Kerrville’s Response to the July 2002 Flood

Largest Flood of Record for Quinlan Creek

Charlie Hastings, P.E., CFM
City of Kerrville
Summary

• Storm & Emergency Response
  – Condition Assessment
  – Emergency Contracts and Purchases
  – Debris Disposal

• CIP and Federal Funds
  – Buy-Outs
  – Infrastructure Restoration
  – Final Accounting
Accumulated Rainfall
July 1 to 22, 2002
National Weather Service
West Gulf River Forecast Center
Accumulated Rainfall
July 1 to 22, 2002

National Weather Service
West Gulf River Forecast Center

Inches
0.00 - 1.00"
1.00 - 2.00"
2.00 - 3.00"
3.00 - 4.00"
4.00 - 5.00"
5.00 - 7.50"
7.50 - 10.00"
10.00 - 12.50"
12.50 - 15.00"
15.00 - 20.00"
20.00 - 25.00"
25.00 - 30.00"
30.00 - 35.00"
> 35.00"
No Data
TURN AROUND
DON’T DROWN!!!
City looks at possible flooding around

By all accounts, 2002 in Kerrville started out as a dry year. Kerr County received just a little more than 6 inches in the first half of the year, recorded in only three months this year. But then rain started falling on June 28, 2002, dropping 3 inches, and by July 1, 2002, the area
Emergency Operation Center

• Affirm/Restablish
  – Chain of Command
  – Responsibilities/Jurisdiction
  – Communication/Flow of Information
  – PRO

• Civic Groups
  – Red Cross
  – Texas Baptist Men
Condition Assessment

• Clear, Concise and Meaningful Information
  – Affirm/Restablish database and manager
    • Phone calls
    • E-mails
    • Visitors
  – Pictures, Data and Maps
    • Time and date stamped
    • GIS/GPS

• Public and Private Infrastructure
  – Floodplain Debris Mapping
  – Public Infrastructure Damage Assessment
  – Residential Substantial Damage Estimator (RSDE)
NOTES:
1. Reports of up to 17 inches of rain per hour
2. Over 200 homes reported flooded
3. Chance of a storm being equal or greater is 0.1%
4. 22 homes located in floodway were purchased through FEMA and can never be used for construction again.
5. One home completely destroyed and missing (Third and Ross)

July 3, 2002 Flood
Emergency Contracts and Purchases

• Critical facilities
  – Water plant
  – Landfill
  – Water and sewer mains
  – Sewer lift stations
• In-house construction
• Local contractors
• Contract amendments
• Document, document, document
Debris Disposal

• Residential debris (immediate)
  – Schedule advertised in Newspaper (4 weeks)
  – Trash on curb
  – City collected trash with loaders and dump trucks
  – Provided dumpsters in neighborhoods
  – Rummaging

• Public and floodplain debris
  – In-house clearing at critical locations
  – Contract clearing in floodplain

• Volume too large for landfill
  – Permit from TCEQ to burn
  – Contract
DRAWINGS FOR
FLOOD DEBRIS REMOVAL AND DISPOSAL - TOWN CREEK & QUINLAN CREEK
FOR
CITY OF KERRVILLE
TEXAS

LOCATION MAP

LIST OF DRAWINGS:
1. TITLE SHEET
2. TOWN CREEK - REACH "A" THROUGH REACH "B"
3. QUINLAN CREEK - REACH "C" THROUGH REACH "D"
4. QUINLAN CREEK - REACH "E" THROUGH REACH "L"

JANUARY 2000
MATKIN-HOOVER
ENGINEERING, INC.
Accelerated Incineration
CIP and Federal Funds

• Condition Assessment
• Engineer’s Estimates (in-house)
• City and County submittal
Buy-Outs

• ORCA

• 27 homes qualified
  – Substantially damaged
  – Floodway

• 23 homes purchased and demolished
  – In-house demolition
  – Deed restriction
  – Flood control only
415
W Schreiner
720
LITTLE
Infrastructure Restoration

• Consolidate city funding
• In-house Construction
• In-house Engineering
• Engineering Consultants
• Contractors
  – Emergency
  – Quotes
  – Sealed bid
ALPINE BRIDGE & WATER MAIN RECONSTRUCTION
CITY OF KERRVILLE, TEXAS

