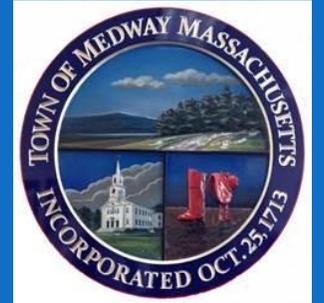


# Understanding the Proposed Exelon Expansion

A Review by the Town of Medway



# Presentation Overview

- Site History and Present Operation
- Facility & Impacts
  - What is a Peaking Power Plant?
  - Proposed Expansion Project
  - Required Approvals
  - Air Quality - Presented by Air Quality Associates
  - Noise - Presented by Acentech
  - Water - Presented by Kleinfelder Associates
  - Environmental
  - Property Values
  - Traffic
- Financial Benefits
- Next Steps
- Questions and Answers

# Site History and Present Operation

- Property is approximately 94 acres
  - Eversource operates 2 substations and a natural gas interconnection are located on the property (approx. 54 acres)
- Existing 135 MW oil-fired facility is sited on 5 acres which has been in operation since 1970
- The 3 peaking units, fueled by oil, were installed by Boston Edison following the 1965 East Coast blackout
- Previously owned and operated by Sithe West Medway Development LLC as a peaker plant

# Site History and Present Operation

- Site received approval from the Massachusetts Energy Facilities Siting Board (“EFSB”) to construct a 540 MW facility, but it was never constructed
- Town approved HCA and PILOT Agreements with Site at that time
- Exelon purchased the West Medway station in 2002
- With a combined capacity of 135 MW, units operate during periods of peak demand
- The existing units have operated for less than 80 hours on an annual basis over the last 5 years

# How did we get here?

- Notified November 2014 of Exelon's interest in expansion
- Met with Town officials mid-winter
- Reviewed existing site and conceptual plans
- Town reviewed process following EFSB filing including meeting with department heads
- Hired independent professional consultants and filed for Intervenor Status following EFSB public hearing in June 2015
- Engaged services of specialized legal team to review Town options
- Commenced negotiations on HCA and PILOT to protect Town interests

# Facility & Impacts

# What is a Peaking Power Plant? - Glenn Walker

- Peaking power plants, aka peaker plants, are generally run only when there is a high need for electricity during periods of substantial peak energy demand.
- Peaking power plants, using combustion turbines, are typically quick-start and burn natural gas and limited amounts of oil.
- Peaking power plants are used in combination with renewable resources and other more highly utilized power plants to supply a dependable and consistent amount of electricity.

# Proposed Expansion Project - Glenn Walker

- Expansion of existing site by adding two additional generating units
  - Highly efficient, fast-starting 200 MW generators & associated structures and systems
  - Run primarily on natural gas with ultra low sulfur diesel (ULSD) oil as a back up
  - Proposed turbines will be equipped with advanced emissions control and are cleaner, quieter and more efficient than existing units
  - Two (2) 160-foot tall stacks

# Proposed Expansion Project

- Is required to meet all state and federal emission regulations
- Seeking authorization to operate at a 3yr average capacity factor of 43% (maximum of 3,767 hours); and no more than a maximum of 5,256 hours of operation in a single year on gas (60% capacity)
  - Per the DEIR, Exelon projects to run 10 dys/yr on Ultra Low Sulfur Diesel oil (improvement over initial EFSB petition)
- Shrewsbury Peaker Plant is permitted for up to 1,000 hours/year but only runs an average of 69 hours/year since 2011

# Required Approvals - Michael Ernst, Esq.

- Environmental Attorney with Bachelor of Sciences degree
- 30 Years Energy Experience, including
  - Union of Concerned Scientists
  - MASSPIRG Safe Energy Advocate
  - Counsel to Mass. Legislature's Joint Committee on Energy
  - General Counsel, Mass. Department of Public Utilities
  - Director of Regulatory Affairs, Tetra Tech (#1 Wind Consultant in U.S.)
- Former Energy Facilities Siting Board Hearing Officer

# Required Approvals

## FEDERAL

- U S Army Corps of Engineers: Section 404 General Permit for Wetlands Impacts
- Environmental Protection Agency: National Pollutant Discharge Elimination System (“NPDES”) General Permit for Discharges from Construction Activities
- Federal Aviation Administration: FAA Form 7560-1 Notice of Proposed Construction or Alteration for Construction Cranes

