



*Metropolitan Water Reclamation District of Greater Chicago*  
*Protecting Our Water Environment*

# **Update on the District's Biosolids Management Program**

**Albert Cox: *Soil Scientist***

**Dan Collins: *Biosolids Manager***

# Biosolids Management Staff

## Maintenance and Operations

1. Stickney, Calumet and Egan WRPs
2. Biosolids Management Areas – Biosolids Manager
  - CALSMA – East & West and lagoons
  - LASMA - Drying Sites and lagoons

## Monitoring and Research Department

1. **Analytical Labs Division** – Analyses for permits and for research projects
2. **Analytical Microbiology Lab** – Pathogen testing for permit and regulatory compliance
3. **Biosolids Utilization and Soil Science section**
  - sampling & analysis for research & tech support
  - Technical support, marketing, and research

# Pillars of the District's Biosolids Management Program

1. Fulton County Land Reclamation – 1972 – 2004
2. Pretreatment Program
3. Controlled Solids Distribution Permit - 1984
4. Adj. Standards for Landfill Final Cover - 1995
5. Process to Further Reduce Pathogens (PFRP) - 2002
6. Facilities – R&D Greenhouse, and Fulton County lab
7. Applied Research and Collaborations
8. Trust-worthiness in Regulatory Community

# Biosolids Management Team

- **Revamped in 2006**
- **M&O and R&D Departments**
- **Purpose of team**
  - 1. Issues and responsibilities related to biosolids production, processing, and utilization**
  - 2. Opportunity for R&D and M&O to share information on projects and studies**
  - 3. Develop Biosolids Management & Utilization Plan**
  - 4. Work the Plan**

# **Five-Year Biosolids Management & Marketing Plan**

- 1. Goals**
- 2. Current and Future Biosolids Products**
- 3. Description of Current Markets**
- 4. Biosolids Production and Utilization Projection**
- 5. Biosolids Production and Utilization Costs**
- 6. Projected M&O Budget for Next 5 Years**
- 7. Biosolids Marketing Plan**
  - a. Background**
  - b. Evaluation of Biosolids Utilization Outlets**
  - c. Overall Goals of the Biosolids Marketing Plan**
  - d. Biosolids Utilization Targets**
  - e. Biosolids Marketing Strategy**

# Biosolids Utilization Goals

1. Beneficial use of all biosolids - Environmental responsibility, applicable rules and permits.
2. Increase the Farmland Application and the Controlled Solids beneficial reuse programs
3. Increase public acceptance through research and demonstration programs, and public education
4. Maintain a sustainable range of outlets

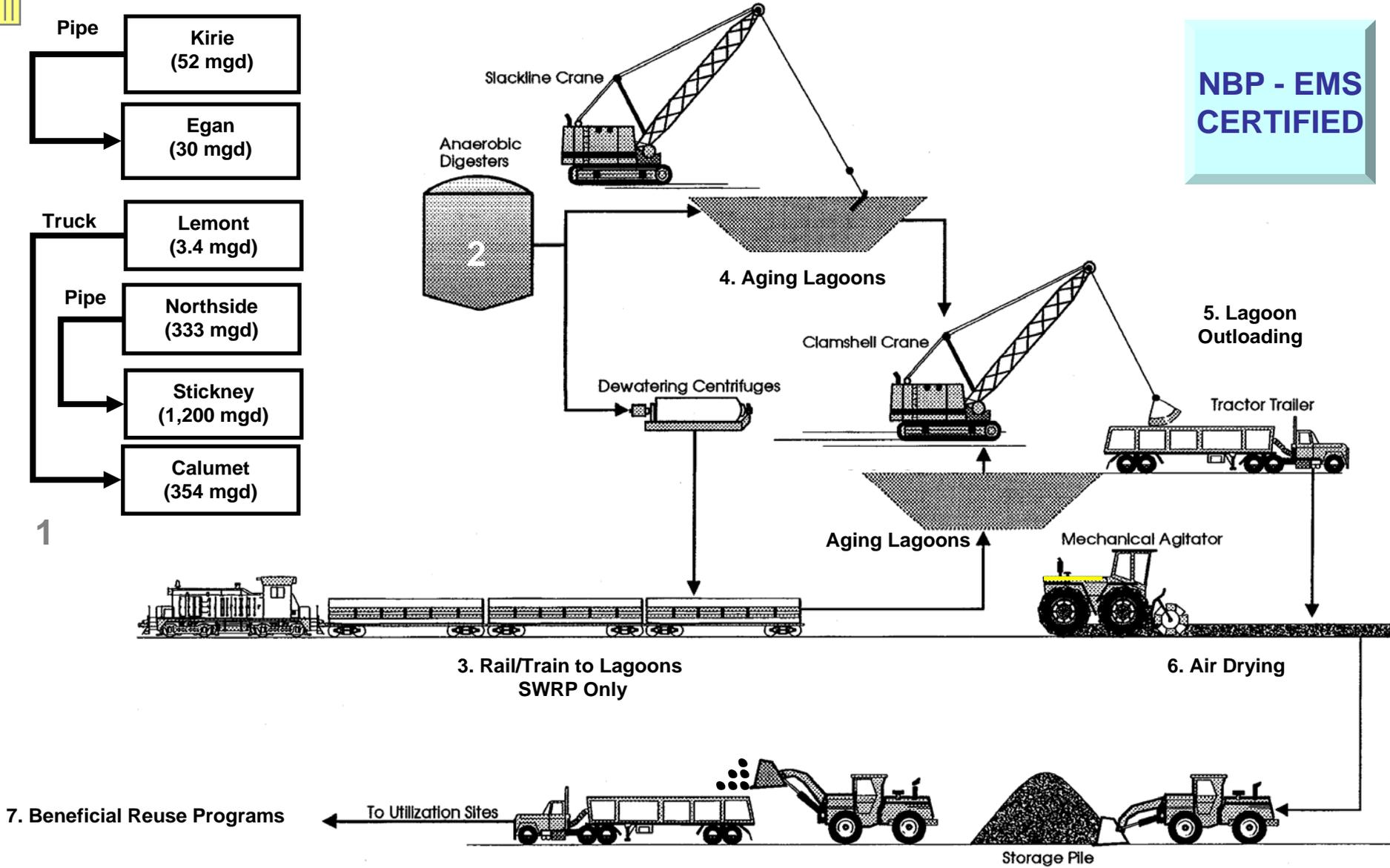
***Sustainable*** – meeting the needs of a diverse range of customers in the long-term

