

Grounds and Natural Resource Management Operational Assessment and Logistics Plan Evaluation Report

May 10, 2022

FPDDC Mission:

"to acquire and hold lands containing forests, prairies, wetlands and associated plant communities or lands capable of being restored to such natural conditions for the purpose of protecting and preserving the flora, fauna and scenic beauty for the education, pleasure and recreation of its citizens."

FPDDC Purpose:

"to acquire, preserve, protect and restore the natural resources in DuPage County while providing opportunities for people to connect with nature."

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05-10-2022

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Grounds and Natural Resource Management Operational Assessment and Logistics Plan Evaluation Report

DOCUMENTATION REVIEW 1.0

NIGHT

Engineers & Architects



Review of Historic Data is an essential starting place in facility assessments as it brings important components of past facility usage and understanding into view as evaluations are made for incorporation into future spaces and programs. The following documents were reviewed in support of this report:

- FPDDC-GNR 2007 Evaluation Report
- FPDDC-GNR 2020 Evaluation Report Update
- Video Presentation from each Crew to FPDDC Board
- Schedules and Charts of Preserve Usage and Maintenance Hours
- Schedules of Equipment and Property Inventory •
- Construction Documents from current buildings
- County Maps indicating Property locations. •
- Lists of existing conditions and needs from management staff •

2007 Blackwell Fleet and Grounds Maintenance Buildings Needs Assessment 1.1 Report

The report issued in January of 2007 by Knight E/A, Inc. evaluated and incorporated long-term planning needs for the Fleet Management Services, Grounds and Natural Resources. It explored three strategies for upgrading and consolidating these groups:

- Campus Consolidation
- Integrated Consolidation and
- Decentralized Expansion and Renovation.

The final recommendation of this report focused on Campus Consolidation. It was determined that the Blackwell Grounds and Natural Resources buildings, along with Fleet at the time of the report, had outgrown their usefulness due to deteriorating conditions and poor site circulation required for optimal efficiency. The buildings and yard space were insufficient and undersized.

This report also looked at the allocation of spaces and their uses and conditions. It was determined at that time that the exterior yard and staging areas were significantly undersized for the parking and site circulation. An analysis of the current use and conditions of each of the buildings was looked at in depth. Peer agency trends were identified from review of nearby facilities including:

- Elmhurst Public Works
- Arlington Heights Public Works •
- Wheaton Public Works

A phased approach was outlined for the campus consolidation in order to spread out funding over time and allow for groups to relocate without interruption to operations.

Grant opportunities were identified, many of which are still viable options for potential funding sources for this current project. They include:

- Illinois Clean Energy Community Foundation
- United States Environmental Protection Agency
- Illinois Environmental Protection Agency
- StEPP Foundation (Strategic Environmental Project Pipeline)

1.2 2020 Natural Resources and Grounds Maintenance Needs Assessment Report **Update & Knight Responses**

The report issued in March of 2020 by H.W. Lochner, Inc. and Land Planning & Design, LLC included:

- A synopsis of the 2007 report prepared by Knight EA, Inc (KEA).
- An update of current changes in the facility

The following, in italics, is the Conclusions and Recommendations excerpt from that report as well as the efforts being undertaken to address them.

- Complete a Department of Natural Resources audit to review staffing, equipment inventory, equipment storage, and employee offices to identify the extent of department's needs district-wide.
 - o KEA: This task has been completed as a resource for the culmination of this report.
- Complete audit on ecology research programs to review and verify that all programs align with current directives and priorities of the FPDDC.
 - o KEA: Current industry trends have been researched as well as the latest methodology involving Ecosystem Management. The current ecology research programs include the Hines Emerald Dragonfly and Blanding's turtle. The FPDDC has the unique position within the state for the location of the migratory path for both species. It is important for the FPDDC to maintain these studies as very few places exist that offer ideal conditions for both to flourish.
- Grounds Maintenance Division audit should investigate efficiencies of locating maintenance equipment at multiple satellite storage facilities versus one centralized location.
 - KEA: Currently GNR equipment and materials are at satellite locations. Having all of this located where they deploy from in the morning makes the most logistical sense. The biggest deficiency identified from the interviews and questionnaires is that too much time is wasted mobilizing for the days tasks as equipment and material are

located at various locations throughout the county, including the Blackwell campus. Having their equipment close to Fleet management as well as close to their own shop space is more efficient for loading/ unloading and maintenance of equipment. FPDDC staff also indicated that it would be appropriate to have custodial supplies located in a designated storage area at each new facility for ease of cleaning and changing out supplies such as toilet rooms.

- Explore partnerships with university programs, which could fund ecological studies.
 - for use of under-utilized properties throughout the District.
- Processing Center at Greene Valley.
 - space.

 KEA: Currently the Ekins Farm property operates as an aquarium and study area for the Hines Emerald Dragonfly Research in partnership with the University of South Dakota. We recommend that the FPDDC pursue partnerships for other universities

Explore partnership with DuPage County Public Works Department for relocating the Deer

o KEA: DuPage County Public Works Department is located off IL-53, just south of 75th Street in Woodridge, IL which is surrounded by FPDDC property. It was reviewed as a potential location for the Natural Resources Support Program. If this location were to be used, a facility would need to be built on the land immediately south. The pros of this location is the infrastructure for utilities is easily accessible and drives are already in place and it is right off of a main road, so it is easy to access. The Cons are that the land would need to be built up as the land drops off past the Public Works property line which would be costly. In addition, an agreement would need to be negotiated with Public Works for use of tapping into their utilities and use of their drive and gate into the property. The other con we saw for this site is it is rather public and given the sensitive nature of deer management, it would make more sense to locate it in a more discreet area. We have determined that to make financial sense for a new facility for the Natural Resources Program Support, it should be paired with another use for GNR since this task only occurs in November and December. One such pairing would be the seed processing, as largely, there is not much overlap seasonally with these activities. One of the largest deficiencies that seed processing faces is the lack of cooler space for seed germination. Since both tasks require cooler space and activities do not overlap, it would be an ideal combined use of

Explore moving Natural Resources Division Administrative Office to District Headquarters

o KEA: We took a tour of the FPDDC Headquarters for potential use of GNR administrative staff use. While there seems to be opportunities at this location for adding more personnel, it is not the ideal set-up. The administrative staff for GNR tend to be people that are also in the field. One of the primary reasons Headquarters would not work is its isolation from the rest of the field crew. Also, because GNR is out in the field every day, often dirty boots and gear come in and out all day long. Headquarters would have to have one wing retrofitted to have a mud room entry for GNR staff along with lockers and potentially showers.

- Relocate lab from basement at District Headquarters to USRC, Blackwell or Willowbrook.
 - KEA: It was determined that it was best to maintain the lab at Headquarters as it was not a priority for GNR to have it relocated. Upon our review, this work is very independent of the field crew as well as does not require the equipment usage or storage needs of the rest of the crews.
- Natural Resources Division ecological field projects could be located at USRC, Blackwell, or Willowbrook.
 - KEA: Ecological Field project locations are at Ekins barn, which is used for Aquariums and Hines Emerald dragonfly studies. That location is uniquely positioned to be the most optimal for these studies as it is where they migrate in and out of.
- Explore moving Grounds Maintenance Division supervisory staff to existing facilities at Blackwell Structural Maintenance or Blackwell Fleet Services.
 - KEA: Consideration will be made in the planning stages for the building layouts to accommodate this staff, however, communication with crew would be difficult if supervisory staff was in a different locaction

- Maintenance or Fleet Services buildings.
- technology to minimize need for permanent office space.
 - planning stages in building layout.

• Explore Grounds Maintenance Division sharing training and lunchroom facilities at Structural

o KEA: Shared training space is being taken into consideration for all crews in one location, but likely not at Structural Maintenance or the Fleet Services buildings due to current training room sizes are not adequate to taking on the entire GNR crews.

• Explore Grounds Maintenance Division field staff utilizing new computer programs and

• KEA: Site Ops recently deployed the use of iPhones to all of their staff just prior to the Covid 19 pandemic and it has been found to be an invaluable way to communicate schedules and work orders. Something similar should be considered for GNR crews. Shared office space and potential "hotel" type workstations is being considered for the

Grounds and Natural Resource Management Operational Assessment and Logistics Plan Evaluation Report

2.0 PRESERVE USAGE ANALYSIS

2.1 Preserve Heat Map



Ons	Preserve	2016	2017	% Change	2018	% Change	2019	% Change	2020	% Change	Grounds Crew Total Labor Hours
0 0 3		(1)	(1)	2016 to 2017	(1)(2)	2017 to 2018	(1)	2018 to 2019	(1)(2)	2019 to 2020	2016 thru 2020 (3)
BSO	Blackwell - Main	160,480	164,915	3%	151,894	-8%	147,027	-3%	254,357	73%	42,806.28
BSO	Danada	61,420	58,288	-5%	44,592	-23%	30,855	-31%	45,806	48%	22,947.08
BSO	Elsen's Hill	11,620	11,372	-2%	10,581	-7%	9,692	-8%	18,576	92%	
BSO	Hawk Hallow – Off Leash Dog	39,217	44,174	13%	39,378	-11%	44,902	14%	53,722	20%	4,020.44
BSO	Herrick Lake - Main	87,681	94,992	8%	83,443	-12%	85,094	2%	207,417	144%	0 258 25
BSO	Herrick Lake – South	67,636	70,940	5%	65,745	-7%	67,197	2%	82,087	22%	9,338.23
BSO	Klein Creek Farms	31,947	32,532	2%	30,699	-6%	31,772	3%	43,268	36%	
BSO	Mallard Lake	64,254	83,424	30%	77,453	-7%	81,229	5%	158,976	96%	4,881.85
BSO	McDowell Grove	53,968	34,005	-37%	28,708	-16%	37,796	32%	51,981	38%	3,670.50
BSO	Pratt's Wayne Woods – Air Field	9,719	9,542	-2%	8,326	-13%	8,908	7%	9,818	10%	6 862 25
BSO	Pratt's Wayne Woods – Main	52,955	40,388	-24%	47,476	18%	45,104	-5%	51,722	15%	0,803.33
BSO	Springbrook – Off Leash Dog Area	57,816	62,497	8%	55,416	-11%	55,366	0%	87,101	57%	6,397.43
BSO	St. James Farm	46,455	45,654	-2%	48,570	6%	50,926	5%	104,154	105%	9,772.75
BSO	West Branch	44,027	50,521	15%	43,809	-13%	47,318	8%	69,283	46%	5,029.75
BSO	West Chicago Prarie	4,245	6,160	45%	5,174	-16%	6,835	32%	7,795	14%	781.80
BSO	West Dupage Woods	17,339	17,517	1%	15,376	-12%	26,534	73%	51,751	95%	3,847.38
CSO	Churchill Woods -Central	53,703	52,345	-3%	49,207	-6%	46,851	-5%	56,371	20%	
CSO	Churchill Woods - Crescent	18,132	17,263	-5%	13,046	-24%	14,183	9%	19,144	35%	5,438.69
CSO	Churchill Woods - Shelter	28,985	28,403	-2%	26,889	-5%	27,260	1%	30,582	12%	
CSO	Cricket Creek	65,161	72,732	12%	68,083	-6%	60,568	-11%	61,695	2%	6 161 25
CSO	Cricket Creek - Model Boat	14,204	11,762	-17%	9,725	-17%	12,624	30%	25,275	100%	0,101.23
CSO	East Branch	51,964	48,007	-8%	40,259	-16%	46,691	16%	40,155	-14%	2 129 00
CSO	East Branch - Off Leash Dog Area	70,104	78,756	12%	76,599	-3%	74,768	-2%	72,335	-3%	5,128.90
CSO	Fullersburg	71,240	82,249	15%	67,193	-18%	81,363	21%	110,352	36%	13,554.70
CSO	Graue Mill	59,161	65,173	10%	83,719	28%	74,538	-11%	90,768	22%	
CSO	Greene Valley - North Area	93,374	119,467	28%	113,951	-5%	115,424	1%	129,827	12%	
CSO	Greene Valley - South	37,819	40,944	8%	38,025	-7%	35,941	-5%	41,647	16%	13,935.00
CSO	Greene Valley - ThunderBird	24,582	24,868	1%	23,652	-5%	25,670	9%	31,003	21%	
CSO	Hidden Lake	79,224	76,131	-4%	68,240	-10%	72,595	6%	129,417	78%	4,005.20
CSO	Maple Grove	35,883	35,313	-2%	33,048	-6%	33,873	2%	43,506	28%	2,014.50
CSO	Mayslake - Off Leash Dog Area	50,129	103,878	107%	95,955	-8%	101,085	5%	115,695	14%	6 256 87
CSO	Mayslake Mansion	40,904	43,980	8%	39,475	-10%	36,474	-8%	26,870	-26%	0,330.87
CSO	Meacham Grove - Circle Ave	35,782	49,488	38%	45,920	-7%	54,460	19%	76,149	40%	4,267.20
CSO	Oldfield Oaks	21,857	24,329	11%	24,101	-1%	24,650	2%	44,405	80%	5 072 00
CSO	Oldfield Oaks - Off Leash Dog Area	N/A	N/A	N/A	18,175	N/A	57,843	218%	71,787	24%	5,072.00
CSO	Salt Creek Park	59,077	46,154	-22%	53,989	17%	63,335	17%	78,722	24%	3,982.21
CSO	Songbird Slough	25,302	38,114	51%	33,765	-11%	36,707	9%	49,093	34%	2,654.67
CSO	Spring Creek Reservoir	67,576	61,939	-8%	71,918	16%	84,246	17%	117,322	39%	2,752.05
CSO	Waterfall Glen - Lemont	36,477	33,180	-9%	38,287	15%	38,831	1%	49,626	28%	
CSO	Waterfall Glen - Outdoor Ed	68,183	75,635	11%	75,853	0%	73,311	-3%	72,489	-1%	18,880.63
CSO	Waterfall Glen - Trail Head	36,679	48,941	33%	45,991	-6%	51,533	12%	69,287	34%	
CSO	Willowbrook	69,934	52,403	-25%	50,699	-3%	51,498	2%	30,124	-42%	2,890.00
CSO	Wood Dale Grove	70,543	61,852	-12%	83,928	36%	108,842	30%	149,612	37%	3,970.50
CSO	York Woods - North	11,859	9,777	-18%	9,502	-3%	9,787	3%	12,965	32%	2 595 20
CSO	York Woods - South	40,287	38,838	-4%	20,006	-48%	17,133	-14%	18,054	5%	2,333.20
	Totals	2,148,904	2,268,842	6%	2,175,840	-4%	2,308,639	6%	3,162,091	37%	222,036.43

1. The graphic indicates the quantity of vehicles which enter each of the Forest Preserves on an annual basis. Assumptions for quantity of people per vehicle can be made; however, people who enter the park by bicycling or walking are not able to be factored in, as well as how many vehicles are Forest Preserve staff. The Intent of this graphic is to give an overview of Preserve usage over a four-year period, data as provided by the FPDDC-GNR.

2. Both the 2018 and 2020 data tend to skew any pattern in the limited amount of data available. The 2018 data indicates a decrease in vehicular activity at the Forest Preserves; the cause of this decline is unknown. The significant increase in the vehicular activity indicated in the 2020 data more than likely represents Forest Preserve usage due the Covid 19 pandemic.

3. Additional Grounds Crew labor hours totaling 115,632.54 are not included in the above graphic since the properties either do not have vehicular access or do not monitor the vehicles entering.





This map represents the top 10 locations that contain the most Trail Systems that are required to be maintained by Forest Preserve Crews. As a result, they in turn represent the top 10 locations where these Crews spend the most time throughout the year. It is anticipated that the best location to support these services would be centrally within the area they contain.

