

ENVIRONMENTAL JUSTICE & RELOCATION

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THE GOALS OF THIS PRESENTATION

Examine the influence of
Demographic and Economic
Variables on the Releases

Analyze whether People Relocate to
Polluted Areas

ENVIRONMENTAL VARIABLES

- Total releases
- Total hazard (total releases*toxicity)
- Total onsite releases
- Total onsite hazard (onsite releases*toxicity)
- Percent onsite releases
- Percent onsite hazard
- RSEI Score

ECONOMIC AND DEMOGRAPHIC VARIABLES

Within 3 miles of the facility:

- Minorities over 90 percent
- Minorities over 75 to 90 percent
- Minorities over 50 to 75 percent
- Minorities over 25 to 50 percent
- Minorities over 5 to 25 percent
- Below poverty level over 25 percent
- Below poverty level over 10 to 25 percent
- Below poverty level over 5 to 25 percent
- Population over 50,000
- Percent > 35 without high school diploma

UNIVARIATE ANALYSIS

Examine the Impact of One Variable at a Time

All states and Puerto Rico, American Samoa, Virgin Island, Guam, Northern Mariana Islands included in the analysis.

Focus of Analysis

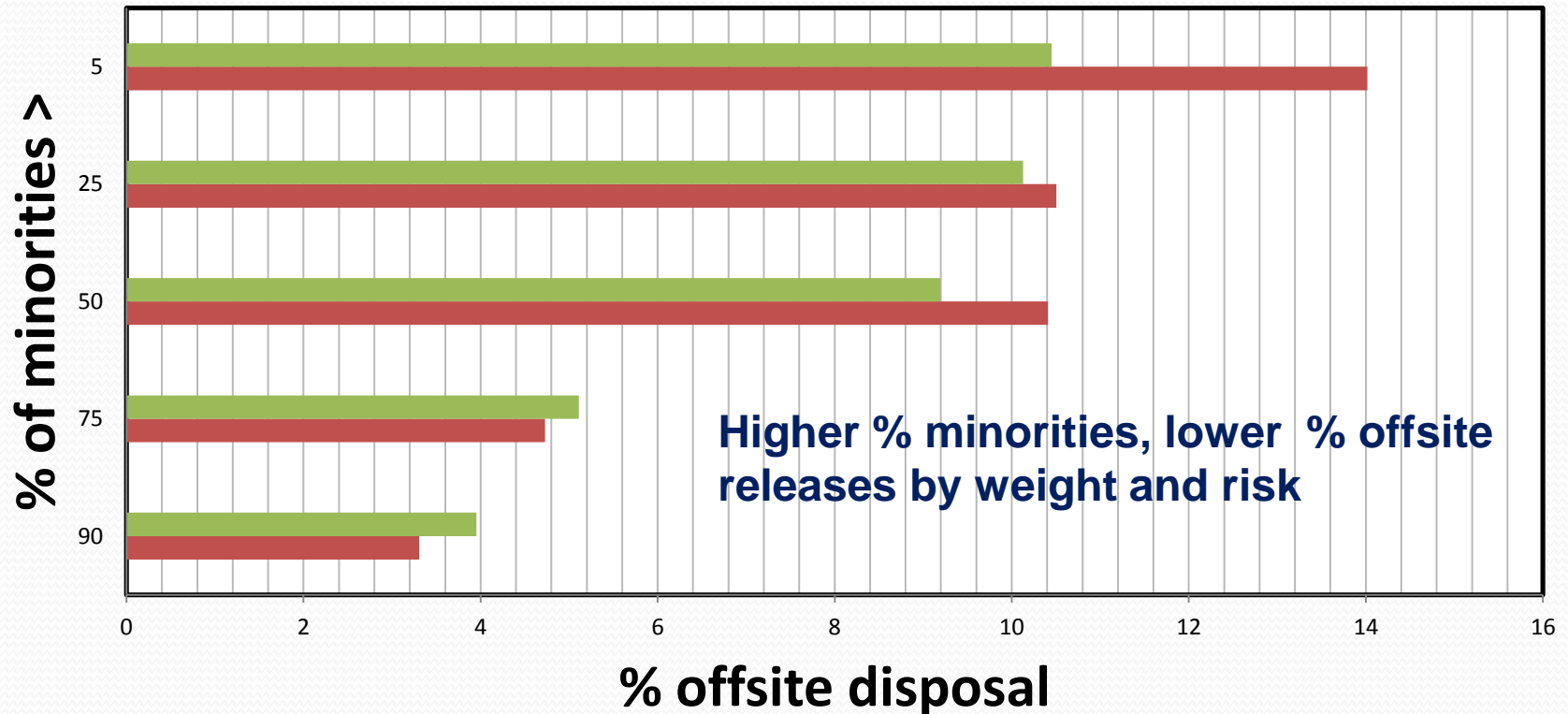
Off-Site Releases by Weight and Toxicity as a percent of total releases

- Higher off-site can be generally assumed to be better

Analysis of toxicity per pound of releases of On-Site & Off-Site Releases

- If off-site is higher, then the facility is releasing “more toxic” releases away from the facility

