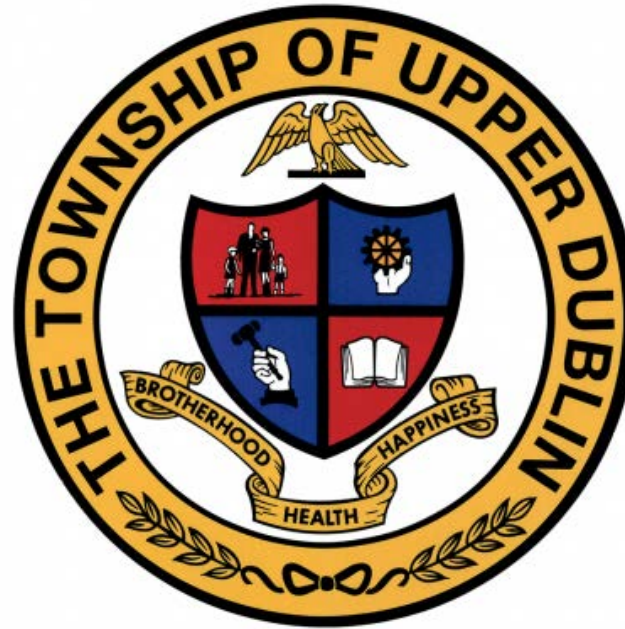


PRESENTATION TO THE BOARD OF
COMMISSIONERS

April 11, 2023



Public Works Storm Damage & Crane Bay Project – Progress Update

On Schedule for May 1, 2023 Substantial Completion



Exterior Insulation Complete Awaiting Siding



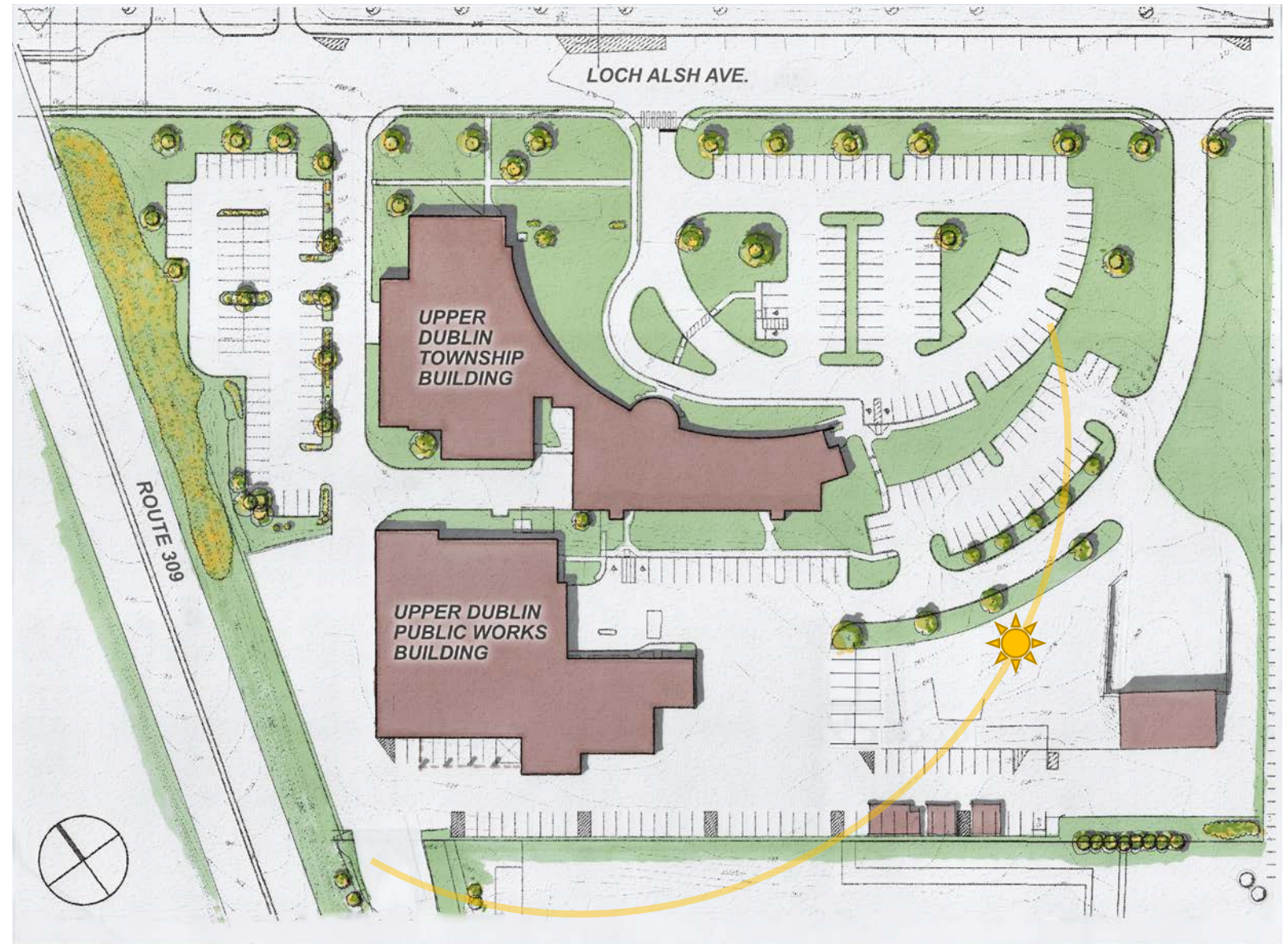
