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GARY W. OTT  
RECORDER, SALT LAKE COUNTY, UTAH  
SL CO TOWNSHIP SERVICES  
H3-600  
BY: CBA, DEPUTY - WI 18 P.

**When recorded, mail to:**

Salt Lake County  
2001 South State St N600  
Salt Lake City, Ut 84190-4050

Affects Parcel No: 20-22-300-002

**STORMWATER  
MAINTENANCE AGREEMENT**

This Storm Water Maintenance Agreement (this "Agreement") is made and entered into this 16<sup>th</sup> day of May, 2016, by and between Salt Lake County, a body corporate and politic of the State of Utah (the "County"); Arbor Gardner Plum Sunset Hills, LLC, a Utah limited liability corporation (the "Operator"); and G&N Wood Properties, LLC, a Utah limited liability company (the "Owner").

**RECITALS**

WHEREAS, the County is authorized and required to regulate and control the disposition of storm and surface waters within the unincorporated County, as set forth in the Salt Lake County Storm water Ordinance, as amended ("Ordinance"), adopted pursuant to the Utah Water Quality Act, as set forth in UTAH CODE ANN. §§ 19-5-101, *et seq.*, as amended (the "Act"); and

WHEREAS, the Owner hereby represents and acknowledges that it is the owner in fee simple of certain real property more particularly described in Exhibit "A," attached hereto and incorporated herein by this reference (the "Property"); and

WHEREAS, the Operator desires to install a retention pond on the Property which will alter existing storm and surface water conditions on the Property and/or adjacent lands; and

WHEREAS, in order to facilitate these anticipated changes, the Operator desires to build and maintain, at Operator's expense, storm and surface water management facilities (the "Storm water Facilities"); and

WHEREAS, a detailed description of the operation and routine maintenance procedures required to enable the Storm Water Facilities to perform their designed functions, is attached hereto, consisting of 10 pages all marked as Exhibit "B," and is incorporated herein by this reference; and

WHEREAS, the Storm water Facilities are more particularly described in Exhibit "C," attached hereto and incorporated herein by this reference; and

WHEREAS, as a condition of the approval of the construction of the Storm water Facilities described in Exhibit "C," and as required by the Salt Lake County MS4 UPDES General Permit

from the State of Utah, Operator is required to enter into this Agreement establishing a means of documenting the Storm Water Facilities maintenance; and

NOW, THEREFORE, in consideration of the benefits received and to be received by the Operator, its successors and assigns, and the mutual covenants contained herein, the parties agree as follows:

#### SECTION 1

**Construction of Storm water Facilities.** The Operator shall, at its sole cost and expense, construct the Storm water Facilities in strict accordance with Exhibit "C" and any amendments thereto which have been approved by the County.

#### SECTION 2

**Maintenance of Storm water Facilities.** The Operator shall, at its sole cost and expense, fully comply with all the requirements of Exhibit "B." The Operator shall, at its sole cost and expense, perform all work necessary to keep the Storm Water Facilities in good working condition.

#### SECTION 3

**Annual Maintenance Report.** The Operator shall, at its sole cost and expense, inspect the Storm water Facilities and submit an inspection report and certification to the County annually. The purpose of the inspection and certification is to assure safe and proper functioning of the Storm water Facilities. The annual inspection shall cover all aspects of the Storm water Facilities. Deficiencies shall be noted in the inspection report. The report shall also contain a certification as to whether adequate maintenance has been performed and whether the structural controls are operating as designed to protect water quality. The annual inspection report and certification shall be due by July 31, of each year and shall be in a form acceptable to the County.

#### SECTION 4

**Oversight Inspection Authority.** The Operator and the Owner hereby grant permission to the County, its authorized agents and employees, to enter upon the Property and to inspect the Storm water Facilities upon reasonable notice to the Operator. Such inspections shall be conducted in a reasonable manner and at reasonable times, as determined appropriate by the County. The purpose of the inspection shall be to determine and ensure that the Storm water Facilities are adequately maintained, are continuing to perform in an adequate manner, and are in compliance with the Act, the Ordinance, and Exhibit "B."

#### SECTION 5

**Notice of Deficiencies.** If the County finds the Storm Water Facilities contain any defects or are not being maintained adequately, the County shall send the Operator written notice of the defects or deficiencies and provide the Operator with reasonable time to cure such defects or deficiencies. Such notice shall be confirmed delivery to the Operator or sent certified mail to the Operator.

#### SECTION 6

**Operator to Make Repairs.** The Operator shall, at its sole cost and expense, make such repairs, changes or modifications to the Storm water Facilities as may be determined as reasonably necessary by the County within the required cure period to ensure the Storm water Facilities are adequately maintained and continue to operate as designed and approved.