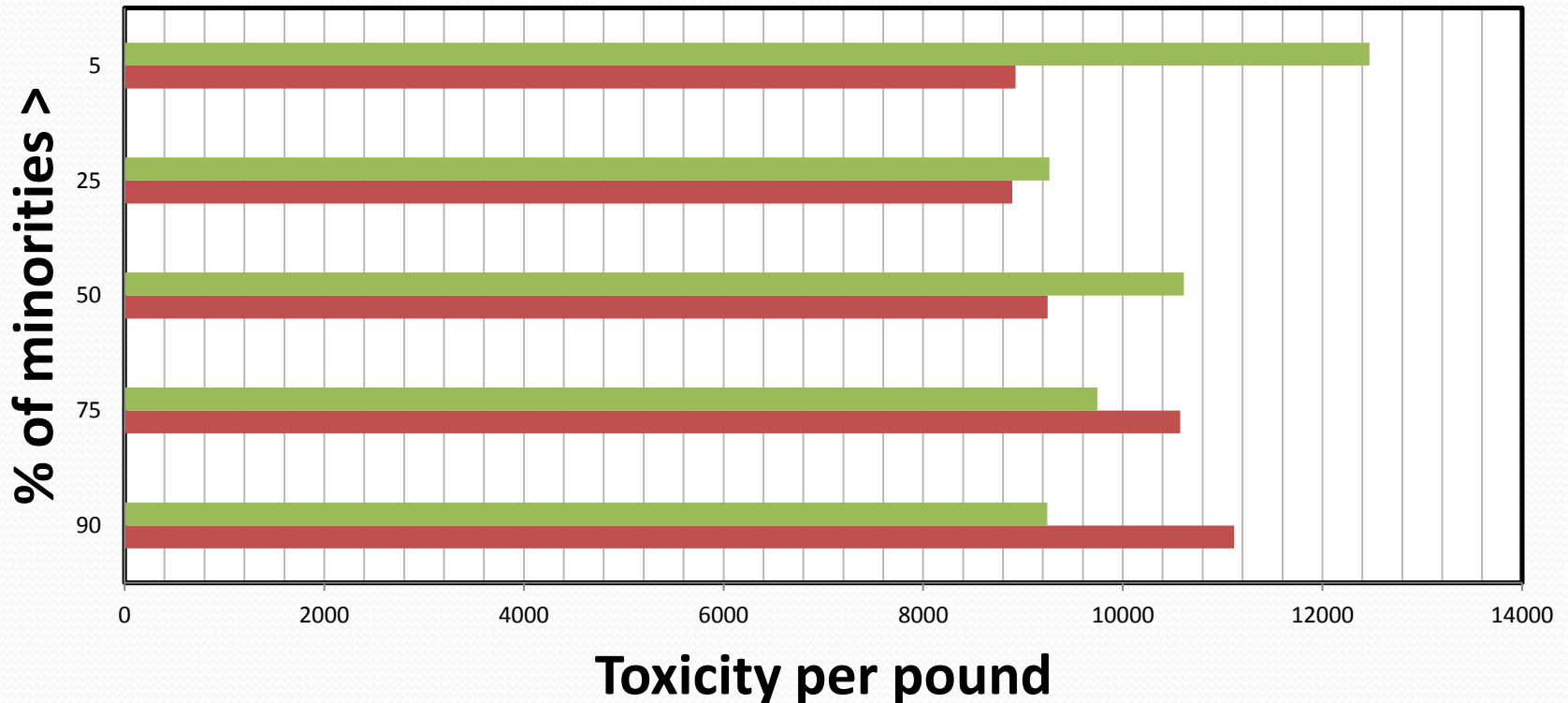
% of Off-Site Releases by Weight and Toxicity



■ % offsite disposal by wt

■ % offsite disposal by Toxicity

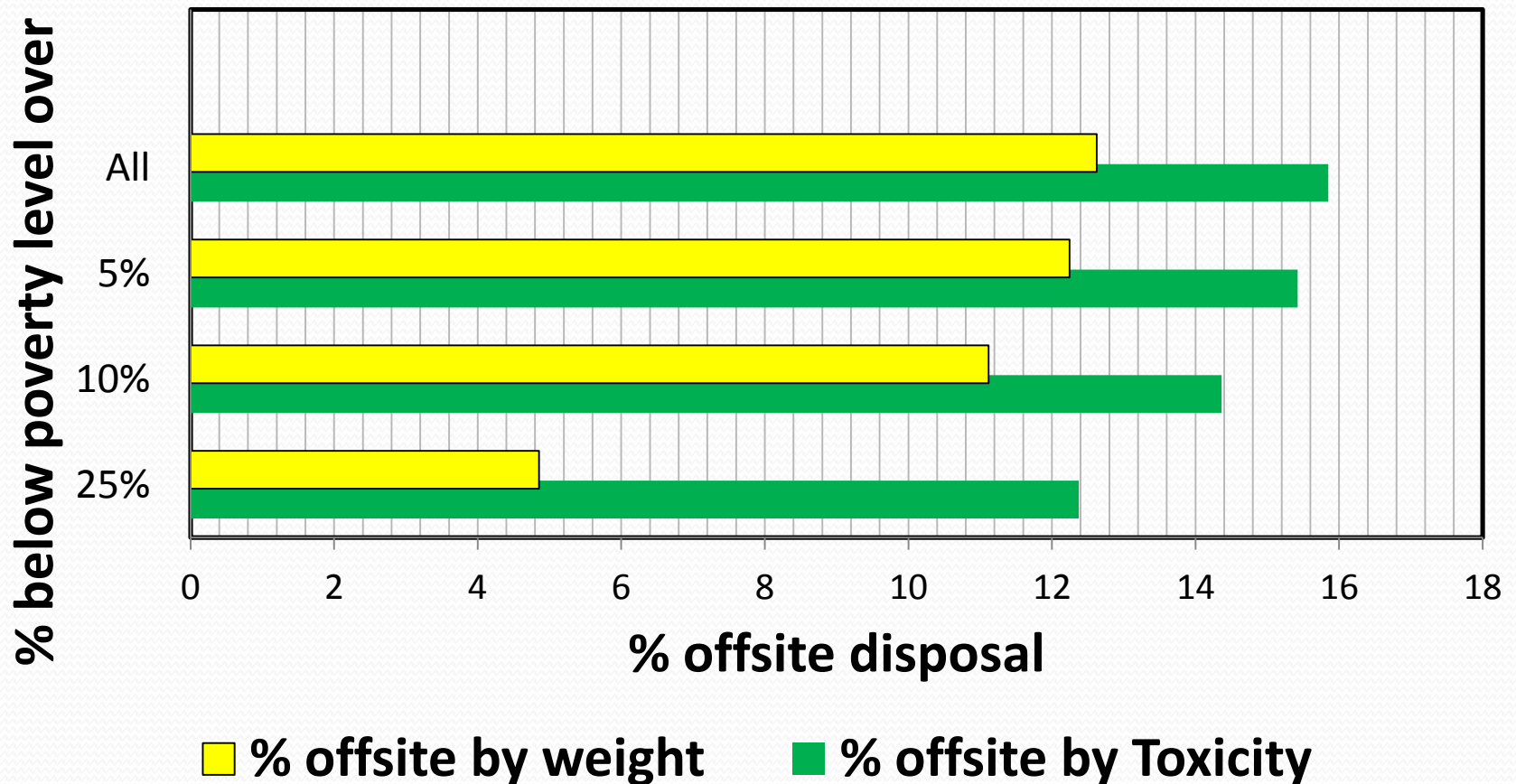
Toxicity per pound of On-Site and Off-Site Releases



