## STATE OF CONNECTICUT CONNECTICUT SITING COUNCIL

IN RE:

APPLICATION OF NEW CINGULAR WIRELESS PCS, LLC (AT&T) FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF A WIRELESS TELECOMMUNICATIONS FACILITY AT 499 MILE LANE, CITY OF MIDDLETOWN, CONNECTICUT DOCKET NO. 506

January 26, 2022

## NEW CINGULAR WIRELESS PCS, LLC d/b/a AT&T SUPPLEMENTAL SUBMISSION

#### SUPPLEMENTAL AT&T SUBMISSIONS

AT&T (the "Applicant") respectfully submits the following supplemental information to the Connecticut Siting Council in the above-referenced proceeding:

#### 1. Multiple Carriers Interested

T-Mobile and Dish have indicated initial interest in the site, but no specific commitments have been made at this time. Verizon has indicated that it has no specific interest for a site here at this time. As AT&T's engineering and radiofrequency expert witnesses testified at the November 30<sup>th</sup> and December 21<sup>st</sup> evidentiary hearings, collocation for any such future carrier would not be feasible for the existing light-duty municipal tower and any reinforcement plan.

#### 2. Alternatives Comparison

Below is a chart comparing the alternatives the Council has inquired about regarding tower siting on the subject parcel and summarizing the technical, environmental, economic and public safety feasibility of each alternative using the siting criteria set forth in 16-50p and 16-50aa of the Connecticut General Statutes.

	AT&T's Proposal: Modify the Existing Tower Site with a Second Tower	Reinforce Existing Light- Duty Municipal Tower	Construct a New Replacement Monopole Tower in an Adjacent Location	Construct a New Large Replacement Lattice Tower
Technical Feasibility	Yes	No	No	No
Environmental Feasibility	Yes	Yes	Yes	Yes
Public Safety Feasibility	Yes	No	No	No
Economic Feasibility	Yes	No	No	No
Exclusive of AT&T Equipment Costs	Approx \$150,000	Approx \$350,000 – \$450,000	Approx \$500,000	Approx \$1,000,000+
Avoids the Unnecessary Proliferation of Towers	Yes	No	Yes	Yes
Comments Based on Testimony of AT&T and City Witnesses	No significant adverse environmental effects as listed in the CGS §16-50p(a)(3)(B) state statutory criteria  No Agricultural land impacts  Not within 250' of a school or day care facility  Not on water company land  Meets manufacturer safety standards	Additional carriers could not collocate  The scope of structural modifications that do not meet the building code and which would require custom welds render this a technically and economically infeasible option.  The City has legitimate interests in public safety associated with this unique hub site for the whole City's emergency	The City wont consent to this option citing its legitimate public safety concerns related to technical viability for its microwave links and concerns over cut over issues to a second set of network facilities prior to demolition of the old site and given this site is it's unique hub for the whole City emergency network.  The City wont consent to this option citing its capital investment in the existing tower structure and ownership of same for reserved capacity for additional whips the City planned for but not installed.	In addition to all the same issues with installation of one replacement monopole that the City wont consent to, other than microwave link stability, the costs to the City and AT&T are further multiplied compared to the proposed monopole tower cost and something the City wont consent to.  This alternative would also have added construction costs for a new compound, driveway and utility extensions if in a modified location on the property.  Notably, these costs provide added economic

