



The Florida Brownfields Redevelopment Atlas

A Decision Support Tool for Sustainability Assessment

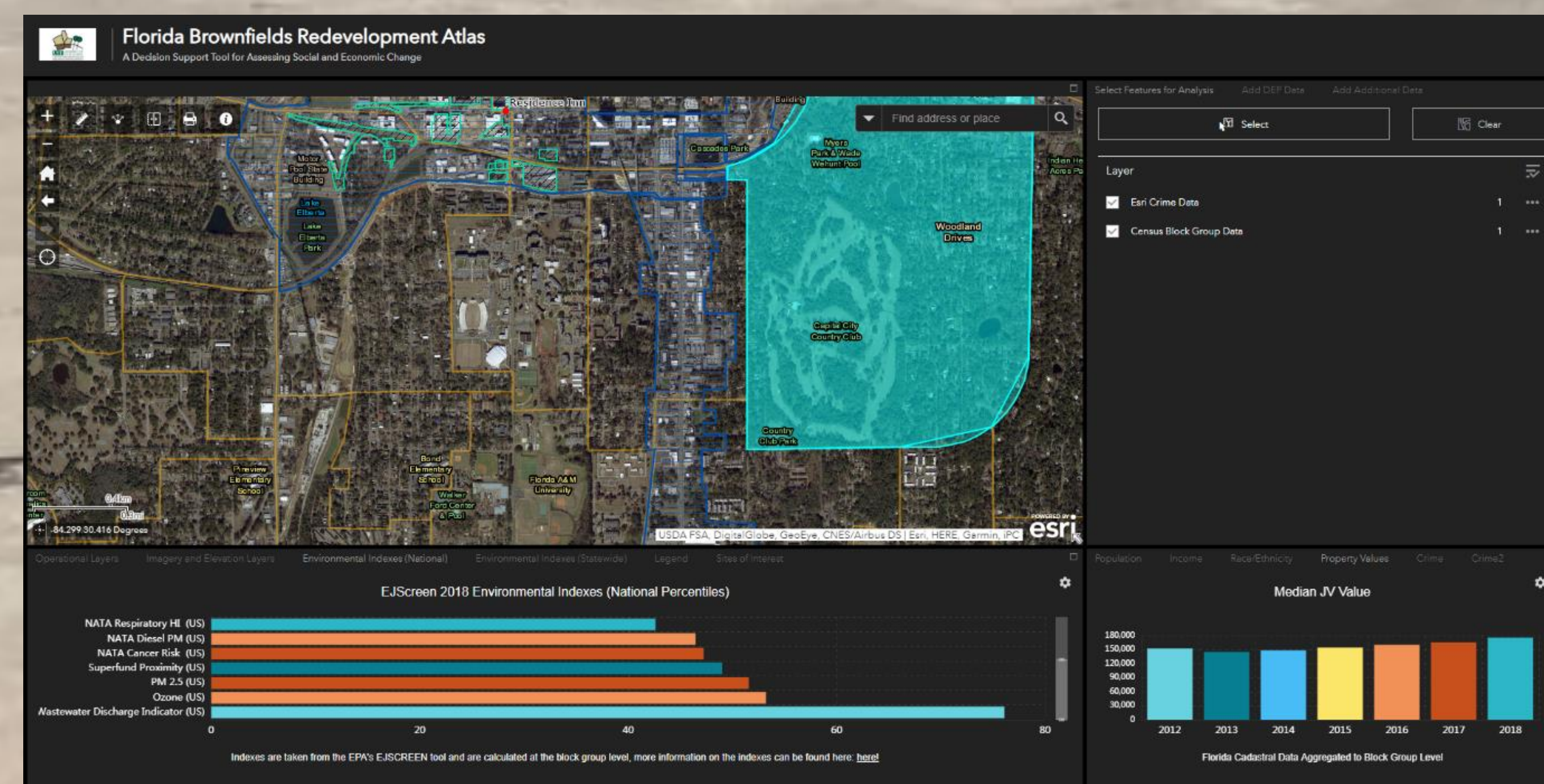
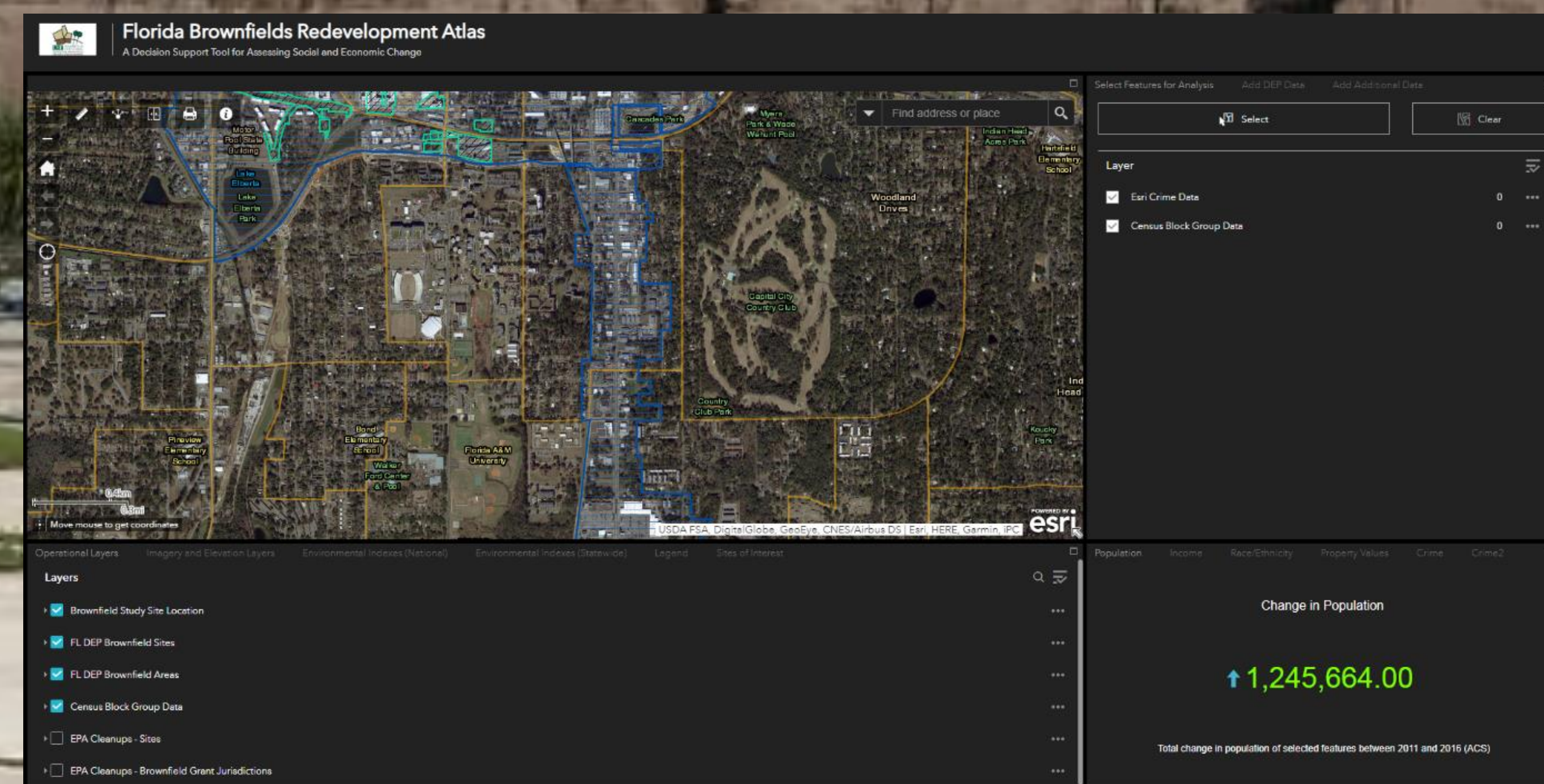


