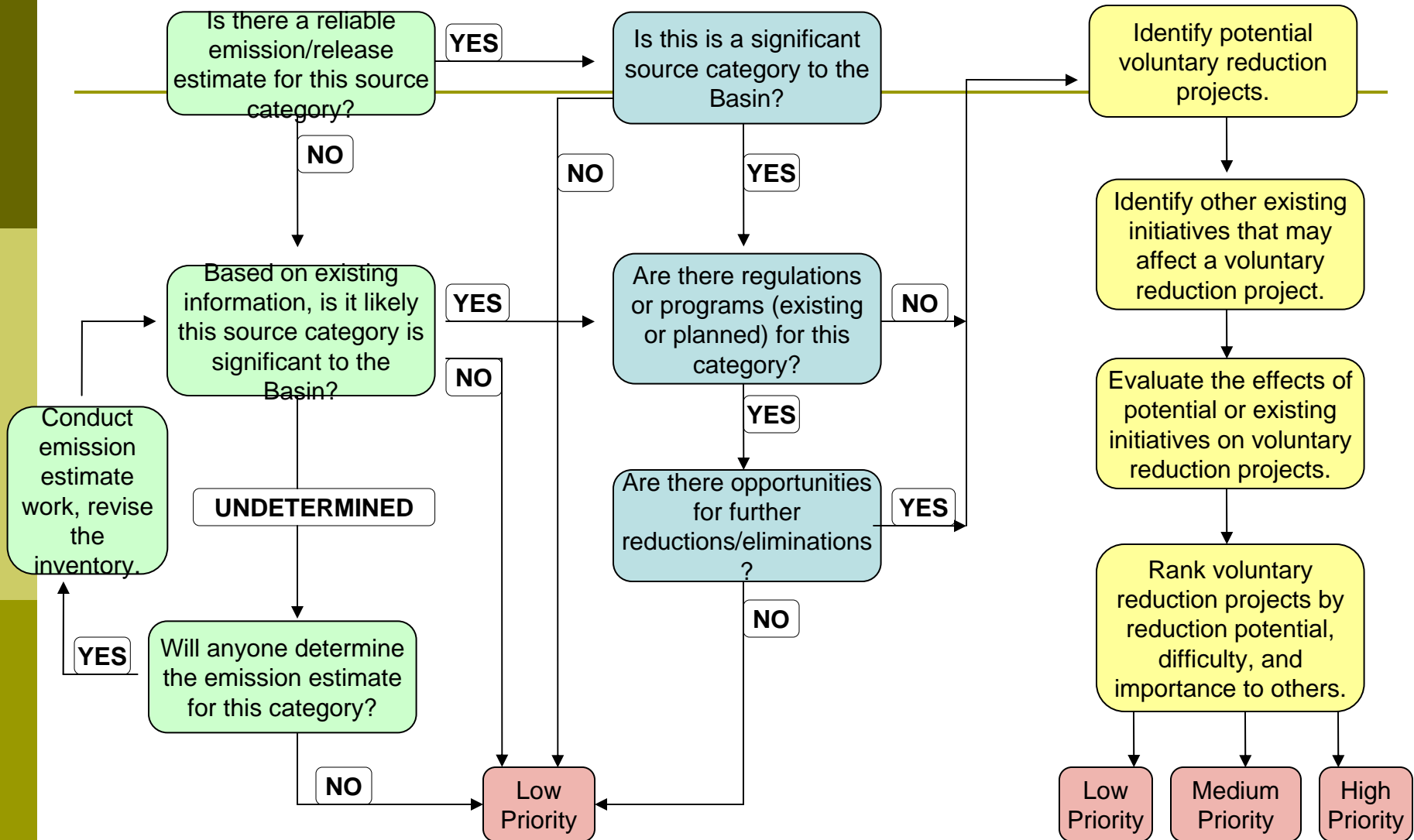


# Dioxin/Furan Workgroup Decision Tree



## Dioxin/Furan Workgroup Decision Tree for Prioritizing Sources



# Criteria for Inventoried Sources of Interest

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- Reliable emission estimates
- Likely to be significant in the Basin
- More than 2% of the total dioxin inventory
  - U.S. – 2000 inventory
  - Canada – 2005 inventory

# Sources of Interest-U.S. (2000 Inventory)

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- ❑ Backyard barrel burning
- ❑ Medical waste incinerators
- ❑ Municipal waste combustion
- ❑ Coal fired utility boilers
- ❑ Diesel emissions (trucks, rail, locomotive)
- ❑ Hazardous waste cement kilns
- ❑ Primary magnesium production
- ❑ Industrial wood combustion
- ❑ Non-ferrous smelting

# Criteria Explanation

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- ❑ Using the Decision Tree Process, the GLBTS D/F Workgroup ranked sources of interest as “high, medium, or low priority.”
- ❑ These designations are for the purposes of priority setting within the Workgroup agenda and based on:
  - Environmental data
  - Knowledge of outside programs addressing the sources
  - Ability of the GLBTS to impact these sources
- ❑ These rankings should not be considered an overall judgment of the importance of these sources.