#### SECTION 7

**Corrective Action.** In the event the Operator fails to adequately maintain the Storm water Facilities in good working condition acceptable to the County, after due notice of deficiencies as provided in Section 5, the County may issue the Operator a citation punishable as a misdemeanor. The County may also give written notice to the Operator that the Storm water Facilities will be disconnected from the County's municipal separate storm sewer system. Any damage resulting from the disconnected system will be the Operator's responsibility. It is expressly understood and agreed that the County is under no obligation to maintain or repair the Storm water Facilities, and in no event shall this Agreement be construed to impose any such obligation on the County. The actions described in this Section are in addition to and not in lieu of the legal remedies available to the County as provided by law for Operator's failure to remedy deficiencies or any other failure to perform under the terms and conditions of this Agreement.

#### SECTION 8

**Reimbursement of Costs.** In the event the County, pursuant to this Agreement, incurs any costs, or expends any funds resulting from enforcement or cost for labor, use of equipment, supplies, materials, and the like related to storm drain disconnection from the County's municipal separate storm sewer system, the Operator shall reimburse the County upon demand, within thirty (30) days of receipt thereof for all actual costs incurred by the County. After said thirty (30) days, such amount shall be deemed delinquent and shall be subject to interest at the rate of ten percent (10%) per annum. Operator shall also be liable for any collection costs, including attorney's fees and court costs, incurred by the County in collection of delinquent payments. The Owner hereby authorizes the County to assess any of the above-described costs, if remained unpaid, by recording a lien against the Property.

#### SECTION 9

**Successors and Assigns.** This Agreement shall be recorded in the office of the County Recorder and the covenants and agreements contained herein shall run with the land and whenever the Property shall be held, sold, conveyed or otherwise transferred, it shall be subject to the covenants, stipulations, agreements and provisions of this Agreement which shall apply to, bind and be obligatory upon the Operator and the Owner, and their respective successors and assigns, as their respective obligations appear herein.

#### SECTION 10

**Severability Clause.** The provisions of this Agreement shall be severable and if any phrase, clause, sentence or provision is declared unconstitutional, or the applicability thereof to the

Owner or the Operator, their successors and assigns, is held invalid, the remainder of this covenant shall not be affected thereby.

#### **SECTION 11**

**Utah Law and Venue.** This Agreement shall be interpreted under the laws of the State of Utah. Suits for any claims or for any breach or dispute arising out of this Agreement shall be maintained in the appropriate court of competent jurisdiction in Salt Lake County, Utah.

#### **SECTION 12**

**Indemnification.** This Agreement imposes no liability of any kind whatsoever on the County. The Operator hereby agrees to indemnify and hold the County and its officers, employees, agents and representatives, and also the Owner, harmless from and against all liability, loss, damage, costs, or expenses, including attorneys' fees and court costs arising from, or as a result of, any accident, injury, loss, or damage whatsoever caused to any person or to the property of any person by the construction, existence, maintenance, or failure of the Storm water Facilities.

#### **SECTION 13**

**Amendments.** This Agreement shall not be modified except by written instrument executed by the County, and the Operator and Owner of the Property at the time of modification, and no modification shall be effective until recorded in the office of the County Recorder.

#### **SECTION 14**

**Duration.** This Agreement shall continue in effect until the Storm water Facilities are replaced with other storm water facilities constructed over, around, or nearby the Storm water Facilities to accommodate development of Owner's adjacent lands, whether constructed by Owner or other parties.

[SIGNATURE PAGE TO FOLLOW]

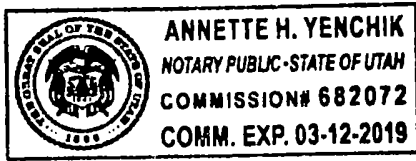
IN WITNESS WHEREOF, the parties have signed and subscribed their names hereon and have caused this Agreement to be duly executed as of the day and year first set forth above.

**OWNER  
G&N WOOD PROPERTIES, LLC**

By: *Norma G. Wood*  
Title: *Manager*

STATE OF UTAH )  
 ) :SS.  
COUNTY OF SALT LAKE )

The above instrument was acknowledged before me by *Norma G. Wood*,  
this *16<sup>th</sup>* day of *May*, 2016.



