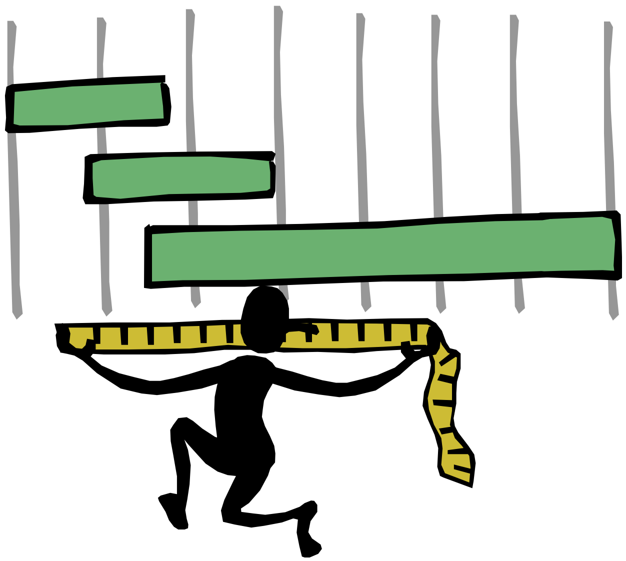
P2 Measurement and Results Database



CPPR Victoria – June 1st 2005

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National Office of Pollution Prevention

Environment Canada

Objectives of this Presentation

- Provide a quick overview of Performance Measurement and Pollution Prevention
- Discuss the rationale and need for a standard method of measurement
- Provide an introduction to the features, functions and future of the database
- Review the “draft” list of core measures
- Discuss future steps and directions

Measuring P2 - Background

- In the past staff have been asked to provide data on our projects for:
  - Annual P2 progress reports, report on P2 Demo Fund projects and results, SME study, ECP2 team
- Led to a number frustrations and issues:
  - Data we were providing, estimates at best
  - Inconsistent formats and data
  - Mostly anecdotal or qualitative case studies
  - Scrambling to gather info from various division within own Branch working on P2 projects
- Measurement a hot topic in the P2 field:
  - NPPR 2003 P2 Measurement Report
  - GLRPPR work group

Reasons to Measure Pollution Prevention Activities

- Ensure programs meeting deliverables
- Value – funding being allocated appropriately and efficiently
- Measure impact of programs
- Program justification
- Help to set priorities, future directions
- Ability to compare and report achievements (i.e. annual P2 Progress reports)

