2011 FLOOD EVENT

OMAHA DISTRICT

SENATOR NELSON BRIEFING

5 JUNE 2011

US Army Corps of Engineers
BUILDING STRONG®

Background - How we got here

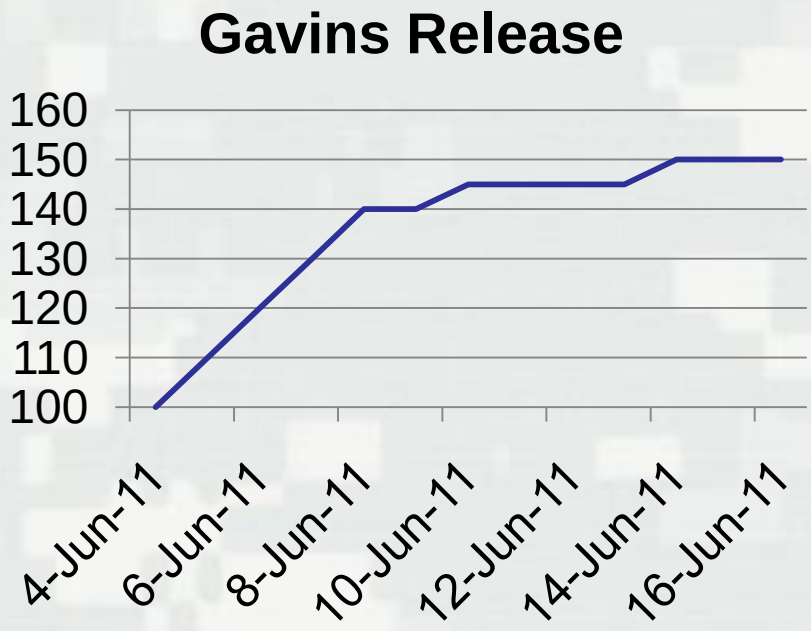
- Huge rain event last month in eastern Montana, northern Wyoming and the western Dakotas.
  - As much rain in May as this region gets in a normal year
  - 300 - 600 percent of normal
- Runoff from the rain has used up much of the storage we intended to utilize to manage the snowmelt runoff.
- Snowpack peaked late and has only just begun to runoff into the system.
- Initial release forecasts were looking at short term, immediate changes we needed to handle the rainfall event.
- Now we've had a chance to look at the longer range forecast to determine what we need to do to manage the snowmelt runoff that is poised to come into the reservoir system

