



REMEDIATION ROUNDTABLE

February 5, 2013



AGENDA

- Various Updates
- Presentations with Q&A:
 - Online Engineered Control Database
 - Financial Assurance Mechanisms (Part 2)
 - Temporary Authorizations
 - Remediation Transformation
 - Newhall Project



ROUNDTABLE WORKGROUPS

95% UCL Workgroup

- Submitted comments during public comment period for proposed amendments to the RSRs
- Draft Guidance for internal review by Spring 2013
- Topics include:
 - 95% UCL definition
 - Determining representative data to define release areas and groundwater plumes
 - Appropriate calculation methods
 - Utilization of non-detect values
 - RSR alternative requests



ROUNDTABLE WORKGROUPS

Urban Soils Workgroup

- Draft Guidance undergoing review by the workgroup and Remediation management

TI Workgroup

- Has provided recommendations for statutory changes to support the Remediation Transformation



ROUNDTABLE WORKGROUPS

Contaminated Sites List Workgroup

- Discussed implementation of searchable sites database with OIM
- Acquiring funding to stabilize current data structure for online distribution
 - Funding will enable interactive web-based database using real-time data
- February 2013 - Start data stabilization process
- Fall 2014 - Roll-out of interactive contaminated sites database



PROPOSED RSRs – COMPLETED STEPS

- 
1. Public “Notice of Intent to Amend Regulations and hold a Public Hearing” – *Completed 08/21/12*
 2. DEEP informational meetings – *Completed 9/20/12 and 9/26/12*
 3. Public Hearing – *Completed 10/25/12*



PROPOSED RSRs – CURRENT STEPS

4. Hearing Officer's Report - final proposed regulations and response to comments - *February 2013*
5. Final proposed Regulations and associated documents to Commissioner - *February 2013*
6. DEEP notifies all interested parties of availability of final wording - *February 2013*
7. DEEP submits final regulations to Attorney General for “Legal Sufficiency” approval - *February 2013*



PROPOSED RSRs – NEXT STEPS

8. DEEP submits final regulations to Office of Fiscal Analysis and Comm. of Cognizance (Environment Committee)
9. DEEP submits final regulations for approval to LRRC per CGS 4-170
10. Regulations filed with Secretary of State Office per CGS 4-172 (Regulations final upon Filing)
11. Publication of Regulations in the CT Law Journal

http://www.ct.gov/deep/cwp/view.asp?a=2715&q=325012&deepNav_GID=1626



BENEFICIAL USE REGULATIONS UPDATE

- LEAN event in January 2013
- Building on previous work and stakeholder dialogue
- Beneficial use regulations will be proposed for reuse, recycling and management of:
 - Excavated soil and sediment
 - Asphalt, brick, concrete, and ceramics
 - Potentially other materials



BENEFICIAL USE REGULATIONS UPDATE

- These regulations would largely replace the requirements in RSRs for off-site polluted soil management
- Outreach schedule:
 - Feb. 26th Solid Waste Advisory Committee mtg. at DEEP
 - In-depth meeting in March
 - Presentation at May Remediation Roundtable
 - Public comment period in May/June 2013
 - Adopt regulations Fall 2013



REMEDIATION WEBSITE UPDATES

- Remediation Transformation Report to Governor and Legislature will be posted for 30-day public input
- Transition DEP → DEEP complete
- Posted:
 - Written comments on Amendments to RSRs
 - Financial Assurance Tools for Engineered Controls
 - Updated Engineered Controls Database



UPDATE

Engineered Control Database

CLAIRE FOSTER
ENVIRONMENTAL ANALYST
REMEDIATION DIVISION



Connecticut Department of Energy and Environmental Protection

DATABASE

- What is the Engineered Control Database?
- Why is it important?
- How do we use it?



DATABASE – WHAT IS IT?

Described in the Engineered Control (EC) Guidance Document:

- An electronic, public information file
 - Available on the Remediation Division Website
http://www.ct.gov/deep/cwp/view.asp?a=2715&q=434230&deepNav_GID=1626
 - Read-only Microsoft Access database
- For stakeholders and DEEP staff
- Examples of ECs



DATABASE – WHAT IS IT?

Currently contains listings for almost 40 ECs

- Not a complete listing of all applications
- Includes approved and “in process” applications

Engineered Control Database 1 records are currently selected. Use the buttons below to navigate through records.

Print Current Record Previous Record Next Record Search Clear Search Close Form Main Menu

Site Information:

REM ID: 7137 GIS ID: 6380 EC ID: 48
Site Name: Griswold Rubber Company, Inc. LEP: Robert S. Potterton, Jr.
Address: 1 River Street Consultant: Fuss & O'Neill
Town: Plainfield DEEP Reviewer: Drew Kukucka
Program: Vol_Rem_X DEEP Site Contact: Drew Kukucka

EC Information:

Type of EC: PMC and DEC Components of EC: Layer and Design, Financial Assurance and Maintenance Details: 0(3)

Contaminant Types Present: CVOCs CleanFill Asphalt Barrier
 non-CVOCs Concrete
 SVOCs Low Permeability Membrane
 Petroleum Other Low Permeability Materials
 Metals Permeable Geotextile
 Pesticides Root Barrier
 PCBs Surface Markers
Other: asbestos Warning Layer
Primary Contaminants: PAHs, Lead Engineered Permeable Materials
(Max of 2) Rip Rap, Gabion Baskets, etc.
Surface Cover: Processed Aggregate and Rip Rap Other: Retaining Wall

Proposed Site-Use: Rubber manufacturing company
Surrounding Use: Commercial/Residential
Size of EC (sq ft): 3,300
GW Class: GB
Determination: Approved
Determination Date: 9/14/2010
Date Constructed: 11/11/2010
Surety Mechanism: Performance Bond
Surety Amount: \$6,664.00
of Years Surety Covers Costs For: 5

Comments:
There are two separate engineered control for this site. The other one was approved and constructed prior to this one.



DATABASE – WHAT IS IT?

Includes information regarding ECs' nature and design characteristics

Searchable

Site location/use

Surrounding land use

Classes of contaminants

Remedial criteria
addressed

Materials used

Descriptive

Details of “layer cake”

