Setting Wasteload Allocations in a TMDL
Training Goals

1. Define wasteload allocation (WLA)
2. Understand the relationship between stormwater and the TMDL wasteload allocation
3. Understand what the wasteload allocation encompasses
4. Understand what language a TMDL should have regarding the wasteload allocation for permitted stormwater
The Issue

TMDL sets a WLA for point sources, including stormwater

SWPPP must translate the WLA into “on the ground” stormwater management requirements

The challenge is to ensure that the TMDL provides clear, concise language that can easily be incorporated into SWPPPs
1. WHAT IS A WASTELOAD ALLOCATION (WLA)?
What is a Wasteload Allocation?

- The wasteload allocation is the pollutant load allocated to current and future point sources (includes NPDES permitted entities)

- $TMDL = WLA + LA + MOS + RC$

- $WLA = \text{point sources, including NPDES}$
- $LA = \text{non-permitted sources (nonpoint sources)}$
- $MOS = \text{margin of safety (accounts for uncertainty in estimates of WLA and LA)}$
- $RC = \text{reserve capacity (allows for future growth)}$
Who gets a WLA?

- NPDES-regulated discharges must be part of WLA. This includes discharges covered under municipal, construction, industrial, and individual permits.

- Non-NPDES discharges may be assigned to the WLA if
  - Future discharges will be covered by an NPDES permit
  - Reasonable assurances are provided by an NPDES permittee that the WLA will be met
Types of WLAs

- Categorical - multiple entities get the same WLA
- Individual - individual entities get different WLAs
- De minimus - loads from individual entities are considered to be insignificant. EPA interprets de minimus loads as zero.
Example of types of WLAs

In the chart at the right, MS4s A, B, and C have the same (categorical) WLA, D and E have individual WLAs, and F and G are given de minimu. Because of EPA interpretation, the WLAs for F and G are zero.
2. WLAs FOR THE DIFFERENT STORMWATER COMPONENTS
WLAs for construction stormwater

- For turbidity, eutrophication, dissolved oxygen, and biotic impairments, construction stormwater must get a WLA.
- The WLA should be categorical. If all regulated construction stormwater discharges to NPDES-permitted conveyances, construction stormwater can be part of a WLA that includes all regulated stormwater. Otherwise, construction stormwater should receive its own WLA.
- The TMDL should state “Construction storm water activities will be considered in compliance with provisions of the TMDL if they obtain a Construction General Permit under the NPDES program and implement the appropriate Best Management Practices.”
WLAs for industrial stormwater

- If the pollutant of impairment is on a benchmark sampling list for industrial stormwater, industrial stormwater must get a WLA.
- The WLA should be categorical. If all regulated industrial stormwater discharges to NPDES-permitted conveyances, industrial stormwater can be part of a WLA that includes all regulated stormwater. Otherwise, industrial stormwater should receive its own WLA.
- The TMDL should state “Industrial storm water activities will be considered in compliance with provisions of the TMDL if they follow conditions of the permit and implement the appropriate Best Management Practices.”
Regulated (Permitted) MS4s

- A TMDL must identify all permitted MS4s
- A TMDL must assign a WLA to each MS4, either:
  - Categorical (multiple MS4s get same requirement)
  - Individual (individual MS4 WLAs)
  - or a combination of these

- NOTE: EPA interprets de minimus WLAs to be equivalent to a WLA of 0. De minimus WLAs are therefore not allowed.
Permitted MS4s

§ WLA goal for permitted MS4s should be same as LA goal for non-permitted MS4s unless data supports having different WLAs

§ If different, Reasonable Assurance section must contain language explaining the difference
3. EXPRESSING THE WLA
The preferred form of the WLA for MS4 stormwater is as a percent reduction from a defined baseline.

The baseline must include a year and may include other information, such as BMPs that will not be credited (because they were considered in the allocations).

The form of the WLA for construction and industrial stormwater is unimportant since compliance with the permit is required for these.
4. ACCOUNTING FOR FUTURE LOADS AND FUTURE GROWTH
Incorporating nonpoint sources into the WLA - future loads and future growth

- WLA can include nonpoint sources not covered by an NPDES permit if
  - There will be NPDES coverage in the future
  - or
  - Reasonable assurances can be given that WLA will be achieved
Future NPDES discharges can be part of the WLA

| Regulated portion – automatically is part of WLA |
| Water Body |
| Nonsewered area within city boundary but not part of conveyance – normally part of the LA but can be included in WLA if the MS4 intends on sewering |
| Agricultural land – normally part of the LA but can be included in the WLA if the MS4 envisions growth into this area |

This figure illustrates two scenarios where the WLA can include load that normally is part of the LA.
Reasonable assurance - Non-regulated sources are in WLA if discharge is to a regulated conveyance

Agricultural land discharging directly to water body – part of the LA

Water Body

Regulated potion of the MS4 – automatically is part of the WLA

Agricultural land – normally part of the LA but can be included in the WLA if the discharge from the agricultural land is to the regulated MS4

The MS4 is responsible for what is in its conveyance and has authorities to cover discharges to its conveyance system
Future Growth - areas to be urbanized in future should be included in the WLA

- Regulated portion – automatically is part of WLA
- Area currently in agriculture but projected to be urban by 2030 (using land use plans) – put into the WLA
- Agricultural land that is projected to remain in agriculture by 2030 (using land use plans) – put into the LA

§ Base WLA on growth projections (e.g. land use plans)
§ Include growth in WLA, not a separate Reserve Capacity
Future Loads - non-regulated entities can get a WLA if they significantly contribute to impairment.