1.	Blackwell	9,171 Hours
2.	Greene Valley	4,548 Hours
3.	Timber Ridge	3,174 Hours
4.	Springbrook Prairie	3,031 Hours
5.	Danada	2,604 Hours

<u>Trail systems-</u> maintained by Forestry, Landscape, and Trails and Streams crews

Trail type	Linear feet	Linear miles	Value
Asphalt	140,020	28	\$9,857,232
Concrete	11,613	2.2	\$1,355,369
Crushed Granite	10,078	1.8	\$ 633,679
Gravel	36,084	6.8	\$2,251,276
Screenings	456,289	86.3	\$28,571,34
Other	36,136	6.7	\$ 1,049,153
Turf	167,415	31.6	\$ 4,948,266
Wood chip	17,975	3.3	\$ 516,747
Totals	875,610	166	\$ 49,183,06

Trail Maintenance includes:

- 4-year cyclic resurfacing
- Herbicide applications as needed throughout the growing season •
- Trail patching as needed
- Rough mowing 3' of trails edges during the growing season equates to 97.5 acres per mow as well • as an additional 30.8 acres of mowing grass trails
- Woody vegetation trimming and removal along edges as well as line of sight clearing at curbs, corners, and intersections, as well as raising vegetation to proper height over trails
- Grading and seeding of edges for proper drainage and erosion control
- Yearly dead and hazard tree removals within immediate vicinity of trails
- Impromptu storm damage remediation •
- Fall leaf removal in wooded areas •
- Trail dragging and raking as needed

Trail culverts:

- Typically maintained by Trails and Streams crew
- Cyclical inspection and inventory updates done concurrent with resurfacing program
- Replacements done during trail resurfacing projects as needed •

6.	Pratts Wayne Woods	2,587 Hours
7.	Herrick Lake	2,152 Hours
8.	Fullersburg Woods	2,003 Hours
9.	Waterfall Glen	1,987 Hours
10.	St James Farm	1,044 Hours





Roadways and Parking Lots – Crew Access Analysis 2.3

This map represents the top 10 locations that contain the most Roadways and Parking Lots that are required to be maintained by Forest Preserve Crews. As a result, they in turn represent the top 10 locations where these Crews spend the most time throughout the year. It is anticipated that the best location to support these services would be centrally within the area they contain.

1.	Blackwell	9,960 Hours
2.	Waterfall Glen	3,903 Hours
3.	Danada	2,761 Hours
4.	Fullersburg Woods	2,318 Hours
5.	Greene Valley	2,021 Hours

Roadway and parking lot assets – typically maintained by Roads crew

Material	Sq. Ft.	Acreage	Value
Asphalt	6,317,702	145	\$ 24,070,445
Concrete	24,877	.6	\$ 165,867
Gravel	2,507,463	57.6	\$ 3,916,657
Permeable Pavers	138,736	3.2	\$ 2,219,776
Totals	8,988,778	206.4	\$30,372,765

Roadway and parking lot maintenance includes:

- 4-year seal coating cycle
- Crack routing and filling all assets every 1-2 years •
- Herbicide application as needed throughout growing season ٠
- Patching areas as needed prior to seal coating. •
- Striping after seal coating, resurfacing, and patching, or as needed. •
- Removing and replacing asphalt or resurfacing assets as needed. ٠
- Cyclical gravel grading, patching, and resurfacing •
- Parking bumper maintenance and replacement •
- Dust control •
- Snow plowing and deicer (granular and liquid) •

** Values based on contractor prices for building parking lot only. Does not include: tree/stump removal, major grading, storm water control, storm sewers, curbs, parking bumpers, etc.

<u>Storm Sewers-</u> maintained and repaired by Roads crew. Linear footage is unknown as of this point. Staff shortages have not allowed for surveying and inventory at this point.

6.	St James Farm	1,909 Hours
7.	Pratts Wayne Woods	1,155 Hours
8.	Herrick Lake	1,143 Hours
9.	Timber Ridge	978 Hours
10.	Springbook Prairie	777 Hours

Landscape – Crew Access Analysis 2.4



This map represents the top 10 locations that contain the most Landscaping Areas that are required to be maintained by Forest Preserve Crews. As a result, they in turn represent the top 10 locations where these Crews spend the most time throughout the year. It is anticipated that the best location to support these services would be centrally within the area they contain.

1.	Danada	12,359 Hours
2.	Waterfall Glen	9,816 Hours
3.	Blackwell	7,553 Hours
4.	Fullersburg Woods	5,753 Hours
5.	Greene Valley	4,553 Hours

General use areas

Woody vegetation: maintained primarily by Forestry crews

- 12,156 trees currently in inventory database with about 2000-3000 needing to be added
- Trees average over 12" D.B.H. totaling over 140,000 inches. •
- ease removal, raising branches over picnic areas and roadways, etc.
- •
- Cyclic tree inventory additions and updates •
- Stump removal and restoration •
- Guying and cabling as needed •
- Inspections, insect and disease diagnosis, evaluations, etc. •
- Storm damage

Landscape beds and tree rings: Maintained by Landscape crew

- 2.4 acres of tree rings and 10.4 acres of mulched beds utilizing woodchips from tree removals •
- Beds are replenished with mulch as needed and edged at that time
- Herbicide applications are done as needed throughout the growing season to control weeds ٠
- Some beds have native grasses, flowers and various gardens are included in this as well •
- Weeding by hand is needed in many cases as herbicide can damage plants ٠
- Fall clean up: burning native beds, leaf collection, mowing, etc. •
- Vegetation control around District signs, cable gates and structures. •

Mowed general use areas: Maintained by Landscape crew

- tion in spring and fall, fall fertilization, irrigation as needed
- Leaf collection and removal, turf restoration, pesticide applications, hardscaping and waterscaping maintenance.
- 308 acres of mowed turf in general use areas X \$ 4,715 per acre = \$ 1,452,220

6.	Herrick Lake	3,996 Hours
7.	Timber Ridge	2,094 Hours
8.	Pratts Wayne Woods	1,933 Hours
9.	Springbrook Praire	1,821 Hours
10.	St James Farm	913 Hours

Cyclic pruning program for dead wood removal, branch structure improvement, thinning, dis-

Dead and hazard trees removed as needed, then replaced with trees from Blackwell Nursery

• Maintenance includes: spring fertilizing, liquid weed application as needed in late spring, aera-

Forestry – Crew Access Analysis 2.5



This map represents the top 10 locations that contain the most Forestry Areas that are required to be maintained by Forest Preserve Crews. As a result, they in turn represent the top 10 locations where these Crews spend the most time throughout the year. It is anticipated that the best location to support these services would be centrally within the area they contain.

1.	Blackwell	16,121 Hours
2.	St James Farm	5,906 Hours
3.	Danada	5,222 Hours
4.	Fullersburg Woods	3,480 Hours
5.	Waterfall Glen	3,174 Hours

Blackwell Native Plant Nursery: Maintained by forestry

- Over 20 acres with over 12 acres of lined trees for preserve reforestation
- 5000-6000 trees comprised of 50-60 species
- 700-1200 tree harvested per year for tree planting District Wide •
- Maintenance includes trimming, weeding harvesting, restocking, mowing, pesticide usage, etc. •
- Green waste recycling areas: firewood, wood chip pile, tub grinding composting, mill logs, etc. •
- Pump house and irrigation system for over half of the nursery stock •
- Equipment storage and material storage for all crews •

Boundary issues: Handled by Forestry and Trails and Streams crews

- Over 475 miles of boundary District Wide
- Good neighbor policy for tree removals regarding hazard tree issues •
- Storm damage to trees •
- Fly dumping clean up •
- Grading to correct issues for flooding and proper storm water runoff ٠

Natural areas management: Assistance to ONR with Natural Areas Restoration, primarily by removing invasive species and herbicide application, is done by all Grounds crews as time allows throughout the winter.

- No number available on acreage done throughout the years (hundreds)
- Projects include initial clearing and re-sprout work according to ONR recommendations •
- Clearing areas by hand, woods mowers, and forestry mowers •

6.	Greene Valley	2,812 Hours
7.	Herrick Lake	2,056 Hours
8.	Timber Ridge	2,032 Hours
9.	Pratts Wayne Woods	1,187 Hours
10.	Springbrook Prairie	767 Hours

2.6 Natural Resources – Crew Access Analysis



This map represents the top 10 locations that contain the most Natural Resource Areas that are required to be maintained by Forest Preserve Crews. As a result, they in turn represent the top 10 locations where these Crews spend the most time throughout the year. It is anticipated that the best location to support these services would be centrally within the area they contain.

1.	Blackwell Hours	11,670 Hours
2.	Timber Ridge Hours	5,411 Hours
3.	Herrick Lake Hours	3,748 Hours
4.	Pratts Wayne Woods Hours	3,423 Hours
5.	Waterfall Glen Hours	2,768 Hours

KNIGHT Engineers & Architects

6.	West Chicago Prairie	2,376
7.	Green Valley	1,728
8.	Springbrook Prairie	1,703
9.	St James Farm	1,197
10.	Dunham	1,124



Preserve Usage Analysis – Focus Area 2.7

This Graph provides a look at an overlay of the focus areas where staff spend most of their time providing services to the County's Preserves. The colored outlines are derived from the top three locations requiring support in each of the primary service areas detailed on the previous pages.

The concentrated areas are further defined by the Common Denominators as outlined and highlighted in red. This would indicate that the best place to locate a facility to accommodate these primary functions would fall within these boundaries. As a result, the facilities in consideration include:

Facilities within the Focus Area

Blackwell	54,475 Hours	9.7%
• Danada	22,946 Hours	5.9%
Herrick Lake	13,095 Hours	2.9%
• St James Farm	10,969 Hours	2.6%
Warrenville Grove	1,080 Hours	0.4%
Total Hours spent withir	21.54%	

DuPage County consists of 337 square miles; nearly 22% of all work performed by the FPDDC Crews is done within this 9-mile radius; therefore, placement of a consolidated facility within this focus area would be the most beneficial with regards to minimizing the time and resources required to access these spaces.

2.7.1 SUMMARY OF FINDINGS - PRESERVE USAGE ANALYSIS - FINANCIAL **AFFECTS**

The following financial affects can be realized by the location of the Grounds and Natural Resources Campus:

- a new consolidated facility results in a net crew deficiency / efficiency of 0 hours.
- done at Fleet Management at Blackwell.
- site, i.e. water, sewer and increased traffic on a different community.

KNIGHT Engineers & Architects 1. Maintaining the campus within the Focus Area as the centralized location for the placement of

2. Locating a new campus outside of the Focus Area would have a negative effect on the budget as additional time and fueling costs would be necessary to get crews, materials, and equipment to each worksite along with being less efficient for refueling or having maintenance

3. There would be a significant cost increase in infrastructure needs for a location at a different

Location	Proximity to Current Resources	Utility Resources	Open Land Availability	Proximity to Residences	Impact to traffic	Environmental Impact	Viability
Blackwell	 Adjacent to Fleet Management – previous studies for Fleet Management placement pointed to Blackwell as being a centralized location. Adjacent to Fuel Island, Nursery and Facilities Management Central to a majority of physical assets the District maintains. 	 Sanitary Sewer – Existing Available Water – Existing Available Natural Gas – Existing Available Electric – Existing Available 	 The property is currently utilized for this facility with adequate space for the proposed work. Additional temporary staging area is available on the West portion of the property. Minimal need for additional natural resource impacts, i.e tree removals, etc. 	 Single-family residences border to the site on the East. Potential neighborhood association conflict – Blackwell Fleet Management Building encountered issues but were able to reach a suitable solution. Current gravel areas proposed to be asphalt so less dust / pollutants in the air. 	 Low - Already operating out of this location – traffic patterns already established. No additional traffic planned or anticipated on Mack Rd. 	 Low - Environmental impact would be minimal since the new development will be on existing development. New facilities will have lower energy costs and heating and cooling efficiencies. There will be measures in place to comply with Dark Skies initiatives. Reduces need to duplicate resources that other sites do not have but Blackwell does 	 Viability is high. Currently in use for this facility.
Danada	 Property is the furthest, in this group of properties, from Blackwell for Fleet Management, Facilities Management and Nursery Former Equestrian Field site is located on the same property as the District Headquarters 	 Sanitary Sewer – Not Easily Available Water – Not Easily Available Natural Gas – Not Easily Available Electric – Not Easily Available 	 The proposed site is an open field. Danada-Herrick Lake Regional Trail is located directly North of the portion of the property available. 	 Single-family residences border the site to the South. 	 Low - Minimal impact to traffic would be expected. Located ``` I-88 and Naperville Road. Several large facilities are currently in the area which also have access from Naperville Road. 	 High - There are several small bodies of water and forest area adjacent to the proposed site which could impact the local ecosystem with the construction and the daily noise. 	 Viability is medium to low.
Herrick Lake	 Property is in close proximity to Blackwell for Fleet Management, Facilities Management and Nursery 	 Sanitary Sewer – Not Easily Available Water – Not Easily Available Natural Gas – Not Easily Avail. Electric – Not Easily Available 	• The southwest corner of Butterfield Rd. and Herrick Rd. is the only open land available	 Single-family residences are located South of the proposed site. 	• Low - Minimal impact to traffic would be expected since access to and from the site would be from Herrick Road leading to Butterfield Road and Warrenville Road.	 Low - Minimal environmental impact would be anticipated. 	 Viability is medium.
St. James Farm	 Property is adjacent to Blackwell for Fleet Management, Facilities Management and Nursery 	 Sanitary Sewer – Existing Available Water – Existing Available Natural Gas – Existing Available Electric – Existing Available 	 The open space available is centrally located in property and currently used in conjunction with activities on the property. A trail crosses the site at the South edge. The amount of open space is insufficient for the new facility. 	 Single-family residences border the site to the North and East. 	• Low - Direct impact to traffic would be minimal, however access to the portion of the property would be through the current facility and may conflict with its activities.	 Low - Minimal impact to the environment would be anticipated since the proposed site is an open field. 	 Viability is low. Currently used as an event space.
Warrenville Grove	 Property is adjacent to Blackwell for Fleet Management, Facilities Management and Nursery 	 Sanitary Sewer – Not Available Water – Not Available Natural Gas – Not Available Electric – Not Available, existing sub-station is located nearby. 	Open land is not available.	 Single-family residences border the site to the South and East. 	 Low - The property is bordered to the North by Butterfield Road. Access is currently non-existent. 	 High - Environmental impact would be great since the property contains primarily forest area with a stream traversing the property. 	Viability is low to non-existent.

2.8 Summary of Findings - Preserve Usage Analysis - Focus Area

KNIGHT Engineers & Architects

CREW OPERATIONS & INTERNAL ASSESSMENTS 3.0

3.1 Grounds Management - Trails and Streams Crew Operations

Trails and Streams activities provided by GNR Crews include the following:

- Maintenance of trails including repair and resurfacing (92 miles of limestone, 31 miles of asphalt, 32 miles of turf, and 20 miles of mixed material)
- Dam maintenance in accordance with state, federal and local requirements.
- Erosion repair, drainage improvement, and culvert replacement
- Cyclical management of encroaching vegetation on trail systems and around structures.
- Invasive species control, including herbicide applications.
- River clearing of blockages and bank line restoration •
- Structure demolition •
- Campground and dog park maintenance
- Log bench construction and maintenance
- Snow removal
- Construction of boat ramps •
- Construction and maintenance of retaining walls
- Construction of trails and various aggregate assets •
- Hauling of bulk materials for District needs including aggregates, bituminous paving materials, green waste, recyclables, refuse, etc.
- GIS inventory of drainage structures and benches
- Maintenance of material storage areas. Equipment maintenance of saws and hand tools
- Assist with deer management program.
- Contract milling process for recycling green waste logs for District usage.