Missouri River Regulation

Jody Farhat – Chief Missouri River Basin Water Management

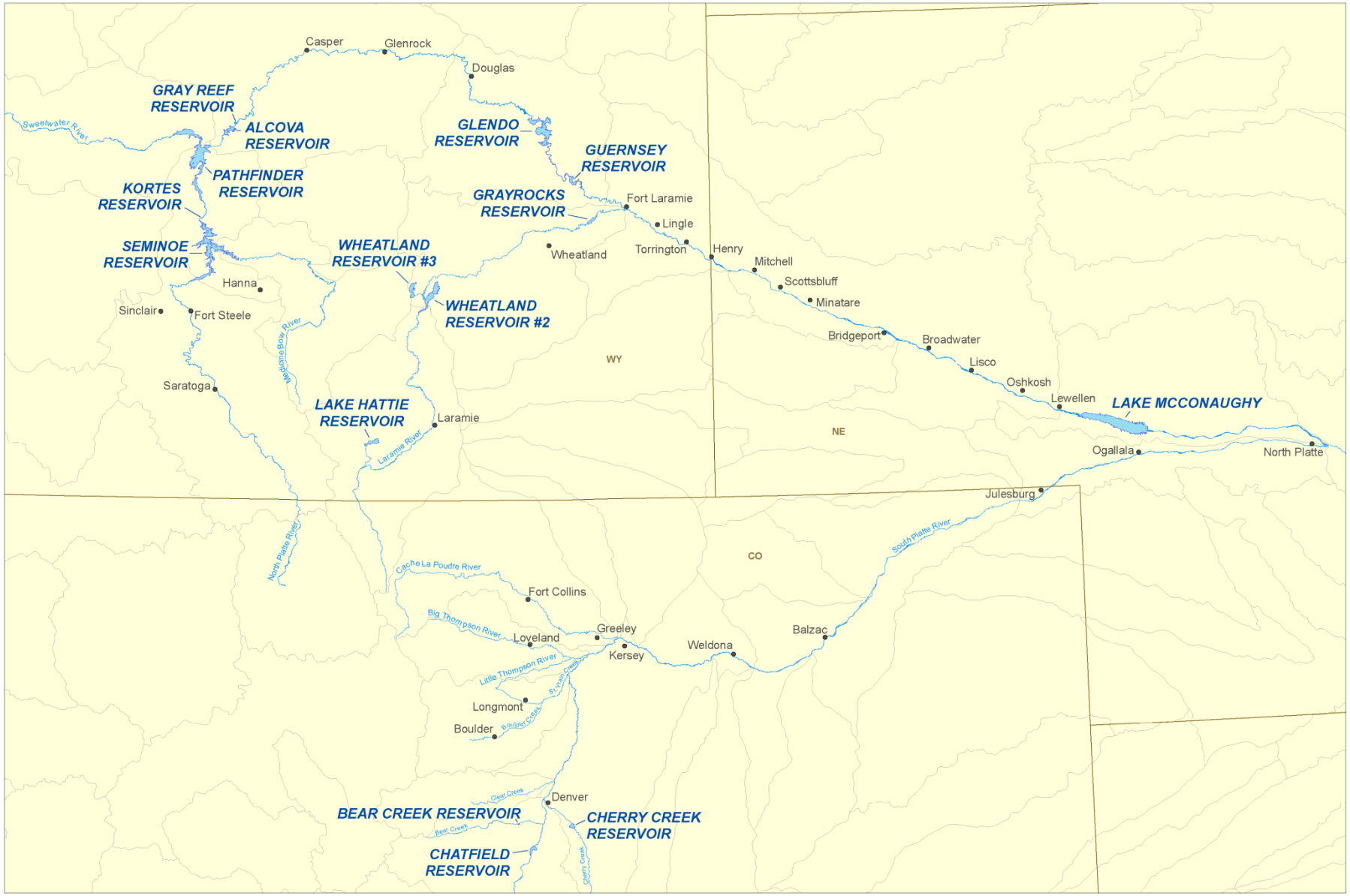
Current Conditions and Forecast

- Gavins Point – forecast updated daily
  - 110,000 cfs – today
  - 120,000 cfs – 6 June
  - 130,000 cfs – 7 June
  - 140,000 cfs – 8-9 June
  - 145,000 cfs – 10-13 June
  - 150,000 cfs – 14 June…



