	57.09
0.667	Apr-6, 2022 4:20:05 PM	64.99	73.38	38.01	252.97	9615	69.19	53.35	57.50
0.750	Apr-6, 2022 4:25:05 PM	65.40	74.28	38.13	252.75	9638	69.84	53.60	58.24
0.833	Apr-6, 2022 4:30:05 PM	65.95	74.36	38.14	255.68	9753	70.16	53.35	58.61
0.917	Apr-6, 2022 4:35:05 PM	66.52	74.76	38.30	253.70	9717	70.64	54.10	59.17
1.000	Apr-6, 2022 4:40:05 PM	66.56	75.00	38.41	253.55	9740	70.78	54.18	59.42
1.083	Apr-6, 2022 4:45:05 PM	67.09	75.57	38.17	252.89	9652	71.33	54.02	60.15
1.167	Apr-6, 2022 4:50:05 PM	67.49	76.39	38.08	253.55	9656	71.94	53.39	60.55
1.250	Apr-6, 2022 4:55:05 PM	67.73	76.47	38.29	253.55	9709	72.10	53.39	61.08
1.333	Apr-6, 2022 5:00:05 PM	67.84	76.76	38.01	255.02	9693	72.30	53.35	61.49
1.417	Apr-6, 2022 5:05:05 PM	68.62	76.84	38.29	253.92	9723	72.73	53.39	61.77
1.500	Apr-6, 2022 5:10:05 PM	68.78	77.46	38.11	252.82	9634	73.12	53.68	62.25
1.583	Apr-6, 2022 5:15:05 PM	69.15	77.58	38.33	253.85	9729	73.37	53.76	62.94
1.667	Apr-6, 2022 5:20:05 PM	69.74	78.03	38.43	254.36	9774	73.89	53.51	63.02
1.750	Apr-6, 2022 5:25:05 PM	69.55	77.91	38.32	253.63	9718	73.73	53.51	63.22
1.833	Apr-6, 2022 5:30:05 PM	69.63	78.28	38.13	252.89	9643	73.96	53.35	63.87
1.917	Apr-6, 2022 5:35:05 PM	69.91	78.11	38.36	254.73	9772	74.01	52.73	63.91
2.000	Apr-6, 2022 5:40:05 PM	70.23	79.01	38.40	253.99	9753	74.62	53.56	64.46
2.083	Apr-6, 2022 5:45:05 PM	70.44	78.93	38.08	254.14	9678	74.69	53.02	64.83
2.167	Apr-6, 2022 5:50:05 PM	70.64	79.18	38.41	254.07	9760	74.91	52.86	65.24
2.250	Apr-6, 2022 5:55:05 PM	70.72	79.22	38.07	252.82	9625	74.97	53.07	65.52
2.333	Apr-6, 2022 6:00:05 PM	71.24	79.72	38.41	254.43	9773	75.48	52.98	65.80
2.417	Apr-6, 2022 6:05:05 PM	70.60	79.22	38.00	255.38	9704	74.91	53.11	65.99
2.500	Apr-6, 2022 6:10:05 PM	71.24	79.72	38.33	253.70	9724	75.48	53.02	66.64
2.583	Apr-6, 2022 6:15:05 PM	71.28	79.76	37.99	253.33	9623	75.52	52.82	66.52
2.667	Apr-6, 2022 6:20:05 PM	71.20	79.51	38.03	255.75	9727	75.36	52.78	66.93
2.750	Apr-6, 2022 6:25:05 PM	71.85	80.74	38.28	254.14	9728	76.30	53.02	67.17
2.833	Apr-6, 2022 6:30:05 PM	71.76	80.33	38.24	253.48	9694	76.05	52.44	67.61
2.917	Apr-6, 2022 6:35:05 PM	71.89	80.91	38.41	254.21	9765	76.40	52.73	67.65
3.000	Apr-6, 2022 6:40:05 PM	72.46	80.91	38.19	253.92	9698	76.69	52.19	67.96
3.083	Apr-6, 2022 6:45:05 PM	71.97	80.70	38.40	253.85	9748	76.34	52.27	68.17
3.167	Apr-6, 2022 6:50:05 PM	72.38	80.91	38.07	253.63	9656	76.65	52.31	68.45
3.250	Apr-6, 2022 6:55:05 PM	72.50	81.21	38.25	255.16	9761	76.86	51.89	68.21
3.333	Apr-6, 2022 7:00:05 PM	72.34	81.33	38.38	253.70	9736	76.84	51.85	68.58
3.417	Apr-6, 2022 7:05:05 PM	72.74	81.12	37.99	253.33	9623	76.93	51.93	68.74
3.500	Apr-6, 2022 7:10:05 PM	72.90	81.67	38.41	254.29	9768	77.29	51.85	69.02
3.583	Apr-6, 2022 7:15:05 PM	72.90	81.71	38.11	254.07	9682	77.31	51.68	69.15
3.667	Apr-6, 2022 7:20:05 PM	73.22	82.00	38.03	252.89	9618	77.61	51.72	69.31
3.750	Apr-6, 2022 7:25:05 PM	72.94	81.92	38.27	253.70	9708	77.43	51.44	69.63
3.833	Apr-6, 2022 7:30:05 PM	72.82	81.58	38.01	255.46	9710	77.20	51.56	69.66
3.917	Apr-6, 2022 7:35:05 PM	73.34	82.37	38.41	253.99	9757	77.86	51.40	69.91
4.000	Apr-6, 2022 7:40:05 PM	73.38	81.83	38.01	253.33	9629	77.61	51.44	69.91
4.083	Apr-6, 2022 7:45:05 PM	73.75	82.58	38.41	254.21	9765	78.17	51.36	70.11
4.167	Apr-6, 2022 7:50:05 PM	73.87	82.50	38.25	253.99	9716	78.19	51.60	70.48
4.250	Apr-6, 2022 7:55:05 PM	73.67	82.45	38.12	252.89	9640	78.06	51.56	70.40
4.333	Apr-6, 2022 8:00:05 PM	73.79	82.50	38.11	252.89	9637	78.15	51.23	70.60
4.417	Apr-6, 2022 8:05:05 PM	73.91	82.67	38.30	255.16	9773	78.29	51.36	70.36
4.500	Apr-6, 2022 8:10:05 PM	73.54	82.50	38.01	255.46	9710	78.02	51.27	70.68
4.583	Apr-6, 2022 8:15:05 PM	73.83	82.92	38.38	253.63	9733	78.38	50.98	70.80
4.667	Apr-6, 2022 8:20:05 PM	74.36	83.26	38.34	253.99	9738	78.81	51.76	71.12
4.750	Apr-6, 2022 8:25:05 PM	73.79	82.58	38.02	255.46	9713	78.19	51.48	71.04
4.833	Apr-6, 2022 8:30:05 PM	74.24	83.05	38.39	253.70	9739	78.65	51.07	71.36
4.917	Apr-6, 2022 8:35:05 PM	74.24	82.75	38.05	253.63	9650	78.50	50.94	71.20
5.000	Apr-6, 2022 8:40:05 PM	74.48	83.26	38.24	255.16	9758	78.87	50.61	71.16
5.083	Apr-6, 2022 8:45:05 PM	74.48	83.09	38.02	254.87	9691	78.79	50.82	71.60
5.167	Apr-6, 2022 8:50:05 PM	74.56	83.51	38.40	253.92	9751	79.04	50.56	71.60
5.250	Apr-6, 2022 8:55:05 PM	74.76	83.26	38.01	253.33	9629	79.01	50.61	71.52
5.333	Apr-6, 2022 9:00:05 PM	74.48	83.34	38.16	253.55	9674	78.91	50.65	71.68
5.417	Apr-6, 2022 9:05:05 PM	74.60	83.63	38.23	253.41	9688	79.12	50.52	71.68
5.500	Apr-6, 2022 9:10:05 PM	75.08	83.51	38.29	254.07	9729	79.30	50.98	71.93
5.583	Apr-6, 2022 9:15:05 PM	74.92	83.68	38.38	253.70	9736	79.30	50.65	72.17
5.667	Apr-6, 2022 9:20:05 PM	75.00	83.59	38.01	253.26	9626	79.30	50.52	71.89
5.750	Apr-6, 2022 9:25:05 PM	75.04	83.80	38.12	253.63	9668	79.42	50.77	72.21
5.833	Apr-6, 2022 9:30:05 PM	75.24	83.84	38.17	255.75	9761	79.54	50.39	72.09
5.917	Apr-6, 2022 9:35:05 PM	75.16	84.01	38.11	253.85	9673	79.59	50.61	72.13
6.000	Apr-6, 2022 9:40:05 PM	75.08	84.09	38.38	253.63	9733	79.59	50.44	72.21
6.083	Apr-6, 2022 9:45:05 PM	75.24	83.88	38.13	253.63	9671	79.56	50.73	72.46
6.167	Apr-6, 2022 9:50:05 PM	75.45	83.76	38.38	253.70	9736	79.61	50.39	72.34
6.250	Apr-6, 2022 9:55:05 PM	75.28	84.05	38.05	255.68	9728	79.67	50.56	72.50
6.333	Apr-6, 2022 10:00:05 PM	75.45	84.34	38.01	254.80	9685	79.90	50.52	72.66
6.417	Apr-6, 2022 10:05:05 PM	75.53	84.17	38.21	253.04	9667	79.85	50.86	72.70
6.500	Apr-6, 2022 10:10:05 PM	75.82	84.60	38.35	253.99	9741	80.21	50.94	72.78
6.583	Apr-6, 2022 10:15:05 PM	75.70	84.51	38.28	255.02	9762	80.11	50.52	72.38
6.667	Apr-6, 2022 10:20:05 PM	75.57	84.68	38.40	253.63	9739	80.13	50.69	72.78
6.750	Apr-6, 2022 10:25:05 PM	75.74	84.60	38.18	253.04	9661	80.17	50.69	72.82
6.833	Apr-6, 2022 10:30:05 PM	76.31	84.94	37.96	252.82	9597	80.63	50.44	72.82
6.917	Apr-6, 2022 10:35:05 PM	75.82	84.77	38.40	253.99	9753	80.30	50.35	72.82
7.000	Apr-6, 2022 10:40:05 PM	75.99	84.68	38.32	253.63	9718	80.34	50.27	72.70
7.083	Apr-6, 2022 10:45:05 PM	75.74	84.73	38.40	253.63	9739	80.24	50.44	72.98
7.167	Apr-6, 2022 10:50:05 PM	75.99	84.86	38.00	253.19	9621	80.43	50.39	72.90
7.250	Apr-6, 2022 10:55:05 PM	76.52	84.98	38.41	254.36	9771	80.75	50.31	73.02
7.333	Apr-6, 2022 11:00:05 PM	76.23	84.86	38.33	253.70	9724	80.55	50.52	72.86

