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# **Volunteering for State Cleanup Programs**

The “Business of Brownfields” Conference  
April 17, 2008  
Pittsburgh, PA



## RESEARCH RESULTS FOR REMEDICATION AND REDEVELOPMENT

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### PROJECT TEAM

- **Kris Wernstedt**, Resources for the Future/Virginia Tech, Urban and Regional Planning Center
- **Tom Lyon**, University of Michigan, Stephen M. Ross School of Business
- **Allen Blackman**, Resources for the Future
- **Sarah Darley**, Resources for the Future
- **Kelly Novak**, Virginia Tech Center for Public Administration and Policy



## PROJECT GOAL

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Learn about factors that influence voluntary cleanup programs and identify the motivations of different types of parties who participate in voluntary cleanup programs;

Understanding behavior of regulated and non-regulated entities across a range of “corporate” settings (private, public and individuals); and

Add to literature on voluntary corporate behavior and identify gaps in policy and practice



## PROJECT ACKNOWLEDGMENT & DISCLAIMER

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- **Project began in 2004 with support from EPA's National Center for Environmental Research under STAR Grant R832154**
- **The project preliminary findings have not been subjected to EPA's peer and policy review so does not necessarily reflect EPA views (and no endorsement)**



## INTRODUCTION

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### □ **Legislative Background**

- ✓ Comprehensive Environmental Response, Compensation, and Liability Act, 1980 (Superfund or CERCLA)
- ✓ Resource Conservation & Recovery Act, 1976
- ✓ Small Business Liability Relief & Brownfields Revitalization Act, 2002
- ✓ State laws

### □ **200,000-1 million contaminated and potentially contaminated sites still not addressed**

- ✓ liability concerns\*
- ✓ limited regulatory resources
- ✓ limited market demand

### □ **nearly all states have established voluntary cleanup program (VCPs) to provide incentives for remediation**

- ✓ liability relief
- ✓ variable cleanup standards
- ✓ other types of regulatory flexibility
- ✓ financial incentives

### □ **over 20,000 sites have participated in VCPs**



# PROJECT STUDY TARGETS

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## Three Part Study

- ❑ **Motivations** of public and private entities to enter voluntary cleanup programs
- ❑ Features of voluntary cleanup programs **attractive** to program participants and state officials
- ❑ **Relationship** between participant motives and other characteristics



## CHARACTERISTICS CONSIDERED

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- Enrolled **property characteristics** – land use, market value, cleanup costs
- **Community demographics** – income, education levels, political engagement
- **Participants** – Property interest in site, public or private entity, size in terms of budget or employees



