

# **PROPERTY DEVELOPMENT WITH AND WITHOUT RBCA**

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***PRESENTATION TO:***  
**CONTAMINATED PROPERTIES:**  
**ISSUES, RISKS AND ACTIONS**  
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**MONCTON, N.B.**  
**Atlantic PIRI and New Brunswick**  
**Environmental Industries Association**



# **PROPERTY DEVELOPMENT WITH AND WITHOUT RBCA**

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FREDERICTON, NEW BRUNSWICK**

# **USING RISK BASED CORRECTIVE ACTION PRINCIPLES**

- **OBTAIN DETAILED KNOWLEDGE OF DISTRIBUTION OF ALL CONTAMINANTS.**
- **EVALUATE POTENTIAL FUTURE USES AND LIMITATIONS ON RISK OF EXPOSURE.**
- **DEVELOP REHABILITATION PLANS BASED ON RBCA PRINCIPLES.**
  - **CORRECTIVE ACTIONS DESIGNED AND IMPLEMENTED TO MINIMIZE RISK BASED ON FUTURE USES AND ECONOMIC CONSTRAINTS.**
  - **= ENVIRONMENTALLY SUSTAINABLE PROPERTY DEVELOPMENT**
- **PARTICULARLY USEFUL FOR BROWNFIELD DEVELOPMENTS.**

# WHAT IS BROWNFIELD DEVELOPMENT AND WHY IS RBCA USEFUL?



# DEFINING “BROWNFIELD”

- **INNER CITY LOCATION.**
- **PREVIOUS USES INCLUDE INDUSTRIAL OR HEAVY COMMERCIAL.**
- **VIEWED BY COMMUNITY AS “CONTAMINATED” = STIGMA**
- **ESSENTIALLY ABANDONED – LOW VALUE USES.**
- **SURROUNDING PROPERTY VALUES ENCOURAGE ALTERNATE USE.**
- **BENEFIT OF USING INVESTMENT IN EXISTING INFRASTRUCTURE.**
- **OFTEN BECOMES CATALYST FOR AREA RE-DEVELOPMENT AND RENEWAL.**

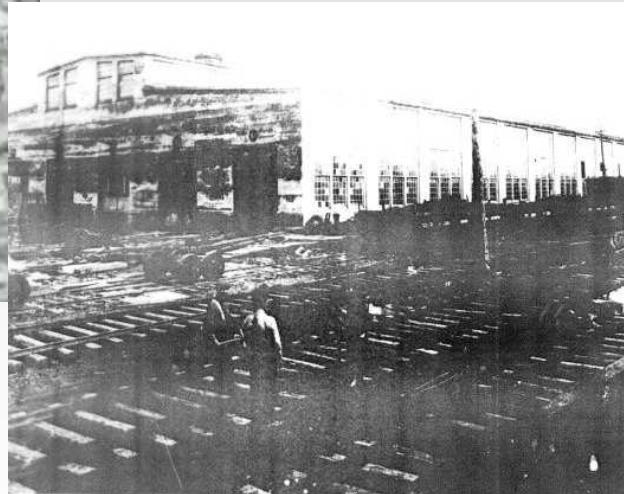
# LIMITATIONS

- **MUST DERIVE VALUE FROM RE-DEVELOPMENT TO COVER COSTS OF REMEDIATION.**
- **HOW TO ENSURE LOCAL COMMUNITY ACCEPTS RISK-BASED REDEVELOPMENT?**
- **HOW TO CONTROL COSTS?**
- **WHAT OF MULTIPLE-ORIGIN CONTAMINATION?**



# CASE #1

## FORMER CN RAIL CAR SHOPS MONCTON, NEW BRUNSWICK





**FORMER CN RAIL CAR SHOPS  
MONCTON, N.B.**





# 1988 VIEW AT SITE CLOSURE, BUT BEFORE BUILDING DEMOLITION



# 1996 VIEW, BUILDINGS DEMOLISHED IN 1991; PROPERTY EMPTY



# **HOW TO BAR-B-QUE A 280 ACRE ELEPHANT?**

- **IDENTIFY LAND USES BASED ON ECONOMIC PLANNING**
- **DIVIDE INTO PROPERTY DEVELOPMENT UNITS = PDU'S**
- **PREPARE ENVIRONMENTAL ACTION PLANS UNIQUE TO EACH PDU.**
- **USE RISK-BASED CORRECTIVE ACTION APPROACH.**
- **USE ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT APPROACH.**
- **ENSURE FULL PUBLIC TRANSPARENCY OF PROCESS, ACTIVITIES AND RESULTS.**