500 ft Geothermal Loop									
Doylestown Community Center, Doylestown, PA									
Time (Hours)	Date/Time (EDT)	Loop Temps °F		Current (A)	Voltage (V)	Power (W)	Mean Temp (°F)	Air Temp (°F) AT	Box Temp (°F) BT
		In	Out						
7.417	Apr-6, 2022 11:05:05 PM	76.47	85.07	37.99	253.26	9620	80.77	50.44	73.02
7.500	Apr-6, 2022 11:10:05 PM	76.15	85.15	38.06	253.55	9650	80.65	50.31	73.14
7.583	Apr-6, 2022 11:15:05 PM	76.39	85.07	38.14	256.60	9750	80.73	50.18	73.10
7.667	Apr-6, 2022 11:20:05 PM	76.47	85.36	38.06	254.58	9689	80.92	50.09	73.30
7.750	Apr-6, 2022 11:25:05 PM	76.43	85.28	38.08	252.82	9628	80.86	50.14	73.26
7.833	Apr-6, 2022 11:30:05 PM	76.72	85.19	38.43	254.73	9788	80.96	49.76	73.18
7.917	Apr-6, 2022 11:35:05 PM	76.11	84.90	38.01	256.38	9707	80.51	50.05	73.30
8.000	Apr-6, 2022 11:40:05 PM	76.39	85.53	38.41	253.85	9751	80.96	49.93	73.38
8.083	Apr-6, 2022 11:45:05 PM	76.60	85.53	38.10	252.82	9631	81.07	50.18	73.46
8.167	Apr-6, 2022 11:50:05 PM	76.68	85.40	38.13	253.77	9677	81.04	50.31	73.58
8.250	Apr-6, 2022 11:55:05 PM	76.35	85.53	38.43	253.92	9757	80.94	49.84	73.42
8.333	Apr-7, 2022 12:00:05 AM	76.27	85.36	38.01	256.31	9704	80.82	49.59	73.42
8.417	Apr-7, 2022 12:05:05 AM	76.72	85.70	38.38	253.70	9736	81.21	49.80	73.79
8.500	Apr-7, 2022 12:10:05 AM	76.84	85.45	38.10	253.55	9659	81.15	49.84	73.71
8.583	Apr-7, 2022 12:15:05 AM	77.00	85.70	38.34	253.99	9738	81.35	49.68	73.79
8.667	Apr-7, 2022 12:20:05 AM	77.00	85.57	38.07	254.58	9692	81.29	50.18	73.71
8.750	Apr-7, 2022 12:25:05 AM	76.76	85.95	38.40	253.85	9748	81.36	49.93	73.67
8.833	Apr-7, 2022 12:30:05 AM	76.92	85.45	38.01	253.33	9629	81.19	49.89	73.58
8.917	Apr-7, 2022 12:35:05 AM	77.04	85.66	38.40	254.87	9787	81.35	49.39	73.50
9.000	Apr-7, 2022 12:40:05 AM	77.12	85.61	38.22	255.75	9774	81.37	49.47	73.67
9.083	Apr-7, 2022 12:45:05 AM	77.29	86.03	38.27	253.92	9717	81.66	50.18	73.87
9.167	Apr-7, 2022 12:50:05 AM	77.16	85.91	38.08	253.63	9659	81.54	49.93	73.95
9.250	Apr-7, 2022 12:55:05 AM	76.84	86.03	38.41	253.85	9751	81.44	49.97	73.87
9.333	Apr-7, 2022 1:00:05 AM	77.33	86.03	38.03	254.29	9672	81.68	49.99	73.95
9.417	Apr-7, 2022 1:05:05 AM	77.21	85.82	38.08	252.82	9628	81.52	49.93	73.95
9.500	Apr-7, 2022 1:10:05 AM	77.12	85.70	38.39	253.70	9739	81.41	50.05	73.83
9.583	Apr-7, 2022 1:15:05 AM	77.41	85.57	38.40	254.73	9782	81.49	49.68	73.79
9.667	Apr-7, 2022 1:20:05 AM	77.54	86.03	38.27	253.92	9717	81.79	50.22	74.08
9.750	Apr-7, 2022 1:25:05 AM	77.74	86.55	37.99	252.89	9606	82.15	49.89	74.03
9.833	Apr-7, 2022 1:30:05 AM	77.12	85.91	38.17	253.55	9677	81.52	50.01	74.03
9.917	Apr-7, 2022 1:35:05 AM	77.37	86.12	38.34	254.87	9771	81.75	49.72	73.87
10.000	Apr-7, 2022 1:40:05 AM	77.50	86.42	38.16	253.85	9686	81.96	49.59	73.99
10.083	Apr-7, 2022 1:45:05 AM	77.83	86.85	37.99	252.82	9603	82.34	49.80	74.12
10.167	Apr-7, 2022 1:50:05 AM	77.08	86.12	38.00	255.31	9701	81.60	49.43	74.16
10.250	Apr-7, 2022 1:55:05 AM	77.70	86.47	38.06	254.21	9675	82.09	49.59	74.28
10.333	Apr-7, 2022 2:00:05 AM	77.74	86.77	38.03	252.82	9616	82.26	49.64	74.24
10.417	Apr-7, 2022 2:05:05 AM	77.58	86.29	38.02	253.33	9632	81.94	49.30	74.16
10.500	Apr-7, 2022 2:10:05 AM	77.37	86.38	38.40	253.77	9745	81.88	49.39	74.24
10.583	Apr-7, 2022 2:15:05 AM	77.91	86.68	38.18	253.77	9689	82.30	49.39	74.32
10.667	Apr-7, 2022 2:20:05 AM	77.50	86.21	38.25	253.55	9699	81.86	49.22	74.20
10.750	Apr-7, 2022 2:25:05 AM	77.83	86.72	38.36	254.58	9767	82.28	49.18	74.12
10.833	Apr-7, 2022 2:30:05 AM	77.62	86.68	38.01	255.09	9696	82.15	49.18	74.48
10.917	Apr-7, 2022 2:35:05 AM	77.58	86.38	38.35	253.48	9721	81.98	48.66	74.20
11.000	Apr-7, 2022 2:40:05 AM	77.87	86.60	38.00	253.26	9623	82.24	48.83	74.28
11.083	Apr-7, 2022 2:45:05 AM	77.50	86.60	38.18	253.55	9681	82.05	49.34	74.28
11.167	Apr-7, 2022 2:50:05 AM	77.91	86.77	38.11	255.68	9743	82.34	48.83	74.40
11.250	Apr-7, 2022 2:55:05 AM	78.11	87.02	38.17	253.70	9683	82.57	48.49	74.40
11.333	Apr-7, 2022 3:00:05 AM	78.36	87.32	37.99	253.11	9614	82.84	48.36	74.52
11.417	Apr-7, 2022 3:05:05 AM	77.99	87.07	38.32	253.92	9729	82.53	48.36	74.76
11.500	Apr-7, 2022 3:10:05 AM	77.95	86.90	38.02	254.80	9688	82.43	48.53	74.64
11.583	Apr-7, 2022 3:15:05 AM	77.95	86.90	38.38	253.70	9736	82.43	48.58	74.76
11.667	Apr-7, 2022 3:20:05 AM	78.03	86.90	38.14	253.85	9683	82.47	48.27	74.68
11.750	Apr-7, 2022 3:25:05 AM	78.32	86.90	38.36	253.77	9736	82.61	47.98	74.56
11.833	Apr-7, 2022 3:30:05 AM	78.15	86.64	38.13	255.75	9752	82.40	47.98	74.52
11.917	Apr-7, 2022 3:35:05 AM	78.15	87.32	38.41	253.99	9757	82.74	47.60	74.60
12.000	Apr-7, 2022 3:40:05 AM	78.07	87.24	38.06	253.48	9647	82.66	47.56	74.56
12.083	Apr-7, 2022 3:45:05 AM	78.44	86.98	38.38	253.92	9744	82.71	47.85	74.56
12.167	Apr-7, 2022 3:50:05 AM	78.19	87.24	38.11	253.99	9679	82.72	47.47	74.52
12.250	Apr-7, 2022 3:55:05 AM	78.56	87.24	38.23	253.99	9710	82.90	47.39	74.68
12.333	Apr-7, 2022 4:00:05 AM	78.28	87.36	38.07	252.82	9625	82.82	47.60	74.60
12.417	Apr-7, 2022 4:05:05 AM	78.15	87.19	38.03	253.33	9635	82.67	47.98	74.48
12.500	Apr-7, 2022 4:10:05 AM	78.28	87.02	38.02	254.87	9691	82.65	47.05	74.76
12.583	Apr-7, 2022 4:15:05 AM	78.48	87.24	38.06	254.14	9672	82.86	47.47	74.64
12.667	Apr-7, 2022 4:20:05 AM	78.40	87.58	38.41	253.92	9754	82.99	47.26	74.64
12.750	Apr-7, 2022 4:25:05 AM	78.28	87.45	38.06	253.48	9647	82.87	47.26	74.56
12.833	Apr-7, 2022 4:30:05 AM	78.19	87.32	38.22	253.41	9685	82.76	46.96	74.36
12.917	Apr-7, 2022 4:35:05 AM	78.40	87.15	38.11	255.75	9746	82.78	46.92	74.52
13.000	Apr-7, 2022 4:40:05 AM	78.68	87.53	38.25	253.99	9716	83.11	46.74	74.76
13.083	Apr-7, 2022 4:45:05 AM	78.80	87.41	37.99	253.19	9617	83.11	46.79	74.52
13.167	Apr-7, 2022 4:50:05 AM	78.76	87.58	38.38	253.85	9742	83.17	47.00	74.64
13.250	Apr-7, 2022 4:55:05 AM	78.52	87.24	38.11	255.75	9746	82.88	46.83	74.56
13.333	Apr-7, 2022 5:00:05 AM	78.60	87.74	38.23	255.24	9758	83.17	46.48	74.60
13.417	Apr-7, 2022 5:05:05 AM	78.76	87.58	38.29	253.70	9714	83.17	46.66	74.52
13.500	Apr-7, 2022 5:10:05 AM	78.68	87.74	38.08	252.82	9628	83.21	46.74	74.60
13.583	Apr-7, 2022 5:15:05 AM	78.68	87.49	37.99	253.11	9614	83.09	46.35	74.40
13.667	Apr-7, 2022 5:20:05 AM	79.05	87.66	38.43	254.51	9780	83.36	46.61	74.52
13.750	Apr-7, 2022 5:25:05 AM	79.01	87.49	38.44	253.92	9760	83.25	46.79	74.60
13.833	Apr-7, 2022 5:30:05 AM	78.97	88.00	38.03	252.82	9616	83.49	46.31	74.52
13.917	Apr-7, 2022 5:35:05 AM	78.44	87.19	38.22	253.41	9685	82.82	46.35	74.44
14.000	Apr-7, 2022 5:40:05 AM	78.56	87.74	38.40	253.55	9736	83.15	46.18	74.52
14.083	Apr-7, 2022 5:45:05 AM	78.84	87.66	38.11	254.14	9685	83.25	46.52	74.60
14.167	Apr-7, 2022 5:50:05 AM	78.88	87.70	38.34	253.77	9729	83.29	46.70	74.44
14.250	Apr-7, 2022 5:55:05 AM	79.18	87.83	38.19	252.97	9662	83.51	46.66	74.72
14.333	Apr-7, 2022 6:00:05 AM	78.76	87.87	38.03	253.33	9635	83.32	46.27	74.48
14.417	Apr-7, 2022 6:05:05 AM	78.64	88.00	38.43	253.77	9751	83.32	46.44	74.56
14.500	Apr-7, 2022 6:10:05 AM	78.56	87.62	38.01	255.38	9707	83.09	46.66	74.56
14.583	Apr-7, 2022 6:15:05 AM	79.18	87.70	38.25	253.92	9713	83.44	46.39	74.80
14.667	Apr-7, 2022 6:20:05 AM	79.18	87.92	38.28	253.92	9720	83.55	46.18	74.68
14.750	Apr-7, 2022 6:25:05 AM	79.01	87.79	38.19	252.97	9662	83.40	46.39	74.76