## RESEARCH DESIGN

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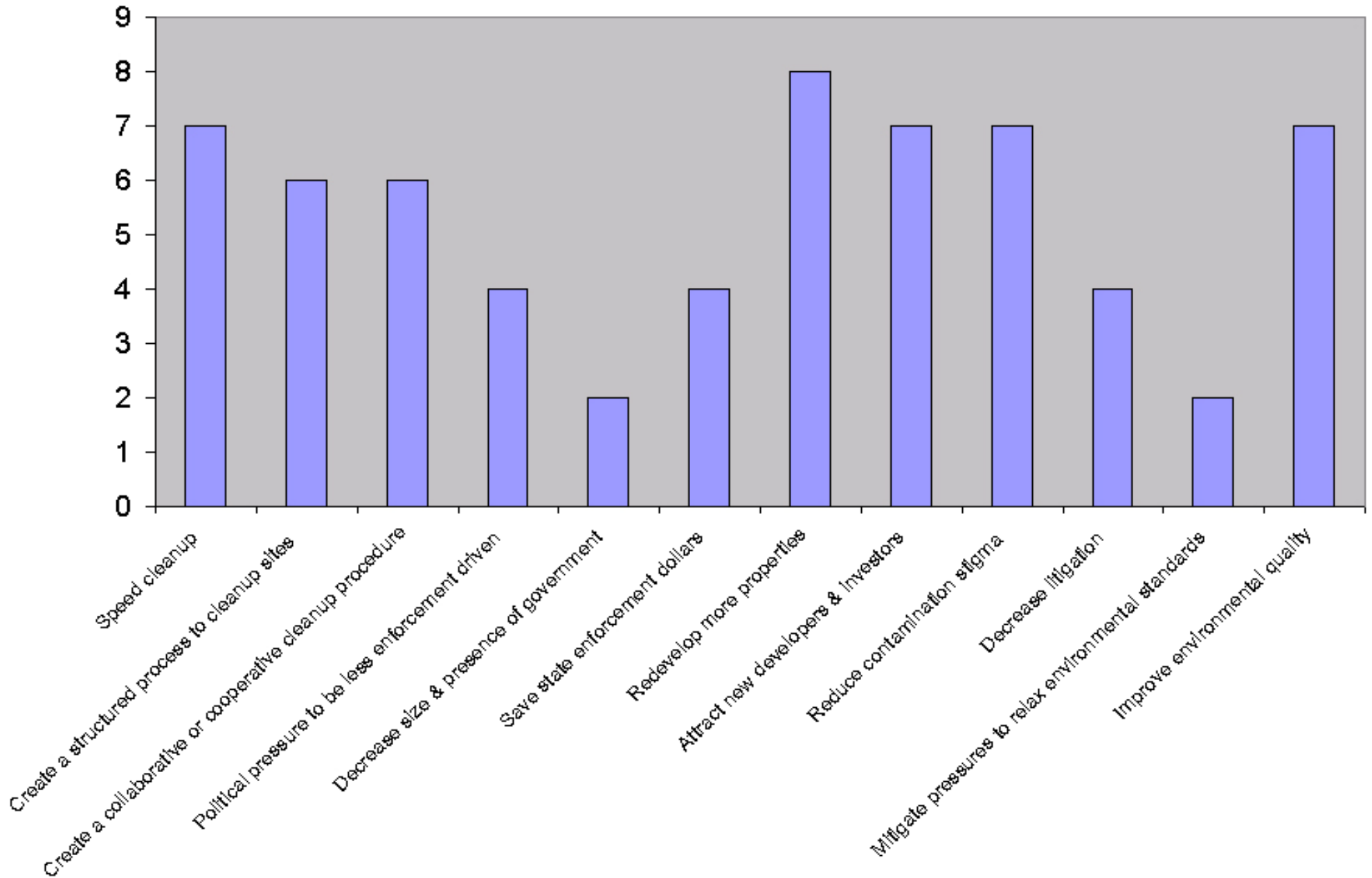
- ❑ **Interviews** of state voluntary cleanup program officials
- ❑ **Survey** of voluntary program participants
- ❑ **Three to six case studies** of voluntary programs  
Oregon will be one of the case studies  $n = 2,650$  sites
- ❑ Analysis: modeling by Tom Lyon, is focusing on asymmetrical aspects of the findings using **regression analysis** to explain motivation-characteristics relationship and for **case studies** currently a **simple probit** with possibility of **including duration analysis**



## INTERVIEWING AND SURVEY PROCESS

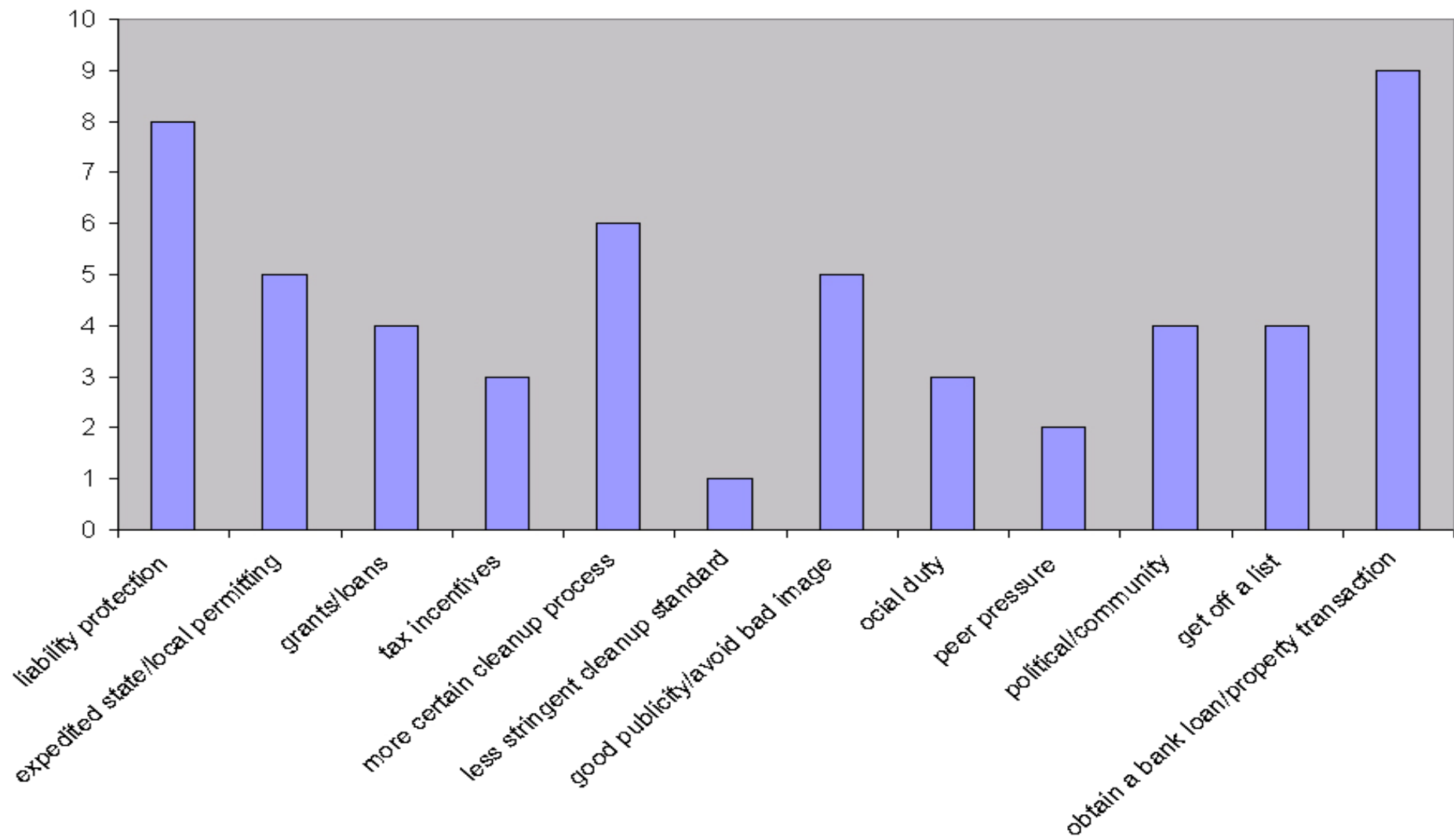
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- Currently have **interviewed 47 state** voluntary cleanup programs
- Qualitatively there are **Likert-scaled attitudinal** questions
- Compiling **lists** of voluntary cleanup program **participants** to further survey
- Property characteristics are aggregated using Standard Industrial Classification (SIC) codes and Census tracts for demographics





