Age of Development, Land Use and Landscape Development Intensity Index

Sarasota County Water Resources

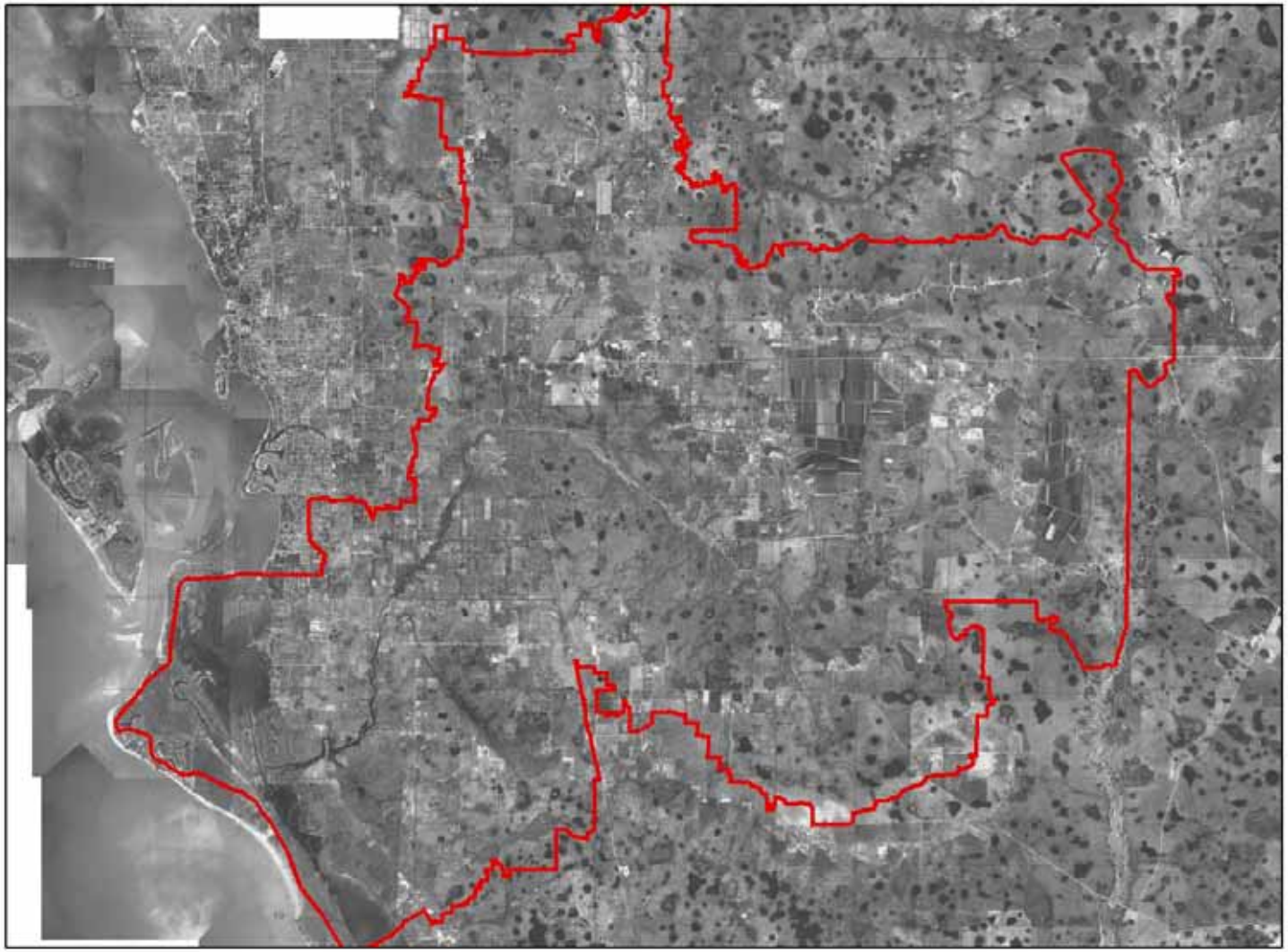
Age of Development
What's it all about?

