EBC Program Series with MassDEP Leadership:
Western Region Leadership Team
Welcome

Francis J. Hoey

Program Chair and Moderator

Vice Chair – Programming, EBC

Senior Vice President, Tighe & Bond
Keynote Address:
Review of DEP Programs & Priorities

Martin Suuberg
Commissioner
Department of Environmental Protection
Commonwealth of Massachusetts
EBC Program Series with MassDEP Regional Offices

Commissioner Suuberg and the MassDEP Western Regional Office Leadership

November 8, 2018
MassDEP HQ Overview

Commissioner Martin Suuberg

- Climate Change
  - GHG rules/Transportation/Resiliency
- Recycling
  - Changing Markets/Initiatives
- PFAS
- EIPAS/Technical Assistance/Modernization
Update from the MassDEP Western Region Leadership Team

- **Michael Gorski**, *Regional Director*
- **Brian Harrington**, *Deputy Regional Director*
  Bureau of Water Resources
- **Eva Tor**, *Deputy Regional Director*
  Bureau of Waste Site Cleanup

Environmental Business Council of New England
Energy Environment Economy
Small Town Environmental Partnership
Small Town Environmental Partnership (STEP)

- 86 of 106 WERO communities population less than 10,000.
- Voluntary compliance audits and inspections of municipal facilities.
  - water system, wastewater treatment plant, transfer station, DPW facility, landfills, USTs/ASTs, etc.
- 8 municipalities participated.
- Enforcement Discretion unless egregious.
STEP Program Summary

• 32 regulated facilities in 8 participating communities inspected including:
  – 5 Public Water Systems
  – 1 Wastewater Treatment Plant
  – 8 Highway/DPW facilities with ASTs and/or USTs
  – 6 landfill/transfer stations
  – 1 BWSC site and Brownfield

• Compliance Assistance & Follow-up Needs
  – Hazardous Waste Management
  – Management of Junk/Surplus Equipment
  – Gasoline Dispenser Stage 1
  – Solid Waste 3rd Party Inspections
STEP Findings and Recommendations

- Success!
- Free Technical Assistance.
- Relationships developed and maintained.
- Report - road map to compliance.
- LUST Funds directed to Stockbridge as a result!
STEP II

- 2\textsuperscript{nd} phase planned for Spring of 2018.
- Up to 6 participating communities.
- Check-in with STEP I communities.
Significant Brownfields Redevelopment Projects
Current Projects

• Chicopee River Mills – Unroyal/Facemate Site
• Greylock Works, North Adams – Former Greylock Mill
• Former Bendix Site, Greenfield
• Ludlow Mills
• Holyoke Brownfields Urban Initiative
Current Projects

Mt. Tom Generating Facility Decommissioning

• Dismantling and Demolition estimated completion 2019
  • Buildings, WWTP, Boiler, Intake Structure, Lagoons and Smoke stack
• 5.76 megawatt solar array with storage
Upcoming Projects

• Berkshire Innovation Center - Pittsfield
• Developer: Pittsfield Economic Development Authority
• Former GE Plant Area
• Research and development facility to support engineering and technology fields. STEM vocational training and education to students.
Upcoming Projects

• Lee Northern Mills
• Developer: Jeffrey Cohen
• Eagle, Columbia, Greylock and Niagara Mills
• Mixed use – commercial, residential, recreational. 200 full time jobs created
Upcoming Projects

• One Ferry Street - Easthampton
• Developer: Michael Michon
• Former textile mill early 1900s
• Mixed use – housing, commercial, recreational
Upcoming Projects

Tel-Electric Dam Removal Pittsfield

- 1929 - 18 feet high run of river hydro-electric dam
- Ecological Restoration Project - W. Branch Housatonic River
  - Funding NRD, MA DF&G, MA DER, US Dept. of Interior, MA EOEEA
- Sediment Management
  - Dredge - off-site disposal and on-site stabilization

Photos from Berkshire Eagle and Kleinschmidt
Upcoming Projects

Tennessee Gas Pipeline - Agawam Loop

- New 2.1 mile loop of 12-inch diameter gas main in existing ROW
  - 17,000 dekatherms per day (Dth/d) of additional capacity
- Upgrade to Compressor Station 261
  - Replace two older compressors with one new compressor
    - System reliability and additional 30,800 Dth/d
- New Meter Station Longmeadow
Palmer Renewable Energy

- 35 MW biomass-fired power plant
- 509 million Btu/hr
- Primary fuel is non-forest derived green wood chips
- Strict wood sampling/monitoring protocols required
- Emission controls include dry fluid bed scrubber, fabric filter, and SCR
- Below major source emission thresholds and meets all ambient air quality standards
Solid Waste and Recycling
Commercial Solid Waste Capacity

• 2 Municipal Waste Combustors (combined 215,400 tons/year) coupled with Bondi Island Ash Landfill.

