
Duplicate Effective Model Input

StonyBrookDari en1-dup. txt

HEC-RAS Version 4.1.0 Jan 2010
U. S. Army Corps of Engineers
Hydrologic Engineering Center
609 Second Street
Davis, California

```
X      X  XXXXXX   XXXX      XXXX      XX      XXXX
X      X  X       X      X      X      X  X      X
X      X  X       X      X      X      X  X      X
XXXXXXXX XXXX     X      XXX  XXXX     XXXXXX     XXXX
X      X  X       X      X      X      X  X      X
X      X  X       X      X      X      X  X      X
X      X  XXXXXX   XXXX     X      X      X      XXXXX
```

PROJECT DATA

Project Title: StonyBrookDari en1
Project File : StonyBrookDari en1. prj
Run Date and Time: 4/13/2011 2:09:56 PM

Project in English units

Project Description:
Stony Brook, Dari en, CT

PLAN DATA

Plan Title: SB FEMA Duplicate
Plan File : p:\1581-05\Design\Comps\Hydraulics\Models\StonyBrookDari en1. p01

Geometry Title: SB FEMA Duplicate
Geometry File :
p:\1581-05\Design\Comps\Hydraulics\Models\StonyBrookDari en1. g01

Flow Title : SB FEMA Duplicate Flows
Flow File :
p:\1581-05\Design\Comps\Hydraulics\Models\StonyBrookDari en1. f01

Plan Description:
HEC-2 Model received from Michael Baker Corp in pdf form on October 2, 2008.
Data input manually into this plan from pdf. Some errors apparent, but not corrected.

Plan Summary Information:

| | | | | |
|------------|------------------|----|----------------------|---|
| Number of: | Cross Sections = | 62 | Multiple Openings = | 0 |
| | Culverts = | 0 | Inline Structures = | 0 |
| | Bridges = | 10 | Lateral Structures = | 0 |

Computational Information

| | |
|--|-------|
| Water surface calculation tolerance = | 0.01 |
| Critical depth calculation tolerance = | 0.01 |
| Maximum number of iterations = | 20 |
| Maximum difference tolerance = | 0.3 |
| Flow tolerance factor = | 0.001 |

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Computati on Opti ons

Critical depth computed only where necessary
 Conveyance Calculati on Method: At breaks in n values only
 Fricti on Slope Method: Average Conveyance
 Computati onal Flow Regime: Subcriti cal Flow

Encroachment Data

Equal Conveyance = True
 Left Offset = 0
 Right Offset = 0

| River = StonyBrook | Reach = StonyBrook | RS | Profile | Method | Value1 | Value2 |
|--------------------|--------------------|------|--------------|--------|--------|---------|
| | | 48 | 100-yr(encr) | 1 | 990 | 1019 |
| | | 47 | 100-yr(encr) | 1 | 990 | 1010 |
| | | 46 | 100-yr(encr) | 1 | 939.77 | 1039.42 |
| | | 45 | 100-yr(encr) | 1 | 889.35 | 1005 |
| | | 44 | 100-yr(encr) | 1 | 992 | 1016 |
| | | 43.4 | 100-yr(encr) | 1 | 992 | 1016 |
| | | 43.1 | 100-yr(encr) | 1 | 986 | 1010 |
| | | 42 | 100-yr(encr) | 1 | 986 | 1010 |
| | | 41 | 100-yr(encr) | 1 | 990 | 1013.59 |
| | | 40 | 100-yr(encr) | 1 | 985 | 1015 |
| | | 39.4 | 100-yr(encr) | 1 | 985 | 1015 |
| | | 39.1 | 100-yr(encr) | 1 | 977 | 1002 |
| | | 38 | 100-yr(encr) | 1 | 977 | 1005.97 |
| | | 37 | 100-yr(encr) | 1 | 991 | 1008 |
| | | 36.4 | 100-yr(encr) | 1 | 991 | 1008 |
| | | 36.1 | 100-yr(encr) | 1 | 992 | 1007 |
| | | 35 | 100-yr(encr) | 1 | 992 | 1007 |
| | | 34 | 100-yr(encr) | 1 | 989 | 1022.68 |
| | | 33 | 100-yr(encr) | 1 | 977.6 | 1013 |
| | | 32 | 100-yr(encr) | 1 | 974.9 | 1008.23 |
| | | 31 | 100-yr(encr) | 1 | 992 | 1010 |
| | | 30 | 100-yr(encr) | 1 | 995 | 1023.43 |
| | | 29 | 100-yr(encr) | 1 | 991 | 1011 |
| | | 28.4 | 100-yr(encr) | 1 | 992 | 1010 |
| | | 28.1 | 100-yr(encr) | 1 | 990 | 1010 |
| | | 27 | 100-yr(encr) | 1 | 983.71 | 1023.29 |
| | | 26.4 | 100-yr(encr) | 1 | 996 | 1005 |
| | | 26.3 | 100-yr(encr) | 1 | 985.5 | 1015.5 |
| | | 26.2 | 100-yr(encr) | 1 | 990 | 1020 |
| | | 26.1 | 100-yr(encr) | 1 | 990.39 | 1010 |
| | | 25 | 100-yr(encr) | 1 | 992 | 1011 |
| | | 24 | 100-yr(encr) | 1 | 992 | 1011 |
| | | 23 | 100-yr(encr) | 1 | 992 | 1011 |
| | | 22.4 | 100-yr(encr) | 1 | 970.07 | 1021 |
| | | 22.3 | 100-yr(encr) | 1 | 992 | 1009 |
| | | 22.2 | 100-yr(encr) | 1 | 985 | 1008 |
| | | 22.1 | 100-yr(encr) | 1 | 985 | 1008 |
| | | 21 | 100-yr(encr) | 1 | 990 | 1010 |
| | | 20 | 100-yr(encr) | 1 | 992 | 1010 |
| | | 19.4 | 100-yr(encr) | 1 | 992 | 1010 |
| | | 19.1 | 100-yr(encr) | 1 | 993 | 1010 |
| | | 18 | 100-yr(encr) | 1 | 987.71 | 1010 |
| | | 17 | 100-yr(encr) | 1 | 986 | 1041.74 |
| | | 16 | 100-yr(encr) | 1 | 952.95 | 1040.35 |
| | | 15.4 | 100-yr(encr) | 1 | 952.89 | 1040.43 |
| | | 15.1 | 100-yr(encr) | 1 | 942.07 | 1006 |
| | | 14 | 100-yr(encr) | 1 | 947.93 | 1006 |
| | | 13 | 100-yr(encr) | 1 | 990 | 1050 |
| | | 12 | 100-yr(encr) | 1 | 978 | 1028 |
| | | 11 | 100-yr(encr) | 1 | 993 | 1016 |

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| | | | | |
|-------|--------------|---|---------|----------|
| 10. 4 | 100-yr(encr) | 1 | 993 | 1016 |
| 10. 1 | 100-yr(encr) | 1 | 990 | 1010 |
| 9 | 100-yr(encr) | 1 | 990 | 1010 |
| 8 | 100-yr(encr) | 1 | 989 | 1008 |
| 7 | 100-yr(encr) | 1 | 1000 | 1023 |
| 6. 4 | 100-yr(encr) | 1 | 900. 95 | 1072. 42 |
| 6. 1 | 100-yr(encr) | 1 | 992 | 1013 |
| 5 | 100-yr(encr) | 1 | 992 | 1013 |
| 4 | 100-yr(encr) | 1 | 991 | 1020 |
| 3 | 100-yr(encr) | 1 | 967 | 1027 |
| 2 | 100-yr(encr) | 1 | 986 | 1050 |
| 1 | 100-yr(encr) | 1 | 972 | 1034 |

FLOW DATA

Flow Title: SB FEMA Duplicate Flows

Flow File : p:\1581-05\Desi gn\Comps\Hydraul i cs\Model s\StonyBrookDari en1. f01

Flow Data (cfs)

| Ri ver | Reach | RS | 100-yr | 100-yr(encr) |
|---------------------|---------------------|------|--------|--------------|
| 10-yr StonyBrook | 50-yr StonyBrook | 48 | 538 | 538 |
| 312 StonyBrook | 450 StonyBrook | 807 | 800 | 800 |
| 465 | 670 | 1200 | | |

Boundary Condi ti ons

| Ri ver Downstream | Reach | Profi le | Upstream |
|--------------------------------|------------|--------------|------------|
| StonyBrook Known WS = 6. 36 | StonyBrook | 100-yr | Cri ti cal |
| StonyBrook Known WS = 6. 36 | StonyBrook | 100-yr(encr) | Cri ti cal |
| StonyBrook Known WS = 4. 8 | StonyBrook | 10-yr | Cri ti cal |
| StonyBrook Known WS = 6. 15 | StonyBrook | 50-yr | Cri ti cal |
| StonyBrook Known WS = 7 | StonyBrook | 500-yr | Cri ti cal |

GEOMETRY DATA

Geometry Title: SB FEMA Duplicate

Geometry File : p:\1581-05\Desi gn\Comps\Hydraul i cs\Model s\StonyBrookDari en1. g01

CROSS SECTION

StonyBrookDari en1-dup. txt

RIVER: StonyBrook
REACH: StonyBrook

RS: 48

INPUT

Description: FEMA AM, HEC2 - 53.000, Upstream Limit of Model - just ds of Hanson Road Bridge

| Station | | Elevation | | Data | | num= 11 | | | |
|---------|-------|-----------|-------|------|-------|---------|-------|------|-------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 753 | 120 | 930 | 117.5 | 977 | 115 | 990 | 110 | 992 | 105.3 |
| 1000 | 104.8 | 1012 | 105.3 | 1019 | 109.5 | 1040 | 114.5 | 1180 | 113 |
| 1410 | 113.5 | | | | | | | | |

| Manning's n | | Values | | num= 3 | |
|-------------|-------|--------|-------|--------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 753 | .06 | 990 | .05 | 1019 | .09 |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 990 | 1019 | | 1000 | 1030 | 1050 | | .1 | .3 |

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook

RS: 47

INPUT

Description: FEMA AL, HEC2 - 52.000

| Station | | Elevation | | Data num= 10 | | | | | |
|---------|-------|-----------|-------|--------------|-------|------|-------|------|-------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 795 | 112.5 | 890 | 111.5 | 925 | 105.5 | 990 | 105 | 996 | 99.7 |
| 1000 | 99.8 | 1006 | 100.3 | 1010 | 105 | 1215 | 105.2 | 1350 | 109.5 |

| Manning's n | | Values | | num= 3 | |
|-------------|-------|--------|-------|--------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 795 | .06 | 990 | .05 | 1010 | .09 |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 990 | 1010 | | 1040 | 1120 | 1080 | | .1 | .3 |