- Regulated portion – automatically is part of WLA
- Area currently in agriculture but projected to be urban by 2030 (using land use plans) – put into the WLA
- Mixed land outside regulated MS4 is not projected to urbanize but contributes 25% of total load – give an individual WLA

WLA must be individual

“Significant” is not defined; at least 5% of total load
5. ADJUSTING WLAs
Individual WLAs can be adjusted after TMDL is complete

Ex: based on new data, revised TMDL increases requirement for MS4 C and decreases for MS4. Overall WLA stays the same.

Revision does not require public noticing, but MS4s must be informed of the change.
CASE EXAMPLES

The following examples illustrate some of the concepts presented
WLAs for different sectors
Lower MN River Low Flow DO TMDL

- Point sources and NPDES stormwater make up the WLA
- Remaining sectors make up the Load Allocation

<table>
<thead>
<tr>
<th></th>
<th>Ag</th>
<th>Non-compliant ISTS</th>
<th>Under-treated Communities</th>
<th>Point Sources</th>
<th>NPDES Stormwater</th>
<th>Other Stormwater</th>
<th>Other Natural and Background Sources</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>178.8</td>
<td>5.6</td>
<td>4.4</td>
<td>381.3</td>
<td>30.5</td>
<td>147.5</td>
<td>3.8</td>
<td>752.0</td>
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</table>
Different WLAs for permitted and non-permitted MS4s

Concerns

- question of equity
- what is requirement for a non-permitted MS4 when it becomes a permitted MS4

<table>
<thead>
<tr>
<th>Urban stormwater</th>
<th></th>
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<tbody>
<tr>
<td>Permitted entities (MS4, construction, industrial)</td>
<td>30 percent reduction in phosphorus by 2025.</td>
</tr>
<tr>
<td>Communities below permitted MS4 thresholds</td>
<td>20 percent reduction in phosphorus by 2025.</td>
</tr>
</tbody>
</table>

Source: Lower Minnesota River Low Flow Dissolved Oxygen TMDL
Individual WLAs for construction and industrial stormwater

- WLA is categorical
- WLA is mass per unit time

Concerns
- hard to divide WLA among different entities
- could limit construction activity at any point in time

Source: SAN GABRIEL RIVER METALS TMDL California Regional Water Quality Control Board Los Angeles Region March 2006

<table>
<thead>
<tr>
<th>Metal</th>
<th>Flow (cfs)</th>
<th>Daily Storm Volume (liters)</th>
<th>General Construction (kg/day)</th>
<th>General Industrial (kg/day)</th>
<th>MS4 and Caltrans (kg/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>San Gabriel Reach 2 and upstream reaches and tributaries</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lead</td>
<td>260</td>
<td>$6.4 \times 10^8$ liters</td>
<td>1.2</td>
<td>2.9</td>
<td>52</td>
</tr>
<tr>
<td>Coyote Creek and tributaries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copper</td>
<td>156</td>
<td>$3.8 \times 10^8$ liters</td>
<td>0.29</td>
<td>0.20</td>
<td>5.2</td>
</tr>
<tr>
<td>Lead</td>
<td>156</td>
<td>$3.8 \times 10^8$ liters</td>
<td>1.5</td>
<td>1.0</td>
<td>28</td>
</tr>
<tr>
<td>Zinc</td>
<td>156</td>
<td>$3.8 \times 10^8$ liters</td>
<td>2.4</td>
<td>1.7</td>
<td>44</td>
</tr>
</tbody>
</table>
Categorical WLA for MS4s Mississippi River fecal coliform

§ Concerns
  § How to distribute load among 4 different permitted MS4s
  § treats all loading equally and doesn’t account for “hotspots”

§ Solution: Give WLA as a reduction or as number of organisms per unit area
Individual WLAs for MS4s
Lake Independence TMDL

- WLAs are easily converted to mass per unit area since we know areas of the MS4s
- MN DOT and Carver County were each given de minimus WLAs (not shown in table)
- Needed wasteload reduction is also provided

### Phosphorus Loading - Wasteload Allocation (WLA)

<table>
<thead>
<tr>
<th>Assigned Source</th>
<th>Existing Phosphorus Loading</th>
<th>Waste Load Phosphorus Allocation</th>
<th>Load Reduction (lbs)</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>(lbs/year)</td>
<td>(lbs/day)</td>
<td>(lbs/year)</td>
</tr>
<tr>
<td>Independence</td>
<td>891</td>
<td>2.44</td>
<td>356</td>
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<tr>
<td>Loretto</td>
<td>69</td>
<td>0.19</td>
<td>16</td>
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<tr>
<td>Medina</td>
<td>515</td>
<td>1.41</td>
<td>231</td>
</tr>
<tr>
<td><strong>Total (external only)</strong></td>
<td><strong>1475</strong></td>
<td><strong>4.04</strong></td>
<td><strong>603</strong></td>
</tr>
</tbody>
</table>
Future Growth - Putting nonpoint into the WLA: Potash Brook TMDL, VT

- WLA included all impervious areas greater than or equal to one acre in size, even though many of these were not covered under a Federal permit.
- Vermont has a state permit that covers these impervious areas.
- The reasonable assurance section of the TMDL contains language on Vermont’s permit.
Putting nonpoint into the WLA
Lake Independence TMDL

• All load in WLA even though urban makes up small % of watershed

• “In the event that voluntary implementation …does not occur … Medina and Independence will revise existing Conditional Use Permits or Zoning Ordinances to require compliance.” (reasonable assurance)
There are a number of issues surrounding setting WLAs for stormwater.

MPCA has developed a set of policy recommendations. These were discussed in this module.

To find out more, visit [http://www.pca.state.mn.us/water/stormwater/impairedwaters.html](http://www.pca.state.mn.us/water/stormwater/impairedwaters.html)