# The Biosolids Story Part 1

## Biosolids Production & Utilization

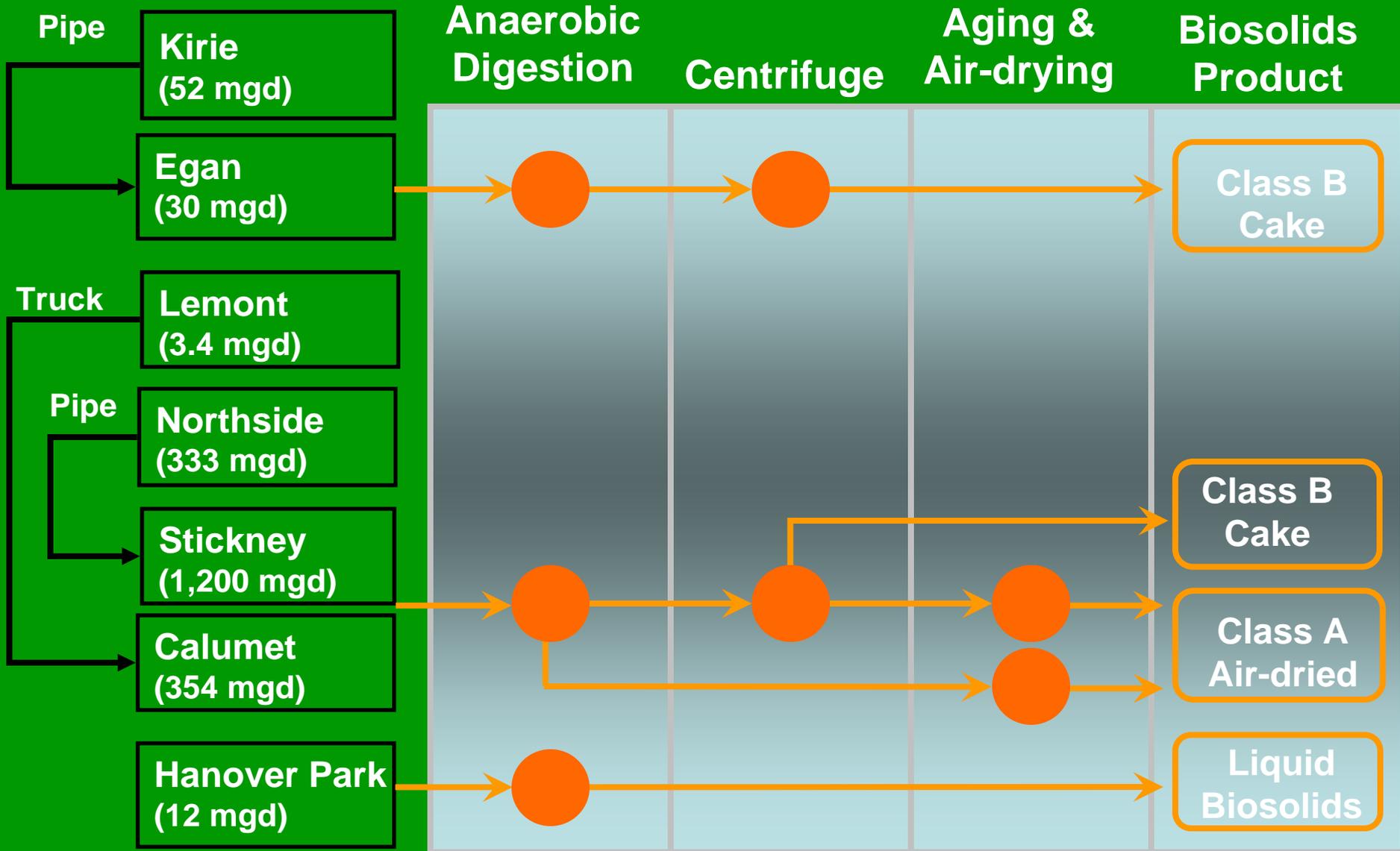
1. Description of District biosolids processing
2. Biosolids utilization programs
3. Environmental Management System (EMS)
4. Looking ahead

**NBP - EMS  
CERTIFIED**



# LASMA / CALSMA SOLIDS HANDLING AND PROCESSING SCHEMATIC

# Biosolids Production and Processing



# Solids Generation

The District generates approximately 190,000 DT of biosolids for utilization every year.

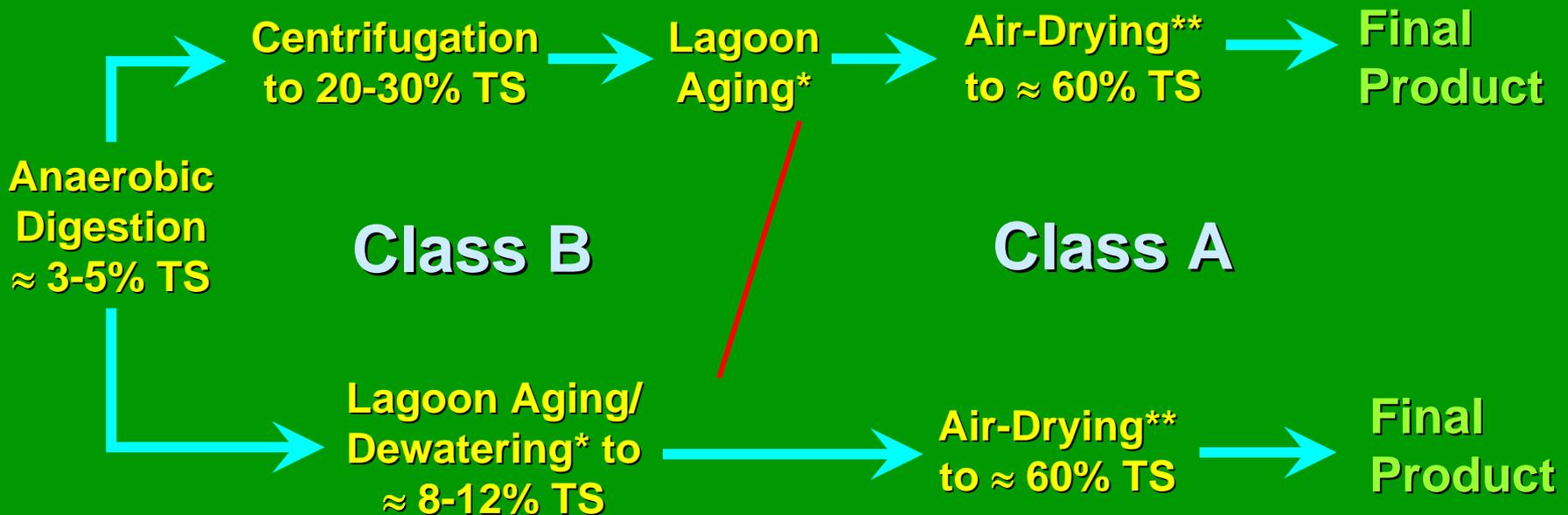
Biosolids are processed for at 4 WRPs:

	<u>Amount Utilized/Year (DT)</u>
Stickney	150,000
Calumet	30,000
John E. Egan	4,500
Hanover Park	1,600



# Solids Processing Trains

## High Solids Sludge Processing Train



## Low Solids Sludge Processing Train

\*Dewatering, Stabilization, and Inactivation

\*\*Dewatering and Inactivation



**Centrifuge Cake transport by Rail to Lagoons**



# Management Area Machines

- Heavy Equipment
  - Crane with Slacklining System
  - Crane with Clamshell Bucket
  - Tractor with Pump
  - Wheelloader / Bulldozer
  - Tractor and Tiller Combination
  - Paddle Aerators and Augers
  - Screeners

# Lagoon at LASMA



**Typical Depth 16 Feet**  
**Typical Capacity ~ 350,000 yd<sup>3</sup>**

# LASMA

- 7 Active Lagoons: 24 – 30, (~2,300,000 cubic yards)
- Lagoon 23 relining to be completed in 2009 adding ~300,000 cubic yards
- Lagoons 1 - 22 replaced by the Construction of McCook Reservoir
- Five Drying Sites, (243 ACRES)

# CALSMA SOUTH LAGOONS



**Typical Capacity ~ 100,000 - 200,000 yd<sup>3</sup>**

# CALSMA

- 10 Active Lagoons: 1,2,5-7,17-19, (~1,300,000 cubic yards)
- Lagoons 3, 4, 14 and 15 relining to be completed in 2012 adding ~ 460,000 cubic yards
- Lagoon 8 is temporarily out of service and Lagoon 9 was lost to plant expansion.
- Two Drying Sites, (149 ACRES)





**Crane with Clamshell Bucket Outloading a Lagoon for Transportation to Drying Site**





# The Drying Process

- Lagoon Outloading to Drying Cells
  - Crane (High Solids)
  - Tractor and Pump (Low Solids)
- Air Drying
  - Low Solids: Wheelloader or Tractor with a rail attachment or Tractor-Tiller combination
  - High Solids: Tractor-Tiller combination and/or Paddle Aerator