Operation and
maintenance plans

Financial assurance
calculations and
estimates



DATABASE

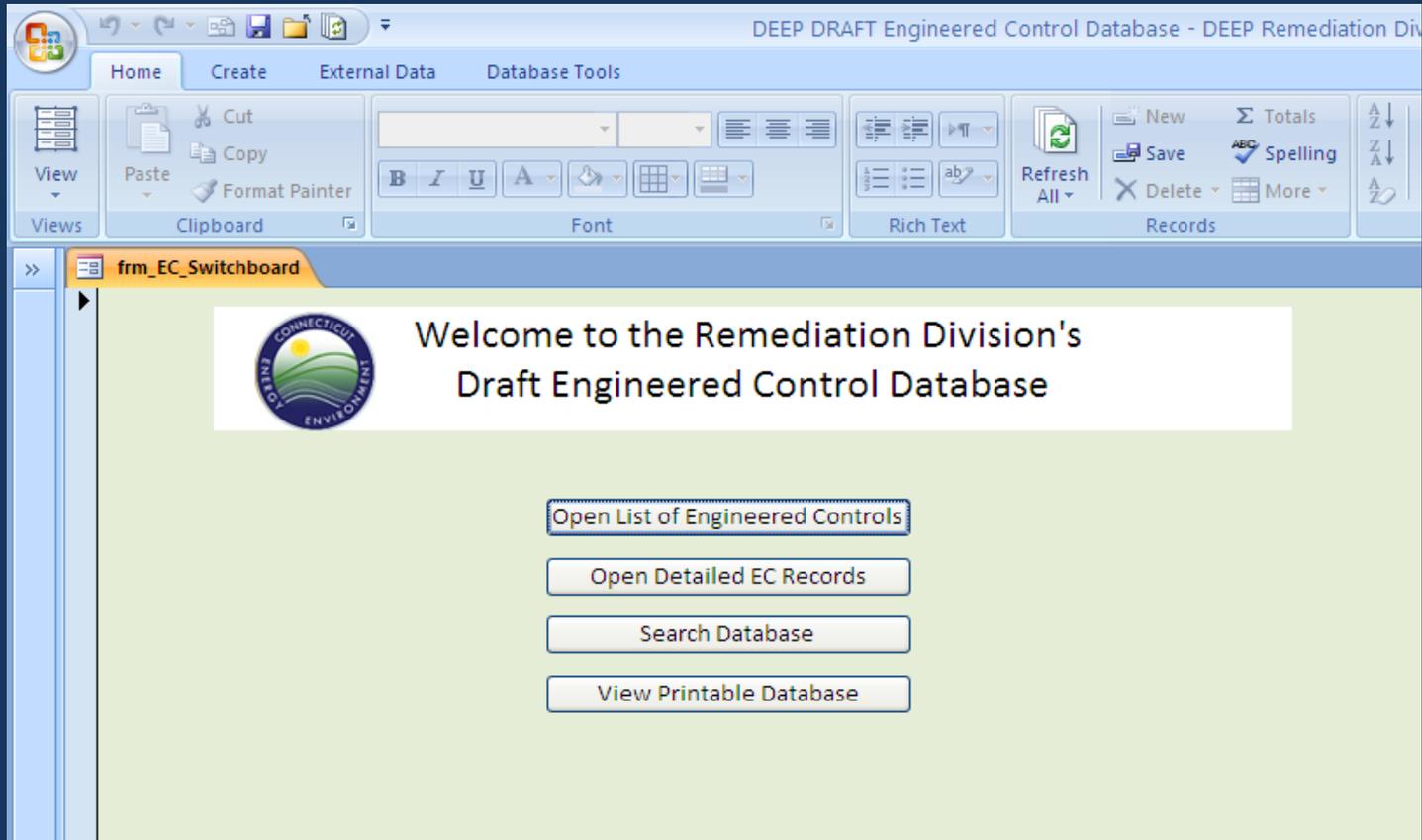
Why is it important?

- It is a reference for planning future engineered controls – shows what has already been approved
- Can be searched by contaminant, remedial criteria addressed, materials used in construction
- Saves time! Information is at your fingertips



DATABASE

How do we use it?



Connecticut Department of Energy and Environmental Protection

CLAIRE FOSTER

DATABASE

Questions / Comments

Please state your name and
speak loudly.

www.ct.gov/deep/remediationroundtable



Financial Assurance Mechanisms Part 2: Engineered Controls

ROBERT BELL
ASSISTANT DIRECTOR
REMEDIATION DIVISION



Connecticut Department of Energy and Environmental Protection

WHY FINANCIAL ASSURANCE

Why is financial assurance needed for an Engineered Control?

- Financial assurance guarantees the protection of human health and the environment in the event the responsible party defaults on its obligation
- Without financial assurance, the cost would be shifted from the responsible parties to the state and federal taxpayers



WHEN FINANCIAL ASSURANCE

When is financial assurance needed for an Engineered Control?

- Required under RSRs 22a-133k-2(f)(2) to be obtained within one year of installation of EC
 - DEEP prefers FA to be obtained by the completion of installation of the EC
- Proof of current FA must be submitted annually



FINANCIAL ASSURANCE TOOLS

- Letter of credit and performance bond templates and instructions
- Financial assurance calculator spreadsheet and instructions
- Appendix C of the Engineered Control Guidance Document revised

Available on the Remediation Division Website

http://www.ct.gov/deep/cwp/view.asp?a=2715&q=434230&deepNav_GID=1626



Connecticut Department of Energy and Environmental Protection

ROBERT BELL

FINANCIAL ASSURANCE TOOLS

The templates were created as fillable forms to simplify the financial assurance requirement process.

DEEP Financial Assurance Performance Bond Engineered Control

[Name of Issuing Company]

SURETY: []

ADDRESS: []

BOND NUMBER: []

TOTAL PENAL SUM OF BOND: \$ []

EFFECTIVE DATE: []

PRINCIPAL: [Legal name of owner of subject parcel]

ADDRESS: []

REM ID #: []

PROPERTY ADDRESS: []

Know All Persons By These Presents, That we, the Principal and Surety(ies) hereto are firmly bound to the Connecticut Department of Energy and Environmental Protection (DEEP/Department/Commissioner), in the above penal sum for the payment of which we bind ourselves, our heirs, executors, administrators, successors, and assigns jointly and severally; provided that, where the Surety(ies) are corporations acting as co-sureties, bind ourselves in such sum "jointly and severally" only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety, but if no limit of liability is indicated, the limit of liability shall be the full amount of the penal sum.

Whereas said Principal has elected, under the Remediation Standard Regulations (RSRs), Regulations, Connecticut State Agencies §22a-133k-2(f)(2)(B), to obtain an environmental remediation variance to install an engineered control at the facility identified above; and

DEEP Financial Assurance Irrevocable Letter of Credit Engineered Control

[Name of Issuing Bank]

IRREVOCABLE STANDBY LETTER OF CREDIT NUMBER: []

ISSUANCE DATE: []

TOTAL AMOUNT: U.S.\$ []

BENEFICIARY: []

APPLICANT: []

Connecticut Department of Energy
and Environmental Protection
c/o: Director, Bureau of Water Protection
and Land Reuse, Remediation Division
79 Elm Street
Hartford, CT 06106-5127

[Name of owner/operator]
[Title if applicable]
[Address]

Dear Sir or Madam:

We hereby establish our Irrevocable Standby Letter of Credit No. [] in your favor, at the request and for the account of the Applicant [owner's or operator's name and address] up to the aggregate amount of [dollar amount in words] U.S. dollars \$[total amount]. We hereby authorize the Connecticut Department of Energy and Environmental Protection (DEEP) to draw at sight on us, [insert name and address of issuing bank], an aggregate amount equal to the total amount, available upon presentation of:



Connecticut Department of Energy and Environmental Protection

ROBERT BELL

APPROVAL OF FINANCIAL ASSURANCE

The conditions for approval outline the terms and conditions of the financial assurance that will be acceptable to the Commissioner.

