



# DESIGN

## SELECTING DEWATERING OPERATIONS

**DESIGN PHASE:**  
Consultant selects a dewatering system

Must dewatering occur?

No

Conduct construction operations without dewatering

Yes

Assess water quality; estimate discharge frequency, flow rate, and volume

Manage polluted water without discharge to storm drain or water body?

No

Obtain NPDES Permit

Yes

Consult with owner. Conduct further testing and evaluation per owner requirements.

1  
Manage within the project site

2  
Use on adjacent land or within City right-of-way outside of project

3  
Use at facility owned by others

4  
Transport for off-site treatment

5  
Discharge to sanitary sewer

6  
Follow project-specific permit requirements

DDC review. Design PM review the dewater plan. Consult DDC Construction PM for constructability review.

Yes

Does DDC suggest any changes/improvements?

No

Allow contractor to review the dewatering plan

Yes

Does the contractor suggest any changes/improvements?

No

Conduct pre-construction meeting, including site visit. Designate roles and responsibilities: to prevent and report noncompliances/ violations to DOH.

Issue NTP, Start construction activities



## 1. MANAGE WITHIN THE PROJECT SITE

### 1.1. Definition

Accumulated water is retained on the construction site rather than discharged or transported off site. Retained water evaporates and/or infiltrates into the soil. Review the questions to the right to assess if this option is appropriate.

### 1.2. Implementation

1. Disperse the water over an appropriate area or basin and allow the water to infiltrate into the soil or evaporate, or
2. Store the water in tanks for later use on the construction site.

### 1.3. Water Quality

- Appropriate for water free of pollutants other than sediment.
- Minor amounts of other non-hazardous pollutants may be acceptable.

### 1.4. Advantages

- Minimal NPDES permit requirements.
- Conserves water for other uses, such as BMPs (i.e. dust control, tire washing, irrigation for landscaped areas, etc.).

### 1.5. Limitations

- Generally, not feasible for large quantities or high flow rates.
- May require space for water storage tanks.
- Requires ponded water to be infiltrated or evaporated within 72 hours.
- May require treatment for sediment removal.

### 1.6. General Requirements

- Infiltrate or evaporate the water so that it does not remain ponded for more than 72 hours.
- If necessary, treat water to remove sediment prior to reuse on site.
- Retained water should not be reused near inlets or other areas where it may be inadvertently discharge from the site
- Removed sediments must be handled properly. Retained sediment must be dispersed onsite and stabilized or disposed at an approved location.

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**Answer the following questions to determine the feasibility of this option:**

- a. Is the water free of pollutants other than sediment?
- b. In your best judgment, is the water free of non-visible pollutants?
- c. Can the operation be managed so that no water leaves the construction site?
- d. Can the estimated volume of water be calculated?
- e. If applicable, will ponded water evaporate or infiltrate within 72 hours of collection?

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If you answered **YES** to all of the applicable questions above, consider retaining ownership of the water on site.

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If you answered **NO** to any of the above questions, this option is not feasible for the site. Consider other management options.

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## 2. USE ON ADJACENT LAND OUTSIDE OF PROJECT

### 2.1. Definition

Discharge of accumulated water by special agreement to adjacent land or outside the construction project limits (i.e., storage and tanks, infiltration, settling basin, open field). Review the questions to the right to assess if this option is appropriate.

### 2.2. Implementation

1. This agreement should include provisions for any monetary compensation, discharge prohibitions, pre-discharge testing, and expected final condition of the area or facility to be used.

### 2.3. Water Quality

- An option generally appropriate for water that does not contain pollutants other than sediment.

### 2.4. Advantages

- Minimal NPDES permit requirements.

### 2.5. Limitations

- May require a fee.
- May require treatment for sediment removal.
- Requires a written agreement.

