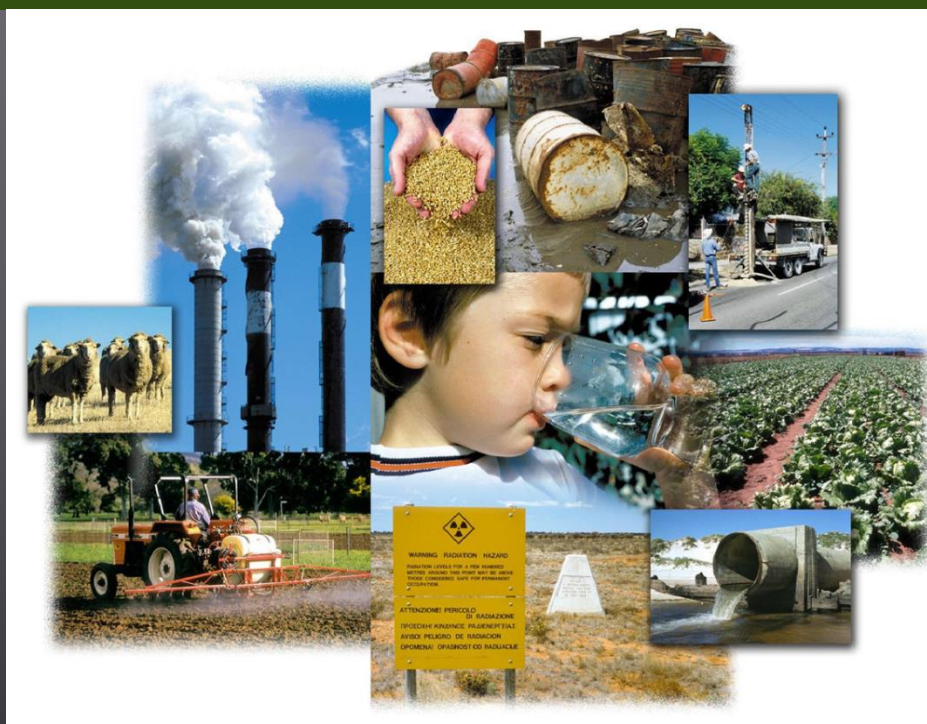# Overview of EJSCREEN: Environmental Justice Screening Tool
Introductory Webinar for NACAA

Background

- EPA's new tool for EJ screening and mapping

- Web-based GIS tool and data for EPA and the public

- Plan EJ 2014 announced EPA's plan to create a new, nationally consistent EJ screening tool

- Builds upon NEJAC report on EJ screening, and prior work across EPA programs and Regions

- Peer reviewed by experts on geospatial tools and EJ

Continued

Combines environmental & demographic data

♦ EJSCREEN provides:

> » 1. environmental indicators

> » 2. demographic indicators
> (predictors of health status and of
> potential vulnerability to environment)

> and combines them as an index...

> » 3. "EJ index"
> for each environmental factor, in each location.

Key Features

♦ **12 different environmental indicators, including several new or improved metrics (e.g., traffic score)**

♦ **Updated demographics – every 1 year, not every 10 years**

♦ **A consistent, quantified approach to EJ, not just "overlays" – numerical indexes that combine environmental and demographic indicators**

♦ **Accessible and transparent to anyone with a web browser**

♦ **Standard printable reports and bar graphs**

♦ **Higher resolution maps – 3 times as many data points**

♦ **A wealth of additional data maps; can add more from the Web**

♦ **Raw data downloads will also be available**

Using EJSCREEN

♦ **A tool for everyone**

 » Available to all EJ stakeholders and general public
 › But no requirement that state/tribal/stakeholders use it