500 ft Geothermal Loop									
Doylestown Community Center, Doylestown, PA									
Time (Hours)	Date/Time (EDT)	Loop Temps °F		Current (A)	Voltage (V)	Power (W)	Mean Temp (°F)	Air Temp (°F) AT	Box Temp (°F) BT
		In	Out						
14.833	Apr-7, 2022 6:30:05 AM	80.05	87.92	38.43	254.43	9776	83.99	46.18	74.64
14.917	Apr-7, 2022 6:35:05 AM	79.01	87.96	38.38	254.73	9776	83.49	45.84	74.44
15.000	Apr-7, 2022 6:40:05 AM	79.30	88.00	38.43	253.92	9757	83.65	45.89	74.76
15.083	Apr-7, 2022 6:45:05 AM	79.34	87.83	37.99	253.11	9614	83.59	45.80	74.60
15.167	Apr-7, 2022 6:50:05 AM	79.01	88.05	38.28	253.41	9700	83.53	45.84	74.68
15.250	Apr-7, 2022 6:55:05 AM	79.22	88.13	38.06	254.58	9689	83.68	46.44	74.80
15.333	Apr-7, 2022 7:00:05 AM	79.22	88.18	38.17	253.77	9686	83.70	45.93	74.60
15.417	Apr-7, 2022 7:05:05 AM	79.22	88.05	38.38	253.63	9733	83.64	46.18	75.00
15.500	Apr-7, 2022 7:10:05 AM	79.34	88.00	37.99	253.11	9614	83.67	45.89	74.60
15.583	Apr-7, 2022 7:15:05 AM	79.30	88.27	38.23	255.02	9749	83.79	45.54	74.56
15.667	Apr-7, 2022 7:20:05 AM	79.09	87.87	38.00	254.87	9685	83.48	45.67	74.84
15.750	Apr-7, 2022 7:25:05 AM	79.39	87.79	38.46	253.99	9769	83.59	46.27	74.80
15.833	Apr-7, 2022 7:30:05 AM	79.39	87.53	38.45	253.85	9760	83.46	46.18	74.76
15.917	Apr-7, 2022 7:35:05 AM	79.01	87.79	38.21	253.41	9682	83.40	45.84	74.60
16.000	Apr-7, 2022 7:40:05 AM	79.34	88.22	38.32	255.02	9771	83.78	45.63	74.52
16.083	Apr-7, 2022 7:45:05 AM	79.34	87.96	38.13	253.99	9685	83.65	46.35	74.72
16.167	Apr-7, 2022 7:50:05 AM	79.55	88.31	38.18	253.77	9689	83.93	46.18	74.68
16.250	Apr-7, 2022 7:55:05 AM	79.26	88.13	38.23	253.11	9676	83.70	45.37	74.84
16.333	Apr-7, 2022 8:00:05 AM	79.51	88.05	38.32	253.63	9718	83.78	45.93	74.68
16.417	Apr-7, 2022 8:05:05 AM	79.39	88.09	38.43	253.63	9746	83.74	45.67	74.84
16.500	Apr-7, 2022 8:10:05 AM	79.22	88.22	38.41	253.63	9743	83.72	45.50	74.92
16.583	Apr-7, 2022 8:15:05 AM	79.34	88.35	38.41	253.55	9740	83.85	45.72	75.00
16.667	Apr-7, 2022 8:20:05 AM	79.39	88.48	38.41	253.63	9743	83.94	45.59	74.84
16.750	Apr-7, 2022 8:25:05 AM	79.09	88.31	38.46	253.70	9758	83.70	45.54	74.92
16.833	Apr-7, 2022 8:30:05 AM	79.59	88.27	38.11	253.55	9662	83.93	45.76	74.96
16.917	Apr-7, 2022 8:35:05 AM	79.59	88.57	38.33	253.77	9726	84.08	45.67	75.12
17.000	Apr-7, 2022 8:40:05 AM	79.34	88.09	38.40	253.55	9736	83.72	45.63	74.88
17.083	Apr-7, 2022 8:45:05 AM	79.76	88.31	38.38	253.63	9733	84.04	45.93	74.96
17.167	Apr-7, 2022 8:50:05 AM	79.39	88.57	38.43	253.85	9754	83.98	45.84	74.92
17.250	Apr-7, 2022 8:55:05 AM	80.05	88.78	38.43	254.29	9771	84.42	45.63	74.96
17.333	Apr-7, 2022 9:00:05 AM	79.39	88.27	38.05	255.60	9725	83.83	45.67	75.00
17.417	Apr-7, 2022 9:05:05 AM	79.92	88.22	38.24	253.92	9710	84.07	45.76	75.16
17.500	Apr-7, 2022 9:10:05 AM	79.84	88.74	38.06	252.75	9619	84.29	45.63	75.00
17.583	Apr-7, 2022 9:15:05 AM	79.59	88.61	38.28	253.33	9697	84.10	45.41	75.08
17.667	Apr-7, 2022 9:20:05 AM	79.84	88.44	38.41	254.58	9779	84.14	45.76	74.84
17.750	Apr-7, 2022 9:25:05 AM	79.72	88.48	38.34	254.87	9771	84.10	45.24	74.76
17.833	Apr-7, 2022 9:30:05 AM	79.96	88.27	38.41	254.51	9776	84.12	45.24	75.00
17.917	Apr-7, 2022 9:35:05 AM	79.88	88.70	38.18	253.92	9695	84.29	45.20	74.96
18.000	Apr-7, 2022 9:40:05 AM	79.51	88.78	38.43	253.70	9748	84.15	45.63	75.16
18.083	Apr-7, 2022 9:45:05 AM	79.72	88.70	38.03	253.33	9635	84.21	45.54	75.04
18.167	Apr-7, 2022 9:50:05 AM	79.76	89.00	38.45	253.99	9766	84.38	45.50	75.16
18.250	Apr-7, 2022 9:55:05 AM	79.55	88.40	38.06	255.60	9728	83.98	45.24	75.24
18.333	Apr-7, 2022 10:00:05 AM	80.05	88.91	38.28	253.99	9722	84.48	45.06	75.41
18.417	Apr-7, 2022 10:05:05 AM	79.96	88.44	38.45	253.92	9763	84.20	45.20	75.20
18.500	Apr-7, 2022 10:10:05 AM	80.29	89.13	37.99	253.04	9612	84.71	44.98	75.28
18.583	Apr-7, 2022 10:15:05 AM	79.96	89.00	38.34	253.85	9732	84.48	44.89	75.45
18.667	Apr-7, 2022 10:20:05 AM	79.96	89.17	38.32	255.16	9776	84.57	44.58	74.92
18.750	Apr-7, 2022 10:25:05 AM	79.72	88.44	38.07	255.68	9734	84.08	45.02	75.20
18.833	Apr-7, 2022 10:30:05 AM	79.88	88.61	38.03	254.87	9694	84.25	45.06	75.41
18.917	Apr-7, 2022 10:35:05 AM	79.88	88.83	38.03	254.80	9691	84.36	45.24	75.41
19.000	Apr-7, 2022 10:40:05 AM	79.72	88.44	38.45	253.70	9755	84.08	45.50	75.20
19.083	Apr-7, 2022 10:45:05 AM	80.05	88.83	38.12	253.55	9665	84.44	45.54	75.24
19.167	Apr-7, 2022 10:50:05 AM	80.29	89.34	38.44	254.21	9771	84.82	45.41	75.20
19.250	Apr-7, 2022 10:55:05 AM	79.59	88.65	38.03	255.31	9710	84.12	45.50	75.16
19.333	Apr-7, 2022 11:00:05 AM	79.80	88.57	38.47	253.85	9767	84.19	45.24	75.16
19.417	Apr-7, 2022 11:05:05 AM	80.25	89.13	38.07	252.82	9625	84.69	45.93	75.16
19.500	Apr-7, 2022 11:10:05 AM	80.45	89.04	38.00	253.11	9618	84.75	45.59	75.24
19.583	Apr-7, 2022 11:15:05 AM	79.96	88.83	38.28	253.41	9700	84.40	45.63	75.16
19.667	Apr-7, 2022 11:20:05 AM	80.50	89.25	38.45	254.29	9777	84.88	45.80	75.20
19.750	Apr-7, 2022 11:25:05 AM	80.05	89.04	38.03	254.73	9688	84.55	45.93	75.33
19.833	Apr-7, 2022 11:30:05 AM	80.21	89.17	38.44	253.92	9760	84.69	46.31	75.20
19.917	Apr-7, 2022 11:35:05 AM	80.13	88.87	38.29	253.41	9703	84.50	46.10	75.45
20.000	Apr-7, 2022 11:40:05 AM	80.21	89.04	38.33	253.70	9724	84.63	46.01	75.41
20.083	Apr-7, 2022 11:45:05 AM	80.25	88.83	38.25	255.31	9767	84.54	45.76	75.00
20.167	Apr-7, 2022 11:50:05 AM	80.17	89.13	38.14	253.92	9686	84.65	46.10	75.12
20.250	Apr-7, 2022 11:55:05 AM	80.17	88.87	38.35	253.41	9719	84.52	46.14	74.92
20.333	Apr-7, 2022 12:00:05 PM	80.66	89.55	38.02	252.97	9618	85.11	46.27	75.24
20.417	Apr-7, 2022 12:05:05 PM	80.33	89.08	38.01	253.11	9621	84.71	46.27	75.08
20.500	Apr-7, 2022 12:10:05 PM	80.37	88.87	38.40	253.70	9742	84.62	46.66	75.20
20.583	Apr-7, 2022 12:15:05 PM	80.37	89.04	38.11	254.07	9682	84.71	46.61	75.24
20.667	Apr-7, 2022 12:20:05 PM	80.33	89.00	38.33	253.55	9718	84.67	46.79	75.57
20.750	Apr-7, 2022 12:25:05 PM	80.13	89.13	38.23	253.19	9679	84.63	46.27	75.04
20.833	Apr-7, 2022 12:30:05 PM	80.13	88.91	38.06	255.60	9728	84.52	47.00	75.33
20.917	Apr-7, 2022 12:35:05 PM	80.17	89.17	38.40	253.63	9739	84.67	47.09	75.24
21.000	Apr-7, 2022 12:40:05 PM	80.83	89.30	38.43	254.29	9771	85.07	46.92	75.24
21.083	Apr-7, 2022 12:45:05 PM	80.37	89.34	38.16	253.70	9680	84.86	47.22	75.16
21.167	Apr-7, 2022 12:50:05 PM	80.25	88.74	38.46	253.77	9761	84.50	47.52	75.28
21.250	Apr-7, 2022 12:55:05 PM	80.09	88.78	38.21	253.55	9687	84.44	47.13	75.24
21.333	Apr-7, 2022 1:00:05 PM	80.01	88.83	38.00	255.09	9693	84.42	47.81	75.24
21.417	Apr-7, 2022 1:05:05 PM	80.70	89.25	38.46	253.99	9769	84.98	47.69	75.33
21.500	Apr-7, 2022 1:10:05 PM	80.41	89.42	38.08	253.63	9659	84.92	47.64	75.41
21.583	Apr-7, 2022 1:15:05 PM	80.54	89.13	38.23	255.60	9772	84.84	47.47	75.24
21.667	Apr-7, 2022 1:20:05 PM	80.33	89.30	38.43	253.77	9751	84.82	47.60	75.41
21.750	Apr-7, 2022 1:25:05 PM	80.37	89.25	38.05	253.41	9641	84.81	47.30	75.37
21.833	Apr-7, 2022 1:30:05 PM	80.45	89.55	38.30	253.55	9712	85.00	47.94	75.66
21.917	Apr-7, 2022 1:35:05 PM	80.25	89.30	38.02	255.09	9699	84.78	47.39	75.49
22.000	Apr-7, 2022 1:40:05 PM	80.74	89.00	38.45	253.92	9763	84.87	48.02	75.53
22.083	Apr-7, 2022 1:45:05 PM	80.96	89.47	37.99	253.11	9614	85.22	47.98	75.62
22.167	Apr-7, 2022 1:50:05 PM	80.29	89.34	38.43	253.70	9748	84.82	47.85	75.49