All Three Coiling Doors Completed



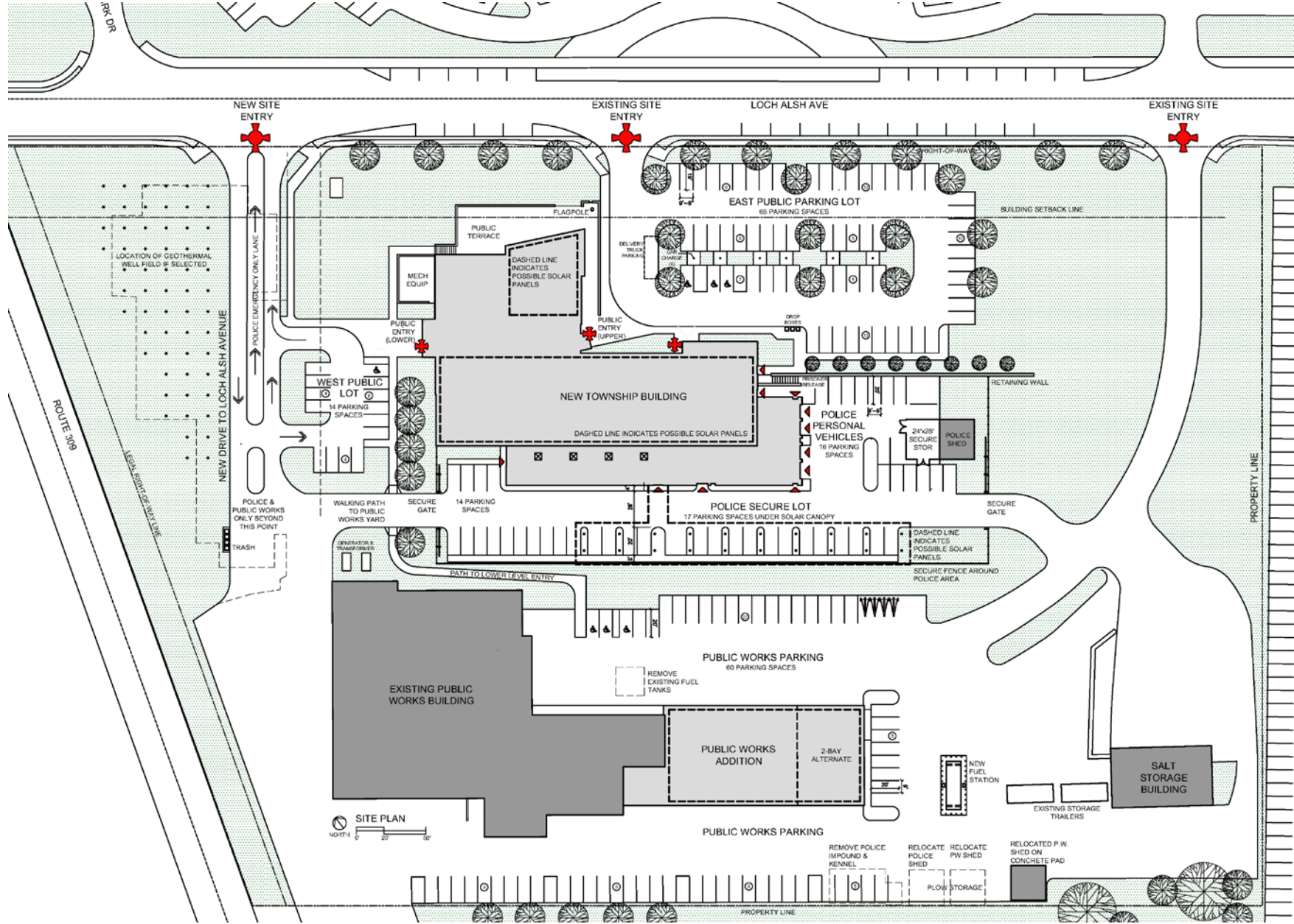
Interior Finishes Ongoing



- Site entry points off Loch Alsh Ave.
- Terraced Topography
- Upper-Level public parking lot
- 2-story Township Building with public entry on Upper floor
- Police on Lower-Level
- Public parking to the West serves the lower-level