### 2.6. General Requirements

- The discharge must be managed so that it cannot discharge to a storm drain or surface water body.
- If sediment filtration is required, the sediment must be properly managed. Retained sediment must be dispersed onsite and stabilized or disposed at an approved location.
- Water should be discharged in accordance with a written agreement from the property owner.
- The discharge must be monitored to ensure compliance.
- The discharge must not create a hazard at the discharge point.
- Pre-discharge chemical testing (if required) should be performed in accordance with the agreement, and the results provided to the owner prior to the discharge.

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**Answer the following questions to determine the feasibility of this option:**

- a. Is there an appropriate landowner adjacent to the construction site that is willing to negotiate an agreement to accept your discharge?
- b. Is the water free of visible pollutants other than sediment?
- c. In your best judgement, is the water free of non-visible pollutants?
- d. Can the estimated volume of water be accommodated on the adjacent land?
- e. If necessary, can the water be treated for sediment prior to discharge?

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If you answered **YES** to all of the applicable questions above, consider negotiating an agreement to discharge to adjacent land, but outside of the project limits.

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If you answered **NO** to any of the above questions, this option is not feasible for the site. Consider other management options.

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## 3. USE AT A FACILITY OWNED BY OTHERS

### 3.1. Definition

Discharge by special agreement of accumulated water for appropriate use at a facility owned by another. Typical uses include industrial operations; irrigation of a golf course, crops, or pasture; or, other non-potable use. Review the questions to the right to assess if this option is appropriate.

### 3.2. Implementation

1. This agreement should include provisions for any monetary compensation, discharge prohibitions, pre-discharge testing, and expected final condition of the area or facility to be used.

### 3.3. Water Quality

- An option appropriate for water that does not contain pollutants other than sediment.
- However, in certain cases, the adjacent facility may be able to accept water containing pollutants in addition to sediment.

### 3.4. Advantages

- Acceptable levels of pollutants may be discharged without pretreatment.
- Can be used to dispose of polluted water.
- No NPDES permit required.

### 3.5. Limitations

- May be very expensive (i.e., transport and analytical testing).
- Requires sufficient time for testing.
- Not viable for prolonged periods of dewatering or for large volumes of water.
- On-site collection/storage area may require secondary containment and permitting.

### 3.6. General Requirements

- Chemical testing may be required.
- The water may need to be transported using the appropriate manifest and documentation requirements.

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**Answer the following questions to determine the feasibility of this option:**

- a. Is there a facility conducive to the construction site that is willing to negotiate an agreement to accept the water?
- b. Can the estimated volume of water be accommodated by the facility?
- c. If necessary, can the water be appropriately treated prior to discharge?

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If you answered **YES** to all of the applicable questions above, consider negotiating an agreement to transfer the water to the facility.

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If you answered **NO** to any of the above questions, this option is not feasible for the site. Consider other management options.

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## 4. TRANSPORT FOR OFF-SITE TREATMENT

### 4.1. Definition

Water is hauled off-site for treatment. This typically involves a licensed commercial contractor who can remove, transport and dispose (or treat and recycle) polluted water. Review the questions to the right to assess if this option is appropriate.

### 4.2. Implementation

1. The use of a licensed-hauling contractor will require a fee and testing prior to pick-up and transportation.

### 4.3. Water Quality

- This option is typically appropriate for water with toxic pollutants that cannot be discharged elsewhere, although some contractors will accept clean water.
- This option would be feasible if the water were polluted in a manner that makes it more cost effective to transport the water off site than to treat it for discharge at the site.

### 4.4. Advantages

- Can be used to dispose of highly polluted water, including water polluted with hazardous materials.
- No NPDES permit required, except that already held by the receiving facility.

### 4.5. Limitations

- May be very expensive (for treatment, hauling, and analytical testing).
- Requires time for testing.
- Not viable for prolonged periods of dewatering or for large volumes of water.
- On-site collection/storage area may require secondary containment and permitting

### 4.6. General Requirements

- Chemical testing is required.
- Uniform hazardous waste manifests will be required if water is hazardous.

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**Answer the following questions to determine the feasibility of this option:**

- a. Is the water acceptable to the waste hauler and the receiving facility?
- b. Can the estimated volume of water be hauled by the waste hauler and can the receiving facility accommodate the volume of water?
- c. Can the costs and fees be afforded by the contract budget?