■ off-site disposal toxicity ■ Onsite Disposal Toxicity

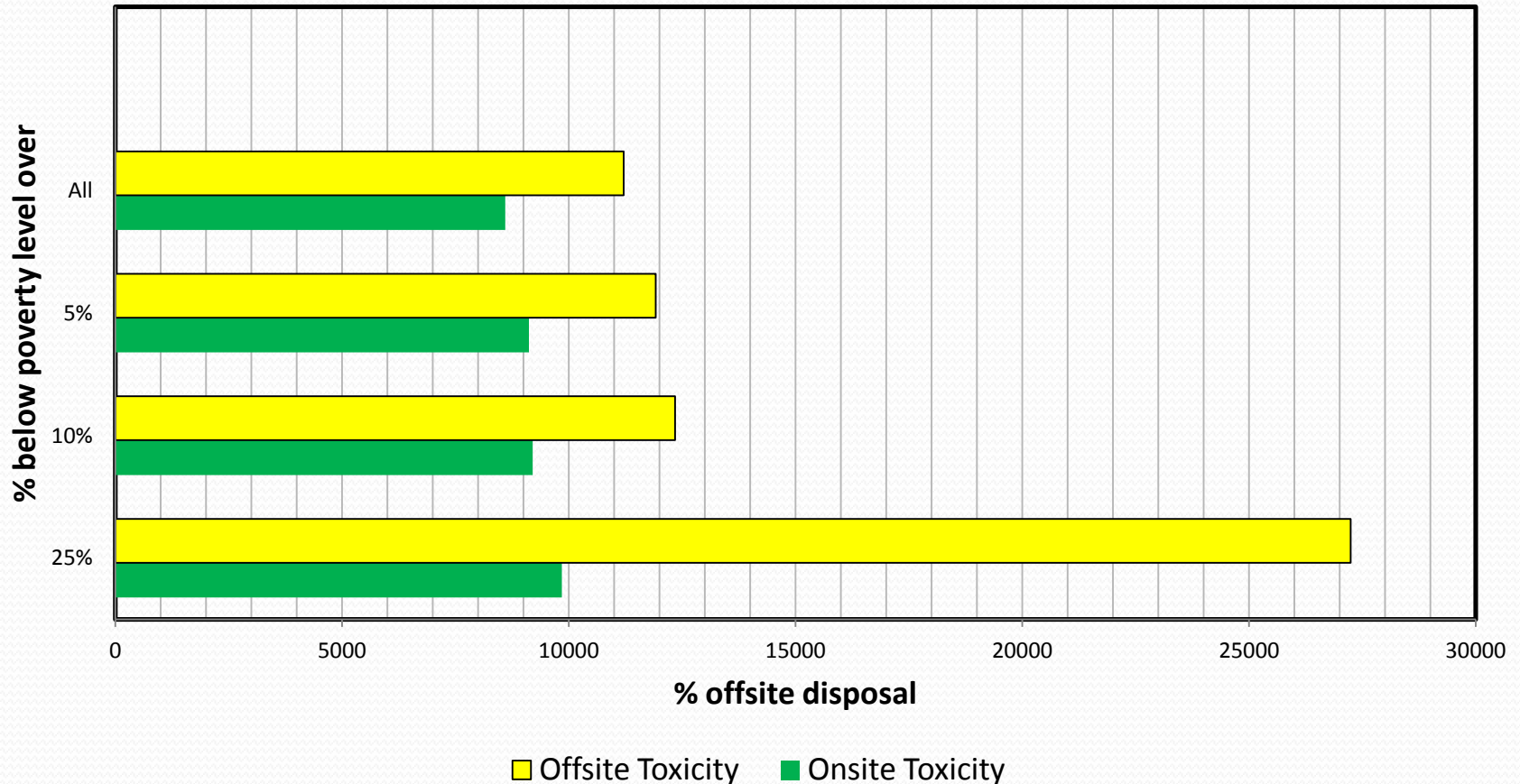
Higher % of minorities, higher toxicity per lb of on-site releases