context in addition to the Collocation is network and The City also cites economic unique technical concerns available for other concerns over the extra concerns with expenditures related to the City has for its public wireless carriers AT&T construction purchasing duplicative safety network and why equipment for the new facility the City did not build a impacts given the This part of magnitude of what and the cost of collocatable tower in Middletown is not in a DEEP or local would be required decommissioning and 2017/2018 with taxpayer to essentially removing the existing tower funds or why AT&T and area of undisturbed scenic rebuild this light which are concerns shared by other tower companies would have declined any quality duty tower AT&T. request by the City to This option would also limit contribute capital to the Use of a monopole City (on the order of the height of future minimizes collocation by other wireless \$500,000 to \$750,000) for incremental carriers to avoid interference the City's construction and aesthetic effects ownership of one and the spacing requirements with lower tower collocatable 180' lattice height, lesser mass on 1 combined monopole and minimal (i.e., other carriers would be tower. footprint at heights below 100'), whereas the proposed This alternative would also addition of a monopole by have comparatively Public safety AT&T and the City allows additional environmental concerns require enough horizontal separation effects including relative the City and visibility, ground of the two structures to AT&T facilities to disturbance and other interleave carrier elevations be constructed on the proposed monopole factors. along the higher with typical 10' separations at elevations where the existing tower the 150' through 120' elevations with the adjacent is located for City elevations on the service to the existing 180' light duty tower community remaining and not impacted.

SUPPLEMENTAL INFORMATION REQUESTED BY THE SITING COUNCIL

AT&T (the "Applicant") respectfully submits the following exhibits and redirect testimony in response to the Connecticut Siting Council's request for additional information dated December 22, 2021:

a) Provide a cost estimate of the small cell configuration described in "Late Filed Exhibit a" (AT&T's November Supplemental Submission).

<u>Kelly Wade Bettuchi</u>- The estimated cost of a hypothetical small cell alternative in this Docket would be over \$3 million, which far exceeds AT&T's capital budget for this site and

renders a small cell configuration economically infeasible irrespective of the technical and public safety deficiencies small cells would present.

Mr. Lavin and AT&T's Radiofrequency Engineers have estimated that at least 42 and likely over 50 small cell nodes would be required to achieve mostly roadway coverage only. Based on a sample of AT&T's PURA utility pole attachment installations in the state, and depending on the amount of make ready work including pole replacements, the range of capital costs per small cell node is somewhere in the \$50,000 to \$70,000 range each. Other types of small cells including new poles on private properties would generally have increased costs. Notably, these costs do not include the capital costs to AT&T of building a "hub site" or "front haul fiber" required to the nodes and for a coverage type small cell build.

<u>Martin Lavin</u>- A small cell configuration would not adequately meet AT&T's coverage and public safety objectives in this Docket, given that placement of small cells is typically limited to locations along the rights-of-way. Replicating the full coverage of the proposed facility would require dozens more sites and leases for pole installations with various private landowners, thereby complicating and extending the buildout process significantly.

As an example, in-building coverage, like the coverage needed in the schools in the area within the search ring would require more than simply right of way utility pole attachments to achieve. Middletown High School has buried utilities and no available poles. In order to provide reliable coverage for the schools in the search ring area, it would be necessary to install new on-site poles at the School with commercial power and fiber for interconnection to the network too.

Additionally, small cells would not further the public safety objectives identified in this Docket because AT&T's small cells do not support FirstNet. The 700 MHz band is not deployed on small cells due to the limitations on physical antenna size. This inhibits FirstNet users from having priority access on Band 14.

The lack of 700 MHz signal on a small cell configuration also limits coverage due to the use of higher frequencies (such as PCS, AWS). This results in increased signal loss to foliage and impacts coverage objectives. Further, the unavailability of long-term emergency back-up power for a small cell configuration makes them unreliable in an emergency power outage situation and renders this option infeasible from a public safety standpoint.

It is my professional opinion that small cells are not technically implicated as an alternative in this Docket.

b) Provide the run time for the proposed diesel generator based on its fuel capacity and operating at full load conditions.

<u>Daniel Hamm</u>- The proposed emergency back-up diesel generator could operate for approximately 48 hours based on full load conditions, which utilize approximately 1.90

gallons per hour. The fuel capacity for the proposed diesel generator is approximately 92 gallons. Attached as Exhibit 1 is the Equipment Specification Sheet for the proposed Generac Industrial Diesel Generator.

c) Determine if natural gas is available at the site.