[SEAL]

*Annette H. Yenchik*  
NOTARY PUBLIC  
Residing in Salt Lake County

**OPERATOR  
ARBOR GARDNER PLUM SUNSET HILLS,  
LLC**

By: *John Gust*  
Title: *Manager*

STATE OF UTAH )  
 ) :SS.  
COUNTY OF SALT LAKE )

The above instrument was acknowledged before me by *John Gust*,  
this *8* day of *June*, 2016. *manager of Arbor Gardner Plum Sunset Hills, LLC*



[SEAL]

*Melanie Maxfield*  
NOTARY PUBLIC  
Residing in Salt Lake County

APPROVED AS TO FORM  
District Attorney's Office

By: Angela Lane  
Attorney

ANGELA D. LANE

Date: 06/13/2016

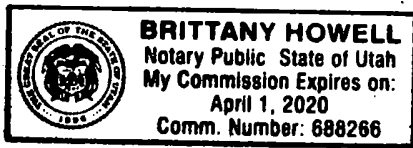
SALT LAKE COUNTY

By: [Signature]  
Mayor or Designee

STATE OF UTAH )  
:SS.  
COUNTY OF SALT LAKE )

On this 20 day of JUNE, 2016, personally appeared before me  
Lori Bayns, who being duly sworn, did say  
that (s)he is the Deputy Mayor of Salt Lake County, Office of Mayor, and that the  
foregoing instrument was signed on behalf of Salt Lake County, by authority of law.

[SEAL]



Brittany Howell  
NOTARY PUBLIC  
Residing in Salt Lake County

**Exhibit "A"**

A part of the Southwest Quarter of Section 22, Township 2 South, Range 2 West, Salt Lake Base and Meridian, U.S. Survey in Salt Lake County, Utah:

Beginning at a point 422.70 feet South  $89^{\circ}53'49''$  East along the Quarter Section Line from the West Quarter Corner of said Section 22; and running thence South  $89^{\circ}53'49''$  East 125.70 feet along the Quarter Section Line; thence South  $0^{\circ}06'11''$  West 102.60 feet; thence North  $89^{\circ}53'49''$  West 125.70 feet; thence North  $0^{\circ}06'11''$  East 102.60 feet to the point of beginning.

**Exhibit "B"**



**OFFICE OF TOWNSHIP SERVICES**

Planning and Development Services

2001 S. State Street N3-600 • Salt Lake City, UT 84190-4050

Phone: (385) 468-6700 • Fax: (385) 468-6674

[www.pwpds.slco.org](http://www.pwpds.slco.org)

## Post Construction Storm Water Management Plan

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Commercial Best Management Practices (BMPs) are those measures and/or practices to be maintained by the property owner or operator to prevent illicit discharges, pollutants and other contaminants from entering the city storm water system. These measures and practices are to be implemented upon completion of construction activities, to be conducted and maintained in perpetuity and will typically address the following:

- **Inspection and cleaning of oil/water separator and catch basin**—Oil/water separator and catch basin are to be inspected monthly and oil/water separator is to be cleaned at least every six months.
- **Parking area cleaning and sweeping**—Parking lots are to be cleaned and swept at least quarterly to prevent pollutants from entering the storm drain system.
- **Waste management and disposal**—Wastes will be limited to standard trash and recycling materials that will be disposed of in standard waste bins and disposed of by a licensed waste removal company.
- **Landscape maintenance**—Owner is responsible for general landscape maintenance. The landscape maintenance will consist primarily of watering.
- **Employee training**—Property owner is to provide or require training in storm water quality management and required BMPs. Employee training in storm water quality management and required BMPs shall be integrated with any other existing employee training programs.
- **Record of inspection, maintenance and training activities**—These shall be kept on site and made available for review by county and/or state officials upon request. An inspection of the site will be conducted by the city annually, or more frequently as may be deemed necessary.

The objectives of the plan are to:

1. Control soil erosion
2. Control discharge of sediment into storm drainage facilities or off-site
3. Prevent illicit discharge into on-site soils, into storm drainage facilities or offsite

**If** the objectives of the plan are not being met, the site operator or owner shall make adjustments to the plan as needed to accomplish its purposes.



## Exhibit "B"



### MAINTENANCE INSPECTION REPORT POST CONSTRUCTION PRIVATE STORMWATER BMP MAINTENANCE

#### INSPECTION PROCEDURE:

These Instructions and inspection report can serve as a Standard Operating Procedure (SOP) to comply with The Utah Department of Environmental Quality mandate that private stormwater facilities that discharge to Salt Lake County MS4 are properly inspected annually. At the discretion of the P.W. Engineer, some sites will require additional site specific SOP in addition to the following:

Site evaluation– Submit a copy of the inspection report to Salt Lake County Township office by July 31st of each year.