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Background

Both the U.S. Environmental Protection Agency (EPA) and the Florida Department of Environmental Protection (FDEP) would like to better understand the impacts of federal funding provided to eligible communities who have demonstrated a need for funding assistance for assessment and remediation work in advance of planned and agreed-upon brownfields redevelopment.

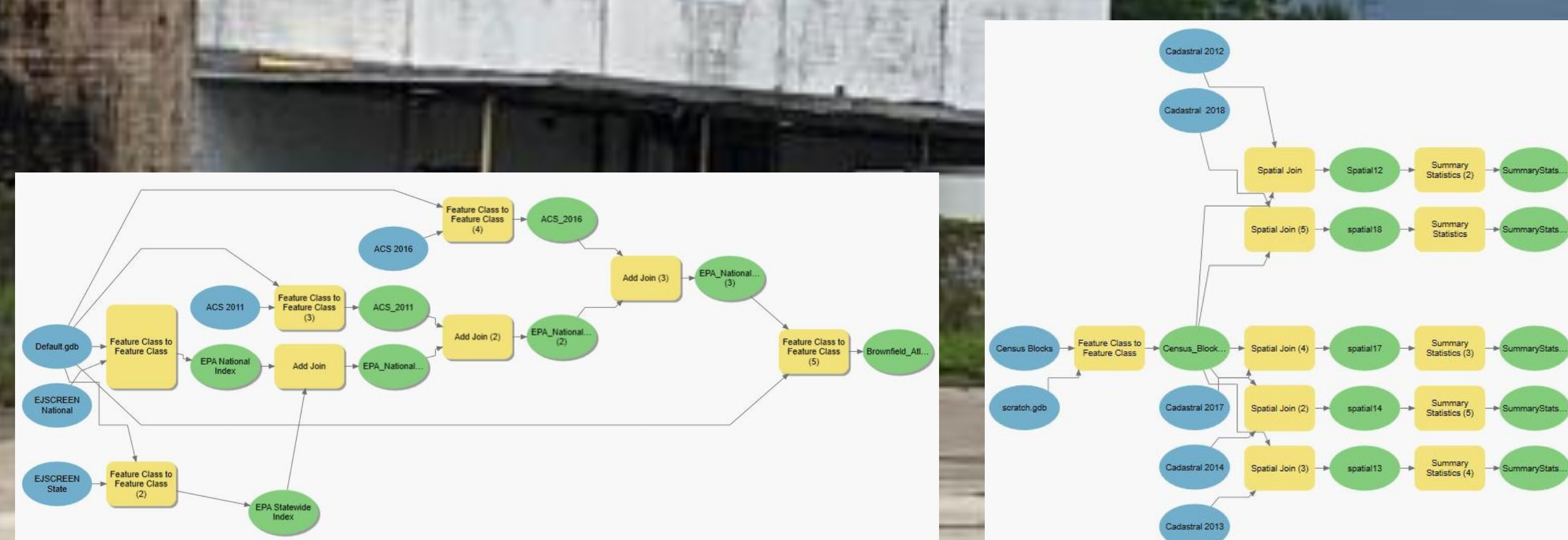
This project is a collaborative effort between EPA, FDEP, and the University of South Florida (USF), with the greater goal of identifying social and economic impacts associated with redeveloped brownfield sites across Florida where assessment and cleanup activities were funded under the State and Tribal Response Program (SRP) Grant program. The project resulted in the creation of the Florida Brownfields Redevelopment Atlas, available at www.usf.edu/brownfields.



Overview

The Florida Brownfields Redevelopment Atlas is an online discovery tool that allows researchers to explore, summarize, and extract various types of environmental and socioeconomic data, with an emphasis on change over time, at the census block group level for the entire state of Florida (all census data currently used in the Atlas are intended to be analyzed at the block group level of geography).

