CITY OF HARWOOD, NORTH DAKOTA





POSITIONS/DESCRIPTION OF DUTIES

1. FLOOD COORDINATOR.

<u>PREPARATORY PHASE</u>. At such time as it appears likely the city will be threatened by flooding, the Mayor will request the Flood Coordinator to begin preparations for an emergency flood operation. If no one is designated Flood Coordinator at the time, or if the individual designated is not readily available, the Mayor will then appoint an individual to that position. The Flood Coordinator and Assistant Flood Coordinator will assess the situation and provide advice to the Mayor and City Council when and whether a flood emergency should be declared. The preparations for a flood operation should include arranging staff for flood operations, with full authority to select individuals for all positions under the Flood Coordinator. Inventorying and inspecting drainage facilities, flap gates, etc., should be supervised by the Flood Coordinator. The flood fighting materials and equipment should be also inventoried and inspected and necessary maintenance or repairs made. It is anticipated prior to this phase a city maintenance worker should be responsible for accomplishing this work on an annual basis prior to the spring flooding season. The city maintenance crew should take direction on preparation of equipment and materials from the Flood Coordinator during the preparatory phase.

<u>OPERATION PHASE</u>. At such time a flood emergency is declared by the City, the Flood Coordinator shall take full charge of the operations. Decisions on what level of protection, location and at what time to start flood control measures shall be decided by the Flood Coordinator. The Flood Coordinator shall notify the Flood Organizational Staff that a flood operation is underway and hold whatever meetings necessary to manage the operation. The Flood Coordinator shall then manage the entire flood operation with the City Emergency Flood Plan as the operation guide. The Flood Coordinator shall be the point of contact for coordinating efforts of the Corp of Engineers or any other agencies also involved in the flood operation. The Flood Coordinator will provide periodic updates and reports to the Mayor as to the progress of the operation and any other problems needing action by the City Council.

2. <u>PURCHASING AGENT</u>. The Purchasing Agent shall be the City Auditor or selected by and under the supervision of the City Auditor. The Assistant shall provide assistance to the City Auditor for pricing and purchase of materials, equipment and other flood related expenditures and will assist in keeping records, FEMA documentation, purchase orders, payroll and receipts for all flood expenditures.

3. <u>COMMUNICATIONS & PUBLIC AFFAIRS</u>. Works under the supervision of the Flood Coordinator. Will arrange for communications for the flood operation, e.g., phones and radios. The position will also include handling calls from the public and media. This individual would also attempt to manage media coverage of the flood and provide media tours and information that would limit incorrect reports, interruptions and interference of city operations during a flood event. Will keep a flood diary, situation reports, and take photos and videos of the flood operation for documentation purposes.

4. <u>INTERIOR DRAINAGE SUPERVISOR</u>. Will work under the supervision of the Superintendent of Works. This individual will be responsible for setting up and closing flap gates and pipe to reduce the amount of floodwater accumulating inside the line of protection. Will be responsible for setting up pumps, hoses, and other material or equipment as necessary to provide drainage during the flood. Will be responsible for checking all pumps and making sure gas cans are ready and filled. [Note: Some pumps are gas/some diesel-should be tagged]. Responsible for maintaining and signing pump logs to record pump hours. Will also coordinate with operation of the sewer and water system to provide assistance to keep the systems operational and provide notification to the Flood Coordinator of serious problems.

5. <u>SANDBAG SUPERVISOR</u>. Will work under the supervision of the Superintendent of Works. Will be responsible for construction and maintenance of all sandbag levees during the flood operation. Will be responsible for contacting and locating workers and volunteers and supervise activities of volunteers in filling and placement involved in this work, keep inventory of sandbags, poly, etc., to provide adequate supply, control disbursement of supplies to the public. Will coordinate with the City Auditor on policy for disbursement of flood supplies to the general public, and report any problems to the Superintendent of Works without delay. It should be noted the City of Harwood is responsible for paying for all federally furnished pumps, sandbags and poly unless those changes are waived by the federal government.

6. <u>TRAFFIC CONTROL SUPERVISOR</u>. Will work under the supervision of the Superintendent of Works. Is responsible for making sure parked vehicles and traffic do not interfere with the flood operation. Will request barricades and signage from the County or other sources for road closures and detour signs. Will call Cass County Sheriff's Department in the event traffic and sightseers become unmanageable locally.