 » Basis for further dialogue

♦ **EPA uses EJSCREEN in various contexts**

 » Outreach and engagement

 » Many aspects of environmental programs

 » Geographically-based initiatives

♦ **What does EJ screening show?**

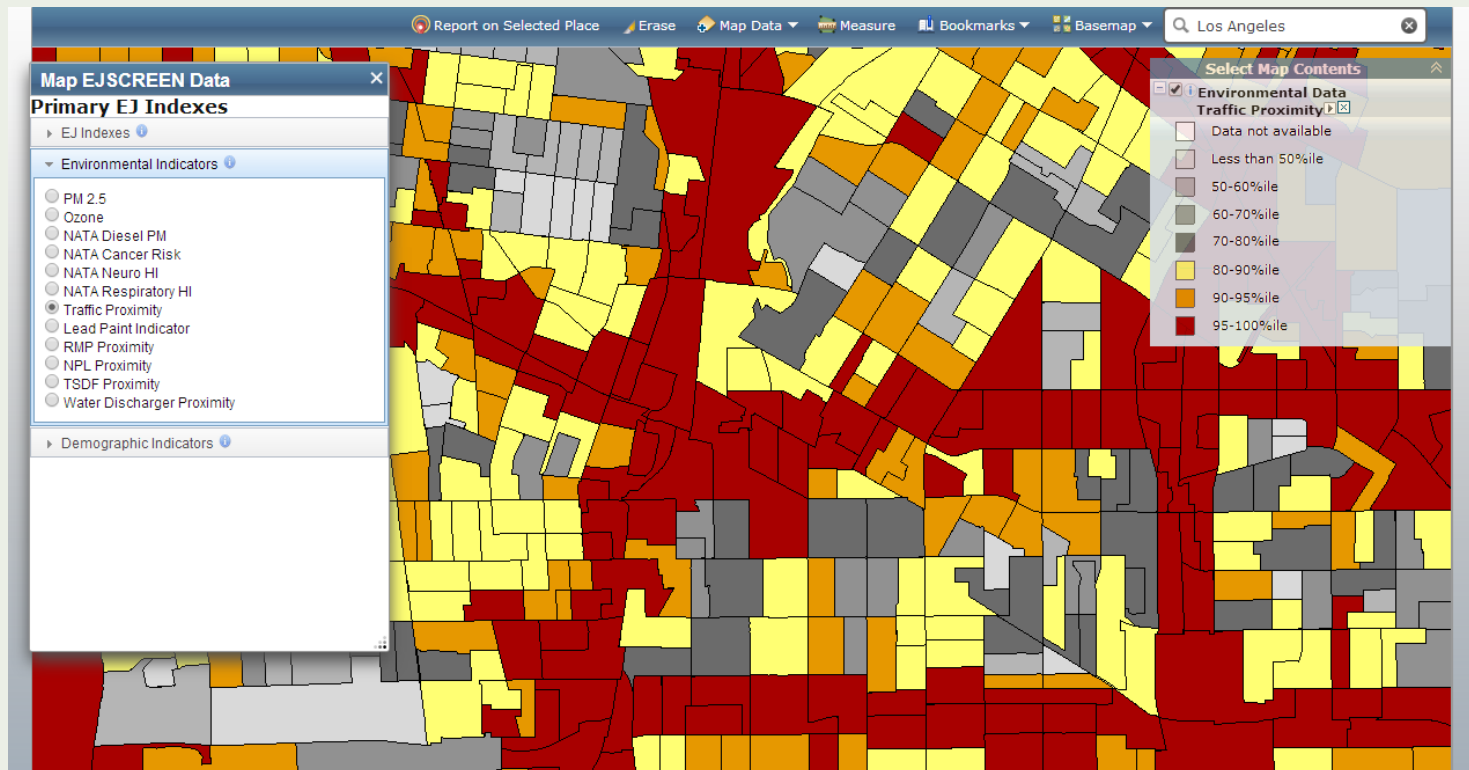 » Helps show which places may be candidates for further review – where to take a closer look, where to start.