## STATE

- MA Energy Facilities Siting Board: Approval of Petition to Construct; Zoning Exemptions
- Executive Office of Energy and Environmental Affairs: MEPA Certificate
- Massachusetts Department of Environmental Protection (MassDEP):
  - Major Comprehensive Air Plan Approval
  - Prevention of Significant Deterioration (“PSD”) Permit
  - Title V Air Operating Permit
- Department of Public Safety: State Fire Marshal Construction and Use Permits (oil & ammonia tanks)

# Required Approvals

## LOCAL

- Medway Planning and Economic Development Board: Site Plan Review
- Medway Zoning Board of Appeals: Variances (zoning exemptions filed)
- Medway Conservation Commission:
  - Wetlands Protection Act Order of Conditions
  - Abbreviated Notice of Resource Area Determination (“ANRAD”)
- Medway Inspectional Services Department: Building and Demolition Permits
- Medway Water Department: Water Service Permit
- Medway Board of Health/Sewer Department: Sewer Service Permit
- Medway Fire Department:
  - Storage Tank Permit
  - Flammable/Combustible Storage Permit

# Required Approvals

## Energy Facilities Siting Board

- Certificate of Environmental Compatibility & Public Need
  - Lead State Permitting Agency coordinating other state approvals
  - EFSB Approval Pre-condition to all other state approvals
- Local Zoning Exemptions
  - EFSB May authorize exemptions from local zoning restrictions (e.g. stack height)
- Composite Certificate may Override Local Authorities
  - The Siting Board, upon request, has granted a Certificate in the form of a composite of all individual permits, approvals or authorizations which would otherwise be necessary for the construction and operation of the facility and acts in the place of the other permits.
  - The Cape Wind Decision stated “no agency shall require any approval, consent, permit, certificate or condition for the construction, operation, or maintenance of the project. No agency shall impose or enforce any law, ordinance, by-law, rule or regulation nor take any action nor fail to take any action which could delay or prevent construction, operation, or maintenance of the project.” Cape Wind Associates, LLC, EFSB 07-8 (2009).

# MA Energy Facilities Siting Board Options

Siting Board is state agency responsible for managing power plant permitting process

- Project Opposition Considerations
  - If Town refuses to issue required local permits, Exelon will seek Siting Board override of local permits
  - Siting Board has never rejected a Petition to Construct a power plant
- Negotiate Best Mitigation and Compensation Agreement
  - Town submitted 57 questions and requests to Exelon to mitigate impacts in Medway
  - Exelon responded by agreeing to:
    - Oil combustion fee of \$1000/hour (First Local Oil Fee in Nation)
    - Reduce oil combustion authorization from 60 days to projected operation of 10 days/year
    - Establish Property Value Fund to reimburse neighbors for property value loss up to \$25,000
    - Allow Town expert to help design noise testing protocol and witness noise testing
    - Negotiate offsite screening with neighbors to reduce visual impacts
    - Town participation in development of:
      - Traffic Management Plan
      - Construction Management Plan
      - Community Outreach Plan

# Air Quality - Lynne Santos, P.E.

- Independent air quality engineering consultant
- Over 20 years experience with air quality permitting and analyses
- Assisted citizens groups in past (Westford & Billerica)
  
- Reviewed the air permit application
  - Proposed air pollution controls
  - Air impact analysis
  - Compliance with current regulations and guidelines
  
- Air Quality Considerations in Permitting Process
  - Local - Particulates and Nitrogen Dioxide
  - Global - Carbon Dioxide: **695,875 tons**

# Air Quality - Pollution Control

- Best Available Control Technology (BACT)
  - Particulate Matter, Carbon Monoxide, Volatile Organic Compounds, Sulfur Dioxide and Sulfuric Acid Mist
  - Greenhouse Gases (Carbon Dioxide)
- Lowest Achievable Emission Rate (LAER)
  - Nitrogen Oxides
- MassDEP will require Stack emission testing to confirm emission rates
  - Stack testing of emissions is industry standard for power plants and represents best method of monitoring emissions
- Continuous Emissions Monitoring System 24/7 of Nitrogen Oxides and Carbon Monoxide
- Agree that proposed control technology represents BACT/LAER