7. <u>DIKE SUPERVISOR</u>. Will work under the supervision of the Superintendent of Works and City Auditor. Will conduct and coordinate periodic inspection of the dike system and be responsible for lining up necessary volunteers for dike watch flood operations.

A. SCOPE OF OPERATIONS

Flooding at the City of Harwood can be divided in two different sources. Usually the first flooding occurs from the Sheyenne River heavily influenced by the Maple River, Rush River, creeks and agricultural drains to the west of Harwood. Flooding has been experienced mostly during spring run-off, but has occurred during summer months (1975 and 1993 in recent history.) The I-29 bridges south of Harwood allow breakout flows from the Sheyenne River to drain towards the Red River. At major flood stages on the Sheyenne River of 889-891, the operation consists of closing gates, sealing culverts and low openings in the flood barrier along the perimeter of the Rivertree Subdivision. Continuous monitoring of the flood barrier, especially at high head areas and interior drainage pumping is necessary during the high water period. During severely high flood levels of between 891 and 892 breakout flows will begin to come east from the Sheyenne River and under I-29 south of Harwood. In 2009 the NDOT started to raise I-29 south of Harwood. This change should be positive as far as keeping I-29 open during severely high flood stages for access to and from Fargo. Depending on the level of the Red River at this time, this situation could threaten the southern flood barriers of Harwood. High levels on the Red River could create a hazardous situation if County Highway #81 were overtopped. Flooding of this severity should be a concern when Fargo is experiencing severe flooding with the Red near Stage 38 feet or above. Uncontrolled flood waters could result in flooding the elementary school, convenience store, businesses and several homes in the lower areas near the original part of town along Main Street and other adjacent lower areas. Flood levels could be into the first floors of some of these structures. The watch words for flooding at Harwood are do not expect the next flood to be similar to past floods. The overall situation must be monitored, vulnerable areas closely watched, and to be prepared for the unexpected.

B. FLOOD FORECASTING.

Predicting flood levels is not an exact science. Initially, the best warning signals are as follows:

<u>Sheyenne River Flooding</u>. Stage 21 or above at West Fargo is a concern. The following signs indicate flooding is eminent and methods to assess the danger are as follows:

- 1. National Weather Service (NWS) predictions of a West Fargo Flood Stage of 21 feet or higher. As of 1995, the USGS has switched its forecasting station to the County Hwy #22 bridge at Harwood. When this number is predicted to be higher than 890, preparations should begin. Early flood outlooks are listed in terms of percentage probabilities of exceeding various flood levels. After runoff starts then actual numerical stages will be provided. NWS information is available on the web at <u>http://www.crh.noaa.gov/fgf/ahps/ahpsmain.htm</u>. Phone POC is Greg Gust (701-795-5127).
- 2. The Maple River and other source flows directly to the west have gauges near Mapleton which should be monitored online. The river level at the West Fargo Diversion on 12th Ave is also a key to provide indications of flood stages and trends. Sometimes the best forecasting is to monitor the rate of rise per hour at West Fargo and Mapleton to catch the crest date. The rate of rise at Harwood then can be translated into an expected crest at Harwood by estimating the date of the crest and projecting the rate of rise for that period of time.
- 3. Contact the National Weather Service, Corps of Engineers and Houston Engineering directly for help in predicting flood levels. The difficulty is no one wants the liability of projecting flood levels to low. Therefore, forecasts especially during uncertain flood conditions sometimes need to be questioned and followed up on.

<u>Red River Flooding</u>. Stage 38 or above at in Fargo is a sign of danger. When signs of eminent flooding the following are ways to assess the danger:

- 1. National Weather Service predictions at Fargo, ND and upstream to Breckenridge, MN, indicate serious flooding.
- 2. Breckenridge, MN and Wahpeton areas and Fargo, ND, and some of the upstream communities are having serious flooding problems. Permanent flood control features at both the Cities of Wahpeton and Breckenridge are currently constructed to mitigate flooding problems.
- 3. Monitor crest predictions versus actual crests upstream of Fargo, ND.
- 4. Monitor rate of rise on the Red River at Harwood and upstream gaging stations to determine actual versus predicted crest elevations.
- 5. Contact the National Weather Service, Corps of Engineers and City of Fargo for their estimates.
- 6. Monitor rate of rise at Harwood, ND, for the Red River and develop our own estimate of crest date and elevation based on available information.

<u>Summary</u>. No one will be able to accurately predict the flood levels until the variable conditions become known. Therefore, it will always be necessary to act based on the best information available and the best judgment of the Emergency Flood Staff.





