



HARRISVILLE CITY

363 West Independence • Harrisville, Utah 84404 • (801) 782-4100

CITY COUNCIL MEETING AGENDA 363 West Independence Blvd July 12, 2016

MAYOR:

Bruce N. Richins

COUNCIL MEMBERS:

Jeffery Pearce
Gary Robinson
Jennifer Jensen
Michael Murtha
Ruth Pearce

"In accordance with the Americans with Disabilities Act, the City of Harrisville will make reasonable accommodations for participation in the meeting. Request for assistance can be made by contacting the City Recorder at 801-782-4100, providing at least three working days advance notice of the meeting."

6:00 P.M. HERITAGE DAYS WORK SESSION

7:00 P.M. CITY COUNCIL MEETING **Presiding: Mayor Bruce Richins** **Mayor Pro Tem: Jennifer Jensen**

1. **CALL TO ORDER**
2. **PLEDGE OF ALLEGIANCE & OPENING CEREMONY** [Council Member Jeff Pearce]
3. **CONSENT ITEMS**
 - a. Approve the minutes of June 14, 2016 as presented.
4. **BUSINESS ITEMS**
 - a. PUBLIC HEARING – Discussion/possible action to approve Assignment and Assumption of Development Agreement for Golf View Phase 2 Townhomes. [Joel Prince]
 - b. Rural Community Presentation [Mike Hansen]
 - c. Discussion/possible action to approve Harrisville Resolution 2016-08; Certified Tax Rate. [Bill Morris]
 - d. Discussion/possible action to grant Preliminary Approval for Thoroughbred Crossing; a 23 lot subdivision located east of Thoroughbred Meadows Subdivision on Larsen Lane.
 - e. Storm Water Management Plan Update
5. **PUBLIC COMMENTS - (3 minute maximum)**
6. **MAYOR/COUNCIL FOLLOW-UP:**
7. **CLOSED EXECUTIVE SESSION:** Utah State Code §52-4-204 & §52-4-205(1)(a): The Council may consider a motion to enter into Closed Executive Session for the purpose of discussion of character, professional competence, or physical or mental health of individual(s) and §52-4-205(1)(c) strategy regarding pending or reasonably imminent litigation.
8. **ADJOURN**

DATE POSTED: July 8, 2016

BY: Jennie Knight, City Recorder

I, Jennie Knight, certify that I am the City Recorder of Harrisville City, Utah, and that the foregoing City Council agenda was faxed to the Ogden Standard Examiner, Weber County Library, and neighboring cities. The agenda was also posted at the following locations: City hall, on the City's website www.cityofharrisville.com and the State Public Meeting Notice website at <http://pmn.utah.gov>.

**MINUTES OF HARRISVILLE CITY
CITY COUNCIL MEETING
Tuesday, June 14, 2016–7:00 p.m.
Council Chambers
363 West Independence Blvd
Harrisville, Utah 84404**

Present: Mayor Bruce Richins, Council Member Jeff Pearce, Council Member Gary Robinson, Council Member Jennifer Jensen, Council Member Ruth Pearce. [Council Member Mike Murtha was excused]

Staff: Bill Morris, City Administrator, Sean Lambert, Public Works Director, Max Jackson, Police Chief, Lynn Fortie, Treasurer, Pam Crosbie, Finance Clerk, Bryan Fife, Recreation Director, Jennie Knight, City Recorder, Keith Wheelwright, Police Lieutenant, Rick Hill, Bailiff.

Visitors: Michelle Tait, Joel Prince, Aspen Teuscher, Brenna Teuscher, Boyd Fife, Steve Mueller.

6:00P.M. BUDGET WORK SESSION

Mayor Richins called the budget work session to order. He asked if there are any comments on the proposed final budget that was sent out. Council Member Jeff Pearce asked about the line item listed in the budget for a recreation fence compound. Bryan Fife specified this is more of a rock wall for security. Mayor Richins explained the safety concern that will be removed with this security fence. Council Member Jeff Pearce asked if there will be outside storage in the yard. Mayor Richins commented he believes Bryan Fife will be frugal with the funds. Bryan Fife explained this will be the same material as the dumpster enclosure. The proposed cost of the wall alone is \$21,000. Mayor Richins reminded Council the previous fence was unsightly and he would like to have something that is augmenting the area.

Mayor Richins commented the projected building permit revenue in the proposed budget seems low. He said the current budget is listed at \$135,000 and the proposed budget line is \$50,000. He was comparing several prior years and the common range is \$80,000 to \$90,000. Mayor and Council gave discussion on the building permit revenue line item including the historic growth over the last several years. There is still some growth left in several subdivision. Lynn Fortie explained he usually adds a fairly conservative estimate on this because he is not involved in the potential growth discussions. He also reminded Council these revenue funds are not dependable. This year's was high due to the LDS Cannery. Mayor Richins commented that has not been included in this year's numbers yet. Council Member Ruth Pearce suggested increasing this line item to \$80,000. Council Member Jensen agreed. Lynn Fortie asked if he should increase the plan check fees as well. Bill Morris suggested the plan check fees be increase to 55% of the building permit revenue line. Mayor Richins suggested \$40,000 for plan check fees.

Lynn Fortie said this will reduce the use of fund balance to \$36,000. Mayor Richins asked Bill Morris if the proposed code enforcement line should be higher than \$2,000. Bill Morris commented this should be listed at \$5,000. Lynn Fortie clarified this is not the

wage; the wage portion is included under part time wages in administration. Bill Morris further explained this is the clean up portion of the code enforcement. Mayor Richins commented about how pleased he is with the new code enforcement officer and stated this will help improve things in the future.

Mayor Richins said Class C Road expenses are listed at \$500,000. He asked Sean Lambert if this seemed appropriate. Lynn Fortie explained that this was always requested by Gene Bingham to include the full amount although this is never expended. Historic record shows they rarely spend from this account.

Council Member Jensen pointed out the Heritage Days line item is not an accurate reflection due to the celebration being held in June of last year. Most of the expenditure was from the FY2015 budget. She expressed concern with the reduced amount Council agreed on in previous work sessions. She inquired whether or not to purchase the t-shirts out of the current year budget if there will be a surplus. Lynn Fortie said he does not have the final numbers available for the current year but it is looking like there will be a healthy surplus. Council Member Jensen said she would like to increase the Heritage Days budget back up because the hypnotist is going to cost about \$1,000 and the current \$5,000 budget will likely go over. Council Member Ruth Pearce suggested increasing this back to the original \$10,000. Mayor Richins agreed this line item will likely go over because the current fiscal year does not reflect accurate numbers.

Council Member Ruth Pearce said it wouldn't hurt anything to increase this; there is no obligation to spend it all. Council Member Jeff Pearce said he is fine with the increase. Council Member Robinson disagreed with the proposed increase. Council Member Jensen pointed out they will go over if they do not increase this.

Mayor Richins pointed out the garbage fund has a healthy balance and with the recent increase this should continue.

Mayor Richins said we will hold out on the purchase of two police cars. Council Member Jensen said she is sure they will need to be replaced next year. Chief Jackson said if the problem that was discussed in earlier work sessions manifests itself, the cost of the repair will exceed the cars worth. They will deal with that if it happens. Council Member Jeff Pearce said the service shop should have warranties on any work they caused. Chief Jackson said they paid the city a couple thousand dollars.

Council Member Jeff Pearce asked if the sewer fund will be increased incrementally over time. Mayor Richins asked Bill Morris if this has been implemented. Bill Morris said we are still covering the costs of the bond. Mayor Richins said this is a large bond. Sean Lambert pointed out they will likely have another in the future to cover EPA regulation costs.

Council Member Robinson asked what the use of fund balance would be now. Lynn Fortie said approximately \$35,000 with the proposed adjustments to building permit revenue and the Heritage Days increase.

Council Member Robinson asked what is the population of Pleasant View. Bill Morris said around 8,000. Council Member Robinson asked what our population is. Mayor Richins said around 6,000. Council Member Robinson then proposed a salary and wage increase for Mayor and Council based on the salary and wages of Pleasant View. He suggested doubling the salary and wages for Mayor and Council. Mayor Richins asked Council Member Robinson why he introduced this proposal when two months ago he wanted to decrease this line item. Council Member Robinson said to be consistent with

other cities. Council Member Jensen said she feels the salaries and wages are fine. Mayor Richins asked if he has conducted any kind of unofficial survey. Council Member Jensen stated we are the lowest paid city but we are fine this way. Council Member Ruth Pearce said there are cities that are way out of line, but we are not one of these. Mayor Richins said if Council Member Robinson would like to do an unofficial survey between several cities he is welcome to do so, but comparing just one city is not necessarily an accurate comparison.

Lynn Fortie said a more accurate number for the use of fund balance would be \$41,000. Chief Jackson asked for clarification on the 1.5% merit increase for employees and whether this is included in the budget. Lynn Fortie said this does include the 1.5% merit increase.

Council Member Robinson asked if we have any police officers that live in the Layton or Clearfield area. Chief Jackson said there are a couple of officers that live in Davis County.

Mayor Richins suggested moving into the Heritage Days discussion if there is no further budget discussion. Council Member Jensen agreed.

Council Member Ruth Pearce asked if Council Member Jensen had any follow-up information on entertainment. Council Member Jensen said she talked to four different hypnotists; two were \$800 and two were \$1000. Council Member Jeff Pearce asked Council Member Jensen if she had any recommendation of which one. Council Member Jensen said all of them look fine and they all have short clips online where you can preview their work. Mayor Richins asked if she had any strong recommendations. Council Member Jensen said they all have something different to offer and they are all local. She can solicit bids for a future meeting.

Council Member Ruth Pearce asked about the food trucks. Council Member Robinson was going to contact food truck vendors. Council Member Jensen was going to provide a list of vendors. Mayor and Council agreed to offer a variety of food trucks vendors with reasonable pricing. Council Member Ruth Pearce suggested they setup at 5:00pm and begin serving at 6:00pm. Council Member Robinson suggested having them here at 4:00pm. Mayor Richins asked what time the saw dust scramble will be held. Mayor and Council gave discussion on how long the entertainment program should last.

Council Member Ruth Pearce suggested offering Bingo for one hour. Mayor Richins said he has the Family Feud game available that could be used. Council Member Ruth Pearce suggested having kid's games using tickets for free activities. Council Member Jensen said adding more events might be difficult with the short time frame they are facing. There would be a need for volunteers to run all of those activities.

Council Member Robinson asked if the disc golf course will be shut down for Heritage Days. Mayor and Council gave discussion as to why they might need to shut down the disc golf. Bryan Fife said he ropes off the area and includes signs on the ropes notifying residents of disc golf traffic. Council Member Jeff Pearce asked if there was going to be a disc golf tournament. Bryan Fife said he put on the tournament the last two years.

Mayor Richins said they are not planning on a tournament this year.

Mayor Richins said there are no agenda items for the regularly scheduled meeting on June 28th so the next Heritage Days work session will be held the first meeting in July with the celebration less than a month away from that meeting date. He suggested Council continue Heritage Days discussion through email.

Council Member Ruth Pearce asked if Walmart could donate prizes to give out during the hypnotist. Mayor Richins said he will need a list of items to request. Council Member Ruth Pearce asked about other donation assignments. Mayor Richins said unless assignments are made tonight, they won't have time to get things done. Council Member Jensen said last year she bought a certain dollar amount of gift certificates and the businesses matched that amount with a donation. She already has the Raptor certificates. Last year they collected gift cards from Zeppe's, Toad's, Arby's and Chili's. Mayor Richins said he will contact Chili's again this year. Council Member Robinson suggested contacting the new Burger King on 2700 North for donations. Mayor and Council gave discussion on the budget and time frame on activities. Council Member Jensen suggested having the saw dust scramble at 8:00pm and begin the dance immediately after. That way the times advertised in the Newsletter do not have to change. Pam Crosbie reminded Council the mass gathering permit has to be submitted 30 days prior to the event. Council Member Jeff Pearce asked if there is a fee for this permit. Council Member Jensen confirmed there is a fee and also a late fee if not submitted timely. Mayor Richins said if there is any more discussion they can address this in Mayor/Council Follow-up.

7:00 P.M. CITY COUNCIL MEETING

1. Call to Order.

Mayor Richins called the meeting to order and welcomed all visitors. Mayor Richins excused Council Member Murtha.

2. Opening Ceremony.

Mayor Richins led the pledge of allegiance and conducted the opening ceremony.

3. Consent Items.

- a. Approve the minutes of May 24, 2016 as presented.

MOTION: Council Member J. Pearce motioned to approve the minutes of May 24, 2016 as presented. Council Member Jensen seconded the motion. All Council Members voted aye. Motion passed.

4. Business Items.

- a. **PUBLIC HEARING: Discussion/possible action to approve Harrisville City Resolution 2016-06; a resolution adopting the FY 2015-16 amended budget for the fiscal year ending June 30, 2016.**

Lynn Fortie explained the proposed changes to the current fiscal year's budget. This will reflect more accurate numbers on budget items so they are not out of line. He said he is available to answer any questions.

MOTION: Council Member J. Pearce motioned to open the public hearing for discussion on Harrisville City Resolution 2016-06; a resolution adopting the FY 2015-16 amended budget for the fiscal year ending June 30, 2016. Council

Member Robinson seconded the motion. All Council Members voted aye. Motion passed.

No public comments were offered.

MOTION: Council Member R. Pearce motioned to close the public hearing. Council Member J. Pearce seconded the motion. All Council Members voted aye. Motion passed.

No further discussion was given.

MOTION: Council Member Jensen motioned to approve Harrisville City Resolution 2016-06; a resolution adopting the FY 2015-16 amended budget for the fiscal year ending June 30, 2016. Council Member R. Pearce seconded the motion. A Roll Call vote was taken.

Council Member R. Pearce	Yes
Council Member Jensen	Yes
Council Member Robinson	Yes
Council Member J. Pearce	Yes

Motion passed 4-0.

b. PUBLIC HEARING: Discussion/possible action to approve Harrisville City Resolution 2016-07; a resolution adopting the FY 2016-17 final budget for the fiscal year ending June 30, 2017.

Lynn Forte explained he received the official certified tax rate and entered the correct number which will decrease the use of fund balance as well as the changes that were previously discussed.

MOTION: Council Member R. Pearce motioned to open a public hearing to discuss Harrisville City Resolution 2016-07; a resolution adopting the FY 2016-17 final budget for the fiscal year ending June 30, 2017. Council Member Robinson seconded the motion. All Council Members voted aye. Motion passed.

Ruth Pearce asked if the budget is available online. Jennie Knight said under the public notice section on the city's website.

Boyd Fife asked if the current budget will balance. He said he understood the Mayor explaining there will be \$35,000 out of the fund budget. He asked where this money will be coming from.

Mayor Richins explained this current year's budget will be ending with a surplus. Council Member Jensen confirmed there will be a surplus this year.

Mr. Fife said he had heard the Council was considering raising taxes. Bill Morris explained there is no property tax increase included in this final budget and that multiple hearing notices must be met and the final budget passed in August when a property tax

increase is proposed. Mr. Fife said he has been hearing stories this was being considered.

Steve Mueller expressed his biggest concern is the increase in salaries for the Mayor and Council. He asked if the Mayor and Council are getting raises. He expressed his concern with the Mayor and Council receiving such pay. Years ago they served because they wanted to serve the citizens of their community. Now they are being paid for their service. He suggested reducing the salaries for Mayor and Council; saying maybe things don't need to be as high as they are.

Mayor Richins clarified there is an increase of about \$300 included in the budget based on a resolution that was passed years ago and never implemented until recently. He said the resolution bases the Mayor and Council salaried on years of service. Council receives a \$50 per year of service increase and \$250 for the Mayor. This is a built in increase.

MOTION: Council Member R. Pearce motioned to close the public hearing. Council Member Jensen seconded the motion. All Council Members voted aye. Motion passed.

No further discussion was given.

MOTION: Council Member R. Pearce motioned to adopt Harrisville City Resolution 2016-07; a resolution adopting the FY 2016-17 final budget for the fiscal year ending June 30, 2017 with the amendments from the work session and the certified tax rate correction. Council Member Robinson seconded the motion. A Roll Call vote was taken.

Council Member R. Pearce	Yes
Council Member Jensen	Yes
Council Member Robinson	No
Council Member J. Pearce	Yes

Motion passed 3-1.

c. General Plan Discussion

Bill Morris said planning commission held a public hearing at the last meeting on the general plan. Better City's Adam Hughes presented this to planning commission. He would like to encourage the mixed use development for the future. Mayor and Council discussed the next step in the general plan discussion. Bill Morris said Better City will work up a proposal and suggested we request several other proposals. Rural Community Consultants can also submit a proposal and are willing to give a presentation if requested. Mayor Richins said we have had unofficial discussions with Better City and they would like to come present some of the things they have worked on to help other communities. He is hoping to have a presentation the first meeting in July. Bill Morris explained that Planning Commission held this required public hearing as the

kick off and now we are ready to proceed to the state of hiring a consultant. Council Member Ruth Pearce asked what needs to happen with zoning. Bill Morris said also presented at Planning Commission was a proposed horizontal mixed use. He asked the developer to re-evaluate the proposal to more of a mansion house concept with vertical mixed use. We will also hold public hearings on any new ordinances that will include regulations that allow for these mixed use zones. Council Member Jeff Pearce said he is not in favor of what was proposed in Planning Commission. He feels there are too many issues to address with that proposal which is tighter residential area than what is already in Harrisville.

Council Member Robinson asked if the Better City presentation information about the potential deficit can be included in the newsletter. Bill Morris said he will draft a notice and send it through for review.

d. Discussion/possible action to approve Assignment and Assumption of Development Agreement for Golf View Phase 2 Townhomes.

Bill Morris said this item was presented in Planning Commission and recommended for approval through Council.

Council Member Jensen asked if the developer is required to notify the homeowners of the changes. Bill Morris said they are not required. Council Member Jensen expressed her concern with the potential of dropping property values on the existing townhomes with this new proposal because the buildings don't match. She said she contacted homeowners about building different buildings and received negative feedback. She is concerned with approving this with no input from current homeowners. Bill Morris said Council can send this back to Planning Commission and require a public hearing. Council Member Jensen said she would like to have this input because the majority of the townhomes are already in. She asked if there was a concept that is a compromise because the proposed concept looks different. Bill Morris said this is a different developer.

Joel Prince said in the previous development where this was done, it actually raised the property values of the existing homes. Council Member Jensen said she disagrees; they were increased because of the increase in sales due to the economy. She knows homeowners that have lost money on selling their homes and would like to allow the current owners some input.

Bill Morris suggested tabling this item until the developer can present the changes to homeowners. Council Member Robinson said he feels this is a proper way to handle things. Bill Morris said the developer would have to submit comments from the HOA meeting. Joel Prince asked if they can collect signatures. Council Member Jensen said she would like the homeowner's informed of the big changes since this will affect them. Council Member Ruth Pearce asked how often the HOA meets. Bill Morris said normally they don't. Joel Prince said they can hold a meeting. Bill Morris suggested Council decide what they want to require; saying a public hearing is an option and explained the requirements. Council Member Jensen said the earliest they could vote on this would be July 12, 2016, because that is the next meeting and suggested holding a public hearing at that time. Bill Morris commented if the HOA holds a separate meeting they will have to provide the minutes by the July 12th due date. Council Member Robinson asked if a certain percentage of attendance is required. Council Member Jensen said no, just as

long as the homeowner's are notified of the changes. She doesn't feel good about passing something that the current owner's may not know about. Bill Morris said the advertisement for a public hearing will be noticed in the newsletter and the newspaper. Jared Thompson asked what it is about the structure that Council doesn't like. Council Member Jensen said the fact they are completely different than the existing homes. They don't look the same and there was a huge problem when this happened in Golf Crest. Jared Thompson asked what requirements they are requesting because the style will change due to the fact that the materials used to build the existing homes are no longer available. Bill Morris said this is not necessarily the building appearance as much as giving proper notice to the residents.

MOTION: Council Member Jensen motioned to table Assignment and Assumption of Development Agreement for Golf View Phase 2 Townhomes and set a public hearing for July 12, 2016. Council Member R. Pearce seconded the motion. All Council Members voted aye. Motion passed.

Bill Morris suggested the developer have a PowerPoint presentation ready for the July 12th public hearing.

e. Discussion/possible action to approve Harrisville Ordinance 480; an Ordinance amending various land use.

Bill Morris explained before Gene Bingham and Ken Martin left they gave some updates that needed to be made to the land use ordinances. This ordinance includes a change to the setback requirement for accessory buildings; from 8 feet to 3 feet. Council Member Jeff Pearce commented the fire department is not in favor of such small setbacks. Bill Morris reminded Council this only applies to metal roofs. The setback requirement for asphalt roofs remains at 1 foot. Council Member Robinson asked for clarifications. Bill Morris explained that accessory buildings can be within 1 foot of the property line with asphalt roofs. This ordinance changes the metal roof setback to 3 feet instead of the previous 8 feet. Council Member Robinson asked if this includes rain gutters. Bill Morris explained that the building cannot be closer than 1 foot and rain gutters are not allowed to extend over the neighboring property. Council Member Ruth Pearce asked what needs to be done to change the 1 foot requirement. Bill Morris said that they can send this back to Planning Commission but this does not include the 1 foot setback. Mayor and Council gave a brief discussion on the neighboring city setback requirements. Council Member Jensen commented that on smaller zoning a larger setback requirement would put accessory buildings in the middle of yards. Bill Morris said this proposal includes changing the 8 foot requirement to 3 feet and the eaves cannot be closer than ½ foot. Mayor and Council gave discussion on a variety of scenarios. Council Member Jeff Pearce said there is a fire safety issue with the smaller setback. Bill Morris said these are not designed for the fire department requirements but for storm water.

Another change in this ordinance updates the special provisions for political signs which will bring us into compliance with the Supreme Court recommendations.

The update to the subdivision ordinance brings us into compliance with state code and there was a section that contradicted itself in the cash escrow requirements. Council

Member Robinson asked if this is a new ordinance. Bill Morris explained that the crossed out portions are being removed and anything underlined is being added to existing ordinances. Anything that is regular text is not changing. Council Member Robinson asked what this is amending and if the original ordinance must be repealed. Bill Morris said no because the code is codified and can just be amended. Sometimes if there are a lot of changes to one ordinance he would recommend repealing and re-enacting the ordinance but for small changes there is too much risk of leaving out something or missing something important by repealing the entire ordinance. This process is the same thing the state legislature does and is tracked with a legislative history.

MOTION: Council Member Jensen motioned to approve Harrisville Ordinance 480; an Ordinance amending various land use. Council Member Ruth Pearce seconded the motion. A Roll Call Vote was taken.

Council Member R. Pearce	Yes
Council Member Jensen	Yes
Council Member Robinson	Yes
Council Member J. Pearce	Yes

Motion passed 4-0.

5. Public Comments - (3 minute maximum)

Greg Montgomery, 231 Larsen Lane, wanted to give his feedback about the setback discussion. He explained that zoning acts as one thing and building is separate. He gave examples of building requirements that define how a building is built. Additionally he wanted to comment about the noticing that is only through the paper and online. He inquired as to why the notices are not sent to the property owners as well. He feels this would help with notification. These costs can be passed through to the developer. He asked what is going on with Larsen Lane. Is there consideration for a bike lane or how many lanes of traffic? He would like to see a complete street concept with the general plan. He, himself, doesn't know what is happening on Larsen Lane and would like to see what the other resident input would be as well.

Mayor Richins said they are currently improving the East end of Larsen Lane by adding an additional left hand turn lane. Regarding the noticing, there were yellow signs placed on the property. Council Member Jensen said she can understand his concern and suggested incorporating the cost of noticing into the fee schedule. Jennie Knight explained she works together with Shanna Edwards to meet the required noticing in the newspaper and online. Although it may be more informative for residents to receive a letter, this is not what the current regulations require. Council Member Robinson inquired about safety concern of individuals. Bill Morris said safety concerns are included in the building code that Sean Lambert administers. Sean Lambert said this property was noticed at the entrance to Thoroughbred Meadows. Bill Morris said the developer will be returning for final approval. This development has not received approval through Council nor has the full discussion of widening Larsen Lane.

Greg Montgomery asked what the design principle is that is involved for speed, travel lanes, etc. Bill Morris said the city engineer's office, Jones & Associates, along with Gene Bingham, worked together to develop the concept. Greg Montgomery asked Council to consider how this street is being used. When this is widened it naturally creates an increase in speed. He asked how this will accommodate bikes, pedestrian traffic, and expressed concern with no consideration from resident involvement. Bill Morris said the STIP requirements are the regulation used but now is the time to get public input. Mayor Richins said the widening of the entire street is not being discussed. Bill Morris said the proposed subdivision that is coming in will be required to widen the section of improvements relating to the subdivision. Mayor and Council gave discussion on what they should consider, even having a public hearing to show the profile of the road and take public comments. Bill Morris said we are just not far enough involved in the process for this but it could be arranged to have the city engineer's office available to address public concerns.

Mayor and Council agreed to hold a public hearing to discuss the intent of the profile of this road. Mayor Richins suggested targeting August as a good time. Bill Morris pointed out the improvements of this road are likely 10 years out but building with a philosophy in mind would help.

6. Mayor/Council Follow-Up:

Mayor Richins asked if there were any comments after studying the Better City presentation. Council Member Jeff Pearce suggested entering some type of contract before using their concepts. Mayor Richins said there is something on financial tools such as community reinvestment projects on Page 15 and asked if this is the old RDA. Bill Morris said yes, essentially. Mayor Richins said he would like to know more about that. He expressed concern with the suggestion the city should meet with Weber County Schools to discuss certain areas in the city because the school district does not own any undeveloped areas in the city. Council Member Jensen said this possibly relates to the section that is nearby in North Ogden.

Mayor Richins asked Council Member Ruth Pearce for a follow-up on the Farmer's Market. Council Member Ruth Pearce said this is supposed to start on June 23rd and everything is a go.

Council Member Jensen asked for extra patrol on her road 1550 North. Particularly when church services are taking place; people are speeding through the neighborhood and running the stop sign.

Mayor Richins reminded Council we may not be meeting on June 28th.

7. Adjourn.

Mayor Richins declared the meeting adjourned at 8:16pm.

ATTEST:

BRUCE RICHINS
Mayor

JENNIE KNIGHT

City Recorder

Approved this 12th day of July, 2016

ASSIGNMENT AND ASSUMPTION OF DEVELOPMENT AGREEMENT

This ASSIGNMENT AND ASSUMPTION OF DEVELOPMENT AGREEMENT (the “Assignment”) is made effective as of _____, 2016, between GOLF VIEW TOWNHOUSES ONE L.L.C., a _____ limited liability company (“Assignor”), and SKY MOUNTAIN HOMES LLC, a Utah limited liability company (“Assignee”).

RECITALS:

A. Assignor entered into a development agreement with HARRISVILLE CITY, dated _____, 2002, more specifically captioned as “*A Development Agreement for “Golf View Estates” Development by Golf View Townhouses One L.L.C., and the Golf View Special Area Plan, Located at Approximately 300 West 2000 North Harrisville City, Weber County Utah*” (hereinafter the “**Development Agreement**”). A copy of the Development Agreement is attached hereto.

B. The Development Agreement sets forth certain rights, duties, and obligations of Assignor and Harrisville City with regards to the development of certain real property more particularly described on Exhibit A of the Development Agreement.

C. Assignor desires to assign to Assignee all of Assignor’s rights, duties, and obligations in, to, and under the Development Agreement, and Assignee desires to accept and assume such rights, duties and obligations.

NOW THEREFORE, in consideration of the terms, covenants and conditions contained in this Assignment, and for other good and valuable consideration, the receipt and legal sufficiency of which are hereby acknowledged, Assignor and Assignee agree as follows:

1. **Assignment of Development Agreement.** Assignor hereby assigns, conveys, and transfers to Assignee all of Assignor’s rights, title, interest, duties, and obligations in, to, and under the Development Agreement.

2. **Assignee’s Assumption and Covenant.** Assignee hereby accepts all of Assignor’s rights, title, and interest and assumes all of Assignor’s duties, obligations, burdens, and liabilities under the Development Agreement, and Assignee agrees to duly keep, observe, and perform all of the terms, covenants, and conditions of Assignor under the Development Agreement.

3. **Indemnification.** Assignor agrees to indemnify and hold Assignee harmless from and against any and all liability, loss, cost, damage, and/or expense (including, without limitation, reasonable attorneys’ fees and costs) arising out of Assignor’s duties and obligations under the Development Agreement accruing prior to the date hereof.

4. Successors and Assigns. The terms, covenants, and conditions of this Assignment shall inure to the benefit of and be binding upon the respective successors and assigns of Assignor and Assignee.

5. Contingent Assignment and Assumption. Section 14 of the Development Agreement requires that written consent from the City Council of Harrisville City be obtained prior to any assignment of the Development Agreement or any term or condition thereof. Accordingly, this Assignment, and all terms, conditions, rights, interests, duties, and obligations arising hereunder, is contingent upon Assignee obtaining written consent to this Assignment from the City Council of Harrisville City on or before _____, 2016. If Assignee fails to obtain such written consent on or before such date, this Assignment, and all terms, conditions, rights, interests, duties, and obligations arising hereunder, shall be null and void.

IN WITNESS WHEREOF, the parties have executed this Assignment and Assumption of Development Agreement on the dates indicated below, to be effective as of the date first above written.

GOLF VIEW TOWNHOUSES ONE L.L.C.

Date

By: _____ (sign)
_____ (print)
_____ (title)

SKY MOUNTAIN HOMES LLC

Date

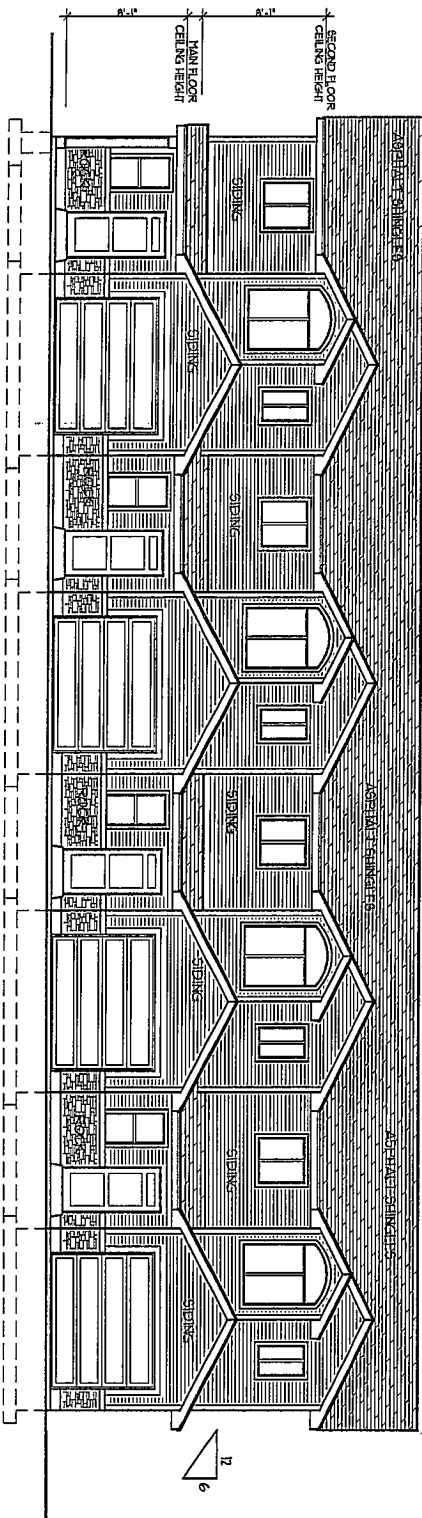
By: _____ (sign)
_____ (print)
_____ (title)

Harrisville City Mayor

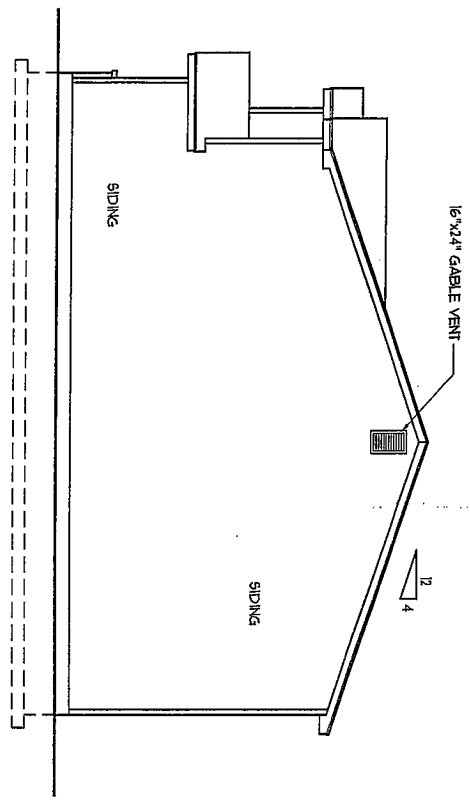
ATTEST:

Harrisville City Recorder

Harrisville City Attorney



FRONT ELEV. VIEW
SCALE 1/8" = 1'-0"



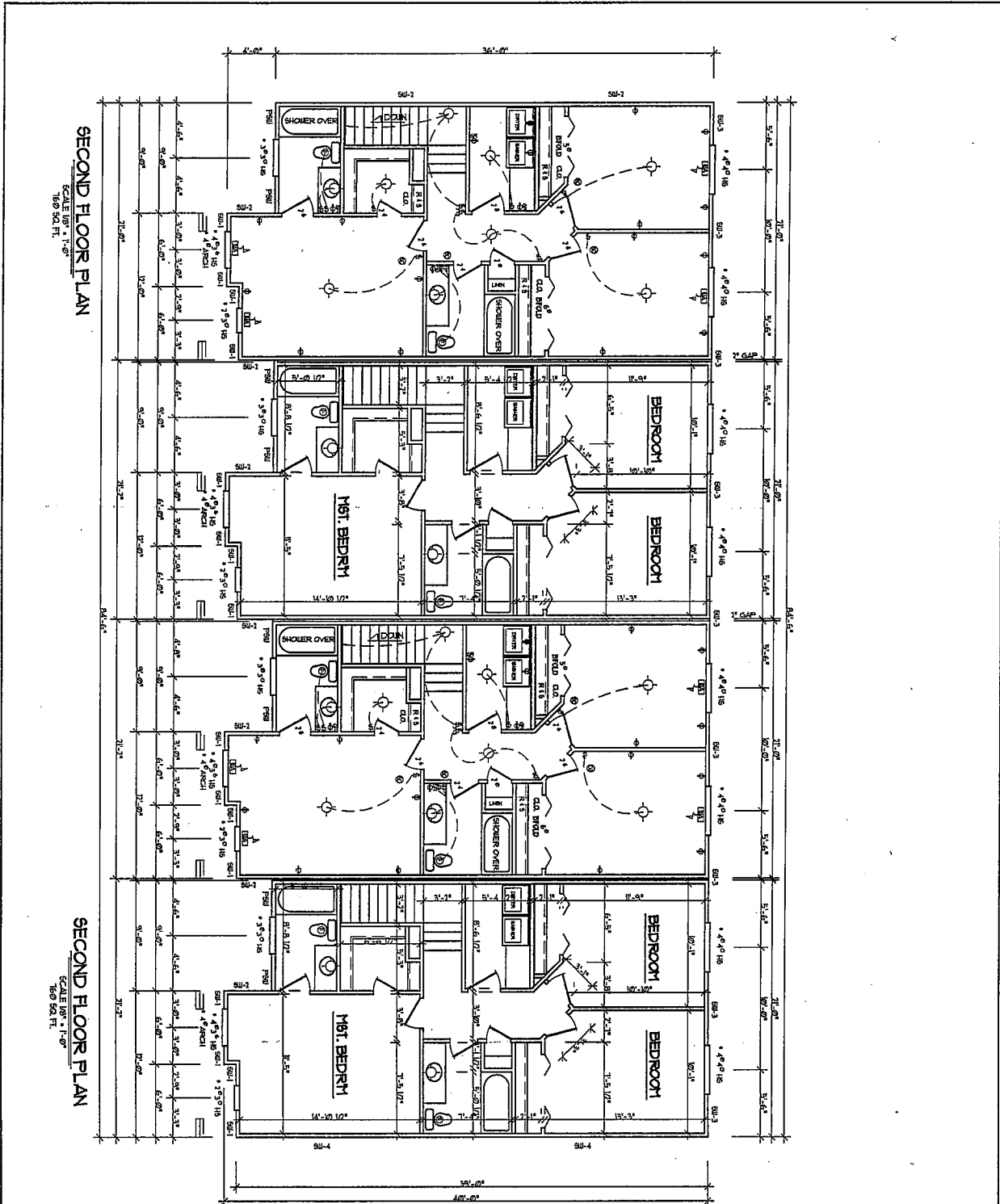
RIGHT SIDE VIEW
SCALE 1/8" = 1'-0"

BRICK VENEER	R1021
CONNECTION RESISTANT ANCHOR TIES EMBEDDED IN HORIZONTAL OR VERTICAL BRICKWORK AND THE VERTICAL ANCHORS OR TIES SHALL BE 1/2" DIA. AND SPACED 16" ON CENTER OR AS SHOWN ON OTHER SIDE OF SHEET.	
CONNECTION RESISTANT 22 GAUGE X 1/8" OR NO. 9 GAUGE LINE SHALL BE USED FOR ALL CONNECTIONS AND VERTICAL TIES AND ANCHORS SHALL BE 1/2" DIA. AND SPACED 16" ON CENTER.	
STEEL ANGLE - 1"X 6"x6" WITH THE LONG LEG VERTICAL, CORNER WITH SECTION R1021.	
ALL SIZES AND PATTERN VENEER SHALL CORRELATE WITH SECTION R1021.	
ATTIC VENTILATION	R1026
ATTIC VENTILATION SHALL CORRELATE WITH SECTION R1026. THE NET FREE VENTILATION SHALL NOT BE LESS THAN 1/80th OF THE AREA OF THE SPACE VENTILATED EXCEPT WHEN THE AREA REQUIRED VENTILATION AREA IS LOCATED IN THE UPPER HALF OF THE SPACE. THE VENTILATION SHALL BE PROVIDED BY FLUES OR CORRUGATED VENTS, ETC.	
EXTERIOR WALL COVERING	R1023
ALL EXTERIOR COVERINGS SHALL CORRELATE WITH SECTION R1023 (UNLESS OTHERWISE NOTED).	
FRONT CORNER SIDING - SHALL CORRELATE WITH SECTION R1023.	
VENT. SIDING - INSTALLATION SHALL CORRELATE PER ASTM D 3478.	
ASPHALT SHINGLES - INSTALLATION SHALL CORRELATE PER ASTM D 4811 D 328 OR D 3462, CLASS 1.	
BUILDING ADDRESS	INC. MAIL
BUILDING NUMBER SHALL BE A MIN. 4" HIGH WITH A MIN. 1/8" THICKNESS.	

Kustom House Plans
 RESIDENTIAL / COMMERCIAL DESIGN & ENGINEERING
 NATE KARRAS P.E. (601) 726-0849 email: KustomNK@aol.com
 NOTE THIS PLAN IS THE PROPERTY OF KUSTOM HOUSE PLANS
 DO NOT COPY WITHOUT WRITTEN PERMISSION

GOLFCREST
 HARRISVILLE, UTAH

REVISED 5-29-14



SECOND FLOOR PLAN
SCALE 1/8" = 1'-0"
160 SQA FT.

SECOND FLOOR PLAN
SCALE 1/8" = 1'-0"
160 SQA FT.

- NOTES: GENERAL**
1. CONSTRUCTION IS TO VERIFY DESIGN DIMENSIONS AND NOTES PRIOR TO BEGINNING OF CONSTRUCTION.
 2. ALL WORK IS TO BE DONE UNDER THE SUPERVISION OF A LICENSED CONTRACTOR.
 3. ALL WORK IS TO BE DONE UNDER LOCAL AND STATE REGULATIONS.
 4. ELECTRICAL SHALL BE PERMANENTLY IDENTIFIED.
 5. MECHANICAL SHALL BE PERMANENTLY IDENTIFIED.
 6. APPLICABLE CODES, LOCAL ORDINANCES.
- NOTES: STRUCTURAL**
- SEE STRUCTURAL DETAILS - SHEET S-1.1, 2.1, AND 3.1

Kustom House Plans
RESIDENTIAL / COMMERCIAL DESIGN & ENGINEERING
NATE KARRAS P.E. (801) 786-0649 email: KustomNC@aol.com
NOTE THIS PLAN IS THE PROPERTY OF KUSTOM HOUSE PLANS
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SCALE 1/8" = 1'-0"
TOTAL 160 SQA FT.
DATE 05/29/14
PROJECT NUMBER AS

GOLFCREST
HARRISVILLE, UTAH

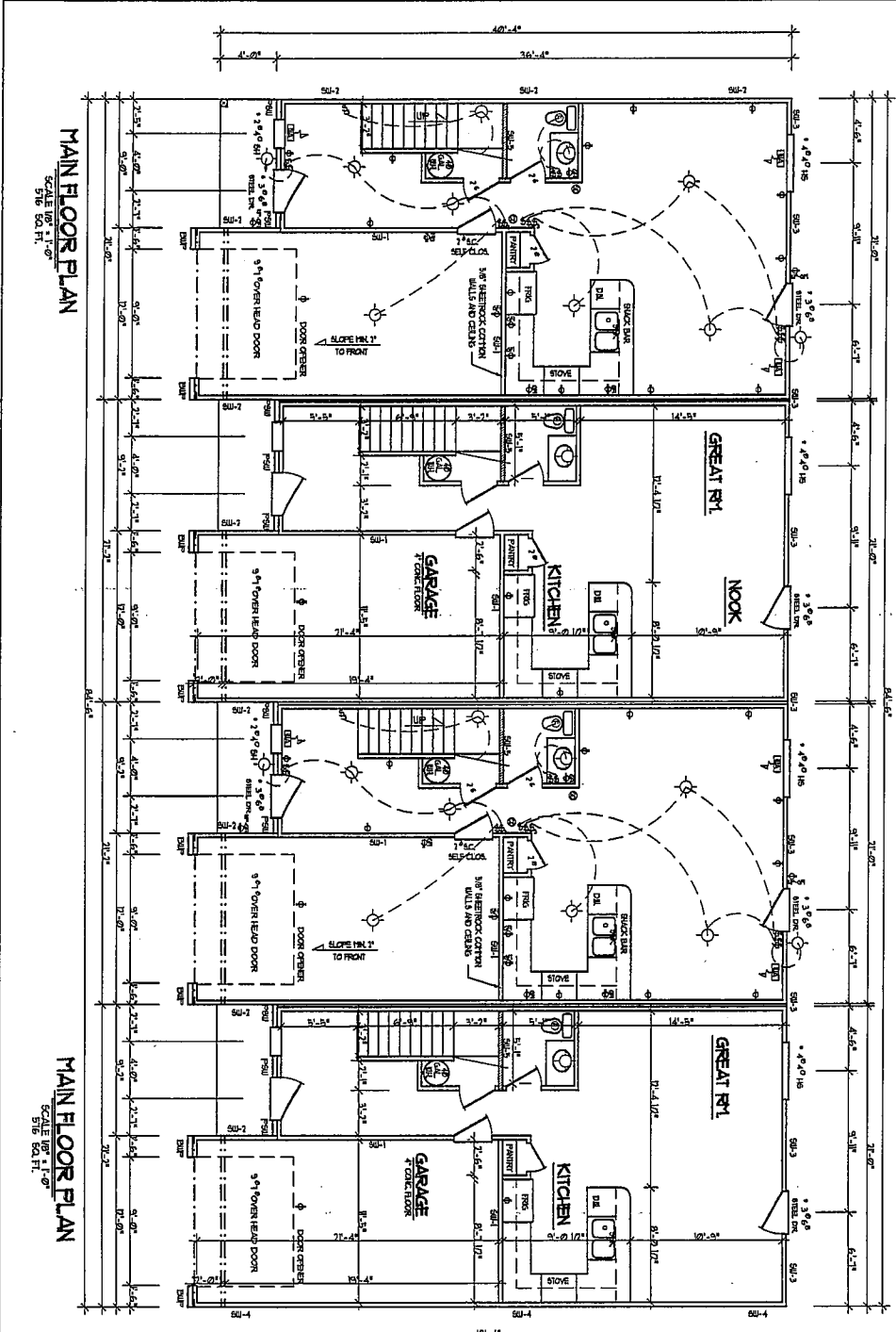
REVISED 5-29-14

NOTES: GENERAL

1. ALL WORK IS TO BE DONE UNDER THE SUPERVISION OF A LICENSED CONTRACTOR.
2. ALL WORK IS TO BE DONE IN ACCORDANCE WITH THE LATEST EDITIONS OF THE INTERNATIONAL RESIDENTIAL CODE BOOKS.
3. ELECTRICAL SHALL BE PER NATIONAL ELECTRICAL CODE (NEC) AND LOCAL CODES.
4. MECHANICAL SHALL BE PER ASHRAE 62.1-2004 AND LOCAL CODES.
5. PLUMBING SHALL BE PER INTERNATIONAL PLUMBING CODE (IPC) AND LOCAL CODES.
6. FIRE PROTECTION SHALL BE PER NFPA 101 AND LOCAL CODES.

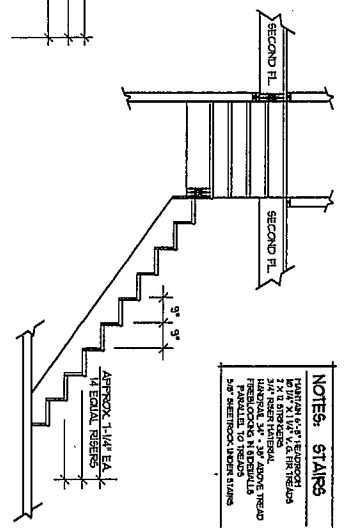
NOTES: STRUCTURAL

SEE STRUCTURAL DETAILS - SHEET S-1, S-2, AND S-3



MAIN FLOOR PLAN
SCALE 1/8" = 1'-0"
5/16" DIA. FT.

MAIN FLOOR PLAN
SCALE 1/8" = 1'-0"
5/16" DIA. FT.



NOTES: STAIRS

1. STRINGER, 1x12 EA.
2. TREADS, 2x8
3. RISERS, 1x6
4. FINISHING TO BE PER LOCAL CODES
5. FINISHING TO BE PER LOCAL CODES
6. FINISHING TO BE PER LOCAL CODES
7. FINISHING TO BE PER LOCAL CODES

STAIR DETAIL
SCALE 1/4" = 1'-0"

Kustom House Plans
RESIDENTIAL / COMMERCIAL DESIGN & ENGINEERING
NATE KARRAS P.E. (801) 786-0949 email: nate@kustomhouseplans.com

NOTE THIS PLAN IS THE PROPERTY OF KUSTOM HOUSE PLANS
DO NOT COPY WITHOUT WRITTEN PERMISSION

SCALE 1/8" = 1'-0"
5/16" DIA. FT.

DATE: 08/20/2014
TIME: 10:00 AM
PAGE: 1 OF 1

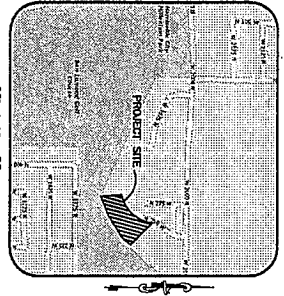
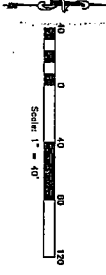
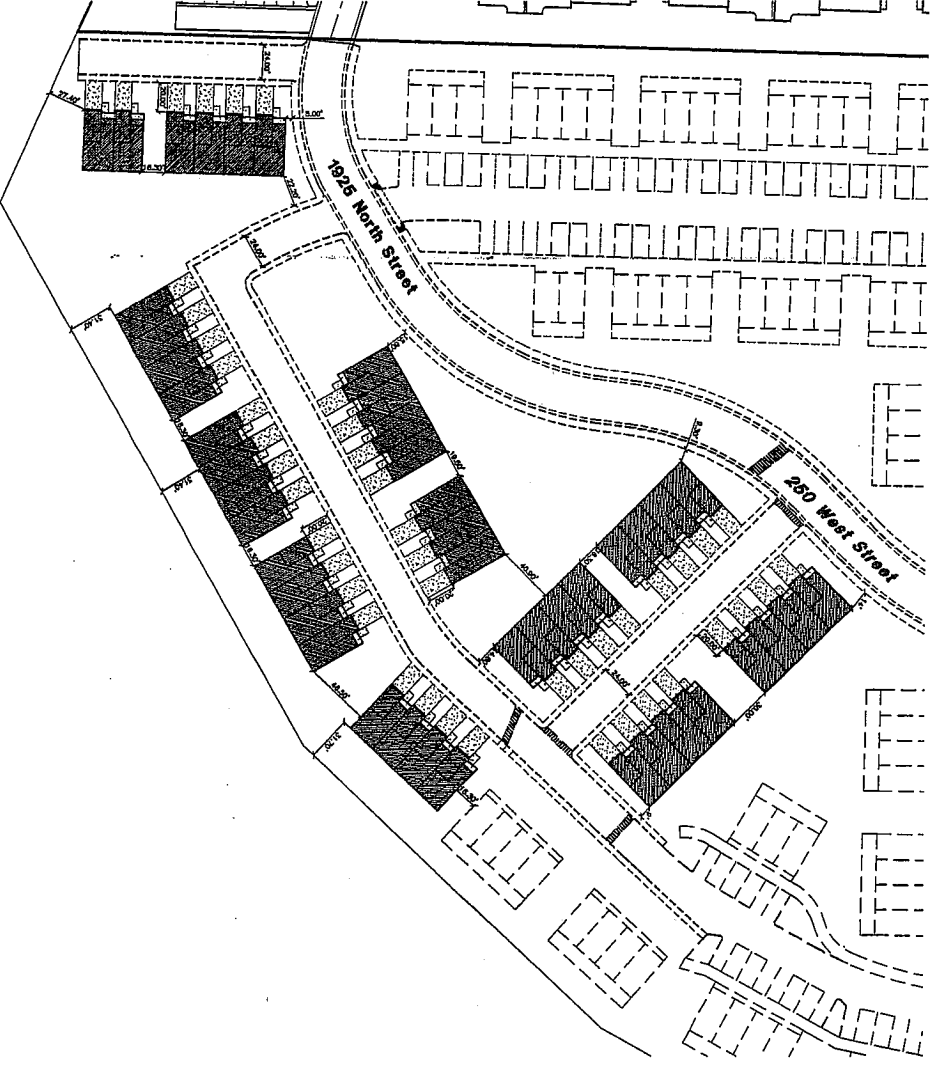
**GOLFCREST
HARRISVILLE, UTAH**

Reeve & Associates, Inc., Solutions You Can Build On

GOLF VIEW TOWNHOMES

Improvement Plans

PART OF THE SE 1/4 OF SECTION 31 AND PART OF THE SW 1/4 OF SECTION 32, T.7N., R.1W., S1.B.&M., U.S. SURVEY
 HARRISVILLE CITY, WEBER COUNTY, UTAH
 JULY, 2007



THESE PLANS AND SPECIFICATIONS ARE THE PROPERTY OF REEVE & ASSOCIATES, INC., 4115 S. WYNDHAM BLVD. DORSETT, UTAH. ANY REUSE, REPRODUCTION, OR ALTERATION OF THESE PLANS WITHOUT WRITTEN PERMISSION FROM REEVE & ASSOCIATES, INC. IS STRICTLY PROHIBITED. ANY CHANGES OR AMENDMENTS MADE TO THESE PLANS OR THE DESIGN THEREIN WITHOUT THEIR CONSENT.

Richard Lingo
 Engineer
 PROFESSIONAL ENGINEER
 No. 10000
 State of Utah
 Expires 12/31/2007
 Home: 435.433.2007
 Cell: 435.433.2007
 Fax: 435.433.2007
 Email: rlingo@ra-inc.com
 Project No. 07-001
 Number: 07-001-01



Golf View Townhomes
Floorprint Update
 HARRISVILLE CITY, WEBER COUNTY, UTAH

Cover/Index Sheet

DATE	DESCRIPTION
5-15-14	TP FLOORPRINT UPDATE

RA **Reeve & Associates, Inc.**
 5100 SOUTH 1500 WEST, MIDVALE, UTAH 84042
 TEL: (801) 437-2100 FAX: (801) 437-2988 WWW.RA-INC.COM

**HARRISVILLE CITY
RESOLUTION 2016-08**

2016 TAX RATE

**A RESOLUTION OF HARRISVILLE CITY, UTAH, ADOPTING THE
2016 TAX RATE, TAX YEAR 2016.**

WHEREAS, Harrisville “City” is a municipal corporation duly organized and existing under the laws of the State of Utah;

WHEREAS, the City has followed all procedures required by statute in adopting a Tax Rate for Tax Year 2016;

WHEREAS, the Single Levy Certified Tax Rate Worksheet, Report 713 has been reviewed by the County Auditor and found to be true and correct;

NOW, THEREFORE, be it resolved by the City Council of Harrisville City, Utah, that the Property Tax Rate of 0.001123 for Tax Year 2016 as agreed is hereby ratified effective July 1, 2015, and said rate is now duly adopted and approved.

Section 1: Effective Date. This Ordinance shall be effective immediately upon posting or publication.

PASSED AND ADOPTED by the City Council on this 12th day of July, 2016.

BRUCE RICHINS, Mayor

Harrisville City

ATTEST:

Roll call vote is as follows:		
Mr. Pearce	yes	no
Mr. Robinson	yes	no
Mrs. Jensen	yes	no
Mr. Murtha	yes	no
Mrs. Pearce	yes	no


JENNIE KNIGHT, City Recorder

RECORDED this ____ day of July, 2016.
PUBLISHED OR POSTED this ____ day of July, 2016.



MEMORANDUM

To: Harrisville City Planning Commission

From: Matthew Robertson, P.E. – City Engineer 

CC: Sean Lambert, Public Works Director
Chase Freebairn, Ivory Development
Greg Day, Focus Engineering

RE: **THOROUGHBRED CROSSING SUBDIVISION – PRELIMINARY REVIEW**

Date: June 1, 2016

This development is located in between Berkley Street and Larsen Lane 800 North at about 225 East on the former Dinneen property. The proposed subdivision is 10.81 acres in size and is proposed to have 23 lots. We have reviewed the preliminary plat and improvements drawings and have the following comments:

Comment

Approvals

1. A copy of the “Availability” letter from Bona Vista has been submitted. All requirements from Bona Vista will need to be met and a “Will Server” letter will be required prior to final approval.
2. A copy of the “Availability” letter from Pine View Water has been submitted. All requirements from Pine View will need to be met including turning over water shares prior to final approval.
3. Requirements listed by Rocky Mountain Power, Questar Gas, and other utility companies will need to be met prior to final approval. The developer will need to work with Rocky Mountain Power to relocate the power poles along Larsen Lane.
4. A copy of a letter from Bernard Dinneen concerning the irrigation ditch on the east side of the property has been submitted. Additional flow information for the ditch is needed to verify that the proposed pipe is sufficiently sized to convey the necessary flows.
5. A copy of a letter from Jarold Williamson granting approval to abandon the irrigation ditch on their property has been submitted. Provide additional information on how the ditch is to be abandoned.
6. Please check with North View Fire District to coordinate the location of all fire hydrants.
7. Please prepare a Storm Water Pollution Prevention Plan (SWPPP) and coordinate the SWPPP controls for the site with the City. A Notice of Intent (NOI) needs to be filed with the state prior to final approval.

Plat

8. The street names and lot addresses will need to be shown on the final plat. Please coordinate this work with Brent Slater from our office.
9. The plat should be submitted to the Weber County Surveyor’s Office for review and survey monuments need to be shown on the plat per the County’s requirements.
10. Show the Western Canal and 20’ access road easement with 6’ fence on the final plat.
11. It appears that the property between the ROW line on Larsen Lane to the proposed property line of the new lots will need to be dedicated to the City for the widening of Larsen Lane. The detention basin will also need to be dedicated to the City. Coordinate this with the City and show on the final plat.

Comment

12. Verify that the acute angle between the centerline on Berkley Street and the proposed "Street B" is between 80°-90°.
13. Regarding the "R" label on the lots, a note on the final plat shall read as follows:
"R" (RESTRICTED LOT) — Due to high ground water conditions, the lowest habitable floor level on this lot is restricted to an elevation which is 1.0 feet below the curb and gutter fronting the lot. The curb elevation reference point shall be the lowest top back of curb elevation on the lot frontage.

A geotechnical report has been prepared and submitted for the development which states that floor levels extending below the original ground surface should be protected with a drain system. If the developer plans to construct structures below the natural ground elevation than the final plat shall be prepared, approved and recorded labeling all lots with an "SR" designation. A note on the final plat shall read as follows:

"SR" (SPECIFIC RESTRICTED LOT) — A detailed ground water study has been prepared and approved for this subdivision. Due to the ground water conditions at this site, the lowest habitable floor elevation for structures located on specific restricted lots "SR lots", are limited to the floor elevations shown on this plat.

The final plat will provide a table showing the lowest habitable floor elevation for all lots labeled with the "SR" designation.

14. Final plat will need to include signature blocks, owner's dedication, surveyor's certificate, etc.

Improvement Plans

15. Provide detailed construction drawings with cross sections, plan and profile sheets and all required design information and details as required by the city subdivision ordinance and city standards prior to final approval.
16. Show tie-in with existing curb and gutter radius on Berkley Drive. Berkley Drive and Wahlen Drive are narrower streets; show how the wider street will transition to the existing intersection.
17. Slope the storm drain from the cul-de-sac back to the storm drain on "Street B" if feasible to avoid installing the storm drain between lots 114 and 115. If not feasible, install the storm drain in a straight line between the cul-de-sac and the detention basin to avoid having a manhole structure in future backyards.
18. Provide details on the outlet/overflow structure for the storm drain system. The outlet structure will need to be installed in the detention basin or in the parkstrip as opposed to under the street as currently shown to provide access to the control gate and orifice.
19. Provide details and dimensions of detention pond configuration. The depth of the pond should not exceed 3 feet, side slopes should not exceed 3:1 (4.5:1 is preferred) and 1 foot of freeboard is required.
20. Local detention basins are to be designed to accommodate the 100-year storm event per City Code 10.14. Please adjust the detention calculations accordingly or provide details of emergency overflow to show that there is downstream capacity to handle a 100-year event.
21. Adjust runoff "C" values in storm drain calculations to 0.90 for paved surfaces and 0.85 for buildings.
22. A street light should be located on the corner of Larsen Lane and "Street B".
23. Sanitary sewer manhole in cul-de-sac should be located as per City Standards and no service laterals are allowed to be connected directly to the manhole.
24. The pavement section on Larsen Lane should be re-evaluated by the geotechnical engineer to account for higher traffic counts and truck traffic. The geotechnical report assumed a residential area with light traffic and minimal truck traffic. The truck traffic on Larsen Lane should be assumed to be about 15%.

If you have any questions please feel free to contact me.

HARRISVILLE CITY
PRELIMINARY SUBDIVISION PLAN APPLICATION

Date 4/25/16

Name of Subdivision Thoroughbred Crossing Zone RE-15

Approximate Address 220 E Larsen Ln Harrisville, UT 84404

Property Owner's Name Jerry Williamson Address 196 E Larsen Ln Ogden, UT
Bernard Dinneen Address 987 N 400 E Ogden, UT

Developer's Name Ivory Development Phone 801-386-6708 e-mail Chaset@ivorydevelopment.com
Address 978 E Woodoak Lane SL4UT Fax # _____

Developer's Engineer Greg Day Contact Person Focus Engineering
Engineer's Phone # 801-819-1778 Fax # _____ E-mail gday@focusutah.com

General Contractor TBD
Contractor's Phone # _____ Fax # _____ E-mail _____

Project size-acres 11.01 Number of lots 23 Existing zone RE-15

- Secondary Water Available? Yes
- Culinary Water Available? Yes
- Sewer Connection Available? Yes
- Is Property in a Flood Hazard Area? No
- Designated wetlands on property? No
- Future proposed trails? No
- Lowest Habitable Floor Elevation _____

APPROVAL DATES

Pre application meeting April 14 2016 Preliminary plat review _____

Planning Commission _____ City Council _____

FEES

Conceptual / Preliminary: \$2000 + \$50 per lot or unit . Receipt # 047951
183150

N.E. 1/4
SECTION 8, T.6N., R.1.W., S.L.B., & M.
HARRISVILLE CITY, OGDEN CITY & WEBER COUNTY

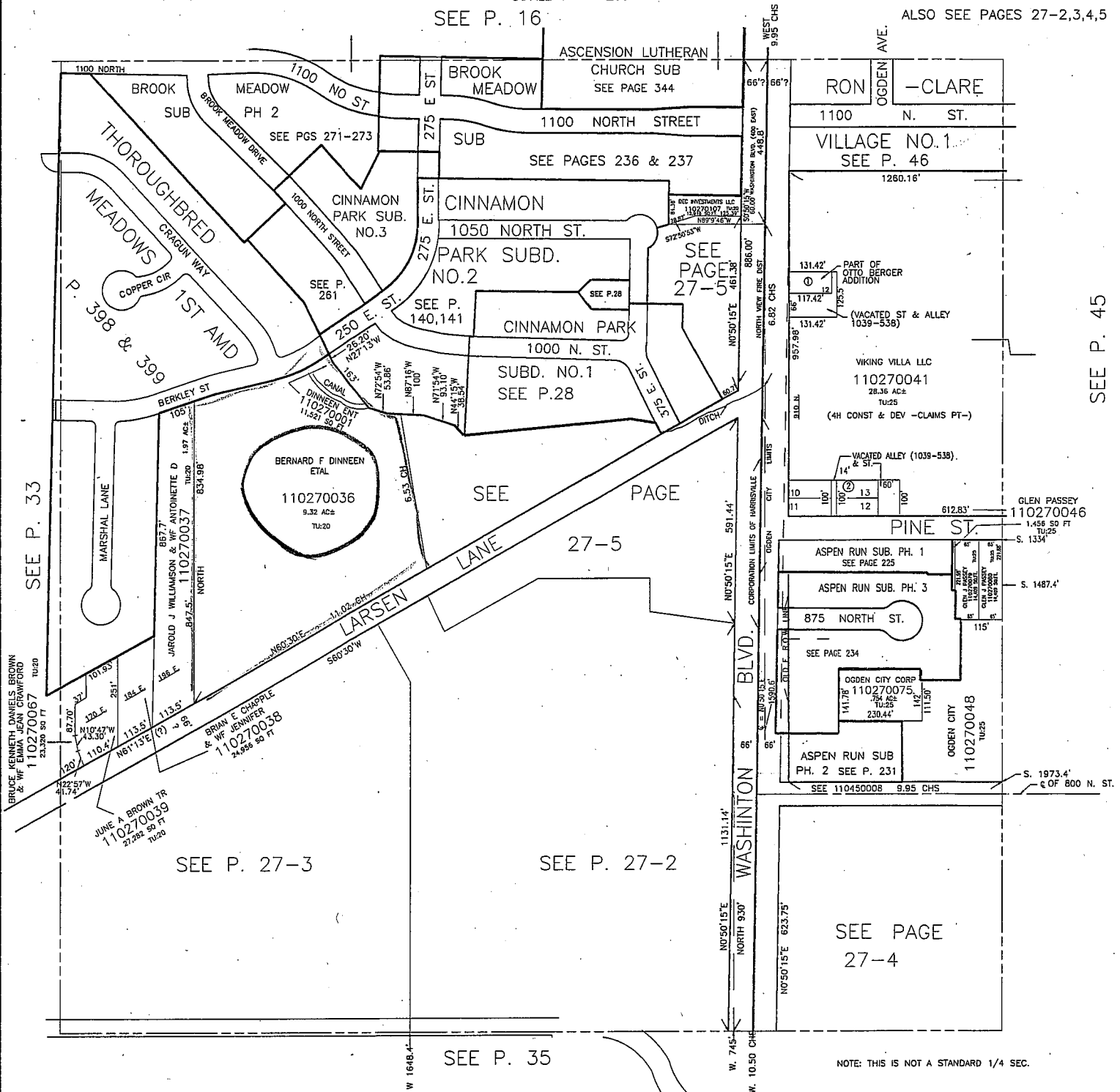
PREFIX : 11-027

TAXING UNITS: 17, 20, 25

SCALE 1" = 200'

SEE P. 16

ALSO SEE PAGES 27-2,3,4,5



SEE P. 45

SEE P. 33

BRUCE, KENNETH DANIELS, BROWN & WIFE EMMA JEAN CRAWFORD
110270067
23,300 SQ FT
TU20

JAROLD J WILLIAMSON & WIFE ANTOINETTE D
110270037
847.5' NORTH
834.98'

BERNARD F DINNEEN ETAL
110270036
9.32 AC±
TU20

BRAN E CHAPPLE & WIFE JENNIFER
110270038
24,556 SQ FT
TU25

JUNE A BROWN TR
110270039
27,282 SQ FT
TU25

SEE P. 27-3

SEE P. 27-2

SEE P. 35

SEE PAGE 27-4

NOTE: THIS IS NOT A STANDARD 1/4 SEC.

Bona Vista Water Improvement District

2020 West 1300 North, Farr West, Utah 84404

Phone (801) 621-0474 Fax (801) 621-0475

Directors

Z. Lee Dickmore
Farr West

Bruce Richius
Harrisville

Keith Butler
Marriott/Slaterville

Bruce Higley
Plain City

Ronald Stratford
Unincorporated Area

Management

Jerry Allen
General Manager

Blake Carlin
Assist. Manager

Monette Panter
Office Manager

AVAILABILITY

March 18, 2016

Harrisville City Planning Commission
363 Independence Blvd.
Harrisville City, Utah 84404

RE: Thoroughbred Crossing Subdivision
Ivory Development

The development is located at approx. 220 East Larsen Lane consisting of 21 lots.

This letter is ONLY to state that the above named project is in the boundaries of the Bona Vista Water Imp. District but water will ONLY be available under the following conditions:

- The subdivision utility plan be reviewed and approved by the District.
- Review fees are paid to the District.
- Proof of Secondary Water.

The non-refundable fee for this review is \$450 plus \$75 per lot. We consider this fee to be minimal and is only to cover the cost of review by the District administration and inspectors and the District Engineer. Only the phase in consideration is guaranteed service, and the Plan Review is good only for a period of one year from the date of the Will Serve letter, if not constructed.

Furthermore, the District's responsibility is to provide flow and pressure to the development. The Developer and his Engineer are then responsible to provide proper flow and pressure throughout the development. This may require some over-sizing within the Development, as determined by the District.

This letter is the first of two letters that will be issued for this development. Following the acceptance of the above conditions the District will issue the "Will Serve" letter.

This subdivision, like all other subdivisions, must have a secondary water system for all outside irrigation usage. Prior to the District excepting fee's for the service line, the owner or developer must furnish us with their secondary water information.

If you have any questions please call.

Sincerely,



Bona Vista Water District
Jerry Allen/General Manager
Blake Carlin/Assist. Manager



WESTERN IRRIGATION COMPANY

1645 Farr West Dr
Farr West, Utah 84404
801-782-4834

Chase Freebairn
Land Acquisition & Development Associate
Ivory Development

31 March 2016

Dear Mr. Freebairn,

I received your email with the attachment "Harrisville Top of Bank Exhibit". This is to inform you that it is approved as drawn with the fencing and twenty foot easement for Western Irrigation Company.

Thanks,

Robert DeFries

Robert DeFries
President

WEBER-BOX ELDER CONSERVATION DISTRICT

471 WEST 2ND STREET • OGDEN, UTAH 84404

OFFICERS

DAVID S. HUMPHREYS
CHAIRMAN

TEREL H. GRIMLEY
GENERAL MANAGER-TREASURER

TAMERA MARTINSON
SECRETARY-CLERK

MICHAEL V. HOLTZ
LEGAL COUNSEL



PHONE (801) 621-6555
FAX (801) 621-6558
INSIDE UTAH - TOLL FREE
1-800-750-6553

TRUSTEES

DAVID S. HUMPHREYS

PAUL W. NELSON

RICK HANCOCK

PAUL HODSON

STEVE KNUDSON

February 12, 2016

Harrisville City Planning Commission
363 Independence Blvd,
Ogden, UT 84404

RE: Secondary Water Availability
Parcel # 11-027-0036 & 11-027-0037

To Whom It May Concern,

Mr. Chase Freebairn has been in contact with our office concerning the development of parcel # 11-027-0036 & 11-027-0037 . The development will need to include the development into our District and turn over sufficient water shares to cover the development. The developer will need to provide the district with a full set of drawings if this development is approved for a redline drawing and parts list before construction begins.

Should you have any concerns or questions please contact me at 621-6555.

Sincerely,

Benjamin Quick
Engineering

Shanna Edwards

From: Gene Bingham
Sent: Wednesday, May 18, 2016 1:05 PM
To: Shanna Edwards
Subject: RE: Thoroughbred Crossing memo

Shanna, I spoke with Justin Anderson of Ogden City and he verbally told me that the developer was good to go on connecting to their sewer in Larsen Lane however, he wants to take the current inter local agreement between them and Harrisville City and get it updated in which I agreed but haven't heard back from them yet.

From: Shanna Edwards [mailto:sedwards@cityofharrisville.com]
Sent: Wednesday, May 18, 2016 9:47 AM
To: Gene Bingham <gbingham@cityofharrisville.com>
Subject: Thoroughbred Crossing memo

Gene,
You sent me an e-mail indicating that you had met with Ogden city and they are OK with Thoroughbred Crossing Subdivision hooking onto the Ogden City sewer. I cannot find that e-mail and I need that or some authorization indicating that Ogden City is ok with the sewer before the proposed development comes to planning commission. Can you help me?

Shanna



1438 West 2550 South
Ogden, Utah 84401

February 11, 2016

Chase Freebairn
chasef@ivorydevelopment.com

Request: 6147851

Dear Mr. Freebairn:

Rocky Mountain Power will supply power to property located at or near 220 E Larsen Ln, Harrisville, UT with the following provisions:

- Applicant will apply for power by calling 1-888-221-7070
- Applicant or Developer will supply a signed, approved recorded property plat map with lot numbers, addresses, and section corners identified if applicable.
- Residential and Commercial Developer will supply an electronic copy of the subdivision by e-mail, (Auto-cad version 2011), to the estimator assigned to the project.
- Residential Subdivision Developer will pay all costs which are non-refundable above the \$750.00 per lot allowance according to line extension tariff, regulation 12.
- All single lot applicants will be subject to the line extension rules and regulation 12.
- Applicant is responsible to sign a contract after job is approved by Rocky Mountain Power management, and pay any associated costs before work can be scheduled or materials ordered.
- Rocky Mountain Power engineering review may be required and may be subject to additional charges according to our filed line extension tariff, regulation 12.

If you have any questions regarding these provisions, please feel free to call me at 801-629-4434.

Respectfully,

Craig Garner
Journeyman Estimator
Rocky Mountain Power
Ogden Operations



February 11, 2016

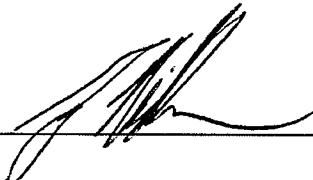
To whom it may concern,

This letter is to verify that Comcast service is available to Dinneen/Williamson Ivory Homes purposed 23 lot Subdivision. Located at 220 E. Larsen Ln., Harrisville, Utah. Comcast will generally provide all materials and labor to provide broad band services from the property line to the point of service, in a trench provided by the property owner. The cost of installation, construction and provision of cable, internet and voice service will be part of the contract negotiations with the Owner of the Property or a designated representative. **This letter is not to be considered a contract or guarantee of service.** Furthermore, all permits, licenses and rights of access must be provided by the Owner prior to any provision of services.

Please be advised that we require a minimum of 90 days for project approvals and construction **after we receive a signed contract.**

Please contact me Greg Miller at 801-401-3017 before opening utility trenches. We look forward to working with you on this Project; please feel free to contact me at 801-401-3017 with any questions or concerns.

Sincerely,



Greg Miller
Comcast Cable
801 401-3017 office
801 401-3036 fax
1350 E Miller Avenue
Salt Lake City, Utah 84106

North View Fire District

315 East 2550 North
North Ogden, UT 84414
Phone: 782-8159
Fax: 782-3532

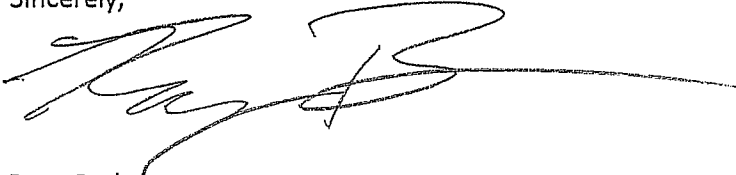
March 21, 2016

Re: Dineen Property Subdivision

To Whom It May Concern,

North View Fire District provides both EMS and Fire Service to the City of Harrisville and all properties located within the city boundaries. The proposed site of a future subdivision located on the Dineen property at 220 E. Larsen Lane Harrisville, UT is located in the service district of North View Fire District.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ryan Barker', with a long horizontal flourish extending to the right.

Ryan Barker
Fire Marshal
North View Fire District

February 16, 2016

Ivory Homes
220 e Larsen lane
harrisville, UT 84404

Dear Developer:

Re: Natural Gas Service Availability Letter

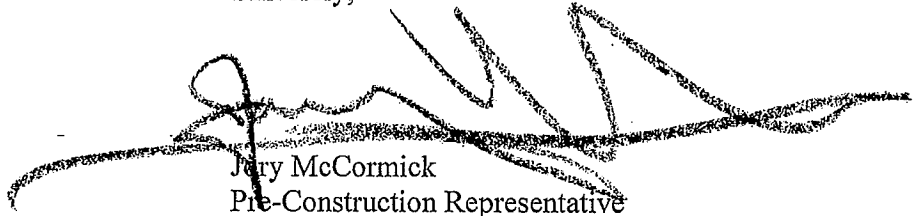
Natural gas can be made available to serve the Narritive development when the following requirements are met:

1. Developer provides plat maps, drawings, construction schedules, average size of homes, units, and/or buildings that will be served by natural gas, and any and all other relevant information regarding commercial and residential uses, including but no limited to, proposed natural gas appliances (number and type of appliances per unit, homes, building).
2. Review and analysis by Questar Gas' Engineering and/or Pre-Construction Department to determine load requirements. System reinforcement requirements and estimated costs to bring natural gas to the development.