- Public Works facility



Upper Dublin Township – Proposed Site Plan

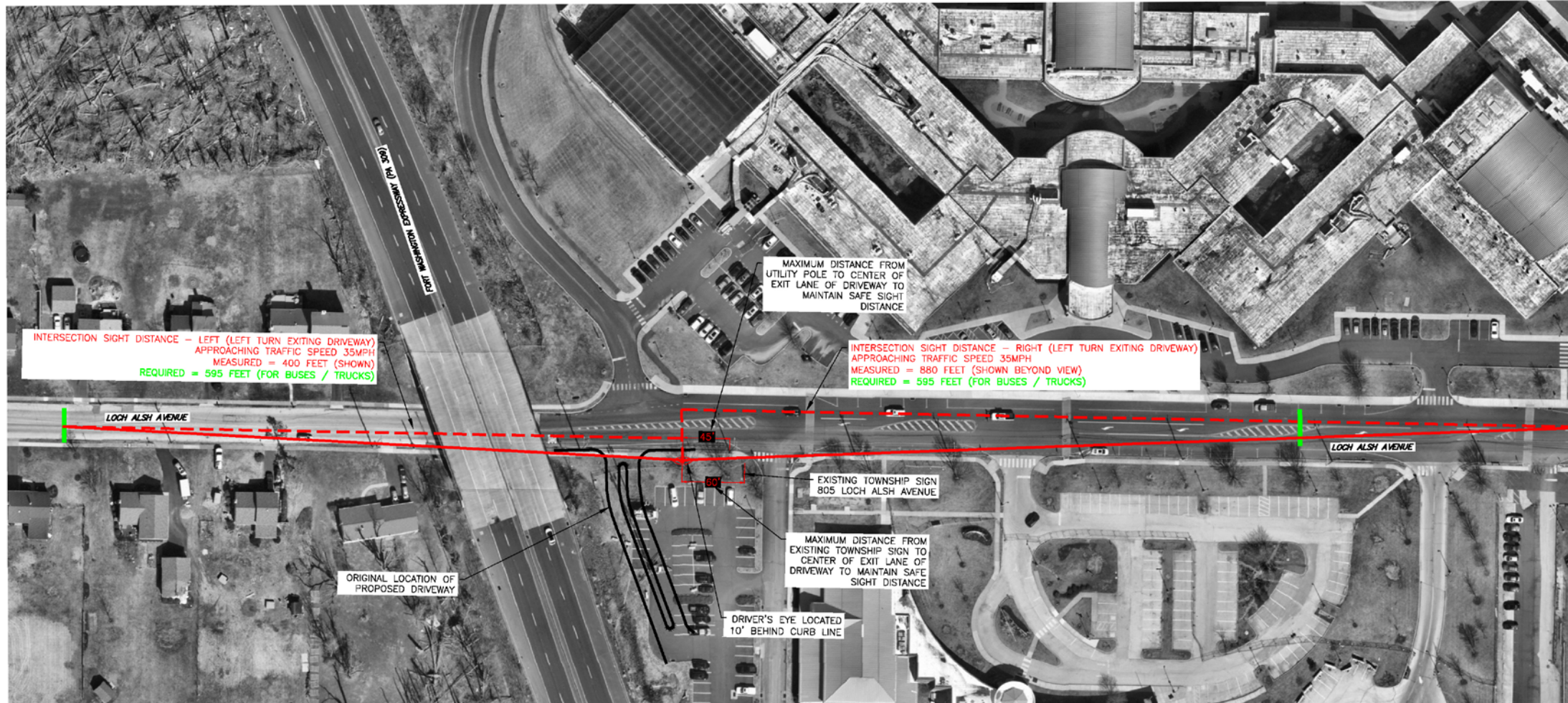


Summary / Comparison of Parking (current & Proposed)	Old 801 Facility:	Proposed Layout:
Public & Staff Parking (East & West Lots)	150	78
Police	36	47
Public Works	55	60
	241	185