# LASMA Biosolids Management Area (Cells)



# Biosolids Agitation



**Rail System Pulled by a Bulldozer On Paved Drying Cells**

# Biosolids Agitation



**(Tractor-Tiller) on Paved Drying Cells**

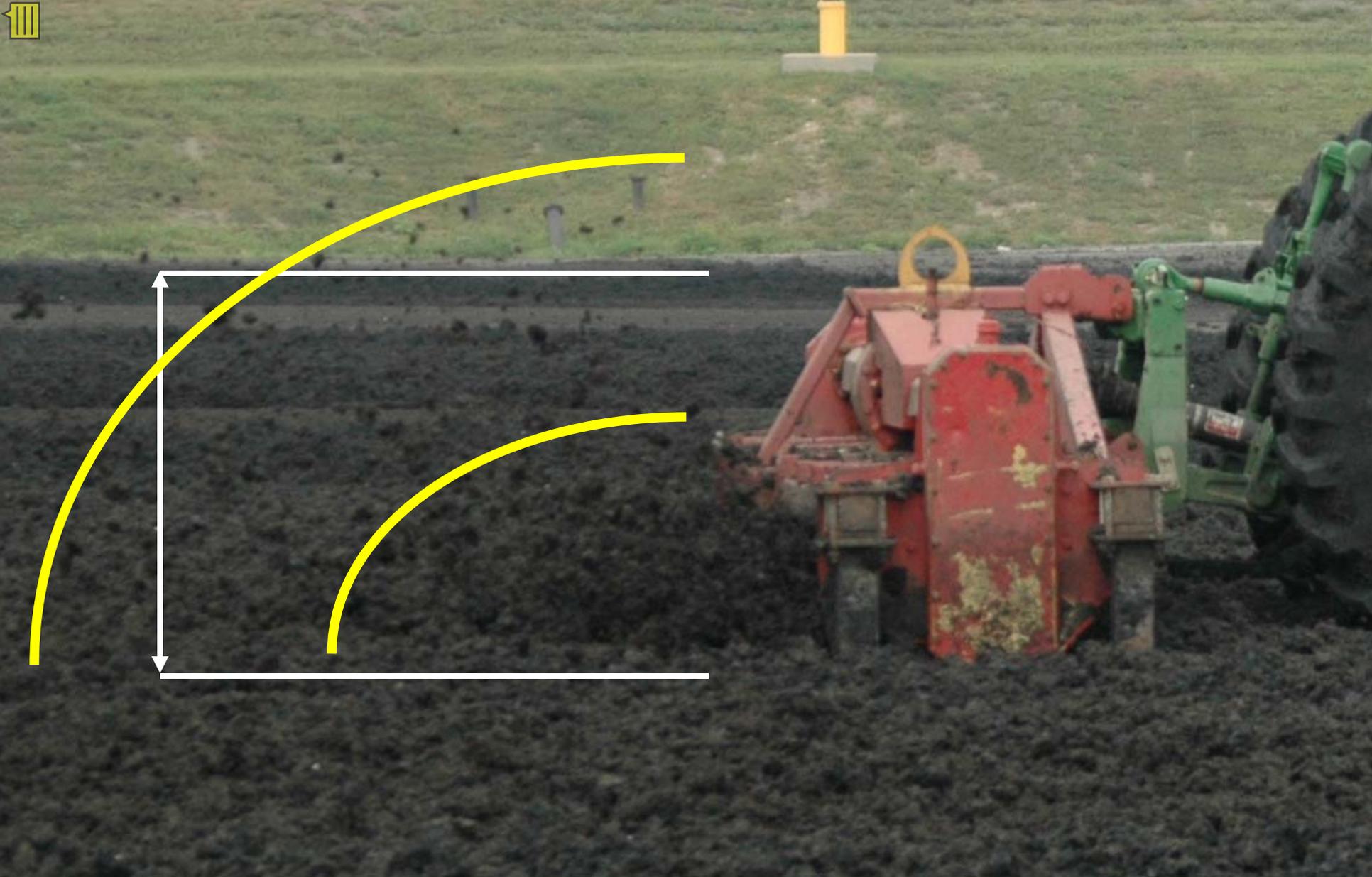
# Biosolids Agitation



**Biosolids Mechanically Agitated (Auger) During Air-Drying On Paved Drying Cells**



**Biosolids Mechanically Agitated (Paddle Aerator) During Air-Drying On Paved Drying Cells**



**(Tiller) During Air-Drying On Paved Drying Cells**



**(Auger) During Air-Drying On Paved Drying Cells**



**(Paddle Aerator) During Air-Drying On Paved Drying Cells**



**Air-Dried Biosolids Being Stacked In Preparation For  
Transport to Beneficial Use Sites**



**Air-Dried Biosolids Stockpile Ready for Transport to Sites**

# **How are District Biosolids Used Beneficially in the Chicago Metro Area?**

# **District BIOSOLIDS BENEFICIAL REUSE PROGRAMS**

- 1. Fertilizer on farmland (up to 60% of production)**
- 2. Substitute for soil on landfill - Daily Cover and Final Cover**
- 3. Fertilizer and soil amendment in the Chicago metro area (Controlled Solids Distribution)**
- 4. Pelletizer**

# Land Application Loading



# Land Application Loading





# Farmland Application Spreading



# Utilization of District Biosolids in 2002 - 2007

<u>District Wide Summary</u>	2002	2003	2004	2005	2006	2007
Farmland Application – Injection	1,331	950	1,210	4,289	3,414	1,106
Farmland Application – Cake	31,700	84,321	84,997	64,673	59,802	81,422
Farmland Application - Lagooning/Drying	0	0	0	0	0	0
Controlled Solids Distribution	4,810	23,922	680	33,924	1,898	5,801
Fulton County	20,496	20,276	22,037	0	0	0
Landfill Applications	91,006	80,906	77,856	70,257	38,057	35,454
Unsuitables	12,381	3,925	2,293	2,759	2,946	9,417
MBM Peletizing Facility	0	0	0	0	0	553
<b>Total</b>	<b>161,724</b>	<b>214,300</b>	<b>189,072</b>	<b>175,902</b>	<b>106,117</b>	<b>133,753</b>





# NBP's EMS

- The Metropolitan Water Reclamation District of Greater became involved with the National Biosolids Partnership's Environmental Management System in 2000.
- Eight years have past since the District first became involved with the NBP's EMS.
- Since 2000 we have had 3 General Superintendents
- Two Chief Engineers of Maintenance and Operations
- Each of the Seven WWTP Plant heads has changed and
- There have been 4 EMS Coordinators
- Several Changes in the EMS Field Representation



# Biosolids EMS

## Promotes

### Four Key Outcomes

#### **Quality Management Practices**

Ensure consistent product quality

#### **Relations with interested parties**

Establish and maintain credibility

#### **Regulatory Compliance**

Meet or exceed compliance with regulatory requirements

#### **Environmental Performance**

Protect the environment for future generations



# We need to manage our biosolids value chain to ensure product quality



- Think of biosolids as a product, not a by-product
- Manage key activities that impact biosolids quality and the environment
- Follow best practices and have documented procedures for key activities