Upon completion of Questar Gas' review of the development's natural gas requirements, agreements will be prepared, as necessary, for high pressure, intermediate high pressure and/or service line extensions required to serve the development. These service extensions must be paid in advance.

To accommodate your construction schedule and provide cost estimates to you, please contact me at your earliest convenience.

Sincerely,

A handwritten signature in black ink, appearing to read "Jerry McCormick", is written over the typed name and title. The signature is stylized and somewhat messy, with a large loop at the beginning and a long, sweeping tail.

Jerry McCormick
Pre-Construction Representative



431 26th St – 2nd Flr
Ogden, UT 84401-2418

April 11, 2016

Ivory Development LLC
c/o Chase Freebairn
978 E Woodoak Ln
Salt Lake City, UT 84417
chasef@ivorydevelopment.com

RE: Availability of CenturyLink facilities

Recently, you approached CenturyLink about providing a “will serve” letter to serve Ivory Development, LLC. CenturyLink appreciates the opportunity to provide Thoroughbred Crossing Subdivision at 220 E Larson Lane in Harrisville, Utah with its future communication needs. In response to the request for a commitment to serve, CenturyLink will work with Ivory Development, LLC on determining what the needs will be. Upon such determination, CenturyLink will undertake an analysis of the construction required and the cost to complete that construction. It is only at that point, given the prevailing Terms and Conditions of the Local Terms of Service, that CenturyLink will make a determination whether it can or cannot provide service.

The service you request will be provided for under the prevailing Terms and Conditions of the Local Terms of Service posted on our CenturyLink web site at www.Centurylink.com/tariffs.

Should any relocation of Communication facilities become necessary due to the development of said property, the cost of all said relocations will be the sole responsibility of the developer(s).

If there are any further questions or if I can be of any help, please do not hesitate to call me on telephone number 801-626-5010. I will work with you on the requirements.

Yours truly,

A handwritten signature in black ink, appearing to read "Tom Larsen", written over a horizontal line.

Tom Larsen
Engineer II



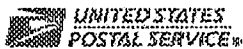
04/11/2016

To whom it may concern,

The USPS will provide service to approximately 21 units located at 220 East Larsen Lane.

ERIC SOHL

USPS SUPERVISOR
221 N WASHINGTON BLVD
OGDEN, UT 84414
801-612-1806



Attn: **Harrisville City**

April 29th 2016

From: **Bernard Dinneen**

To whom this may concern,

Re: **Property Tax ID's 11-027-0036 and 11-027-0001 located on Larsen Lane.**

Concerning the active water irrigation ditches on subject property, owner, Bernard Dinneen, here-by states that there is one active irrigation ditch on the property.

The head gate for the ditch is approx. 70 ft. from the NE corner. There is a 16 in. buried pipe that runs from the head gate to the start of the open ditch.

The open irrigation ditch runs from NE corner along property line to SE corner of property line to Larsen Lane; the ditch turns W on the N side of Larsen Lane and runs W to the SW corner; at which point it flows into a pipe under Larsen Lane to the head gate on the S side of Larsen Lane which feeds irrigation water to the S side of Larsen Lane.

The ditch that runs W along the N side of Larsen Lane is between the property line and Larsen Lane which I believe is Harrisville City easement property.

Every 7.5 days the "head gate" is opened for approximately 12 hrs. This water is for water shareholders on the S side of Larsen Lane.

Respectfully,

A handwritten signature in black ink, appearing to read "Bernard F. Dinneen". The signature is stylized and cursive, with a large initial "B" and "D".

Bernard F Dinneen

The property owned by Jarold & Antionette Williamson at 196 E Lasen Lane when bought by Ivory holmes devolpment, all ditches will not be used and abandoned and will not servicing any one downstream


A handwritten signature in black ink, appearing to read "Jarold Williamson". The signature is written in a cursive style with a long horizontal flourish at the end.



CONSULTING ENGINEERS

MEMORANDUM

To: Harrisville City Council

From: Matthew Robertson, P.E. – City Engineer 

CC: Bill Morris, City Administrator
Sean Lambert, Public Works Director
Jennie Knight, City Recorder
Chase Freebairn, Ivory Development

RE: **THOROUGHBRED CROSSING SUBDIVISION – PRELIMINARY REVIEW**

Date: July 7, 2016

This development is located in between Berkley Street and Larsen Lane at about 225 East on the former Dinneen property. The proposed subdivision is 10.81 acres in size and is proposed to have 23 lots. A review of the preliminary plat and improvements was completed on June 1, 2016. We have not received new plans from the developer since that review. The comments from the review of the preliminary plat and improvements drawings are as follows:

Comment

Approvals

1. A copy of the “Availability” letter from Bona Vista has been submitted. All requirements from Bona Vista will need to be met and a “Will Server” letter will be required prior to final approval.
2. A copy of the “Availability” letter from Pine View Water has been submitted. All requirements from Pine View will need to be met including turning over water shares prior to final approval.
3. Requirements listed by Rocky Mountain Power, Questar Gas, and other utility companies will need to be met prior to final approval. The developer will need to work with Rocky Mountain Power to relocate the power poles along Larsen Lane.
4. A copy of a letter from Bernard Dinneen concerning the irrigation ditch on the east side of the property has been submitted. Additional flow information for the ditch is needed to verify that the proposed pipe is sufficiently sized to convey the necessary flows.
5. A copy of a letter from Jarold Williamson granting approval to abandon the irrigation ditch on their property has been submitted. Provide additional information on how the ditch is to be abandoned.
6. Please check with North View Fire District to coordinate the location of all fire hydrants.
7. Please prepare a Storm Water Pollution Prevention Plan (SWPPP) and coordinate the SWPPP controls for the site with the City. A Notice of Intent (NOI) needs to be filed with the state prior to final approval.

Plat

8. The street names and lot addresses will need to be shown on the final plat. Please coordinate this work with Brent Slater from our office.
9. The plat should be submitted to the Weber County Surveyor’s Office for review and survey monuments need to be shown on the plat per the County’s requirements.
10. Show the Western Canal and 20’ access road easement with 6’ fence on the final plat.
11. It appears that the property between the ROW line on Larsen Lane to the proposed property line of the new lots will need to be dedicated to the City for the widening of Larsen Lane. The detention basin will also need to be dedicated to the City. Coordinate this with the City and show on the final plat.

Comment

12. Verify that the acute angle between the centerline on Berkley Street and the proposed "Street B" is between 80°-90°.
13. Regarding the "R" label on the lots, a note on the final plat shall read as follows:
"R" (RESTRICTED LOT) — Due to high ground water conditions, the lowest habitable floor level on this lot is restricted to an elevation which is 1.0 feet below the curb and gutter fronting the lot. The curb elevation reference point shall be the lowest top back of curb elevation on the lot frontage.
A geotechnical report has been prepared and submitted for the development which states that floor levels extending below the original ground surface should be protected with a drain system. If the developer plans to construct structures below the natural ground elevation than the final plat shall be prepared, approved and recorded labeling all lots with an "SR" designation. A note on the final plat shall read as follows:
"SR" (SPECIFIC RESTRICTED LOT) — A detailed ground water study has been prepared and approved for this subdivision. Due to the ground water conditions at this site, the lowest habitable floor elevation for structures located on specific restricted lots "SR lots", are limited to the floor elevations shown on this plat.
The final plat will provide a table showing the lowest habitable floor elevation for all lots labeled with the "SR" designation.
14. Final plat will need to include signature blocks, owner's dedication, surveyor's certificate, etc.

Improvement Plans

15. Provide detailed construction drawings with cross sections, plan and profile sheets and all required design information and details as required by the city subdivision ordinance and city standards prior to final approval.
16. Show tie-in with existing curb and gutter radius on Berkley Drive. Berkley Drive and Wahlen Drive are narrower streets; show how the wider street will transition to the existing intersection.
17. Slope the storm drain from the cul-de-sac back to the storm drain on "Street B" if feasible to avoid installing the storm drain between lots 114 and 115. If not feasible, install the storm drain in a straight line between the cul-de-sac and the detention basin to avoid having a manhole structure in future backyards.
18. Provide details on the outlet/overflow structure for the storm drain system. The outlet structure will need to be installed in the detention basin or in the parkstrip as opposed to under the street as currently shown to provide access to the control gate and orifice.
19. Provide details and dimensions of detention pond configuration. The depth of the pond should not exceed 3 feet, side slopes should not exceed 3:1 (4.5:1 is preferred) and 1 foot of freeboard is required.
20. Local detention basins are to be designed to accommodate the 100-year storm event per City Code 10.14. Please adjust the detention calculations accordingly or provide details of emergency overflow to show that there is downstream capacity to handle a 100-year event.
21. Adjust runoff "C" values in storm drain calculations to 0.90 for paved surfaces and 0.85 for buildings.
22. A street light should be located on the corner of Larsen Lane and "Street B".
23. Sanitary sewer manhole in cul-de-sac should be located as per City Standards and no service laterals are allowed to be connected directly to the manhole.
24. The pavement section on Larsen Lane should be re-evaluated by the geotechnical engineer to account for higher traffic counts and truck traffic. The geotechnical report assumed a residential area with light traffic and minimal truck traffic. The truck traffic on Larsen Lane should be assumed to be about 15%.

If you have any questions please feel free to contact me.

Harrisville City Project Management Meeting
Harrisville City Office
April 14, 2016, 9:00 a..m.

DRAFT ONLY

Attendance: Gene Bingham (Public Works)
Pat Young (Commissioner)
Shanna Edwards (Secretary)
Blake Carlin (Bona Vista)
Bill Morris (Administrator)
Matt Robertson (City Engineer)
Ryan Barker (North View Fire)
Jeff Pearce (City Council)
Bill Smith (Commissioner)
Ken Martin (Building Inspector)

Visitors:
Dana Shuler
Chase Freebairn
Greg Poy

2. Discussion concerning a Pleasant View City connection to the Weber Basin Water main on 2550 North including construction of a pump house in Harrisville east of the Weber Basin Well road. (Dana Shuler)

Dana Shuler and is the engineer associated with Jones & Associates working with Pleasant View City on this project. She pointed to the area where the current Weber Basin Water Conservancy District pump house is located (Parcel Number 17-066-0088) on the southeast corner of Skeen property accessed by a driveway from 2550 North. She pointed out several locations to put the new pump house that will work and said they are leaving their options open on a location. It does not have to be in a particular area as long as it is in the general location of the well. Gene Bingham suggested it is less likely to get tagged with graffiti if located off the main road behind the present pump house. She presented two building styles and said it would be similar to one of the two. If they locate the pump house on property in Harrisville, the property will need to be divided off, receive site plan approval, and conditional use approval. Bill Morris arrived and referred to the Land Use Ordinance which indicates that public utility substations are allowed as a conditional use in all residential zones as well as commercial and manufacturing zones. He referred to the sections 11.10.020.16 and 11.14.020.10 special regulations of the Land Use Ordinance concerning public utility substations which gives setbacks and allows the planning commission to reduce the lot area to 3,000 square feet. Blake Carlin reported that Bona Vista did a study and determined that the additional pump house will work using the existing well.

1. Preliminary review Dinneen property subdivision (Thoroughbred Crossing) on Larsen Lane. (Chase Freebairn 801-386-6708)

Chase Freebairn mentioned that they originally proposed 23 lots but will likely reduce that number to allow for a detention pond. He mentioned under ground storm water storage, but he was told that is not allowed.

Irrigation: Gene Bingham said that the city requires a letters from ditch owners if the existing irrigation ditch on the property is abandoned and disconnected. Bernard Dineen is probably the main ditch owner, but letters are required from any down stream users indicating they no longer

will need the ditch for irrigation. If the ditch remains in use, developers will have to work out the details on the plat. Western Irrigation company is not responsible for any ditches outside of the canal. Gene Bingham suggested a note be included on the plat concerning the ditch.

(Greg Poy, Focus Engineering arrived)

Storm Water: Matt Robertson said that if the city receives the subdivision application before the new LID (Low Impact Development) standards are adopted to reflect the requirement for on site retention, the development may follow the existing standards. The developer's engineer may wish to apply the new LID requirements. In that case, the city engineer will review it as such. It is anticipated that the city will adopt the new requirements by September 2016. The city standards do not allow gravel underground storage or a French drain.

Sewer: Chase Freebairn said the sewer study by Ogden City has been completed. Ogden City wants the sewer agreement with Harrisville City for sewer on Larsen Lane to be updated before they approve any sewer connection for this development. Gene Bingham suggested Mr. Freebairn have Ogden City contact him about updating the agreement. Ogden City approval has to be received before the subdivision can receive final approval.

Larsen Lane: The 15 foot width for Larsen Lane expansion is indicated on the proposed plat.

Western Irrigation Canal: Chase Freebairn said that he has an agreement with Western Irrigation to fence off the company's 20 foot access easement. The homeowner will still own the property that is fenced off 20 feet to top of the canal bank, but the canal company will have access to the fenced off easement area. The setback requirements for the lots do not change with the fence there as long as the fenced off property belongs to the property owner.

Miscellaneous: There must be no remnant parcels in the subdivision. The city engineer assigns house numbers. Jeff Pearce pointed out a house in Cinnamon Park where 250 east has only one home before the street changes to Berkley Street. He questioned if changing the address on this one house to Berkley Street would make the address less confusing. Gene Bingham said that technically the coordinates do change. Chase Freebairn said that all of the lots in Thoroughbred Meadows have been sold. Ken Martin reminded developers the front set back is 30 feet from the property line, not from the road. Blake Carlin informed developers that Bona Vista has to get a waiver from the state after they receive the subdivision construction drawing which can take up to four weeks. Developers purchased some of the property for their subdivision from Williamson and committed to furnish pressurized secondary water to his property. Detention calculations on the proposed plat were reviewed.

"R" Restriction: Lots are restricted to no basements unless a geo-tech study is done on each lot, and the "R" restriction should be noted n the plat. Gene Bingham said land drains are not allowed in the city even with a geo-tech study. Those homes in Thoroughbred Meadows that

went further into the ground with geo-tech studies have included a foundation drain with a sump pump on the outside corner of each house which pumps the water out onto the owner's lawn.

Streets: It was noted that the street from Thoroughbred Meadows transitions from a 54 foot wide roadway to 60 foot right of way.

NOI & SWPPP: NOI and Swipp approval is required prior to final subdivision approval.

(Bill Morris left meeting 9:40 a.m.)

The developer should furnish an updated digital set of plans to the city engineer two weeks prior to the planning commission meeting May 11, 2016. Gene Bingham would like to receive a large paper copy to review. Application for preliminary approval including filing fees must also be received at the city office earlier than fourteen days (by April 25). The property will be posted to notice the public hearing for May 11, 2016.

Blake Carlin asked how Harrisville releases escrow for asphalt completion. Gene Bingham said the city does not release asphalt escrow and begin the one year warrantee until all the collars are on in the street, and even then, a 10% contingency fee is retained. Blake Carlin requested the city contact Bona Vista before releasing any escrow on asphalt.

Adjourned 10:05 a.m.

Harrisville City Planning Commission Meeting
363 W. Independence Boulevard
7:00 p.m., June 8, 2016

Commissioners: Steve Weiss
Kevin Jensen
Chad Holbrook
Roger Shuman
Brenda Nelson
Blair Christensen

Staff: Bill Morris (City Administrator)
Shanna Edwards (Secretary)
Bruce Richins (Mayor)
Jeff Pearce (City Council)
Ruth Pearce (City Council)

Visitors: Malorie Brask, Chase Freebairn, Donny Mooty, Tris Comstock, Randy Comstock, Eric Thomas, Lance E. French, Crystal Ocampos, Carlos Naranjo, Terry Casell, K. C. Casell, Adam Hughes, ... Eric Zeissler, Tonya Zeissler, Jared Thompson, Bambi Saunders, Michael Taylor

1. Welcome new commissioner, Roger Shuman, administer oath of office.

Chairman Weiss welcomed everyone. He turned the time over to Bill Morris who administered the oath of office to Roger Shuman and thanked him for accepting the appointment to serve a four-year term on the planning commission.

2. CONSENT APPROVAL of Planning Commission Meeting Minutes December 9, 2015.

MOTION: Commissioner Jensen motioned and Commissioner Holbrook seconded to approve minutes of planning commission meeting held December 9, 2015, as written. Voting was unanimous.

3. PUBLIC HEARING to receive public comment on updating the city's General Plan.

Bill Morris introduced Adam Hughes and Malorie Brask from Better City. Adam Hughes further introduced commissioners to the company they represent, and gave the power point presentation that Matt Godfrey presented at city council meeting, May 24, 2016. It included their suggested initial planning and development strategy for Harrisville. At the completion they took questions from commissioners. Roger Shuman asked what they might consider a draw to Harrisville since it mostly a rural community and does not have an amenity like a river. Adam Hughes said the city has to create assets that attract businesses, and put together a strategic plan or strategy. He recommended combining mixed use including retail shops, multi family residential, and parks. Commissioner Shuman commended that in Harrisville the commercial retail is scattered around in developments as a whole. Adam said the area has to have the density to support the retail development. Deciding on a location that will draw from the region is the greatest asset. Commissioner Holbrook asked what Better City would suggest. Adam Hughes responded by suggesting the city clean up blighted areas along the corridors. He suggested the city look at areas with sufficient acreage along main thoroughfares where land owners are willing to sell and do a Commercial Redevelopment District (CDR). This is where a feasibility study will factor in putting this together.

Bill Morris referred to Utah State Code 10-9a-401 and gave a power point presentation on the required content for the General Plan, protections it should provide for, and importance of identifying future uses of land. At the conclusion of both presentations, Chairman Weiss called for motion on the public hearing.

MOTION: Commissioner Shuman motioned and Commissioner Holbrook seconded with unanimous approval to open the public hearing.

No public comments.

MOTION: Commissioner Shuman motioned and Commissioner Christensen seconded with unanimous approval to close the public hearing.

4. PUBLIC HEARING / RECOMMENDATION concerning a preliminary plan for a 23-lot subdivision, "Thoroughbred Crossing," located east of Thoroughbred Meadows Subdivision on Larsen Lane.

Bill Morris read the letter of recommendation from the city engineer's office dated June 1, 2016.

MOTION: Commissioner Jensen motioned and Commissioner Holbrook seconded with unanimous approval to open the public hearing.

Donny Mooty, 972 N. Marshal Lane

He said he moved into Thoroughbred Meadows from Texas because he liked the country setting. When he bought his home, the seller assured him that the neighboring property owner was not developing the land. Had he known the property was for sale, he may have bought it to keep horses on in order to keep it rural. He is not happy with the proposed additional subdivision development. Pricing the proposed homes in the low \$200,000 will affect the value of the existing homes. He also expressed concern about increased traffic with widening of Larsen Lane.

Lance French, 202 E. Concord Circle

He said the connecting road from Thoroughbred Meadows through Thoroughbred Crossing to Larsen Lane will make the homes in Thoroughbred Meadows more easily accessible and benefit public safety.

Donny Mooty spoke again and disagreed with Mr. French. He explained how easy it is now to access Thoroughbred Meadows from Washington Boulevard.

Eric Zeissler, 168 E. Berkley Street.

His concern is that the proposed street may be insufficient to accommodate homes in both Thoroughbred Meadows and Thoroughbred Crossing. Many existing homes have children living there with no safe way to walk to any park. He loves the existing field, but he is not opposed to progress as long as it is not going to jeopardize the safety of his family. He expressed concern that the open property to the west of Thoroughbred Meadows may develop as well. He asked about the size of the lots proposed for Thoroughbred Crossing and was told that they will be third acre lots (RE-15).

MOTION: Since there were no further public comments, Commissioner Shuman motioned and Commissioner Christensen seconded with unanimous approval to close the public hearing.

DISCUSSION: Citizens commented on availability of copies of the proposed development. They were told that these are always available at the city office. Bill Morris printed copies of the preliminary plan and gave them to those in attendance. Commissioner Jensen commented that a land owner has the right to develop his land according to how it is zoned. The planning commission cannot prevent land owners from developing their property or force them to develop it a certain way. It has been zoned RE-15 for a number of years. Bill Morris reiterated that government cannot interfere with individual property rights. It is vested to the zoning in place at the time they develop the property. He said the items on the engineer's memo should be completed before final approval is given.

MOTION: Commissioner Shuman motioned to recommend preliminary approval for a 23-Lot subdivision "Thoroughbred Crossing" located east of Thoroughbred Meadows Subdivision on Larsen Lane. The motion was seconded by Commissioner Holbrook and voting was unanimous.

Commissioner Shuman was excused at 8:10 p.m.

5. PUBLIC HEARING / DISCUSSION / ACTION concerning amending Harrisville Municipal Code Sections 11.09.030 accessory building development standards, Section 11.23.040 relating to special regulations for signs, and Section 12.04.030 relating to subdivision escrow and state code compliance.

Bill Morris said Ordinance #480 resulted from a request by Gene Bingham, public works director, to make some changes in how cash escrow is set up, and to comply with state legislation which limited the amount retained by cities for contingency and inflation from 15% to 10%. The ordinance also changes the subdivision improvement guarantee period to one year. Ken Martin, building inspector, also suggested some changes. This proposed ordinance covers the changes recommended.

MOTION: Commissioner Nelson motioned and Commissioner Holbrook seconded with unanimous approval to open the public hearing.

No public comments.

MOTION: Commissioner Nelson motioned and Commissioner Christensen seconded with unanimous approval to close the public hearing.

MOTION: Commissioner Nelson motioned to recommend approval of Ordinance #480 amending the Harrisville Municipal Code Sections 11.99.030 accessory building development standards, Section 11.23-040 relating to special regulations for signs, and Section 12.04.030 relating to subdivision escrow and state code compliance. The motion was seconded by Commissioner Jensen, and voting was unanimous.

6. REVIEW / DISCUSSION / RECOMMEND APPROVAL of amended building design for the remaining undeveloped portion of Golf View Phase II including amended development agreement.

DISCUSSION: Jarred Thompson intends to complete Phase II of Golf View, but he would like to make some changes by updating the floor plans, and he is suggesting a more updated finish appearance. The buildings will occupy the same foot print. The underground work is already done. Since this is in the (SAP) Special Area Plan Zone, approval of any amendments and an amended development agreement is required.

MOTION: Commissioner Holbrook motioned to approve the amended building design for the remaining undeveloped portion of Golf View Phase II including an amended development agreement. The motion was seconded by Commissioner Nelson and voting was unanimous.

7. REVIEW / DISCUSSION / ACTION on concept plan for 1529 North Washington Boulevard to include multiple housing.

Bill Morris said that Rick Scadden and Eric Thomas are partnering this concept. Bill Morris said he invited them to come and talk to commissioners to see if what they propose is something they may or may not want to consider in Harrisville.

Eric Thomas provided commissioners with pictures of the multi family residential development they are proposing. He said he realizes it does not fit the zoning. He said this is a narrow strip of ground that does not lend to a general subdivision. Their plan includes a pocket park of green space and a small commercial area with mainly multi family town homes. Eric Thomas brought out that there some drainage issues in this area associated with North Ogden City. The roadway they are proposing would have dual utilities going down it to cary some storm water from North Ogden to Mud Creek Detention. Commissioners pointed out that the General Plan indicates commercial extending further back on the property than is showing on their concept plan. Property to the north and west is probably designated as agricultural unincorporated Weber County, but it is on North Ogden City's Annexation Declaration Plan. Eric Thomas said that North Ogden would gladly take this parcel into their city because they need the road for their utilities. Bill Morris said that commissioners are studying the General Plan to make updates, but it is not yet completed. Commissioners hesitated to commit to what is being proposed if this may be an ideal location for applying the type of development strategy discussed earlier. Commissioner Holbrook was not in favor of giving any land to North Ogden City. Chairman Weiss would look closer at single patio type homes, and Commissioner Nelson favored duplex or patio homes. When asked about approximate selling price for the proposed units, developers said selling price would be in the mid to upper \$100,000. Chairman Weiss said "For Rent" signs are going up all around in the existing SAP town homes, and he feels the city has enough town homes. Bill Morris said he would like to make something work. They would have to have an HOA for the road and the HOA would have to generate enough to maintain the infrastructure. Commissioner Nelson suggested looking into what might be scheduled to go in around it. Eric Thomas said the nearest development to the north in North Ogden City is zoned for multiple family. Developers are here to find out if whether pursuing this concept plan would be reasonably acceptable. Bill Morris suggested Eric Thomas contact him.

8. Elect Planning Commission Chair and Vice Chair for 2016.

Chairman Weiss declared nominations open. Since the year is half over, Commissioner Nelson motioned that Chairman Weiss finish out the year as chairman, and Commissioner Jensen continue as vice chair. The motion was seconded by Commissioner Holbrook. Voting was unanimous by those present. Chairman Weiss declared nominations closed.

9. PUBLIC COMMENTS: *None*

10. Adjourn: At 8:35 p.m., Commissioner Jensen motioned and Commissioner Nelson seconded with unanimous approval to adjourn. The next regularly scheduled planning commission meeting will be held July 13, 2016, 7:00 p.m. at the city hall.

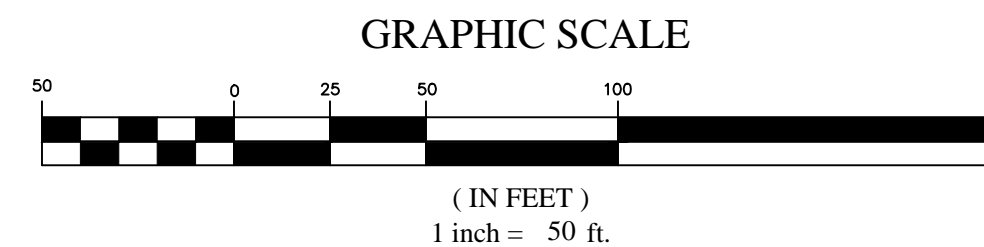
Shanna C. Edwards
Secretary

Steve Weiss
Chairman

PRELIMINARY PLAT

THOROUGHbred CROSSING SUBDIVISION

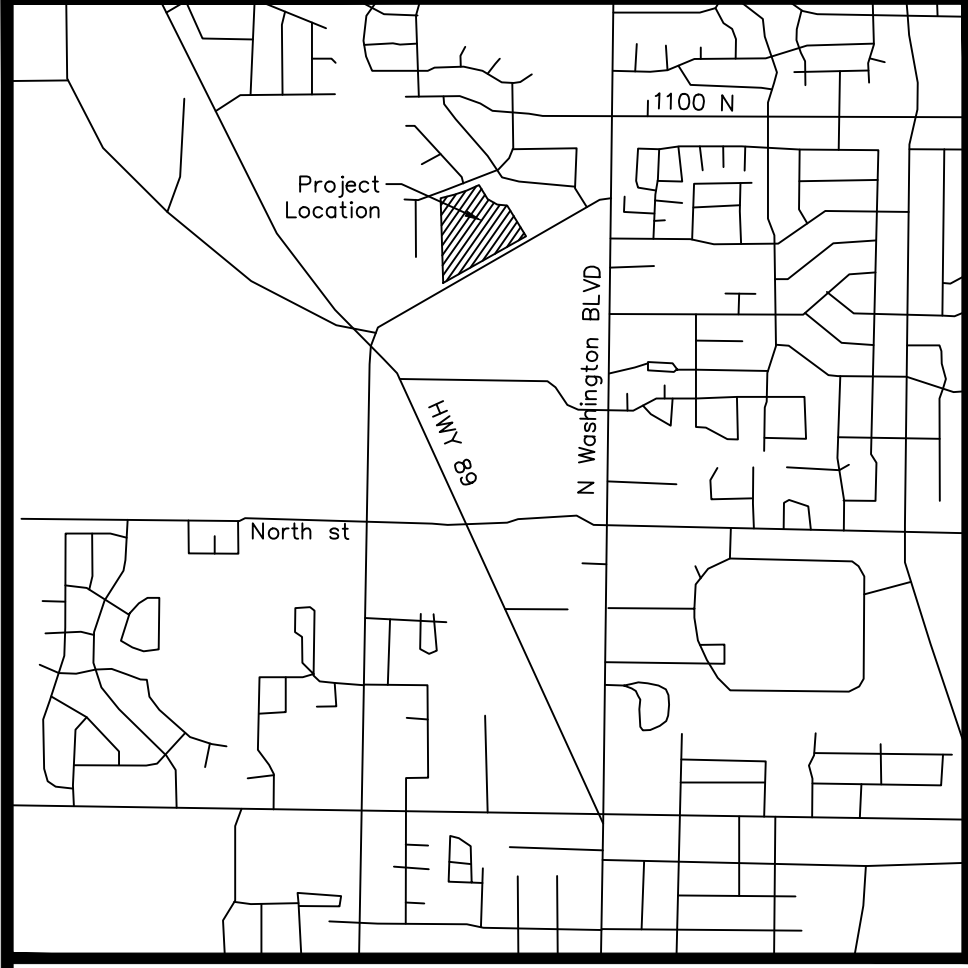
LOCATED IN THE NE 1/4 OF SECTION 8, T6N, R1W, SLB&M
HARRISVILLE, UTAH



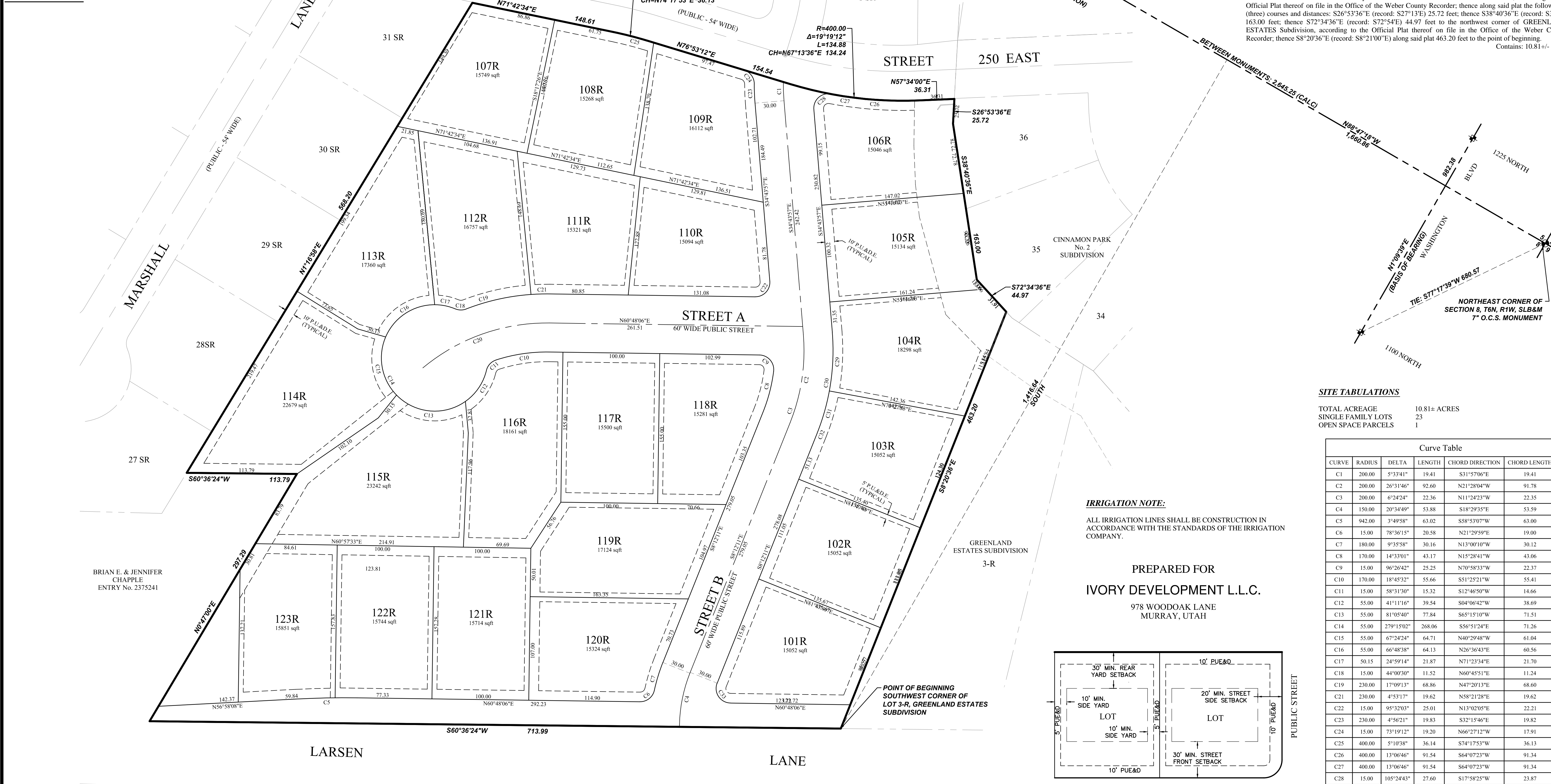
COMPOSITE SURVEY DESCRIPTION

A portion of the NE 1/4 of Section 8, Township 6 North, Range 1 West, Salt Lake Base & Meridian, located in Harrisville, Utah, more particularly described as follows:
Beginning at a point on the northerly line of Larsen Lane at the southwest corner of Lot 3-R, GREENLAND ESTATES Subdivision, according to the Official Plat thereof on file in the Office of the Weber County Recorder, located N88°47'8"W along the Section line 1,660.86 feet and South 1,416.64 feet from the Northeast Corner of Section 8, T6N, R1W, S.L.B. & M.; thence S60°36'24"W (record: S60°36'00"W) along the north line of Larsen Lane 713.99 feet; thence N0°47'00"E 297.29 feet thence S60°36'24"W 113.79 feet to the easterly line of THOROUGHbred MEADOWS Subdivision (1st Amendment), as constructed and according to the Official Plat thereof on file in the Office of the Weber County Recorder; thence along said plat the following 6 (six) courses and distances: N1°16'58"E 568.20 feet; thence N71°42'34"E 148.61 feet; thence along the arc of a 400.00 foot radius curve to the right 36.14 feet through a central angle of 5°10'38" (chord: N74°17'53"E 36.13 feet); thence N76°53'12"E 154.54 feet; thence along the arc of a 400.00 foot radius curve to the left 134.88 feet through a central angle of 19°19'12" (chord: N67°13'36"E 134.24 feet); thence N57°34'00"E 36.31 feet to the westerly line of CINNAMON PARK Subdivision No. 2, according to the Official Plat thereof on file in the Office of the Weber County Recorder; thence along said plat the following 3 (three) courses and distances: S26°53'36"E (record: S27°13'E) 25.72 feet; thence S38°40'36"E (record: S39"E) 163.00 feet; thence S72°34'36"E (record: S72°54"E) 44.97 feet to the northwest corner of GREENLAND ESTATES Subdivision, according to the Official Plat thereof on file in the Office of the Weber County Recorder; thence S8°20'36"E (record: S8°21'00"E) along said plat 463.20 feet to the point of beginning.
Contains: 10.81 +/- acres

FOCUS
ENGINEERING AND SURVEYING, LLC
502 WEST 8360 SOUTH
SANDY, UTAH 84070 PH: (801) 352-0075
www.focusutah.com



VICINITY MAP



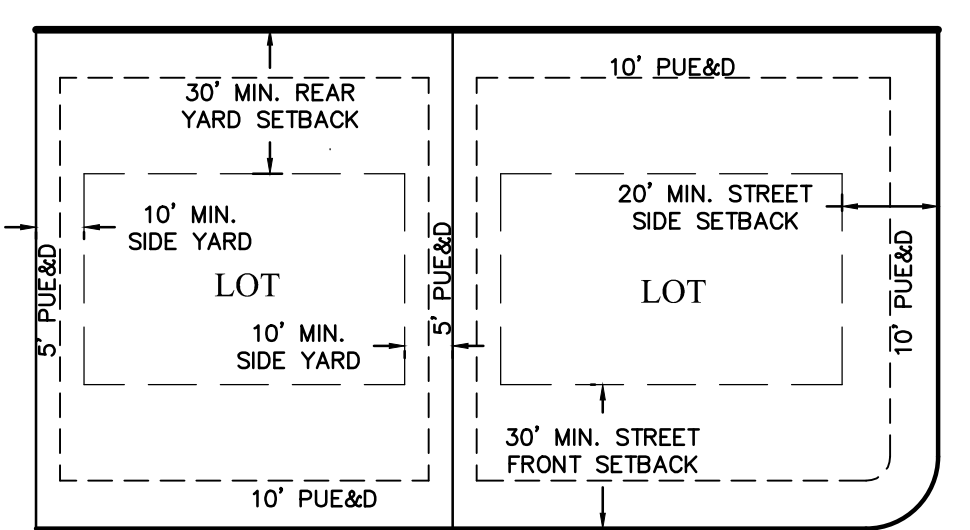
SITE TABULATIONS

TOTAL ACREAGE	10.81± ACRES
SINGLE FAMILY LOTS	23
OPEN SPACE PARCELS	1

Curve Table					
CURVE	RADIUS	DELTA	LENGTH	CHORD DIRECTION	CHORD LENGTH
C1	200.00	5°33'41"	19.41	S31°57'06"E	19.41
C2	200.00	26°31'46"	92.60	N21°28'04"W	91.78
C3	200.00	6°24'24"	22.36	N11°24'23"W	22.35
C4	150.00	20°34'49"	53.88	S18°29'35"E	53.59
C5	942.00	3°49'58"	63.02	S58°53'07"W	63.00
C6	15.00	78°36'15"	20.58	N21°29'59"E	19.00
C7	180.00	9°35'58"	30.16	N13°00'10"W	30.12
C8	170.00	14°33'01"	43.17	N15°28'41"W	43.06
C9	15.00	96°26'42"	25.25	N70°58'33"W	22.37
C10	170.00	18°45'32"	55.66	S51°25'21"W	55.41
C11	15.00	58°31'30"	15.32	S12°46'50"W	14.66
C12	55.00	41°11'16"	39.54	S04°06'42"W	38.69
C13	55.00	81°05'40"	77.84	S65°15'10"W	71.51
C14	55.00	279°15'02"	268.06	S56°51'24"E	71.26
C15	55.00	67°24'24"	64.71	N40°29'48"W	61.04
C16	55.00	66°48'38"	64.13	N26°36'43"E	60.56
C17	50.15	24°59'14"	21.87	N71°23'34"E	21.70
C18	15.00	44°00'30"	11.52	N60°45'51"E	11.24
C19	230.00	17°09'13"	68.86	N47°20'13"E	68.60
C21	230.00	4°53'17"	19.62	N58°21'28"E	19.62
C22	15.00	95°32'03"	25.01	N13°02'05"E	22.21
C23	230.00	4°56'21"	19.83	S32°15'46"E	19.82
C24	15.00	73°19'12"	19.20	N66°27'12"W	17.91
C25	400.00	5°10'38"	36.14	S74°17'53"W	36.13
C26	400.00	13°06'46"	91.54	S64°07'23"W	91.34
C27	400.00	13°06'46"	91.54	S64°07'23"W	91.34
C28	15.00	105°24'43"	27.60	S17°58'25"W	23.87
C29	230.00	15°11'50"	61.01	S27°08'02"E	60.83
C30	230.00	26°31'46"	106.50	N21°28'04"W	105.55
C31	230.00	11°19'56"	45.49	S13°52'09"E	45.42
C32	230.00	11°19'56"	45.49	S13°52'09"E	45.42
C33	15.00	110°59'43"	29.06	S63°42'02"E	24.72

IRRIGATION NOTE:
ALL IRRIGATION LINES SHALL BE CONSTRUCTION IN ACCORDANCE WITH THE STANDARDS OF THE IRRIGATION COMPANY.

PREPARED FOR
IVORY DEVELOPMENT L.L.C.
978 WOODOAK LANE
MURRAY, UTAH



TYPICAL BUILDING SETBACKS
N.T.S.

BRIAN E. & JENNIFER CHAPPLE
ENTRY No. 2375241

11-027-0116 R&W WARREN FAMILY TRUST 11-027-0034
MONTGOMERY 11-027-0100 JENNINGS 11-027-0025 BROWN 11-027-0104 PETERSON BARNETT 11-027-0022

THOROUGHbred CROSSING

HARRISVILLE, UTAH

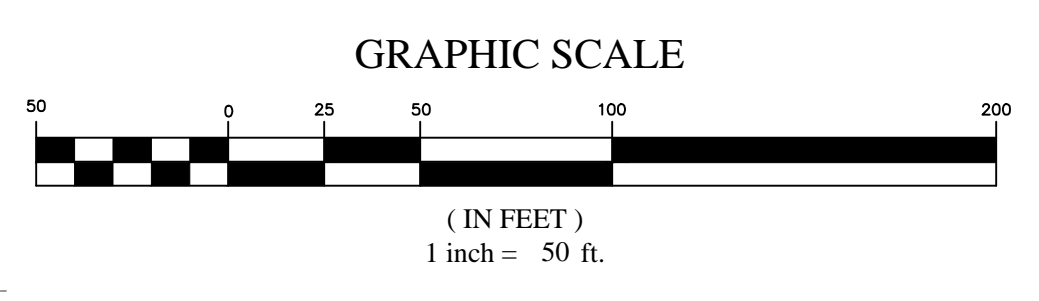
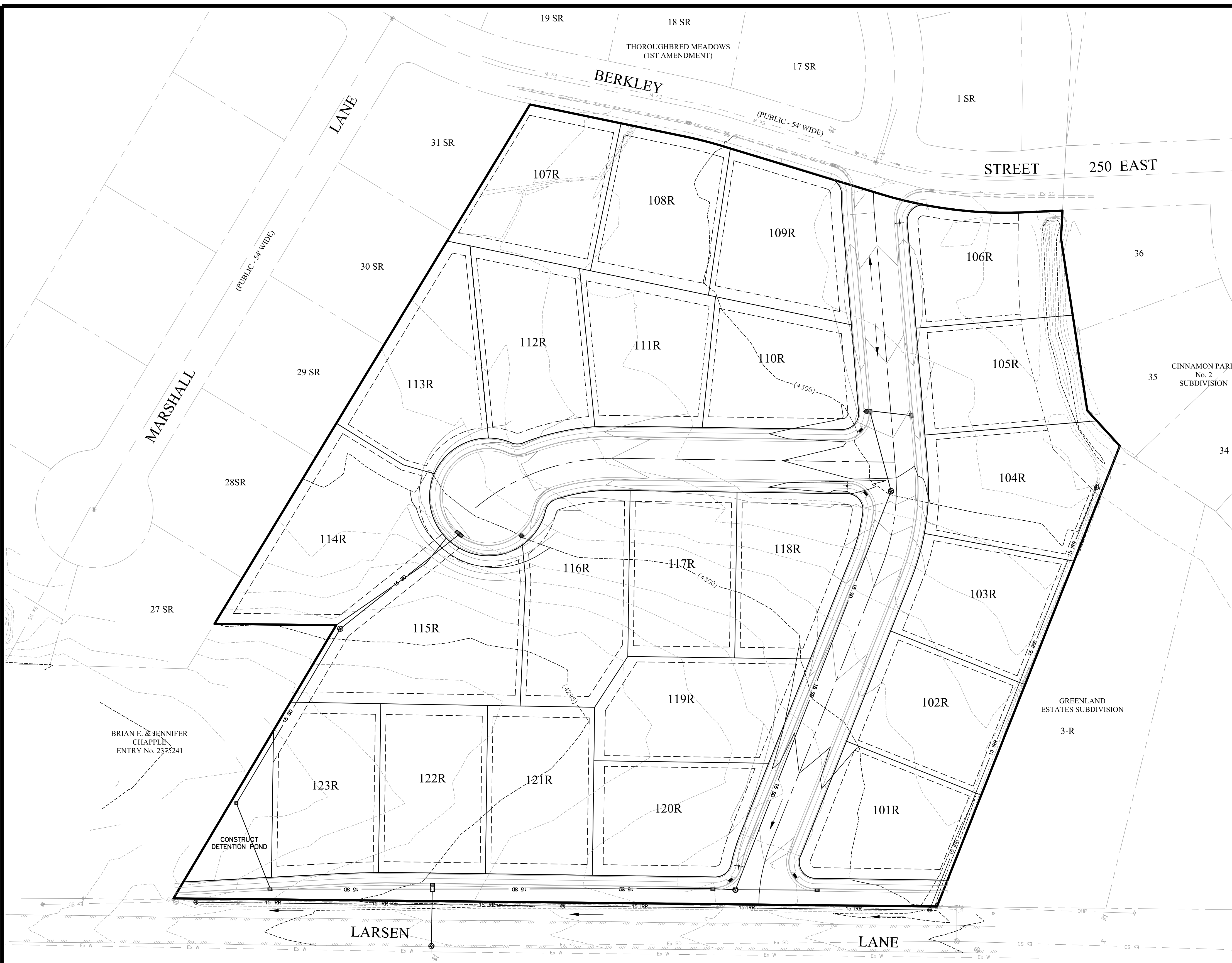
PRELIMINARY PLAT

REVISION BLOCK		DISCUSSION
#	DATE	
1		
2		
3		
4		
5		
6		

PRELIMINARY PLAT

Scale: 1"=50'
Date: 03/25/16
Job #: 16-007
Sheet: C1

23_16-007-007 Ivory Development Design 16-007 (copy) sheets\preliminary\C1 - PRELIMINARY PLAT.dwg



LEGEND

--- (solid)	BOUNDARY
--- (dashed)	ROW
--- (dotted)	CENTERLINE
--- (dash-dot)	LOT LINE
---	EASEMENT
---	15" SD
---	8" SS
---	8" SANITARY SEWER
---	8" CULINARY WATER
---	8" SECONDARY WATER
---	CONTOUR MAJOR
---	CONTOUR MINOR
---	EXIST. STORM DRAIN
---	EXIST. SANITARY SEWER
---	EXIST. CULINARY WATER
---	EXIST. FENCE
---	EXIST. CONTOUR MAJOR
---	EXIST. CONTOUR MINOR
---	SIGN
---	STREET LIGHT
---	SD MH, INLET, AND COMBO
---	SEWER MANHOLE
---	VALVE, TEE & BEND
---	WATER BLOW-OFF
---	FIRE HYDRANT
---	STREET MONUMENT (TO BE SET)
---	EXIST. STREET MONUMENT
---	EXIST. SD INLET & MH
---	EXIST. SEWER MH
---	EXIST. VALVE, TEE, & BEND
---	EXIST. FIRE HYDRANT
---	SPOT ELEVATION
---	AREAS OF 3+ FEET OF FILL

Detention Pond

Project: Harrisville - Ivory
 Location: Harrisville, Utah
 Date: 4/8/2016
 Calculated By: Brandon Parr, CAD Designer



10-Year Detention Sizing

Design Criteria

Intensity Table: Per NOAA Atlas 14
 Return Period: 10 year
 Allowable Discharge: 0.10 cfs/acre Per Salt Lake City Standards

Allowable Discharges

Storm Drain Discharge: 1.08 cfs
 Other Discharge: 0.00 cfs
 Total Discharge: 1.081 cfs

Source:

Weighted "C" Value

Surface Type	Area (sq)	"C" Value	C*A
Building	42,000	0.90	37,800
Drives	10,080	0.80	8,064
Roadway and Sidewalk	82,536	0.85	70,156
Landscape	336,482	0.15	50,472
Totals	471,098		166,492
Weighted "C" Value		0.35	

Drainage Calculations

Duration	Intensity	Runoff C	Area	Rainfall	Accumulated Flow	Allowable Discharge	Discharge	Required Storage
min	in/hr		Ac	cfs	cf	cfs	cf	cf
15.0	2.20	0.35	10.81	8.41	7,568	1.08	975	6,594
30.0	1.48	0.35	10.81	5.66	10,182	1.08	1,947	8,235
60.0	0.92	0.35	10.81	3.52	12,659	1.08	3,893	8,766
120.0	0.54	0.35	10.81	2.06	14,860	1.08	7,787	7,074
180.0	0.39	0.35	10.81	1.49	16,099	1.08	11,680	4,419
360.0	0.25	0.35	10.81	0.96	20,639	1.08	23,360	-2,721
720.0	0.16	0.35	10.81	0.61	26,419	1.08	46,720	-20,302
1440.0	0.10	0.35	10.81	0.38	33,023	1.08	93,411	-60,418

Maximum Storage Requirement: 8,766
 Maximum Storage Requirement (ac-ft): 0.20

Detention Basin Design

Storage Requirement: 8,766 cf
 Allowable Depth: 1.0 ft
 Detention Pond Volume: 10,781 cf
 Roadway Sump Storage: 0 cf

Total Storage: 10,781 **DETENTION ADEQUATE**

Orifice Design

Restriction Rate: 0.10 CFS/ACRE
 Allowable Outfall Rate Q (cfs): 1.08
 Orifice Sizing: h = 4 ft
 C = 0.6
 A = 0.112 sf
 dia. = 4.54 inches
 Orifice Size = 4.5 inch

THOROUGHbred CROSSING
 HARRISVILLE, UTAH
PRELIMINARY GRADING & DRAINAGE PLAN

REVISION BLOCK

#	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		

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CITY *of* HARRISVILLE

363 West Independence · Harrisville, Utah 84404 · (801) 782-9648 · (801) 782-1449, Fax

STORM WATER MANAGEMENT PLAN

June 2016

STORM WATER MANAGEMENT PLAN

for

HARRISVILLE CITY CORPORATION

Original Date: July 2002
Previous Update: November 2004
Update: November 2010
Update: June 2016

Updated by:

**HARRISVILLE CITY
PUBLIC WORKS DEPARTMENT**

TABLE OF CONTENTS

STORM WATER MANAGEMENT PLAN

for

HARRISVILLE CITY CORPORATION

Contents

GENERAL INFORMATION	5
0.1 INTRODUCTION	5
0.2 COMMUNITY INFORMATION.....	5
0.3 RESPONSIBLE PERSONS.....	5
0.4 STORM WATER MAPPING	6
0.5 FISCAL ABILITY	6
PUBLIC EDUCATION AND OUTREACH	7
1.1 INTRODUCTION	7
1.2 MEASURABLE GOALS	8
1.3 BEST MANAGEMENT PRACTICES (BMP)	9
PUBLIC INVOLVEMENT AND PARTICIPATION	17
2.1 INTRODUCTION	17
2.2 POLLUTANTS OF CONCERN	17
2.3 GENERAL PRACTICES.....	18
2.4 MEASURABLE GOALS	20
2.5 BEST MANAGEMENT PRACTICES (BMP)	20
2.6 REFERENCES.....	20
ILLICIT DISCHARGE DETECTION AND ELIMINATION.....	23
3.1 INTRODUCTION	23
3.2 MEASURABLE GOALS.....	23
3.3 BEST MANAGEMENT PRACTICES (BMP)	24
3.4 STORM WATER MAPPING	24
CONSTRUCTION SITE RUNOFF CONTROL.....	41

4.1	INTRODUCTION	41
4.2	POLLUTANTS OF CONCERN	41
4.3	MEASURABLE GOALS	42
4.4	BEST MANAGEMENT PRACTICES (BMP)	43
4.5	REFERENCES.....	44
	POST CONSTRUCTION STORM WATER MANAGEMENT	83
5.1	INTRODUCTION	83
5.3	MEASURABLE GOALS	85
5.4	BEST MANAGEMENT PRACTICES (BMP)	87
5.5	REFERENCES.....	87
	POLLUTION PREVENTION / GOOD HOUSE KEEPING.....	97
6.1	INTRODUCTION	97
6.2	POLLUTANTS OF CONCERN	97
6.3	MEASURABLE GOALS	100
6.4	BEST MANAGEMENT PRACTICES (BMP)	102
6.5	REFERENCES.....	102

APPENDIX A – Supplemental Information for Contractors/Developers

APPENDIX B – Supplemental Information for Public Works Personnel

APPENDIX C – City Ordinances

APPENDIX D – Permits

GENERAL INFORMATION

0.1 INTRODUCTION

The Clean Water Act requires that all communities within certain metropolitan areas adopt a Storm Water Management Plan by March 8, 2003. Harrisville City, in the Wasatch Front Metropolitan area falls under this requirement. This book is intended to address the requirements for Harrisville City.

This version of the Storm Water Management Plan was updated by the Harrisville City Public Works Department in 2016. This Storm Water Management Plan was updated to the current MS4 permit.

As a minimum, these requirements consist of community information, naming responsible persons, obtaining appropriate signatures, mapping, addressing the six Minimum Control Measures (MCM's), establishing Best Management Practices (BMP's), measurable goals and addressing the fiscal requirements of the plan. All of these items are discussed below.

0.2 COMMUNITY INFORMATION

Harrisville City is located at the base of the Wasatch Front, on the North section of Weber County. The population of the community from the 2010 Census was 5,567. The majority of the land use in the community is residential with some commercial and industrial.

The city was incorporated in the 1960's. It is estimated that the community is approximately 64% built out.

0.3 RESPONSIBLE PERSONS

The Harrisville City Mayor is the ranking elected official:

Bruce Richins
363 W. Independence Blvd.
Harrisville, Utah 84404
Phone: (801) 782-4100

The responsible person for the Storm Water System is the current Public Works Director:

Sean Lambert, Public Works Director
363 W. Independence Blvd
Harrisville, UT 84404
Public Works Facility: (801) 782-4100
Cell: (801) 916-1723

The person responsible for Storm Water Inspections and Enforcement is the current Storm Water Inspector:

Zack Loveland
363 W. Independence Blvd.
Harrisville, Utah 84404
Public works Facility: (801) 782-4100
Cell: (801) 940-6717

The person responsible for citations of enforcement violations:

Harrisville City Police Department/Code Enforcement
363 West Independence Blvd.
Harrisville, Utah 84404
(801) 782-4100

0.4 STORM WATER MAPPING

Included with this Plan in section MCM 3, Illicit Discharge Detection and Elimination, is a map showing the storm drain system of the City. All discharges from the City are indicated. Master Plan storm water infrastructure is also shown on the map.

0.5 FISCAL ABILITY

Financial ability is a critical role throughout this plan. In June 2003 the City incorporated a Storm Water Utility in order to finance the majority of these items. The funding for the applicable BMP's and O&M expenses is as follows:

The following table summarizes the budget that has been established by Harrisville City for storm water management, as per the Storm Water Management Plan, based upon the current fiscal year.

Item	Amount
Employee Wages (enforcement)	\$10,220
Employee Benefits	\$5,387
Engineering/BMP O&M	\$20,000
Billing Charges	\$7,000
Curb and Driveway Approach Replacement	\$10,000
Employee Storm Water Training	\$2,000
DEQ Fees	\$500
Street Cleaning and Equipment	\$19,893
TOTAL	\$75,000

PUBLIC EDUCATION AND OUTREACH

Minimum Control Measure 1

1.1 INTRODUCTION

Harrisville City has committed to Joint Permit with the Weber County Storm Water Coalition to meet the requirements of Public Education and Outreach. All official documents (e.g., interlocal agreements, resolutions, etc.), as per the current UPDES MS4 General Permit requirements on Co-Permitting and other applicable **ELECTED RANKING OFFICIAL** signatures shall be included in the **ANNUAL REPORT**.

Specific responsibilities required in the **SWMP** shall be presented in their appropriate sections. Because storm water runoff is generated from dispersed land surfaces e.g., pavements, yards, driveways, and roofs – efforts to control storm water pollution must consider individual, household, commercial, public behaviors and activities that can generate pollution from these surfaces. These common individual behaviors have the potential to generate storm water pollution:

- Littering
- Disposing of trash and recyclables
- Disposing of pet waste
- Applying of lawn chemicals
- Washing cars
- Changing motor oil on impervious driveways
- Household behaviors like disposing leftover paint and household chemicals, improper hazardous waste disposal, etc.

It takes individual behavior change and proper practices to control such pollution. Therefore it is important to make the public sufficiently aware and concerned about the significance of their behavior for storm water pollution through information and education that can change improper behaviors.

Phase II MS4's are required to educate their community on the pollution potential of common activities, and increase awareness of the direct links between land activities, rainfall run off, storm drains, and their local water resources. Commercial and residential behaviors are challenging in as much as some habits are identical while others may vary. Therefore an effort should be made to effectively target identical habits where possible and furthermore address the individual practices relating to the specific use. Most importantly the requirement is to give the public clear guidance on steps and specific actions that they can take to reduce their storm water pollution potential. Operators of small MS4s are encouraged to utilize partnerships with other governmental entities to fulfill this minimum control measure's requirements. It is generally more cost-effective to use an existing program, than to have numerous operators developing their own local programs. As a condition of the joint permit, Weber County will have the major responsibility for this Minimum Control Measure.

1.2 MEASURABLE GOALS

The following table summarizes the BMPs, Measurable Goals, and Implementation Schedule of the City's for each BMP.

MCM 1 - PUBLIC EDUCATION AND OUTREACH			
Name	BMP	Measurable Goal	Implementation Schedule
HWMC HWMR	Hazardous Waste Management Commercial/Residential	Listing of dump sites on City web site and distribute information on proper handling and disposal for both Commercial and Residential. <i>Goal Completed</i>	<i>Weber County Transfer Station Goal Completed / Ongoing</i>
PEP	Public Education / Participation	Joint Permit for Public Education with the Weber County Storm Water Coalition. Promote education as a prerequisite for participation and involvement.	<i>On going</i>
SDSS	Storm Drain System Signage.	Label and maintain all catch basins. Education can be accomplished by sign advertising. Participation can be accomplished by involvement of labeling. <i>Goal Completed</i>	<i>Goal Completed / Ongoing</i>
CESW	Classroom Education on Storm Water	Support a developed plan for getting Storm Water Education into schools in coordination with the Weber County Storm Water Coalition. Participate in a water fair to educate 4 th graders on storm water impacts	<i>Ongoing</i>
PSMCB	Promoting the Storm Water Message on Commercial Business.	Develop a plan for Storm Water Education to all Commercial Businesses within Harrisville City. Provide at a minimum- City web site information and additional web site addresses.	<i>Ongoing</i>

SWEM *DH (MCM 3)	Storm Water Educational Material	Develop a plan in conjunction with the Weber County Storm Water Coalition (to further enhance education) on distributing information to all local residents and commercial businesses - pamphlets and brochures indicating potential hazards that are applicable to their individual uses that can generate storm water pollution. Information distribution may be accomplished through mailing, volunteer groups, the web site and *staff distribution. Also provide information to engineers, contractors, developers, planners, etc. on SWPPPs and BMPs.	<i>Ongoing</i>
	Employee Training	Train all public works employees on storm water issues on a yearly basis. Also send employee responsible for storm water program to specific training each year on SWPPP and storm water inspections	<i>Ongoing</i>

1.3 BEST MANAGEMENT PRACTICES (BMP)

The following pages consist of the fact sheets for the above mentioned goals and BMP's. Each page represents a separate BMP with details given. The intent of this section is to provide a variety of practices that could be related to Public Education and Outreach. The format is similar to other communities on the Wasatch Front, originally obtained from Salt Lake County's Storm Water Management Plan.



DESCRIPTION:

Prevent or reduce the discharge of pollutants to storm water from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.

APPLICATION:

Many of the chemicals used on-site can be hazardous materials which become hazardous waste upon disposal. These wastes may include:

- Paints and Solvents; petroleum products such as oils, fuels, and grease; herbicides and pesticides; Acids for cleaning masonry; and concrete curing compounds.

In addition, sites with existing structures may contain wastes which must be disposed of in accordance with Federal, State, and local regulations, including:

- Sandblasting grit mixed with lead, cadmium, or chromium-based paints; asbestos; and PCB's.

INSTALLATION/APPLICATION CRITERIA:

The following steps will help reduce storm water pollution from hazardous wastes:

- Use all of the product before disposing of the container.
- Do not remove the original product label, it contains important safety and disposal information.
- Do not over-apply herbicides and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried off-site by runoff. Do not apply these chemicals just before it rains. People applying pesticides must be certified in accordance with Federal and State regulations.

LIMITATIONS:

Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.

MAINTENANCE:

- Inspect hazardous waste receptacles and area regularly.
- Arrange for regular hazardous waste collection.

OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion



*363 W. Independence Blvd.
Harrisville, UT 84404
(801) 782-9648*

TARGETED POLLUTANTS

- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

IMPLEMENTATION REQUIREMENTS

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

- High Impact
- Medium Impact
- Low or Unknown Impact



DESCRIPTION:

Many products found in homes contain chemicals potentially harmful to both people and the environment. Chemical products such as oven cleaners, paint removers, bug killers, solvents, and drain cleaners are just a few common hazardous products in the home. Over the last 20 years, concern about the disposal of such products has been growing.

In 1976, the Resource Conservation and Recovery Act (RCRA) was passed, regulating the procedures governing the generation, storage, transport, treatment, and disposal of hazardous materials. Although this legislation has mitigated some of the problems associated with commercial hazardous material disposal, more needs to be done to reduce and properly dispose of home hazardous wastes.

Hazardous products include the following:

- Cleaning products: oven cleaner, floor wax, furniture polish, drain cleaner, and spot remover
- Car care and maintenance: motor oil, battery acid, gasoline, car wax, engine cleaner, antifreeze, degreaser, radiator flush, and rust preventative
- Home improvement products: paints, preservatives, strippers, brush cleaners, and solvents
- Other products labeled toxic, flammable, or corrosive, or containing lye, phenols, petroleum distillates, or trichlorobenzene

OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion



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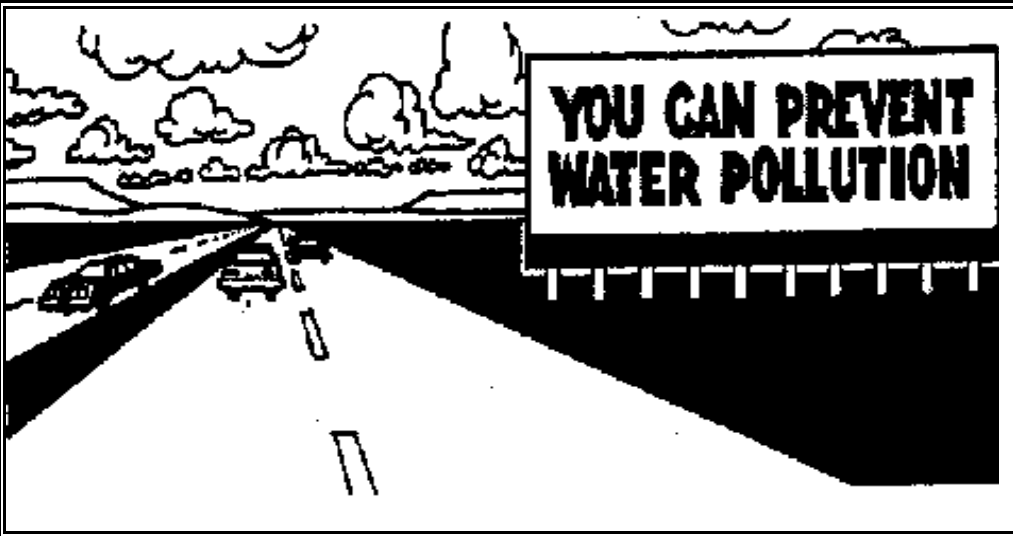
TARGETED POLLUTANTS

- Sediment
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- Oil & Grease
- Floatable Materials
- Other Waste

IMPLEMENTATION REQUIREMENTS

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

- High Impact
- Medium Impact
- Low or Unknown Impact



DESCRIPTION:

Public education/participation, like an ordinance or a piece of equipment, is not so much a best management practice as it is a method by which to implement BMPs. This information sheet highlights the importance of integrating elements of public education and participation into a municipality’s overall plan for storm water quality management.

A public education and participation plan provides the municipality with a strategy for educating its employees, the public, and businesses about the importance of protecting storm water from improperly used, stored, and disposed of pollutants. Municipal employees must be trained, especially those that work in departments not directly related to storm water but whose actions affect storm water. Residents must become aware that a variety of hazardous products are used in the home and that their improper use and disposal can pollute storm water. Increased public awareness also facilitates public scrutiny of industrial and municipal activities and will likely increase public reporting of incidents.

APPROACH:

- Pattern a new program after the many established programs around the country.
- Implement public education/participation as a coordinated campaign in which each message is related to the last.
- Present a clear and consistent message and image to the public regarding how they contribute to storm water pollution and what they can do to reduce it.
- Utilize multi-media to reach the full range of audiences.
- Translate messages into the foreign languages of the community to reach the full spectrum of the populace and to avoid misinterpretation of messages.
- Create an awareness and identification with the local watershed.
- Use everyday language in all public pieces. Use outside reviewers to highlight and reduce the use of technical terminology, acronyms, and jargon.
- Make sure all statements have a sound, up-to-date technical basis. Do not contribute to the spread of misinformation.
- Break complicated subjects into smaller more simple concepts. Present these concepts to the public in a metered and organized way to avoid “overloading” and confusing the audience.

LIMITATIONS:

None.

PROGRAM ELEMENTS

- New Development
- Residential
- Commercial Activities
- Industrial Activities
- Municipal Facilities
- Illegal Discharges



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TARGETED POLLUTANTS

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

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Regulatory
- Training
- Staffing
- Administrative

- High Impact
- Medium Impact
- Low or Unknown Impact



PROGRAM ELEMENTS

- New Development
- Residential
- Commercial Activities
- Industrial Activities
- Municipal Facilities
- Illegal Discharges

DESCRIPTION:

Stenciling of the storm drain system (inlets, catch basins, channels, and creeks) with prohibitive language/graphic icons discourages the illegal dumping of unwanted materials.

APPROACH:

- Create a volunteer work force to stencil storm drain inlets.
- An important aspect of a stenciling program is the distribution of informational flyers that educate the neighborhood (business and residential) about storm water pollution, the storm drain system, and the watershed. The flyers should also provide information on alternatives such as recycling, household hazardous waste disposal, and safer products.
- Because a stenciling program primarily involves volunteer services, liability release forms and volunteer identification notices should also be administered.
- Readability of stencils is critical to their effectiveness. Wherever possible stencils should be painted on a smooth surface such as cement, as opposed to asphalt.
- Use municipal staff to erect signs near drainage channels and creeks.
- An effectively implemented stenciling program encourages change in personal behavior and helps minimize non-point source pollutants from entering the storm drain system. An additional benefit is that waste and catch basin maintenance is minimized through the reduction of disposed materials into storm drain inlets. Finally a well-implemented stenciling program encourages the use of household hazardous waste collection and used oil recycling programs.

LIMITATIONS:

- Private property access limits stenciling to publicly-owned areas.
- Program is highly dependent on volunteer response.
- Storm drain inlets that are physically blocked will be missed or require follow-up.
- High traffic/commercial/industrial zones are the responsibility of city staff.
- Ongoing maintenance is needed to maintain readable signs.



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- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Regulatory
- Training
- Staffing
- Administrative

- High Medium Low



DESCRIPTION:

Classroom education is an integral part of any storm water pollution outreach program. Providing storm water education through schools exposes the message not only to students but to their parents as well. Topics can include water conservation, proper lawn and garden care, and proper disposal of hazardous household wastes.

APPROACH:

- Building a strong relationship with the school district is the most important step in getting storm water education into the schools.
- When developing an outreach message for children, choose the age ranges to target.
- Many addition classroom materials are available for use free of cost. Educational materials are available for downloading from the internet at www.csu.org/water/watereducation/watereducation.html.
- Make students aware of the potential impacts of hazardous household materials on water quality and inform residents of ways to properly store, handle, and dispose of the chemicals.
- Water usage in the home can easily be reduced by 15 to 20 percent – without major discomfort – by implementing a program to conserve water in the home.
- Lawn and garden activities can result in contamination of storm water through pesticide, soil, and fertilizer runoff. Proper landscape management, however, can effectively reduce water use and contaminant runoff and enhance the aesthetics of a property.

LIMITATIONS:

- One of the limitations of classroom education is being able to incorporate storm water issues into the school curricula. With so many subjects to teach, environmental issues might be viewed as less important.

MAINTENANCE:

- Programs and educational materials can be re-used, but they must be presented on a continual basis.

APPLICATIONS

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices



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TARGETED POLLUTANTS

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- Medium Impact
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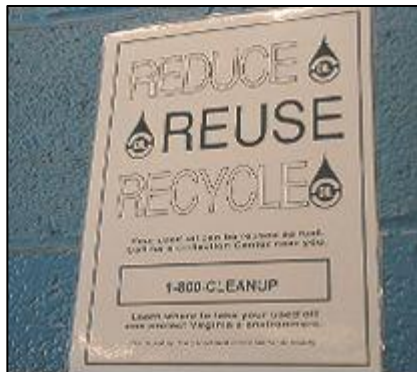
IMPLEMENTATION REQUIREMENTS

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

- High Medium Low

BMP: Promoting the Storm Water Message – Commercial Businesses

PSMCB



Signs can be posted to educate both employees and the public about the impacts of business activities on water quality

DESCRIPTION:

A successful outreach campaign must tailor its message to a targeted audience. The target audience may be industry or business groups whose activities influence the health of watersheds. Many commercial activities contribute to storm water pollution (such as vehicle washing, landscape fertilization, and improper hazardous waste disposal). Therefore, it is important to address commercial activities specifically in an outreach strategy and recognize that in most cases incentives must be provided to encourage businesses to change their behavior.

APPROACH:

- Materials can be designed and produced to provide education and outreach including posters, magnets, calendars, fliers, brochures, and BMP fact sheets and handbooks.
- Target businesses include restaurants, auto maintenance, parking lots, gas stations, car washes, and home mechanics, to name a few.
- Incentive programs can be put in place for compliance. Participants can be rewarded with technical assistance, promotional items, and public recognition (cfpub.epa.gov/npdes/stormwater/menuofbmps)

LIMITATIONS:

- There are many different types of commercial activities, and outreach programs might not be applicable to some of them. Before developing and implementing an outreach program, municipalities should prioritize business types that they think might impair water quality or that might be most receptive to outreach.
- Because the measures that the municipality proposes for businesses are voluntary, owners, operators, and employees must be convinced that changing their behavior is valuable and worth their efforts.

PROGRAM ELEMENTS

- : New Development
- : Commercial Activities
- : Industrial Activities
- : Municipal Facilities
- : Illegal Discharges



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- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Regulatory
- Training
- Staffing
- Administrative

- High Medium Low



Some examples of stormwater educational materials

DESCRIPTION:

Educational Materials to present information to the public on storm water issues and water quality awareness is an integral part of any storm water education program. Providing storm water education by sending out information with bills, newsletters, or presented at city activities, in city offices, schools, and fair booths, exposes the message to a wide variety of people, if not city-wide. Topics can include water conservation, proper lawn and garden care, and proper disposal of hazardous household wastes. Many educational materials can be used for city personnel, contractors as well as homeowners or businesses.

APPROACH:

- Building a strong relationship with citizens is the most important step in getting storm water education city-wide.
- Educational materials can be tailored to all different age groups and technical background.
- Make people aware of the potential impacts of hazardous household materials on water quality and inform residents of ways to properly store, handle, and dispose of the chemicals.
- Water usage in the home can easily be reduced by 15 to 20 percent-without major discomfort-by implementing a program to conserve water in the home.
- Lawn and garden activities can result in contamination of storm water through pesticide, soil, and fertilizer runoff. Proper landscape management can effectively reduce water use and contaminant runoff and enhance the aesthetics of a property.

LIMITATIONS:

- Not everyone will actually read or incorporate the information into their lives.
- Budgets need to have sufficient funds to obtain educational materials and their distribution.

MAINTENANCE:

- Programs and educational materials can be reused, but they must be presented on a continual basis.

APPLICATIONS

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices



363 W. Independence Blvd.
Harrisville, UT 84404
(801) 782-9648

TARGETED POLLUTANTS

- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Subst.
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low

PUBLIC INVOLVEMENT AND PARTICIPATION

Minimum Control Measure 2

2.1 INTRODUCTION

Harrisville City has committed to Joint Permit with the Weber County Storm Water Coalition to meet the requirements of Public Involvement and Participation. All official documents (i.e. inter local agreements, resolutions, etc.), as per the current UPDES MS4 General Permit requirements on Co-Permitting shall be included in the **ANNUAL REPORT**. Specific responsibilities in the **SWMP** shall be presented in their appropriate sections. Operators of small MS4's are encouraged to utilize partnerships with other governmental entities to fulfill this Minimum Control Measure's requirements. It is generally more cost effective to use an existing program, than to have numerous operators developing their own local programs. As a condition of the Joint Permit, the Weber County Storm Water Coalition will have the major responsibility for this Minimum Control Measure.

2.2 POLLUTANTS OF CONCERN

MCM's #1 and #2 may be related in as much as overlapping practices of education through participation. Further reduction in storm water pollution can be accomplished with appropriate Best Management Practices that follow these as well as other procedures. Consider what happens to detergents from car washing, leaves and lawn clippings left in the gutter, or litter that is carelessly deposited alongside of the road. These are the kinds of pollutants that flow into the storm drain system. Below is a brief description of some of the more typical storm water pollutants and potential impacts these pollutants may have on waterways.

Sediment

Sediment can be harmful to aquatic life (plants, fish, and other animals that live in lakes and streams). Light needed by plants in water is blocked by sediments. Sediments can carry chemicals that are toxic and that cause the oxygen in water to be used up. Sediments clog fish gills and fill in the places they hide. Sediment generally is the result of soil erosion from lawns, hillsides, and gardening/landscaping activities.

Floatables

Floatables are pieces of litter in the water. They may be contaminated with toxic chemicals and bacteria. Floatables are also an eyesore in our waterways. Commonly observed floatables include cigarettes, plastic containers, wrappers, and cans. Floatables such as these are generally the result of careless handling practices or littering.

Bacteria and Viruses

Bacteria are washed with animal excrement and leakage from sewers and septic tanks into waterways. These organisms can cause disease in both animals and humans. Biological contaminants come from litter, organic matter, and animal waste.

Oxygen Demanding Substances

The chemical breakdown of organic materials (leaves, excrement, and street litter) washed into waterways decreases levels of dissolved oxygen in water. Aquatic life requires this oxygen to exist.

Nutrients

Nutrients such as nitrogen and phosphorus result in excessive plant growth that clogs waterways, blocks sunlight, and reduces oxygen. Some sources of nutrients are fertilizer, excrement, and detergents.

