Analysis of Benefits of EPA Oil Program

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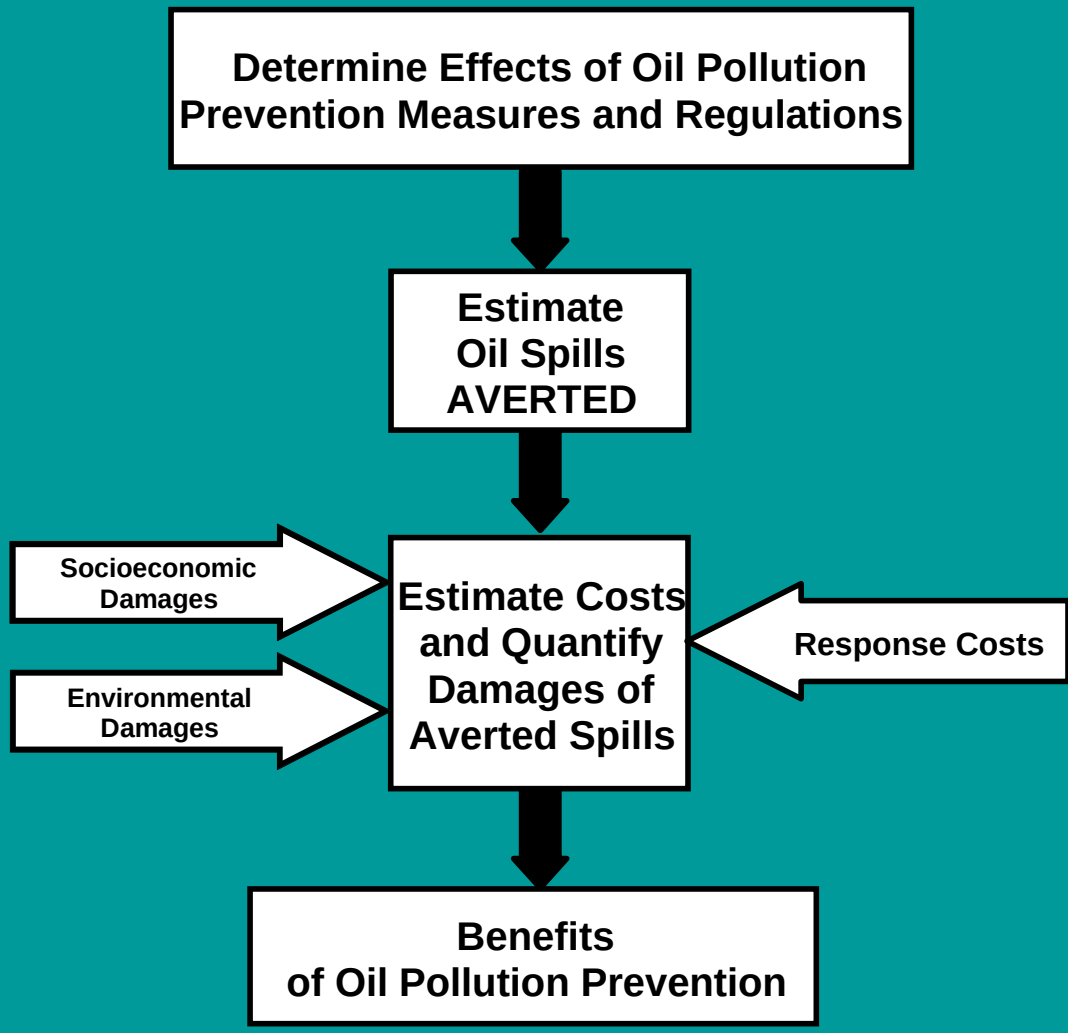
Purpose of project