## State Perceptions of Participants' Motivations to Enter VCPs





Help grow our knowledge.

Take our voluntary cleanup  
survey online.

[www.nvc.vt.edu/uap/survey.html](http://www.nvc.vt.edu/uap/survey.html)



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## **Case Study:**

# **What Drives Participation In Oregon's Voluntary Cleanup Programs?**



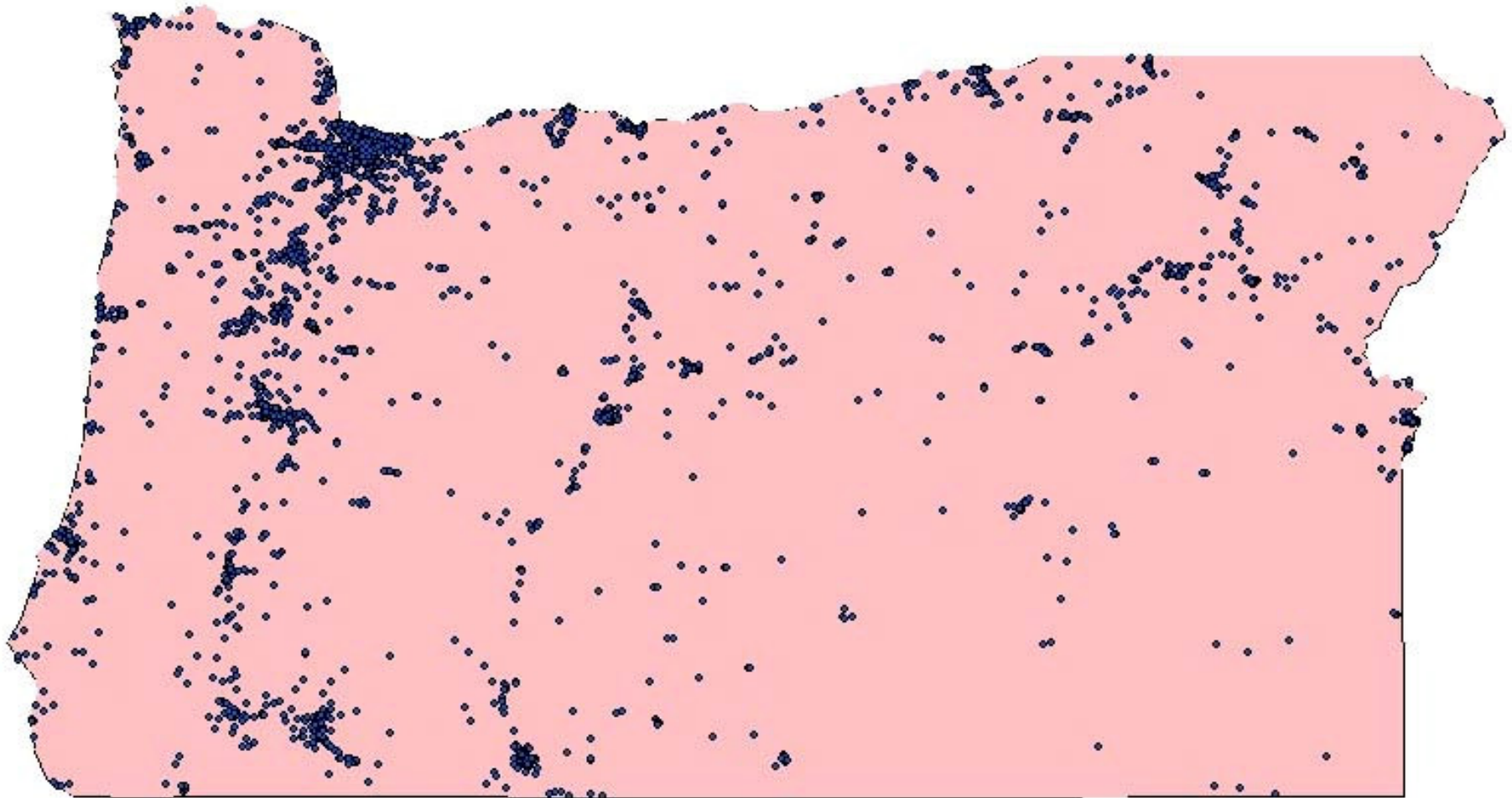
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- Why Oregon?
    - ✓ robust VCP
    - ✓ maintains a registry of known contaminated sites (ECSI) including those NOT participating in VCP
  - Main findings
    - ✓ VCP does attract sites with significant contamination
    - ✓ participation in VCP correlates with public listing of sites
    - ✓ difficult to interpret the influence of public listing on voluntary program participation