<u>Daniel Hamm</u>- Natural gas is available at the street, but not at the existing tower site. The City has deployed propane as its backup power fuel source. In order to utilize natural gas as a fuel source, a new gas line would need to be installed from the street up the hill to the proposed tower location. This would involve approximately 700 linear feet of new trenching in addition to potential driveway excavation and re-paving. The capital costs of a new natural gas line would be well in excess of planned costs for back up power generation at the site for AT&T and not warranted for economic reasons in light of viable alternatives including diesel or propane that do not present significant adverse environmental effects as a fuel source at the existing tower site.

d) Identify any alternative site(s) (other than the Lawrence School property at Kaplan Drive) that were evaluated by AT&T, and provide the reason(s) such site(s) were rejected.

Brian Gaudet- Included as Exhibit 2 is an aerial map of all parcels within 2,500' of the center of the search area provided by AT&T with the search ring shown and color coding land uses in the area to show single family residential, municipal, utility and agricultural lands. As depicted, the majority of properties within this area are residential and there are substantial areas of wetlands to the east, north and northwest of the proposed site associated with Swamp Brook and lower elevations. The three parcels in the search ring are all owned by the City of Middletown which include the current parcel used as the City's emergency response and fire training center, Middletown High School and Keigwin Middle School, school properties also owned by the City.

Martin Lavin- Included as Exhibit 3 is a topographic map showing the original search ring and the refined search area based on topography. As depicted, there is limited technical availability of properties to the east or west of the proposed site because of the ridge line the existing tower is located on and which would block coverage to the area as required to address what is a significant coverage gap in Middletown for AT&T and other wireless carriers. As such a tower on one of the three City properties towards the top of the ridge line is required and why AT&T focused on the existing parcel and tower site which was made available to it by the City and has existing access and utilities.

Notably, the existing Eversource right of way to the south adjacent to residences further south along Aspen and Blacksmith Drives and Quail Run, consists of light-duty approximately 50' to 60' wood utility poles part of what is a 115kv line. Collocating on these poles is not feasible nor are they structurally engineered to accommodate the additional load of wireless equipment. Additionally, Eversource has not allowed carriers to install

altogether new towers in its rights of way and further limits replacement poles due to maintenance and repair complications for them and wireless carriers. See Siting Council Docket No. 388 (2011). There are also access limitations to the top of the hill where a new tower would have to be located.

<u>Kelly Wade Bettuchi/Scott Pike</u>- Typically AT&T will not explore new "raw land" locations on other properties when there is an existing tower site, as is the case here. This consistent with state law that seeks to avoid the unnecessary proliferation of towers in the state and our company's understanding of Siting Council application of the Connecticut General Statutes. Our site acquisition approach also incorporates the general state legislated preference to avoid tower siting within 250' of school buildings which would include the Lawrence School and other schools in the area.

#### **CERTIFICATE OF SERVICE**

I hereby certify that on this day an electronic copy and one original and fifteen (15) hard copies of the foregoing was sent via overnight mail to the Connecticut Siting Council with an electronic copy sent to:

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January 26, 2022

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Joseph Barbagallo, Talias Trail Kelly Pugliares, Talias Trail Michael Siteman, Talias Trail

AT&T, Smartlink Group

# Exhibit 1

#### SDC20 | 2.5L | 20 kW - AC

#### **INDUSTRIAL DIESEL GENERATOR SET**

**EPA Certified Stationary Emergency** 



Model G007098-0 (Steel)

**Standby Power Rating** 

20 kW AC, 60 Hz







Image used for illustration purposes only

#### **Codes and Standards**

Generac products are designed to the following standards:



UL2200, UL508, UL142, UL489



NFPA 37, 70, 99, 110



NEC700, 701, 702, 708



ISO 3046, 7637, 8528, 9001



NEMA ICS10, MG1, 250, ICS6, AB1



ANSI C62.41

### **Powering Ahead**

For over 50 years, Generac has provided innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial applications under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.