500 ft Geothermal Loop									
Doylestown Community Center, Doylestown, PA									
Time (Hours)	Date/Time (EDT)	Loop Temp °F		Current (A)	Voltage (V)	Power (W)	Mean Temp (°F)	Air Temp (°F) AT	Box Temp (°F) BT
		In	Out						
22.250	Apr-7, 2022 1:55:05 PM	80.62	89.42	38.07	254.58	9692	85.02	48.32	75.66
22.333	Apr-7, 2022 2:00:05 PM	80.58	89.55	38.08	253.48	9653	85.07	48.19	75.62
22.417	Apr-7, 2022 2:05:05 PM	80.66	89.47	38.27	255.16	9764	85.07	48.58	75.37
22.500	Apr-7, 2022 2:10:05 PM	80.50	89.30	38.13	253.85	9680	84.90	48.62	75.49
22.583	Apr-7, 2022 2:15:05 PM	80.66	89.68	38.08	252.82	9628	85.17	48.71	75.66
22.667	Apr-7, 2022 2:20:05 PM	80.66	89.47	38.07	253.48	9650	85.07	48.62	75.70
22.750	Apr-7, 2022 2:25:05 PM	80.66	89.47	38.40	254.73	9782	85.07	48.83	75.45
22.833	Apr-7, 2022 2:30:05 PM	80.58	89.90	38.41	253.85	9751	85.24	48.92	75.74
22.917	Apr-7, 2022 2:35:05 PM	80.66	89.34	38.03	253.26	9632	85.00	49.30	75.62
23.000	Apr-7, 2022 2:40:05 PM	80.33	89.00	38.03	255.53	9719	84.67	49.51	75.78
23.083	Apr-7, 2022 2:45:05 PM	80.79	89.51	38.38	253.70	9736	85.15	49.59	76.07
23.167	Apr-7, 2022 2:50:05 PM	80.83	89.64	37.99	253.11	9614	85.24	49.59	75.74
23.250	Apr-7, 2022 2:55:05 PM	80.87	89.38	38.07	254.21	9678	85.13	49.93	75.95
23.333	Apr-7, 2022 3:00:05 PM	80.66	89.72	38.14	252.89	9646	85.19	49.89	75.99
23.417	Apr-7, 2022 3:05:05 PM	80.62	89.21	38.40	253.63	9739	84.92	49.76	75.90
23.500	Apr-7, 2022 3:10:05 PM	80.70	89.68	38.02	254.58	9680	85.19	50.01	76.11
23.583	Apr-7, 2022 3:15:05 PM	81.00	89.86	38.25	253.99	9716	85.43	50.14	76.15
23.667	Apr-7, 2022 3:20:05 PM	81.17	89.81	38.01	252.82	9610	85.49	50.09	75.99
23.750	Apr-7, 2022 3:25:05 PM	80.87	89.38	38.40	253.77	9745	85.13	50.48	76.03
23.833	Apr-7, 2022 3:30:05 PM	80.74	89.81	38.02	254.80	9688	85.28	50.48	76.27
23.917	Apr-7, 2022 3:35:05 PM	80.62	89.72	38.43	253.77	9751	85.17	50.52	76.27
24.000	Apr-7, 2022 3:40:05 PM	80.91	89.99	38.00	253.26	9623	85.45	51.02	75.99
24.083	Apr-7, 2022 3:45:05 PM	80.83	89.99	38.43	254.07	9763	85.41	50.77	76.23
24.167	Apr-7, 2022 3:50:05 PM	80.79	89.77	38.01	254.73	9682	85.28	51.19	76.43
24.250	Apr-7, 2022 3:55:05 PM	80.91	89.38	38.02	253.26	9629	85.15	51.02	76.23
24.333	Apr-7, 2022 4:00:05 PM	80.74	89.64	38.14	253.48	9669	85.19	51.40	76.43
24.417	Apr-7, 2022 4:05:05 PM	80.96	89.64	38.22	255.75	9774	85.30	51.23	76.23
24.500	Apr-7, 2022 4:10:05 PM	81.08	90.12	38.44	254.14	9768	85.60	51.72	76.47
24.583	Apr-7, 2022 4:15:05 PM	80.83	89.81	38.07	253.63	9656	85.32	51.68	76.43
24.667	Apr-7, 2022 4:20:05 PM	80.66	89.64	38.18	253.33	9672	85.15	51.68	76.31
24.750	Apr-7, 2022 4:25:05 PM	80.79	90.08	38.41	253.92	9754	85.44	51.64	76.52
24.833	Apr-7, 2022 4:30:05 PM	80.74	90.04	38.39	253.70	9739	85.39	51.52	76.52
24.917	Apr-7, 2022 4:35:05 PM	81.17	89.95	37.96	253.04	9606	85.56	51.64	76.47
25.000	Apr-7, 2022 4:40:05 PM	81.00	89.72	38.24	255.38	9766	85.36	51.60	76.43
25.083	Apr-7, 2022 4:45:05 PM	81.08	89.86	38.08	254.21	9681	85.47	52.10	76.68
25.167	Apr-7, 2022 4:50:05 PM	80.62	89.59	38.43	253.85	9754	85.11	52.15	76.72
25.250	Apr-7, 2022 4:55:05 PM	80.83	89.81	38.25	253.48	9697	85.32	52.02	76.64
25.333	Apr-7, 2022 5:00:05 PM	80.96	89.99	38.01	254.73	9682	85.48	52.44	76.96
25.417	Apr-7, 2022 5:05:05 PM	80.96	89.68	38.36	253.63	9730	85.32	52.10	76.64
25.500	Apr-7, 2022 5:10:05 PM	81.00	89.77	38.38	253.70	9736	85.39	52.31	77.08
25.583	Apr-7, 2022 5:15:05 PM	81.12	90.17	38.08	253.63	9659	85.65	52.36	76.96
25.667	Apr-7, 2022 5:20:05 PM	80.66	89.55	37.99	255.31	9698	85.11	52.23	76.92
25.750	Apr-7, 2022 5:25:05 PM	80.62	89.81	38.41	253.70	9745	85.22	52.36	77.00
25.833	Apr-7, 2022 5:30:05 PM	81.17	90.04	38.33	253.55	9718	85.61	52.53	77.25
25.917	Apr-7, 2022 5:35:05 PM	81.17	89.81	38.08	253.70	9662	85.49	52.57	77.04
26.000	Apr-7, 2022 5:40:05 PM	80.87	89.90	38.06	255.75	9734	85.39	52.69	77.08
26.083	Apr-7, 2022 5:45:05 PM	81.33	89.64	38.43	253.99	9760	85.49	52.86	77.04
26.167	Apr-7, 2022 5:50:05 PM	81.54	90.26	37.96	252.82	9597	85.90	52.94	77.08
26.250	Apr-7, 2022 5:55:05 PM	80.91	90.08	38.40	253.70	9742	85.50	53.19	77.04
26.333	Apr-7, 2022 6:00:05 PM	81.12	90.08	38.10	252.75	9629	85.60	53.39	77.21
26.417	Apr-7, 2022 6:05:05 PM	81.00	89.59	38.41	253.63	9743	85.30	53.35	77.12
26.500	Apr-7, 2022 6:10:05 PM	81.08	89.30	38.08	253.55	9656	85.19	54.02	77.29
26.583	Apr-7, 2022 6:15:05 PM	81.17	90.26	37.94	253.26	9608	85.72	53.47	77.12
26.667	Apr-7, 2022 6:20:05 PM	81.21	89.99	38.05	252.89	9621	85.60	53.60	77.29
26.750	Apr-7, 2022 6:25:05 PM	81.12	90.43	38.19	253.48	9681	85.78	53.89	77.41
26.833	Apr-7, 2022 6:30:05 PM	81.21	89.77	38.06	253.99	9667	85.49	54.02	77.29
26.917	Apr-7, 2022 6:35:05 PM	80.96	89.86	38.35	253.85	9736	85.41	54.06	77.37
27.000	Apr-7, 2022 6:40:05 PM	81.38	90.56	38.07	253.63	9656	85.97	54.10	77.29
27.083	Apr-7, 2022 6:45:05 PM	81.50	90.21	38.14	253.92	9686	85.86	54.27	77.46
27.167	Apr-7, 2022 6:50:05 PM	81.38	89.68	38.03	253.63	9647	85.53	54.56	77.66
27.250	Apr-7, 2022 6:55:05 PM	81.29	90.04	37.97	254.58	9667	85.67	54.72	77.66
27.333	Apr-7, 2022 7:00:05 PM	81.25	89.95	38.33	253.77	9726	85.60	54.43	77.79
27.417	Apr-7, 2022 7:05:05 PM	81.12	89.68	38.29	253.55	9709	85.40	54.27	77.41
27.500	Apr-7, 2022 7:10:05 PM	81.75	89.95	37.89	253.04	9587	85.85	54.23	77.74
27.583	Apr-7, 2022 7:15:05 PM	81.00	90.52	38.13	253.70	9674	85.76	54.51	77.58
27.667	Apr-7, 2022 7:20:05 PM	81.25	90.61	38.21	253.63	9690	85.93	53.85	77.91
27.750	Apr-7, 2022 7:25:05 PM	81.42	90.96	38.25	253.99	9716	86.19	53.68	78.03
27.833	Apr-7, 2022 7:30:05 PM	81.42	90.34	38.01	253.55	9637	85.88	53.15	77.87
27.917	Apr-7, 2022 7:35:05 PM	81.42	91.09	37.97	252.67	9595	86.26	53.19	77.83
28.000	Apr-7, 2022 7:40:05 PM	81.33	89.90	37.94	253.33	9611	85.62	52.86	77.74
28.083	Apr-7, 2022 7:45:05 PM	81.46	90.52	38.32	254.58	9754	85.99	52.06	77.70
28.167	Apr-7, 2022 7:50:05 PM	81.38	90.48	38.01	253.85	9649	85.93	51.60	77.91
28.250	Apr-7, 2022 7:55:05 PM	81.17	90.34	38.30	253.48	9709	85.76	51.19	77.79
28.333	Apr-7, 2022 8:00:05 PM	81.54	90.56	37.90	253.11	9593	86.05	51.36	77.83
28.417	Apr-7, 2022 8:05:05 PM	81.67	90.69	38.28	253.92	9720	86.18	50.82	78.11
28.500	Apr-7, 2022 8:10:05 PM	81.50	89.86	38.22	255.31	9757	85.68	50.39	77.83
28.583	Apr-7, 2022 8:15:05 PM	81.71	90.39	38.13	253.85	9680	86.05	50.52	78.11
28.667	Apr-7, 2022 8:20:05 PM	81.71	90.61	38.33	253.85	9729	86.16	50.44	78.11
28.750	Apr-7, 2022 8:25:05 PM	81.42	90.69	37.99	253.41	9626	86.06	50.14	78.15
28.833	Apr-7, 2022 8:30:05 PM	81.71	90.61	38.30	253.99	9729	86.16	50.61	78.19
28.917	Apr-7, 2022 8:35:05 PM	81.08	89.95	37.96	255.46	9698	85.52	50.48	78.07
29.000	Apr-7, 2022 8:40:05 PM	81.54	90.87	38.24	253.48	9694	86.21	50.61	78.40
29.083	Apr-7, 2022 8:45:05 PM	81.83	90.56	37.94	252.82	9591	86.20	50.56	78.07
29.167	Apr-7, 2022 8:50:05 PM	81.92	90.74	38.35	254.36	9755	86.33	50.56	78.11
29.250	Apr-7, 2022 8:55:05 PM	81.21	90.04	37.94	255.02	9675	85.63	50.44	78.19
29.333	Apr-7, 2022 9:00:05 PM	81.63	90.56	37.99	254.43	9665	86.10	50.05	78.28
29.417	Apr-7, 2022 9:05:05 PM	81.46	90.65	38.10	252.97	9637	86.06	50.09	78.24
29.500	Apr-7, 2022 9:10:05 PM	81.42	90.43	38.18	253.33	9672	85.93	49.84	78.11
29.583	Apr-7, 2022 9:15:05 PM	81.63	90.30	38.30	254.51	9748	85.97	50.01	77.91

