EBC Solid Waste Management Program: Wrap & Roll – the Future of Rail Haul of Solid Waste in New England
Welcome

Daniel K. Moon

President & Executive Director
Environmental Business Council
Welcome to EL Harvey

Ben Harvey

President

E. L. Harvey & Sons, Inc.
Program Introduction & Overview

Christopher Koehler

Program Chair & Moderator

Solid Waste Section Manager

HDR Engineering, Inc.
Update on the Pawtucket, Rhode Island Rail Haul Facility

Angelo Calcagni

Compliance Manager

J.R. Vinagro Corporation
Proposed Pawtucket Transfer Station

- Proposing a 2,000 ton per day facility
- Operating from 12:00 AM – 8:00 PM, Monday through Saturday
- Located on Concord St, Pawtucket RI
- Accepting both C&D, and Solid Waste.
- Intent to ship out by both rail and tractor trailer.
Proposed Pawtucket Transfer Station
Rail Access
Proposed Facility Design
Permitting Difficulties:

• New Type of Facility in Rhode Island
  • Additional education required for City and RI Department of Waste Management

• Unique Co-License requirement for our proposed facility.

• Difficulties moving forward permit applications when both City and State must review and meet their individual requirements.

• Public perception and education

• Public push back
Railroad Obstacles

• Lack of commitment on pricing for transportation costs
  • Require contract prior
  • Huge disparity between pricing
• Uncertainty of ability to move cars on a regular basis
• No ability to control longer term costs
EBC Presentation

November 2017

UNITED MATERIAL MANAGEMENT
Scott Lemay, CEO

- 28 years of waste industry experience
- Founder and CEO of RTI (1987-1992)
  - Built integrated waste management company and developed Fitchburg Transfer station and MRF
  - Merged with United Waste Systems
  - Integrated over 50 acquired companies. Acquired or developed landfills in Fitchburg, Barre, Gardner, Grandby, & Chicopee. Aquired or developed Marlboro, Fitchburg, Leominster & West Springfield Transfer Stations
- Founder and CEO of Waste Control Inc. (1998-1999)
  - Integrated 4 acquisitions and developed Leominster transfer station.
  - Executed stock-swap with Waste Management Inc.
- Founder and CEO of United Site Services, Inc. (1999)
  - Executed private offering and debt facility to fund development and acquisitions
  - Acquired and integrated 36 companies nationwide
  - Executed stock sale to Odyssey (PE Firm) and remained as director and investor.
- Founder and CEO of United Waste Management
  - Integrated 7 companies. Boston, Sandwich & Rochester C&D processing Facilities.
  - Sold to ReEnergy
- Founder and CEO of United Material Management
UMM

- **UMM of Holyoke**
  - MSW, C&D Processing & Rail
  - 225k TPY & 24 hour permit

- **UMM of Millbury**
  - C&D Processing
  - 250K TPY & 24 hour permit

- **UMM of Southbridge (?)**
  - C&D Processing

- **UMM Partner with NER Taunton Rail Facility**
  - MSW, C&D Residual & Rail

- **UMM Hauling Acquisitions/Operations**
  - Complete Disposal – Western MA Rolloff & Trailer
  - County Waste Residential – Western MA Sept 2017
  - EZ Disposal West - Central MA Sept 2017
UMM Holyoke
Processing Line
Schematic - Holyoke
Wood Recovery
Nonferrous & Ferrous Separation
Questions & Comments

- Dust or Odor Problems? UMMH misting and air System.
- Permitting Nightmare? Beginning vs Current relationship.
- Rail Cars on Site. Shortline availability.
- Did we Install Spur. YES

- THP Relationship
- Tafisia
Update on the Taunton Rail Transfer Facility

Joe Tutsch

Vice President
The Lopes Companies
Truck to Rail Logistics for Solid Waste

Jon Delli Priscoli

Owner

Grafton and Upton Railroad & Seaview Railroad
First Colony Development Group

Building Our Future

Logistic Development and Transportation Solutions for New England’s Solid Waste
Our experience allows us to navigate and collaborate with municipalities through the zoning, permitting, utility infrastructure, and roadway improvements requirements to prepare a site for fast-track construction to foster economic development and other companies’ growth within Commonwealth.
Welcome
2011 and Beyond

N.E. LOGISTICS CENTER
COMPLETE SUPPLY CHAIN SOLUTIONS
FOR NEW ENGLAND

Rail Miles: 16
Car Spots: 200
Transfer Car Spot: 150
Lay Down: 60 Acres
Warehouse: 85,000s.f.
Available Land: 330+ acres

National Door-to-Door 3pl Service provided
The Grafton & Upton Railroad has been in business since 1873. Since we started tracking in June of 2015, our customers have enjoyed a 97.5% on time delivery of product, which is far better than what larger carriers like CSX, NS and PAS can offer. Because of the safe and consistent service provided by the G&U, any facility constructed here can enjoy greater throughput capacity without spending money to construct extraordinarily large infrastructure.