CONDITIONS FOR APPROVAL OF IRREVOCABLE STANDBY LETTER OF CREDIT

To satisfy the surety/financial assurance requirements of the Engineered Control (EC) Application, the Applicant must submit for the Commissioner's review and written approval the amount and format of the proposed financial instrument. Regulations of Connecticut State Agencies §22a-133k-2(f)(2)(B)(vi). The following instructions set forth the terms and conditions to be included in an Irrevocable Standby Letter of Credit that will be acceptable to the Commissioner.

Issuing Institution:

The irrevocable standby letter of credit (letter of credit) must be issued from a bank or other financial entity authorized to issue irrevocable letters of credit, regulated by a Federal or State agency and licensed to do business in the State of Connecticut. Documentation of compliance with this requirement must be submitted to the Commissioner with the originally signed duplicate of the letter of credit. The issuing financial institution must be unrelated to the owner or operator of the Applicant.

Letter of Credit Requirements

1. The wording of the letter of credit must be identical to the wording specified in the DEEP Financial Assurance Letter of Credit template.



FINANCIAL ASSURANCE TOOLS

The financial assurance spreadsheet can aid in the calculation of the amount of financial assurance required and provides a format for presenting the information.

Financial Assurance Calculation - Example									
A	B	C	D	E	F	G	H	I	J
	Current Year \$	Current Year \$ Plus 15 % contingency	Cost of repavement adjusted for Annual Inflation (15 years & 30	Divide Cost by 30yrs					
				Year 1	Year 2	Year 3	Year 4	Year 5	30
First repavement cost at year 15 (provided by consultant)	\$720,000	\$828,000	\$1,252,424	\$41,747	\$83,495	\$125,242	\$166,990	\$208,737	\$208,737
Second repavement cost at year 30 (provided by consultant)	\$720,000	\$828,000	\$1,951,236	\$65,041	\$130,082	\$195,124	\$260,165	\$325,206	\$325,206
A line item breakdown showing derivation of these costs should be provided.									
	Current Year	Year \$ Plus 15 %		Cumulative Annual M&M Adjusted for Annual Inflation					
				Year 1	Year 2	Year 3	Year 4	Year 5	30
Annual M&M - including patching (provided by consultant)	\$2,000	\$2,300		\$2,300	\$4,669	\$7,109	\$9,622	\$12,211	\$12,211
Including quarterly inspection by third party, completion of inspection checklist, regular maintenance of control such as repairing cracks, clearing drains, any required sampling and analyses associated with the control, and annual reporting to DEP.									
Total Value of Surety (Sum of yearly value for repavement costs and annual M&M. Total Value accrues over 5 years until final value is achieved.)									
				Year 1	Year 2	Year 3	Year 4	Year 5	30
				\$109,089	\$218,246	\$327,475	\$436,777	\$546,154	\$546,154
Input anticipated inflation rate as a decimal value (for example 3% should be input as 0.03)	0.03								



FINANCIAL ASSURANCE

Questions / Comments

Please state your name and
speak loudly.

www.ct.gov/deep/remediationroundtable



Temporary Authorizations Application

DON GONYEA
ENVIRONMENTAL ANALYST
WATER PERMITTING & ENFORCEMENT DIVISION



Connecticut Department of Energy and Environmental Protection

TEMPORARY AUTHORIZATIONS

CGS 22a-6k as amended by Public Act 12-148

- Authorizes the DEEP commissioner to issue TAs
- Requires that anyone requesting a TA submit sufficient information to determine that:
 - The activity is necessary to protect human health or the environment, or otherwise in the public interest
 - It does not pose a significant threat to human health or the environment
 - Will not occur for more than 90 days (cumulative)
 - No renewal
 - Is compliant with federal law



WHAT OTHER LAWS?

Groundwater Quality Standard GW13

Allows injections
that are otherwise
prohibited

- Must comply with other laws
- Must be necessary to remediate pollution
- Must not impair human health or the environment

CGS 22a-430 requires all
discharges be permitted

Injections to
the ground are
discharges

Aquifer
Protection
Regulations

State Health
Code



WHY SO MUCH DETAIL

DEEP has many responsibilities

Insuring protection of the environment

- Both on-site and adjacent

Insuring protection of human health

- Whether or not individuals recognize a risk

Insuring compliance with applicable laws

- Activities require permits by statute
- Groundwater Standards limit allowable activities



WHAT DEEP EVALUATES

Make the determination that all the requirements of 22a-6k are met

Is the project necessary to conduct remediation of the target pollution?

Will it comply with federal law

Will the public be protected

Will the public interest be represented

Will the environment be protected

Once a balance is found, DEEP can begin processing the application.



THE TA MUST INCLUDE

Rationale for the technology selected

An accounting for all sensitive receptors

Any possible undesired pathways

Generation of daughter products, byproducts or release of other pollutants

Whether impacts will leave the site

DEEP Analyst will need to document for Management approval



MONITORING CONSIDERATIONS

In addition to the standard requirements, injectate-specific concerns may arise.

Injectant	Analysis	Field Parameter
All	Target compounds, daughters	ORP, pH, DO, DCO ₂ , Conductivity
Carbon	Fe, plate count, As	
Oxidants	Cr ⁺⁶	Visual breakout
MnO ₄	Mn,	Color
ZVI	MEK, acetone	
H ₂ O ₂		Pressure, O ₂ , gassing, foam
Surfactant	Surfactants	Turbidity, foam
Pure O ₂		O ₂ , LEL



MONITORING CONSIDERATIONS

- Other site specific conditions must be addressed if appropriate
 - High As, reduction and release of natural levels
 - Chromium oxidation to CR+6
 - Iron fouling of wells (monitoring and drinking)
 - Native oxidant demand
 - Masking of related pollutants
 - Interferences
 - Cross Reactions



TEMPORARY AUTHORIZATIONS

Questions / Comments

Please state your name and
speak loudly.

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Comprehensive Evaluation and Transformation: Report to the Governor and Legislature

GRAHAM STEVENS

OFFICE DIRECTOR

CONSTITUENT AFFAIRS AND LAND MANAGEMENT /
STATE BROWNFIELDS COORDINATOR



Connecticut Department of Energy and Environmental Protection

Current Status of Transformation

- Public Act No. 12-196 requires DEEP to submit a report to the Governor and Legislature by January 1, 2013
- DEEP currently working on refining a few critical issues
- Report will be released in draft form very soon
- DEEP will seek comments for 30 days