Logic Model

The Performance Spectrum

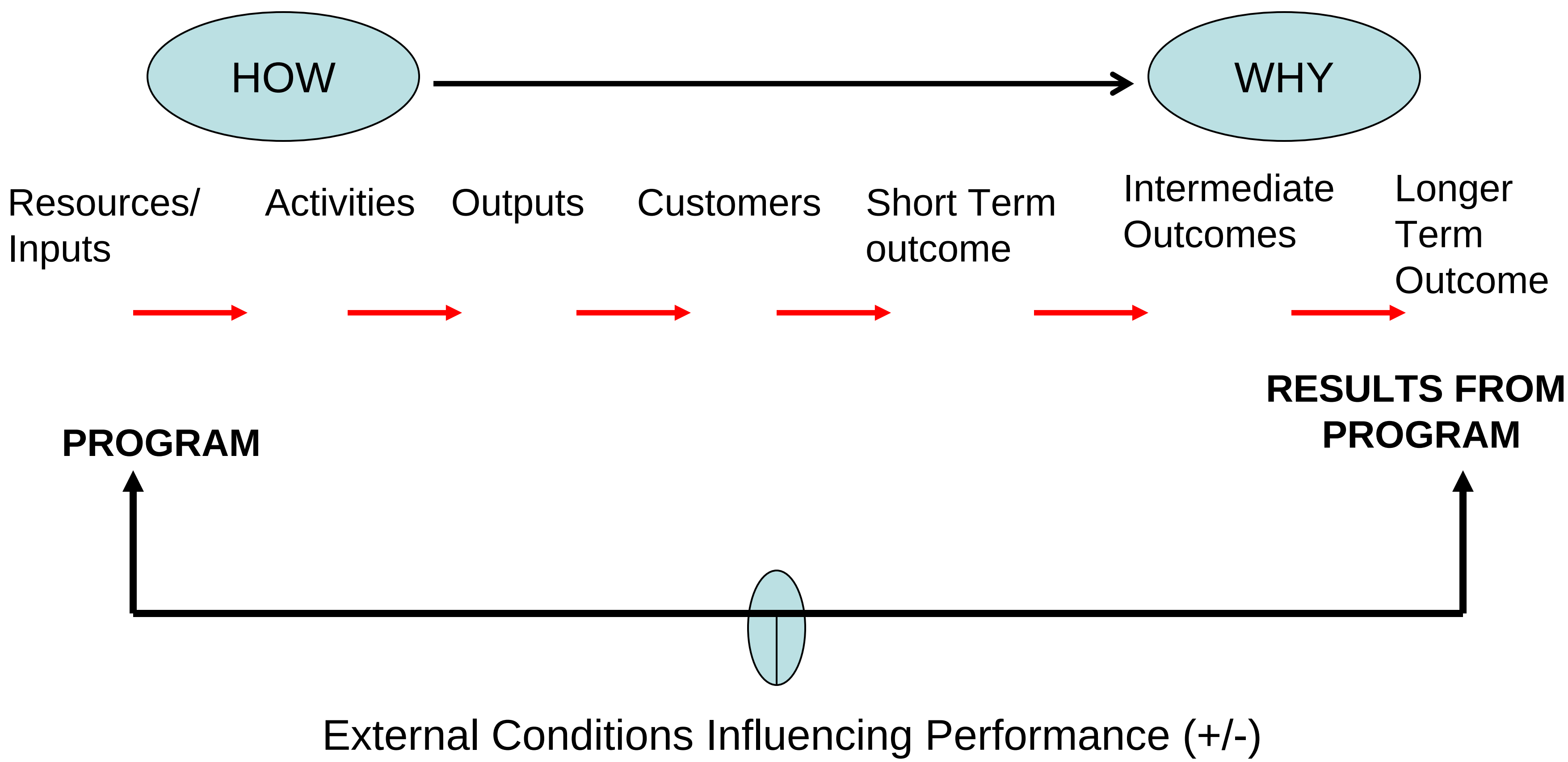


Diagram Adapted from: Yvonne Watson & Michelle Mandolia, USEPA, National Centre for Environmental Innovation

What Should Be Measured?

- Inputs: resources spent/allocated
  - Grants, funded projects, partnerships, time
- Processes: tasks performed
  - Workshops/training given, meetings or workgroups attended
- Outputs: project specific results that flow directly from what is done
  - Publications or products created (i.e. fact sheets, cds, posters)
- Outcomes: impacts/differences resulting from the P2 project
  - Changes in releases, emissions, awareness, behaviour

Criteria for Useful Performance Measures

- Objective linked
- Responsibility linked
- Organizationally acceptable
- Comprehensive
- Credible
- Cost-effective
- Compatible
- Comparable with other data
- East to interpret and report

Existing P2 Metrics Databases

NEWMOA P2 Metrics Menu

www.newmoa.org/newmoa/htdocs/prevention/ metrics

- Focus on_onsite visits, workshops, tools developed, awards, partnerships, grants, lbs pollution reduced, $ saved, all 8 states agreed to use (MOA signed)

US EPA Region 8 P2 Program Measurement Tool

- Measures: output and outcome, includes regulatory integration

US EPA Region 10 P2 Results Measurement Project

www.pprc.org/measure/index.cfm

- Measures: aggregated data on quantities of materials or waste reduced, incorporates Global Reporting Initiative tool, estimates cost savings and annual reductions

EC-OR Metrics Database

- Began as an unfunded projected started by P2 team in Ontario Region
- Attended a Metrics workshop held by NEWMOA and discussed potential for adding Canadian fields
- Started to create a database in MS Access
- Expanded into a joint project with Quebec Region
- Integrated EnviroClub measurements into the database

Progress to Date

- Received $20K from the Innovation and Learning Fund for 2004-5
- Pilot project between Ontario and Quebec Region's P2 team
- Negotiated service agreement with Downsview IT development division
- Database requirements (data dictionary) and specifications (ERD) developed and finalized
- Database design started by Downsview IT team (to be completed by Jan 2005)
- Core measures list initiated
- Project adopted by National Office of Pollution Prevention
- Interface and system design diagrams initiated

Objectives of the Database

- P2 Measurement database will:
  - demonstrate that federally supported P2 programs are delivering value for their clients, the public and tax payers
  - help policy makers and managers assess P2 and understand what P2 efforts work as they set priorities and program goals and objectives
  - help evaluate progress toward P2 goals, identify gaps in information and pursue opportunities for new P2 projects
  - encourage transfer of knowledge between regions, branches and even divisions

Scope of the Database

- The first phase of this project will be limited to EC P2 programs including:
  – Voluntary P2 projects
  – Environmental Performance Agreements
  – Outreach campaigns
  – P2 Planning notices
- P2 project information including:
  – performance measures (toxic reductions, financial savings, partner contributions);
  – amount of time and financial resources spent on individual projects and reporting successes and deliverables consistent with the department’s priorities.