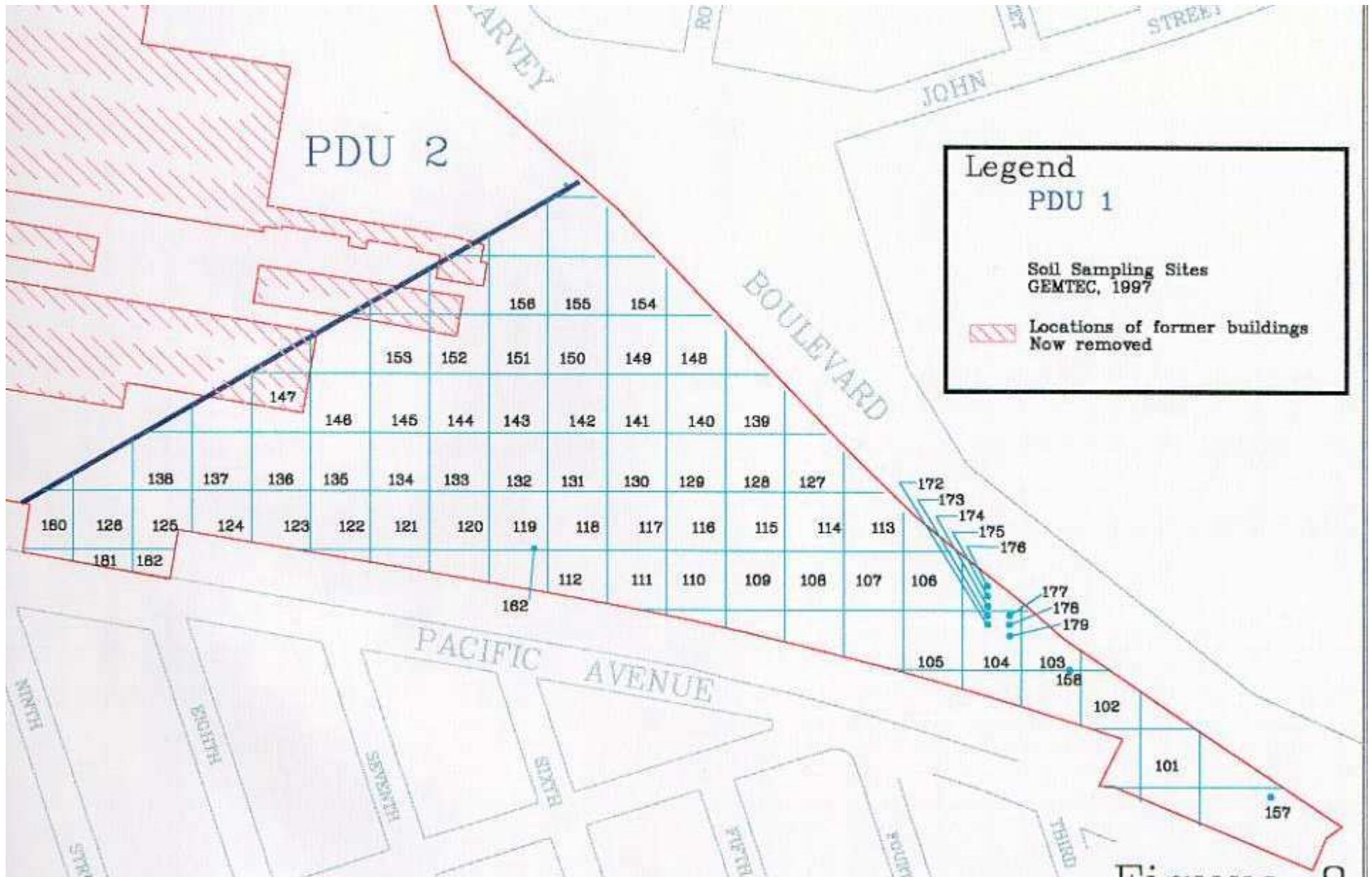
## PDU Boundaries



# HOW TO REMOVE STIGMA? -1

- **VERY DETAILED SITE ASSESSMENT OF SOILS AND GROUNDWATER.**
- **HIGH QUALITY ANALYSES.**
- **ALL DATA PLACED IN GIS.**
- **USE GIS TO DEVELOP REMEDIATION AND REHABILITATION SCENARIOS.**