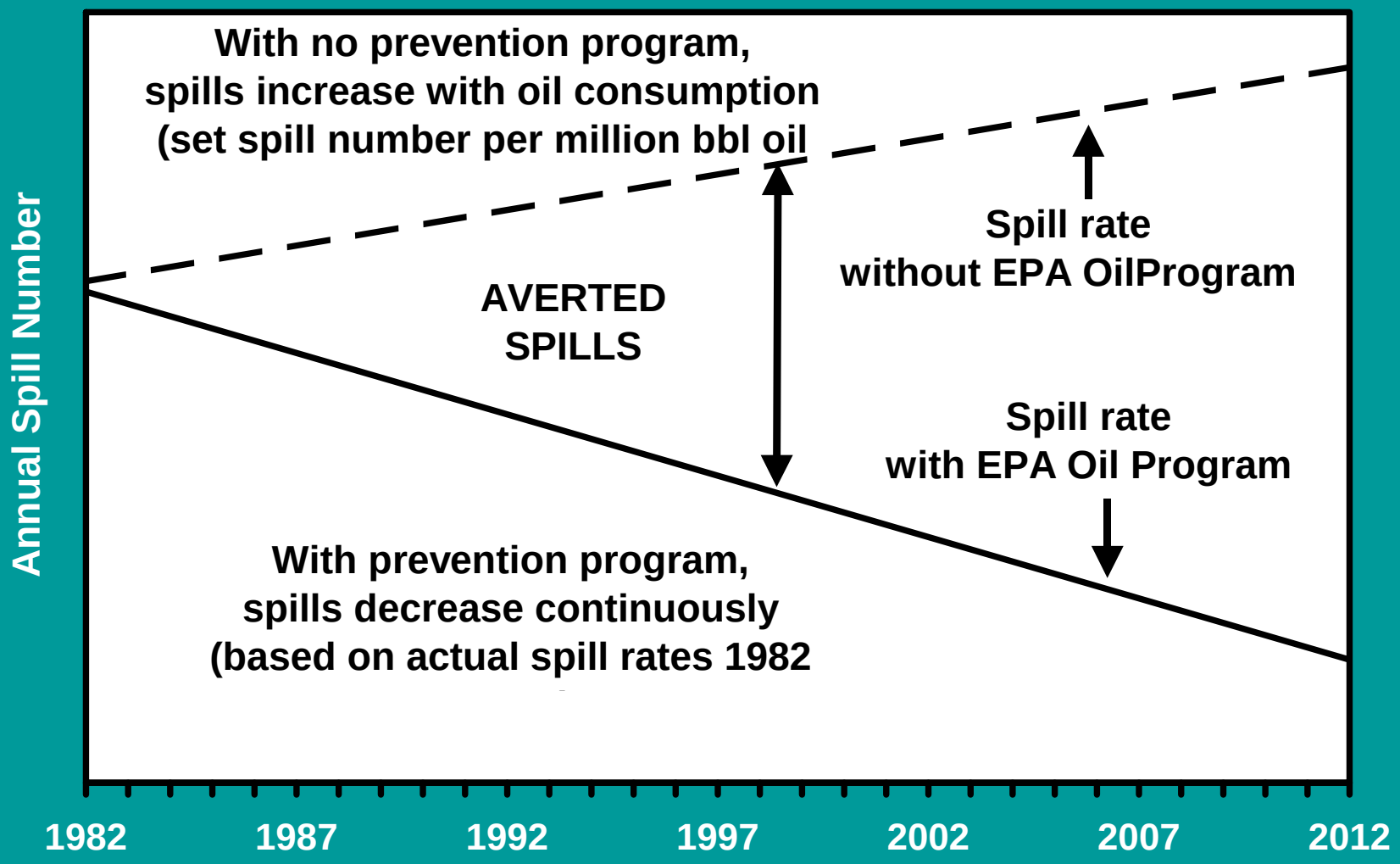
- Analyze EPA Oil Program benefits quantitatively with respect to **oil spills prevented** in non-marine navigable waters in EPA jurisdiction and from EPA-regulated facilities