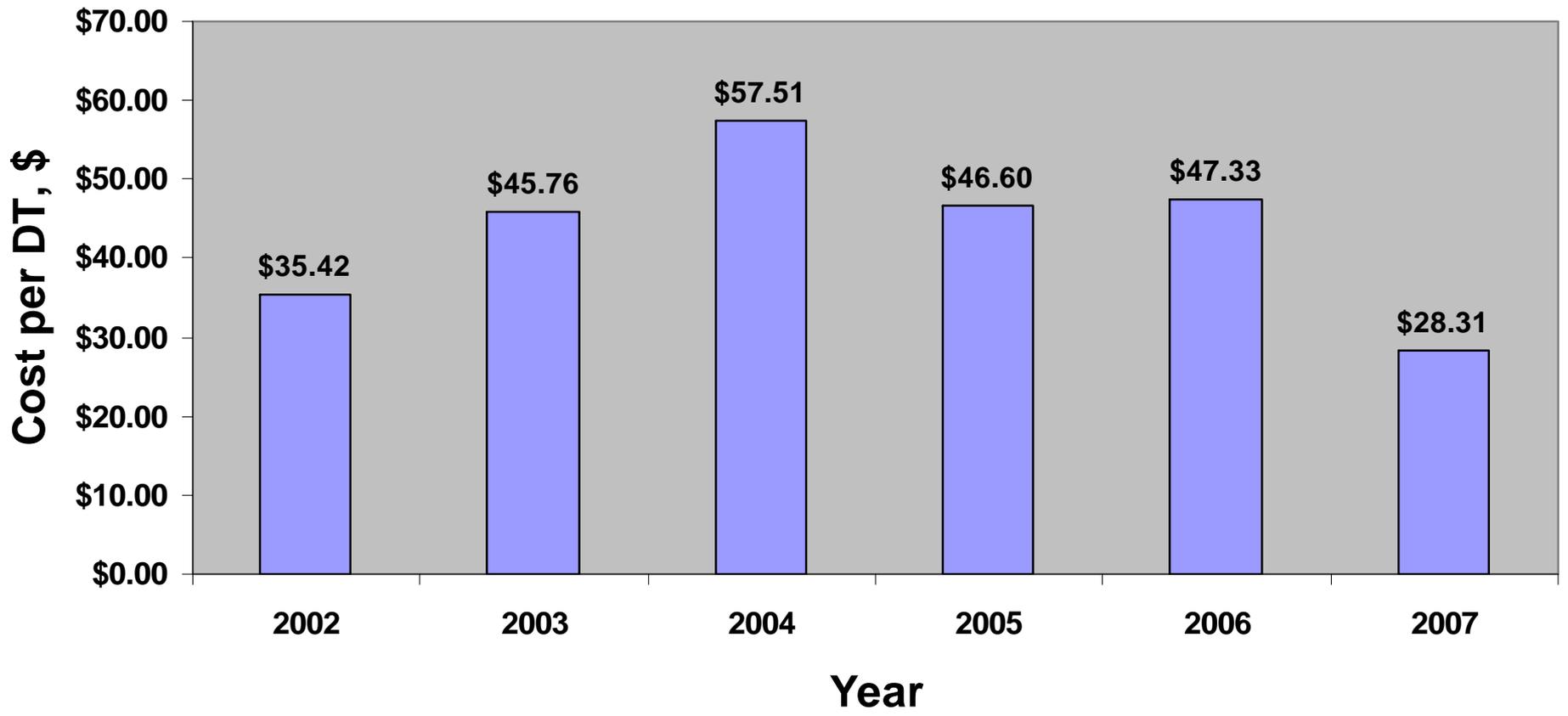
# EMS Benefits

- **Operations managers at each plant now serve as the EMS Field Representative improving communications and unity throughout the District.**
- **The EMS binder system for indexing important documentation such as SOP's, recordkeeping and much more has made all important information readily accessible.**
- **Procedures at the processing sites have been streamlined and made consistent where possible.**
- **Contracts for similar work have been combined thus reducing the number of contracts written and reducing related administrative costs.**

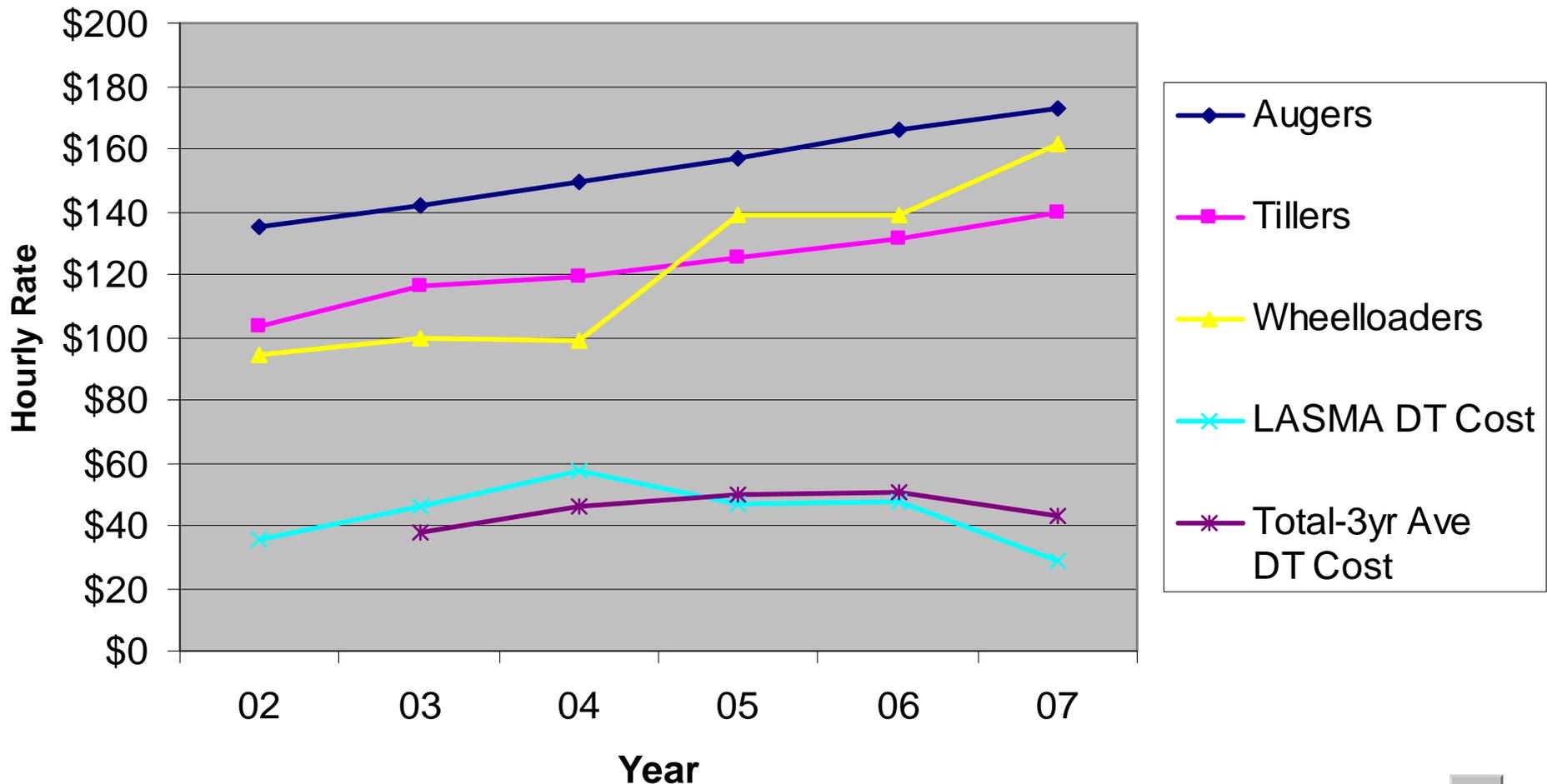
# EMS Benefits

- We are utilizing new technologically advanced heavy equipment and management techniques reducing the time required to dry biosolids, thus, lowering air emissions and costs, (up to 15%). ■
- In addition, the District's public outreach program has improved through Field Days Events, A Radio Campaign with Orion Samuelson and local presentations with park districts to explore new outlets. As a result, acceptance of biosolids has risen creating new opportunities for its use.
- For example: In 2000 39,000DT went to Landfill as unsuitable material and 83% of the biosolids were beneficially reused. In 2006 2,900DT were shipped as unsuitable material and our 7 year average for beneficial reuse has climbed to just under 96%. ■