#### INDUSTRIAL DIESEL GENERATOR SET

**EPA Certified Stationary Emergency** 

## GENERAC\* INDUSTRIAL POWER

#### Model G007098-0 (Steel)

#### STANDARD FEATURES

#### **ENGINE SYSTEM**

- Oil Drain Extension
- · Air Cleaner with Service Indicator
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- · Exhaust Silencer with Drain
- Factory Filled Oil & Coolant

#### **Fuel System**

· Primary Fuel Filter

#### **Cooling System**

- 120V AC Coolant Heater
- · Closed Coolant Recovery System
- UV/Ozone Resistant Hoses
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension

#### **Electrical System**

- · Battery Charging Alternator
- AGM Spill Proof Battery
- Battery Cables
- Sealed/Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor
- Output Circuit Breaker

#### **ALTERNATOR SYSTEM**

- · Class H Insulation Material
- Vented Rotor
- 2/3 Pitch
- · Skewed Stator
- · Amortisseur Winding
- Brushless Excitation
- Sealed Bearings
- Rotor Dynamically Spin BalancedFull Load Capacity Alternator
- · Protective Thermal Shutdown

#### **GENERATOR SET**

- Single Side Service
- · Internal Genset Vibration Isolators
- · Separation of Circuits- High/Low Voltage
- Silencer Heat Shield
- High Heat Wrapped Exhaust Piping
- Silencer Enclosed Within Generator
- 5 Year Extended Warranty
- Extended Factory Testing
- 12 Gallon System Spill Containment
- 2.5 Gallon Fuel Fill Spill Containment

#### **ENCLOSURE**

- · Serviceable Items Accessible Though Lift-Off Door
- High Performance Sound-Absorbing Material
- · Gasketed Door
- Stamped Air-Intake Louvers
- Single Door Latch Lockable with Key & Padlock
- Rhino Coat<sup>™</sup> Textured Polyester Powder Coat
- 150 MPH Wind Rating
- 36" Snow Rating

#### **FUEL TANK**

- UL 142 Compliant
- Double Wall Construction
- Factory Pressure Tested (5 psi)
- Rupture Basin Alarm
- Fuel Level Gauge and Sender
- · Check Valve in Supply Line
- Rhino Coat™ Textured Polyester Powder Coat
- · Stainless Steel Hardware
- Integrated Fork Pockets

#### **CONTROL SYSTEM**

- Digital H Control Panel Dual 4x20 Display
- · Programmable Crank Limiter
- 7-Day Programmable Exerciser
- Special Applications Programmable PLC
- RS-232/485 Communications
- · All-Phase Sensing Voltage Regulator
- Full System Status
- 2-Wire Start Compatible
- · Power Output (kW)
- Power Factor
- · kW Hours, Total & Last Run
- · Real/Reactive/Apparent Power
- · All Phase AC Voltage
- All Phase Currents
- Oil Pressure
- · Coolant Temperature
- Coolant Level
- Engine Speed
- Battery Voltage

- Frequency
- Date/Time Fault History (Event Log)
- Isochronous Governor Control
- Waterproof/Sealed Connectors
- Audible Alarms and Shutdowns
- · Not in Auto (Flashing Light)
- Auto/Off/Manual Switch
- E-Stop (Red Mushroom-Type)
- NFPA110 Level I and II (Programmable)
- Customizable Alarms, Warnings, and Events
- Modbus protocol
- Predictive Maintenance Algorithm
- Sealed Boards
- · Password Parameter Adjustment Protection
- Single Point Ground Connections
- 15 Channel Data Logging
- 0.2 msec High Speed Data Logging
- Alarm Information Automatically Comes Up On the Display

#### Alarms

- Generator Run- Dry Contact
- Major Alarm- Dry Contact
- Minor Alarm- Dry Contact
- Low Fuel Alarm- Dry Contact
- Rupture Basin Alarm- Dry ContactAlarms & Warnings Time and Date Stamped
- Alarms & Warnings for Transient and Steady State Conditions
- Snap Shots of Key Operation Parameters During Alarms & Warnings
- Alarms and Warnings Spelled Out (No Alarm Codes)