• 1 Commercial Landfill (Chicopee, 365,000 tons/year; anticipated closing Spring 2019)

• 7 Transfer facilities for MSW and C&D (combined 824,000 tons/year). Western Recycling recently resumed operation.

• 1 Transfer facility for C&D only (214,500 tons/year).

• Continuing trend toward Handling/Transfer and Rail.

• 5 Anaerobic Digestion Facilities for Source Separated Organics (4 active, 1 under construction).
Western Mass. Recycling Update

- Global commodity markets continue to be challenging, especially for smaller companies;
- Springfield MRF communities (74) partially shielded by Waste Management Inc. contract expiring in June 2020;
- In the interim, significant emphasis on quality of delivered and processed materials;
- RFR seeking 2020-2030 recycling services to be issued shortly.
  - No major changes to accepted materials.
  - Likely tip fee for municipalities.
  - Continued use of MRF buildings uncertain.
Solar Update
Landfills and Brownfields Solar Update

- 21 LF projects currently operational (51.5 MW).
- 2 LF projects currently permitted and to start construction (5.5 MW).
- 13 Brownfields projects operational (48.9 MW).
- The City of Holyoke Gas and Electric Department’s plan to store solar-generated electricity at the former Mt. Tom Power Station will be the state’s largest utility-scale energy storage system.
Compliance and Enforcement
Enforcement FY 2018

- Inspections: 1519
- Audits: 332
- LLE: 393
- HLE: 104
- Penalties: $421,560
Top Violations

- Hazardous Waste
- Air Emissions
- Wetlands
- Failure to Notify
- Asbestos
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Critical Issues

• Brownfields Redevelopment Challenges
• Emerging Contaminants
Brownfields Challenges

• Cleanup Costs
• Liability Concerns
• Technical – Example Asbestos in Soil
Catalysts

- Motivated developers
- Strong city support
- Significant assistance by federal & state agencies:
  - MassDEP
  - U.S. EPA
  - MassDevelopment
  - MOBD
  - AG
Applicable Regulations for AIS

- Asbestos: 310 CMR 7.15
  - Non-Traditional Work Practice Permit (NTWP): 310 CMR 7.15(14)
- MCP: 310 CMR 40.0300
  - Asbestos is on the Massachusetts Oil and Hazardous Materials List (MOHML)
  - Reportable Quantity: 1 lb. – 2 HR Notification
AIS Monitoring/Risk Characterization Challenges

- Lack of a reliable method that predicts concentrations in air from concentrations in soil
- Collection of representative samples
- Lack of a standard/reliable method for soil – EPA/600 method for bulk materials
- Lack of health info. correlating soil to air/breathing space
21E/MCP and Superfund Risk Based Approach

- Risk-based, site-specific approach
- Asbestos is a CERCLA-listed hazardous substance
- Asbestos is listed under the Massachusetts Oil and Hazardous Materials List (310 CMR 40.1600)
Practical Solutions

• Asbestos containing materials/buildings/demos/renovations – Air Regulations – 310 CMR 7.15
• Releases to the environment –
  – MCP – 310 CMR 40.0000
  – NTWP process under 310 CMR 7.15
• Use of an AUL
• Use of Activity Based Sampling (per USEPA Framework for Investigating Asbestos-Contaminated Superfund Sites)
ABS Considerations

• Levels in soil ≠ inhalation risk
• Use of personal air monitors
• Consideration of the complexities of the site
  – Land use consideration
  – Frequency of use
• Risk based exposure assessments
Case Studies

- Western Massachusetts Hospital – Westfield
- Former Crane Paper Site – Indian Orchard, Springfield
Chief Medical Examiners Office, Westfield