North Platte Basin

Kellie Bergman
Chief of Water Control Section
Engineering Branch



City
Lake
River
River Basin
State

N
W E
S

North and South Platte Rivers

0 30 60 120 Miles

GIS Service Center
CENWO-ED-GD

Produced by:
M. LaMagna-Reiter

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M. LaMagna-Reiter

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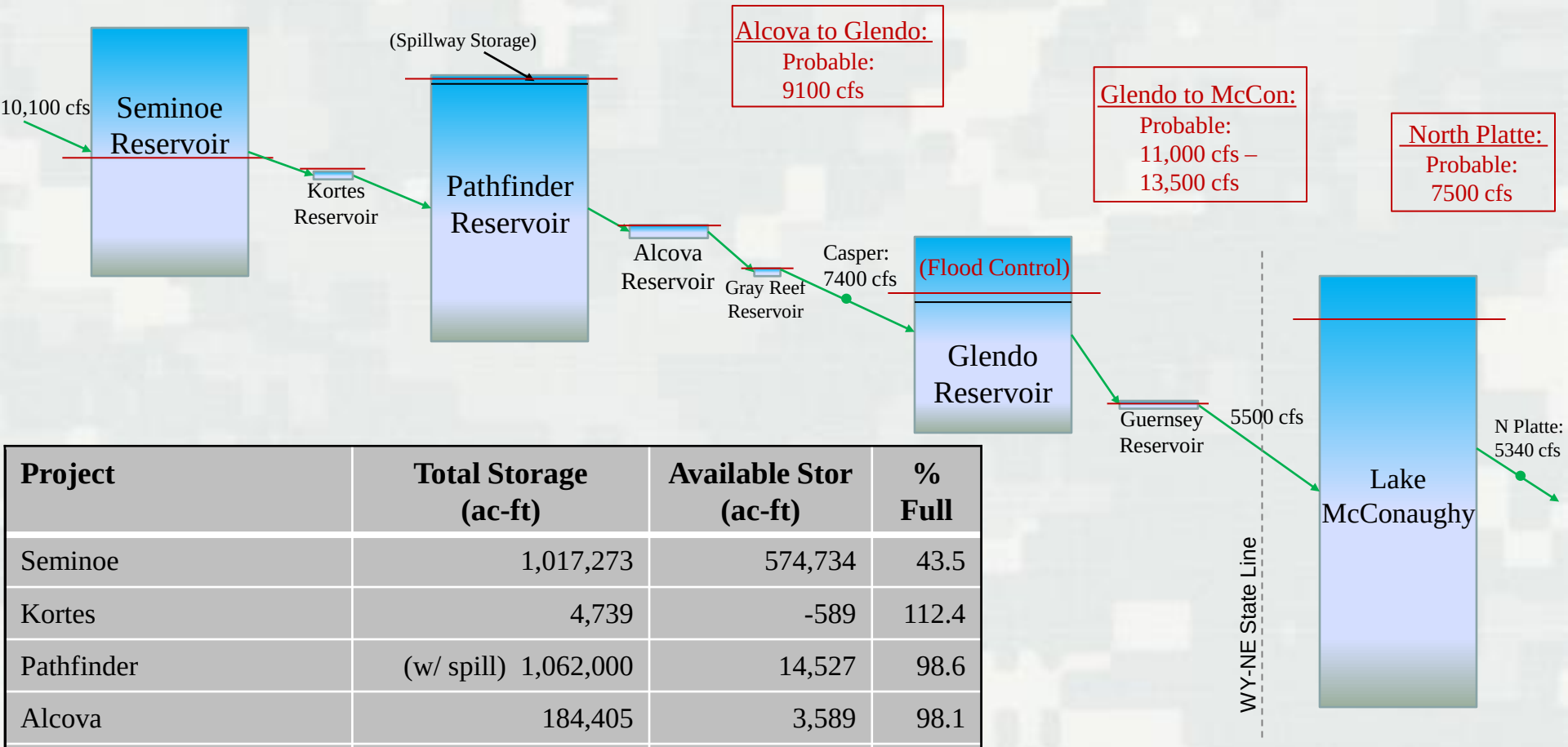
Omaha District

North Platte River Reservoir System Storage



Project	Total Storage (ac-ft)	Available Stor (ac-ft)	% Full
Seminoe	1,017,273	574,734	43.5
Kortes	4,739	-589	112.4
Pathfinder	(w/ spill) 1,062,000	14,527	98.6
Alcova	184,405	3,589	98.1
Gray Reef	1,800	81	95.5
Glendo	(w/ f.c.) 789,402	247,998	68.6
Guernsey	45,612	18,370	59.7
TOTAL SYSTEM	3,095,231	858,710	72.3
McConaughy (CNPPID)	(el. 3267) 1,805,000	128,600	92.9

The shapes are to scale and represent the relative size of the total storage in the North Platte Basin