#### itery voltage

## MODEL OPTIONS

**CONTROL SYSTEM** 

- 21 Light Annunciator- Shipped Loose Kit and Field Installed
- External E-Stop-Shipped Loose Kit and Field Installed

#### **ENCLOSURE**

- O Aluminum Enclosure
- Extreme Cold Weather Kit Shipped Loose Kit and Field Installed

#### **TANKS**

 External Fuel Vent- Shipped Loose Kit and Field Installed

# SPEC SHEF

## SDC20 | 2.5L | 20 kW - AC

#### INDUSTRIAL DIESEL GENERATOR SET

**EPA Certified Stationary Emergency** 

#### Model G007098-0 (Steel)

**GENERAC** 

**INDUSTRIAL** 

#### **APPLICATION AND ENGINEERING DATA**

#### **ENGINE SPECIFICATIONS**

Make	Mitsubishi	
EPA Emissions Compliance	Interim Tier 4	
Cylinder #	4	
Туре	In-Line	
Displacement - L (Cu In)	2.5 (158)	
Bore - mm (in)	88 (3.5)	
Stroke - mm (in)	103 (4.1)	
Compression Ratio	22:1	
Intake Air Method	Naturally Aspirated	
·	·	

#### **Engine Governing**

Crankcase Capacity - L (qts)

Governor	Electronic Isochronous
Frequency Regulation (Steady State)	± 0.25%
Lubrication System	
•	
Oil Pump Type	Trochoid Gear Pump
Oil Filter Type	Filtering Paper, Full Flow

6.5 (6.9)

#### Cooling System

Cooling System Type	Forced Circulation
Water Pump Type	Centrifugal Pump
Fan Type	Pusher
Fan Speed (rpm)	2100
Fan Diameter - mm (in)	431.8 (17)
Coolant Heater Wattage	1000
Coolant Heater Voltage	120

#### Fuel System

Fuel Type	Ultra Low Sulfur Diesel #2
Fuel Specifications	ASTM
Fuel Filtering (microns)	6
Fuel Inject Pump Make	Bosch
Injector Type	Engine Driven Gear
Engine Type	Diesel
Fuel Supply Line - mm (in.)	6.6 (0.26)

#### **Engine Electrical System**

System Voltage	12 VDC
Battery Charger Alternator	12V-50A
Battery Size	650 CCA
Battery Group	35
Battery Voltage	12 VDC
Ground Polarity	Negative

#### **ALTERNATOR SPECIFICATIONS**

Standard Model	Mecc Alte ECP 28-2L/4
Poles	4
Field Type	Revolving
Insulation Class - Rotor	Н
Insulation Class - Stator	Н
Total Harmonic Distortion	<5%
Telephone Interference Factor (TIF)	<45
Standard Excitation	Brushless

Bearings	Dual Sealed
Coupling	Belt, Pulley
Load Capacity - Standby	100%
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Digital
Number of Sensed Phases	All
Regulation Accuracy (Steady State)	±0.5%

#### **RATING DEFINITIONS**

Model G007098-0 (Steel)

### SDC20 | 2.5L | 20 kW - AC

#### INDUSTRIAL DIESEL GENERATOR SET

**EPA Certified Stationary Emergency** 

#### **OPERATING DATA**

#### **POWER RATINGS**

Single-Phase 120/240 VAC @1.0pf

Circuit Breaker Size

20 kW 100A

Amps: 83

#### **FUEL CONSUMPTION RATES\***

#### Diesel - gph (lph)

Percent Load	Standby
25%	0.74 (2.80)
50%	0.99 (3.75)
75%	1.41 (5.30)
100%	1.90 (7.19)

<sup>\*</sup> Fuel supply installation must accommodate fuel consumption rates at 100% load.