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook

RS: 46

INPUT

Description: FEMA AK, HEC2 - 51.000

| Station | | Elevation | | Data num= 17 | | | | | |
|---------|------|-----------|-------|--------------|------|------|-------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 570 | 111 | 705 | 105.5 | 760 | 105 | 780 | 103.3 | 972 | 98.1 |
| 995 | 98.7 | 997 | 98.1 | 997 | 95 | 1000 | 96 | 1006 | 96 |
| 1006 | 97.6 | 1010 | 98.8 | 1024 | 98.4 | 1300 | 107 | 1375 | 107 |
| 1420 | 110 | 1493 | 111 | | | | | | |

| Manning's n | | Values | | num= 4 | |
|-------------|-------|--------|-------|--------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 570 | .06 | 997 | .05 | 1006 | .06 |
| | | | | 1300 | .035 |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 997 | 1006 | | 150 | 135 | 120 | | .1 | .3 |

CROSS SECTION

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RIVER: StonyBrook
 REACH: StonyBrook RS: 45

INPUT

Description: FEMA AJ, HEC2 - 50.000

| Station | | Elevation | | Data | | num= 14 | | | |
|---------|------|-----------|-------|------|-------|---------|-------|------|-------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 570 | 120 | 615 | 110 | 780 | 100.5 | 980 | 100 | 985 | 99.5 |
| 998 | 99.3 | 1000 | 96.8 | 1005 | 98 | 1015 | 100 | 1130 | 102.5 |
| 1300 | 107 | 1355 | 106.9 | 1400 | 109.5 | 1470 | 105.5 | | |

| Manning's n | | Values | | num= 3 | |
|-------------|-------|--------|-------|--------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 570 | .16 | 998 | .03 | 1005 | .18 |

| Bank | Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|------|------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 998 | 1005 | 650 | 650 | 610 | | | .1 | .3 | |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 44

INPUT

Description: FEMA AI, HEC2 - 49.000, US section for High School Road Bridge, copy of ds section

| Station | | Elevation | | Data num= 17 | | | | | |
|---------|------|-----------|-------|--------------|------|------|-------|------|-------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 605 | 110 | 750 | 106.5 | 770 | 105 | 895 | 101.5 | 950 | 100.5 |
| 984 | 99.2 | 992 | 95.8 | 1000 | 95.4 | 1008 | 96 | 1016 | 95.6 |
| 1020 | 96 | 1024 | 98.4 | 1045 | 98.5 | 1160 | 100.5 | 1450 | 102.5 |
| 1480 | 105 | 1550 | 107.5 | | | | | | |

| Manning's n | | Values | | num= 3 | |
|-------------|-------|--------|-------|--------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 605 | .11 | 992 | .035 | 1016 | .11 |

| Bank | Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|------|------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 992 | 1016 | 35 | 40 | 45 | | | .3 | .5 | |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 43.4

INPUT

Description: HEC2 - 49.100, US face of High School Road Bridge, IFAS may be off

| Station | | Elevation | | Data num= 17 | | | | | |
|---------|------|-----------|-------|--------------|------|------|-------|------|-------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 605 | 110 | 750 | 106.5 | 770 | 105 | 895 | 101.5 | 950 | 100.5 |
| 984 | 99.2 | 992 | 95.8 | 1000 | 95.4 | 1008 | 96 | 1016 | 95.6 |
| 1020 | 96 | 1024 | 98.4 | 1045 | 98.5 | 1160 | 100.5 | 1450 | 102.5 |
| 1480 | 105 | 1550 | 107.5 | | | | | | |

| Manning's n | | Values | | num= 3 | |
|-------------|-------|--------|-------|--------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 605 | .11 | 992 | .035 | 1016 | .11 |

| Bank | Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|------|------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 992 | 1016 | 44 | 44 | 44 | | | .3 | .5 | |

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Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 605 979 103.5 F
 1016 1550 103.5 F

BRIDGE

RIVER: StonyBrook
 REACH: StonyBrook RS: 43.25

INPUT

Description: High School Lane Bridge, HEC2 sections 48.100 and 48.200 now internal bridge sections

Distance from Upstream XS = 5
 Deck/Roadway Width = 34
 Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates

num= 5

| Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord |
|------|-------|------|-------|------|------|-------|------|-------|------|------|-------|------|-------|------|
| 984 | 103.5 | | 102.9 | | 984 | 103.5 | | 102.9 | | 1000 | 103.5 | | 102.9 | |
| 1008 | 103.5 | | 102.9 | | 1008 | 103.5 | | 102.9 | | | | | | |

Upstream Bridge Cross Section Data

Station Elevation Data num= 15

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|-------|------|-------|------|-------|------|------|------|-------|
| 668 | 109 | 730 | 107.5 | 785 | 107 | 820 | 105 | 850 | 104 |
| 915 | 103.5 | 984 | 103.5 | 984 | 96.3 | 1000 | 95.3 | 1008 | 95.1 |
| 1008 | 103.5 | 1212 | 103.5 | 1240 | 104.5 | 1370 | 105 | 1500 | 107.5 |

Manning's n Values

num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 668 | .03 | 984 | .01 | 1008 | .03 |

Bank Sta: Left Right Coeff Contr. Expan.
 984 1008 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 668 979 103.5 F
 1016 1500 103.5 F

Downstream Deck/Roadway Coordinates

num= 5

| Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord |
|------|-------|------|-------|------|------|-------|------|-------|------|------|-------|------|-------|------|
| 984 | 103.5 | | 102.9 | | 984 | 103.5 | | 102.9 | | 1000 | 103.5 | | 102.9 | |
| 1008 | 103.5 | | 102.9 | | 1008 | 103.5 | | 102.9 | | | | | | |

Downstream Bridge Cross Section Data

Station Elevation Data num= 15

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|-------|------|-------|------|-------|------|------|------|-------|
| 668 | 109 | 730 | 107.5 | 785 | 107 | 820 | 105 | 850 | 104 |
| 915 | 103.5 | 984 | 103.5 | 984 | 96.3 | 1000 | 95.3 | 1008 | 95.1 |
| 1008 | 103.5 | 1212 | 103.5 | 1240 | 104.5 | 1370 | 105 | 1500 | 107.5 |

Manning's n Values

num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 668 | .03 | 984 | .01 | 1008 | .03 |

Bank Sta: Left Right Coeff Contr. Expan.
 984 1008 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 668 980 102 F

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F

1010 1500 102

Upstream Embankment side slope = 0 hori z. to 1.0 vertical
 Downstream Embankment side slope = 0 hori z. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data

Energy
 Selected Low Flow Methods = Highest Energy Answer

High Flow Method
 Energy Only

Additional Bridge Parameters

Add Friction component to Momentum
 Do not add Weight component to Momentum
 Class B flow critical depth computations use critical depth
 inside the bridge at the upstream end
 Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 43.1

INPUT

Description: HEC2 - 47.100, DS face of High School Bridge, copy of ds section,
 with ineffective flow area- which may be wrong

| Station Elevation Data | | num= 15 | | | | | | | | | |
|------------------------|-------|---------|-------|------|-------|------|------|------|------|-----|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 665 | 108.5 | 722 | 105.5 | 953 | 100 | 986 | 96 | 988 | 94 | | |
| 1008 | 94 | 1010 | 96 | 1092 | 98.5 | 1230 | 98.5 | 1290 | 100 | | |
| 1345 | 100 | 1420 | 101 | 1462 | 103.5 | 1555 | 105 | 1600 | 108 | | |

| Manning's n Values | | num= 3 | | | |
|--------------------|-------|--------|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 665 | .11 | 986 | .035 | 1010 | .11 |

Bank Sta: Left 986 Right 1010 Lengths: Left Channel 65 Right 70 Coeff Contr. .3 Expan. .5

| Ineffective Flow | | num= 2 | |
|------------------|-------|--------|-----------|
| Sta L | Sta R | Elev | Permanent |
| 665 | 980 | 102 | F |
| 1010 | 1600 | 102 | F |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 42

INPUT

Description: FEMA AH, HEC2 - 47.000, DS section for High School Bridge

| Station Elevation Data | | num= 15 | | | | | | | | | |
|------------------------|-------|---------|-------|-----|------|-----|------|-----|------|-----|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 665 | 108.5 | 722 | 105.5 | 953 | 100 | 986 | 96 | 988 | 94 | | |

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| | | | | | | | | | |
|------|-----|------|-----|------|-------|------|------|------|-----|
| 1008 | 94 | 1010 | 96 | 1092 | 98.5 | 1230 | 98.5 | 1290 | 100 |
| 1345 | 100 | 1420 | 101 | 1462 | 103.5 | 1555 | 105 | 1600 | 108 |

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 665 .11 986 .035 1010 .11

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 986 1010 350 400 440 .1 .3

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 41

INPUT

Description: FEMA AG, HEC2 - 46.000

Station Elevation Data num= 15

| | | | | | | | | | |
|------|------|------|------|------|-------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 545 | 105 | 585 | 103 | 665 | 100.5 | 865 | 100 | 880 | 98.5 |
| 948 | 98.5 | 973 | 95 | 990 | 94.5 | 994 | 93.9 | 1000 | 93.1 |
| 1010 | 94.5 | 1015 | 95 | 1078 | 96.5 | 1200 | 98.5 | 1285 | 97.8 |

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 545 .085 990 .035 1010 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 990 1010 400 440 430 .1 .3

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 40

INPUT

Description: FEMA AF, HEC2- 45.000, US xsect for Middlesex Road Bridge, copy of ds section

Station Elevation Data num= 15

| | | | | | | | | | |
|-----|------|------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 430 | 105 | 502 | 103 | 540 | 100 | 585 | 98.5 | 640 | 99.5 |
| 670 | 99.5 | 700 | 99.8 | 849 | 98.5 | 870 | 97.8 | 985 | 95 |
| 990 | 90.8 | 1010 | 90.8 | 1015 | 95 | 1048 | 97.5 | 1270 | 98 |

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 430 .12 985 .04 1015 .12

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 985 1015 30 35 35 .1 .3

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 39.4

INPUT

Description: HEC2- 45.100, US face of Middlesex Road Bridge, IFAs may be in wrong place

Station Elevation Data num= 15

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| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev |
|-----|-------|------|-------|------|-------|------|-------|------|-------|
| 430 | 105 | 502 | 103 | 540 | 100 | 585 | 98.5 | 640 | 99.5 |
| 670 | 99.5 | 700 | 99.8 | 849 | 98.5 | 870 | 97.8 | 985 | 95 |
| 990 | 90.8 | 1010 | 90.8 | 1015 | 95 | 1048 | 97.5 | 1270 | 98 |

Manning' s n Val ues num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 430 | .12 | 985 | .04 | 1015 | .12 |

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

| Left | Right | Left | Channel | Right | Coeff | Contr. | Expan. |
|------|-------|------|---------|-------|-------|--------|--------|
| 985 | 1015 | 50 | 50 | 50 | | .3 | .5 |