# Sources of Interest-Ontario (2005 Inventory)

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- Backyard trash burning
- Non-ferrous smelters\*
- Federal waste incinerators\*
- Iron and steel\*
- Sewage sludge land application
- On-road diesel engines
- Electric power generation

\* Not on US list

# Backyard Barrel Burning

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- Reliable inventory
- Significant source
- Regulations or programs to address
- Workgroup has already identified potential reduction projects
  
- OUTCOME – high priority and workgroup efforts will continue.

# Medical Waste Incinerators and Municipal Waste Combustors

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- Reliable inventory
- Significant source
- Regulations or programs to address
- Opportunities for further reductions (Small incinerators?, MACT Standards, CWS and Ontario regulations have reduced D/F significantly)
- OUTCOME: Low priority



# Municipal Wastewater Treatment Sludge

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- Reliable inventory
- Significant source
- Regulations or programs to address
- Opportunities for further reductions  
(Ontario study showed low D/F levels in sewage sludge)
- EPA made a low risk determination on this issue for D/Fs
  
- OUTCOME: Low priority

# Coal Fired Utility Boilers

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- Reliable inventory
- Significant source
- Regulations or programs to address
- Opportunities for further reductions  
(Ontario commitment to phase out coal-fired power plants by 2014)
- Suspect that mercury controls may also reduce D/F emissions further
  
- OUTCOME: Low priority

# Diesel Emissions

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- Reliable inventory
- Significant source
- Regulations or programs to address (Sulphur in Diesel Regulations lowered sulphur levels to 15 ppm)
- Opportunities for further reductions (diesel emission reduction projects)
  
- OUTCOME: Low Priority

# Hazardous and Non hazardous Waste Cement Kilns

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- Reliable inventory
- Significant source
- MACT standard not fully captured in EPA value
- Expect EPA to revise number lower and may fall below 2% of the inventory
- OUTCOME: Low Priority

# Primary Magnesium Production

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- Reliable inventory
  - Significant source
  - No sources in the GL Basin
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- OUTCOME: Low Priority

# Industrial Wood Combustion

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- Reliable inventory
- Significant source
- Regulations or programs to address
- Opportunities for further reductions
- Expect EPA to revise number lower and may fall below 2% of the inventory
  
- OUTCOME: Low Priority

# Non-ferrous Smelters

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- ❑ Reliable inventory (incomplete, some reported to NPRI)
- ❑ Significant source
- ❑ Regulations or programs to address
- ❑ Opportunities for further reductions (may combine with Secondary Aluminum Smelting and BaP/HCB workgroup)
  
- ❑ Outcome:       Medium Priority

# Federal Waste Incinerators

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- Reliable inventory
  - Significant source
  - Regulations or programs to address
  - Opportunities for further reductions (Many have shutdown in Ontario, EC will confirm operating incinerators remaining and can discuss with facilities on CWS)
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- Outcome:      Low priority



# Iron and Steel/Ferrous Smelters

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- Reliable inventory
- Significant source
- Regulations or programs to address
- Opportunities for further reductions (Steel mills are reducing D/F through CWS)
- Outcome: Low priority

# Poorly Characterized Sources



- Secondary metal smelting
- Coke production
- Ceramic manufacturing
- Foundries
- Asphalt mixing
- Petroleum refineries
- Boilers (ind/res/agric)
- Textile effluents
- Residential wood burning
- Crematoria
- Forest fires
- Brush fires
- Range fires
- Agricultural burning
- Landfill Fires
- Structural fires
- Ash Disposal
- Copper wire recycling/burning
- Rural soil erosion
- Urban runoff
- Utility poles and storage yards
- Landfill fugitive emissions
- Transformer storage yards
- Contaminated sites

# Options for Non-Inventoried Sources of Interest

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- ❑ Workgroup review list of sources and prepare discussion papers on dioxin/furan release from the sources
- ❑ Conduct the above jointly with BaP/HCB workgroup
- ❑ Leave them for US EPA and EC to review