# Air Quality - Air Dispersion Modeling

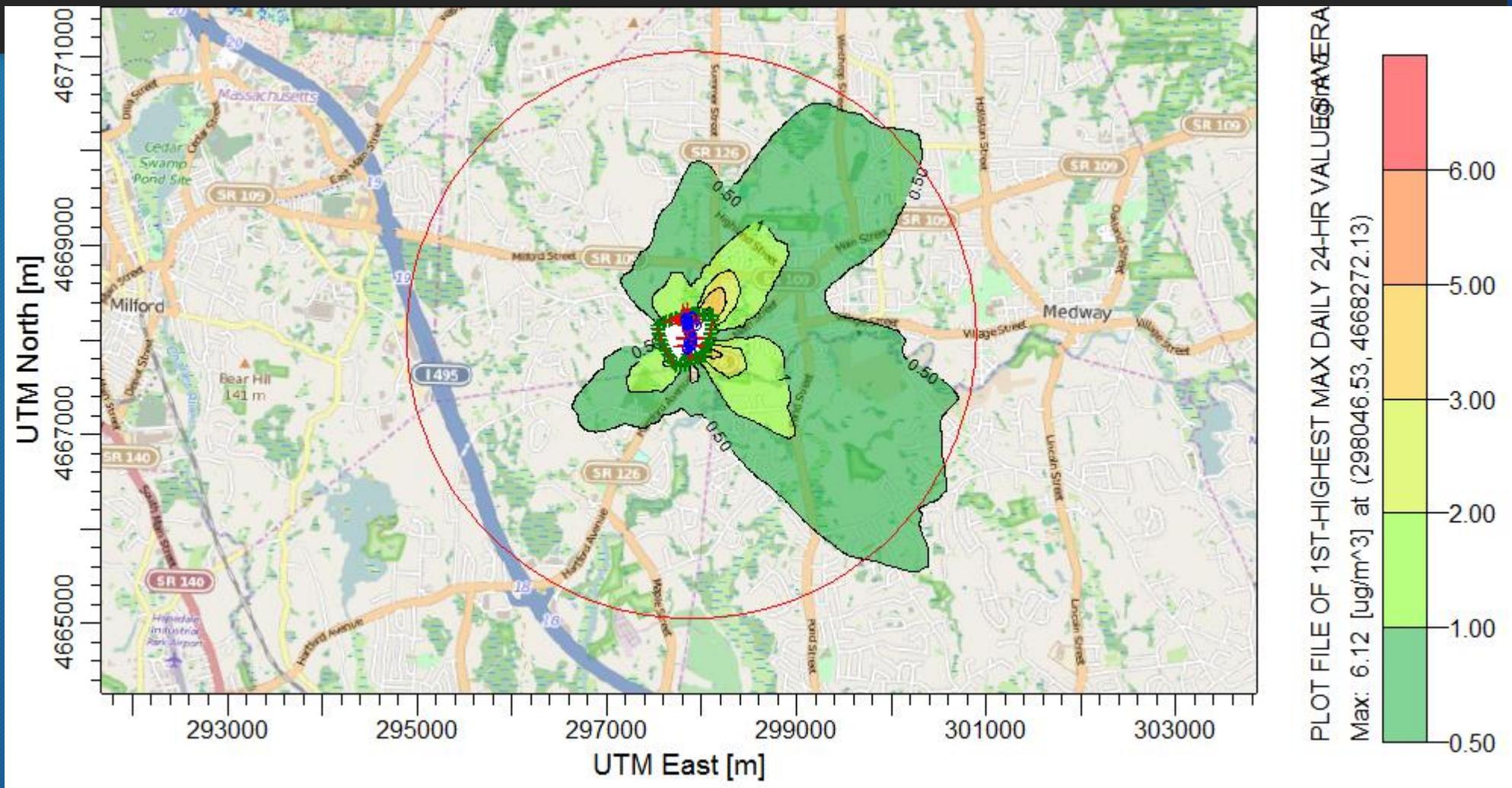
- Primary way to determine impacts and compliance with ambient standards
- US EPA computer-based model used - has been validated against field data
- 5 years of local meteorological data
- Emission rates modeled are the maximum possible 24 hours per day
- All turbines running (except existing turbines shut off at night)
- Existing Background Sources Included (ANP Bellingham, etc.)
- Concentrations calculated at 6,000 locations around Medway and surrounding towns
- Existing monitored background from Worcester added
- **Modeling performed in accordance with both US EPA and MassDEP guidelines and shows compliance with standards.**