Ineffecti ve Flow num= 2

| Sta L | Sta R | El ev | Permanent |
|-------|-------|-------|-----------|
| 430 | 986 | 97.5 | F |
| 1021 | 1270 | 97.5 | F |

BRI DGE

RIVER: StonyBrook
 REACH: StonyBrook RS: 39.25

INPUT

Descripti on: Middl esex Road Bri dge, Defi ned i n HEC2 by secti ons 44.100 and 44.200, now defi ned as i nternal bri dge cross secti ons

Di stance from Upstream XS = 5
 Deck/Roadway Wi dth = 40
 Wei r Coeffi ci ent = 2.6

Upstream Deck/Roadway Coordi nates

| num= | Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 6 | 991 | 97.5 | 94.9 | 991 | 97.5 | 1000 | 97.5 | 94.9 | 1000 | 97.5 | 1016 | 97.5 | 94.9 | 1016 | 97.5 |
| | 1008 | 97.5 | 94.9 | 1016 | 97.5 | 1016 | 97.5 | 94.9 | 1016 | 97.5 | 1016 | 97.5 | 94.9 | 1016 | 97.5 |

Upstream Bri dge Cross Secti on Data

| Stati on | El evati on | Data | num= | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev |
|----------|-------------|------|------|------|-------|------|-------|------|-------|------|-------|
| 415 | 105 | 615 | 99.5 | 815 | 98.5 | 925 | 97.8 | 991 | 97.5 | 991 | 97.5 |
| 991 | 89.1 | 1000 | 88.9 | 1008 | 89.1 | 1016 | 90.4 | 1016 | 97.5 | 1016 | 97.5 |
| 1080 | 98 | 1140 | 98.8 | 1205 | 99 | 1290 | 100.3 | 1415 | 103 | 1415 | 103 |
| 1435 | 105 | | | | | | | | | | |

Manning' s n Val ues num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 415 | .03 | 991 | .02 | 1016 | .03 |

Bank Sta: Left Right Coeff Contr. Expan.

| Left | Right | Coeff | Contr. | Expan. |
|------|-------|-------|--------|--------|
| 991 | 1016 | | .3 | .5 |

Ineffecti ve Flow num= 2

| Sta L | Sta R | El ev | Permanent |
|-------|-------|-------|-----------|
| 415 | 986 | 97.5 | F |
| 1021 | 1435 | 97.5 | F |

Downstream Deck/Roadway Coordi nates

| num= | Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 6 | 991 | 97.5 | 94.9 | 991 | 97.5 | 1000 | 97.5 | 94.9 | 1000 | 97.5 | 1016 | 97.5 | 94.9 | 1016 | 97.5 |
| | 1008 | 97.5 | 94.9 | 1016 | 97.5 | 1016 | 97.5 | 94.9 | 1016 | 97.5 | 1016 | 97.5 | 94.9 | 1016 | 97.5 |

Downstream Bri dge Cross Secti on Data

| Stati on | El evati on | Data | num= | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev |
|----------|-------------|------|------|-----|-------|-----|-------|-----|-------|-----|-------|
| 415 | 105 | 615 | 99.5 | 815 | 98.5 | 925 | 97.8 | 991 | 97.5 | 991 | 97.5 |

StonyBrookDari en1-dup. txt

| | | | | | | | | | |
|------|------|------|------|------|------|------|-------|------|------|
| 991 | 89.1 | 1000 | 88.9 | 1008 | 89.1 | 1016 | 90.4 | 1016 | 97.5 |
| 1080 | 98 | 1140 | 98.8 | 1205 | 99 | 1290 | 100.3 | 1415 | 103 |
| 1435 | 105 | | | | | | | | |

Manning's n Values num= 3

| | | |
|-----------|-----------|-----------|
| Sta n Val | Sta n Val | Sta n Val |
| 415 .03 | 991 .02 | 1016 .03 |

Bank Sta: Left Right Coeff Contr. Expan.

| | | | | |
|-----|------|--|----|----|
| 991 | 1016 | | .3 | .5 |
|-----|------|--|----|----|

Ineffective Flow num= 2

| | | | |
|-------|-------|------|-----------|
| Sta L | Sta R | Elev | Permanent |
| 415 | 986 | 96 | F |
| 1021 | 1435 | 96 | F |

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
 Energy
 Selected Low Flow Methods = Highest Energy Answer

High Flow Method
 Energy Only

Additional Bridge Parameters
 Add Friction component to Momentum
 Do not add Weight component to Momentum
 Class B flow critical depth computations use critical depth
 inside the bridge at the upstream end
 Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 39.1

INPUT
 Description: HEC2- 43.100, DS face of Middlesex Road Bridge, copy of ds section
 with ineffective flow areas, IFAS may be in wrong place

Station Elevation Data num= 17

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 815 | 97 | 854 | 96 | 905 | 96 | 945 | 94 | 966 | 94 |
| 977 | 91 | 984 | 89.4 | 1002 | 91 | 1021 | 91.5 | 1021 | 93 |
| 1032 | 95 | 1140 | 95.5 | 1170 | 96 | 1232 | 98.5 | 1300 | 99 |
| 1380 | 101 | 1490 | 110 | | | | | | |

Manning's n Values num= 3

| | | |
|-----------|-----------|-----------|
| Sta n Val | Sta n Val | Sta n Val |
| 815 .1 | 977 .04 | 1021 .15 |

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

| | | | | | | |
|-----|------|----|----|----|----|----|
| 977 | 1021 | 50 | 50 | 50 | .3 | .5 |
|-----|------|----|----|----|----|----|

Ineffective Flow num= 2

| | | | |
|-------|-------|------|-----------|
| Sta L | Sta R | Elev | Permanent |
|-------|-------|------|-----------|

StonyBrookDari en1-dup. txt

815 986 96
1021 1490 96

F
F

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook RS: 38

INPUT

Description: FEMA AE, HEC2- 43.000, DS section for Middlesex Road Bridge
Station Elevation Data num= 17

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|------|------|------|------|------|------|------|------|------|
| 815 | 97 | 854 | 96 | 905 | 96 | 945 | 94 | 966 | 94 |
| 977 | 91 | 984 | 89.4 | 1002 | 91 | 1021 | 91.5 | 1021 | 93 |
| 1032 | 95 | 1140 | 95.5 | 1170 | 96 | 1232 | 98.5 | 1300 | 99 |
| 1380 | 101 | 1490 | 110 | | | | | | |

Manning's n Values

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 815 | .1 | 977 | .04 | 1002 | .15 |

Bank Sta: Left 977 Right 1002 Lengths: Left Channel 790 Right Channel 730 Right 630 Coeff Contr. .1 Expan. .3

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook RS: 37

INPUT

Description: FEMA AD, HEC2 - 39.000, US xsect for Driveway Bridge, copy of ds section

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|-------|------|------|------|------|------|------|------|------|
| 800 | 104.5 | 820 | 100 | 860 | 96 | 905 | 95 | 935 | 93.5 |
| 970 | 90 | 988 | 89.5 | 991 | 86 | 1000 | 85.4 | 1008 | 86 |
| 1015 | 89.5 | 1033 | 90 | 1045 | 94 | 1075 | 95 | 1140 | 98.5 |
| 1250 | 100.5 | | | | | | | | |

Manning's n Values

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 800 | .07 | 991 | .05 | 1008 | .07 |

Bank Sta: Left 991 Right 1008 Lengths: Left Channel 55 Right Channel 50 Right 45 Coeff Contr. .3 Expan. .5

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook RS: 36.4

INPUT

Description: HEC2 - 39.200, US face of Driveway Bridge, increased downstream reach lengths to account for 4 feet between sections and bridge

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|-------|------|------|------|------|------|------|------|------|
| 800 | 104.5 | 820 | 100 | 860 | 96 | 905 | 95 | 935 | 93.5 |
| 970 | 90 | 988 | 89.5 | 991 | 86 | 1000 | 85.4 | 1008 | 86 |
| 1015 | 89.5 | 1033 | 90 | 1045 | 94 | 1075 | 95 | 1140 | 98.5 |
| 1250 | 100.5 | | | | | | | | |

StonyBrookDari en1-dup. txt

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 800 .07 991 .05 1008 .07

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 991 1008 22 22 22 .3 .5
 Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 800 991 92.5 F
 1008 1250 92.5 F

BRIDGE

RIVER: StonyBrook
 REACH: StonyBrook RS: 36.25

INPUT

Description: Driveway Bridge, Sections 38.1000 and 38.200 in HEC2 were input as internal bridge sections

Distance from Upstream XS = 4
 Deck/Roadway Width = 14
 Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates num= 6
 Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 993 92.8 90.7 993 92.8 90.7 1000 93 91
 1007 93.3 91.2 1008 93.3 91.2 1008 93.3 91.2

Upstream Bridge Cross Section Data

Station Elevation Data num= 17
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 780 104.5 850 96 890 95 930 93.5 975 92.5
 993 92.8 993 90.7 995 85.2 1000 84.6 1007 86.2
 1008 91.2 1008 93.3 1025 93.3 1052 95 1110 97.5
 1195 100 1280 101.5

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 780 .08 993 .04 1008 .055

Bank Sta: Left Right Coeff Contr. Expan.
 993 1008 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 780 991 92.5 F
 1008 1280 92.5 F

Downstream Deck/Roadway Coordinates

num= 6
 Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 993 92.8 90.7 993 92.8 90.7 1000 93 91
 1007 93.3 91.2 1008 93.3 91.2 1008 93.3 91.2

Downstream Bridge Cross Section Data

Station Elevation Data num= 17
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 780 104.5 850 96 890 95 930 93.5 975 92.5
 993 92.8 993 90.7 995 85.2 1000 84.6 1007 86.2
 1008 91.2 1008 93.3 1025 93.3 1052 95 1110 97.5
 1195 100 1280 101.5

StonyBrookDari en1-dup. txt

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 780 .08 993 .04 1008 .055

Bank Sta: Left Right Coeff Contr. Expan.
 993 1007 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 780 992 91.2 F
 1007 1280 91.2 F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
 Energy

Selected Low Flow Methods = Highest Energy Answer

High Flow Method
 Energy Only

Additional Bridge Parameters

Add Friction component to Momentum
 Do not add Weight component to Momentum
 Class B flow critical depth computations use critical depth
 inside the bridge at the upstream end
 Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 36.1

INPUT

Description: HEC2 - 37.100 DS face of Driveway Bridge, copy of ds section with
 ineffective flow areas

Station Elevation Data num= 16

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|-------|------|------|------|------|------|------|------|------|
| 745 | 101.5 | 810 | 95 | 835 | 95 | 875 | 93.5 | 937 | 93 |
| 975 | 90 | 992 | 89.5 | 994 | 87 | 1000 | 86 | 1005 | 87 |
| 1007 | 89.5 | 1015 | 90 | 1035 | 92.5 | 1095 | 97 | 1180 | 100 |
| 1285 | 105 | | | | | | | | |