% of Off-Site Releases by Weight and Toxicity



% of offsite releases by weight and toxicity increases with income

Toxicity Per Pound of On- & Off-Site Disposal by Poverty Level

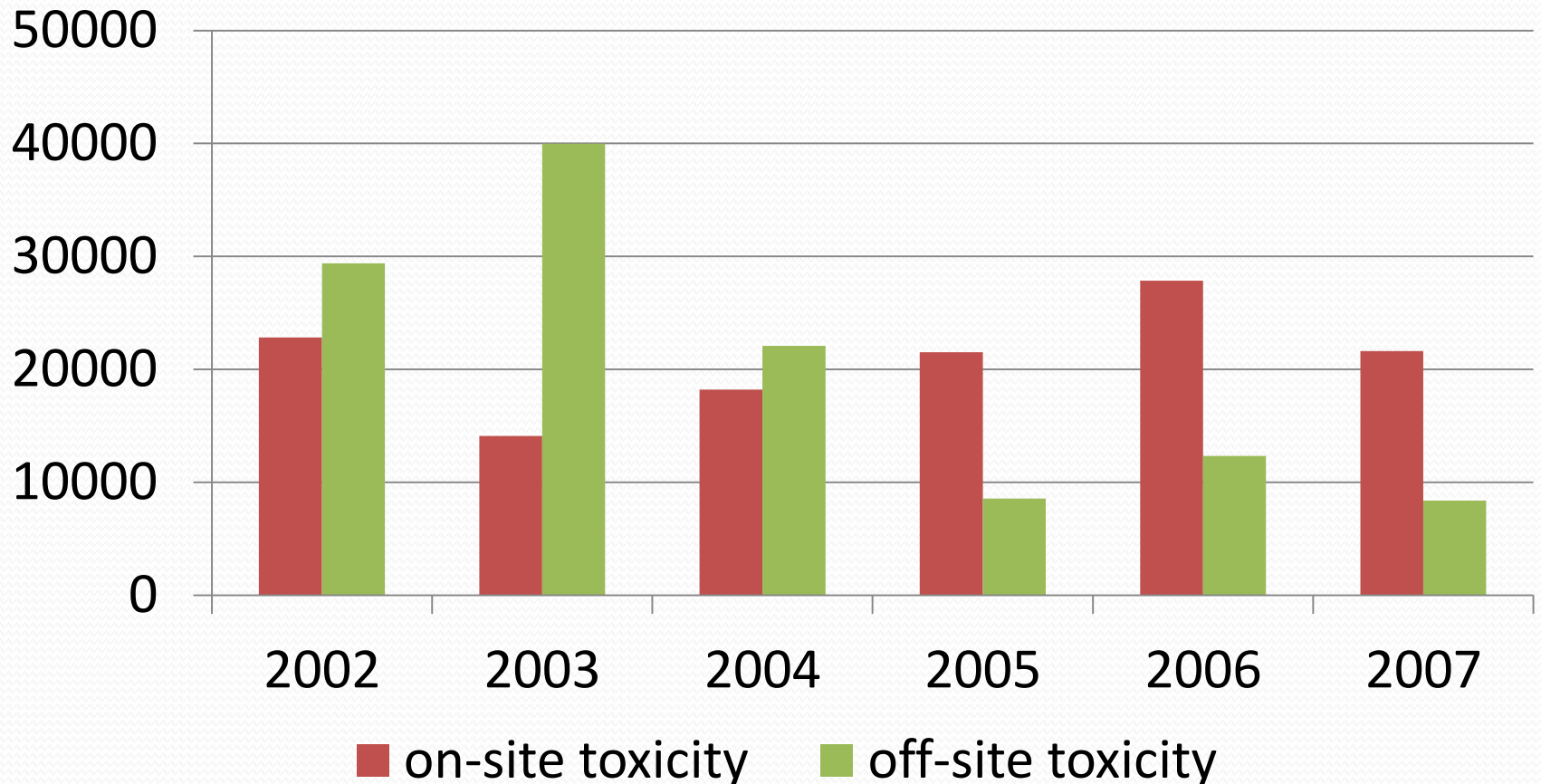


Toxicity per pound of releases increases with poverty level

Analysis 2 – Trend Analysis

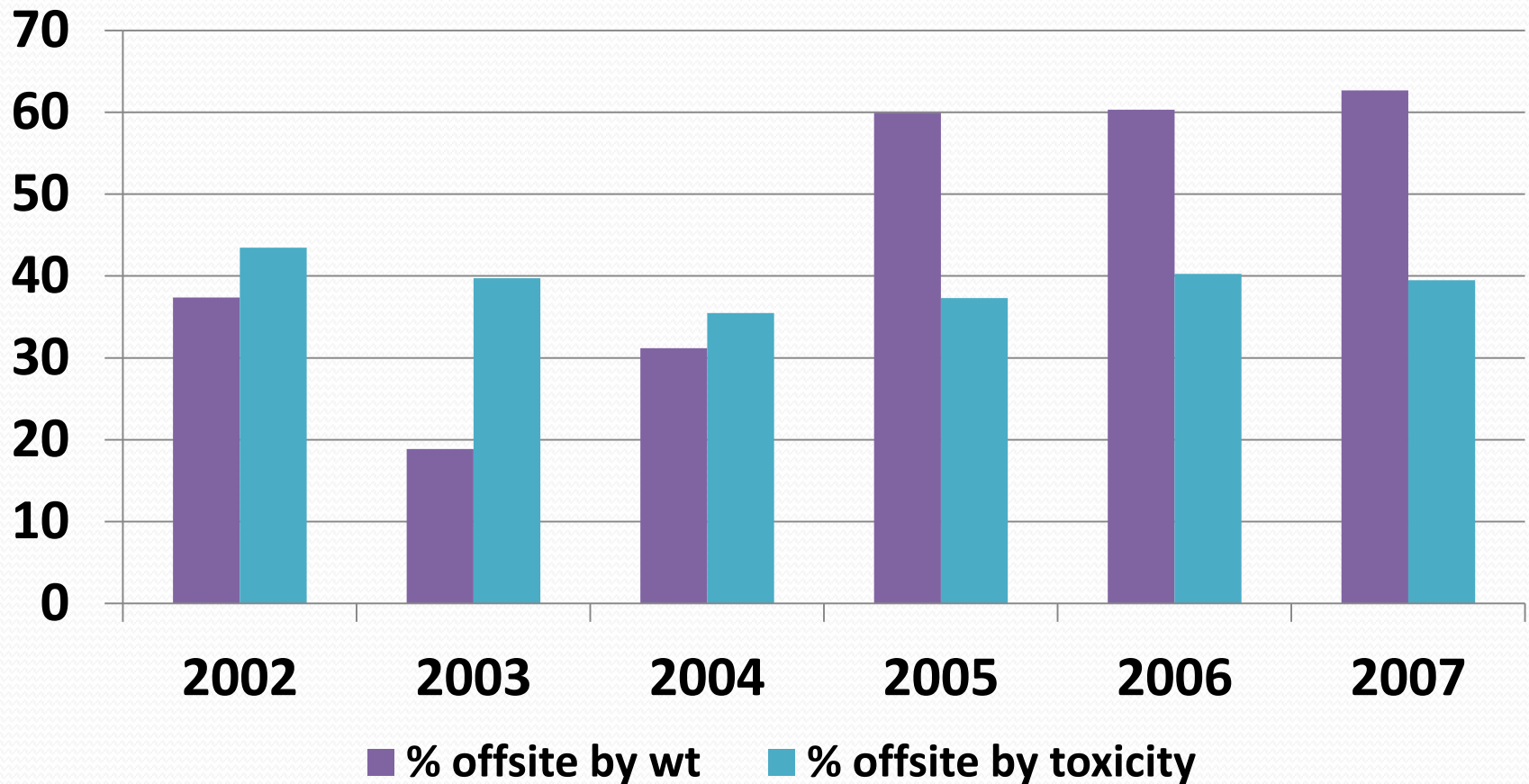