97.5% on time delivery of product
Safety First

At the Envirobulk Terminal, we're committed to safety. The facility is built on a non-permeable surface and fully secured with fencing. On-site emergency management plans, a closed-loop transfer process, and liquid retention areas ensure that safety and the surrounding environment are a top priority.

Envirobulk Terminal
G&U Propane - Projected 1,000 cars this winter removing almost 4,000 tractor trailers - half travel to an extra 250 miles RT and idle for 8hrs

Four 80,000 Gallon Tanks
Nearly 7,000 railcars handled in 2015
First Colony Development Group

Building Our Future

Logistic Development and Transportation Solutions for New England’s Solid Waste
EBC Presentation
November 7, 2017
Disclaimer

This presentation and the accompanying information has been prepared solely for informational purposes and shall be maintained in strict confidence. The recipient further agrees that the contents of this overview and accompanying information are a trade secret, the disclosure of which is likely to cause substantial and irreparable competitive harm to Tunnel Hill Partners and its affiliates. Any reproduction or distribution of this presentation and accompanying financial information, in whole or in part, or the disclosure of its contents, without the prior written consent from Tunnel Hill Partners is prohibited.
Tunnel Hill Partners Highlights

» Largest integrated waste-by-rail service provider in the US
   — Strong network of collections / hauling, transfer, recycling and disposal operations
   — Handles ~4.0 million tons of waste volume annually
   — Northeast and New England presence

» Highly diversified customer base
   — Services commercial, industrial, residential and municipal clients and construction, remediation and dredging projects
   — Permitted waste types include municipal solid waste (MSW), construction / demolition debris (C&D), contaminated soils, dewatered or stabilized dredge spoils, biosolids, recyclables and organics
   — Primary transfer station and 3rd party rail customers consist of recycling and processing facilities

» Experienced management team with waste industry and rail transportation expertise
   — Over 190 years of combined professional history
Operational Footprint

Tunnel Hill is the leading integrated waste services provider in the Northeast

Total Service Area
- Material Recovery Facility (Recycling)
- Transfer Station
- Landfill / Beneficial Reuse Facility

Hauling Service Area (City Carting assets)
- Managed Municipal Material Recovery Facility (Recycling)
- Managed Municipal Transfer Station
- Disposal / Recycling Only Municipality Contracts
Benefits of Rail

» Declining local landfill capacity in the Northeast drives demand for farther disposal outlets
  - Number of operating landfills has naturally shrunk to less than 1,500 from 8,000 in 1988 in the US, significantly increasing the distance between landfills and urban areas
    ▪ Decrease in operating landfills in New England even more pronounced
  - Extremely difficult to open new landfills
    ▪ Permitting process for the last new landfill in New England lasted 11-12 years

» Higher diversion rates to recycling / processing facilities and incinerators projected to be insufficient to offset local landfill capacity decline and increase in waste generation
  - Aging waste-to-energy (“WTE”) facilities and less economically-favorable power purchase agreements have resulted in higher disposal prices and capacity constraints
  - This has created disruptions in some localities as recycling / processing facilities try to find disposal sites for excess post-recycled waste

» Waste-by-rail is more cost effective and environmentally-friendly than trucking for long hauls
  - In the Northeast, transporting waste beyond ~150 miles is increasingly more economical by rail – benefits increase for longer distances and higher volumes
  - Rail is not affected by common trucking concerns, such as traffic congestion, driver safety, tire punctures, and other vehicle damage at landfills
  - Trains are on average 4x more fuel efficient than trucks and produce less greenhouse gases
Constrained Local Capacity Driving Waste Out Of Northeast

Northeast Landfill Disposal Capacity

M Tons

<table>
<thead>
<tr>
<th>Year</th>
<th>Capacity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>582</td>
<td>(5%)</td>
</tr>
<tr>
<td>2009</td>
<td>553</td>
<td>(15%)</td>
</tr>
<tr>
<td>2014</td>
<td>468</td>
<td>(10%)</td>
</tr>
<tr>
<td>2019E</td>
<td>421</td>
<td></td>
</tr>
</tbody>
</table>