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If you answered **YES** to all of the applicable questions above, consider negotiating an agreement to transfer the water to an off-site facility for treatment.

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If you answered **NO** to any of the above questions, this option is not feasible for the site. Consider other management options.

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## 5. DISCHARGE TO SANITARY SEWER

### 5.1. Definition

Discharge of water to a sewer system through a permit with the local sewerage agency (ENV-Regulatory Control Branch). Review the questions to the right to assess if this option is appropriate.

### 5.2. Implementation

1. Must obtain permit from the local sanitary sewer agency. This permit will include provisions for fees, requirements for pre-discharge testing and reporting, and discharge limitations/prohibitions. If this option is used, an NPDES permit is not required for the dewatering operation.

### 5.3. Water Quality

- Generally appropriate for water that contains sediment and pollutants other than sediment.
- Acceptable pollutants and pollutant levels are defined by the local sanitary sewer agency. Sediment may require pre-treatment.

### 5.4. Advantages

- Acceptable levels of pollutants may be discharged without pretreatment.
- Water may be pumped directly from the project site with no intermediate transportation.
- No NPDES permit required.

### 5.5. Limitations

- May require treatment for sediment removal.
- Requires a permit from the local sanitary sewer agency.
- Time required to negotiate agreement and receive permission from local sanitary sewer agency.
- May require a fee.
- May require pre-discharge chemical testing.

### 5.6. General Requirements

- A permit is required from the local sanitary sewer agency to specify requirements for chemical quality of the water, discharge flow rates and quantities.
- Discharge water in accordance with written agreement from the local sanitary sewer agency. The discharge may require monitoring to assure compliance.
- Pre-discharge chemical testing (if required) should be performed in accordance with the local sanitary sewer agency policy with results provided to the agency prior to discharge.
- Discharge records may be required to be submitted to the local sanitary sewer agency.
- Water may need to be treated for sediment prior to discharge.
- If sediment filtration is required, the removed sediment must be properly managed.
- Retained sediment must be dispersed onsite and stabilized or disposed at an approved location.

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**Answer the following questions to determine the feasibility of this option:**

- a. Does \_\_\_\_\_ already have a standard agreement for discharge of accumulated precipitation or non-storm water from dewatering operations? Or, is \_\_\_\_\_ willing to negotiate an agreement and does the proposed discharge meet the terms of that agreement?
- b. Is the water quality acceptable to the \_\_\_\_\_ or can it be treated to meet requirements?
- c. Can the estimated volume of water be accommodated by the sanitary sewer?

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If you answered **YES** to all of the applicable questions above, consider negotiating an agreement to the \_\_\_\_\_.

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If you answered **NO** to any of the above questions, this option is not feasible for the site. Consider other management options.

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# 6. OBTAIN AN NPDES PERMIT AND FOLLOW PROJECT-SPECIFIC PERMIT REQUIREMENTS

### 6.1. Definition

Discharge to a storm drainage system or surface water in accordance with a general NPDES permit or site-specific NPDES permit issued by a DOH-CWB.

### 6.2. Implementation

1. Requires applying for permission to discharge under the applicable general NPDES permit or applying for a site-specific permit.

### 6.3. Water Quality

- Appropriate for water free of pollutants other than sediment.
- Water with pollutants other than sediment may be discharged by permission of the DOH-CWB, and treatment may be required.

### 6.4. Advantages

- Can be discharged directly from the project site.
- Appropriate for small to large quantities of water.

### 6.5. Limitations

- Permit application and approval may take several months.
- Discharged water must meet permit water quality requirements.
- Treatment for sediment and/or other pollutants may be required.
- Pre-discharge testing, monitoring, and reporting to be conducted in accordance with permit.
- Effluent and receiving water body testing may be costly and extensive.

