INTEGRATED ASSESSMENT

Alternative Stormwater Management Practices that Address the Environmental, Social, and Economic Aspects of Water Resources in Spring Lake Township and Village

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Photo credit: Progressive AE

Why do we care about stormwater?

Photo credit: D. O'Keefe

- Stormwater discharges are generated by runoff from land and impervious areas during rainfall and snow events.
  - Paved streets
  - Parking lots
  - Building rooftops

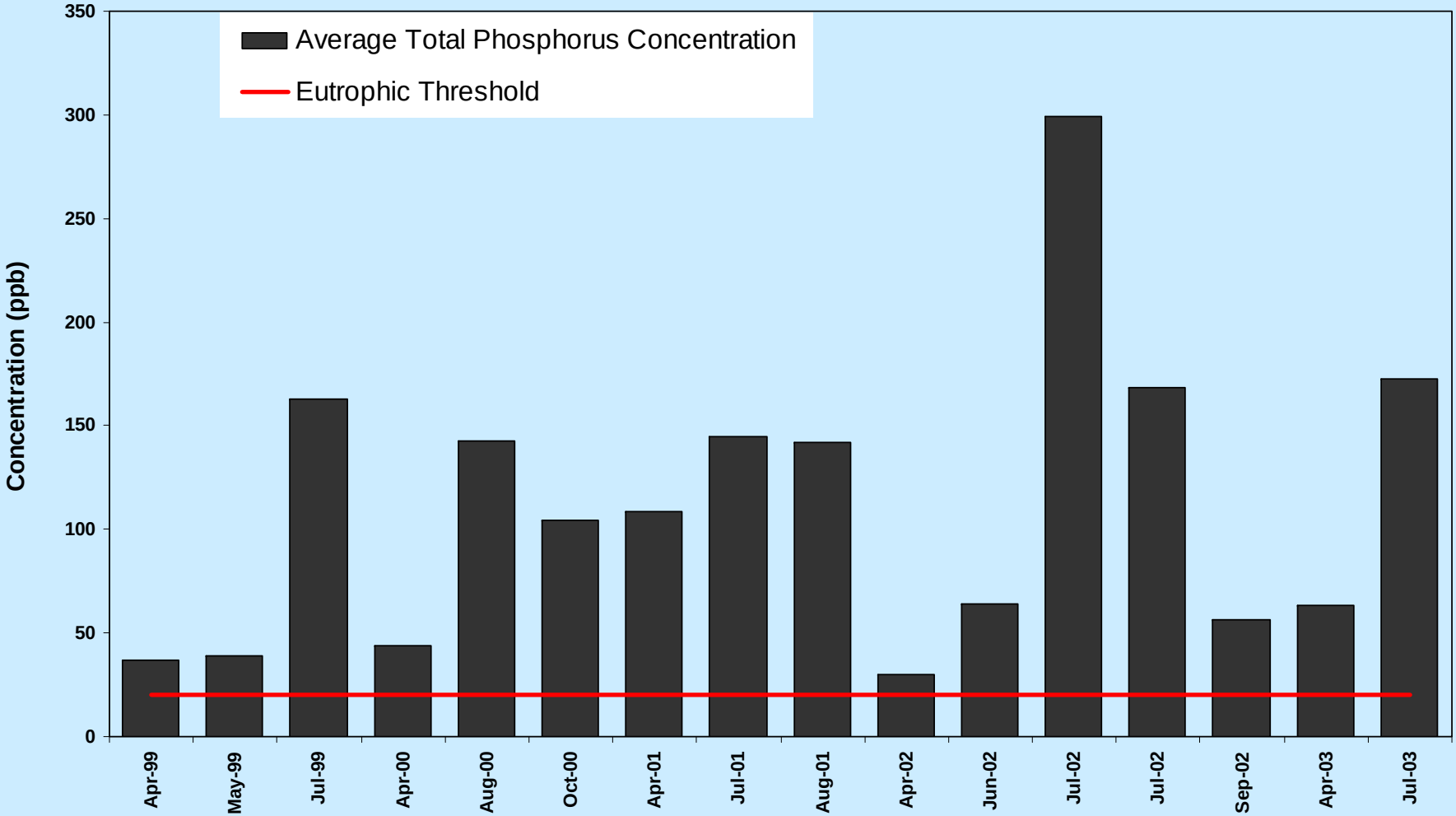
Photo credit: A. Steinman

- These discharges often contain pollutants in quantities that could adversely affect water quality
  - Excess fertilizers, herbicides, and insecticides from agricultural lands and residential areas
  - Oil, grease, and toxic chemicals from urban runoff
  - Sediment from improperly managed construction sites, crop and forest lands, and eroding streambanks
  - Salt from road-deicing and irrigation practices
  - Bacteria and nutrients from livestock, pet wastes, and faulty septic systems