1. **Dumping Evidence:** Evaluate catch basins, inlets, manholes, gutters etc. for the presence of stains from dumping or paints, thinners, oils, or other hazardous substances.
  2. **Spill Evidence:** Evaluate pavements and soils for spills, particularly for evidence of neglected spills.
  3. **General Site Exposure:** Evaluate materials, devices, and operations that are exposed to weather. Inspect to verify that BMPs are in place or that there are practices that will contain or minimize pollutants and pollutant sources. Look for uncontained waste material, oil, antifreeze, cleansers and other materials and chemicals that could seep into the ground, enter the storm drain system, or affect water quality.
  4. **Other Pollution Sources:** Evaluate any activity or operations that are or may pollute the environment.
  5. **Stormwater Storage:** Inspect for proper maintenance and condition of detention/retention ponds. Check for proper capacity, debris or sediment accumulation, and that overflow devices are in place and in good condition, etc.
  6. **Inlets and catch basins:** Inspect for proper maintenance and function of storm water inlets and catch basins. Inspect for pollutants, debris, and excessive amounts of dirt and sediment. Inlets, basins, and covers should be in good working order.
  7. **Conveyance Systems:** Inspect for proper maintenance, condition, and function of stormwater pipes, catch basins, swales, ditches and other conveyances.
  8. **Manholes:** Inspect manholes for condition, debris, excessive amounts of sediment, proper maintenance, and function.
  9. **Parking:** Inspect parking areas for proper maintenance and condition. Inspect for pollutants, spills, etc. Pavement areas should indicate regular sweeping activity and maintenance.
  10. **Waste Collection:** Inspect for proper maintenance and function of waste collection facilities. Inspect for stains and leaks from containers. Ensure that lids are kept closed.
- Landscaping:** Inspect for condition, maintenance, and function. Inspect for excessive debris. Ensure proper application of chemicals by looking for accumulation of excess fertilizers, herbicides, insecticides, etc.
12. **Pre-Treatment Devices:** Inspect pre-treatment devices for proper maintenance and condition. Pre-treatment devices are devices such as hooded outlet cover (Snout), grease/sand interceptors, or other devices designed to remove pollutants from stormwater.
  13. **Sumps:** Inspect for proper maintenance and condition of Sumps, Class-V Injection Wells, and other similar underground devices designed to collect stormwater and percolate it to the ground.
  14. **Flow Control Devices:** Inspect for proper maintenance and function of Weirs, orifice plates and other similar flow control devices.
  15. **Site Specific SOP Items:** Certain land uses require site specific stormwater management SOP's to ensure the quality of stormwater that is discharged from a site. Review site inspections for compliance with site SOPs. Evaluate the current SOP's and modify, update, or amend them as needed.
  16. **Other:** Inspect other post construction stormwater items for proper function. This could include Pumps, Vaults, Backflow Devices, Bio-Filters, Bio-Retention Areas, Permeable Pavement, Green Roofs, etc.

**Exhibit "B"**



Exhibit B

Storm water Management BMP  
Schedule of Long Term Maintenance  
Activities in Salt Lake County, Utah

Activity	Frequency	Notes
Inspection	Annually	It is recommended that the SMP Operation and Maintenance Inspection Report, referenced by this agreement, be used as a guiding document. This annual inspection should be submitted to Salt Lake County upon completion.
Mowing and maintenance of vegetation	Variable, depending on vegetation and desired aesthetics	Landscaping and vegetation should be cared for throughout the year to ensure that proper sediment removal and infiltration is maintained and the Facilities remains aesthetically appealing.
Remove trash and debris	As needed or following each storm	Trash and debris should be removed regularly to ensure that the Facilities function properly and operate effectively. Trash often collects at inlet and outlet structures.
Inspect and maintain inlet and outlet structures	Annually	The inlet and outlet structures should be inspected for damage and proper operation.
Sediment removal	Variable (5-10 years is typical)	The removal of sediment is necessary if the Facilities begin to lose capacity or effectiveness.