3.1.1 Grounds Management – Trail and Streams Internal Assessments

- 12 full time includes 1 Foreman; 2 seasonal
- Operate and store equipment and materials out of 7 Buildings at Blackwell and 2 off site buildings for milled oak lumber.
- Vehicles or Large Equipment needed to be stored in a heated space:
 - \circ 5 skid steers with the following implements 2 mowers, 1 set of forks, 1 clam bucket, 2 snowplows, 1 power bucket, 1 pulverizer, 5 general use buckets.
 - o 2 crawler loaders
 - o 1 roller
 - o 1 paver
 - 1 backhoe with 1 extra bucket for ditching
 - o 1 excavator
 - o 2 UTV's, 1 spray tank



- 2 large walk-behind mowers
- 1 portable saw mill
- 1 walk behind plate compactor 0
- 3 full sized extended cab pick-up trucks
- 2 1-ton dump trucks 0
- 3 6-wheeler dump trucks
- 1 semi-tractor Ο
- 2 semi dump boxes

1 lowboy semi

- Training:
 - every 2 years. Various monthly equipment training.
- Material Storage needs:
 - Log benches
 - o Stain
 - Fuel cans
 - Vehicle cleaning supplies 0
 - Various equipment oils and grease 0
 - Geo textile rolls 0
 - Various signs for safety and safety cones 0
 - Plastic snow/safety fence and posts 0
 - Flammable storage cabinet 0
 - Safety signs 0
 - o Bags of cement
- Each crew member has 5 different uniforms.

3.2 **Grounds Management - Roads Crew Operations**

Road and Parking Lot activities provided by GNR Crews include the following:

- Parking lot and roadway maintenance
- Parking lot accessory repair (wheel stops, signage, etc.)
- Asphalt patching and crack filling
- Cyclical application of emulsified asphalt sealer and asphalt marking

• Weekly, brief tailgate training sessions on various topics. Annual chainsaw safety certification training and training on advanced felling/cutting techniques

 Certified Arborists on crew required to obtain CEUs for certification renewal. o First Aid, CPR, AED certification and training for renewal.

• Large shop size is needed repairing, fabricating, constructing, and maintaining assets. Shop space would ideally include air lines and water hookups.

(5 acres permeable pavers & concrete walk, 59.8 acres gravel, 144 acres asphalt)

Grounds and Natural Resource Management Operational Assessment and Logistics Plan Evaluation Report

- Asphalt resurfacing
- River clearing
- Herbicide applications in parking lots and roadways as needed... or could phrase it as vegetation management in parking lots and roadways.
- Aggregate grading
- Storm sewer scoping, clearing and repair
- Parking lot and roadway sweeping
- Snow removal and deicing
- Deer transport
- Equipment maintenance (i.e. sharpening and cleaning chainsaws, greasing and washing equipment)

3.2.1 Grounds Management - Roads Crew Internal Assessments

All GNR crews were given questionnaires to address the needs and understanding of current operations from the perspective of those on the ground. It is important to consider what they identify as efficiencies and deficiencies in order to provide an optimal solution for all staff operations as well as positioning them for the future.

I time includes 1 Foreman: Seasonal

- Operate out of 5 Buildings.
- Off-site storage of materials and equipment at Schwarz barn.
- 33 pieces of equipment and vehicles along with 8 trailers would benefit from being stored inside.
- Material storage:
 - Pallets of sand for sealcoating
 - Pallets of thermoplastic striping materials 0
 - Pallets of deicer 0
 - Pallets of heavy-duty patching compound 0
 - Pallets of zone marking striping paint (flammable) 0
 - 55-gallon barrel of biodegradable asphalt release agent 0
 - (2) 55-gallon barrels of SS-1 tack cote 0
 - o 5,500 gallons of liquid deicer in an outdoor storage tank.
- Weekly, brief tailgate training sessions on various topics. Annual chainsaw safety certification training and training on advanced felling/cutting techniques every 2 years. Various monthly equipment training.
- Certified Arborists on crew required to obtain CEUs for certification renewal.
- First Aid, CPR, AED certification and training for renewal

- Each crew member has 6 different uniforms.
- Crew is at capacity.
- Productivity Challenges:
 - o Lack of space.
 - movement to pass.
 - o Clearing vehicles and equipment of ice and snow.
 - o Insufficient indoor shop space to maintain tools and equipment.
- and Waterfall Glen.



• A commercial washer/dryer would be used for this crew as clothes are often covered in tar, herbicide, fuel and mud - washing clothing at home then introduces materials into the household.

o Trailers are stored across the street at the Nursery which has one lane roads with limited

Most time is spent maintaining the Blackwell Preserve followed by Greene Valley, St. James Farm

Grounds Management - Landscape Crew Operations 3.3

Landscape activities provided by GNR Crews include the following:

- Mowing of 166 miles of aggregate trail sides and grass trails. Mowing of 310 acres of turf and the associated trash removal from the turf areas
- Landscape maintenance and installation
- Weed control, herbicide application of 15 acres of mulch beds
- Turf restoration working with Forestry Crew •
- Snow removal working with Roads Crew
- Tree removal working with Forestry Crew
- River clearing working with Roads Crew
- Paver replacement and repair
- Wood splitting and delivering for various departments and locations.
- Tree pruning and mulch bed maintenance
- Fertilizing of turf areas •
- Waterscaping asset construction and maintenance. Planting bed maintenance at Danada Gardens and FPDDC Headquarters
- Irrigation of new trees, turf restoration areas and planting beds
- Fall clean up including leaf pick up and brush burning
- Rototilling and aeration of turf areas
- Over-seeding 200 acres of fine mow turf annually Tree planting
- Stump grinding Prescribed burns - working with Natural Resource Management Crew

3.3.1 Grounds Management - Landscape Crew Internal Assessments

All GNR crews were given questionnaires to address the needs and understanding of current operations from the perspective of those on the ground. It is important to consider what they identify as efficiencies and deficiencies in order to provide an optimal solution for all staff operations as well as positioning them for the future.

- 13 full time includes 1 Foreman: 4-6 seasonal
- Operate out of 4 buildings at Blackwell and 2 at Danada.
- Weekly, brief tailgate training sessions on various topics. Annual chainsaw safety certification training and training on advanced felling/cutting techniques every 2 years. Various monthly equipment training.
- Certified Arborists on crew required to obtain CEUs for certification renewal.

- Most time is spent at Blackwell Preserve.
- Indoor storage for mowers needed.



• First Aid, CPR, AED certification and training for renewal. Material storage - stored at Facilities Management yard, Danada Equestrian area and Blackwell nursery.

• Small lift to load mowers onto trucks and trailers would improve mobilization.



3.4 Grounds Management - Forestry Crew Operations

Landscape activities provided by GNR Crews include the following:

- Aerial rescue
- Tree cabling and guying •
- Removal of dead and hazardous trees. Heavy equipment operation
- Tree trimming and pruning •
- Tree inventory and GIS data mapping
- Maintain native tree and shrub nursery
- Tree planting working with Landscaping Crew
- Turf restoration
- **River Clearing** •
- Rescuing and re-nesting fledging raptors
- Special Programs education
- Assist Structural Maintenance with aerial lift truck operations.
- Supply campgrounds with firewood
- Green waste recycling program
- Snow removal with tractor/loaders
- Equipment maintenance (i.e. sharpening and cleaning chainsaws, greasing tractors, greasing and changing blades on chippers, washing equipment)
- Prescribed burning (assist Natural Resource Management Crew)
- Seed collection and propagation of native species to restock nursery

3.4.1 Grounds Management – Forestry Crew Internal Assessment

All GNR crews were given questionnaires to address the needs and understanding of current operations from the perspective of those on the ground. It is important to consider what they identify as efficiencies and deficiencies in order to provide an optimal solution for all staff operations as well as positioning them for the future.

I time includes 1 Foreman: 2-3 Seasonal

- Operate out of 5 Buildings.
- Off-site storage at East Branch Schwarz barn.
- Vehicles or Large Equipment needed to be stored in a heated space:



- o 6 large trucks
- 3 medium trucks
- 2 tractors
- o 2 stump grinders
- o 1 ATV
 - o 2 Water spray rigs
 - Riding mower
 - One agriculture tractor
 - o Hydromulcher
- Vehicles or Large Equipment needed to be stored indoors:
 - o Implements
 - 0
 - o (2) three-point tractor implements
 - o Turf roller
 - o Rototiller
- Material storage:
 - Nursery supplies (burlap, twine)
 - o Grass seed
 - o Hydromulch
 - Erosion matting
 - o Irrigation hose
 - o Poly water tanks
 - o Bar / chain oil cases
- Various monthly equipment training.
- Certified Arborists on crew required to obtain CEUs for certification renewal.
- First Aid, CPR, AED certification and training for renewal.
- Aerial rescue training and aerial lift truck certification
- Crew is at capacity for completing their management plan.
- Crew spends time rearranging trucks daily.
- Insufficient indoor shop space to maintain tools and equipment.
- Wayne Woods, Herrick Lake and Fullersburg Woods.

• Weekly, brief tailgate training sessions on various topics. Annual chainsaw safety certification training and training on advanced felling/cutting techniques every 2 years.

• Most time is spent at the Blackwell Preserve and Nursery followed by Waterfall Glen, Pratts-

3.5 Natural Resource - Management Crew Operations

Landscape activities provided by GNR Crews include the following:

- Firefighting, prescribed burn management and fire break mowing
- Seed harvesting, processing, propagation and distribution
- Brush clearing, mowing and mulching
- Invasive species control, herbicide spraying
- Bird banding working with Animal Ecology ٠
- Turtle trapping education •
- Tree and shrub installation
- Installation of plugs/pots of native herbaceous species • either propagated or purchased
- Propagation of woody native species by cuttings
- Deer culling and baiting for deer management program
- Equipment maintenance
- Data entry for seed collection and distribution and herbicide use
- Beaver control
- Plant survey •
- Erosion control •
- Shrub and sod planting •
- Tree planting
- Landscaping

3.5.1 Natural Resource - Management Crew Internal Assessment

All GNR crews were given questionnaires to address the needs and understanding of current operations from the perspective of those on the ground. It is important to consider what they identify as efficiencies and deficiencies in order to provide an optimal solution for all staff operations as well as positioning them for the future.

ull time includes 1 Foreman: 4-8 seasonal

- Operate out of 6 Buildings at Blackwell, storage at Springbrook Prairie and Pratt's Wayne Woods. Program equipment stored at Waterfall Glen at the Natural Resources Program support buildings.
- 34 Vehicles or Large Equipment needed to be stored in a heated space: •
 - 11 trucks 0
 - 2 tractors 0
 - 1 Track loader 0
 - 6 ATVs 0
 - 14 prescribed fire or herbicide spray tanks 0



- Safety Training is done for:
 - Chainsaw and clearing saw operation and maintenance Ο
 - Tree Felling operational safety 0
 - Prescribed fire operational safety 0
 - Confined space entry 0
 - First aid and CPR 0

• Inadequate square footage for seed drying, processing, mixing and for dry and cold storage (walk-in cold storage is needed). • Most time is spent on the west half of the county, along with Waterfall Glen and Greene

Valley.



3.5.2 Natural Resource - Management Stewardship Coordinator Operations

(Volunteer management and Native Nursery Maintenance)

- Maintaining plant nursery working with Natural Resource Management Crew
- Native plant species propagation
- Education
- Firefighting, prescribed burn management and fire break mowing
- Seed harvesting, processing, propagation and distribution
- Brush clearing, mowing and mulching
- Invasive species control, herbicide spraying
- Training session-safety, chain saw training, monitor program training

3.5.3 Natural Resource - Management Stewardship Coordinator Internal Assessment

(Volunteer Management and Native Nursery Maintenance)

- 3 full time; 1 seasonal on occasion
- Operates out of 5 building areas plus a storage shed at Blackwell, the pump house at the nursery, and 6 additional storage locations throughout the District for the Stewards.
- Indoor vehicle storage for 1 pull-behind seed stripper and pick-up trucks.
- Additional equipment desired for more efficient operations:
 - Year-round green house with potting benches, electric and cooling.
 - Walk-in freezer with shelving for seed storage.
- Participate in 5 training sessions per year.
- Crew spends most time at Willowbrook, Springbrook, Maple Grove, Blackwell and Mayslake
- Biggest productivity challenge: volunteer pick-up for equipment and materials after-hours, lack of indoor workstation space for seed processing and plant propagation.
- Identified positives of current working conditions:
 - Great location and proximity to fleet maintenance and facilities management. This leads to ease of communication with the various crews.
- Identified negatives of current working conditions:
 - o Undesirable workspace along with minimal storage areas.
 - Lack of sufficient office space.
 - Leaky roofs and poor air quality due to rodents and mold.





3.5.4 Natural Resources - Program Support Operations

 Deer population control and processing – involves Grounds Management, Natural Resources, Site Ops and USDA

3.5.5 Natural Resource - Program Support Internal Assessment

- Operates out of two converted residences, 1 for deer processing and 1 for offices, in the Waterfall Glen Preserve in November / December. Some equipment and vehicles are stored at Blackwell Nursery.
- Crew consists of volunteers from the following:
 - o 2-3 from Natural Resources for duration of the program.
 - 2 from Trails and Streams, twice per week
 - 1 from landscape for the duration of the program.
 - 1-2 from Ecology for the duration of the program.
 - o 2-3 pre-professionals (seasonal) for the duration of the program.
- Crew needs a larger walk-in cooler with an oversized door with rail system to move from the space used to process deer into the cooler and then back out again onto a dump truck when transported off-site. Currently the crew must manually carry the heavy loads from space to space.
- The current cooler is not ideally placed and causes inefficiencies in operations. For example, the deer get processed, then weighed then washed prior to being placed in the cooler. Since the cooler is not in an ideal location, all the deer get processed and pushed past the scale, brought back to the one floor drain in the space and washed then to the cooler. This creates a bottleneck in the operations and wastes time.
- A taller ceiling is needed so that the dump truck that picks up the fully processed deer can pull into the space.
- There is currently only one water spigot so washing of the deer is slower than it should having an additional spigot would speed up their process.
- Once deer are processed, they are taken on Wednesday and Friday mornings throughout the program to a venison processor in Earlville, IL.
- Biggest productivity challenge: hanging deer in cooler and taking them out of cooler. It is estimated that there is a 30%-time deficiency due to rail setup. Another challenge is not enough water spigots for cleaning.
- Identified positives of current working conditions:

- Currently located in a secluded area away from residences.
- Dedicated space for processing and office area.
- Sufficient space for processing, office work and storage.
- On demand hot water
- Space to park 2 vehicles plus ATV inside of a heated garage. 0
- Identified negatives:
 - Limited security due to seclusion.
 - Travel time when working in opposite corner of the county.
 - Building and infrastructure conditions are failing.
 - o Cooler undersized and exposed to outside elements which cause the condenser unit to freeze.
 - The floor is improperly pitched to the floor drain and it is undersized, causing frequent clogs.

 - put in dump truck with a tall tailgate.
 - Lack of hot and cold-water locations.
 - Insufficient lighting.
 - One toilet room. 0
 - program support due to decentralized location.

o Rail system inefficiencies in the scale and washing/processing areas.

o Deer need to be either carried from the cooler or lifted off rails and carried outside to

• The need for the trucks, trailer, and ATV to be "dedicated" to natural resource

3.6 Crew Operations Start of Day

Asset Management is a vital component in the efficiencies we strive to improve as we go about our daily tasks. How and when we interact with each other and how we start and close our days sets the tone for how we will achieve improved task management as well. The diagram below indicates the efficiencies and inefficiencies of how the crews interact on a daily basis.