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 745 .08 992 .04 1007 .055

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 992 1007 40 35 25 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 745 992 91.2 F
 1007 1285 91.2 F

CROSS SECTION

StonyBrookDari en1-dup. txt

RIVER: StonyBrook
 REACH: StonyBrook RS: 35

INPUT

Description: FEMA AC, HEC2 - 37.000 DS cross section for Driveway Bridge
 Station Elevation Data num= 16

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|-------|------|------|------|------|------|------|------|------|
| 745 | 101.5 | 810 | 95 | 835 | 95 | 875 | 93.5 | 937 | 93 |
| 975 | 90 | 992 | 89.5 | 994 | 87 | 1000 | 86 | 1005 | 87 |
| 1007 | 89.5 | 1015 | 90 | 1035 | 92.5 | 1095 | 97 | 1180 | 100 |
| 1285 | 105 | | | | | | | | |

Manning's n Values num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 745 | .08 | 992 | .04 | 1007 | .055 |

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

| | | | | | | |
|-----|------|----|----|----|----|----|
| 992 | 1007 | 90 | 70 | 50 | .1 | .3 |
|-----|------|----|----|----|----|----|

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 34

INPUT

Description: FEMA AB, HEC2 - 36.000, ROB n value obscured- kept previous value,
 first station value also obscure - made guess
 Station Elevation Data num= 13

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|-------|------|------|------|------|------|------|------|------|
| 790 | 103.5 | 805 | 100 | 840 | 95 | 875 | 92.5 | 950 | 90 |
| 955 | 89.1 | 989 | 88.7 | 993 | 87.9 | 1008 | 87.9 | 1009 | 89.2 |
| 1019 | 88.5 | 1039 | 86.7 | 1040 | 105 | | | | |

Manning's n Values num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 790 | .08 | 989 | .04 | 1009 | .055 |

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

| | | | | | | |
|-----|------|-----|-----|-----|----|----|
| 989 | 1009 | 240 | 265 | 270 | .1 | .3 |
|-----|------|-----|-----|-----|----|----|

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 33

INPUT

Description: FEMA AA, HEC2- 35.000
 Station Elevation Data num= 15

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|------|------|------|------|------|------|------|------|-------|
| 845 | 99 | 890 | 95 | 910 | 90.7 | 940 | 90 | 960 | 85.5 |
| 963 | 85 | 987 | 84.9 | 996 | 84.5 | 1005 | 84.7 | 1013 | 85.1 |
| 1016 | 85.4 | 1030 | 84.6 | 1040 | 88.4 | 1050 | 95 | 1075 | 103.5 |

Manning's n Values num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 845 | .05 | 987 | .04 | 1013 | .055 |

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

| | | | | | | |
|-----|------|-----|-----|-----|----|----|
| 987 | 1013 | 240 | 235 | 230 | .1 | .3 |
|-----|------|-----|-----|-----|----|----|

StonyBrookDari en1-dup. txt

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 32

INPUT

Description: FEMA Z, HEC2 - 34.000

| Station Elevation Data num= 13 | | | | | | | | | |
|--------------------------------|------|------|-------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 700 | 96.5 | 763 | 83.5 | 895 | 86 | 960 | 82.9 | 972 | 82.8 |
| 986 | 82.5 | 994 | 82.4 | 998 | 81.2 | 1002 | 81.3 | 1007 | 82.6 |
| 1025 | 83.1 | 1055 | 84.09 | 1110 | 95 | | | | |

| Manning's n Values num= 3 | | | | | |
|---------------------------|-------|-----|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 700 | .045 | 994 | .04 | 1007 | .04 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|-------|--------|--------|
| | 994 | 1007 | | 340 | 360 | | .1 | .3 |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 31

INPUT

Description: FEMA Y, HEC2- 33.000

| Station Elevation Data num= 14 | | | | | | | | | |
|--------------------------------|------|------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 890 | 81.5 | 945 | 80.3 | 956 | 78.5 | 992 | 77.2 | 993 | 74 |
| 995 | 73 | 1000 | 72 | 1007 | 74.1 | 1010 | 76.8 | 1019 | 78 |
| 1036 | 77.7 | 1090 | 79 | 1225 | 82 | 1275 | 83 | | |

| Manning's n Values num= 3 | | | | | |
|---------------------------|-------|-----|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 890 | .1 | 992 | .04 | 1010 | .07 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|-------|--------|--------|
| | 992 | 1010 | | 500 | 720 | | .1 | .3 |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 30

INPUT

Description: FEMA X, HEC2 - 32.000

| Station Elevation Data num= 11 | | | | | | | | | |
|--------------------------------|------|------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 711 | 75.3 | 930 | 75.5 | 988 | 75 | 995 | 73.3 | 996 | 71 |
| 1000 | 70 | 1005 | 73.3 | 1065 | 74.5 | 1160 | 76.1 | 1205 | 76.5 |
| 1275 | 79.5 | | | | | | | | |

| Manning's n Values num= 3 | | | | | |
|---------------------------|-------|-----|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 711 | .09 | 995 | .035 | 1005 | .05 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|-------|--------|--------|
| | 995 | 1005 | | 550 | 600 | | .1 | .3 |

StonyBrookDari en1-dup. txt

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 29

INPUT

Description: FEMA W, HEC2- 31.000, US xsect for West Road Bridge

| Station | | Elevation | | Data | | num= | | 17 | |
|---------|------|-----------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 790 | 90 | 920 | 80.5 | 940 | 80 | 970 | 73.9 | 987 | 75.3 |
| 992 | 69.7 | 996 | 68.6 | 1005 | 68.6 | 1010 | 69.5 | 1017 | 72.5 |
| 1028 | 73.3 | 1049 | 73.2 | 1090 | 74.1 | 1195 | 75 | 1325 | 75 |
| 1380 | 75.1 | 1570 | 79.4 | | | | | | |

| Manning's n | | Values | | num= | | 3 | |
|-------------|-------|--------|-------|------|-------|-----|-------|
| Sta | n Val | Sta | n Val | Sta | n Val | Sta | n Val |
| 790 | .1 | 992 | .035 | 1010 | .1 | | |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 992 | 1010 | | 15 | 45 | 50 | | .3 | .5 |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 28.4

INPUT

Description: HEC2- 31.100, US face of West Road Bridge

| Station | | Elevation | | Data | | num= | | 17 | |
|---------|------|-----------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 790 | 90 | 920 | 80.5 | 940 | 80 | 970 | 73.9 | 987 | 75.3 |
| 992 | 69.7 | 996 | 68.6 | 1005 | 68.6 | 1010 | 69.5 | 1017 | 72.5 |
| 1028 | 73.3 | 1049 | 73.2 | 1090 | 74.1 | 1195 | 75 | 1325 | 75 |
| 1380 | 75.1 | 1570 | 79.4 | | | | | | |

| Manning's n | | Values | | num= | | 3 | |
|-------------|-------|--------|-------|------|-------|-----|-------|
| Sta | n Val | Sta | n Val | Sta | n Val | Sta | n Val |
| 790 | .1 | 992 | .035 | 1010 | .1 | | |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 992 | 1010 | | 50 | 50 | 50 | | .3 | .5 |

| Ineffective Flow | | num= | | 2 | |
|------------------|-------|------|-----------|-------|-------|
| Sta L | Sta R | Elev | Permanent | Sta L | Sta R |
| 790 | 991 | 75.3 | F | | |
| 1010 | 1570 | 75.3 | F | | |

BRIDGE

RIVER: StonyBrook
 REACH: StonyBrook RS: 28.25

INPUT

Description: West Avenue Bridge, Included in HEC2 in sections 30.100 and 30.200

Distance from Upstream XS = 5
 Deck/Roadway Width = 40
 Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates

| num= | | 5 | |
|------|----|------|---------|
| Sta | Hi | Cord | Lo Cord |
| | | | |

StonyBrookDari en1-dup. txt

| | | | | | | | | |
|------|------|------|------|------|------|------|------|----|
| 991 | 81.8 | 69 | 994 | 81.8 | 74.7 | 1000 | 81.8 | 76 |
| 1006 | 81.7 | 74.2 | 1009 | 81.7 | 69.9 | | | |

Upstream Bridge Cross Section Data

| | | | | | | | | | |
|------------------------|------|------|------|------|------|------|------|------|------|
| Station Elevation Data | | num= | | 20 | | | | | |
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 755 | 90.7 | 790 | 90 | 930 | 80.5 | 952 | 80 | 984 | 78.7 |
| 984 | 81.8 | 990 | 81.8 | 991 | 69.6 | 994 | 69.5 | 1000 | 69.1 |
| 1006 | 69.7 | 1009 | 69.9 | 1010 | 81.7 | 1016 | 81.7 | 1016 | 77.8 |
| 1029 | 77.3 | 1090 | 76 | 1172 | 75.3 | 1270 | 75.4 | 1580 | 80.1 |

| | | | | | |
|--------------------|-------|------|-------|------|-------|
| Manning's n Values | | num= | | 3 | |
| Sta | n Val | Sta | n Val | Sta | n Val |
| 755 | .1 | 991 | .04 | 1009 | .08 |

| | | | | | |
|-----------|------|-------|-------|--------|--------|
| Bank Sta: | Left | Right | Coeff | Contr. | Expan. |
| | 991 | 1009 | | .3 | .5 |

| | | | | | |
|------------------|-------|------|-----------|---|--|
| Ineffective Flow | | num= | | 2 | |
| Sta L | Sta R | Elev | Permanent | | |
| 755 | 991 | 75.3 | F | | |
| 1010 | 1580 | 75.3 | F | | |

Downstream Deck/Roadway Coordinates

| | | | | | | | | | |
|------|------|------|----|------|------|------|------|----|------|
| num= | | 5 | | | | | | | |
| Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord |
| 991 | 81.8 | 69 | | | 994 | 81.8 | 74.7 | | |
| 1006 | 81.7 | 74.2 | | | 1009 | 81.7 | 69.9 | | 76 |

Downstream Bridge Cross Section Data

| | | | | | | | | | |
|------------------------|------|------|------|------|------|------|------|------|------|
| Station Elevation Data | | num= | | 20 | | | | | |
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 755 | 90.7 | 790 | 90 | 930 | 80.5 | 952 | 80 | 984 | 78.7 |
| 984 | 81.8 | 990 | 81.8 | 991 | 69.6 | 994 | 69.5 | 1000 | 69.1 |
| 1006 | 69.7 | 1009 | 69.9 | 1010 | 81.7 | 1016 | 81.7 | 1016 | 77.8 |
| 1029 | 77.3 | 1090 | 76 | 1172 | 75.3 | 1270 | 75.4 | 1580 | 80.1 |

| | | | | | |
|--------------------|-------|------|-------|------|-------|
| Manning's n Values | | num= | | 3 | |
| Sta | n Val | Sta | n Val | Sta | n Val |
| 755 | .1 | 991 | .04 | 1009 | .08 |

| | | | | | |
|-----------|------|-------|-------|--------|--------|
| Bank Sta: | Left | Right | Coeff | Contr. | Expan. |
| | 991 | 1009 | | .3 | .5 |

| | | | | | |
|------------------|-------|------|-----------|---|--|
| Ineffective Flow | | num= | | 2 | |
| Sta L | Sta R | Elev | Permanent | | |
| 755 | 990 | 74 | F | | |
| 1010 | 1580 | 74 | F | | |