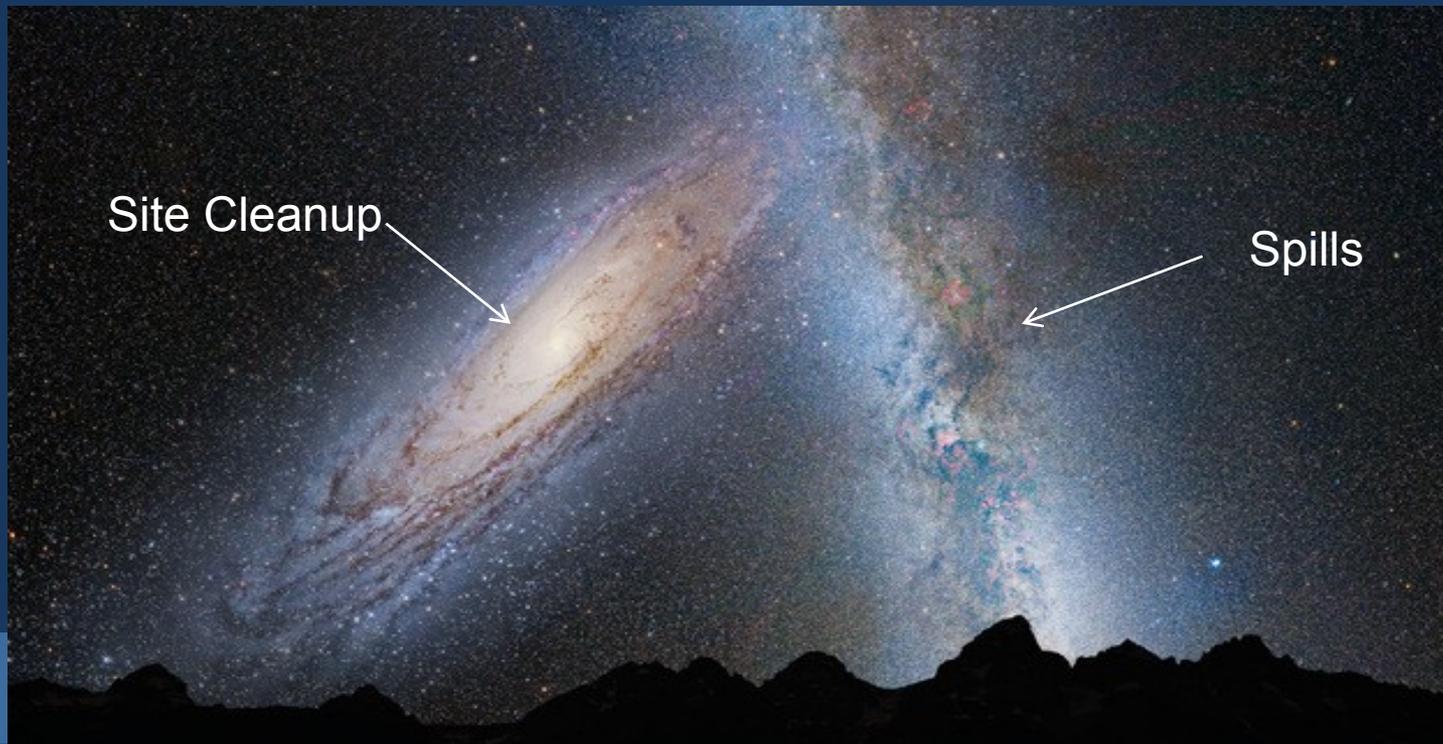
What Has Happened Thus Far

- White Paper – January 2011
- Stakeholder Highlights:
 - Visioning Session (June 2011)
 - 6 Stakeholder Evaluation Workgroup Reports (Sept 2011)
 - January 2012 Concept Report to Governor and Legislature
 - September 2012 Outline Report
 - 6 Stakeholder Transformation Workgroup Reports (Nov 2012)
- Multiple years of dialogue on both cleanup and release reporting regulations



What We Set Out To Do

- Determine how effective spill response and remediation programs have been at addressing risk
- Address shortcomings
- Base any modifications of the Spills and Site Cleanup universes on science and practicality

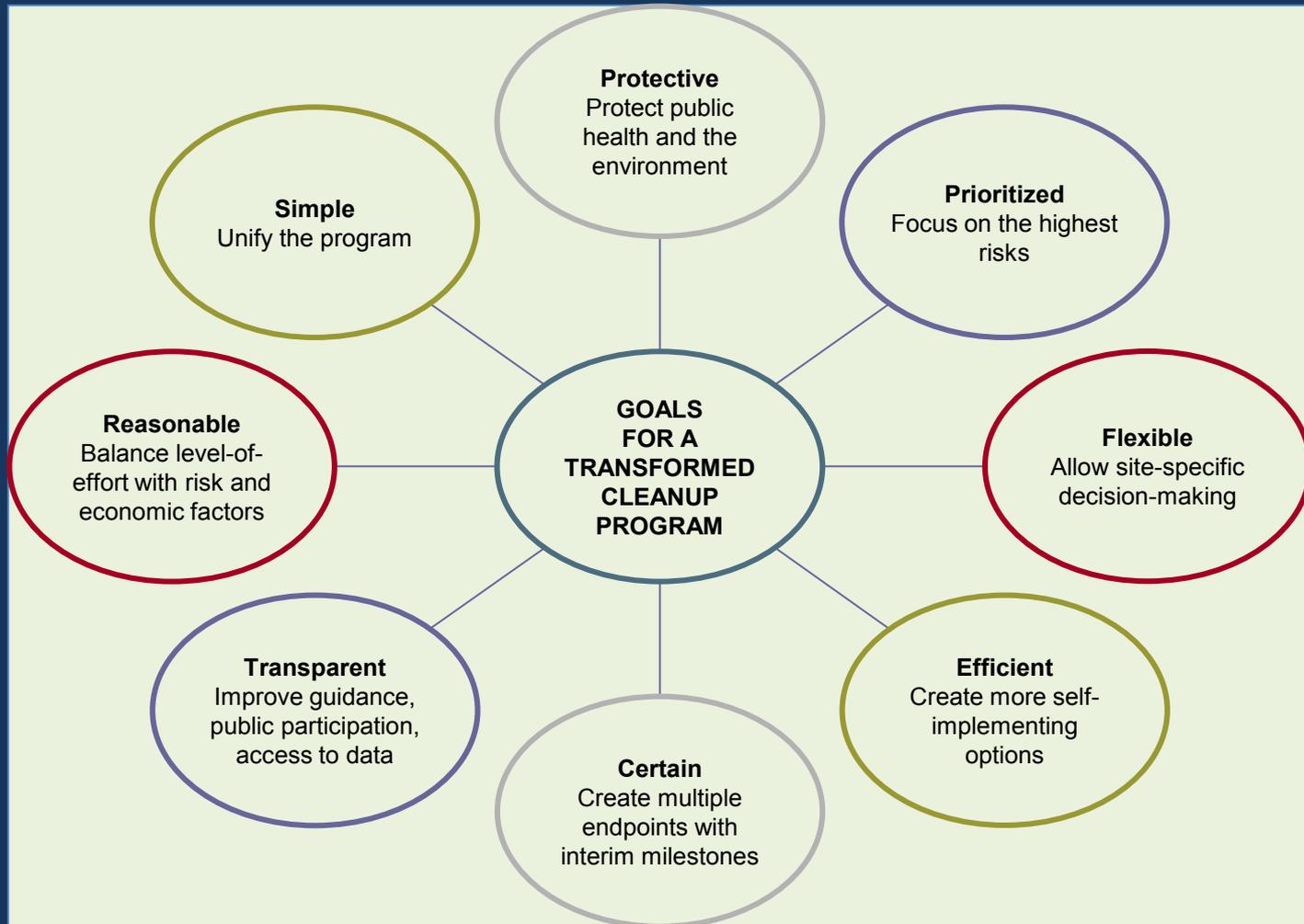


Why Change

- Current programs have significantly reduced risk and we have all learned from these programs – some in place since 1967
- DEEP has an opportunity to make significant improvements to our cleanup programs
- Status quo is not good for:
 - Environment and public health – pollution remains and risks can increase with time
 - Economy – too much uncertainty and too much input (time & \$) to get outcomes
- Current system too cumbersome and too slow to yield results commensurate with risk quickly