**500 ft Geothermal Loop**

Doylestown Community Center, Doylestown, PA

Time (Hours)	Date/Time (EDT)	Loop Temp °F		Current (A)	Voltage (V)	Power (W)	Mean Temp (°F)	Air Temp (°F) AT	Box Temp (°F) BT
		In	Out						
29.667	Apr-7, 2022 9:20:05 PM	81.75	90.74	38.12	253.70	9671	86.25	49.93	78.03
29.750	Apr-7, 2022 9:25:05 PM	81.54	90.96	38.32	253.70	9721	86.25	50.01	78.32
29.833	Apr-7, 2022 9:30:05 PM	81.58	90.61	38.17	253.26	9666	86.10	50.27	78.32
29.917	Apr-7, 2022 9:35:05 PM	81.58	90.34	38.06	255.75	9734	85.96	50.05	78.07
30.000	Apr-7, 2022 9:40:05 PM	81.67	90.96	37.99	254.36	9662	86.32	50.09	78.19
30.083	Apr-7, 2022 9:45:05 PM	82.00	90.78	37.95	252.97	9600	86.39	49.93	78.03
30.167	Apr-7, 2022 9:50:05 PM	81.38	90.34	38.13	253.55	9668	85.86	49.93	78.03
30.250	Apr-7, 2022 9:55:05 PM	81.50	90.26	38.29	254.58	9748	85.88	49.89	77.87
30.333	Apr-7, 2022 10:00:05 PM	81.21	90.21	37.95	255.31	9689	85.71	49.89	78.03
30.417	Apr-7, 2022 10:05:05 PM	81.75	90.87	38.33	253.70	9724	86.31	49.89	78.32
30.500	Apr-7, 2022 10:10:05 PM	81.71	90.48	38.27	253.92	9717	86.10	49.68	78.36
30.583	Apr-7, 2022 10:15:05 PM	81.75	90.39	38.13	255.60	9747	86.07	49.51	77.99
30.667	Apr-7, 2022 10:20:05 PM	82.00	91.09	38.16	253.85	9686	86.55	49.59	78.15
30.750	Apr-7, 2022 10:25:05 PM	81.67	90.74	38.16	253.11	9658	86.21	49.84	78.24
30.833	Apr-7, 2022 10:30:05 PM	81.42	90.56	38.36	253.85	9739	85.99	49.64	78.03
30.917	Apr-7, 2022 10:35:05 PM	81.38	90.65	37.94	255.02	9675	86.02	49.59	78.03
31.000	Apr-7, 2022 10:40:05 PM	81.50	90.39	38.33	253.55	9718	85.95	49.34	77.99
31.083	Apr-7, 2022 10:45:05 PM	81.71	90.74	38.05	252.89	9621	86.23	49.55	78.11
31.167	Apr-7, 2022 10:50:05 PM	81.46	90.69	38.35	253.77	9733	86.08	49.34	78.03
31.250	Apr-7, 2022 10:55:05 PM	81.67	91.09	37.95	254.80	9669	86.38	49.43	78.24
31.333	Apr-7, 2022 11:00:05 PM	81.67	90.56	38.27	253.48	9700	86.12	49.34	77.70
31.417	Apr-7, 2022 11:05:05 PM	81.83	90.61	38.02	252.97	9618	86.22	49.39	78.03
31.500	Apr-7, 2022 11:10:05 PM	81.79	90.65	38.36	253.99	9744	86.22	49.51	77.99
31.583	Apr-7, 2022 11:15:05 PM	81.46	90.48	37.97	255.24	9692	85.97	49.18	78.03
31.667	Apr-7, 2022 11:20:05 PM	82.00	90.87	38.22	253.99	9707	86.44	49.26	78.19
31.750	Apr-7, 2022 11:25:05 PM	82.08	90.87	37.91	253.11	9596	86.48	49.18	77.95
31.833	Apr-7, 2022 11:30:05 PM	81.58	90.52	38.17	253.48	9675	86.05	49.51	77.79
31.917	Apr-7, 2022 11:35:05 PM	81.75	90.87	37.96	254.87	9675	86.31	49.34	78.19
32.000	Apr-7, 2022 11:40:05 PM	81.88	90.87	38.27	253.63	9705	86.38	49.39	78.28
32.083	Apr-7, 2022 11:45:05 PM	81.88	90.91	38.24	253.77	9705	86.40	49.30	78.19
32.167	Apr-7, 2022 11:50:05 PM	82.25	90.83	38.38	254.58	9770	86.54	49.09	77.95
32.250	Apr-7, 2022 11:55:05 PM	81.88	91.22	37.99	254.51	9668	86.55	49.18	78.11
32.333	Apr-8, 2022 12:00:05 AM	82.12	90.61	38.38	254.07	9750	86.37	49.22	78.07
32.417	Apr-8, 2022 12:05:05 AM	81.67	90.87	38.13	253.41	9663	86.27	50.18	77.79
32.500	Apr-8, 2022 12:10:05 AM	81.54	90.56	37.94	255.02	9675	86.05	49.59	77.99
32.583	Apr-8, 2022 12:15:05 AM	81.83	90.69	38.30	253.70	9717	86.26	49.47	77.74
32.667	Apr-8, 2022 12:20:05 AM	81.92	90.78	38.16	253.11	9658	86.35	49.01	78.19
32.750	Apr-8, 2022 12:25:05 AM	81.79	90.78	37.95	253.26	9611	86.29	48.83	77.91
32.833	Apr-8, 2022 12:30:05 AM	81.92	90.78	38.25	254.80	9747	86.35	48.66	77.70
32.917	Apr-8, 2022 12:35:05 AM	81.88	91.13	38.25	254.73	9744	86.51	48.66	77.74
33.000	Apr-8, 2022 12:40:05 AM	81.58	90.26	38.38	253.70	9736	85.92	48.83	77.95
33.083	Apr-8, 2022 12:45:05 AM	81.96	90.87	37.96	253.41	9620	86.42	48.66	77.87
33.167	Apr-8, 2022 12:50:05 AM	82.33	91.09	38.36	254.29	9756	86.71	48.66	78.03
33.250	Apr-8, 2022 12:55:05 AM	81.88	91.30	37.97	254.95	9681	86.59	48.79	78.15
33.333	Apr-8, 2022 1:00:05 AM	81.92	90.69	38.33	253.70	9724	86.31	48.62	78.15
33.417	Apr-8, 2022 1:05:05 AM	81.88	90.96	38.08	253.63	9659	86.42	48.71	78.07
33.500	Apr-8, 2022 1:10:05 AM	82.04	90.52	38.33	254.58	9757	86.28	48.49	77.79
33.583	Apr-8, 2022 1:15:05 AM	81.75	90.26	37.96	255.38	9694	86.01	48.40	78.03
33.667	Apr-8, 2022 1:20:05 AM	82.21	90.48	38.38	253.99	9747	86.35	48.49	77.95
33.750	Apr-8, 2022 1:25:05 AM	81.88	91.30	37.99	253.41	9626	86.59	48.40	77.91
33.833	Apr-8, 2022 1:30:05 AM	81.83	91.30	37.96	255.02	9681	86.57	48.49	78.03
33.917	Apr-8, 2022 1:35:05 AM	82.29	91.17	38.16	253.92	9689	86.73	48.45	77.95
34.000	Apr-8, 2022 1:40:05 AM	82.33	91.13	37.91	253.11	9596	86.73	48.53	77.87
34.083	Apr-8, 2022 1:45:05 AM	82.16	90.52	38.03	253.55	9644	86.34	48.66	78.03
34.167	Apr-8, 2022 1:50:05 AM	82.08	91.75	38.14	255.38	9741	86.92	48.32	77.74
34.250	Apr-8, 2022 1:55:05 AM	82.16	90.69	38.35	253.70	9730	86.43	48.49	77.87
34.333	Apr-8, 2022 2:00:05 AM	82.04	91.30	38.17	253.11	9661	86.67	48.66	78.07
34.417	Apr-8, 2022 2:05:05 AM	82.16	90.69	38.34	254.73	9766	86.43	48.27	77.66
34.500	Apr-8, 2022 2:10:05 AM	82.21	90.87	38.01	254.07	9657	86.54	48.49	77.87
34.583	Apr-8, 2022 2:15:05 AM	82.04	90.52	38.18	253.33	9672	86.28	48.32	78.07
34.667	Apr-8, 2022 2:20:05 AM	82.16	91.48	38.01	252.75	9607	86.82	48.32	77.87
34.750	Apr-8, 2022 2:25:05 AM	82.33	91.13	38.34	254.58	9760	86.73	48.23	77.70
34.833	Apr-8, 2022 2:30:05 AM	82.29	91.35	38.13	253.85	9680	86.82	47.69	77.70
34.917	Apr-8, 2022 2:35:05 AM	82.16	91.13	38.25	253.55	9699	86.65	47.47	78.07
35.000	Apr-8, 2022 2:40:05 AM	82.33	91.39	38.28	253.85	9717	86.86	47.56	77.95
35.083	Apr-8, 2022 2:45:05 AM	82.16	90.91	38.07	255.75	9737	86.54	47.26	77.74
35.167	Apr-8, 2022 2:50:05 AM	82.16	91.00	38.34	253.85	9732	86.58	46.79	77.83
35.250	Apr-8, 2022 2:55:05 AM	82.04	90.61	37.96	253.26	9614	86.33	46.92	77.70
35.333	Apr-8, 2022 3:00:05 AM	82.12	91.22	38.28	254.73	9751	86.67	47.05	77.50
35.417	Apr-8, 2022 3:05:05 AM	82.21	90.87	38.06	255.60	9728	86.54	46.96	77.70
35.500	Apr-8, 2022 3:10:05 AM	81.79	90.83	38.35	253.63	9727	86.31	46.83	77.79
35.583	Apr-8, 2022 3:15:05 AM	82.00	91.04	38.17	253.41	9672	86.52	46.66	77.54
35.667	Apr-8, 2022 3:20:05 AM	82.16	90.69	38.27	255.02	9759	86.43	46.18	77.46
35.750	Apr-8, 2022 3:25:05 AM	82.04	90.74	38.30	253.33	9703	86.39	46.35	77.50
35.833	Apr-8, 2022 3:30:05 AM	82.25	90.34	37.96	253.26	9614	86.30	46.23	77.58
35.917	Apr-8, 2022 3:35:05 AM	82.37	91.09	38.33	253.85	9729	86.73	46.74	77.70
36.000	Apr-8, 2022 3:40:05 AM	82.08	91.04	38.02	255.75	9724	86.56	46.57	77.70
36.083	Apr-8, 2022 3:45:05 AM	82.16	91.30	38.11	252.89	9637	86.73	46.87	77.79
36.167	Apr-8, 2022 3:50:05 AM	82.25	91.61	38.24	253.70	9702	86.93	46.74	77.87
36.250	Apr-8, 2022 3:55:05 AM	82.00	91.13	38.00	255.68	9715	86.57	46.79	77.70
36.333	Apr-8, 2022 4:00:05 AM	82.16	91.75	38.08	253.85	9667	86.96	46.74	77.50
36.417	Apr-8, 2022 4:05:05 AM	82.21	91.30	38.08	252.97	9634	86.76	47.05	77.66
36.500	Apr-8, 2022 4:10:05 AM	82.04	91.48	38.34	253.70	9727	86.76	47.18	77.54
36.583	Apr-8, 2022 4:15:05 AM	82.16	91.30	37.96	254.95	9678	86.73	47.09	77.70
36.667	Apr-8, 2022 4:20:05 AM	82.54	90.87	38.38	253.99	9747	86.71	47.30	77.62
36.750	Apr-8, 2022 4:25:05 AM	82.33	91.52	38.27	253.85	9714	86.93	47.30	77.83
36.833	Apr-8, 2022 4:30:05 AM	82.50	91.35	38.14	253.85	9683	86.93	47.22	77.58
36.917	Apr-8, 2022 4:35:05 AM	82.21	90.91	38.30	253.63	9715	86.56	47.30	77.33
37.000	Apr-8, 2022 4:40:05 AM	82.12	91.13	38.18	253.33	9672	86.63	47.13	77.37