Oil and Grease

Petroleum products (gasoline, oil, and grease) may be toxic to aquatic life, even in small amounts. Oil and grease in storm drains can generally be traced to automotive leaks and spills or improper disposal of used oil and automotive products into storm drains.

Pesticides, Herbicides and Fertilizers

Excess amounts of pesticides, herbicides, and fertilizers applied to yards, lawns and greenways are washed into streams during rainfall events. These chemicals can cause increased algae growth and toxicity to organisms.

Metals

Metals such as lead, zinc, mercury, copper, and cadmium in water, can be toxic to humans, aquatic life and other animals that drink the water. Metals come from vehicle exhaust, weathered paint, metal plating, tires and motor oil.

Toxic Substances

Gasoline, household products, and paint thinner are examples of toxic substances. These substances can deplete oxygen in waterways and cause toxic effects in living organisms.

2.3 GENERAL PRACTICES

As citizens, there are many things that we can do to protect the water in our environment. These general practices can be executed by simpler changes to routine habits. With every resident practicing good housekeeping and material management, great effects can be seen in local water quality. Here are just a few:

Household and Home Maintenance

√ Buy household products such as cleaners and furniture polish labeled “non-toxic”. Use small quantities and purchase only the amount you need.

√ Follow manufacturer’s recommendations for use and storage of all toxic products including cleaners, solvents, and paints.

√ Properly dispose of household hazardous wastes (any toxic substances) at solid waste facilities.

√ Rinse paint brushes in the sink. Filter and reuse paint thinner or brush cleaners. Dispose of used materials at a hazardous materials collection event.

√ Recycle reusable materials. Throw litter into trash cans and keep cans tightly covered to prevent foraging by neighborhood animals.

Lawn and Garden

√ Minimize the use of pesticides, herbicides and fertilizers; apply carefully and sweep up excess.

√ Use a broom rather than a hose to clean up sidewalks and driveways. Do not hose down gutter.

√ Deposit leaves and clippings in a garbage can or a compost pile.

√ Divert rain spouts and garden hoses from paved surfaces onto grass or garden areas to allow filtration through the soil. Water only your lawn and garden.

√ Control sediment migration and erosion, don't let it reach the gutter, sweep up and re-use it.

√ Do not over-water -- Don't be a "gutter flooder."

√ Pick-up, bag, and dispose of pet waste in a garbage can.

Automotive

√ Recycle used motor oil and antifreeze at automotive centers.

√ Have your car inspected and maintained regularly to reduce leakage of oil, antifreeze and other fluids.

√ Reduce automotive emissions through regular auto maintenance, ride sharing, and by using public transportation.

√ Conserve water when using your car and use biodegradable soap.

Non-point source pollution comes from many sources and its control is everyone's responsibility. Pollution prevention and good housekeeping practices are essential to reducing non-point source pollution. From the individual gardener to the public official, everyone has a stake in protecting our resources. The best place to get started is your own backyard and garage.

2.4 MEASURABLE GOALS

The following table summarizes the BMPs, Measurable Goals, and Implementation Schedule of the City's for each BMP.

MCM 2 - PUBLIC INVOLVEMENT AND PARTICIPATION			
Name	BMP	Measurable Goal	Implementation Schedule
PEP	Public Education / Participation	Joint permit with the Weber County Storm Water Coalition for Public Involvement/Participation.	<i>Goal Completed/ongoing</i>
	Annual standards and plan review from staff and public.	Annual review of SWMP and storm water construction standards with staff and public.	Annually in February
	Provide chance for public to give input on SWMP	Post SWMP to City website and provide contact name and phone number	July 2016
	Community clean up; Involve local groups	Semi-annual city wide cleanup; volunteer groups to do storm drain system signs	<i>Ongoing</i>
AS	Adopt a Stream and Storm Drain program	Encourage individuals or groups to keep storm drains free of debris and to monitor what is entering local water ways through storm drains. Involve citizens and groups to clean up, monitor and protect the local water ways.	<i>Ongoing</i>

2.5 BEST MANAGEMENT PRACTICES (BMP)

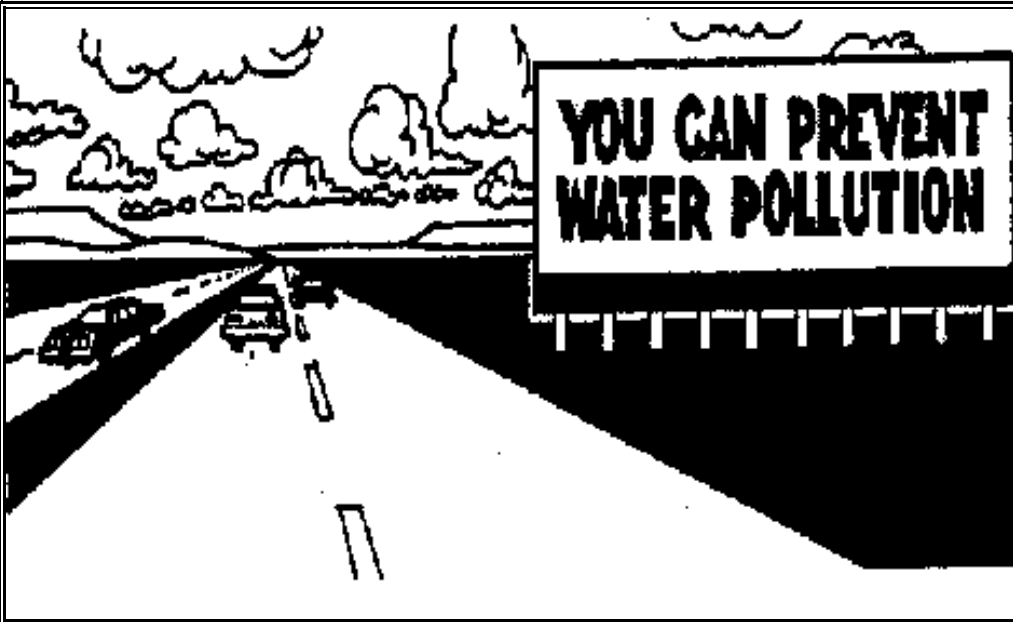
The following pages consist of the fact sheets for the above mentioned goals and BMP's. Each page represents a separate BMP with details given. The intent of this section is to provide a variety of practices that could be related to Public Education and Outreach. The format is similar to other communities on the Wasatch Front, originally obtained from Salt Lake County's Storm Water Management Plan.

2.6 REFERENCES

Orange County Environmental Management Agency. "The ocean begins at your front door! Nonpoint Source Pollution and what you can do to help!"

New Jersey Department of Environmental Protection and Energy. "Nonpoint Source Pollution."

Salt Lake County Engineering Division. September 1999. "Guidance Document for Storm Water Management."



DESCRIPTION:

Public education/participation, like an ordinance or a piece of equipment, is not so much a best management practice as it is a method by which to implement BMPs. This information sheet highlights the importance of integrating elements of public education and participation into a municipality’s overall plan for storm water quality management.

A public education and participation plan provides the municipality with a strategy for educating its employees, the public and businesses about protecting storm water from improperly used, stored, and disposed of pollutants. Municipal employees must be trained, especially those that work in departments not directly related to storm water but whose actions affect storm water. Residents must become aware that a variety of hazardous products are used in the home and their improper use and disposal can pollute storm water. Increased public awareness also facilitates public scrutiny of industrial and municipal activities and will likely increase public reporting of incidents.

APPROACH:

- Pattern a program after many established programs around the country.
- Implement public education/participation as a coordinated campaign in which each message is related to the last.
- Present a clear and consistent message and image to the public regarding how they contribute to storm water pollution and what they can do to reduce it.
- Utilize multi-media to reach the full range of audiences.
- Translate messages into the foreign languages of the community to reach the full spectrum of your populace and to avoid misinterpretation of messages.
- Create an awareness and identification with the local watershed.
- Use everyday language in all public pieces. Use outside reviewers to highlight and reduce technical terminology, acronyms, and jargon.
- Make sure all statements have a sound, up-to-date technical basis. Do not contribute to the spread of misinformation.
- Break complicated subjects into smaller more simple concepts. Present these concepts to the public in a metered and organized way to avoid “overloading” and confusing the audience.

LIMITATIONS: None.

PROGRAM ELEMENTS

- New Development
- Residential
- Commercial Activities
- Industrial Activities
- Municipal Facilities
- Illegal Discharges



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TARGETED POLLUTANTS

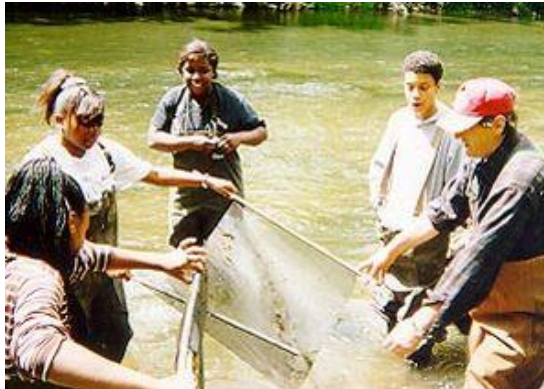
- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Subst.
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Regulatory
- Training
- Staffing
- Administrative

- High
- Medium
- Low



DESCRIPTION:

Adopt-A-Stream programs are an excellent public outreach tool for municipalities to involve citizens of all ages and abilities. They are volunteer programs in which participants "adopt" a stream, creek, or river to study, clean up, monitor, protect, and restore. Through these activities, the adopting group or organization becomes the primary caretaker of that stretch of stream in the watershed.

APPROACH:

- Municipalities can begin an Adopt-A-Stream program by obtaining a watershed map and marking potential stream sites on it. The map can then be used to keep track of which stretches are adopted and by whom.
- Identify different types of activities that can be done to improve streams within the city.
- Prepare "how to" packets for each stream improvement activity that can be distributed to interested organizations. For example, a packet for conducting a stream cleanup might include trash bags and gloves, a map designating appropriate trash pickup sites along the stream and private land areas for which special permission might be required, and a list of contact information for trash collectors and recyclers.
- Require documentation to be completed by the participants, such as registration forms and cleanup reports.
- The media should be used whenever possible to spread the word about the Adopt-A-Stream program and the activities it sponsors. Advertisements can be placed in newspapers, public service announcements (PSAs) can be broadcast on TV and radio, and an internet site can be developed with program information.
- Many Adopt-A-Stream programs partner with schools to develop interdisciplinary classroom curricula and activities. Through the program, teachers and students adopt a waterway and perform chemical, physical, and biological testing to determine water quality and perform habitat restoration.

LIMITATIONS:

- Commitment. Many people sign up for activities but quickly find they do not have time for follow-up activities.
- Other limitation may include funding availability, weather, equipment maintenance, and liability associated with the dangers of slippery rocks or steep slopes.

MAINTENANCE:

- To maintain water quality, cleanup efforts must be recurring.

APPLICATIONS

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices



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- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low

ILLICIT DISCHARGE DETECTION AND ELIMINATION

Minimum Control Measure 3

3.1 INTRODUCTION

Federal regulations define an “illicit discharge” “as any discharge to a municipal separate storm sewer system that is not composed entirely of storm water” (except discharges resulting from firefighting activities and a few other categories). Common sources of non-storm water, dry weather discharges in urban areas include apartments and homes, car washes, restaurants, airports, landfills and gas stations to name but a few. These so called “generating sites” discharge sanitary waste water, septic system effluent, vehicle wash water, wash down from grease traps, motor oil, antifreeze, gasoline and fuel spills, among other substances. These illicit discharges can enter the storm drain system in various ways, (e.g., waste water piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration in to the storm drain system, spills, or “midnight dumping”). Illicit discharges can be further divided in to those discharging continuously and those discharging intermittently. Dry weather discharges can contribute significant pollutants to receiving waters.

The detection and elimination of illicit discharges is important to protect and restore urban waterways. One way for example, as part of the Public IDDE for any program, is to report illicit discharges by calling Harrisville City @ (801) 782-4100 or 911.

Harrisville City has committed to joint permit with Weber County to meet the requirements of Illicit Discharge Detection and Elimination. As a condition of the joint permit, Weber County has a minor responsibility for this Minimum Control Measure.

3.2 MEASURABLE GOALS

The following table summarizes the BMPs, Measurable Goals, and Implementation Schedule of the Citys for each BMP.

MMC 3 – ILLICIT DISCHARGE DETECTION AND ELIMINATION			
Name	BMP	Measurable Goal	Implementation Schedule
Permit	Joint Permit with Weber County Storm Water Coalition	Joint Permit with Coalition for discharge and detection.	<i>Goal Completed / Ongoing</i>
MAP	Maintain a map of the City Storm Drain System in GIS.	Continue GIS maintenance	<i>Goal Completed / Ongoing</i>
SW-MP	Obtain a Storm Water Master Plan to pin point locations for future detention and sediment basins.	Obtain a master plan and update as needed	<i>Goal Completed / Ongoing</i>

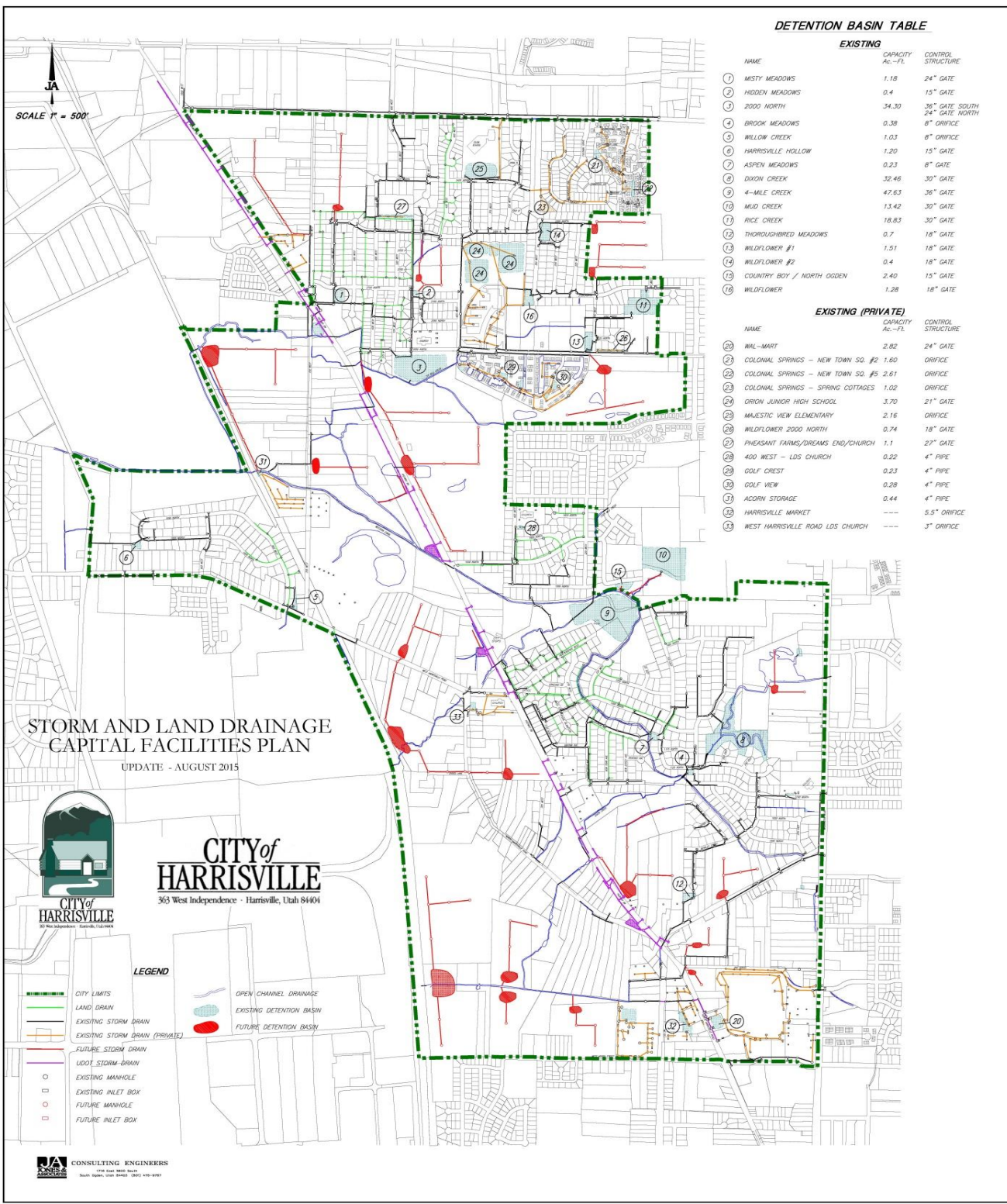
DWS	Dry weather screening. (SOP added)	20% per year as per SOP	<i>Annually</i>
PSMCB	Promoting the storm water message on commercial business.	See MCM1 PSCMB, HWMC	
IDDEO	Establish an illicit discharge detection and elimination ordinance.	Maintain and enforce ordinance	<i>Goal Completed</i> <i>Ongoing</i>
IDDE-SOP's	Establish SOP's for detecting and eliminating illicit discharges.	Maintain and enforce SOP's	Ongoing
IDDE-PEP	Establish an education program for commercial businesses.	See MCM 1 SWEM	Ongoing
ET	Train employees on the IDDE program as per section 4.2.3.11 of the Small MS4 General UPDES Permit.	Train annually	Annually
DH	Develop an IDDE awareness notice of violation program. Distribute door hangers by staff when a potential IDDE is discovered.	Maintain program	Ongoing
	Develop a list of priority areas and inspect annually	Develop and maintain list	Annually

3.3 BEST MANAGEMENT PRACTICES (BMP)

The following pages consist of the fact sheets for the above mentioned goals and BMP's. Each page represents a separate BMP with details given. The intent of this section is to provide a variety of practices that could be related to Public Education and Outreach. The format is similar to other communities on the Wasatch Front, originally obtained from Salt Lake County's Storm Water Management Plan.

3.4 STORM WATER MAPPING

The attached map shows the storm water system for the City.



DETENTION BASIN TABLE

EXISTING		
NAME	CAPACITY AC.-FT.	CONTROL STRUCTURE
1 MISTY MEADOWS	1.18	24" GATE
2 HIDDEN MEADOWS	0.4	15" GATE
3 2000 NORTH	34.30	36" GATE SOUTH 24" GATE NORTH
4 BROOK MEADOWS	0.38	8" ORIFICE
5 WILLOW CREEK	1.03	8" ORIFICE
6 HARRISVILLE HOLLOW	1.20	15" GATE
7 ASPEN MEADOWS	0.23	8" GATE
8 DIXON CREEK	32.46	30" GATE
9 4-MILE CREEK	47.63	36" GATE
10 MUD CREEK	13.42	30" GATE
11 RICE CREEK	18.83	30" GATE
12 THOROUGHBRID MEADOWS	0.7	18" GATE
13 WILDFLOWER #1	1.51	18" GATE
14 WILDFLOWER #2	0.4	18" GATE
15 COUNTRY BOY / NORTH OGDEN	2.40	15" GATE
16 WILDFLOWER	1.28	18" GATE
EXISTING (PRIVATE)		
NAME	CAPACITY AC.-FT.	CONTROL STRUCTURE
20 WAL-MART	2.82	24" GATE
21 COLONIAL SPRINGS - NEW TOWN SQ. #2	1.60	ORIFICE
22 COLONIAL SPRINGS - NEW TOWN SQ. #5	2.61	ORIFICE
23 COLONIAL SPRINGS - SPRING COTTAGES	1.02	ORIFICE
24 ORION JUNIOR HIGH SCHOOL	3.70	21" GATE
25 MAJESTIC VIEW ELEMENTARY	2.16	ORIFICE
26 WILDFLOWER 2000 NORTH	0.74	18" GATE
27 PHEASANT FARMS/DREAMS END/CHURCH	1.1	27" GATE
28 400 WEST - LOS CHURCH	0.22	4" PIPE
29 OOLF CREST	0.23	4" PIPE
30 OOLF VIEW	0.28	4" PIPE
31 ACORN STORAGE	0.44	4" PIPE
32 HARRISVILLE MARKET	---	5.5" ORIFICE
33 WEST HARRISVILLE ROAD LOS CHURCH	---	3" ORIFICE

**STORM AND LAND DRAINAGE
CAPITAL FACILITIES PLAN**
UPDATE - AUGUST 2015



**CITY of
HARRISVILLE**
365 West Independence - Harrisville, Utah 84404

LEGEND

	CITY LIMITS		OPEN CHANNEL DRAINAGE
	LAND DRAIN		EXISTING DETENTION BASIN
	EXISTING STORM DRAIN		FUTURE DETENTION BASIN
	EXISTING STORM DRAIN (PRIVATE)		
	FUTURE STORM DRAIN		
	UDOT STORM DRAIN		
	EXISTING MANHOLE		
	EXISTING INLET BOX		
	FUTURE MANHOLE		
	FUTURE INLET BOX		

RA CONSULTING ENGINEERS
1714 South 9000 South
South Ogden, Utah 84403 (801) 478-9787



DESCRIPTION:

Inspection of drainage-ways during dry weather at least ten days after a storm. Report and documentation of active flowing drainage-ways. General assessment of water quality. Actively flowing drainage-ways are then followed upstream to identify the source.

APPROACH:

- Organize a group of people to inspect drainage-ways during dry weather at least ten days after a storm.
- Provide a map of the land layout and the storm drainage system in order to efficiently locate checkpoints and mark areas where water is flowing.
- In areas where water is flowing, a general assessment of the water quality can be made with respect to discoloration, pollutants, and odor.
- Document and report the status of all checkpoints to the authorized municipality.
- The municipality then makes efforts to follow up and identify the source of the water. Sources should then be marked on a system map.
- Illicit discharges should be disconnected and removed from the system.

LIMITATIONS:

- Permission may be required to access private properties.
- Inaccurate map data may result in confusion.
- Water coming from springs, land drains, and surfacing ground water can be difficult to trace.

MAINTENANCE:

- Identified non-storm water sources should be monitored on a regular basis to ensure no contamination enters the storm water system.

APPLICATIONS

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices



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TARGETED POLLUTANTS

- Sediment
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- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low

IDDE- DWS-SOP - Outfall Inspections/dry weather screening

1. Preparation:
 - a. Know the past and present weather conditions. Conduct inspections during dry weather periods.
 - b. Gather all necessary equipment including: tape measure, clear container, EPA form "outfall reconnaissance inventory/sample collection field sheet", flashlight, and camera (optional).
 - c. Obtain maps showing outfall locations and identifiers.
 - d. Obtain outfall description and observations from previous inspections, so the outfall can be accurately identified and observations compared.

2. Process:
 - a. Perform an inspection of each identified outfalls at least once per year. Inspect 20 percent of the receiving waters each year for unknown outfalls. Whenever possible, use the same personnel for consistency in observations.
 - b. Identify each outfall with a consistent and unique identifier. Use maps and previous inspection reports to confirm the outfall identity and location. (See Harrisville City storm water map)
 - c. If dry weather flow is present at the outfall, then document and evaluate the discharge by completing the following steps:
 - i. Collect field samples for visual observations in a clean, clear container and in a manner that avoids stirring up sediment that might distort the observation.
 - ii. Characterize and record observations on basic sensory and physical indicators (e.g., outfall condition, flow, odor, color, oil sheen) on the Outfall Inspection Form.
 - iii. Compare observations to previous inspections.
 - iv. If the flow does not appear to be an obvious illicit discharge (e.g., flow is clear, odorless, etc.), attempt to identify the source of the flow (e.g., groundwater, intermittent stream, etc.)
 - d. If an illicit discharge (such as raw sewage, petroleum products, paint, etc.) is encountered or suspected, follow the procedure of SOP IDDE - Tracing Illicit Discharges.

3. Cleanup - as necessary

4. Documentation
 - a. File completed outfall inspection forms.
 - b. Update maps if new outfalls are observed and inspected.

IDDE SOP - Call-in Inspections/ Response Procedure

1. Preparation:
 - a. Have a system in place to receive phone calls and collect information regarding suspected illicit discharges.
 - **Call the Harrisville City office @ 801-782-9648**
 - **Weber/Morgan Heath Department @ 801-399-7169**
 - **Weber County spill response @ 801-536-4123**
 - **A Plus Environments LLC @ 801-392-6545**
 - **HMHTTC Response Inc. @ 801-627-2240 or 800-927-9303**
 - **Lincoln Environmental Services @ 800-257-5370**
 - **North View Fire Department @ 801-782-8159**
 - **Department of Water Quality @ 800-458-0145**
2. Process:
 - a. Use the Incident Tracking Sheet to collect the appropriate information from the caller. Then, transfer the Incident Tracking Sheet to the proper authority (ie. department head, storm water specialist, construction inspector, code enforcement officer, or other assigned personnel). See the file for the tracking sheet.
 - b. Promptly investigate reported incidents.
 - c. If an illicit discharge of unknown source is confirmed, follow the procedure of SOP IDDE - Tracing Illicit Discharges.
 - d. If an illicit discharge of known source is confirmed, follow the procedure of SOP IDDE - Removing Illicit Discharges.
3. Clean up:
 - a. Clean catch basin, clean storm drain, or initiate spill response, as applicable. Follow relevant SOPs.
4. Documentation:
 - a. File all completed forms (ie. incident tracking, catch basins cleaning, storm drain cleaning).
 - b. Document any further action taken.
 - c. Review incidents reported by citizens on an annual basis to look for patterns of illicit discharges and to evaluate the call-in inspection program.

IDDE SOP - Tracing Illicit Discharges

1. Preparation:
 - a. Review / consider information collected when illicit discharge was initially identified and document using Incident Tracking Form or Outfall Inspection Form.
 - b. Obtain storm drain mapping for the area of the reported illicit discharge.
 - c. Gather all necessary equipment including: tape measure, clear container, clipboard with necessary forms, flashlight, and camera (optional).

2. Process:
 - a. Survey the general area / surrounding properties to identify potential sources of the illicit discharge as a first step.
 - b. Trace illicit discharges using visual inspections of upstream points as a second step. Use available mapping to identify tributary pipes, catch basins, etc.
 - c. If the source of the illicit discharge cannot be determined by a survey of the area or observation of the storm drain system, then consider the following additional steps:
 - i. Use weirs, sandbags, dams, or optical brightener monitoring traps to collect or pool intermittent discharges during dry weather.
 - ii. Smoke test or televise the storm drain system to trace high priority, difficult to detect illicit discharges.
 - iii. Dye test individual discharge points within suspected buildings.
 - iv. Consider collecting bacterial samples of flowing discharges to confirm/refute illicit discharge.
 - d. If the source is located, follow SOP IDDE - Removing Illicit Discharges.
 - e. If the source cannot be found, add the location to a future inspection program.

3. Clean up:
 - a. Clean catch basin, clean storm drain, or initiate spill response, as applicable. Follow relevant SOPs.

4. Documentation:
 - a. Document tracing results for future reference.

IDDE SOP - Opportunistic Illicit Discharge Observation

1. Preparation:
 - a. Be alert for potential illicit discharges to the municipal storm water system while going about normal work activities.
2. Process:
 - a. Call the appropriate authority (ie. department head, storm water specialist, construction inspector, code enforcement officer or a supervisor) if you see evidence of an illicit discharge.
 - b. Assess the general area of the illicit discharge to see if you can identify its source.
 - c. Whenever possible, take photographs of the suspected illicit discharge.
 - d. Responding storm water department personnel or code enforcement officer will complete the following:
 - i. Use the IDDE Incident Tracking Sheet to document observations.
 - ii. Obtain sample for visual observation and complete an Outfall Inspection Form, if applicable.
 - iii. Follow the procedure of SOP IDDE - Tracing Illicit Discharges.
3. Clean-up
 - a. Clean catch basin, clean storm drain, or initiate spill response, as needed. Follow relevant SOPs.
4. Documentation:
 - a. File all completed forms (ie. Incident Tracking Form, Outfall Inspection Form, Catch Basin Cleaning Form, and Storm Drain Cleaning Log).
 - b. Document any further action taken. As in any enforcement, follow up inspections and changes.

IDDE SOP- Removing Illicit Discharges

1. Preparation:
 - a. Obtain available property ownership information for the source of the illicit discharge.
2. Process:
 - a. Determine who is financially responsible and follow associated procedures as given below.
 - i. For Private Property Owner:
 1. Contact owner.
 2. Issue Notice of Violation for violations of the municipal ordinance.
 3. Determine schedule for removal.
 - ii. For Municipal Facility:
 1. Notify appropriate municipal authority or department head.
 2. Schedule removal.
 3. Remove illicit connection.
 - b. Suspend access to storm drain if threats of serious physical harm to humans or the environment are possible.
 - c. Direct responsible party to initiate repairs/corrections/cleanup. Coordinate with enforcement official for escalating penalties in accordance with the municipal ordinance.
 - d. Repair/correct cause of discharge if municipality is responsible. Schedule the work through the appropriate municipal authority or department head.
 - e. Seek technical assistance from the Weber-Morgan Health Department or Utah Department of Water Quality, if needed.
3. Clean up:
 - a. Confirm illicit discharge is removed or eliminated by follow-up inspection.
4. Documentation:
 - a. Maintain records of notice of violation and penalties.
 - b. Document repairs, corrections, and any other actions required.

IDDE-ET-SOP- Annual Employee Training about the IDDE Program

1. Train all employees as per current IDDE SOP's on their normal job responsibilities of proper MS4 pollution control procedures and IDDE obligations including:
 - a. How to identify spills.
 - b. Investigation of spills.
 - c. Termination of spills.
 - d. Clean up of spills.
 - e. Reporting of illicit discharges including spills.
 - f. Improper disposal and illicit connections.

IDDE-SOP- Evaluation and Immediate Containment of Illicit Discharges

1. Determine the kind of illicit discharge. Check for illicit discharge indicators (e.g. odor, color, turbidity, and floatables).
2. Locate source of illicit discharge and eliminate.
3. Have a list of emergency spill materials and locations.
4. Place applicable emergency spill material at the site of the illicit discharge (e.g. flotation booms, oil rags, water based oil absorbent materials, etc).
5. Seek technical assistance from the Weber-Morgan Health Department, Utah Department of Water Quality, and North View Fire Department if needed.

SPILL REPORT FORM

Date of Spill _____ Time _____ Duration _____

Chemical name or identity of any substance involved in the release: _____

Is it a hazardous substance or EHS? _____

Estimate of Quantity Spilled _____

Who Responded? _____

Cleaning Method Used _____

Any Discharge to Storm Drain? _____

Any known or anticipated acute or chronic health risks for exposed individuals associated with the emergency spill: _____

Were proper precautions taken, including evacuation, if necessary? _____

Was Spill Reported to the State? Yes No

OUTFALL RECONNAISSANCE INVENTORY/ SAMPLE COLLECTION FIELD SHEET

Section 1: Background Data

Subwatershed:		Outfall ID:	
Today's date:		Time (Military):	
Investigators:		Form completed by:	
Temperature (°F):	Rainfall (in.):	Last 24 hours:	Last 48 hours:
Latitude:	Longitude:	GPS Unit:	GPS LMK #:
Camera:		Photo #s:	
Land Use in Drainage Area (Check all that apply):			
<input type="checkbox"/> Industrial		<input type="checkbox"/> Open Space	
<input type="checkbox"/> Ultra-Urban Residential		<input type="checkbox"/> Institutional	
<input type="checkbox"/> Suburban Residential		Other: _____	
<input type="checkbox"/> Commercial		Known Industries: _____	
Notes (e.g., origin of outfall, if known):			

Section 2: Outfall Description

LOCATION	MATERIAL	SHAPE	DIMENSIONS (IN.)	SUBMERGED
<input type="checkbox"/> Closed Pipe	<input type="checkbox"/> RCP <input type="checkbox"/> CMP <input type="checkbox"/> PVC <input type="checkbox"/> HDPE <input type="checkbox"/> Steel <input type="checkbox"/> Other: _____	<input type="checkbox"/> Circular <input type="checkbox"/> Single <input type="checkbox"/> Elliptical <input type="checkbox"/> Double <input type="checkbox"/> Box <input type="checkbox"/> Triple <input type="checkbox"/> Other: _____	Diameter/Dimensions: _____	In Water: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully With Sediment: <input type="checkbox"/> No <input type="checkbox"/> Partially <input type="checkbox"/> Fully
<input type="checkbox"/> Open drainage	<input type="checkbox"/> Concrete <input type="checkbox"/> Earthen <input type="checkbox"/> rip-rap <input type="checkbox"/> Other: _____	<input type="checkbox"/> Trapezoid <input type="checkbox"/> Parabolic <input type="checkbox"/> Other: _____	Depth: _____ Top Width: _____ Bottom Width: _____	
<input type="checkbox"/> In-Stream	(applicable when collecting samples)			
Flow Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>If No, Skip to Section 5</i>		
Flow Description (If present)	<input type="checkbox"/> Trickle <input type="checkbox"/> Moderate <input type="checkbox"/> Substantial			

Section 3: Quantitative Characterization

FIELD DATA FOR FLOWING OUTFALLS				
PARAMETER	RESULT	UNIT	EQUIPMENT	
<input type="checkbox"/> Flow #1	Volume		Liter	Bottle
	Time to fill		Sec	
<input type="checkbox"/> Flow #2	Flow depth		In	Tape measure
	Flow width	____' ____"	Ft, In	Tape measure
	Measured length	____' ____"	Ft, In	Tape measure
	Time of travel		S	Stop watch
Temperature		°F	Thermometer	
pH		pH Units	Test strip/Probe	
Ammonia		mg/L	Test strip	

Illicit Discharge Hotline Incident Tracking Sheet

Incident ID:				
Responder Information				
Call taken by:		Call date:		
Call time:		Precipitation (inches) in past 24-48 hrs:		
Reporter Information				
Incident time:		Incident date:		
Caller contact information (<i>optional</i>):				
Incident Location (<i>complete one or more below</i>)				
Latitude and longitude:				
Stream address or outfall #:				
Closest street address:				
Nearby landmark:				
Primary Location Description		Secondary Location Description:		
<input type="checkbox"/> Stream corridor <i>(In or adjacent to stream)</i>	<input type="checkbox"/> Outfall	<input type="checkbox"/> In-stream flow	<input type="checkbox"/> Along banks	
<input type="checkbox"/> Upland area <i>(Land not adjacent to stream)</i>	<input type="checkbox"/> Near storm drain	<input type="checkbox"/> Near other water source (storm water pond, wetland, etc.):		
Narrative description of location:				
Upland Problem Indicator Description				
<input type="checkbox"/> Dumping	<input type="checkbox"/> Oil/solvents/chemicals	<input type="checkbox"/> Sewage		
<input type="checkbox"/> Wash water, suds, etc.	<input type="checkbox"/> Other: _____			
Stream Corridor Problem Indicator Description				
Odor	<input type="checkbox"/> None	<input type="checkbox"/> Sewage	<input type="checkbox"/> Rancid/Sour	<input type="checkbox"/> Petroleum (gas)
	<input type="checkbox"/> Sulfide (rotten eggs); natural gas	<input type="checkbox"/> Other: Describe in "Narrative" section		
Appearance	<input type="checkbox"/> "Normal"	<input type="checkbox"/> Oil sheen	<input type="checkbox"/> Cloudy	<input type="checkbox"/> Suds
	<input type="checkbox"/> Other: Describe in "Narrative" section			
Floatables	<input type="checkbox"/> None:	<input type="checkbox"/> Sewage (toilet paper, etc)	<input type="checkbox"/> Algae	<input type="checkbox"/> Dead fish
	<input type="checkbox"/> Other: Describe in "Narrative" section			
Narrative description of problem indicators:				
Suspected Violator (name, personal or vehicle description, license plate #, etc.):				

Investigation Notes

Initial investigation date:

Investigators:

No investigation made

Reason:

Referred to different department/agency:

Department/Agency:

Investigated: No action necessary

Investigated: Requires action

Description of actions:

Hours between call and investigation:

Hours to close incident:

Date case closed:

Notes:

Outfall Reconnaissance Inventory Field Sheet

Section 4: Physical Indicators for Flowing Outfalls Only
 Are Any Physical Indicators Present in the flow? Yes No *(If No, Skip to Section 5)*

INDICATOR	CHECK if Present	DESCRIPTION	RELATIVE SEVERITY INDEX (1-3)		
Odor	<input type="checkbox"/>	<input type="checkbox"/> Sewage <input type="checkbox"/> Rancid/sour <input type="checkbox"/> Petroleum/gas <input type="checkbox"/> Sulfide <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Paint	<input type="checkbox"/> 2 - Easily detected	<input type="checkbox"/> 3 - Noticeable from a distance
Color	<input type="checkbox"/>	<input type="checkbox"/> Clear <input type="checkbox"/> Brown <input type="checkbox"/> Gray <input type="checkbox"/> Yellow <input type="checkbox"/> Green <input type="checkbox"/> Orange <input type="checkbox"/> Red <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Paint colors in sample bottle	<input type="checkbox"/> 2 - Clearly visible in sample bottle	<input type="checkbox"/> 3 - Clearly visible in outfall flow
Turbidity	<input type="checkbox"/>	See severity	<input type="checkbox"/> 1 - Slight cloudiness	<input type="checkbox"/> 2 - Cloudy	<input type="checkbox"/> 3 - Opaque
Floatables -Does Not Include Trash!!	<input type="checkbox"/>	<input type="checkbox"/> Sewage (Toilet Paper, etc.) <input type="checkbox"/> Suds <input type="checkbox"/> Petroleum (oil sheen) <input type="checkbox"/> Other:	<input type="checkbox"/> 1 - Rew/slight, origin not obvious	<input type="checkbox"/> 2 - Some, indications of origin (e.g., possible suds or oil sheen)	<input type="checkbox"/> 3 - Some, origin clear (e.g., obvious oil sheen, suds, or floating sanitary materials)

Section 5: Physical Indicators for Both Flowing and Non-Flowing Outfalls
 Are physical indicators that are not related to flow present? Yes No *(If No, Skip to Section 6)*

INDICATOR	CHECK if Present	DESCRIPTION	DESCRIPTION	COMMENTS
Outfall Damage	<input type="checkbox"/>	<input type="checkbox"/> Spalling, Cracking or Chipping <input type="checkbox"/> Peeling Paint <input type="checkbox"/> Corrosion		
Deposits/Stains	<input type="checkbox"/>	<input type="checkbox"/> Oily <input type="checkbox"/> Flow Line <input type="checkbox"/> Paint <input type="checkbox"/> Other:		
Abnormal Vegetation	<input type="checkbox"/>	<input type="checkbox"/> Excessive <input type="checkbox"/> Inhibited		
Poor pool quality	<input type="checkbox"/>	<input type="checkbox"/> Odors <input type="checkbox"/> Colors <input type="checkbox"/> Floatables <input type="checkbox"/> Oil Sheen <input type="checkbox"/> Suds <input type="checkbox"/> Excessive Algae <input type="checkbox"/> Other:		
Pipe benthic growth	<input type="checkbox"/>	<input type="checkbox"/> Brown <input type="checkbox"/> Orange <input type="checkbox"/> Green <input type="checkbox"/> Other:		

Section 6: Overall Outfall Characterization
 Unlikely Potential (presence of two or more indicators) Suspect (one or more indicators with a severity of 3) Obvious

Section 7: Data Collection

1. Sample for the lab?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. If yes, collected from:	<input type="checkbox"/> Flow <input type="checkbox"/> Pool <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Other:
3. Intermittent flow trap set?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Other:

Section 8: Any Non-Illicit Discharge Concerns (e.g., trash or needed infrastructure repairs)?

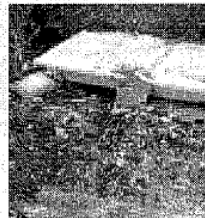
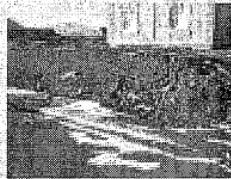


Stormwater Pollution Found in Your Area!

This is not a citation.

This is to inform you that our staff found the following pollutants in the storm sewer system in your area. This storm sewer system leads directly to

- Motor oil
- Oil filters
- Antifreeze/
transmission fluid
- Paint
- Solvent/degreaser
- Cooking grease
- Detergent
- Home improvement waste (concrete,
mortar)
- Pet waste
- Yard waste (leaves, grass, mulch)
- Excessive dirt and
gravel
- Trash
- Construction debris
- Pesticides and
fertilizers
- Other



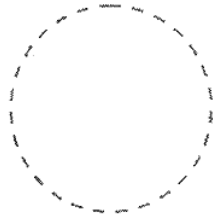
**For more information or to report
an illegal discharge of
pollutants, please call:**

harrisville city public works
801-782-4100 ext 1021



www.epa.gov/npdes/stormwater

EPA 833-F-03-002
April 2003



Stormwater runoff is precipitation from rain or snowmelt that flows over the ground. As it flows, it can pick up debris, chemicals, dirt, and other pollutants and deposit them into a storm sewer system or waterbody.

Anything that enters a storm sewer system is discharged *untreated* into the waterbodies we use for swimming, fishing, and providing drinking water.

Remember:
Only Rain Down the Drain

To keep the stormwater leaving your home or workplace clean, follow these simple guidelines:

- ◆ Use pesticides and fertilizers sparingly.
- ◆ Repair auto leaks.
- ◆ Dispose of household hazardous waste, used auto fluids (antifreeze, oil, etc.), and batteries at designated collection or recycling locations.
- ◆ Clean up after your pet.
- ◆ Use a commercial car wash or wash your car on a lawn or other unpaved surface.
- ◆ Sweep up yard debris rather than hosing down areas. Compost or recycle yard waste when possible.
- ◆ Clean paint brushes in a sink, not outdoors. Properly dispose of excess paints through a household hazardous waste collection program.
- ◆ Sweep up and properly dispose of construction debris like concrete and mortar.



CONSTRUCTION SITE RUNOFF CONTROL

Minimum Control Measure 4

4.1 INTRODUCTION

All Permittees shall develop, implement, and enforce a program to reduce pollutants in any storm water runoff to the MS4 from construction sites with a land disturbance of greater than one acre, including projects that are less than one acre that are part of a larger **COMMON PLAN OF DEVELOPMENT** or sale. Public and private projects, including projects proposed by the departments and agencies, (including utility companies and special service districts) shall comply with these requirements. If any project (requiring a State permit or not) is less than one acre and not a part of a larger common plan of development but has the potential for storm water pollutant generation, all applicable requirements shall apply. When a CPD site is legitimately stabilized and terminated by filing a Notice of Termination (NOT) with DWQ that is verified by a local MS4 or DWQ, the construction storm water permit is terminated (whether the site is substantially completed or not). Upon resumption of any further construction, the site will retain its status as a CPD and will require issuance of a storm water permit, no matter what size of land is disturbed, unless **both** of the following two requirements are met: 1- Less than 1 acre of the CPD is remaining. 2- There has been no ongoing construction on the site for at least two years. Harrisville City has committed to Joint Permit with the Weber County Storm Water Coalition to meet the requirements of Construction Site Runoff Control. The City will take the major role of responsibility for this Measure as a condition of the joint permit with the Weber County Storm Water Coalition.

4.2 POLLUTANTS OF CONCERN

Sediment in storm water is the primary pollutant of concern for construction activities. Other pollutants including heavy metals, nutrients, and additional toxics (construction materials and chemicals) are often found in runoff waters from construction sites. The following sections address storm water runoff from the pollutants of concern associated with construction site activities along with impacts to receiving waters caused by these pollutants.

Sediment

Soil erosion is the process by which soil particles are removed from the land surface by wind, water, or gravity. Water erosion is the primary mechanism for the transport of sediment into storm water systems and receiving waters. Vegetation protects soil from erosion by intercepting and absorbing rainfall, and by binding soil together with root structures. When trees and brush are removed, soil is exposed and is easily transported off site, resulting in increased sediment migration. Natural depressions and hills which temporarily pond water are often removed by grading activities; rainfall then runs off the area, taking with it soil particles. Run off from areas which have been cleared and grubbed are associated with generally higher volumes of flow conveyed at an increased velocity capable of carrying sediment particles.

Excessive sediment in water can cause increased turbidity and reduced light penetration, resulting in impaired vision for aquatic life, clogging of fish gills, and a reduction in aesthetic

values. In addition, other substances such as nutrients, heavy metals, and hydrocarbons tend to attach to sediment and in turn are transported with the sediment.

Nutrients

Nutrients, nitrogen and phosphorus, from fertilizers, pesticides, construction chemicals, and solid waste are often generated at construction sites. Excessive discharge into waterways may result in algae growth which can cause odor problems and reduce the dissolved oxygen available to fish and other aquatic life.

Oils and Greases

Oil and grease contain a wide array of hydrocarbon compounds, some of which are toxic to aquatic organisms at low concentrations. The main sources of oil and grease during construction activities are leakage from engines, spills at fueling stations, overfilled tanks, and waste oil disposal.

Other Toxic Chemicals

Construction of buildings and roads may require toxic or hazardous materials such as pesticides, herbicides, petroleum products, and building materials such as asphalt, sealants and concrete which may pollute storm water running off the construction site. These types of pollutants often contain small amounts of metals and other materials which may be harmful to humans, plants, and fish in streams.

Miscellaneous Wastes

Miscellaneous wastes include wash water from concrete mixers, paints and painting equipment cleaning activities, solid wastes resulting from trees and shrubs removed during land clearing, wood and paper materials derived from packaging of building products, food containers such as paper, aluminum, and metal cans, and sanitary wastes. The discharge of these can lead to unsightly and polluted waterways.

4.3 MEASURABLE GOALS

The following table summarizes the BMPs. Note: BMPs should be used in a manner that ultimately does not allow pollutants (eg. dirt and mud) to reach a paved surface or storm drain system inlet if there are other means of control. The goal is to implement procedures as close to the source as possible. It is not the intent of Harrisville City's SWMP to endorse BMPs to be used downstream when upstream BMP measures can be utilized to prevent pollutants from reaching the final critical inlet destination point of a storm drain system where extreme measures have to be used. The following table summarizes the BMPs, Measurable Goals, and Implementation Schedule of the City for each BMP.

MCM 4 - CONSTRUCTION SITE RUNOFF CONTROL			
Name	BMP	Measurable Goal	Implementation Schedule
	See BR, CESA, CR, CWM, DC, ECB, EVWA, GM, HWM,* IP, PTHD, SB, SCE, SCU, SF, FR, ST , VEF, and WD BMP fact sheets & SOP'S. (*IP – Above surface BMP's should only be used as a final MCM option for paved surfaces and will not be allowed on a dedicated Public ROW from November 1 to April 1).	Adopt an Ordinance for enforcement	<i>Goal Completed</i>
<i>CCIT</i>	Contractor Certification & Inspector Training	Coordinate with Weber County Storm Water Coalition for Contractor Training classes. Obtain inspector registration.	Continue maintaining RSI certification through state requirements.
<i>ECP</i>	Erosion Control Plan	All Contractors will submit a SWPPP for City projects	Ongoing
<i>SPR</i>	Site Plan Review	Review site plans to ensure they include adequate BMP's to protect water quality. As seen below. Include Sop's for Construction Site Run Off Control, (CSSWRC), Notice of Termination, (NOTN), and MS4 Inspection and Enforcement (MS4IE)	Ongoing
<i>PCSPR</i>	(Post Construction Site Plan Review)	Define Construction Ownership & Maintenance for each site.	Ongoing
	Training of all staff involved with construction storm water program	Provide annual training for employees and immediate training for new hires	<i>Annually / Immediately for new hires</i>

4.4 BEST MANAGEMENT PRACTICES (BMP)

The following pages consist of the fact sheets for the above mentioned goals and BMP's. The intent of this section is to reduce pollutants in any storm water runoff to the MS4 from construction sites. Each page represents a separate BMP with details given that can be considered as procedures to fulfill the minimum requirements for all applicable parties.

4.5 REFERENCES

Berman, L., C. Hartline, N. Ryan, and J. Thorne. 1991. "Urban Runoff: Water Quality Solutions." American Public Works Association, Special Report #61.

City of Boise, Public Works Department. January 1997. "Boise Storm Water Best Management Practices (BMP) Guidebook."

Denver Regional Council of Governments. February 1998. "Keeping Soil On Site - Construction Best Management Practices."

Salt Lake County Engineering Division. September 1999. "Guidance Document for Stormwater Management."

State of California. March 1993. "California Storm Water Best Management Practice Handbooks."

State of Minnesota. October 1989. "Protecting Water Quality in Urban Areas - Best Management Practices for Minnesota."

U.S. Environmental Protection Agency. September 1992. "Storm Water Management for Construction Activities - Developing Pollution Prevention Plans and Best Management Practices," EPA-832-R-92-005.

BMP: Building Repair and Construction

BRC



OBJECTIVES

- Cover
- Contain
- Educate
- Reduce/Minimize
- Commercial Activities
- Recycle

DESCRIPTION:

Modifications are common particularly at large industrial sites. The activity may vary from minor and normal building repair to major remodeling, or the construction of new facilities. These activities can generate pollutants including solvents, paints, paint and varnish removers, finishing residues, spent thinners, soap cleaners, kerosene, asphalt and concrete materials, adhesive residues, and old asbestos installation. Protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants to storm water from building repair, remodeling, and construction by using soil erosion controls, enclosing or covering building material storage areas, using good housekeeping practices, using safer alternative products, and training employees.



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APPROACH:

Pollution Prevention

- Recycle residual paints, solvents, lumber, and other materials to the maximum extent practical.
- Buy recycled products to the maximum extent practical.
- Inform on-site contractors of company policy on these matters and include appropriate provisions in their contract to ensure certain proper housekeeping and disposal practices are implemented.
- Make sure that nearby storm drains are well marked to minimize the chance of inadvertent disposal of residual paints and other liquids.

Suggested Protocols

Repair & Remodeling

- Follow BMPs identified in Construction BMP Handbook.
- Maintain good housekeeping practices while work is underway.
- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep the area.
- Cover materials of particular concern that must be left outside, particularly during the rainy season.
- Do not dump waste liquids down the storm drain.
- Dispose of wash water, sweepings, and sediments properly.
- Store materials properly that are normally used in repair and remodeling such as paints and solvents.
- Sweep out the gutter or wash the gutter and trap the particles at the outlet of the downspout if when repairing roofs, small particles have accumulated in the gutter. A sock or geofabric placed over the outlet may effectively trap the materials. If the downspout is tight lined, place a temporary plug at the first convenient point in the storm drain and pump out the water with a vactor truck, and clean the catch basin sump where you placed the plug.
- Properly store and dispose waste materials generated from construction activities. See Construction BMP Handbook.

TARGETED POLLUTANTS

- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Subst.
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- High Impact
 - Medium Impact
 - Low or Unknown Impact

- Clean the storm drain system in the immediate vicinity of the construction activity after it is completed.
- Painting**
- Enclose painting operations consistent with local air quality regulations and OSHA.
 - Local air pollution regulations may, in many areas of the state, specify painting procedures which if properly carried out are usually sufficient to protect water quality.
 - Develop paint handling procedures for proper use, storage, and disposal of paints.
 - Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
 - Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint containers.
 - Mix paint indoors before using so that any spill will not be exposed to rain. Do so even during dry weather because cleanup of a spill will never be 100% effective.
 - Transfer and load paint and hot thermoplastic away from storm drain inlets.
 - Do not transfer or load paint near storm drain inlets.
 - Plug nearby storm drain inlets prior to starting painting and remove plugs when job is complete when there is significant risk of a spill reaching storm drains.
 - Cover nearby storm drain inlets prior to starting work if sand blasting is used to remove paint.
 - Use a ground cloth to collect the chips if painting requires scraping or sand blasting of the existing surface. Dispose the residue properly.
 - Cover or enclose painting operations properly to avoid drift.
 - Clean the application equipment in a sink that is connected to the sanitary sewer if using water based paints.
 - Capture all cleanup-water and dispose of properly.
 - Dispose of paints containing lead or tributyl tin and considered a hazardous waste properly.
 - Store leftover paints if they are to be kept for the next job properly, or dispose properly.
 - Recycle paint when possible. Dispose of paint at an appropriate household hazardous waste facility.

Training

Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employees can be lost by unknowing off-site contractors, so make sure they are well informed about what they are expected to do.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Clean up spills immediately.
- Excavate and remove the contaminated (stained) soil if a spill occurs on dirt.

Limitations

- This BMP is for minor construction only. The State’s General Construction Activity Storm water Permit has more requirements for larger projects. The companion “Construction Best Management Practice Handbook” contains specific guidance and best management practices for larger-scale projects.
- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.

OBJECTIVES

- Cover
- Contain
- Educate
- Reduce/Minimize
- Commercial Activities
- Recycle



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TARGETED POLLUTANTS

- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Subst.
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- High Impact
- ☒ Medium Impact
- Low or Unknown Impact

BMP: Building Repair and Construction – Continued

REQUIREMENTS:

Costs

- These BMPs are generally low to modest in cost.

MAINTENANCE:

- N/A

SUPPLEMENTAL INFORMATION:

Further Detail of the BMP

Soil/Erosion Control

- If the work involves exposing large areas of soil, employ the appropriate soil erosion and control techniques. See the Construction Best Management Practice Handbook. If old buildings are being torn down and not replaced in the near future, stabilize the site using measures described in SC-40 Contaminated or Erodible Areas.
- If a building is to be placed over an open area with a storm drainage system, make sure the storm inlets within the building are covered or removed, or the storm line is connected to the sanitary sewer. If because of the remodeling a new drainage system is to be installed or the existing system is to be modified, consider installing catch basins as they serve as effective “in-line” treatment devices. See Treatment Control Fact Sheet TC-20 Wet Pond/Basin in Section 5 of the New Development and Redevelopment Handbook regarding design criteria. Include in the catch basin a “turn-down” elbow or similar device to trap floatables.

BMP: Contaminated or Erodible Surface Areas

CESA



DESCRIPTION:

Prevent or reduce the discharge of pollutants to storm water from contaminated or erodible surface areas by leaving as much vegetation on-site as possible, minimizing soil exposure time, stabilizing exposed soils, and preventing storm water runoff and runoff.

APPLICATION:

This BMP addresses soils which are not so contaminated as to exceed criteria but the soil is eroding and carrying pollutants off in the storm water.

INSTALLATION/APPLICATION CRITERIA:

Contaminated or erodible surface areas can be controlled by: Preservation of natural vegetation, re-vegetation, chemical stabilization, removal of contaminated soils or geosynthetics.

LIMITATIONS:

Disadvantages of preserving natural vegetation or re-vegetating include:

- Requires substantial planning to preserve and maintain the existing vegetation.
- May not be cost-effective with high land costs.
- Lack of rainfall and/or poor soils may limit the success of re-vegetated areas.
- Disadvantages of chemical stabilization include:
 - Creation of impervious surfaces.
 - May cause harmful effects on water quality.
 - Is usually more expensive than vegetative cover.

MAINTENANCE:

- Maintenance should be minimal, except possibly if irrigation of vegetation is necessary.

OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion



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TARGETED POLLUTANTS

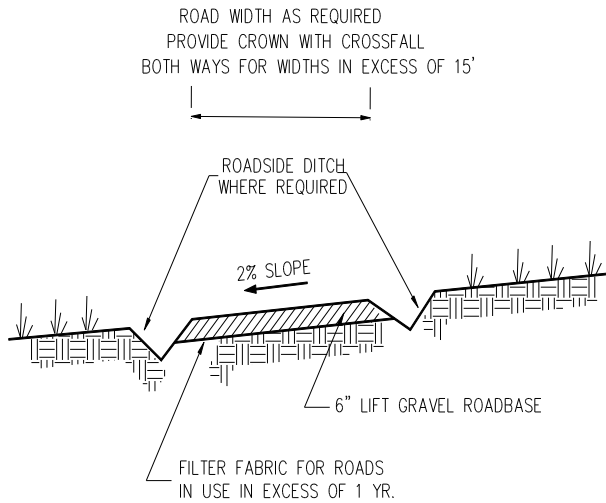
- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low



DESCRIPTION:

Temporary stabilization of on-site roadway by placement of gravel roadbase.

APPLICATION:

- On-site roadways used daily by construction traffic (may not apply to gravelly type soils)
- Parking or staging areas susceptible to erosion due to traffic use

INSTALLATION/APPLICATION CRITERIA:

- Grade temporary access road with 2% cross fall, for two-way width provide crown.
- Provide roadside ditch and outlet controls where required.
- Place 6 inches of 2-inch to 4-inch crushed rock on driving area

LIMITATIONS:

- May require removal of gravel roadbase at completion of activities if final cover is not impervious
- May require controls for surface storm water runoff

MAINTENANCE:

- Inspect after major rainfall events and at least monthly.
- Place additional gravel as needed and repair any damaged areas.
- Maintain any roadside drainage controls.

OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion



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TARGETED POLLUTANTS

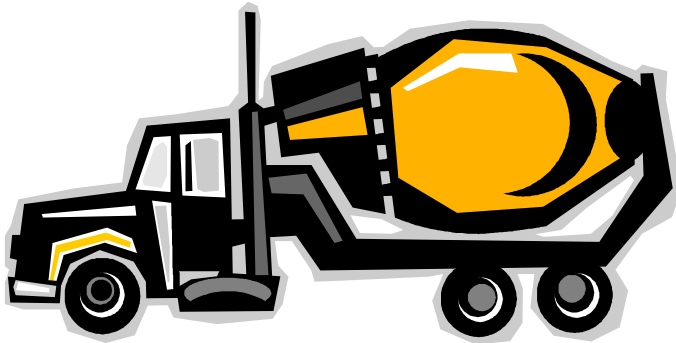
- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low



OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION:

Prevent or reduce the discharge of pollutants to storm water from concrete waste by conducting washout off-site, performing on-site washout in a designated area, and training employees and subcontractors.

APPLICATIONS:

This technique is applicable to all types of sites.

INSTALLATION/APPLICATION CRITERIA:

- Store dry and wet materials under cover, away from drainage areas.
- Avoid mixing excess amounts of fresh concrete or cement on-site.
- Perform washout of concrete trucks off-site or in designated areas only.
- Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- Do not allow excess concrete to be dumped on-site, except in designated areas.
- When washing concrete to remove fine particles and expose the aggregate, avoid creating runoff by draining the water within a bermed or level area. (See Earth Berm Barrier information sheet.)
- Train employees and subcontractors in proper concrete waste management.

LIMITATIONS:

- Off-site washout of concrete wastes may not always be possible.

MAINTENANCE:

- Inspect subcontractors to ensure that concrete wastes are being properly managed.
- If using a temporary pit, dispose hardened concrete on a regular basis.



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IMPLEMENTATION REQUIREMENTS

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

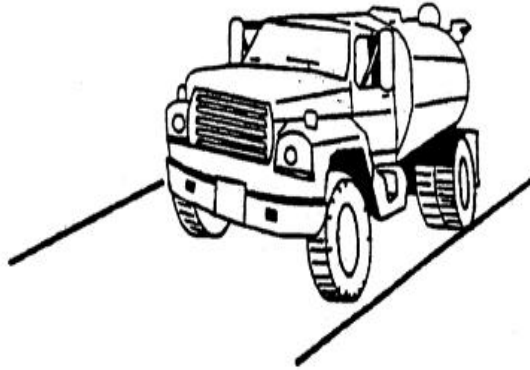
- High
- Medium
- Low

SOP-STREETS/STORM DRAIN – Concrete Work

1. Preparation:
 - a. Store dry and wet materials under cover, away from drainage areas
 - b. Remove any damaged concrete that may need to be replaced.
 - c. Prepare and compact sub-base.
 - d. Set forms and place any reinforcing steel that may be required.
 - e. Determine how much new concrete will be needed.
 - f. Locate or construct approved concrete washout facility.
 - g. Protect downstream gutter drains (concrete cutting and grinding).

2. Process:
 - a. Avoid mixing excess amounts of fresh concrete on-site.
 - b. Moisten sub base just prior to placing new concrete. This helps keep the soil from wicking moisture out of the concrete into the ground.
 - c. Place new concrete in forms.
 - d. Consolidate new concrete
 - e. Screed off surface
 - f. Let concrete obtain its initial set
 - g. Apply appropriate surface finish
 - h. Remove forms when concrete will not slump
 - i. Barricade and or block off fresh concrete until cure.

3. Clean-up:
 - a. Perform washout of concrete trucks and equipment in designated areas only
 - b. Do not washout concrete trucks or equipment into storm drains, open ditches, streets or streams
 - c. Cement and concrete dust from grinding and cutting activities is swept up and removed from the site.



OBJECTIVES

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- Contain Waste
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DESCRIPTION:

Dust control BMPs reduce surface activities and air movement that causes dust to be generated from disturbed soil surfaces. Construction sites can generate large areas of soil disturbance and open space for wind to pick up dust particles. Airborne particles pose a dual threat to the environment and human health. First, dust can be carried offsite, thereby increasing soil loss from the construction area and increasing the likelihood of sedimentation and water pollution. Second, blowing dust particles can contribute to respiratory health problems and create an inhospitable working environment.

APPLICATIONS:

Dust control measures are applicable to any construction site where there is the potential for air and water pollution from dust traveling across the landscape or through the air. Dust control measures are especially important in arid or semiarid regions, where soil can become extremely dry and vulnerable to transport by high winds. Implement dust control measures on all construction sites where there will be major soil disturbances or heavy equipment construction activity such as clearing, excavation, demolition, or excessive vehicle traffic. Earthmoving activities are the major source of dust from construction sites, but traffic and general disturbances can also be major contributors. The dust control measures that are implemented at a site will depend on the topography and land cover of the site and its soil characteristics and expected rainfall.

SITING AND DESIGN CONSIDERATIONS:

When designing a dust control plan for a site, the amount of soil exposed will dictate the quantity of dust generation and transport. Therefore, construction sequencing and disturbing only small areas at a time can greatly reduce problematic dust from a site. If land must be disturbed, consider using temporary stabilization measures before disturbance. A number of methods can be used to control dust from a site; not all will be applicable to a site. The owner, operator, and contractors responsible for dust control at a site will have to determine which practices accommodate their needs according to specific site and weather conditions. The following is a brief list of some control measures and design criteria.



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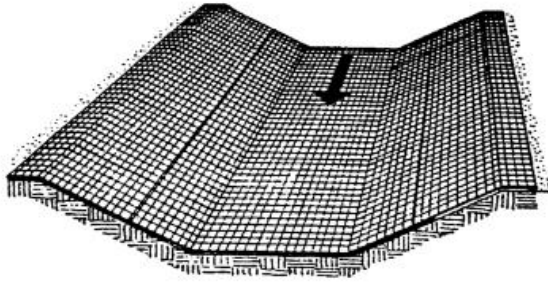
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IMPLEMENTATION REQUIREMENTS

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

BMP: Dust Controls - Continued

- *Sprinkling/Irrigation*. Sprinkling the ground surface with water until it is moist is an effective dust control method for haul roads and other traffic routes (Smolen et al., 1988). This practice can be applied to almost any site.
- *Vegetative Cover*. In areas not expected to handle vehicle traffic, vegetative stabilization of disturbed soil is often desirable. Vegetative cover provides coverage to surface soils and slows wind velocity at the ground surface, thus reducing the potential for dust to become airborne.
- *Mulch*. Mulching can be a quick and effective means of dust control for a recently disturbed area (Smolen et al., 1988).
- *Wind Breaks*. Wind breaks are barriers (either natural or constructed) that reduce wind velocity through a site and, therefore, reduce the possibility of suspended particles. Wind breaks can be trees or shrubs left in place during site clearing or constructed barriers such as a wind fence, snow fence, tarp curtain, hay bale, crate wall, or sediment wall (USEPA, 1992).
- *Tillage*. Deep tillage in large open areas brings soil clods to the surface where they rest on top of dust, preventing it from becoming airborne.
- *Stone*. Stone can be an effective dust deterrent for construction roads and entrances or as a mulch in areas where vegetation cannot be established.
- *Spray-on Chemical Soil Treatments (palliatives)*. Examples of chemical adhesives include anionic asphalt emulsion, latex emulsion, resin-water emulsions, and calcium chloride. Chemical palliatives should be used only on mineral soils. When considering chemical application to suppress dust, determine whether the chemical is biodegradable or water-soluble and what effect its application could have on the surrounding environment, including waterbodies and wildlife.



OBJECTIVES

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DESCRIPTION:

Erosion control blankets are used in place of mulch on areas of high velocity runoff and/or steep grade, to aid in controlling erosion on critical areas by protecting young vegetation.

APPLICATIONS:

- Where vegetation is likely to grow too slowly to provide adequate cover.
- In areas subject to high winds where mulch would not be effective.

INSTALLATION/APPLICATION CRITERIA:

- Install erosion control blankets parallel to the direction of the slope.
- In ditches, apply in direction of the flow.
- Place erosion control blankets loosely on soil - do not stretch.
- Ends of blankets should be buried no less than six inches deep.
- Staple the edges of the blanket at least every three feet.

LIMITATIONS:

- Not recommended in areas which are still under construction.

MAINTENANCE:

- Check for erosion and undermining periodically, particularly after rainstorms.
- Repair dislocations or failures immediately.
- If washouts occur, reinstall after repairing slope damage.
- Monitor until permanently stabilized.



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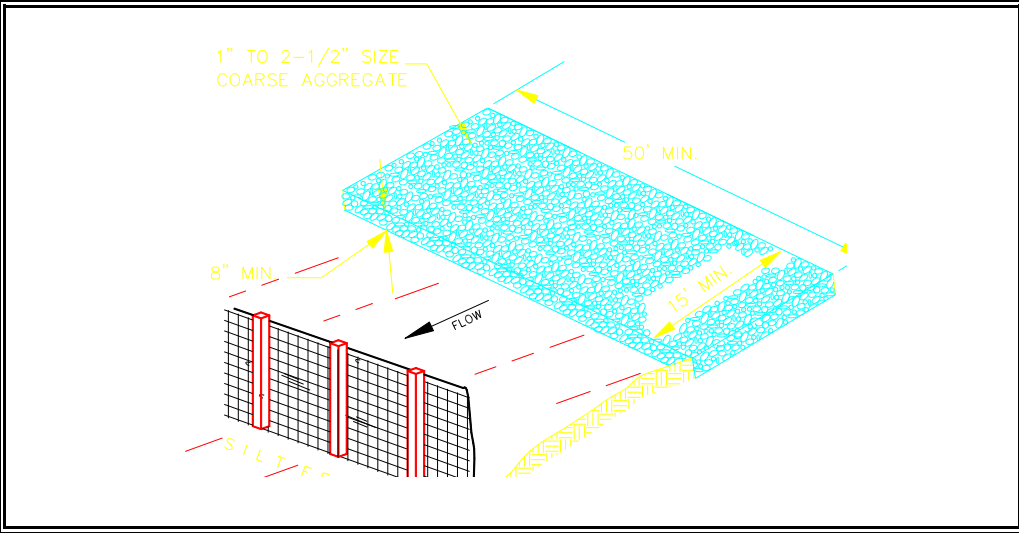
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IMPLEMENTATION REQUIREMENTS

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

- High Medium Low



DESCRIPTION:

A stabilized pad of crushed stone for general washing of equipment and construction vehicles.

APPLICATION:

- At any site where regular washing of vehicles and equipment will occur.
- May also be used as a filling point for water trucks limiting erosion caused by overflow or spillage of water.

INSTALLATION/APPLICATION CRITERIA:

- Clear and grub area and grade to provide maximum slope of 1%
- Compact subgrade and place filter fabric if desired (recommended for wash areas to remain in use for more than 3 months).
- Place coarse aggregate, 1 to 2-1/2 inches in size, to a minimum depth of 8-inches.
- Install silt fence downgradient (see silt fence BMP information sheet).

LIMITATIONS:

- Cannot be utilized for washing equipment or vehicles that may cause contamination of runoff such as fertilizer equipment or concrete equipment.
- Solely used to control sediment in wash water.

MAINTENANCE:

- Inspect daily for loss of gravel or sediment buildup.
- Inspect adjacent area for sediment deposit and install additional controls as necessary.
- Repair area and replace gravel as required to maintain control in good working condition.
- Expand stabilized area as required to accommodate activities.
- Maintain silt fence as outlined in specific silt fence BMP information sheet.

OBJECTIVES

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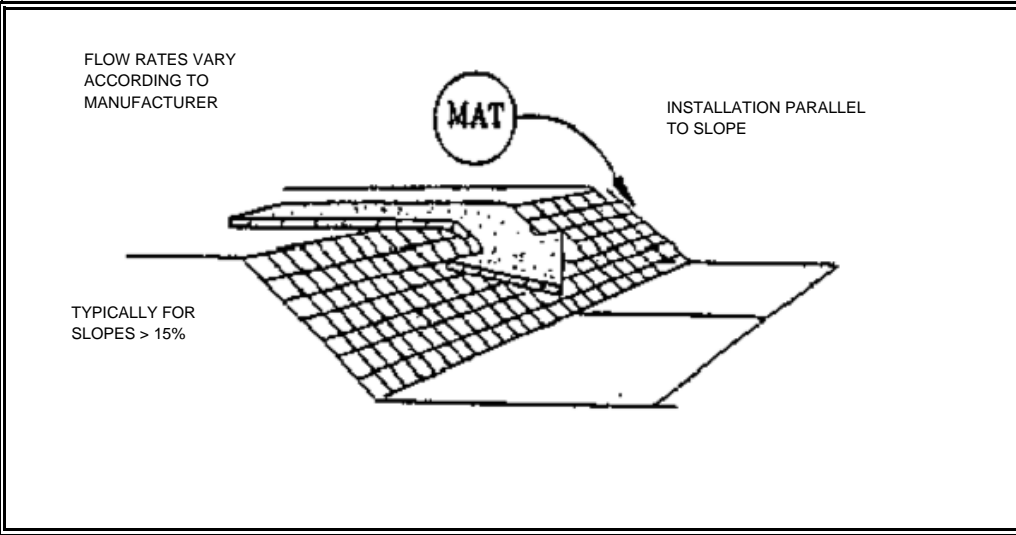
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IMPLEMENTATION REQUIREMENTS

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

- High Medium Low



OBJECTIVES

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DESCRIPTION:

Mattings made of natural or synthetic material which are used to temporarily or permanently stabilize soil.

APPLICATION:

- Typically suited for post-construction site stabilization, but may be used for temporary stabilization of highly erosive soils.
- Channels and streams.
- Steep slopes.

INSTALLATION/APPLICATION CRITERIA:

- Mattings may be applied to disturbed soils and where existing vegetation has been removed.
- The following organic matting materials provide temporary protection until permanent vegetation is established, or when seasonal circumstances dictate the need for temporary stabilization until weather or construction delays are resolved: Jute mattings and straw mattings.
- The following synthetic mattings may be used for either temporary or post-construction stabilization, both with and without vegetation: excelsior matting, glass fiber matting, mulch matting.
- Staples are needed to anchor the matting.

LIMITATIONS:

- Mattings are more costly than other BMP practices, limiting their use to areas where other BMPs are ineffective (e.g., channels, steep slopes).
- May delay seed germination, due to reduction in soil temperature.
- Installation requires experienced contractor to ensure soil stabilization and erosion protection.

MAINTENANCE:

- Inspect monthly and after significant rainfall.
- Re-anchor loosened matting and replace missing matting and staples as required.



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IMPLEMENTATION REQUIREMENTS

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

- High
- Medium
- Low



DESCRIPTION:

Prevent or reduce the discharge of pollutants to storm water from hazardous waste through proper material use, waste disposal, and training of employees and subcontractors.

APPLICATION:

Many of the chemicals used on-site can be hazardous materials which become hazardous waste upon disposal. These wastes may include:

- Paints and Solvents; petroleum products such as oils, fuels, and grease; herbicides and pesticides; acids for cleaning masonry; and concrete curing compounds.

In addition, sites with existing structures may contain wastes which must be disposed of in accordance with Federal, State, and local regulations, including:

- Sandblasting grit mixed with lead, cadmium, or chromium-based paints; asbestos; and PCB's.

INSTALLATION/APPLICATION CRITERIA:

The following steps will help reduce storm water pollution from hazardous wastes:

- Use all of the product before disposing of the container.
- Do not remove the original product label, it contains important safety and disposal information.
- Do not over-apply herbicides and pesticides. Prepare only the amount needed. Follow the recommended usage instructions. Over-application is expensive and environmentally harmful. Apply surface dressings in several smaller applications, as opposed to one large application, to allow time for infiltration and to avoid excess material being carried off-site by runoff. Do not apply these chemicals just before it rains. People applying pesticides must be certified in accordance with Federal and State regulations.

LIMITATIONS:

- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.

MAINTENANCE:

- Inspect hazardous waste receptacles and area regularly.
- Arrange for regular hazardous waste collection.

OBJECTIVES

- Housekeeping Practices
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TARGETED POLLUTANTS

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IMPLEMENTATION REQUIREMENTS

- Capital Costs
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DESCRIPTION:

Storm drain inlet protection measures prevent soil and debris from entering storm drain drop inlets. These measures are usually temporary and are implemented before a site is disturbed.

There are several types of inlet protection:

Excavation around the perimeter of the drop inlet: Excavating a small area around an inlet creates a settling pool that removes sediments as water is released slowly into the inlet through small holes protected by gravel and filter fabric.

Fabric barriers around inlet entrances: Erecting a barrier made of porous fabric around an inlet creates a shield against sediment while allowing water to flow into the drain. This barrier slows runoff while catching soil and other debris at the drain inlet.

Block and gravel protection: Standard concrete blocks and gravel can be used to form a barrier to sediments that permits water runoff to flow through select blocks laid sideways.

Sandbags can also be used to create temporary sediment barriers at inlets. For permanent inlet protection after the surrounding area has been stabilized, sod can be installed. This permanent measure is an aesthetically pleasing way to slow storm water near drop inlet entrances and to remove sediments and other pollutants from runoff.

APPLICABILITY:

- All temporary inlet protection should have a drainage area no greater than 1 acre per inlet.
- Temporary controls should be constructed before the surrounding landscape is disturbed.
- Excavated drop inlet protection and block and gravel inlet protection are applicable to areas of high flow, where drain overflow is expected.
- Fabric barriers are recommended for smaller, flatter drainage areas (slopes less than 5 percent leading to the drain).
- Temporary drop inlet control measures are often used in sequence or with other erosion control techniques.