- Western Mass Hospital site – 5.5 acres
- Construction of a new Chief Medical Examiner building adjacent to hospital
- Historic demolition debris buried onsite – discovery in April 2017 of transite pieces in stockpiled soil
Chief Medical Examiners Office, Westfield

• NTWP to manage the soil and dispose of off-site
• Further discovery of additional material including friables from excavation of a former steam tunnel – significant cost increases
• Alternative method was needed
Chief Medical Examiners Office, Westfield

• Aug 2017 – MCP pathway
• LSP oversight and NTWP amendment
• Handling and placement of AIS on-site under a capping system – approx. 2,000 yd$^3$ soil
• Capping of additional known areas
• AUL placement
Former Chapman Valve/Crane Co. Site, Indian Orchard, Springfield

- 16 acre site (originally 54 acres)
- 1874 - Chapman Valve Manufacturing Company
- 1959 - 1980s - Crane Company
- 12 factory buildings demolished by 1996
- 2006 – OHM contamination discovered, addressed by 2009
- 2010 – 30,000 yd$^3$ of debris with asbestos containing material characterized
Former Chapman Valve/Crane Co. Site, Indian Orchard, Springfield

• 2011 – MassDEP brings in U.S. EPA
• Implementation of Activity Based Sampling for trespassing scenario
• ABS – personal monitoring, more representative of actual exposure
Former Crane Site, Indian Orchard

• Three personal sampling areas
• One person conducting an activity for approximately 100 minutes throughout the area
• Wore a backpack containing one high volume and one low volume air sample pump
• Air sample pumps in perimeter locations
• Results – no asbestos fibers detected in air samples
PFAS

• Large group of man-made fluorine-containing chemicals

• Per- and Polyfluoroalkyl Substances – stain, water and grease repellent chemicals found in a variety of consumer products
  o Carpet and fabric protection
  o Food packaging
  o Metal plating
PFAS

- Key components of Aqueous film-forming foams (AFFF) widely used in firefighting
- Longer-chain perfluoroalkyl acids (C₆ – C₈)
- PFOS & PFOA
- Persistent in the environment
- Migrate easily
- Concentrate in the food chain (bioaccumulate)
Case Study – Westfield

• City of Westfield
• Barnes Air National Guard
• MassDEP
Timeline

- 2013 – UCMR3 – PFAS, City Wells
- 2016 – EPA HA 70 PPT, PFOA + PFOS
- MassDEP takes action under MCP 310 CMR 40.0000 – Defined as a Hazardous Material
- 2016 – MassDEP issues NOR to Barnes ANG
- 2016 – City undertakes actions to address wells
- 2017 – Barnes initiates on-site assessment
- 2017 – MassDEP initiates review of private wells
- 2018 – MassDEP establishes an ORSG
Barnes Aquifer

- Hydrogeology is well understood
- General flow direction is south
Identification

- Evaluation of hydrogeology and groundwater flow of the Barnes Aquifer
- 1-mile radius of wells 7&8 and 1&2
- Evaluation of Well Driller database
- City Records
- Approximately 150 wells identified
- Approx. 130 wells are south/southeast
Sampling Methodology

- Phased approach
- Identification of extent of impacts to wells
- General indication of concentrations
- Greater focus of immediate downgradient
- Inclusion of areas upgradient as a conservative measure and to address outside concerns
- Initial proposed number of wells Phase 1: 25
Mitigation

• If concentrations were detected that may pose health risks, MassDEP:
  o Provided bottled water
  o Installed a water treatment system
• Long term solutions to be explored
Treatment System

- GAC system
- Whole house filter
- Carbon replacement 1 – 3 years
Summary to Date

MassDEP
• 92 Access agreement letters sent
• 74 responded and were assessed
• 4 > 70 PPT
• 32 will be re-assessed this Fall

Barnes ANG
• Will be initiating a Supplemental Site Investigation this Fall

City of Westfield
• Installing temporary treatment on 2 wells and permanent treatment on the other 2 wells
MassDEP WERO
Bureau of Water Resources
EBC – 2018

Brian Harrington
Deputy Regional Director
Bureau of Water Resources
(Drinking Water, Wastewater, Wetlands, Municipal Services)
MassDEP Western Regional Office
FOLLOW UP - 2015-2017
2018 and Beyond