# PM<sub>2.5</sub> 24Hr Concentration ( $\mu\text{g}/\text{m}^3$ )

- Background: 20.7
- Standard: 35
- Max modeled: 6.12
- Plot shows max modeled - average of maximum impact day for each of 5 years
- Red circle = 3km scale



# Air Quality - 24-hr PM<sub>2.5</sub> (New Plant Only)



# Noise - James Barnes, PE F-INCE USA

- Noise Study reviewed applicable project noise criteria, baseline ambient sound measurements in the community, computer modeling for both the existing equipment and proposed project.
  - 7 study locations were selected around and nearby the site
- Studied comparisons of both existing and estimated proposed new facility sound levels with measured daytime and nighttime ambient background levels.
- Proposed project will incorporate at least \$16 million of noise mitigation measures in both the proposed and existing facilities including the purchase of reduced noise equipment, and installation of muffler, lined duct, enclosure, and lagging treatments plus 3 sound wall barriers up to 55 feet tall.

# Noise

- Results of the analysis indicate that with substantial mitigation measures, the sound of the proposed new equipment would comply with the applicable noise criteria during both daytime and nighttime hours, and that the combined sound from the existing and new equipment would comply with the applicable noise criteria during daytime hours only (Exelon has agreed not to operate existing and new turbines at night except when directed during an emergency).
- Exelon agrees that Town expert can help design and participate in post-construction noise testing.
- Plant sound will be audible at times in the surrounding neighborhood closest to the facility during plant operation during both daytime and nighttime periods.

# Noise

- The noise created by the new turbines will be similar to the existing turbines; Town officials have not received any recent complaints about existing plant noise.
- The new facility sound levels estimated by consultants at the closest residences are only slightly higher than the measured daytime background sound levels and are greater than the nighttime background levels.
- Projected noise levels during the day and night of 45 dBA and 43 dBA are less than the noise created by "light auto traffic" at 100 feet, which is about 50 dBA.
- How noticeable the plant sound will be to a person in the neighborhood will depend on many factors at the time, including the number of units in operation, meteorological conditions (particularly wind direction), ambient sound levels, person's location (e.g., indoor or outdoor), and person's activity (e.g., reading, riding bike).

# Water - Kirsten Ryan, P.G.

Town retained Kleinfelder to assess Medway's water system capacity and ability to provide 50,000 gallons per day to Exelon from the Town's system:

- Under current State Permit Medway is allowed to pump 920,000 gpd.
- With recent major leak repairs, Medway is currently pumping about 860,000 gpd.
- New developments already planned in Medway will increase demand for water.
- Demand is projected to exceed both Medway's Permit limit and actual pumping ability.

# Water

- Medway has water production and treatment challenges that need to be addressed in order to meet future demands:
  - The Oakland Well has high levels of iron and manganese; only pumped when necessary during very high spikes in demand in summer.
  - A treatment plant to remove iron and manganese is needed in order to fully utilize Oakland Well.
  - The Populatic Well originally pumped 600 gallons per minute, now pumps 400 gpm.
  - More water could most likely be pumped from the Populatic Well site by satellite wells.
    - Medway decided it will not provide water from its wells to Exelon.
    - Exelon plans to seek water from Millis.

# Water

## Exelon Water Needs and Sources:

Exelon Water Needs	Gallons Per day
Average daily use, maximum year, 60% capacity	95,206
Typical expected use, 33% capacity	51,900

Exelon Water Sources Proposed	Gallons Per day
Exelon Bedrock Well, 500 ft deep	51,840
Supply from Millis	as needed up to 40,000 (excess demand to be made up by on-site storage tank 450,000 gal)