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BMP: Inlet Protection - continued

SITING AND DESIGN CONSIDERATIONS:

- With the exception of sod drop inlet protection, install these controls before any soil disturbance in the drainage area. Excavate around drop inlets at least 1 foot deep (2 feet maximum), excavating a volume of at least 35 yd³ per acre disturbed. Side slopes leading to the inlet should be no steeper than 2:1. Design the shape of the excavated area such that the dimensions fit the area from which stormwater is expected to drain. For example, the longest side of an excavated area should be along the side of the inlet expected to drain the largest area.
- Stake fabric inlet protection close to the inlet to prevent overflow onto unprotected soils. Stakes should be at least 3 feet long and spaced no more than 3 feet apart. Construct a frame for fabric support during overflow periods, and bury it at least 1 foot below the soil surface. It should rise to a height no greater than 1.5 feet above the ground. The top of the frame and fabric should be below the downslope ground elevation to keep runoff from bypassing the inlet.
- Block and gravel inlet barriers should be at least 1 foot high (2 feet maximum). Do not use mortar. Lay the bottom row of blocks at least 2 inches below the soil surface, flush against the drain for stability. Place one block in the bottom row on each side of the inlet on its side to allow drainage. Place 1/2-inch wire mesh over all block openings to prevent gravel from entering the inlet. Place gravel (3/4 to 1/2 inch in diameter) outside the block structure at a slope no greater than 2:1.
- Do not consider sod inlet protection until the entire surrounding drainage area is stabilized. Lay the sod so that it extends at least 4 feet from the inlet in each direction to form a continuous mat around the inlet. Lay the sod strips perpendicular to the direction of flows. Stagger them so that the strip ends are not aligned. The slope of the sodded area should not be steeper than 4:1 approaching the drop inlet.

LIMITATIONS:

- To increase the effectiveness of these practices, use them with other measures, such as small impoundments or sediment traps (USEPA, 1992). In general, storm water inlet protection measures are practical for areas receiving relatively clean runoff that is not heavily laden with sediment. They are designed to handle drainage from areas less than 1 acre (CASQA, 2003).
- To prevent clogging, storm drain control structures must be maintained frequently. If sediment and other debris clog the water intake, drop inlet control measures can actually cause erosion in unprotected areas.

MAINTENANCE CONSIDERATIONS:

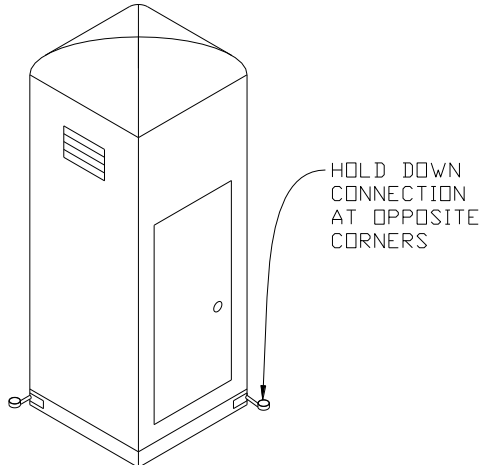
- Check all temporary control measures after each storm event.
- To maintain the capacity of the settling pools, remove accumulated sediment from the area around the drop inlet (excavated area, area around fabric barrier or block structure) when the capacity is reduced by half. Remove additional debris from the shallow pools periodically.
- The weep holes in excavated areas around inlets can become clogged, preventing water from draining out of the pools. If that happens, it might be difficult and costly to unclog the intake.

EFFECTIVENESS:

- Excavated drop inlet protection can be used to improve the effectiveness and reliability of other sediment traps and barriers, such as fabric or block and gravel inlet protection. The effectiveness of inlet protection alone is low for erosion and sediment control, long-term pollutant removal, and habitat and stream protection.

COST CONSIDERATIONS:

- The cost of implementing storm drain inlet protection measures varies depending on the control measure used. Initial installation costs range from \$50 to \$150 per inlet depending on the materials used, with an average cost of \$100 (USEPA, 1993).
- Maintenance costs can be high (up to 100 percent of the initial construction cost annually) because of the frequent inspection and repair needs. The Southeastern Wisconsin Regional Planning Commission has estimated the cost of installing inlet protection devices at \$106 to \$154 per inlet (SEWRPC, 1991).



DESCRIPTION:

Temporary on-site sanitary facilities for construction personnel.

APPLICATION:

- All sites with no permanent sanitary facilities or where permanent facility is too far from activities.

INSTALLATION/APPLICATION CRITERIA:

- Locate portable toilets in convenient locations throughout the site.
- Secure portable toilet to the ground with rebar at opposite corners.

LIMITATIONS:

- No limitations.

MAINTENANCE:

- Portable toilets should be maintained in good working order by licensed service with daily observation for leak detection.
- Regular waste collection should be arranged with licensed service.
- All waste should be deposited in sanitary sewer system for treatment with appropriate agency approval.



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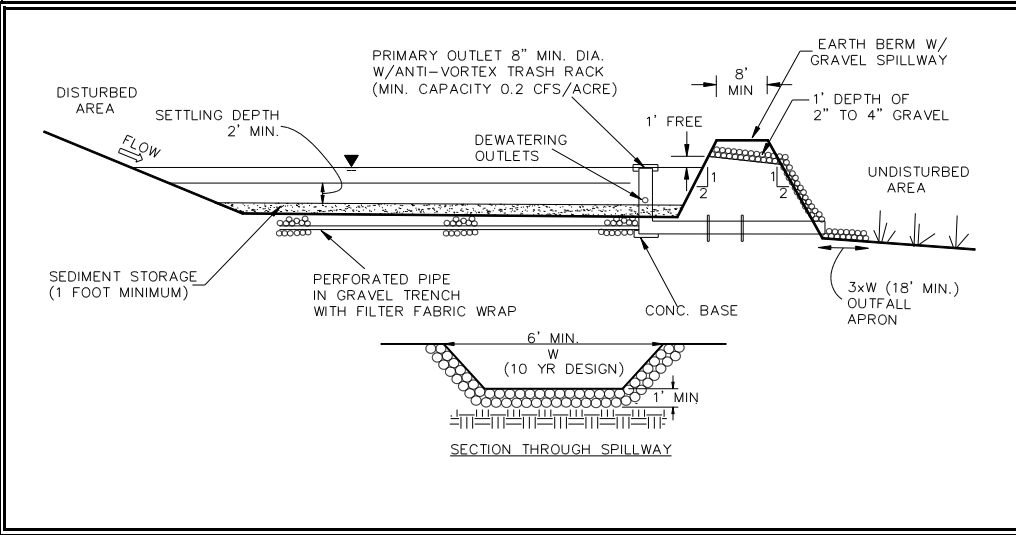
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- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

High Medium Low



OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION:

A pond created by excavation or construction of an embankment, and designed to retain or detain runoff sufficiently to allow excessive sediment to settle.

APPLICATION:

- At the outlet of all disturbed watersheds 10 acres or larger.
- At the outlet of smaller disturbed watersheds, as necessary.
- Where post construction detention basins will be located.

INSTALLATION/APPLICATION CRITERIA:

- Design basin for site specific location, maintain effective flow length 2 times width.
- Excavate basin or construct compacted berm containment, ensure no downgradient hazard if failure should occur. (Provide minimum of 67 cy. per acre of drainage area).
- Construct dewatering and outfall structure and emergency spillway with apron.

LIMITATIONS:

- Should be sized based on anticipated runoff, sediment loading and drainage area size.
- May require silt fence at outlet for entrapment of very fine silts and clays.
- May require safety fencing to prevent public access.
- Height restrictions for embankment regulated by Utah Division of Dam Safety.

MAINTENANCE:

- Inspect after each rainfall event and at a minimum of monthly.
- Repair any damage to berm, spillway or sidewalls.
- Remove accumulated sediment as it reaches 2/3 height of available storage.
- Check outlet for sedimentation/erosion of downgradient area and remediate as necessary. Install silt fence if sedimentation apparent.



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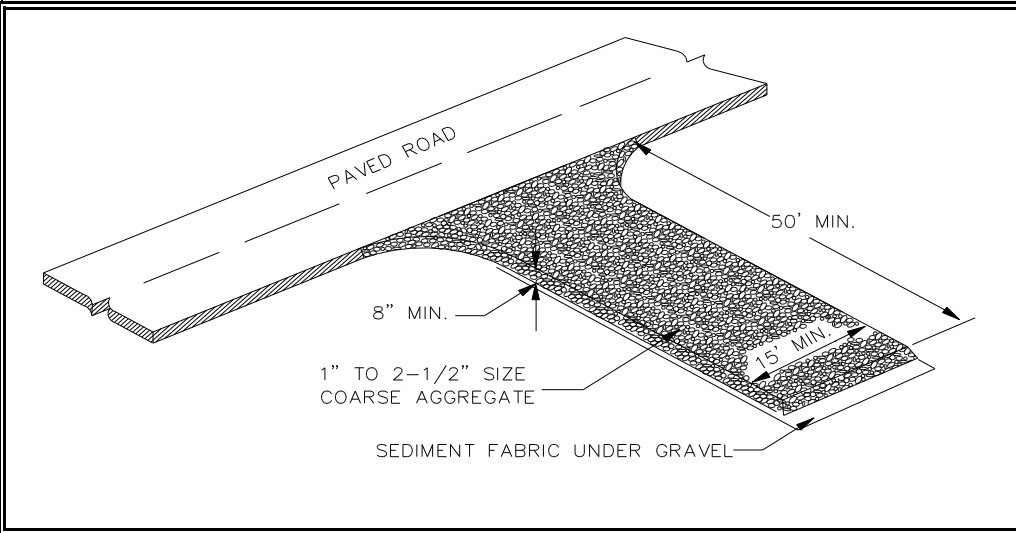
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IMPLEMENTATION REQUIREMENTS

- Capital Costs
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- Maintenance
- Training

<ul style="list-style-type: none"> <input checked="" type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
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DESCRIPTION:

A stabilized pad of crushed stone located where construction traffic enters or leaves the site from or to paved surface.

APPLICATIONS:

- At any point of ingress or egress at a construction site where adjacent traveled way is paved. Generally applies to sites over 2 acres unless special conditions exist.

INSTALLATION/APPLICATION CRITERIA:

- Clear and grub area and grade to provide maximum slope of 2%.
- Compact subgrade and place filter fabric if desired (recommended for entrances to remain for more than 3 months).
- Place coarse aggregate, 1 to 2-1/2 inches in size, to a minimum depth of 8 inches.

LIMITATIONS:

- Requires periodic top dressing with additional stones.
- Should be used in conjunction with street sweeping on adjacent public right-of-way.

MAINTENANCE:

- Inspect daily for loss of gravel or sediment buildup.
- Inspect adjacent roadway for sediment deposit and clean by sweeping or shoveling.
- Repair entrance and replace gravel as required to maintain control in good working condition.
- Expand stabilized area as required to accommodate traffic and prevent erosion at driveways.

OBJECTIVES

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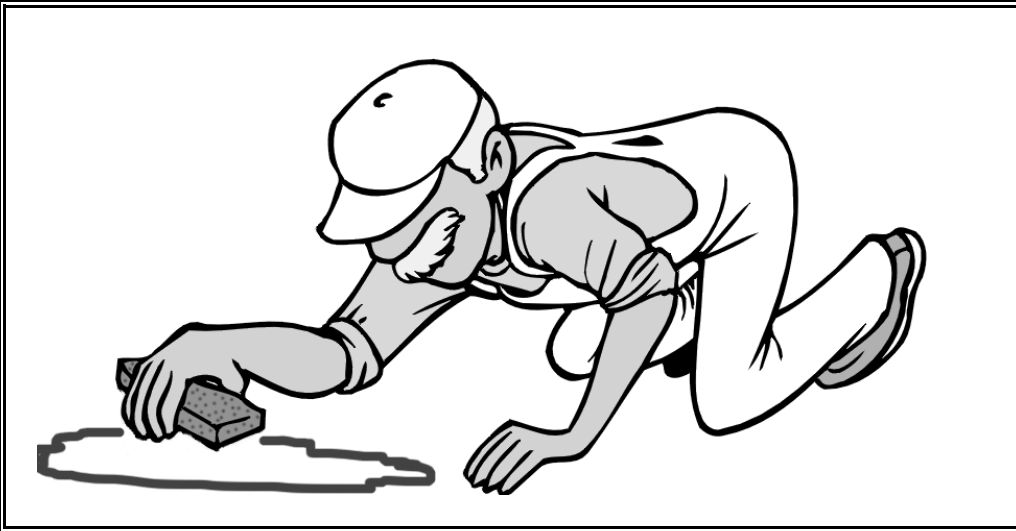
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DESCRIPTION:

Practices to clean-up leakage/spillage of on-site materials that may be harmful to receiving waters.

APPLICATION:

- All sites

GENERAL:

- Store controlled materials within a storage area.
- Educate personnel on prevention and clean-up techniques.
- Designate an Emergency Coordinator responsible for employing preventative practices and for providing spill response.
- Maintain a supply of clean-up equipment on-site and post a list of local response agencies with phone numbers.

METHODS:

- Clean-up spills/leaks immediately and remediate cause.
- Use as little water as possible. NEVER HOSE DOWN OR BURY SPILL CONTAMINATED MATERIAL.
- Use rags or absorbent material for clean-up. Excavate contaminated soils. Dispose of clean-up material and soil as hazardous waste.
- Document all spills with date, location, substance, volume, actions taken and other pertinent data.
- Contact local Fire Department and State Division of Environmental Response and Remediation (Phone #536-4100) for any spill of reportable quantity.

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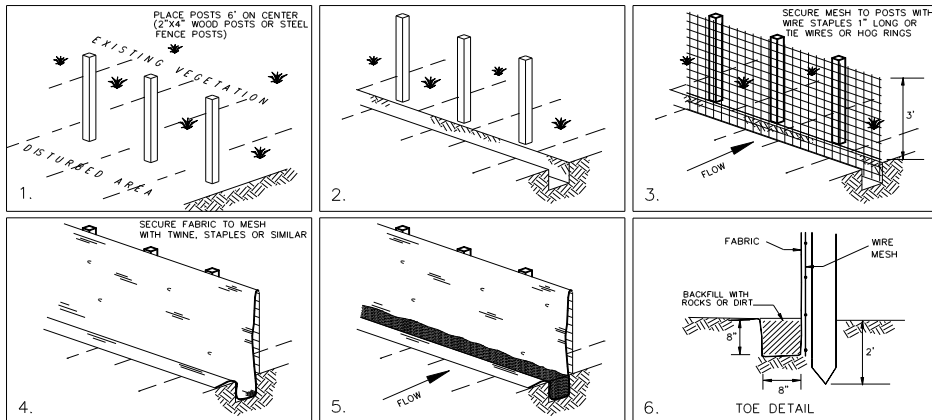
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IMPLEMENTATION REQUIREMENTS

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DESCRIPTION:

A temporary sediment barrier consisting of entrenched filter fabric stretched across and secured to supporting posts.

APPLICATION:

- Perimeter control: place barrier at downgradient limits of disturbance
- Sediment barrier: place barrier at toe of slope or soil stockpile
- Protection of existing waterways: place barrier at top of stream bank
- Inlet protection: place fence surrounding catchbasins

INSTALLATION/APPLICATION CRITERIA:

- Place posts 6 feet apart on center along contour (or use preassembled unit) and drive 2 feet minimum into ground. Excavate an anchor trench immediately upgradient of posts.
- Secure wire mesh (14 gage min. With 6 inch openings) to upslope side of posts. Attach with heavy duty 1 inch long wire staples, tie wires or hog rings.
- Cut fabric to required width, unroll along length of barrier and drape over barrier. Secure fabric to mesh with twine, staples, or similar, with trailing edge extending into anchor trench.
- Backfill trench over filter fabric to anchor.

LIMITATIONS:

- Recommended maximum drainage area of 0.5 acre per 100 feet of fence
- Recommended maximum upgradient slope length of 150 feet
- Recommended maximum uphill grade of 2:1 (50%)
- Recommended maximum flow rate of 0.5 cfs
- Ponding should not be allowed behind fence

MAINTENANCE:

- Inspect immediately after any rainfall and at least daily during prolonged rainfall.
- Look for runoff bypassing ends of barriers or undercutting barriers.
- Repair or replace damaged areas of the barrier and remove accumulated sediment.
- Reanchor fence as necessary to prevent shortcutting.
- Remove accumulated sediment when it reaches 1/2 the height of the fence.

OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion



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(801) 782-9648

TARGETED POLLUTANTS

- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low



DESCRIPTION:

Fiber rolls (also called fiber logs or straw wattles) are tube-shaped erosion-control devices filled with straw, flax, rice, coconut fiber material, or composted material. Each roll is wrapped with UV-degradable polypropylene netting for longevity or with 100 percent biodegradable materials like burlap, jute, or coir. Fiber rolls complement permanent best management practices used for source control and revegetation. When installed in combination with straw mulch, erosion control blankets, hydraulic mulches, or bounded fiber matrices for slope stabilization, these devices reduce the effects of long or steep slopes (Earth Saver Erosion Control Products, 2005). Fiber rolls also help to slow, filter, and spread overland flows. This helps to prevent erosion and minimizes rill and gully development. Fiber rolls also help reduce sediment loads to receiving waters by filtering runoff and capturing sediments.

APPLICABILITY:

Fiber rolls can be used in areas of low shear stress. Avoid using them in channels that are actively incising or in reaches with large debris loads or potential for significant ice buildup (Maryland Department of the Environment, 2000). Fiber rolls have been used to control erosion in a variety of areas--along highways and at construction sites, golf courses, ski areas, vineyards, and reclaimed mines. According to the California Stormwater Quality Association (CASQA, 2003), fiber rolls can be suitable in the following settings:

- Along the toe, top, face, and at-grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow
- At the end of a downward slope where it transitions to a steeper slope
- Along the perimeter of a project
- As check dams in unlined ditches
- Downslope of exposed soil areas
- Around temporary stockpiles



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BMP: Fiber Rolls - continued

SITING AND DESIGN CONSIDERATIONS:

Fiber rolls should be prefabricated rolls or rolled tubes of [geotextiles](#) fabric. When rolling the tubes, make sure each tube is at least 8 inches in diameter. Bind the rolls at each end and every 4 feet along the length of the roll with jute-type twine (California Stormwater Quality Association, 2003).

Slope ground projects

- On slopes, install fiber rolls along the contour with a slight downward angle at the end of each row to prevent ponding at the midsection (California Straw Works, 2005). Turn the ends of each fiber roll upslope to prevent runoff from flowing around the roll. Install fiber rolls in shallow trenches dug 3 to 5 inches deep for soft, loamy soils and 2 to 3 inches deep for hard, rocky soils. Determine the vertical spacing for slope installations on the basis of the slope gradient and soil type. According to California Straw Works (2005), a good rule of thumb is:
 - 1:1 slopes = 10 feet apart
 - 2:1 slopes = 20 feet apart
 - 3:1 slopes = 30 feet apart
 - 4:1 slopes = 40 feet apart
- For soft, loamy soils, place the rows closer together. For hard, rocky soils, place the rows farther apart. Stake fiber rolls securely into the ground and orient them perpendicular to the slope. Biodegradable wood stakes or willow cuttings are recommended. Drive the stakes through the middle of the fiber roll and deep enough into the ground to anchor the roll in place. About 3 to 5 inches of the stake should stick out above the roll, and the stakes should be spaced 3 to 4 feet apart. A 24-inch stake is recommended for use on soft, loamy soils. An 18-inch stake is recommended for use on hard, rocky soils.

Projects without slopes

- Fiber rolls can also be used at projects with minimal slopes. Typically, the rolls are installed along sidewalks, on the bare lot side, to keep sediment from washing onto sidewalks and streets and into gutters and storm drains. For installations along sidewalks and behind street curbs, it might not be necessary to stake the fiber rolls, but trenches must still be dug. Fiber rolls placed around storm drains and inlets must be staked into the ground. These rolls should direct the flow of runoff toward a designated drainage area. Place them 1 to 1½ feet back from the storm drain or inlet.

Limitations

- The installation and overall performance of fiber rolls have several limitations, including the following:
- Fiber rolls are not effective unless trenched.
- Fiber rolls can be difficult to move once saturated.
- To be effective, fiber rolls at the toe of slopes greater than 5:1 must be at least 20 inches in diameter. An equivalent installation, such as stacked smaller-diameter fiber rolls, can be used to achieve a similar level of protection.
- If not properly staked and entrenched, fiber rolls can be transported by high flows.
- Fiber rolls have a very limited sediment capture zone.
- Fiber rolls should not be used on slopes subject to creep, slumping, or landslide.

Maintenance Considerations

- The maintenance requirements of fiber rolls are minimal, but short-term inspection is recommended to ensure that the rolls remain firmly anchored in place and are not crushed or damaged by equipment traffic (Murphy and Dreher, 1996). Monitor fiber rolls daily during prolonged rain events. Repair or replace split, torn, unraveled, or slumping fiber rolls. Fiber rolls are typically left in place on slopes. If they are removed, collect and dispose of the accumulated sediment. Fill and compact holes, trenches, depressions, or any other ground disturbance to blend with the surrounding landscape.

Effectiveness

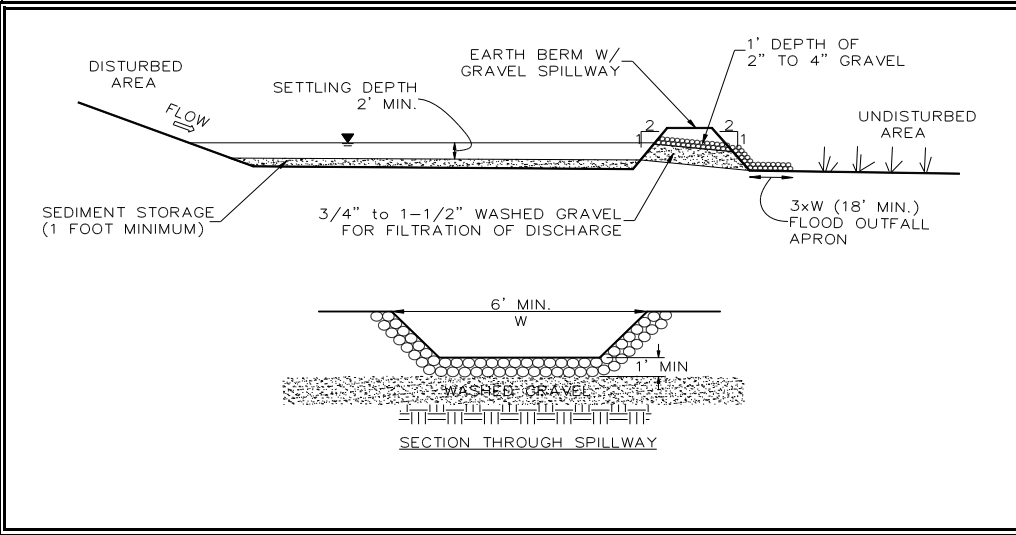
- Unlike other BMPs that could cause water to back up and flow around the edges, fiber rolls allow water to flow through while capturing runoff sediments. Fiber rolls placed along the shorelines of lakes and ponds provide immediate protection by dissipating the erosive force of small waves. As an alternative to silt fences, fiber rolls have some distinct advantages, including the following (Earth Saver, 2005):
- They install more easily, particularly in shallow soils and rocky material.
- They are more adaptable to slope applications and contour installations than other erosion and sediment control practices.
- They are readily molded to fit the bank line.

BMP: Fiber Rolls - continued

- They blend in with the landscape and are less obtrusive than other erosion and sediment controls such as silt fence.
- They do not obstruct hydraulic mulch and seed applications.
- They can be removed or left in place after vegetation is established.
- Fiber rolls can provide slope protection for 3 to 5 years (California Straw Works, 2005). They slowly decompose into mulch, and the netting breaks down into small pieces. The San Diego State University Soil Erosion Research Laboratory reported that the use of fiber roll products reduced offsite sediment delivery by 58 percent (International Erosion Control Association, 2005).
- The Flint Creek watershed, which covers approximately 28 square miles of Lake and Cook counties in northeastern Illinois, was listed in the Illinois Water Quality Report (1994-1995) as being impaired due to nonpoint source pollution from land development, channelization, and urban runoff. Along with other bioengineering techniques, fiber rolls were installed along the shorelines of the creek to reduce the effects of wave action. Native plants were installed in the fiber rolls. As a result, the growth of vegetative cover increased and helped to stabilize the slopes along the banks of the creek. Ultimately, the water quality of Flint Creek was improved (USEPA, 2002).

Cost Considerations

- Material costs for fiber rolls range from \$20 to \$30 per 25-foot roll (CASQA, 2003). Labor hours should also be allocated for installation, monitoring, and maintenance. Because fiber rolls are usually left along slopes and are biodegradable, labor costs for removing them are avoided. However, sediment removal and disposal are still necessary in areas where sediment accumulates to at least one-half the distance between the top of the fiber roll and the ground surface.



OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion



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TARGETED POLLUTANTS

- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low

DESCRIPTION:

A sediment trap is a small excavated or bermed area where runoff from small drainage areas is detained and sediment can settle.

APPLICATION:

- Temporary control for runoff from disturbed areas of less than 3 acres.
- Temporary control for discharge from diversion dike, surface benching, or other temporary drainage measures.

INSTALLATION/APPLICATION CRITERIA:

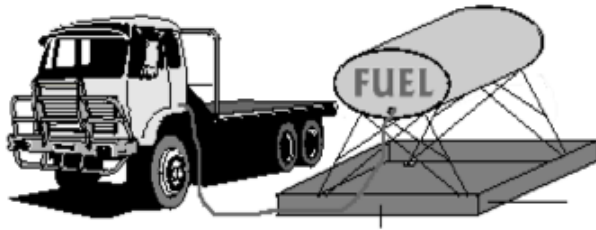
- Design basin for site specific location.
- Excavate basin or construct compacted berm containment.
- Construct outfall spillway with apron.
- Provide downstream silt fence if necessary.

LIMITATIONS:

- Should be sized based on anticipated runoff, sediment loading and drainage area size.
- May require silt fence at outlet for entrapment of very fine silts and clays.

MAINTENANCE:

- Inspect after each rainfall event and at a minimum of monthly.
- Repair any damage to berm, spillway or sidewalls.
- Remove accumulated sediment as it reaches 2/3 height of available storage.
- Check outlet for sedimentation/erosion of downgradient area and remediate as necessary. Install silt fence if sedimentation apparent.



DESCRIPTION:

Prevent fuel spills and leaks, and reduce their impacts to storm water by using off-site facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors.

INSTALLATION/APPLICATION:

- Use off-site fueling stations as much as possible. Fueling vehicles and equipment outdoors or in areas where fuel may spill/leak onto paved surfaces or into drainage pathways can pollute storm water. If you fuel a large number of vehicles or pieces of equipment, consider using an off-site fueling station. These businesses are better equipped to handle fuel and spills properly. Performing this work off-site can also be economical by eliminating the need for a separate fueling area at your site.
- If fueling must occur on-site, use designated areas, located away from drainage courses, to prevent the runoff of storm water and the runoff of spills. Discourage "topping-off" of fuel tanks.
- Always use secondary containment, such as a drain pan or drop cloth, when fueling to catch spills/leaks. Place a stockpile of spill cleanup materials where it will be readily accessible. Use adsorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.
- Carry out all Federal and State requirements regarding stationary above ground storage tanks. (40 CF Sub. J) Avoid mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and perhaps forklifts, most vehicles should be able to travel to a designated area with little lost time. Train employees and subcontractors in proper fueling and cleanup procedures.

LIMITATIONS:

- Sending vehicles/equipment off-site should be done in conjunction with Stabilized Construction Entrance.

MAINTENANCE:

- Keep ample supplies of spill cleanup materials on-site.
- Inspect fueling areas and storage tanks on a regular schedule.

OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion



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TARGETED POLLUTANTS

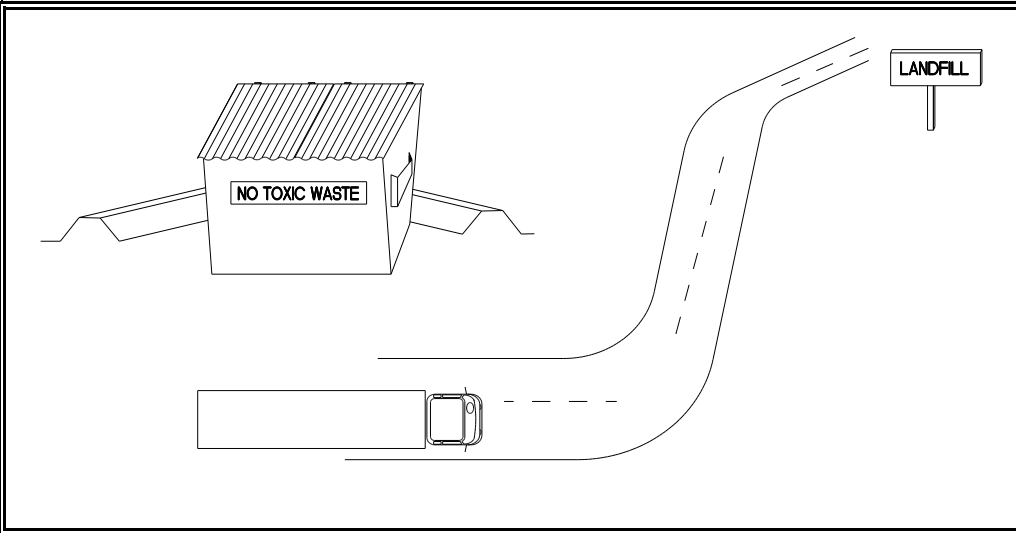
- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low



DESCRIPTION:

Controlled storage and disposal of solid waste generated by construction activities.

APPLICATION:

- All construction sites.

INSTALLATION:

- Designate one or several waste collection areas with easy access for construction vehicles and personnel. Ensure no waterways or storm drainage inlets are located near the waste collection areas.
- Construct compacted earthen berm (See Earth Berm Barrier Information Sheet), or similar perimeter containment around collection area for impoundment in the case of spills and to trap any windblown trash.
- Use water tight containers with covers to remain closed when not in use. Provide separate containers for different waste types where appropriate and label clearly.
- Ensure all on site personnel are aware of and utilize designated waste collection area properly and for intended use only (e.g. all toxic, hazardous, or recyclable materials shall be properly disposed of separately from general construction waste).
- Arrange for periodic pickup, transfer and disposal of collected waste at an authorized disposal location. Include regular Porto-potty service in waste management activities.

LIMITATIONS:

- On-site personnel are responsible for correct disposal of waste.

MAINTENANCE:

- Discuss waste management procedures at progress meetings.
- Collect site trash daily and deposit in covered containers at designated collection areas.
- Check containers for leakage or inadequate covers and replace as needed.
- Randomly check disposed materials for any unauthorized waste (e.g. toxic materials).
- During daily site inspections check that waste is not being incorrectly disposed of on-site (e.g. burial, burning, surface discharge, discharge to storm drain).

OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion



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TARGETED POLLUTANTS

- Sediment
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- Oil & Grease
- Floatable Materials
- Other Waste

<ul style="list-style-type: none"> <input checked="" type="checkbox"/> High Impact <input checked="" type="checkbox"/> Medium Impact <input type="checkbox"/> Low or Unknown Impact
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IMPLEMENTATION REQUIREMENTS

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

<ul style="list-style-type: none"> <input checked="" type="checkbox"/> High <input checked="" type="checkbox"/> Medium <input type="checkbox"/> Low
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Municipalities can establish training programs to educate contractors about erosion and sediment control practices



Construction reviewers periodically inspect construction sites to ensure that contractors have installed and maintained their erosion and sediment controls properly (Source: University of Connecticut Cooperative Extension System, 2000)

APPLICATIONS

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

DESCRIPTION:

One of the most important factors determining whether or not erosion and sediment controls will be properly installed and maintained on a construction site is the knowledge and experience of the contractor. Many communities require certification for key on-site employees who are responsible for implementing the ESC plan. Several states have contractor certification programs. The State of Delaware requires that at least one person on any construction project be formally certified. The Delaware program requires certification for any foreman or superintendent who is in charge of onsite clearing and land-disturbing activities for sediment and runoff control associated with a construction project.

APPROACH:

- Training and certification will help to ensure that the plans are properly implemented and that best management practices are properly installed and maintained.
- Inspector training programs are appropriate for municipalities with limited funding and resources for ESC program implementation.
- Contractor certification can be accomplished through municipally sponsored training courses, or more informally, municipalities can hold mandatory pre-construction or pre-wintering meetings and conduct regular and final inspection visits to transfer information to contractors (Brown and Caraco, 1997).
- To implement an inspector training program, the governing agency would need to establish a certification course with periodic recertification, review reports submitted by private inspectors, conduct spot checks for accuracy, and institute fines or other penalties for noncompliance.
- Curb systems should be maintained through curb repair (patching and replacement).
- To minimize the amount of spilled material tracked outside of the area by personnel, grade within the curbing to direct the spilled materials to a down-slope side of the curbing, thus keeping the spilled materials away from personnel and equipment. Grading will also facilitate clean-up.

LIMITATIONS:

- Contractor certification and inspector training programs require a substantial amount of effort on the part of the municipality or regulatory agency.
- They need to develop curricula for training courses, dedicate staff to teach courses, and maintain a report review and site inspection staff to ensure that both contractors and inspectors are fulfilling their obligations and complying with the ESC program.



TARGETED POLLUTANTS

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

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High
- Medium
- Low



Diversion dikes can be used to contain storm water onsite

DESCRIPTION:

Erosion and sediment control are generally two of the biggest problems on construction sites. Erosion control measures must be taken during a construction project. An Erosion Control Plan will be submitted and approved before work can begin on the project. An Erosion Control Plan describes what erosion control BMPs will be implemented, when and where, during the project. Erosion and sediment control measures should be installed before other construction activities begin.

APPROACH:

- Create a list of possible erosion control BMPs that could be implemented in any given project.
- Require submittal of erosion & sediment control plans for projects that are on 1 acre and larger sites.
- Develop a review checklist for plan review personnel.
- Provide the review checklist to contractors/developers so they know what is expected.
- Provide inspectors with a copy of the approved plans.
- Check to make sure erosion control measures are properly installed before beginning other construction activities.

LIMITATIONS:

- Must be enforced to be effective.
- Sometimes site conditions are different than planned on and the plans have to be modified.
- The erosion control measures have to be maintained.
- The BMPs have to be installed early on in the project.
- The BMPs have to be removed after the threat of erosion is no longer present.

APPLICATIONS

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices



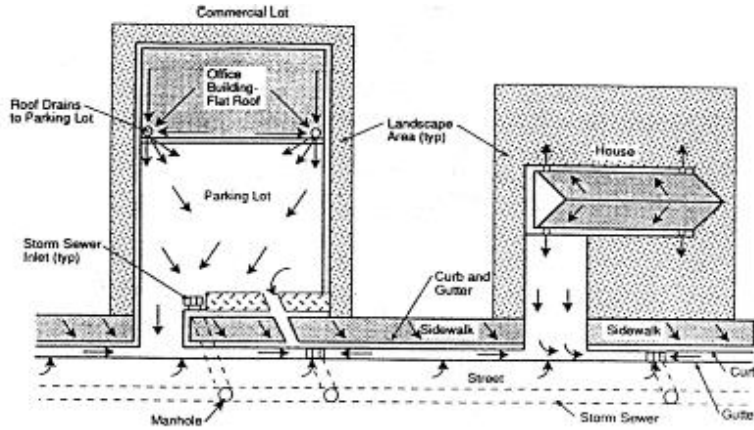
TARGETED POLLUTANTS

- Sediment
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- Floatable Materials
- Bacteria & Viruses

<ul style="list-style-type: none"> <input checked="" type="checkbox"/> High Impact <input checked="" type="checkbox"/> Medium Impact <input type="checkbox"/> Low or Unknown Impact
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IMPLEMENTATION REQUIREMENTS

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



OBJECTIVES

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



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- Floatable Materials
- Bacteria & Viruses

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low

DESCRIPTION:

Site plan review will be conducted of all commercial sites and subdivisions by the City Engineer and other city staff for consideration of storm water issues.

APPLICATIONS:

- All site plans, including those less than 1 acre, will be reviewed. The costs of such reviews will be paid for by the developer through the City.

INSTALLATION/APPLICATION CRITERIA:

- Detention basin calculations will be submitted for the 10 year storm with orifice plate size given.
- Storm water calculations will be in accordance with county standards.
- The outlet piping must be shown to an approved discharge location.
- Flood zone issues must be addressed.
- Overflow locations must be addressed.
- All site plans and subdivisions greater than 1 acre must have an Erosion Control Plan.
- The spillway location and elevation must be shown.
- The detention basin volume must be indicated on the plan.
- Efforts must be made to minimize directly connected impervious areas

LIMITATIONS:

- The downstream receiving pipe or ditch must be capable of the design flows, otherwise percolation rates must be considered.
- Consideration for oil separation must be given.
- Infiltration of water near building foundations and parking lots is a concern.
- Will likely result in increased maintenance for private detention basins.

MAINTENANCE:

- Inspections will be required during construction.
- After construction is complete, the improvements, including the orifice plate must be inspected.
- Periodic inspections are required in insure proper maintenance.
- Remove sediment buildup and replace damaged grass cover.

BMP: Post Construction Site Plan Review

PCSPR



APPLICATIONS

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

DESCRIPTION:

Establishment and implementation of a schedule for long term operation and maintenance procedures for the existing storm drain system. The primary focus of this BMP is on structural BMPs installed by contractors, and developments that are left to be maintained by the MS4 or by residents and businesses.

APPROACH:

- Review existing policy on who is responsible to maintain privately installed BMPs.
- Create or modify Development Agreements as necessary.
- Review existing maintenance schedule and/or efforts.
- Review the requirements necessary to maintain the existing storm drain system.
- Conduct periodic inspections of existing facilities. To determine if they are being maintained.
- Create a schedule for long term operation and maintenance of the storm drain system.
- Implement the maintenance schedule.
- Follow up.
- Possibly offer incentives for properly maintained BMPs or charge fees to maintain privately held facilities.

LIMITATIONS:

- Cost
- Access and ownership issues
- Availability of trained staff
- Difficulties in getting Home Owners Associations to do long term maintenance.



TARGETED POLLUTANTS

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

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High
- Medium
- Low

SOP-CSSWRC – CONSTRUCTION SITE STORM WATER RUN OFF

Specific processes and sanctions minimize occurrences of and obtain compliance from violators.

1. Inspect site using UPDES Storm Water Inspection Evaluation form.
2. Use ordinance #11.26.040 for escalating enforcement procedures and actions when applicable.

SOP-NOTN-NOTICE OF TERMINATION NOTIFICATION

- Residential/subdivision development
 - Commercial developments
 - Residential lots/building permits
1. All residential and commercial development improvement drawings and site plans will have the NOT description as per the NOI labeled on the SWPP.
 2. All residential and commercial building permittees will be notified on the Construction Site Requirements checklist.

NOTICE OF TERMINATION (NOT)

A completed Notice of Termination (NOT) form is required to terminate your permit at the end of construction. Please complete the NOT form, including the project's assigned permit number, and return it to the Division of Water Quality. If you apply online, you will receive a partially filled out NOT at the time of application on which you will need to fill in the termination date and provide a signature for submission. Please contact the storm water coordinator at (801) 536-4300 for any questions or a copy of the NOT form.

SOP-MS4 SWPP INSPECTION AND ENFORCEMENT

Construction Site Inspection and Enforcement of Construction Storm Water Pollution Control Measures

1. Construction site storm water inspections and enforcement of pollution control measures shall be done by the City Storm Water Inspector as referenced on page one of the General Information section of the SWMP.
2. Penalties from violations resulting in citations and fines shall be enforced by the Police Department/Code Enforcement Officer as referenced on page one of the General Information section of the SWMP.

Storm Water Pollution Prevention Plan Elements

Project Name: _____

Owners Name: _____

Contact Information: _____

Location: _____

Start Date: _____ End Date: _____

Description	✓	Location in SWPP & Notes
Identify all potential sources of pollution that might affect the Quality of storm water discharges from the site.		
Identify all operators at the site, and the areas over which each Operator has control.		
Project & Activity Description		
Describe the nature/function of the construction project.		
Describe the intended sequences of major construction activities.		
Indicate the total site area (in acres) that is expected to be disturbed (including off-site borrow & fill areas).		
Include a general location map identifying site location and any waters of the U.S. within one mile of the site.		
Indicate the location of any storm water discharges associated with industrial activity other than at the site (e.g. dedicated asphalt or concrete plants).		
Site Map		
Include a legible site map, complete to scale, of the entire site. Indicate the following items on the map:		
Direction of storm water flow/drainage patterns, and approximate slopes after major grading activities;		

Description	✓	Location in SWPP & Notes
Locations of off-site material, waste, borrow or equipment storage areas used solely for the project.		
Locations of major structural and non-structural erosion and sedimentation controls.		
Name and location of all waters of the U.S. including wetlands.		
Locations where storm water discharges to surface water or to a municipal storm sewer system.		
Areas where final stabilization has occurred and no further construction will be done.		
Controls to Reduce Pollutants		
For each major activity identified in the project description, describe all control measures, the timing during the construction when measures will be installed, and the operator responsible for accomplishing the installation.		
Describe all interim and permanent stabilization practices, including installation schedule. Preserve vegetation where possible, and avoid the use of impervious surfaces.		
Maintain a record of the dates when major grading activity occurs, when construction activity has been temporarily or permanently ceased on a portion of the site, and when stabilization measures are initiated.		
Describe any structural practices used to divert flows from exposed soils, retain/detain flows, or otherwise limit runoff/pollutants from exposed areas.		
Describe any post-construction storm water management controls to be installed at the site, and identify any applicable federal/state/local/tribal requirements for design or installation.		
Describe all measures/waste disposal practices to prevent discharge of solid material, including building materials, to waters of the U.S.		
Describe measures to minimize off-site tracking of sediments to paved surfaces and the generation of dust.		
Describe any waste or construction materials to be stored onsite, and list all measure to limit exposure, including storage, spill prevention and response practices.		
Describe controls to minimize pollutants from sources other than construction (e.g. dedicated asphalt or concrete plants).		
Non-Storm Water Discharge Management		
Identify & list pollution prevention measures for any allowable non-storm water discharges.		

Description	✓	Location in SWPP & Notes
Documentation of Permit Eligibility Related to Endangered Species		
Document your project's eligibility for permit coverage with regard to endangered species. Applicants must follow the procedures in Appendix C to assess the potential effects of the project's storm water on endangered species and critical habitat.		
Documentation of Permit Eligibility Related to Total Maximum Daily Loads		
Document your project's eligibility for permit coverage with regard to discharging to water bodies with an approved TMDL. State TMDL information can be found through EPA's website, www.epa.gov/npdes/stormwater/cgp . Also check Part 9 of the permit for any applicable state/tribal requirements.		
Copy of Permit Requirements		
Include a copy of the permit with the SWPP.		
Applicable State, Tribal or Local Programs & Requirements		
Describe your project's compliance with any applicable state, local or tribal requirements for soil and erosion control and storm water management.		
Inspections		
Describe routine inspection schedules and procedures to ensure control measures are operating effectively.		
Indicate if the inspection frequency is to be at least once every seven days, or at least once every 14 days and within 24 hours of the end of a storm event of 0.5 inches or greater.		
Indicate who the qualified personnel will be to perform inspections and describe the person's qualifications.		
Describe the format for the inspection reports documenting each inspection, including documentation of incidents of non-compliance or certifying full compliance, and indicating who will be authorized to sign the report.		
Signature, Plan Review, & Making Plans Available		
Post a sign or other notice near the main entrance of the construction site. The sign must contain a copy of the NOI, name and phone number of contact person for scheduling SWPP viewing time, and the location of the SWPP.		
The operator must sign and certify the SWPP.		

Description	✓	Location in SWPP & Notes
Maintenance of Controls		
Describe all procedures and activities to be used to accomplish the following:		
Maintain all identified controls in effective operating condition.		
Maintain controls as soon as possible if site inspections identify controls are not working effectively.		
If control measures need to be modified, modifications must occur before next storm event whenever practicable.		
Remove sediment from sediment traps or sedimentation ponds when design capacity has been reduced by 50%.		
Inspections		
If the site is eligible for reduced inspection frequency, indicate why it is eligible and the dates of the waiver period.		
Keep a section of the SWPP dedicated to inspection reports.		
Maintain inspection records for at least three years past the date permit coverage expires or is terminated.		
Maintain an Updated Plan		
Establish a protocol for modifying the SWPP whenever there is a change in design, construction, operation, or maintenance at the site, or if during inspections or investigations it is determined that the SWPP is ineffective in minimizing pollutants in the discharges from the site.		
Signature, Plan Review, & Making Plans Available		
Retain the SWPP on site and make it available to EPA, state, tribal or local agency officials approving sediment and erosion plans.		
Management Practices		
Describe the protocol for ensuring that the following permit requirements will be met.		
All controls must be properly selected, installed, and maintained in accordance with the manufacturer specification and good engineering practices.		
Off-site accumulations of sediment must be removed as necessary.		
Litter, debris and chemicals must be prevented from being exposed to storm water.		
Portions of the site must be stabilized within 14 days where construction activity is temporarily or permanently ceased.		
A combination of sediment and erosion control measures must be used to		

Description	✓	Location in SWPP & Notes
achieve maximum pollutant removal. When considering use of sediment basins, document any factors considered when determining whether to use sediment basins as a control measure.		
Velocity dissipation devices must be used at discharge locations and along outfall channels to provide non-erosive flow.		

LONG-TERM STORM WATER MANAGEMENT

Minimum Control Measure 5

5.1 INTRODUCTION

The objective of this control measure is for the hydrology associated with new development to mirror the pre-development hydrology of the previously undeveloped site or to improve the hydrology of a redeveloped site and reduce the discharge of storm water. Harrisville City, through the Storm Drain Capital Facilities Master Plan, has implemented some of these controls in various areas of the City taking into consideration runoff from future development with several regional detention basins.

Although water quality considerations of this minimum control measure do not replace or substitute for water quantity or flood management requirements implemented locally for new developments, reducing storm water discharges for any purpose should always be considered for the numerous advantages associated with it. The selection of long term BMP's for this section was based upon sound engineering practices and past successful applications, e.g. detention basin sediment filtration .

Harrisville City has committed to Joint Permit with the Weber County Storm Water Coalition to meet the requirements of Long Term Storm Water Management. The City will take the major role for responsibility for this measure as a condition of the joint permit with Weber County.

As part of this MCM, Harrisville City will update its ordinance or have another regulatory mechanism which requires the implementation of post-construction runoff controls to the extent allowable under State or local law, including the evaluation of Low Impact Development (LID) and on-site retainage of the 90th percentile rainfall event. The City will also develop and define specific hydrologic methods for calculating runoff volumes and rates to ensure consistent sizing of structural BMPs in their jurisdiction.

5.2 POLLUTANTS OF CONCERN

Because of the many different types of residential, commercial and construction activities, there can be a wide variety of pollutants that make it into storm water runoff. Even different facilities of the same industry may need different approaches to reducing pollutant discharges to storm water. Therefore, it is imperative that the owner/operator of each facility understand the potential pollutants and impacts from their individual processes. This chapter will discuss the most typical pollutants found in industrial storm water runoff in which BMP's were selected to address the pollutant removal of concern.

Solids, nutrients, metals, oxygen demanding substances, bacteria and viruses, and oil and grease are the pollutants most frequently associated with storm water runoff. These pollutants are discussed in the following subsection.

Solids

Solids (often referred to as total or suspended solids) can cause many receiving water problems. First, it can cause direct toxicity to aquatic organisms, through such mechanisms as

fouling of gills, suffocation, etc. Second, high solids concentrations can reduce water clarity. Third, solids act as a vehicle to transport other pollutants. Excessive solids are often the result of poor construction practices at the industrial site.

Nutrients

Excessive nutrients such as nitrogen and phosphorus in the receiving water can cause problems by stimulating the growth of algae or rooted aquatic plants. Excessive plant growth can cause dissolved oxygen problems, reduce biologic diversity, worsen aesthetics, or impair use for water supply. Some industrial activities typically associated with nutrients include fertilizer/pesticide manufacturing and distribution, waste treatment, and food processing.

Metals

Metals, especially “heavy” metals can be toxic at very low concentrations. Metals can also bioaccumulate in fish and other species and be passed on to higher levels of the food chain, including humans. Certain metals including cadmium, copper, lead, silver, and zinc are the most common metals which contaminate waterways. Industrial activities which commonly deal with metals include mining, electroplating, cement, battery production, and metal recycling.

Oxygen-Demanding Substances

Oxygen-demanding substances tend to deplete the dissolved oxygen levels in streams and lakes. The depleted oxygen supply can result in loss of aquatic life. Oxygen demanding substances are commonly found in food processing industries and chemical manufacturing plants.

Bacteria and Viruses

Bacteria and viruses are the most common microorganisms found in surface water runoff. Bacteria and viruses often carry diseases which can be transferred to animal life and to humans. Food processing and medical wastes are often associated with microbiological contamination.

Oil and grease

Oil and grease contain a wide array of hydrocarbon compounds, some of which are toxic to aquatic organisms at low concentrations. Industrial sources of oil and grease are generally associated with automobile related industries such as: repair shops, body and paint shops, retail distribution, and dismantlers/recyclers.

Floatables

Trash and litter from industrial sites may contain amounts of pollutants which will effect storm water quality. Floatables in waterways and drainage systems pose both aesthetic and maintenance problems.

Other Toxic Materials (Priority Pollutants)

Facilities may contribute other toxic materials to storm water in low concentrations. Pesticides, phenols and poly nuclear or polycyclic aromatic hydrocarbons (PAHs) are most frequently found in storm water discharges associated with industrial operations.

5.3 MEASURABLE GOALS

The following table summarizes the BMPs, Measurable Goals, and Implementation Schedule of the City's for each BMP.

MCM 5 - POST CONSTRUCTION STORM WATER MANAGEMENT			
Fact Sheet	BMP	Measurable Goal	Implementation Schedule
Basin	Detention Basin	Required for all development >1 acre. Refer to Ordinance #386 15.25.050 #2 for sites < 1 acre.	<i>Goal Completed – City Ordinance and Public Works Standards to be updated by December 1, 2016</i>
LID	LID Evaluation	Update City Storm Drain Design Ordinance to require evaluation of LID design. Develop list of acceptable LID practices.	<i>Updated ordinance by December 1, 2016</i>
Study	Storm Drain Study requirements	Require all storm drain studies to conform to Current City Ordinances. Require storm drain designs to retain 90 th percentile storm	<i>Ongoing – Update ordinance by December 1, 2016</i>
CW	Constructed Wetlands	To conform with the Storm Drain Master Plan Update	<i>Goal Completed / Update as necessary</i>

MCM 5 - POST CONSTRUCTION STORM WATER MANAGEMENT			
EDB	Extended Detention/Retention Basins	To conform with the Storm Drain Master Plan Update	<i>Goal Completed / Update as necessary</i>
OWS	Oil/Water Separators and Water Quality Inlets	Require in suspected developments such as commercial	<i>Ongoing</i>
SB	Sediment Basins	To conform with the Storm Drain Master Plan Update	<i>Goal Completed</i>
SPR	Site Plan Review and Inspection	Require erosion control plan for all sites greater than or equal to one acre that are part of a larger common plan of development or sale, or if there is a potential for the discharge of pollutants to the storm drain system regardless of size.	<i>Ongoing</i>
PCSPR	(Post Construction Site Plan Review)	See MCM 4. Include in the construction phase plan review. SOP for Inspection and Enforcement of Post Construction Storm Water Control Measures (IEPCSWCM)	<i>Ongoing</i>

MCM 5 - POST CONSTRUCTION STORM WATER MANAGEMENT			
I & M	Inspection & Maintenance	Routine inspection & maintenance. Inspect during and or after storm events or at a minimum once per year. Repair as needed. Inspect private BMPs at least once every 5 years.	<i>Ongoing</i>
S L O M	Overlay Map	Create a Sensitive Lands Overlay Map to protect the integrity of natural resources and sensitive areas.	<i>Goal Completed / Update as necessary</i>
ET	Employee Training	Provide adequate training for all staff involved in post-construction storm water management, planning and review, inspections and enforcement.	<i>Ongoing</i>

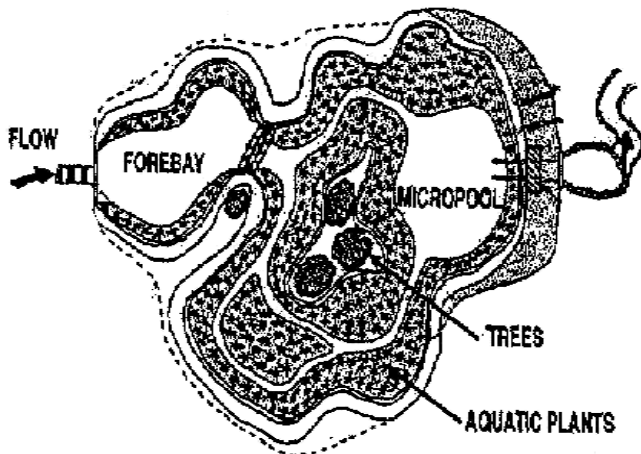
5.4 BEST MANAGEMENT PRACTICES (BMP)

The following pages consist of the fact sheets for the above mentioned goals and BMP's. Each page represents a separate BMP with details given. The intent of this section is to provide a variety of practices that could be related to Public Education and Outreach. The format is similar to other communities on the Wasatch Front, originally obtained from Salt Lake County's Storm Water Management Plan

5.5 REFERENCES

Salt Lake County Engineering Division. September 1999. "Guidance Document for Stormwater Management."

State of California. March 1993. "California Storm Water Best Management Practice Handbooks."



DESCRIPTION:

Constructed wetlands have a significant percentage of the facility covered by wetland vegetation.

APPLICATION:

- Need to achieve high level of particulate and some dissolved contaminant removal.
- Ideal for large, regional tributary areas.
- Multiple benefits of passive recreation and wildlife.

INSTALLATION/APPLICATION CRITERIA:

- Suitable soils for wetland vegetation are required.
- Surface area equal to at least 1% and preferably 2% of the tributary watershed.
- Include a forebay for extra storage and to trap incoming sediment.
- Involve qualified wetland ecologist to design and install wetland vegetation.
- Establishing wetland vegetation may be difficult.

LIMITATIONS:

- Concern for mosquitoes.
- Cannot be placed on steep unstable slopes.
- Need base flow to maintain water level.
- Not feasible in densely developed areas.
- Nutrient release may occur during winter.
- Overgrowth can lead to reduced hydraulic capacity.
- Regulatory agencies may limit water quality to constructed wetlands.

MAINTENANCE:

- Remove foreign debris and sediment build-up.
- Areas of bank erosion should be repaired.
- Remove nuisance species.
- Control mosquitoes.

OBJECTIVES

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



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TARGETED POLLUTANTS

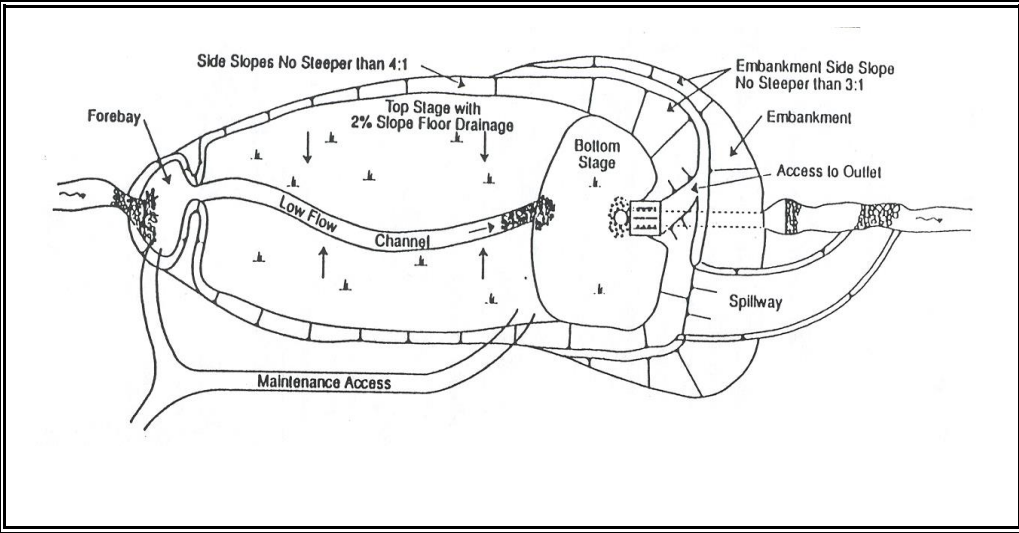
- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Substances
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low



OBJECTIVES

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

DESCRIPTIONS:

Extended detention basins are dry between storms. During a storm the basin fills. A bottom outlet releases the storm water slowly to provide time for sediments to settle.

APPLICATION:

- Objective is to remove only particulate pollutants.
- Use where lack of water prevents the use of wet ponds, wetlands or biofilters.
- Use where wet ponds or wetlands would cause unacceptable mosquito conditions.

INSTALLATION/APPLICATION CRITERIA:

- Basin volume is sized to capture a particular fraction of the runoff.
- Drawdown time of 24 to 40 hours is required.
- A shallow basin with large surface area performs better than a deep basin with the same volume.
- Place energy dissipators at the entrance to minimize bottom erosion and resuspension.
- Vegetate side slopes and bottom to the maximum extent practical.
- If side erosion is particularly severe, consider paving or soil stabilization.
- If floatables are a problem, protect outlet with a trash rack or other device.
- Provide bypass or pass through capabilities for 100-year storm.

LIMITATIONS:

- May be less reliable than other treatment control BMPs. Inability to vegetate banks and bottom may result in erosion and resuspension.
- Limitation of the orifice diameter may preclude use in small watersheds.
- Requires differential elevation between inlet and outlet.

MAINTENANCE:

- Check outlet regularly for clogging.
- Check banks and bottom of basin for erosion and correct as necessary.
- Remove sediment when accumulation reaches 6-inches, or if resuspension is observed.



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TARGETED POLLUTANTS

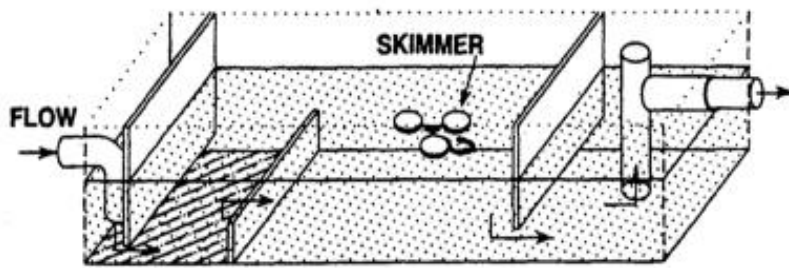
- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Substances
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low



DESCRIPTION:

Oil/Water separators are designed to remove a specific group of contaminants: petroleum compounds and grease. However, separators will also remove floatable debris and settleable solids. Two general types of oil/water separators are used: conventional gravity separator and the coalescing plate interceptor (CPI).

APPLICATION:

- Applicable to situations where the concentration of oil and grease related compounds is abnormally high and source control cannot provide effective control. The general types of businesses where this situation is likely are truck, car, and equipment maintenance and washing businesses, as well as businesses that perform maintenance on their own equipment and vehicles.
- Public facilities where separators may be required include marine ports, airfields, fleet vehicle maintenance and washing, facilities, and mass transit park-and-ride lots.
- Conventional separators are capable of removing oil droplets with diameters equal to or greater than 150 microns.
- A CPI separator should be used if smaller droplets must be removed.

INSTALLATION/APPLICATION CRITERIA:

- Sizing relates to anticipated influent oil concentration, water temperature and velocity, and the effluent goal.
- To maintain a reasonable separator size, it should be designed to bypass flows in excess of first flush.

LIMITATIONS:

- The lack of data on oil characteristics in storm water leads to considerable uncertainty about performance.
- An air quality permit may be required.

MAINTENANCE:

Clean frequently of accumulated oil, grease, and floating debris.

OBJECTIVES

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



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TARGETED POLLUTANTS

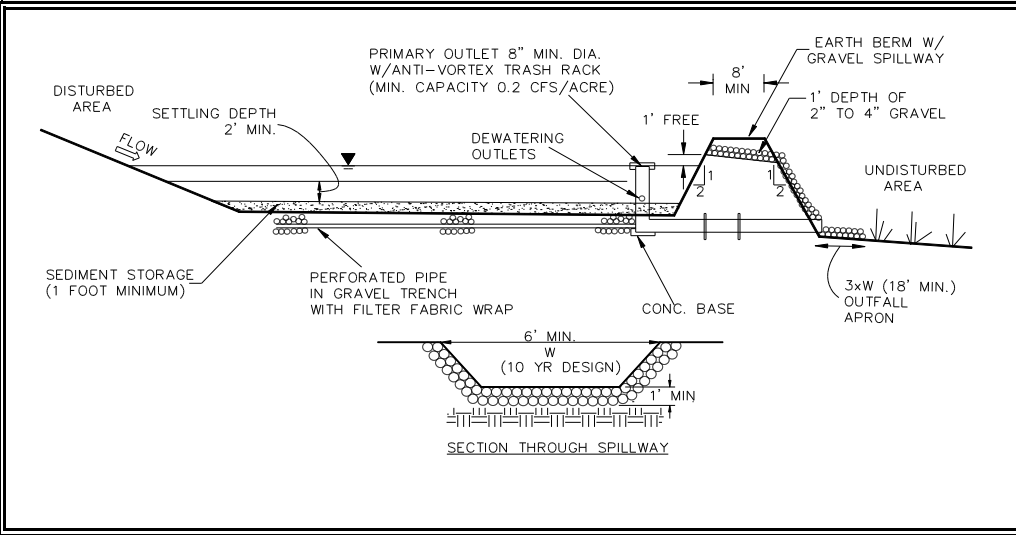
- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Substances
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High
- Medium
- Low



OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION:

A pond created by excavation or construction of an embankment, and designed to retain or detain runoff sufficiently to allow excessive sediment to settle.

APPLICATION:

- At the outlet of all disturbed watersheds 10 acres or larger.
- At the outlet of smaller disturbed watersheds, as necessary.
- Where post construction detention basins will be located.

INSTALLATION/APPLICATION CRITERIA:

- Design basin for site specific location, maintain effective flow length 2 times width.
- Excavate basin or construct compacted berm containment, ensure no downgradient hazard if failure should occur. (Provide minimum of 67 cy. per acre of drainage area).
- Construct dewatering and outfall structure and emergency spillway with apron.

LIMITATIONS:

- Should be sized based on anticipated runoff, sediment loading and drainage area size.
- May require silt fence at outlet for entrapment of very fine silts and clays.
- May require safety fencing to prevent public access.
- Height restrictions for embankment regulated by Utah Division of Dam Safety.

MAINTENANCE:

- Inspect after each rainfall event and at a minimum of monthly.
- Repair any damage to berm, spillway or sidewalls.
- Remove accumulated sediment as it reaches 2/3 height of available storage.
- Check outlet for sedimentation/erosion of downgradient area and remediate as necessary. Install silt fence if sedimentation apparent.



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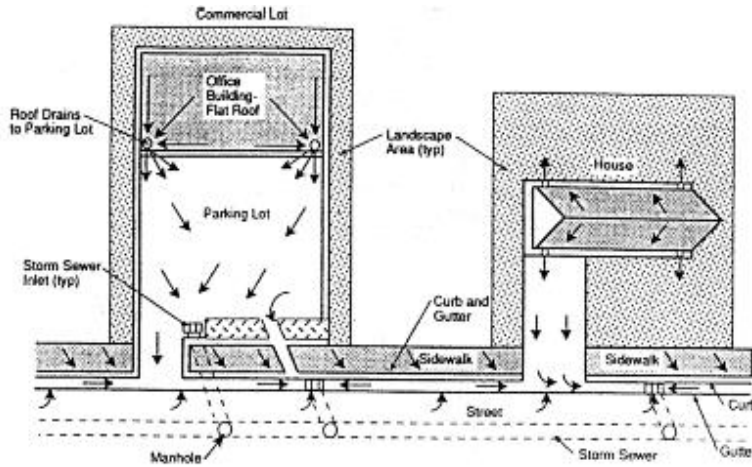
- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low



Considerations

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



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TARGETED POLLUTANTS

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

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low

DESCRIPTION:

Site plan review will be conducted of all commercial sites and subdivisions by the City Engineer and other city staff for consideration of storm water issues.

APPLICATIONS:

- All site plans, including those less than 1 acre, will be reviewed. The costs of such reviews will be paid for by the developer through the City.

INSTALLATION/APPLICATION CRITERIA:

- Detention basin calculations will be submitted for the 10 year storm with orifice plate size given.
- Storm water calculations will be in accordance with county standards.
- The outlet piping must be shown to an approved discharge location.
- Flood zone issues must be addressed.
- Overflow locations must be addressed.
- All Site plans and subdivisions greater than 1 acre must have an Erosion Control Plan.
- The spillway location and elevation must be shown.
- The detention basin volume must be indicated on the plan.
- Efforts must be made to minimize directly connected impervious areas

LIMITATIONS:

- The downstream receiving pipe or ditch must be capable of the design flows, otherwise percolation rates must be considered.
- Consideration for oil separation must be given.
- Infiltration of water near building foundations and parking lots is a concern.
- Will likely result in increased maintenance for private detention basins.

MAINTENANCE:

- Inspections will be required during construction.
- After construction is complete, the improvements, including the orifice plate must be inspected.
- Periodic inspections are required in insure proper maintenance.
- Remove sediment buildup and replace damaged grass cover.



APPLICATIONS

- Manufacturing
- Material Handling
- Vehicle Maintenance
- Construction
- Commercial Activities
- Roadways
- Waste Containment
- Housekeeping Practices

DESCRIPTION:

Establishment and implementation of a schedule for long term operation and maintenance procedures for the existing storm drain system. The primary focus of this BMP is on structural BMPs installed by contractors, and developments that are left to be maintained by the MS4 or by residents and businesses.

APPROACH:

- Review existing policy on who is responsible to maintain privately installed BMPs.
- Create or modify Development Agreements as necessary.
- Review existing maintenance schedule and/or efforts.
- Review the requirements necessary to maintain the existing storm drain system.
- Conduct periodic inspections of existing facilities. To determine if they are being maintained.
- Create a schedule for long term operation and maintenance of the storm drain system.
- Implement the maintenance schedule.
- Follow up.
- Possibly offer incentives for properly maintained BMPs or charge fees to maintain privately held facilities.

LIMITATIONS:

- Cost
- Access and ownership issues
- Availability of trained staff
- Difficulties in getting Home Owners Associations to do long term maintenance.



TARGETED POLLUTANTS

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

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High
- Medium
- Low

IEPCSWCM-SOP-Inspection and Enforcement of Post-Construction Storm Water Control Measures

1. Applicable Post-Construction SWPP inspection and review throughout the project.
2. Signed NOT.
3. Completion of steps 1 and 2 prior to conditional acceptance of the subdivision.

Low Impact Development (LID) Strategies

Minimum Control Measure: Long-Term Storm Water Management in New Development and Redevelopment (Post-Construction Storm Water Management)

Subcategory: Innovative BMPs for Site Plans

Urban development significantly alters the natural features and hydrology of a landscape. Development and redevelopment usually creates impervious surfaces like concrete sidewalks and asphalt roadways, commercial and residential buildings, and even earth compacted by construction activities. Prevented from soaking into the ground, rainwater runs across parking lots and streets, collecting used motor oil, pesticides, fertilizers, and other pollutants.

In most cities, a complex system of piping usually feeds contaminated storm water flows directly into streams and coastal waters. More recently, storm water control structures (sometimes called Best Management Practices or BMPs) like dry extended detention ponds or wet retention ponds have been installed, most in new development, to intercept storm water on its way to surface waters.

Historically, the goal of storm water planning has been to prevent localized flooding by moving large amounts of water offsite as quickly as possible. However, experience has shown that traditional storm water management has many limitations.

Expensive, ever-expanding storm sewer systems strain municipal budgets. Fast moving storm water discharges cause downstream flooding, erode stream banks, and contribute to water quality violations. Bacteria and other pathogens carried in storm water contaminate coastal waters, often requiring beach closures. Rainwater diverted or otherwise unable to soak into the soil cannot recharge aquifers. This reduces stream base flows, which can cause streams to dry-up for extended periods of time. Storm water that collects in detention basins or flows over impervious surfaces is often much warmer than the streams into which it flows. This is a problem because a temperature increase of just one or two degrees can stress fish and other aquatic organisms.

Mimicking Natural Hydrology

Efforts to address storm water problems resulting from traditional development methods have produced a number of innovative design alternatives. For example, researchers and developers are experimenting with minimizing the distance between land uses to decrease infrastructure requirements. Another method reduces storm water runoff by conserving forests and green spaces and protecting stream buffers. Yet another technique diminishes impervious surfaces, narrows road and sidewalk widths, reduces parking lot sizes, minimizes or removes cul-de-sacs, and replaces traditional paving materials with pervious concrete.

Such innovative site design grew out of concerns that rapid urban development was not only impairing water quality but eroding quality of life. Concerned by the development of sensitive agricultural and wetlands, and burdened by the rising costs of storm water damage, some

communities are implementing Green Design strategies, such as LID, Conservation Development, Better Site Design, and Smart Growth. The complementary goals of these design schemes lessen the impact of storm water while still providing opportunities for development.

LID

Like other alternative development strategies, LID seeks to control storm water at its source. Rather than moving storm water offsite through a conveyance system, the goal of LID is to restore the natural, pre-developed ability of an urban site to absorb storm water.

LID integrates small-scale measures scattered throughout the development site. Constructed green spaces, native landscaping, and a variety of innovative bioretention and infiltration techniques capture and manage storm water on-site. LID reduces peak runoff by allowing rainwater to soak into the ground, evaporate into the air, or collect in storage receptacles for irrigation and other beneficial uses. In areas with slow drainage or infiltration, LID captures the first flush before excess storm water is diverted into traditional storm conveyance systems. The result is development that more closely maintains pre-development hydrology. Furthermore, LID has been shown to be cost effective, and in some cases, cheaper than using traditional storm water management techniques.

LID Techniques

LID can be simple and effective. Instead of relying solely on complex and costly collection, conveyance, storage and treatment systems, LID employs a range of economical devices that control runoff at the source.

- Bioretention cells, commonly known as rain gardens, are relatively small-scale, landscaped depressions containing plants and a soil mixture that absorbs and filters runoff.
- Cisterns and rain barrels harvest and store rainwater collected from roofs. By storing and diverting runoff, these devices help reduce the flooding and erosion caused by storm water runoff. And because they contain no salts or sediment, they can provide "soft" chemical-free water for garden or lawn irrigation, reducing water bills and conserving municipal water supplies.
- Green roofs are roof-tops partially or completely covered with plants. Used for decades in Europe, green roofs help mitigate the urban "heat island" effect and reduce peak storm water flows. The vegetated cover also protects and insulates the roof, extending its life and reducing energy costs.
- Permeable and porous pavements reduce storm water runoff by allowing water to soak through the paved surface into the ground beneath. Permeable pavement encompasses a variety of mediums, from porous concrete and asphalt, to plastic grid systems and interlocking paving bricks suitable for driveways and pedestrian malls. Permeable pavement helps reduce runoff volumes at a considerably smaller cost than traditional storm drain systems.
- Grass swales are broad, open channels sown with erosion resistant and flood tolerant grasses. Used alongside roadways for years primarily as storm water conveyances, swales

can slow storm water runoff, filter it, and allow it to soak into the ground. Swales and other biofiltration devices like grass filter-strips improve water quality and reduce in-stream erosion by slowing the velocity of storm water runoff before it enters the stream. They also cost less to install than curbs, storm drain inlets, and piping systems.

Conservation Development

Like LID, Conservation Development tries to mitigate the effects of urbanization, but it places additional emphasis on protecting aquatic habitat and other natural resources. Conservation Development subdivisions are characterized by compact clustered lots surrounding a common open space. Conservation Development's goal is to disturb as little land area as possible while simultaneously allowing for the maximum number of residences permitted under zoning laws.

Prior to new construction, conservation developers evaluate natural topography, natural drainage patterns, soils and vegetation. They deploy storm water best management practices to help prevent flooding and protect natural hydrology. By maintaining natural hydrological processes, Conservation Development creates conditions that slow, absorb, and filter storm water runoff onsite.

Because future development threatens valuable natural features, Conservation Development provides specific provisions for long-term and permanent resource protection. Conservation easements, transfer of development rights, and other "in perpetuity" mechanisms ensure that protective measures are more than just temporary.

Better Site Design

The goals of Better Site Design are to reduce impervious cover, preserve natural lands, and capture storm water onsite. To meet these goals, designers employ a variety of methods. To reduce impervious cover, they narrow streets and sidewalks, minimize cul-de-sacs, tighten parking spaces, and reduce the size of driveways and housing lots.

To reduce storm water runoff, designers preserve natural lands, using them as buffer zones along streams, wetlands and steep slopes. They employ landscaping techniques that flatten slopes and preserve native vegetation and clusters of trees. They create bioretention areas - open channels, filter strips and vegetated swales - to increase storm water infiltration, helping to protect streams, lakes, and wetlands.

Development Districts

Development districts are areas zoned specifically for the purpose of permitting property development. Development districts concentrate intense, mixed-use development in an area typically five-acres and larger. Although a development district's percentage of imperviousness may exceed those of surrounding areas, such focused, compact development creates a smaller "footprint" than traditional development patterns.

A well-designed development district can contribute to a number of water quality benefits. Compact development lends itself to more environmentally friendly transportation options, like biking or walking, and shorter and less frequent automobile trips. A development district that redevelops an urban area reuses existing infrastructure, which can reduce the demand for new construction elsewhere in a watershed. Many development districts incorporate tree-lined streets, rain gardens, green roofs and other best management practices into their designs, helping manage storm water onsite.

Smart Growth

Smart Growth is a set of development strategies that seek to balance economic growth, urban renewal, and conservation. In newly developing areas, Smart Growth advocates compact, town-centered communities composed of open green space, businesses, and affordable housing, interconnected by pedestrian walkways and bicycle lanes. Smart Growth's emphasis on walkable communities and alternative forms of transportation can help alleviate the environmental consequences of automobile use. Smart Growth also advocates the revitalization of inner cities and older suburbs. Reusing existing infrastructure often costs less than new construction, and it helps slow the spread of large-scale impervious surfaces.