### 6.6. General Requirements

- Consult with DOH-CWB for general NPDES permit application and compliance assistance.
- Test, manage, and monitor the discharge in accordance with the permit.
- Conduct dewatering in accordance with the permit.
- Treatment for sediment and/or other pollutants may be required.
- Prevent erosion at the discharge point. Implement appropriate BMPs such as outlet protection or velocity dissipation devices.

### G.1 Dewatering Discharge Information

- Quantity of discharge (gallons/million gallons)
- Rate of discharge (cfs/gpd)
- Frequency of discharge
  - Continuous
  - Emergency
  - Daily
  - Intermittent

### G.2 Location Map

- Location map
  - Attached?
    - Island on which the project is located
    - Location of project
- Topographic map
  - Attached?
    - Legal boundaries of project
    - Location and identification number of each of the project's existing and/or proposed outfalls or discharge points
    - Receiving State water(s) and receiving storm water drainage system(s), if applicable, identified and labeled, and
    - Location(s) where the water quality sample was collected in relation to the proposed project

### G.3 Flow Chart

- Flow chart or line drawing showing the general route taken by the dewatering effluent through the project from intake to the discharge point.

### G.4 Existing or Pending permits, Licenses, or Approvals

- Provide the status and corresponding file numbers on any existing or pending environmental permits:
  - Other NPDES Permit or NGPC File No
  - DA Permit
  - Section 401 WQC
  - RCRA Permit (Hazardous Wastes)
  - Facility on SARA 313 List (identify SARA 313 chemicals on site)
  - Other (specify)

### G.5 Site Characterization

- History of the land use at the proposed construction site and surrounding area
- Potential pollutant(s) that may be present and its source(s) at the proposed construction site and surrounding area.

### G.6 Project Description

- General description of construction activity, including quantity of disturbed area (in acres)
- Portion of project involving construction dewatering
- Construction schedule
  - Submitted?
- Time frame of proposed discharges

### G.7 Physical Source Water Quality

- Floating debris
- Scum or foam
- Color
- Odor

### G.8 Water Quality Parameters

- All parameters must be tested and reported. Provide lab data sheets and complete the table
- Explain and evaluate the source water quality data
- Include QA/QC and Chain of Custody Documents
  - Attached?

### G.9 Toxic Parameters

- Metals
- Organonitrogen compounds
- Pesticides
- Phenols
- Phthalates
- Polynuclear Aromatic Hydrocarbons
- Volatile Organics
- Others
- Explanation of the toxic pollutants analysis

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### G.10 Dewatering Facility Designer Information

- Dewatering facility designer information
  - Legal name
  - Mailing address
  - Street address
  - Contact person & job title
  - Phone#
  - Fax #

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### G.11 Treatment Facility Designer Information

- Treatment facility designer information
  - Legal name
  - Mailing address
  - Street address
  - Contact person & job title
  - Phone#
  - Fax #

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### G.12 Dewatering Plan

- Dewatering plan must comply with basic water quality criteria
  - Description of pumping devices
    - Pumping capacity
    - Number of devices
- Treatment design
- Design concerns
- Calculations used in the treatment design
- Proposed mitigation measures
- Site-specific dewatering plan
  - Submitted?
  - Contractor to submit?

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### G.13 Dewatering system maintenance plan

- Must ensure that the dewatering effluent discharge meets the conditions of the permit, water quality criteria, and applicable specific water quality parameters
  - Schedule of activities
  - Operation and maintenance procedures to prevent or reduce the pollution of state water
    - Responsible field person to the system, name and title
    - Operation plan
    - Maintenance scheduling and action criteria
    - Maintenance program
    - Sediment handling and disposal plan
    - Monitoring and visual inspection program
    - Cessation of discharge plan
    - Effluent control plan
  - Treatment requirements
- Site-specific dewatering system maintenance plan
  - Submitted?
  - Contractor to submit?

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### G.14 Construction Pollution Prevention Plan

- Prohibited practices
- Other management practices to prevent or reduce the pollution of state waters
- Practices to control project site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage or stockpiling area(s)
- Site-specific Construction Pollution Prevention Plan
  - Attached?
  - Contractor to submit?

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### G.15 Additional information