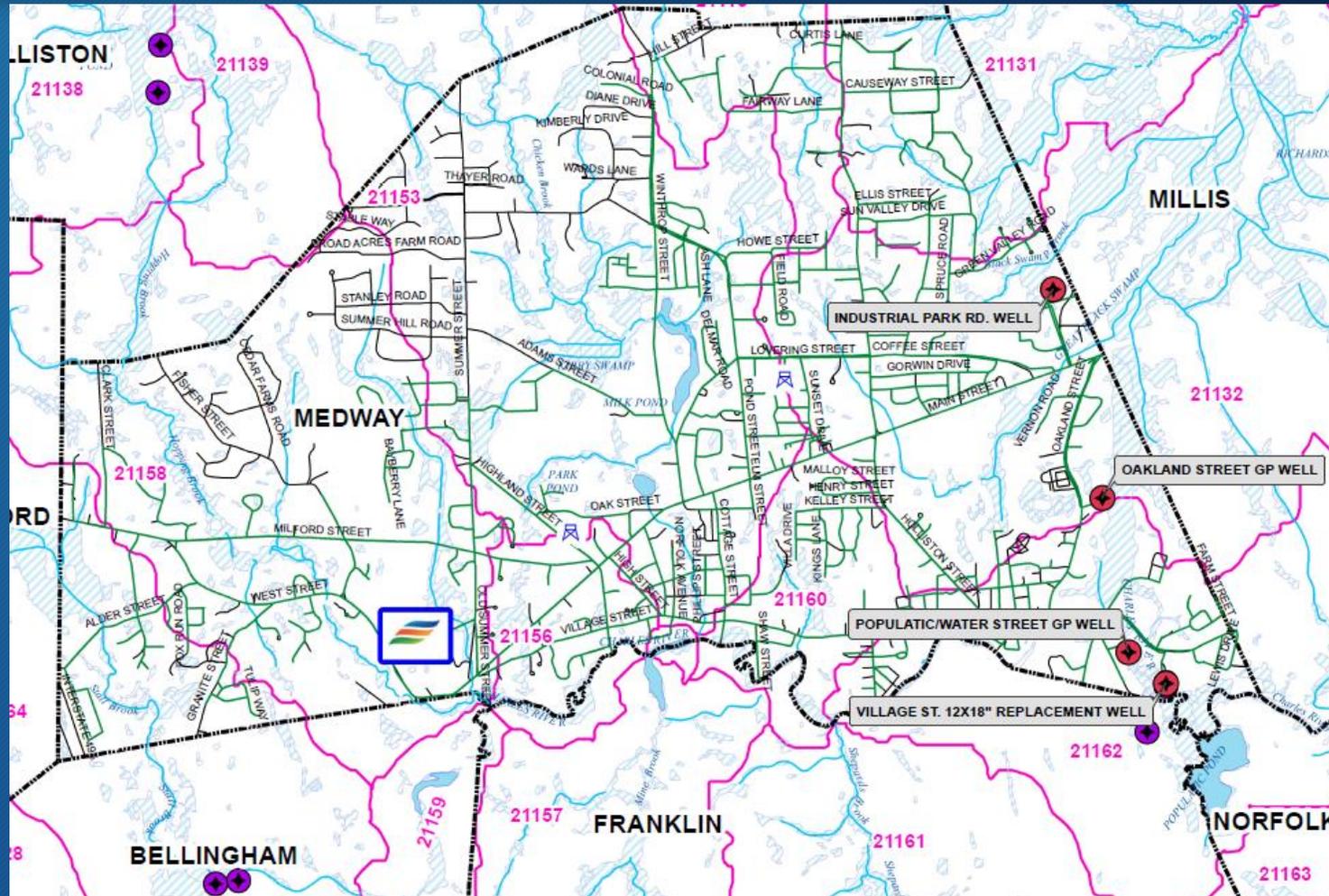
- Exelon well will not require state permit

# Water

## Impacts from 500-ft deep Exelon Bedrock Well?

- Medway Town wells
  - 3 miles east of Exelon
  - Different aquifer system (sand and gravel; 50 to 75 feet deep)
    - No impact
- Pumping test showed no impacts on monitoring wells within 800 to 1600 feet
- Medway BOH reviewing private well locations with MassDEP
  - No impacts expected on private wells

# Water



# Water

## Supply From Millis to Exelon

- Millis has capacity under its Permit to provide water
  - Water would be transported via Medway's water mains
  - Study about to begin
  - Full evaluation of impacts or improvements needed
- Initiate discussions with Millis and MassDEP about potential water purchase by Exelon and transfer through Medway.

Exelon will pay for all costs relating to any improvements needed as per Host Community Agreement.