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
 Energy

Selected Low Flow Methods = Highest Energy Answer

High Flow Method
 Energy Only

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Additional Bridge Parameters

Add Friction component to Momentum
 Do not add Weight component to Momentum
 Class B flow critical depth computations use critical depth
 inside the bridge at the upstream end
 Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 28.1

INPUT

Description: HEC2 - 29.100, DS face of West Road Bridge, copy from ds cross section, with ineffective flow areas

| Station | | Elevation | | Data | | num= | | 15 | |
|---------|------|-----------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 780 | 86.7 | 840 | 84.6 | 925 | 79.2 | 965 | 75 | 990 | 70.4 |
| 992 | 68.5 | 1000 | 68 | 1008 | 69 | 1010 | 70.4 | 1060 | 74.7 |
| 1123 | 74.8 | 1280 | 74 | 1325 | 75 | 1415 | 76.3 | 1490 | 80.2 |

| Manning's n | | Values | | num= | | 3 | |
|-------------|-------|--------|-------|------|-------|-----|-------|
| Sta | n Val | Sta | n Val | Sta | n Val | Sta | n Val |
| 780 | .1 | 990 | .04 | 1010 | .08 | | |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 990 | 1010 | | 45 | 40 | 35 | | .3 | .5 |

| Ineffective Flow | | num= | | 2 | |
|------------------|-------|------|-----------|-----|------|
| Sta L | Sta R | Elev | Permanent | Sta | Elev |
| 780 | 990 | 74 | F | | |
| 1010 | 1490 | 74 | F | | |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 27

INPUT

Description: FEMA V, HEC2 - 29.000

| Station | | Elevation | | Data | | num= | | 15 | |
|---------|------|-----------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 780 | 86.7 | 840 | 84.6 | 925 | 79.2 | 965 | 75 | 990 | 70.4 |
| 992 | 68.5 | 1000 | 68 | 1008 | 69 | 1010 | 70.4 | 1060 | 74.7 |
| 1123 | 74.8 | 1280 | 74 | 1325 | 75 | 1415 | 76.3 | 1490 | 80.2 |

| Manning's n | | Values | | num= | | 3 | |
|-------------|-------|--------|-------|------|-------|-----|-------|
| Sta | n Val | Sta | n Val | Sta | n Val | Sta | n Val |
| 780 | .1 | 990 | .04 | 1010 | .08 | | |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 990 | 1010 | | 400 | 400 | 400 | | .3 | .5 |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 26.4

INPUT

Description: FEMA U, HEC2 - 28.000, US section for Conrail Bridge, copy of ds

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section, but increased by 0.8 elevation, decreased ds distance by 5 feet to accomodate bridge and each face setback from it 5 feet, right bank station looks fishy

| Station Elevation Data | | num= 16 | | | | | | | |
|------------------------|------|---------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 818 | 80 | 845 | 75 | 865 | 73 | 920 | 71.1 | 935 | 70 |
| 967 | 67.8 | 986 | 67 | 996 | 64.7 | 1005 | 64.3 | 1011 | 65.3 |
| 1015 | 68.4 | 1047 | 68 | 1065 | 70.5 | 1090 | 70 | 1120 | 74.6 |
| 1155 | 85 | | | | | | | | |

| Manning's n Values | | num= 3 | | | |
|--------------------|-------|--------|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 818 | .1 | 996 | .04 | 1005 | .08 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|--------------|--------|
| | 996 | 1005 | | 85 | 80 | 75 | .3 |
| | | | | | | | .5 |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 26.3

INPUT

Description: HEC2 - 28.100, US face of Conrail Bridge, decreased given GR records by .8 feet, increased ds distance by 5 feet to accomodate bridge and each face setback from it 5 feet, added ineffective flow areas, right bank station looks fishy

| Station Elevation Data | | num= 16 | | | | | | | |
|------------------------|------|---------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 818 | 79.2 | 845 | 74.2 | 865 | 72.2 | 920 | 70.3 | 935 | 69.2 |
| 967 | 67 | 986 | 66.2 | 996 | 63.9 | 1005 | 63.5 | 1011 | 64.5 |
| 1015 | 67.6 | 1047 | 67.2 | 1065 | 69.7 | 1090 | 69.2 | 1120 | 73.8 |
| 1155 | 84.2 | | | | | | | | |

| Manning's n Values | | num= 3 | | | |
|--------------------|-------|--------|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 818 | .1 | 996 | .04 | 1005 | .08 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|--------------|--------|
| | 996 | 1005 | | 71 | 71 | 71 | .3 |
| | | | | | | | .5 |

| Ineffective Flow | | num= 2 | |
|------------------|-------|--------|-----------|
| Sta L | Sta R | Elev | Permanent |
| 818 | 991.5 | 78.5 | F |
| 1009.5 | 1155 | 78.5 | F |

BRIDGE

RIVER: StonyBrook
 REACH: StonyBrook RS: 26.25

INPUT

Description: Conrail Bridge, Model ed as special bridge in HEC2 on sections 26.100 and 28.100, no BT given in HEC2 - needed to use bridge bottom width of 8 feet, top of road width of 300 feet, elevation of road and low chord given in X2 record, and centered opening inside bank stations provided, copied upstream section to downstream internal section, bridge opening inverts were given in the SB record, but were entered backwards (62.5 up invert and 63.5 dn invert)

Distance from Upstream XS = 5
 Deck/Roadway Width = 61

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Weir Coefficient = 2.5

Upstream Deck/Roadway Coordinates

| num= 7 | | Sta Hi Cord Lo Cord | | Sta Hi Cord Lo Cord | | Sta Hi Cord Lo Cord | | |
|--------|------|---------------------|--------|---------------------|------|---------------------|------|---|
| 818 | 79.2 | 0 | 847 | 78.5 | 0 | 996.5 | 78.5 | 0 |
| 996.5 | 78.5 | 70.7 | 1004.5 | 78.5 | 70.7 | 1004.5 | 78.5 | 0 |
| 1147 | 78.5 | 0 | | | | | | |

Upstream Bridge Cross Section Data

Station Elevation Data

num= 16

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|------|------|------|------|------|------|------|------|------|
| 818 | 79.2 | 845 | 74.2 | 865 | 72.2 | 920 | 70.3 | 935 | 69.2 |
| 967 | 67 | 986 | 66.2 | 996 | 63.5 | 1005 | 63.5 | 1011 | 64.5 |
| 1015 | 67.6 | 1047 | 67.2 | 1065 | 69.7 | 1090 | 69.2 | 1120 | 73.8 |
| 1155 | 84.2 | | | | | | | | |

Manning's n Values

num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 818 | .1 | 996 | .04 | 1005 | .08 |

Bank Sta: Left 996 Right 1005 Coeff Contr. .3 Expan. .5

Ineffective Flow

num= 2

| Sta L | Sta R | Elev | Permanent |
|--------|-------|------|-----------|
| 818 | 991.5 | 78.5 | F |
| 1009.5 | 1155 | 78.5 | F |

Downstream Deck/Roadway Coordinates

| num= 7 | | Sta Hi Cord Lo Cord | | Sta Hi Cord Lo Cord | | Sta Hi Cord Lo Cord | | |
|--------|------|---------------------|--------|---------------------|------|---------------------|------|---|
| 818 | 79.2 | 0 | 847 | 78.5 | 0 | 996.5 | 78.5 | 0 |
| 996.5 | 78.5 | 70.7 | 1004.5 | 78.5 | 70.7 | 1004.5 | 78.5 | 0 |
| 1147 | 78.5 | 0 | | | | | | |

Downstream Bridge Cross Section Data

Station Elevation Data

num= 16

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|------|------|------|------|------|------|------|------|------|
| 818 | 79.2 | 845 | 74.2 | 865 | 72.2 | 920 | 70.3 | 935 | 69.2 |
| 967 | 67 | 986 | 66.2 | 996 | 62.5 | 1005 | 62.5 | 1011 | 64.5 |
| 1015 | 67.6 | 1047 | 67.2 | 1065 | 69.7 | 1090 | 69.2 | 1120 | 73.8 |
| 1155 | 84.2 | | | | | | | | |

Manning's n Values

num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 818 | .1 | 996 | .04 | 1005 | .08 |

Bank Sta: Left 996 Right 1005 Coeff Contr. .3 Expan. .5

Ineffective Flow

num= 2

| Sta L | Sta R | Elev | Permanent |
|--------|-------|------|-----------|
| 818 | 993.2 | 74.6 | F |
| 1007.8 | 1155 | 74.6 | F |

Upstream Embankment side slope = 0 horiz. to 1.0 vertical

Downstream Embankment side slope = 0 horiz. to 1.0 vertical

Maximum allowable submergence for weir flow = .98

Elevation at which weir flow begins =

Energy head used in spillway design =

Spillway height used in design =

Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data

Energy

Selected Low Flow Methods = Highest Energy Answer

High Flow Method

Energy Only

Additional Bridge Parameters

Add Friction component to Momentum

Do not add Weight component to Momentum

Class B flow critical depth computations use critical depth inside the bridge at the upstream end

Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: StonyBrook

REACH: StonyBrook

RS: 26.2

INPUT

Description: HEC2 - 26.100, DS face of Conrail Bridge, left bank station looks wrong from HEC2, copy from ds section with increase in elevation of 1.5 ft and ineffective flow areas, decreased ds distance by 5 feet to move section away from structure (was modeled as a special bridge in HEC2)

| Station Elevation Data | | num= 16 | | | | | | | | | |
|------------------------|------|---------|------|------|------|------|------|------|------|-----|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 750 | 76.4 | 825 | 75.5 | 890 | 72.2 | 940 | 71.7 | 970 | 71.5 | | |
| 980 | 66.5 | 985 | 63 | 1000 | 62.5 | 1010 | 63 | 1012 | 64.3 | | |
| 1020 | 66.5 | 1067 | 66.7 | 1120 | 66.3 | 1235 | 69 | 1360 | 73.8 | | |
| 1410 | 76.6 | | | | | | | | | | |

| Manning's n Values | | num= 3 | | | |
|--------------------|-------|--------|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 750 | .1 | 1000 | .04 | 1010 | .1 |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|------------------|--|--------|----------|------|-----------|-------|-------|--------|--------|
| | 1000 | 1010 | | 55 | 55 | 55 | | .3 | .5 |
| Ineffective Flow | num= | | | | | | | | |
| | 2 <th>Sta L</th> <th>Sta R</th> <th>Elev</th> <th>Permanent</th> <td></td> <td></td> <td></td> <td></td> | Sta L | Sta R | Elev | Permanent | | | | |
| | | 750 | 993.2 | 74.6 | F | | | | |
| | | 1007.8 | 1410 | 74.6 | F | | | | |