Grounds – Trails and Streams Crew

- Start at Rental office trailer
- Vehicles, equipment, and tools are then acquired
- Trailer picked up from the Nursery
- Material collected and loaded onto the trailer
- Out to preserves to maintain trails or streams

Grounds – Roads Crew

- Start at rental office trailer
- If using herbicide, then it is collected at the Wash Bay / Chemical Mixing building.
- Vehicles, equipment, and tools are acquired
- Trailer picked up from Nursery
- Material collected and loaded onto trailer
- Out to preserves

Landscape Crew

- Start at Rental office trailer
- Vehicles, equipment, and tools are acquired
- Trailer picked up from Nursery
- Out to preserves



Grounds – Forestry Crew

- Start at Administrative Office Building
- Vehicles, equipment and tools are acquired. May head into the Nursery to maintain trees and shrubs
- Out to preserves



Natural Resources - Management Crew

- Start at Rental office trailer
- For invasive species control, herbicide is collected.
- Seed processing or distribution
- Vehicles, equipment then trailers are acquired
- Out to preserves

3.7 Crew Operations End of Day

Asset Management is a vital component in the efficiencies we strive to improve as we go about our daily tasks. How and when we interact with each other and how we start and close our days sets the tone for how we will achieve improved task management as well. The diagram below indicates the efficiencies and inefficiencies of how the crews interact on a daily basis.



All crews end their day at the refueling station located on the east end of the Blackwell Site – this is cause for lengthy waits and inefficiencies. This may add up to 15 minutes per vehicle per refueling instance. On some occasions, refueling is done in the morning whenever possible to offset the afternoon delays.

Vehicles with trailers often have to unload their equipment at their corresponding storage location on site before then moving the trailer to either the nursery across the street, or to a spot within one of the buildings or onsite, before parking their vehicle. This causes tandem parking situations where vehicles are boxed in, creating a time addition the next day when mobilizing.

Grounds - Trails and Streams Crew

- Trailer dropped off
- Fuel
- Return and unload equipment, materials, and park vehicle
- Administrative tasks
- Sign out

Grounds – Roads Crew

- Trailer dropped off
- Fuel
- Return and unload equipment, materials, and park vehicle
- Administrative tasks
- Sign out

Landscape Crew

- Trailer dropped off
- Fuel
- Return and unload equipment, materials, and park vehicle
- Administrative tasks
- Sign out



Grounds – Forestry Crew

- Trailer dropped off
- Fuel
- Return and unload equipment, materials, and park vehicle
- Administrative tasks
- Sign out



Natural Resources – Management Crew

- Fuel
- Return and unload equipment, materials, and park vehicle
- Administrative tasks
- Sign out

Grounds and Natural Resource Management Operational Assessment and Logistics Plan Evaluation Report

Crew Operations - Summary of Findings 3.8

The following represents commonalities between most if not all crews.

- Biggest Productivity Challenge:
 - o Congested yard space along with limited turning movement and circulation space around current configuration.
 - Keeping tools and equipment organized and in one location due to lack of storage.
 - o Mobilization takes from 30mins 1 hour due to gathering supplies and equipment needed for the day's tasks. This includes trips to other facility locations to pick-up supplies or equipment.
 - Parking, storing, and extracting vehicles and equipment from various buildings and spaces.
 - Having to move equipment around for accessibility. Trucks are often in and out of storage space when not being used.
 - Outdoor equipment storage requires tools to be unloaded and relocated each day in secure buildings.
- Negatives:
 - Equipment and materials are difficult to keep clean due to insufficient indoor storage space. There are many contributors to the uncleanliness: gravel site, animal feces, mold, dirt floors in barns, leaks, and aging structures.
 - Equipment depreciates faster and creates more downtime.
 - Limited private conference areas.
 - o Lack if indoor storage space exposes equipment to inclement weather, which accelerates end of life cycles and maintenance issues.
 - General overcrowding in storage areas. 0
 - Insufficient locker space for all personal and specialty gear needed for all seasons. 0
 - Insufficient restrooms available for number of staff both male and female. 0
 - Separate changing areas for clean and dirty gear is needed along with shower 0 facilities. A shower area for proper chemical clean-up is needed.
 - No commercial washer or dryer.
 - Building deterioration increases risk of injury to staff.

- Positives:

 - manner (i.e. parking entrance).

3.8.1 Crew Operations – Summary of Findings – Financial Affects

The following "yearly" financial affects can be realized by replacing the existing Grounds and Natural Resources Campus with a more efficient layout and rectifying the Challenges and Negatives previously outlined. The potential to save time/money in relation to crew costs is estimated as follows:

			1 200 E
То	otal		\$173,745
			\$ 69,498 -
		<u>X</u>	65 Busines
		Х	\$39.58 / Ho
		Х	54 current
Wi	nter Activities:		30-40 minu
			\$104,247 -
		<u>X</u>	195 Busine
		Х	\$39.58 / Ho
		Х	54 current
Su	mmer Activities:		15-20 minu

The potential to save money in relation to storing equipment out of the elements realizes cost savings due to expanding the equipment longevity is estimated as follows (reference Cost Savings analysis in Section 4.2 of the Evaluation Report):

542 existing District Assets represents \$8,000,000.

If stored outdoors it would cost the District approximately \$50 million+, in lieu of spending \$16.3 million now plus operation and maintenance of brand new buildings (heated and unheated) over 50 years to store these assets indoors. This represents a savings of \$30 million+.

Centrally located near Fleet Management facility, nursery and fuel island.

o Near facilities and provides opportunity to connect property in a more efficient

utes per person

Crew Staff

our (\$0.66/minute - includes salary and benefits)

ess "Summer" Days/Year

\$138,996 / Year

utes per person

Crew Staff

our (\$0.66/minute – includes salary and benefits)

ss "Winter" Days/Year

\$92,664 / Year

- 231,660 Savings per Year

4,390 – 5,853 Manhours savings per year

NOTE:

This estimate is based on the understanding that all vehicles will be stored within an enclosed and heated building and that trailers can remain attached overnight with equipment and supplies fully loaded. Properly stored equipment will result in longer life spans, reduced mechanical failures and minimal chance for theft or vandalism. Additionally, handheld equipment will be readily accessible within the same structure for ease of access and asset protection.

Fully enclosed, unheated structures on the same site will allow for seasonal items to be stored more efficiently and out of the way therefore reducing congestion and energy costs.

3.8.2 Needs Assessment from Crews (provided by FPDDC)

Over the years FPDDC GNR and Site Ops crews have collected data and shared their daily experiences to assist in better understanding the costs associated with operation as well as the amount of material or preserve features they maintain. Most of what has been provided will assist in developing a detailed program during later development.

- Grounds Crews need additional office space as well as heated / unheated covered storage space.
- Workshop areas are undersized and not able to store all tools and materials needed for various repairs and small projects.
- Larger lockers and locker room space along with showers and a functional mudroom are all deficient at the current facilities.
- A commercial washer / dryer would be utilized if accommodated.
- The Wash Bay and Herbicide storage experiences a lot of problems with drains clogging and undersized. The Wash bay was inoperable for 100 days in 2021.
- Vehicle movements and mobilization is problematic as additional time is spent every day gathering equipment and materials along with constant shifting of vehicle placement. This also causes dangerous situations for yard circulation.
- The yard should be asphalt as current gravel lot produces a lot of dust and creates a continual need for cleaning off vehicles and equipment. It also produces ice in the winter due to low areas which collect water. Gravel also makes effective snow plowing and deicing difficult, resulting in safety concerns for staff and potential for damage to District Fleet assets.
- A larger meeting / training space and lunchroom is needed and could be shared amongst crews. Currently NR supervisors/staff are utilizing lunchroom for office space

- lunchroom is being used for office space. Room is too small for meetings.
- events.

• Currently there is not any private space to conduct sensitive employee matters without people vacating their office space. The conference room is once again available as

 Volunteer stewards have their program material stored in various locations and is in need of a space to consolidate all materials along with an adequate deployment space for volunteer

4.0 PROPERTY AND BUILDING ASSESSMENT

This section summarizes the properties that the FPDDC owns along with the vehicles and equipment it owns and operates.

4.1 Evaluation of Existing Site & Building Conditions

Three are three (3) main components to the evaluation of an existing building, they are as follows:

Deferred Maintenance (DM) is the postponement of building and equipment maintenance/upgrades for an entity's normal operating budget cycle due to a lack of funds or an anticipated future capital improvement. Lack of funding for routine maintenance can cause neglect, allowing minor repair work to evolve into more serious conditions, causing future capital improvements to escalate in scope.

Code Compliance (CC) involves the use of locally accepted model and state codes, with local amendments, to provide safety, health and public welfare through *structural strength and stability, means of egress, adequate light and ventilation, energy conservation and protection to life and property from fire and hazards incidental to the use, design, construction, alteration, relocation, removal or demolition of buildings and structures.* These regulations shall control all matters concerning the construction, alteration, addition, repair, relocation, removal, demolition, use, location, occupancy and maintenance of all buildings and structures, and shall apply to existing buildings and structures.

Model and State Codes as adopted by DuPage County:

- International Building Code (IBC) 2015
- International Fire Code (IFC) 2015
- International Mechanical Code (IMC) 2015
- International Fuel Gas Code (IFGC) 2015
- International Property Maintenance Code (IPMC) 2015
- NFPA 70 National Electrical Code (NEC) 2014
- Illinois Energy Efficiency Code (IEEC) 2018
- Illinois State Plumbing Code 2017

Accessibility Compliance (AC) utilizes the Illinois Accessibility Code (IAC) – 2018, which implements the Environmental Barriers Act (410 ILCS 25). The Code is intended to establish minimum scoping and technical design requirements to ensure that the built environment in the State of Illinois is designed, constructed, and altered to be accessible to and usable by all, including individuals with disabilities. This Code is also intended to resolve areas of difference between federal accessible design standards such as the 2010 Americans with Disabilities Act (ADA), standards for accessible design (28 CFR 36 [2010]) and this Code. Building constructed prior to 1988 are not required to comply with the IAC unless work on the facility involves alterations, additions, or reconstruction.

Listed below are several of the FPDDC-GNR property sites and buildings we have evaluated utilizing the above components to determine their current usefulness and serviceability.



Blackwell Preserve (Campus & Nursery)

The Blackwell Campus is located off Mack Rd. between Winfield Rd to the east and Rte. 59 to the west in the Blackwell Preserve. The site includes 12 buildings and 2 shed structures, North of Mack Road, currently being evaluated, these do not include Fleet Management, Facilities and the Alternative Fuel Island. In addition to the portion of the campus North of Mack Road the Blackwell Tree Nursery is located on the South side of the road, it hosts two small greenhouses and an open air storage structure. Additionally, there are multiple trailers being rented and used to house crew and for Seed Processing. These structures are not being evaluated since they are not owned by the FPDDC.

Blackwell Campus & Nursery Site Conditions:

This campus currently houses Grounds, Natural Resources, Fleet Management, the Alternative Fuel Island, and Facilities Management. Grounds and Natural Resources station their vehicles and store most equipment on the Blackwell site with a couple exceptions. The following items are *non-code* related but

need to be addressed for operational and logistics reasons.

- There is limited space for vehicle and large equipment storage on the site with a small amount of that space being usable enclosed and/or heated.
- The limited amount of yard space lends itself to needing to have vehicles and trailers parked in tandem from two to four deep, on a first come first serve basis when it comes to parking the vehicles at the end of the workday. This leads to issues with vehicles leaving the site at the start of the day since last in may not be able to be first out.
- Additionally, several of the equipment trailers, which there is no space for, are parked across Mack Road in the Nursery. This required the work trucks to go across the road and pick up a trailer only to come back across to load equipment on to that trailer. The crossing of Mack Road causes concerns for the safety of the drivers and equipment since this tasked is performed in the morning and in the evening every workday.
- A large portion of the yard is unpaved which causes multiple issues on the site:
 - When the unpaved parking and circulation areas are dry in the warmer seasons, large amounts of dust and dirt are thrown into the air when the vehicles and equipment are moved, which is an environmental issue.
 - Additionally, this dust and dirt covers the vehicles and equipment leading to more cleaning and maintenance being required.
 - The unpaved portions of the yard tend to develop wheel ruts and building drainage swales 0 which cause ponding areas which freeze in the winter making for unsafe circulation in and out as well as around the buildings on campus.
- Blind and narrow corners around buildings on the campus pose safety concerns with vehicular • movement around campus.
- Currently there is an access to the site near the Alternative Fuel Island which cause there to be insufficient queuing space for vehicles and trailers at the pumps.
- The main access points to the North and South portions of the Blackwell Campus from Mack Road are narrow drives which pose difficulties for crew when trying to maneuver multiple trailers in and out of the site at the start and the end of the workday.
- Work at the Nursery involves participation of a great deal of volunteers seasonally and does not provide an adequate or safe parking lot.

Building BW-017 Vehicle, Equipment & Material Storage

- Constructed in 1970.
- Approximately 3,200 square feet.
- The construction consists of a wood framed pole barn with corrugated metal roof and wall panels, and a compacted gravel floor.
- HVAC: Un-conditioned space, no heating or • cooling.
- Plumbing: None.

NIGHT

Engineers & Architects

• Fire Alarm System: Pull station with a strobe/horn device is present. Fire extinguishers are accessible in the space.



DM Issues:

- The existing metal roofing needs to be repaired, the current condition has led to water infiltration deteriorating the roof structure and causing serviceability issues.
- The existing metal exterior wall cladding, and several doors need to be repaired, the current condition has led to water infiltration and rodent infestation.
- The existing gravel floor needs to be repaired to provide a flat even surface to eliminate tire ruts and prevent pooling water.

 Regular failures with electrical system also. CC Issues:

- The structural strength and stability of the building is compromised due to water infiltration.
- The building has inadequate lighting and ventilation.
- Since the building is intended for the storage of vehicles and materials it has inadequate fire prevention and protection systems in place.
- ing to poor energy conservation and water infiltration, resulting in the building being unusable.
- is inappropriate for the function; with the flooring conditions making it unsafe in an emergency.
- rently exhausts into this space.
- condition of the building currently exposes these components to an exterior environment.

AC Issues:

- be remodeled the following items, at a minimum, would need to be addressed.
- An accessible pathway at the interior of the building is limited due to the uneven gravel flooring and the differential in the floor level to the connected building.
- auirements.

Building BW-017A Vehicle Storage & Service Shop – 2 Bays

- Constructed in 1980.
- Approximately 1,536 square feet. ٠
- The construction consists of a wood framed pole barn with corrugated metal roof and wall panels, space, accessed with a wood framed stair.
- electric exhaust fan is mounted on the East wall.



The building has inadequate thermal and moisture protection of the wall and roof assemblies lead-

• There is a single Emergency Egress location the door swings inward to the space and the hardware

• A through wall air conditioning unit, is mounted in the common wall with Building BW-017A, and cur-

• The existing electrical service panel, devices, and light fixtures are intended for interior use. The

• Currently compliance is not required due to the date of construction, however if the building were to

The hardware and operation of the entrance/egress door is not in compliance with accessibility re-

and a concrete floor. A wood framed storage mezzanine is located in the Southeast corner of the

HVAC: Two gas-fired unit heaters are ceiling hung, as well as a ceiling hung electric inferred heater, a through wall air conditioning unit, is mounted in the common wall with Building BW-017, and an

- Plumbing: A single user toilet room is provided with a hand sink and toilet, a service (utility) sink, and emergency eye wash are located adjacent to the toilet room, as well as an electric water heater. All wastewater is reclaimed and/or stored in an underground storage tank.
- Fire Alarm System: Pull station with a strobe/horn device is present. Fire extinguishers are accessible in the space.