MAX FLOOD LEVELS 1

C. FLOOD OPERATIONS. Provided herein are the anticipated Flood Action Levels. The Action Level is a guide as to when a decision has to be made to do the work. The Critical Level is the flood level when actual damages will occur if the work is not done. Several factors need to be considered when deciding when to perform Emergency Flood Control work. Availability of labor, weather conditions and soil conditions are some of the variables which should enter into such decisions. For instance, there may be no danger from the Sheyenne River flooding along Rivershore Drive until 891; however, if the bank soaks up with flood water and it rains, 890 may not be too conservative to get the work done. The Key # provided in this plan merely provides an identification for a location or problem which needs to be considered during an Emergency Flood Operation. The Key #'s start on the south dike south of the Harwood Community Center and are entered clockwise around the entire city. The elevations shown somewhat dictate which should be done first. At this time many of the elevations are estimated and should be verified. The operations listed are only those items foreseen. We should always be alert for the unforeseen and sometimes important problems. Changes in flood control dikes, drainage pipe and other changes known to exist should be incorporated into the plan on an annual basis. The following data provides Identification, Action Level and Critical Levels for each task as well as material estimates, costs and labor requirements.

CITY OF HARWOOD MANAGEMENT OBJECTIVE. The Flood Coordinator's management objective should be to protect the City of Harwood from the hazard of flooding to the greatest extent possible. Protection of life, health and public facilities shall be the order of first priorities. The Flood Operation Organization Plan provided herein is merely a guide and it shall be the Flood Coordinator's responsibility to manage a staff that is adequate but not wasteful. Several of the positions listed may not require staffing on a 24-hour basis and may be able to be combined with another position or on-call arrangements only for the hours needed depending on the stage and severity of the flood event. A list of several individuals is provided for reference in the selection of individuals for the positions. However, the final selection is at the discretion of the Flood Coordinator within the limits of law and regulation. Non-volunteer pay rates are provided herein.

Historical Crests for Sheyenne River at Harwood

(1) 892.02 ft on 04/16/1997 (2) 891.82 ft on 04/10/2011 (3) 891.72 ft on 03/29/2009 (4) 891.56 ft on 03/20/2010 (5) 891.42 ft on 04/03/2006 (6) 891.29 ft on 04/10/2001 (7) 890.33 ft on 06/24/2000 (8) 890.05 ft on 04/16/1996 (9) 890.04 ft on 03/30/1995 (10) 889.70 ft on 06/16/2005 (11) 888.68 ft on 06/19/2007 (12) 886.83 ft on 02/28/1998 (13) 883.27 ft on 06/13/2008 (14) 879.83 ft on 04/12/2004 (15) 876.09 ft on 06/29/2003 (16) 874.57 ft on 06/11/2002

FLOOD ORGANIZATION PAY RATES

POSITION	DESCRIPTION	PAY RATE*
1	Flood Coordinator	\$20.00 hr
2	Assistant Flood Coordinator	\$15.00 hr
3	Superintendent of Works	(current wage+OT)
4	Purchasing Agent (City Auditor)	(current wage+OT)
5	Assistant to PA/Auditor	\$10.00 hr
6	Dike Watch/Sandbag Coordinator	\$10.00 hr
6	Interior Drainage Supervisors	\$10.00 hr
7	Sandbag Supervisors	\$10.00 hr
8	Traffic Control Supervisors	\$10.00 hr
9	Dike Supervisors	\$10.00 hr
10	Lift Station Supervisors	\$10.00 hr
11	Dike Watch Laborer's	\$10.00 hr
12	Sandbag Labors	\$10.00 hr

*Rates subject to change

IMPORTANT AREAS OF CONSIDERATION AND KEY #'S

<u>Rivertree Park Dike Protection #95-1</u>: This project was constructed to protect the Rivertree Subdivision with a top of levee elevation at 893.5 built along the Sheyenne River. Unfortunately, subsequent riverbank stability problems have occurred where portions of this levee settle to as low as 891 requiring annual elevation checks for adequate protections levels. In addition, the project utilizes the roads which boundary that portion of the City for a flood barrier. Of concern during flooding is Key #6W, County Road #22, 891.8, Ruud Road and Stennes Drive which were left at 893.5 after the Flood of '97.