Day-time Need (parking spcs)	In Public Lot	In Police Lot
Administration Staff	40	
Reception	2	
Tax Collector	2	
Manager	6	
Finance	5	
Communications, HR, IT	3	
Code Enf, Eng, Zoning	16	
Parks and Recreation	6	
Police (@ shift change)		47
Patrol Officers Personal	14	
Community Police	5	
Detectives (unmarked)	6	
Admin. (unmarked)	4	
Patrol cars - marked	18	
Civilians	6	6
Visitors	30	
Total	76	47

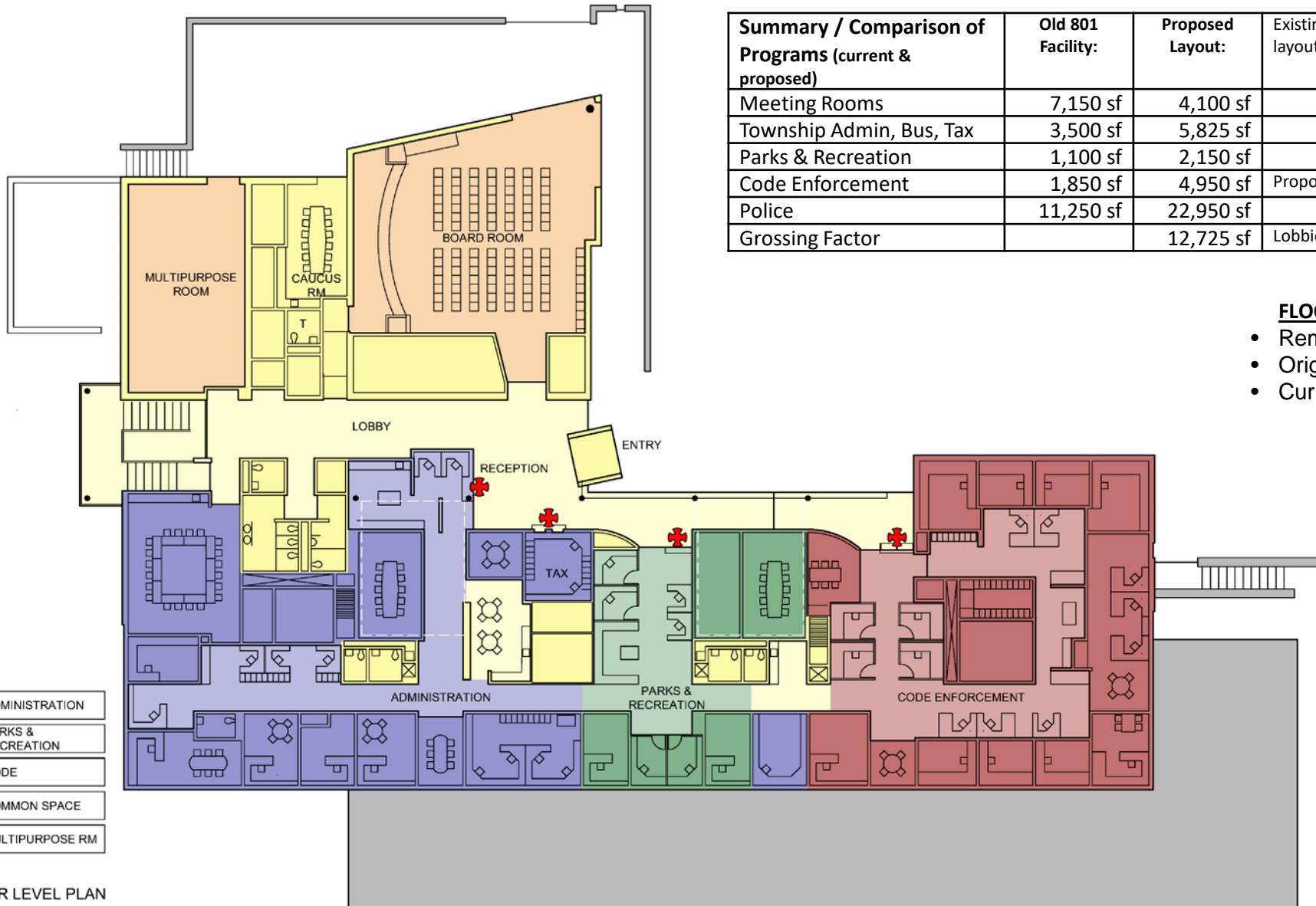
Number of Evening (Occupants)	
Board Room	135 occupants
Multipurpose Room	40 occupants
Conference Room	25 occupants
Total	200