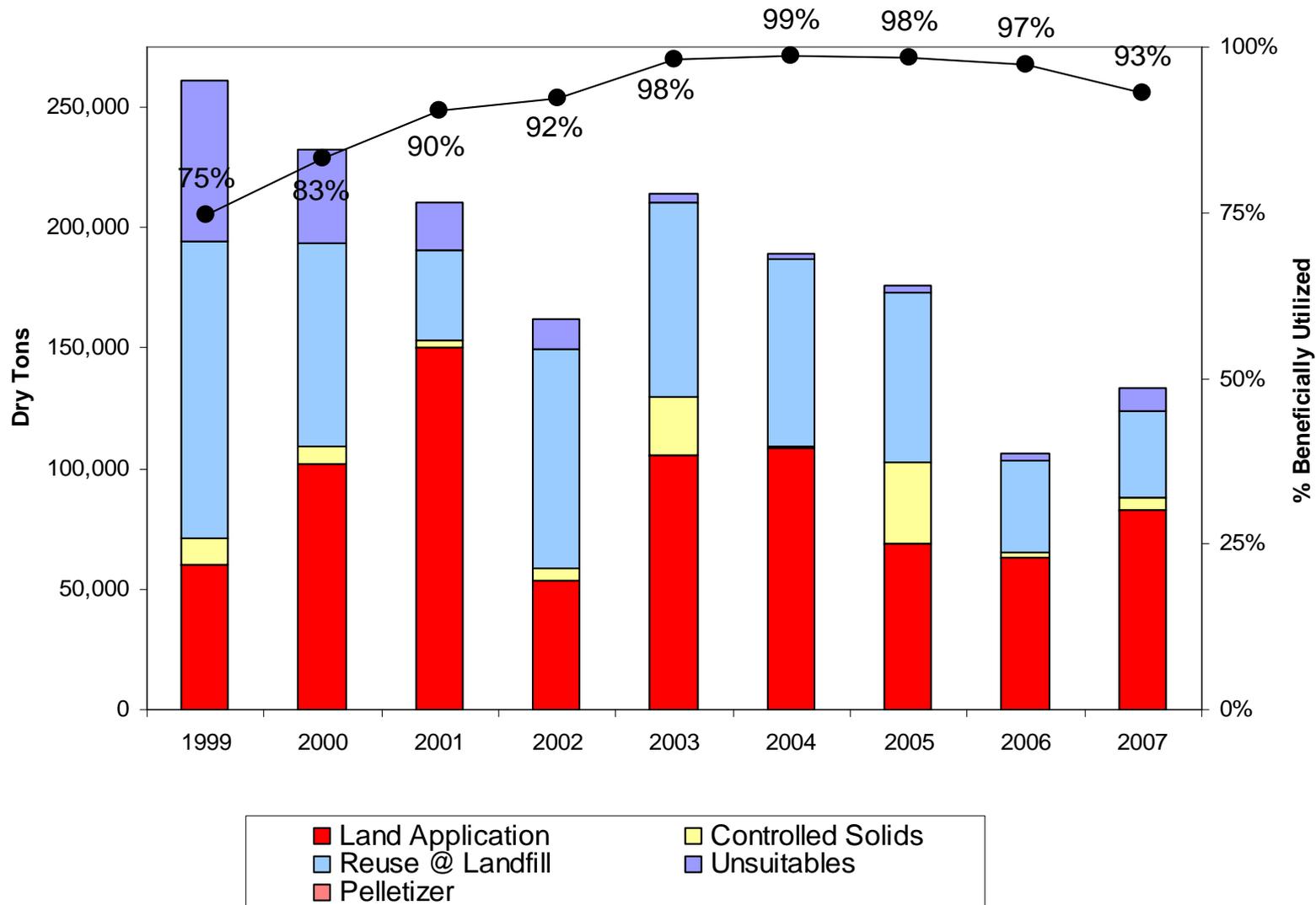
# LASMA CONTRACT AGITATION COST 2002-2007



# CONTRACT MACHINE RATES AND LASMA AGITATION/DT COSTS



# Biosolids Utilization



# Innovation: Crossover Auger/Paddle Aerator Experiment



# Innovation: Crossover Auger/Paddle Aerator Experiment



# Innovation: Tiller on the front of a Brown Bear



# Newer Technology: Paddle Aerator



# Goals and Objectives

- Utilize all 15,000dt of Class A dried biosolids in the Controlled Solids Distribution Program.
- Purchase 3 environmentally friendly tractors for use with lagoon pumps and tillers. (Air emissions)
- Implement environmentally friendly Crane for outloading cake lagoons.(Air emissions)
- Reduce hours worked per dry ton processed. (Air emissions)
- Continue to work with R&D to locate additional final utilization outlets in the Chicagoland area.
- RFP for Topsoil Manufacturing
- Investigate future opportunities such as biosolids composting and biosolids to energy conversion.

# Green Initiatives

- **Lower Emissions**

- **Utilize Tier 3 Equipment: Tractors, Cranes, WL**

- **More efficient operations**

- **More efficient equipment (Decrease hrs/dt)**

- **New Crane with larger bucket capacity**

- **New Wheelloader with larger bucket capacity**

- **Tractor/Pump combination replaces Dredge Pump operation for low solids loading.**

- **Reduction in Truck Miles**

- **Closer Final Utilization Sites**

- **Chicago Park District (6,000 acres)**

- **Direct Haul to Cells for processing instead of lagoons for storage**

# NBP Seal of Approval



# The Biosolids Story Part 2

## Technical Support, Marketing and Public Relations

1. Technical support to biosolids users
  - Farmland application program
  - Controlled Solids Distribution Program
2. Biosolids benefits and safety
3. Biosolids marketing & public education program
4. What have we accomplished thus far?
5. Are there areas for improvement?
6. Where do we go from here?

# Farmland Application Program

- **Class B centrifuge cake biosolids used as fertilizer for producing row crops in Cook and nearby counties**
- **Land application contractor responsible for enrolling farmers**
- **Land application rates based on crop nitrogen needs**

# Farmland Application Program

## Why Technical Oversight?

To compliment contractor's efforts on:

- District and Contractor's permit issued by IEPA
- Public Relations
- Long-term sustainability of the program

## What Do We Do?

- Approve Fields – Review field info, including:
  - Maps (plat, soils) and aerial photo
  - Notification to public officials and field neighbors
  - Soil test report
- Field Inspections—permit compliance or odor complaint

# Controlled Solids Program

## Why Technical Oversight and Assistance?

The goal is to help plan how biosolids are used:

- Compliance with CSD permit issued by IEPA
- Make best use of biosolids – application rates, etc.
- Minimize potential for odors and other PR issues

## What Do We Do?

- Site visit – before, during, or after biosolids applied
- Collect soil samples for pH and other tests
- Assist with preparing *User Information Form*

# Biosolids Benefits-Farmland Application

- 1. Primarily substitutes fertilizer N, P, micronutrients and some K**
  - **Approx. 40 - 50 WT replaces typical corn crop N needs (~150 pounds N/ac)**
- 2. Improves soil OM and physical properties**
- 3. Increased crop yield**

**What can Biosolids Do for  
Athletics Fields, Parks, Golf  
Courses, Community etc.?**

# Biosolids Benefits—Controlled Solids

## Soil Amendment

- Reduce cost of topsoil - \$ave your \$
- Improve organic matter and quality of 'junk' soil
- Large supply of slow release plant nutrients over time
- More consistent quality compared to topsoil

## Fertilizer

- Decrease cost of fertilizer – Don't throw away \$
- Improve managed and unmanaged (“eyesores”) turf
- Slow release fertilizer - Does not leach out easily