<u>3W – Cass Co. #22 & Rivershore Drive</u>: Close flood gate when no longer flowing to the river at approximate elevation 886.5. This structure contains a 2" electric pump. (Need extra 3" pump)

<u>4W – County Road #22</u>. The north shoulder of the roadway adjacent to the dike is 891.8. Should the flood levels overtop this area, the flood waters would flood the area of Rivershore Drive north across County Road #22 and the remainder of Rivertree Park Subdivision. Sandbagging from the south end of the river dike and continuing east along the north shoulder of Co. Road #22 is felt the most practical if clay and heavy equipment are not available. This essentially blocks off Rivershore Drive from the south. Contact should be made with the Cass County Emergency Management and the Corps of Engineers for possible assistance with this work.

 $\underline{7W - 106 \text{ Rivershore Drive.} - 116 \text{ Oak Circle:}}$ Low spots have developed in this area of the dike. Station 6-11 has established 400'-500' of low spots to be inspected, measured and brought to the desired protection level. Preliminary estimate of material required is 500-1,000 cy. Elevations to be verified.

1W - 130 Ash Lane Area Dike: Close gate at 885 or when no longer flowing into the river. This structure contains a 3" electric pump.

2W - 130 Ash Lane Area Dike: This is an area of particular concern in that it was not reconstructed as part of the 1995 dike repair. It was reinforced in 1993 by FEMA funds. Particular attention should be paid to signs of seepage or failure in this area. At 892.0 preparations should be made to ring dike this area.

<u>5W – Raise Stennes Drive/Ruud Road</u>: At the time of this update, this road should be at 893. It should be noted that during severe flooding, this area must be watched. Flap gate on west side of dike. Close gate at 890. May need to be sealed with sandbags.

<u>6W – Stennes Drive/Ruud Road</u>: Flap gate on north side of dike. Close gate at 891. May need to be sealed with sandbags.

7W – Sluice gate behind City Shop:

<u>8W – Controlled Breach</u>: If by some unfortunate circumstance the levees protection fails or overtops, it may make sense to excavate an opening in the barrier to lower the flood level inside the line of protection. This would speed dewatering the area but would only be practical if the water outside the dike system is lower than inside which is possible. Obviously, this decision should be made only after careful assessment of the situation. However, in view of the fact most streets are paved, and with consideration for allowing access for all property owners, it is recommended the breach be made on the west dike just south of the Stennes driveway.

<u>9W – Flood Gate - 415 Intersection Blvd (corner of Maple Lane & Interstate Boulevard)</u>: Close flap at 887.5 or when no longer flowing to Interstate ditch. This structure contains a 2" electrical pump. (6" pump)

<u>10W – Maple Lane Flap Gate</u>: This culvert was left in place for additional drainage and will need to be sandbagged and sealed during flooding. Close flap gate at 887.0.

 $\underline{6E - 430 \text{ Lind Blvd}}$: South lot. Close flap gate and seal with sandbags.

<u>13 W – North South 18" CMP – NW Quadrant of Intersection</u>: This culvert was left in place for additional drainage and will need to be sandbagged and sealed during flooding.

<u>Sanitary Lift Stations</u>: A contingency plan needs to be developed for summer rainstorms and a way to provide upgrading the sewer system and the station to withstand the maximum possible storms. During spring flooding, adequate time is usually available to plan for sewage lift problems.

1E - Cass Co. #81/SW Corner of South Dike: 18" CMP culvert with a sluice gate. During flooding, close sluice gate.

<u>3E – Off-Ramp Ditch - Block Northbound I-29</u>: Flap gate should be closed and sandbagged during flooding. Close gate at 889.0

<u>4E – North End of Centennial Park</u>: Place PVC plugs at 889.0

<u>9E – Chapin Drive & Hwy #81</u>: 2-24" CMP culvert with sluice gate with 6" pump. Close at 886.0 or when no longer flow.

<u>11E – East of Chapin & Truman Drive intersection</u>: Ring dike manhole.

<u>8E – North of Cass Co. #81 & Dakota Drive</u>: RCP culvert with slice gate. Close when no longer flowing.

<u>7E – South of Cass Co. #81 & Dakota Drive</u>: RCP culvert with flap gate. Close and sandbag.

<u>13E – Co. Hwy. #81 – Road Raise</u>: Should flood levels on the Red River predicted to be Stage 37–38 feet in Fargo, it is recommended steps be taken to prepare for an emergency dike along Hwy #81. This type of operation is felt to be beyond the capability of the City and assistance should be sought through the County or State Emergency Management. Corps of Engineers emergency assistance may be necessary. Removal of any emergency dike would be City expense with possible FEMA reimbursement in the event of a Flood Emergency Presidential Declaration.