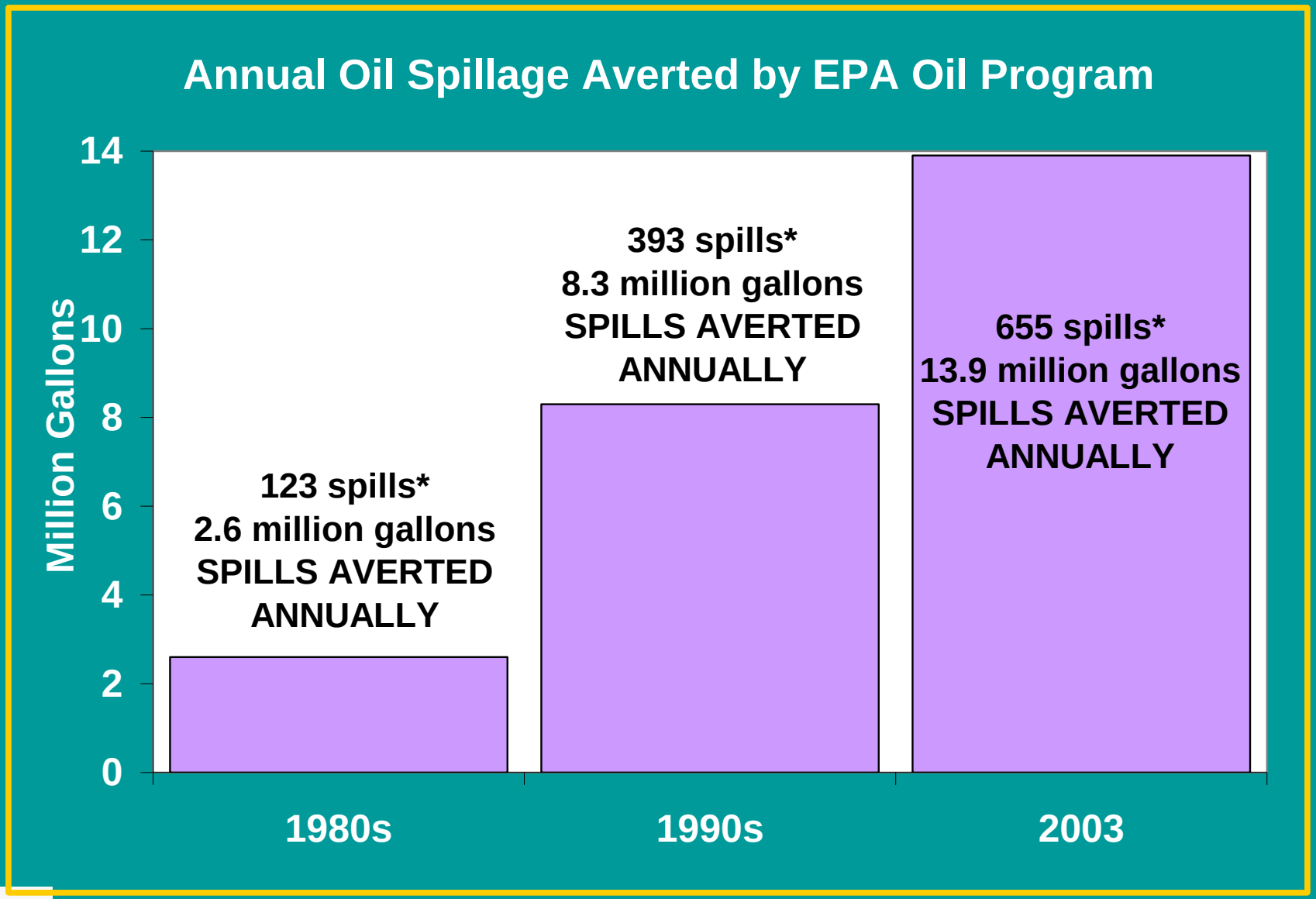
Analysis of Oil Pollution Prevention at EPA-Regulated Facilities

- Determination of oil spillage averted through prevention measures and regulations
- Estimation of value of averted oil spillage (costs and damages)
- Quantification of benefits of oil spill prevention