## Opportunity to Go “Green” with Recycle/Reuse

- Recycle organic material in place of chemical fertilizer
- Do your part in Chicago's Green Initiative
- We've paid \$ to produce EQ biosolids. Now, let's use it

# Biosolids Benefits–Controlled Solids

**And.....Still at No Cost**

## **Technical Support**

- **R&D staff of five soil scientists**
- **Reliable service staff at the biosolids drying sites**
- **Nutrient analysis of biosolids as needed**
- **Assistance in community outreach, and promoting biosolids program to community officials**

# **Is it Safe to Use Biosolids on Turf?**

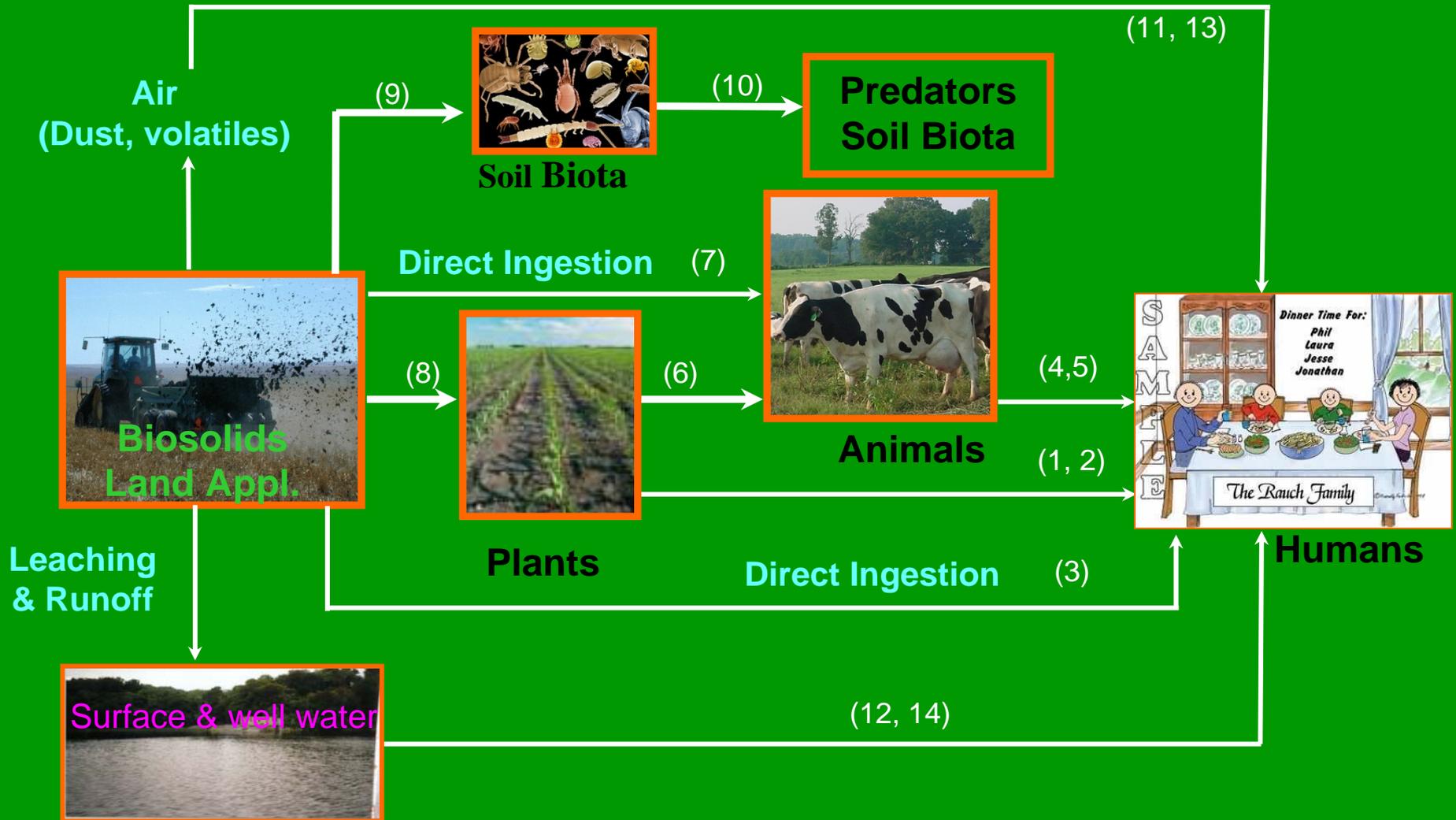
# Biosolids Safety Rules – “Bullet-Proof”

## USEPA 40 CFR Part 503 Regulation

- Based on comprehensive risk assessment 
- The rule establish limits on:
  - Trace metal content 
  - Trace metal loading rates
  - Pathogen content
  - Vector attraction
- All District air-dried biosolids meet USEPA’s **Exceptional Quality** standard



# USEPA Part 503 Risk Assessment



# Annual Mean Levels of Trace Metals in District Biosolids Compared to USEPA Part 503 EQ Limits

Trace Metal	1974	1980	1990	2007	Part 503 EQ Limit
	----- mg/kg -----				
Cd	293	308	92	4	39
Cu	1,659	1,888	426	422	1500
Hg	4.9	7.7	2.0	0.5	17
Ni	415	449	202	37	420
Pb	805	1159	374	86	300
Zn	3,829	4,318	1,820	899	2,800

# Biosolids Safety Rules

## IEPA Regulation

- Title 35 Subtitle C Chapter II Part 391: 'Design Criteria for Biosolids Application on Land'
- More stringent than USEPA Part 503 rule
- IEPA requires monitoring of biosolids and management practices to ensure protection of environment and public health
- All users are covered under the District's *Controlled Solids Distribution Permit* issued by IEPA
- Addressing IDOT concerns, IEPA issued letter to confirm biosolids-amended soil is not contaminated

# Biosolids Safety Rules

## Chicago DOE Risk Assessment

- Goes beyond IEPA and USEPA - apply standards that are used to define “clean soil” in Illinois
- Evaluate Many Factors
  - Various sites for biosolids use – Athletic fields, playgrounds, picnic areas, community gardens, parking lots, and park buildings
  - Who is exposed– Children, employees, patrons
  - Methods of contact – Ingestion and skin contact
- Result – Meets “clean soil” definition when used according to District’s guidelines

# How To Use Biosolids?

# How to Use Biosolids

- 1. Soil Amendment – Renovation and New Construction**
  - Spread ~1-1/2 inch and roto-till to 5 to 6-inch depth
  - Seed or place sod
- 2. Fertilizer Topdressing**
  - Spread up to 1/4-inch layer on turf using fertilizer spreader
  - Custom rates - based on biosolids N content and turf N requirement
  - Best if done after aerification
- 3. Blending - With Other Materials to Make Topsoil**
  - Spread other materials and biosolids in layers
  - Mix using bobcat or other mechanical methods

# Typical Biosolids Use as Soil Amendment *Morton West H.S. Soccer Field*

- Spread 2" biosolids
- Blend with top 4 inch soil
- Level and prepare seedbed
- Seed



# Biosolids Spread as Fertilizer Topdressing *Blue Island Park District, 2008*



**And How Do I Get  
Biosolids?**

# How to Get Biosolids?

## 1. Call in Advance to Facilitate Planning

- Dan Collins, Biosolids Manager (708-588-4300)
- Albert Cox, Soil Scientist (708-588-4063)

## 2. District Consultation and Site Visit

- District soil scientist will visit to assist in planning
- Soil scientist will assist in filling User Information Form required by IEPA permit

## 3. Don't Need Your Check Book

- Biosolids are free
- No delivery charge
- Usually delivered to within ~ 50 miles of Calumet or Stickney WRPs