Operational Features

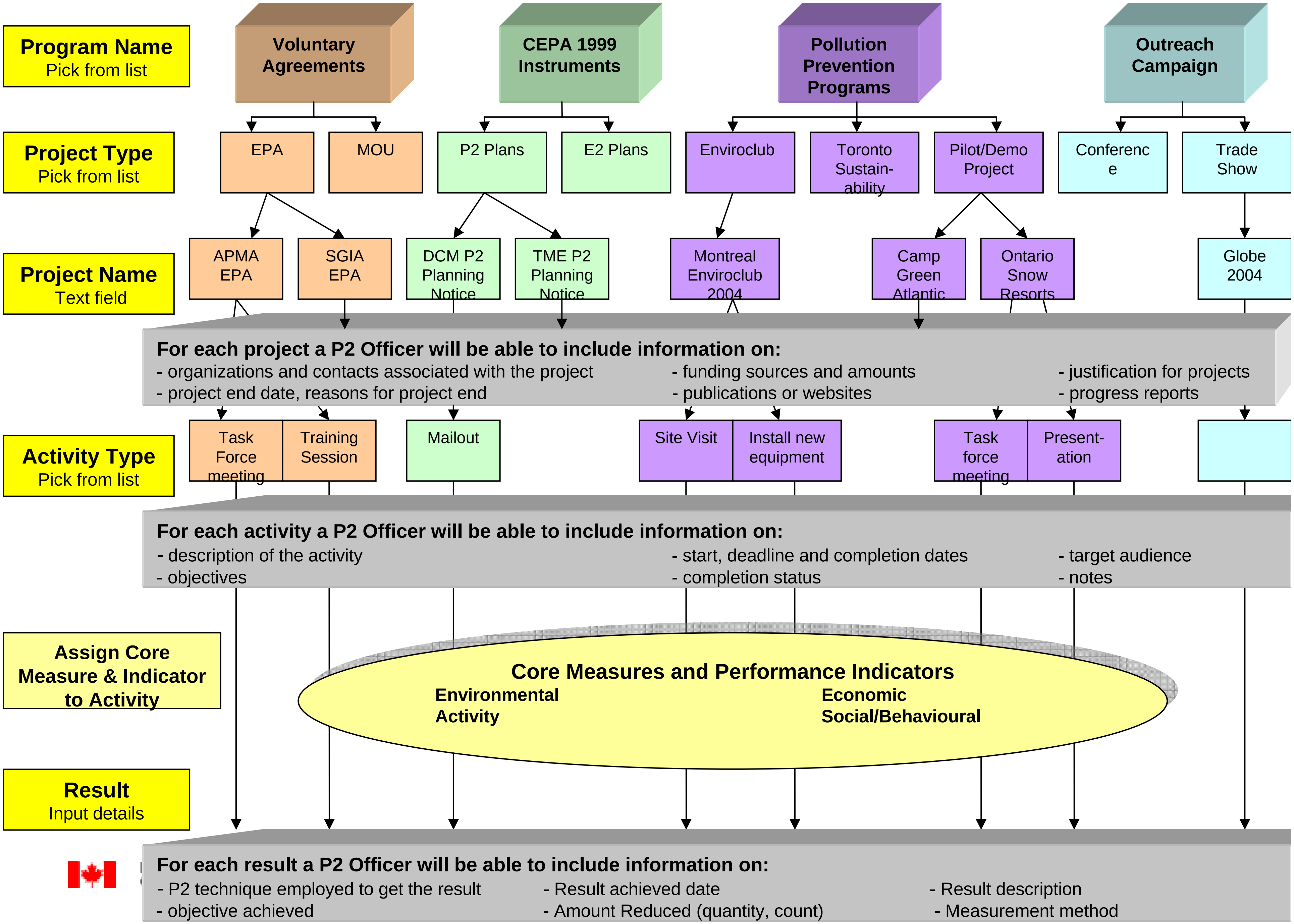
- Database to be web-based, EC intranet application with password protection
- System Access:
  - 1 Administrator, P2 Officers (P2 regional staff, Risk Managers) able to input project data
  - Other system users will only be able to view data and generate reports
- Calculation and data analysis capabilities
- Data export – capable of downloading raw data for further analysis

Database Information Fields

- Project details/background information
- Justification of the project
- Project contact and partner details
- Resources – funding, staff time, project costs, in kind contributions
- Core measures and indicators assigned to each project and activity
- Activities completed for each project
- Results – output and outcome results of the activities and project

Database Structure

How is the database set up?