- Analysis of toxicity of off- and on-site releases by years, 2002-2007
- Analysis of percent of offsite releases by weight and toxicity by years, 2002-2007

Toxicity of On- & Off-Site Releases per pound for facilities with Minorities >90%



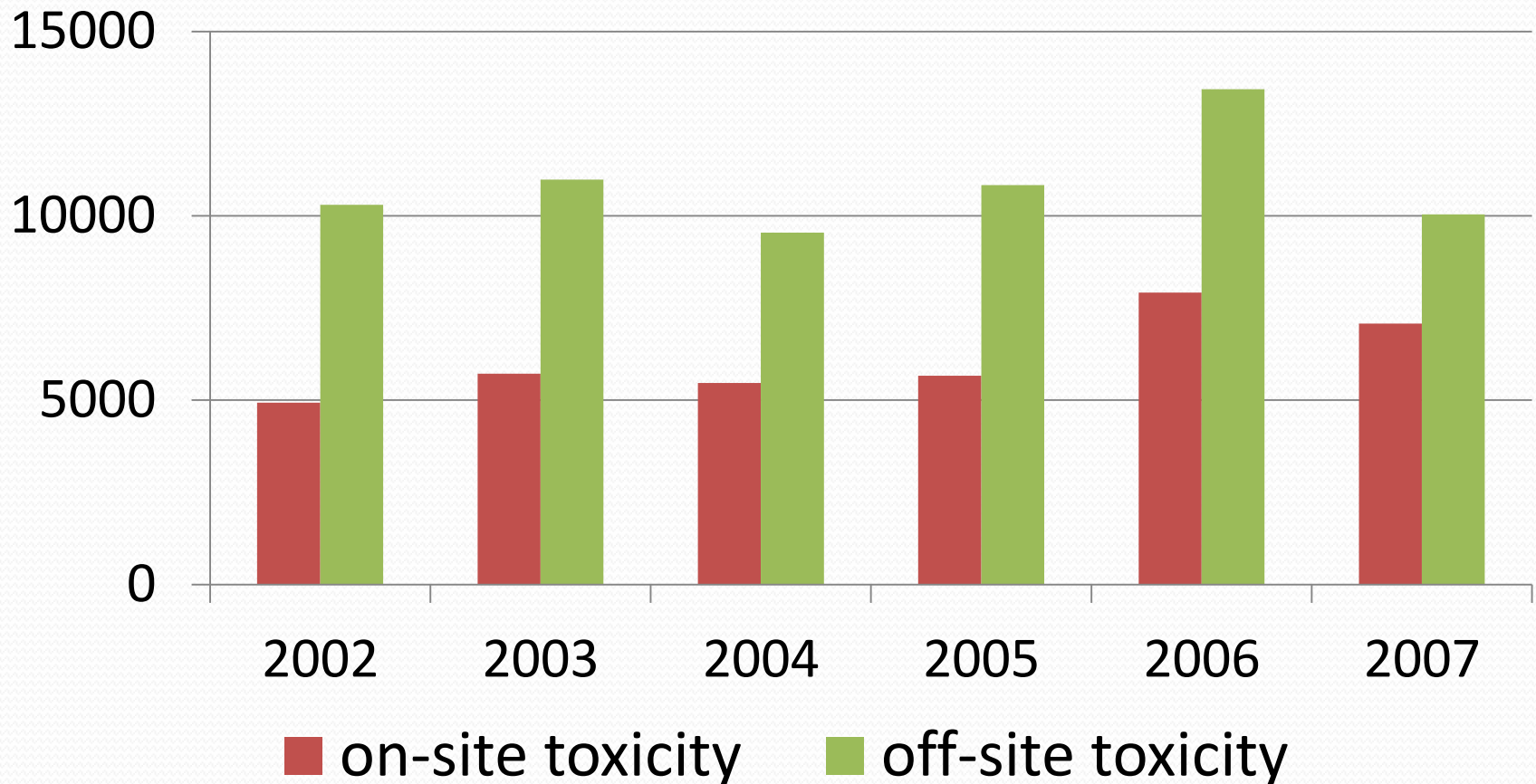
Not much change in the toxicity of on-site releases per pound