Considerations and Limitations for Using EJSCREEN

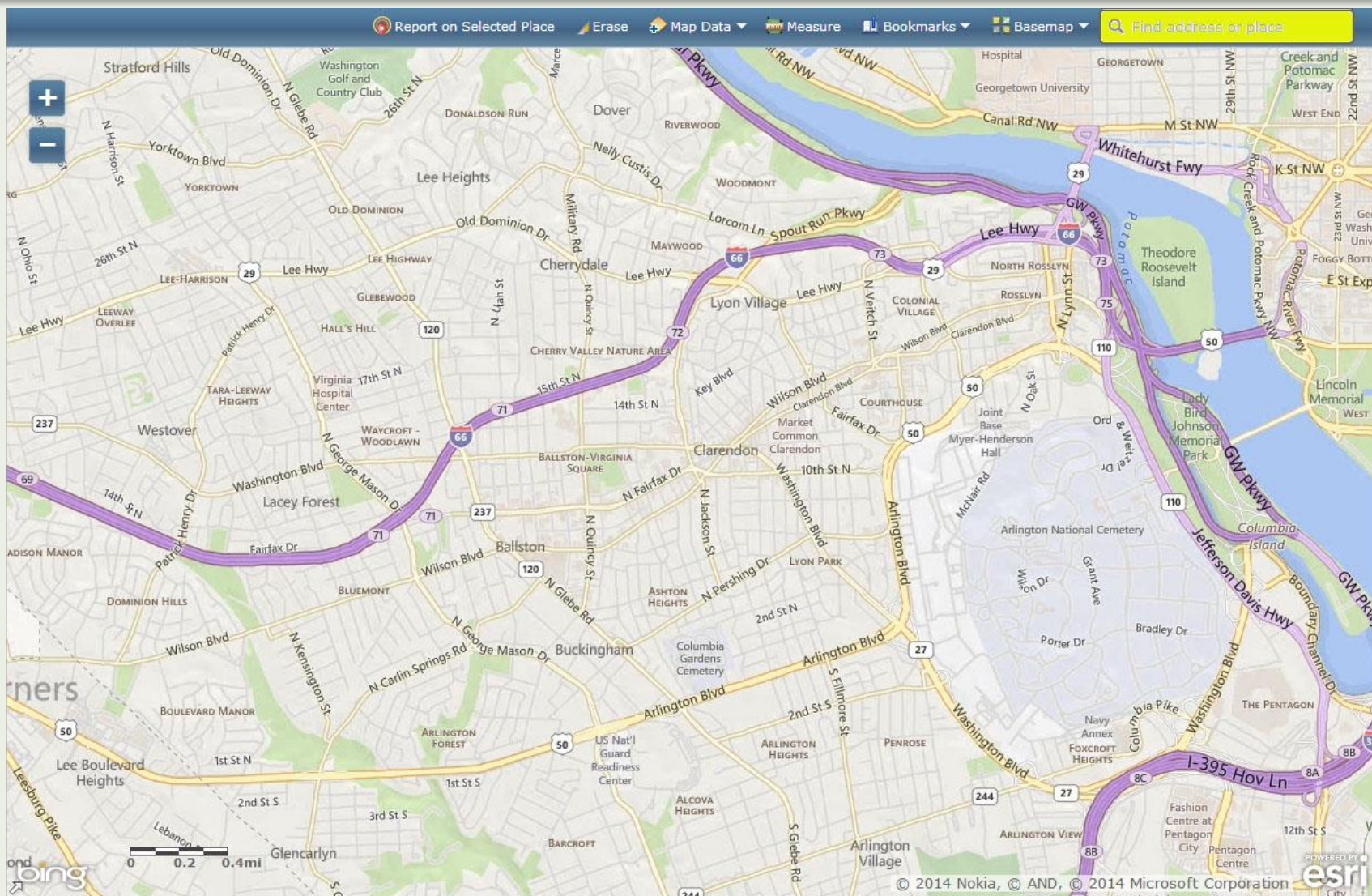♦ **EJSCREEN CANNOT be used as:**

    » A way to label an area as an "EJ community" or "EJ area"
    » A risk assessment
    » The basis for EPA decision-making (it is "pre-decisional")

Based on Census Block Groups

♦ Over 217,000 Block Groups in the U.S.