<u>16E – Co. Hwy #81/Railroad Crossing Approach</u>: CMP culvert. Close flap gate and sandbag.

17E - Co. Hwy #81/SE Corner of South Dike: CMP culvert. Close flap gate and sandbag. Also sandbag to ballast of railroad.

<u>18E – Behind 120 Lind Blvd & E of I-29</u>: Close flap gate and sandbag.

<u>19E – Co. Hwy #81 & Dike South of School</u>: Shut down railroad and dike with clay.

<u>20E – I-29 Off-Ramp Ditch</u>: Tie into off-ramp and existing dike to the east.

<u>21E – I-39 On-Ramp & Median</u>: Dike with clay.

HARWOOD EMERGENCY FLOOD PLAN

SHEYENNE TO 892 FEET

		ACTION	CRITICAL
KEY #	DESCRIPTION	LEVEL	LEVEL
3W	CLS FLGT, 18" CMP No DITCH CO #22 &	887.0	887.0
	CLOSE CO #22 & RIVERSHORE DR		
4W	DIEDE/GROSSMAN/TANNER	891.3	891.8
1W	CLS FLGT, 18" CMP, 130 ASH LANE	883.4	884.0
6W	CLS FLGT, 18" CMP STENNES DRIVE	888.0	888.5
5W	CMP STENNES DRIVE, NO. SIDE	884.0	884.0
8W	PREP FOR CONTROLLED BREACH	892.5	893.0
9W	CLS FLGT, 24" CMP, So MAPLE & INT BLVD	888.0	888.5
10W	CLS FLGT, 24", CMP N. SIDE MAPLE LANE/INT.BLV	888.0	888.5
7W	BEHIND CITY SHOP		
	PREP EVACUATION OF RIVERTREE	897.0	898.0
	EVACUATE RIVERTREE @ FAILURE	892.0	892.5
	PREP FOR SANITARY FAILURE	892.5	893.5
	PREP FOR WATER SHUTDOWN	892.5	893.5
	PREP BREACH So OF STENNES	893.0	893.5

RED RIVER FLOODING

		ACTION	CRITICAL
KEY #	DESCRIPTION	LEVEL	LEVEL
1E	CLS FLGT, 18" CMP, So DIKE	886.0	886.0
2E	CLS FLGT, 18" CMP, So DIKE	887.0	888.0
6E	CLS PIPE I-20E BEHIND LIND BLVD	889.0	890.0
9E	CLS FLGT, 24" CMP, CHAPIN/HWY #81 (SLUCE GT)	886.0	887.0
4.1E	RD RSE INT #81 & CHAPIN 24" CMP W/FLAP GATE	888.0	889.0
11E	SEAL TOP OF SS MH E OF #81	888.0	888.0
4E	10" PVC ACROSS FROM 21 LIND CIRCLE	889.0	890.0
8E	CLS FLGT, 24" CMP, No #81 & DAKOTA DR	886.0	887.0
7E	CLS FLGT, 24" CMP, So #81 & DAKOTA DR	886.0	887.0
13E	ROAD RAISE CO #81 & CHAPIN DR	889.0	890.0
12E	CHECK BNRR APPR, 18" CMP CULVERT	885.0	886.0
3E	CLS FLGT, 18" CMP 42 LIND BLVD	889.0	890.0
	PREP FOR EVAC EAST OF I-29	890.0	890.5
	PREP FOR SANITARY FAILURE	890.0	890.5
14E	RAILROAD; SHEET PILE IN PLACE		
165		000.0	001.0
ISE	I-29 OFF RAMP & MEDIAN	890.0	891.0
16E	I-29 ON RAMP	890.0	890.0
6E	SLUCE GATE LIND BLVD		
17E	DITCH BLOCK – ELLINGSON DRIVE WEST		
18E	DITCH BLOCK – ELLINGSON DRIVE EAST		

INVENTORY ESTIMATES

Major Flood	Exceeding	892 on She	yenne River
	-		

KEY #	HOURS	BAGS	POLY	SAND	CLAY	CREW
8W	1	50	0.5	.85		4
12W	1	50	0.5	.85		
10W	1	50	0.5	.74		4
3W	1	50	0.5	.74		4
6W	4				300	2
7W					500	
9W	8	1000	2	17.00	100	12
9.1W	6	800	6	13.60	100	12
11.1W						
12.1W						
12.2W						
12.4W						
11.2W						
TOTALS:	22	2000	10 ROLLS	33.78 CY	1000 CY	