**500 ft Geothermal Loop**

Doylestown Community Center, Doylestown, PA

Time (Hours)	Date/Time (EDT)	Loop Temps °F		Current (A)	Voltage (V)	Power (W)	Mean Temp (°F)	Air Temp (°F) AT	Box Temp (°F) BT
		In	Out						
37.083	Apr-8, 2022 4:45:05 AM	82.33	91.39	38.03	253.92	9658	86.86	47.35	77.54
37.167	Apr-8, 2022 4:50:05 AM	82.54	91.00	38.40	253.99	9753	86.77	47.30	77.54
37.250	Apr-8, 2022 4:55:05 AM	82.75	92.24	37.95	252.97	9600	87.50	46.83	77.58
37.333	Apr-8, 2022 5:00:05 AM	82.58	91.22	38.30	253.70	9717	86.90	47.05	77.62
37.417	Apr-8, 2022 5:05:05 AM	82.33	91.48	37.99	254.73	9676	86.91	46.74	77.74
37.500	Apr-8, 2022 5:10:05 AM	82.29	91.26	38.28	253.41	9700	86.78	46.14	77.29
37.583	Apr-8, 2022 5:15:05 AM	82.25	91.66	38.23	253.55	9693	86.96	46.18	77.62
37.667	Apr-8, 2022 5:20:05 AM	82.75	91.97	38.35	254.29	9753	87.36	45.72	77.54
37.750	Apr-8, 2022 5:25:05 AM	82.00	91.00	37.94	255.09	9677	86.50	45.72	77.50
37.833	Apr-8, 2022 5:30:05 AM	82.67	91.13	38.36	253.92	9741	86.90	45.67	77.62
37.917	Apr-8, 2022 5:35:05 AM	82.45	91.61	38.08	253.70	9662	87.03	45.76	77.70
38.000	Apr-8, 2022 5:40:05 AM	82.00	91.13	37.95	255.16	9683	86.57	45.28	77.54
38.083	Apr-8, 2022 5:45:05 AM	82.29	91.61	38.34	253.70	9727	86.95	44.71	77.54
38.167	Apr-8, 2022 5:50:05 AM	82.45	91.22	38.02	252.82	9613	86.84	44.93	77.62
38.250	Apr-8, 2022 5:55:05 AM	82.58	91.70	38.28	253.92	9720	87.14	44.37	77.79
38.333	Apr-8, 2022 6:00:05 AM	82.45	90.96	38.08	255.75	9740	86.71	44.45	77.46
38.417	Apr-8, 2022 6:05:05 AM	82.67	91.22	38.14	253.70	9677	86.95	44.28	77.54
38.500	Apr-8, 2022 6:10:05 AM	82.41	91.70	38.16	253.11	9658	87.06	44.11	77.70
38.583	Apr-8, 2022 6:15:05 AM	82.58	91.09	38.33	253.70	9724	86.84	44.11	77.54
38.667	Apr-8, 2022 6:20:05 AM	82.50	91.22	38.18	255.68	9762	86.86	43.89	77.29
38.750	Apr-8, 2022 6:25:05 AM	82.58	91.93	38.27	253.70	9708	87.26	43.85	77.41
38.833	Apr-8, 2022 6:30:05 AM	82.50	91.04	38.28	253.55	9705	86.77	44.24	77.79
38.917	Apr-8, 2022 6:35:05 AM	82.71	91.52	37.94	253.26	9608	87.12	44.02	77.37
39.000	Apr-8, 2022 6:40:05 AM	82.75	91.13	38.33	253.92	9732	86.94	43.98	77.50
39.083	Apr-8, 2022 6:45:05 AM	82.25	91.13	38.00	255.60	9712	86.69	43.45	77.54
39.167	Apr-8, 2022 6:50:05 AM	82.71	92.33	38.36	253.92	9741	87.52	43.41	77.50
39.250	Apr-8, 2022 6:55:05 AM	82.84	91.93	37.94	252.82	9591	87.39	43.19	77.37
39.333	Apr-8, 2022 7:00:05 AM	82.41	92.01	38.38	253.99	9747	87.21	43.23	77.41
39.417	Apr-8, 2022 7:05:05 AM	82.54	91.22	38.24	255.02	9752	86.88	43.19	77.12
39.500	Apr-8, 2022 7:10:05 AM	82.16	90.34	37.94	255.16	9680	86.25	43.80	77.37
39.583	Apr-8, 2022 7:15:05 AM	82.58	91.22	38.38	253.77	9739	86.90	43.80	77.37
39.667	Apr-8, 2022 7:20:05 AM	82.62	91.61	38.05	253.55	9647	87.12	44.06	77.50
39.750	Apr-8, 2022 7:25:05 AM	82.92	91.43	38.33	254.29	9746	87.18	44.45	77.33
39.833	Apr-8, 2022 7:30:05 AM	82.12	91.09	37.96	255.24	9689	86.61	44.58	77.29
39.917	Apr-8, 2022 7:35:05 AM	82.21	91.48	38.38	253.70	9736	86.85	44.89	77.33
40.000	Apr-8, 2022 7:40:05 AM	82.54	90.87	38.07	253.55	9653	86.71	45.15	77.50
40.083	Apr-8, 2022 7:45:05 AM	82.58	91.22	38.06	253.99	9667	86.90	45.50	77.37
40.167	Apr-8, 2022 7:50:05 AM	82.58	91.97	38.16	253.04	9655	87.28	45.93	77.54
40.250	Apr-8, 2022 7:55:05 AM	82.62	91.48	38.01	253.41	9632	87.05	46.23	77.54
40.333	Apr-8, 2022 8:00:05 AM	82.58	91.75	38.30	254.58	9751	87.17	46.44	77.21
40.417	Apr-8, 2022 8:05:05 AM	82.62	91.26	38.28	253.55	9705	86.94	46.92	77.29
40.500	Apr-8, 2022 8:10:05 AM	82.58	91.39	38.07	252.89	9628	86.99	47.26	77.58
40.583	Apr-8, 2022 8:15:05 AM	82.45	91.66	38.18	253.33	9672	87.06	47.43	77.54
40.667	Apr-8, 2022 8:20:05 AM	82.58	91.75	38.08	253.92	9670	87.17	47.52	77.54
40.750	Apr-8, 2022 8:25:05 AM	82.58	91.04	38.11	253.04	9643	86.81	48.53	77.74
40.833	Apr-8, 2022 8:30:05 AM	82.45	91.22	38.08	253.48	9653	86.84	48.71	77.79
40.917	Apr-8, 2022 8:35:05 AM	82.33	91.17	37.94	255.09	9677	86.75	48.71	77.79
41.000	Apr-8, 2022 8:40:05 AM	82.41	90.87	38.35	253.70	9730	86.64	49.34	77.79
41.083	Apr-8, 2022 8:45:05 AM	82.67	91.30	38.23	255.02	9749	86.99	49.64	77.58

(/)



## XR5-SE Data Logger ([data-loggers-xr5.htm](#))

### Specifications

Note: Specifications are also listed in the XR5-SE User's Guide ([XR5-SE.pdf](#))

**Overall dimensions:** 4.88" length, 2.21" width, 1.28" height. (124mm x 56.2mm x 32.5mm). Length includes mounting ears, width includes detachable terminal block.

**Weight** (with batteries): 4.2 ounces; 120 grams

**Mounting:** Two 0.187" dia. mounting holes on enclosure centerline, spaced 4.5" (114.3mm) apart.

**Input termination:** Detachable 20 position screw terminal block.

**Screw terminals:** 20

**Recommended Screw Terminal Wire Size:** 16 to 28 awg, solid or stranded. Use stranded wire if multiple wires are terminated in a single terminal block.

**Operating limits:** -40 to 78°C (-40 to 172°F); 5-90% R.H. non-condensing

**Altitude:** No limitations, the XR5 is suitable for use in a vacuum environment.

**Case material:** Tough, flame retardant ABS plastic; Flammability rating UL 94V-O

**IP Protection rating:** IP50

## Analog Inputs

**Resolution:** 12 bits (1 part in 4096, 0.024% F.S.)

**Temperature Resolution:** 0.02°C at 25°C (12 bits); 0.06°C or better from -25 to 75°C

**Temperature Accuracy:** ± 0.15°C from 10 to 40°C; ± 0.3°C from -25 to 85°C

Temperature accuracy is valid over the full operating temperature range of the XR5 Data Logger (-40 to 78°C) and assumes use of Pace PT9xx series Temperature Probes.

### Vdc Ranges: 0-5 V and 0-2.5 V

Either range is selectable for each analog channel (1-8).

**Accuracy, 0-2.5 V range:** ± 0.15% F.S. (10-40°C); ± 0.20% F.S. (0-60°C)

**Accuracy, 0-5 V range:** ± 0.35% F.S. (10-40°C); ± 0.40% F.S. (0-60°C)

**Repeatability:** ± 0.05% F.S. for <10°C ambient temperature change.

**Input impedance:** >10Mohm (for all logging modes and when inactive or not logging).

### Resistance Range

(Two wire resistance)

Resistance range is selectable for each analog channel (1-8).

**Resolution at 30k ohms:** Better than 0.1% of reading (2 wire resistance).

**Accuracy at 30k ohms:** ±0.15% of reading.

**Useable range:** Approx. 100 ohms to 1.5 Mohms (measurements near 30k midpoint have highest resolution).

### Potentiometers

A potentiometer can be read by connecting its wiper to an analog input, selecting the 0-2.5 Vdc range and connecting the other leads to terminals C and D. Wired in this way, a potentiometer from 500 ohms (or lower) to 100k ohms (or higher) can be used. Power draw from the D terminal will be about 5 ma for a 500 ohm potentiometer, and about 0.025 ma for a 100k potentiometer. In either case, potentiometer resolution would be 1 part in 4096 or 0.024%.

### Optional Millivolt Ranges

**Accuracy, "Half-Range" selected:** ± 0.45% F.S. (10-40°C); ± 0.50% F.S. (0-60°C)

**Accuracy, "Full-Range" selected:**  $\pm 0.65\%$  F.S. (10-40°C);  $\pm 0.70\%$  F.S. (0-60°C)

**Input impedance:** >10Mohm (for all range selections and logging modes and when inactive or not logging).

**Input offset:** 5uV max. at 25°C, 10uV max. from -40 to 60°C.

**Offset voltage drift:** 0.02uV/°C max.

**Millivolt resolution:** See XR5 Data Logger Millivolt Range Table. (/data-loggers-xr5.htm#mvttable)

**Thermocouple accuracy:** See tables in XR5-SE User's Guide (/XR5-SE.pdf) starting on page 97.

## Pulse Inputs

Three Pulse inputs (X, Y and Z) accept voltage pulses or unpowered contact closures.

Alternate functions: Ch X: External Trigger, Ch Y: Peak Count (2 second window), Ch Z: Alarm Output.

Pulse Inputs are disabled if Fast Logging is active (2Hz to 1000Hz) see page 33 of XR5-SE User's Guide for details. (/XR5-SE.pdf)

Pulse Type (selected in setup)	Maximum Rate	Minimum Hold Time	Debounce Time
Mechanical Switch	15 Hz	30 ms	30 ms
Solid State Switch	900 Hz	0.5 ms	0.5 ms

**Maximum count per Log Interval:** 16,777,215

**Active edge:** Falling edge

**Input Type:** Schmitt Trigger

**Dry contact: Bias voltage from XR5:** 3.3 V

**Current when contact is closed:** 3.3 microamps

### Voltage Pulse

**Positive range:** 2.3 to 18 V

**Negative range:** -18 to 0.8 V

**Alarm Output** (select on Ch Z): 0.25 V inactive, 1.8 V active (with 100k resistor from C to Z)

## Input Protection

Analog and pulse inputs meet the following surge protection requirements:

IEC 61000-4-2 (ESD) 15 kV (air) 8 kV (contact)

IEC 61000-4-4 (EFT) 40 Amps (5/50ns)

**Continuous Fault Voltage** (maximum):

**Pulse inputs** (channels X, Y, Z):  $\pm 24$  Vdc

**Analog inputs** (channel 1-8):  $\pm 24$  Vdc \*

\* Analog input (channel 1-8) fault voltage is any voltage above 5.6 V or below -0.25 V (with respect to the C terminal). A fault voltage within  $\pm 24$ vdc on one or more analog inputs will not damage the XR5, but may saturate the input multiplexer and cause erroneous readings on all analog channels.

## General Specifications

**Communication interface:** Serial, 3 wire, EIA/TIA-562 signal levels (RS232 compatible), 9600 bps. (8 data bits, 1 stop bit, no parity, no flow control)

**LED indicators:** 2

**Green:**

**Blink every 5 secs:** Slow logging active.

**Blink every 1 second (or faster):** Fast logging active.

**Red:**

**Blink every 5 secs:** One or more active Alarms.

If external power is applied to the Q terminal, the Red LED stays ON steady when an Alarm is active.

The Red LED does not function when Fast Logging is active.

**Number of channels:** 11 or 12

(8 analog input channels, 3 pulse input channels; Millivolt option adds ambient temperature channel)

**Logging modes:** Manual, Pre-set, Log on Alarm, Cycle Logging (start time, active period, pause period, stop time), Log on Ext. Trigger, Manual/Wrap, Preset/Wrap.

Manual (slow), Log on Alarm, Log on External Trigger and Cycle Logging may have any number of individual data segments, limited only by available memory.

Log on Ext. Trigger (Slow) includes a selectable Stop Delay time that causes logging to continue after a Stop trigger occurs, for the duration of the selected Stop Delay time.

**Sampling modes:** Standard, Average (1 second internal sampling), Peak (1 second internal sampling), Differential (Ch1-Ch2, Ch3-Ch4, Ch5-Ch6, Ch7-Ch8).

Peak and Average sampling are only available when using the following Slow Logging modes: Manual, Preset, Manual/Wrap Preset/Wrap and Cycle.

**Memory capacity:**

**XR5-SE:** 127,284 bytes (up to 63,642 analog readings)

**XR5-SE-M:** 520,400 bytes (up to 260,200 analog readings)

Each analog reading consumes 2 bytes. Each pulse reading consumes 4 bytes. The start of each data set consumes 12 bytes. Log modes Manual/wrap, Preset, and Preset/wrap have a single data set. Other logging modes (Manual, Log on Alarms, Log on Ext. Trigger, Cycle Logging) may have many data sets.

LogXR Software displays the Total Log Time on the Main tab of the Setup screen based on the current Setup.

**Data retention:** Logged data and Setup data: Over 100 years with no power.

**Logging interval:** Any time interval from 1 second to 24 hours, plus 2 Hz to 1000 Hz for Fast Logging modes. During Fast Logging, Real Time display and data transfers are not available and pulse count inputs are disabled.

Fast Logging above 100 Hz results in reduced channel count (see page 34 of the XR5-SE User's Guide (/XR5-SE.pdf) for details).

**Alarming capabilities:** All eight analog channels have individually adjustable high and low alarm limits. Configurable alarm responses for all slow logging modes include activate Alarm output, dial out to a host computer (modem required), send a descriptive SMS alarm message to a cell phone (GSM modem required).

Alarms are disabled for all fast logging modes except 'Log on Alarm'.

**Real Time display:** Displays current readings and alarm conditions of all active channels. Updated every 2 seconds or when readings are logged to XR5 memory (selectable). Can be active while any slow logging mode is active with no effect on the logging session.

**Real Time write to file:** Logs real time data to a text file every 2 seconds or when readings are logged to XR5 memory (selectable). When active, Real Time display is also active. Can be active while any slow logging mode is active with no effect on the logging session.

**Data transfer:** Binary Xmodem transfer, converted to readable text file. Data may be transferred while any Slow Logging mode is active with no effect on the logging session. All data is transferred at 9600 bps.

**Clock accuracy:**  $\pm 1$  minute per month at 25°C;  $\pm 2.5$  minutes per month from -10 to 60°C.

Clock accuracy is also Time Stamp accuracy for all logging modes and logging intervals.