- Searching for additional attributes to describe land use for the Pollutant Loading Model EMCs
- The basic premise: older areas differ from younger, i.e. no stormwater treatment
- Possible correlations:

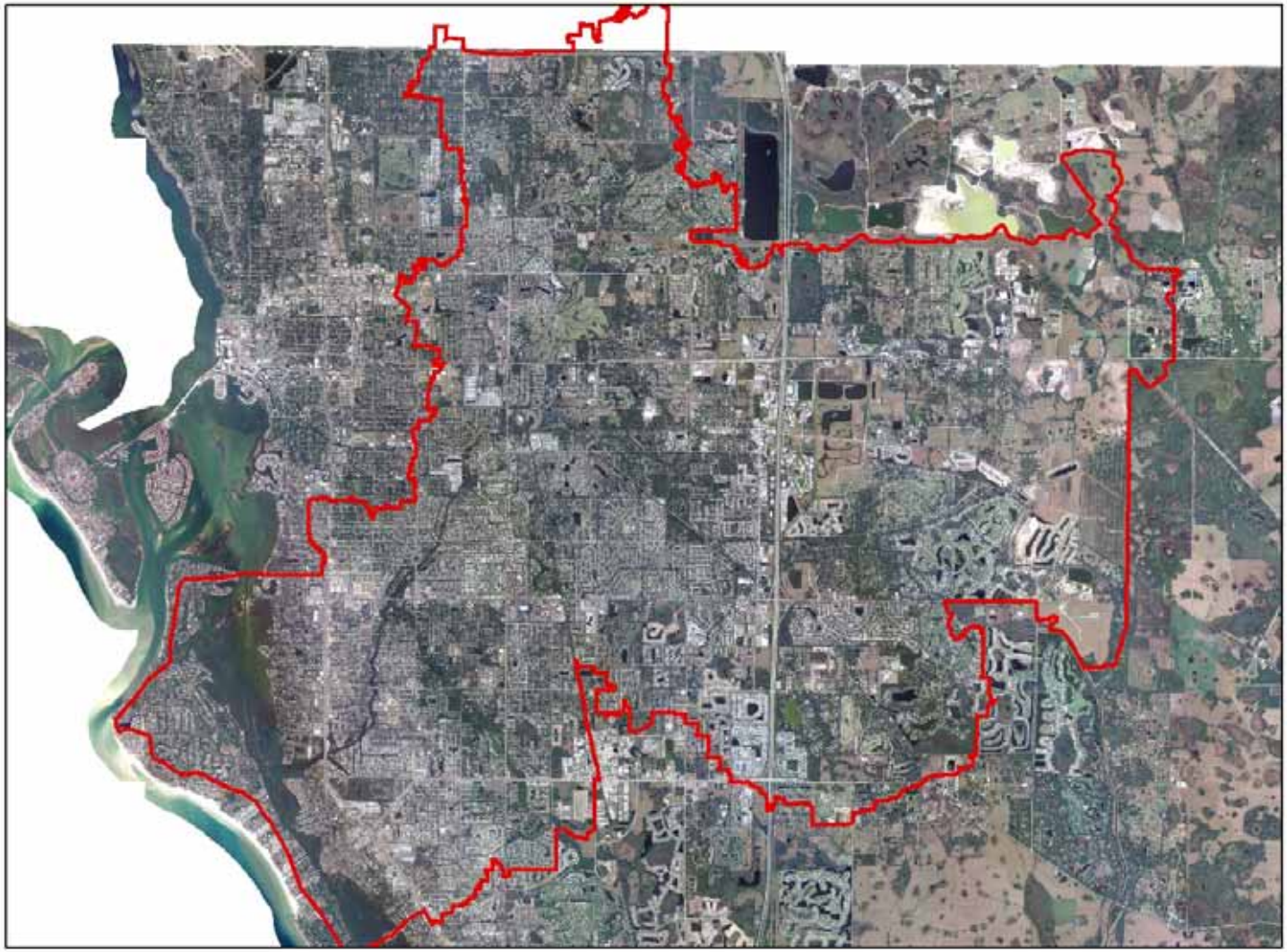
  Presence of swales with ditches vs. curb and gutter with pipes and ponds