♦ The average block group has a population of about 1,400 residents, and most have between 900 and 1,800 residents.
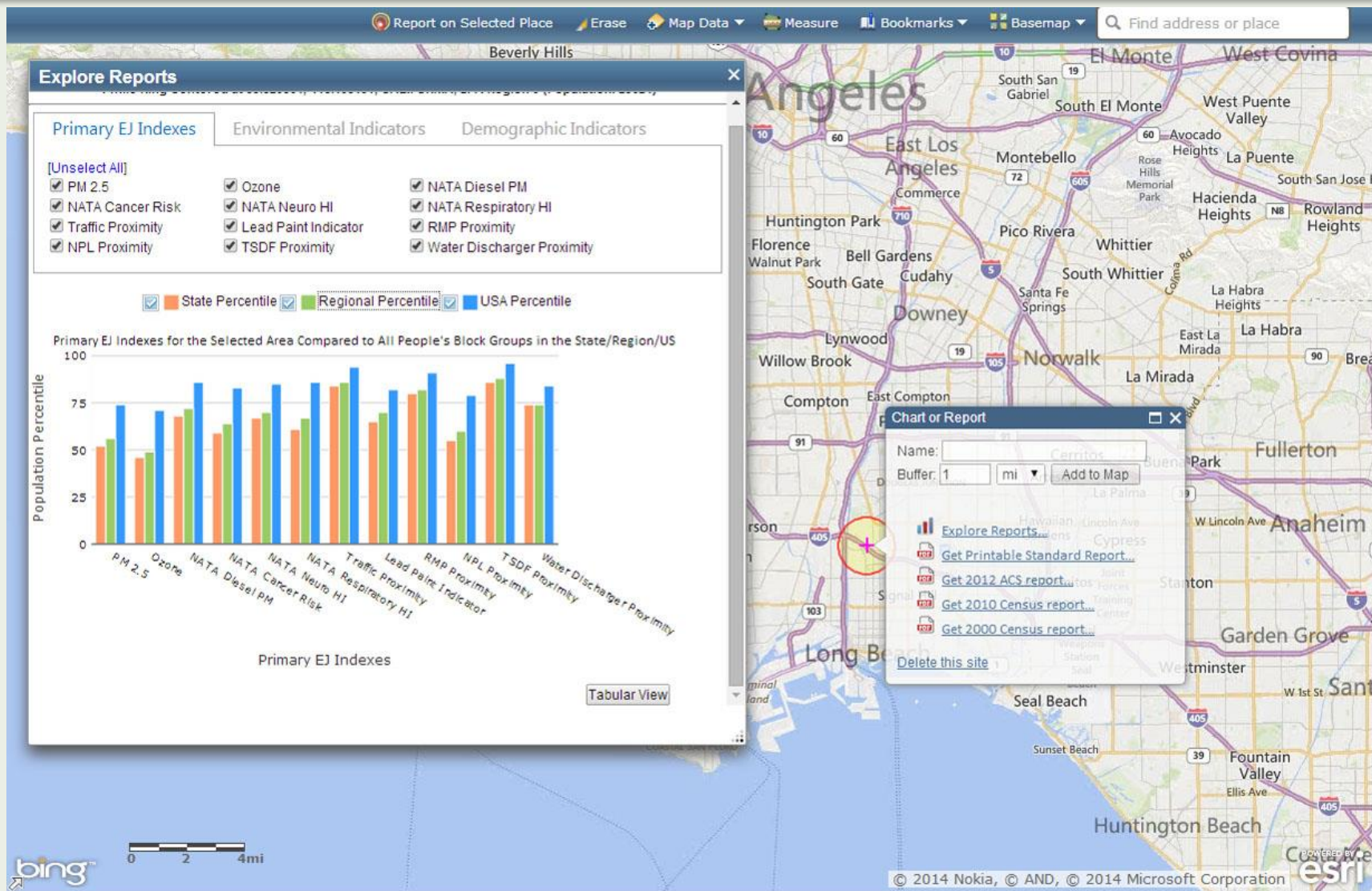
Selecting a Location