DM Issues:

- The existing toilet room is currently unused do to neglect and damage caused by trapped animal. This space needs to be renovated to be placed back into operation.
- The concrete floor surface is deteriorating and needs to be repaired or replaced.
- Remnants of vehicle lifts covered vaults from old Fleet space remain on floor causing trip hazards • for staff.

CC Issues:

- The exterior walls of the building are insulated with a combination of rigid foam board and paper • faced fiberglass batts. These insulation products are exposed to the interior of the building and can pose a fire and smoke development issue in the space. It is unknown what insulation is provided in the ceiling or at the roof since it was not accessible due to the presence of an acoustical ceiling tile system.
- Since the building is intended for the storage of vehicles and materials it has inadequate fire pre-• vention and protection systems in place.
- The building walls have inadequate thermal protection since the insulation is not uniform in its installation. Additionally, daylight to the space is provided with the use of translucent acrylic wall panels which have limited thermal performance.
- There is a single Emergency Egress door provided in the space and its hardware is inappropriate • for the function.
- A through wall air conditioning unit is mounted in the common wall with Building BW-017, and currently exhausts into that space.
- The existing electrical service panels are not protected from potential damage and equipment is stored in the clear space required in front of the panels.

AC Issues:

- Currently compliance is not required due to the date of construction, however if the building were to be remodeled the following items, at a minimum, would need to be addressed.
- The existing toilet room is not accessible for multiple reasons including the access door width, the raised floor level, fixture placement, etc.
- The door hardware of the toilet room and entrance/egress doors are not in compliance with accessibility requirements.

Building BW-017B Vehicle Storage & Service Shop – 2 Bays

- Constructed in 1984.
- Approximately 1,577 square feet. •
- The construction consists of a wood framed pole barn with corrugated metal roof and wall panels, and a concrete floor.
- HVAC: Two gas-fired unit heaters are ceiling hung, and an electric exhaust fan is mounted on the East wall.
- Plumbing: None. A portable handwashing station is available in the space.
- Fire Alarm System: Pull station with a strobe/horn device is present. Fire extinguishers are accessible in the space.

DM Issues:

NIGHT

Engineers & Architects

The concrete floor surface is deteriorating and needs to be repaired or replaced.

CC Issues:

- building and can pose a fire and smoke development issue in the space.
- Since the building is intended for the storage of vehicles and materials it has inadequate fire prevention and protection systems in place.
- els which provide limited thermal performance.
- for the function.

AC Issues:

- be remodeled the following items, at a minimum, would need to be addressed.
- ments.
- The door at the East side of the space has a raised threshold preventing it from being accessible. •

Building BW-017C Vehicle & Equipment Storage – 6 Bays

- Constructed in 1984.
- Approximately 7,170 square feet plus a 600 square foot mezzanine.
- The construction consists of a wood framed pole barn with corrugated metal roof and wall panels, and a compacted gravel floor. A wood framed office mezzanine is in the West end of the space, accessed with a wood framed stair.
- HVAC: Two gas-fired unit heaters are ceiling hung in the vehicle bays, two wall mounted exhaust fans, and two through wall air conditioning units in the mezzanine office space. Additionally, there are supply registers in the ceiling of the mezzanine office space with a wall mounted thermostat.
- Plumbing: A sink is in a break room at the mezzanine level.
- Fire Alarm System: Pull station with a strobe/horn device is present. Fire extinguishers are accessible in the space.

DM Issues:

• The existing gravel floor needs to be repaired to provide a flat even surface to eliminate tire ruts and prevent pooling water.

CC Issues:

• The exterior walls and roof of the building in the vehicle bays are insulated with rigid foam board. velopment issue in the space.

• The exterior walls of the building and overhead doors are insulated with a combination of rigid foam board and paper faced fiberglass batts. These insulation products are exposed to the interior of the

• The building walls have inadequate thermal protection since the insulation is not uniform in its installation. Additionally, daylight to the space is provide with the use of translucent acrylic roof pan-

• There are two Emergency Egress doors provided in the space and their hardware is inappropriate

Currently compliance is not required due to the date of construction, however if the building were to

The door hardware of the entrance/egress doors are not in compliance with accessibility require-



This insulation product is exposed to the interior of the building and can pose a fire and smoke de-

- Since the building is intended for the storage of vehicles and materials it has inadequate fire prevention and protection systems in place.
- The building walls have inadequate thermal protection since the insulation is not uniform in its in-• stallation. Additionally, daylight to the space is provide with the use of translucent acrylic roof panels which provide limited thermal performance.
- There are two Emergency Egress doors provided in the • space and their hardware is inappropriate for the function. The emergency exit at the West end of the building is improperly identified and requires additional signage. Exit signage at both doors in not properly illuminated.
- The mezzanine office space does not have code com-• pliant exiting. Two means of egress are required from that space, one of which would need to be enclosed and exit directly to the exterior of the building.
- The existing stair and railing construction, accessing the mezzanine, is not code compliant.
- The existing electrical service panels are not protected from potential damage.
- Continuous failures with garage doors believed to be • due to shifting or settling of the building.

AC Issues:

- Currently compliance is not required due to the date of • construction, however if the building were to be remodeled the following items, at a minimum, would need to be addressed.
- The door hardware of the entrance/egress doors are not • in compliance with accessibility requirements.
- An accessible pathway at the interior of the building is • limited due to the uneven gravel flooring.





Building BW-026 Chemical Mixing & Vehicle Wash – 2 Bays



• Approximately 4,680 square feet. • The construction consists of a pre-engineered metal frame with corrugated metal roof and wall panels, interior concrete masonry (CMU) partitions, and a concrete floor.

• HVAC: Infrared gas heaters are ceiling hung, and electric exhaust fans are mounted on the South wall of both bays. Electric unit heaters are ceiling hung in the equipment and chemical mixing rooms with wall mounted electric exhaust fans in both rooms.

Plumbing: A wall mounted service sink and emergency eye wash and shower are located near the • main entry door. A gas-fired water heater and boiler system are located near the water reclaim equipment. Hose bibbs and garden hoses are provided to wash the vehicles and equipment, as well as, fillers for chemical mixing barrels.

Constructed in 1999.

sible in the space.

DM Issues:

- We were informed that roof leaks are present and in need of repair.
- Corrosion (rust) on the structural steel needs to be addressed and properly treated.
- Additionally, the door frame has deteriorated (rusted) through at the base.

Wash bay is insufficient for needs. Regular mechanical problems and when it is operational, it does not function properly (leaves residue on vehicles). CC Issues:

- and protection systems in place.
- The door hardware on the West egress/exit door is inappropriate for the type. •
- The equipment mounted above the electrical room has no means of permanent access. •

There are lockers placed within the require floor space in front of the electrical panels. • AC Issues:

- ance with accessibility requirements.
- Accessibility into several spaces in the building is limited.
- quirements.

Building BW-003 Storage Barn

- Constructed in 1935.
- Approximately 1,493 square feet.
- The construction consists of a wood timber frame with • vertical wood siding (metal siding has been installed on the North face) and asphalt shingled roof. The building has a basement level with a partial concrete and partial dirt floor with cut stone foundation walls.
- HVAC: None. •
- Plumbina: None.
- Fire Alarm System: None. Fire extinguishers are accessible in the space.

DM Issues:

- to water infiltration deteriorating the roof structure and causing serviceability issues.
- The wood siding is deteriorating and needs to be replaced. The current condition has led to water ration of the siding had led to rodent infestation and the building being inhabited by bats.
- bers allowing air and water to infiltrate the building. CC Issues:
 - tion and protection systems in place.

• Fire Alarm System: Pull station with a strobe/horn device is present. Fire extinguishers are acces-

The exit door and hardware, located on East side of the building, is corroding and requires repair.

Since the building is used for the storage of vehicles and materials it has inadequate fire prevention

• Several of the door hardware handles for the entrance/egress and interior doors are not in compli-

The emergency exit door land on the unpaved yard which is not in compliance with accessibility re-





We were informed that roof leaks are present and in need of repair. The current condition has led

infiltration deteriorating the wall structure and causing serviceability issues. Additionally, the deterio-

• The weather barrier behind the wood siding is deteriorating and falling from the supporting mem-

Since the building is used for the storage of equipment and materials it has inadequate fire preven-

- The structural strength and stability of the building is compromised due to water infiltration.
- The building has inadequate lighting and ventilation. •
- The building has inadequate thermal and moisture protection of the wall and roof assemblies lead-• ing to poor energy conservation and water infiltration, resulting in the building being unusable.
- There is a single Emergency Egress location the door swings inward to the space and the hardware • is inappropriate for the function; there isn't a code compliant exit at the basement level. The exit sign located at the door at the main level is not properly illuminated.
- Rodent feces are present in the building which can cause health issues for people utilizing the • building.
- Paint finish is chipping and flaking from the wood framing in the basement. This could contain lead • which can cause health issues for people utilizing the building.
- The existing stair construction to the basement level is not code compliant.

AC Issues:

• Currently compliance is not required due to the date and type of construction for this building. This building does not comply with any accessibility requirements, and it would be cost prohibitive to renovate it into compliance.

Building BW-003A Equipment Repair Shop

- Constructed in 1966.
- Approximately 1,078 square feet. •
- The construction consists of a wood framed walls with ver-• tical metal siding and a wood truss roof with asphalt shingled roof. The floor throughout is a concrete slab on grade.
- HVAC: A ceiling hung gas-fired unit heater is in the shop • area, as well as a gas fired forced air furnace. A wall mounted electric heater is in the toilet room.
- Plumbing: A single-user unisex toilet room containing a • floor mounted tank water closet, wall hung hand sink, and gas-fired water heater is provided. As well as a service sink and emergency eye wash located in the corridor.
- Fire Alarm System: None. Fire extinguishers are accessible in the space.

DM Issues:

- Minor exterior siding, fascia and gutter repair should be performed.
- Existing windows are single pane glass, with minimal thermal capacity. •

CC Issues:

- Since the building is used for the storage of equipment and materials it has inadequate fire preven-• tion and protection systems in place.
- The building has inadequate ventilation.
- The toilet room doesn't appear to have an exhaust fan.
- Return air to the furnace is being pulled from a storage room which contains gas power tools. ٠
- There is a single Emergency Egress/Exit for the space and the hardware is inappropriate for the • function.
- There is no exit signage visible in the building. •



above gas-fire heating appliances.

AC Issues:

- renovate it into compliance. However, the following are the primary issues for this building:
- Toilet room is in accessible and has none of the required fixture clearances. •
- The corridor is to narrow and has fixtures encroaching the path of travel.
- layout.
- Corridor to the BW-003B building has non-compliant doors and is improperly ramped.

Building BW-003B Vehicle & Equipment Storage

- Constructed in 1968.
- Approximately 2,832 square feet. ٠
- The construction consists of a wood pole barn frame with vertical metal siding and an asphalt shingled roof. The floor throughout is a concrete slab on grade.
- HVAC: None. •
- Plumbing: None. This building shares the toilet room located in the connected building BW-003A and there are two portable toilets (port-a-pots) located at the exterior of the building on the North side.

• Fire Alarm System: None. Fire extinguishers are accessible in the space. **DM** Issues:

• Minor exterior siding, fascia and gutter repair should be performed.

• Existing windows are single pane glass, with minimal thermal capacity. CC Issues:

- prevention and protection systems in place.
- The building has inadequate ventilation.
- This buildings only required exit path is through building BW-003A.
- There is no exit signage visible in the building.
- to the space.

AC Issues:

renovate it into compliance.

Building BW-020 Administrative Office Building

- Constructed in 1988.
- Approximately 4,556 square feet.

• The fiberglass paper and foil faced insulation batts are exposed in the space. This violates the code requirements for smoke development and flame spread. This same insulation is also exposed

• Currently compliance is not required due to the date and type of construction for this building. This building does not comply with any accessibility requirements, and it would be cost prohibitive to

The entrance/exit door does not have the proper clearances, and has a non-compliant vestibule



• Since the building is used for the storage of vehicles, equipment and materials it has inadequate fire

The building is not insulated and would only become a code issue if heat was to be incorporated in-

• Currently compliance is not required due to the date and type of construction for this building. This building does not comply with any accessibility requirements, and it would be cost prohibitive to



- The construction consists of a masonry bearing walls with vertical metal siding and an metal standing seam roof. The floor throughout is a concrete slab on grade.
- HVAC: Three gas fired, direct venting, forced air furnaces with grade mounted air conditioner compressors.
- Plumbing: Janitor's closet with a mop basing, break area with a sink, and Men's and Women's washroom facilities with the following fixtures:
 - Men's: 2 water closets, 2 urinals, 1 trough sink, and 1 shower stall.
 - Women's: 2 water closets, 2 hand sinks, and 1 shower stall.
- Fire Alarm System: Pull stations with strobe/horn devices are present, as well as smoke detection devices. Fire extinguishers are accessible in the space.

DM Issues:

- Minor exterior siding, fascia and gutter repair should be performed. •
- There are several ceiling tiles which are water stained, indicating potential roof leaks. •
- There is inadequate shower facilities for the quantity of personnel utilizing the locker rooms.

CC Issues:

- Residential furnace equipment is being utilized, which has limited capacity for providing the code • required ventilation air.
- Exit signage is contradictory and in some locations not provided. •
- Women's Locker rooms are being used for file and miscellaneous storage in addition to their in-• tended use.
- (Men's) locker room undersized. There are no lockers available for seasonal staff. ٠
- Access to utility room in difficult (front). •
- Septic drain issues.

AC Issues:

- Compliance is required due to the date and type of construction for this building. The following are • the primary issues for this building:
- Locker rooms and washrooms do not provide the maneuvering clearances required.
- The corridors have fixtures encroaching the path of travel.
- The entrance has a non-compliant vestibule layout. •
- The break area cabinetry and access clearances are non-compliant.

The following two structures are covered open air storage areas with a single rear wall. They are in acceptable condition, however, the BW-017D is open facing the west direction. This allows most weather conditions to enter the space, leaving the stored equipment and/or material unprotected.

Building BW-017D Covered Storage Structure

- Constructed in 1998.
- Approximately 1,050 square feet.
- The construction consists of a pole barn wood frame • with metal panel roofing.
- HVAC: Not Applicable. •
- Plumbing: Not Applicable.
- Fire Alarm System: Not Applicable.

DM Issues:

Not Applicable

CC Issues:

Not Applicable



AC Issues:

Not Applicable

Building BW-003D Covered Storage Structure

- Constructed in 1992.
- Approximately 60 square feet.
- The construction consists of a pole barn wood frame with metal panel roofing. •
- HVAC: Not Applicable.
- Plumbing: Not Applicable.
- Fire Alarm System: Not Applicable.
- **DM** Issues:
 - Not Applicable
- CC Issues:
 - Not Applicable
- AC Issues:
 - Not Applicable

Building BW-022 Facilities Management Administrative Office Building

- Constructed in 1991.
- Approximately 18,046 square feet.
- This building is currently occupied by the Structural Maintenance crew providing office space, shop area, and vehicle storage.
- There is land available to the East of this building which would lend itself to allowing an addition to building BW-022.

DM Issues:

Not Applicable

CC Issues:

Not Applicable

AC Issues:

Not Applicable

Building BW-007F Site Ops Covered Storage Structure

- Constructed in 2001.
- Approximately 540 square feet.
- This building is currently utilized by the Site Ops crew • providing open air storage for equipment and materials.