Probable COE Forecast and Tested Capacity

	Alcova to Glendo	Glendo to Whalen	Whalen to State Line	State Line to McConaughy	North Platte, NE
Probable peak flow	9,100 cfs	8,000 cfs	11,000 cfs (1)	13,500 cfs (2)	7,500(3)
Tested Capacity	7,000 cfs	9,000 cfs	7,000 cfs	6,000 cfs	5,420 cfs (4)

(1) 11,000 cfs at Torrington, WY and Henry, NE
(2) 12,000 cfs at Mitchell, NE; 13,000 cfs at Bridgeport, NE; 13,500 cfs at Lewellen, NE
(3) Probable flow received from CNPPID
(4) Flow through North Platte as of 4 June 2011

System Inflow Volume (April-July)

- 2010 actual inflow volume = 1.64 MAF
- 1983 actual inflow volume = approx 2.14 MAF
- 30 year average inflow volume = 0.904 MAF
- USBR 2011 previous inflow volume forecast = 2.27 MAF
- ***USBR 2011 inflow volume forecast = 2.37 MAF***

South Platte River Conditions

- Cherry Creek, Bear Creek and Chatfield (Tri-Lakes) have available flood control pool storage for snow melt
- Downstream Tri-Lakes on the Cache La Poudre and Big Thompson Rivers no flood control reservoirs
- Dry conditions in the Colorado plains
- Water right diversions expected on the South Platte upstream of North Platte, NE
- If wet conditions begin, diversions will not be taken and larger flows on the South Platte are expected
- N. Platte, NE susceptible to rain events when snow melt reaches the city

<u>Timing Snow Melt</u>:

- Average snow melt
  - 3-4th week of June snow melt at N. Platte, NE
- Above normal snow melt
  - 3rd week of June snow melt at N. Platte, NE

<u>NWS Probabilistic Flows (no diversion at Korty Dam)</u>:
N. Platte, NE – 50% 4,000 cfs; 10% 9000 cfs

Emergency Operations Nebraska

Ryan Buckley, Acting Chief of Emergency Management

Nebraska

- **Public Law 84-99**
- **Flood Control and Coastal Emergencies Authority (FCCE)**
- **Protect Public Infrastructure**
- **When the flooding is done, it will be a challenge to repair the infrastructure before next flood season**

Nebraska

- Resources Deployed
  - 190,000 sandbags
  - 5,674 linear feet of HESCO (innovative flood fight structure)
  - 157 rolls of 100’x20’ plastic sheeting
  - 3 pumps

Nebraska

- North Platte
  - White Horse Creek Diversion - Awarded $195,000 contract to Cement Products Inc. of North Platte, NE on 28 May 2011.
  - City Levee - Awarded $1,500,000 contract to Cement Products Inc. of North Platte, NE on 31 May 2011 Construction will be completed 5 June 2011.
  - Sewage Lift Station contract - Awarded $50,000 contract to Perrett Construction of Valentine, NE on 31 May 2011. Construction complete.
  - Cody Dillion Diversion – Awarded $202,000 contract to Evroworks of Omaha, NE on 3 June 2011. Construction will be completed 5 June 2011.