CROSS SECTION

RIVER: StonyBrook

REACH: StonyBrook

RS: 26.1

INPUT

Description: FEMA T, HEC2 - 26.000, DS section for Conrail Bridge, left bank station looks wrong from HEC2

| Station Elevation Data | | num= 16 | | | | | | | | | |
|------------------------|------|---------|------|------|------|------|------|------|------|-----|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 750 | 74.9 | 825 | 74 | 890 | 70.7 | 940 | 70.2 | 970 | 70 | | |
| 980 | 65 | 985 | 61.5 | 1000 | 61 | 1010 | 61.5 | 1012 | 62.8 | | |
| 1020 | 65 | 1067 | 65.2 | 1120 | 64.8 | 1235 | 67.5 | 1360 | 72.3 | | |
| 1410 | 75.1 | | | | | | | | | | |

| Manning's n Values | | num= 3 | | | |
|--------------------|-------|--------|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 750 | .1 | 1000 | .04 | 1010 | .1 |

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Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 1000 1010 290 280 230 .1 .3

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 25

INPUT

Description: FEMA S, HEC-2 - 25.200, copy of ds section - increased elevation by 1.5

| Station | Elevation | Data | num= | 13 | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|---------|-----------|------|------|------|------|------|------|------|------|------|-----|------|
| 790 | 71 | 940 | 67 | 975 | 63 | 992 | 60.1 | 995 | 58.8 | | | |
| 1000 | 58.4 | 1009 | 60.1 | 1011 | 61.9 | 1022 | 62.1 | 1027 | 63.9 | | | |
| 1055 | 64.3 | 1070 | 71 | 1100 | 77.7 | | | | | | | |

| Manning's n | Values | num= | 3 | Sta | n Val | Sta | n Val | Sta | n Val |
|-------------|--------|------|------|------|-------|-----|-------|-----|-------|
| 790 | .08 | 992 | .039 | 1011 | .085 | | | | |

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 992 1011 150 150 150 .1 .3

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 24

INPUT

Description: FEMA R, HEC-2 - 25.100, copy of ds section - increased elevation by 1.5

| Station | Elevation | Data | num= | 13 | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|---------|-----------|------|------|------|------|------|------|------|------|------|-----|------|
| 790 | 69.5 | 940 | 65.5 | 975 | 61.5 | 992 | 58.6 | 995 | 57.3 | | | |
| 1000 | 56.9 | 1009 | 58.6 | 1011 | 60.4 | 1022 | 60.6 | 1027 | 62.4 | | | |
| 1055 | 62.8 | 1070 | 69.5 | 1100 | 76.2 | | | | | | | |

| Manning's n | Values | num= | 3 | Sta | n Val | Sta | n Val | Sta | n Val |
|-------------|--------|------|------|------|-------|-----|-------|-----|-------|
| 790 | .08 | 992 | .039 | 1011 | .085 | | | | |

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 992 1011 150 150 150 .1 .3

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 23

INPUT

Description: FEMA Q, HEC-2 - 25.000, DS limit of upstream model section in HEC2, downstream distance taken as difference between sections P and Q as reported in FEMA FIS tables

| Station | Elevation | Data | num= | 13 | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|---------|-----------|------|------|------|------|------|------|------|------|------|-----|------|
| 790 | 68 | 940 | 64 | 975 | 60 | 992 | 57.1 | 995 | 55.8 | | | |
| 1000 | 55.4 | 1009 | 57.1 | 1011 | 58.9 | 1022 | 59.1 | 1027 | 60.9 | | | |
| 1055 | 61.3 | 1070 | 68 | 1100 | 74.7 | | | | | | | |

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Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 790 .08 992 .039 1011 .085

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 992 1011 264 264 264 .1 .3

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 22.4

INPUT

Description: FEMA P, HEC-2 - 24.000, US xsect of CT Turnpike, Last section in DS segment of HEC-2 model, decreased downstream distance by 5 feet to accomodate correctly modeling face sections at ds bridge

Station Elevation Data num= 16
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 702 50 852 33.4 920 32.4 950 30 984 23.4
 996 23.2 1000 21.6 1006 21.6 1014 20.2 1021 21.9
 1036 29.1 1039 29 1041 31.5 1051 35.1 1073 36.9
 1165 50

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 702 .03 996 .025 1021 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 996 1021 25 25 25 .3 .5

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 22.3

INPUT

Description: HEC-2 - 23.000, US face of CT Turnpike, was modeled as a special bridge in HEC-2 increased ds reach length to include bridge width and 5 ft on either side

Station Elevation Data num= 10
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 505 44 680 41.4 973 39.2 988 39.7 992 40
 992 20.5 1009 20.5 1009 40.4 1028 40.7 1120 45

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 505 .03 992 .025 1009 .03

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 992 1009 325 325 325 .3 .5

BRIDGE

RIVER: StonyBrook
 REACH: StonyBrook RS: 22.25

INPUT

Description: CT Turnpike and Ledge Road, Model ed as a Special Bridge in HEC-2 in cross-sections 22.000 and 23.000, has strange geometry for

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downstream cross section- as modeled in HEC-2, so copied upstream cross-section as the new downstream internal section. Inverts were specified in the SB and input into the internal bridge cross-sections. The DS low chord was adjusted in the internal section to maintain culvert height, as well as slope.

Distance from Upstream XS = 5
 Deck/Roadway Width = 315
 Weir Coefficient = 2.5

Upstream Deck/Roadway Coordinates

| num= 10 | | | | | | | | | | | |
|---------|----|------|---------|------|----|------|---------|------|----|------|---------|
| Sta | Hi | Cord | Lo Cord | Sta | Hi | Cord | Lo Cord | Sta | Hi | Cord | Lo Cord |
| 505 | | 44 | | 680 | | 41.4 | | 973 | | 39.2 | |
| 988 | | 39.7 | | 992 | | 40 | 27.1 | 992 | | 40 | 27.1 |
| 1009 | | 40.4 | 27.1 | 1009 | | 40.4 | 27.1 | 1026 | | 40.7 | |
| 1120 | | 45 | | | | | | | | | |

Upstream Bridge Cross Section Data

| Station Elevation Data num= 10 | | | | | | | | | |
|--------------------------------|-------|------|-------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 505 | 44 | 680 | 41.4 | 973 | 39.2 | 988 | 39.7 | 992 | 40 |
| 992 | 20.45 | 1009 | 20.45 | 1009 | 40.4 | 1028 | 40.7 | 1120 | 45 |

| Manning's n Values num= 3 | | | | | |
|---------------------------|-------|-----|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 505 | .03 | 992 | .025 | 1009 | .03 |

| Bank Sta: | Left | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|-------|--------|--------|
| | 992 | 1009 | .3 | | .5 |

Downstream Deck/Roadway Coordinates

| num= 10 | | | | | | | | | | | |
|---------|----|------|---------|------|----|------|---------|------|----|------|---------|
| Sta | Hi | Cord | Lo Cord | Sta | Hi | Cord | Lo Cord | Sta | Hi | Cord | Lo Cord |
| 505 | | 44 | | 680 | | 41.4 | | 973 | | 39.2 | |
| 988 | | 39.7 | | 992 | | 40 | 23.75 | 992 | | 40 | 23.75 |
| 1009 | | 40.4 | 23.75 | 1009 | | 40.4 | 23.75 | 1026 | | 40.7 | |
| 1120 | | 45 | | | | | | | | | |

Downstream Bridge Cross Section Data

| Station Elevation Data num= 10 | | | | | | | | | |
|--------------------------------|------|------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 505 | 44 | 680 | 41.4 | 973 | 39.2 | 988 | 39.7 | 992 | 40 |
| 992 | 17.1 | 1009 | 17.1 | 1009 | 40.4 | 1028 | 40.7 | 1120 | 45 |

| Manning's n Values num= 3 | | | | | |
|---------------------------|-------|-----|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 505 | .03 | 992 | .025 | 1009 | .03 |

| Bank Sta: | Left | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|-------|--------|--------|
| | 992 | 1009 | .3 | | .5 |

| Ineffective Flow num= 2 | | | | |
|-------------------------|-------|------|-----------|--|
| Sta L | Sta R | Elev | Permanent | |
| 505 | 985 | 33 | F | |
| 1009 | 1120 | 33 | F | |

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Piers = 1

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Pier Data
 Pier Station Upstream= 1000.5 Downstream= 1000.5
 Upstream num= 2
 Width El ev Width El ev
 2 17 2 28
 Downstream num= 2
 Width El ev Width El ev
 2 17 2 28

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
 Energy
 Selected Low Flow Methods = Highest Energy Answer

High Flow Method
 Energy Only

Additional Bridge Parameters
 Add Friction component to Momentum
 Do not add Weight component to Momentum
 Class B flow critical depth computations use critical depth
 inside the bridge at the upstream end
 Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 22.2

INPUT
 Description: HEC-2 - 22.000, DS face of CT Turnpike, decreased downstream
 distance by 5 feet to accomodate moving face cross sections 5 feet
 from structure

| Station | Elevation | Data | num= | 17 | | | | | | | |
|---------|-----------|------|-------|------|-------|------|-------|------|-------|-----|-------|
| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev |
| 900 | 34.4 | 930 | 32.8 | 960 | 27.8 | 964 | 26.4 | 968 | 25.9 | | |
| 985 | 18.8 | 990 | 17.4 | 1000 | 17.1 | 1008 | 17.9 | 1013 | 18.8 | | |
| 1023 | 22.3 | 1044 | 21.9 | 1135 | 20.9 | 1200 | 23.3 | 1310 | 32.7 | | |
| 1370 | 32.2 | 1460 | 41 | | | | | | | | |

| Manning's n | Values | num= | 3 |
|-------------|--------|------|-------|
| Sta | n Val | Sta | n Val |
| 900 | .03 | 985 | .025 |
| | | 1008 | .03 |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|------------------|-------|-------|-----------|------|---------|-------|-------|--------|--------|
| | 985 | 1008 | | 105 | 105 | 105 | | .3 | .5 |
| Ineffective Flow | | | num= | 2 | | | | | |
| Sta L | Sta R | El ev | Permanent | | | | | | |
| 900 | 985 | 33 | F | | | | | | |
| 1009 | 1460 | 33 | F | | | | | | |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 22.1

INPUT
 Description: FEMA 0, HEC-2 - 21.000, DS x-sect of CT Turnpike
 Station Elevation Data num= 17

