CEG 750: Urban Runoff

Total Maximum Daily Loads
(source: U.S. EPA)
What is a TMDL?

• The amount of a pollutant (point and nonpoint) that a waterbody can receive and still meet water quality standards
Why are they Needed?

• States report over 40 percent of assessed waters are still too polluted for fishing or swimming even after 28 years of water pollution control efforts

• Required under Clean Water Act (CWA) Section 303(d)
303(d) of CWA

• Identify waters not meeting State water quality standards (“listed”)

• Set priorities for TMDL development

• Develop TMDL for each pollutant for each “listed” water

• Required but not implemented
Listed (Impaired) Water Bodies

- 218 million people live within 10 miles of an impaired water body
- 300,000 river miles
- 5 million lake acres
- Most common pollutants: sediments, nutrients, microorganisms
- See U.S. Figure
U.S. Atlas of Impaired Water Bodies
Sources of Impairment

• 47% Combination Point and Nonpoint sources

• 43% Nonpoint sources only

• 10% Point Sources only
1992 Regulations

• In response to legal actions

• Responsibility put onto each State

• Issues:
  – Development of adequate “Lists”
  – Schedule of when they will be done
  – EPA as a “Backstop”…If state does not do it.
1992 Regulations
Scope of State List

• States develop impaired water bodies by pollutants

• Water body remains on list until TMDL is approved or water quality standard met.

• 2 year listing cycle
1992 Regulations
Components of a TMDL

• Sum of allowable loads to meet water quality standards
  – Wasteload from point sources
  – Loads from nonpoint source and natural background

• Margin of Safety

• Considers seasonal variation
1992 Regulations

• Public Review

• EPA Approval

• 1997 Interpretive Guidance
  – National consistency of approaches
  – After listing, TMDLs in 8-13 years
  – Public Participation
  – Recognition of watershed management processes and programs
2000 Rule

• Establish effective and flexible framework to obtain clean water

• Common sense and cost effective

• More comprehensive list of impaired waters

• Cleanup actions to attain water quality standards

• Consistency with NPDES

• 10 year horizon for attaining water quality standards

• Military construction exemption

• Not implemented yet (legal actions, etc..)
Status in Nevada

• List developed in 1998
  – Carson River: BOD, Nitrate, Ortho-P, TDS
  – Humbolt River: TDS, TP, TSS
  – Las Vegas Wash/Bay: TP, Total Ammonia
  – Truckee River: TDS, TN, TP
  – Walker River: TSS

• New List being developed (June 2002 Draft)
Nevada Impaired Water Bodies