# Environmental

- Environmental Monitoring Plan - BOH Oversight
  - Annually in October, Exelon representatives will meet with the Medway Health Agent and safety officials to review environmental and safety performance of the prior 12 month period
- MassDEP maintains a list of sites that have had reportable releases. According to this list, there are four Release Tracking Numbers (“RTNs”) associated with the property.
  - Reportable releases were under the ownership of Boston Edison
  - Three of the four RTNs are PERMANENTLY CLOSED
  - The fourth RTN has achieved a Temporary Solution
    - MA DEP receives semi-annual status reports; last report received on 9/29/15

# Environmental

- The Town discourages the use of fuel oil.
- In response, Exelon has proposed to limit its use of ULSD fuel oil to no more than 30 days or 720 hours per year (per DEIR, this may reduce to 10 days/240 hours).
- In any such instance (except under certain circumstances), Exelon shall pay to the Town a sum of one thousand dollars (\$1,000) per hour of electricity actually generated from oil burning during such operations.
- Any funds received by the Town may be used by the Town for open space, recreation, conservation, and general municipal purposes.
- Exelon will provide to the Town copies of the quarterly and annual reports regarding the burning of fuel oil that Exelon is required to file with DEP, within ten (10) business days of such filings.

# Environmental cont'd...

- Decommissioning Plan:
  - Exelon shall decommission and remove the Facility following the end of all use and/or operations at their expense in accordance with all applicable laws and procedures (includes restoration of the Site)
  - Within 30 days of the Commercial Operation Date of the Facility, Exelon will provide to the Town financial assurance in the amount of \$2 million dollars for the decommissioning and removal of the facility after all use has permanently ceased
  - Exelon will provide to the Town a copy of its decommissioning plan submitted in connection with permitting or approval of the Project
  - Exelon will provide the Town with at least 180 days written notice prior to any decommissioning of the Plant or the Facility

# Property Values

- 55 Homes within 300 feet of Facility
- Exelon has agreed in the Host Community Agreement to establish a fund to reimburse the owner of any residential property near the facility boundary if the property owner can demonstrate a loss of property value due to the new facilities.
- The fund will reimburse owners of residences within 300 feet of the site boundary up to \$25,000 if the Board of Assessor's confirms a diminution of property value within 5 years of the commencement of construction.
- ANP Power Plant has a similar fund; one claim made and it was unfounded. No loss of property values ever identified due to plant.

# Traffic

- Traffic Management Plan to be approved by Medway Town officials
- All heavy truck traffic to access the Facility via Hartford Avenue to Summer Street.
- Oil truck deliveries will not be scheduled during morning or evening rush hours.
- Per the Host Community Agreement:
  - Exelon will utilize Medway police officers as directed by the Town during construction.
  - Following construction of the Project, Exelon will repair any damage to Summer Street, West Street, and Main Street (portion) caused by construction of the Project.
  - Exelon will coordinate with the Medway and Bellingham Chiefs of Police and Public Works regarding transportation of oversized deliveries.

# Financial Benefits

# Revenue Summary

- \$73 million in property taxes  
(Year 1 = \$3.8 million)
- \$2.75 million in building permit fees (estimated permit cost)
- \$2.2 million in CPA
- \$650,000 for a Foam Firefighting Vehicle
- \$400,000 for Energy Conservation Awareness (\$20K/yr for 20 yrs)
- \$300,000 for First Responder Training (\$15K/yr for 20yrs)
- \$100,000 for a Dry-Chemical Fire Vehicle
- \$100,000 for Legal & Technical Services Reimbursement
- \$50,000 for Emergency Management Fund
- \$28,000 for Water System Study Reimbursement

**Estimated total = \$79.1 million**

# Potential Allocation of Revenue

- \$1 million/year investment for roads & sidewalks
- Facility Replacement Financing (ex: DPS Facility)
- Debt Reduction & Financial Stability programming
- Possible reduction/elimination of fees (including trash fees)

# Potential Allocation of Revenue

- Operations Support & Enhancement:
  - Medway Public Schools
  - Public Safety
  - Parks & Recreation
  - Medway Library
  - Facility Maintenance
  - Open Space Preservation & Maintenance
- Upgrades and enhancements of playground equipment
- Enhancement of Medway capital and infrastructure improvement plan

# Next Steps

- Energy Facilities Siting Board
  - Hearings held in December
  - Continuation of Permitting Process through 2<sup>nd</sup> Quarter of 2016
- Local Permits
  - Filing dates to be determined

**Town's involvement is not done!**  
**We will continue to monitor each and every  
step of the permitting process for the proposed  
project to protect the best interests of the  
community.**