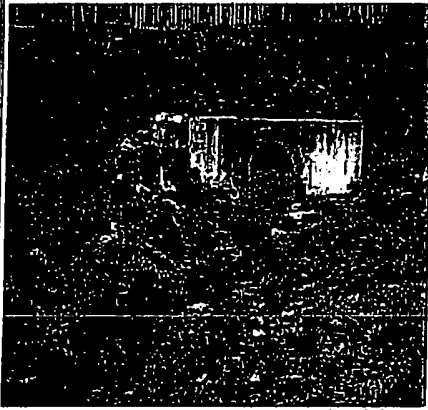
**Exhibit "B"**



**SMP OPERATION AND MAINTENANCE INSPECTION REPORT  
POST CONSTRUCTION PRIVATE STORMWATER BMP MAINTENANCE**

Site Name:		Date of Evaluation:					
Site Address:							
Facility Contact Information							
	NAME and MAILING ADDRESS		Phone		E-MAIL ADDRESS		
SITE CONTACT:							
INSPECTOR CONTACT:							
BUSINESS TYPE:    INSTITUTIONAL    COMMERCIAL    INDUSTRIAL    OTHER							
Circle Business type							
Are SOP's for Storm water Post Construction Inspections implemented and available for review?    YES    NO							
Circle Answer							
Office Required for site Circle Answers		YES	NO	Office Size:			
				Hooded outlet cover (snout) Required for site    YES    NO			
Items Inspected	Checked		Maintenance Req'd?		Is there excessive accumulation of debris or sediment?	Observations and Remarks	Deadline for corrective action
	Yes	No	Yes	No			
1. Dumping Evidence							
2. Spill Evidence							
3. General Site Exposure							
4. Other Pollution Sources							
5. Stormwater Storage condition and capacity (detention/retention ponds)							
6. Inlets and catch basins							
7. Conveyance System							
8. Manholes							
9. Parking							
10. Waste Collection							
11. Landscaping							
12. Pre-Treatment devices							
13. Sumps							
14. Flow Control devices							
15. Site Specific SOP Items							
16. Other							
Notes:							
Project Name:				Date:			
Signature:				Title or Position:			

**SOURCE CONTROL BMP**  
**BMP Inspection and Maintenance**



**DESIGN OBJECTIVES**

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Cover
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

**IMPLEMENTATION REQUIREMENTS**

- Capital Costs
- O&M Costs
- Maintenance
- Training

- High
- Medium
- Low

**DESCRIPTION:**

Regular inspections and maintenance of post-construction BMPs are critical to the performance and effectiveness of these measures. Without this, captured stormwater pollutants can be re-entrained or pass through the BMP. This BMP refers to routine maintenance to ensure proper operation, and repair maintenance to fix problems prior to the next storm event.

**APPLICATIONS:**

- ▶ Applicable to owners and operators of small municipal separate storm sewer system (MS4) facilities that are responsible for implementing BMP inspection and maintenance programs and having penalties in place to deter infractions.

**IMPLEMENTATION:**

- ▶ All stormwater BMPs should be inspected on a regular basis for continued effectiveness and structural integrity.
- ▶ Some structural BMPs may require more frequent inspection to ensure proper operation.
- ▶ All BMPs should be checked after each storm event. In some cases, such as vegetative or infiltration BMPs, the after storm inspection should occur after the expected drawdown period to allow the inspector to see if the BMPs are draining properly.
- ▶ Inspections and follow-up actions should be documented. Development of inspection checklists would be beneficial.

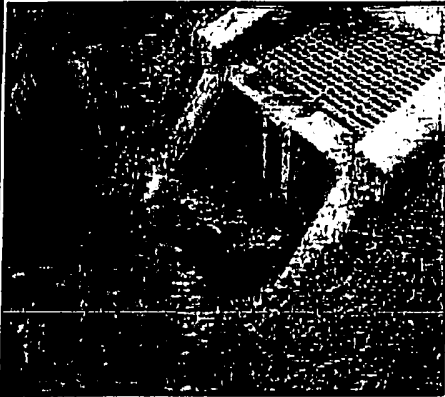
**LIMITATIONS:**

- ▶ Most tools necessary for BMP maintenance are readily available; however, some materials necessary for emergency structural repairs may be more difficult. Consideration should be given to stockpiling essential materials for this purpose.

**MAINTENANCE:**

- ▶ Routine maintenance and non-routine repair should be conducted according to a schedule or as soon as a problem is identified, as many BMPs are ineffective if not installed and maintained properly.

**TREATMENT CONTROL BMP**  
**Outlet Structures**



**CONSIDERATIONS**

- Soils
- Area Required
- Slope
- Water Availability
- Aesthetics
- Hydraulic Head
- Environmental Side Effects

**TARGETED POLLUTANTS**

- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Substances
- Oil & Grease
- Bacteria
- Floatable Materials
- Other Waste

**IMPLEMENTATION REQUIREMENTS**

- Capital Costs
- O&M Costs
- Maintenance
- Training

High     Medium     Low

**DESCRIPTION:**

This BMP is used primarily in conjunction with sedimentation BMPs. The most common types of outlets can be categorized into three groups: orifice-type, weir-type, and riser-pipe structures.

**APPLICATIONS:**

- ▶ Used for regulation of flow in detention basins, retention ponds and constructed wetlands.

**INSTALLATION/APPLICATION CRITERIA:**

- ▶ These structures should include a partially submerged orifice plate with a screen (or grate) protecting the orifice plate from clogging, and an overflow weir for flows exceeding the water quality capture volume.
- ▶ Design orifice plate to pass the baseflow while detaining the water quality capture volume for appropriate length of time.
- ▶ Maximize the area of each orifice to avoid clogging.
- ▶ Maximize the width of the trash rack to the geometry of the outlet to reduce clogging and maintenance requirements associated with cleaning the trash rack.
- ▶ Set outlet into the embankment of the pond for better access.
- ▶ Consider safety, aesthetics and maintenance when designing outlet structure.