• Fourth year of WERO-EBC meetings
• Update on some items from prior years
• 2015 – Staffing – Living Buildings, Water Reuse at UMass
• 2016 - Revised Total Coliform Rule, PFOS & PFOA (Westfield Drinking Water)
• 2017 – Mitigation Database, Lead and Copper in Schools
• 2018 and Beyond
2015 Update

“Living Buildings”

• LEED Certification
  – Point system to score green building design and construction
  – More points = higher the level of certification

• “Living Building Challenge” – beyond LEED
  – Based on the concept of a flower
  – seven different "petals" that encompass issues of sustainability, aesthetics, and social justice
  – Certification with respect to each petal: Equity, Beauty, Health, Site, Water, Energy, & Materials
  – “Red list” of prohibited materials
2015 Update
Living Buildings

- Primarily Educational Facilities
- One residential Development at Village Hill in Northampton
- Variety of Challenges
  - “Redlist” chemicals and materials
  - Project Goals vs Regulations
  - Multiple regulatory authorities
- Water System at Kern Center
2015 Update - Kern Center

• 17,000 sf building
• Generates its own electricity
• Constructed avoiding toxic “red list” chemicals using materials mainly from local and regional sources
• Net Zero Water Consumption
• Drinking Water
  – Capture rainwater for potable uses
  – No similar approved water system in US or territories
  – MassDEP worked with EPA to develop acceptable water system and water quality testing
Kern Center Water System

Mini-Surface Water System collecting rainwater

- **Source** – Rainwater from Roof Storage
- **Storage** - Two cisterns
  - Volume to serve a 17,000 sf building
  - Modeled NOAA precipitation, storage and other data to determine sufficiency
- **Filtration System**
  - Vortex style filter to separate the debris from roof to cistern
  - First flush diverted to a first flush tank
  - Remaining water to a cistern with an overflow
  - 2 parallel treatment trains
    - 5 micron cartridge filter, two carbon filters in parallel, a UV reactor and two 1 micron cartridge filters
Kern Center Water System

• Disinfection System
  – UV Disinfection
  – 4-log virus removal to meet disinfection requirements

• Water Quality Sampling
  – Standard sampling for Surface Water System
  – HPC (Heterotrophic plate counts) twice per month for rainfall catchments without chlorination
  – Meeting this standards is challenging

• Back up elements include:
  – Emergency Procedures
  – Municipal interconnection
  – Chemical addition port for disinfection
  – Important & have had to use them at various times due to bacteria/HPC counts
2015 Update

Water Reuse at UMass

- Classification by effluent use and water quality limits
- 2015 – Boiler Feed from Amherst WWTP
  - UMass provides additional treatment
- Class C – Boiler Feed
  - Limited testing parameters
  - Limited Uses
- Class A - Stricter Standards -
  - Increased testing
  - Broader class of uses
- 2017 – additional uses
  - UMass Commonwealth Honors College Cooling Tower
  - Irrigation, Dust Control and Street Sweeping
- Sampling tailored to time of use
2016 Update
Revised Total Coliform Rule

Revised Total Coliform Rule

• Eliminated the bacteria MCL violation
  – No more Notices of Noncompliance (NON)
• Replaced the NON with an Assessment requirement
• Assessment to find cause and fix it
  – Many instances not finding a “smoking gun”
  – No assessment Poor Assessment – Back to NON
2016 Update
PFOA/PFOS - Westfield

• 2013 UCMR3 Sampling Found PFOA/PFAS in Westfield Water System Well #7
• 2016 – EPA established Health Advisory
  – Westfield notifies customers
  – Removes Well #7 (and adjacent Well #8) from service
  – Westfield conducts additional sampling
    • Well #1 and Well #2 also affected (at lower level)
  – Westfield begins investigation of treatment options
  – Public updates, quarterly sampling of on-line sources
2016 Update
Westfield PFOA / PFOS