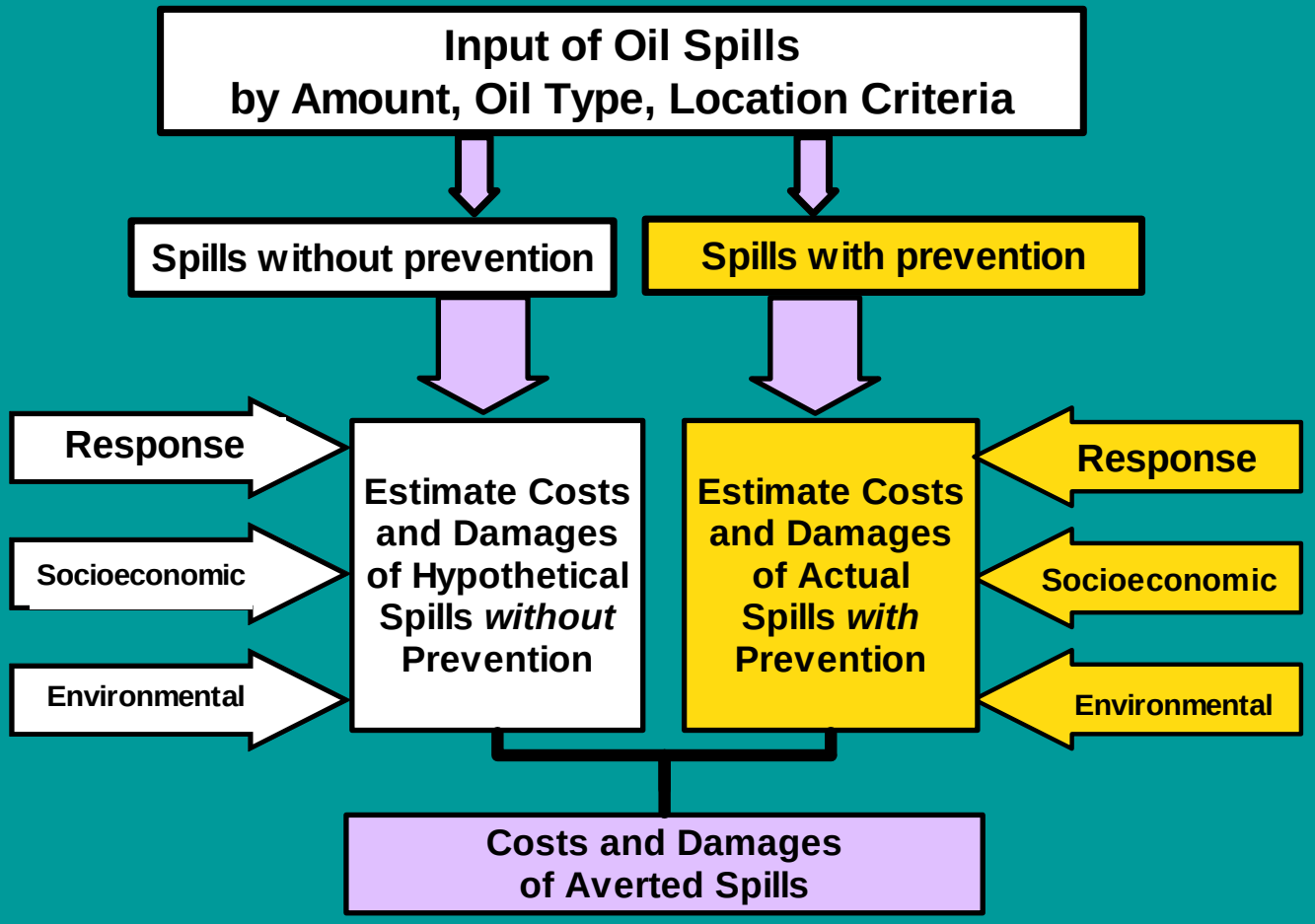


Estimation of Averted Spills

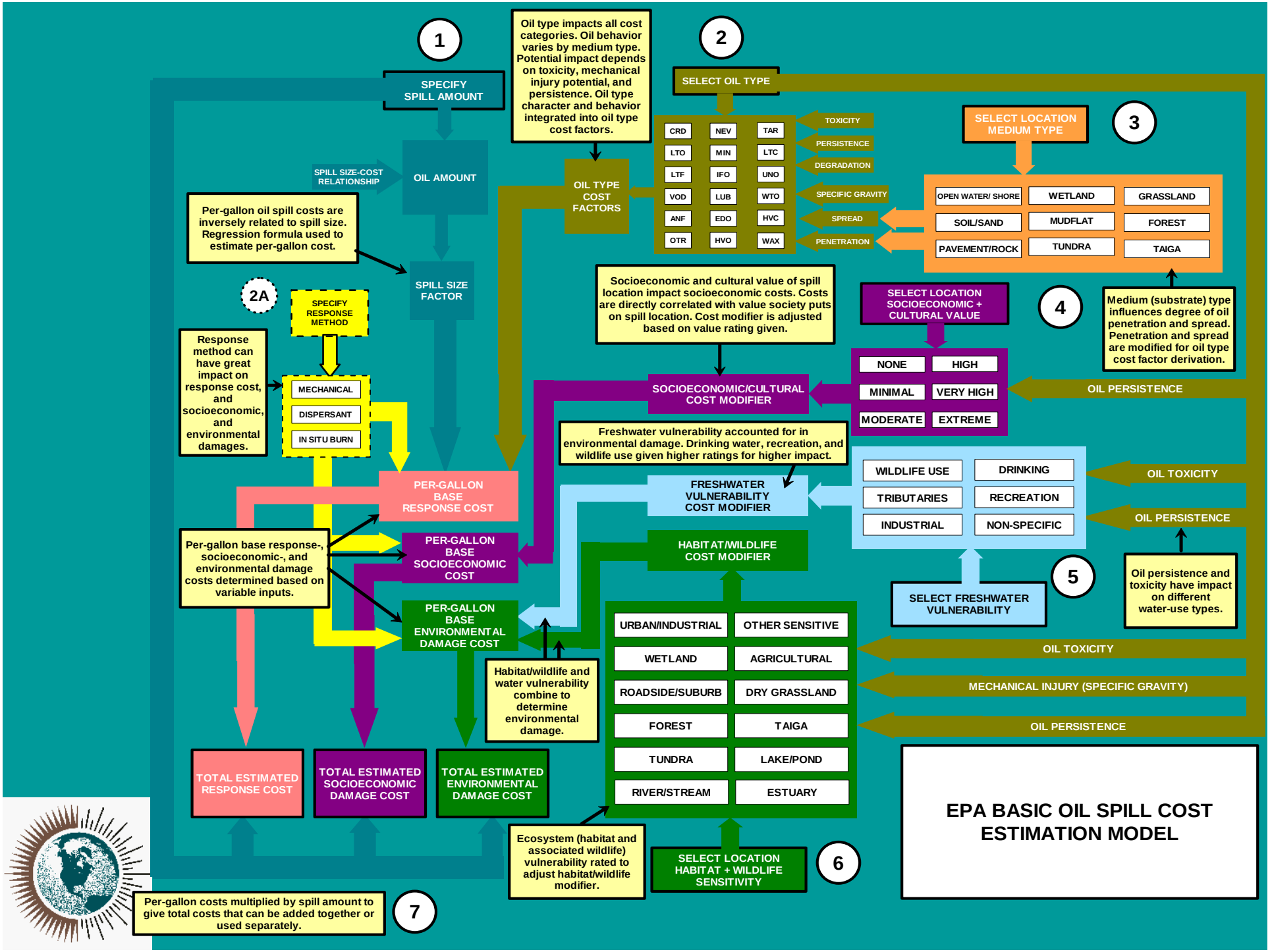




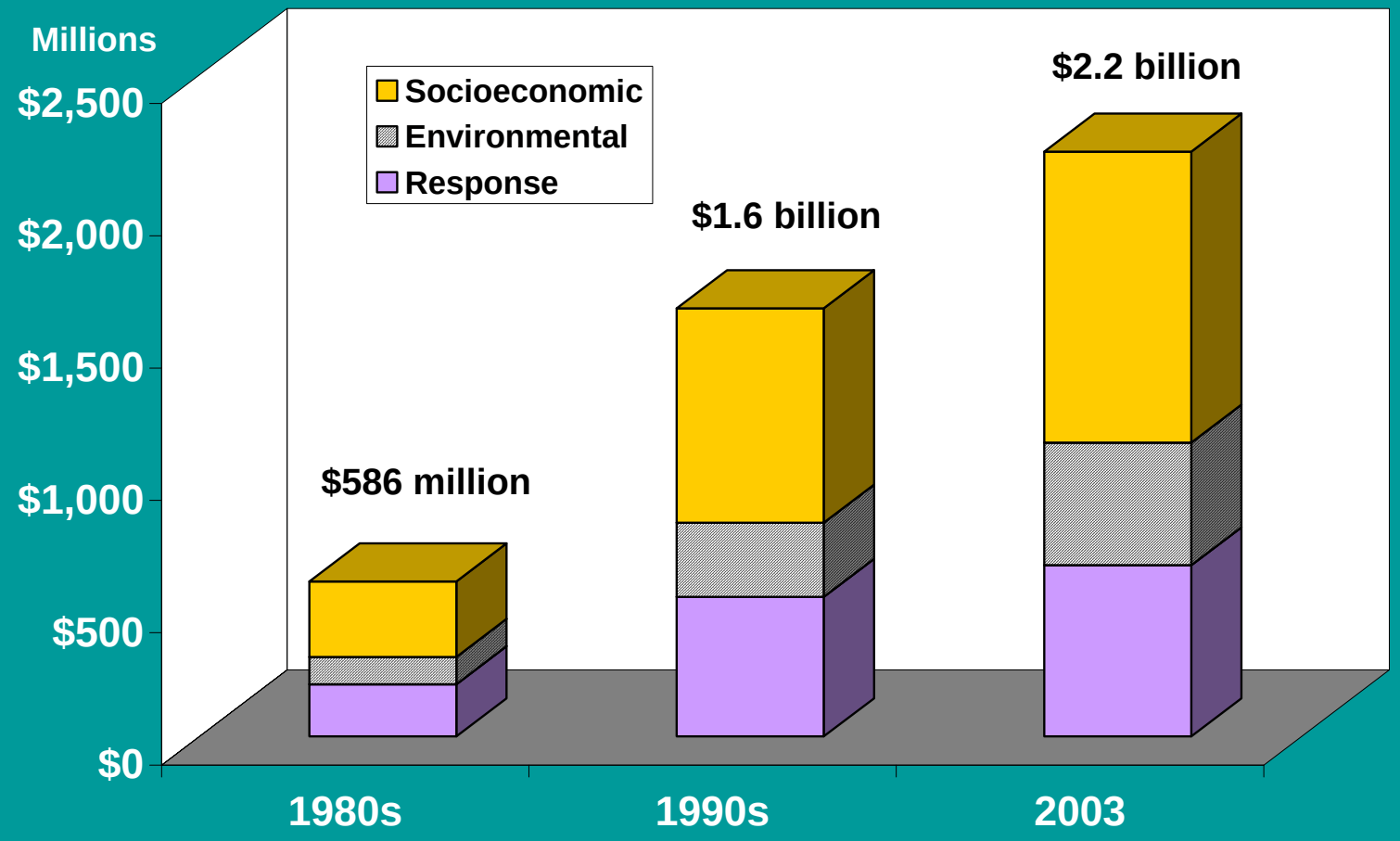
Determine Costs and Quantify Damages of Averted Oil Spillage



Oil spill response costs and socioeconomic/environmental damages estimated based on EPA Basic Oil Spill Cost Estimation Model for both *averted* spills and *actual* spills



Annual Oil Spill Costs and Damages Averted By EPA Oil Program Activities



Key Benefits Study Findings

1980 to 1992: EPA-regulated facilities producing, handling, or storing oil discharged 14.6 million gallons into navigable waters *annually* – 33% more than the Exxon Valdez spilled.