**LIMITATIONS:**

- ▶ Sizing must be appropriate to needs for flood control and water quality control, as well as the size of the contributing area.

**MAINTENANCE:**

- ▶ Clearing trash rack.
- ▶ Sediment removal.
- ▶ Vegetation maintenance.

**References:**

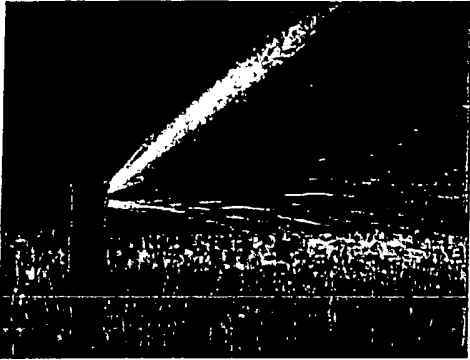
- <http://www.cire.iastate.edu/pubs/stormwater/documents/2C-12DetentionBasinOutletStructures.pdf>
- <http://www.knoxcounty.org/stormwater/pdfs/vol2/3-3%20Outlet%20Structures.pdf>

## Exhibit "B"



### SOURCE CONTROL BMP Efficient Irrigation

SALT LAKE  
COUNTY



#### DESIGN OBJECTIVES

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Cover
- Prohibit Dumping of Improper Materials
- Contain Pollutants
- Collect and Convey

#### IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High    ☒ Medium    □ Low

#### DESCRIPTION:

Irrigation water provided to landscaped areas may result in excess irrigation water being conveyed into stormwater drainage systems. Development plans should include careful consideration of irrigation systems to minimize runoff of excess irrigation water into the stormwater conveyance systems. This BMP also serves to conserve water usage.

#### APPLICATIONS:

- ▶ Applicable to residential, commercial and industrial areas planned for development or redevelopment.

#### IMPLEMENTATION:

- ▶ Use rain-triggered shutoff devices to prevent irrigation after precipitation.
- ▶ Design irrigation systems to each landscaped area's specific water requirements.
- ▶ Implement water conservation plans that may include water sensors, programmable irrigation times, etc.
- ▶ Group plants with similar water requirements; use plants with low irrigation requirements.
- ▶ Park strips are difficult to irrigate without waste of water; consider alternative landscape techniques for these areas.

#### LIMITATIONS:

- ▶ Must be in compliance with local regulations.

#### MAINTENANCE:

- ▶ Maintenance of vegetation as appropriate.

## Exhibit "B"



### SOURCE CONTROL BMP Storm Drain System Signs



#### DESIGN OBJECTIVES

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Cover
- Collect and Convey
- Prohibit Illicit Discharges
- Contain Pollutants

#### IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High     Medium    □ Low

#### DESCRIPTION:

Identifying storm drain system inlets can serve to discourage illegal or illicit discharges into the system. Signs can be stenciled or may be stickers designed to inform the public that these are drains for stormwater that may impact surface water quality.

#### APPLICATIONS:

- ▶ Applicable to residential, commercial and industrial areas planned for development or redevelopment.

#### IMPLEMENTATION:

- ▶ Could be part of the project design.
- ▶ Some cities encourage signs as part of volunteer efforts, for example, Boy Scout projects.
- ▶ Marker or sign should be placed in clear sight facing toward anyone approaching the inlet from either side.
- ▶ Salt Lake County has information packets available for residents where signs are placed providing general stormwater information.

#### LIMITATIONS:

- ▶ Type of sign needs to take into consideration snow plows and street sweepers.

#### MAINTENANCE:

- ▶ Stencils may need to be repainted on a periodic basis.
- ▶ Stickers or markers will need to be replaced every few years.

**SOURCE CONTROL BMP**  
**Landscape Maintenance**



**DESIGN OBJECTIVES**

- Maximize Infiltration
- Provide Retention
- Slow Runoff
- Minimize Impervious Cover
- Collect and Convey
- Prohibit Illicit Discharges
- Contain Pollutants

**IMPLEMENTATION REQUIREMENTS**

- Capital Costs
- O&M Costs
- Maintenance
- Training

High     Medium     Low

**DESCRIPTION:**

Proper landscape maintenance is important to reduce nutrient and chemical loading to the storm drain system, reduce nuisance flows and standing water in stormwater BMPs, and to maintain healthy vegetation. Examples of maintenance activities that will serve to minimize stormwater pollutants include mowing, aeration, fertilization and irrigation.

**APPLICATIONS:**

- ▶ Applicable to residential, commercial, municipal, and some industrial areas.