Wells #7 & #8

• Pilot study of a carbon treatment system for Well #8 submitted November 6, 2017
• Treatment System conditionally approved for Wells #7 and #8 November 17, 2017
• Final Approval in March 2019
• June 28, 2016 – Bond Approval for Well #7 and #8 System
• 2019 anticipated service to residents
  – late spring/early summer
2016 Update
Westfield PFOA / PFOS
Well #1 and Well #2
• May 25, 2018 – application for temporary treatment system for Well #2
• Temporary Treatment System approved June 6, 2018
• October 22, 2018 – Treatment is Operational
  – Water Quality Sampling results due November 12th
  – Sampled the inlet, midpoint and outlet of the system
• Design work on a permanent treatment plant for Well #1 & #2 has begun
2017 Update

WERO – Mitigation Database

Database of potential Wetlands Projects for Project Proponents to draw from

- Also available for violation cases

- Avoid, Minimize, Mitigate
  - Help applicants with Mitigation

- Database by community with potential mitigation project
  - Challenge for applicants to find projects
  - Database focuses on state. Muni, non-profit sites

- Conceptual in 2017 –
  - Some preliminary GIS work
2017 Update
Mitigation Database

• Intern Generated
• GIS Based with field verification
• Simple Excel Spreadsheet
  – Town, Address, Owner, Contact Info, Resource Areas (by area), field verification, hyperlink to inspection, Additional comments
• Searchable
• Developing town by town
• Possible expansion
  – DCR, DPWs, Conservation Commissions
  – Will speed development of database
2017 Update

Lead and Copper in Schools

- 2016 Initiative launched by Governor Baker and Treasurer Goldberg
  - $2 million from the Massachusetts Clean Water Trust (MCWT)
- Assist Public Schools, child care, similar facilities (“schools”)
- 55,000 samples from 818 school buildings
- Elevated lead and copper <10% of tested taps and water fountains
- Results from our database – available on line
2017 -2018 - Massachusetts Actions

• **2017-2018 – Lead in Schools Continued**
  – Additional Funding
  – Schools that had not previously participated eligible

• **Lead Contamination and Control Program**
  – MassDEP Developed guidance for schools to establish and manage own testing
    • Why, how to establish program, sampling, working with labs, informing public, fixing problems
GAO Report on Lead Testing in Schools

GAO was asked to review school practices for lead testing and remediation

- Report examined the extent to which:
  - school districts are testing for, finding, and remediating lead in drinking water;
  - states are supporting these efforts; and
  - federal agencies are supporting state and school district efforts.
Findings

GAO Report on Lead Testing in Schools

- Educators did not have a good grasp of Lead in Schools

- 41% of districts, serving 12 million students, had not tested for lead in the 12 months before completing our survey

- 43% of districts, serving 35 million students, tested for lead. Of those, 37% found elevated levels and reduced or eliminated exposure

- 16% did not know if they had tested

- At least 8 states require schools to test for lead, and many others assist with voluntary testing
Recommendations

GAO Report on Lead Testing in Schools

Largely a to-do list for EPA’s Office of Groundwater and Drinking Water

• Encourage schools to test
• Better – Guidance .... “Bright lines”
  – concentration to use
  – consider a public health benchmark calculation for exposure via schools
• Improve Communication
  – EPA should communicate better with Department of Education and Office of Children’s Health Protection
• Better Coordination
  – Guidance where school people will look
  – Make it easier for Educators
  – Involve states in the process
• Better Information for Schools
  – Sampling schedules
  – Actions to take if lead is found
  – costs information
WERO - Water Quality 2018

Surface Water
- Violation of Filtration Waiver – East Northfield
- Aesthetic issues – numerous small systems
  - Additional testing, technical assistance, alternate sources

Groundwater
- Assessment
- 4-log disinfection – 99.99% virus removal

Boil Orders

Disinfection By-Products
Boil Orders (16)
• Chateau Harmony – Granby
• Jiminy Peak – Hancock
• Sportshaven Mobil Home Park – Belchertown
• Sodom Mountain Campground – Southwick
• Adams Fire District – Adams (Entire Town)
• Becket Arts Center – Becket
• Bartlett’s Orchard – Richmond
• Wendell State Forest (DCR)
• New Ashford Motor Inn – New Ashford
• West Springfield – Part of Town
• Ware – Entire Town
• Bachelor Knolls – Granby
• Whately Water District
• White Pines Condominiums – Stockbridge
• Washington Acres – Belchertown
• Tolland State Forest (DCR)