Photo credit: N. DeMol

- Primary method to control stormwater discharges is the use of best management practices

Total Phosphorus: Spring Lake



Data courtesy of Progressive AE

Nutrient Impacts

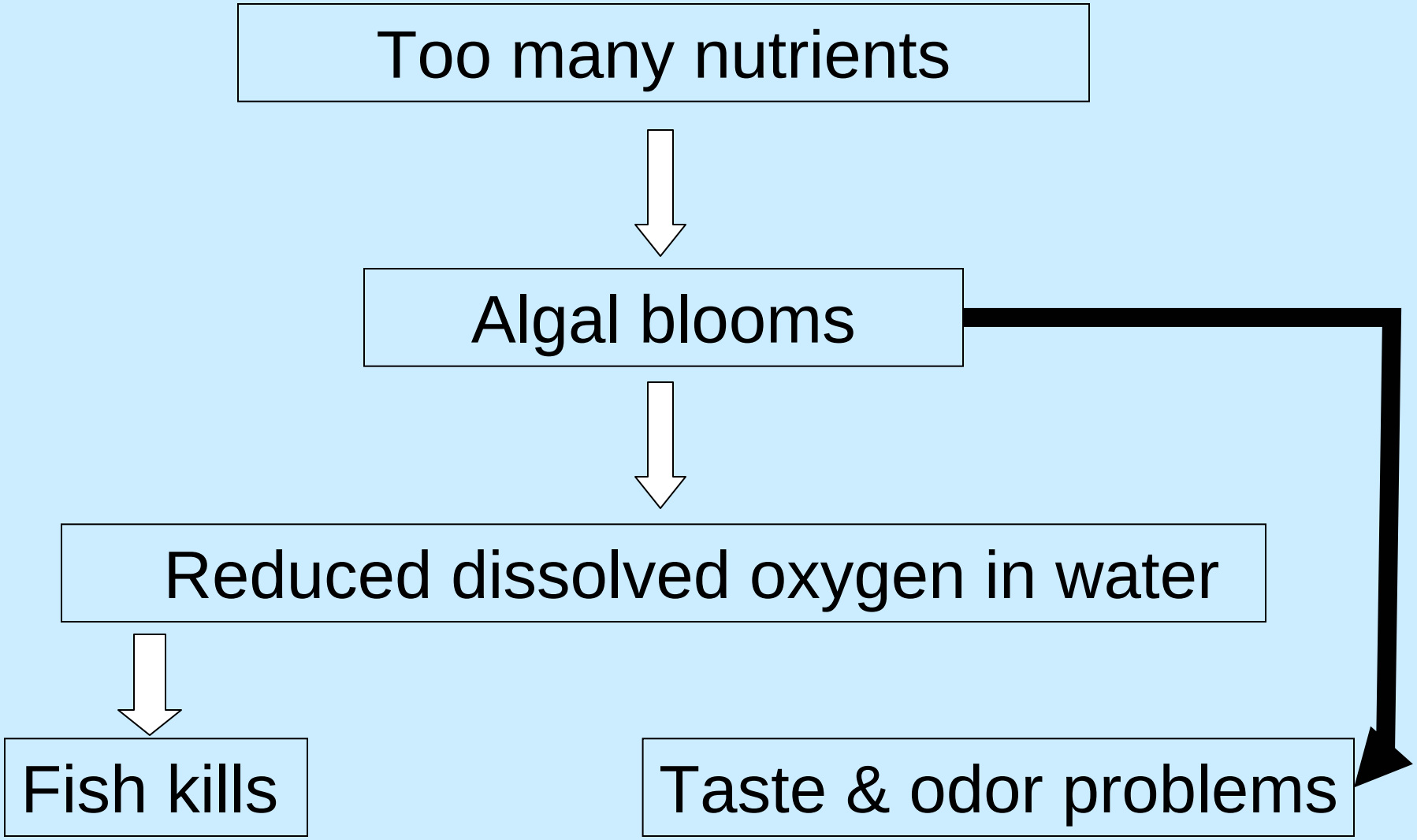


Photo Credit: Spring Lake Lake Board

Alum Treatment

Photo credit: Annis Water Resources Institute

Photo credit: Progressive AE

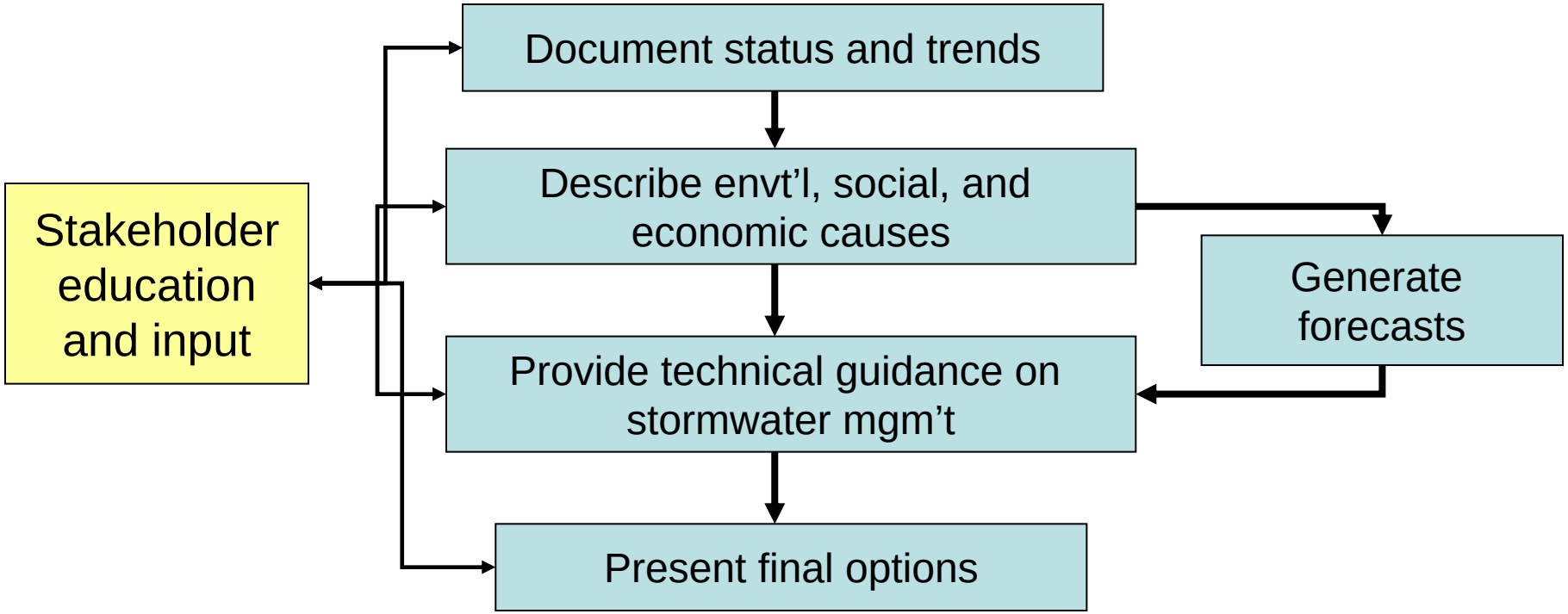
- Reduced release of phosphorus from sediments
- Reduced total phosphorus levels in water column
- No effect on algal biomass
- Did not address new nutrient and other stormwater inputs

Steinman, A.D. and M. Ogdahl 2008. Ecological effects following an alum treatment in Spring Lake, Michigan. Journal of Environmental Quality 37(1): xxx-xxx.

Project Objectives

- Increase understanding of the causes and consequences of stormwater runoff
- Increase stakeholder participation in stormwater control and management
- Identify regulatory mechanisms to improve local stormwater management and control
- Provide alternative BMPs for stormwater mgm't

Planned Activities



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