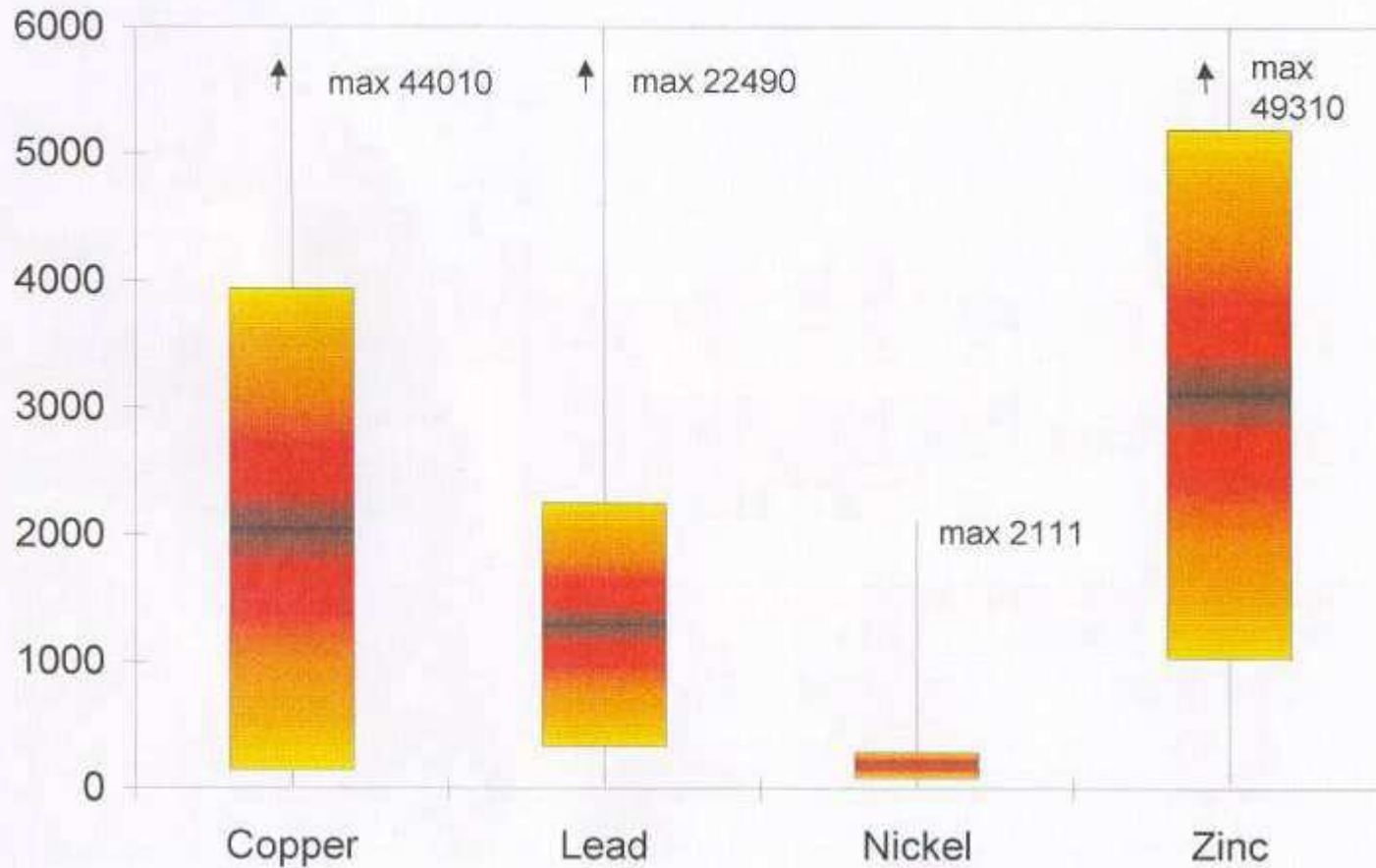


## PLANNING SAMPLING PROGRAM

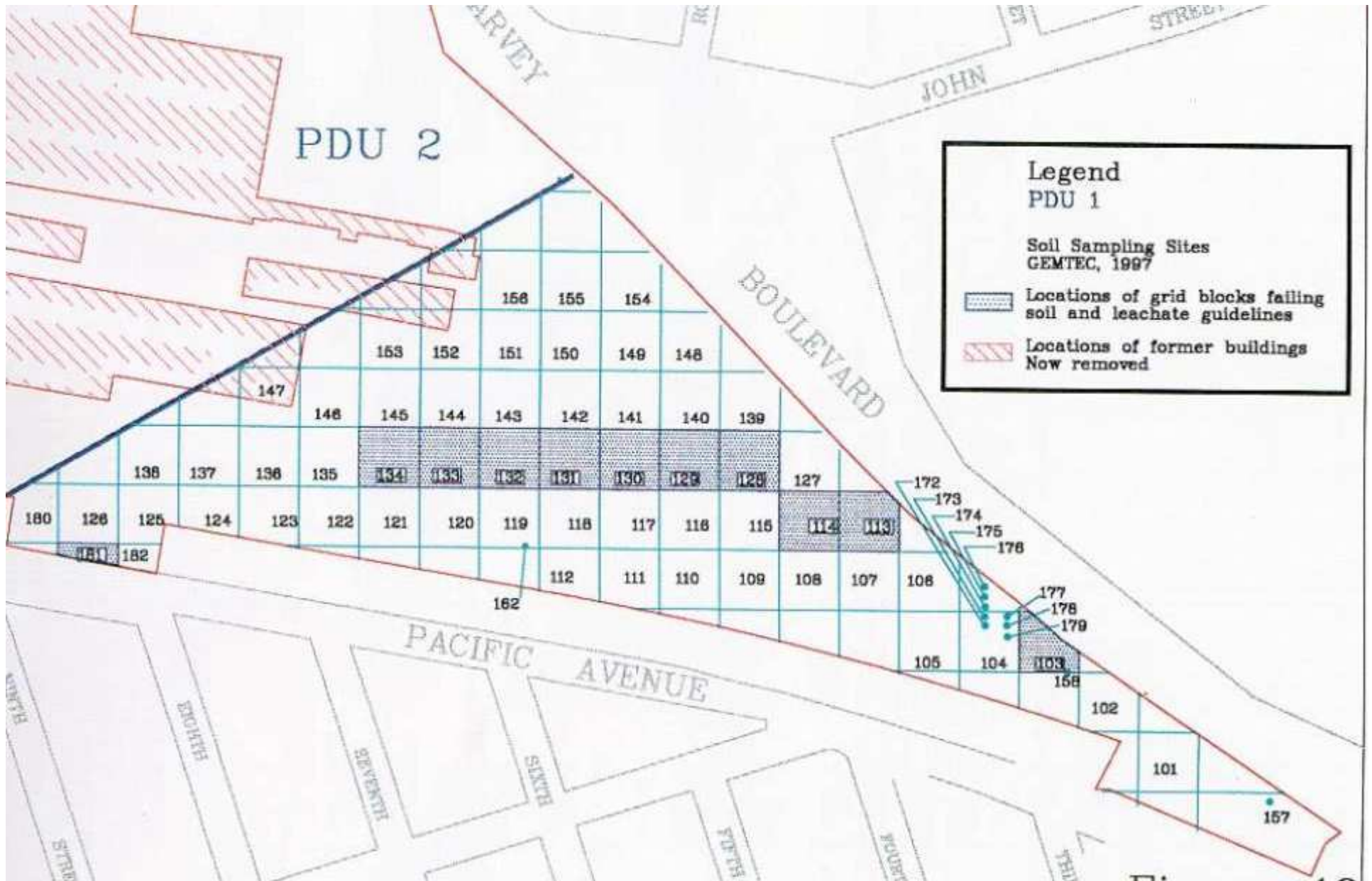
# **RISK-BASED CORRECTIVE ACTION USING NON-PIRI RISK MODELS**

- **DETAILED EVALUATION OF CONTAMINANTS.**
- **KNOWLEDGE OF 3-D OF CONTAMINANT DISTRIBUTIONS**
- **DEVELOP RISK/EXPOSURE MODELS BASED ON KEY CONTAMINANTS – TRACE METALS DUE TO FOUNDRY SAND & METAL WORKING.**
- **DEVELOP REMEDIAL OPTIONS BASED ON POTENTIAL USES & COSTS.**
- **DEVELOP REMEDIAL ACTION PLANS BASED ON SELECTED OPTIONS.**

## PDU 1: Present Surface Soil Concentrations (mg/kg)



### **EXAMPLE OF DATA PRESENTATION**



**REMEDIAL ACTION PLAN FOR PDU-1**

# HOW TO REMOVE STIGMA? -2

- **TRANSPARENCY TO PUBLIC & COMMUNITY**
- **FULL PRESENTATION OF ALL ACTIVITIES & DATA TO CITIZENS THROUGH WEBPAGE, NEWSLETTERS, OPEN HOUSES, TOWN HALL PRESENTATIONS.**
- **CITIZENS' ROUNDTABLE**





## **RECOVERY OF METAL DEBRIS IN WESTERN AREA**



**RECOVERY AND  
PLACEMENT OF  
WOOD WASTES**





## **REMOVING AND RECOVERING CONCRETE FOR AGGREGATE**

# MONCTON COMMON EMMERSON BUSINESS TECHNOLOGY PARK FRANKLIN RESIDENTIAL AREA



# LESSONS LEARNED

- **CAN SUCCESSFULLY USE RISK-BASED CORRECTIVE ACTION PRINCIPLES FOR BROWNFIELD DEVELOPMENT.**
- **PRINCIPLES WERE USED TO ADDRESS TRACE METAL CONTAMINATION WITH NON-PIRI EXPOSURE MODELS.**
- **MOST DIFFICULT TASK IS TO CONVINCING PUBLIC & COMMUNITY THAT SITE IS SAFE AND USABLE.**



**THANK YOU - MERCI**