# How to Get Biosolids?

## 5. Are Biosolids Always Available?

- Available during drying season, Mid May – October
- Dependent on weather conditions
- Premier Customers are our highest priority
  - Those who have shown commitment to long-term biosolids beneficial reuse
  - Other topdressing projects

# **Biosolids Marketing and Public Education**

# Farmland Application Program

## What's the Size of Farmland Application Market?

- Distance from WRP is key – 50-mile radius from WRPs
- Primary target is farmland in Will, Kankakee, Cook, Dupage, Kane, McHenry Counties
- Number of fields approved for use

**2005 241**

**2006 182**

**2007 175**

**2008 190**

- Contractor uses about 60 – 70% of the approved fields

# Farmland Application Program

## Main Challenges

- Public perception (odors, and safety)
- Public concern about liabilities on biosolids-amended land
- Timing of biosolids application
  - Accessibility of fields after harvesting
  - Increased potential compaction of soil

# Controlled Solids Program

## What's the Potential of the CSD Market?

- Distance from WRP is key – 50-mile radius from WRP
  - Cook, Will, Dupage, and Lake Counties
- Municipalities
  - City of Chicago Park District
  - Park Districts and Villages of 123 suburban communities
- Over 200 golf courses
- Schools and Universities
- Landscapers

# Controlled Solids Program

## Main Challenges

- Many people don't know what they don't know -  
The benefits of biosolids reuse is ***No Secret!***
- Quality of biosolids to meet specific user fertilizer needs
- Synchronizing availability with demands
- Public perception (odors, and safety)

***To Know and not to Do, is not to Know***

# Farmland Application PR Program

## Research & Demonstration Plots

Collaborate with two farmers in Will & Kankakee Co.

- Compare corn production with Class B biosolids vs. chemical fertilizer - corn yield, soil and ground water 

## Benefits of the Plots

- Demonstrate the benefits and safety of biosolids
- Collect data on biosolids benefits, such as crop yield
- Visible in the farming community
- Back drop for field days



# Farmland Application PR Program



# Farmland Application PR Program

## Field Days at Research and Demo plots

- District hosted in 2005 and 2007
- Contractor hosted in 2008  
-with contribution from



# Farmland Application PR Program

## Biosolids Hit the Air Waves

- Orion Samuelson – WGN Radio *Farm Report* host
  - Advertise Field Days
  - Biosolids radio ads
  - Spice up the field day



# Controlled Solids Marketing & PR

## Goals of marketing and PR program

- Increase biosolids use under the program
- Improve quality of biosolids
- Educate the public at large on benefits and safety of biosolids
- Sync the demand and availability of biosolids during the year

# Controlled Solids Marketing & PR

## Phone Calls, Mass Mailing and Meetings

### Phone Calls from Directories

- Golf Courses – [golflink.com](http://golflink.com) directory
- Directory of IL Schools
- Landscape Contractor Customer Directory

### Letters and Brochures to Over 600 Prospects

- Schools, Park Districts, Villages

### Follow-up Presentations: e.g.

- Board of St. Charles Park District
- Green Team of Fox Valley Park District
- Kiwanis Club of Village of Berwyn
- Board of Dupage County Forest Preserve

# Controlled Solids Marketing & PR

## Biosolids Promotional Pamphlets

- 1. Beneficial Reuse of Biosolids in the Chicago Area**
- 2. Biosolids: Value as a Fertilizer and Soil Amendment**
- 3. Guidelines and Specifications for Using District Class A Air-dried Exceptional Quality Biosolids as a Soil Amendment or Fertilizer**
- 4. Do Biosolids Contain Metals?**
- 5. Biosolids Use on Golf Courses**

# Controlled Solids Marketing & PR

## Biosolids Quality

- Screen biosolids when used as topdressing esp. for golf courses
- Increase vigilance for odor potential of biosolids
- Conduct nutrient testing in advance –
  - Available on customer request
  - Designate for projects based on N content

# Controlled Solids Marketing & PR

## Demonstrations at Prospective Users Sites

- Spread 1 load biosolids as demonstration
- Two Demonstrations
  - Blue Island Park District
  - Lombard Park District
- Prospective users attended demonstrations

# Controlled Solids Marketing & PR

Field Day – June 2008

- Hosted by Blue Island Park District
- ~ 50 attendees
- Presentation by District and U of I staff
- Blue Island Park District Commissioner declare **“No More Chemical Fertilizer”**



# Controlled Solids Marketing & PR

Field Day – June 2008



# Controlled Solids Marketing & PR

## Collaboration With Government Entities

### Illinois Department of Transportation (IDOT)

- Still needs some work

### City of Chicago Departments

#### ➤ Chicago Public Schools

- Needs more work - Biosolids used at only two schools

#### ➤ Dept of Environ (DOE)

- Collaboration on TACO risk assessment – Determine if biosolids meet “clean soil standard”

#### ➤ Chicago Park District

- OK with biosolids use as soil amendment
- Work with District to prepare biosolids beneficial reuse portfolio for public outreach

# Controlled Solids Marketing & PR

## Exhibitions & Networking at Local Conferences

- Mid-America Horticultural Show (Mid Am) 2007
- IL Assoc. Park Districts/IL Park & Rec. Assoc. – 2006 -
  - Biosolids presentation in 2006
- IL Professional Turf Conf – 2006 - current
- Midwest Institute of Park Executives – meets monthly
  - Biosolids presentation at Nov 2008 meeting
- IL Sports Turf Management Assoc.
- Keep America Playing Conference

# **Controlled Solids Marketing & PR**

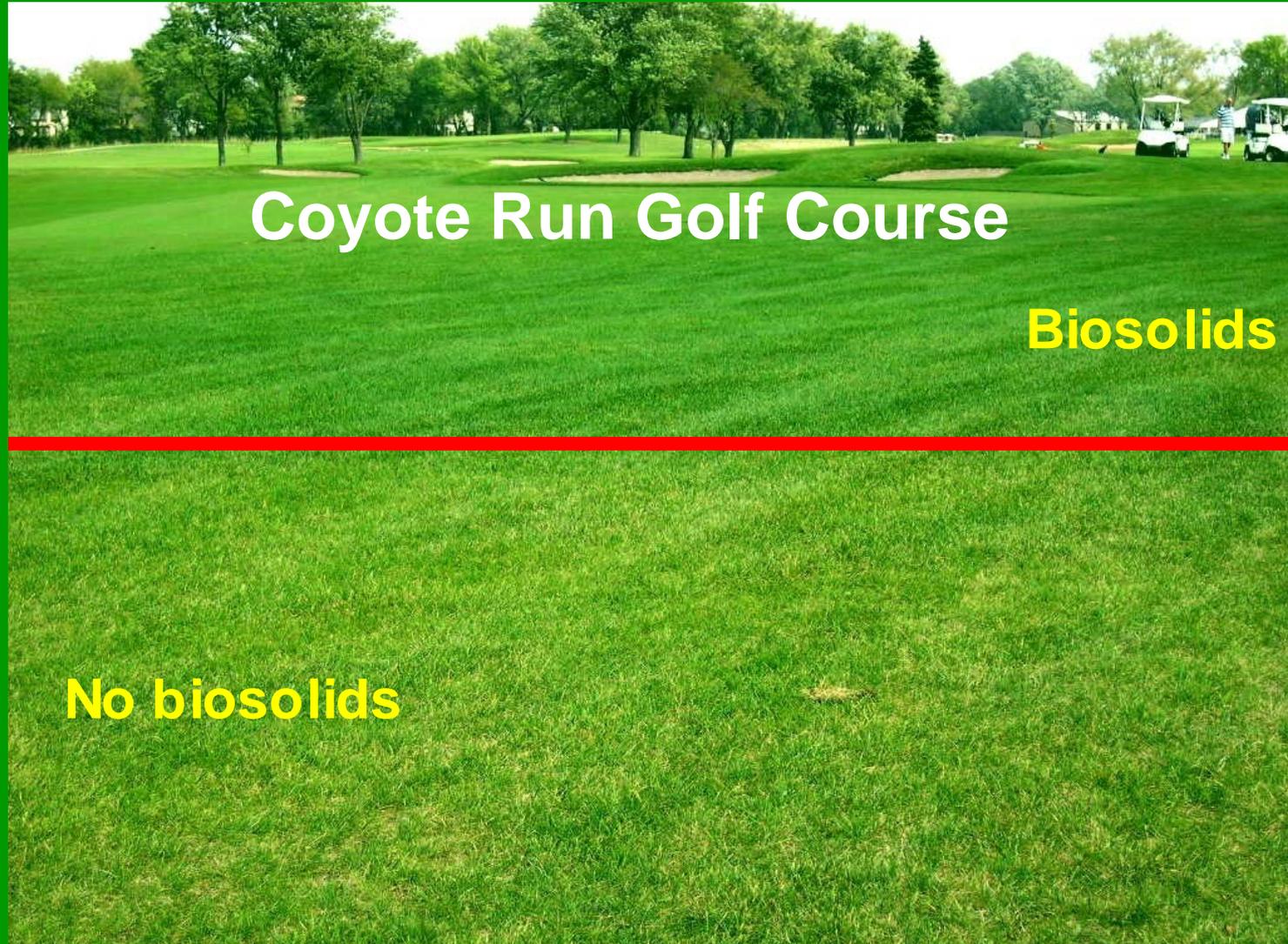
## **On-site Research and Demonstration**