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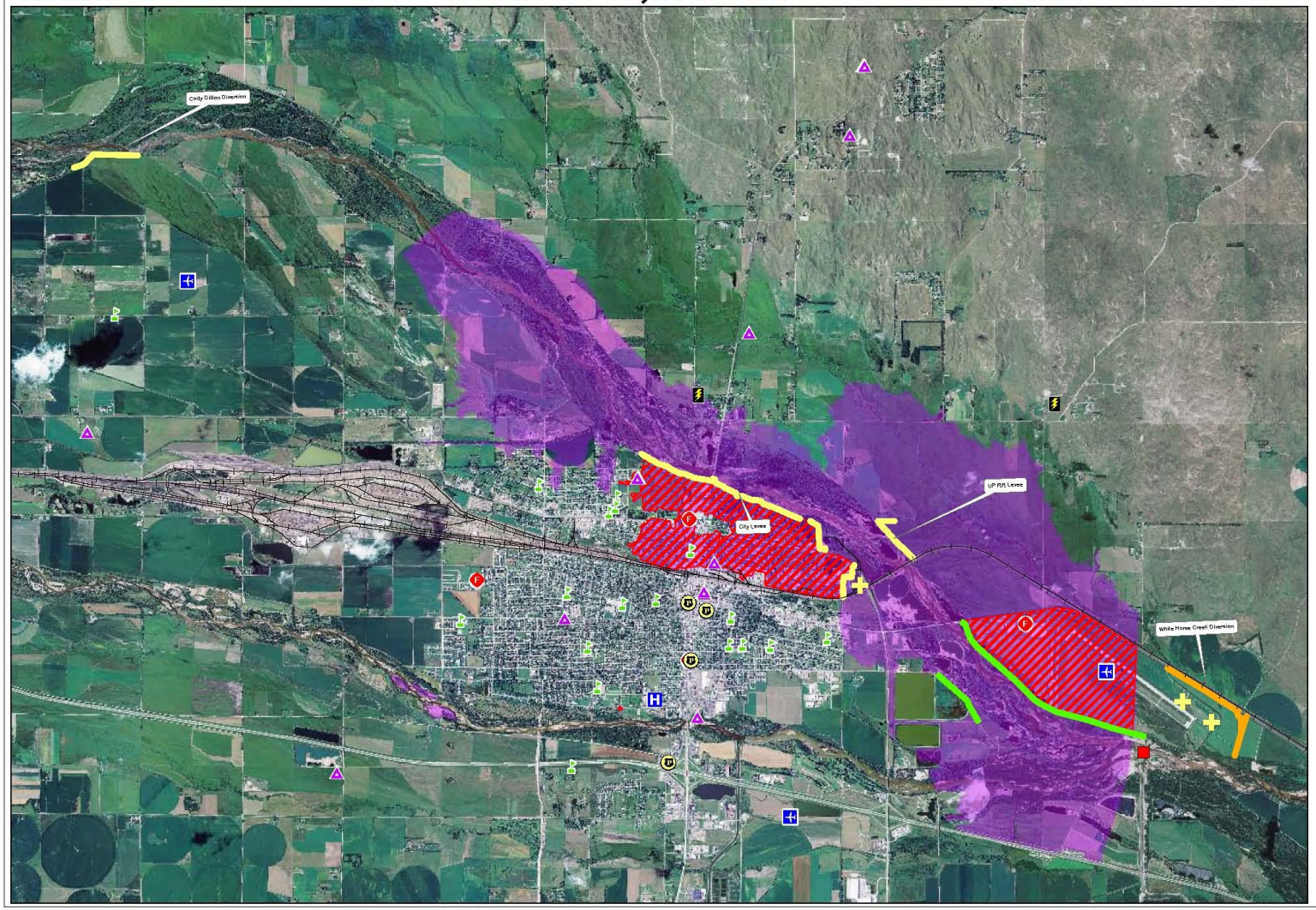
North Platte, NE - Potential Inundation
9,000 cfs



4 Jun 2011
@
1100 HRS

- Ring Levees
- City Levee
- Diversion
- Embankment
- Areas of Reduced Risk
- Potential Innundation Area
- Dams
- Airports Heliports
- Police Stations
- Communication Facilities
- Fire Stations
- Hospitals
- Schools
- Electric Substations
- Railroad

0 1,600 3,200 6,400 Feet

Disclaimer: This map has been completed using the best information available and is believed to be accurate; however, its preparation required many assumptions. Actual conditions during a flood event may vary from those assumed, so the accuracy cannot be guaranteed. The limits of flooding shown should only be used as a guideline for emergency planning and response actions. Actual areas inundated will depend on specific flooding conditions and may differ from the areas shown on the map.

Information on this map is intended to permit state and local agencies to plan emergency evacuation and flood response actions.