Major Flood Exceeding 890 on Red River

KEY #	HOURS	BAGS	POLY	SAND	CLAY	CREW
15E	1	50	0.5	.85		4
15.1E	1	50	0.5	.85		4
16E						
1E	3	75	0.5	1.28		4
2E	3	75	0.5	1.28		4
14.2E	1	10	0.25	0.17		
14.1E	5				350	6
13E	1	25	0.25	0.43		3
15.2E	3				200	
18E	1	25	0.25	0.43		
18.1E	1	25	0.25	0.43		
18.2E						
17E	8	1000		17.00		20
TOTALS:	27	1310 EA	2.75 ROLLS	22.2 CY	550 CY	

FLOOD COMMITTEE

BILL ROHRICH	306-3456 (c)	282-5182 (h)	
DICK SUNDBERG	866-9390 (c)	282-8968 (h)	
BERNIE STASCH	238-6200 (c)	277-9344 (shop/water	plant)
JIM HUGHES	282-9396 (h)	799-4142 (c)	
SHERRY MORRIS	281-0314 (w)	361-1450 (c)	237-6354 (h)
TONI MAKI	282-9580 (c)		
BRIAN ANDERSON	(893-5949 (c)	281-3943 (h)	
JOE LEASE	729-9423 (c)	282-4479 (h)	
KEITH OSE	371-3417 (c)	282-5284 (h)	282-2356 (w)
ERIC LAKE	541-1632 (c)	282-3348 (h)	
BOB SCHREINER	306-8742 (c)	277-8160 (h)	451-2448 (w)
MARC MOSSER	261-2471 (c)		
PATSY VAAGEN	799-1414 (c)	282-3095 (h)	

CITY COUNCIL:

ROSS PUHR	850-3370 (h)	261-2872 (c)	235-4161 (w)
DANA PETERSON	866-2991 (c)	277-7152 (h)	239-2335 (w)
RON MACK	282-0331 (h)	799-9509 (c)	282-4977 (w)
LORI PEYERL	282-7216 (h)	371-0369 (c)	

OTHER NUMBERS:

DAVE ROGNESS, Emergency Manager Q.R.A. – 297-6000 (For immediate help)	793-0605 (c) 476-4068 (w)
CASS COUNTY SHERIFF'S DEP'T	241-5800
SANDBAGS FOR RURAL RESIDENTS SANDBAG VOLUNTEER LINE FIRST LINK (Volunteer Hotline)	298-2379 (Hwy Dept 10¢/bag – min. 1,000 bags) 298-2339 (daytime #) or 238-2732 (evening) 476-4000

CITY FLOOD CHECKLIST

□ Identify the hazards in your community. Where has the city flooded before? Do you have elevation information, flood gauges in place and exact locations available?

Determine flood coordinators for city and give them the responsibility for taking care of protective measures such as sandbag inventory & checking the levees around town to see if they need repair or upgrading.

Establish a flood alert system and assure warning alert process is in place.

Appoint someone to work with individuals to make sure the elderly and infirm will be taken care of.

□ Start a flood diary to develop standard operating procedures for future use.

□ Make sure critical flap gates are in good repair and valves on sewer lines assure no back flow. Also assure that culverts are open so a drainage system is in place.

Development Publish articles in your local newspaper to urge citizens to protect themselves and their possessions by purchasing flood insurance through the National Flood Insurance Program.

Determine if there is a need to build dirt dikes. If so, have access to unfrozen ground (clay preferred).

□ Have in place necessary easements for private property owners

Apply for SHPO Emergency Material Borrow Location for borrow pit

Identify locations that have been underwater in the past and take measures to determine if the streets and sidewalks will need reinforcement.

 \Box Inventory sufficient barricades and signs to close streets. Rentals as needed.

Assure that primary routes of travel are protected from flooding.

Have information available to citizens about what they can do to protect their homes from overland flooding and seepage. (Available at West Acres Courtesy counter or through the American Red Cross).

 \Box Inform the public about taking care of their pets. Most shelters do not accept pets.

Develop a list of volunteers in the community and have a signup list with available names & numbers.

 \Box Identify local available pumps, emergency generators, hoses, lights for use at night. Make sure they're in good working condition.

□ Identify a city operations center and make sure you have adequate phone lines, mobile radio communication, maps and other supplies on hand.

Develop situation reports and keep your county emergency manager informed of your situations.