  Lawn care attributes, newer properties are more likely to fertilize, use large quantities of reclaimed water than older

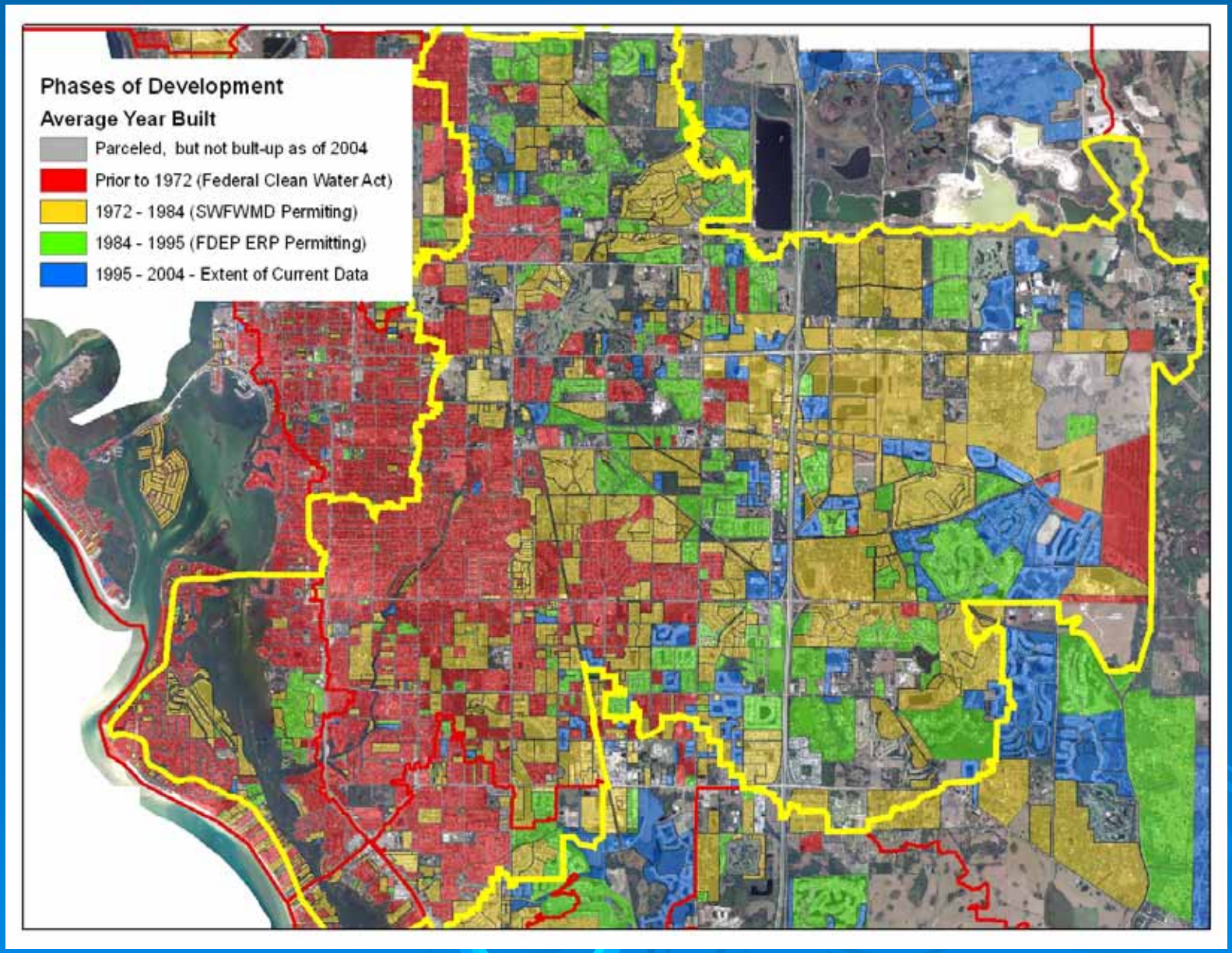
Roberts Bay Watershed 1948 Aerial Photograph