Potential Inundation
(includes current tributary flows)
Spring 2011 Flood
Date: 30 May 2011 - Version 1

Nebraska

- South Sioux City
  - Awarded $1,675,000 contract to ME Collins of Wahoo, NE on 2 Jun 11
  - Contractor has mobilized and has begun operations. Contractor is working 24 hour operation.
  - The city has identified additional potential low spots that may require additional work effort. Engineering is evaluating.
  - Project consists of six (6) segments of approximately 11,000 LF of embankments.

South Sioux City, NE

Segment	Description	Contract Status	Construction Material	Levee Height	Levee Length	Construction End Date (ESTIMATED)	Percent Complete
1	Golf Road just West of Elgin Avenue	No Work	Clay	Varies from 3' down to 1'	1,800	7-Jun-11	0
2	Golf course and farm field just North of Golf Road	Placing levee Embankment	Clay	Varies from 10' down to 1'	5,600	6-Jun-11	40%
3	Driveway area North of Golf Road	Placing levee Embankment	Clay	1'	100	4-Jun-11	100%
4	Levee North of Golf Road	No Work	Clay	1'	200	5-Jun-11	0
5	West 3 Street and farm field	Placing levee Embankment	Clay	Varies from 10' down to 1'	2,200	6-Jun-11	25%
6	County Road, G Avenue	No Work	Clay	1'	600	7-Jun-11	0

Nebraska

South Sioux City – Moving Dirt

Nebraska

South Sioux City

Segment 2 – Golf Course

Segment 5

Nebraska

South Sioux City

Borrow Pit

Sand Bags

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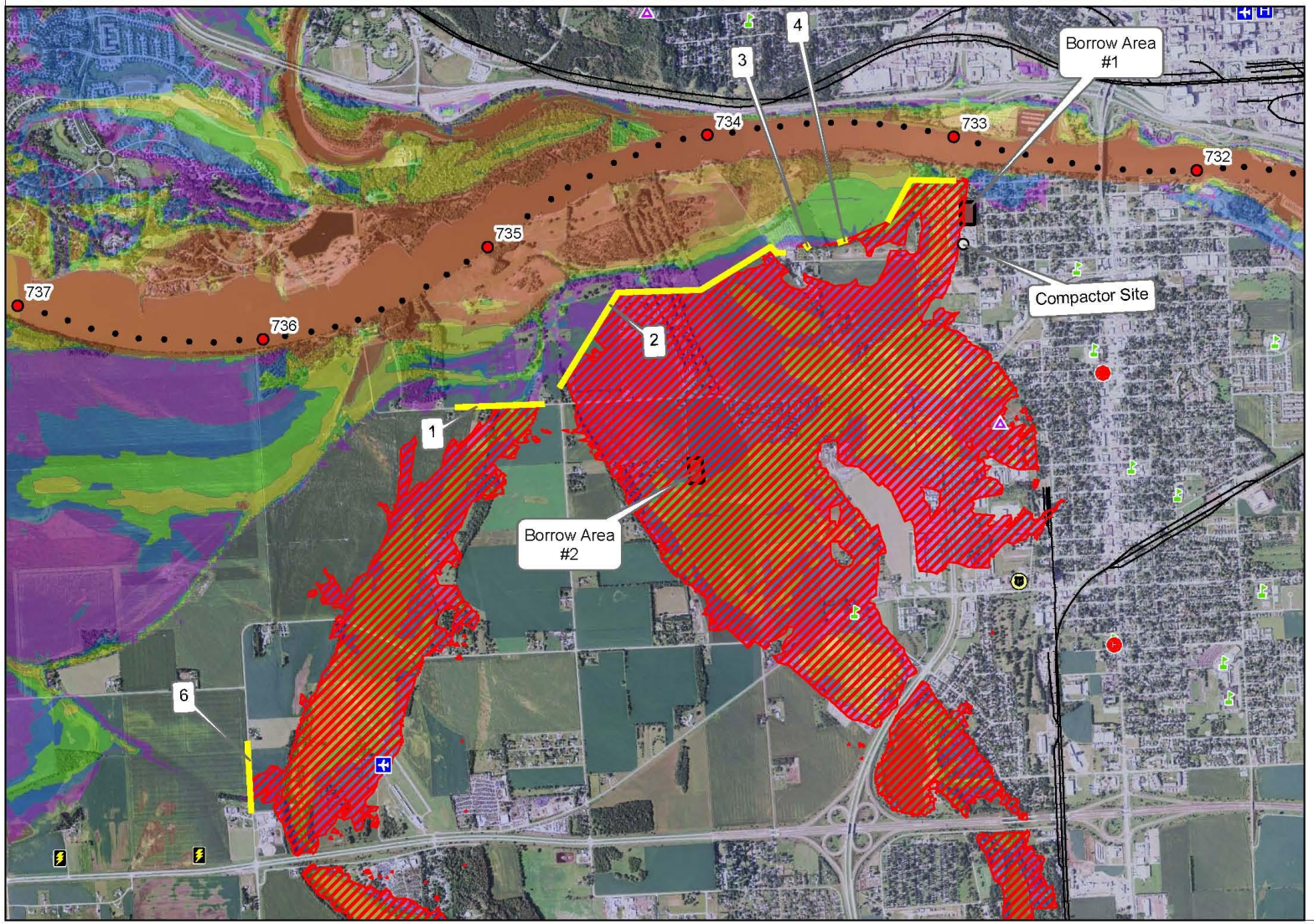
South Sioux City, Nebraska - 150,000 cfs Projected Inundation