Ten core principles guide Smart Growth:

- Mix land use.
- Take advantage of compact building design.
- Create a range of housing opportunities and choices.
- Create walkable neighborhoods
- Foster distinctive, attractive communities with a strong sense of place.
- Preserve open space, farmland, natural beauty and critical environmental areas.
- Strengthen and direct development toward existing communities.
- Provide a variety of transportation choices.
- Make development decisions predictable, fair and cost effective.
- Encourage community and stakeholder collaboration in development decisions.

While not explicitly mentioned as a guiding principal, storm water management nevertheless benefits from Smart Growth policies. Compact, high-density development reduces the spread of impervious surfaces on a watershed scale. This helps reduce overall storm water runoff. Infill and redevelopment that reuses existing infrastructure can be cheaper than greenfield development, which requires expensive new infrastructure. The 'Fix it First' management philosophy advocates repairing and upgrading existing, frequently crumbling infrastructure before spending on new infrastructure.

All of these development strategies can contribute to reducing sprawl and slow the rapid spread of impervious surfaces. All of the site design frameworks discussed in this fact sheet can be coupled with the Smart Growth approach so that small-scale reductions in run-off aren't offset by watershed-scale increases in run-off.

Holistic Planning

The damaging effects of storm water runoff can be mitigated if urban planners use development designs that reduce the "footprint" of impervious structures. Traditional storm water approaches, with their emphasis on collection, conveyance, storage and discharge, cannot adequately address the environmental problems caused by sprawling urbanization. Furthermore, with rapid development occurring beyond the fringe of metropolitan regions, urban storm water is jeopardizing hard fought gains in U.S. water quality.

New land and storm water management strategies take a more holistic approach. Communities employing conservation development techniques have found that natural features like undeveloped landscapes, vegetation, and buffer zones effectively reduce and filter storm water flows. There are also other benefits like recreation, wildlife habitat, and increased property values.

Case studies of green design practices have shown substantial decreases in storm water runoff in pre-existing communities refitted with bioretention basins, permeable pavements, vegetated roof covers, and grass swales.

For example, a study of runoff and pollutant loading conducted in the parking lot of The Florida Aquarium in Tampa revealed an 80 percent decline in runoff volumes when the parking lot was retrofitted with pervious pavement and grass swales. Amounts of copper, manganese, lead, and other metals found in runoff also dropped steeply. [EXIT Disclaimer](#).

Similarly, a study of vegetated roofs in Philadelphia, PA found that an older building retrofitted with a green roof absorbed all but 15 inches of a total 44 inches of rainfall that fell during the nine-month test period. Twenty-five years of German research on green roofs support this finding.

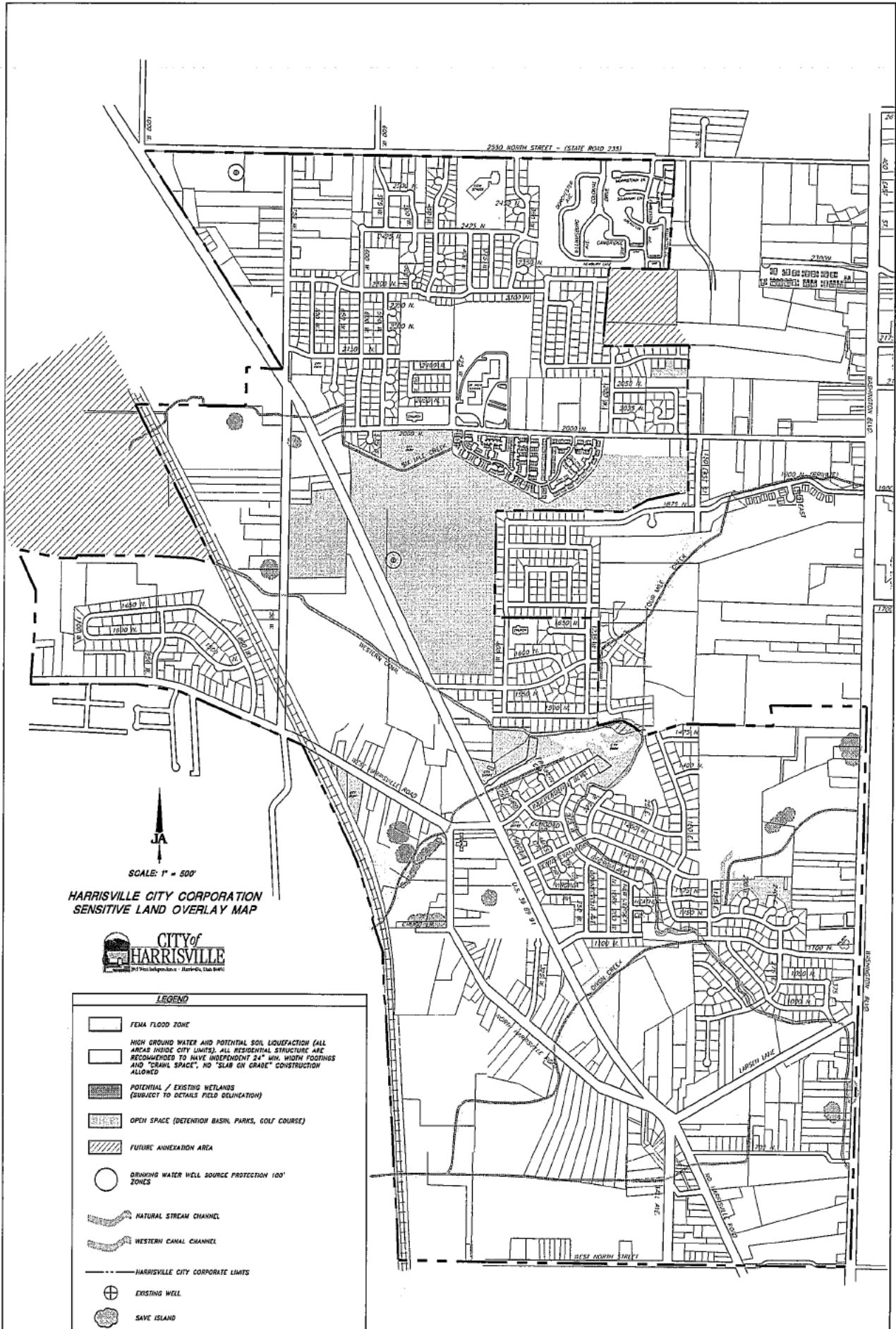
LID integrates ecological considerations into each phase of urban development, from design to construction to post-construction. Pilot programs conducted in the U.S. and around the world show that LID saves money by reducing construction costs for curbing, paving materials, drainage pipes and land clearing. Techniques that manage runoff onsite, such as swales and rain gardens, deliver tangible improvements in water quality and ground water recharge. LID practices also improve air quality, reduce the heat island effect, and enhance community appearance.

Green Design concepts used individually can yield measurable improvements in storm water runoff management. Used in combination, they can help local governments address significant sources of storm water pollution, particularly in older urban and suburban areas.

Because Green Design practices like LID blend multiple technologies, they are more versatile than the more limited drain-and-discharge methods of traditional storm water management. LID can effectively address sources of water pollution in new and existing developments, in brownfields and greenfields, in warm climates and cold, and wet and dry climates. In urban

areas, green roofs used in combination with rain gardens, permeable pavement, bio-retention cells and rain barrels produce results far greater than a single technology used alone.

Sound engineering principals form the basis of Green Design practices. Years of experience derived from storm water management, sanitary engineering, agriculture, and other disciplines, demonstrate soil's ability to effectively absorb and digest many waterborne pollutants. By capturing storm water onsite, Green Design techniques not only reduce pollutants and runoff volume, but they do so cost-effectively.














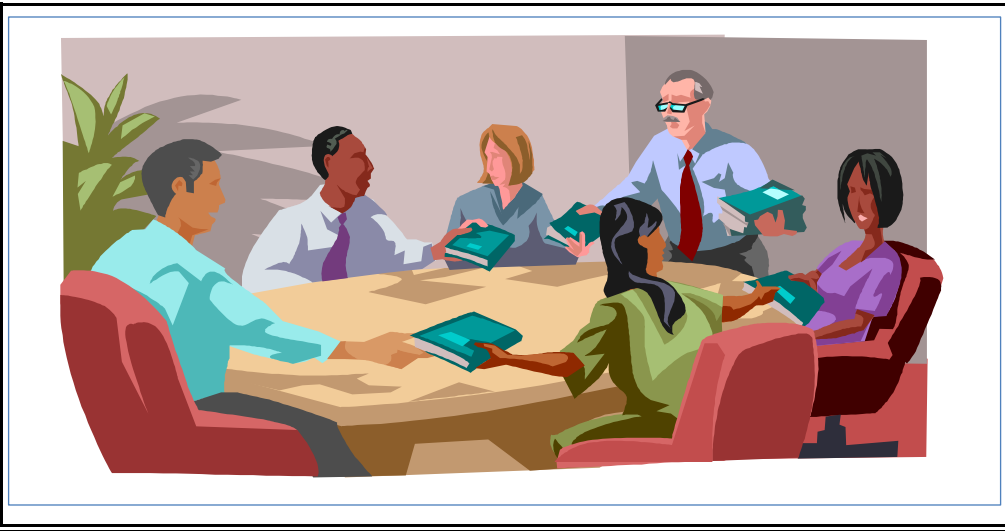
SCALE: 1" = 500'

**HARRISVILLE CITY CORPORATION
SENSITIVE LAND OVERLAY MAP**



LEGEND

-  FEMA FLOOD ZONE
-  HIGH GROUND WATER AND POTENTIAL SOIL LIQUEFACTION (ALL AREAS INSIDE CITY LIMITS). ALL RESIDENTIAL STRUCTURES ARE RECOMMENDED TO HAVE INDEPENDENT 24" MIN. WIDTH FOOTINGS AND "BRAND SPACE", NO "SLAB ON GRADE" CONSTRUCTION ALLOWED
-  POTENTIAL / EXISTING WETLANDS (SUBJECT TO DETAIL FIELD DELINEATION)
-  OPEN SPACE (DETENTION BASIN, PARKS, GOLF COURSE)
-  FUTURE ANNEXATION AREA
-  DRINKING WATER WELL SOURCE PROTECTION 100' ZONES
-  NATURAL STREAM CHANNEL
-  WESTERN CANAL CHANNEL
-  HARRISVILLE CITY CORPORATE LIMITS
-  EXISTING WELL
-  SAVE ISLAND



Program Elements

- New Development
- Residential
- Commercial Activities
- Industrial Activities
- Municipal Facilities
- Illegal Discharges



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TARGETED POLLUTANTS

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

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Regulatory
- Training
- Staffing
- Administrative

- High Medium Low

DESCRIPTION:

Employee training, like equipment maintenance, is a method by which to implement BMPs. Employee training should be used in conjunction with all other BMPs as part of the facility’s SWPPP.

The specific employee training aspects of each of the source controls are highlighted in the individual information sheets. The focus of this information sheet is more general, and includes the overall objectives and approach for assuring employee training in storm water pollution prevention. Accordingly, the organization of this information sheet differs somewhat from the other information sheets in this chapter.

OBJECTIVES:

Employee training should be based on four objectives:

- Promote a clear identification and understanding of the problem, including activities with the potential to pollute storm water;
- Identify solutions (BMPs);
- Promote employee ownership of the problems and the solutions; and
- Integrate employee feedback into training and BMP implementation.

APPROACH:

- Integrate training regarding storm water quality management with existing training programs that may be required for other regulations.
- Employee training is a vital component of many of the individual source control BMPs included in this manual.

POLLUTION PREVENTION AND GOOD HOUSEKEEPING FOR MUNICIPAL OPERATIONS

Minimum Control Measure 6

6.1 INTRODUCTION

The Pollution Prevention/Good Housekeeping for MCM 6 MS4 Operations is required to alter their own actions to help ensure a reduction in the amount and type of pollution that:

1. Collects on streets, parking lots, open spaces, and storage and vehicle maintenance areas and is discharged into local waterways; and
2. Results from actions such as environmentally damaging land development and flood management practices or poor maintenance.

While this measure is meant primarily to improve or protect receiving water quality by altering municipal or facility operations, it also can result in a cost savings for the small MS4 operator, since proper and timely maintenance of storm water systems can help avoid repair costs from damage caused by age and neglect.

The City will take the major role for responsibility for this Measure as a condition of the joint permit with Weber County.

MCM 6 applies to preventing pollution in areas other than construction and establishing good techniques for Public Works and Sector P maintenance activities.

6.2 POLLUTANTS OF CONCERN

A variety of pollutants are associated with storm water pollution due to municipal activities including: sediment, nutrients, bacteria and viruses, oxygen demanding substances, oil and grease, metals, toxic pollutants, and floatables (Table 6-1). The impacts of these pollutants on water quality along with a discussion on municipal activities which can potentially contribute to their introduction into storm water runoff is presented in the following subsections.

Sediment

Sediment is a common component of storm water, and is considered to be one of the most damaging pollutants in Utah. Sediment fills in streams, lakes, rivers, wetlands, and road ditches, and can affect aquatic life by smothering fish larvae and eggs. Suspended soil particles can cause water to look cloudy or turbid. Excessive turbidity reduces light penetration in water, impairs sight of feeding fish, clogs fish gills, and increases drinking water treatment costs. Fine sediment also acts as a vehicle to transport other pollutants including nutrients, trace metals, and hydrocarbons to nearby surface waters.

Significant sediment-borne pollutants are associated with highway runoff; originating from pavement wear, vehicles, atmospheric deposition, and road maintenance. Other sources of sediment include erosion from new development and construction sites.

Nutrients

Nutrients, especially nitrogen and phosphorus, can cause algal blooms and excessive aquatic plant growth in lakes. These conditions can impair many important uses of these waters, including recreation, fish habitat, and water supply.

Nitrogen and phosphorus associated with highway runoff come from atmospheric deposition and roadside fertilizer application. Phosphorus has also been associated with application of sand and salt on roads. Nutrients are a result of yard debris, garbage, as well as fertilizer and pesticide use.

Metals

Trace metals are a water quality concern because the toxic effects they can have on aquatic life. Metals can also be a health hazard to humans through direct ingestion of contaminated water or through eating contaminated fish. The most common trace metals found in storm water runoff in urban areas are lead, zinc, and copper. These metals originate from galvanizing, chrome plating, and other metal sources associated with automobiles. Lead, cadmium, nickel and zinc in urban runoff have also been associated with different sources including body rust, brake lining wear, steel highway structures, and tire wear from automobiles.

Oxygen-demanding substances

Oxygen-demanding substances tend to deplete the dissolved oxygen levels in streams and lakes. The depleted oxygen supply can result in the reduction of aquatic life. Oxygen demanding substances are found in yard waste (such as leaves and lawn clippings), animal wastes, street litter, and organic matter.

Bacteria and Viruses

Bacteria and viruses are the most common microorganisms found in surface water runoff. Bacteria and viruses often carry diseases which can be transferred to animal life and to humans. The main sources of these contaminants are animal excrement and sanitary sewer overflows.

Oil, Grease and Hydrocarbons

Oil, grease and hydrocarbons contain a wide array of compounds, some of which are toxic to aquatic organisms at low concentrations. The main sources of oil and grease are leakage from engines, restaurant grease traps, and waste oil disposal. Hydrocarbons typically come from spills, leaks, lubricants and asphalt surface leachate. Hydrocarbon levels are highest from parking lots, roads and service stations.

Floatables

Floatables are pollutants that may be contaminated with heavy metals, pesticides, and bacteria. Typically resulting from street refuse or industrial yard waste, floatables also create an aesthetic "eye sore" in waterways or detention basins.

Table 6-1. Potential pollutants of concern associated with municipal activities.

Activity	Pollutant	Potential Source
Construction	Sediment	Poor erosion control practices on hillsides, undeveloped property, right-of-way for construction sites
Residential, Parks, and Golf Courses	Nutrients	Yard debris, garbage, fertilizer and pesticide use, rat poison, pyrotechnics
Transportation and Commercial	Metals	Paint, plastics, pottery pigments and glazes, automobile tires, common galvanized coatings, pesticide use, root killer application on sewer lines, old lead paint and glazes, wood preservatives, batteries
Residential	Oxygen Demanding Substances	Yard debris, animal wastes, organic chemical use
Parks and Residential	Bacteria and Viruses	Human and animal (pets and aquatic life) waste, sanitary sewer infiltration into storm drain system, decomposing yard waste
Commercial and Residential	Oil, Grease, and Hydrocarbons	Asphalt surface leaching, spills, leaks, construction activities

Residential and Parks	Floatables	Street refuse, industrial yard waste
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6.3 MEASURABLE GOALS

The following table summarizes the BMPs, Measurable Goals, and Implementation Schedule of the City for each BMP. The Fiscal Ability as referenced on page 2 of the General Information Section of this document projects the anticipated cost for the BMP as well as the source of funding. The City has a Storm Water Utility Fund (SWUF) which should cover the costs of this plan.

MCM 6 - POLLUTION PREVENTION / GOOD HOUSE KEEPING				
New Fact Sheet	Old Fact Sheet	BMP	Measurable Goal	Implementation Schedule
		Maintain SWPPP for all high-priority sites	Identify high-priority sites and implement SWPPP	<i>September 2016</i>
		Inspection of high-priority sites	Inspect high-priority sites following schedule in permit	<i>Beginning September 2016</i>
<i>Same</i>	ET	Employee Training	Provide a minimum of 2 days of training for storm water all other applicable staff	<i>Ongoing</i>
		Storm Water Master Plan	Update the Master plan to include BMP's for improving existing facilities as needed	<i>Goal Completed</i>
<i>A-1, 2, 3, 6, 7, BGM, & MU</i>	BGM	Building and Grounds Maintenance	Keep a log of usage city wide to ensure against waste. SOP's for Public Works MCM 6	<i>Ongoing</i>
<i>A-1, 2, 3, 6, 7, & BRC</i>	BRC	Building Repair, and Construction	See training above	<i>Ongoing</i>
<i>Same</i>	CBC & SDSC	Catch Basin Cleaning Storm Drain System Cleaning	Clean catch basins annually	<i>Ongoing</i>
<i>A-4</i>	CO	Covering	Construct a storage facility for Salt Storage – SOP for Public Works MCM 6	<i>Goal Completed</i>

MCM 6 - POLLUTION PREVENTION / GOOD HOUSE KEEPING				
A-12	SWM	Solid Waste Management – Litter Control	Continue semiannual city cleanup program – SOP for Public Works MCM 6	<i>Ongoing</i>
A-4	MU	Material Use	See training above	<i>Ongoing</i>
Same	RBM	Roadway/Bridge Maintenance	Fill potholes annually –log tonnage of materials used. Refer to Public Works Standards for additional procedures on roadway maintenance	<i>Ongoing</i>
Same	SC/PL/O & M	Street Cleaning/Parking Lot Maintenance	Sweep streets semiannually-log miles and loads – SOP for Public Works MCM 6	<i>On going</i>
A-3	SCU/SP	Spill Clean-Up & Spill Prevention	Program managed by local fire department-refer to Sector P	<i>Goal Completed</i>
A-8	VEC	Vehicle and Equipment Cleaning	Maintain a log of washings. SOP for Public Works MCM 6	<i>Ongoing</i>
A-3	WHD	Waste Handling and Disposal	See MCM 1 for Weber County Transfer Station	<i>Goal Completed</i>
A-9	O & M	Standard Operating Procedures (SOP)	Create SOP's for Public Works BMP's as needed and as per MCM 6 of the General Permit	<i>Goal Completed</i>
A-5		Used Oil Recycling SOP Added	Save all used oil and dispose of through used oil contractor.	<i>Ongoing</i>
A-10(DB)		Detention Basins	Monitor detention basins for Maintenance MCM 5 and I & M	<i>Annually</i>
A-11		Storm Water Monitoring	Conduct Dry Weather Screening	<i>1/5 per year</i>
HWM		Reduce discharge of pollutants to Storm Water from Hazardous Waste.	Provide training of employees and subcontractors	<i>Ongoing</i>
Sector P		Develop a Sector P Industrial SWPP creek maintenance	Continue updating and implementing BMP's as needed	<i>On going</i>

6.4 BEST MANAGEMENT PRACTICES (BMP)

The following pages consist of the fact sheets for the above mentioned goals and BMP's. Each page represents a separate BMP with details given. The intent of this section is to provide a variety of practices that could be related to Public Education and Outreach. The format is similar to other communities on the Wasatch Front, originally obtained from Salt Lake County's Storm Water Management Plan.

6.5 REFERENCES

Berman, L., C. Hartline, N. Ryan, and J. Thorne. 1991. "Urban Runoff: Water Quality Solutions." American Public Works Association, Special Report #61.

City of Boise Public Works Department. January 1997. "Boise Storm Water Best Management Practices (BMP) Guidebook."

Debo, T.N. and A. J. Reese. 1995. Municipal Storm Water Management. Lewis Publishers. Boca Raton, FL.

Salt Lake County Engineering Division. September 1999. "Guidance Document for Stormwater Management."

State of California. March 1993. "California Storm Water Best Management Practice Handbooks."

State of Minnesota. October 1989. "Protecting Water Quality in Urban Areas - Best Management Practices for Minnesota."

U.S. Environmental Protection Agency. September 1992. "Storm Water Management for Industrial Activities - Developing Pollution Prevention Plans and Best Management Practices," EPA-832-R-92-006.



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OBJECTIVES:

Employee training should be based on four objectives:

- Promote a clear identification and understanding of the problem, including activities with the potential to pollute storm water;
- Identify solutions (BMPs);
- Promote employee ownership of the problems and the solutions; and
- Integrate employee feedback into training and BMP implementation.

APPROACH:

- Integrate training regarding storm water quality management with existing training programs that may be required for other regulations.
- Employee training is a vital component of many of the individual source control BMPs included in this manual.

PROGRAM ELEMENTS

- New Development
- Residential
- Commercial Activities
- Industrial Activities
- Municipal Facilities
- Illegal Discharges



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TARGETED POLLUTANTS

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

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Regulatory
- Training
- Staffing
- Administrative

- High Medium Low



DESCRIPTION:

Prevent or reduce the discharge of pollutants to storm water from buildings and grounds maintenance by washing and cleaning up with as little water as possible, preventing and cleaning up spills immediately, and maintaining the storm water collection system.

APPROACH:

- Preserve existing native vegetation to reduce water, fertilizer, and pesticide needs.
- Carefully use pesticides and fertilizers in landscaping.
- Take care in over-watering landscape sites to reduce the risk of discharge of water contaminated with nutrients and pesticides.
- Integrate pest management where appropriate.
- Sweep paved surfaces.
- Clean the storm drainage system at appropriated intervals, includes marking storm drain inlets to minimize the dumping of inadvertent liquids.
- Properly dispose wash water, sweepings, and sediments.
- Take care of landscaped areas around the facility.
- Clean parking lots and areas other than industrial activity.
- Clean all catch basins in parking lots every 6 to 12 months or whenever the sump is full.
- Sweeping, either vacuum or mechanical, is the most appropriate BMP for cleaning parking lots and basins.

LIMITATIONS:

Alternative pest/weed controls may not be available, suitable or effective in every case.

MAINTENANCE:

The BMPs themselves relate to maintenance and do not require maintenance as they do not involve structures.

Program Elements

- New Development
- Residential
- Commercial Activities
- Industrial Activities
- Municipal Facilities
- Illegal Discharges



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TARGETED POLLUTANTS

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

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Regulatory
- Training
- Staffing
- Administrative

- High
- Medium
- Low



DESCRIPTION:

Prevent or reduce the discharge of pollutants to storm water from material use by using alternative products, minimizing hazardous material use on-site, and training employees and subcontractors.

APPLICATION:

The following materials are commonly used on construction sites:

- Pesticides and herbicides, fertilizers, detergents, plaster and other products, petroleum products such as fuel, oil, and grease.
- Other hazardous chemicals such as acids, lime, glues, paints, solvents, and curing compounds.

INSTALLATION/APPLICATION CRITERIA:

- Use less hazardous, alternative materials as much as possible.
- Minimize use of hazardous materials on-site.
- Use only materials where and when needed to complete the construction activity.
- Follow manufacturer’s instructions regarding uses, protective equipment, ventilation, flammability, and mixing of chemicals.
- Personnel who use pesticides should be trained in their use.
- Do not over apply fertilizers, herbicides, and pesticides. Prepare only the amount needed.
- Unless on steep slopes, till fertilizers in to the soil rather than hydroseeding.
- Do not apply these chemicals just before it rains.

LIMITATIONS:

Alternative materials may not be available, suitable, or effective in every case.

MAINTENANCE:

Maintenance of this best management practice is minimal.

Objectives

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion



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TARGETED POLLUTANTS

- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

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

- High Medium Low

SOP-PARKS – Chemical Application Pesticides, Herbicides, Fertilizers

1. Preparation:

- a. Make sure all applicable state Chemical Handling Certification is complete and up-to-date before handling any chemicals. (To be done by 2011)
- b. Calibrate fertilizer and pesticide application equipment to avoid excessive application.
- c. Use pesticides only if there is an actual pest problem and periodically test soils for determining proper fertilizer use.
- d. Time and apply the application of fertilizers, herbicides or pesticides to coincide with the manufacturer's recommendation for best results ("Read the Label").
- e. Know the weather conditions. Do not use pesticides if rain is expected. Apply pesticides only when wind speeds are low (less than 5 mph).

2. Process:

- a. Always follow the manufacturer's recommendations for mixing, application and disposal. ("Read the Label").
- b. Do not mix or prepare pesticides for application near storm drains, preferably mix inside a protected area with impervious secondary containment (preferably indoors) so that spills or leaks will not contact soils.
- c. Employ techniques to minimize off-target application (e.g. spray drift, over broadcasting.) of pesticides and fertilizers.

3. Clean-up

- a. Sweep pavements or sidewalks where fertilizers or other solid chemicals have fallen, back onto grassy areas before applying irrigation water.
- b. Triple rinse containers, and use rinse water as product. Dispose of unused pesticide as hazardous waste.
- c. Always follow all federal and state regulations governing use, storage and disposal of fertilizers, herbicides or pesticides and their containers. ("Read the Label")

4. Documentation

- a. Keep copies of MSD sheets for all pesticides, fertilizers and other hazardous products used.
- b. Record fertilizing and pesticide application activities, including date, individual who did the application, amount of product used and approximate area covered.

SOP-PARKS – Cleaning Equipment

1. Preparation:
 - a. Review process with all Parks employees

2. Process:
 - a. Wipe off dirt, dust, and fluids with disposable towel
 - b. Wash equipment in approved wash station

3. Clean-up:
 - a. Dispose of towels in proper trash receptacle
 - b. Sweep floor and dispose of debris.

SOP-PARKS – Mowing and Trimming

1. Preparation:
 - a. Process overview with all employees
 - b. Check the oil and fuel levels of the mowers and other equipment; fill if needed.

2. Process:
 - a. Install temporary catch basin protection installed on affected basins
 - b. Put on eye and hearing protection
 - c. Mow and trim the lawn
 - d. Sweep or blow clippings to grass areas
 - e. Remove inlet protection

3. Clean-up:
 - a. Mowers are to be scraped and brushed at shop – dry spoils are dry swept and disposed of
 - b. Wash equipment in approved wash station

SOP-PARKS – Open Space Management

1. Preparation:

- a. Provide a regular observation and maintenance of parks and other public open spaces.
- b. Identify public open spaces that are used for storm water detention and verify that detention areas are included on the storm drain system mapping, inspection schedules, and maintenance schedules.

2. Process:

- a. Ensure that any storm drain or drainage system components on the property are properly maintained.
- b. Avoid placing bark mulch (or other floatable landscaping materials) in storm water detention areas or other areas where storm water runoff can carry the mulch into the storm drainage system.
- c. Follow all SOPs related to irrigation, mowing, landscaping, and pet waste management.

3. Clean Up:

- a. Keep all outdoor work areas neat and tidy. Clean by sweeping instead of washing whenever possible. If areas must be washed, ensure that wash water will enter a landscaped area rather than the storm drain. Do not use soap for outdoor washing.
- b. Pick up trash on a regular basis.

4. Documentation:

- a. Document any observed deficiencies for correction or repair.

SOP-PARKS – Pet Waste

1. Preparation:

- a. Adopt and enforce ordinances that require pet owners to clean up pet wastes and use leashes in public areas. If public off-leash areas are designated, make sure they are clearly defined. Avoid designating public off-leash areas near streams and water bodies.
- b. Whenever practical and cost effective, install dispensers for pet waste bags and provide disposal containers at locations such as trail heads or parks where pet waste has been a problem. Provide signs with instructions for proper cleanup and disposal.

2. Process:

- a. Check parks and trails for pet waste as needed.
- b. Check public open space for pet waste prior to mowing and watering.
- c. Provide ordinance enforcement as needed.

3. Clean up:

- a. Remove all pet waste, provide temporary storage in a covered waste container, and dispose of properly. Preferred method of disposal is at a solid waste disposal facility.

4. Documentation:

- a. Document problem areas for possible increased enforcement and/or public education signs.

SOP-PARKS – Planting Vegetation (Starters)

1. Preparation:

- a. Call the Blue Stakes Center of Utah at least 2 working days before any digging will be done, to reveal the location of any underground utilities.
- b. Dial 811 or 1-800-662-4111
- c. Decide where any spoils will be taken.

2. Process:

- a. Dig holes; place spoils near the hole where they may easily be placed back around roots.
- b. Bring each plant near the edge of the hole dug for it.
- c. Check the depth of the hole, and adjust the depth if necessary. The depth of the hole for a tree should be as deep as the root ball, so that the top of the root ball is level with the top of the hole.
- d. Carefully remove pot or burlap.
- e. Place the plant in the hole.
- f. Backfill the hole with existing spoils, compost, and a litter fertilizer if desired. Do not use excessive amendments.
- g. Water the plant.
- h. Stake the plant, if necessary, to stabilize it.

3. Clean-up:

- a. Move any extra spoils into truck or trailer. Place the spoils on a tarp if there is a likelihood that some of the dirt would be lost through openings in the bed.
- b. Sweep dirt from surrounding pavement(s) into the planter area
- c. Transport spoils to their designated fill or disposal area.

SOP-PARKS – Planting Vegetation (Seeds)

1. Preparation:

- a. Call the Blue Stakes Center of Utah at least 2 working days before any digging will be done, to reveal the location of any underground utilities.
- b. Dial 811 or 1-800-662-4111
- c. Decide on the application rate, method, water source, and ensure adequate materials are on hand.
- d. Grade and prepare the soil to receive the seed. Place any extra soil in a convenient location to collect.

2. Process:

- a. Place the seed and any cover using the pre-determined application method (and rate).
- b. Lightly moisten the seed.

3. Clean-up:

- a. Move any extra spoils into truck or trailer. Place the spoils on a tarp if there is likelihood that some of the dirt would be lost through openings in the bed.
- b. Sweep dirt, seed, and any cover material from surrounding pavement(s) into the planter area.
- c. Transport spoils to their designated fill or disposal area.

SOP-PARKS – Transporting Equipment

1. Preparation:

- a. Determine equipment needed for transport and method (trailer, truck bed) needed to transport equipment.
- b. Conduct pre-trip inspection of equipment

2. Process:

- a. Load and secure equipment on trailer or truck
- b. Load and secure fuel containers for equipment usage

3. Clean-up:

- a. Off load equipment
- b. Store equipment and trailer in proper location on hard suffice.
- c. Conduct post-trip inspection of equipment
- d. Wash equipment, if needed, according to the SOP for Cleaning Equipment SOP

4. Documentation:

- a. N/A

BMP: Building Repair and Construction

BRC



OBJECTIVES

- Cover
- Contain
- Educate
- Reduce/Minimize
- Commercial Activities
- Recycle

DESCRIPTION:

Modifications are common particularly at large industrial sites. The activity may vary from minor and normal building repair to major remodeling, or the construction of new facilities. These activities can generate pollutants including solvents, paints, paint and varnish removers, finishing residues, spent thinners, soap cleaners, kerosene, asphalt and concrete materials, adhesive residues, and old asbestos installation. Protocols in this fact sheet are intended to prevent or reduce the discharge of pollutants to storm water from building repair, remodeling, and construction by using soil erosion controls, enclosing or covering building material storage areas, using good housekeeping practices, using safer alternative products, and training employees.

APPROACH:

Pollution Prevention

- Recycle residual paints, solvents, lumber, and other materials to the maximum extent practical.
- Buy recycled products to the maximum extent practical.
- Inform on-site contractors of company policy on these matters and include appropriate provisions in their contract to ensure certain proper housekeeping and disposal practices are implemented.
- Make sure that nearby storm drains are well marked to minimize the chance of inadvertent disposal of residual paints and other liquids.

Suggested Protocols

Repair & Remodeling

- Follow BMPs identified in Construction BMP Handbook.
- Maintain good housekeeping practices while work is underway.
- Keep the work site clean and orderly. Remove debris in a timely fashion. Sweep the area.
- Cover materials of particular concern that must be left outside, particularly during the rainy season.
- Do not dump waste liquids down the storm drain.
- Dispose of wash water, sweepings, and sediments properly.
- Store materials properly that are normally used in repair and remodeling such as paints and solvents.
- Sweep out the gutter or wash the gutter and trap the particles at the outlet of the downspout if when repairing roofs, small particles have accumulated in the gutter. A sock or geofabric placed over the outlet may effectively trap the materials. If the downspout is tight lined, place a temporary plug at the first convenient point in the storm drain and pump out the water with a vactor truck, and clean the catch basin sump where you placed the plug.
- Properly store and dispose waste materials generated from construction activities. See Construction BMP Handbook.
- Clean the storm drain system in the immediate vicinity of the



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TARGETED POLLUTANTS

- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Subst.
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- | |
|--|
| <ul style="list-style-type: none"> ■ High Impact <input checked="" type="checkbox"/> Medium Impact <input type="checkbox"/> Low or Unknown Impact |
|--|

construction activity after it is completed.

Painting

- Enclose painting operations consistent with local air quality regulations and OSHA.
- Local air pollution regulations may, in many areas of the state, specify painting procedures which if properly carried out are usually sufficient to protect water quality.
- Develop paint handling procedures for proper use, storage, and disposal of paints.
- Transport paint and materials to and from job sites in containers with secure lids and tied down to the transport vehicle.
- Test and inspect spray equipment prior to starting to paint. Tighten all hoses and connections and do not overfill paint containers.
- Mix paint indoors before using so that any spill will not be exposed to rain. Do so even during dry weather because cleanup of a spill will never be 100% effective.
- Transfer and load paint and hot thermoplastic away from storm drain inlets.
- Do not transfer or load paint near storm drain inlets.
- Plug nearby storm drain inlets prior to starting painting and remove plugs when job is complete when there is significant risk of a spill reaching storm drains.
- Cover nearby storm drain inlets prior to starting work if sand blasting is used to remove paint.
- Use a ground cloth to collect the chips if painting requires scraping or sand blasting of the existing surface. Dispose the residue properly.
- Cover or enclose painting operations properly to avoid drift.
- Clean the application equipment in a sink that is connected to the sanitary sewer if using water based paints.
- Capture all cleanup-water and dispose of properly.
- Dispose of paints containing lead or tributyl tin and considered a hazardous waste properly.
- Store leftover paints if they are to be kept for the next job properly, or dispose properly.
- Recycle paint when possible. Dispose of paint at an appropriate household hazardous waste facility.

Training

Proper education of off-site contractors is often overlooked. The conscientious efforts of well trained employees can be lost by unknowing off-site contractors, so make sure they are well informed about what they are expected to do.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Clean up spills immediately.
- Excavate and remove the contaminated (stained) soil if a spill occurs on dirt.

Limitations

- This BMP is for minor construction only. The State's General Construction Activity Storm Water Permit has more requirements for larger projects. The companion "Construction Best Management Practice Handbook" contains specific guidance and best management practices for larger-scale projects.
- Hazardous waste that cannot be reused or recycled must be disposed of by a licensed hazardous waste hauler.

OBJECTIVES

- Cover
- Contain
- Educate
- Reduce/Minimize
- Commercial Activities
- Recycle



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- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- High Impact
- Medium Impact
- Low or Unknown Impact

BMP: Building Repair and Construction – Continued

REQUIREMENTS:

Costs

- These BMPs are generally low to modest in cost.

MAINTENANCE:

- N/A

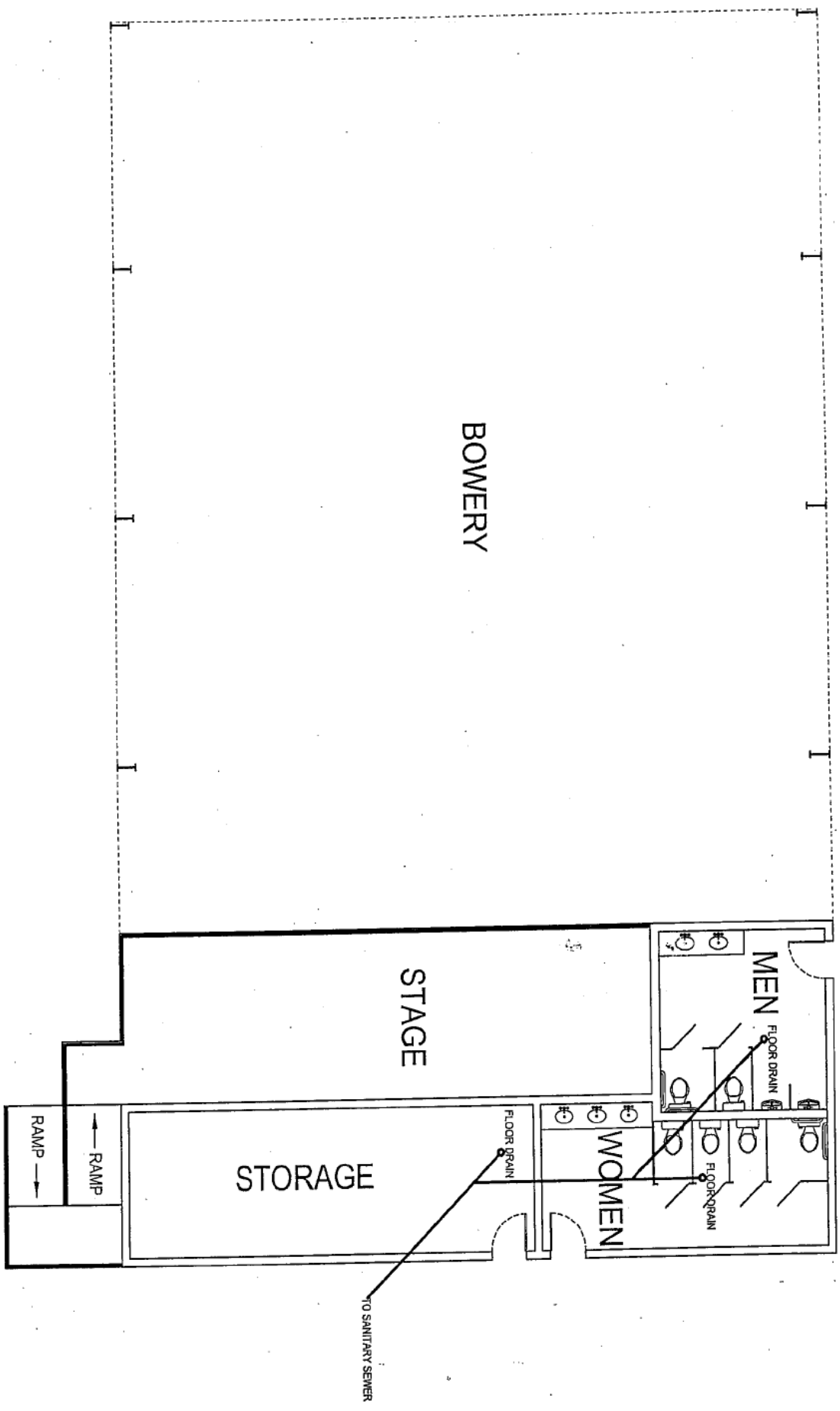
SUPPLEMENTAL INFORMATION:

Further Detail of the BMP

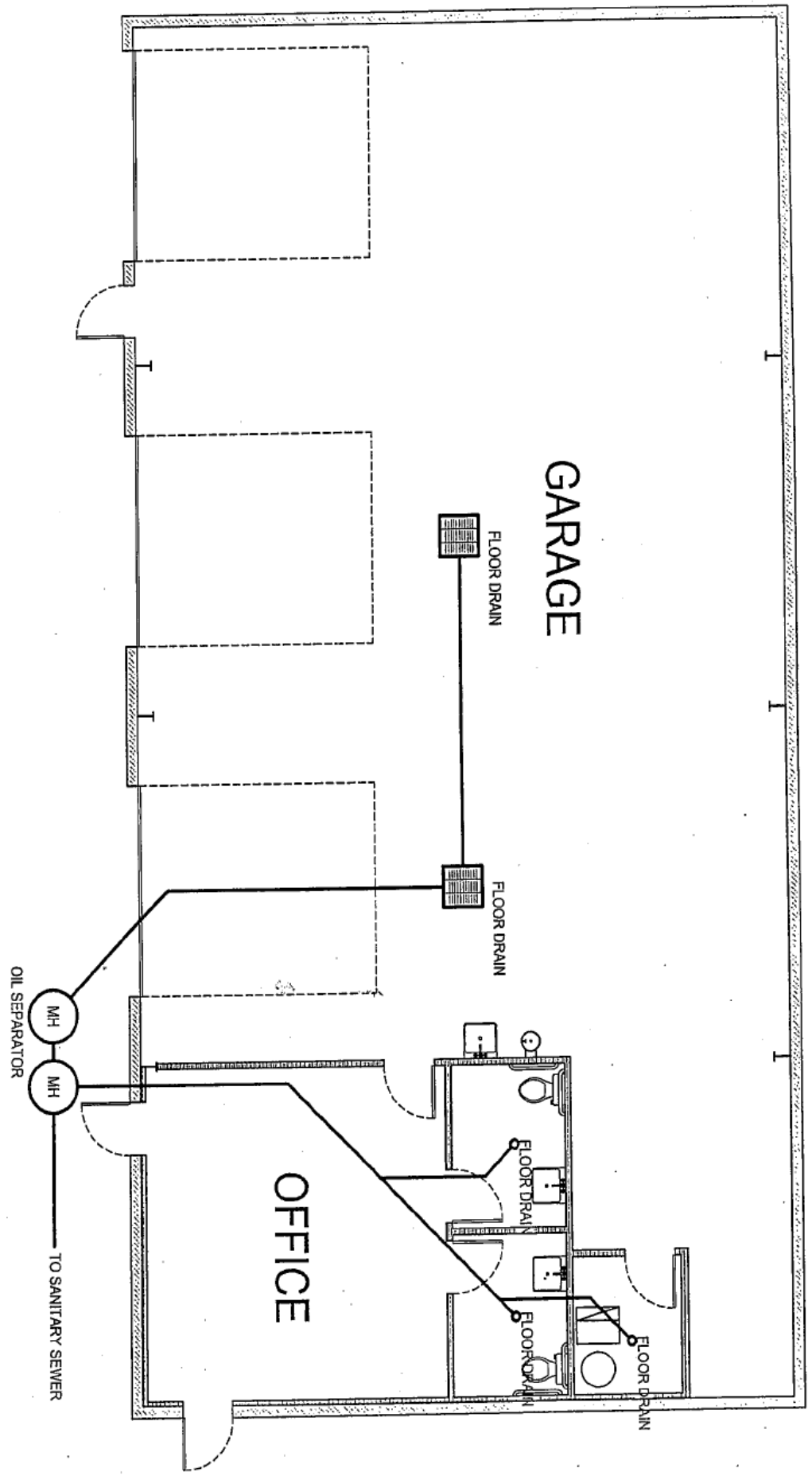
Soil/Erosion Control

- If the work involves exposing large areas of soil, employ the appropriate soil erosion and control techniques. See the Construction Best Management Practice Handbook. If old buildings are being torn down and not replaced in the near future, stabilize the site using measures described in SC-40 Contaminated or Erodible Areas.
- If a building is to be placed over an open area with a storm drainage system, make sure the storm inlets within the building are covered or removed, or the storm line is connected to the sanitary sewer. If because of the remodeling a new drainage system is to be installed or the existing system is to be modified, consider installing catch basins as they serve as effective “in-line” treatment devices. See Treatment Control Fact Sheet TC-20 Wet Pond/Basin in Section 5 of the New Development and Redevelopment Handbook regarding design criteria. Include in the catch basin a “turn-down” elbow or similar device to trap floatables.

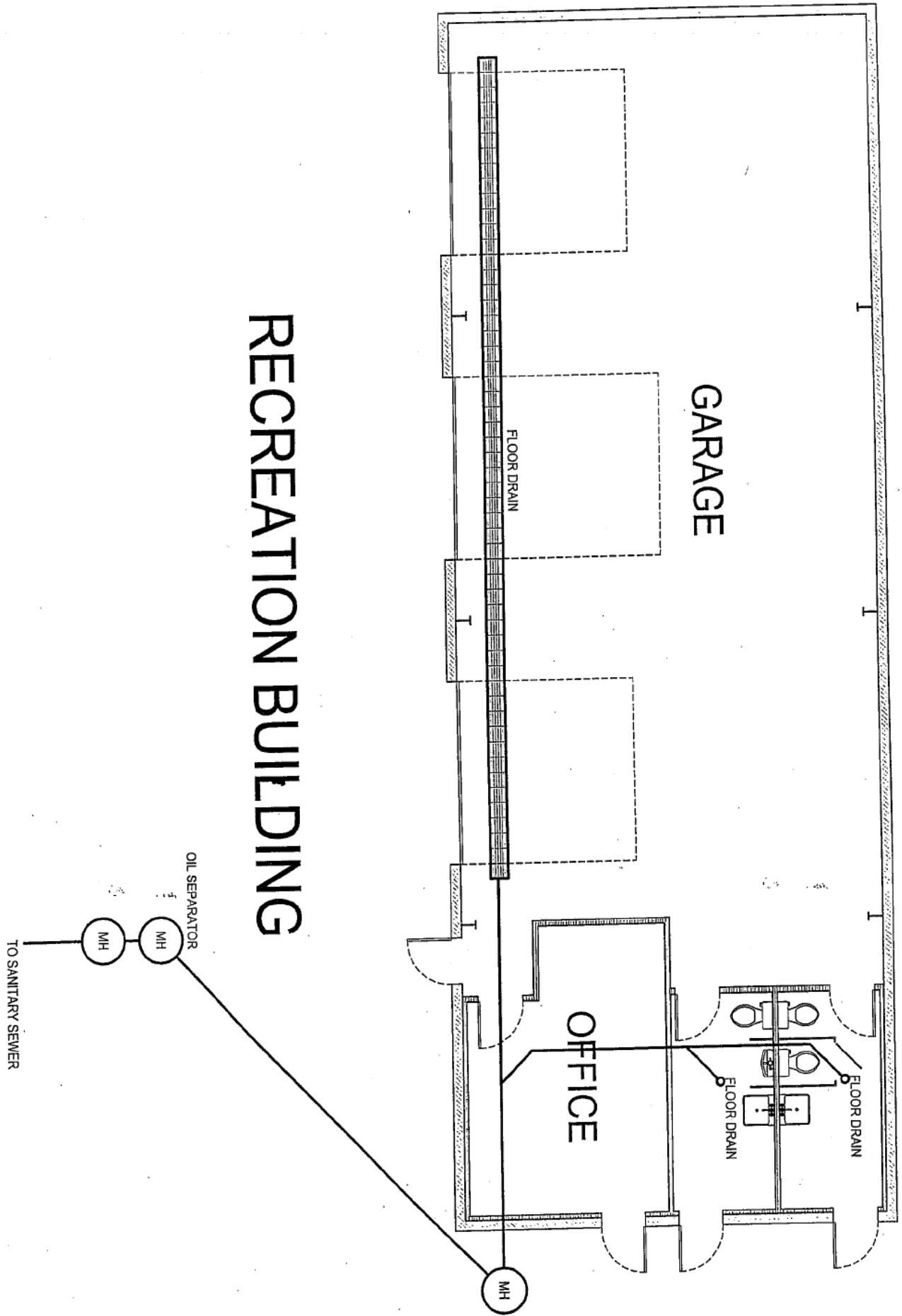
HARRISVILLE PARK BOWERY



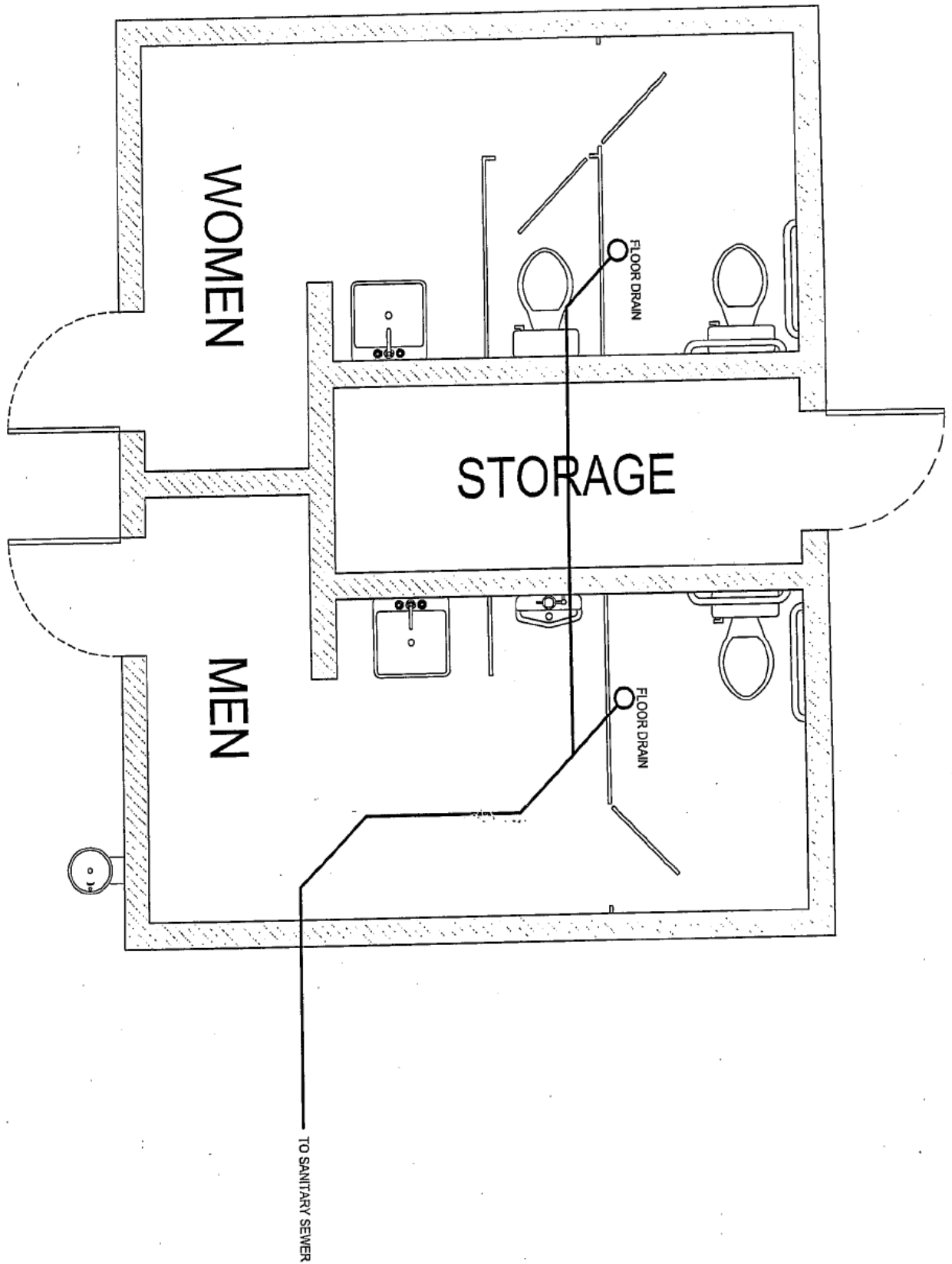
PUBLIC WORKS BUILDING



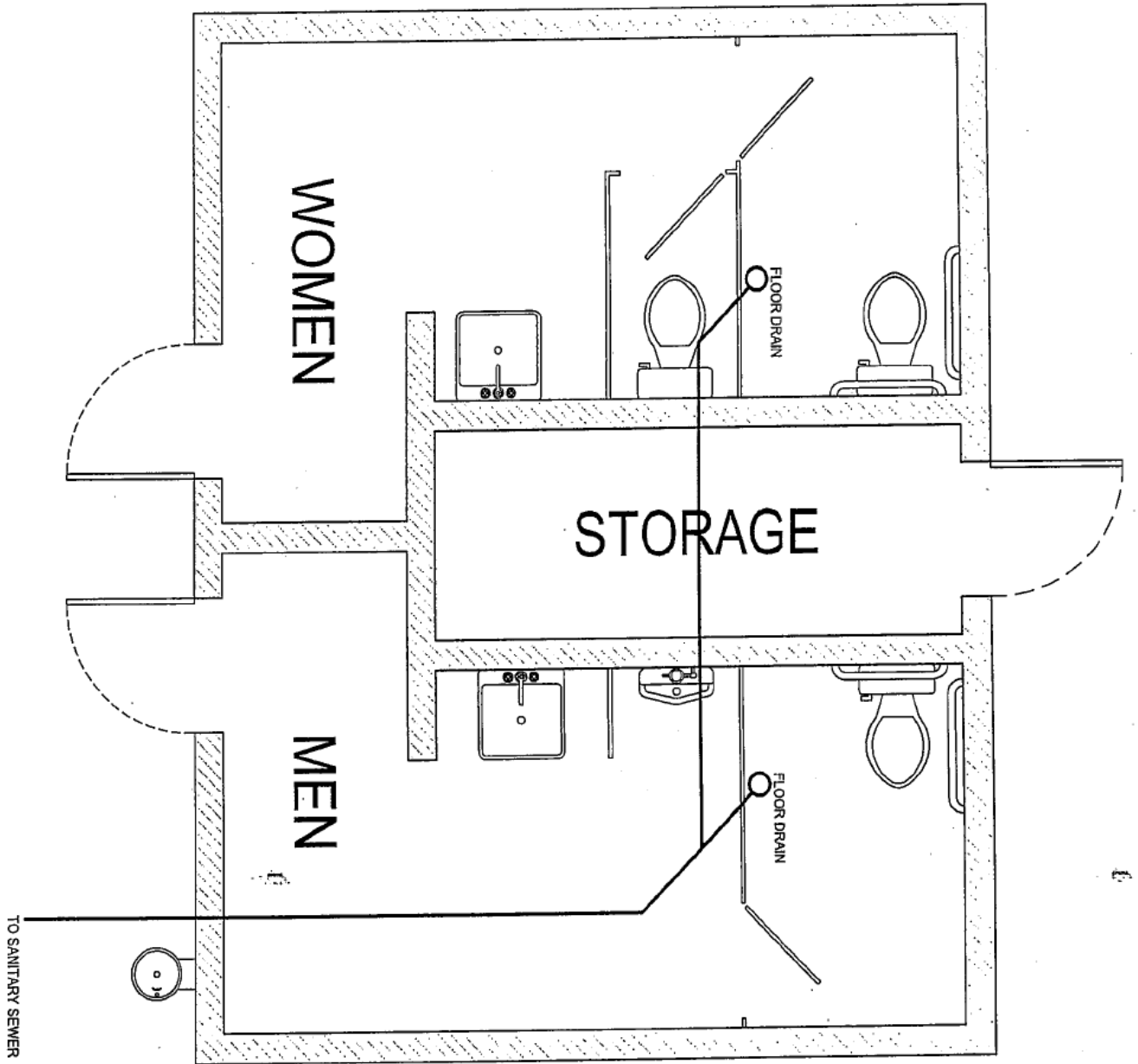
RECREATION BUILDING

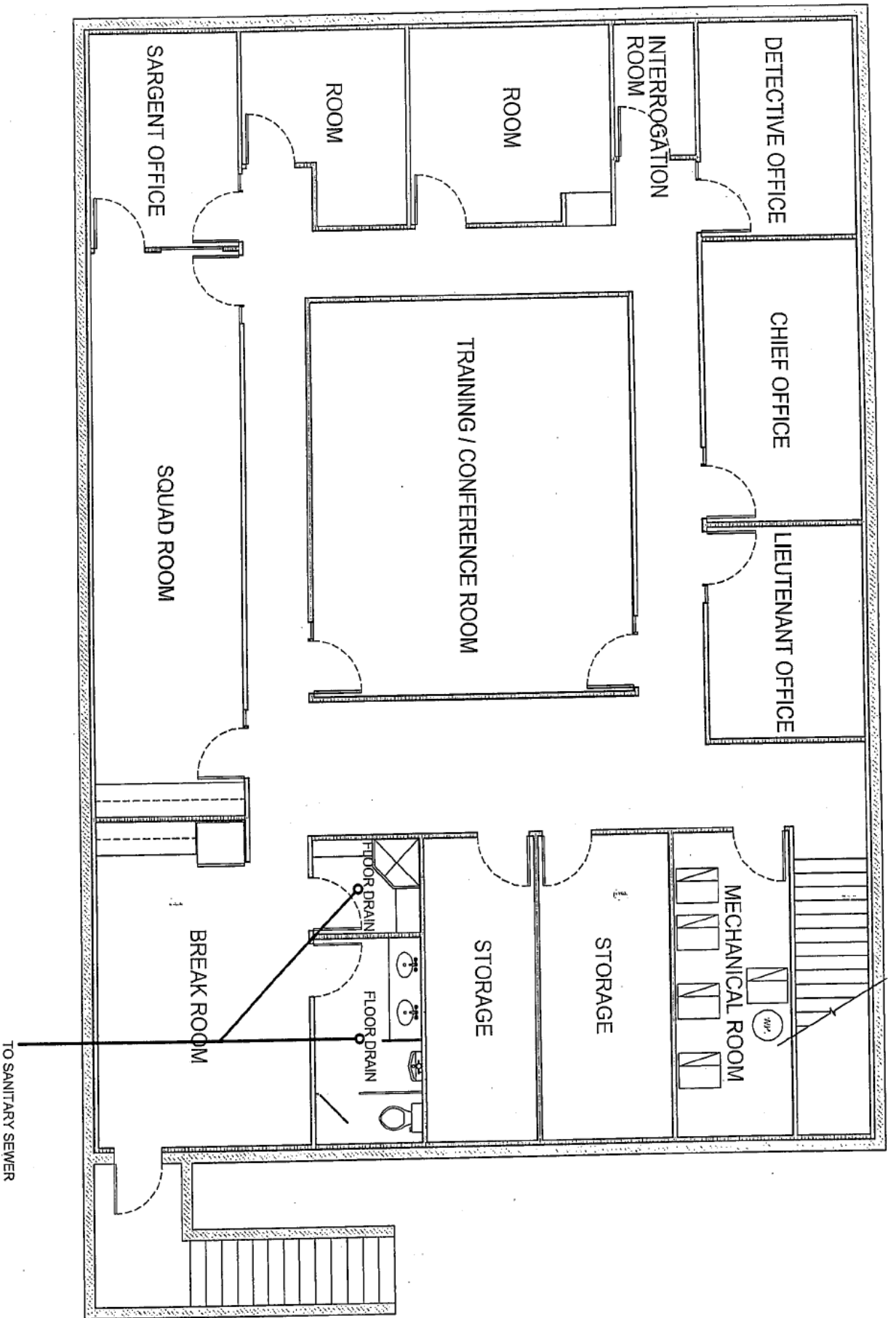


INDEPENDENCE PARK RESTROOMS



MILLENNIUM PARK RESTROOMS





POLICE BUILDING

BMP: Drainage System Maintenance

CBC-SDSC



OBJECTIVES

- Cover
- Contain
- Educate
- Reduce/Minimize

DESCRIPTION:

As a consequence of its function, the storm water conveyance system collects and transports urban runoff and storm water that may contain certain pollutants. The protocols in this fact sheet are intended to reduce pollutants reaching receiving waters through proper conveyance system operation and maintenance.

APPROACH:

Pollution Prevention

- Maintain catch basins, storm water inlets, and other storm water conveyance structures on a regular basis to remove pollutants, reduce high pollutant concentrations during the first flush of storms, prevent clogging of the downstream conveyance system, restore catch basins' sediment trapping capacity, and ensure the system functions properly hydraulically to avoid flooding.

Suggested Protocols

Catch Basins/Inlet Structures

Staff should regularly inspect facilities to ensure compliance with the following:

- Immediate repair of any deterioration threatening structural integrity.
- Cleaning before the sump is 40% full. Catch basins should be cleaned as frequently as needed to meet this standard.
- Stenciling of catch basins and inlets (see SC34 Waste Handling and Disposal).
- Clean catch basins, storm drain inlets, and other conveyance structures before the wet season to remove sediments and debris accumulated during the summer.
- Conduct inspections more frequently during the wet season for problem areas where sediment or trash accumulates more often. Clean and repair as needed.
- Keep accurate logs of the number of catch basins cleaned.
- Store wastes collected from cleaning activities of the drainage system in appropriate containers or temporary storage sites in a manner that prevents discharge to the storm drain.
- Dewater the wastes if necessary with outflow into the sanitary sewer if permitted. Water should be treated with an appropriate filtering device prior to discharge to the sanitary sewer. If discharge to the sanitary sewer is not allowed, water should be pumped or vacuumed to a tank and properly disposed. Do not dewater near a storm drain or stream.

Storm Drain Conveyance System

- Locate reaches of storm drain with deposit problems and develop a flushing schedule that keeps the pipe clear of excessive buildup.



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TARGETED POLLUTANTS

- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Subst.
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- High Impact
- Medium Impact
- Low or Unknown Impact

- Collect and pump flushed effluent to the sanitary sewer for treatment whenever possible.

Open Channel

- Modify storm channel characteristics to improve channel hydraulics, increase pollutant removals, and enhance channel/creek aesthetic and habitat value.
- Conduct channel modification/improvement in accordance with existing laws. The developer-applicant should also contact local governments (city, county, special districts), other state agencies, and Federal Corps of Engineers and USFWS.

Illicit Connections and Discharges

- Look for evidence of illegal discharges or illicit connections during routine maintenance of conveyance system and drainage structures:
 - Is there evidence of spills such as paints, discoloring, etc?
 - Are there any odors associated with the drainage system?
 - Record locations of apparent illegal discharges/illicit connections.
 - Track flows back to potential dischargers and conduct aboveground inspections. This can be done through visual inspection of upgradient manholes or alternate techniques including zinc chloride smoke testing, fluorometric dye testing, physical inspection testing, or television camera inspection.
 - Eliminate the discharge once the origin of flow is established.
- Stencil or demarcate storm drains, where applicable, to prevent illegal disposal of pollutants. Storm drain inlets should have messages such as "Dump No Waste Drains to Stream" stenciled next to them to warn against ignorant or intentional dumping of pollutants into the storm drainage system.

Illegal Dumping

- Inspect and clean up hot spots and other storm drainage areas regularly where illegal dumping and disposal occurs.
- Establish a system for tracking incidents. The system should be designed to identify the following:
 - Illegal dumping hot spots
 - Types and quantities (in some cases) of wastes
 - Patterns in time of occurrence (time of day/night, month, or year)
 - Mode of dumping (abandoned containers, "midnight dumping" from moving vehicles, direct dumping of materials, accidents/spills)
 - Responsible parties
- Post "No Dumping" signs in problem areas with a phone number for reporting dumping and disposal. Signs should also indicate fines and penalties for illegal dumping.

Training

- Train crews in proper maintenance activities, including record keeping and disposal.
- Allow only properly trained individuals to handle hazardous materials/wastes.
- Have staff involved in detection and removal of illicit connections trained in the following:
 - OSHA-required Health and Safety Training (29 CFR 1910.120) plus annual refresher training (as needed).
 - OSHA Confined Space Entry training (29 CFR 1910.146).
 - Procedural training (field screening, sampling, smoke/dye testing, TV inspection).

Spill Response and Prevention

- Investigate all reports of spills, leaks, and/or illegal dumping promptly.
- Clean up all spills and leaks using "dry" methods (with absorbent materials and/or rags) or dig up, remove, and properly dispose of contaminated soil.

CBC-SDSC Contin.

OBJECTIVES

- Cover
- Contain
- Educate
- Reduce/Minimize



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Other Considerations (Limitations and Regulations)

- Clean-up activities may create a slight disturbance for local aquatic species. Access to items and material on private property may be limited. Trade-offs may exist between channel hydraulics and water quality/riparian habitat. If storm channels or basins are recognized as wetlands, many activities, including maintenance, may be subject to regulation and permitting.
- Storm drain flushing is most effective in small diameter pipes (36-inch diameter pipe or less, depending on water supply and sediment collection capacity). Other considerations associated with storm drain flushing may include the availability of a water source, finding a downstream area to collect sediments, liquid/sediment disposal, and prohibition against disposal of flushed effluent to sanitary sewer in some areas.
- Regulations may include adoption of substantial penalties for illegal dumping and disposal.
- Local municipal codes may include sections prohibiting discharge of soil, debris, refuse, hazardous wastes, and other pollutants into the storm drain system.

REQUIREMENTS:**Costs**

- An aggressive catch basin cleaning program could require a significant capital and O&M budget.
- The elimination of illegal dumping is dependent on the availability, convenience, and cost of alternative means of disposal. The primary cost is for staff time. Cost depends on how aggressively a program is implemented. Other cost considerations for an illegal dumping program include:
 - Purchase and installation of signs.
 - Rental of vehicle(s) to haul illegally-disposed items and material to landfills.
 - Rental of heavy equipment to remove larger items (e.g., car bodies) from channels.
 - Purchase of landfill space to dispose of illegally-dumped items and material.
- Methods used for illicit connection detection (smoke testing, dye testing, visual inspection, and flow monitoring) can be costly and time-consuming. Site-specific factors, such as the level of impervious area, the density and ages of buildings, and type of land use will determine the level of investigation necessary.

Maintenance

- Two-person teams may be required to clean catch basins with vector trucks.
- Teams of at least two people plus administrative personnel are required to identify illicit discharges, depending on the complexity of the storm sewer system.
- Arrangements must be made for proper disposal of collected wastes.
- Technical staff are required to detect and investigate illegal dumping violations.

SUPPLEMENTAL INFORMATION:**Further Detail of the BMP***Storm Drain Flushing*

Flushing is a common maintenance activity used to improve pipe hydraulics and to remove pollutants in storm drainage systems. Flushing may be designed to hydraulically convey accumulated material to strategic locations, such as an open channel, another point where flushing will be initiated, or the sanitary sewer and the treatment facilities, thus preventing resuspension and overflow of a portion of the solids during storm events. Flushing prevents "plug flow" discharges of concentrated pollutant loadings and sediments. Deposits can hinder the designed conveyance capacity of the storm drain system and potentially cause backwater conditions in severe cases of clogging. Storm drain flushing usually takes place along segments of pipe with grades that are too flat to maintain adequate velocity to keep particles in

suspension. An upstream manhole is selected to place an inflatable device that temporarily plugs the pipe. Further upstream, water is pumped into the line to create a flushing wave. When the upstream reach of pipe is sufficiently full to cause a flushing wave, the inflated device is rapidly deflated with the assistance of a vacuum pump, thereby releasing the backed up water and resulting in the cleaning of the storm drain segment.

To further reduce impacts of storm water pollution, a second inflatable device placed well downstream may be used to recollect the water after the force of the flushing wave has dissipated. A pump may then be used to transfer the water and accumulated material to the sanitary sewer for treatment. In some cases, an interceptor structure may be more practical or required to recollect the flushed waters.

It has been found that cleansing efficiency of periodic flush waves is dependent upon flush volume, flush discharge rate, sewer slope, sewer length, sewer flow rate, sewer diameter, and population density. As a rule of thumb, the length of line to be flushed should not exceed 700 feet. At this maximum recommended length, the percent removal efficiency ranges between 65-75% for organics and 55-65% for dry weather grit/inorganic material. The percent removal efficiency drops rapidly beyond that. Water is commonly supplied by a water truck, but fire hydrants can also supply water. To make the best use of water, it is recommended that reclaimed water be used or that fire hydrant line flushing coincide with storm sewer flushing.

CBC-SDSC Contin.

SOP-SD-O&M – Storm Drain Operations and Maintenance

1. Annually check and clean all City storm drain inlet boxes and pipes.
2. Personnel will pull grates and check the structures of the box and do a visual on the pipes.
 - a. Check for dirt, debris, and sediment.
3. Clean inlet boxes as needed, drain water into the sanitary sewer system. Let materials dry out and take to land fill. If storm drain pipes need cleaning, contract it out. Standard disposal procedures for both sewer and storm drain contractors are to take to the sewer plant. If any other disposal procedure is required, document what actions were taken.
4. Storm event operation and maintenance.
 - a. Check and clean inlet boxes throughout the City.
 - b. Remove any dirt or debris.
 - c. Dispose of applicable material properly and document.
5. Keep logs of location and number of storm drains and catch basins cleaned. Record the amount of waste collected. Make notes of any comments or concerns.

SOP-STORM DRAIN – Creek Management

1. Preparation:

- a. Monitor streams on a regular basis. Bi-annually, before, during and after rain events.
- b. Check culverts and crossings after every storm.
- c. Maintain access to stream channels wherever possible.
- d. Identify areas requiring maintenance
- e. Determine what manpower or equipment will be required.
- f. Identify access and easements to area requiring maintenance.
- g. Determine method of maintenance that will be least damaging to the channel.
- h. Obtain Stream Alteration Permit. If needed.

2. Process:

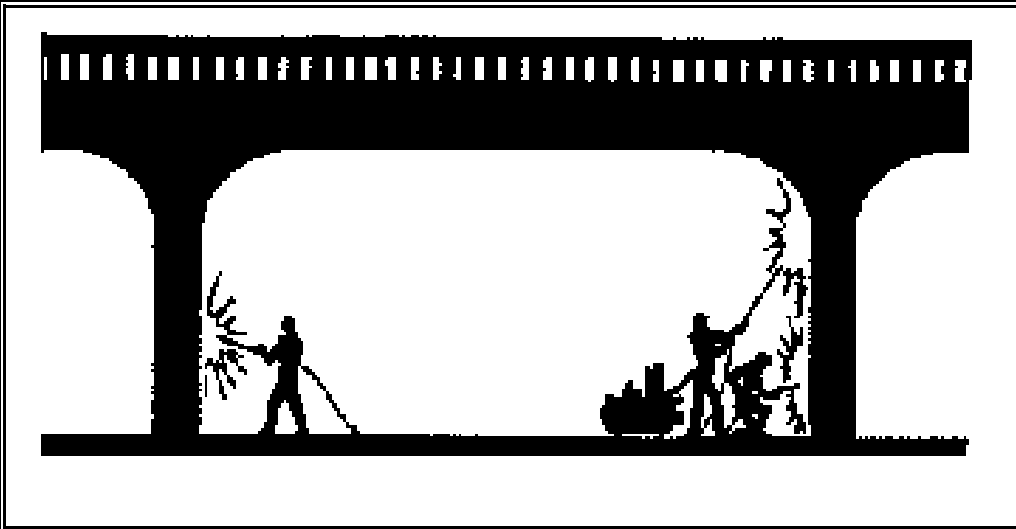
- a. Remove unwanted material (debris, branches, soil) from the creek channel and place it in a truck to be hauled to the Weber county land fill or the north Ogden compost.

3. Clean-up:

- a. Stabilize all disturbed soils.
- b. Remove all tracking from paved surfaces near maintenance site, if applicable.
- c. Haul all debris or sediment removed from area to the Weber county land fill or the North Ogden compost.

4. Documentation:

- a. Keep log of actions performed including date and individuals involved.
- b. Record the amount of materials removed or imported.
- c. Keep any notes or comments of any problems.
- d. Use “before” and “after” photographs to document activities as applicable.



DESCRIPTION:

Address storm water pollution from roadway and bridge maintenance on a site-specific basis. The deposition and subsequent magnitude of pollutants found in road and bridge runoff is variable and affected by climate, surrounding land use, roadway or bridge design, traffic volume, and frequency and severity of accidental spills.

APPROACH:

Prevent or reduce the discharge of pollutants to storm water from roadway and bridge maintenance by:

- Paving as little as possible.
- Designing bridges to collect and convey storm water.
- Using measures to prevent runoff and runoff.
- Properly disposing of maintenance wastes.
- Training employees and subcontractors.

Some general measures for roadway maintenance should be implemented:

- Sweep and vacuum heavily traveled roadways to remove accumulated sediment and debris. (See the Street Sweeping BMP sheet).
- Ensure proper handling, application, and disposal of pesticides, fertilizers, and paints.
- Do not over-apply deicing salt and sand, and routinely calibrate spreaders.

The following steps will help reduce the storm water impacts of bridge maintenance:

- Site new bridges so that significant adverse impacts to wetlands, sensitive areas, critical habitat, and riparian vegetation are minimized.
- Design new bridges to avoid the use of scupper drains and route runoff to land for treatment control. Existing scupper drains should be cleaned of debris on a regular basis.
- Reduce the discharge of pollutants to surface waters during maintenance by using suspended traps, vacuums, or booms in the water to capture paint, rust, and removing agents.
- Train employees and subcontractors to reduce the discharge of wastes during bridge maintenance.

LIMITATIONS:

- The minimization of impervious areas may be limited by minimum required widths for roadways, shoulders, etc.
- The siting of new bridges is limited by available land, socioeconomic, fiscal, and political issues.

Program Elements

- New Development
- Residential
- Commercial Activities
- Industrial Activities
- Municipal Facilities
- Illegal Discharges



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TARGETED POLLUTANTS

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

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Regulatory
- Training
- Staffing
- Administrative

- High
- Medium
- Low



Program Elements

- New Development
- Residential
- Commercial Activities
- Industrial Activities
- Municipal Facilities
- Illegal Discharges



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IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Regulatory
- Training
- Staffing
- Administrative

- High
- Medium
- Low

DESCRIPTION:

Reduce the discharges of pollutants to storm water from street surfaces by conducting street cleaning on a regular basis.