Program Name
Pick from list
Voluntary Agreements
CEPA 1999 Instruments
Pollution Prevention Programs
Outreach Campaign
Project Type
Pick from list
EPA
MOU
P2 Plans
E2 Plans
Enviroclub
Toronto Sustain-ability
Pilot/Demo Project
Conferenc e
Trade Show
Project Name
Text field
APMA EPA
SGIA EPA
DCM P2 Planning Notice
TME P2 Planning Notice
Montreal Enviroclub 2004
Camp Green Atlantic
Ontario Snow Resorts
Globe 2004
For each project a P2 Officer will be able to include information on:
- organizations and contacts associated with the project
- project end date, reasons for project end
- funding sources and amounts
- publications or websites
- justification for projects
- progress reports
Activity Type
Pick from list
Task Force meeting
Training Session
Mailout
Site Visit
Install new equipment
Task force meeting
Present-ation
For each activity a P2 Officer will be able to include information on:
- description of the activity
- objectives
- start, deadline and completion dates
- completion status
- target audience
- notes
Assign Core Measure & Indicator to Activity
Core Measures and Performance Indicators
Environmental
Activity
Economic
Social/Behavioural
Result
Input details
For each result a P2 Officer will be able to include information on:
- P2 technique employed to get the result
- objective achieved
- Result achieved date
- Amount Reduced (quantity, count)
- Result description
- Measurement method

Step 1: Add a Project

- Determine with Program Type your project falls under:
  - Voluntary Agreements
  - CEPA Instruments
  - Pollution Prevention Programs
  - Outreach Campaign
- Begin entering your project information
  - Mandatory fields
  - Drop down/pick lists

Environment Canada Environnement Canada

Canada

Français	Contact Us	Help	Search	Canada Site
What's New About Us	Topics	Publications	Weather	Home
Great Lakes	Pollution	Laws	Science	Wildlife

- Add Project
- Edit Project
- Add Organization
- Edit Organization

Add Project

Additional tabs:

- Funding
- Progress reports
- Publications

Enter Project Information:

Program:*

Project Name:*

Project Type:*

Project Start Date:* YYYY MM DD

Estimated Project Length:

Project Objective:

Federal P2 Strategy:*

- With Federal Government
- With Other Governments
- With Industry
- With Canadian Industry
- With International Community

Can choose more than one

Justification:*

- Reduction of CEPA toxics
- Reduction of COA substanc
- Clean Environment Table
- Engage SME
- Cost Effective
- CEPA P2 Plan

Project Type:

- EnviroClub
- EPA
- P2 Planning Notice
- Pilot Project
- Outreach Event
- Assistance Program
- Website
- Training Program

Reason for Project End (drop down?):
- Objectives met
- Funding expired
- Partners withdrew
- Lack of resources
- Change in departmental priorities
- Was not feasible
- Change in scope

Number of Stakeholders:

Potential Audience Size:

Estimated Cost of Project:

Project Website Address:* http://

Publications Produced:

Project End Date:* YYYY MM DD

Description of Reasons for Project End:

Next Steps:

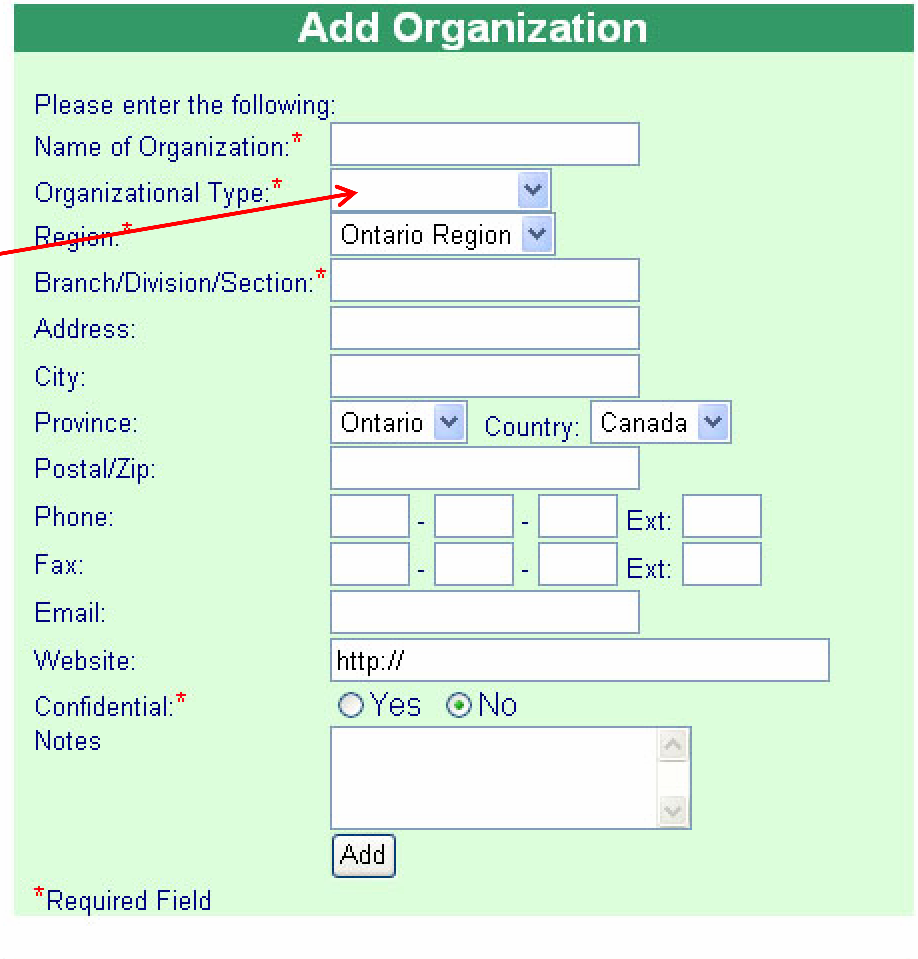
Is the Project Archived? Yes No

Notes:

Save

*Required Field

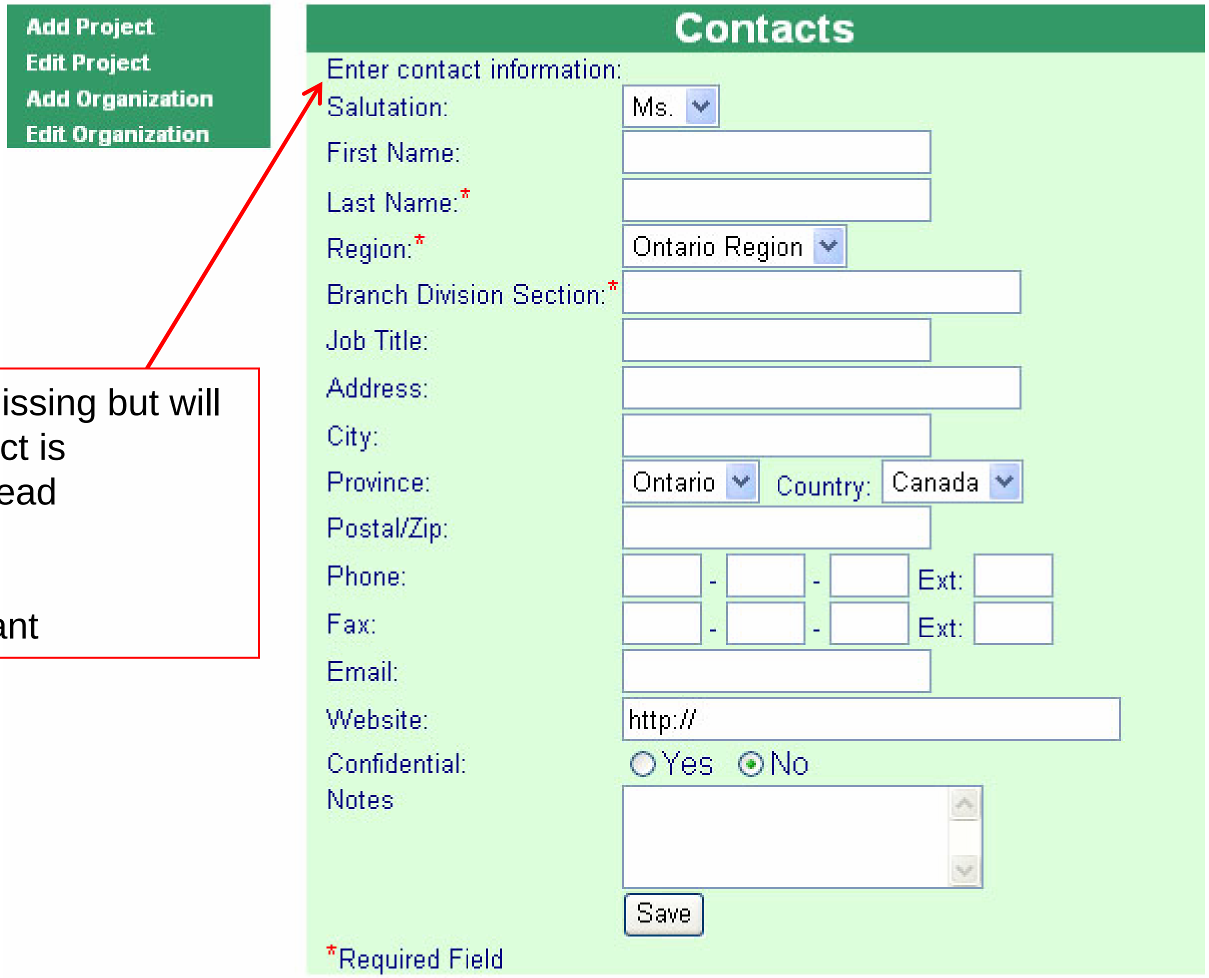
Step 2a: Organization Information



Organization Type:

- Federal Government Dept
- Provincial Government
- Municipal Government
- Industrial Facility
- Association
- Non-Governmental
- Consulting Firm
- Small business
- Corporation

Step 2b: Add Contact Information


Add Project
Edit Project
Add Organization
Edit Organization

Contacts

Enter contact information:

Salutation:	Ms.
First Name:	
Last Name:*	
Region:*	Ontario Region
Branch Division Section:*	
Job Title:	
Address:	
City:	
Province:	Ontario Country: Canada
Postal/Zip:	
Phone:	- - Ext:
Fax:	- - Ext:
Email:	
Website:	http://
Confidential:	Yes No
Notes	
	Save

*Required Field

Contact type missing but will identify if contact is
- Project lead
- Partner
- Client
- Consultant

