City of Manitowoc

Proposed Water Quality Pond

Pond - 102
#31 BMP Alternative

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

Intercept flow from existing storm sewer. Redirect to Pond-102

Proposed Outlet Structure
Direct into existing ditch
## City of Manitowoc
### Proposed Water Quality Pond - 102
#### #31 BMP Alternative

<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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<tr>
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<td>CY</td>
<td>$4</td>
<td>4,863</td>
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<tr>
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<td>LF</td>
<td>$40</td>
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<td>3)</td>
<td>Outlet Structure</td>
<td>EA</td>
<td>$2,000</td>
<td>1</td>
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<tr>
<td>4)</td>
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<td>LS</td>
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<tr>
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<td>SY</td>
<td>$20</td>
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<td>6)</td>
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<td>$1</td>
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<td>$3,307</td>
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**DIRECT COST SUBTOTAL**  
$36,700

**Unexpected Design Details 30%**  
$11,010  
$25,000 Cap

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

**PROBABLE CONSTRUCTION COST ESTIMATE**  
$77,710

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<tr>
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<tr>
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**Prorate from Assessed to Market Value 5%**  
$1,370

**TOTAL CONCEPTUAL COST ESTIMATE (2007-$s)**  
$106,480

**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 - 153
#32 BMP Alternative

Legend

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

Interceptor flow from existing storm sewer, redirect to Pond-153

Proposed Outlet Structure, direct into existing storm sewer

Pond 153
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Quantity</th>
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<td>LS</td>
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**DIRECT COST SUBTOTAL**

$18,288

**Unexpected Design Details**

30% $5,486

**Engineering Costs**

15% $30,000

**PROBABLE CONSTRUCTION COST ESTIMATE**

$53,774

**Land Purchase**

LS $35,000 1.0 $35,000

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

$90,524

**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 - 110
#33 BMP Alternative

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

Intercept flow from existing storm sewer. Redirect to Pond-110

Proposed Outlet Structure Direct into Manitowoc River
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
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<th>Unit Price</th>
<th>Quantity</th>
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<tbody>
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<td>854</td>
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<td>LS</td>
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<td>694</td>
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**DIRECT COST SUBTOTAL**

$30,335

**Unexpected Design Details 30%** $9,101 $25,000 Cap*

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

**PROBABLE CONSTRUCTION COST ESTIMATE**

$69,436

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**Prorate from Assessed to Market Value 5%** $620

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

$82,456

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 - 109
#34 BMP Alternative

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

Intercept flow from existing storm sewer. Redirect to Pond-109

Proposed Outlet Structure Direct into Manitowoc River

Pond 109
## City of Manitowoc
### Proposed Water Quality Pond - 109
#### #34 BMP Alternative

<table>
<thead>
<tr>
<th>Item</th>
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<th>Quantity</th>
<th>Extension</th>
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<td>2,003</td>
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**DIRECT COST SUBTOTAL** $24,343

Unexpected Design Details 30% $7,303 $25,000 Cap*

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

**PROBABLE CONSTRUCTION COST ESTIMATE** $61,646

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Prorate from Assessed to Market Value 5% $1,500

**TOTAL CONCEPTUAL COST ESTIMATE (2007-$s)** $93,146

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

Pond - 101.1
#35 BMP Alternative

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

Intercept flow from existing storm sewer. Redirect to Pond-101.1
City of Manitowoc  
Proposed Water Quality Pond - 101.1  
#35 BMP Alternative

<table>
<thead>
<tr>
<th>Item</th>
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<th>Quantity</th>
<th>Extension</th>
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<td>1</td>
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**DIRECT COST SUBTOTAL**  
$116,609

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

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

**PROBABLE CONSTRUCTION COST ESTIMATE**  
$171,609

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**TOTAL CONCEPTUAL COST ESTIMATE (2007-$s)**  
$260,859

**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 - 123
#36 BMP Alternative

Legend

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

Intercept flow from existing storm sewer: Redirect to Pond-123

Proposed Outlet Structure Direct into existing storm sewer
<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Unit</th>
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<td>$2,000</td>
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**DIRECT COST SUBTOTAL** $20,858

- Unexpected Design Details 30% $6,257 $25,000 Cap
- * Engineering Costs 15% $30,000 $30,000 Min.

**PROBABLE CONSTRUCTION COST ESTIMATE** $57,115

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Prorate from Assessed to Market Value 5% $690

**TOTAL CONCEPTUAL COST ESTIMATE (2007-$s)** $71,605

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