#### **COOLING**

		Standby
Coolant Flow per Minute	gpm (lpm)	11.9 (45)
Coolant System Capacity	gal (L)	3.5 (13.2)
Heat Rejection to Coolant	BTU/hr	238,200
Inlet Air	cfm (m³/min)	2365 (67)
Max. Operating Ambient Temperature (Before Derate)	°F (°C)	77° (25°)
Maximum Radiator Backpressure	in H <sub>2</sub> O	0.50

#### **COMBUSTION AIR REQUIREMENTS**

Standby Flow at Rated Power cfm (m<sup>3</sup>/min) 88 (2.49)

**EXHAUST** 

#### **ENGINE**

		Standby
Rated Engine Speed	rpm	1800
Horsepower at Rated kW**	hp	33.5
Piston Speed	ft/min	1220.47
BMEP	psi	96.5

		Standby
Exhaust Flow (Rated Output)	cfm (m³/min)	193 (328)
Max. Backpressure (Post Silencer)	inHg (kPa)	1.38 (4.67)
Exhaust Temp (Rated Output - Post Silencer)	°F (°C)	928 (497.7)

<sup>\*\*</sup> Refer to "Emissions Data Sheet" for maximum bHP for EPA and SCAQMD permitting purposes.

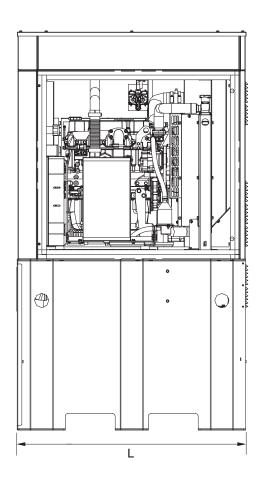
#### **INDUSTRIAL DIESEL GENERATOR SET**

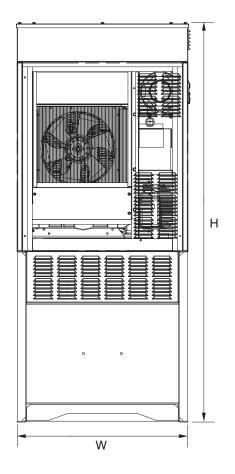
**EPA Certified Stationary Emergency** 

**DIMENSIONS AND WEIGHTS\*** 



Model G007098-0 (Steel)





#### **Level 2 Sound Attenuation Enclosure**

Run Time Hours	48
Usable Capacity Gal (L)	92 (348.2)
L x W x H in (mm)	48 x 36 x 90
	(1219.2 x 914.4 x 2286)
Weight lbs (kg)	2400 (1089)
Sound Level	71 dBA

\* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER		

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.