Selecting an Area of Interest

Viewing EJ Indexes

Viewing Environmental Indicators

Viewing Demographic Indicators
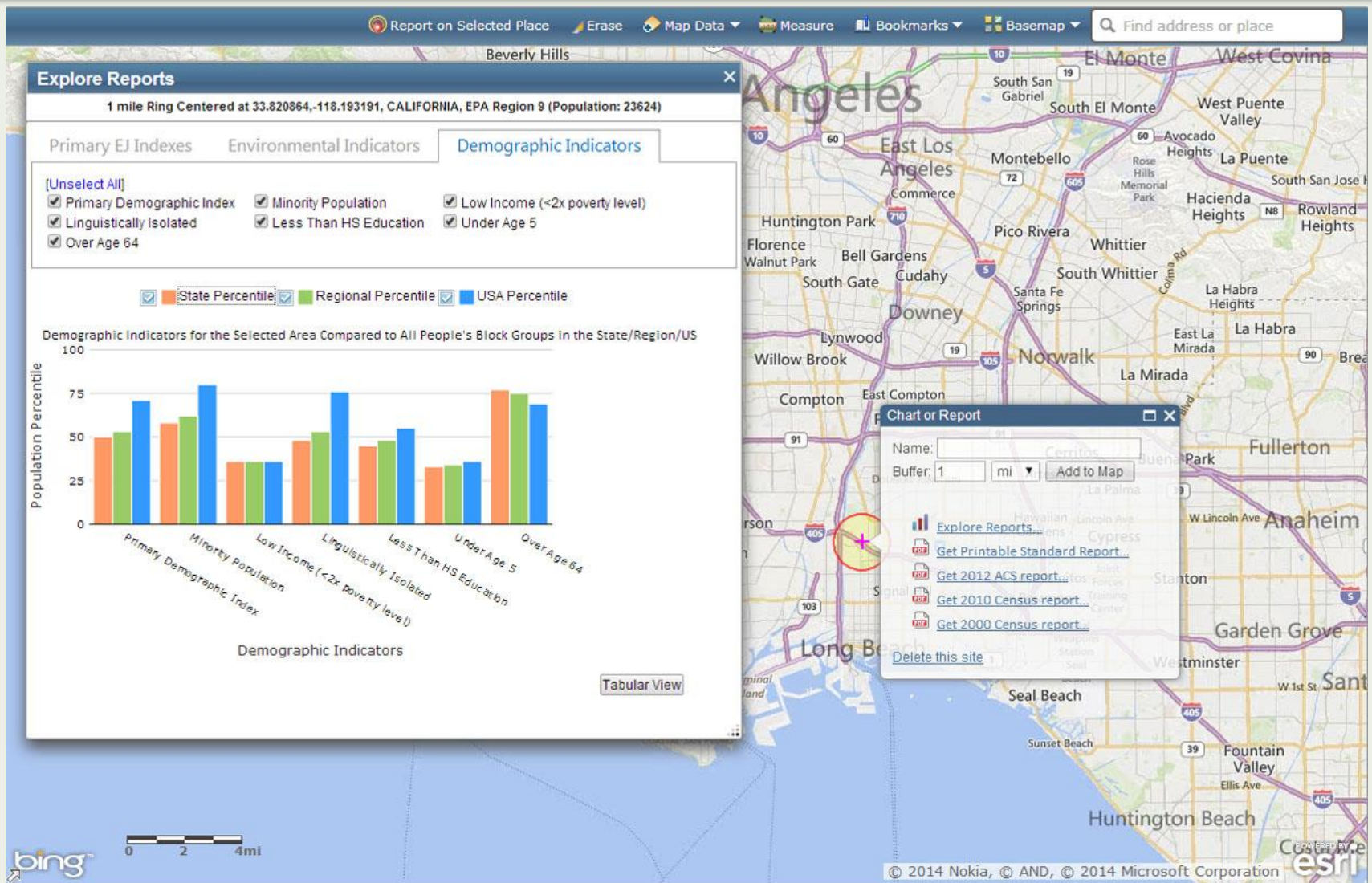
Twelve Environmental Indicators