Declarations of Water Emergencies for loss/potential loss of supply (3)
• Quabbin Sunrise Cooperative – Mobile Home Park in Ware
• Quabbin Health Care – Petersham
• Heritage Motor Home Park - Petersham

Additional Orders in response to issues
WERO Drinking Water – On the Horizon

• Lead and Copper – Non-school
  – Chemical Addition training provided Late October
  – Focus on Optimal Water Quality Parameters

• Filtration plant for East Northfield Water Company
  – Violation of requirements to maintain waiver from filtration

• Interconnect for Southwick to SWSC with treatment

• Ware water treatment plant

• Aesthetic issues
Wastewater – On the Horizon

Springfield Water and Sewer
   – York street crossing for SWSC, $100 million project

Pittsfield
   Pittsfield WWTP Upgrades - $75 million

Springfield, Chicopee, Holyoke
   – All continue CSO work

Long Island Sound Nitrogen Study
   – Potential for enforceable Nitrogen limits in NPDES Permits
   – SWSC permit is presently in process
     • Public Comment closed October 1, 2018
   – Could impact all WWTP’s tributary to Long Island Sound
**SRF Loans**

Maximizing Program for strapped towns

- Planning Documents - CWMP, IWMP
- Funding Available
  - Helps SRF rating scores, may mean SRF Savings
  - Good Tool for system(s)
- **Loan Subsidy** –
  - 10% of the CWSRF grant to subsidize projects in communities which would have financial difficulty in undertaking projects
  - Federal Requirement
  - $5M in 2018.
- **0% Interest - Nutrient Management projects**
  - may be eligible for some 0% financing (not limited to the Cape)
  - Statutory requirement: (1) **DEP-approved CWMP**; (2) must not be in violation of a NPDES schedule for nutrient reduction; (3) must implement land use controls to limit sprawl after the project is constructed; and (4) must be undertaking a project whose primary purpose is Nutrient management
  - Split financing packages - Nutrient management in combination with rehabilitation of aging WWTP infrastructure ... traditional work financed at 2% and the nutrient work at 0%
Wetlands - Energy Projects

Water Quality Certifications & Wetlands Appeals
• Pipelines
  – New pipelines
  – Expansion projects
• Hydropower facilities
  – New Facilities
  – Renewal Permits

Time intensive
• Often Complex projects / impacts
• Significant Public Interest
• Appeals

Closures also resource intensive
• Mount Tom Power Plant
• Wetlands Permitting
  – Structure removal – fire dock, intake and discharge structures
  – Bank stabilization
  – Wastewater Treatment Plant Closure – Building, Lagoons, etc...
Active - FERC Projects

- Tennessee Gas Pipeline Expansion Project – Sandisfield & Agawam
- Tennessee Gas Pipeline Loop & Compressor Station – Agawam
- Deerfield River Projects – Hydropower in Rowe
- FirstLight HyrdoPower – Northfield Pump/Storage & Turners Falls
Wetlands - In-lieu fee payment

- Avoid, Minimize, Mitigate
- Monetary payment – in lieu of mitigation
  - Massachusetts Department of Fish and Game (DFG) is the Corps-approved Sponsor of the In-Lieu Fee (ILF) Program for Massachusetts
- Army Corps increasingly focused on this program
  - Fee amounts can be adjusted
  - Corps permits will require confirmation of payment before work
- MassDEP does not have equivalent – must mitigate in state permits for impacts
Wetlands - In-lieu fee payment

Change to past practice with Army Corps

• Historically, MassDEP effective in coordinating mitigation with ACOE that would satisfy MassDEP and Corps (no payment or reduced payment) - Not as effective

• Enforcement – ACOE taking a similar approach to enforcement.
  – MassDEP led enforcement, ACOE would “count the bean”
  – ACOE now less inclined to “count the bean”,
  – looking for in-lieu fee payment, even if mitigation for DEP settlement
Water and Wastewater Operators

- Systems struggling to fill positions
- Aging workforce
- Anticipate increasing shortage
- Opportunities
  - Contract Operations - services
  - Careers
Moderated Discussion

Moderator: Fran Hoey, Tighe & Bond

Panelists:

- Martin Suuberg, Commissioner
- Michael Gorski, Regional Director
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