Roberts Bay Watershed 2004 Aerial Photograph



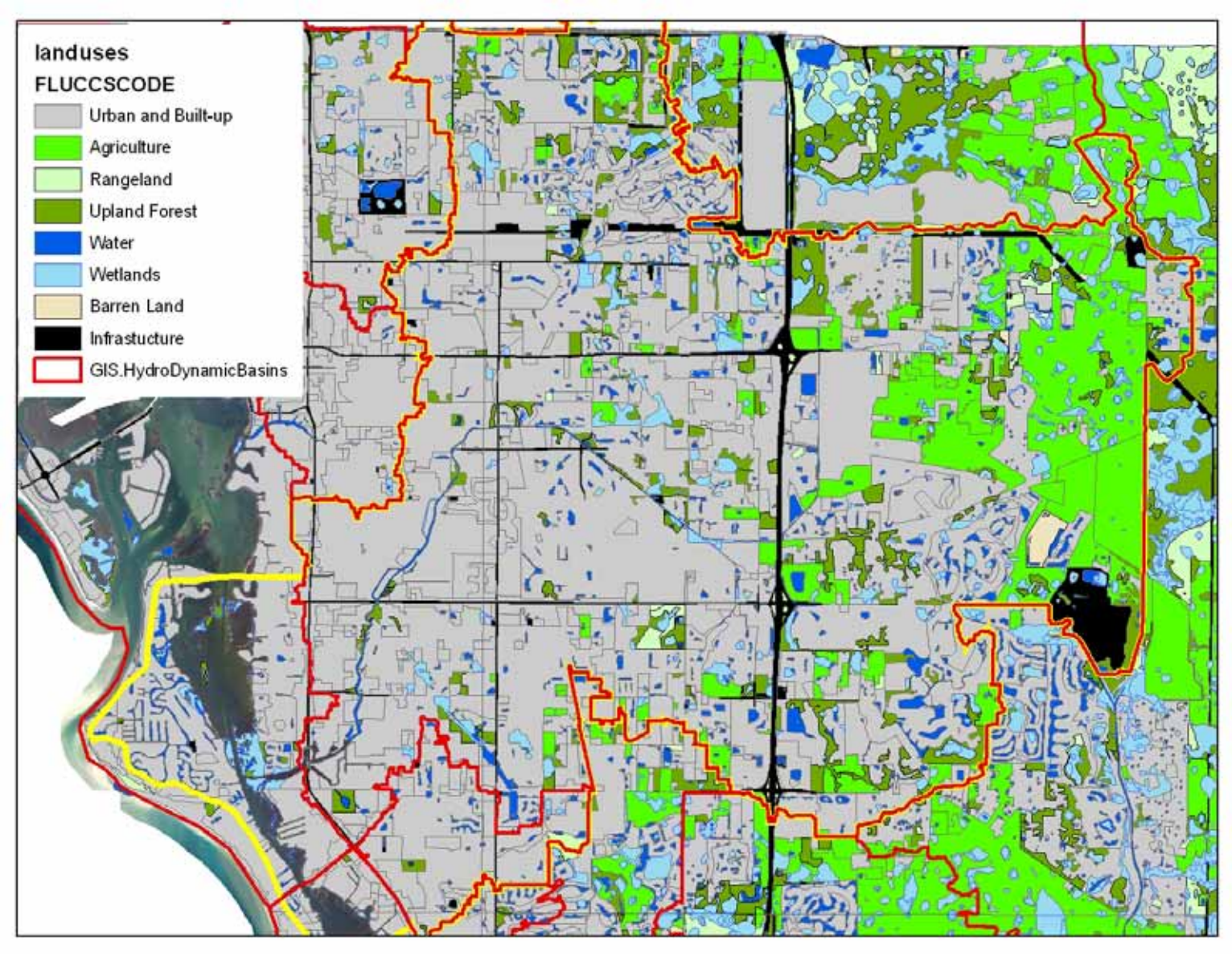
Roberts Bay Watershed Average Age of Buildings