| Environmental Indicator Raw Data Type (Units)	Raw Data Description	Indicator Descriptor
Particulate Matter (PM2.5 in µg/m3)	PM2.5 levels in air, µg/m3 annual average	Potential Exposure
Ozone (ppb)	Ozone summer seasonal average of daily maximum 8-hour concentration in air in parts per billion	Potential Exposure
National Air Toxics Assessment (NATA) Diesel PM in (µg/m3)	Diesel particulate matter (PM) level in air, µg/m3	Potential Exposure
NATA Air Toxics Cancer Risk (risk per million people)	Excess lifetime cancer risk from inhalation of air toxics	Hazard/Risk
NATA Respiratory Hazard Index	Air toxics respiratory hazard index (ratio of exposure concentration to health-based reference concentration)	Hazard/Risk
NATA Neurological Hazard Index	Air toxics neurological hazard index (ratio of exposure concentration to health-based Reference Concentration (RfC))	Hazard/Risk

Twelve Environmental Indicators

Environmental Indicator Raw Data Type (Units)	Raw Data Description	Indicator Descriptor
Lead Paint Indicator (% pre-1960s Housing)	Percent of housing units built before 1960, as indicator of potential exposure to lead-based paint	Potential Exposure
Traffic Proximity (daily traffic count/distance to road)	Count of vehicles (average annual daily traffic) at major roads within 500 meters, divided by distance in kilometers (km)	Proximity
Proximity to National Priority List (NPL) sites (count/km distance)	Count of NPL (Superfund) facilities within 5 km (or nearest one beyond 5 km), divided by distance in km	Proximity
Proximity to Risk Management Plan (RMP) facilities (count/km distance)	Count of RMP (potential chemical accident management plan) facilities within 5 km (or nearest one beyond 5 km), divided by distance in km	Proximity
Proximity to Toxic Storage Disposal Facilities (TSDF) (count/km distance)	Count of TSDFs (hazardous waste management facilities) within 5 km (or nearest one beyond 5 km), divided by distance in km	Proximity
Proximity to Major Direct Dischargers (count/km distance)	Count of NPDES major direct water discharger facilities within 5 km (or nearest one beyond 5 km), each divided by distance in km	Proximity