Goals for a Transformed Program



Keys to Success



What We Need To Change

From

- Multiple and Overlapping Programs
- Property-based and Release-based System
- Few Exits from Cleanup Program
- Command and Control System

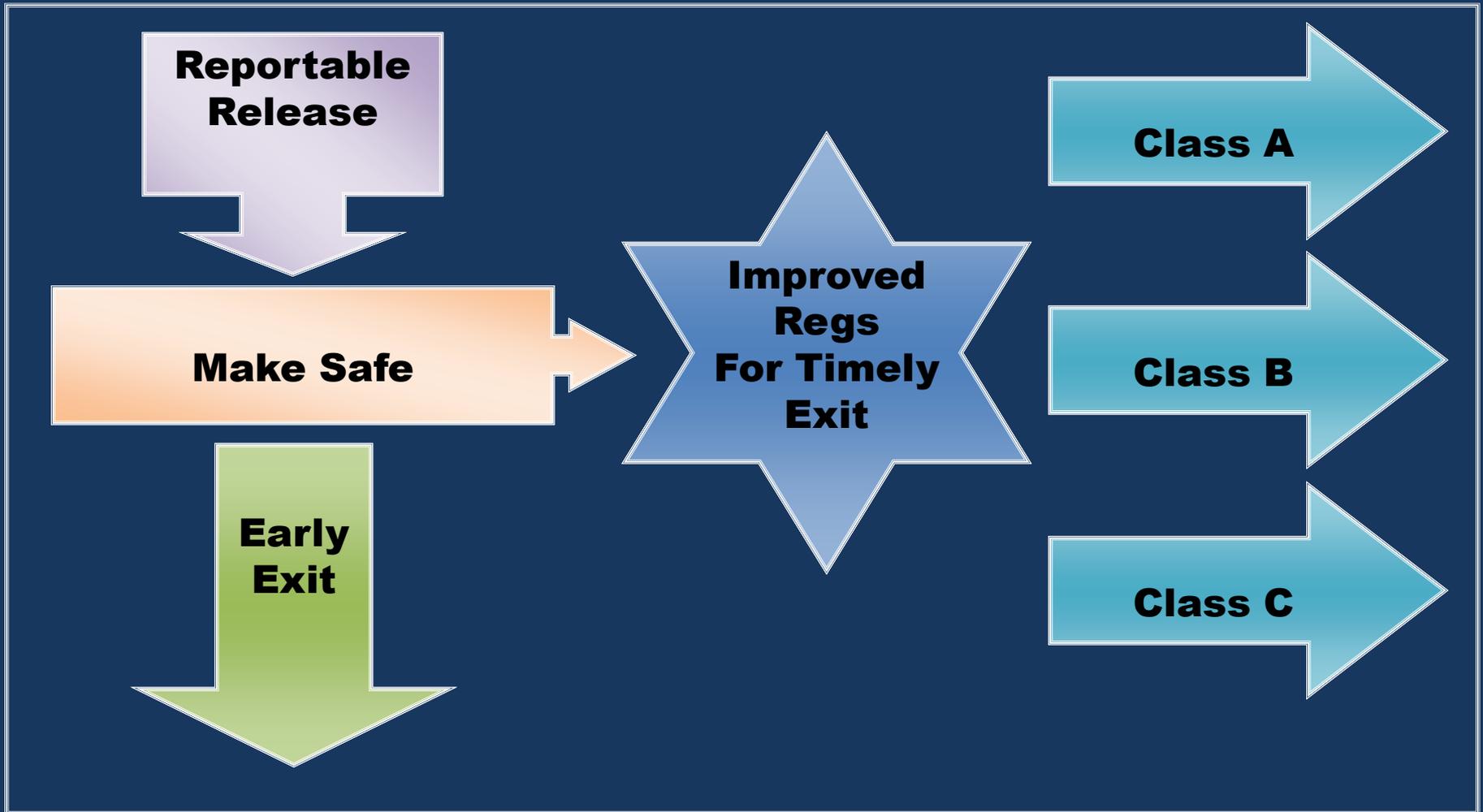


To

- Unified Program
- Primarily a Release-based System
- Earlier and Multiple Exits
- Self-Implementation and Clearer Obligations

HIGH ENVIRONMENTAL STANDARDS PRESERVED

Cleanup Program Concept



What Would Parties Have to Do

1. Report Spills and certain discovered Historical Releases (aka Historical Environmental Conditions)
2. Make Safe All Reported Releases
 - No one is touching, breathing, or drinking pollution
 - Release is not left to create a bigger problem



NEW PROGRAM – Major Components

- Release Reporting (who and what comes in)
 - New spills and historical releases
- Early Exits (quick & easier compliance for many)
 - Low-risk releases get out
- Address Imminent High Risks
- New Multiple Cleanup Exits
 - Numerous self-implementing and timely paths to Tiered Exits



Release Reporting

- Reportable releases can either be new (spills) or old (historical releases)
 - Spills reported based on compound or substance-specific **Reportable Quantity** with risk-based exceptions
 - Historical releases reported based on a **Reportable Concentration** (taking into consideration current risk assumptions) or information of significant release where no lab data exists



Release Response

- Release response for new releases can use an Early Exit from program
 - Currently releases addressed by release response may be subject to future property transfer act cleanup requirements
- Early Exits will close out program obligations and incentivize timely and commonsense cleanups



Make Safe

- Reportable new spills and historical releases will all have to *Make Safe*
 - No fire or explosion hazards exist
 - No floating product present
 - No contamination threatening a public or private water supply
 - No vapor impact to a dwelling, basement, or preferential pathway
 - No direct exposure hazard to contamination or hazardous materials
 - Significant environmental hazards/imminent risks have been mitigated
 - No impact (dissolved, sheen, or product) to a surface water system



Early Exits

- Exit from the program can be achieved with less effort if cleanup is completed quickly
 - New releases that don't pose significant risk to receptors
 - Certain historical releases
- Reduced or no groundwater monitoring
- Certain Early Exits can be reached with use of other qualified, licensed, and accountable professional
- Audits possible but will be prompt



Long-Term Cleanup

- Releases that meet an Early Exit have no further obligations (full closure)
- All other releases must reach one of five new cleanup exits (full closure)
 - Class A
 - Class B1 or B2
 - Class C1 or C2
 - These cleanups are overseen by LEPs, DEEP may audit



MULTI-LEVEL EXIT CLASSES

C1/C2

B1/B2

A

- Soil Cleanup Complete
- Groundwater Remedy Operational
- Long-term Maintenance

- Soil & Ground Water Cleanup Complete
- Land-Use Controls
- Long-term Maintenance