% offsite releases by wt and toxicity for facilities with minorities > 90%

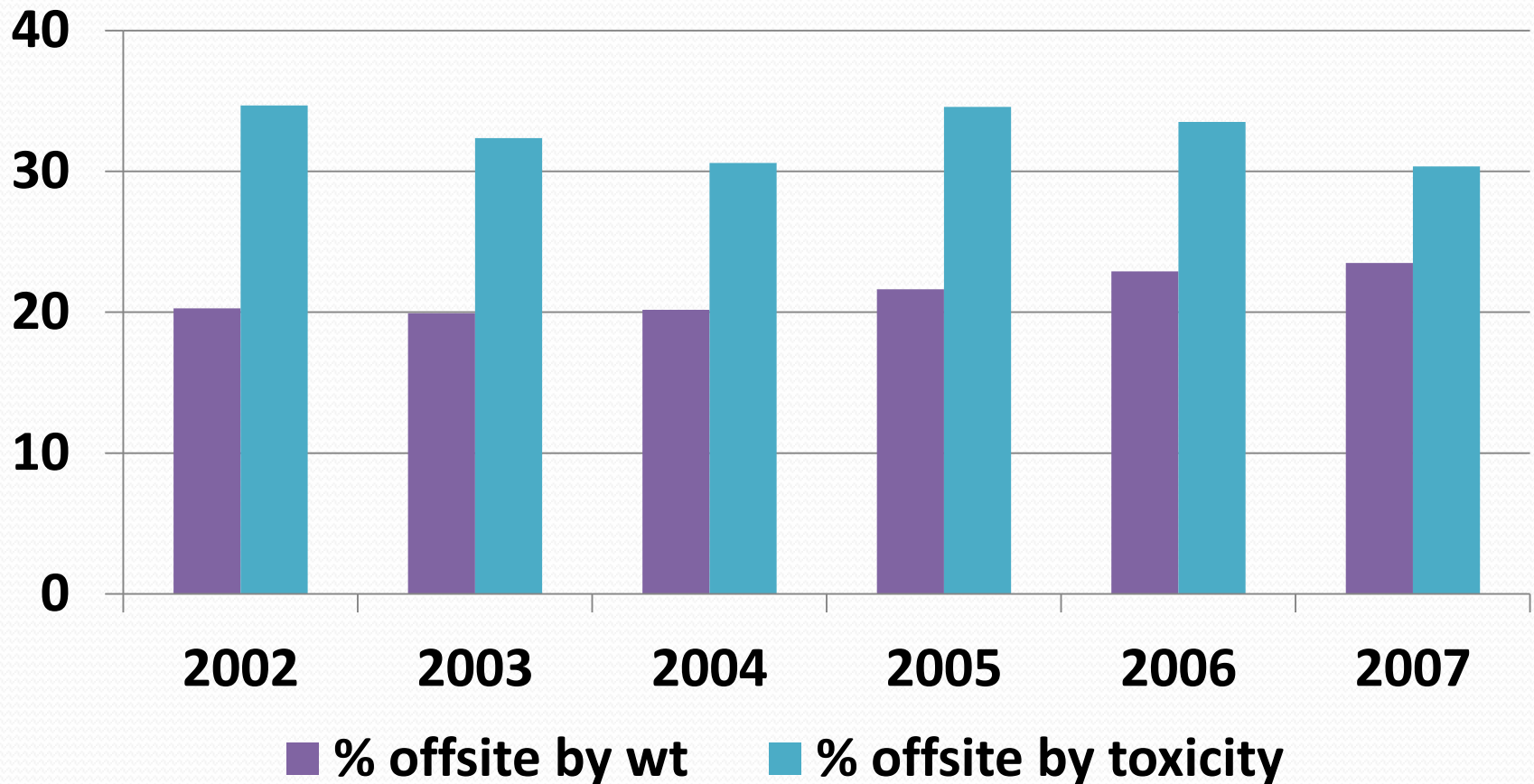


% of off-site releases increasing

Toxicity of On- & Off-Site Releases per pound for facilities with Minorities >5

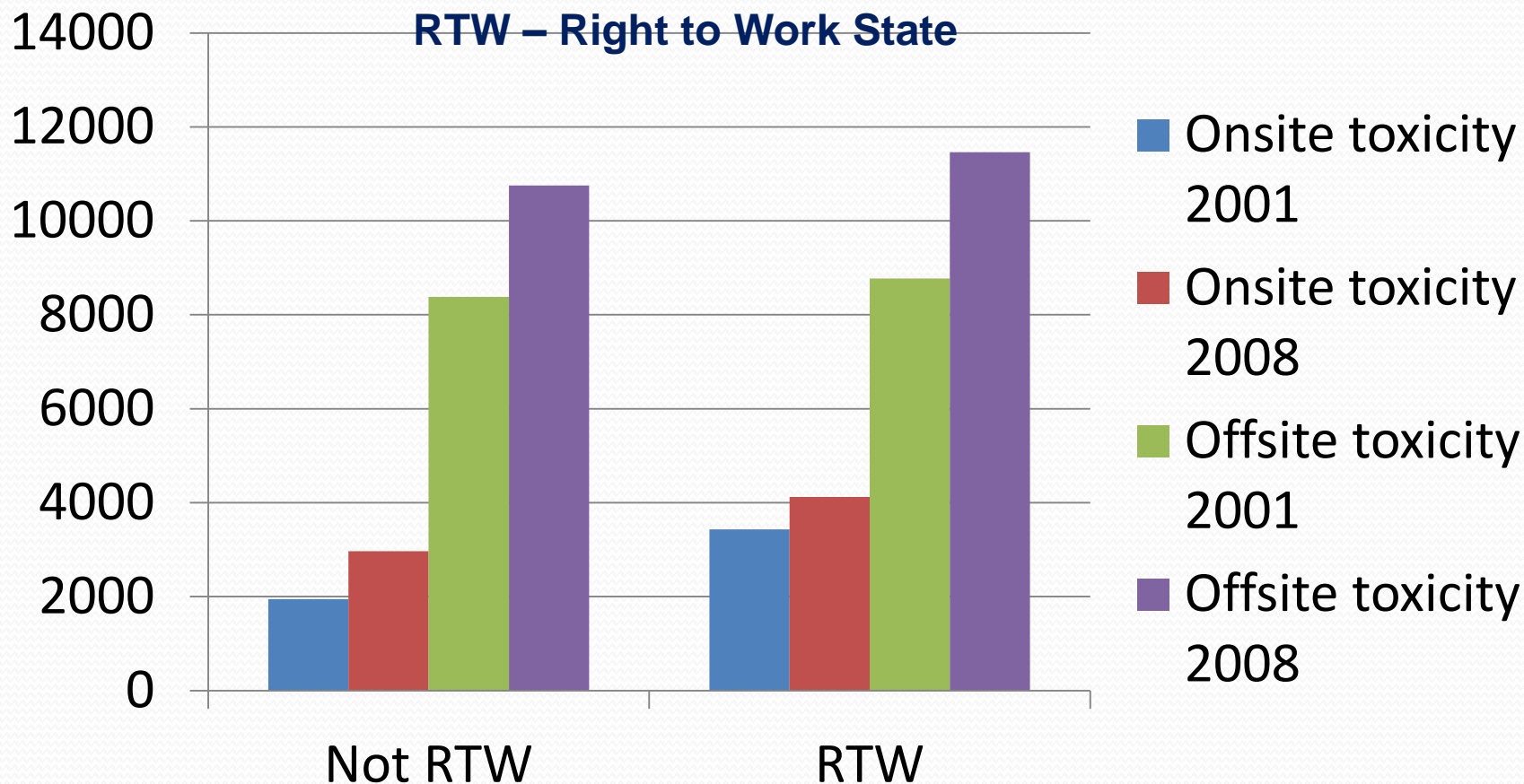


% offsite releases by wt and toxicity for facilities with minorities > 5



Toxicity per Pound in 2001 & 2008

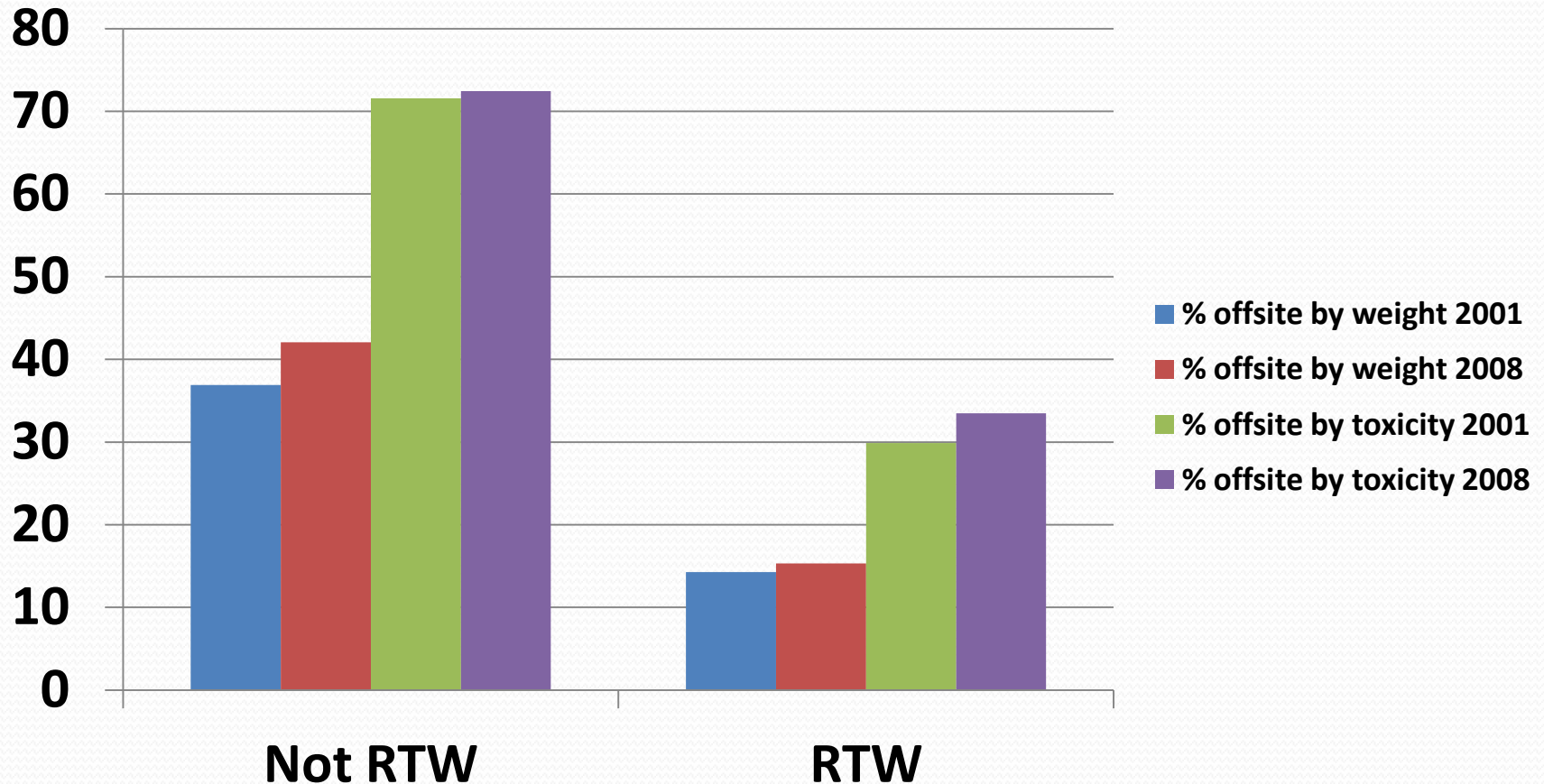
Only manufacturing facilities



Toxicity per pound little higher in the RTW states

Off-site releases as a % of total releases, 2001 & 2008 for RTW & Not RTW States

Only manufacturing facilities



Off-site releases percent lower in the RTW states

Take away

Univariate Analysis

- Higher % minorities, lower % offsite releases by weight and toxicity
- Higher % of minorities, higher toxicity per lb of on-site releases
- % of offsite releases by weight and toxicity increases with income
- Toxicity per pound of releases increases with poverty level

MULTIVARIATE ANALYSIS

Multiple Linear Regression Analysis and Logistic Regression Analysis which Consider the Influence of Several Variables Simultaneously.