StonyBrookDari en1-dup. txt

| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev |
|------|-------|------|-------|------|-------|------|-------|------|-------|
| 900 | 31. 6 | 930 | 30 | 960 | 25 | 964 | 23. 6 | 968 | 23. 1 |
| 985 | 16 | 990 | 14. 6 | 1000 | 14. 3 | 1008 | 15. 1 | 1013 | 16 |
| 1023 | 19. 5 | 1044 | 19. 1 | 1135 | 18. 1 | 1200 | 20. 5 | 1310 | 29. 9 |
| 1370 | 29. 4 | 1460 | 38. 2 | | | | | | |

Manning's n Values

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 900 | . 1 | 985 | . 03 | 1008 | . 1 |

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

| | | | | | | |
|-----|------|-----|-----|-----|-----|-----|
| 985 | 1008 | 320 | 290 | 270 | . 1 | . 3 |
|-----|------|-----|-----|-----|-----|-----|

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook RS: 21

INPUT

Description: FEMA N, HEC-2 - 20.000, DS x-sect for CT Turnpike

Station Elevation Data num= 15

| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev |
|------|-------|------|-------|------|-------|------|-------|------|-------|
| 790 | 38. 9 | 875 | 34. 5 | 925 | 26. 8 | 980 | 15 | 990 | 14. 5 |
| 993 | 12. 5 | 1000 | 12. 5 | 1007 | 13 | 1010 | 14. 5 | 1050 | 19. 2 |
| 1110 | 16. 4 | 1175 | 18. 6 | 1250 | 27 | 1310 | 24. 6 | 1350 | 31. 2 |

Manning's n Values

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 790 | . 1 | 990 | . 03 | 1010 | . 1 |

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

| | | | | | | |
|-----|------|-----|-----|-----|-----|-----|
| 990 | 1010 | 270 | 310 | 340 | . 1 | . 3 |
|-----|------|-----|-----|-----|-----|-----|

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook RS: 20

INPUT

Description: FEMA M, HEC-2 - 20.000, US x-sect for Hecker Road Bridge, copy of ds section

Station Elevation Data num= 17

| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev |
|------|-------|------|-------|------|-------|------|-------|------|-------|
| 835 | 30 | 875 | 29. 7 | 925 | 25. 3 | 960 | 20 | 986 | 17. 8 |
| 992 | 15. 2 | 995 | 12. 3 | 997 | 8. 5 | 1000 | 10. 6 | 1008 | 12. 4 |
| 1010 | 16. 3 | 1022 | 18 | 1029 | 17. 5 | 1095 | 21. 1 | 1285 | 19 |
| 1370 | 20 | 1560 | 30 | | | | | | |

Manning's n Values

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 835 | . 08 | 992 | . 03 | 1010 | . 08 |

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

| | | | | | | |
|-----|------|----|----|----|-----|-----|
| 992 | 1010 | 35 | 35 | 35 | . 3 | . 5 |
|-----|------|----|----|----|-----|-----|

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook RS: 19. 4

StonyBrookDari en1-dup. txt

INPUT

Description: HEC-2 - 19.100, US face of Hecker Road Bridge

Station Elevation Data num= 17

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|------|------|------|------|------|------|------|------|------|
| 835 | 30 | 875 | 29.7 | 925 | 25.3 | 960 | 20 | 986 | 17.8 |
| 992 | 15.2 | 995 | 12.3 | 997 | 8.5 | 1000 | 10.6 | 1008 | 12.4 |
| 1010 | 16.3 | 1022 | 18 | 1029 | 17.5 | 1095 | 21.1 | 1285 | 19 |
| 1370 | 20 | 1560 | 30 | | | | | | |

Manning's n Values num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 835 | .08 | 992 | .03 | 1010 | .08 |

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

| Left | Right | Left | Right | Coeff | Contr. | Expan. |
|------|-------|------|-------|-------|--------|--------|
| 992 | 1010 | 43 | 43 | .3 | | .5 |

Ineffective Flow num= 2

| Sta L | Sta R | Elev | Permanent |
|-------|-------|------|-----------|
| 835 | 992 | 17.5 | F |
| 1010 | 1560 | 17.5 | F |

BRIDGE

RIVER: StonyBrook
 REACH: StonyBrook RS: 19.25

INPUT

Description: Hecker Road Bridge, internal cross-sections defined from HEC-2 sections 18.100 and 18.200, Upstream end bridge deck elevations may be wrongly input into HEC-2, so copied ds BT to us section (also specified)

Distance from Upstream XS = 5
 Deck/Roadway Width = 33
 Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates num= 5

| Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord |
|------|------|------|----|------|------|------|------|----|------|------|------|------|----|------|
| 993 | 24.7 | 20.3 | | | 993 | 24.7 | 20.3 | | | 1000 | 24.7 | 20 | | |
| 1010 | 24.7 | 19.4 | | | 1010 | 24.7 | 19.4 | | | | | | | |

Upstream Bridge Cross Section Data Station Elevation Data num= 13

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|------|------|------|------|------|------|------|------|------|
| 833 | 30 | 944 | 25 | 986 | 22.8 | 993 | 23 | 993 | 11.7 |
| 1000 | 11.7 | 1010 | 12 | 1010 | 21.9 | 1023 | 21.3 | 1055 | 20 |
| 1188 | 17.3 | 1318 | 18 | 1380 | 20 | | | | |

Manning's n Values num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 833 | .03 | 993 | .02 | 1010 | .03 |

Bank Sta: Left Right Coeff Contr. Expan.

| Left | Right | Coeff | Contr. | Expan. |
|------|-------|-------|--------|--------|
| 993 | 1010 | .3 | | .5 |

Ineffective Flow num= 2

| Sta L | Sta R | Elev | Permanent |
|-------|-------|------|-----------|
| 833 | 992 | 17.5 | F |
| 1010 | 1380 | 17.5 | F |

Downstream Deck/Roadway Coordinates num= 5

| Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord |
|------|------|------|----|------|------|------|------|----|------|------|------|------|----|------|
| 993 | 24.7 | 20.3 | | | 993 | 24.7 | 20.3 | | | 1000 | 24.7 | 20 | | |
| 1010 | 24.7 | 19.4 | | | 1010 | 24.7 | 19.4 | | | | | | | |

StonyBrookDari en1-dup. txt

Downstream Bridge Cross Section Data

| Station Elevation Data num= 13 | | | | | | | | | |
|--------------------------------|------|------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 833 | 30 | 944 | 25 | 986 | 22.8 | 993 | 23 | 993 | 11.7 |
| 1000 | 11.7 | 1010 | 12 | 1010 | 21.9 | 1023 | 21.3 | 1055 | 20 |
| 1188 | 17.3 | 1318 | 18 | 1380 | 20 | | | | |

| Manning's n Values num= 3 | | | | | |
|---------------------------|-------|-----|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 833 | .03 | 993 | .02 | 1010 | .03 |

Bank Sta: Left 993 Right 1010 Coeff Contr. .3 Expan. .5

| Ineffective Flow num= 2 | | | |
|-------------------------|-------|------|-----------|
| Sta L | Sta R | Elev | Permanent |
| 833 | 993 | 17 | F |
| 1010 | 1380 | 17 | F |

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data

Energy
 Selected Low Flow Methods = Highest Energy Answer

High Flow Method
 Energy Only

Additional Bridge Parameters

Add Friction component to Momentum
 Do not add Weight component to Momentum
 Class B flow critical depth computations use critical depth
 inside the bridge at the upstream end
 Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 19.1

INPUT

Description: HEC-2 - 17.100, DS face of Hecker Road, copy of ds section

| Station Elevation Data num= 10 | | | | | | | | | |
|--------------------------------|------|------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 920 | 25 | 966 | 20 | 982 | 15 | 988 | 11.7 | 993 | 11.5 |
| 1000 | 11.1 | 1010 | 11.7 | 1013 | 14 | 1062 | 19 | 1085 | 19.2 |

| Manning's n Values num= 3 | | | | | |
|---------------------------|-------|-----|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 920 | .06 | 993 | .03 | 1010 | .1 |

Bank Sta: Left 993 Right 1010 Lengths: Left Channel 55 Right 50 Coeff Contr. .3 Expan. .5

Ineffective Flow num= 2

StonyBrookDari en1-dup. txt

| Sta L | Sta R | El ev | Permanent |
|-------|-------|-------|-----------|
| 920 | 993 | 17 | F |
| 1010 | 1085 | 17 | F |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 18

INPUT

Description: FEMA L, HEC-2 - 17.000, DS x-sect for Hecker Road

| Station | | Elevation Data | | num= 10 | | Sta | | El ev | |
|---------|-------|----------------|-------|---------|-------|------|-------|-------|-------|
| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev |
| 920 | 25 | 966 | 20 | 982 | 15 | 988 | 11.7 | 993 | 11.5 |
| 1000 | 11.1 | 1010 | 11.7 | 1013 | 14 | 1062 | 19 | 1085 | 19.2 |

| Manning's n Values | | num= 3 | | Sta | | n Val | |
|--------------------|-------|--------|-------|------|-------|-------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val | Sta | n Val |
| 920 | .06 | 993 | .03 | 1010 | .1 | | |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|-------|--------|--------|
| | 993 | 1010 | | 445 | 445 | | .1 | .3 |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 17

INPUT

Description: FEMA K, HEC-2 - 16.000

| Station | | Elevation Data | | num= 16 | | Sta | | El ev | |
|---------|-------|----------------|-------|---------|-------|------|-------|-------|-------|
| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev |
| 941 | 26.2 | 960 | 18 | 986 | 10.9 | 988 | 9.6 | 1000 | 9.2 |
| 1008 | 9 | 1012 | 10 | 1012 | 14.1 | 1014 | 14.2 | 1015 | 13.2 |
| 1060 | 13.9 | 1128 | 15 | 1310 | 16 | 1364 | 17 | 1407 | 19 |
| 1424 | 21 | | | | | | | | |

| Manning's n Values | | num= 3 | | Sta | | n Val | |
|--------------------|-------|--------|-------|------|-------|-------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val | Sta | n Val |
| 941 | .1 | 986 | .03 | 1012 | .1 | | |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|-------|--------|--------|
| | 986 | 1012 | | 970 | 975 | | .1 | .3 |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 16

INPUT

Description: FEMA J, HEC-2 15.000, Upstream xsect of Renshaw Road, copy of ds sections, left bank point with elevation 140 seems wrong

DUP-

corrected assumed typo from elevation 140 to elevation 14 in Left overbank

| Station | | Elevation Data | | num= 13 | | Sta | | El ev | |
|---------|-------|----------------|-------|---------|-------|------|-------|-------|-------|
| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev |
| 530 | 20 | 549 | 18 | 614 | 16 | 628 | 14 | 955 | 10.5 |
| 990 | 10.2 | 990 | 7 | 1011 | 7.5 | 1011 | 11.5 | 1024 | 13 |
| 1050 | 14 | 1055 | 15 | 1085 | 16 | | | | |

StonyBrookDari en1-dup. txt

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 530 .04 990 .03 1011 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 990 1011 45 40 35 .3 .5