DM Issues:

- Not Applicable
- CC Issues:
 - Not Applicable
- AC Issues:
 - Not Applicable





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Building BW-007G Site Ops Storage Building – 2 bays heated

- Constructed in 2001.
- Approximately 780 square feet.
- This building is currently utilized by the Site Ops crew • providing storage for vehicles and equipment.

DM Issues:

Not Applicable

CC Issues:

Not Applicable

AC Issues:

• Not Applicable





Building BW-007 Site Ops Office & Storage Building – 3 bays heated

- Constructed in 1969.
- Approximately 2,266 square feet.

• This building is currently utilized by the Site Ops crew providing office space, shop area, and storage for vehicles and equipment.

DM Issues:

• Not Applicable

CC Issues:

Not Applicable

AC Issues:

Not Applicable

East Branch (Swift Prairie)

Several crews store equipment at this location. Site Ops stores kayaks, Natural Resources stores boats as well as use the building for seasonal. The Forest Preserve Police utilize the space for storage for bike patrol equipment and conduct training exercises in this building.

Building 08-8979 Schwarz Barn - heated

- Construction date unknown.
- Approximate square footage unknown.



• The construction consists of a pole barn wood frame with metal panel siding and roofing. DM Issues:

• Not Applicable CC Issues: Not Applicable AC Issues: • Not Applicable Waterfall Glen

There are four buildings located on this site three of which are primarily used. The buildings were originally residences that have been converted to house the Natural Resources Support Program, which utilizes these buildings for 6-8 weeks in November and December annually. One building is for the deer processing, the other contains office space and washroom facilities, and the third building is used for storing vehicles.



Building WFG-007 Office & Washroom Facilities

- Constructed in 1950.
- Approximately 1,225 square feet.

WFG-008 building provided.

- The construction consists of a wood framed bearing walls with vertical wood siding and asphalt shingle roof. The floor throughout is a concrete slab on grade.
- HVAC: A gas fired, forced air furnace, no cooling. • Plumbing: Break area with a sink, unisex single user washroom 1 wall hung sink, 1 floor mounted



tank type water closet, and a tub/shower. Additionally, there are provisions for a clothes washing machine. A 30-gallon electric domestic water heater and a gas fired tankless water heater for the • Fire Alarm System: None. Fire extinguishers are accessible in the space.

DM Issues:

- Minor exterior siding, fascia and gutter repair should be performed. •
- There peeling ceiling paint and taped joints. ٠
- There is evidence of water leakage at the combination furnace and water heater flue.

CC Issues:

- Residential furnace equipment is being utilized, which has no capacity for providing the code re-• guired ventilation air.
- Exit signage is not provided. •
- The main electrical panel is located adjacent to the tankless water heater.

AC Issues:

- Currently compliance is not required due to the date and type of construction for this building. The • following are the primary issues for this building:
- Washroom does not provide the maneuvering clearances required. •
- The corridors are narrow, and doorways are not accessible. •
- Access into the building is non-compliant.
- The break area cabinetry and access clearances are non-compliant. •

Building WFG-008 Processing Facility

- Constructed in 1950.
- Approximately 1,225 square feet. •
- The construction consists of a wood framed bearing walls with vertical wood siding and asphalt shingle roof. The floor throughout is a concrete slab on grade.
- HVAC: None. ٠
- Plumbing: Break area with a sink, and the gas fired tankless water heater in the WFG-007 building • provided hot water for wash down cleaning.
- Fire Alarm System: None. A fire extinguisher is accessible in the space.

DM Issues:

- Minor exterior siding, fascia and gutter repair should be performed. •
- There peeling ceiling paint and taped joints.
- Floor paint/sealer is peeling and worn off. •
- Existing break area cabinets are deteriorating and excessively worn. •
- The walk in cooler is in disrepair, metal liner panels are being held in place with tape and the seals on the door are damaged and organic growth is present

CC Issues:

- The ceiling structure has been shored up in order to support the conveying system, sagging is evident.
- There is no means for providing the code required ventilation air. •
- Water and other fluids accumulate on the concrete floor during the processing, which can freeze • since there is no heat present in the building.
- Exit signage is not provided. ٠
- The main electrical panel is located in an area which gets washed down. •
- Extension cords are being used to provide power to light fixtures.
- Light fixtures do not appear to be suitable for wet environment. •

- the site.
- Proper disposal of the wash down fluids need to be evaluated at this location. AC Issues:
 - following are the primary issues for this building:
 - Access into the building is non-compliant.
 - The break area cabinetry and access clearances are non-compliant.

Greene Valley

The building is maintained by Waste Management and sits on the landfill site at Greene Valley, positioned west of IL 53, south of 75th Street. A sewer main is being brought to this site under an agreement that is currently being worked out with DuPage County Waste Management. The property is set to be turned over to the district to maintain within 10 years. The building currently houses storage in a section of the building for Waste Management, and some space is dedicated for the storage of maintenance equipment for the preserve.



Building GV-010 Storage Barn

- Construction date unknown.
- Approximate square footage undetermined.
- ٠ floor throughout is a concrete slab on grade.
- HVAC: two gas fired, ceiling mounted unit heaters with ventilation fans located at the side walls.

• An enclosed ventilated holding area is not provided for the entrails which need to be removed from

Currently compliance is not required due to the date and type of construction for this building. The

The construction consists of a structural steel frame with vertical metal siding and roof panels. The

- Plumbing: None. •
- Fire Alarm System: Pull stations with strobe/horn devices are present. Fire extinguishers are accessible in the space.

DM Issues:

- Exterior siding, fascia and gutters are damaged and should be replaced. ٠
- Weather stripping and seals on the exterior doors are in disrepair. •
- The structural steel is corroded (rusted) and in need of proper preparation and painting. •
- The existing concrete flooring is damaged with evidence of excessive ware and rutting. •
- The overhead doors are non-functional and in need of repair or replacement. •
- The existing wall and roof insulation wrap is ripped at several locations. •
- Exterior bollards need to be reset plumb and painted.

CC Issues:

- Proper insulation needs to be installed to in compliance with the Energy Conservation Code. •
- Exit signage is not provided. •
- Potable water is not provided to the build at this time. •
- Washroom facilities are not present. ٠
- The stairs are non-compliant with regard to tread size and railing requirements. •
- Fences at the mezzanine level need to be evaluated to determine if they are in compliance with the code required loading capacity of a guardrail.
- Electrical power is not fully functional in the building.

AC Issues:

- Access into the building is non-compliant. ٠
- The floor surface deterioration provides a non-compliant path of travel. •



Churchill Woods

There are five buildings located on this site being utilized by the Site Ops crew. Two of the buildings were originally residences that have been converted to house the office space, shop and equipment storage. Two of the remaining buildings are garages being utilized to store vehicles and equipment, and the last building on the site is an open air storage shed.

At this time this site was evaluated based on an option of decentralization of the GNR. The property at this location is limited and is not conducive to relocation of additional services.

The existing structures with the following inventory identification have not been evaluated for their needs and code compliance.

• CH-005, CH-006, CH-006A, CH-009, CH-010

Ekins Farm

This property is located in the southern portion of the County. The University of South Dakota runs a grant funded research program on the Hines Emerald Dragonfly out of this property April through November every year. This location is uniquely positioned to their migratory path as well as provides the unique terrain and weather conditions for the species to populate. The program has not identified any deficiencies in the property despite being converted from a residence to a research facility. Additionally, the education department uses this property for storage, and this property is also used for mower storage November through April for the Landscape crew. Mowers are moved back to Natural Resources at Blackwell in April.

This site is not ideal for re-purposing for the GNR due to its lack of available potable water to the site and limited availability of other utilities. This being the case, the existing structure with the inventory identification of 28-8171 has not been evaluated for its needs and code compliance

Danada

The existing Headquarters building is located at the Danada Preserve, off of Naperville Road, is primarily space dedicated to the FPDDC management and administration. Currently the building does have a small amount of ground floor office space and basement storage space available. The space available for use would not be appropriate for GNR field crews to function out of and access to the basement storage is very limited.

Additionally, there is open field space located to the West of the Headquarters building. This site was evaluated for use to relocate the GNR facilities, however this property is of a higher profile since it is bordered by residential properties.

DuPage County Public Works

DuPage County Public Works Department is located off IL-53, just south of 75th Street in Woodridge, IL which is surrounded by FPDDC property. The open land at the South end of the property was evaluated as a potential location for the Natural Resources Support Program. Current access to the site is through gated entry, and site utilities would be easily accessible. The area south of the site would be the only location on this property that would make sense to construct a new facility. However, a new facility would require significant site improvements regarding raising the grade since the site drops off to the south.

The Pros of this location:

- The infrastructure for utilities is easily accessible.
- The drives and secure access are already in place.

• The site is right off of a main road so it is easy to access. The Cons of this location:

- The land would require significant grading due to the drop-off of the site.
- An agreement would need to be negotiated with Public Works for use of tapping into their utilities, use of their drive and security gate into the property.



• This site is it is rather public and given the sensitive nature of deer management, it would make more sense to locate it in a more discreet location.

Additional Properties

Additional FPDDC properties were considered and deemed inappropriate due to limited site availability and/or established current use.

4.2 VEHICLE AND EQUIPMENT STORAGE: INDOOR VS. OUTDOOR

It is our opinion that the following are the seven main reasons why GNR vehicles and equipment should be stored indoors:

- 1. Public Safety on Forest Preserve Properties
- 2. Employee Safety
- 3. Cost Savings
- 4. Efficient & Cost-Effective Operations
- 5. Protection of Equipment
- 6. Impacts to Abutters
- 7. Impacts to the Environment

The following is a brief discussion on each of these reasons:

Public Safety on Forest Preserve Properties

The GNR maintains a significant area of parking lots and sidewalks, miles of trails, acres of grounds, miles of drainage lines and streams, quantity of public facilities and number of vehicles that the GNR is responsible for maintaining during normal operating hours. In addition, the GNR is responsible for, among other things, Preserve operations and trail maintenance, snow management, landscaping and grounds maintenance, flooding and stream blockage, downed tree removal, and maintenance of parking and roadways.

The equipment that is used to perform this work and respond to Forest Preserve emergencies is temperature sensitive and, if stored outdoors during the cold weather months, may be subject to starting problems that can delay the GNR's response time during these emergencies. This can result in unsafe conditions for the public. In addition to starting problems, employees may be required to waste valuable time warming up and cleaning off a vehicle prior to responding to an emergency.

Employee Safety

During the normal course of the day or during unscheduled emergencies, a GNR crews will be required to access motorized equipment and non-motorized towed equipment or equipment attachments to meet the needs of the Preserves. Storage of the larger GNR vehicles outdoors during inclement weather may require an employee to climb around the exterior of the vehicle to clean off and prepare the vehicle for use. This exposes the employee to unnecessary risks associated with slipping or falling from the large equipment. In addition, employees must also access and connect smaller non-motorized equipment attachments such as plows, mower attachments, as well as trailers, etc., which may also pose risks when conducted in foul weather or in areas with inadequate lighting.

Cost Savings

A cost/benefit analysis determined the financial impact of storing vehicles and equipment outdoors. The data shows that the cost to store vehicles and equipment outdoors over the life of the building will cost approximately three times the cost to construct, operate, and maintain a new vehicle/equipment storage garage.

For example, for a fleet with 60 vehicles, the cost to construct, maintain and operate a new 41,000 square-

foot storage garage (approximate measurements) over a 50-year anticipated life span is calculated at approximately \$13 million. The cost to store vehicles outdoors over the same time period is approximately \$38 million.

The primary added costs associated with storing a vehicle outdoors include:

- 1. Increased unscheduled maintenance activities
- 2. Reduction in vehicle life expectancy, accelerating vehicle replacement schedules
- 3. Loss of productive labor associated with cold weather and storm event impacts

It is important to note that this cost/benefit analysis does not take into consideration:

- address the increase in unscheduled maintenance activities
- resulting from inclement weather and/or delayed response times
- 3. Costs associated with impacts to the environment
- 4. Costs associated with impacts to abutters

Efficient & Cost-Effective Operations

Storing vehicles and equipment in a minimally heated and well-lit storage garage will result in efficient operations by providing an environment that is conducive to both vehicles and the employees. The minimally heated environment will enhance the performance of the vehicles, eliminating potential delays associated with cold engines and frozen equipment. This will also allow employees to guickly access their vehicles and connect to the necessary equipment needed to meet the needs of their daily tasks, thus eliminating the loss of productive labor associated with preparing vehicles and equipment for operation.

Protection of Equipment

One of the most important reasons to store the vehicles indoors is to protect the Forest Preserves investment in equipment. The Forest Preserve has millions of dollars invested in the equipment used to service the Preserves and their infrastructure. For example, a new standard GNR dump truck will cost approximately \$130,000 to replace today, and this is one of several vehicles used by the GNR. A vehicle and equipment storage garage is the most inexpensive space to construct, but it is responsible for protecting the single largest investment in equipment for the Forest Preserve. Locating vehicles indoors will reduce maintenance costs, protect the vehicles from corrosive conditions, extend the useful life of the vehicles, and protect the vehicles from exposure to potential vandalism.

Impacts to Abutters

Several of the GNR facilities are located adjacent to residential neighborhoods. Although many of these facilities may have existed before the residential properties were developed, the GNR strives to continue to be good neighbors. The outdoor storage of vehicles will most likely jeopardize any chances that a GNR may have at being a good neighbor by increasing the noise output and exhaust emissions from the site. The exterior storage of vehicles will require extended periods of idling as vehicles are prepared to respond to daily activities. Due to unanticipated emergency these extended idle periods could take place early in the morning, increasing the inconveniences already imposed on the neighbors.

Impacts to the Environment

Storage of vehicles and equipment outdoors increases potential impacts to the environment associated with oil or grease entering the storm water system. Engine fluids from leaks or hydraulic line breaks have the potential to be washed into the storm water system if the vehicle is stored outdoors. However, any leaks that occur within a vehicle storage garage will be captured in a closed floor drain system, which will prevent the fluids from reaching the storm water system, which in turn will assist in protecting the environment.

1. Potential increase in costs associated with delaying regularly scheduled maintenance activities to

2. Costs associated with potential injuries to employees and/or the public due to unsafe conditions

4.3 FPDDC-GNR Facility Condition Matrix

Building Condition Group (6)	ilding/Structure	Year Constructed (1) Square Footage (approx.) (1)	Code Compliance	Accessibility Building Envelope Interior Finishes	Life Safety	Functionality Structural	HVAC Electrical	Lighting	Plumbing Fire Protection	Site Utilities	Site Accessibility	Site Circulation	Opinion of Remaining Useful Life ORUL (%) (3)	Opinion of Probable Construction Cost OPCC (4) Renovation	Opinion of Curre Value (5)
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Blackwell Campus

2	Admin. Office Building BW-020	1988	4,556	3	2	4	3	3	3	3	3	3	3	3	N/A	3	4	4	63%	\$609,202.29	\$859,131.43
1	GNR Barn BW-003 Equipment Barn BW-003 A&B Equipment Barn BW-017 A-D	1935 1980-84 1980-98	1,492 5,402 15,946	1 1 2	1	1 3 2	1 2 2	1 2 2	1 3 2	1 3 2	1 2 2	1 2 2	1 2 2	1 2 2	N/A N/A N/A	2 3 3	2 4 3	4	27% 49% 41%	\$195,665.14 \$333,257.14 \$1,961,358.00	\$60,745.71 \$262,285.71 \$1,156,085.00
2	Vehicle Wash Building BW-003	1999	4,680	4	2	2	3	4	2	4	4	4	4	4	N/A	3	3	3	66%	\$385,097.14	\$615,085.71
3	Fleet Maintenance Building Fuel Island Facilities Maintenance Building Sign Shop	2018 2019 1991 2003	N/A N/A 18,046 1,890	5 5 3 4	5 5 3 3	5 3 4	5 5 4	5 5 3 4	5 5 2 4	5 5 4 4	5 5 4 4	5 4 4	5 4 4	5 4 5	5 N/A N/A N/A	5 5 4 5	5 5 5	5 5 5	100% 100% 73% 84%	N/A N/A \$783,712.00 \$23,760.00	N/A N/A \$2,629,560.00 \$159,300.00
4	Processing Building WFG-008 Office/Storage Building WFG-007	1950 1950	1,225 1,225	2	1	3		3	2	3	2 3	3	2	2	N/A N/A	2	4	4	49% 47%	\$138,600.00 \$142,450.00	\$119,000.00 \$115,500.00
	Greene Valley																				
5	Storage Barn GV-010	N/A	5,460	3	2	3	2	3	4	4	3	3	2	2	N/A	2	4	4	59%	\$838,920.00	\$559,650.00

Ratings (2): Each category is rated on a scale of 1 through 5, 5 being the highest possible rating.