**IMPLEMENTATION:**

- ▶ Public education regarding landscape maintenance should include the following key points:
  - Keep lawn clipping and debris out of the gutters; mulch-mowing turf at a height of 2.5 to 3 inches to help develop deeper root systems; minimize thatch development by mowing at appropriate frequencies and heights for the grass type, avoid overwatering and over fertilization, and aerating the turf.
  - Lawn aeration reduces soil compaction and serves to move water and fertilizer into the root zone; aerate once or twice/year, but not when it is extremely hot and dry; don't use spike-type aerators, holes should be 2 to 3 inches deep and no more than 2 to 4 inches apart; thoroughly water day before.
  - Only apply nutrients that the plants can use; follow manufacturer's directions; conduct soil testing to determine needs; utilize split applications of slow-release fertilizers; keep fertilizers off hard surfaces (streets and sidewalks); water turf following fertilization; avoid fertilizing before heavy rainfall forecast; don't fertilize near wells or waterbodies (6 to 10 feet away).
  - Determine water needs to supplement normal rainfall; irrigate lawn uniformly until soil is moist to a depth of 4 to 6 inches; maintain irrigation system to prevent waste; consider use of "Smart" irrigation controllers and weather sensors;

**LIMITATIONS:**

- ▶ Must be in compliance with local regulations.



**SOURCE CONTROL BMP  
Pesticides, Herbicides and Fertilizers**



**DESIGN OBJECTIVES**

- |  |   |
|--|---|
| <input type="checkbox"/> Maximize Infiltration     | <input type="checkbox"/> Collect and Convey                     |
| <input type="checkbox"/> Provide Retention         | <input checked="" type="checkbox"/> Prohibit Illicit Discharges |
| <input type="checkbox"/> Slow Runoff               | <input checked="" type="checkbox"/> Contain Pollutants          |
| <input type="checkbox"/> Minimize Impervious Cover |   |

**IMPLEMENTATION REQUIREMENTS**

- |  |                               |  |                              |
|--|-------------------------------|--|------------------------------|
| <input type="checkbox"/> Capital Costs | <input type="checkbox"/> High | <input checked="" type="checkbox"/> Medium | <input type="checkbox"/> Low |
| <input type="checkbox"/> O&M Costs     |                               |  |                              |
| <input type="checkbox"/> Maintenance   |                               |  |                              |
| <input type="checkbox"/> Training      |                               |  |                              |

**DESCRIPTION:**

Various chemicals used for landscape maintenance must be properly applied, stored, handled and disposed of to prevent contamination of surface and ground waters. These chemicals include pesticides, herbicides, fertilizers, fuel, etc. Misuse of pesticides and herbicides can result in adverse impacts to aquatic life, even at low concentrations. Misuse of fertilizer can result in increased algae growth in waterbodies due to excessive phosphorus and nitrogen loading.

**APPLICATIONS:**

- ▶ Applicable to residential, commercial and municipal areas.

**IMPLEMENTATION:**

- ▶ Public education regarding the use of these chemicals is necessary to ensure proper application and to minimize the release of these chemicals into storm drains or groundwater. Some of the key education points include:
  - Application of fertilizers, pesticides, and other chemicals according to manufacturer's directions.
  - Application of pesticides and herbicides only when needed and use in a manner to minimize off-target effects.
  - Accurately diagnose the pest; know characteristics of the application site, including soil type and depth to groundwater.
  - Employ application techniques that increase efficiency and allow the lowest effective application rate.
  - Keep pesticide and fertilizer equipment properly calibrated according to the manufacturer's instructions and in good repair.
  - All mixing and loading operations must occur on an impervious surface.
  - Do not apply pesticides or herbicides during high temperatures, windy conditions or immediately prior to heavy rainfall or irrigation.
  - Storage areas should be secure and covered, preventing exposure to rain and unauthorized access.
  - Store chemicals in their original containers, tightly closed, with labels intact. Regularly inspect them for leaks. Storage and maintenance areas, and vehicle refueling and maintenance areas should be located away from wells and surface waterbodies in accordance with local regulations, typically at least 50 to 100 feet away.