Net Importers (Exporters) of Waste

M 2014 Tons

<table>
<thead>
<tr>
<th>State</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA</td>
<td>6.7</td>
</tr>
<tr>
<td>OH</td>
<td>2.6</td>
</tr>
<tr>
<td>NH</td>
<td>0.4</td>
</tr>
<tr>
<td>ME</td>
<td>0.2</td>
</tr>
<tr>
<td>VT</td>
<td>(0.1)</td>
</tr>
<tr>
<td>RI</td>
<td>(0.1)</td>
</tr>
<tr>
<td>CT</td>
<td>(0.6)</td>
</tr>
<tr>
<td>MA</td>
<td>(2.0)</td>
</tr>
<tr>
<td>NJ</td>
<td>(4.0)</td>
</tr>
<tr>
<td>NY</td>
<td>(7.3)</td>
</tr>
</tbody>
</table>

Source: Waste Business Journal
Northeast defined as Maine, New Hampshire, Vermont, Massachusetts, New York, Rhode Island, Connecticut, New Jersey, and Pennsylvania
Waste defined as MSW and C&D
1 Decline in Landfill Capacity to Continue

Pennsylvania
Losing ~1.7M tons of annual landfill capacity over next 5 years

Rhode Island
1 large and 1 small active landfill and no WTE plants
In-state landfills are experiencing significantly higher volumes than expected or planned causing airspace / lifespan concerns

New Hampshire
6 active landfills and 1 WTE facility currently exceeding generation by 530k tons / year
Largest landfill limiting out-of-state waste to preserve capacity for in-state disposal

Massachusetts
6 active landfills (3 closing in next 24 months) and 7 WTE plants currently exceeding generation by 300k tons / year (deficit to triple in next 2-3 years)
Projected to lose ~1.5M tons of annual landfill capacity over next 5 years

Connecticut
1 active landfill and 5 aging WTE plants currently exceeding generation by 300k tons / year

New York (1)
Losing ~0.7M tons of annual landfill capacity over next 5 years

Maine
42 active small landfills and 3 WTE plants currently exceeding generation by 150k tons / year

New Jersey
Losing ~0.9M tons of annual landfill capacity over next 5 years

Vermont
1 active landfill and no WTE plants currently exceeding generation by 150k tons / year

Source: Waste Business Journal, EBC

(1) Primarily related to reduced landfill capacity at the Brookhaven landfill located on Long Island
1 Case Study: Massachusetts

Projected Annual Waste Disposal Capacity

By 2021, MA permitted landfill capacity will have virtually vanished, leaving the burden of in-state waste disposal to seven aging incinerators, which are incompatible with certain waste types (e.g., C&D, soils).

Even under MA’s waste reduction and diversion plans, MA remains a net waste exporter.

Source: Massachusetts DEP 2015 Solid Waste Data Update, March 2017
Anatomy of Waste-by-Rail
Rail provides a cost-effective, environmentally-friendly method of transportation for post-recycled waste exports

**THP primarily accepts residual waste from material recycling facilities or processing facilities**

**Rail-Served Transfer Station**
- MSW, C&D, soils, and non-hazardous specialty waste are transported over short and long lines to rail-served landfills
- Railcars transport approximately 100 tons of waste / car
- Transport and disposal of waste typically takes ~1 week (one-way)

**Rail-Served Landfill**

**Collection Operations**

**Material Recycling Facility**
# Rail vs. Trucking

<table>
<thead>
<tr>
<th>Rail</th>
<th>Trucking</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Economies of Scale</td>
<td>✓ Locality</td>
</tr>
<tr>
<td></td>
<td>Each railcar carries up to 110 tons / load (vs. typical 20 - 25 tons / truckload)</td>
</tr>
<tr>
<td></td>
<td>Cost advantage increases with distance and volume</td>
</tr>
<tr>
<td>✓ Reliability</td>
<td>✓ Inefficient</td>
</tr>
<tr>
<td></td>
<td>Undeterred by traffic congestions</td>
</tr>
<tr>
<td></td>
<td>Limits wear and tear on customer equipment (truck never enters landfill)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>✓ Optionality</td>
<td>✓ Limited Outlets</td>
</tr>
<tr>
<td></td>
<td>Creates alternative to declining landfill capacity in the Northeast</td>
</tr>
<tr>
<td>✓ Environmentally &amp; Infrastructure Friendly</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trains are on average 4x more fuel efficient than trucks</td>
</tr>
<tr>
<td></td>
<td>Greater use of rail over trucking offers a simple and immediate solution to meaningfully reduce GHG emissions</td>
</tr>
<tr>
<td></td>
<td>Rail tracks maintained by the railroads; highways maintained by taxpayers</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rail Access</td>
</tr>
<tr>
<td></td>
<td>Requires access to rail-served facility</td>
</tr>
</tbody>
</table>
Panel Discussion

Panel Moderator:
• Christopher Koehler, *HDR Engineering, Inc.*

Panel Members:
• Angelo Calcagni, *J.R. Vinagro Corporation*
• Scott Lemay, *United Material Management*
• Joe Tutsch, *The Lopes Companies*
• William Gay, *Tunnel Hill Partners*