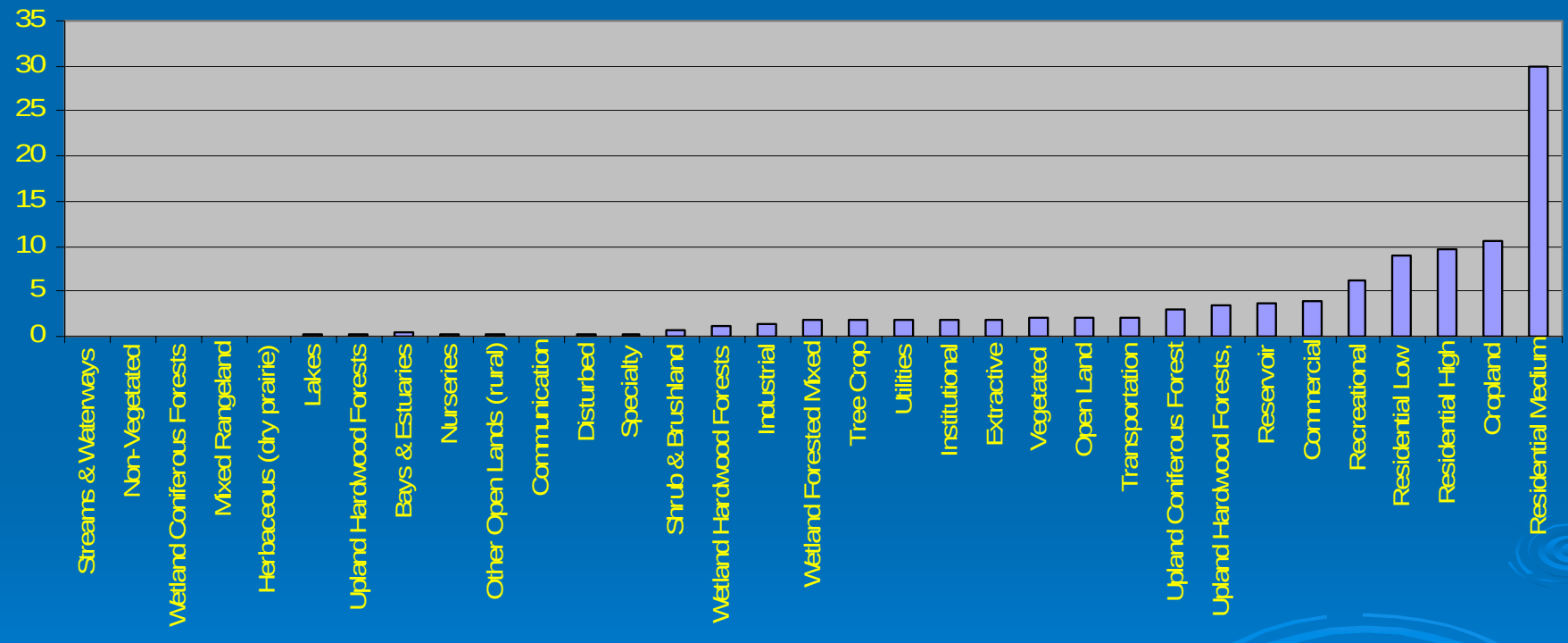
Did it work?

- Jones, Edmunds and Associates used the analysis during a windshield survey of the county and found that there appeared to be a connection between age/lawn care and swales. Two current areas of interest for the County.

