City of Manitowoc

Proposed Water Quality Pond

Pond - 103
#11 BMP Alternative

Legend
- Proposed Stormsewer
- Existing Stormsewer
- Proposed Pond
- City Parcels
- Pond Watershed

Intercept flow from existing storm sewer. Redirect to Pond-103

Proposed Outlet Structure Direct into existing storm sewer

Remove existing storm sewer stub
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Quantity</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Excavation</td>
<td>CY</td>
<td>$4</td>
<td>10,011</td>
<td>$40,044</td>
</tr>
<tr>
<td>2)</td>
<td>RCP Cost and Installation</td>
<td>LF</td>
<td>$40</td>
<td>95</td>
<td>$3,800</td>
</tr>
<tr>
<td>3)</td>
<td>Outlet Structure</td>
<td>EA</td>
<td>$2,000</td>
<td>1</td>
<td>$2,000</td>
</tr>
<tr>
<td>4)</td>
<td>Erosion Control</td>
<td>LS</td>
<td>$3,004</td>
<td>1</td>
<td>$3,004</td>
</tr>
<tr>
<td>5)</td>
<td>Street Restoration</td>
<td>SY</td>
<td>$20</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>6)</td>
<td>Re-Stabilization</td>
<td>SY</td>
<td>$1</td>
<td>6,625</td>
<td>$6,625</td>
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</tbody>
</table>

**DIRECT COST SUBTOTAL**

$55,473

**Unexpected Design Details** 30% $16,642 $25,000 Cap*

**Engineering Costs** 15% $30,000 $30,000 Min.

**PROBABLE CONSTRUCTION COST ESTIMATE** $102,115

<table>
<thead>
<tr>
<th>Item</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Quantity</th>
<th>Extension</th>
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<tbody>
<tr>
<td>7)</td>
<td>Land Purchase</td>
<td>LS</td>
<td>$70,000</td>
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<td>$70,000</td>
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<tr>
<td></td>
<td>Prorate from Assessed to Market Value</td>
<td>5%</td>
<td>$3,500</td>
<td></td>
<td></td>
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**TOTAL CONCEPTUAL COST ESTIMATE (2007-$$s)** $175,615

Notes:
* Engineering Cost to include: Geotechnical, Environmental, Construction Mgmt., Survey, Legal Costs, Property Investigation, Environmental Phase 1 & 2, Design, Plans & Specs., Bid, Construction Observation.
City of Manitowoc

Proposed Water Quality Pond

Pond - 134
#12 BMP Alternative

Legend
- Proposed Stormsewer
- Existing Stormsewer
- Proposed Pond
- City Parcels
- Pond Watershed

Intercept flow from existing storm sewer. Redirect to Pond-134.
<table>
<thead>
<tr>
<th>Item</th>
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<th>Unit</th>
<th>Unit Price</th>
<th>Quantity</th>
<th>Extension</th>
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<td>CY</td>
<td>$4</td>
<td>15,701</td>
<td>$62,804</td>
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<td>LF</td>
<td>$40</td>
<td>430</td>
<td>$17,200</td>
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<tr>
<td>3)</td>
<td>Outlet Structure</td>
<td>EA</td>
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<td>$2,000</td>
</tr>
<tr>
<td>4)</td>
<td>Erosion Control</td>
<td>LS</td>
<td>$3,538</td>
<td>1</td>
<td>$3,538</td>
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<tr>
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<td>Street Restoration</td>
<td>SY</td>
<td>$20</td>
<td>220</td>
<td>$4,400</td>
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<tr>
<td>6)</td>
<td>Re-Stabilization</td>
<td>SY</td>
<td>$1</td>
<td>10,856</td>
<td>$10,856</td>
</tr>
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</table>

**DIRECT COST SUBTOTAL**  
$100,798

**Unexpected Design Details 30%**  
$25,000  
$25,000 Cap*

**Engineering Costs 15%**  
$30,000  
$30,000 Min.

**PROBABLE CONSTRUCTION COST ESTIMATE**  
$155,798

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Quantity</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>7)</td>
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<td>LS</td>
<td>$262,604</td>
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</tr>
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</table>

**TOTAL CONCEPTUAL COST ESTIMATE (2007-$s)**  
$418,402

**Notes:**  
* Engineering Cost to include: Geotechnical, Environmental, Construction Mgmt., Survey, Legal Costs, Property Investigation, Environmental Phase 1 & 2, Design, Plans & Specs., Bid, Construction Observation.
City of Manitowoc

Proposed Water Quality Pond

Pond - 150
#13 BMP Alternative

Legend

- **Green** Proposed Stormsewer
- **Gray** Existing Stormsewer
- **White** City Parcels
- **Blue** Proposed Pond
- **Red** Pond Watershed

Intercept flow from existing storm sewer. Redirect to Pond-150

Proposed Outlet Structure Direct into existing storm sewer

Remove abandoned storm sewer during construction
## City of Manitowoc
### Proposed Water Quality Pond - 150
#### #13 BMP Alternative