**Battery life:** Dependent on logging rate, channel Type (Standard, Average, or Peak), Real Time Mode use, data transfers, selected excitation time, and the power drawn from the D and E terminals to power external sensors.

LogXR Software displays the "Estimated battery life" on the Main tab based on the current setup and the Estimated Sensor milliamps (if any). See pages 29 and 30 of the XR5-SE User's Guide (/XR5-SE.pdf) for details.

**Battery type:** Lithium, AA size, 3.6 volt; 2 required (Tadiran TL-5903/S or equiv.)

**External power input:** Voltage range: 8.0 – 14.0 vdc (9vdc or 12vdc Regulated Supply)

Warning: A voltage higher than 14 Vdc on the External Power Input may damage the unit.

**Power Consumption:** Average current for slow logging intervals is approximately 30 microamps (0.030 milliamps) plus periodic excitation current (if any) from the D and E terminals.

**Excitation terminals:**

**E:** 5 Vdc; maximum current: 30 ma (current limited).

**D:** 2.5 Vdc; recommended maximum current: 40 ma.

Power from the excitation terminals is pulsed for the duration of the selected Excitation Time, just prior to logging readings or reading Real Time data. If Fast Logging (2 Hz – 1000 Hz), excitation terminals are continuously powered ON for the duration of the Logging Session.

**Sensor Excitation Time:** User selectable for any of the following times: 30 ms, 150 ms, 1 second, 5 seconds, 10 seconds.

Specifications subject to change without notice.

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[XR5-SE Data Logger \(data-loggers-xr5.htm\)](#)



[\(/XR5-SE.pdf\)](#) [XR5-SE User's Guide \(XR5-SE.pdf\)](#)





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## Low Range AC Current Sensors

Connect directly to any XR440 (/data-logger-xr440.htm) or XR5-SE Data Logger (/data-loggers-xr5.htm). Or connect to a recorder or data acquisition system's 0-5vdc input. No external power required.

- Self powered
- Split core design
- Rugged molded plastic housing
- Connect up to four (4) AC Current Sensors to the XR440 Data Logger (/data-logger-xr440.htm)
- Connect up to eight (8) AC Current Sensors to the XR5-SE Data Logger (/data-loggers-xr5.htm)

Split core construction simplifies installation on existing conductor. Nylon thumb screws, no exposed metal parts; Monitor motors, pumps, or any AC load.



### Specifications - Low Range AC Current Sensors

Input Current	AC Current, single phase, 50 - 400 Hz, load power factor 0.5 to 1.0 lead or lag.
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Accuracy, SA-10 (0-10 amps)	1% of reading from 20% to 100% F.S. 2% of reading at 10% F.S. 6% of reading at 5% F.S.
Accuracy, SA-20 (0-20 amps)	1% of reading from 20% to 100% F.S. 2% of reading at 10% F.S. 3% of reading at 5% F.S. 5% of reading at 2.5% F.S.
Accuracy, SA-50 (0-50 amps)	1% of reading from 10% to 100% F.S. 3% of reading at 5% F.S. 5% of reading at 2% F.S.
Temperature effect	Less than 0.05% from -20 to 55°C
Temperature range	-20 to 55°C
Response time	250 milliseconds, input from 10% to 90% of full scale, 200 amp and higher ranges.
Ripple	0.5%
Voltage rating	600 VAC tested with 2.5 KVDC for 60 seconds
Overload	1.6x full scale (continuous)
Surge	3x full scale
Lead wires	8 ft (2.4 meter) twisted 22 AWG, Black/Red per UL1015
Output signal	Linear 0 - 5 Vdc
Output signal loading	100k ohms or higher
Construction	ABS potted housing
Environment	Indoor Type 1 rating per UL506

Size  
Length: 2.6" (66 mm)  
Width: 2.3" (59 mm)  
Thick: 1.25" (32 mm)

Part No.	Range	Window Size	Price \$US
SC10A ( <a href="/ac-current-low-range.htm">/ac-current-low-range.htm</a> )	0-10 amps AC	0.5" square (12.7 mm)	105.
SC20A ( <a href="/ac-current-low-range.htm">/ac-current-low-range.htm</a> )	0-20 amps AC	0.5" square (12.7 mm)	102.
SC50A ( <a href="/ac-current-low-range.htm">/ac-current-low-range.htm</a> )	0-50 amps AC	0.5" square (12.7 mm)	98.

[All Models: AC Current Sensors \(/ac-current.htm\)](/ac-current.htm)

[Multi-channel AC Current Data Logging \(/ac-current-data-logger.htm\)](/ac-current-data-logger.htm)

[XR5-SE Data Logger \(/data-loggers-xr5.htm\)](/data-loggers-xr5.htm)

[XR440 Data Logger \(/data-logger-xr440.htm\)](/data-logger-xr440.htm)



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(/)

## AC Voltage Sensors

Connect directly to any XR440 (</data-logger-xr440.htm>) or XR5-SE Data Logger (</data-loggers-xr5.htm>). Or connect to a recorder or data acquisition system's 0-5vdc input. No external power required.

- Self powered
- Rugged polyamide DIN mount case
- Designed for industrial environments
- Connect up to four (4) AC Voltage Sensors to the XR440 Data Logger (</data-logger-xr440.htm>)
- Connect up to eight (8) AC Voltage Sensors to the XR5-SE Data Logger (</data-loggers-xr5.htm>)



SV300 AC Voltage Sensor (range 0-300 Vac)

### Specifications - AC Voltage Sensors

Input Current	AC Current, single phase, 50 - 400 Hz, load power factor 0.5 to 1.0 lead or lag.
Frequency Range	SV300: 50 - 400 Hz SV600: 50 - 60 Hz
Voltage Overload	Full scale rating
Accuracy	±0.25% of F.S. at 60Hz (includes effects of linearity 10% to 100% of F.S.)
Temperature Effect	±1.0% (-20 to 65°C)
Output Signal	Linear 0 - 5 vdc
Output Ripple	Less than 1% full scale
Response Time (to 99%)	400 milliseconds
Dielectric Test (Input / Output isolation)	1500 VAC
Connections	Recessed screw terminals for input and output wiring
Burden	2.0 VA
Size	3.7"H x 3.1"W x 1"D

**IMPORTANT:** Unlike other PACE Pocket Logger Accessories, the AC Voltage Sensors must be mounted in a suitable panel or enclosure and the input & output terminals must be wired.

**WARNING: SHOCK OR INJURY HAZARD**

**Disconnect AC Power Source before wiring AC Sensor inputs.**

The SV600 Sensor includes an external potential transformer which also must be mounted and wired in a suitable panel or enclosure. External transformer size: 1.6"H x 2.8"W x 2"D.

Use the SV300 to monitor and record 24, 120 and 240 Vac circuits; use the SV600 to monitor and record 24, 120, 240 and 480 Vac circuits.

Part No	Range (Frequency)	Price
SV300	0-300 Vac (50 - 400 Hz)	\$195.

Part No	Range (Frequency)	Price
SV600	0-600 Vac (50 - 60 Hz)	\$230.

[XR5-SE Data Logger \(/data-loggers-xr5.htm\)](/data-loggers-xr5.htm)

[XR440 Data Logger \(/data-logger-xr440.htm\)](/data-logger-xr440.htm)



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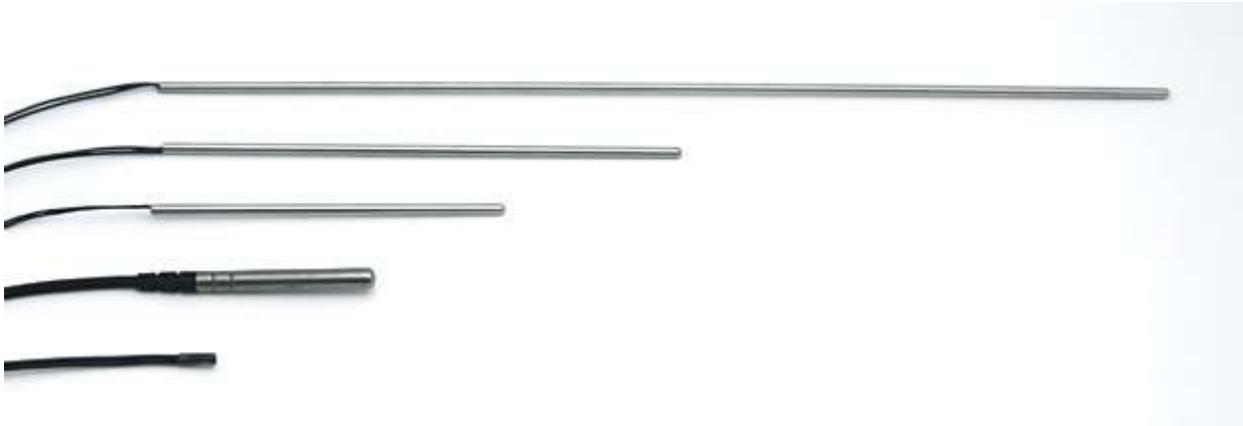
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## High Accuracy Temperature Probes

Connect directly to any XR440 (</data-logger-xr440.htm>) or XR5-SE (</data-loggers-xr5.htm>) Data Logger. All probes utilize a precision 30k ohm thermistor with 0.1 deg. C interchangeability.



### PT900 Series Temperature Probes

Connect up to eight probes to the XR5-SE Data Logger, and up to four probes to the XR440 Data Logger.

Common to all PT900 series Probes

- 0.1°C Interchangeability
- Resolution 0.02°C at 25°C
- No calibration required
- Probe cables may be extended using ordinary copper wire.

### PT907



Epoxy tip with parallel 24 gage, PVC insulated leads (parallel bonded). For general purpose temperature measurement. Not for continuous immersion in water (mineral or silicon oil is OK).



Temperature range	-50 to 75°C (-58 to 167°F) continuous duty Intermittent duty to 110°C (230°F)
Lead length	4 feet (1.2 meters)
Interchangeability	±0.1°C from 20 to 45°C (68 to 113°F)
Total system accuracy (XR440 set to 12 bit or XR5-SE)	±0.15°C from 0 to 40°C (±0.27°F from 32 to 104°F)  ±0.3°C from -25 to 85°C (±0.55°F from -13 to 185°F)
Time constant (typical) in stirred oil bath	2.5 seconds
Probe dimensions	0.127 inch diameter (3.23 mm), 0.37 inch length (9.4 mm)

PT907 price: \$20.

## PT916



PT916 Probe, available in 4", 6" and 12" lengths

Closed end 1/8 inch diameter stainless steel tube. Teflon insulated 24 gage leads. Suitable for liquid or gaseous immersion, refrigeration and general temperature applications. Can be inserted into a 'Pete's Plug'. Available in three lengths: 4 inch (102 mm), 6 inch (153.4 mm) and 12 inch (305 mm). A bored-through compression fitting is available (see below).

Temperature range	-50 to 75°C (-58 to 167°F) continuous duty Intermittent duty to 150°C (302°F)
-------------------	--

Lead length	3 feet (0.9 meters)
Interchangeability	$\pm 0.1^{\circ}\text{C}$ from 0 to $70^{\circ}\text{C}$ (32 to $158^{\circ}\text{F}$ )
Total system accuracy (XR440 set to 12 bit or XR5-SE)	$\pm 0.15^{\circ}\text{C}$ from 0 to $40^{\circ}\text{C}$ ( $\pm 0.27^{\circ}\text{F}$ from 32 to $104^{\circ}\text{F}$ ) $\pm 0.3^{\circ}\text{C}$ from $-25$ to $85^{\circ}\text{C}$ ( $\pm 0.55^{\circ}\text{F}$ from $-13$ to $185^{\circ}\text{F}$ )
Time constant (typical) in stirred oil bath	3.0 seconds

PT916 Temperature Probe		
Part No.	Sheath Length	Price
PT916-4	4 inches (102 mm)	\$44.
PT916-6	6 inches (152 mm)	\$46.
PT916-12	12 inches (305 mm)	\$52.

## CF916-1/8



Bored-through stainless steel compression fitting for PT916 probe. 1/8 NPT male threads. 1.2 inches in length (30.5 mm).

CF916-1/8 price: \$18.

## PT960



Rugged stainless steel probe 6 mm (0.236") diameter and 50 mm (approx 2 inch) length with 6.1 meter (20 ft) cable. TPE jacketed cable has diameter of 3.3 mm (0.13"), round cross section and 24 gage, polypropylene insulated leads. Suitable for immersion, HVAC, and soil burial applications. Probe's cable not recommended for immersion in fuels (fuel splashing on cable is OK).