SDC20 | 2.5L | 20 kW - AC

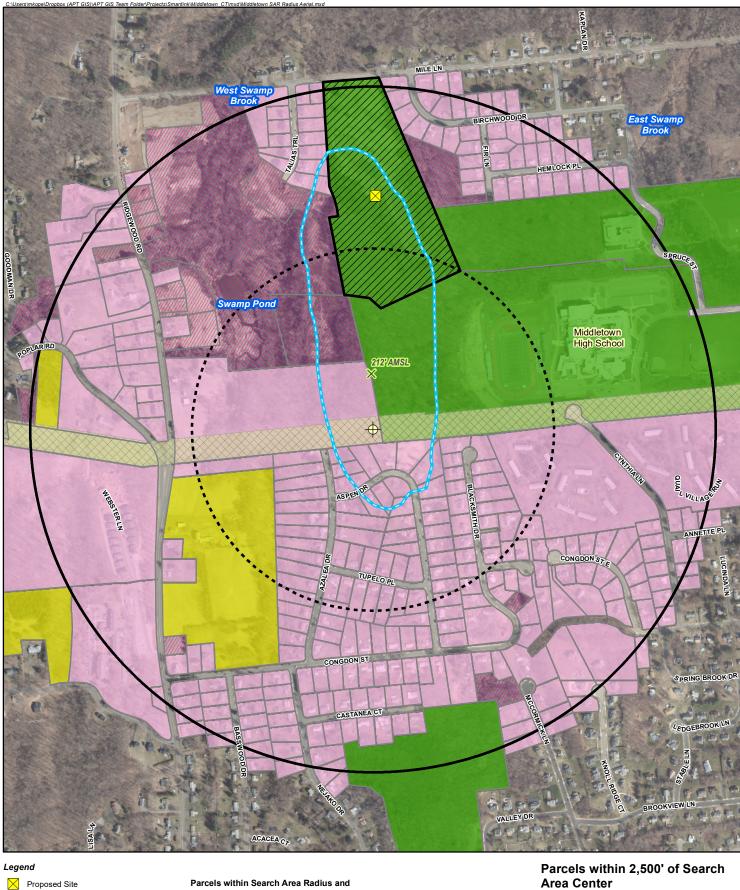
INDUSTRIAL DIESEL GENERATOR SET

**EPA Certified Stationary Emergency** 

GENERAC\* INDUSTRIAL POWER

Model G007098-0 (Steel)

Exhibit 2





SAR Center Point

Search Area Ring (SAR) 2,500' Radius

Subject Property (Proposed Site) Approximate Ridge

Approximate Eversource Utility Right-of-Way

Map Notes: Base Map Source: 2019 Aerial Photograph (CTECO) Map Scale: 1 inch = 700 feet Map Date: January 2022

### **Associated Land Use**

Residential

Vacant Residential Residential (Potential Agricultural Use)

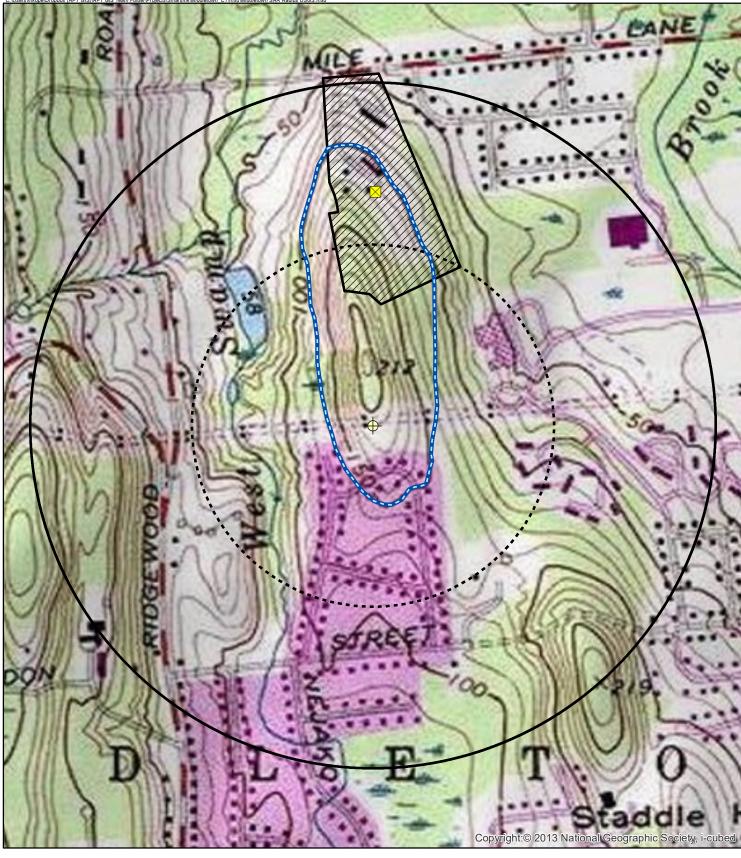
Municipal (City of Middletown) Utility Right-of-Way

## 350 700

**Proposed Wireless** Telecommunications Facility Middletown\_Mile Lane 499 Mile Lane Middletown, Connecticut



Exhibit 3



#### Legend



Proposed Site



SAR Center Point



Search Area Ring (SAR)



Subject Property (Proposed Site)

Approximate Ridge

## Map Notes: Base Map Source: USGS 7.5 Minute Topographic Quadrangle Map, Middletown, CT (1992) Map Scale: 1 inch = 700 feet Map Date: January 2022



#### 2,500' Radius Topographic Map

Proposed Wireless Telecommunications Facility Middletown\_Mile Lane 499 Mile Lane Middletown, Connecticut