Upper Dublin Township – Analysis of West Drive onto Loch Alsh Ave



INTERSECTION SIGHT DISTANCE AT PROPOSED DRIVEWAY AT LOCH ALSH AVENUE (BUSES / TRUCKS)

Upper Dublin Township – Proposed Upper-Level Plan

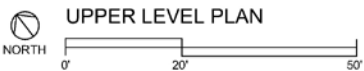


Summary / Comparison of Programs (current & proposed)	Old 801 Facility:	Proposed Layout:	Existing building has defined boundaries between programs. Proposed layout shares some spaces.
Meeting Rooms	7,150 sf	4,100 sf	
Township Admin, Bus, Tax	3,500 sf	5,825 sf	
Parks & Recreation	1,100 sf	2,150 sf	
Code Enforcement	1,850 sf	4,950 sf	Proposed layout includes Zoning & Engineering
Police	11,250 sf	22,950 sf	
Grossing Factor		12,725 sf	Lobbies, walls, corridors, stairs, common toilets or common storage

FLOOR PLANS:

- Removed Community Rooms and associated spaces.
- Original Targeted Area: 59,000 sf
- Current Area:

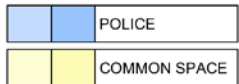
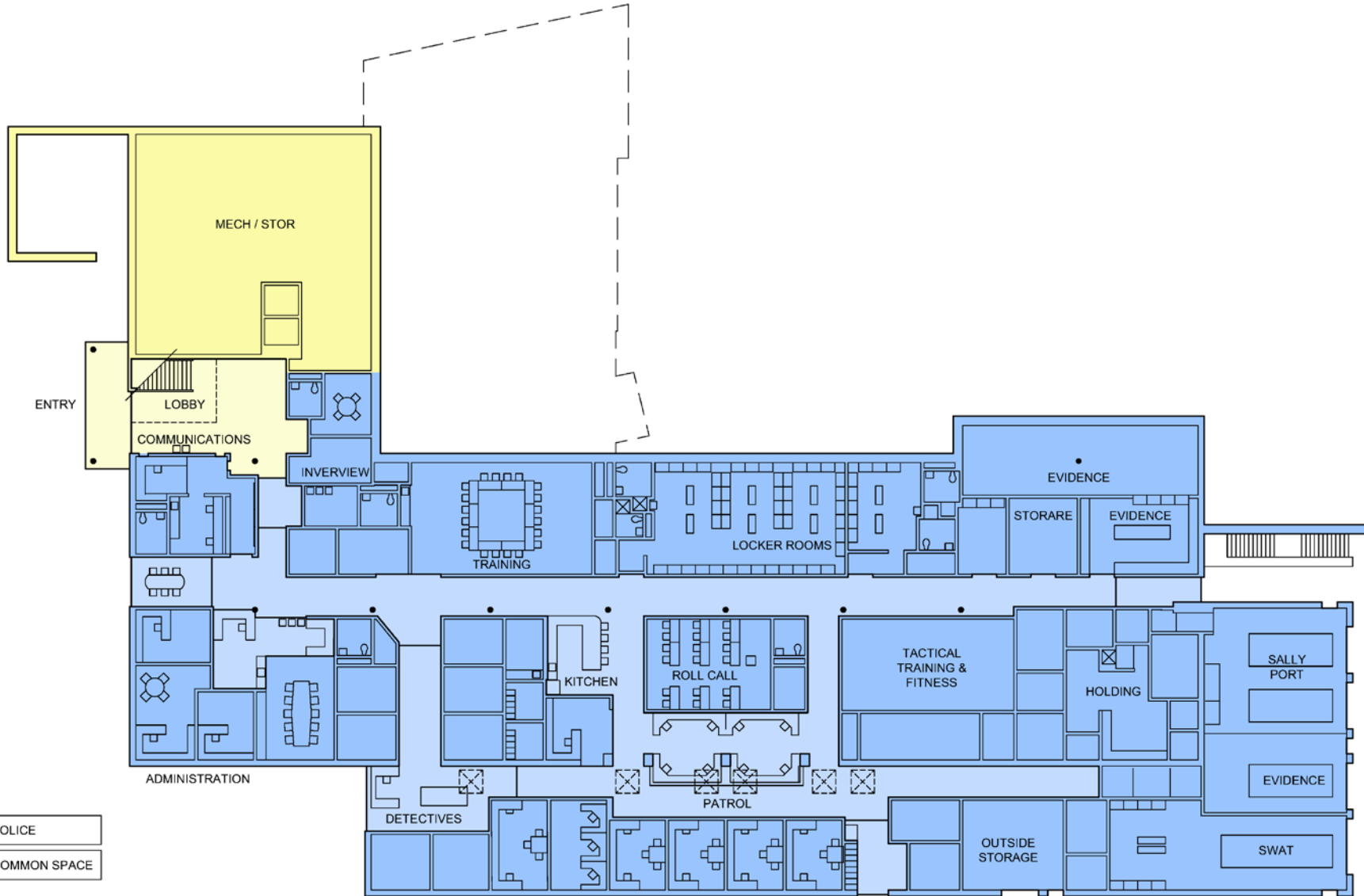
UL	25,000 sf
LL	27,700 sf
Total	52,700 sf