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<th>Unit Price</th>
<th>Quantity</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Excavation</td>
<td>CY</td>
<td>$4</td>
<td>2,354</td>
<td>$9,416</td>
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<td>55</td>
<td>$2,200</td>
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<tr>
<td>3)</td>
<td>Outlet Structure</td>
<td>EA</td>
<td>$2,000</td>
<td>1</td>
<td>$2,000</td>
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<tr>
<td>4)</td>
<td>Erosion Control</td>
<td>LS</td>
<td>$1,854</td>
<td>1</td>
<td>$1,854</td>
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<td>5)</td>
<td>Street Restoration</td>
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<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>6)</td>
<td>Re-Stabilization</td>
<td>SY</td>
<td>$1</td>
<td>1,940</td>
<td>$1,940</td>
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</table>

**DIRECT COST SUBTOTAL**

\[
\text{DIRECT COST SUBTOTAL} = 17,410
\]

- **Unexpected Design Details**
  - 30% of DIRECT COST SUBTOTAL
  - 30% of $17,410 = $5,223
  - $25,000 Cap

**ENGINEERING COSTS**

\[
\text{ENGINEERING COSTS} = 15\% 
\]

\[
\text{ENGINEERING COSTS} = 15\% \times 17,410 = 2,611.5
\]

**TOTAL CONCEPTUAL COST ESTIMATE (2007-$s)**

\[
\text{TOTAL CONCEPTUAL COST ESTIMATE (2007-$s)} = 17,410 + 5,223 + 30,000 = 52,633
\]

- **Land Purchase**
  - LS $25,725

**TOTAL CONCEPTUAL COST ESTIMATE (2007-$s)**

\[
\text{TOTAL CONCEPTUAL COST ESTIMATE (2007-$s)} = 52,633 + 25,725 = 78,358
\]

**Notes:**
* Engineering Cost to include: Geotechnical, Environmental, Construction Mgmt., Survey, Legal Costs, Property Investigation, Environmental Phase 1 & 2, Design, Plans & Specs., Bid, Construction Observation.
City of Manitowoc

Proposed Water Quality Pond

Pond - 147
#14 BMP Alternative

Legend

- Green: Proposed Stormsewer
- Green: Existing Stormsewer
- White: City Parcels
- Blue: Proposed Pond
- Red: Pond Watershed

Intercept flow from existing storm sewer. Redirect to Pond-147
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Quantity</th>
<th>Extension</th>
</tr>
</thead>
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<tr>
<td>1)</td>
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<td>CY</td>
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<td>34,494</td>
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<td>1</td>
<td>$2,000</td>
</tr>
<tr>
<td>4)</td>
<td>Erosion Control</td>
<td>LS</td>
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<td>$5,098</td>
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<td>SY</td>
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<td>50</td>
<td>$1,000</td>
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<tr>
<td>6)</td>
<td>Re-Stabilization</td>
<td>SY</td>
<td>$1</td>
<td>21,950</td>
<td>$21,950</td>
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</tbody>
</table>

**DIRECT COST SUBTOTAL** $193,024

**Unexpected Design Details 30%** $25,000 $25,000 Cap

**Engineering Costs 15%** $30,000 $30,000 Min.

**PROBABLE CONSTRUCTION COST ESTIMATE** $248,024

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Quantity</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
<tr>
<td>7)</td>
<td>Land Purchase</td>
<td>LS</td>
<td>$0</td>
<td>1.0</td>
<td>$0</td>
</tr>
</tbody>
</table>

**TOTAL CONCEPTUAL COST ESTIMATE (2007-$$)** $248,024

**Notes:**

* Engineering Cost to include: Geotechnical, Environmental, Construction Mgmt., Survey, Legal Costs, Property Investigation, Environmental Phase 1 & 2, Design, Plans & Specs., Bid, Construction Observation.
City of Manitowoc

Proposed Water Quality Pond

Pond - 152
#15 BMP Alternative

Legend
- Proposed Stormsewer
- Existing Stormsewer
- City Parcels
- Proposed Pond
- Pond Watershed

Remove abandoned storm sewer during construction
Intercept flow from existing storm sewer. Redirect to Pond-152
Proposed Outlet Structure Direct into existing storm sewer
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Quantity</th>
<th>Extension</th>
</tr>
</thead>
<tbody>
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<td>$78,544</td>
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<td>RCP Cost and Installation</td>
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<td>100</td>
<td>$4,000</td>
</tr>
<tr>
<td>3)</td>
<td>Outlet Structure</td>
<td>EA</td>
<td>$2,000</td>
<td>1</td>
<td>$2,000</td>
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<tr>
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<td>$3,278</td>
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<td>$3,278</td>
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<tr>
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<td>Street Restoration</td>
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<td>$20</td>
<td>0</td>
<td>$0</td>
</tr>
<tr>
<td>6)</td>
<td>Re-Stabilization</td>
<td>SY</td>
<td>$1</td>
<td>12,515</td>
<td>$12,515</td>
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<tr>
<td>7)</td>
<td>Demolition of Existing Structures</td>
<td>SY</td>
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<td>18,300</td>
<td>$201,300</td>
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</tbody>
</table>

**DIRECT COST SUBTOTAL**

$301,637

**Unexpected Design Details 30%**

$25,000

**Total Probable Construction Cost Estimate**

$356,637

**Land Purchase**

| LS | $180,000 | 1.0 | $180,000 |

**TOTAL CONCEPTUAL COST ESTIMATE (2007-$s)**

$545,637

Notes:
* Engineering Cost to include: Geotechnical, Environmental, Construction Mgmt., Survey, Legal Costs, Property Investigation, Environmental Phase 1 & 2, Design, Plans & Specs., Bid, Construction Observation.