GENERAL NOTES:
1. ALL CONSTRUCTION SHALL COMPLY WITH THE CITY OF KERRVILLE AND THREE COMMISSIONER, CODES AND REGULATIONS. UNLESS OTHERWISE STATED IN THE PLANS OR SPECIFICATIONS. ALL CONSTRUCTION SHALL COMPLY CONFORM TO CITY OF KERRVILLE PLUMBING SPECIFICATIONS FOR SUBMISSION CONSTRUCTION DATED AUGUST 2002.
2. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION OF ALL AUTHORIZED INSPECTORS AND PERSONS IN CHARGE OF PRIVATE OR PUBLIC UTILITY AGREED BY THIS PROJECT PRIOR TO COMMENCEMENT OF WORK.
3. THE CONTRACTOR SHALL PROVIDE TRENCH SAFETY IN ACCORDANCE WITH OSHA SPECIFICATIONS AND PROVIDE DAILY INSPECTIONS TO ENSURE THAT THESE REQUIREMENTS ARE BEING MET. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY OF THOSE PERSONS WORKING IN AND AROUND THE TRENCH.
4. SHOULD THE CONTRACTOR FIND ANY CONDITION OR CONSTRUCTION FROM THE TRENCH PLANS, HE WILL NOTIFY THE CITY ENGINEER AT ONCE TO OBTAIN CLEARANCE PRIOR TO STARTING CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL BARRIERS, WARNIN-G SIGNS, FLASHING LIGHTS, TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE TEXAS MANUAL ON CIVIL TRAFFIC CONTROL DEVICES AND SHOWN ON A TRAFFIC CONTROL PLAN SUBMITTED BY THE CONTRACTOR FOR APPROVAL BY THE CITY ENGINEER.
6. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES TO EXISTING UTILITIES CAUSED BY HIS FAILURE TO LOCATE AND PROTECT ANY AND ALL EXISTING UTILITIES.
7. THE LOCATIONS AND DEPTHS OF EXISTING UTILITIES SHOWN IN THESE PLANS ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE, LIST, SERVICE LINES 48 HOURS PRIOR TO EXECUTION AND PROTECT THE SAME DURING CONSTRUCTION.
   a. ELECTRIC LINES – KUD (800) DIG-TRESS
   b. WATER MAIN/DRAIN – CITY OF KERRVILLE (830) 792-4319
   c. GAS LINES – N.O.C. (800) DIG-TRESS
   d. TELEPHONE – KERRVILLE TELEPHONE (830) DIG-TRESS
8. THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF ALL WASTE ASSOCIATED WITH CONSTRUCTION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING AND PROTECTING ALL MATERIAL AND WORK SHOWN ON THE JOB AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STORAGE OF MATERIALS IN A SAFE AND WORKABLE CONDITION UNTIL REMOVAL FROM SITE UNTIL AFTER WORK WEEKS HAVE PASSED OR UPON COMPLETION.
10. THE CONTRACTOR SHALL NOT USE ANY TRACK-TYPE CONSTRUCTION MACHINERY ON ANY EXISTING PROPERTY OR CABLES OR ANY EXISTING PAVEMENT OR CHEMICALS DURING THE PROJECT WITHOUT AUTHORIZATION FROM THE CITY ENGINEER WHERE Applicable.
11. ALL PRINTED VALUES OR OTHER APPURTENANCES NECESSARY FOR TESTING OR DETERMINATION OF UTILITIES SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
12. SCAFFOLDING MUST BE TAKEN DURING WATERLINE CONSTRUCTION, AS CALLED FOR BY AMERICAN STANDARDS. REQUIREMENTS INCLUDE VESTS, SCAFFOLDING, PLATFORMS, LADDER, ROPES TO INCLUDE MEANS, UNITS OR OTHER SIGNS OF SIGNALIZATION FROM UNAUTHORIZED PIPE LINES AT TIMES WHERE CONSTRUCTION IS NOT IN PROGRESS.
14. AVAILABLE STANDING AREAS ARE AS SHOWN ON SHEET 2.
15. LOWER PORTIONS OF THE CONCRETE WATER MAIN ARE CONTINUOUSLY UNDER WATER AND A WATER MAIN OR SHUTOFF VALVE WILL BE NEEDED (NO SEPARATE PAVEMENT).
Document, Document, Document

Force Account

• Labor
  – Hours regular time
  – Hours overtime
  – Benefits

• Equipment
  – Type
  – Rented

• Materials

• Contract Work
Final Accounting

• 2002 – Storm
• 2003 - Federal Funds Available
• 2005 – Federal Funds Reimbursement
• 2007 – Fiscal recovery from storm
• 2012 – Final accounting (ORCA)