## Oregon Department of Environmental Quality (DEQ) Cleanup Programs

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- Environmental Cleanup Site Information (ECSI) data base
  - Known contaminated, potentially contaminated, formerly contaminated sites
  - July 2006: 4,223 sites





## Analytical Framework

- managers join VCP/ICP if expected benefits  $>$  costs

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  - expected benefits of joining
    - avoided future liability costs from NFA
    - appreciation in property value from NFA
    - avoided costs imposed by community/NGOs
    - avoided additional (transactions and cleanup) costs of mandatory SRP
  - expected costs of joining
    - Transactions costs (pecuniary & nonpecuniary)
    - Cleanup costs
    - For non-ECSI sites, costs associated with informing DEQ about contamination
- expected benefits & costs vary across sites
- we don't observe benefits & costs directly, but do observe proxies



# Variables in Econometric Analysis

Variable	Description	VCP Sample		
		All n=1,680	Parts n=613	Nonparts n=1,067
<i>DEPENDENT</i>				
VCP	Participant in Voluntary Cleanup Program?*	0.365	1	0
ICP	Participant in Independent Cleanup Pathway?*	0.107	0.109	0.105
<i>INDEPENDENT</i>				
<i>Regulatory activity</i>				
CRL	On Confirmed Release List?*	0.255	0.423	0.159
CERCLIS	In CERCLIS?*	0.168	0.119	0.197
PERMIT	Has DEQ permit?*	0.168	0.194	0.150
E_REGION	In DEQ eastern region?*	0.263	0.321	0.229
W_REGION	In DEQ western region?*	0.371	0.238	0.448
NW_REGION	In DEQ northwestern region?*	0.366	0.440	0.323
<i>Neighborhood characteristics</i>				
HOUSEVAL	Median house value in census block group (\$)	142,237.1	145,068.4	140,610.5
TR_TIME	Med. travel time to work in census block group (min.)	12890.9	13,120.9	12,758.8
<i>Prior use</i>				
14 dummies	Two-digit SIC code categories			



## Case Study Conclusions

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- VCP and ICP attract sites w/ significant contamination
  - VCP: 41% of 613 participating sites “listed” in CRL
  - ICP: 25% of 155 participating sites “listed” in CRL
- listing associated w/ higher probability of joining VCP ( 28%)
  - is this because it increases regulatory & non-regulatory pressure and therefore raising expected benefit of joining?
  - an artificial result?



# Planner Respondents

## Reasons for Redeveloping Contaminated Properties

(for planner respondents w/ strong or very strong familiarity with brownfields, n=41)

Please indicate your view of the importance of each of the following reasons why contaminated properties should be redeveloped in your local area, using a scale of 1 (not important) to 5 (very important).

Reason	Percentage of respondents selecting "important" or "very important"
more efficient use of infrastructure	88%
remove eyesores	88%
increase tax revenue	87%
reduce environmental risk	78%
reduce public health risk	71%
create jobs	66%
part of area-wide redevelopment agenda	63%
reduce sprawl	56%
diversify business mix	41%
promote greenspace	32%



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