Temperature range	-40 to 100°C (-58 to 212°F)
Cable length	20 feet (6.1 meters)
Interchangeability	±0.1°C from 0 to 70°C (32 to 158°F)
Total system accuracy (XR440 set to 12 bit or XR5-SE)	±0.15°C from 0 to 40°C (±0.27°F from 32 to 104°F) ±0.3°C from -25 to 85°C (±0.55°F from -13 to 185°F)
Time constant (typical) in stirred oil bath	6 seconds
IP (Ingress Protection) Rating:	IP68

PT960 price: \$54.

## Extension Cable

Extension cable can be spliced to any of the above probes. We recommend 24 gauge two-conductor stranded copper cable for extensions of up to 100 feet (30 meters). For longer extensions, 22 gauge cable is recommended. Acceptable splicing methods include wire nuts, crimp connectors, hand twisting and taping, or solder. For cable runs longer than 30 feet, we recommend using shielded cable (Belden 9501 or equivalent).

[All Temperature Sensors and Probes \(/temperature.htm\)](/temperature.htm)

[Multi-channel Temperature Data Logging \(/temperature-data-logger.htm\)](/temperature-data-logger.htm)

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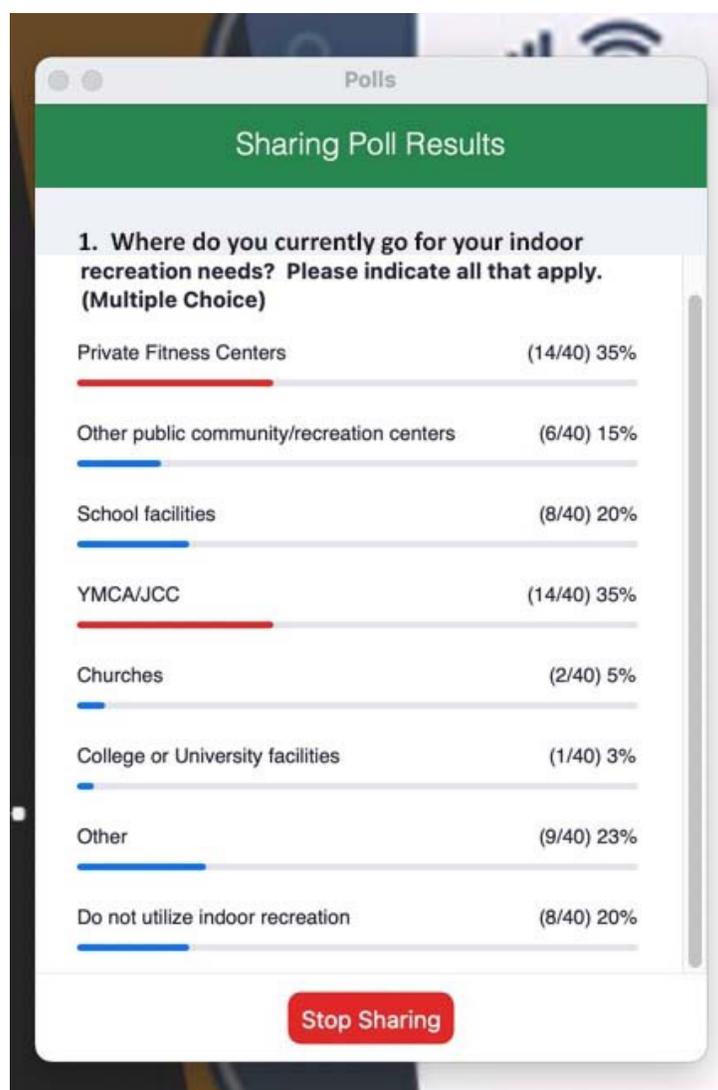
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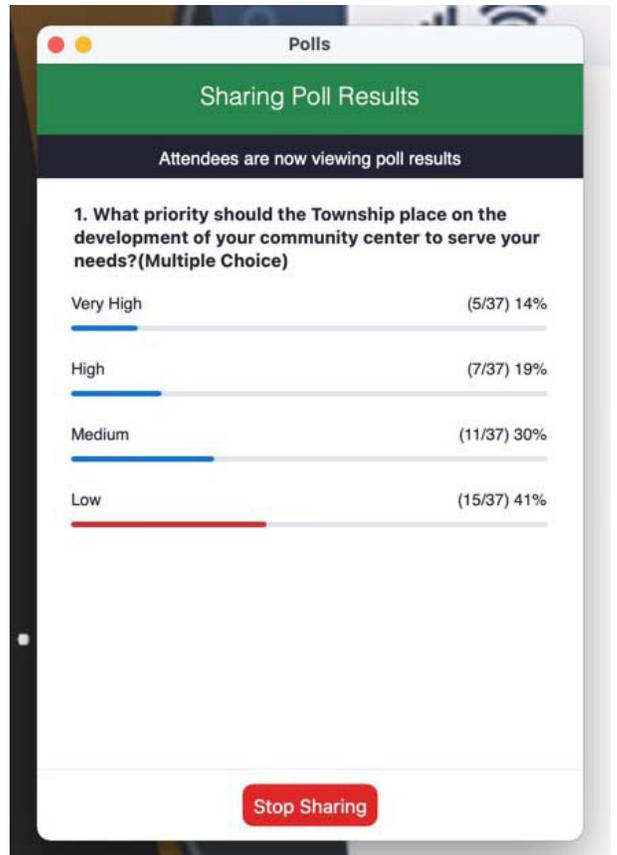
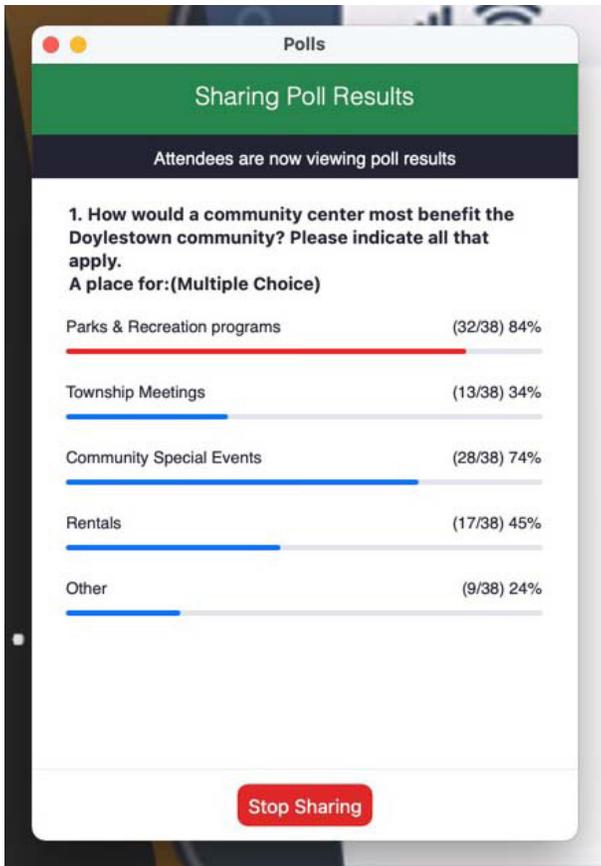
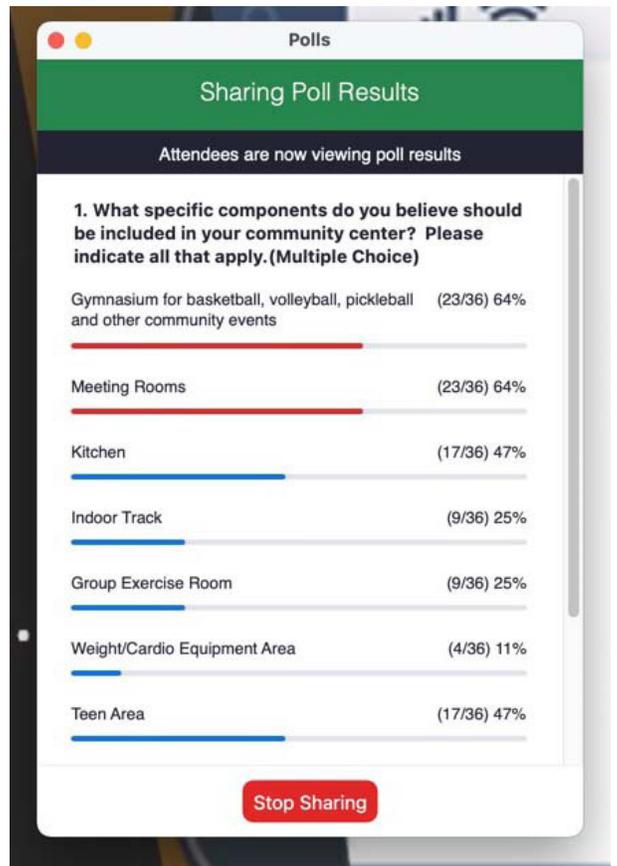
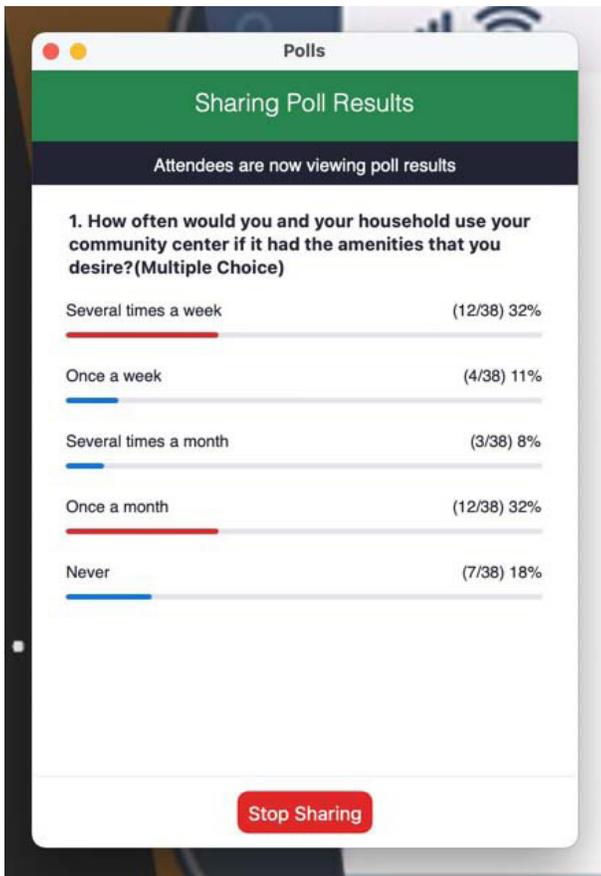
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# Summary of Public Meeting Survey

A public meeting was held on February 25th, 2020 via Zoom and after a presentation and a review of the purpose of the Feasibility Study and the proposed Community Center, the participants were asked to answer five questions utilizing an online polling tool. The results of these poll questions follow.







Doylestown Township Community Recreation Center Feasibility Study

# THANK YOU TO ALL STUDY PARTICIPANTS

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## **Doylestown Township Board of Supervisors**

Barbara Lyons - Chairman  
Ryan Manion - Vice Chairman  
Jennifer Herring  
Dan Wood  
Nancy Santacecilia

## **Doylestown Township Administration**

Stephanie Mason - Township Manager  
Dean Logan - Chief of Police  
Dave Tomko - Director of Operations  
Karen Sweeney - Director of Parks & Recreation  
Sinclair Salisbury – Director of Code Enforcement  
Rick Schea – Township Fire Marshal and Facilities Manager  
Lisa Pearsall – Recreation Program Manager  
Chris Mason – Parks Superintendent  
Margaret Trageser –Parks & Recreation Office Manager

## **Doylestown Twsp Boards and Commissions**

Joe Salvati - Friends of Kids Castle  
Paul DiNella - Parks and Recreation  
Art Zapolski - TAB  
Bob Salanik - Ways & Means  
Jim Baldassarre - EAC

## **Doylestown Township Community Partners**

Jim Bishop, Cornerstone Clubs  
Chris Nardo, C&N Bank  
Greg Nardi, Bar Association  
Zane Moore, YMCA Bucks  
Barbara Ann Price, Village Improvement Association of Doylestown

## **Doylestown Twsp Athletic Partners**

Art Bass, DAA  
Barb Matase, USPBA Regional Ambassador  
Jeff Marcinkowski, DAA  
Kristian Bates, PA Rush Soccer

And thank you to all the **Doylestown Township residents** that participated in this study.



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