Nebraska

- Dakota City
  - Contract awarded to Niewohner Construction, Inc of Onawa, IA on 3 Jun 11 for $201,600.
  - 700’ temporary emergency levee to protect the waste water treatment plant located west of the Missouri River in Dakota City, NE.
  - A pre-construction conference was held at 9:00AM, 4 Jun 11.
  - Construction is underway and scheduled to be completed by 7 June 11.
  - Some flood elevation error calculations were discovered that will require a cost modification to raise the elevation approximately 1.4’ and extend the levee approximately 100 feet. Engineering is working the modification.

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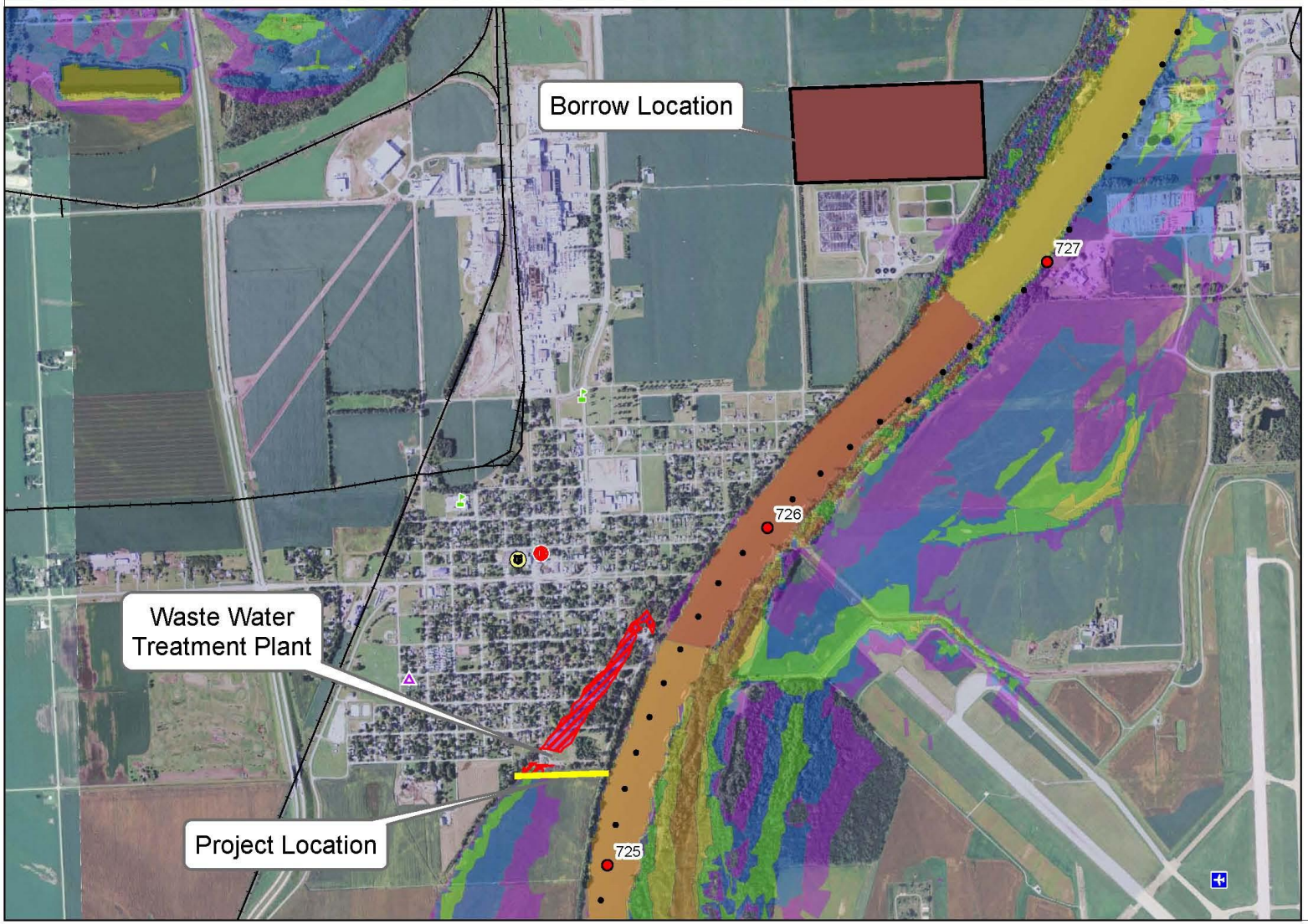
Dakota City, Nebraska - 150,000 cfs Projected Inundation



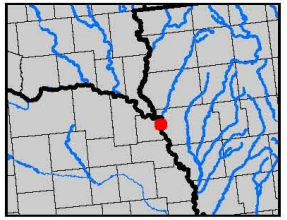
3 June 2011 @ 1915 HRS

- Embankments to be Constructed
- Areas of Reduced Risk
- Borrow Areas

Estimated Flood Depths

- 0 ft - 2 ft
- 2 ft - 4 ft
- 4 ft - 6 ft
- 6 ft - 8 ft
- 8 ft - 10 ft
- > 10 ft

- District River Mile
- Airports or Heliports
- Police Stations
- Civil Defense Centers
- Communication Facilities
- Fire Stations
- Hospitals
- Schools
- Power Plants
- Electric Substations
- Water Treatment Plants
- Railroad



0 0.15 0.3 Miles

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Projected Inundation (includes current tributary flows) Spring 2011 Flood
Date: 3 June 2011 - Version 1

Nebraska

- **Technical Assistance**

  - Cargill
    - Emergency levee oversight
  - Niobrara
    - Assessment for treatment plant, school and roads
  - Offutt AFB
    - Assessment of NRD levee
    - Storm drain design.
    - Drainage/pump calculations provided to Air Force
  - Plattsmouth
    - Assessment of water and wastewater treatment plant
  - OPPD, Nebraska City
    - Assessing levee
  - Cooper Nuclear Plant
    - Assessment of plant protection
  - Maxwell, NE
    - City assessment
  - Terrytown
    - Supplied Pump for interior drainage
  - Grand Island to Wyoming Border
    - Assess communities along North Platte River
  - Cass County
    - Pumps provided to Wakonda and Plattsmouth
  - Sandbags
    - Big Elk Park, NE – Working
    - Decatur, NE- Complete
    - Peru – Complete
    - Bellevue – Complete