Seven Demographic Indicators
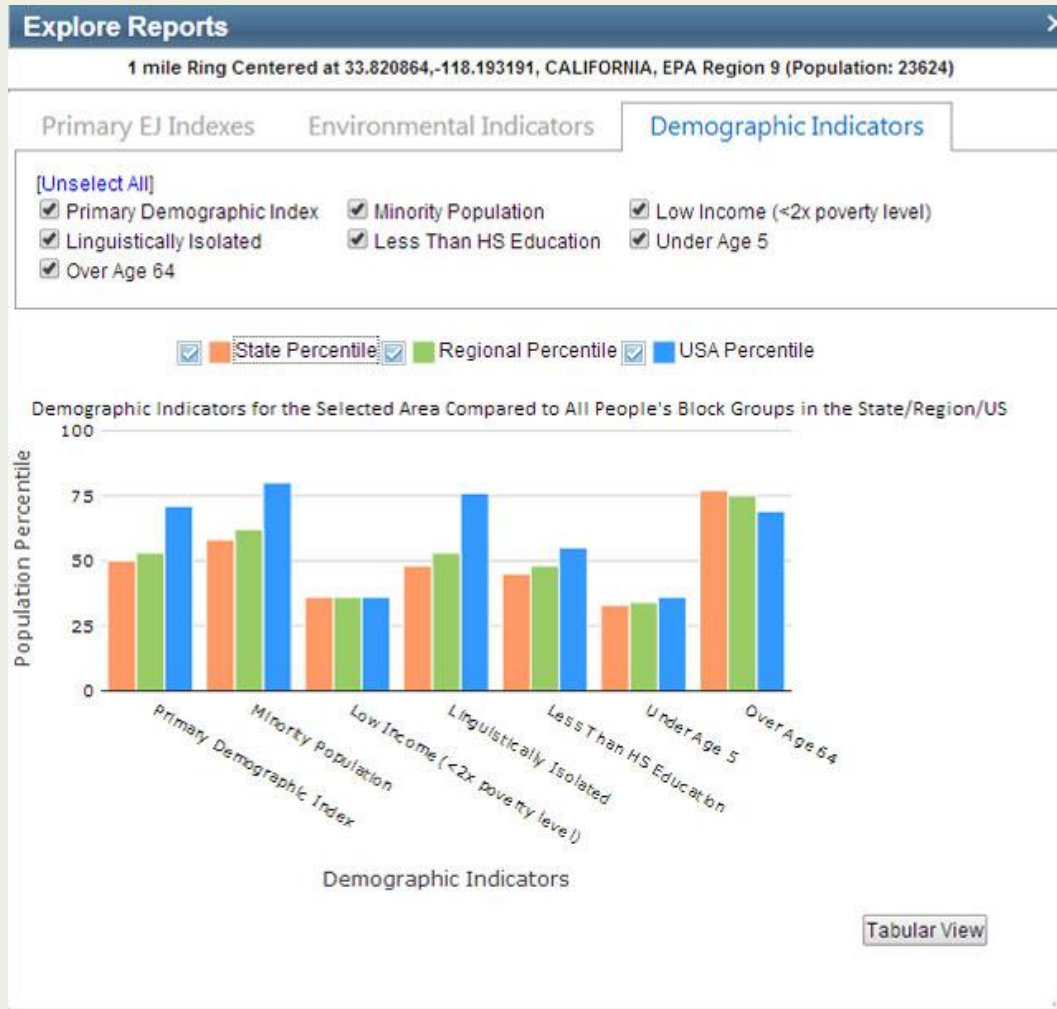
- Demographic Index

- Minority Population

- Low-income

- Linguistically isolated

- Less than high school education

- Under age 5

- Over age 64

♦ **The EJ index combines environmental and demographic data**

♦ **It shows how much a block group contributes to the nation's overall disparity (between demographic groups) in that environmental indicator.**

♦ **In other words,**

» Nationwide overall, the average low-income and/or minority individual in the US has a higher lead paint indicator score than the rest of the US population.

» The EJ index shows how much this block group contributes to that disparity.

» If the block groups with the highest EJ index values (for lead paint) were "cleaned up" first, that would be the fastest way to reduce the disparity in average lead paint scores.

Important Notes About How EPA Uses EJSCREEN

- ♦ **Tool and data to be shared with State/Tribal, public, etc.**

- ♦ **Highlights areas that may be candidates for further review**

- ♦ **Pre-decisional screening tool**

- ♦ **Does not direct final outcomes**

- ♦ **Baseline screening should be supplemented with local information and experience**

- ♦ **Should not be used to label areas as "EJ community"**

Caveats

♦ **Demographic and environmental indicators for a single block group may have high uncertainty**

♦ **Small differences may not be true or meaningful ones**

♦ **EJSCREEN does not cover all environmental issues.**

♦ **Other local data and concerns may be very important.**

Questions?