Upper Dublin Township – Proposed Lower-Level Plan



D'HUY Engineering, Inc.
Est. 1976



LOWER LEVEL PLAN

Parking Lot Canopy and Roof Top Solar Examples



Monroe Campus
Northampton Community College



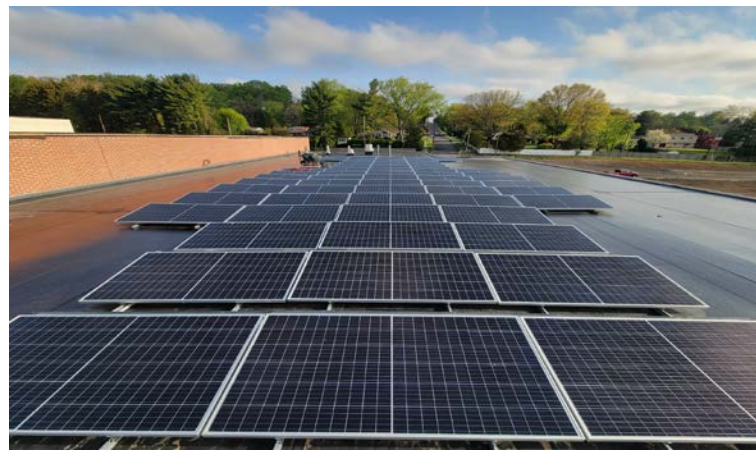
Freedom High School



Whitehall Township Police Station



CRSD - Hillcrest Elementary School
(Low Profile Solar Panels)



UDSD - Sandy Run Middle School
(Low Profile Solar Panels)



Upper Dublin Township – Solar System Cost Analysis



Solar PV System Production Information		Estimated Energy Production (KW)	Estimated Energy Production (Watts)	Est. Unit Cost (\$/Watt)	Est. First Cost of Solar (\$)	Est. Cost after 30% Direct Tax Credit	Est. Produced KWH/Year*
Roof Mounted Solar	Township Building	178	178,000	\$ 2.35	\$ 418,300	\$ 292,810	213,600
Roof Mounted Solar	Public Works	107	107,000	\$ 2.35	\$ 251,450	\$ 176,015	128,400
Canopy Solar	Parking Lot	332	332,000	\$ 4.25	\$ 1,411,000	\$ 987,700	398,400
Totals		617	617,000		\$ 2,080,750	\$ 1,456,525	740,400

* Note: Assume 1200 (KWH/Yr.)/KW

Estimated Annual Power Consumption	
Description	Estimated Annual KWH Consumption
Lighting/Power	375,000
HVAC	435,000
Total	810,000

Est. Produced KWH/Year	740,400
Percent of Required Energy Produced by Solar PV System	91.41%