APPROACH:

- Prioritize cleaning to use the most sophisticated sweepers, at the highest frequency, and in areas with the highest pollutant loading.
- Restrict street parking prior to and during sweeping.
- Increase sweeping frequency just before the rainy season.
- Proper maintenance and operation of sweepers greatly increase their efficiency.
- Keep accurate operation logs to track programs.
- Reduce the number of parked vehicles using regulations.
- Sweepers effective at removing smaller particles (less than 10 microns) may generate dust that would lead to concerns over worker and public safety.
- Equipment selection can be key for this particular BMP. There are two types used, the mechanical broom sweepers (more effective at picking up large debris and cleaning wet streets), and the vacuum sweepers (more effective at removing fine particles and associated heavy metals). Many communities find it useful to have a compliment of both types in their fleet.

LIMITATIONS:

- Conventional sweepers are not able to remove oil and grease.
- Mechanical sweepers are not effective at removing finer sediments.
- Effectiveness may also be limited by street conditions, traffic congestion, presence of construction projects, climatic conditions, and condition of curbs.

MAINTENANCE:

- Replace worn parts as necessary.
- Install main and gutter brooms of the appropriate weight.

SOP-STREETS/STORM DRAIN – Street Sweeping

1. Preparation:
 - a. Prioritize cleaning routes to use at the highest frequency in areas with the highest pollutant loading. Main roads, collector roads, and highly populated areas.
 - b. Restrict street parking prior to and during sweeping using regulations as necessary.
 - c. Increase sweeping frequency just before the rainy season. Sweep as many times as needed throughout the year. As soon as possible, weather permitting, in the spring.
 - d. Perform preventative maintenance and services on sweepers to increase and maintain their efficiency

2. Process:
 - a. Drive street sweeper safely and pick up debris
 - b. When full, take the sweeper to an approved street sweeper cleaning station.
 - c. Clean sweeper hopper out and inspect after each time it is dumped to maintain efficiency.

3. Clean-up:
 - a. Street sweepers are to be cleaned out in an approved manner such as NOT to introduce swept material into storm drains etc. street sweeper cleaning station
 - b. Street sweeping cleaning stations should separate the solids from the liquids.
 - c. Once solids have dried out, haul them to the local landfill
 - d. Decant water is to be collected and routed to an approved wastewater collection system area only.

4. Documentation:
 - a. Keep accurate logs to track streets swept and streets still requiring sweeping.
 - b. Log the amount of debris collected and hauled off.
 - c. Log dates and miles that are swept

SOP-BUILDINGS – Parking Lot Maintenance

1. Preparation:
 - a. Conduct regular employee training to reinforce proper housekeeping.
 - i. Done annually in the “good housekeeping” training class.
 - b. Restrict parking in areas to be swept prior to and during sweeping using regulations as necessary.
 - c. Perform regular maintenance and services in accordance with the recommended vehicle maintenance schedule on sweepers to increase and maintain efficiency.

2. Process:
 - a. Sweep parking areas, as needed, or as directed by the city’s responsible official.
 - i. Done bi-annually and as needed.
 - b. Hand sweep sections of gutter if soil and debris accumulate.
 - c. Pick-up litter as required to keep parking areas clean and orderly.
 - i. Done daily as needed.

3. Clean-up:
 - a. Dispose of sweepings properly (appropriate solid waste facility).
 - i. See the street sweeping SOP.
 - b. Street sweepers to be cleaned out in a manner as instructed by the manufacturer and in a location that swept materials cannot be introduced into a storm drain.
 - c. Swept materials will not be stored in locations where storm water could transport fines into the storm drain system.

4. Documentation:
 - a. Keep accurate logs to track swept parking areas and approximate quantities.
 - i. See street sweeping log.
 - b. Document training of employees. See employee training file.



DESCRIPTION:

Accidental releases of materials from above ground liquid storage tanks and drums present the potential for contaminating storm waters with many different pollutants. Tanks may store many potential storm water runoff pollutants, such as gasoline, aviation gas, diesel fuel, kerosene, oils, greases, lubricants and other pollutants. Materials spilled, leaked, or lost from storage tanks may be carried away by rainfall runoff. These source controls apply to containers storing liquid materials.

TARGETED POLLUTANTS

Nutrients
 Heavy Metals
 Toxic Materials
 Organics
 Oil & Grease

APPROACH:

- Identify all areas of fluid storage and take inventory of each fluid. Label all fluid containers clearly.
- Large Containers:
 - Group all large containers with similar fluids together in a location away from drains. If storage in one overall location is not possible, store containers in one area in each department.
 - Provide secondary containment system for large containers such as double walled tanks, liners, vaults, containment pallets, etc.
 - Raise large containers off the ground and provide appropriate spill control measures.
- Small Containers:
 - Keep all small containers in one area with each department.
 - Provide secondary containment for small containers. If secondary containment is shared by several containers, provide containment for at least the volume of one full container.
- Place drip pans or absorbent materials under all taps and potential drip locations.
 - Provide an inventory of non-used drip pans that can be used under vehicles/equipment.
- Show locations of fluid storage on site map with a description of containment measures.
- Provide readily available absorbent materials.
- Post spill response plan near all hazardous materials storage areas.

INSPECTION:

- Fluid containers should be inspected monthly, unless otherwise indicated in Appendix D, for signs of leaks or spills.
- Signs, labels, and spill response plan should be inspected monthly, unless otherwise indicated in Appendix D, to ensure they are easily read.

MAINTENANCE:

- Use dry cleanup methods to clean drips or spills. **Do not hose down spill area.**
- Replace containers as deemed necessary by inspection.
- Follow spill response checklist found in BMP "Spill Response" if a spill occurs.

TRAINING:

- No special training is required for this BMP.
- Other training as-per Appendix G.

DOCUMENTATION:

- All inspections performed should be documented at the time of inspection using the Vehicle Storage Intermediate Site Compliance Evaluation forms and filed appropriately.

CONTROL IMPLEMENTATION RECOMMENDATIONS:

- Store in covered location
- Use dry clean up methods first

LIMITATIONS:

- Training of employees must continually be updated.
- Keeping fluids far from a drain may be difficult.
- It may not be possible to store all fluid containers in one place.
- Stored fluids may need to be removed from containment during use.
- Storage areas need to be carefully planned to allow room for secondary containment.



DESCRIPTION:

Material storage areas exposed to rain and/or runoff can pollute storm water. Storm water can become contaminated when materials wash off or dissolve into water or are added to runoff by spills and leaks. Improper storage of these materials can result in the release of materials. To prevent or reduce the discharge of pollutants to storm water from material delivery and storage, pollution prevention and source control measures must be implemented.

TARGETED POLLUTANTS

Sediment
 Nutrients
 Heavy Metals
 Toxic Materials
 Oxygen Demanding
 Substances
 Oil & Grease

APPROACH:

- Establish perimeter controls.
- Consolidate storage areas where possible.
- Minimize exit tracking.
- Provide proper site drainage.
- Cover materials as needed.

INSPECTION:

- Inspection of runoff area should be conducted monthly, unless otherwise noted in Appendix D, and after storms.
- Conduct visual inspections of turbidity in river during rain events, quarterly when conditions allow, to determine effectiveness of implemented measures.

MAINTENANCE:

- Remove accumulated sediment.
- Maintain perimeter controls.
- Refresh gravel filter as deemed necessary by inspections.

TRAINING:

- No special training is required for this BMP.
- Other training as-per Appendix G.

DOCUMENTATION:

- All inspections performed should be documented at the time of inspection using the Materials Storage Intermediate Site Compliance Evaluation sheet and filed appropriately.

CONTROL IMPLEMENTATION RECOMMENDATIONS:

- Move used oil to vehicle storage shed
- Build canopy from vehicle maintenance shop to vehicle storage shed

LIMITATIONS:

- Visual inspections need to be conducted during storm events to determine the effectiveness of the BMP.
- Tracking pad requires continual maintenance to ensure it is functioning properly.

Training of employees must continually be updated.



DESCRIPTION:

Spills and leaks are one of the largest contributors of storm water pollutants. Spill prevention and control plans are applicable to any site at which hazardous materials are stored or used. An effective plan should have spill prevention and response procedures that identify potential spill areas, specify material handling procedures, describe spill response procedures, and provide spill clean-up equipment. The plan should take steps to identify and characterize potential spills, eliminate and reduce spill potential, respond to spills when they occur in an effort to prevent pollutants from entering the stormwater drainage system, and train personnel to prevent and control future spills.

TARGETED POLLUTANTS

Nutrients
 Heavy Metals
 Toxic Materials
 Organics
 Oil & Grease

APPROACH:

- Identify locations of potential spills or leaks on a site map.
- Identify all areas of fluid storage and take inventory of each fluid. Label all fluid containers clearly. Label all hazardous material according to its hazard (corrosive, poisonous, radioactive, flammable, explosive).
- Store and maintain appropriate spill cleanup materials in a location known to all near the storage area; and ensure that employees are familiar with the site's spill response plan and/or proper spill cleanup procedures.
- Place spill prevention and cleanup materials in a readily accessible area and mark clearly.
- Clean up spills and leaks immediately upon occurrence.
- Sweep and clean the storage area monthly if it is paved, **do not hose down the area to a storm drain.**
- Store and contain liquid materials in such a manner that if the container is ruptured, the contents will not discharge, flow, or be washed into the storm drainage system, surface waters, or groundwater.
- Provide secondary containment for existing containers.
- Place drip pans or absorbent materials under all taps and potential drip locations.

PROCEDURE:

- In the event of a leak or a spill use the following “Spill Response Plan”:
 1. Stop source
 2. Contain Spill
 3. Call supervisor
 4. Identify substance
 5. Quantify spill
 6. Did spill leave the site?
 7. Call county health department (801-591-7168)
 8. Call State (801-536-4123)
 9. Clean up and dispose
 10. Document
(Use Spill Response Report from SWPPP Appendix B)

INSPECTION:

- No Inspection Required

MAINTENANCE:

- See Approach and Procedure Sections

TRAINING:

- Spill Prevention and Response
 - Training as-per Appendix G.

DOCUMENTATION:

- Spills and leaks should be reported using the Spill Response Report found in Appendix B and filed appropriately.

LIMITATIONS:

- Training of employees must continually be updated.



DESCRIPTION:

Material storage areas exposed to rain and/or runoff can pollute stormwater. Stormwater can become contaminated when materials wash off or dissolve into water. Improper storage of these materials can result in accidental spills and the release of materials. To prevent or reduce the discharge of pollutants to stormwater from material delivery and storage, pollution prevention and source control measures must be implemented.

TARGETED POLLUTANTS

Sediment
Nutrients
Toxic Materials

APPROACH:

- Locate salt storage in an appropriate location.
- Contain the salt storage area to prevent it from running off into storm drains.
- Grade salt storage area to drain in a controlled manner.
- Build covered area for salt storage.

INSPECTION:

- Salt Storage area should be inspected quarterly, unless otherwise noted in Appendix D, for structural integrity (no cracks, leaks, etc.) and containment functionality.

MAINTENANCE:

- Maintenance of cover structure and containment area should be performed as deemed necessary by inspections.

TRAINING:

- Provide annual training on:
 - Proper loading and unloading of salt.
- Other training as-per Appendix G.

DOCUMENTATION:

- All inspections performed should be documented at the time of inspection using the Material Storage Intermediate Site Compliance Evaluation sheet and filed appropriately.

CONTROL IMPLEMENTATION RECOMMENDATIONS:

- Sweep in front of salt storage
- Post sign

LIMITATIONS:

- Loading and unloading salt usually takes place in areas where it may be exposed.
- Containment will need to be regularly maintained.
- Salt, as delivered, contains moisture. With time moisture will drain from the salt even if it is covered. This internal drainage has high salt concentrations.

SOP-STREETS/STORM DRAIN – Snow Removal and De-icing

1. Preparation:
 - a. Store de-icing material under a covered storage area.
 - b. Wash out vehicles (if necessary) in approved washout area before preparing them for snow removal.
 - c. Calibrate spreaders to minimize amount of de-icing material used and still be effective
 - d. Provide vehicles with spill cleanup kits in case of hydraulic line rupture or other spills
 - e. Train employees in spill cleanup procedures and proper handling and storage of de-icing materials

2. Process:
 - a. Load material into trucks carefully to minimize spillage
 - b. Periodically dry sweep loading area to reduce the amount of de-icing materials exposed to runoff
 - c. Distribute the minimum amount of de-icing material to be effective on roads
 - d. Do not allow spreaders to idle while distributing de-icing materials.
 - e. Park trucks loaded with de-icing material inside or under cover when possible.

3. Cleanup:
 - a. Sweep up all spilled de-icing material around loading area
 - b. Clean out trucks after snow removal duty in approved washout area (see vehicle washing SOP)
 - c. Provide maintenance for vehicles in covered area

4. Documentation:
 - a. Date and time of snow removal and de-icing
 - b. Location of snow removal and or de-icing
 - c. Loads or tonnage of de-icing material used per activity.

BMP: Used Oil Recycling

A-5



DESCRIPTION:

Used motor oil is a hazardous waste because it contains heavy metals picked up from the engine during use. Since it is toxic to humans, wildlife, and plants, it should be disposed of at a local recycling or disposal facility.

TARGETED POLLUTANTS

Nutrients
Heavy Metals
Toxic Materials
Organics
Oil & Grease

APPROACH:

- Cover oil recycle storage to prevent storm water run on. (Possibly doghouse style cover)
- Provide secondary containment for oil recycle storage.
- Store only used motor oil in container. If other fluids are mixed into the oil it becomes a hazardous waste and cannot be recycled.

INSPECTION:

- Inspect storage area quarterly, unless otherwise noted in Appendix D, for leaks, cracks, or spills from any of the containment.
- Determine if other materials have been mixed if possible by checking for separation of fluids.

MAINTENANCE:

- Fix any leaks or cracks in secondary containment as deemed necessary by inspection.
- Replace secondary or primary containment as deemed necessary by inspection.
- Use dry cleanup methods to clean up any spills or leaks. **Do not hose down spill area.**

TRAINING:

- No Special Training is required for this BMP.
- Other training as per Appendix G.
-

DOCUMENTATION:

- All inspections performed should be documented at the time of inspection using the Fleet Department Intermediate Site Compliance Evaluation sheet and filed appropriately.

CONTROL IMPLEMENTATION RECOMMENDATIONS:

- Add secondary containment
- Store in vehicle storage shed

LIMITATIONS:

- It may not be possible to cover the area immediately.
- Mixing fluids may limit the possibility of recycling the oil.

BMP: Vehicle and Equipment Fueling

A-6



DESCRIPTION:

Spills and leaks that occur during vehicle and equipment fueling can contribute hydrocarbons, oil and grease, as well as heavy metals to storm water runoff. Implementing the following management practices can help prevent fuel spills and leaks.

TARGETED POLLUTANTS

Nutrients
Heavy Metals
Toxic Materials
Organics
Oil and Grease

APPROACH:

- Permanent BMP's include providing on-site absorbent materials and spill response training to prevent gasoline and other pollutants from running off into the storm drain.
- Cover the fueling area where possible to prevent storm water from coming in contact with spilled pollutants.
- Place a spill response cabinet with appropriate spill response equipment next to fueling area. Contain spills and follow spill response plan.
- Post spill response plan near the fueling area with instructions on what to do in the case of a spill or leak.
- Use labeled signs to indicate spill response equipment.

INSPECTION:

- Inspect fueling area quarterly, unless otherwise noted in Appendix D, for structural failure, cracks, leaks, spills and overfills.

MAINTENANCE:

- Spot clean fueling area regularly using dry cleanup methods. **Do not hose down spill area.**
- Fix any cracks, leaks, spills, and overfills upon occurrence or as deemed necessary by inspection.
- Training should be administered to all employees semi-annually regarding spill response plans and procedures.

TRAINING:

- Provide annual training on:
 - Proper fueling techniques (including not topping off tank) to avoid unnecessary spills.
- Other training as-per Appendix G.

DOCUMENTATION:

- All inspections performed should be documented at the time of inspection using Vehicle Wash Area, Fuel Station, and Parking Lot Intermediate Site Compliance Evaluation sheet and filed appropriately.

CONTROL IMPLEMENTATION RECOMMENDATIONS:

- Temporary
 - Construct temporary berm to contain spills and contaminated runoff
- Permanent
 - Provided absorbent material with posted container
 - Construct canopy to cover fueling area

LIMITATIONS:

- Covering the fueling area will take time and cannot be implemented immediately.
- Requires extensive regular cleanup and maintenance until covered.

SOP-VEHICLES – Fueling

1. Preparation:
 - a. Train employees on proper fueling methods and spill cleanup techniques.
 - b. Install a canopy or roof over aboveground storage tanks and fuel transfer areas.
(long term activity)
 - c. Absorbent spill clean-up materials and spill kits shall be available in fueling areas and on mobile fueling vehicles and shall be disposed of properly after use.

2. Process:
 - a. Shut off the engine.
 - b. Ensure that the fuel is the proper type of fuel for the vehicle.
 - c. Nozzles used in vehicle and equipment fueling shall be equipped with an automatic shut off to prevent overfill.
 - d. Fuel vehicle carefully to minimize drips to the ground.
 - e. Fuel tanks shall not be 'topped off'.
 - f. Mobile fueling shall be minimized. Whenever practical, vehicles and equipment shall be transported to the designated fueling area in the Facilities area.
 - g. When fueling small equipment from portable containers, fuel in an area away from storm drains and water bodies.

3. Clean Up:
 - a. Immediately clean up spills using dry absorbent (e.g., kitty litter, sawdust, etc.) sweep up absorbent material and properly dispose of contaminated clean up materials.
 - b. Large spills shall be contained as best as possible and the HazMat team should be notified ASAP.

4. Records:
 - a. Document training of employees.



DESCRIPTION:

Vehicles stored outdoors are exposed to rain and/or runoff and can pollute storm water. Storm water can become contaminated when materials wash off or dissolve into water or are added to runoff by spills and leaks. Improper storage of vehicles can result in accidental spills and the release of materials. To prevent or reduce the discharge of pollutants to storm water, pollution prevention and source control measures must be implemented.

TARGETED POLLUTANTS

- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Organics
- Oil & Grease

APPROACH:

- Whenever possible, first identify any covered areas where vehicles may be stored.
- Identify and repair leaks, connections, hoses, etc. that may release materials or fluids during storage.
- Prior to storing any vehicle outdoors for more than two weeks, wash the vehicle in designated wash areas.
- If any vehicle is to be stored outdoors for an extended period of time (i.e. being used for parts), drain all fluids from the vehicle to reduce the likelihood of leaks.
- Use drip pans under any equipment that is leaking.
- Do preventative maintenance on all vehicles and equipment.

INSPECTION:

- General yard inspections should be conducted monthly, unless otherwise noted in Appendix D, including inspections of stored vehicles and equipment to ensure that pollutants are being adequately contained.

MAINTENANCE:

- Prior to storing any vehicle, identify and repair any leaks, connections, hoses, etc. that may release materials or fluids during storage.
- Use absorbent materials and dry cleanup methods in the event of a spill or leak. **Do not hose down the contaminated area.**
- Drain all fluids from vehicles being stored and used for parts.

TRAINING:

- No special training is required for this BMP.
- Training as-per Appendix G.

DOCUMENTATION:

- All inspections performed should be documented at the time of inspection using Intermediate Site Compliance Evaluation sheet for each department and filed appropriately.

CONTROL IMPLEMENTATION RECOMMENDATIONS:

- Absorbent material with signs
- Store in covered vehicle storage area

LIMITATIONS:

- It may not be possible to store all vehicles in a covered area.
- Training of employees must continually be updated.

SOP-VEHICLES – Vehicle and Equipment Storage

1. Preparation:

- a. Inspect parking areas for stains/leaks on a regular basis.
- b. Provide drip pans or adsorbents for leaking vehicles.

2. Process:

- a. Whenever possible, store vehicles inside where floor drains have been connected to sanitary sewer system.
- b. When inside storage is not available, vehicles and equipment will be parked in the approved designated areas.
- c. Maintain vehicles to prevent leaks as much as possible.
- d. Address any known leaks or drips as soon as possible. When a leak is detected a drip pan will be placed under the leaking vehicle to collect the drip.
- e. The shop will provide a labeled location to empty and store drip pans.
- f. If any leaks are discovered, a drip pan will be used to collect the fluids and the vehicle will be scheduled for repairs.
- g. Clean up all spills using dry methods.
- h. Never store leaking vehicles over a storm drain.

3. Clean Up:

- a. Any leaks that are spilled on the asphalt will be cleaned up with dry absorbent; the dry absorbent will be swept up and disposed of in the garbage.



DESCRIPTION:

Wash water from vehicle and equipment cleaning activities performed outdoors or in areas where wash water flows onto the ground can contribute toxic hydrocarbons and other organic compounds, oils and greases, nutrients, phosphates, heavy metals, and suspended solids to storm water runoff. Use of the procedures outlined below can prevent or reduce the discharge of pollutants to storm water during vehicle and equipment cleaning.

TARGETED POLLUTANTS

- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Organics
- Oil & Grease

APPROACH:

- Only use designated wash areas for vehicle cleaning. The wash area should be marked with signs to show where washing should occur.
- Use dry cleanup methods before washing when possible.
- Where practical, cover wash area, and run drains to the sanitary sewer.

INSPECTION:

- Oil/water separators should be inspected quarterly for buildup of sediments, oils, greases, and other pollutants unless otherwise indicated in Appendix D.
- Wash area sump and drain pipe should be inspected quarterly to ensure they are draining properly unless otherwise indicated in Appendix D.

MAINTENANCE:

- When cleaning vehicles and equipment use dry cleanup methods in a contained area whenever possible before washing them to prevent excess material from entering the storm drain system.
- Oil/water separators should be maintained under any one or more of the following conditions:
 - When depth of sediment in separator reaches 1 foot in depth
 - When oil sheen appears
 - When floatable debris covers 50% of surface area
- Hazardous material including oil sheen should either be absorbed or pumped out of the separator and disposed of properly.
- Sump and drain pipe should be maintained according to inspection. Sump and drain pipe should be cleared of sediment and other deposits.

TRAINING:

- Provide annual training on:
 - Pre cleaning using dry methods
 - Appropriate use of power washer to minimize over spray
- Other training as-per Appendix G

DOCUMENTATION:

- All inspections performed should be documented at the time of inspection using the Vehicle Wash Area, Fuel Station, and Parking Lot Intermediate Site Compliance Evaluation form and filed appropriately.

CONTROL IMPLEMENTATION RECOMMENDATIONS:

- Wash all vehicles indoors
- Construct large vehicle washing pad and pump to sewer

LIMITATIONS:

- Long term plan to redesign and cover the wash rack area is expensive and will take some time to fully implement.
- Employing training must be continually updated.

SOP-VEHICLES – Washing

1. Preparation:

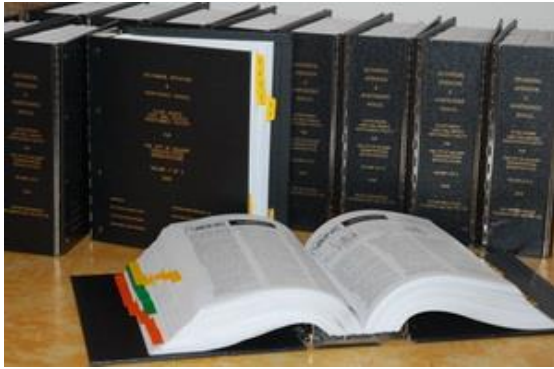
- a. Provide wash areas for small vehicles inside the maintenance building that has a drain system which is attached to the sanitary sewer system.
- b. Provide wash areas for large vehicles on an approved outside wash pad that has a drain system which is attached to the sanitary sewer system.
- c. Set up the pump in the drain box and the hoses from the pump to the sewer man hole for larger equipment.
- d. No vehicle washing will be done where the drain system is connected to the storm sewer system.

2. Process:

- a. Minimize water and soap use when washing vehicles inside the shop building.
- b. Soap should not be used when washing vehicles outside the shop building.
Water Only.
- c. Use hoses with automatic shut off nozzles to minimize water usage.
- d. When washing outside the building, it is the operators' responsibility to make sure all wash water is contained on the wash pad and does not have access to the storm drain.
- e. Never wash vehicles over a storm drain.

3. Clean Up:

- a. Sweep wash areas after every washing to collect what solids can be collected to prevent them from washing down the drain system.
- b. Clean solids from the settling pits on an as needed basis.



DESCRIPTION:

Knowledge of operations and maintenance procedures plays an important role in preventing storm water pollution. Many incidents that have contributed large amounts of pollution were caused because of lack of knowledge of operations and maintenance procedures. Creating a readily available operations and maintenance manual will help prevent such incidents from occurring.

TARGETED POLLUTANTS

- Nutrients
- Heavy Metals
- Toxic Materials
- Organics
- Oil & Grease
- Floatables

APPROACH:

- Each department should have an Operations and Maintenance manual which contain the following:
 - A list of those responsible from each department and contact information
 - Detailed description of all activities the department performs and possible pollutants associated with each
 - Detailed description of best management practices used to protect against pollutants
 - List of procedures used to manage bmps

SOP-DPIR – Department Personnel Identification Responsibilities

1. Fleet Maintenance, Buildings & Facilities – Dan Funk
2. Parks and Open Space – Bryan Fife
3. Roads, Parking Lots, Storm Water Collection and Conveyance, O&M, Inspections and Enforcement – Zack Loveland
4. Highways – The Utah Department of Transportation

SOP-VEM – Vehicle and Equipment Maintenance

1. Where practical, perform all maintenance and repairs under cover and/or indoors.
2. Have all drains connect to the sewer via an oil/water separator.
3. Use drip pans and absorbents under or around leaky vehicles.
4. Dispose of fluids properly.

SOP-UOR – Used Oil Recycling

1. Drain all used oil properly into oil pans or leak proof containers.
2. Clean up any additional oil residue with proper absorbent materials and rags.
3. Use only absorbent materials that can be disposed of through normal waste disposal practices.
4. Store used oil in approved used oil recycle container under a covered area.
5. Contract the services of a certified used oil recycle contractor for pick up and proper disposal.

BMP: Detention Basin

DB



DESCRIPTION:

Detention ponds are basins whose outlets have been designed to detain the storm water runoff from a water quality design storm for some minimum time to allow particles and associated pollutants to settle. They can also be used to provide flood control by including additional flood detention storage.

TARGETED POLLUTANTS

Sediment
Toxic Materials
Organics
Oil & Grease
Floatables

APPROACH:

- Detention basins should be designed to retain water for a relatively short amount of time (i.e. 72 hours) to allow sediment and other pollutants to settle out, but prevent vector habitats from forming.
- Detention pond should be vegetated. Vegetation should be maintained regularly.
- Detention basins should be designed according to needed capacity to ensure proper containment of pollutants.

INSPECTION:

- Inspection of basin should be conducted quarterly, unless otherwise noted in Appendix D, and after storms to ensure drainage.
- Inspection of structural stability should be conducted quarterly, unless otherwise noted in Appendix D, to ensure water is being detained and treated as desired.
- Inspect emergency spillway annually unless otherwise noted in Appendix D.
- Inspect inlets or outlets quarterly and after storms unless otherwise noted in Appendix D.

MAINTENANCE:

- Maintain vegetation as deemed necessary by inspection.
- Remove materials that may block inlets or outlets as deemed necessary by inspection.
- Repair any damage to basin as deemed necessary by inspection.

TRAINING:

- No special training is required for this BMP.
- Other training as-per Appendix G.

DOCUMENTATION:

- All inspections performed should be documented at the time of inspection using the Detention Basin Intermediate Site Compliance Evaluation sheet and filed appropriately.

CONTROL IMPLEMENTATION RECOMMENDATIONS:

- Temporary
None
- Permanent
Build up berm along the south of the entrance to the detention basin to ensure runoff does not leave the public works site upstream of the detention basin.

LIMITATIONS:

- To remain effective, detention basins require regular maintenance.
- If water is not detained for an adequate amount of time, pollutants may not be effectively removed from storm water.
- Detention basins can create vector habitats.

SOP-STREETS/STORM DRAIN – Detention Pond Cleaning

1. Preparation:

- a. Schedule the pond cleaning work for a time when dry weather is expected.
- b. Remove any sediment and trash from grates, placing it in a truck for disposal.
- c. Do a visual inspection to make sure any grates, structures, manholes, boxes, and pipes are in good working order. Remove manhole covers and grates as necessary for inspecting.
- d. Grate cleaning is done bi-weekly and before, during, and after rain events. See creek grate cleaning log for which grates to be cleaned.
- e. An overall inspection is done annually in the fall.

2. Process:

- a. Provide outlet protection where feasible to minimize the amount of debris that might leave basin during cleaning process.
- b. Start cleaning basin by using backhoe to remove debris and sediment off the bottom.
- c. Continue cleaning structures and pond bottom as necessary by sweeping and shoveling.
- d. Put all material removed from the pond into a dump truck.
- e. Some structures may require use of a vactor truck. If so use the same procedures described for cleaning catch basins.

3. Clean-up:

- a. Take the material that was removed to the landfill for final disposal.
- b. Clean the equipment used.

4. Documentation:

- a. Keep a log of each detention basins/pond cleaned including date, individuals involved in cleaning, and a description of the type of debris removed.
- b. Record the amount of waste collected.
- c. Keep any notes or comments of any problems.



DESCRIPTION:

Storm Water Monitoring is an important aspect in ensuring that BMP's are functioning effectively. Monitoring the stormwater on a regular basis will help to make sure that pollutants are being removed from the water before it enters the storm drain system. The following monitoring procedures must be followed to produce accurate results.

TARGETED POLLUTANTS

- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Organics
- Oil & Grease
- Floatable Materials

APPROACH:

- Identify locations of storm water outfall from the facility.
- Identify (where possible) one individual to carry out collection and examination for the entire permit.
- A visual examination must be performed at least once quarterly during daylight hours unless there is insufficient water to produce a runoff event.
- Samples should be collected in a storm event that is greater than 0.1 inches in magnitude.
- Samples should be collected at least 72 hours from the previous measurable storm event.
- In the event that samples are unable to be collected due to adverse conditions (such as flooding, hurricane, tornadoes, electrical storms, etc.), the individual may document the reason for not performing the examination and file the documentation with visual examination records.
- When a site is inactive or unstaffed the individual is not required to conduct examinations as long as the site remains inactive or unstaffed.

PROCEDURE:

- In the event of a storm use the following steps:
 1. Identify all outfall locations.
 2. Collect and examine all samples from each outfall within the first 30 minutes (as practical; not to exceed 1 hour) of when water starts discharging.
 3. Note the nature of discharge (runoff or snowmelt).
 4. Find a well lit area to perform examination.
 5. Observe and document color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other indicators of pollution.
 6. Identify probable sources of any contamination found.

INSPECTION:

- See Approach and Procedure Sections

MAINTENANCE:

- Maintain outfall areas if needed as determined by inspections.

TRAINING:

- The Importance of Protecting Water Quality
- Reporting Procedures
- Inspection Procedures
- Permit Requirements
- Training only needs to be administered to personnel in charge of conducting examinations.

DOCUMENTATION:

- Monitoring should be reported using the Visual Storm Water Discharge Examination Report and filed appropriately.

LIMITATIONS:

- Training of employees must continually be updated.



DESCRIPTION:

Building materials and other wastes must be properly managed and disposed of to reduce the risk of pollution from materials such as surplus or refuse building materials or hazardous wastes. Practices such as trash disposal, recycling, proper material handling, and spill prevention and cleanup measures can reduce the potential for stormwater runoff to mobilize wastes and contaminate surface or ground water.

TARGETED POLLUTANTS

- Nutrients
- Toxic Materials
- Oxygen Demanding
- Oil & Grease
- Floatable Material

APPROACH:

- Designate an area for waste disposal that receives a minimal amount of stormwater runoff.
- Store waste in containers in a covered area or provide lids to cover the containers and keep water out in the event of a storm.
- Have a regular waste collection schedule to help prevent containers from overflowing.
- Use proper loading and unloading procedures to prevent spills.
- Schedule regular yard maintenance to keep surrounding area free of waste and debris.
- Clean up any spills upon occurrence.

INSPECTION:

- Inspection of waste area and containers should be performed quarterly to check for uncovered or damaged containers.
- Inspection of runoff area should be inspected quarterly to ensure pollutants are not entering the storm drain.

MAINTENANCE:

- Keep containers adequately covered in case of a storm event.
- Clean surrounding area according to maintenance schedule and as needed.
- Repair waste containers as deemed necessary by inspections.
- Use proper spill response procedures to clean up spills upon occurrence. Use dry cleanup procedures when necessary.

TRAINING:

- No special training is required.
- Other training as per Appendix G.

DOCUMENTATION:

- All inspections performed should be documented at the time of inspection using Site Compliance Evaluation sheet and filed appropriately.

CONTROL IMPLEMENTATION RECOMMENDATIONS:

- Store in covered location

LIMITATIONS:

- Training of employees must continually be updated.

SOP-BUILDINGS – Dumpsters/Garbage Storage

1. Preparation:

- a. Train employees on proper trash disposal.
 - i. Do in the annual “good housekeeping” training class
- b. Locate dumpsters and trash cans in convenient, easily observable areas.
- c. Provide properly-labeled recycling bins to reduce the amount of garbage disposed.
 - i. The blue cans are for recyclable materials
- d. Install berms, curbing, or vegetation strips around storage areas to control water entering/ leaving storage areas.
- e. Whenever possible store garbage containers beneath a covered structure or inside to prevent contact with storm water.
 - i. All garbage cans and dumpsters have lids.

2. Process:

- a. Inspect garbage bins for leaks regularly, and have repairs made immediately by responsible party.
 - i. Garbage cans and dumpsters are inspected weekly when they are dumped.
 - ii. Waste management is responsible for any repairs. 801-731-5542
- b. Request/use dumpsters, and trash cans with lids and without drain holes.
- c. Locate dumpsters on a flat, hard surface that does not slope or drain directly into the storm drain system.

3. Clean-up:

- a. Keep areas around dumpsters clean of all garbage.
- b. Have garbage bins emptied regularly to keep from overflowing.
 - i. Can and dumpsters are dumped weekly or more often as needed.
- c. Wash out bins or dumpsters as needed to keep odors from becoming a problem.

4. Documentation:

- a. Document training of employees. See employee training file.

BMP: Drainage System Maintenance

HWM



OBJECTIVES

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution

DESCRIPTION:

Improper storage and handling of solid wastes can allow toxic compounds, oils and greases, heavy metals, nutrients, suspended solids, and other pollutants to enter storm water runoff. The discharge of pollutants to storm water from waste handling and disposal can be prevented and reduced by tracking waste generation, storage, and disposal; reducing waste generation and disposal through source reduction, reuse, and recycling; and preventing run-on/runoff.

APPROACH:

Pollution Prevention

- Accomplish reduction in the amount of waste generated using the following source controls:
 - Production planning and sequencing
 - Process or equipment modification
 - Raw material substitution or elimination
 - Loss prevention and housekeeping
 - Waste segregation and separation
 - Close loop recycling
- Establish a material tracking system to increase awareness about material usage. This may reduce spills and minimize contamination, thus reducing the amount of waste produced.
- Recycle materials whenever possible.

Suggested Protocols

General

- Cover storage containers with leak proof lids or some other means. If waste is not in containers, cover all waste piles (plastic tarps are acceptable coverage) and prevent storm water run-on and runoff with a berm. The waste containers or piles must be covered except when in use.
- Use drip pans or absorbent materials whenever grease containers are emptied by vacuum trucks or other means. Grease cannot be left on the ground. Collected grease must be properly disposed of as garbage.
- Check storage containers weekly for leaks and to ensure that lids are on tightly. Replace any that are leaking, corroded, or otherwise deteriorating.
- Sweep and clean the storage area regularly. If it is paved, do not hose down the area to a storm drain.
- Dispose of rinse and wash water from cleaning waste containers into a sanitary sewer if allowed by the local sewer authority. Does not discharge wash water to the street or storm drain.
- Transfer waste from damaged containers into safe containers.
- Take special care when loading or unloading wastes to minimize losses. Loading systems can be used to minimize spills and fugitive emission losses such as dust or mist. Vacuum transfer systems can minimize waste loss.



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TARGETED POLLUTANTS

- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Subst.
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

Controlling Litter

- Post "No Littering" signs and enforce anti-litter laws.
- Provide a sufficient number of litter receptacles for the facility.
- Clean out and cover litter receptacles frequently to prevent spillage.

Waste Collection

- Keep waste collection areas clean.
- Inspect solid waste containers for structural damage regularly. Repair or replace damaged containers as necessary.
- Secure solid waste containers; containers must be closed tightly when not in use.
- Do not fill waste containers with washout water or any other liquid.
- Ensure that only appropriate solid wastes are added to the solid waste container. Certain wastes such as hazardous wastes, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers (see chemical/ hazardous waste collection section below).
- Do not mix wastes; this can cause chemical reactions, make recycling impossible, and complicate disposal.

Good Housekeeping

- Use the entire product before disposing of the container.
- Keep the waste management area clean at all times by sweeping and cleaning spills immediately.
- Use dry methods when possible (e.g., sweeping, use of absorbents) when cleaning around restaurant/food handling dumpster areas. If water must be used after sweeping/using absorbents, collect water and discharge through grease interceptor to the sewer.

Chemical/Hazardous Wastes

- Select designated hazardous waste collection areas on-site.
- Store hazardous materials and wastes in covered containers and protect them from vandalism.
- Place hazardous waste containers in secondary containment.
- Make sure that hazardous waste is collected, removed, and disposed of only at authorized disposal areas.
- Stencil or demarcate storm drains on the facility's property with prohibitive message regarding waste disposal.

Run-on/Runoff Prevention

- Prevent storm water run-on from entering the waste management area by enclosing the area or building a berm around the area.
- Prevent waste materials from directly contacting rain.
- Cover waste piles with temporary covering material such as reinforced tarpaulin, polyethylene, polyurethane, polypropylene or hypalon.
- Cover the area with a permanent roof if feasible.
- Cover dumpsters to prevent rain from washing waste out of holes or cracks in the bottom of the dumpster.
- Move the activity indoor after ensuring all safety concerns such as fire hazard and ventilation are addressed.

Inspection

- Inspect and replace faulty pumps or hoses regularly to minimize the potential of releases and spills.
- Check waste management areas for leaking containers or spills.
- Repair leaking equipment including valves, lines, seals, or pumps promptly.

Training

- Train staff in pollution prevention measures & proper disposal methods.
- Train employees and contractors in proper spill containment and cleanup. The employee should have the tools and knowledge to immediately begin cleaning up a spill should one occur.
- Train employees and subcontractors in proper hazardous waste management.

HWM Contin.

OBJECTIVES

- Cover
- Contain
- Educate
- Reduce/Minimize
- Product Substitution



363 W. Independence Blvd.
 Harrisville, UT 84404
 (801) 782-9648

TARGETED POLLUTANTS

- Sediment
- Nutrients
- Heavy Metals
- Toxic Materials
- Oxygen Demanding Subst.
- Oil & Grease
- Floatable Materials
- Bacteria & Viruses

- High Impact
- ☒ Medium Impact
- ☐ Low or Unknown Impact

HWM Contin.

Spill Response and Prevention

- Keep your Spill Prevention Control and Countermeasure (SPCC) Plan up-to-date.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills
- Collect all spilled liquids and properly dispose of them.
- Store and maintain appropriate spill cleanup materials in a location known to all near the designated wash area.
- Ensure that vehicles transporting waste have spill prevention equipment that can prevent spills during transport. Spill prevention equipment includes:
 - Vehicles equipped with baffles for liquid waste
 - Trucks with sealed gates and spill guards for solid waste

Other Considerations (Limitations and Regulations)

- Hazardous waste cannot be reused or recycled; it must be disposed of by a licensed hazardous waste hauler.

REQUIREMENTS:

Costs

- Capital and O&M costs for these programs will vary substantially depending on the size of the facility and the types of waste handled. Costs should be low if there is an inventory program in place.

Maintenance

- None except for maintaining equipment for material tracking program.

SUPPLEMENTAL INFORMATION:

Further Detail of the BMP

Land Treatment System

Minimize runoff of polluted storm water from land application by:

- Choosing a site where slopes are under 6%, the soil is permeable, there is a low water table, it is located away from wetlands or marshes, and there is a closed drainage system.
- Avoiding application of waste to the site when it is raining or when the ground is saturated with water
- Growing vegetation on land disposal areas to stabilize soils and reduce the volume of surface water runoff from the site
- Maintaining adequate barriers between the land application site and the receiving waters (planted strips are particularly good)
- Using erosion control techniques such as mulching and matting, filter fences, straw bales, diversion terracing, and sediment basins
- Performing routine maintenance to ensure the erosion control or site stabilization measures are working.

APPENDIX A

Supplemental Information for Contractors/Developers

STORM WATER RESOURCES

1. Environmental Protection Agency (EPA) Region 8
www.epa.gov/region8/ 800-227-8917
2. Army Corps of Engineers
www.usace.army.mil 916-557-7461
3. Harrisville City
City Hall
Public Works Shop
www.cityofharrisville.com 801-782-4100
ext. 1015
4. Utah Department of Environmental Quality
Division of Water Quality 801-538-6146
Division of Environmental Response and Remediation 801-536-4100
Division of Air Quality 801-536-4000
Solid and Hazardous Waste- Used Oil Hotline 801-458-0145
www.deq.utah.gov/
5. Utah Division of Natural Resources
General Information 801-538-7200
www.naturalresoures.utah.gov/
6. Weber County
Engineering Office 801-399-8374
Storm Water Management 801-399-8677
Weber County Coalition
www.co.weber.ut.us/
7. Utah Storm Water Advisory Committee
www.swac.utah.gov/
8. Jones & Associates Consulting Engineers
City Engineer 801-476-9767
www.jonescivil.com
9. J-U-B Engineers
Storm Water Management Consultant 801-547-0393
www.jub.com

GLOSSARY

Berm: An earthen mound used to direct the flow of runoff around or through a structure.

Best Management Practices (BMPs): Includes schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Bioengineering: Restoration or reinforcement of slopes and stream banks with living plant materials.

Conveyance System: Any channel or pipe for collecting and directing the stormwater.

Culvert: A covered channel or large diameter pipe that directs water flow below the ground surface.

Degradation: (Biological or chemical) The breakdown of chemical compounds into simpler substances, usually less harmful than the original compound, as with the degradation of a persistent pesticide. (Geological) Wearing down by erosion. (Water) The lowering of the water quality of a watercourse by an increase in the amount of pollutant(s).

Dike: An embankment to confine or control water, often built along the banks of a river to prevent overflow of lowlands; a levee.

Discharge: The release of stormwater or other substance from a conveyance system or storage container.

Drainage: Refers to the collection, conveyance, containment, and/or discharge of surface and stormwater runoff.

Erosion: The wearing away of land surface by wind or water. Erosion occurs naturally from weather or runoff but can be intensified by land-clearing practices related to farming, residential or industrial development, road building, or timber-cutting.

Eutrophication: The process of over-enrichment of waters by nutrients, often typified by the presence of algal blooms.

Fibric Peats: Those peats in which the undecomposed fibrous organic materials are easily identifiable. The most common fibric peat is sphagnum moss, which is extremely acidic.

Fill: A deposit of earth material placed by artificial means.

First Flush: The delivery of a disproportionately large load of pollutants during the early part of storms due to the rapid runoff of accumulated pollutants.

Forebay: An extra storage area provided near the inlet of a BMP to trap incoming sediments before they accumulate in a pond BMP.

Gabion: A large rectangular box of heavy gage wire mesh, which holds large cobbles and boulders. Used in streams and ponds to change flow patterns, stabilize banks, or prevent erosion.

General Permit: A permit issued under the NPDES program to cover a class or category of stormwater discharges.

Grading: The cutting and/or filling of the land surface to a desired slope or elevation.

Hazardous Waste: By-products of society that can pose a substantial or potential hazard to human health or the environment when improperly managed. Possesses at least one of four characteristics (flammable, corrosivity, reactivity, or toxicity), or appears on special EPA lists.

Heavy Metals: Metals of high specific gravity, present in municipal and industrial wastes, that pose long-term environmental hazards. Such metals include cadmium, chromium, cobalt, copper, lead, mercury, nickel, and zinc.

Hemic Peats: Peats which are intermediate in their properties between those of the fibric and sapric categories. They are typically more decomposed than fibric peats but less so than sapric. Similarly, hydraulic conductivity and color of hemic peat are generally intermediate between those of the other two peat categories.

Hydraulic Head: The height of water above any plain of reference.

Individual Permit: A permit issued under the NPDES program for a specific facility, whereby the unique characteristics of that facility may be addressed through the imposition of special conditions or requirements.

Infiltration: The downward movement of water from the surface to the subsoil. The infiltration capacity is expressed in terms of inches/hour.

Ingress/Egress: The points of access to and from a property.

Inlet: An entrance into a ditch, storm sewer, or other waterway.

Mulch: A natural or artificial layer of plant residue or other materials covering the land surface which conserves moisture, holds soil in place, aids in establishing plant cover, and minimizes temperature fluctuations.

Nonpoint Source: Pollution caused by diffuse sources (not a single location such as a pipe) such as agricultural or urban runoff.

NPDES (National Pollutant Discharge Elimination System): EPA's program to control the discharge of pollutants to waters of the United States.

NPDES Permit: An authorization, or license, or equivalent control document issued by EPA or an approved state agency to implement the requirements of the NPDES program.

Off-site: Any area lying upstream of the site that drains onto the site and any area lying downstream of the site to which the site drains.

On-site: The entire property that includes the proposed development.

Outfall: The point, location, or structure where wastewater or drainage discharges from a sewer pipe, ditch, or other conveyance to a receiving body of water.

Point Source: Any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.

Plat: A map or representation of a subdivision showing the division of a tract or parcel of land into lots, blocks, streets, or other divisions and dedications.

Pollutant: Generally, any substance introduced into the environment that adversely affects the usefulness of a resource.

Receiving Waters: Bodies of water or surface water systems receiving water from upstream constructed (or natural) systems.

Retention: The holding of runoff in a basin without release except by means of evaporation, infiltration, or emergency bypass.

Riparian: A relatively narrow strip of land that borders a stream or river.

Riprap: A combination of large stone, cobbles and boulders used to line channels, stabilize banks, reduce runoff velocities, or filter out sediment.

Runon: Stormwater surface flow or other surface flow which enters property other than that where it originated.

Runoff: That part of precipitation, snow melt, or irrigation water that runs off the land into streams or other surface water. It can carry pollutants from the air and land into the receiving waters.

Sapric Peat: Includes the most highly decomposed peat materials. In sapric peats, the original plant fibers have mostly disappeared. The water-holding capacity of sapric peat is commonly less than that of either fibric or hemic peat. Sapric peats are typically very dark gray to black in color and are quite stable in their physical properties.

Sedimentation: The process of depositing soil particles, clays, sands, or other sediments that were picked up by runoff.

Sheet Flow: Runoff which flows over the ground surface as a thin, even layer, not concentrated in a channel.

Sorption: The physical or chemical binding of pollutants to sediment or organic particles.

Source Control: A practice or structural measure to prevent pollutants from entering stormwater runoff or other environmental media.

Stabilization: The proper placing, grading and/or covering of soil, rock, or earth to ensure its resistance to erosion, sliding, or other movement.

Storm Drain: A slotted opening leading to an underground pipe or open ditch for carrying surface runoff.

Stormwater: Rainfall runoff, snow melt runoff, and drainage. It excludes infiltration.

Swale: An elongated depression in the land surface that is at least seasonally wet, is usually heavily vegetated, and is normally without flowing water. Swales direct stormwater flows into primarily drainage channels and allow some of the stormwater to infiltrate into the ground surface.

Treatment: The act of applying a procedure or chemicals to a substance to remove undesirable pollutants.

Treatment Control BMP: A BMP that is intended to remove pollutants from stormwater.

Turbidity: Describes the ability of light to pass through water. The cloudy appearance of water is caused by suspended and colloidal matter (particles).

Urban Runoff: Stormwater that passes through and out of developed areas to a stream or other body of water.

Wetlands: An area that is regularly saturated by surface or ground water and subsequently characterized by a prevalence of vegetation that is adapted for life in saturated soil conditions. Examples include: swamps, bogs, marshes, and estuaries.

APPENDIX B

**Supplemental Information for
Public Works Personnel**

SWPP Facilities Checklist

1. Storm Water Pollution Prevention Plan Requirements
 - a. Pollution Prevention Team -- Identified individual or individuals responsible for developing the plan and assisting in implementation. _____
2. Drainage
 - a. Site map outlining the drainage area within the facility boundary. _____
 - i. Include all drains, inlets, and outlets. _____
 1. Where do the outlets discharge to? _____
 2. Where does water drain to? _____
 - ii. Show directions of flow. _____
 - b. Note locations exposed to significant precipitation. _____
 - c. Note covered locations. _____
 - d. What kind of treatment does the storm water receive? _____
3. Inventory of Exposed Materials
 - a. Inventory of materials that may potentially be exposed to precipitation. _____
 - b. Note existing control measures to reduce pollution. _____
4. Spills and Leaks
 - a. Note locations of any major spills or leaks. _____
 - b. Where do they drain to? _____
5. Storage Areas
 - a. Note locations of storage of potential pollutants. (Fertilizer, paint, gas, oil, chemicals, metals, antifreeze, batteries, etc.) _____
 - b. What is being done to prevent leaks and spills? _____
 - c. Is everything labeled clearly? _____
6. Engine Maintenance and Repair Areas
 - a. Note all areas of maintenance (welding, fueling, engine maintenance and repair, sanding, blasting, painting, metal fabrication, etc.) _____
 - b. Where is maintenance being performed? (indoors or outdoors) _____
 - c. How are fluids being cleaned up? (hosing floor, dry cleanup, etc) _____
 - d. Where are vehicles being fueled? _____

7. General Yard Area

- a. Is there a schedule for routine yard maintenance? _____
- b. How are things being cleaned up and contained? _____

8. Preventive Maintenance

- a. Is there a schedule for routine maintenance of storm water management devices? (oil/water separators, sediment traps, etc.) _____
- b. Is equipment being inspected regularly for breakdowns or failures that could cause pollutant discharge? _____

9. Spill Prevention and Response

- a. Note locations of potential spills. _____
- b. Where do they drain to? _____
- c. How are spills being cleaned up? _____

10. Inspections

- a. Are inspections of the facility being performed regularly? _____

11. Employee Training

- a. Are employees being trained on spill response and material management practices? (used oil, spent solvent, fueling procedures, batteries, etc.) _____
- b. Are they being informed about BMP's for the facility? _____

12. Recordkeeping and Internal Reporting

- a. Are records of incidents (major spills or discharges) being kept? _____
- b. Are reports of quality/quantity of storm water discharges being filed? _____
- c. Are inspections and maintenance activities being documented? _____

13. Certification of Non-Storm Water

- a. Is it possible to evaluate for the presence of non-storm water? _____
- b. If so, is its presence being tested for and certified? _____

14. Sediment and Erosion Control

- a. Note locations of high potential for soil erosion. _____
- b. What preventative/stabilization measures are being implemented? _____

15. Runoff Management

- a. What practices (other than those controlling source of pollutants) are being used in the traditional storm water management of the facility? _____



UPDES STORM WATER INSPECTION EVALUATION FORM FOR SWPPP COMPLIANCE



BACKGROUND INFORMATION

Site Name:		UPDES Permit #:	
Site Address:			
Local Jurisdiction or County:			
Permit Effective Date:		Permit Expiration Date:	
Total Project Area:		Total Disturbed Area:	
Project Type: (circle) <i>Subdivision</i> <i>Commercial</i> <i>Industrial</i> <i>Linear (Road/Pipe/Power)</i> <i>Land Disturbance</i>			

OPERATOR CONTACT INFORMATION

	NAMES	PHONE NUMBERS	E-MAIL
Operator:			
Onsite Facility Contact:			
Important Contacts:			
Important Contacts:			

SWPPP PRE-SITE REVIEW INFORMATION			SWPPP PRE-SITE REVIEW INFORMATION			
	YES	NO	YES	NO		
1. Has a pre-construction review of the SWPPP been conducted by the applicable jurisdiction, if required?			6. Does the SWPPP contain the site description, sequence of construction activities, and areas of the site to be disturbed?			
2. Are the required post-construction elements included in the SWPPP? (i.e. grass swales, detention basins, etc.)			7. Does the SWPPP contain locations of storm drains, surface drainage patterns, and locations of storm water discharges?			
3. Are contact names and telephone numbers listed in the SWPPP?			8. Does the SWPPP and/or site map address waste control & disposal, off site tracking, sanitary concerns, exposure to construction materials, lay down or storage areas, administrative trailers, etc.?			
4. Are the NOI and State permit in the SWPPP?			9. Does the SWPPP include the site map, sediment, and erosion control design drawings, showing both structural and non structural BMPs?			
5. Did the "Operator" sign the SWPPP with authorization and certification statements?						

NOTICE OF TERMINATION (NOT) INSPECTION

Site Name:	Date of Evaluation:
Site Address:	
Inspected By:	Title/Organization:

	YES	NO	Comments:
1. Has the site been properly stabilized according to permit requirements?			
2. Have all temporary BMPs been removed?			
3. Have post-construction (permanent storm water system) elements been constructed and inspected in accordance with approved project drawings?			
4. Is the site acceptably clean?			

Inspector: I certify that this document and all attachments were prepared under my direction. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Inspector: _____
(Print Name) (Title) (Signature) (Date)

Operator: _____
(Print Name) (Title) (Signature) (Date)



SWPPP COMPLIANCE INSPECTION FORM



Project Name:		Address:		Date:
Owner:		Contractor: Gen/Sub		Start time:
Site Contact:		Phone:		Stop time:
UPDES Permit #:	Expiration:	Weather: Sunny Cloudy Raining Snowing Other:		
Date of last rain event:	Duration:	Approx. Rainfall (in):		
Inspected By (Print):		Local Jurisdiction or County:		

Reason for Inspection:	Scheduled	Complaint/Tip	Random	Receiving Waters:	YES	NO
BMP/HOUSEKEEPING INFORMATION				BMP/HOUSEKEEPING INFORMATION		
1. Are the SWPPP, NOI, and permit on site and accessible?				14. Are BMPs properly located, including inlet protection BMPs?		
2. Are off-site flows entering the construction site?				15. Are wind erosion controls in place?		
3. Are sediment & erosion control BMP's installed on the site as shown in the SWPPP, or on the site map if req'd? (BMPs that are no longer necessary should be crossed out and dated, new BMPs drawn in and dated.)				16. Does repair/maintenance of existing sediment and erosion control BMPs need to occur?		
4. Does your site evaluation indicate a need to update and document the SWPPP report and accompanying sediment and erosion control drawings within the next seven (7) days?				17. Are soil, construction material, landscaping items, or other debris evident on the street?		
5. Are on-site inspection reports in the SWPPP? (Inspections are to be performed <i>bi-weekly</i> and <i>within 24 hours</i> after a measurable weather event, and/or as required by the SWPPP)				18. Have all on-site corrective action items from previous inspections been addressed and documented within the time frame allotted by the inspector?		
6. Are updated BMP submittals in the SWPPP? (specifications and engineering for BMPs, both structural and non-structural)				19. Are there locations where additional BMPs should be installed or removed that are not identified in the SWPPP?		
7. Is trash and debris cleanup being performed? (goodhousekeeping)				20. Are all exits to public roads maintained to limit track-out?		
8. Are construction products, chemicals, and supplies properly managed and contained?				21. Is there evidence of sediment discharge such as mud flows or soil deposits from the construction site to downstream locations?		
9. Is fuel storage properly located and maintained?				22. Is there evidence of vehicles tracking sediment (mud-tracking) off the construction site onto roads or property?		
10. Are proper (not dirt) curb ramps installed?				23. Are soil, construction material, landscaping items, or other debris evident on the street?		
11. Are port-a-potties properly located off impervious areas and anchored down				24. Are spill prevention controls in place?		
12. Are runoff controls properly located and maintained? (e.g. silt fences, straw bails, waddles, etc.)?				25. Do locations exist where BMPs could be removed?		
13. Are there disturbed areas that have not had construction activities for 14 to 21 days without stabilization? (except snow or frozen ground)?				26. Should additional BMPs be installed that aren't in the SWPPP?		
				27. Is a concrete wash out area with sign properly located on the site?		

COMMENTS AND CORRECTIVE ACTIONS FOR SWPPP COMPLIANCE

Identify the problem and its location. If appropriate, describe (in general terms) what needs to be completed. However, only if qualified (e.g., you are a designer) should you be mandating specific BMPs to install. Include the date when corrections are to be completed.

Inspection Code (circle):	SW sampling	SW non-sampling	Inspector Code (circle):	(S) State	(L) Local	Type Code (circle):	1 - Municipal	2 - Industrial	4 - Federal
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Please list applicable Single Event Violation Codes:
 Inspector: I certify that this document and all attachments were prepared under my direction. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

Inspector:	(Print Name)	(Title)	(Signature)	(Date)
Operator:	(Print Name)	(Title)	(Signature)	(Date)

APPENDIX C
City Ordinances

HARRISVILLE CITY
RESOLUTION 2010-15

A RESOLUTION OF HARRISVILLE CITY, UTAH, ADOPTING THE STORM WATER MANAGEMENT PLAN PREPARED BY HARRISVILLE CITY PUBLIC WORKS WITH THE ASSISTANCE OF J-U-B ENGINEERS IN COMPLIANCE WITH THE STATE PERMIT RELATING TO PHASE II OF THE FEDERAL CLEAN WATER ACT.

WHEREAS, Harrisville City (hereafter "City") is a municipal corporation duly organized and existing under the laws of the State of Utah; and

WHEREAS, the City Council finds that in conformance with Phase II of the Federal Clean Water Act is an unfunded mandate imposed upon the City and administered by a state permit issued by the Utah Department of Environmental Quality;

WHEREAS, the City adopted its original Harrisville City Storm Water Management Plan (hereafter "Plan") by Resolution 2002-02 on or about July 23, 2002;

WHEREAS, the City has updated the Plan to conform to new state permit requirements and other applicable regulations in order to bring the City into compliance with the same;

WHEREAS, the City Council desires to adopt the updated Plan as provided herein;

NOW, THEREFORE, BE IT RESOLVED by the City Council of Harrisville City as follows:


Section 1: Updated Plan Adopted.

The updated Harrisville City Storm Water Management Plan dated November, 2010, prepared by the City Public Works Department with assistance from J-U-B Engineers, attached as Exhibit "A" and incorporated herein by this reference, is hereby adopted and approved. The Plan is to be a living document and the City's Public Works Department staff is hereby delegated authority to update and adapt said Plan as needed and subject to any agency requirements.

Section 2: Effective Date.

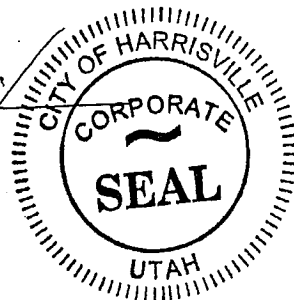
This Resolution is effective immediately upon passage and approval.

PASSED AND APPROVED by the Harrisville City Council on this 23rd day of November, 2010.


RICHARD HENDRIX, Mayor
Harrisville City

ATTEST:


JENNIFER MORRELL, City Recorder



Roll call vote is as follows:

Mr. Allen	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Mr. Crowther	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Ms. Fowers	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Mr. Richins	<input checked="" type="radio"/> Yes	<input type="radio"/> No
Mr. Wilhelmsen	<input checked="" type="radio"/> Yes	<input type="radio"/> No

Adoption by Administrative Rule

The adoption of this updated Plan constitutes a duly adopted policy or administrative rule authorized and enforceable in accordance with Section 15.23.060 of the Harrisville Municipal Code.

Harrisville Procedure Relating to MS4 Regulations 4.2.5.5.1, 4.2.5.5.2, and 4.2.5.5.3

4.2.5.5.1. Private property access and control measures.

The City's Storm Water Management Plan should be amended to require access for the City to inspect storm water control measures on private property for all development that is vested subsequent to the effective date of this Plan. This shall serve as an enforceable administrative rule promulgated by the City until such time that the storm water regulation ordinance is amended to reflect this procedure.

The access for the City to inspect storm water control measures on private property that is vested subsequent to the effective date of this Plan includes both construction-phase and post-construction access. Upon approval of the Public Works Director, and in lieu of City employees inspecting and maintaining storm water controls on private property, the City may allow the owner/operators or a qualified third party to conduct maintenance so long as: a) that at least annual certification, in the form of inspection documentation which has been performed, is provided to the City; and b) the structural controls are adequately operating and maintained as such were designed to protect water quality as provided in the original maintenance agreement and plans submitted upon vesting and approval of the site.

A maintenance agreement is required on private property that is vested subsequent to the effective date of this Plan includes both construction-phase and post-construction access and where owner/operators or a qualified third party to conduct maintenance as provided herein. Said maintenance agreement shall be promulgated in the form and manner as determined by the Public Works Director so long as the agreement includes at a minimum: a) allows the City oversight authority of the storm water measures, b) a provision that the agreement acts as a covenant that runs with the land, c) allows the City to perform necessary maintenance or corrective actions neglected by the owner/operators or the qualified third party, and d) allows the City to recoup the costs from the owner/operator as necessary to cover the expenses for necessary actions conducted by the City.

The City interprets this regulation as secondary and subservient to the United States Constitution and the Utah State Constitution as applied to property rights, land use, development, and similar rights. Specifically, the intent of this regulation is not to be applied to violate vested property rights nor to be a physical invasion of property rights as determined by the United States Supreme Court in Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419 (1982). The City recognizes that the United States Supreme Court interprets property right in conjunction with the laws and constitutions of each state. Therefore, Utah law also plays an important role in defining property rights. For the purpose of determining when a property right is vested the City shall continue to apply the Utah Supreme Court ruling in Western Land Equities, Inc. V. City of Logan, 617 P.2d 388 (1980) that states a property owner is vested to follow the City's

regulations in effect at the time a land use application is filed. Furthermore, where there is vagueness in any land use regulation, including the storm water regulations, it shall be interpreted in favor of the property owner.

4.2.5.5.2. Inspection of permanent structural BMPs.

The City's storm water inspector, the City Engineer, or his designee, shall inspect, at least once during construction and installation, any permanent structural BMPs.

4.2.5.5.3 Inspection and maintenance on private property.

Where a maintenance agreement exists between the City and the owner/operator of a private property, inspections and necessary maintenance is to be performed annually. On sites where the City has an agreement with the property owner/operator who is responsible to conduct maintenance, the City shall still inspect such sites at least every five (5) years to verify adequate maintenance is being performed. The City is to document its findings on an inspection report as follows:

1. Inspection date.
2. Name and signature of inspector.
3. Site location or address.
4. Current ownership information.
5. A description of:
 - a. The storm water control measures, including the quality and condition of:
 - i. Vegetation.
 - ii. Inlet and outlet channels and structures.
 - iii. Spillways.
 - iv. Weirs.
 - v. Other control structures.
 - vi. Sediment and debris accumulated in storage area and around inlet and outlet structures.
 - b. Specific maintenance issues or violations found that need to be corrected by the property owner/operator that includes:
 - i. Deadline for correction of violations.
 - ii. Reinspection date to follow-up on violations to be corrected.

RESOLUTION NO. 2002-06

A RESOLUTION REGARDING FEES, CREDITS,
EXEMPTIONS AND OTHER ISSUES RELATED TO THE
HARRISVILLE CITY STORM WATER UTILITY.

WHEREAS, the City Council enacted a storm water utility ordinance (the "ordinance") on October 22, 2002; and

WHEREAS, the ordinance created a storm water utility effective January 1, 2003; and

WHEREAS, Section 15.23.040 and 15.24.030 of the ordinance provided that fees associated with the storm water connections and activity permitting could be established by resolution of the City Council; and

WHEREAS, Section 15.22.050 of the ordinance provided that fees, credits and exemptions associated with the storm water utility could be established by resolution of the City Council; and

WHEREAS, the purpose of this resolution is to establish fees, credits and exemptions for the City's storm water utility.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF HARRISVILLE, UTAH, as follows:

1. The following provisions apply to the storm water utility established by the City;

Definitions. The following definitions shall apply to this resolution:

- A. **Developed parcel.** Any parcel that has been altered from its natural condition by grading, filling, or the construction of improvements or other impervious surfaces.
- B. **Equivalent Residential Unit ("ERU").** The average amount of impervious surface, expressed in square feet, on developed single family residential parcels in Harrisville.
- C. **Impervious surface.** Any hard surface, other than the natural surface, that prevents or retards the absorption of water into the soil, or that causes water to run off the surface in greater quantities or at a greater rate of flow than the natural surface.
- D. **Parcel.** The smallest separately segregated unit or plot of land having an identified owner, boundaries, and surface area which is documented for tax purposes and given a tax account (lot) number by the Weber County Assessor.
- E. **Single Family Residential.** A residential building having only one living unit, or a residential building having more than one living unit, if living units are separately owned and titled. Examples of single family residences included single family houses and condominiums.
- F. **Best Management Practices (BMPs):** Includes schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff spillage or leaks, sludge

or waste disposal, or drainage from raw material storage. These practices included Structural BMP or actual physical elements constructed or installed to meet the intent described above or Non-Structural BMPs which are practices or procedures for the above intent.

Fees

Storm Water Connections and Activity Permitting Fees

Background.

One of the purposes of this resolution is to establish the basis for the fees charged by the city. The fees may be amended at any time as part of the fees and charges section of the City's annual budget resolution or in a separate City Council resolution. The City Council may amend the fees established in this resolution without amending this resolution and without affecting the validity of the remaining provisions of this resolution.

Basis.

The fees established in this resolution are based on fees imposed by other communities involved with the Clean Water Act Phase II.

Amount.

The City Council finds that the following fees (service charges) are reasonable and necessary to fund the administration, and inspection for the Storm Water Connection and Activity Permits. The following fees (service charges) are hereby established for each parcel of real property in the City:

- | | | |
|----|---|--------|
| 1. | Storm Water Connection Permit: | \$0.00 |
| 2. | Storm Water Construction Activity Permit: | \$0.00 |

Storm Water Utility Fee

Background.

One of the purposes of this resolution is to establish the basis for the fees charged by the storm water utility. The fees may be amended at any time as part of the fees and charges section of the City's annual budget resolution or in a separate City Council resolution. The City Council may amend the storm water utility fees established in this resolution without amending this resolution and without affecting the validity of the remaining provisions of this resolution.

Basis.

The two main components of the fee are (1) the amount of impervious surface on the parcel (expressed as Equivalent Residential Units or "ERU's") and (2) the amount charged per ERU.

Non-single family residential parcels will be assessed a fee based on the actual amount of impervious surface on the parcel. Single family residential parcels will all be assessed a common fee, based on the average amount of impervious surface area found on single family residential parcels in the City. The City Council finds that the common fee for single family residential parcels is justified because (1) each single family residential parcel contributes approximately the same amount of storm water runoff, and (2) it would be impractical and difficult to administer the utility if each single family residential parcel were measured individually. The City Council

finds the ERU to be the most accurate measurement for determining the amount that each parcel contributes to, benefits from, and otherwise uses the storm water utility. For convenience, the City Council establishes the amount of impervious surface included in each ERU to be equal to the average amount of impervious surface found on single family residential parcels. Therefore, each single family residential parcel will pay the fee for one ERU. Based on the average hard surface area for many homes in the City and throughout the state as determined by other Storm Water Utilities, the City Council finds that one ERU equals 2,800 square feet of impervious surface area.

The amount to be charged per ERU was determined by calculating the amount of money needed to fund a basic level of storm water service, with emphasis on capital improvements, regulatory compliance with agencies such as the US EPA and the State, maintenance, public information, and water quality, and dividing that amount by the estimated number of ERU's in the City. This calculation results are included in a separate feasibility report incorporated hereby by reference..

Amount.

The City Council finds that the following fees (service charges) are reasonable and necessary to fund the administration, planning, design, construction, water quality programming, operation, maintenance and repair of existing and proposed storm and surface water facilities. The following storm water utility fees (service charges) are hereby established for each parcel of real property in the City:

1. Undeveloped Parcel - No charge.
2. Single Family Residential - \$3.00 per month (1 ERU).
3. Other Developed Parcels - All other developed parcels, including multiple family residential parcels, shall be charged a fee based on the number of ERU's on the parcel. If there is more than one City utility bill for the parcel, the fee shall be divided between the City utility bills covering the parcel. The number of ERU's shall be established by measuring the amount of impervious surface on the parcel, dividing that number by 2,800, and then rounding to the nearest whole number. The actual monthly fee (service charge) shall be computed by multiplying the total ERU's for the parcel by the monthly rate of \$3.00 per ERU. For example, a parcel with 20,000 square feet of impervious surface area shall pay a fee of \$21.00 per month ($20,000 / 2,800 = 7.1$; 7.1 rounded to the nearest whole number = 7; $7 \times \$3.00 = \21.00).

Credits

Non-single family residential parcels may apply for and receive a service charge credit if the property includes on-site storm water facilities that improve the quality of the storm water discharge from the property. The maximum amount of the credit shall be fifty percent (50%) of the service charge.

Credits shall be calculated based on the following Structural and non-Structural BMPs:

Structural BMP's

- A. **Working Detention Basin** - A credit of up to **30%** of the monthly utility rate will be

- given for a properly sized and functioning detention basin. Said basin must initially be reviewed and inspected by the City.
- B. **Increased Detention Volume** - A credit of up to **10%** of the monthly utility rate will be given for a detention basin whose volume is greater than that required for the 0.2 cfs/acre discharge. Credits will be given at a rate of 2% for every 0.02 cfs/acre down to a minimum of 0.1 cfs/acre. Calculations of the basin volume and discharge must be approved by the City Engineer for the credit. For example: for a discharge of 0.16 cfs/acre discharge would receive a credit of 4% per month in addition to other credits.
- C. **Increased Landscape** - A credit of up to **10%** of the monthly utility rate will be given for a increase landscape above the minimum landscape requirement of 15%. Credits will be given at a rate of 2% for every 5% of area landscaped up to a maximum of 40% landscaped area. Calculations of the landscape area must be approved by the City Engineer for the credit. Pervious Xeriscape is permissible. Xeriscape is defined as water efficient landscaping of xerigraphic quality ("Xeriscape Gardening" by Ellefson, Stephens & Welsh; McMillian Publishing Co., 1992.) Unmaintained weeds are not considered for Landscape requirements.
- D. **Working Oil Separator** - A credit of up to **10%** of the monthly utility rate will be given for a properly sized and functioning Oil separator. Said separator must initially be reviewed and inspected by the City.
- Non-Structural BMP's
- E. **Annual Parking lot Sweeping**- A credit of up to **10%** of the monthly utility rate will be given for receipts presented to the Storm Water Manager indicating that the entire parking area has been swept on at least an annual basis.
- F. **Catch Basin & Pipe Cleaning**- A credit of up to **10%** of the monthly utility rate will be given for receipts presented to the Storm Water Manager indicating that the Catch Basins and pipes have been cleaned at least on an annual basis.

The sum of the above credits shall not exceed 50% of the monthly Strom Water Utility rate. For example, if BMP's A, B, E, & F are applicable, even though their sum is 60%, the monthly credit will be 50%. The lack of maintenance of any of the above BMP's is grounds for elimination of any credits given.

Credits will be given under the following conditions:

1. The non-single family residential user make application to the City for said credits.
2. The Non-single family residential user provide all information to the City, mentioned in the credit calculations. Said calculations must be submitted by a licenced Professional Engineer, Surveyor, Architect or Landscape Architect.
3. A non-single family residential user receiving a credit can only maintain the credit as long as the approved BMPs are adhered to. Credits will be considered ongoing and renewable from year-to-year as long as inspections support that the approved credit program is being followed in its entirety.
4. Credits may be revoked or amended if inspections reveal that the approved program is not being followed in its entirety or it the non-single family residential user adds to its existing water quality program.
5. Policies for the removal or amendments of credits will be established by the City. These policies will consider an appropriate appeal process to the loss of a credit previously enjoyed by a non-single family residential user as outlined in the City Code.

Exemptions

1. **Undeveloped Parcels.** Undeveloped parcels shall not pay any storm water utility fees.

2. **Streets.** The City Council finds that all streets (publicly and privately owned) are part of the storm water utility conveyance system and are therefore exempt from the storm water utility fee. For purposes of this section, "streets" shall include the following:
 1. Any publicly-owned rights-of-way.
 2. Any property that has been dedicated, deeded or condemned as a street and accepted by the City as a street.
 3. Any property that has been abandoned to the public as a street, if the City considers the property a street and maintains the property as a street.
 4. Any thoroughfares (publicly or privately owned) that are open to the public, provide access to real property, and are used primarily for vehicular traffic.
 5. Any railroad rights-of-way."Streets" shall not include private driveways, designated drive areas in malls or shopping centers, or designated drive areas through condominium or PRUD parking areas.

3. **Common Area.** Common areas in residential condominium and PRUD developments shall not be assessed a storm water utility fee if each of the residential units in the development is assessed the standard residential fee.

Policies


The Public Works Director may adopt policies, consistent with this resolution, the storm water utility ordinance, and any other resolutions passed by the City Council, to assist in the application, administration and interpretation of this resolution, the storm water utility ordinance, and any resolutions related to the storm water utility.

2. If any section, sentence, clause or phrase of this resolution is held to be invalid or unconstitutional by a court of competent jurisdiction, such invalidity or unconstitutionality shall not effect the validity or constitutionality of any other section, sentence, clause of phrase of this ordinance.

3. All resolutions or policies in conflict herewith are hereby repealed.

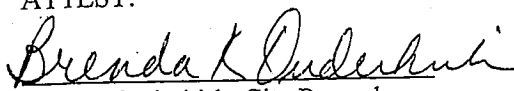
4. This resolution shall take effect on January 1, 2003.

PASSED AND APPROVED this 22nd day of October, 2002.