Puerto Rico, American Samoa, Virgin Island, Guam, Northern Mariana Islands excluded from the analysis.

Analysis is done for the year 2006 and change is with respect to the year 1999

level significance **0.05 *0.10

Impact of Variables

Variable	Total Releases	Total Hazard	RSEI Score
% Minority >90	Higher**	Higher**	Higher*
% Minority 75-90			Higher**
% Minority 25-50			Higher**
<i>Ref: % minority <5 percent</i>			
% below poverty level >25	Higher**	Higher*	
% below poverty level 10 to 25		Higher**	
<i>Ref: % below poverty level <5</i>			
Population >50K	Lower**	Lower**	
% without high school diploma >35	Lower**	Lower*	

Based on Regression Analysis

Variable	% Onsite releases	% Onsite Hazard	Onsite releases % of total
% minority > 90	Higher**	Higher**	
% minority 75-90			Higher**
% minority 50-75			Higher**
% minority 25-50			Higher**
% below poverty level > 25	Higher**	Higher*	
% below poverty level 10-25		Higher*	
Population > 50K	Lower**	Lower**	Lower**
% without HS Diploma > 35	Lower**	Lower*	Higher*

% Change in Releases by Weight and Toxicity and Likelihood of score change > 10 percent, 1999-2006

Variable	% Change by Weight	% Change by Toxicity	Likelihood of score changing by 10 percent
% below poverty level 10 to 25	Reduce**		
% below poverty level 5 to 10	Reduce**		
Population > 50K	Reduce***		1.3 likelihood that scores will not rise by more than 10%
% without diploma>35		Increase**	

Toxicity & Relocation

- No association between County Toxicity in 1996 and Population Change between 1991 and 2001.
- Positive association between County Toxicity in 1996 and Per Capita Income Change between 1991 and 2001
- Manufacturing Dependent Counties have higher Mean Toxicity

Toxicity & Relocation

- Housing Stressed Counties have Higher Mean Toxicity
- Low Education Counties have Lower Mean Toxicity
- Low Employment Counties have Lower Mean Toxicity
- Persistent Poverty Counties have Lower Mean Toxicity.
- Persistent Population Lose Counties have lower Mean Toxicity .

Classification based on USDA

<http://www.ers.usda.gov/Briefing/Rurality/Typology/>