- Soil & Ground Water Cleanup Complete
- Unrestricted Reuse

INCREASING LEVEL OF CLEANUP



MULTI-LEVEL EXIT CLASSES

B2 or C2

B1 or C1

**Risk-Based and/or Site-
Specific Standards and
Approach**

**Default
Standards and
Approach**

INCREASING LEVEL OF CLEANUP



Site-Specific Approaches

- Any parties can choose to use the standard cleanup approach (Class A, B1 or C1 cleanups)
- Parties can also choose to adjust their cleanup based on site-specific conditions or uses (Class B2 or C2 cleanups)
- Many of the B2 or C2 alternatives will be self-implementing with very few alternatives requiring agency review and approval



Cleanup Regulations

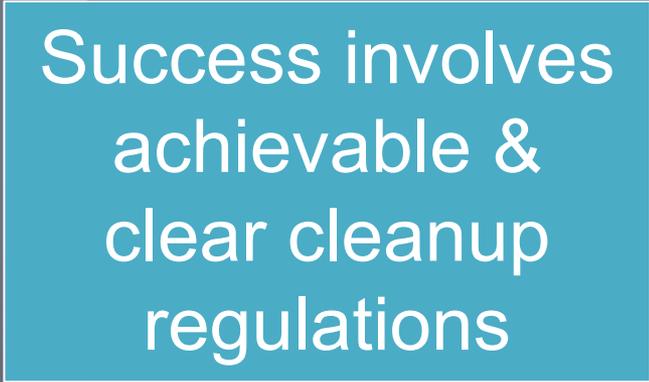
- All stakeholders agreed that the cleanup regulations need to be refined and improved
- Changes to these regulations include:
 1. Providing more clarity
 2. Institutionalizing and expanding targeted remedies for brownfields
 3. Introducing site-specific and self-implementing adjustments to the cleanup standards
 4. Creating Early Exits that would be available for releases that are rapidly discontinued, contained, and cleaned up



It's All About Getting Out



Goal: Clean Up
More Pollution



Success involves
achievable &
clear cleanup
regulations



Connecticut Department of Energy and Environmental Protection

GRAHAM STEVENS

Time To Improve

- *Regulations must provide quick and self-implementable paths to reasonable exits*
- DEEP held RSRs LEAN event this August
- Two external workgroups proposed changes to cleanup regulations
- Based on many years of experience – more comfort exists on what is not adding value and what remains important