1992 to 2001: Annual spillage decreased 46%.

1980 through 2002: Oil pollution prevention regulations produced benefits estimated at $32 billion, by averting discharges at EPA-regulated facilities.

- Avoided cleanup costs: $10 billion
- Avoided environmental damage: $6 billion
- Avoided socioeconomi damage: $16 billion

Key Benefits Study Findings (continued)

2003: Oil pollution prevention regulations are producing benefits at the estimated rate of $2.2 billion each year, compared to $586 million annually in the 1980s.

- Avoided cleanup costs: $647 million annually
- Avoided environmental damage: $463 million annually
- Avoided socioeconomic damage: $1.07 billion annually

Other Factors that Influence Oil Spill Reduction

- **Oil Pollution Act of 1990 (OPA 90) increases responsible party liability to unlimited in most jurisdictions – i.e., there is more at stake for spiller**
- **High response and damage costs and more litigation in notorious spills both in the US and internationally**
- **State regulations aimed at spill prevention, including fines and penalties –regulations largely influenced by measures taken by EPA Oil Program and US Coast Guard towards spill prevention and preparedness, as well as OPA 90**
- **US Coast Guard oil spill prevention, preparedness and response regulations and programs increasing safety of vessels (relevant for inland waterway spills in EPA jurisdiction)**
- **Better salvage and response preparedness decreases size of spills by stopping spillage earlier in incident**

Development and Analysis of EPA Oil Spill Databases

- Development of new EPA Oil Spill Databases provides more reliable data with which to track progress
- New databases allowed for more comprehensive and accurate analyses for EPA Oil Program Benefits Study