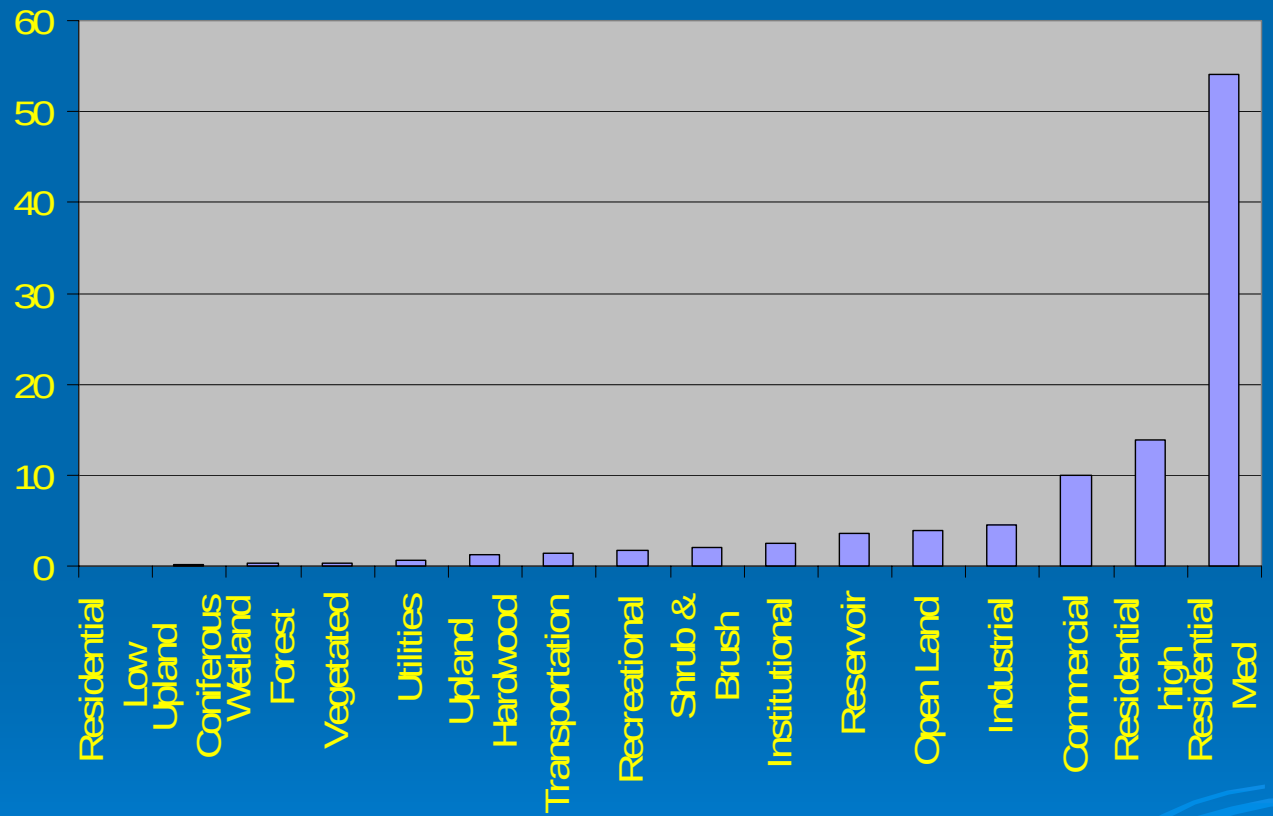
Roberts Bay Watershed 1998 SWFWMD Land Use



Phillippi Creek Basin
% Land Use by 1998 FLUCCS



Matheny Creek Basin
% Land Use by 1998 FLUCCS



Landscape Development Intensity Index

- MARK T. BROWN and M. BENJAMIN VIVAS,
  LANDSCAPE DEVELOPMENT INTENSITY INDEX in Environmental Monitoring and Assessment (2005) 101: 289–309 c Springer 2005
- “The intended use of the LDI is as an index of the human disturbance gradient (the level of human induced impacts on the biological, chemical, and physical processes of surrounding lands or waters).”
- Calculated from land use and Emergy, that is, energy that has been normalized.
- “Emergies used in calculating the LDI are all nonrenewable energies including electricity, fuels, fertilizers, pesticides, and water (both public water supply and irrigation)”
- Characterizes the contributing drainage area to a geographic point
- For isolated wetlands, a 100m buffer would suffice

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