5 - New or in excellent state of condition, 4 - Serviceable and useable state of condition, 3 - Marginal state of condition and usefulness, extensive maintenance required, 2 - At the end of its useful life, 1 - Poor or substand state of condition, replacement recommended

Notes:

1. Building/Structure year of construction and approximate square footage were extracted from documentation obtained from the FPDDC.

2. Ratings indicated are based upon visual inspection of the facilities.

3. The Opinion of Remaining Useful Life is a function of the overall rating of the building in the form of a percentage.

- 4. The Opinion of Probable Construction Cost is based on current values for renovation of the existing buildings.
- 5. The Opinion of Current Value is a funtion of the OPCC and the percentage of ORUL.

6. Refer to the Property and Building - Summary of Findings.

4.4 PROPERTY AND BUILDING - SUMMARY OF FINDINGS

In the survey and analysis of the conditions of the existing structures that support the Grounds and Natural Resources Staff it is evident that maintaining the primary GNR Campus at the Blackwell location best meets the needs and efficiencies of the Forest Preserve District of DuPage County. The structures located within this campus represent a mix of the best and worst facility conditions.

Demolish the poorest structures that have reached their useful life (<50%), including:

- o GNR Barn BW-003
- Equipment Barn BW-003 A&B
- o Equipment Barn BW-017 A-D

This allows the site to open up to receive a series of new buildings that can house the GNR fleet within fully enclosed structures that will protect valuable assets including all fleet vehicles, trailers and equipment.

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There are two buildings with approximately 65% of useful life remaining, however they pose logistical hardships that lower their value:

- Administration Office Building BW-020
- Vehicle Wash Building BW-003

Could easily go stay or go. Based on its current location and its low functionality, we would recommend that they have more value being demolished and replaced.

Based on Deferred Maintenance, Code Non-Compliance and Accessibility Non-Compliance these structures are collectively worth \$2,935,333.57. It is estimated that bringing them into compliance would cost approximately an additional \$3,500,000.00, but this would have a minimal affect on their overall function and useability.

The adjacent newer structures have nearly 95% of their useful life remaining, including:

- Fleet Maintenance Building
 - o Fuel Island
- o Facilities Maintenance Shop
- o Sign Shop

These buildings would remain and be incorporated into the larger the Campus. This retains theits holistic approach to functionality and reduces the time needed to travel from site to site.

By evaluating the need for immediate use tempered facilities versus off season unconditioned facilities it is possible to create new spaces that support the most efficient first cost and energy saving campus.

The Natural Resources Program Support, which is currently at Waterfall Glen, should be relocated as they operate out of former residences that were retrofitted to be used for the deer management program.

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These buildings are at < 49% of their useful life and do not function optimally for their current use due to lack of efficient movement between the processing space and the cooler as well as cooler to truck pick-up. This land would be more suitable for more recreational opportunities taking into consideration the concurrent Waterfall Glen master-planning.



A facility located at Greene Valley landfill, currently operated by Waste Management, would be a more appropriate location to renovate for the purpose of deer processing. It is currently at nearly 60% of its useful life and is situated more appropriately to address the needs of the program.

RECOMMENDATIONS 5.0



The FPDDC prides itself in its impeccable care of all preserves. It was evident while touring many of them that they are well maintained, clean and inviting.

The FPDDC mission is to preserve, protect and restore open spaces. Due to the Covid Pandemic, the general population has been spending more time outdoors, especially in forest preserves as it gives people the respite needed from being cooped up in doors away from normal daily activity. While the pandemic surely will end, the desire and connection to nature that most have found a new appreciation for, will stay.

As the FPDDC looks towards the future, it will be important to maintain the same level of care and quality of service that it has today. It is anticipated over time that the FPDDC will continue to add to the trail systems and acreage. This cannot be achieved without strengthening the infrastructure for the Operations, Grounds and Natural Resources function. Our recommendation is as follows:

Blackwell Campus East – New Construction and Site Renovation

GNR crews not only share tasks, but they also share tools and resources. The development of the Blackwell East Campus would allow for aging and beyond repair buildings to be removed so that the campus can be reconfigured allowing for safer vehicular movement and a consolidation of material storage, equipment, and shop space into a more efficient layout. We propose a one-story administration building with washroom/locker room facilities and office/meeting spaces. The building should be the primary face of the GNR Fleet Campus located at the far south end of the site facing Mack Road and designed to be the gate keeper of the site as a whole. A series of liner structures housing indoor vehicle/equipment storage and maintenance shops positioned to accommodate vehicle circulation at its perimeter. These changes would accommodate the following:

- Grounds Management Forestry Crew (8-person)
 - Office space
 - Indoor vehicle and equipment storage
 - Maintenance shop
- Grounds Management Roads Crew (9-person)

- Office space
- Indoor vehicle and equipment storage
- Maintenance shop
- Grounds Management Landscape Crew (13-person)
 - Office space
 - Indoor vehicle and equipment storage
 - Maintenance shop
- Grounds Management Trails and Streams Crew (12-person)
 - Office space
 - Indoor vehicle and equipment storage
 - Maintenance shop
- Natural Resources Crew (12-person)
 - Office space
 - Indoor vehicle and equipment storage
 - Maintenance shop
- Stewardship (3-person)
 - Office space
 - Storage space
- Fleet Management building to remain.
- Vehicle wash and herbicide storage building to be incorporated into new layout. •

In addition, the existing parking lot should be connected to the Blackwell Grounds and Natural Resource campus providing additional parking and a driveway to the East parking lot.

The area to the east of the Facilities Management building on the Blackwell West campus could be temporarily surfaced with gravel to accommodate temporary office space and equipment trailers for each crew in the interim while this new construction takes place.

Greene Valley -

Renovation for Relocation of Natural Resources Program Support

The Natural Resources Program Support, which is currently at Waterfall Glen, should be relocated as they operate out of former residences that were retrofitted to be used for the deer management. As a result, the buildings do not function optimally due to lack of efficient movement between the processing space and the cooler as well as cooler to truck pick-up. Further, the deer management program occurs 6-8 weeks out of the year. It is tucked away in the southeast corner of the district, which is not ideally located. This land would be more suitable for more recreational opportunities taking into consideration the concurrent Waterfall Glen master-planning. A facility located at Greene Valley landfill, currently operated by Waste Management, would be a more appropriate location to renovate for this purpose.

The renovation of the building and site would consist of the following:

- New insulated metal panel cladding
- New insulated metal roof panels with skylights, fascia, and gutters/downspouts
- New exterior exit doors
- New Overhead doors and openers •
- Repair or Replace concrete floor slab
- New interior door as required

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- Interior prep. and painting of exposed steel building frame, mezzanine frame and railings
- Interior painting of partitions, door, etc. ٠
- New walk-in cooler module ٠
- New locked storage area
- New conveyor system
- New toilet room.
- New shower area and locker room.
- New break area
- The well water is not potable. Two 1500-gallon vertical potable water storage tanks (connected in tandem) on a platform are to be utilized for potable water at hoses (deer processing), sinks, showers and toilets. During the period of deer processing water will need to be delivered more frequently.
- Cistern collection system for wash down water. ٠
- New waste and water piping, water heater, pressure tanks, and/or pumps. •
- New underground plumbing connection and piping ٠
- New exit and emergency lights
- New interior and exterior lighting
- New electrical service distribution equipment
- New and restored HVAC equipment
- New ventilation equipment
- New paving for parking, loading and general access to the building.

Blackwell Nursery –

New Construction for Native Nursery Propagation Operations (Tagged "E" in proposed Site Layout at Blackwell East)

Seed Processing is currently operating out of a trailer on the Blackwell campus and needs a more permanent location. They are in need of more layout space for cataloguing and processing seed as well as ample cooler space. This building would also allow ample space for expansion of seed processing services. It is estimated that 800-1,000 square feet of space is needed based on crew feedback. In addition to this, the Nursery is also in need of additional green house space. They currently have a roughly 225 SF hoop house and have expressed that they need roughly three times the space to expand their operations. This would be a 450 SF addition to the hoop house. The new construction would include this addition with incorporation of seed processing for a total of 1,200-1,400SF.

New construction would include:

- Office space for 1-2 employees
- Layout space for seed drying ٠
- Racks for seed storage

- Walk-in cooler space
- Green house space

Next steps

The information provided in this Report not only identifies the deficiencies of the current facilities through an in-depth review of

- Preserve Usage
- Crew Operations
- Properties and Buildings

It also provides insight into the components necessary to design a Facility that

- Is located optimally to support full District Care
- Coordinates site logistics for optimal use
- Reduces downtime at the beginning and end of the workday for time/cost savings
- Reduces the funds spent on maintaining obsolete structures
- Reduces Energy Waste on structures that are past their useful life.

The following pages represent (3) possible Options for consideration in developing a Plan that incorporates the needs of the Grounds and Natural Resources Departments into a cohesive and functional Campus at the current Blackwell Forest Preserve Site that reduces staffing inefficiencies and supports a connective flow between different crews in the egress and ingress to the site. Not all meet the full requirements of the anticipated final programming but is it important to investigate multiple options for consideration.

The report closes with an Opinion of Probable Construction Cost that was generated based on the plan options provided.

6.0 Proposed Site Layouts

Next steps

The information provided in this Report not only identifies the deficiencies of the current facilities through an in-depth review of

- Preserve Usage
- Crew Operations
- Properties and Buildings

It also provides insight into the components necessary to design a Facility that

- Is located optimally to support full District Care
- Coordinates site logistics for optimal use
- Reduces downtime at the beginning and end of the workday for time/cost savings
- Reduces the funds spent on maintaining obsolete structures
- Reduces Energy Waste on structures that are past their useful life.

The following pages represent (3) possible Options for consideration in developing a Plan that incorporates the needs of the Grounds and Natural Resources Departments into a cohesive and functional Campus at the current Blackwell Forest Preserve Site that reduces staffing inefficiencies and supports a connective flow between different crews in the egress and ingress to the site. Not all meet the full requirements of the anticipated final programming but is it important to investigate multiple options for consideration.

The report closes with an Opinion of Probable Construction Cost that was generated based on the plan options provided.



FPDDC-GNR Seed Processing & Greenhouse

This portion of the facility is common to all three schemes, located in the nursery on the south side of Mack Road.

FPDDC- Grounds and Natural Resources – Scheme A.1 6.1



- A ADMINISTRATIVE OFFICES AND LOCKER ROOMS
- **B GARAGES, EQUIPMENT STORAGE & SHOP AREAS**
- C GARAGES (UNHEATED) NOT USED
- **D VEHICLE WASH AND CHEMICAL MIXING**
- **E SEED PROCESSING & GREENHOUSE**
- F NEW PAVED PARKING AREA FOR TEMPORARY OF
- G NEW GRAVEL PAVING FOR TEMPORARY VEHICLE
- H EXISTING CONSTRUCTION DEMOLITION

J – UNDERGROUND DETENTION & STORM WATER

SCHEME A.1 – TOTAL

ANNUAL SAVINGS TO BE REALIZED:

- Productivity
- Equipment Longevity •
- **Operational and Energy Efficiency** •
- Environmental Benefits \$\$\$ - Limited opportunity for contaminants in the adjacent soils •
- Public and Staff Safety

	\$ 2	1,100,335
	\$	726,335
	\$	372,767
STAGING	\$	871,602
FICE TRAILER STAGING	\$	479,381
	\$	345,558
	\$	866,660
	\$	0
(HEATED)	\$1	5,484,128
	\$ 1	L,953,905

\$\$\$ - Limited daily loading and unloading

- \$\$\$ All covered and heated storage
 - \$ Heated Equipment with Extensive heated drive aisles
- \$\$\$ Faster response times due to heated, well lite, clean storage

6.2 FPDDC- Grounds and Natural Resources – Scheme A.2



SCHEME A.2 – TOTAL	\$19,070,630
J – UNDERGROUND DETENTION & STORM WATER	\$ 726,335
H – EXISTING CONSTRUCTION DEMOLITION	\$ 372,767
G – NEW GRAVEL PAVING FOR TEMPORARY VEHICLE STAGING	\$ 871,602
F – NEW PAVED PARKING AREA FOR TEMPORARY OFFICE TRAILER STAGING	\$ 479,381
E – SEED PROCESSING & GREENHOUSE	\$ 345,558
D – VEHICLE WASH AND CHEMICAL MIXING	\$ 866,660
C – GARAGES (UNHEATED)	\$ 3,108,315
B – GARAGES, EQUIPMENT STORAGE & SHOP AREAS (HEATED)	\$ 10,346,108
A – ADMINISTRATIVE OFFICES AND LOCKER ROOMS	\$ 1,953,905

ANNUAL SAVINGS TO BE REALIZED:

• Productivity

Engineers & Architects

KNIGHT

- Equipment Longevity
- Operational and Energy Efficiency
- Environmental Benefits
- Public and Staff Safety

- \$\$\$ Limited daily loading and unloading
- \$\$ Moderate covered and heated storage
- \$\$\$ Heated Equipment as needed with No heated drive aisles
- \$ Expanded opportunity for contaminants in the adjacent soils
- \$\$\$ Faster response times due to heated, well lite, clean storage

6.3 FPDDC- Grounds and Natural Resources – Scheme A.3



- A ADMINISTRATIVE OFFICES AND LOCKER ROOMS
- B GARAGES, EQUIPMENT STORAGE & SHOP AREAS (H
- C GARAGES (UNHEATED)
- D VEHICLE WASH AND CHEMICAL MIXING
- **E SEED PROCESSING & GREENHOUSE**
- F NEW PAVED PARKING AREA FOR TEMPORARY OFFI
- G NEW GRAVEL PAVING FOR TEMPORARY VEHICLE ST
- H EXISTING CONSTRUCTION DEMOLITION
- J UNDERGROUND DETENTION & STORM WATER

SCHEME A.1 – TOTAL

ANNUAL SAVINGS TO BE REALIZED:

- Productivity
- Equipment Longevity
- Operational and Energy Efficiency
- Environmental Benefits
 \$\$
- Public and Staff Safety
 \$\$\$ Faster response times due to heated, well lite clean storage

	\$ 21,036,981
	\$ 726,335
	\$ 372,767
TAGING - NOT USED	\$ 0
CE TRAILER STAGING	\$ 479,381
	\$ 345,558
	\$ 866,660
	\$ 3,764,004
HEATED)	\$ 12,528,372
	\$ 1,953,905

- \$\$\$ Limited daily loading and unloading
- \$\$ Moderate covered and heated storage
- \$\$ Heated Equipment as needed with Limited heated drive aisles
- \$\$\$ Limited disruption of tree line, limited contaminants in soil