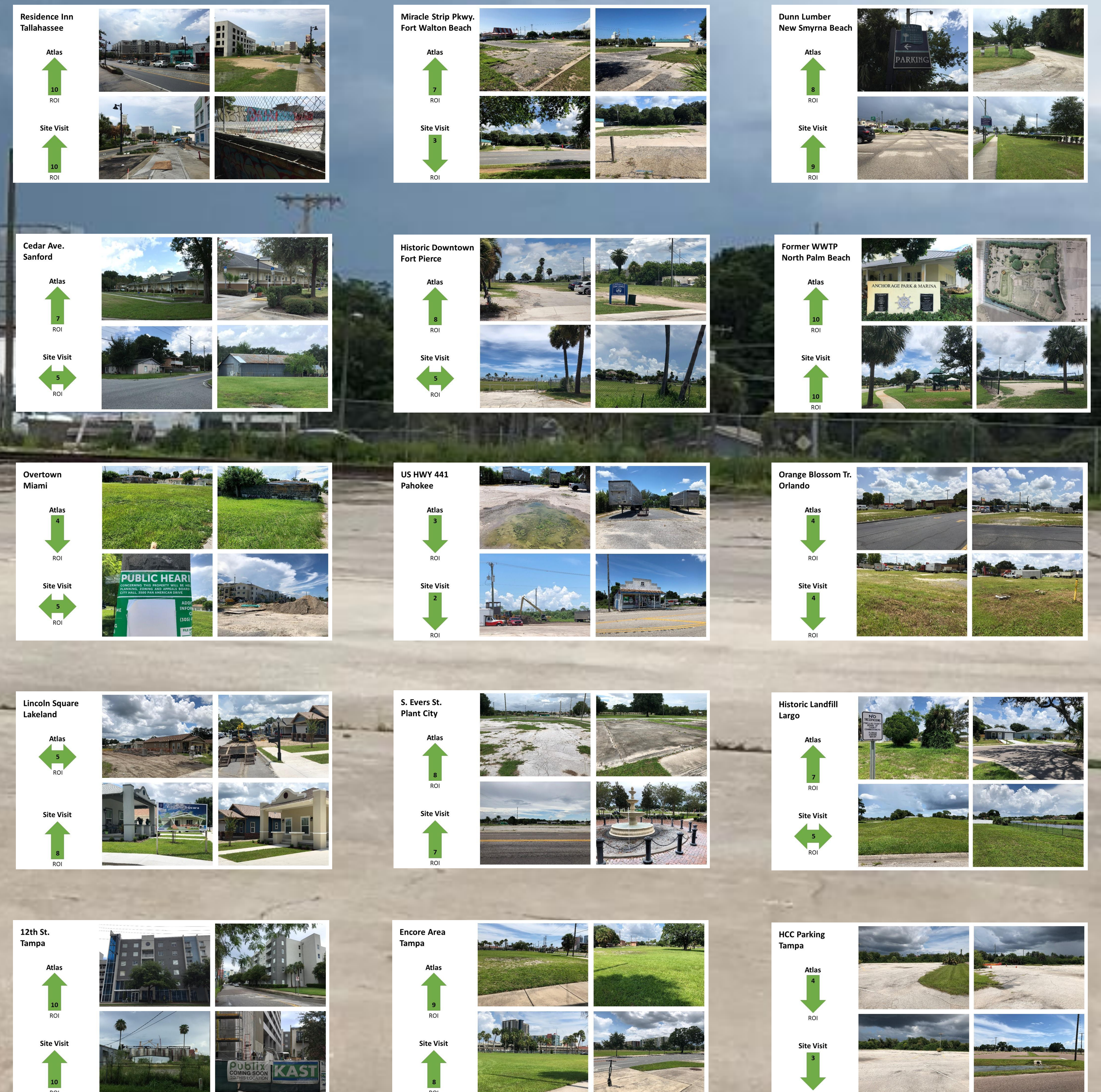
Data for the Atlas originates from numerous sources. Census data were gathered from the National Historical Geographic Information System and from 2012 and 2016 ACS 5-Year Summary datasets. Additional datasets include statewide parcel data, digital elevation models (when data are available), and historic aerial imagery for areas of interest. Other datasets used in the Atlas include Florida Brownfield area and site layers that are managed by the FDEP and additional user-defined layers that can be added to the Atlas.



Data were processed in ArcGIS Pro and published to USF's Digital Heritage & Humanities Collections ArcGIS Online organization. *Left*: model created to analyze cadastral parcel data at the Census Block Group level, the Brownfield Area level, and the Brownfield Site level. *Right*: model created to join and process American Community Survey Data and EJ Screen Index data.

Evaluation

A total of 15 brownfield sites (with established BSRAs) have been evaluated with the Atlas for return on investment (ROI), calculated on a scale of 1 (low) to 10 (high) using the social, economic, and environmental indicators. All sites were then groundtruthed in person, where semi-structured interviews with area residents and local businesses were conducted, transcribed, and analyzed. Overall, the findings indicate that the Atlas correctly predicted the perceived ROI approximately 80 percent of the time. In cases where there was a significant mismatch, we found that political factors unexpectedly influenced the redevelopment process. We also found that state investments in brownfields remediation through SRP funding had only a small effect (Cohen's $d=0.2$) on underserved communities.



Social, Economic & Environmental Indicators



Demographics: population, number of households, median age, percent under age 5, percent over age 64, percent less than high school education, percent minority

Economics: median household income, percent households below poverty level, percent households >2x poverty level, households with public assistance, percent households with public assistance income

Housing: total housing units, vacant housing units, percent of units vacant, percent of units owned, percent of units rented, percent housing build prior to 1960, mean/median property values

Environmental Health: PM2.5, ozone, NATA diesel PM, NATA cancer risk, NATA respiratory HI, traffic proximity, lead paint indicator, superfund proximity, RMP proximity, hazardous waste proximity, wastewater discharge