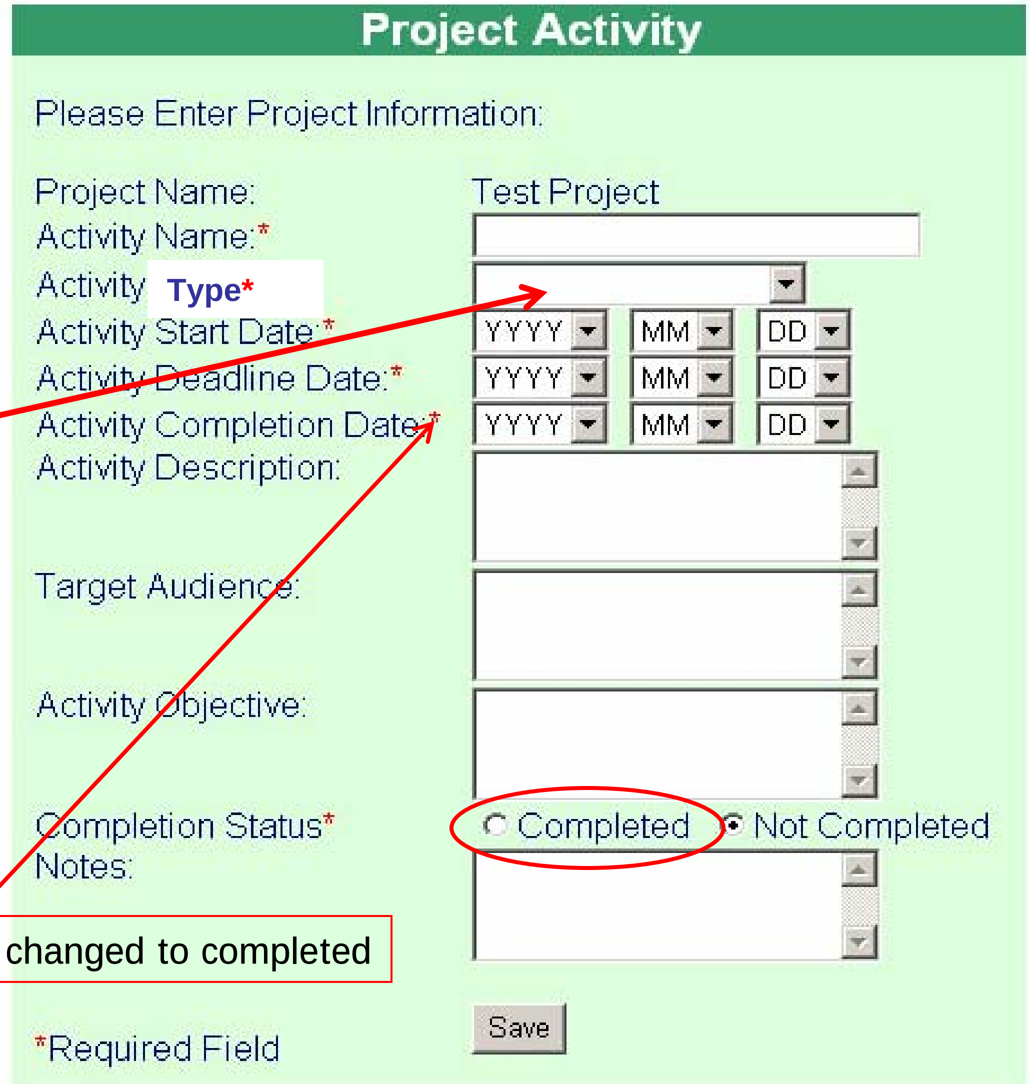
Additional Features - Project

- Not yet built but important features of Project Information screens will include:
  - Project Funding:
    - Source of the funding
    - Linked with a contact already entered for the project
    - Funding year and amount
  - Progress Reports
    - Summary of annual progress/accomplishments
  - Project Publications
    - Publication name, date
    - Author
    - Description of the publication

- These will be additional screens that are linked to the main project information screen

Step 3: Add Activities to your Project

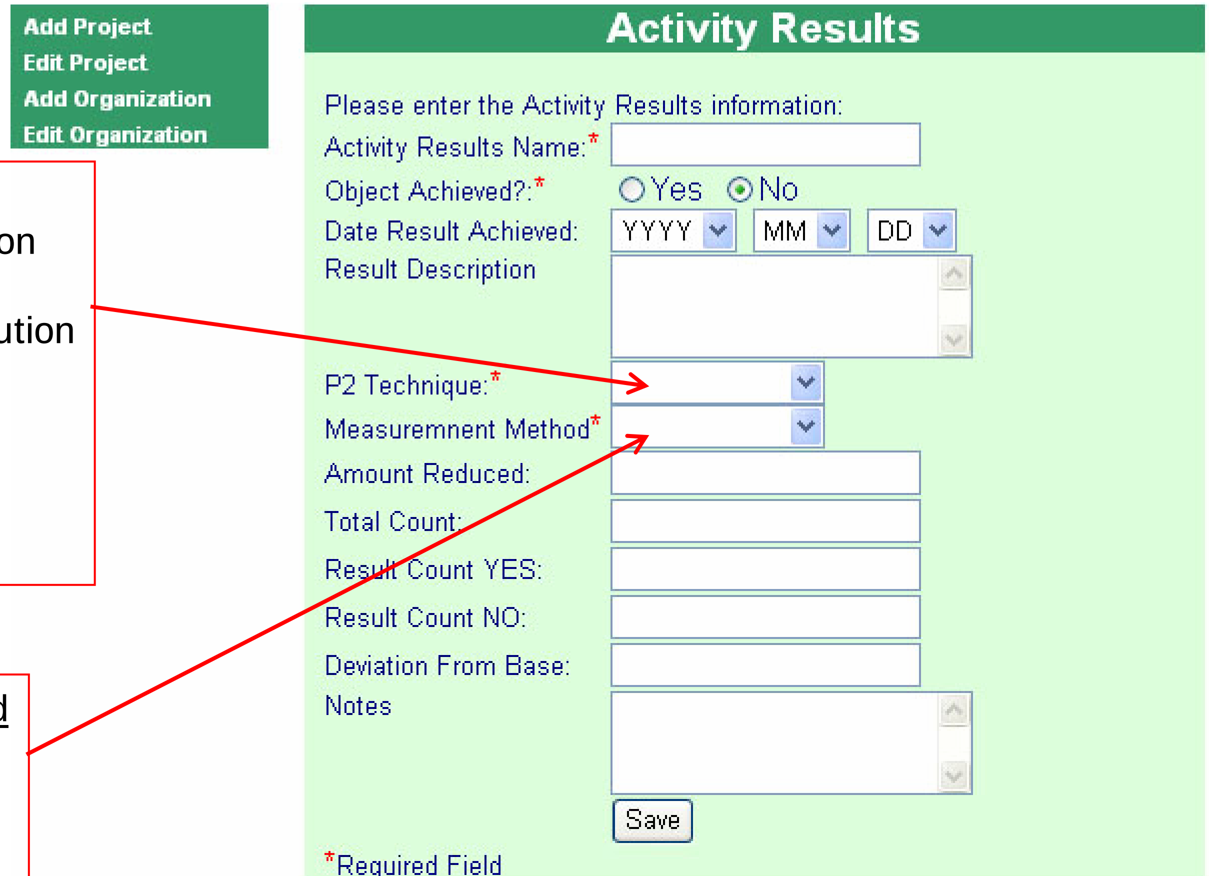
Activity Type:
- Workshop
- Training Session
- Conference
- Teleconference
- Meeting
- Audit
- Site Visit
- Application of P2 Technique
- Document development
- Mailout
- Website development
- Information posted to website