City of HARRISVILLE, by
Fred Oates, Mayor

ATTEST:



Brenda Ouder Kirk, City Recorder

RESOLUTION # 2002-02

A RESOLUTION OF THE CITY OF HARRISVILLE, ADOPTING THE STORM WATER MANAGEMENT PLAN

WHEREAS, the City of Harrisville (herein "City") is a municipal corporation duly organized and existing under the laws of the State of Utah; and

WHEREAS, the City Council finds that in conformance with the Clean Water Act, Phase II, the City is mandated to adopt a Storm Water Management Plan; and

WHEREAS, the City Council finds that in conformance with the provisions of the Clean Water Act, Phase II, the City's Storm Water Management Plan identifies the six Minimum Control Measures (MCM's), with their associated Best Management Practices (BMP'S), Measurable Goals, Implementation Schedules and Fiscal Sources.

WHEREAS, the City seeks to be in compliance with current statutory requirements.

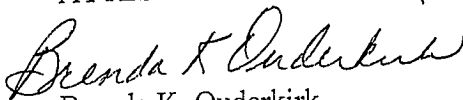
NOW THEREFORE, BE IT RESOLVED BY THE CITY OF HARRISVILLE as follows:

The Harrisville City Storm Water Management Plan dated July 2002, and future Mayor-approved updates, attached is hereby adopted and promulgated this 23rd day of July, 2002.



Fred W. Oates, Mayor

ATTEST:



Brenda K. Ouderkirk
City Recorder



10.11 Storm Water Permits

10.11.010 Purpose And Intent

10.11.020 Activity Permit Required

10.11.030 Activity Permit Application

10.11.040 Storm Water Pollution Prevention Plan

10.11.050 Proper Operation And Maintenance

10.11.060 Inspection And Entry

10.11.070 Revocation Or Suspension Of A Permit

10.11.080 Connection Permit

10.11.090 Violations And Enforcement

10.11.100 Exemptions

10.11.110 Appeal

10.11.120 Compliance With Federal And State Law

10.11.010 Purpose And Intent

The purpose of this chapter is to prevent the discharge of sediment and other construction-related pollutants from construction sites. Sediment and debris from construction sites are a major source of pollution to waterways and water systems located within the city and surrounding areas. Each year storm water runoff carries tons of sediment from construction sites into local drainage systems, irrigation systems, canals, rivers, and lakes. Sediment from storm water runoff also clogs and obstructs storm drains, culverts, canals, and may cause damage to private property, wildlife habitat, or water quality.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.11.020 Activity Permit Required

1. A storm water construction activity permit is required before any person or entity may excavate, grub and clear, grade, or perform any type of construction activity that will disrupt or cause a change in the natural landscape upon any of the following types of property located within the city:
 - a. One acre plus. Any parcel, lot, development, or "common plan of development" which is equal to or greater than one acre (43,560 square feet) in size.
 - b. Subdivisions. A subdivision development greater than or equal to one acre in size qualifies under this subsection even if each of the individual lots in the subdivision are smaller than one acre.
 - c. Special areas. Any parcel, lot, or development or "common plan of development" the city determines that because of the nature or type of the parcel, lot, or development that there may occur a disturbance of land that may likely result in erosion or the transport of sediment off of the site by storm water to a degree substantially greater than that which would occur under natural landscape conditions.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.11.030 Activity Permit Application

Any person or entity desiring a storm water construction activity permit must first file an

application with the city. The application shall be submitted with, or as part of an application for a site plan or subdivision approval or building permit. Any person or entity desiring a storm water construction activity permit must also submit a "notice of intent" (NOI) with the State of Utah.

1. Content. The application shall include a storm water pollution prevention plan which meets the criteria set forth in Section 15.24.040.
2. Timing. The applicant shall file the application on or before the following dates:
 - a. Subdivision. The date that the applicant submits the preliminary subdivision plat application if the applicant proposes to develop a subdivision.
 - b. Site plan. The date that the applicant submits a site plan application if the applicant proposes to develop a site plan or amended site plan.
 - c. Building permit. The date that the applicant submits a building permit application if the applicant proposes to construct a building on an existing lot or parcel.
 - d. Other. At least two (2) weeks before the developer intends to perform any type of work not listed above that would require a storm water construction activity permit in accordance with this chapter.
3. Compliance. If an applicant's development comes under more than one of the categories listed above, then the applicant shall submit the storm water construction activity permit application on the earliest of the listed dates. Failure to comply with the application dates set forth above is not a criminal offense, but may delay the applicant's project. Failure to acquire a required storm water construction activity permit is grounds for denying a related subdivision application, site plan application, conditional use permit application, or building permit application. It is unlawful to commence work (move dirt) on a development site before obtaining a required storm water construction activity permit.
4. Fee. The applicant for a storm water construction activity permit shall pay a fee in an amount set by resolution of the city council.
5. Application Approval. The city administrative staff shall approve the application and grant the permit if the application is complete and meets the criteria set forth in Section 15.24.040. The city administrative staff shall deny the application or approve the application with conditions if the city administrative staff determine that the measures proposed in the storm water pollution prevention plan fail to meet the criteria set forth in Section 15.24.040. Conditions the city administrative staff may impose in connection with the approval of a permit include, but are not limited to, the establishment of specific measures and controls to prevent erosion and the discharge of sediment, debris and other construction-related pollutants from the site by storm water.
6. Term. Unless otherwise revoked or suspended, a storm water construction activity permit shall be in effect for the full period of the construction activity. The construction activity will not be considered to be completed until the following events occur:
 - a. Subdivisions. For permits associated with a subdivision plat approval:
 - i. The permittee must complete all required subdivision improvements.
 - ii. One of the following three (3) events must occur:
 - (1) The city issues a final certificate of occupancy for each lot in the subdivision.

- (2) An individual storm water construction activity permit is issued for each lot in the subdivision not having a final occupancy.
 - (3) The property has been re-vegetated or landscaped in a manner that eliminates erosion and sediment discharge or that brings the property back to its natural state.
 - b. Site plans. For permits associated with a site plan approval, the date that the permittee has completed all required landscaping and all outside construction work associated with the site plan.
 - i. Building permits. For permits associated with a building permit application, the date that the city issues a final occupancy permit for the structure covered by the building permit.
 - ii. Other. For permits issued that are not tied to other approvals from the city, the date that the permittee has completed all work associated with the permit and takes steps required by the permit to prevent further erosion and runoff from the site.
7. Termination. No storm water construction activity permit shall be considered terminated until the permittee notifies the city of the completion of the project and a final inspection is performed by an authorized city inspector to verify site stabilization. When the city inspector has verified the site is stabilized a "notice of termination" shall be submitted to the State of Utah. The permittee shall keep and maintain all permit-required improvements on the site until the city accepts the "notice of termination."
8. Amendments. In the event that the proposed construction activity for a site to which a permit pertains is materially altered from that described in an original storm water pollution prevention plan in a way that may have a significant impact upon the effectiveness of the measures and controls described in the original storm water pollution prevention plan, the permittee shall file an amended storm water pollution prevention plan which meets the criteria set forth in Section 15.24.040.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.11.040 Storm Water Pollution Prevention Plan

1. Required information. The storm water pollution prevention plan (SWPPP) shall be required for all sites disturbing one acre or greater and for sites that are less than one acre that are part of a common plan of development. The SWPPP shall contain the following information. The following is not a comprehensive list of required elements of a SWPPP. For complete requirements see the general permit UTR300000 which can be found at: <http://www.waterquality.utah.gov/stormwatercon.htm>.
 - a. Site map. Provide an accurate map of the development area and surrounding property with spot elevations and contour lines.
 - b. Site description. Provide a description of the total area of the development site and acreage to be disturbed. Explain the nature and location of the construction activities, and a description of the intended sequence of major activities which will disturb soils for major portions of the site and include activities such as:
 - i. Grubbing.

- ii. Excavation.
 - iii. Grading.
 - iv. Utilities.
 - v. Infrastructure.
 - vi. Any other activity that may disturb the natural landscape or vegetation.
 - c. Control description. Provide a description of the proposed measures and controls that will be implemented during construction activity, while the site is not stable, or while the soil is being disturbed or in a state of transition. The SWPPP must clearly describe the times during the construction process that the measures will be implemented for each major activity identified in this section.
 - d. Contact information. The SWPPP shall state the name and phone number of the person or entity responsible for implementation of each control measure.
2. Goals and criteria. The proposed measures and controls described in the SWPPP shall be designed to meet the following goals and criteria:
- a. Discharges. The proposed measures and controls shall be designed to prevent or minimize, to the maximum extent practicable, the discharge of sediment, debris and other construction-related pollutants from the construction site by storm water runoff into the storm drainage system.
 - b. Debris. The proposed measures and controls shall be designed to prevent or minimize, to the maximum extent practicable, the deposit, discharge, tracking by construction vehicles, or dropping of mud, sediment, debris or other potential pollutants onto public streets and rights-of-way.
 - i. Any such discharge shall be cleaned up and removed immediately upon notification to the permittee, or when it otherwise comes to the attention of the permittee.
 - ii. Permittee shall, at a minimum, clean and remove any deposit or discharge by the end of the work shift in which the deposit occurred, or at the end of the work day, whichever comes first.
 - c. BMPs. The proposed measures and controls shall consist of Best Management Practices (BMPs) available at the time that the SWPPP is submitted. BMPs may include, but shall not be limited to:
 - i. Temporary silt or sediment fences.
 - ii. Sediment traps.
 - iii. Detention ponds.
 - iv. Gravel construction entrances and wash down pads to reduce or eliminate off-site tracking.
 - v. Porous type filter material or authorized sediment barrier.
 - vi. Temporary grasses and permanent vegetative cover.
 - vii. Straw mulch as a temporary ground cover.
 - viii. Erosion control blankets.
 - ix. Temporary interceptor dikes and swales.
 - x. Storm drain inlet protection.
 - xi. Check dams.

- xii. Pipe slope drains.
 - xiii. Rock outlet protection.
 - xiv. Reinforced soil retaining systems.
 - xv. Gabions.
 - xvi. Other BMPs that are designed to fulfill the purposes of this chapter.
- d. Stabilization. The proposed measures and controls shall be designed to preserve existing vegetation, where possible. Disturbed portions of the site shall be stabilized. Stabilization practices may include:
- i. Temporary seeding.
 - ii. Permanent seeding.
 - iii. Mulching.
 - iv. Geotextiles.
 - v. Sod stabilization.
 - vi. Vegetative buffer strips.
 - vii. Protection of existing trees.
 - viii. Planting of additional trees.
 - ix. Preservation of mature vegetation.
 - x. Other appropriate measures.
- e. Stabilization practices. The use of impervious surfaces for stabilization is not an appropriate BMP, and should be avoided. Stabilization measures shall be initiated as soon as practicable in disturbed portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased, except under the following circumstances:
- i. If within 14 days of the initiation of stabilization measures the construction activity temporarily or permanently ceases or is precluded by snow cover or frozen ground conditions, stabilization measures shall be initiated as soon as practicable; or
 - ii. If construction activity on a portion of the site is temporarily ceased, and earth disturbing will resume within 21 days, temporary stabilization measures need not be initiated on that portion of the site.
- f. Minimizing risk materials. The proposed measures and controls shall be installed to minimize at the site the risk of discharge of construction-related pollutants such as oil, fuels, paint, thinners, solvents, salts, and other chemicals or pollution material:
- i. Implementation of storage practices to minimize exposure of the material to storm water as well as spill prevention and response.
 - ii. Storage of pollution potential materials under cover and on impervious surfaces.
 - iii. Maintaining permanent vehicle and equipment parking or storage areas on approved impervious surfaces with appropriate catch basins and oil separation devices that are properly maintained.

10.11.050 Proper Operation And Maintenance

The permittee of a SWPPP shall install the erosion and sediment control measures required by the approved SWPPP before commencing any construction activity on the site to which the SWPPP applies or at such times indicated in the SWPPP. The erosion and sediment control measures shall be properly installed and maintained in accordance with the Permit, the manufacturers' specifications, and good engineering practices. The Permittee shall maintain such measures on the site until the City accepts the termination of the Permit pursuant to Section 15.24.030.7.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.11.060 Inspection And Entry

The permittee shall allow any authorized employees and representatives of the city, representatives of the Utah Division of Water Quality, and representatives of the EPA, to enter the site to which a permit applies at any time and to inspect the erosion and sediment control measures maintained by the permittee. The permittee shall also allow inspection of any records pertaining to the conditions of the permit. Section 15.23.060 further specifies the authority relating to inspections.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.11.070 Revocation Or Suspension Of A Permit

1. Revocation or suspension. A storm water construction permit issued under this chapter may be revoked or suspended by the city upon the occurrence of any one of the following:
 - a. Failure of permittee to comply with the SWPPP or any related condition.
 - b. Failure of permittee to comply with any provision of this chapter or any other applicable law, ordinance, rule or regulation related to storm water.
 - c. A determination by the city that the erosion and sediment control measures implemented by a permittee pursuant to the Plan are inadequate to prevent or minimize, to the maximum extent practicable, the discharge of sediment, debris or other pollutants from the construction site by storm water.
2. Notice. The city shall provide permittee written notice of noncompliance before revoking or suspending a permit. The notice shall:
 - a. State the location and nature of the noncompliance, and shall also specify what action is required for the permittee to avoid revocation or suspension of the permit.
 - b. Allow the permittee a reasonable time to take the necessary corrective action to avoid revocation or suspension of the permit which time, in the absence of exceptional circumstances, shall not be less than ten (10) nor more than thirty (30) days.
 - c. Be delivered or mailed to the address listed for the permittee in the application or the site of the construction activity, or both.
 - d. If the permittee fails to correct the problems identified in the notice during the time specified in the notice, the city may suspend or revoke the permit by recording a certificate of non-compliance on the property where the violation occurred.

- e. The permittee may appeal a suspension or revocation determination of any permit as provided in this chapter.
3. Exceptional circumstances. The city may take any steps necessary to mitigate, remedy, or alleviate any exceptional circumstances and recover the costs for the same from a permittee, owner, developer, or contractor responsible for creating an exceptional circumstance. For purposes of this chapter, exceptional circumstances include, but are not limited to:
 - a. Situations which involve a risk of injury to persons.
 - b. Damage to storm drain facilities
 - c. Damage to other property or the environment.
 - d. Discharge of a pollutant into the environment.
4. Stop work order. A stop work order may be issued upon the revocation or suspension of a permit, or upon the discovery of work being conducted without a required permit. The stop work order may be issued by the appropriate city inspector. No construction activity may be commenced or continued on any site for where a stop work order has been issued, or where a permit has been revoked or suspended until the permit has been reinstated or corrected.
5. Reinstatement. A permit may be reinstated or corrected upon:
 - a. Compliance with all provisions of this chapter.
 - b. Correction and compliance with all permit conditions.
 - c. Correction of substandard performance.
 - d. Correction of non-compliance issues.
 - e. Upon the filing of an amended SWPPP which is designed to correct the deficiencies of the original SWPPP.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.11.080 Connection Permit

1. Permit required. No person shall:
 - a. Connect to the city's storm water system, either directly or indirectly, without first obtaining a storm water connection permit from the city.
 - b. Commence new development or redevelopment without first obtaining a storm water connection permit.
2. Application. The applicant for a storm water connection permit shall submit the following to the city:
 - a. Application form. A completed application form as provided by the city.
 - b. BMPs. A plan incorporating storm water BMPs that meet the requirements of the storm water regulations and section 15.23.040.
 - c. Maintenance. A maintenance plan and any maintenance agreement outlining how the applicant will maintain the storm water improvements listed in the application.
 - d. Fee. A fee in an amount set by resolution of the city council.
3. Application. The application shall be submitted to the city in conjunction with building

permit or subdivision approval, whichever is applicable.

4. Review. The storm water connection permit application shall be reviewed by the city official designated to issue storm water permits. Upon review, the permit shall be issued, issued with conditions, or denied.
5. Appeal. An aggrieved party may appeal as provided in this chapter the issuance or denial of any storm water permit.
6. Factors. When deciding whether to issue, issue with conditions, or deny a storm water permit application, the following factors shall be considered:
 - a. Whether the application is complete.
 - b. Whether all development fees have been paid.
 - c. Whether the application complies with all storm water regulations and policies.
 - d. Whether the application conforms to the city's storm drain plan.
 - e. Whether the application incorporates effective BMPs.
 - f. The potential for the connection to introduce pollutants into the storm drain system.
 - g. Whether the proposed connection creates a safety hazard.
 - h. Whether the proposed connection affects the integrity of the storm sewer system infrastructure.
 - i. Whether the proposed connection endangers any ground water or drinking water supply.
 - j. Whether the applicant has submitted a maintenance plan and any maintenance agreement ensuring the proper maintenance and upkeep of the applicant's connection and on-site storm water improvements.
7. Failure. Failure to construct or maintain storm water improvements in accordance with an approved storm water connection permit shall be a violation of this chapter.
8. As-built. Any person connecting to the storm water system shall provide the "as-built" drawings showing the details and the location of the connection along with any location device. The plans shall be provided in a format acceptable to the city.
9. Rate. Connections to the storm water system shall be designed so that the discharge to the storm water system does not exceed one tenth cubic foot per second (0.1 cfs) per acre.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.11.090 Violations And Enforcement

Enforcement, violations, and penalties for this chapter are specified in section 15.23.080. Each day that a violation occurs shall constitute a separate offense.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.11.100 Exemptions

The following activities are exempt from the requirements of this chapter:

1. Bona fide municipal activities of the city.
2. Activities of a public utility, government entity, or similar entity to remove or alleviate an emergency condition, restore utility service, reopen a public thoroughfare to traffic, or otherwise protect public health, safety, and welfare.

3. Bona fide agricultural and farming operations.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.11.110 Appeal

1. Any aggrieved party may appeal the approval, suspension, revocation, or denial of any storm water permit issued under this chapter by filing a notice to appeal with the city recorder within 10 days of determination being issued by the city. The notice of appeal shall contain the following information:
 - a. Appellant's name, address, and contact telephone number.
 - b. A short statement describing the basis for the appeal.
 - c. The relief sought by the appellant.
2. Upon receipt of the notice of appeal, the city recorder shall schedule an appeal before the city's appeal authority in accordance with the procedures and rules for the same as specified in the municipal code.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.11.120 Compliance With Federal And State Law

Nothing in this chapter is intended to relieve any person or entity from any obligation to comply with applicable federal and state regulations.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.12 Storm Water Utility

[10.12.010 Findings](#)

[10.12.020 Purpose](#)

[10.12.030 Definition](#)

[10.12.040 Storm Water Utility](#)

[10.12.050 Storm Water Utility Fee](#)

[10.12.060 Billing](#)

10.12.010 Findings

The city council makes the following findings regarding storm water runoff and the city's storm water system:

1. Facilities. The city's existing storm water system consists of a network of man-made and natural facilities, structures, and conduits, including groundwater and aquifers that collect and route storm water runoff.
2. Endangerment. Uncontrolled or inadequately controlled storm water runoff endangers the city's groundwater supply.
3. Erosion. Uncontrolled or inadequately controlled storm water runoff causes erosion and property damage.
4. Emergency services. Uncontrolled or inadequately controlled storm water runoff hinders the city's ability to provide emergency services to its residents.
5. Traffic. Uncontrolled or inadequately controlled storm water runoff impedes the regular flow of traffic in the city.
6. Public health. Uncontrolled or inadequately controlled storm water runoff poses health hazards to the citizens of the community.
7. Pollution. Storm water runoff carries concentrations of oil, grease, nutrients, chemicals, heavy metals, toxic materials and other undesirable materials that may jeopardize the integrity of ground waters and receiving waters, including the city's culinary water supply.
8. Impervious surfaces. All developed properties in the city contribute to the need for the storm water system by converting natural ground cover into impervious surfaces.
9. Maintenance. All developed properties in the city make use of or benefit from the city's operation and maintenance of the storm water system.
10. Regulations. The Environmental Protection Agency (EPA) and the Utah Department of Environmental Quality (DEQ) will develop further storm water permitting regulations that will apply to local government as unfunded mandated and otherwise.
11. General operation. Absent effective maintenance, operation, regulation and control of existing storm water drainage conditions in the city constitute a potential hazard to the health, safety and general welfare of the city, its residents, and its businesses.
12. Utility fees. A storm water utility is the most equitable and efficient method of managing storm water in the city and ensuring that each property in the city pays its fair share of the amount that the property contributes to, benefits from, and otherwise uses the storm water system.

Repealed & Reenacted by Ord. [453](#) on 7/10/2012

10.12.020 Purpose

The purpose of this ordinance is to protect the health, safety and welfare of the city and its inhabitants by improving the city's storm water system, managing and controlling storm water runoff, protecting property, preventing polluted waters from entering the city's water supply and other receiving waters, and establishing a viable and fair method of financing the construction, operation and maintenance of the storm water system.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.12.030 Definition

The words or phrases in this section shall be defined as follows all chapters in the municipal code relating to storm water:

1. Best management practices (BMPs). A wide range of management procedures, schedules of activities, prohibitions of practices, maintenance procedures, and other management practices which have been demonstrated to effectively control the quality and/or quantity of storm water runoff and which are compatible with the planned land use. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or water disposal, or drainage from raw material storage. A list of sample BMP's and their effectiveness ratings can be found in the most current version of the city's Storm Water Management Plan available at the city office or as otherwise provided.
2. Catch Basin. A drain inlet designed to keep out large or obstructive matter.
3. City. Includes the geographical boundaries of Harrisville City, Utah, and also refers to the classification of the jurisdictional area within a municipal separate storm sewer system (MS4).
4. City council. Refers to the legislative body of Harrisville City, Utah.
5. Common plan of development. Means a development that is contiguous to an area where multiple separate distinct construction activities may be taking place at different times or different schedules under one plan. For example, if a developer buys a 20-acre lot and builds roads, installs pipes, and runs electricity with the intention of constructing homes or other structures sometime in the future, this would be considered a common plan of development or sale. If the land is parceled off or sold, and construction occurs on plots that are less than one acre by separate, independent builders, this activity still would be subject to storm water permitting requirements if the smaller lots were included on the original site plan. The common plan of development or sale also applies to other types of land development such as industrial parks or well fields. A permit is required if one (1) or more acres of land will be disturbed, regardless of the size of any of the individually-owned or developed sites.
6. Debris. Any dirt, rock, sand, vegetation, rubbish or litter.
7. Detention basin. An area designed to detain peak flows from storm water runoff and to regulate release rates of that water into the city's storm drainage system, also allowing debris to settle out. Detention basin outlets are connected directly to downstream storm drains. All flow entering detention basins is released via outlet piping. Regional Detention Basins are defined as large detention basins owned and maintained by the City. Local detention basins are defined as smaller basins typically in subdivisions and constructed by developers. Following acceptance of the construction, the ownership, operation and

maintenance may either be conveyed and maintained by the city or owned and maintained by private property owners.

8. Developed parcel. Any parcel that has been altered from its natural condition by grading, filling, or the construction of improvements or other impervious surfaces.
9. Development or land development. Any man-made change to improved or unimproved real estate, including but not limited to site preparation, filling, grading, paving, excavation, development of a parcel, lot, subdivision plat or site plan and construction of buildings or other structures.
10. Director. Means the person the public works director, or other person or agent designated by the city to enforce storm water regulations adopted by the city.
11. Disturb. To alter the physical condition, natural terrain or vegetation of land by clearing, grubbing, grading, excavating, filling, building or other construction activity.
12. Drain inlet. A point of entry into a sump, detention basin, or storm drain system.
13. Drinking water source protection zone. Zones determined by Geo-Hydrology designed to protect groundwater aquifers of a well in a culinary water system.
14. Equivalent residential unit ("ERU"). The average amount of impervious surface, expressed in square feet, on developed single family residential parcels in the city. One ERU equals 2,800 square feet of impervious surface area.
15. Hazardous material. Any material, including any substance, waste, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, or significantly contribute to, a substantial presence or potential hazard to human health, safety, property, or the environment when improperly treated, stored, transported, disposed of, or otherwise managed. Hazardous material includes, but is not limited to, any hazardous substance designated under 40 CFR part 116 pursuant to section 311 of the Clean Water Act.
16. Illicit connection. Illicit connection means either of the following:
 - a. Any drain or conveyance, whether on the surface or subsurface, which allows an illicit discharge to enter the storm drain system. Examples include, but are not limited to, any conveyances which allow non-storm water discharge such as sewage, process wastewater, or wash water to enter the storm drain system, and any connections to the storm drain system from indoor drains or sinks, regardless of whether said drain or connection had been previously allowed, permitted, or approved by a government agency; or
 - b. Any drain or conveyance connected to or discharging to the storm drain system, which has not been (1) documented in plans, maps, or equivalent records submitted to the City, and (2) approved in writing by the City.
17. Illicit discharge. Any non-storm water discharge to the storm water system. Illicit discharges include both direct connections (e.g. wastewater piping either mistakenly or deliberately connected to the storm water system) and indirect connections (e.g. infiltration into the storm water system or spills collected by drain inlets).
18. Impervious surface. Any hard surface, other than the natural surface, that prevents or retards the absorption of water into the soil, or that causes water to run off the surface in greater quantities or at a greater rates of flow than the natural surface. Such impervious surfaces include, but are not limited to: roofs, concrete, asphalt, and similar improvements that prevent or impede the natural absorption of water into the soil.

19. Municipal separate storm sewer system (MS4). A conveyance or system of conveyances including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains.
20. Percolation. Means the ability of a soil to absorb water. Typically measured by a Standard Percolation Test in units of minute per inch.
21. Person. Means any individual, corporation, partnership, association, company or body politic, including any agency of the State of Utah and the United States government.
22. Pollutant. Means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, industrial, municipal and agricultural waste, paints, varnishes, and solvents; oil and other automotive fluids; non-hazardous liquid and solid wastes and yard wastes; refuse, rubbish, garbage, litter, or other discarded or abandoned objects, articles, and accumulations, that may cause or contribute to pollution; floatables; pesticides, herbicides, and fertilizers; hazardous substances and wastes; sewage, fecal coliform and pathogens; dissolved and particulate metals; animal wastes; wastes and residues that result from constructing a building or structure (including but not limited to sediments, slurries, and concrete resins); and noxious or offensive matter of any kind.
23. Redevelopment. Alterations of a property that change the footprint of a site or building in such a way that disturbs one acre of land or more.
24. Retention basin. Means an area designed to retain flows from storm water runoff and to encourage infiltration into surrounding sub-surface soils. Retention basins do not have outlet piping connected into a storm water system. A retention basin allows debris to settle out.
25. Sanitary sewer overflow (SSO). A discharge of untreated sanitary wastewater. SSOs are illegal and must be eliminated. All SSOs must be reported to the Division of Water Quality and to the permittee's local wastewater treatment plant.
26. Storm drain. Means a closed conduit for conducting collected storm water.
27. Storm water. Means any flow that occurs during or following any form of natural precipitation. Storm water includes only the portion of such flow that is composed of precipitation.
28. Storm water system. The system of conveyances (including sidewalks, roads with drainage systems, municipal streets, catch basins, detention basins, curbs, gutters, ditches, man-made channels, sumps, storm drains, and ground water) owned and operated by the City, which is designed and used for collecting or conveying storm water. The storm water system is also referred to as MS4.
29. Storm water runoff. Water that is generated by storm water flows over land.
30. Sump. A city approved formalized underground structure that may be used in rare situations to act as a detention basin to allow the slow release of water into the surrounding sub-soil.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.12.040 Storm Water Utility

1. Creation. The city council hereby creates and establishes a storm water utility as part of the city's overall storm water system. The storm water utility shall plan, design,

- construct, maintain, administer and operate the city's storm water system.
2. Funding. The city council hereby establishes a storm water utility reserve fund to handle all income, expenses and other financial transactions related to the storm water utility. All storm water utility service charges shall be deposited in this reserve fund. Money in the storm water utility shall be accounted separately and held in reserve separate from general funds. The storm water utility may be used and pay for any services and expenses attributable to storm water. The city may administer the storm water utility reserve fund and an enterprise fund.
 3. Facilities. The storm water utility shall operate independently of the general fund. The storm water utility shall have the same relationship to the city as other utilities, such as the water and sanitary sewer. Upon creation of this utility, all of the city's storm water facilities (not including streets and similar facilities as designated by the city council) shall be transferred to the storm water utility in consideration for the storm water utility taking primary responsibility for planning, designing, constructing, maintaining, administering and operating the storm water system and facilities.
 4. Administration. The storm water utility shall be administered by the director under the oversight of the city manager.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.12.050 Storm Water Utility Fee

1. Imposed. Each developed parcel of real property in the city shall be charged a storm water utility fee.
2. ERU. The fee shall be based on the number of equivalent service units (ERUs) contained in the parcel. The city council finds that the ERU is the most accurate measurement for determining the amount that each parcel contributes to, benefits from, and otherwise uses the storm water utility. Based on engineer's research, the City Council finds and establishes that one ERU equals 2,800 square feet of impervious surface area.
3. Calculation. The city council finds that:
 - a. Each single family residential parcel contributes approximately the same amount of storm water runoff. Therefore, each developed single family residential parcel shall pay a base rate of one (1) ERU.
 - b. All non-single family residential parcels shall pay a multiple of this base rate, expressed in ERU's, according to the total measured impervious area on the parcel being imposed a fee.
4. Charge per ERU. The initial storm water utility fee is \$3.00 per ERU, unless another fee per ERU or fee schedule is established by the city council by ordinance or resolution.
5. Exemptions and credits. The city council may establish exemptions and credits to the storm water utility fee by ordinance or resolution.
6. Policies. The director may adopt policies and rules, consistent with this chapter to assist in the application, administration, and interpretation of this chapter and any other chapter related to the storm water.
7. Appeals. Any person or entity that believes that this chapter, or any storm water utility rate, was interpreted or applied erroneously may appeal to the city's appeal authority. The appeal shall be in writing, shall state any facts supporting the appeal, and shall be made

within ten (10) days of the decision, action, or bill being appealed. All appeal shall be handled in accordance with the procedure in the municipal code for the appeal authority. The decision of the appeal authority shall be final.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.12.060 Billing

The city council finds that the city's storm water system, sanitary sewer system, culinary water system, and solid waste collection system are interrelated services that are part of a unified city plan to provide for the health, safety and welfare of the city and its residents in an environmentally responsible manner. Billing shall be as follows:

1. Utilities and fees. City utility billings is completed in conjunction with the regular monthly billing statement of Bona Vista Water District who shall bill on behalf of the city for:
 - a. Sanitary sewer;
 - b. Solid waste collection and disposal;
 - c. Enhanced services;
 - d. Franchise fees if imposed;
 - e. Storm water; and Purpose
 - f. An administrative cost per bill.
2. General provisions. The following general provisions apply:
 - a. If there is no regular utility bill for the property, there is no city utility imposed for storm water.
 - b. A utility fee is a civil debt owed to the city by the person or entity paying for the city utility services provided to the property.
 - c. All properties receiving Bona Vista water service shall be charged the applicable city utilities specified in this part, including the storm water fee, regardless of whether or not the owner or occupant of the property requests the storm water utility service.
 - d. Failure to pay any portion of the utility bill may result in termination of water service.
3. Billing changes. The city administrator may modify, reduce, impose, or rebate erroneous billing charges not to exceed a period of three (3) month. The mayor may make special exceptions on billing charges for special circumstances as recommended by the director.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.13 Storm Water Policy

10.13.010 Prohibited Obstructions

10.13.020 Prohibited Discharges

10.13.030 Prohibited Storage And Debris

10.13.040 Best Management Practices

10.13.050 Easements

10.13.060 Authority To Inspect

10.13.070 Requirement To Monitor And Analyze

10.13.080 Violations And Enforcement

10.13.090 Damage To Storm Water System Or Irrigation Lines

10.13.100 Manhole Covers

10.13.110 Compliance With Federal And State Law

10.13.010 Prohibited Obstructions

1. It is unlawful for any person to:
 - a. Obstruct the flow of water in the storm water system.
 - b. Contribute to the obstruction of the flow of water in the storm water system.
 - c. Cover or obstruct any drain inlet.
2. The following obstructions are exempt from the prohibitions of this section:
 - a. Street and/or storm water improvement projects authorized by the city.
 - b. Flood control and prevention activities performed by the city.
 - c. Obstructions approved by the city as part of a site's storm water drainage plan.
 - d. Obstructions occurring during clean-up periods established by the city, provided that the materials are placed according to city directions and do not obstruct drain inlets.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.13.020 Prohibited Discharges

1. It is unlawful for any person to discharge non-storm water discharges to the MS4 including spills, illicit connections, illegal dumping, and sanitary sewer overflows ("SSOs") into the storm sewer system. All SSOs must be reported to the Division of Water Quality and to the MS4s local wastewater treatment plant.
2. The following discharges to the storm water system are exempt from the prohibitions of this section:
 - a. Water line flushing.
 - b. Landscape irrigation runoff.
 - c. Diverted stream flows.
 - d. Rising ground waters.
 - e. Uncontaminated ground water infiltration.
 - f. Uncontaminated pumped ground water.
 - g. Discharges from potable water sources.
 - h. Foundation drains.
 - i. Air conditioning condensate.

- j. Springs.
- k. Water from crawl space pumps.
- l. Footing drains.
- m. Individual residential car washing.
- n. Flows from riparian habitats and wetlands.
- o. Dechlorinated swimming/aesthetic pool discharges.
- p. Residual wash water.
- q. Dechlorinated water reservoir discharges.
- r. Discharges or flows from fire fighting activity.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.13.030 Prohibited Storage And Debris

It is unlawful for any person to maintain, store, keep, deposit or leave any pollutant or hazardous material, or any item containing a pollutant or hazardous material in a manner that is likely to result in the discharge of the pollutant or hazardous material to the storm water system.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.13.040 Best Management Practices

Any person connecting to the storm water system or developing a commercial or industrial site shall employ Best Management Practices (BMPs) approved by the city. The city shall adopt a policy establishing a menu of BMPs that may be used to satisfy this requirement. The BMPs may be structural and/or non-structural depending on the needs of the site. The BMPs shall be designed to ensure that the quality and quantity of storm water released to the city's storm water system meets the requirements of federal, state, local law, regulations, and the city's NPDES permit, and will not exceed the designed capacity of the storm water system or jeopardize the integrity of the storm water system.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.13.050 Easements

The director may enter all private properties through which the city holds an easement for the purposes of inspecting, observing, measuring, sampling, repairing or maintaining any portion of the storm water facilities lying within the easement, or the performance of any other duties pertinent to the operation of the storm water system. All entry and subsequent work, if any, on an easement, shall be completed according to any special terms of the easement.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.13.060 Authority To Inspect

1. Inspections. Whenever necessary to make an inspection to enforce any provision of this chapter, or whenever the city has cause to believe that there exists, or potentially exists, a condition which constitutes a violation of this chapter, the city may direct its qualified personnel to enter the premises at all reasonable times to inspect, detect, investigate,

eliminate, and enforce any suspected non-storm water discharges, including illegal dumping, into the city. During the same time the city may inspect and copy records related to storm water compliance. In the event the owner or occupant refuses entry after a request to enter and inspect has been made, the city is hereby empowered to seek assistance from any court of competent jurisdiction in obtaining such entry.

2. Access. The access for the city to inspect storm water control measures on private property that is vested subsequent to the effective date of this chapter includes both construction-phase and post-construction access. Upon approval of the director, and in lieu of city employees inspecting and maintaining storm water controls on private property, the city may allow the owner/operators or a qualified third party to conduct maintenance so long as:

- a. That at least annual certification, in the form of inspection documentation which has been performed, is provided to the city.
- b. The structural controls are adequately operating and maintained as such were designed to protect water quality as provided in the original maintenance agreement and plans submitted upon vesting and approval of the site.

3. Agreement. A maintenance agreement is required on private property that is vested subsequent to the effective date of this chapter includes both construction-phase and post-construction access and where owner/operators or a qualified third party to conduct maintenance as provided herein. Said maintenance agreement shall be promulgated in the form and manner as determined by the director so long as the agreement includes at a minimum:

- a. Allows the city oversight authority of the storm water measures.
- b. A provision that the agreement acts as a covenant that runs with the land.
- c. Allows the city to perform necessary maintenance or corrective actions neglected by the owner/operators or the qualified third party.
- d. Allows the city to recoup the costs from the owner/operator as necessary to cover the expenses for necessary actions conducted by the city.

4. Interpretation. The city interprets this regulation as secondary and subservient to the United States Constitution and the Utah State Constitution as applied to property rights, land use, development, and similar rights. Specifically, the intent of this regulation is not to be applied to violate vested, property rights nor to be a physical invasion of property rights as determined by the United States Supreme Court in *Loretto v. Teleprompter Manhattan CATV Corp.*, 458 U.S. 419 (1982). The city recognizes that the United States Supreme Court interprets property right in conjunction with the laws and constitutions of each state. Therefore, Utah law also plays an important role in defining property rights. For the purpose of determining when a property right is vested the city shall continue to apply the Utah Supreme Court ruling in *Western Land Equities, Inc. v. City of Logan*, 617 P.2d 388 (1980) that states a property owner is vested to follow the city's regulations in effect at the time a land use application is filed. Furthermore, where there is vagueness in any land use regulation, including the storm water regulations, it shall be interpreted in favor of the property owner.

10.13.070 Requirement To Monitor And Analyze

If city tests or inspections indicate that a site is causing or contributing to storm water pollution, illegal discharges, and/or non-storm water discharges to the storm water system or waters of the United States, and if the violations continue after notice from the city, the city may require any person engaged in the illicit activity and/or the owner of operator of the site to provide, at their own expense, monitoring and analyses required by the city to determine compliance with this chapter.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.13.080 Violations And Enforcement

Whenever the city finds that a person, organization, or institution has violated a prohibition or failed to comply with a requirement of this chapter, the city will order compliance by the following procedure:

1. Warning. A verbal warning shall be given. The verbal warning shall be documented in the city records by the qualified person (code enforcement officer, city inspector, public works employee) who issued the warning. The city may skip the requirements set forth in this part and immediately proceed with other more severe actions against the violator if the following may have occurred:
 - a. The violator has committed the same violation in the past.
 - b. The violation, in the opinion of the city, creates a serious risk to persons, the environment or property.
 - c. The city deems the violation to constitute an emergency.
2. Written violation. Issue a written notice of violation to the responsible person(s), company or institution. The notice of violation may be documented in the city's storm water records by the official who issued the warning. Such notice may require without limitation one or more of the following as may be applicable:
 - a. The performance of monitoring, analyses, and reporting.
 - b. The elimination of illicit connections or discharges.
 - c. That violating discharges, practices, or operations shall cease and desist.
 - d. The abatement or remediation of storm water pollution or contamination hazards and the restoration of any affected property.
 - e. Payment to cover administrative, remediation, monitoring, analyses, and reporting costs.
 - f. The implementation of source control or treatment BMPs.
3. Prosecution. The city may skip the notice requirements set forth in this section and immediately proceed with criminal and/or civil action against the violator if any of the following may have occurred:
 - a. The violator has committed the same violation in the past.
 - b. The violation, in the opinion of the city, creates a serious risk to persons, the environment or property.
 - c. The city deems the violation to constitute an emergency.

4. Penalty. The follows penalties apply for each written violation:

- a. Criminal. The violation of any provision of this any chapter relating to storm water is a class B misdemeanor. Each day that a violation continues shall constitute a separate offense.
- b. Civil. In addition to other penalties and remedies, any person, firm, corporation, principal, agent, employee, contractor, or other party violating or permitting the violation of any governing storm water regulation is subject to a civil fine not to exceed a \$1,000.00, per violation, per day, in addition to reasonable attorney's fees and costs incurred by the city for enforcement of storm water regulations.
- c. Damage recovery. The city is entitled to be seek and receive damages equal to the cost to make all repairs and/or replace any materials in addition to any criminal or civil fines and/or penalties imposed.
- d. State penalties. A violation of storm water regulations may also be subject to any penalties that may be imposed by the State of Utah, under the authority of the Utah Water Quality Act, Title 19, Chapter 5 of the Utah Code.
- e. Federal penalties. A violation of storm water regulations may also be subject to prosecution, fines, and penalties imposed by the United States of America.

5. Permit. The Small MS4 General UPDES Permit, Permit No. UTR090000 defines the maximum penalties for violations of Permit conditions as follows:

- a. The general UPDES permit provides that any person who violates a Permit condition implementing provisions of the Act is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates Permit conditions or the Act is subject to a fine not exceeding \$25,000 per day of violation. Any person convicted under Utah Code Annotated §19-5-115(2) a second time shall be punished by a fine not exceeding \$50,000 per day.
- b. The general UPDES permit provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine of not more than \$10,000.00 per violation, or by imprisonment for not more than six months per violation, or by both. Utah Code Annotated §19-5-115(4).
- c. The general UPDES permit provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this Permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both.

6. Stop work order. In addition to other fines and penalties, a stop work order may be issued upon the discovery of work being conducted without a required permit. The stop work order may be issued by any city inspector. No construction activity may be commenced or continued on any site for which a permit has been revoked or suspended until the permit has been reinstated or reissued.

7. Injunctive and corrective action. The city may seek injunctive relief or take corrective action to install and/or maintain appropriate storm water control measures on any site required to have such measures in place, and seek reimbursement for the same, including

penalties, administrative costs, attorney's fees, and court costs.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.13.090 Damage To Storm Water System Or Irrigation Lines

Any person who damages any portion of the storm water system shall be responsible for repairing the damages. The damages shall be repaired by a licensed contractor bonded to do work in the city and shall be repaired in accordance with the public works standards and technical specifications adopted by the city. It is unlawful to remove or alter any portion of the storm water system without permission from the director.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.13.100 Manhole Covers

It shall be unlawful to open any storm water manhole or other storm water fixture (such as grates, lids, or inlets) without permission from the director.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.13.110 Compliance With Federal And State Law

Nothing in this chapter shall be interpreted to relieve any person from an obligation to comply with an applicable federal, state, or local law relating to storm water discharges or drinking water protection.

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.14 Storm Drain Design, Construction Standards And Policies

10.14.010 General Provisions

10.14.020 Rainfall Hydrology

10.14.030 Storm Drain System

10.14.040 Basins

10.14.050 Discharge

10.14.060 Permits And Practices

10.14.070 Violation And Penalties

10.14.010 General Provisions

1. Findings. The city council finds:

1. That the city faces unique storm water challenges as shown on the city's sensitive lands overlay in the city's general plan.
2. The city is impacted by watercourses and multiple drainage ways.
3. The city is impacted by storm water and run-off and non-source point pollution from parking lots, residential uses, commercial uses, and industrial activity and such pollution presents a hazard for the health, safety, and welfare of the public in this community.
4. That there exists in the city a high ground water table that precludes certain storm water control measures and necessitates extensive storm drain design, open space preservation, construction standards, and policies as set forth in this chapter.

2. Purpose. This chapter represents the construction standards for private and public construction as it relates to storm drainage within the city.
3. Conformance. All efforts have been made for this policy to conform with the requirements of Phase II of the Federal Clean Water Act, and the city's Storm Water Management Plan.
4. Outline. The following information is organized in such a way to follow the natural flow of storm water, from the initial rainfall hydrology (15.25.020), to conveying the rain water (15.25.030), to a basin (15.25.040), then discharging to a natural outlet location (15.25.050). Permits and practices (15.25.060), and penalties for violations (15.25.070) are also discussed.
5. Definitions. The definitions specified in Chapter 15.22 apply to all storm water regulations in the municipal code.

Adopted by Ord. 386 on 10/24/2006

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.14.020 Rainfall Hydrology

1. Policy. All storm drain systems shall be designed to carry the 100 year storm.
2. Storm specifications. Local storm drain piping shall be design for the 10 year storm

where the road or other above ground conveyance will carry the difference to the 100 year storm. All basins regardless of local or regional, or retention or detention, shall be designed to accommodate a 100-year storm event. The storm duration used for the sizing of basins shall be based upon the worst case scenario and not the time of concentration.

3. Intensity-duration-frequency (IDF). For the use of the "Rational Method," an IDF curve shall be obtained from the city engineer for the project location.
4. Calculation basis. For single site plans and small subdivisions, the rational equation may be used. For larger sites a city engineer-approved computer model shall be used.
5. Rainfall pattern. For the use of computer models, the following rainfall pattern shall be used. This pattern is based upon the "Farmer-Flecher Distribution." This pattern is for a 1" unit storm and must be multiplied by rainfall depth for storms of other magnitudes.
6. Rainfall total. For the use of the following rainfall pattern, a rainfall total from the "NOAA Atlas" must be obtained. Such total shall be based upon a 1-hour storm.

1	0	11	0.004	21	0.033	31	0.052	41	0.012	51	0.005
2	0	12	0.005	22	0.034	32	0.045	42	0.011	52	0.005
3	0.002	13	0.008	23	0.035	33	0.04	43	0.01	53	0.004
4	0.002	14	0.009	24	0.038	34	0.035	44	0.009	54	0.004
5	0.002	15	0.009	25	0.039	35	0.03	45	0.009	55	0.004
6	0.002	16	0.013	26	0.045	36	0.022	46	0.008	56	0.003
7	0.002	17	0.017	27	0.052	37	0.02	47	0.006	57	0.003
8	0.002	18	0.02	28	0.054	38	0.018	48	0.006	58	0.002
9	0.003	19	0.024	29	0.054	39	0.016	49	0.005	59	0.002
10	0.003	20	0.029	30	0.054	40	0.014	50	0.005	60	0.001

Adopted by Ord. 386 on 10/24/2006

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.14.030 Storm Drain System

1. Policy. It is the policy of the city that:
 1. Storm waters not be carried in irrigation ditches, nor that irrigation water be conveyed in storm drain systems.
 2. Local pipes shall be sized for the 10-year storm event, however, all basins and other above ground storm water facilities shall be designed and constructed to manage the difference for the 100-year storm event.
2. Piping. Storm drain lines shall be concrete pipe (NRCP or RCP), of appropriate class. Minimum size for storm sewer mains shall be 15-inch diameter. Pipe specifications are included in the city's public works standard and technical specifications. Where determined by the city engineer, larger drain lines shall be installed to accommodate future development.

3. System design and costs. The cost to provide adequate storm drainage to a development shall be paid for by the developer. Structures shall be installed in accordance with the standard drawings.
4. Access. Storm drain lines shall have clean-out boxes, inlets or manholes installed at all changes in grade or alignment, with a maximum distance of 400-feet between accesses.

Adopted by Ord. 386 on 10/24/2006

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.14.040 Basins

1. Policy. It is the policy of the city to require storm drainage basins for all development.
2. Basin size and location. All new development and redevelopment sites are required to have a storm water detention system designed as provided in this chapter. It is critical for developments that are in close proximity to a stream or river, or within "drinking water source protection zones" one or two as defined by the "state division of drinking water rules." All detention basin designs and calculations shall be reviewed by the city engineer for approval.
3. Certain development requirement. On-site detention is required for all commercial, manufacturing, industrial, or similar development in the city.
4. Ownership. The ownership of storm water basins is specified as follows:
 1. Private basins. Where the development will have a home owner association (HOA) or in commercial applications, local detention basins shall be owned and maintained by the owner or HOA.
 2. Local public or private basins. In subdivisions, local detention basin shall be constructed by the developer. Following acceptance of the construction, the ownership, operation, and maintenance may either be conveyed and maintained by the city or HOA under an appropriate maintenance agreement.
 3. Regional detention basins. Regional basins shall be owned and maintained by the city and constructed according to the criteria given here in and approved of the city engineer. Actual ownership and responsibility shall be specifically defined in the owner dedication certificates, development agreements, or deed.
5. Basin access and setback. Basin access shall be as follows:
 1. Public basins. The developer shall provide the city ingress and egress easements for construction, operation, service, maintenance, and repair for any public basin.
 2. Private basin. The owner or owning association shall be provided ingress and egress easements for construction, operation, service, maintenance, and repair for any private basin. The city shall be provided and emergency easement for emergency access, service, and repair for a private basin.
 3. Setback. Each basin shall be constructed with a flat rim circling the basin

which shall be setback from a property line, adjoining property, and from any structure an appropriate distance determined by the city engineer to prevent erosion, and to allow for a backhoe and dump truck to circle the rim for maintenance and repair.

6. Percolation. No reduction due to percolation for detention basins volumes shall be permitted in design, due to the nature of basins silting in over time and also possible frost conditions during a storm.
7. Basin construction. Basins shall be constructed as follows:
 1. Policy. Basins must be construction to enhance safety, healthn and aesthetics of the area.
 2. Engineering. Basins, whether detention or retention, must be designed and stamped by a licensed civil engineer.
 3. Location. Detention basins shall be located with convenient access for maintenance and repair by maintenance personnel. This generally means that the basin property has frontage along a public roadway. Volume in ditches or roadside swales shall not be considered in the volume calculation.
 4. Fencing. If unfenced and open to general public, the maximum depth of water should not exceed three (3) feet. If a fence is required, six foot chain link fencing is to be installed in accordance with the city's public works standards and technical specifications, or as may more specifically be stated in any land use regulations.
 5. Side slopes. Side slopes should not exceed 3:1 (horizontal to vertical) (4.5:1 is desirable) for ease of mowing and access.
 6. Bottom Slope. The basin floor shall be designed so as to prevent the permanent ponding of water. The slope of the floor of the basin shall not be less than 1% to provide drainage of water to the outlet grate and prevent prolonged wet, soggy or unstable soil conditions. The preferred minimum slope is 2%.
 7. Freeboard. There should be at least one foot of freeboard (berm above the high water mark).
 8. Spillways. Spillways must be included and a path with a maintained swale and drainage easement to a safe location. Attention should be given to the design of the spillway to avoid erosion. Overflow spillways are intended to introduce flows back into the main pipe and are typically downstream of the outlet control. Emergency spillways are intended to carry flows beyond the capacity of the overflow spillway to a safe downstream location. All spillways shall be designed to protect adjacent embankments, nearby structures, and surrounding properties.
 9. Outlet control. Small, local, private detention basins may be allowed to have calculated fixed orifice plates mounted on the outlet of the basin. Large, regional, public detention basins shall have movable screw-type head gates (Waterman C-10 O.A.E.) set at a calculated opening height for the discharge and with a chain to fix the position.

10. Grates. All grates on inlets and outlets must be hot dipped galvanized (not painted) with bars at spacing to prohibit feet from falling in and yet avoid clogging with debris. Generally bar spacing should never exceed 3" spacing.
 11. Low flow piping. The inlet and outlet structures may be located in different areas of the basin, requiring a buried pipe to convey any base flows that enter and exit the basin, rather than a cross gutter or surface flow. The minimum pipe size and material for the low flow shall be 12" diameter or as approved by the city engineer.
 12. Ground covers. The surface area of the basin may either be seeded, sodded, or covered with fabric and cobbles, as specified by the city. If seeded, measures shall be taken to eliminate erosion until grasses are established. A minimum of 4" of top soil must be installed prior to sod or seed placement. Cobble sizes shall be 4" or greater in size overlying a city-approved weed barrier. Cobble rock may be permitted if the basin is fenced and no other alternative purpose is proposed for the land. Grass or hydro-seeding on all basins shall be installed in accordance with the city's public work standards and technical specifications. The basin shall be provided with an automated sprinkler system previously approved by the city engineer. Landscape shall be in accordance with chapter 15.18 and 15.19.
 13. Embankment (fill) construction. If a raised embankment is constructed for a basin (constructed with granular materials), it shall be provided with a minimum of 6" of clay cover on the inside of the berm to prevent water passage through the soil.
 14. Excavation (cut) construction. If the basin is constructed primarily by excavation, then it may be necessary to provide an impermeable liner and land drain system when constructed in the proximity of basements or other below grade structures as determined by a geotechnical evaluation.
 15. Multi-use basins. Basins may be designed as multi-use facilities when appropriate precautions are incorporated into the design. If amenities such as pavilions, playground equipment, volleyball courts, or other amenity are to be constructed within the water detention area of a basin they shall be designed appropriately. Structures shall be designed for saturated soil conditions and bearing capacities are to be reduced accordingly. Restrooms shall not be located in areas of inundation. Inlet and outlet structures should be located as far as possible from all facilities. No wood chips or floatable objects may be used in the area that will be inundated.
8. Detention volume. Detention basin shall be sized based upon the criteria set forth in section 15.25.020. Detention Basins are designed to allow a pre-determined amount of flow to discharge during and after a storm event as discussed above. Detention Basins are preferred over retention basins. No groundwater injection is allowed. Above-grade detention basins are preferred over below-grade basins, yet both are allowable. Discharge rates shall comply with section 15.25.050.
 9. Retention basins. The following applies to retention basins.

1. Policy. Regional retention basins shall not be permitted by the city. It is the policy of the city to prohibit local or private retention basins for developments, unless certain criteria is met.
2. Retention discouraged. Any retention basin must be specifically approved by the city engineer. Retention basins shall not be permitted within zones 1, 2, or 3 of any "drinking water source protection zone" of any drinking water source. Due to the silting in potential, no percolation rate may be used in the calculation of volume unless an approved oil/sand separator is installed upstream. The volume must be based upon the 100-year, 3 hour storm. Local storm retention basins shall be designed for the 100-year, 3-hour storm, based upon the intensity-duration-frequency (IDF). The curve for the area as approved by the city engineer. Local basins are typically private ownership and maintenance, and serve only one or two specified subdivisions or sites as may be approved.
3. Retention basin criteria. Retention basins are basins which hold and store water until it is evaporated or percolated, and shall not be permitted for developments unless all the following conditions are all met:
 1. The basin is greater than 500 feet or 50 feet times the number of lots in the entire development (whichever is greater) from the city storm drain system or water way, and is topographically capable of draining to the city system.
 2. The basin is not located within a hazardous area such as a steep slope, flood plain, high ground water area, "drinking water source protection zone," or some other hazard area.
4. Percolation for basins. The percolation rate of the ambient soils may be permitted in the calculations only if an oil/sand separator is installed upstream and only 10% of the percolation rate may be used due to eventual silting-in of the basin.

10. Standing water. The following regulations apply to standing water:

1. It is the policy of the city to eliminate standing water wherever possible as an effort to minimize a mosquito problem and associated viruses, except where wetland protection is enforced.
2. Basins should completely drain within 48 hours of the primary storm event.
3. Low flow bypass pipes may be required.

11. Ground surface improvements. It is the city policy that the finished surface of the basin shall be improved to eliminate erosion and dust and to enhance the aesthetics of the area by being appropriately landscaped with approved plant material, landscape material, and approved trees. All basins shall be landscaped in accordance with chapter 10.18 and 10.19.

10.14.050 Discharge

1. Policy. It is the policy of the City to control storm water at the source and minimize the potential for flooding downstream.
2. Requirements. The following requirements apply:
 1. Storm drainage leaving a site or subdivision shall not exceed, as much as practicable, the pre-developed quantities and qualities at a maximum rate as follows:
 1. Allowable discharge. The allowable discharge rate from any non-regional basin shall:
 1. Not exceed the pre-hard surfacing discharge for the entire site for the 100-year storm event.
 2. Not exceed the maximum discharge rate set by the city engineer depending on the proposal, the facts and circumstances of the basin, and historical flow, and the drainage within the surrounding area. If no maximum discharge rate is established then the standard discharge rate of 0.1 cubic feet per second per total acre within the development draining to the basin.
 3. Controlled discharge may be established through an orifice or adjustable gate as approved by the city engineer.
 4. Flow Concentration. By nature of development, flows are concentrated to one or more locations where historically sheet flow in lower concentrations may have left the site. Attempts shall be made to minimize the runoff concentrated quantity to the flows stated above by use of detention basins, down stream piping to safe areas or other methods as deemed necessary by the city engineer.
 2. Water quality. Best Management Practices (BMPs) shall be used to the maximum practicable to ensure healthy water quality based upon national standards for the same. BMPs are included in the city's Storm Water Management Plan and must be approved by the city engineer.
 3. Irrigation facilities. No storm water discharge shall be permitted to irrigation ditches and canals, except where such ditch or canal is has historical use only for storm drainage or was an irrigation facility that has been wholly converted to only storm water use. Irrigation facilities are vested rights under state law and protected against all encroachment, therefore, written permission is required in accordance with Utah Code Annotated §73-1-15 from the owner or operator of any irrigation ditch or canal before any construction activity that affects an irrigation facility.
 4. Sump drains and injection wells. Sump drains, injections wells, and underground storm water basin storage of any kind is not allowed nor is any

underground storm drain facility permitted. All storm drain facilities shall be open at the surface for visible inspection, to ensure adequate size, functionality, and proper maintenance.

5. Parking lots. No parking lot, including sidewalks and all other impervious surfaces, shall be used for storm water storage of any kind, above or below surface.
6. Basin overflows. Attention shall be given to overflow locations and pathways to safe locations downstream as discussed above. Easement shall be obtained and pipes or swales sized to handle the 100-year flow.

Adopted by Ord. 386 on 10/24/2006

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.14.060 Permits And Practices

1. Policy. The following policies apply:

1. It shall be the policy of the city to comply with the requirements of Phase II of the Federal Clean Water Act, and all other state and federal requirements. This is to include applications, permits, plans, and implementation.
2. It is the policy of the city to require a storm water permit for all construction sites within the city.

2. Permits. Permitting applies as follows:

1. A storm water activity and/or a storm water connection permit is required as provided by the municipal code. A permit for all construction activities is required and can be obtained as outlined in section 15.24.030 and section 15.24.080.
 1. This permit must be obtained before connecting to any existing storm water system, drain, pipe, catch basin, storm water box, manhole, or similar facility.
 2. As part of this permit all fees must be paid, all detention basins shall be calculated, designed, and stamped by a licensed professional engineer.
2. Utah Pollution Discharge Elimination System Permit (UPDES). A storm water general UPDES permit for construction activities is required for all sites or development project affecting 1-acre or more, including any area used for staging, stockpiling, or any other temporary construction activity. This permit is filed with the Utah Division of Water Quality, Department of Environmental Quality. The permit can be obtained on-line as follows:
 1. <http://waterquality.utah.gov/updes/stormwater.htm>.
 2. Click on "Online Application Process Notice of Intent."
 3. The appropriate fee must be paid to the state.
 4. A SWPPP must be prepared and on site for this application.

3. Stream alteration permit. A stream alteration permit is filed with the Utah Department of Natural Resources, Division of Water Rights.

1. This permit overlaps the 404 wetlands permit, discussed below, because it is applicable to the area equal to the stream plus two times the bank full width (up to 30 feet).
2. Any modifications to the stream or banks within this area must comply with the stream alteration permit.

4. EPA 404 wetlands permit. This permit is filed with the US Army Corp of Engineers. It is applicable for all wetlands within a development.

1. This will apply to all wetlands depending upon the presence of water, soils type and vegetation.
2. As part of this permit, a wetlands delineation report is required.
3. The scope of this permit applies to all jurisdictional waters of the United States up to and including the normal high water mark.
4. No fee is typically required for this permit.
5. A letter of non-regulated wetlands may also be applicable.
6. Any mitigation that may be required must be done prior to final acceptance of a subdivision.
7. Any wetlands identified must be indicated on the final plat.

3. Best management practices (BMPs). The city's Storm Water Management Plan contains a listing of BMPs that can be used on a site.

1. BMPs typically fall into the following categories:

1. Perimeter control.
2. Erosion controls.
3. Sediment control.
4. Materials handling and spill prevention.
5. Waste Management.
6. Good Housekeeping.

2. The application of some BMPs are discussed below. They include, but are not limited to:

1. Oil separators.
2. Inlet Protection.
3. Tracking pads.
4. Street sweeping.
5. Concrete washout.
6. Silt fences.

3. Oil separators (OWS). Oil Separators shall be required on all sites with parking facilities that exceed 2 acres, automobile salvage or wrecking areas, or smaller sites anticipating oily discharges such as mechanic shops or similar facilities.

Oil separators must be capable of removing particulates down to 150 microns. Possible products include, but are not limited to: BaySaver, Storm Cerptor, Vortechnic.

1. Where oil separators are required, sizing and design of OWS must be reviewed by the city engineer prior to installation. Consideration must be given to frequency and ease of maintenance of the structure. Private basins shall have contracts in place with a local sewer company to periodically clean the separator in accordance with the manufacturer's specifications.
 2. Manufacturers recommendations for sizing must be followed with calculations submitted to the city. The separator may either be installed upstream or downstream of the basin keeping in mind that flows on the outlet of the basin would be smaller.
 4. Inlet protection (IP). The city's Storm Water Management Plan may permit straw bails, silt fences, or curb snakes (after asphalt is placed). Filter fabric under the grate shall not be permitted since drainage is greatly inhibited.
 5. Tracking pads (CR). Sites must have a tracking pad to eliminate mud from being tracked onto the adjacent street. If mud is tracked, the contractor shall be responsible to sweep the streets as necessary.
 6. Street sweeping (SC). If mud is tracked onto the street, the developer or owner shall be responsible for sweeping the street.
 7. Concrete washout (CWM). A place must be located within the subdivision or on the site for concrete washout. No washout will be permitted on the street which would then continue to the storm drain. The washout area may need to be maintained and temporarily excavated until the building foundations and driveways are constructed, or some other arrangement made.
 8. Silt fences (SF). Silt fences must be installed to prohibit the flow of sediments off of the site in accordance with manufacturers recommendations and the city's Storm Water Management Plan.
4. Notice sign. All subdivisions, except minor lot subdivisions, are required to have at least one large notice sign that is clearly visible at the entryway of the subdivision indicating that the SWPPP must be obtained and followed. Said sign shall be maintained by the original subdivision applicant until conditional acceptance of the subdivision. The specific wording on the sign relating to storm water and other related development requirement may be prescribed and modified by the administration as needed to meet challenges created by development and to give notice to requirements of law.

Adopted by Ord. 386 on 10/24/2006

Repealed & Reenacted by Ord. 453 on 7/10/2012

10.14.070 Violation And Penalties

Enforcement, violations, and penalties for this chapter are specified in section 15.23.080. Each day that a violation occurs shall constitute a separate offense.

Adopted by Ord. 386 on 10/24/2006

Repealed & Reenacted by Ord. 453 on 7/10/2012

HARRISVILLE CITY
ORDINANCE NO. 414

LAND USE AMENDMENTS AND ENFORCEMENT

AN ORDINANCE OF HARRISVILLE CITY, UTAH, AMENDING THE SCOPE OF THE APPEAL AUTHORITY; AMENDING SECTION 1.85.010 REGARDING REIMBURSEMENT FOR DEVELOPMENT FEE OVERAGES; AMENDING CHAPTER 11.26 RELATING TO ENFORCEMENT AND PENALTIES IN THE LAND USE ORDINANCES, BUILDING CODE, AND NUISANCE ORDINANCES; MAKING TECHNICAL CHANGES; SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, Harrisville City (hereafter referred to as the "City") is a municipal corporation, duly organized and existing under the laws of the State of Utah;

WHEREAS, *Utah Code Annotated* §§ 10-8-84 and 10-8-60 allow municipalities in the State of Utah to exercise certain police powers and nuisance abatement powers, including but not limited to providing for safety and preservation of health, promotion of prosperity, improve community well-being, peace and good order for the inhabitants of the City;

WHEREAS, Title 10, Chapter 9a, of the *Utah Code Annotated*, 1953, as amended, enables the City to regulate land use and development;

WHEREAS, the City finds it necessary to update its land use ordinances in order to meet the challenges presented by development and to protect public health, safety, and welfare; and,

WHEREAS, the City finds it necessary to update its land use ordinances in order to meet the challenges presented by development and to protect public health, safety, and welfare; and,

WHEREAS, after publication of the required notice the Planning Commission held its public hearing on October 14, 2009, to take public comment on the proposed Ordinance, and subsequently gave its recommendation to approve this Ordinance;

WHEREAS, the City Council received the recommendation from the Planning Commission and held its public meeting on October 27, 2009, and desires to act upon this Ordinance;

NOW, THEREFORE, be it ordained by the City Council of Harrisville City as follows:

Section 1: Repealer. Ordinance No. 378 is hereby repealed in its entirety. Any chapter, section, word, sentence, paragraph, or phrase inconsistent with this Ordinance is hereby repealed and any reference thereto is hereby vacated.

Section 2: Amendment. The *Harrisville Municipal Code* is hereby amended to read as follows:

Section 3: Appeal Authority. All references to appeals in the municipal code for land use decisions is hereby amended to read that such appeal is to be made to the City's Appeal Authority in accordance with the procedure established by ordinance, or state law as the case may be.

01.85.010. Community development and land use fees.

5. In the event that an applicant fails to fully pay any development fees prescribed in this part, fails to complete a development where the city has incurred costs in excess of the fees actually paid by applicant, or the costs incurred by the city relating to applicant exceed the fees collected in this part, developer shall reimburse the city the actual costs incurred by the city within 30 day from the date of invoice by the city. In addition to other remedies, failure to pay development fees may result in a certificate of non-compliance being issues and recorded by the city on the applicable development.

Chapter 11.26
ENFORCEMENT AND PENALTIES

Sections:

- 11.26.010. Applicability.**
- 11.26.020. Enforcement generally.**
- 11.26.030. Building permits.**
- 11.26.040. General procedures for violations and corrective measures.**
- 11.26.050. Penalties.**
- 11.26.060. Recovery of abatement expenses.**
- 11.26.070. Exhaustion of administrative remedies and appeals.**

11.26.010. Applicability.
This chapter applies to all land use regulations, building codes, nuisance ordinances and laws, and other regulations as may be specified in the municipal code.

11.26.020. Enforcement generally.
The City or any adversely affected owner of real estate within the City where an alleged violation of a land use ordinance occur, or are about to occur, may, in addition to other remedies provided by law, institute one or more of the remedies set forth in *Utah Code Annotated* §10-9a-802, 1953, as amended, and the remedies as provided in this chapter.

11.26.030. Building permits.
In accordance with *Utah Code Annotated* §10-9a-802(2), 1953, as amended, the City may withhold building permits where a violation of the municipal code exists. It is unlawful to erect, construct, reconstruct, alter, or change the use of any building or other structure within a

municipality without approval of a building permit. The City's building official may not issue a building permit unless the plans of and for the proposed erection, construction, reconstruction, alteration, or use fully conforms to all regulations then in effect.

11.26.040. General procedures for violations and corrective measures.

When a compliance office, inspector, or any law enforcement officer determines that a violation exists, the City may:

1. Identification of violator. Ascertain the owner or occupant of the property where the violation exists.
2. Notice of violation. Serve by mail or otherwise a written notice upon the owner or occupant of the property upon which a violation exists describing the violations and allowing a reasonable warning period (such as 10 days) to bring the property in compliance. Includes any statement relating to a nuisance that is required by law or the nuisance ordinances in the municipal code. No warning period applies to matters that affect public health or safety and the city may seek immediate remedial action.
3. Certificate of Non-compliance. A Certificate of Non-compliance may be recorded, as appropriate, in the event that a violation continues after the notice of violation is issued.
4. Sufficiency. Such written notice issued by the City is deemed sufficient and complete when mailed or served upon the owner or occupant to the last known post office address appearing on the records of the County Assessor.
5. Corrective action plan. The enforcement officer may require the violator to prepare and submit to the same for approval a written corrective action plan that outlines the proposed corrections violator will make to bring the violation into compliance along with an acceptable time-line for completion. Any penalty is tolled pending the violator successfully completing their corrective action plan.

11.26.050. Penalties.

In accordance with Utah Code Annotated §10-3-703, 1953, as amended, the municipality may impose the following penalties for each violation of this chapter:

1. Criminal penalty. Any owner(s), agent(s), occupant(s), corporation, entity, or lessee found in violation under this chapter shall be guilty of class B misdemeanor and a fine not to exceed \$1,000.00. Each and every day that a violation continues shall constitute a separate offense.
2. Civil Penalty. In addition to criminal penalties and other remedies provided by law, any owner(s), agent(s), occupant(s), corporation, entity, or lessee found in violation under this chapter is subject to a civil penalty not to exceed \$1,000.00, per violation, per day, in addition to administrative enforcement costs, reasonable attorney's fees, and court costs as authorized by this part or other governing law. After a notice of violation, penalties shall be applied as follows:
 - a. Upon Recording of a Certificate of Non-compliance, \$125, plus an additional \$125.00, per day, thereafter that the violation continues.
 - b. After 30 days of filing the Certificate of Non-compliance where the violations(s) continue, \$250.00, per day thereafter.

- c. After 60 days of filing the Certificate of Non-compliance where the violations(s) continue, \$500.00, per day thereafter.
 - d. After 90 days of filing the Certificate of Non-compliance where the violations(s) continue, \$1,000.00, per day thereafter.
3. Other penalties or actions. In addition to other penalties provided by law:
- a. If the violation is located at a commercial operation within the City, it is deemed that such violation is cause for warning, suspension, or revocation of a business license issued by the City in accordance with the procedure for the same as provided in the municipal code.
 - b. The City may record with the County Recorder a Certificate of Non-compliance identifying the property where the violations exists, state the violation(s), indicate that civil fines are accruing each day the violation continues, and state that the City may take abatement action at any time without further notice. A copy of a Certificate of Non-compliance is to be mailed to the address for the property in violation as such address is indicated on the records of the County Recorder Office.
 - c. When a violation is removed, the City shall record a Certificate of Compliance, as appropriate and the case may be, on the property where the violation had been located.
 - d. For continuing violations:
 - i. The City may institute foreclosure proceedings where penalties have significantly accrued.
 - ii. The City Attorney may reach a settlement agreement with the violators independently or in conjunction with the Appeal Authority.
 - iii. The City Attorney may abate a portion of the accrued penalties for good cause, but cannot abate the penalties below the actual costs incurred by the City for enforcement on a given violation, including staff time, administrative costs, attorney's fees and costs, notices, clean-up costs incurred, and other costs related to the violations and its remediation.

11.26.060. Recovery of abatement expenses.

In the event that the City abates a violation under this chapter or a nuisance as otherwise provided by law or court order, the City is to prepare an itemized statement of all expenses incurred by the City in bringing the violation on the property into compliance. This itemized statement is to be mailed to the owner(s) of record demanding full payment in the itemized statement to be made to the City within twenty-five (25) days from the date of mailing. In the event the owner(s) fail(s) to make payment of the full amount set forth in the itemized statement within the twenty-five day period, the City may record a lien on the property for the amount owed including any administrative costs, and/or provide a copy of the itemized statement to the appropriate county office and seek reimbursement as part of the collection of annual property taxes as provided by law. Nothing in this section shall be construed to limit the City from seeking other collection or enforcement remedies, including utilizing a collection agency hired by the City or pursuing foreclosure.

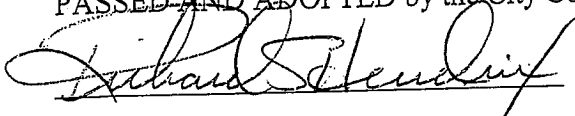
11.26.070. Exhaustion of administrative remedies and appeals.

No person may challenge in district court a municipal land use decision relating to a violation of the municipal code until that person has exhausted his/her administrative remedies. The City or any adversely affected owner of real estate within the City where an alleged violation of a land use ordinance occur, or are about to occur may appeal a decision of the City regarding the enforcement of a violation and any penalty to the City's Appeal Authority as provided in the municipal code. The City's Appeal Authority may approve or ratify any settlement agreement reached between the violator(s) and the City Attorney.

Section 4: Severability. If any section, paragraph, sentence, clause or phrase of this Ordinance is declared invalid by a court of competent jurisdiction, the remainder shall not be affected thereby and shall remain in full force and effect.

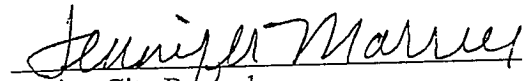
Section 5: Effective Date. This Ordinance shall be effective immediately after posting or publication.

PASSED AND ADOPTED by the City Council on this 27th day of October, 2009.



RICHARD HENDRIX, Mayor

ATTEST:


Acting City Recorder

Roll call vote is as follows:		
Mr. Crowther	<input checked="" type="radio"/> Yes	No
Ms. Tait	<input checked="" type="radio"/> Yes	No
Mr. Wilhelmsen	<input checked="" type="radio"/> Yes	No
Mr. Richins	<input checked="" type="radio"/> Yes	No
Ms. Fowers	<input checked="" type="radio"/> Yes	No

RECORDED this 27 day of October, 2009.
PUBLISHED OR POSTED this 2 day of November, 2009

CERTIFICATE OF PASSAGE AND PUBLICATION OR POSTING

According to the provision of U.C.A. §10-3-713, 1953 as amended, I, the municipal recorder of Harrisville City, hereby certify that foregoing ordinance was duly passed and published, or posted at 1) City Hall 2) 2150 North and 3) The Cabin on the above referenced dates.

 DATE: 11/2/09
Acting City Recorder,
Harrisville City



HARRISVILLE CITY
RESOLUTION NO. 02-07

A RESOLUTION APPROVING AN INTERLOCAL AGREEMENT BETWEEN
HARRISVILLE CITY AND WEBER COUNTY RELATING TO OBLIGATIONS
REQUIRED FOR A GENERAL PERMIT FOR STORM WATER
MANAGEMENT

WHEREAS, the Utah Interlocal Cooperation Act, Title 11, Chapter 3, Utah Code Annotated, 1953 as amended, permits governmental units to enter into agreements with one another for the purpose of exercising on a joint and cooperative basis powers and privileges that will benefit their citizens and make the most efficient use of their resources; and

WHEREAS, Title 11, Chapter 13, Section 5 of the Utah Code Annotated, 1953 as amended, requires that governing bodies of governmental units adopt resolutions approving an interlocal agreement before such agreements may become effective; and

WHEREAS, Weber County and Harrisville City have negotiated an Agreement for the purposes of providing storm water services in accordance with the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1987, and the Utah Water Quality Act, together with federal and state regulation adopted pursuant to such Acts for Harrisville City;

WHEREAS, Weber County and Harrisville City find that mutual benefit and cost effective government can be achieved through this interlocal agreement for the services entailed herein;


NOW, THEREFORE, BE IT RESOLVED by the Mayor and City Council of Harrisville City that the attached Interlocal Agreement is entered with Weber County for the purposes of storm water as authorized in the Interlocal Agreement, and the Interlocal Agreement is hereby approved and incorporated by this reference. The Council hereby authorizes and directs the Mayor to execute the Interlocal Agreement for and on behalf of Harrisville City.

PASSED AND APPROVED by the Harrisville City Council this 10 day of December, 2002.



