

**Integrated
Management
Systems (IMS)
for Biosolids**

Canadian
Environmental
Auditing
Association
(CEAA)

Annual Conference
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Integrated Management Systems (IMS) for Biosolids

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Biosolids Issue

- Residual product from wastewater process
- Nutrient rich sludge
- Management options
 - Land apply
 - Land fill disposal
 - Energy from waste

The Challenge

- Managing biosolids
- Highly regulated
- Very contentious
- Technically complex
- Broad stakeholders
- Often out sourced



The Solution

- Integrated system
- Quality
- Environment
- Health and safety
- Communications
- Client / contractor



Ontario Context

- Perception of biosolids
- Nutrient Management Act
- Waste Management Act
- Ontario Biosolids Partnership (OBP)
 - City of Ottawa
 - Region of Halton
 - City of Hamilton

Regulatory Requirements

- Nutrient Management Act
 - System master planning
 - Material quality control
 - Environmental protection
- Waste Management Act
 - Process / system approval
 - Stakeholder consultation

OBP Requirements

- OBP Elements
 - Modeled after ISO 14001 and HACCP standards
 - Additional requirements for proactive, planned participation by and communications with interested parties

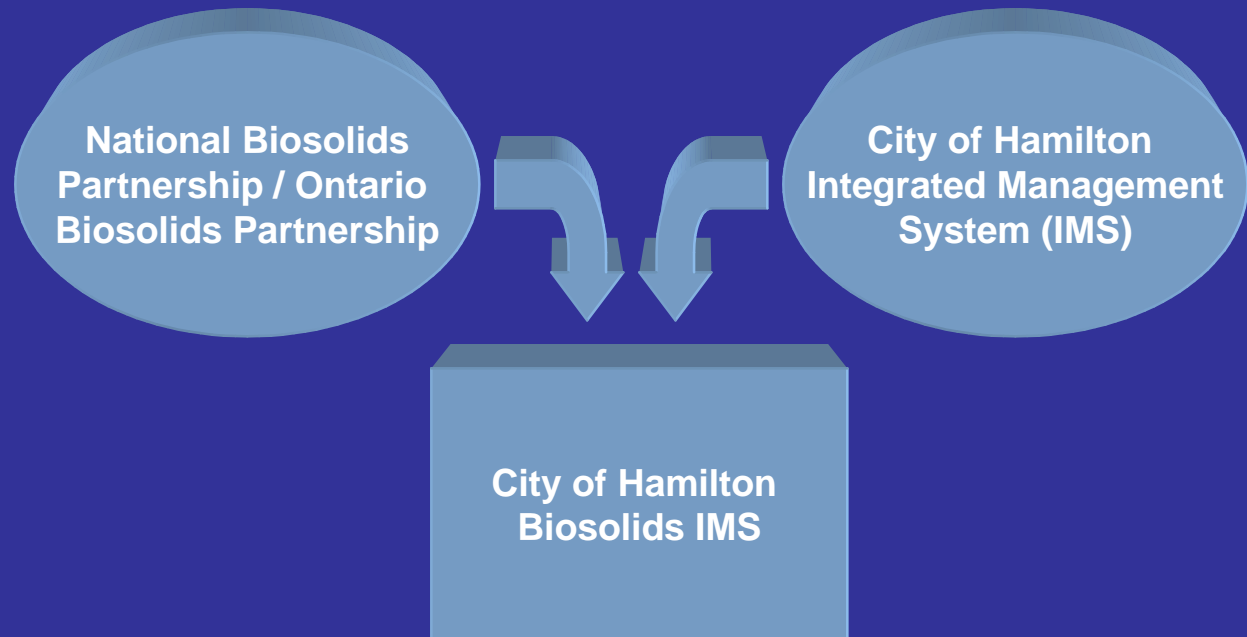
Hamilton Context

- Corporate IMS
 - ISO 14001
 - OHSAS 18001
- OBP Elements
 - Critical control points
 - Public participation
 - Performance reporting

Hamilton System

- Five key components:
 - Wastewater pretreatment and collection
 - Wastewater treatment and solids generation
 - Solids stabilization, conditioning and handling
 - Solids storage and transport
 - Use and disposition alternatives

IMS Approach



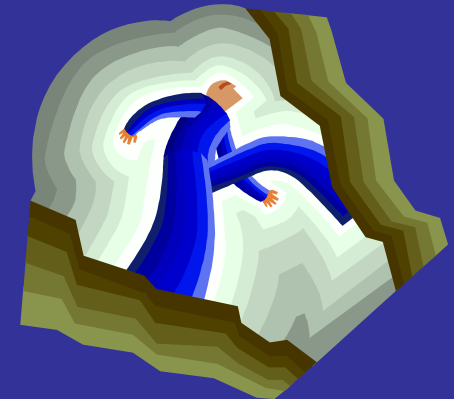
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Biosolids IMS integrates NBP/OBP and City IMS

IMS Progress

- Gap analyses
 - ISO 14001
 - OHS 18001
- OBP requirements
 - Vision / mission
 - Goals / objectives
- System inventories
 - City activities
 - Contractor activities



IMS Progress

- Level 3 procedures
 - Collection / application
 - Testing / verification / training
- Consultation program
 - Local Implementation Team (LIT)
 - Agriculture and Rural Affairs Committee (ARAC)
 - Public / stakeholders
 - Within / outside Hamilton

IMS Progress

- Significance ranking
 - Criteria development
 - Priority setting
- Objectives / targets
 - Performance targets
 - Water quality criteria
- Management programs
 - City and contractors
 - Performance measures



IMS Next Steps

- Operating procedures
 - City functions
 - Contractor SOPs
- Monitor / measure
 - Critical control points
 - Calibration / verification
- System auditing
 - Facilities / activities
 - City / contractor

IMS Successes

- City / contractor commitment
- Adherence to program tasks and schedules
- Dedicated staff to implement and manage program
- Leverage support through OBP and City IMS

IMS Challenges

- Regulatory framework changing continually
- Identifying occupational health and safety hazards
- Building audit capabilities
- Ensuring IMS can address future biosolids activities

Future IMS Trends

- Benchmarking initiatives
 - Municipal utility management practices
 - Drinking water management
 - Wastewater management
 - Storm water management

Future IMS Trends

- ISO / TC 224
 - Standardization of service activities relating to drinking water supply and sewerage
 - Quality criteria of the service and performance indicators

CEAA Issues

- Integrated auditing
 - ISO 19011
 - OHSAS 18001
- New system standards
 - OBP Standard
 - Drinking Water Quality Management Standard

Questions

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