City of Manitowoc

Proposed Water Quality Pond

Pond - 111
#16 BMP Alternative

Legend

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

Intercept flow from existing storm sewer. Redirect to Pond-111

Proposed Outlet Structure Direct into existing ditch
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Quantity</th>
<th>Extension</th>
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<tbody>
<tr>
<td>1)</td>
<td>Excavation</td>
<td>CY</td>
<td>$4</td>
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<td>RCP Cost and Installation</td>
<td>LF</td>
<td>$40</td>
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<td>3)</td>
<td>Outlet Structure</td>
<td>EA</td>
<td>$2,000</td>
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<td>$2,000</td>
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<tr>
<td>4)</td>
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<td>LS</td>
<td>$3,024</td>
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<td>$3,024</td>
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<tr>
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<td>SY</td>
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<td>6)</td>
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<td>$11,459</td>
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**DIRECT COST SUBTOTAL**  
$103,375

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

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

**PROBABLE CONSTRUCTION COST ESTIMATE**  
$158,375

<table>
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<tr>
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<tbody>
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**TOTAL CONCEPTUAL COST ESTIMATE (2007-$s)**  
$580,160

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 - 115

#17 BMP Alternative

Legend

Proposed Stormsewer
Existing Stormsewer
Proposed Pond
City Parcels
Pond Watershed

Intercept flow from existing storm sewer. Redirect to Pond-115

Proposed Outlet Structure Direct into storm sewer
## City of Manitowoc

### Proposed Water Quality Pond - 115

#### #17 BMP Alternative

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<th>Extension</th>
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</table>

**DIRECT COST SUBTOTAL**

Unexpected Design Details 30% $17,828 $25,000 Cap

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

**PROBABLE CONSTRUCTION COST ESTIMATE**

$107,256

7) Land Purchase LS $75,000 1.0 $75,000

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

$186,006

### 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 - 116
#18 BMP Alternative

Legend

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

Intercept flow from existing storm sewer. Redirect to Pond-116
# City of Manitowoc

## Proposed Water Quality Pond - 116

### #18 BMP Alternative

<table>
<thead>
<tr>
<th>Item</th>
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<th>Extension</th>
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<td>LS</td>
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<td>$8,328</td>
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**DIRECT COST SUBTOTAL**

**$71,417**

**Unexpected Design Details 30%**

$21,425 $25,000 Cap*

**Engineering Costs 15%**

$30,000 $30,000 Min.

**PROBABLE CONSTRUCTION COST ESTIMATE**

$122,842

| 7)   | Land Purchase                      | LS   | $131,800   | 1.0      | $131,800  |
|      | Prorate from Assessed to Market Value | 5%   |            |          | $6,590    |

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

$261,232

**Notes:**

* Engineering Cost to include: Geotechnical, Environmental, Construction Mgmt., Survey, Legal Costs, Property Investigation, Environmental Phase 1 & 2, Design, Plans & Specs., Bid, Construction Observation.
Legend
- Proposed Stormsewer
- Existing Stormsewer
- Proposed Pond
- City Parcels
- Pond Watershed

City of Manitowoc

Proposed Water Quality Pond

Pond - 128

#19 BMP Alternative

Intercept flow from existing storm sewer. Redirect to Pond-128

Proposed Outlet Structure: Direct into existing storm sewer

Remove abandoned storm sewer during construction

Intercept flow from existing storm sewer. Redirect to Pond-128
<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>
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</table>

**DIRECT COST SUBTOTAL**

$45,538

**Unexpected Design Details 30%**

$13,661 $25,000 Cap*

**Engineering Costs 15%**

$30,000 $30,000 Min.

**PROBABLE CONSTRUCTION COST ESTIMATE**

$89,199

<table>
<thead>
<tr>
<th>Item</th>
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</table>

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

$89,199

**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 - 112
#20 BMP Alternative

Legend

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

Intercept flow from existing storm sewer. Redirect to Pond-112.
# City of Manitowoc
## Proposed Water Quality Pond - 112
### #20 BMP Alternative

<table>
<thead>
<tr>
<th>Item</th>
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<th>Extension</th>
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<tr>
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**DIRECT COST SUBTOTAL**

$53,503

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

$147,539

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