Mayor, Fred W. Oates
Harrisville City

ATTEST:


City Recorder

WEBER COUNTY
RESOLUTION NO. 5-2003

A RESOLUTION APPROVING AN INTERLOCAL AGREEMENT BETWEEN
WEBER COUNTY AND HARRISVILLE CITY RELATING TO OBLIGATIONS
REQUIRED FOR A GENERAL PERMIT FOR STORM WATER MANAGEMENT

WHEREAS, the Utah Interlocal Cooperation Act, Title 11, Chapter 3, Utah Code Annotated, 1953 as amended, permits governmental units to enter into agreements with one another for the purpose of exercising on a joint and cooperative basis powers and privileges that will benefit their citizens and make the most efficient use of their resources; and


WHEREAS, Title 11, Chapter 13, Section 5 of the Utah Code Annotated, 1953 as amended, requires that governing bodies of governmental units adopt resolutions approving an interlocal agreement before such agreements may become effective; and

WHEREAS, Weber County and Harrisville City have negotiated an Agreement for the purposes of providing storm water services in accordance with the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1987, and the Utah Water Quality Act, together with federal and state regulation adopted pursuant to such Acts for Weber County.

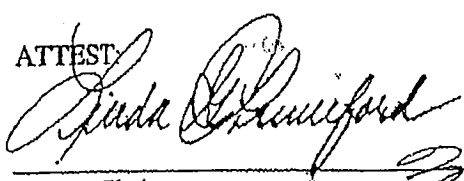
WHEREAS, Weber County and Harrisville City find that mutual benefit and cost effective government can be achieved through this interlocal agreement for the services entailed herein;

NOW, THEREFOR, BE IT RESOLVED by the Weber County Commission that the attached Interlocal Agreement is entered with Harrisville City for the purposes of storm water as authorized in the Interlocal Agreement, and the Interlocal Agreement is hereby approved and incorporated by this reference. The Commission hereby authorizes and directs the Commission Chair to execute the Interlocal Agreement for and on behalf of Weber County.

PASSED AND APPROVED by the Weber County Commission this 4th day of March, 2003.



Kenneth A. Bischoff
Chair, Weber County Commission

ATTEST


County Clerk

**INTERLOCAL AGREEMENT RELATING TO OBLIGATIONS
REQUIRED FOR A GENERAL PERMIT FOR STORM WATER MANAGEMENT**

THIS AGREEMENT made effective this 10th day of December, 2002, is entered into by and among HARRISVILLE City (hereafter "City"), and Weber County (hereafter "County").

RECITALS

WHEREAS, the Utah Interlocal Cooperation Act, Title 11, Chapter 13, Utah Code Annotated 1953, as amended, permits public agencies to enter into agreements with one another for the purpose of exercising, on a joint and cooperative basis, powers and privileges that will benefit their citizens and make the most efficient use of their resources; and,

WHEREAS, all of the parties hereto are public agencies as defined by the Interlocal Cooperation Act;

WHEREAS, the County is a body politic duly organized under the laws of Utah;

WHEREAS, the City is a municipal corporation duly organized under Title 10 of the Utah Code Annotated, as amended;

WHEREAS, in accordance with the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1987, and the Utah Water Quality Act, together with federal and state regulations adopted pursuant to such Acts, the County and the City, as operators of storm water systems, must reduce pollutants in storm water to the Maximum Extent Practicable (hereafter "MEP") to protect water quality;

WHEREAS, Phase II Storm Water Regulations (hereafter "Regulations") specify that compliance with the MEP requirement can be attained by developing, implementing and enforcing a storm water management plan which incorporates Best Management Practices addressing the six minimum control measures;

WHEREAS, also pursuant the Regulations, the County and the City must obtain a Utah Pollution Discharge Elimination System Permit (hereafter "Permit"), and the City can obtain such Permit by co-permitting with the County for the implementation of certain control measures;

WHEREAS, the County and the City desire to work cooperatively to obtain a Permit, to comply with the relevant federal and state storm water regulations, and to provide a cost efficient and effective storm water program;

NOW, THEREFORE, for the reasons cited above, and in consideration of the mutual covenants and agreements contained herein, HARRISVILLE City and Weber County do mutually agree and undertake as follows:

November 9, 2010

Weber County Minimum Control Measures 1 and 2 assistance agreement

- 1- Weber County Fair.
- 2- Booth at Weber County Fair.
- 3- Provide a contractor training opportunity (cities will need to provide invitation to contractors.)
- 4- Provide a Registered Inspector Training class (cities will need to provide invitation to contractors or employees.)
- 5- Provide curb marking decals.
- 6- Provide videos (check out) for municipal employees and contractors training.
- 7- Provide and pay for TV spots water advertisement in cooperation with Salt Lake County.
- 8- Provide brochures for printing by cities.
- 9- Provide representation on USWAC.
- 10-Maintain record of coalition agenda's, minutes, and attendance roll when submitted.

SECTION ONE
SCOPE OF AGREEMENT

1. Intent. The parties intend by this Agreement to co-permit with one another to obtain a Utah Pollution Discharge Elimination System Permit meeting compliance requirements of the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1987, and the Utah Water Quality Act, together with federal and state regulations adopted pursuant to such Acts which require the County and the City to reduce pollutants in storm water to the MEP to protect water quality. Specifically, this Agreement addresses the obligations of the County and the City in relation to compliance with the Regulations which require developing, implementing and enforcing a storm water management plan incorporating Best Management Practices addressing the six minimum control measures as follows:
 - a. Public Education and Outreach.
 - b. Public Involvement and Participation.
 - c. Illicit Discharge Detection and Elimination.
 - d. Construction Site Runoff Control.
 - e. Post Construction Storm Water Management.
 - f. Pollution Prevention and Good House Keeping.

2. County Storm Water Management. The County shall provide for Storm Water Management administration in accordance with the relevant rules and regulations and laws imposed upon the County. The County shall appoint a capable individual as the Director of County Storm Water Management (hereafter "Director") to implement and administer the relevant rules and regulations imposed upon the County. The Director shall also administer this Interlocal Agreement according to its provisions and any amendments.

3. Co-permitting. The County and the City mutually agree to jointly apply to obtain a Utah Pollution Discharge Elimination System Permit, and shall provide one another with the relevant management plan, storm water information, and other necessary documentation for such Permit.

4. County Service Provided. The County shall be responsible for each control measure as follows, and the City shall cooperate with the County in relation to such measures:
 - a. Public Education and Outreach. The County shall provide materials and coordinate educational activities on a county-wide and regional level, including but not limited to media and public relations, publications and advertisements, and school outreach programs. The County may respond to concerns from city officials and relevant public committee recommendations.
 - b. Public Involvement and Participation. The County may establish a county-wide storm water advisory committee for public participation and for addressing storm water issues.
 - c. Illicit Discharge Detection and Elimination. The County shall provide for this control measure only as it relates to mapping and coordinating of discharges that occur in multiple jurisdictions, or as otherwise crosses jurisdictional boundaries between different cities.

- d. **Construction Site Runoff Control.** The County has no responsibility for this control measure, outside unincorporated areas, except for mutual cooperation and coordination with the City at the City's request concerning this control measure.
 - e. **Post Construction Storm Water Management.** The County has no responsibility for this control measure, outside unincorporated areas, except for mutual cooperation and coordination with the City at the City's request concerning this control measure.
 - f. **Pollution Prevention and Good House Keeping.** The County has no responsibility for this control measure, outside unincorporated areas, except for mutual cooperation and coordination with the City at the City's request concerning this control measure.
5. **City Service Provided.** The City shall be responsible for each control measure as follows, and the County shall cooperate with the City in relation to such measures:
- a. **Public Education and Outreach.** The City shall be responsible for distribution of material provided by the County within the City's jurisdiction as coordinated with the County Storm Water Director. The City may coordinate additional public education and outreach program with the County for special events or other activities at the discretion of the City.
 - b. **Public Involvement and Participation.** The City may establish a City Storm Water Advisory Committee for public participation, and to address storm water issues. One representative from the City, appointed by the Mayor, may serve on the county-wide committee, if such committee exists.
 - c. **Illicit Discharge Detection and Elimination.** The City shall provide for the enforcement of illicit discharge detection and elimination within the boundaries of the City.
 - d. **Construction Site Runoff Control.** The City is responsible to implement and administer this control measure within its jurisdiction and may seek mutual cooperation and coordination with the County at the City's request concerning this control measure.
 - e. **Post Construction Storm Water Management.** The City is responsible to implement and administer this control measure within its jurisdiction and may seek mutual cooperation and coordination with the County at the City's request concerning this control measure.
 - f. **Pollution Prevention and Good House Keeping.** The City is responsible to implement and administer this control measure within its jurisdiction and may seek mutual cooperation and coordination with the County at the City's request concerning this control measure.
6. **Nominal Annual Fee.** The County may assess a nominal annual fee, not to exceed \$1,000, upon the City to reimburse the County for copy costs, brochure and publication costs, and community outreach program costs. The City agrees to pay any nominal cost, not to exceed \$1,000, upon receiving a written billing notice for the same from the County.
7. **Limitations.** The County, except as outlined by this Agreement, does not assume any responsibility to inspect, install, operate or otherwise maintain the City's storm water

system, storm water program, or storm water utility. Further, the County shall have no duty regarding storm water management, fees, inspections, or any other types of activity outside the scope of this Agreement, unless such relates to an unincorporated area.

8. Designated Contacts. The City shall designate its contact with the County for any and all issues which may arise under this Agreement. The County designates the Director as its contact with the City for any and all issues which may arise under this Agreement. The County and the City contacts may also consult with each other from time to time on the status of mutual relations and the terms of this Agreement.

SECTION TWO GENERAL PROVISIONS

1. Termination. This Agreement may be terminated by either party upon ninety (90) days written notice from the Mayor or County Commission provided either to the County Clerk or the City Recorder, as the case may dictate.
2. Effective Date. This Agreement shall become effective upon compliance with state law governing interlocal cooperation agreements and upon ratification by the parties as provided U.C.A. § Section 11-13-10, as amended.
3. Amendment. This Interlocal Agreement may be changed, modified, or amended by written agreement of the participants, upon adoption of appropriate resolutions from County and the City, along with an approved as to form by the County Attorney and City Attorney, and upon meeting all other applicable requirements of the Interlocal Cooperation Act.
4. Entire Agreement. This Agreement, together with any written amendments, shall constitute the entire agreement between the parties and any prior understanding or representation of any kind preceding the date of this Agreement shall not be binding upon either party except for the resolutions of each party herein attached and incorporated by reference.
5. Indemnification. The County agrees to save and hold harmless the City from its obligation under this Agreement. In all other instances, each of the parties agrees to defend, hold harmless, and indemnify the other party, its elected officials, officers, employees, agents, and volunteers, for the wrongful or negligent acts or omissions of employees against any and all liabilities, claims, damages, actions, suits, proceedings, costs and expenses which arise by reason of this Agreement, however, in no event shall indemnification exceed the amount set forth in *Utah Code Ann.* § 63-30-1 et. seq, at the time of judgment.
6. Employee Status. It is understood and agreed by the parties that any and all personnel furnished by the parties shall remain employees of the respective parties and shall abide by the personnel policies of the respective parties.

- 7. Warranties. Each party represents and warrants that it is a public agency within the meaning of the Interlocal Cooperation Act, is authorized to execute and deliver this Agreement and there is no litigation, legal action or investigation between the parties that would adversely effect this Agreement.
- 8. Documents on File. Executed copies of this Agreement shall be placed on file in the office of the County Clerk and the City Recorder and shall remain on file for public inspection for the duration of this Agreement.
- 9. Governing Law. It is understood and agreed by the parties that this Agreement shall be governed by the laws of the State of Utah as to interpretation and performance.
- 10. Non-transferable. This rights, duties, powers and obligations of this Agreement may not be transferred, assigned or delegated without the consent of the parties.
- 11. Rules of Construction and Severability. Standard rules of construction, as well as the context of this agreement, shall be used to determine the meaning of the provisions herein, except as follows: If any of the provisions herein are different from what is normally allowed or required by law, every effort shall be made to construe the clauses to be legally binding and to infer voluntary arrangements which are in addition to what is normally allowed or required by law. If any provision, article, sentence, clause, phrase, or portion of this agreement, including but not limited to any written amendments, is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this agreement. It is thus the intention of the parties that each provision of this agreement shall be deemed independent of all other provisions herein.

DATED this ____ day of _____, 20____.

FOR WEBER COUNTY:

Chair, Weber County Commission

ATTEST:

County Clerk

APPROVED AS TO FORM:

County Attorney

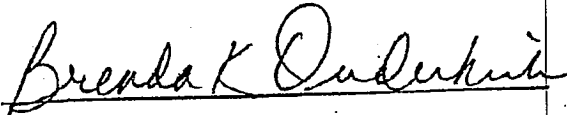
DATED this 10th day of DECEMBER, 2002.

FOR HARRISVILLE CITY:

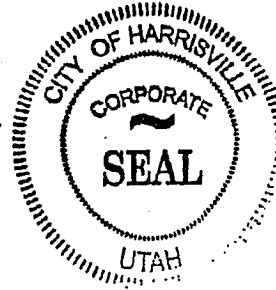


Mayor

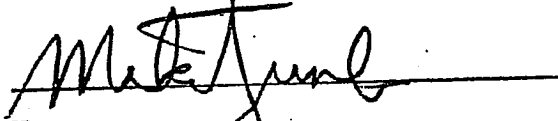
ATTEST:



City Recorder



APPROVED AS TO FORM:



City Attorney

HARRISVILLE CITY
RESOLUTION NO. 02-07

A RESOLUTION APPROVING AN INTERLOCAL AGREEMENT BETWEEN
HARRISVILLE CITY AND WEBER COUNTY RELATING TO OBLIGATIONS
REQUIRED FOR A GENERAL PERMIT FOR STORM WATER
MANAGEMENT

WHEREAS, the Utah Interlocal Cooperation Act, Title 11, Chapter 3, Utah Code Annotated, 1953 as amended, permits governmental units to enter into agreements with one another for the purpose of exercising on a joint and cooperative basis powers and privileges that will benefit their citizens and make the most efficient use of their resources; and

WHEREAS, Title 11, Chapter 13, Section 5 of the Utah Code Annotated, 1953 as amended, requires that governing bodies of governmental units adopt resolutions approving an interlocal agreement before such agreements may become effective; and

WHEREAS, Weber County and Harrisville City have negotiated an Agreement for the purposes of providing storm water services in accordance with the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1987, and the Utah Water Quality Act, together with federal and state regulation adopted pursuant to such Acts for Harrisville City;

WHEREAS, Weber County and Harrisville City find that mutual benefit and cost effective government can be achieved through this interlocal agreement for the services entailed herein;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and City Council of Harrisville City that the attached Interlocal Agreement is entered with Weber County for the purposes of storm water as authorized in the Interlocal Agreement, and the Interlocal Agreement is hereby approved and incorporated by this reference. The Council hereby authorizes and directs the Mayor to execute the Interlocal Agreement for and on behalf of Harrisville City.

PASSED AND APPROVED by the Harrisville City Council this 10 day of December, 2002.



Mayor, Fred W. Oates
Harrisville City

ATTEST:


City Recorder

WEBER COUNTY
RESOLUTION NO. 5-2003

A RESOLUTION APPROVING AN INTERLOCAL AGREEMENT BETWEEN
WEBER COUNTY AND HARRISVILLE CITY RELATING TO OBLIGATIONS
REQUIRED FOR A GENERAL PERMIT FOR STORM WATER MANAGEMENT

WHEREAS, the Utah Interlocal Cooperation Act, Title 11, Chapter 3, Utah Code Annotated, 1953 as amended, permits governmental units to enter into agreements with one another for the purpose of exercising on a joint and cooperative basis powers and privileges that will benefit their citizens and make the most efficient use of their resources; and

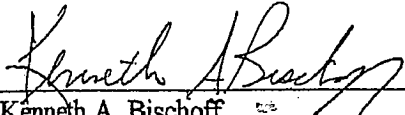
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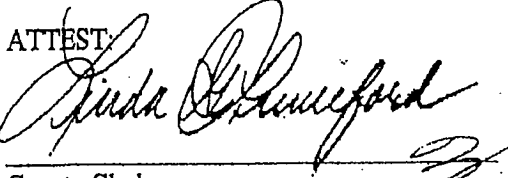
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NOW, THEREFOR, BE IT RESOLVED by the Weber County Commission that the attached Interlocal Agreement is entered with Harrisville City for the purposes of storm water as authorized in the Interlocal Agreement, and the Interlocal Agreement is hereby approved and incorporated by this reference. The Commission hereby authorizes and directs the Commission Chair to execute the Interlocal Agreement for and on behalf of Weber County.

PASSED AND APPROVED by the Weber County Commission this 4th day of March , 2003.



Kenneth A. Bischoff
Chair, Weber County Commission

ATTEST:


County Clerk

STATE OF UTAH, DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER QUALITY
 288 North 1460 West, P.O. Box 144870, Salt Lake City, Utah 84114-4870 (801)538-6146

Notice of Intent (NOI) for Coverage Under the UPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4's), Permit No. UTR090000.



INSTRUCTIONS ON BACK PAGE

DWQ USE ONLY

Coverage No. _____

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a UPDES permit issued for storm water discharges from Small Municipal Separate Storm Sewers in the State of Utah. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

Part I. General Information

Governmental Entity Name: HARRISVILLE CITY CORPORATION

Mailing Address: Street 3631 WEST WINDYBENBENCKE BOULEVARD

City HARRISVILLE State UTAH Zip Code 84404

Operator Type (Circle One): County, Hospital, Prison, Military Base, Park, College/University, UDOT, Sewer District, Flood Control District, Drainage District, Association, Other(list) _____

Operator Status (Circle One): Federal/ State/ Local/ Other Public Entity(list) _____

Operator Contact Person: Name GENE BINGHAM

Title PUBLIC WORKS DIRECTOR Telephone Number 8017829648

Latitude/Longitude at Center of land for which you are requesting authorization to discharge:

Latitude 41° 17' 30" Longitude 112° 00' 00"

Population served by your MS4: 51000 People

Storm Water Management Program Responsible Person:

Name GENE BINGHAM Title PUBLIC WORKS DIRECTOR

Telephone Number 8017829648

Part II: Outfalls and Receiving Waters

Receiving Waters: List all separate storm water outfall receiving waters (all discharges to waters under the definition of waters of the State). If all receiving waters are not known at the time of the NOI submittal, list known outfalls and update the list on annual reports. (ATTACH ADDITIONAL SHEETS AS NEEDED)

	Outfall	Receiving Water
1.	SIX MILE	WARM SPRINGS/GSL
2.	FOUR MILE	WEBER RIVER/GSL
3.	SIXON CREEK	WEBER RIVER/GSL
4.	NEON DRAINAGE	WEBER RIVER/GSL
5.		
6.		

Part III. Initial Identification of Best Management Practices (ATTACH ADDITIONAL SHEETS AS NEEDED)

1. Public Education and Outreach on Storm Water Impacts

Outreach Techniques

- Classroom education/school programs
- Outreach to commercial entities
- Printed material
- Media campaign
- Classroom educational materials
- Events and Programs
- Displays
- Speakers to community groups
- Economic Incentives
- Promotional giveaways
- Others

Management Practices to Encourage

- Proper lawn and garden care (fertilizer and pesticide use, sweeping, etc.)
- Low impact development
- Pet waste management
- Pollution prevention for businesses
- Proper disposal of household hazardous wastes
- Water Conservation Practices
- Others

2. Public Involvement/Participation

Involvement Techniques

- Advisory/partner committees
- Local storm water contact
- Public access to documents and information
- Public review of plans and annual reports
- Watershed organizations
- Attitude surveys
- Community hot lines
- Stakeholder meetings
- Others

Participation Activities

- Adopt-a-stream
- Storm drain stenciling
- Stream/roadway cleanup
- Volunteer monitoring
- Wetland plantings
- Others

3. Illicit Discharge Detection and Elimination

Detection and Elimination Activities

- System mapping
- Regulatory Control Program
- Identifying and Eliminating Illicit connection procedures
- Dye testing/Tracing Procedures
- System inspections
- Dry Weather Screening Program/ Field Testing
- Others

Type of Discharges to Target

- Failing septic systems
- Illegal dumping
- Industrial/business connections
- Recreational sewage
- Sanitary sewer overflows
- Wastewater connections to the storm drain system
- Others

4. Construction Site Storm Water Runoff Control

Program Activities

- Regulatory Control Program
- Erosion and Sediment Control BMP's
- Other Waste Control Program
- Site Plan Review Procedures
- Public Information handling Procedures
- Site Inspection/Enforcement Procedures
- Other Construction Site Runoff Controls
- Contractor certification and inspector training
- Others

Best Management Practices

- Construction Entrance/Exit Stabilization
- Perimeter Controls
- Sediment Retention Structure Requirements
- Sediment filters and sediment chambers
- Mulching Requirements
- Temporary/Permanent Stabilization Requirements
- Vehicle maintenance and washing areas
- Cement Truck Washout Area
- OtherBMP's

5. Post-Construction Storm Water Management in New Development and Redevelopment

- Community Control Strategy
- Regulatory Control Program
- Long Term O & M Procedures
- Pre-Construction Review of BMP Designs
- Site Inspections During Construction
- Post Construction Inspections
- Others

- Infiltration trench/basin
- Infrastructure planning
- storm water inlet specifications
- Narrower residential streets
- Open space design
- Ordinances for post construction runoff
- Storm water wetland
- Zoning
- Others:

6. Pollution Prevention/Good Housekeeping for Municipal Operations

- Employee Training Program
- Inspection and Maintenance Program
- Municipal Operations Storm Water Control
- Others

- Municipal Operations Waste Disposal
- Flood Management/Assessment Guidelines
- Others:

Part IV. Initial Identification of Measurable Goals (Attach additional sheets as needed)

<p>1. Public Education and Outreach on Storm Water Impacts</p> <p>Measurable goals (with start and end dates): <u>INTERLOCAL AGREEMENT / COALITION</u> <u>WITH WEBER COUNTY, MARCH 2003 -</u> <u>ONGOING</u></p> <p>Milestones: Year 1: Year 2: Year 3: Year 4: Year 5:</p>	<p>4. Construction Site Storm Water Runoff Control</p> <p>Measurable goals (with start and end dates): <u>ONGOING, 3-2003</u> <u>STORM WATER MANAGEMENT</u> <u>STORM WATER ENFORCEMENT.</u></p> <p>Milestones: Year 1: Year 2: Year 3: Year 4: Year 5:</p>
<p>2. Public Involvement/Participation</p> <p>Measurable goals (with start and end dates): <u>INTERLOCAL AGREEMENT / COALITION</u> <u>WITH WEBER COUNTY, MARCH 2003</u> <u>ON GOING.</u></p> <p>Milestones: Year 1: Year 2: Year 3: Year 4: Year 5:</p>	<p>5. Post-Construction Storm Water Management in New Development and Redevelopment</p> <p>Measurable goals (with start and end dates): <u>ONGOING, 3-2003</u> <u>STRUCTURAL IMPROVEMENTS I.E.</u> <u>RETENTION BASINS.</u></p> <p>Milestones: Year 1: Year 2: Year 3: Year 4: Year 5:</p>
<p>3. Illicit Discharge Detection and Elimination</p> <p>Measurable goals (with start and end dates): <u>ONGOING.</u> <u>INSPECTIONS, D.E.M. ORDINANCE AND</u> <u>MASTER PLAN UPDATES ON GOING.</u> <u>COMPLETE MASTER PLAN AND</u> <u>MAP UPDATE - NOVEMBER 2007</u></p> <p>Milestones: Year 1: Year 2: Year 3: Year 4: Year 5:</p>	<p>6. Pollution Prevention/Good Housekeeping for Municipal Operations</p> <p>Measurable goals (with start and end dates): <u>MARCH 2003 -</u> <u>ONGOING. SWVF ADAPTED - MARCH 2003</u> <u>SEE ATTACHED SHEETS FOR MCM #6.</u></p> <p>Milestones: Year 1: Year 2: Year 3: Year 4: Year 5:</p>

Part V. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: RICHARD S HENDRIX

Signature: Richard S Hendrix Date: 10/27/07

Instructions for Completing the Notice of Intent for Coverage Under a UPDES General Permit for Storm Water Discharges From SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS

Permit No. UTR090000

Who Must File a Notice of Intent?

If you are an operator of a regulated small MS4 designated for permitting, you must apply for coverage under a UPDES permit, or apply for a modification of an existing UPDES permit. If you have questions about whether you need a permit under the UPDES Storm Water Program, contact the Utah Division of Water Quality. The NOI must be submitted in accordance with the deadlines established in Part 2.A. of the UPDES MS4 General Permit.

When to File the NOI Form

DO NOT FILE THE NOI UNTIL YOU HAVE READ A COPY OF THE SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEM GENERAL PERMIT. You will need to determine your eligibility, prepare your storm water management plan, and correctly answer all questions on the NOI form, all of which must be done before you can sign the certification statement on the NOI in good faith (and without risk of committing perjury).

Where to File the NOI Form

NOIs must be sent to the following address:

Department of Environmental Quality
Division of Water Quality
P.O. Box 144870
Salt Lake City, UT 84114-4870

Completing the NOI Form

Please make sure you have addressed all applicable questions and have made a photocopy for your records before sending the completed form to the address above. Attach additional pages as needed for detailed explanations of items on the form.

Part I. MS4 General Information

Provide the legal name of the person, partnership, co-partnership, firm, company, corporation, association, joint stock company, trust, estate, governmental entity, or other legal entity that operates the MS4 described in this application. The responsible party is the legal entity that controls the MS4's operation. Provide the telephone number of the MS4 operator. Provide the mailing address of the MS4 operator. Include the street address or P.O. box, city, state, and zip code. All correspondence regarding the permit will be sent to this address, not the MS4 address in Section E.

Enter the official or legal name of the MS4.

Enter the city or cities, county or counties, and state in which the MS4 is located.

Enter the latitude and longitude of the approximate center of the MS4 in degrees/minutes/seconds. Latitude and longitude can be obtained from U.S. Geological Survey (USGS) quadrangle or topographic maps or by using a GPS unit, calling 1-(888) ASK-USGS, searching for your Facility's address on several commercial map sites on the Internet, or searching the U.S. Census Bureau database at <http://www.census.gov/cgi-bin/gazetteer>. Additionally, estimate the acreage of land area that drains to the MS4. This estimate can be made using topographic maps or topographic data in a geographic information system.

Indicate the legal status of the MS4 operator as a Federal, State, private, or other public entity (other than Federal or State). This refers only to the operator, not the owner of the land on which the MS4 is located.

Indicate whether the MS4 discharges storm water into one or more receiving water(s). Enter the name(s) of the receiving water(s).

Indicate whether the MS4 discharges storm water into one or more receiving water(s). Enter the name(s) of the receiving water(s).

Part II. Outfalls and Receiving Waters

Indicate all major outfalls (by outfall description) and the receiving water body for each outfall. Indicate whether any of the receiving water bodies are included on the 303(d) list for water quality impairments.

Part III. Initial Identification of Management Practices

Check the management practices that you have selected to meet each of the minimum measures. If a selected practice is not on the list, check "Other" and write the name of the practice in the space provided.

Part IV. Identification of Initial Measurable Goals

List the person(s) responsible for implementing or coordinating the storm water management program. Provide a narrative description of the measurable goals that will be used for each of the storm water minimum control measures. Indicate the month and year in which you will start and fully implement each of the minimum control measures, or indicate the frequency of the action in the description. Attach additional pages as necessary.

Part V. Certification

Certification statement and signature. (CAUTION: An unsigned or undated NOI form will prevent the granting of permit coverage.) State statutes provide for severe penalties for submitting false information on this application form. State regulations require this application to be signed by either a principal executive or ranking elected official as described in Part VI.H. of the Small MS4 General Permit.

Part VI. Contract Certification for Co-Permittee SWMP Implementation

Contract certification is required when more than one entity will be implementing the SWMP for the operator filing the NOI. The form must be completely filled out to clearly identify all coordinating agencies. Additional pages shall be used as necessary to define the responsibilities for each entity in preparation and implementation of the SWMP. The form must be signed by all coordinating entities, certifying that local agreements and/or contracts have been developed and agreed upon.

02003-41 ✓

WEBER COUNTY
RESOLUTION NO. 5-2003

A RESOLUTION APPROVING AN INTERLOCAL AGREEMENT BETWEEN
WEBER COUNTY AND HARRISVILLE CITY RELATING TO OBLIGATIONS
REQUIRED FOR A GENERAL PERMIT FOR STORM WATER MANAGEMENT

WHEREAS, the Utah Interlocal Cooperation Act, Title 11, Chapter 3, Utah Code Annotated, 1953 as amended, permits governmental units to enter into agreements with one another for the purpose of exercising on a joint and cooperative basis powers and privileges that will benefit their citizens and make the most efficient use of their resources; and

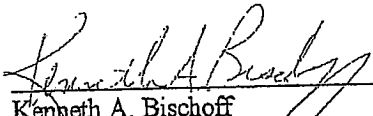
WHEREAS, Title 11, Chapter 13, Section 5 of the Utah Code Annotated, 1953 as amended, requires that governing bodies of governmental units adopt resolutions approving an interlocal agreement before such agreements may become effective; and

WHEREAS, Weber County and Harrisville City have negotiated an Agreement for the purposes of providing storm water services in accordance with the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1987, and the Utah Water Quality Act, together with federal and state regulation adopted pursuant to such Acts for Weber County.

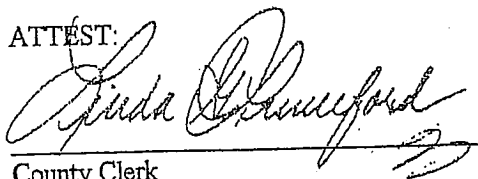
WHEREAS, Weber County and Harrisville City find that mutual benefit and cost effective government can be achieved through this interlocal agreement for the services entailed herein;

NOW, THEREFOR, BE IT RESOLVED by the Weber County Commission that the attached Interlocal Agreement is entered with Harrisville City for the purposes of storm water as authorized in the Interlocal Agreement, and the Interlocal Agreement is hereby approved and incorporated by this reference. The Commission hereby authorizes and directs the Commission Chair to execute the Interlocal Agreement for and on behalf of Weber County.

PASSED AND APPROVED by the Weber County Commission this 4th day of March , 2003.



Kenneth A. Bischoff
Chair, Weber County Commission

ATTEST:


County Clerk

C2003-41

INTERLOCAL AGREEMENT RELATING TO OBLIGATIONS
REQUIRED FOR A GENERAL PERMIT FOR STORM WATER MANAGEMENT

THIS AGREEMENT made effective this 10th day of DECEMBER, 2002, is entered into by and among HARRISVILLE City (hereafter "City"), and Weber County (hereafter "County").

RECITALS

WHEREAS, the Utah Interlocal Cooperation Act, Title 11, Chapter 13, Utah Code Annotated 1953, as amended, permits public agencies to enter into agreements with one another for the purpose of exercising, on a joint and cooperative basis, powers and privileges that will benefit their citizens and make the most efficient use of their resources; and,

WHEREAS, all of the parties hereto are public agencies as defined by the Interlocal Cooperation Act;

WHEREAS, the County is a body politic duly organized under the laws of Utah;

WHEREAS, the City is a municipal corporation duly organized under Title 10 of the Utah Code Annotated, as amended;

WHEREAS, in accordance with the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1987, and the Utah Water Quality Act, together with federal and state regulation adopted pursuant to such Acts, the County and the City, as an operator of storm water systems; must reduce pollutants in storm water to the Maximum Extent Practicable (hereafter "MEP") to protect water quality;

WHEREAS, Phase II Storm Water Regulations (hereafter "Regulations") specify that compliance with the MEP requirement can be attained by developing, implementing and enforcing a storm water management plan which incorporates Best Management Practices addressing the six minimum control measures;

WHEREAS, also pursuant the Regulations, the County and the City must obtain a Utah Pollution Discharge Elimination System Permit (hereafter "Permit"), and the City can obtain such Permit by co-permitting with the County for the implementation of certain control measures;

WHEREAS, the County and the City desire to work cooperatively to obtain a Permit, to comply with the relevant federal and state storm water regulations, and to provide a cost efficient and effective storm water program;

NOW, THEREFORE, for the reasons cited above, and in consideration of the mutual covenants and agreements contained herein, HARRISVILLE City and Weber County do mutually agree and undertake as follows:

SECTION ONE
SCOPE OF AGREEMENT

1. Intent. The parties intend by this Agreement to co-permit with one another to obtain a Utah Pollution Discharge Elimination System Permit meeting compliance with the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1987, and the Utah Water Quality Act, together with federal and state regulation adopted pursuant to such Acts which require the County and the City to reduce pollutants in storm water to the MEP to protect water quality. Specifically, this Agreement address the obligations of the County and the City in relation to compliance with Regulations which require developing, implementing and enforcing a storm water management plan incorporating Best Management Practices addressing the six minimum control measures as follows:
 - a. Public Education and Outreach.
 - b. Public Involvement and Participation.
 - c. Illicit Discharge Detection and Elimination.
 - d. Construction Site Runoff Control.
 - e. Post Construction Strom Water Management.
 - f. Pollution Prevention and Good House Keeping.

2. County Storm Water Management. The County shall provide for Storm Water Management administration and according to the relevant rules and regulations of law imposed upon the County. The County shall appoint capable individual as the Director of County Storm Water Management to implement and administer the relevant rules and regulations imposed upon the County. The Director shall also administer this Interlocal Agreement according to its provisions and any amendments.

3. Co-permitting. The County and the City mutually agree to co-permit to obtain a Utah Pollution Discharge Elimination System Permit, and shall provide one another with the relevant management plan, storm water information, and other necessary documentation for such Permit.

4. County Service Provided. The County shall be responsible for each control measure as follows, and the City shall cooperate with the County in relation to such measures:
 - a. Public Education and Outreach. The County shall provide materials and coordinate educational activities on a county-wide and regional level, including but not limited to media and public relations, publications and advertisements, and school outreach programs. The County may respond to concerns from city officials and relevant public committee recommendations.
 - b. Public Involvement and Participation. The County may establish a county-wide storm water advisory committee for public participation and to address storm water issues.
 - c. Illicit Discharge Detection and Elimination. That County shall provide for this control measure only as it relates to mapping and coordinating of discharges that occur in multiple jurisdictions, or as otherwise crosses jurisdictional boundaries between different cities.
 - d. Construction Site Runoff Control. The County has no responsibility for this control measure, outside unincorporated areas, except for mutual cooperation and coordination with the City at the City's request concerning this control measure.

- e. Post Construction Storm Water Management. The County has no responsibility for this control measure, outside unincorporated areas, except for mutual cooperation and coordination with the City at the City's request concerning this control measure.
 - f. Pollution Prevention and Good House Keeping. The County has no responsibility for this control measure, outside unincorporated areas, except for mutual cooperation and coordination with the City at the City's request concerning this control measure.
5. City Service Provided. The City shall be responsible for each control measure as follows, and the County shall cooperate with the City in relation to such measures:
- a. Public Education and Outreach. The City shall be responsible for distribution of material provided by the County within the City's jurisdiction as coordinated with the County Storm Water Director. The City may coordinate additional public education and outreach program with the County for special events or other activities at the discretion of the City.
 - b. Public Involvement and Participation. The City may establish a City Storm Water Advisory Committee for public participation and to address storm water issues. One representative from the City, appointed by the Mayor, may serve on the county-wide committee, if such committee exists.
 - c. Illicit Discharge Detection and Elimination. The City shall provide for the enforcement of illicit discharge detection and elimination.
 - d. Construction Site Runoff Control. The City is responsible to implement and administer this control measure within its jurisdiction and may seek mutual cooperation and coordination with the County at the City's request concerning this control measure.
 - e. Post Construction Storm Water Management. The City is responsible to implement and administer this control measure within its jurisdiction and may seek mutual cooperation and coordination with the County at the City's request concerning this control measure.
 - f. Pollution Prevention and Good House Keeping. The City is responsible to implement and administer this control measure within its jurisdiction and may seek mutual cooperation and coordination with the County at the City's request concerning this control measure.
6. Accounting and Administration. The County agrees to provide the City as a nominal cost. Upon receiving annual notice from the County of any nominal costs related to the County's obligations, the City agrees to pay the County a nominal charge to compensate the County. Compensation shall be used to assist the County in its obligations arising pursuant to this Agreement relating to the control measures of which the County has assumed responsibility. The County shall keep a accounting of the nominal charges incurred by the City, pay the debts for such and make necessary posting the accounting current. The County shall supply the resources, labor, computer system, postage, all other material necessary to fulfil its obligations under this Agreement. The City shall supply The County shall supply the resources, labor, computer system, postage, all other material necessary to fulfil its obligations under this Agreement.

7. Limitations. The County, except as outlined by this Agreement, does not assume any responsibility to inspect, install, operate or otherwise maintain the City's storm water system, storm water program, or storm water utility. Further, the County shall have no duty regarding storm water management, fees, inspections, or any other types of activity outside the scope of this Agreement, unless such relates to an unincorporated area.
8. Designated Contacts. The City shall designate its contact with the County for any and all issues which may arise under this Agreement. The County designates the Director as its contact with the City for any and all issues which may arise under this Agreement. The County and the City contacts may also consult with each other from time to time on the status of mutual relations and the terms of this Agreement.

SECTION TWO GENERAL PROVISIONS

1. Termination. This Agreement may be terminated by either party upon ninety (90) days written notice from the Mayor or County Commission provided either to the County Clerk or the City Recorder, as the case may dictate.
2. Effective Date. This Agreement shall become effective upon compliance with state law governing interlocal cooperation agreements and upon ratification by the aforesaid City as provided U.C.A. § Section 11-13-10, as amended.
3. Amendment. This Interlocal Agreement may be changed, modified, or amended by written agreement of the participants, upon adoption of appropriate resolutions from County and the City, along with an approved as to form by the County Attorney and City Attorney, and upon meeting all other applicable requirements of the Interlocal Cooperation Act.
4. Entire Agreement. This Agreement, together with any written amendments, shall constitute the entire agreement between the parties and any prior understanding or representation of any kind preceding the date of this Agreement shall not be binding upon either party except for the resolutions of each party herein attached and incorporated by reference.
5. Indemnification. The County agrees to save and hold harmless the City from its obligation under this Agreement. In all other instances, each of the parties agrees to defend, hold harmless, and indemnify the other party for the wrongful or negligent acts or omissions of employees against any and all liabilities, claims, damages, actions, suits, proceedings, costs and expenses which arise by reason of this Agreement, however, in no event shall indemnification exceed the amount set forth in *Utah Code Ann.* § 63-30-1 et. seq, at the time of judgment.
6. Employee Status. It is understood and agreed by the parties that any and all personnel furnished by the parties shall remain employees of the respective parties and shall abide by the personnel policies of the respective parties.

- 7. Warranties. Each party represents and warrants that it is a public agency within the meaning of the Interlocal Cooperation Act, is authorized to execute and deliver this Agreement and there is no litigation, legal action or investigation between the parties that would adversely effect this Agreement.
- 8. Documents on File. Executed copies of this Agreement shall be placed on file in the office of the County Clerk and the City Recorder and shall remain on file for public inspection for the duration of this Agreement.
- 9. Governing Law. It is understood and agreed by the parties that this Agreement shall be governed by the laws of the State of Utah as to interpretation and performance.
- 10. Non-transferable. This rights, duties, powers and obligations of this Agreement may not be transferred, assigned or delegated without the consent of the parties.
- 11. Rules of Construction and Severability. Standard rules of construction, as well as the context of this agreement, shall be used to determine the meaning of the provisions herein, except as follows. Nothing herein shall be construed to prevent the prosecutors of the respective Cities from substituting for each other or from having other prosecuting attorneys substitute for them. If any of the provisions herein are different from what is normally allowed or required by law, every effort shall be made to construe the clauses to be legally binding and to infer voluntary arrangements which are in addition to what is normally allowed or required by law. If any provision, article, sentence, clause, phrase, or portion of this agreement, including but not limited to any written amendments, is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this agreement. It is thus the intention of the parties that each provision of this agreement shall be deemed independent of all other provisions herein.

DATED this 4 day of March, 2003
~~5~~ day of ~~DECEMBER~~, 2002

FOR WEBER COUNTY:

Kenneth A. Bishop
Chair, Weber County Commission

ATTEST:

Andrea D. Brumbyrd

County Clerk

APPROVED AS TO FORM:

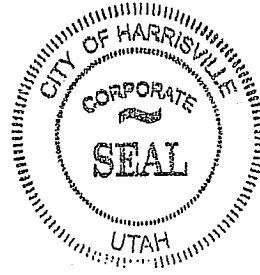
[Signature]

County Attorney

DATED this 10 day of March, 2003
~~10~~ day of ~~DECEMBER~~, 2002

FOR HARRISVILLE CITY:

Interlocal Agreement for Storm Water Management



[Handwritten Signature]
Mayor

ATTEST:

APPROVED AS TO FORM:

Brenda K Ouderbach
City Recorder

[Handwritten Signature]
City Attorney

HARRISVILLE CITY
RESOLUTION NO. 02-07

A RESOLUTION APPROVING AN INTERLOCAL AGREEMENT BETWEEN
HARRISVILLE CITY AND WEBER COUNTY RELATING TO OBLIGATIONS
REQUIRED FOR A GENERAL PERMIT FOR STORM WATER
MANAGEMENT

WHEREAS, the Utah Interlocal Cooperation Act, Title 11, Chapter 3, Utah Code Annotated, 1953 as amended, permits governmental units to enter into agreements with one another for the purpose of exercising on a joint and cooperative basis powers and privileges that will benefit their citizens and make the most efficient use of their resources; and


WHEREAS, Title 11, Chapter 13, Section 5 of the Utah Code Annotated, 1953 as amended, requires that governing bodies of governmental units adopt resolutions approving an interlocal agreement before such agreements may become effective; and

WHEREAS, Weber County and Harrisville City have negotiated an Agreement for the purposes of providing storm water services in accordance with the Federal Water Pollution Control Act, as amended by the Clean Water Act of 1987, and the Utah Water Quality Act, together with federal and state regulation adopted pursuant to such Acts for Harrisville City;

WHEREAS, Weber County and Harrisville City find that mutual benefit and cost effective government can be achieved through this interlocal agreement for the services entailed herein;

NOW, THEREFORE, BE IT RESOLVED by the Mayor and City Council of Harrisville City that the attached Interlocal Agreement is entered with Weber County for the purposes of storm water as authorized in the Interlocal Agreement, and the Interlocal Agreement is hereby approved and incorporated by this reference. The Council hereby authorizes and directs the Mayor to execute the Interlocal Agreement for and on behalf of Harrisville City.


PASSED AND APPROVED by the Harrisville City Council this 10 day of December, 2002.



Mayor, Fred W. Oates
Harrisville City



ATTEST:



City Recorder

STATE OF UTAH, DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER QUALITY
 288 North 1460 West, P.O. Box 144870, Salt Lake City, Utah 84114-4870 (801)538-6146

Notice of Intent (NOI) for Coverage Under the UPDES General Permit for Discharges from Small Municipal Separate Storm Sewer Systems (MS4's), Permit No. UTR090000.



INSTRUCTIONS ON BACK PAGE

DWQ USE ONLY

Coverage No. _____

Submission of this Notice of Intent constitutes notice that the party identified in Section I of this form intends to be authorized by a UPDES permit issued for storm water discharges from Small Municipal Separate Storm Sewers in the State of Utah. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

Part I. General Information

Governmental Entity Name: HARRISVILLE CITY CORPORATION

Mailing Address: Street 363W INDEPENDENCE BLVD.

City HARRISVILLE State UT Zip Code 84404

Operator Type (Circle One): (City) County, Hospital, Prison, Military Base, Park, College/University, UDOT, Sewer District, Flood Control District, Drainage District, Association, Other(list) _____

Operator Status (Circle One): (Federal/State/Local) Other Public Entity(list) _____

Operator Contact Person: Name GENE BINGHAM

Title PUBLIC WORKS DIRECTOR Telephone Number 801 782-7049

Latitude/Longitude at Center of land for which you are requesting authorization to discharge:

Latitude 41° 17' 39" Longitude 112° 09' 00"

Population served by your MS4: 4109 People

Storm Water Management Program Responsible Person:

Name GENE BINGHAM Title PUBLIC WORKS DIRECTOR

Telephone Number 801 782 7049

Part II: Outfalls and Receiving Waters

Receiving Waters: List all separate storm water outfall receiving waters (all discharges to waters under the definition of waters of the State). If all receiving waters are not known at the time of the NOI submittal, list known outfalls and update the list on annual reports. (ATTACH ADDITIONAL SHEETS AS NEEDED)

	Outfall	Receiving Water
1.	<u>5/4 MILE</u>	<u>FOUR MILE</u>
2.	<u>FOUR MILE</u>	<u>WEBER RIVER</u>
3.	<u>DIXON CREEK</u>	<u>FIVE MILE</u>
4.	<u>HORN DRAINAGE</u>	<u>FOUR MILE</u>
5.		
6.		

Part IV. Initial Identification of Best Management Practices (ATTACH ADDITIONAL SHEETS AS NEEDED)

1. Public Education and Outreach on Storm Water Impacts

Outreach Techniques

- Classroom education/school programs
- Outreach to commercial entities
- Printed material
- Media campaign
- Classroom educational materials
- Events and Programs
- Displays
- Speakers to community groups
- Economic incentives
- Promotional giveaways
- Others

.....SDS & STORM DRAIN SYSTEM SIGNAGE.....

Management Practices to Encourage

- Proper lawn and garden care (fertilizer and pesticide use, sweeping, etc.)
- Low impact development
- Pet waste management
- Pollution prevention for businesses
- Proper disposal of household hazardous wastes
- Water Conservation Practices
- Others

2. Public Involvement/Participation

Involvement Techniques

- Advisory/partner committees
- Local storm water contact
- Public access to documents and information
- Public review of plans and annual reports
- Watershed organizations
- Attitude surveys
- Community hot lines
- Stakeholder meetings
- Others

Participation Activities

- Adopt-a-stream
- Storm drain stenciling
- Stream/roadway cleanup
- Volunteer monitoring
- Wetland plantings
- Others

3. Illicit Discharge Detection and Elimination

Detection and Elimination Activities

- System mapping
- Regulatory Control Program
- Identifying and Eliminating illicit connection procedures
- Dye testing/Tracing Procedures
- System inspections
- Dry Weather Screening Program/ Field Testing
- Others

Type of Discharges to Target

- Failing septic systems
- Illegal dumping
- Industrial/business connections
- Recreational sewage
- Sanitary sewer overflows
- Wastewater connections to the storm drain system
- Others

4. Construction Site Storm Water Runoff Control

Program Activities

- Regulatory Control Program
- Erosion and Sediment Control BMP's
- Other Waste Control Program
- Site Plan Review Procedures
- Public Information handling Procedures
- Site Inspection/Enforcement Procedures
- Other Construction Site Runoff Controls
- Contractor certification and inspector training
- Others

Best Management Practices

- Construction Entrance/Exit Stabilization
- Perimeter Controls
- Sediment Retention Structure Requirements
- Sediment filters and sediment chambers
- Mulching Requirements
- Temporary/Permanent Stabilization Requirements
- Vehicle maintenance and washing areas
- Cement Washout Area
- Other BMP's

5. Post-Construction Storm Water Management in New Development and Redevelopment

- Community Control Strategy
- Regulatory Control Program
- Long Term O& M Procedures
- Pre-Construction Review of BMP Designs
- Site Inspections During Construction
- Post Construction Inspections
- Others

- Infiltration trench/basin
- Infrastructure planning
- storm water inlet specifications
- Narrower residential streets
- Open space design
- Ordinances for post construction runoff
- Storm water wetland
- Zoning
- Others:

6. Pollution Prevention/Good Housekeeping for Municipal Operations

- Employee Training Program
- Inspection and Maintenance Program
- Municipal Operations Storm Water Control
- Others

- Municipal Operations Waste Disposal
- Flood Management/Assessment Guidelines
- Others:


Part V. Initial Identification of Measurable Goals (Attach additional sheets as needed)

<p>1. Public Education and Outreach on Storm Water Impacts</p> <p>Measurable goals (with start and end dates): LIST OF DUMPSITES - DEC. 2004 PUBLIC ED. W/ WEBER COUNTY MAR. 2003 SIGNAGE JUN. 2004</p> <p>Milestones: Year 1: Year 2: Year 3: Year 4: Year 5:</p>	<p>4. Construction Site Storm Water Runoff Control</p> <p>Measurable goals (with start and end dates): BASIC WORKS STANDARDS - DEC. 2004 ORDINANCE ENFORCEMENT - DEC. 2005</p> <p>Milestones: Year 1: Year 2: P.W. STANDARDS Year 3: ENFORCEMENT Year 4: Year 5:</p>
<p>2. Public Involvement/Participation</p> <p>Measurable goals (with start and end dates): PARTICIPATION W/ WEBER COUNTY, MARCH 2003 MSA ESTABLISH COMMITTEE DEC. 2003</p> <p>Milestones: Year 1: Year 2: Year 3: Year 4: Year 5:</p>	<p>5. Post-Construction Storm Water Management in New Development and Redevelopment</p> <p>Measurable goals (with start and end dates): STRUCTURAL IMPROVEMENTS - DEC. 2004 STORM DRAIN STUDY REQUIREMENTS - (DEVELOPMENTS): MARCH 2003 SITE REVIEWS, MARCH 2003</p> <p>Milestones: Year 1: SITE REVIEW / S.D. STUDY Year 2: STRUCTURAL IMPROVEMENTS. Year 3: Year 4: Year 5:</p>
<p>3. Illicit Discharge Detection and Elimination</p> <p>Measurable goals (with start and end dates): PARTICIPATE W/ WEBER COUNTY - MARCH 2003 COMPLETE MAP - MARCH 2003 MASTER PLAN UPDATE JUN. 2004 D.D. MANURES, JUN. 2003</p> <p>Milestones: Year 1: W.C. / MAP / D.D. Year 2: MASTER PLAN Year 3: Year 4: Year 5:</p>	<p>6. Pollution Prevention/Good Housekeeping for Municipal Operations</p> <p>Measurable goals (with start and end dates): SEE ATTACHED SHEET FOR MCMG.</p> <p>Milestones: Year 1: 2003 CBC, ET, U, SC, SEU, VEG Year 2: 2004 PLAN, BEM, BERC, PU, REM, WAD. Year 3: Year 4: Year 5:</p>

Part VI. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: FRED DATES

Signature:  Date: 11/17/003

Commercial and Residential	Oil, Grease, and Hydrocarbons	Asphalt surface leaching, spills, leaks, construction activities
Residential and Parks	Floatables	Street refuse, industrial yard waste

6.3 MEASURABLE GOALS AND FISCAL ABILITY

The following table summarizes the BMPs, Measurable Goals, Implementation Schedule and Fiscal ability of the City's for each BMP. The Fiscal Ability references the anticipated cost for the BMP as well as the source of funding. The City plans to institute a Storm Water Utility Fund (SWUF) which should cover the costs of this plan

MCM 6 - POLLUTION PREVENTION / GOOD HOUSE KEEPING				
Name	BMP	Measurable Goal	Implementation Schedule	Fiscal Ability
	Storm Water Master Plan	Update the master plan to include de-silting basins for City Mains	Dec 2004	see MCM 3 for costs
BRRC	Building Repair, Remodeling, and Construction	Provide 2 hours of annual training to employees	June 2004	Included below
BGM	Building and Grounds Maintenance	Reduce pesticide use by keeping a log of usage in each location	June 2004	Included below
CBC	Catch Basin Cleaning	Clean catch basins semi-annually	Sept 2003	\$10,000/yr from SWUF
CO	Covering	Construct a storage facility for Salt Storage	June 2005	\$50,000 from SWUF
ET	Employee Training	training 2 hrs / year	June 2003	\$1000 per year
LC	Litter Control	Start an "Adopt a Neighborhood" Program	Organize by Dec 2003	Coordinated by City Hall for \$500/ year
MU	Material Use	Training 2 hrs/ yr	Dec 2004	\$500/yr by SWUF
RBM	Roadway/ Bridge Maintenance	Fill Potholes annually	Dec 2004	\$1500/yr by SWUF
SC	Street Cleaning	Sweep Streets Semi-annually	Immediate	\$11,000/yr by SWUF

Part VII: Contract Certification for Co-Permittee SWMP Implementation
(ATTACH ADDITIONAL SHEETS AS NEEDED)

List entity names responsible for implementation of the SWMP

- | | |
|------------------------|----------------------------|
| 1. <u>WEBER COUNTY</u> | 2. <u>HARRISVILLE CITY</u> |
| 3. _____ | 4. _____ |
| 5. _____ | 6. _____ |

The above entities have entered into an agreement or contract to satisfy the implementation requirements of the Storm Water Management Program listed in the NOI. As stated in the existing agreements (MOU's) or contracts, the entities have agreed to the following responsibilities.

Circle the entity numbers (entity numbers correspond to entity name numbers listed above) corresponding with responsibilities, or portions thereof, of each entity entering into this agreement in the table below:

<u>RESPONSIBILITY</u>	<u>ENTITY</u>					
a. Public Education and Outreach	①	2.	3.	4.	5.	6.
b. Public Involvement and Participation	①	2.	3.	4.	5.	6.
c. Illicit Discharge Detection and Elimination	①	2.	3.	4.	5.	6.
d. Construction Site Run-off Control	1.	②	3.	4.	5.	6.
e. Post-Construction Storm Water Management in New Development and Redevelopment	1.	②	3.	4.	5.	6.
f. Pollution Prevention/Good Housekeeping for Municipal Operations	1.	②	3.	4.	5.	6.

If any entity is agreeing to accomplish only a portion of a responsibility in the table then explain the responsibility portion (e.g. entity 1 is responsible for storm drain stenciling program in the MS4 area, entity 2 is responsible for conducting phone surveys for item (a) in the table etc.) on a separate sheet.

The following statement and the accompanying signatures serve as certification that the agreements (MOU's) or contracts have been developed and agreed upon for the implementation of the Operator's (Identified in Part I of the NOI) SWMP.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, I certify that the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Entity	Authorized Signature	Date	Entity	Authorized Signature	Date
1.	<u>[Signature]</u>	<u>12-11-03</u>	2.	<u>[Signature]</u>	<u>11/17/03?</u>
3.	_____		4.	_____	
5.	_____		6.	_____	

APPENDIX D

Permits

STATE OF UTAH, DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER QUALITY
195 North 1950 West, P.O. Box 144870, Salt Lake City, Utah 84114-4870 (801)536-4300

NOI

Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under the UPDES General Permit No. UTR300000. SEE REVERSE FOR INSTRUCTIONS

Submission of this Notice of Intent constitutes notice that the party(s) identified in Section I of this form intends to be authorized by UPDES General Permit No. UTR300000 issued for storm water discharges associated with construction activity in the State of Utah. Becoming a permittee obligates such discharger to comply with the terms and conditions of the permit. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

Is this NOI seeking continuation for previously expired permit coverage at the same site? Y N
If yes, what is the number of the previous permit coverage? Permit No. UTR

I. OPERATOR INFORMATION Date NOI is received at DWQ _____ (to be completed by DWQ)

Name (Main operator): _____ Phone: _____
Address: _____ Status of Owner/Operator: _____
City: _____ State: _____ Zip: _____
Contact Person: _____ Phone: _____

Name (1st Co-permittee): _____ Phone: _____
Address: _____ Status of Owner/Operator: _____
City: _____ State: _____ Zip: _____
Contact Person: _____ Phone: _____

Name (2nd Co-permittee): _____ Phone: _____
Address: _____ Status of Owner/Operator: _____
City: _____ State: _____ Zip: _____
Contact Person: _____ Phone: _____

Name (3rd Co-permittee): _____ Phone: _____
Address: _____ Status of Owner/Operator: _____
City: _____ State: _____ Zip: _____
Contact Person: _____ Phone: _____

Please copy this form if you have more co-permittees than what is allowed on this form.

II. FACILITY SITE / LOCATION INFORMATION

Name: _____
Project No. (if any): _____
Address: _____ County: _____
City: _____ State: _____ Zip: _____
Latitude: _____ Longitude: _____

Method (check one): USGS Topo Map, Scale _____ EPA Web site GPS Other

Is the facility located in Indian Country?

Y N

INSTRUCTIONS

Notice Of Intent (NOI) For Permit Coverage Under the UPDES General Permit For Storm Water Discharges From Construction Activities

Who Must File A Notice Of Intent (NOI) Form. State law at UAC R317-8-3.9 prohibits point source discharges of storm water from construction activities to a water body(ies) of the State without a Utah Pollutant Discharge Elimination System (UPDES) permit. The operator of a construction activity that has such a storm water discharge must submit a NOI to obtain coverage under the UPDES Storm Water General Permit. If you have questions about whether you need a permit under the UPDES Storm Water program, or if you need information as to whether a particular program is administered by EPA or a state agency, contact the storm water coordinator at (801) 536-4300.

Where To File NOI Form NOIs, with fee payment(s), must be sent to the following address:

Department of Environmental Quality
Division of Water Quality
P.O. Box 144870
Salt Lake City, UT 84114-4870

(The NOI can also be completed on line at <http://www.waterquality.utah.gov/UPDES/stormwatercon.htm>)

Beginning of Coverage Storm Water General Permits cover a facility quickly avoiding delays, therefore coverage is immediate after submitting an NOI with submission of the permit fee. The permittee should be aware that though you may not have a permit in hand, if you have sent in a completed NOI with the permit fee you are covered by the conditions in the permit and will be expected to comply with these conditions. If you wish, contact the Division of Water Quality at (801) 536-4300 to receive a generic copy of the permit or you can print a copy from the DWQ web site or it can be downloaded during the on line application process.

Permit Fees (MAKE CHECKS PAYABLE TO: DIVISION OF WATER QUALITY) Construction projects are prorated from the time they begin disturbing ground until the time the disturbed surface is stabilized, and the permit is terminated by the permittee with a submittal of a Notice of Termination (NOT) form. That time period may or may not be that same time period as what could be considered project start date and project end date. Fees are prorated at \$8.34 per month of coverage needed, except there is a \$100 minimum and a \$500.00 maximum. EXAMPLE: if you need 5 months of coverage: $5 \times \$8.34 = \41.70 , then you will need to submit the \$100 minimum, if 18 months of coverage is needed: $18 \times \$8.34 = \150.12 , your total fee will be \$150.12. The \$500.00 maximum will provide permit coverage for five years and then expire at the end of the five year period. Permit coverage is calculated on the dollar amount of the permit fee submitted. The minimum time period that a permit can be issued for is one year. If stabilization occurs before one year, the permittee must submit an NOT. State or local political subdivisions are exempt from the permit fee. The fee must be received with the NOI before permit coverage is given.

Length of Coverage: Storm Water Construction Permits get coverage starting on the day that the NOI and fee payment is received at DWQ (on line if that is the case) and ending on the date that the fee pays up to. The minimum fee is \$100, therefore all permits where the minimum fee is paid will automatically receive coverage for one year. If a permittee does not need coverage for a full year and does not want to be held accountable for permit conditions, they must submit the NOT (associated with the permit) after the site has been stabilized (or when other requirements are met so that the permittee can legally terminate the permit) to terminate coverage.

The Storm Water General Permit for Construction Activities UTR300000 will expire on June 30, 2013.

SECTION I - FACILITY OPERATOR INFORMATION Give the legal name(s) of the person(s), firm(s), public organization(s), or any other entity(ies) that conducts the construction operation at the facility or site described in this application. The name of the operator(s) may be the developer, the owner, the general contractor, the design firm, the excavation contractor and/or others (e.g. anyone that fits the definition of operator). An operator is anyone that has control over site/project specifications and/or control of day to day operational activities. Do not use a colloquial name.

Enter the complete address and telephone number of the operator(s). Enter the appropriate letter to indicate the legal status of the operator of the facility.
F = Federal M = Public (other than Fed or State) S = State P = Private

SECTION II - FACILITY/SITE LOCATION INFORMATION. Enter the facility name or legal name and project number (if any) of the site and complete street address, including city, state and ZIP code. The latitude and longitude of the facility must be included to the approximate centroid of the site, and the method of how the Lat/Long was obtained (USGS maps, GPS, Internet Map sites [such as Google Earth], other). The township and range is desirable but not necessary.

Indicate whether the facility is located in Indian Country. If the facility is located in Indian Country, do not complete this NOI, instead complete form 3510-6 and submit to EPA Region VIII except for facilities on the Navajo Reservation or on the Goshute Reservation which should submit EPA form 3510-6 to Region IX.

SECTION III - SITE ACTIVITY INFORMATION If the storm water discharges to a municipal separate storm sewer system (MS4), enter the name of the operator of the MS4 (e.g., municipality name, county name) and the receiving water of the discharge from the MS4 if it is known (if it is not known please estimate or guess and indicate so). (An MS4 is defined as a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a state, city, town, county, district, association or other public body which is designed or used for collecting or conveying storm water).

SECTION IV - TYPE OF CONSTRUCTION Check each type of construction that applies to this application.

SECTION V - BEST MANAGEMENT PRACTICES Check each type of best management practice that will be used to control storm water runoff at the job site.

SECTION VI - ADDITIONAL INFORMATION REQUIRED Enter the project start date and the estimated completion date for the entire development plan. All coverage's issued under this NOI terminate on June 30, 2013. Provide an estimate of the total number of acres of the site on which soil will be disturbed (round to the nearest acre). Indicate whether the storm water pollution prevention plan for the site is in compliance with approved state and/or local sediment and erosion plans, permits, or storm water management plans.

SECTION VII - CERTIFICATION State statutes provide for severe penalties for submitting false information on this application form. State regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (i) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor; or

For a municipality, state, Federal, or other public facility: by either a principal executive officer or ranking elected official.

POLLUTION PREVENTION PLAN A storm water pollution prevention plan (SWP3) is required to be in hand before the NOI can be submitted. It is important to know SWP3 requirements (contained in the permit) even during the design portion of the project. A copy of the permit can be obtained from the Division of Water Quality's storm water construction web site. Guidance material for developing a SWP3 can be obtained from EPA (NTIS) or copied from EPA material at the Division of Water Quality's storm water construction web site.

NOTICE OF TERMINATION (NOT) A completed Notice of Termination (NOT) form is required to terminate your permit at the end of construction. Please complete the NOT form, including the project's assigned permit number, and return it to the Division of Water Quality. If you apply on line you will receive a partially filled out NOT at the time of application for which you will need to fill in the termination date and provide a signature for submission. Please contact the storm water coordinator at (801) 536-4300 for any questions or for a copy of the NOT form.

III. SITE ACTIVITY INFORMATION

Municipal Separate Storm Sewer System (MS4) Operator Name: _____

Receiving Water Body: _____ (this is known this is a guess)

Estimate of distance to the nearest water body? _____ ft. miles. (circle one)

List the Number of any other UPDES permits at the site: _____

IV. TYPE OF CONSTRUCTION (Check all that apply)

- 1. Residential 2. Commercial 3. Industrial 4. Road 5. Bridge 6. Utility
- 7. Contouring, Landscaping 8. Other (Please list) _____

V. BEST MANAGEMENT PRACTICES

Identify proposed Best Management Practices (BMPs) to reduce pollutants in storm water discharges: (Check all that apply)

- 1. Silt Fences 2. Sediment Pond 3. Seeding/Preservation of Vegetation 4. Mulching/Geotextiles
- 5. Check Dams 6. Structural Controls (Berms, Ditches, etc.)
- 7. Other (Please list) _____

VI. ADDITIONAL INFORMATION REQUIRED

A storm water pollution prevention plan has been prepared for this site and is to the best of my knowledge in Compliance with State and/or Local Sediment and Erosion Plans and Requirements. Y N
(A pollution prevention plan is required to be on hand before submittal of the NOI.)

Project Start Date: _____ Completion Date: _____ (All coverage's issued under this NOI will terminate on June 30, 2013)

VII. CERTIFICATION: I certify under penalty of law that I have read and understand the Part 1 eligibility requirements for coverage under the general permit for storm water discharges from construction activities. I further certify that to the best of my knowledge, all discharges and BMPs that have been scheduled and detailed in a pollution prevention plan will satisfy requirements of Part 1, and Part 3 of this permit. I understand that continued coverage under this storm water general permit is contingent upon maintaining eligibility as provided for in Part 1.

I also certify under penalty of law that this document and all attachments were prepared under the direction or supervision of those who have placed their signature below, in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name (of responsible person for the main operator from first page): _____

Date: _____

Signature: _____

Print Name (of responsible person for the 1st co-permittee from first page): _____

Date: _____

Signature: _____

Print Name (of responsible person for the 2nd co-permittee from first page): _____

Date: _____

Signature: _____

Print Name (of responsible person for 3rd co-permittee from first page): _____

Date: _____

Signature: _____

Amount of Permit Fee Enclosed: \$ _____



STORM WATER CONNECTION & ACTIVITY PERMIT APPLICATION HARRISVILLE CITY CORPORATION

1. GENERAL INFORMATION

		Receipt no.	date issued	permit no.	Bldg permit no.
date of application		date work starts		Engineer	phone
proposed work		General Contractor		phone	
Bldg Address		Owner's Signature		date	
lot	subd. name & number				
PERMIT FEES (a.Subd Plat, b.Site Plan, c. lot plan)					
Owner of property		phone		P.W. Standards purchase (a.&b. only) (\$30.00)	
				Storm Water Connection Fee (a&b only)	
Mailing address		city/zip		Storm Water Activity Fee (a,b,&c required)	
				Total Fee	

2. STORM WATER UTILITY INFORMATION

	Area (sf)	Percent	STORM WATER UTILITY INFORMATION	
Building Size			Total Hard Surface (sf)	
Pavement area			Total ERU's (2800sf of H.S.)	
Landscape area			Credits (given in section 3)	
Other _____			Monthly Anticipated Utility Fee	
Total lot size		100%		
Total Disturbed Area				

3. STORM WATER CONNECTION PERMIT and ACTIVITY PERMIT

CONSTRUCTION BMPs (check all applicable)					MAINTENANCE BMP's (Utility Credit up to 50%)	%
BRRC	<input type="checkbox"/>	GM	<input type="checkbox"/>	SF	Detention Basin (30%) Required Volume: _____	
CESA	<input type="checkbox"/>	HWM	<input type="checkbox"/>	SBB	Increased Detention Volume (10%) Actual Volume: _____	
CR	<input type="checkbox"/>	IP	<input type="checkbox"/>	ST	Increased Landscaping (10%) Area: _____	
CWM	<input checked="" type="checkbox"/>	PTHD	<input type="checkbox"/>	TCMC	Oil Separator (10%) <input type="checkbox"/>	
DC	<input type="checkbox"/>	SD	<input type="checkbox"/>	VEF	Annual lot Sweeping (10%) Receipts submitted for credit	
ECB	<input type="checkbox"/>	SCE	<input type="checkbox"/>	WD	Catch basin Cleaning (10%) Receipts submitted for credit	
EVWA	<input checked="" type="checkbox"/>	SCU	<input type="checkbox"/>	Other	TOTAL CREDIT (%)	

4. APPROVALS

	Plan Approval Required			BMP Plan	Storm Water Calculations	Pollution Prevent Plan	Approved (date)
	a.Subd Plat	b.Site Plan	c.Lot Plan				
Storm Drain Inspector							
Public Works Director							
City Engineer							
Building Official							
Planning Commission							
City Council							

ABBREVIATIONS ASSOCIATED WITH THIS PERMIT

BMP	Best management practice
BRRC	Building repair, remodeling and construction
CESA	Contaminated or erodible surface areas
CR	Construction road stabilization
CWM	Concrete waste management
DC	Dust control
ECB	Erosion control blanket
EVWA	Equipment and vehicle wash down area
GM	Geotextiles and mats
HWM	Hazardous waste management
IP	Inlet protection
PTHD	Portable toilet hold down
SB	Sediment basin
SCE	Stabilized construction entrance
SCU	Spill clean-up
SF	Silt fence
SBB	Straw bale barrier
ST	Sediment trap
TCMC	Temporary Corrugated metal culvert
VEF	Vehicle and equipment fueling
WD	Waste disposal

STORM WATER CONNECTION AND ACTIVITY PERMIT CRITERIA

The connection and activity permit both have some of the same requirements. An activity permit (i.e. lot plan/building permit) can be issued without needing a connection permit, however, a connection permit (i.e. subdivision, commercial and special development) cannot be issued without an activity permit. When this is the case, both can be issued at the same time to avoid competition when all of the requirements have been met.

When only an activity permit is needed, the three following construction BMP's (Best Management Practices), will be required: CWM (Concrete Waste Management), EVWA (Equipment and Vehicle Wash Down Area), and TCMC (Temporary Corrugated Metal Culvert).

RESIDENTIAL CONSTRUCTION SITE REQUIREMENTS CHECKLIST

All of the following must be at the construction site before the first inspection (sewer and water) is given and remain throughout the construction of the building.

- Portable toilet
- Concrete wash-out
- Means of trash collection
- No dirt, road base or gravel in the gutter and street
- No dirt curb ramps installed
- Good house keeping must be preformed at all times
- Before final occupancy an NOT must be filled.

NOTICE OF TERMINATION (NOT) A completed Notice of Termination (NOT) form is required to terminate your permit at the end of construction. Please complete the NOT form, including the project's assigned the permit number, and return it to the Division of Water Quality. If you apply on line you will receive a partially filled out NOT at the time of application for which you will need to fill in the termination date and provide a signature for submission. Please contact the storm water coordinator at (801) 536-4300 for any questions or a copy of the NOT form.

I, _____, am aware of the requirements and understand no inspections will be given unless I am in compliance.

Name

Date

Contact Phone #

site address

Lot #

subdivision

STATE OF UTAH, DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER QUALITY

195 North 1950 West, P.O. Box 144870, Salt Lake City, Utah 84114-4870

NOT

Notice of Termination (NOT) for Storm Water Discharges Associated with Construction Activity Under the UPDES General Permit No. UTR 200000 or UTR300000. SEE REVERSE FOR INSTRUCTIONS

Submission of this Notice of Termination constitutes notice that the operator and/or co-permittee identified in Section II of this form is no longer authorized to discharge storm water associated with industrial activity under the UPDES program from that portion of the site for which they are responsible as indicated in the SWPPP. ALL NECESSARY INFORMATION MUST BE PROVIDED ON THIS FORM.

I. Permit Information

UPDES Storm Water General Permit Number: _____

Final stabilization has been achieved on all portions of the site for which you are responsible; Partial site NOT: Full site NOT:

Another party has assumed control of the site for which you are responsible through appropriate transfer of responsibility: Partial site Full site

Coverage under another Storm Water Construction permit or an alternative UPDES permit has been obtained: Partial site Full site

For residential construction only, temporary stabilization has been completed and the residence has been transferred to the homeowner: (list each of the addresses of the lots transferred to a homeowner on a separate sheet and attach it to this sheet before submitting.)

II. Facility Operator (or co-permittee) Information (the same as was entered on the NOI)

Name: _____ Phone: _____

Address: _____

City: _____ State: _____ Zip: _____

If this NOT is for a portion of the site, please send a map from the SWPPP with indications that show which portion of the site this applies to.

III. Facility Site/Location Information (the same as was entered on the NOI)

Name: _____

Address: _____ County: _____

City: _____ State: _____ Zip: _____

Latitude: _____ Longitude: _____

IV. Certification: I certify under penalty of law that either: a) all storm water discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or b) I am no longer an operator at the construction site and a new operator has assumed operational control for those portions of the construction site where I previously had operational control. I understand that by submitting this notice of termination, I am no longer authorized to discharge storm water associated with construction activity under this general permit, and that discharging pollutants in storm water associated with construction activity to waters of the State is unlawful under the State of Utah Water Quality Act where the discharge is not authorized by a UPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Water Quality Act.

Print Name: _____

Date: _____

Signature: _____

Instructions for Completing Notice of Termination (NOT) Form

Who May File A Notice Of Termination (NOT) Form

Permittees who are presently covered under the State issued Utah Pollutant Discharge Elimination System (UPDES) General Storm Water Permit for Construction Activity may submit a notice of termination (NOT) form when their facilities no longer have any storm water discharges associated with industrial activity as defined in the storm water regulations at UAC R317-8-3.9(b)(c) and (d), or when they are no longer the operator of the facilities.

For construction activities, elimination of all storm water discharges associated with industrial activity occurs when disturbed soils at the construction site (or on a portion of the site that this NOT applies to, which if it is a portion of the site this NOT must be accompanied with a map of the site showing which portion) have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time, or that all storm water discharges authorized by the UPDES general permit for construction activity have otherwise been eliminated. Final stabilization means that all soil-disturbing activities at the site (or on a specified portion of the site) have been completed, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established, or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

Where to File NOT Form

Send this form to the following address:

Division of Water Quality
195 North 1950 West
P.O. Box 144870
Salt Lake City, Utah 84114-4870

Or by Fax
(801) 536-4301

Section I - Permit Information

Enter the existing UPDES Storm Water General Permit number assigned to the facility or site identified in Section III. If you do not know the permit number, contact the Division of Water Quality at (801) 536-4300.

Indicate your reason for submitting this Notice of Termination by checking the appropriate box.

Section II - Facility Operator Information

There may be more than one operator for a construction project. This form must be filled out and submitted by the appropriate operator/co-permittees listed on the notice of intent (NOI) that was submitted for receiving coverage under this permit. In this section give the legal name of the person, firm, public organization, or any other entity that is filed as an operator/co-permittee at the facility or site (or portion of the site) described in this application to terminate coverage. The operator/co-permittee of the facility is the legal entity which controls the sites operation (referring to operation of construction activity) or a portion of it and/or the person dictating the storm water control specifications, rather than the plant or site manager of the finished or rehabilitated facility. Do not use a colloquial name. Enter the complete address and telephone number of the operator.

Section III - Facility/Site Location Information

Enter the facility's or site's official or legal name and complete address, including city, state and ZIP code and the latitude and longitude of the facility at the approximate center of the site (as was reported on the NOI), and that portion of the site as indicated in the SWPPP that is being terminated.

Section IV - Certification

State statutes provide for severe penalties for submitting false information on this application form. State regulations require this application to be signed as follows:

For a corporation: by a responsible corporate officer, which means: (I) president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision making functions, or (ii) the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second-quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

For a municipality, State, Federal, or other public facility: by either a principal executive officer or ranking elected official.

APPENDIX E
Documentation