ERNS and NRC Data

Initial (not updated) reports

Duplicate reports

Only reports to federal National Response Center included

No data checking/verification

No search capabilities

New EPA Oil Spill Databases

Updated reports

Duplicate reports reconciled

Data from NRC, OPS, USCG, MMS, state databases, industry, *et al.*

Data cross-checked/verified

Search engine capabilities

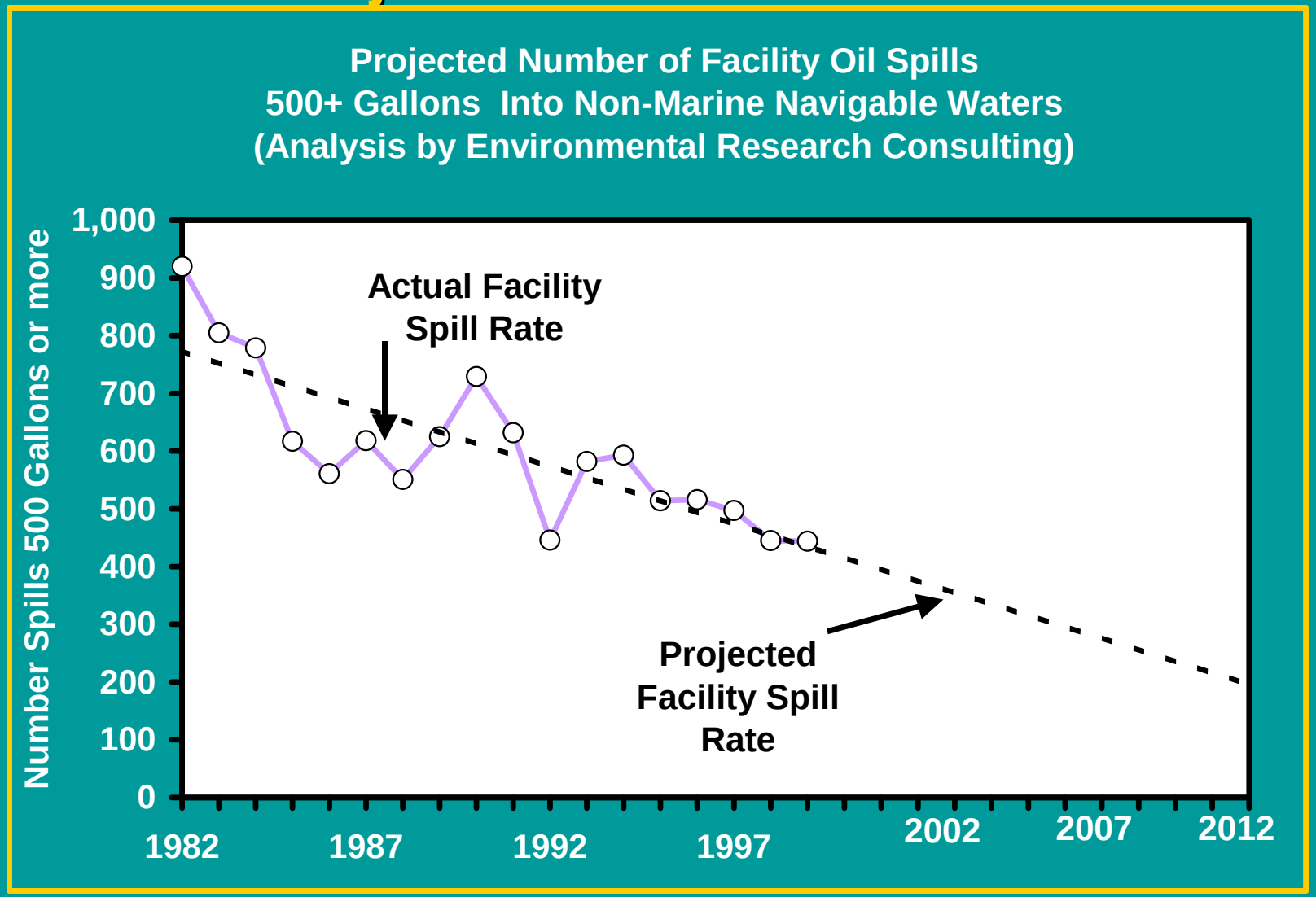
Additional datafields for more comprehensive information

- Analysis of oil spill trends (amounts, spill numbers) for 1980 to 2002 by source, location, oil type, spill size, and cause conducted

Key Findings of Oil Spill Data Analysis

- Average annual amount spilled from facilities in 1992 through 2000 is 46% less than for 1980 through 1991.
- Oil spillage is down while oil consumption has increased. Spill number per million barrels oil consumed decreased nearly 50% since 1982.
- From 1980 through 2002, the greatest volume spilled was of crude oil and greatest number of spills were in diesel spills from facilities.
- Reporting of smaller spills (under 500 gallons) that were previously not reported to authorities has significantly increased.

Finding: Number of Spills and Amount Spilled Projected to Decrease



Key Findings of Oil Spill Data Analysis (continued)

- Operational error leads known causes of oil spills from facilities (except pipelines): 24% of incidents.
- 57% of volume spilled due to structural failure or equipment malfunction.
- Pipelines are the source of the largest number of spills and second highest source of total volume spilled. (Note: many pipelines are regulated by DOT.)

How much have EPA Oil Program's activities contributed to the reduction in oil spills?

- Complex interrelationship among EPA's oil spill prevention actions and those of state environmental agencies, public, and industry
- Many state environmental agencies have developed own oil prevention programs, often stemming from EPA's leadership
- Industry taken voluntary actions, often to avoid new regulations and to have more control over prevention measure implementation
  - Significant financial incentives to reduce oil spillage, as spill response and damage settlements can be formidable
  - Greater concern about public image as people have become more educated on environmental issues (much to credit of EPA)
- More detailed research of industry and state regulatory costs may reveal more information on EPA's contribution, which is uncertain at this time

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