### **Collaboration with U of I Turfgrass Extension Service**

- **Plots compare biosolids with other fertilizers**
- **Six Golf Courses and Recreation Fields**
  - **Lake Forest Academy, Lake Forest**
  - **Coyote Run, Flossmoor**
  - **Knollwood, Lake Forest**
  - **Midwest Golf Club, Lemont**
  - **Northshore Country Club, Glenview**
  - **Park District of Highland Park**
- **Turf performance indices measured**
- **Midwest Golf Club hosted field day in 2007**
- **Develop guidelines for extension publication**

# Controlled Solids Marketing & PR

Onsite Research and Demonstration



Coyote Run Golf Course

Biosolids

No biosolids

# Recent Accomplishments

# Recent Accomplishments

## Biosolids Management Program

**2008 National Environmental Achievement Award  
for "Mission is Possible: Educating People to  
Promote Beneficial Use of Biosolids"**

*National Association of Clean Water Agencies (NACWA)*

**2008 Clean Water Act Recognition Award  
"Exemplary Biosolids Management Award: First  
Place in Public Acceptance Category"**

*United States Environmental Protection Agency (USEPA)*

# Recent Accomplishments

## Farmland Application Program

### Sustainability of the Farmland Application Program

- Decrease in odor complaints
- Increased demand for biosolids
- Improved relationship with farming community
- USDA-NRCS endorsement of biosolids in farm nutrient plans

# Recent Accomplishments

## Controlled Solids Distribution Program

### City of Chicago Departments Begin to Use Biosolids

- After over 6 years of collaboration and on-site demonstration at USX site
- Construction of Park at USX by CPD
- ~ 2,000 DT biosolids blended with river sediment

USX Park Construction September 2008



# Recent Accomplishments

## Controlled Solids Distribution Program

### Increased Number of Customers & Quantity Used

	2005	2006	2007	2008
	----- No. of Users -----			
Total	10	12	37	35*
New	--	10	35	16
	----- Quantity (DT) -----			
Total	33,924	1,900	4,800	20,000
Large users (>1,000 DT)	31,629**	0	0	16,000***

\*Some 2007 users skipped 2008, most due to scheduling

\*\*Cinder Ridge reclamation (30,329 DT) and Willow Springs berm (1,300 DT)

\*\*\*Highlands GC (10,000 DT), Miller Meadows Recl. (4,000 DT), USX (2,000 DT)

# Recent Accomplishments

## Controlled Solids Distribution Program

### Who Are The Customers (2007 – 2008)?

- Golf Courses – 10
- Suburban Villages & Park Districts – 20
- Schools – 16
- Landscape Blenders – 3
- Landscape Contractors (customer referrals) – 1

# High Schools and Universities-Athletic Fields

1. Andrews High, Tinley Park
2. Downers Grove High
3. Plainfield Community and Consolidated SD
4. Bolingbrook High
5. Oak Lawn Community High
6. St. Xavier Univ., Chicago
7. Univ. Illinois-Chicago
8. Univ. Chicago
8. Tinley Park High
9. Oak Forest High
10. St. Laurence High, Burbank
11. Morton West High, Berwyn
12. St. Charles North High
13. Valley View SD, Romeoville
14. Stag High, Palos Hills
15. Notre Dame High, Niles
16. Crete-Monee SD, Crete

# Golf Courses

1. Cinder Ridge GC,  
Wilmington
2. Chalet Hills GC,  
Cary
3. North Shore Country  
Club, Glenview
4. Longwood Country Club,  
Crete
5. Hickory Hills GC
6. Coyote Run GC,  
Flossmoor
7. Arlington Lakes GC  
Arlington
8. White Pines GC,  
Bensenville
9. Renwood GC  
Round Lake
10. Glenwoodie GC,  
Glenwood
11. Indian Lake Resort,  
Bloomington
12. Joliet County Club

# Municipalities - Parks & Rec. Fields

1. St. Charles Park District
2. Summit Park District
3. Village of Steger
4. Village of Evergreen Park
5. Westmont Park District
6. Blue Island Park District
7. Village of Riverside
8. MWRD - Landscaping
9. Burbank Park District
10. Elmhurst Park District
11. Village of Romeoville
12. Village of South Holland
13. Frankfort Park District
14. Franklin Park District
15. Oakbrook Park District
16. River Forest Park District

# Recent Accomplishments

## Farmland Application Program



Oak Forest High School football field just after biosolids applied, May 2008



Oak Forest High School football field – Greener in July 2008



Stan's Park, Blue Island - Just before biosolids applied, August 2008



Stan's Park, Blue Island after biosolids topdressing – Greener in September 2008

# Recent Accomplishments

## Controlled Solids Distribution Program

### Commitment to Biosolids Beneficial Reuse

- Eliminate chemical fertilizer use
  - Blue Island Park District
- Purchase Dedicated Biosolids Spreader
  - Blue Island Park District
  - Westmont Park District
  - Lombard Park District

# Looking Ahead

## Controlled Solids Program

### 1. Expand Market

- Expand fertilizer topdressing market to sustain use of 15,000 DT of air-dried biosolids from CWRP
- Topdressing CPD parks – Seal the deal in 2009
- Harvest the fruits of previous efforts
- Focus on most effective marketing activities
- Continue to target other large potential users – e.g. IDOT, CPS

### 2. Synchronize Availability and Demand

- Work closer with larger users to meet their schedules
- Construct cover to reserve dried biosolids

# Looking Ahead

## Controlled Solids Program

### 3. Research and testing to improve quality

- Minimize potential for odors
- Improve guarantee of nutrient value of biosolids

### 4. Seek opportunities to recover some program costs

- Promote customer biosolids pickup
- Customers could begin paying for the value of the service

### 5. Award program to recognize biosolids users

- Opportunity for communities to innovate and compete for environmental stewardship
- Increase visibility of the beneficial reuse program

# Looking Ahead

## Controlled Solids Program

### 6. Large opportunities ahead

- Chicago Park District – Over 6,000 acres of parks available for topdressing
- Extension of Harbor Side golf course

**Thank You**

***Happy Holidays!***