Only required if completion status is changed to completed

Environment Canada

Step 4: Add Results to your Activity



<u>P2 Technique Look Up</u>
- Product Design and Reformulation
- Equipment Modifications
- Materials and Feedstock Substitution
- Operating Efficiencies
- Employee Training
- Purchasing Techniques
- Inventory Management
- Onsite Reuse and Recycling

<u>Measurement Method</u>
- Stock
- Flow
- Boolean
- Qualitative

Additional Features – Activity & Result

- Not yet built but important features of Activity and Result Information screens will include:
  - Activity Resources:
    - Type of resource i.e. equipment purchase, rental, consultant fee, travel expenses
    - Description and units (i.e. person, trip, item)
  - Combustion Process – for energy reduction measurement
    - Amount of Fuel
    - Type of Apparatus (i.e. boiler)
    - Emission Factors and calucators
  - Core Measurement and Indicator
    - Pre-determined list of core measurements (next slide)
    - When a measure is selected a set of indicators will be available to choose from

Core Measurements

- Environmental (quantity)
  - Reduction of Toxic Substances
  - Reduction of Hazardous Waste
  - Reduction of Substances of Concern
  - Reduction of Solid Waste
  - Reduction of Atmosphere Emissions
  - Conservation of Energy
  - Conservation of Water
  - Reduction of Water Pollution
- Economic ($)
  - Financial Savings/reduced operating cost
  - Financial Investment in P2 Techniques / Programs / Activities
  - Cost of project
  - Return on Investment (Year)
- Activity (# or count)
  - Facilities participating
  - People trained in P2
  - Training sessions
  - Number of P2 plans prepared/implemented
  - Number of site visits conducted
  - Number of web visits to Online information
- Social/Behavioural (+/-)
  - Change in work condition
  - Change in quality of product
  - Change in health & safety
  - Change in employee motivation
  - Change in corporate image
  - Change in awareness of P2
  - Change in commitment to P2

List of Indicators

- When a measure is selected a set of indicators will be available to choose from

<u>Examples:</u>

- Activity #1: Installation of new equipment that will eliminate Dichloromethane (DCM):
  - Core Measure selected: Reduction of Toxic Substances
  - List of indicators specific to that measure will appear and for this particular one will be only CEPA 1999 Schedule 1 substances
  - You would select Dichloromethane
- Activity #2: Training program on water efficiency
  - Core measure selected: Conservation of water
  - List of indicators specific to that measure will appear and in this case the only indicator will be water

Data Definition and Consistency

- Data Definitions will be crucial for core measures and other elements:
  - to ensure users are reporting the same data in the same fields and in the same units
  - Avoid double counting
  - Generate meaningful reports
- User guide will be produced to promote consistency
- Training for all P2 Officers

Reporting Features

- Summary Reports
  - Tabular reports can be created based on existing or new data collection templates
  - Charts, graphs easily created to illustrate achievements, successes and gaps
- Data Queries
  - Projects within database can be queried based on sectors, activities, substances, regions, staff time, costs, etc.

Next Steps

- ✓ System design by Ontario IT developers (March-May 2005)
- ✓ Begin interface development by (summer 2005)
- ✓ Present at CPPR in Victoria (June 2005)
- Set up project working group led by to finalize database features, functions and core measures
- Finalize list of Core Measures and Indicators to be tracked in database
- Build the report functions (fall 2005)
- Testing
- Write user and data definitions protocol
- Roll out and training to Environment Canada staff (winter/spring 2006)

Questions

- For more information on this project or to participate in the task force please contact:

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