Current Cleanup Options

Self- implementing
using default
assumptions /
criteria

Site-specific with
review by
DEEP

Releases

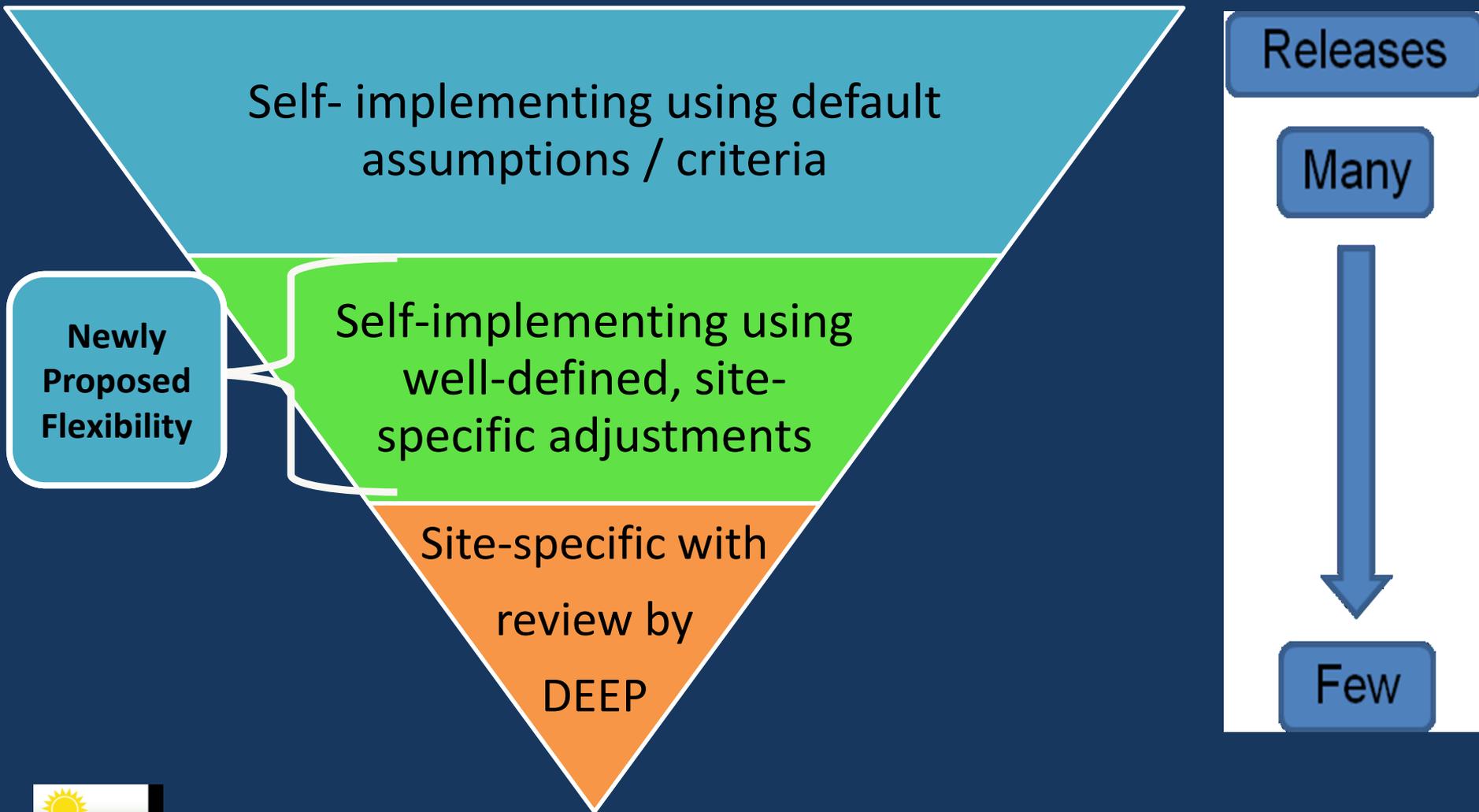
Many



Few



Future Risk Based & Tiered Cleanup Approach

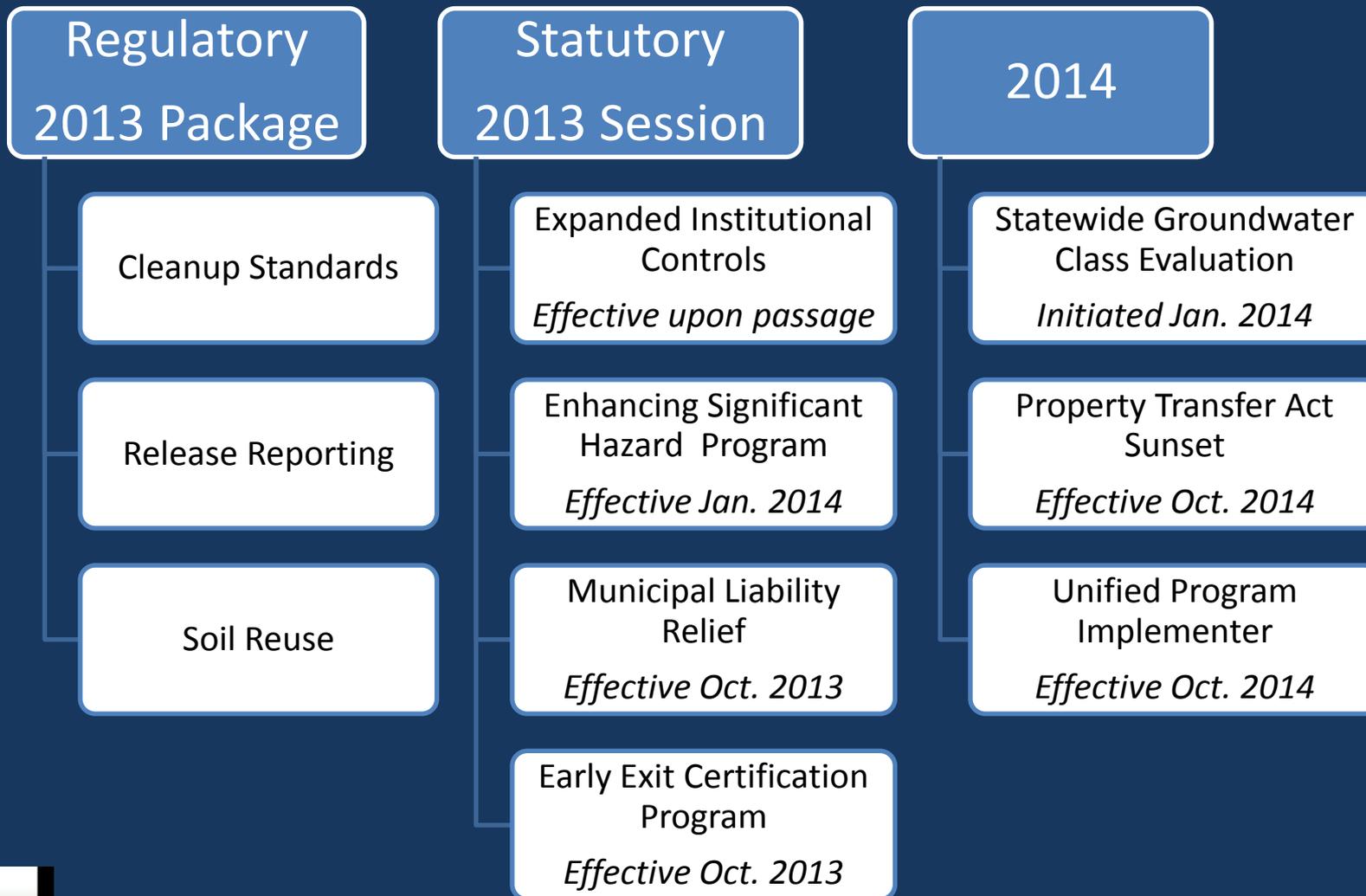


Cleanup Standards

- Criteria and underlying risk assumptions are not a part of this process
 - Separate, larger discussion will be led by DEEP soon
- Risk management techniques will be *greatly* enhanced
- DEEP will also look at adding risk categories
 - e.g., passive recreational



Cleanup Transformation Roadmap



Improved Cleanup Regulations

- Have to consider *new* RSRs
- Improved regulations will manage risk:
 - What self-implementing, site-specific cleanup options are available
 - How long-term Tiered Exits (A/B/C) can be reached
 - What new institutional controls can be used to prevent future exposures where cleanup is less than default criteria



Release Reporting Regulations

- Define what is reportable
 - Reportable Quantity
 - Reportable Concentration
- Define timeframe to report
 - Higher risk → quicker reporting
 - Lower risk → flexibility that encourages cleanup
- Define Early Exits
 - Multiple options that incentivize action



Soil Reuse Regulations

- Reuse of low-level polluted soil is uncertain
- Uncertainty increases costs
- DEEP LEAN event in Jan 2012 proposed new approach
 - Simple and practical
 - Identify reuse options based on level of pollution and uses of destination site



Statutory Reform

- Statutory reform needed for regulatory reform of institutional control options
- Municipal liability reform also sought to encourage facilitation of redevelopment
- Significant Environmental Hazard enhancements will ensure all imminent risks considered and response self-implemented
- Liability Relief Programs of recent years will be preserved



Municipal Liability Relief Program

- Municipalities can be accepted into program that limits liability:
 - From DEEP
 - From future owners and users
- Acquisition of sites under this program will not require cleanup by the municipality
- Goal is to incentivize redevelopment by having the municipality facilitate cleanup and reuse



Institutional Controls

- New, less burdensome and cumbersome tools are needed for the long-term management of residual pollution
- Tool should be commensurate with risk
- More tools will allow for great flexibility in cleanup
- Most institutional controls will be self-implementing by LEPs



Significant Environmental Hazards

- Current definition of hazard to be refined
 - Should include additional risks
 - Should limit reporting where risk of exposure is very low
- Parties should know expectations
 - Back and forth letters contrary to level of urgency
 - Self-implementing options should be identified
- Degree of pollution that poses a hazard should be considered



Report to Governor and Legislature

- DEEP is refining many of the critical components outlined today
- Report will provide our draft proposal
- Your feedback will shape regulatory and statutory proposals
- Many opportunities remain to provide your thoughts and suggestions



CLEANUP TRANSFORMATION

Questions / Comments

Please state your name and
speak loudly.