7.0 FPDDC- GNR Opinion of Construction Cost

7.1 Opinion of Construction Cost – Scheme A.1

Plan Tag		Α	В	С	D	E	F	G	н	J		
Building/Structure		New Construction - Office, Meeting, Locker Rooms & Volunteer Area Notes:	New Construction - Vehicle/Equipment Storage & Shop Area Notes:	Not Used Notes:	New Construction - Chemical Mixing & Vehicle Wash Area Notes:	New Construction - Seed Processing & Greenhouse Area Notes:	New Construction - Paved Parking Lot Notes:	New Construction - Temporary Gravel Stagging Area Notes:	Existing Construction - Demolition Notes:	New Construction - Underground Detention and Storm Sewer		
Square Footage (approx.)		7,000	122,313	0	5,016	1,600	22,000	60,000	32,076			
Sq. Ft. Cost (\$) (1)		\$187.00	\$87.75	\$0.00	\$112.00	\$140.00	\$15.00	\$10.00	\$8.00			
Demolition		N/A (5)	N/A (5)	N/A	N/A (5)	N/A (5)	N/A	N/A	\$256,608.00			
Substructure (2)		\$140,000.00	\$2,446,260.00 (6)	\$0.00	\$100,320.00	\$32,000.00	N/A	N/A	N/A			
Shell (3)		\$210,000.00	\$4,280,955.00	\$0.00	\$150,480.00	\$48,000.00	N/A	N/A	N/A			
Interior (4)		\$455,000.00	\$366,939.00 (12)	N/A	\$15,048.00	\$12,800.00	N/A	N/A	N/A			
Conveying	sndu	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
Plumbing	Can	\$140,000.00	\$611,565.00 (9)	\$0.00	\$50,160.00	\$16,000.00 (11)	N/A	N/A	N/A			
нуас	well	\$70,000.00	\$366,939.00	\$0.00	\$30,096.00	\$9,600.00	N/A	N/A	N/A			
Fire Protection	Black	\$28,000.00	\$489,252.00	\$0.00	N/A	N/A	N/A	N/A	N/A			
Electrical		\$70,000.00	\$672,721.50 (14)	\$0.00	\$50,160.00	\$16,000.00	N/A	N/A	N/A			
Equipment & Furnishings (15)		\$70,000.00	\$30,578.25	\$0.00	\$75,240.00	\$9,600.00	N/A	N/A	N/A			
Special Construction		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A			
Sitework		\$126,000.00	\$1,467,756.00	\$0.00	\$90,288.00	\$80,000.00 (18)	\$330,000.00	\$600,000.00	N/A	\$500,00		
Sub-Total		\$1,309,000.00	\$10,732,965.75	\$0.00	\$561,792.00	\$224,000.00	\$330,000.00	\$600,000.00	\$256,608.00	\$500,00		
Contractors Fees (21%) (20)		\$274,890.00	\$2,253,922.81	\$0.00	\$117,976.32	\$47,040.00	\$69,300.00	\$126,000.00	\$53,887.68	\$105,00		
A/E Fees (21)		\$130,900.00	\$130,900.00 \$536,648.29		\$84,268.80	\$33,600.00	\$19,800.00	\$36,000.00	\$15,396.48	\$30,000		
Permit Fees (22)			\$42,765.03	\$350,645.99	\$0.00	\$18,353.74	\$7,318.08	\$10,781.10	\$19,602.00	\$8,383.38	\$16,33	
Contigency (15%) (23)		\$196,350.00	\$1,609,944.86	\$0.00	\$84,268.80	\$33,600.00	\$49,500.00	\$90,000.00	\$38,491.20	\$75,00		
Opinion of Probable Construction Cost OPCC (19)		\$1,953,905.03	\$15,484,127.70	\$0.00	\$866,659.66	\$345,558.08	\$479,381.10	\$871,602.00	\$372,766.74	\$726,33		
				Summary of	f the OPCC Based on Sch	neme						
Scheme		Total	Total		Total	Total	Total		Total			
Totals		\$1,953,905.03	\$15,484,127.70	\$0.00	\$866,659.66	\$345,558.08	\$479,381.10	\$871,602.00	\$372,766.74	\$726,33		
							Scheme A.1 Total OPC	с		\$21,3		

05-10-2022



FPDDC-GNR Scheme	<u>е А.</u>	2																			
'lan Tag		А		В		С		D		E		F		G		н		J			
uilding/Structure		New Construction - Office, Meeting, Locker Rooms & Volunteer Area	New Construction - Vehicle/Equipment Storage & Shop Area	storage & Shop Area Votes: Vew Construction - /ehicle/Equipment itorage & Shop Area unheated) Votes:		New Construction - Chemical Mixing & Vehicle Wash Area	Notes:	tew Construction - Seed Processing & Greenhouse Area Votes:		New Construction - Paved Parking Lot Notes:		New Construction - Temporary Gravel Stagging Area Votes:		Existing Construction - Demolition Notes:		New Construction - Underground Detention and Storm Sewer	Motoc.				
quare Footage (approx.)		7,000	76,496 24,924			5,016	5,016 1,600			22,000	60,000		32,076	;	N/	Ά					
q. Ft. Cost (\$) (1)		\$187.00		\$93.75		\$85.85		\$112.00	\$112.00		\$140.00		\$15.00			\$8.00		N/A			
emolition	ę.	N/A (5)		N/A (5) N/A (5)		N/A (5) N/A (5)			N/A		N/A		\$256,608.00		N/A						
ubstructure (2)		\$140,000.00	\$1,529,920.00 (6)		\$498,480.00		\$100,320.00 \$32,000.00		\$32,000.00		N/A		N/A		N/A	N/A N/A					
hell (3)		\$210,000.00		\$2,677,360.00		\$872,340.00		\$150,480.00 \$48,000.00			N/A		N/A		N/A						
iterior (4)		\$455,000.00	\$229,488.00	(12)	N/A		\$15,048.00 \$12,800.00			N/A		N/A		N/A	N/A						
onveying	snd	N/A		N/A				N/A	N/A	N/A N/			N/A	N/A		N/A					
umbing	Cam	\$140,000.00		\$382,480.00 (9)		\$39,878.40 (10)		\$50,160.00 \$16,000.00 (11)		N/A		N/A		N/A		N/A					
VAC	well	\$70,000.00		\$229,488.00		\$37,386.00 (13)		\$30,096.00 \$9,600.00			N/A		N/A		N/A		N/A				
re Protection	Black	\$28,000.00		\$305,984.00	4.00 \$99,696.00		N/A	N/A N/A			N/A		N/A		N/A	N/A					
ectrical		\$70,000.00		\$420,728.00	20,728.00 (14) \$137,082.00 (14)		\$50,160.00 \$16,000.00			N/A		N/A		N/A		N/A					
uipment & Furnishings (15)		\$70,000.00		\$19,124.00 \$6,231.00			\$75,240.00 \$9,600.00			N/A		N/A		N/A	•	N/	'A				
ecial Construction		N/A		N/A N/A		N/A N/A			N/A		N/A		N/A		N/	'A					
tework		\$126,000.00		\$1,376,928.00	\$1,376,928.00 \$448,632.00		\$90,288.00 \$80,000.00 (18)		(18)	\$330,000.00		\$600,000.00		N/A	N.	\$500,000.00					
b-Total		\$1,309,000.00		\$7,171,500.00 \$2,139,725.40			\$561,792.00 \$224,000.00				\$330,000.00		\$600,000.00		\$256,608.00	\$500,000.00					
ontractors Fees (21%) (20)		\$274,890.00		\$1,506,015.00 \$449,342.33			\$117,976.32 \$4		\$47,040.00	\$47,040.00		\$69,300.00			\$53,887.68	3	\$105,000.00				
/E Fees (21)		\$130,900.00		\$358,575.00 \$128,383.52			\$84,268.80 \$33,600.00			\$19,800.00		\$36,000.00		\$15,396.48	3	\$30,000.00					
ermit Fees (22)	5	\$42,765.03		\$234,292.91		\$69,904.83		\$18,353.74		\$7,318.08	\$7,318.08			\$19,602.00		\$8,383.38		\$16,335.00			
ontigency (15%) (23)		\$196,350.00		\$1,075,725.00		\$320,958.81	\$84,268.80 \$33,600.00				\$49,500.00		\$90,000.00		\$38,491.20		\$75,000.00				
pinion of Probable Construction Cost OPCC (19)		\$1,953,905.03		\$10,346,107.91		\$3,108,314.90		\$866,659.66		\$345,558.08		\$479,381.10		\$871,602.00		\$372,766.74	1	\$726,335.00			
						Summa	ary of th	ne OPCC Based	on Sche	me											
Scheme		Total		Total				Total		Total		Total				Total					
otals		\$1,953,905.03		\$10,346,107.91		\$3,108,314.90		\$866,659.66		\$345,558.08		\$479,381.10		\$871,602.00		\$372,766.74		\$726,335.0	00		

Opinion of Construction Cost – Scheme A.3 7.3

Plan Tag		А		В	С		D	E			F		G		н	J	
Building/Structure		New Construction - Office, Meeting, Locker Rooms & Volunteer Area	Notes:	New Construction - Vehicle/Equipment Storage & Shop Area Notes:	New Construction - Vehicle/Equipment Storage & Shop Area (unheated)	Notes:	New Construction - Chemical Mixing & Vehicle Wash Area	Notes:	New Construction - Seed Processing & Greenhouse Area	Notes:	New Construction - Paved Parking Lot	Notes:	Not Used	Notes:	Existing Construction - Demolition	Notes: New Construction - Underground Detention and Storm Sewer	
Square Footage (approx.)		7,000	7,000 92,631		24,924		5,016		1,600		22,000				32,076		
Sq. Ft. Cost (\$) (1)		\$187.00		\$93.75	\$103.96		\$112.00	\$112.00			\$15.00				\$8.00		
Demolition		N/A (5)		N/A (5)	(5) N/A (5)		N/A	N/A (5)		N/A (5)			•		\$256,608.00		
Substructure (2)		\$140,000.00 \$210,000.00 \$455,000.00		\$1,852,620.00 (6)	\$498,480.00		\$100,320.00	\$100,320.00 \$32,000.00 \$150,480.00 \$48,000.00 \$15,048.00 \$12,800.00			N/A		N/A		N/A		
Shell (3)				\$3,242,085.00	\$872,340.00		\$150,480.00				N/A	N/A		N/A			
Interior (4)				\$277,893.00 (12)	N/A		\$15,048.00				N/A	N/A			N/A	ſ	
Conveying	sndu	N/A		N/A	N/A		N/A		N/A	N/A	N/			N/A			
Plumbing	Can	\$140,000.00		\$463,155.00 (9)	\$39,878.40 (10)		\$50,160.00		\$16,000.00 (N/A	N//			N/A			
нуас	cwell	\$70,000.00		\$277,893.00	\$37,386.00 (13)		\$30,096.00	\$30,096.00		\$9,600.00			N/A		N/A		
Fire Protection	Black	\$28,000.00		\$370,524.00	\$99,696.00		N/A	N/A		N/A		N/A			N/A		
Electrical		\$70,000.00	\$509,470.50 (1) \$137,082.00 (14)		\$50,160.00	\$50,160.00		\$16,000.00		N/A			N/A		
Equipment & Furnishings (15)		\$70,000.00	\$23,157.75		\$6,231.00		\$75,240.00	\$75,240.00		\$9,600.00		N/A			N/A		
Special Construction		N/A	A N/A		N/A		N/A	N/A		N/A			N/A		N/A		
Sitework		\$126,000.00		\$1,667,358.00	\$900,000.00		\$90,288.00	\$90,288.00		\$80,000.00 (18)			\$0.00		N/A	\$500,00	
Sub-Total		\$1,309,000.00		\$8,684,156.25	\$2,591,093.40		\$561,792.00		\$224,000.00		\$330,000.00		\$0.00		\$256,608.00	\$500,00	
Contractors Fees (21%) (20)		\$274,890.00		\$1,823,672.81	\$544,129.61		\$117,976.32	\$117,976.32		\$47,040.00			\$0.00		\$53,887.68	\$105,00	
A/E Fees (21)		\$130,900.00		\$434,207.81 \$155,465.60			\$84,268.80		\$33,600.00		\$19,800.00		\$0.00		\$15,396.48	\$30,00	
Permit Fees (22)		\$42,765.03		\$283,711.38	\$84,651.02	\$18,353.74			\$7,318.08		\$10,781.10		\$0.00		\$8,383.38	\$16,335	
Contigency (15%) (23)		\$196,350.00		\$1,302,623.44	\$388,664.01	1 \$84,268.80			\$33,600.00		\$49,500.00		\$0.00		\$38,491.20	\$75,00	
Opinion of Probable Construction Cost OPCC (19)		\$1,953,905.03		\$12,528,371.70	\$3,764,003.65		\$866,659.66		\$345,558.08		\$479,381.10		\$0.00		\$372,766.74	\$726,335	
					Summ	iary o	of the OPCC Based	on Sch	eme								
Scheme		Total		Total			Total		Total		Total				Total		
Totals		\$1,953,905.03	5	\$12,528,371.70	\$3,764,003.65		\$866,659.66		\$345,558.08		\$479,381.10		\$0.00	9	\$372,766.74	\$726,33	
											Scheme A.3 Total	орсс				\$21.0	

05-10-2022

\$21,036,980.96

6,335.00

6,335.00

5,000.00

6,335.00

0,000.00

5,000.00

0,000.00

0,000.00

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A

N/A N/A

N/A

and Storm Sewer

N/A

N/A

Notes:

Notes:

- Square foot costs indicated are for construction only, they do not include Contractor's Fees, A/E Fees or Permitting
- Substructure includes the foundations and floor slab of the building and the backfill.
- 3. Shell includes the structure of the building, windows, exterior doors, building cladding, roofing, gutters and downspouts
- 4. Interior includes partitions, interior doors, hardware, fixtures, casework, countertops, etc.
- 5. Cost for the demolition of the existing structures on the property are contained in column "H".
- 6. Column "B" is the total for three buildings of similar construction.
- 7. Demolition on this structure inlcudes the roofing, siding, concrete slab, and interior & exterior doors.
- 8. Substructure includes the floor slab replacement.
- 9. Plumbing includes a unisex toilet room, emergency eye wash/shower, service sink and water heater at each shop location, floor drains and triple garage basins.
- 10. Plumbing includes floor drains and triple garage basins.
- 11. Plumbing includes a unisex toilet room, break area sink, and greenhouse watering system.
- 12. Interior work is located at the shop and storage areas.
- 13. HVAC includes a ventilation system only.
- 14. Provisions for EV charging stations have been provided.
- 15. Equipment & Furnishings includes all moveable furniture and storage cabinets, compressors, fire extinguishers, etc.
- 16. Additional items provided include a walk-in cooler and meat carcass hanging rails ceiling conveyor.
- 17. Plumbing includes unisex toilet room with shower, breakroom sink, water heater, washdown system with water heater, emergency eye wash, and service sink.
- 18. Sitework includes a sanitary septic system.
- 19. The Opinion of Probable Cost of Construction includes the construction cost, Contractor's fees, A/E fees, and Permitting.
- 20. Contractor's Fees include 8% General Conditions, 5% overhead, and 8% profit.
- 21. The A/E Fees are based on a percentage of the construction cost for budgetary purposes. The actual fee is to be negotiated upon establishing the final scope.
- 22. The cost of permits is based upon (construction cost/1000 x \$30) with Public Agency reduction of 10%. The actual permit fee will need to be determined upon establishing the final scope.
- 23. The contingency of 15% of the construction cost has been provided for budgetary purposes. The actual contigency will need to be considered by the FPDDC upon establishing the final scope.