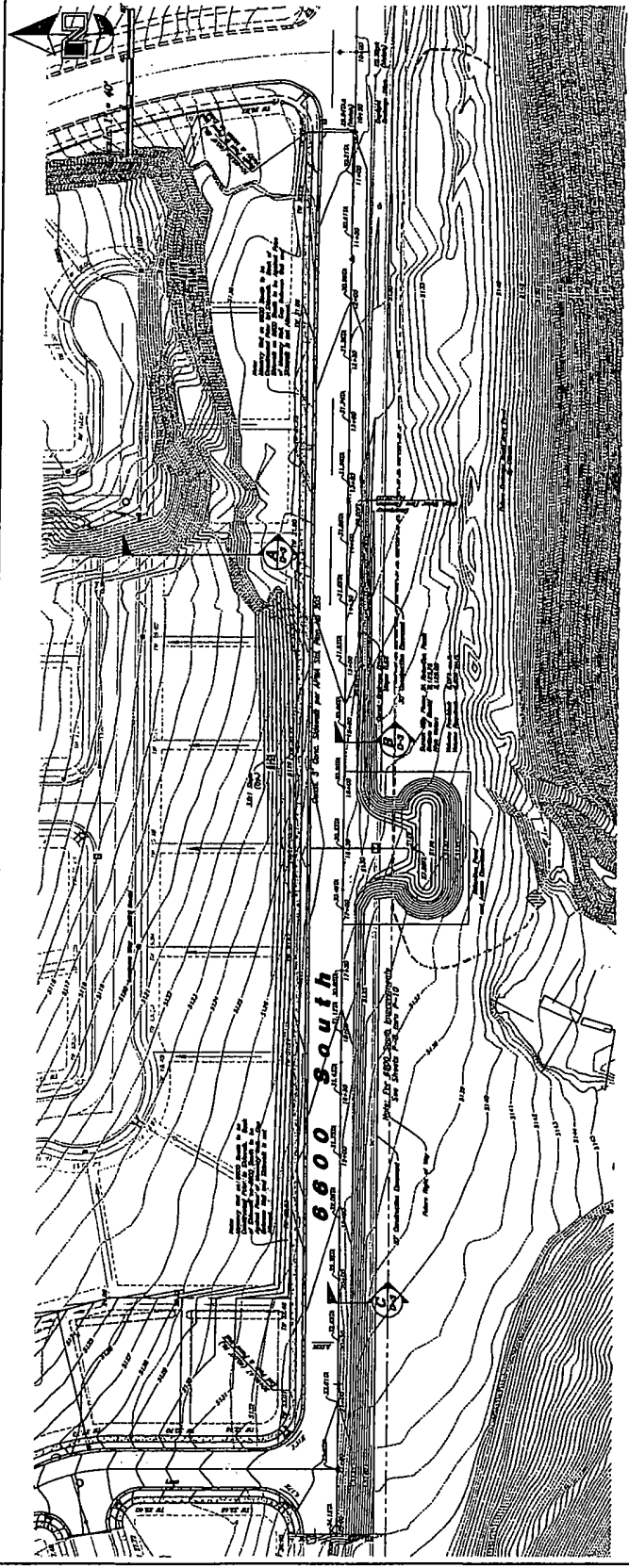
**LIMITATIONS:**

- ▶ Must be in compliance with local regulations.

**MAINTENANCE:**

- ▶ Should be in compliance with manufacturer's instructions.

NO.	DATE	REVISION
1	08/27/25	ISSUE FOR PERMIT
2	08/27/25	REVISED TO REFLECT COMMENTS
3	08/27/25	REVISED TO REFLECT COMMENTS
4	08/27/25	REVISED TO REFLECT COMMENTS
5	08/27/25	REVISED TO REFLECT COMMENTS
6	08/27/25	REVISED TO REFLECT COMMENTS
7	08/27/25	REVISED TO REFLECT COMMENTS
8	08/27/25	REVISED TO REFLECT COMMENTS
9	08/27/25	REVISED TO REFLECT COMMENTS
10	08/27/25	REVISED TO REFLECT COMMENTS
11	08/27/25	REVISED TO REFLECT COMMENTS
12	08/27/25	REVISED TO REFLECT COMMENTS
13	08/27/25	REVISED TO REFLECT COMMENTS
14	08/27/25	REVISED TO REFLECT COMMENTS
15	08/27/25	REVISED TO REFLECT COMMENTS
16	08/27/25	REVISED TO REFLECT COMMENTS
17	08/27/25	REVISED TO REFLECT COMMENTS
18	08/27/25	REVISED TO REFLECT COMMENTS
19	08/27/25	REVISED TO REFLECT COMMENTS
20	08/27/25	REVISED TO REFLECT COMMENTS



NO.	AREA	AREA (SQ. FT.)	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
1	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
2	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
3	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
4	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
5	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
6	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
7	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
8	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
9	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
10	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
11	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
12	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
13	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
14	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
15	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
16	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
17	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
18	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
19	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
20	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00

NO.	AREA	AREA (SQ. FT.)	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT	PERCENT
1	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
2	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
3	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
4	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
5	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
6	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
7	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
8	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
9	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
10	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
11	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
12	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
13	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
14	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
15	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
16	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
17	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
18	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
19	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00
20	Basin	10,000	10.00	10.00	10.00	10.00	10.00	10.00	10.00	10.00

Detention Basin Hydrology