Submit comments to

DEEP.Cleanup.Transform@ct.gov

www.ct.gov/deep/remediationroundtable



Newhall Neighborhood Hamden, CT

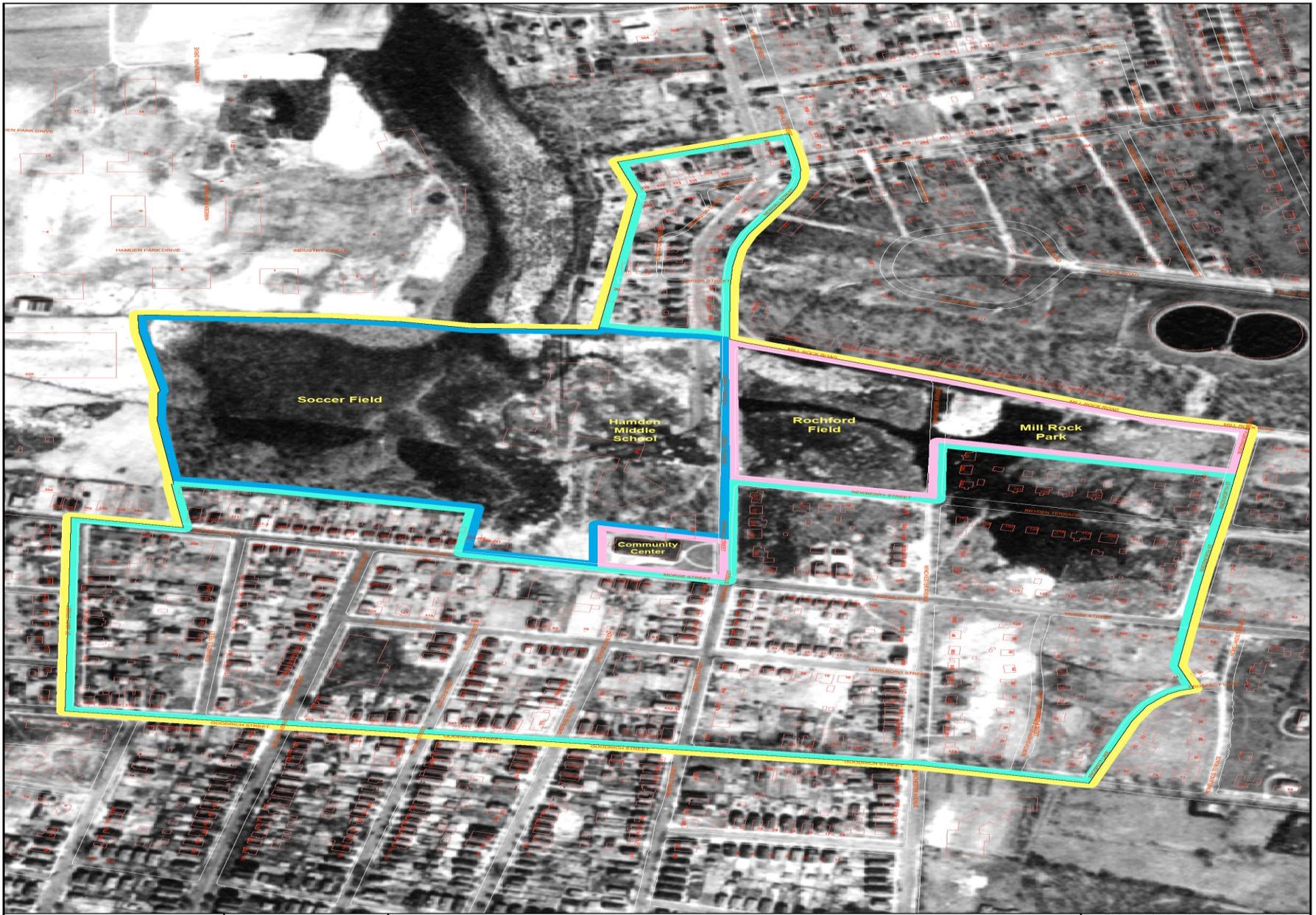
RAY FRIGON
ENVIRONMENTAL ANALYST
REMEDIATION DIVISION



Discovery of Historic Filling

- Approximately 100 acres of wetlands filled between 1880s - 1950
- Fill material primarily comprised of ash, slag, incinerated household trash
- 18-Block neighborhood constructed post-WW2
 - * 300 residential properties
 - * Hamden Middle School
 - * Two Town Parks





- Current Building Outlines
- Consent Order Boundary
- Responsible For Investigation Area
- Olin Corporation Area
- Regional Water Authority Area
- Town of Hamden Area

1934 AERIAL PHOTOGRAPH NEWHALL REMEDIATION PROJECT

Note: This figure is intended to be used for general discussion purposes only. The alignment of the 1934 aerial photograph with the Consent Order Boundary, Outlines and other outlines is approximate.
Data Source: 1934 aerial photograph created by Keegan Associates, LLC; all other data derived from the Environmental Protection Department of Environmental Protection.
Prepared by: Fitzgerald & Halliday, Inc. (October, 2003)

STATE OF CONNECTICUT
 Department of Environmental Protection
 79 Elm Street
 Hartford, Connecticut 06106





- Consent Order Boundary
- Responsible For Investigation
- Olin Corporation Area
- Regional Water Authority Area
- Town of Hamden Area

2001 AERIAL PHOTOGRAPH NEWHALL REMEDIATION PROJECT

Notes: This figure is intended to be used for general discussion purposes only.
 Data Sources: 2001 aerial photograph created by SDC, SDEP; all other data obtained from the Connecticut Department of Environmental Protection.
 Prepared by: Fitzgerald & Halliday, Inc. October, 2003

STATE OF CONNECTICUT
 Department of Environmental Protection
 79 Elm Street
 Hartford, Connecticut 06106



Responsible Parties

- Olin Corporation (Successor to Winchester Repeating Arms Co.)
- Town of Hamden
- South central Connecticut Regional Water Authority
- State Board of Education



Contaminants of Concern

- Lead, Arsenic, PAHs (localized TPH, VOCs, PCBs, Pesticides)
- > RDEC and > IDEC in localized areas
- > PMC but no impact to GW
- GAA to north, GB to south



The Waste Fill Matrix



Connecticut Department of Energy and Environmental Protection

RAY FRIGON

The Remedy – DEC Compliance

- Excavate waste fill within 4' of ground surface
- Backfill with clean soil and restore property features
- Town of Hamden applies Local Design District to neighborhood area in lieu of individual ELURs



The Remedy – DEC Compliance

Local Design District (LDD) components:

- Local building permit to incorporate checklist for future deep excavation in LDD area
- \$2M Fund to pay for future management of deep waste fill
- Town establishing process to administer Fund



The Remedy – PMC Compliance

Alternative PMC and alternative method of demonstrating compliance

- Waste in place for 100 +/- years
- Majority of waste available for water infiltration
- Lab results show potential for leaching to groundwater
- No appreciable impact to groundwater
- COCs in soil exceeding PMC meet GWPC in GW
- Compliance point with SWPC is achieved prior to discharge to surface water body
- 95% UCL proposed as the alternative PMC



Disposition of Excavated Material

- Bulk of excavated materials transported to Tire Pond site for beneficial reuse in closing unpermitted disposal of approximately 30 million tires.
 - Tire Pond Material Acceptability Protocol
- Hot spots treated in place, then transported to licensed LF



Preparing to Implement the Remedy

- Planning
- Planning
- More planning
- Safety (traffic control, dust, etc)
- Temporary relocation of property owners/tenants during excavation
- Community Liaison



Remedy Construction



Connecticut Department of Energy and Environmental Protection

RAY FRIGON

Block-by-Block Cleanup



Connecticut Department of Energy and Environmental Protection

RAY FRIGON

Property Restoration



Connecticut Department of Energy and Environmental Protection

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Project Statistics

- 131,700 cubic yards of waste excavated
(8,700 truck loads)
- 4,700 plants/trees replaced
- 3.8 miles of sidewalk replaced
- Structures replaced:
 - 37 sheds
 - 37 decks
 - 2 carports
 - 6,330 sq ft of retaining wall
 - 2 pools
 - 2 handicapped ramps



Newhall Neighborhood

Questions / Comments

Please state your name and
speak loudly.

www.ct.gov/deep/remediationroundtable



Connecticut Department of Energy and Environmental Protection

REMEDIATION ROUNDTABLE

GENERAL Q&A



E-mail: DEEP.remediationroundtable@ct.gov

Web: www.ct.gov/deep/remediationroundtable



Connecticut Department of Energy and Environmental Protection

THANK YOU

Next meeting: **May 14, 2013**

Schedule and agenda on website

www.ct.gov/deep/remediationroundtable

Submit comments to Camille Fontanella at

DEEP.remедiationroundtable@ct.gov