Assumed Cost of Energy per KWH in 2023	\$ 0.10
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Solar PV System Cost Analysis		Est. Cost after 30% Direct Tax Credit	Est. Produced KWH/Year*	Reduction in Electric Bill from Solar PV per Year at \$0.10/KWH	Break-Even Point (Years) at \$0.10/KWH	Reduction in Electric Bill from Solar PV per Year at \$0.14/KWH	Break-Even Point (Years) at \$0.14/KWH
Roof Mounted Solar	Township Building	\$ 292,810	213,600	\$ 21,360	13.71	\$ 29,969	9.77
Roof Mounted Solar	Public Works	\$ 176,015	128,400	\$ 12,840	13.71	\$ 18,015	9.77
Canopy Solar	Parking Lot	\$ 987,700	398,400	\$ 39,840	24.79	\$ 55,898	17.67
Totals		\$ 1,456,525	740,400	\$ 74,040	19.67	\$ 103,882	14.02

Assumed Annual Inflation of Energy Cost per Year	3.0%
20-Year Inflation Factor	181%
Assumed Cost of Energy per KWH in 20 Years	\$ 0.18
Average Cost of Energy of Next 20 Years	\$ 0.14

Total Costs Over 20 Years						
System	Construction			Maintenance	Energy*	Total
	\$/sq. ft.	Cost	IRA (30% Reduction)***			
GSHP w/ DOAS	70	\$3,640,000	\$2,548,000	\$1,010,000	\$1,508,610	\$5,066,610
GSHP w/ VAV	77	\$4,004,000	\$2,802,800	\$821,251	\$1,791,448	\$5,415,499
GSHP w/ FCU	75	\$3,900,000	\$2,730,000	\$947,597	\$1,837,880	\$5,515,477
RTU	55	\$2,860,000	N/A	\$631,732	\$2,117,117	\$5,608,849
VRF	50	\$2,600,000	N/A	\$1,137,117	\$1,960,033	\$5,697,150

* Assumed to increase at the rate of inflation (2% inflation assumed).

** Initial electric rate of 0.116 \$/kWh and initial fuel rate of 1.602 \$/Therm, assumed to increase at 1% above the rate of inflation.

*** Construction cost reduced by 30% to account for direct payment of 30% of the value of the mechanical contract. Direct payment received from the Inflation Reduction Act.

Upper Dublin Township – Projected Costs



DESCRIPTION	ESTIMATED COST
Option 3 New Township Project	\$37.5M
Crane Bay and Emergency Repairs Project	\$3.5M
Phase 1 of the Public Works Renovations Project	\$5.0M
Phase 2 of the Public Works Addition, Fueling Station, and Sitework (To be included with Township Building Replacement scope of work)	\$4.0M
Soft Costs for Phase 1 and Phase 2 of the Public Works Renovations and Additions Project.	\$2.2M
SUBTOTAL:	\$52.2M
Reduce Building to 53,000 sq.ft.	\$2.0M
Insurance Reimbursement (\$20.5M + \$4.1M)	\$24.6M
Insurance Reimbursement Pending (TBD)	TBD
Township Funding	TBD

Upper Dublin Township – Public Works, Township and Police Building Project

Project Milestone Schedule



ACTIVITY	START DATE	FINISH DATE
◆ <i>Board of Commissioners – Bid Award: Public Works Renovations</i>		<i>JUN 13, 2023</i>
Construction Phase - Public Works Renovations	JUN 20, 2023	DEC 29, 2023
◆ <i>Board of Commissioners – Bid Award: Demolition of Existing Admin/Police Bldg.</i>		<i>DEC 12, 2023</i>
Construction Phase – Demolition of Existing Administration/Police Building	JAN 15, 2024	MAR 17, 2024
◆ <i>Board of Commissioners – Bid Award: New Twp/Police Bldg. & PW Garage Addition</i>		<i>FEB 13, 2024</i>
Construction Phase – New Twp/Police Bldg. and PW Garage Addition	FEB 16, 2024	FEB 27, 2026
Complete Site Work (Parking Lot/Drive Wearing Surface, Lawns, Landscaping, Signage)	MAR 02, 2026	JUL 31, 2023

1. Motion to approve the site plan layout presented April 11, 2023 for the Township Project.
2. Motion to approve the general floor plan with reduced square foot of 53,000 sq. ft. as presented April 11, 2023 for the Township Building.
3. Motion to approve rooftop solar as Alternate Bid for the new Township Building.
4. Motion to approve Geothermal HVAC system for the new Township Building.