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 15.4

INPUT

Description: HEC-2 15.100, Upstream face of Renshaw Road, Left bank point with elevation 140 seems wrong
 DUP- corrected assumed typo from elevation 140 to elevation 14 in Left overbank

Station Elevation Data num= 13
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 530 20 549 18 614 16 628 14 955 10.5
 990 10.2 990 7 1011 7.5 1011 11.5 1024 13
 1050 14 1055 15 1085 16

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 530 .04 990 .03 1011 .04

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 990 1011 55 55 55 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 530 987 13.4 F
 1013 1085 13.4 F

BRIDGE

RIVER: StonyBrook
 REACH: StonyBrook RS: 15.25

INPUT

Description: Renshaw Road Bridge, Used internal cross-sections to input sections 14.100 and 14.200 from HEC-2, bridge deck elevations for us section may be wrong - so copied ds BT to the us section

Distance from Upstream XS = 5
 Deck/Roadway Width = 45
 Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates num= 5
 Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord Sta Hi Cord Lo Cord
 992 16.6 11.2 992 16.6 11.2 996 16.6 11.2
 1008 16.6 11.2 1008 16.6 11.2

Upstream Bridge Cross Section Data
 Station Elevation Data num= 11
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 493 23.3 900 14 992 13.5 992 6.4 996 6.1
 1006 6.8 1008 13.4 1020 13.7 1040 14 1095 16
 1236 24

Manning's n Values num= 3

StonyBrookDari en1-dup. txt

| | | | | | |
|-----|-------|-----|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 493 | .03 | 992 | .02 | 1008 | .03 |

Bank Sta: Left Right Coeff Contr. Expan.
 992 1008 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 493 987 13.4 F
 1013 1236 13.4 F

Downstream Deck/Roadway Coordinates
 num= 5

| | | | | | | | | |
|--------|---------|------|--------|---------|------|--------|---------|------|
| Sta Hi | Cord Lo | Cord | Sta Hi | Cord Lo | Cord | Sta Hi | Cord Lo | Cord |
| 992 | 16.6 | 11.2 | 992 | 16.6 | 11.2 | 996 | 16.6 | 11.2 |
| 1008 | 16.6 | 11.2 | 1008 | 16.6 | 11.2 | | | |

Downstream Bridge Cross Section Data

| | | | | | | | | | |
|---------|-----------|------|------|------|------|------|------|------|------|
| Station | Elevation | Data | num= | 11 | | | | | |
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 493 | 23.3 | 900 | 14 | 992 | 13.5 | 992 | 6.4 | 996 | 6.1 |
| 1006 | 6.8 | 1008 | 13.4 | 1020 | 13.7 | 1040 | 14 | 1095 | 16 |
| 1236 | 24 | | | | | | | | |

| | | | | | |
|-------------|-------|------|-------|------|-------|
| Manning's n | Val | num= | 3 | | |
| Sta | n Val | Sta | n Val | Sta | n Val |
| 493 | .03 | 992 | .02 | 1008 | .03 |

Bank Sta: Left Right Coeff Contr. Expan.
 992 1008 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 493 987 11.3 F
 1013 1236 11.3 F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data
 Energy

Selected Low Flow Methods = Highest Energy Answer

High Flow Method
 Energy Only

Additional Bridge Parameters

- Add Friction component to Momentum
- Do not add Weight component to Momentum
- Class B flow critical depth computations use critical depth inside the bridge at the upstream end
- Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook

RS: 15.1

StonyBrookDari en1-dup. txt

INPUT

Description: HEC-2 - 13.100, DS face of Renshaw Road Bridge, copy of downstream section

| Station | Elevation | Data | num= | 13 | | | | | | |
|---------|-----------|------|-------|------|-------|------|-------|------|-------|-----|
| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta |
| 845 | 15.2 | 905 | 14 | 922 | 12 | 977 | 11 | 993 | 10.8 | |
| 993 | 7 | 1000 | 6.5 | 1006 | 7 | 1006 | 12 | 1026 | 13 | |
| 1074 | 14 | 1152 | 17 | 1170 | 24 | | | | | |

| Manning's n | Values | num= | 3 |
|-------------|--------|------|-------|
| Sta | n Val | Sta | n Val |
| 845 | .04 | 993 | .03 |
| | | 1006 | .055 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|------------------|-------|-------|----------|--------------|-------|-------|--------|--------|
| | 993 | 1006 | | 35 | 35 | | .3 | .5 |
| Ineffective Flow | | | num= | 2 | | | | |
| | Sta L | Sta R | El ev | Permanent | | | | |
| | 845 | 987 | 11.3 | F | | | | |
| | 1013 | 1170 | 11.3 | F | | | | |

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook RS: 14

INPUT

Description: FEMA I, HEC-2 - 13.000, DS section for Renshaw Road Bridge

| Station | Elevation | Data | num= | 13 | | | | | | |
|---------|-----------|------|-------|------|-------|------|-------|------|-------|-----|
| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta |
| 845 | 15.2 | 905 | 14 | 922 | 12 | 977 | 11 | 993 | 10.8 | |
| 993 | 7 | 1000 | 6.5 | 1006 | 7 | 1006 | 12 | 1026 | 13 | |
| 1074 | 14 | 1152 | 17 | 1170 | 24 | | | | | |

| Manning's n | Values | num= | 3 |
|-------------|--------|------|-------|
| Sta | n Val | Sta | n Val |
| 845 | .04 | 993 | .03 |
| | | 1006 | .055 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|-------|--------|--------|
| | 993 | 1006 | | 440 | 455 | | .1 | .3 |

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook RS: 13

INPUT

Description: FEMA H, HEC-2 12.000, in channel point of 60' clearly wrong

| Station | Elevation | Data | num= | 13 | | | | | | |
|---------|-----------|------|-------|------|-------|------|-------|------|-------|-----|
| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta |
| 714 | 22 | 915 | 14 | 990 | 13.2 | 990 | 60 | 1000 | 5.6 | |
| 1007 | 9.5 | 1010 | 11 | 1026 | 10.7 | 1050 | 11 | 1065 | 9.5 | |
| 1165 | 11 | 1210 | 15 | 1282 | 25 | | | | | |

| Manning's n | Values | num= | 3 |
|-------------|--------|------|-------|
| Sta | n Val | Sta | n Val |
| 714 | .06 | 990 | .03 |
| | | 1010 | .06 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|-------|--------|--------|
| | 990 | 1010 | | 30 | 35 | | .1 | .3 |

StonyBrookDari en1-dup. txt

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 12

INPUT
 Description: FEMA G, HEC2 - 11.000

| Station Elevation Data num= 12 | | | | | | | | | |
|--------------------------------|------|------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 900 | 15.9 | 995 | 14.4 | 995 | 6.1 | 1000 | 5.5 | 1011 | 6 |
| 1011 | 12.3 | 1030 | 12.2 | 1061 | 12 | 1094 | 10 | 1190 | 11 |
| 1237 | 14 | 1272 | 20 | | | | | | |

| Manning's n Values num= 3 | | | | | |
|---------------------------|-------|-----|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 900 | .06 | 995 | .03 | 1011 | .06 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|-------|--------|--------|
| | 995 | 1011 | | 90 | 100 | | .1 | .3 |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 11

INPUT
 Description: FEMA F, HEC2 - 10.000, US x-sect for Boston Post Road, copy of ds cross section

| Station Elevation Data num= 14 | | | | | | | | | |
|--------------------------------|------|------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 584 | 23 | 863 | 17 | 885 | 15 | 976 | 15.6 | 993 | 12.5 |
| 993 | 6.4 | 1000 | 4.8 | 1006 | 6 | 1016 | 12.4 | 1085 | 13 |
| 1100 | 14 | 1220 | 15.3 | 1240 | 15 | 1360 | 19.4 | | |

| Manning's n Values num= 3 | | | | | |
|---------------------------|-------|-----|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 584 | .05 | 993 | .03 | 1016 | .06 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|-------|--------|--------|
| | 993 | 1016 | | 25 | 25 | | .3 | .5 |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 10.4

INPUT
 Description: HEC2 - 10.100, US face of Boston Post Road

| Station Elevation Data num= 14 | | | | | | | | | |
|--------------------------------|------|------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 584 | 23 | 863 | 17 | 885 | 15 | 976 | 15.6 | 993 | 12.5 |
| 993 | 6.4 | 1000 | 4.8 | 1006 | 6 | 1016 | 12.4 | 1085 | 13 |
| 1100 | 14 | 1220 | 15.3 | 1240 | 15 | 1360 | 19.4 | | |

| Manning's n Values num= 3 | | | | | |
|---------------------------|-------|-----|-------|------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 584 | .05 | 993 | .03 | 1016 | .06 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|-------|--------|--------|
| | 993 | 1016 | | 62 | 62 | | .3 | .5 |

StonyBrookDari en1-dup. txt

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 584 993 16 F
 1016 1360 16 F

BRIDGE

RIVER: StonyBrook
 REACH: StonyBrook RS: 10.25

INPUT

Description: Boston Post Road, internal bridge sections defined from HEC-2 sections 9.100 and 9.200

Distance from Upstream XS = 5
 Deck/Roadway Width = 52
 Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates
 num= 5

| Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord |
|------|----|------|----|------|------|----|------|----|------|------|----|------|----|------|
| 993 | | 16 | | 12.4 | 993 | | 16 | | 12.4 | 1000 | | 16 | | 12.4 |
| 1010 | | 16 | | 12.4 | 1010 | | 16 | | 12.4 | | | | | |

Upstream Bridge Cross Section Data
 Station Elevation Data num= 12

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|------|------|------|------|------|------|------|------|------|
| 578 | 23 | 840 | 18 | 920 | 16 | 993 | 16 | 993 | 6.3 |
| 1000 | 5.9 | 1010 | 7.4 | 1010 | 16 | 1098 | 16 | 1217 | 17 |
| 1328 | 19 | 1430 | 25 | | | | | | |

Manning's n Values num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 578 | .04 | 993 | .025 | 1010 | .04 |

Bank Sta: Left Right Coeff Contr. Expan.
 993 1010 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 578 993 16 F
 1016 1430 16 F

Downstream Deck/Roadway Coordinates
 num= 5

| Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord | Sta | Hi | Cord | Lo | Cord |
|------|----|------|----|------|------|----|------|----|------|------|----|------|----|------|
| 993 | | 16 | | 12.4 | 993 | | 16 | | 12.4 | 1000 | | 16 | | 12.4 |
| 1010 | | 16 | | 12.4 | 1010 | | 16 | | 12.4 | | | | | |

Downstream Bridge Cross Section Data
 Station Elevation Data num= 12

| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
|------|------|------|------|------|------|------|------|------|------|
| 578 | 23 | 840 | 18 | 920 | 16 | 993 | 16 | 993 | 6.3 |
| 1000 | 5.9 | 1010 | 7.4 | 1010 | 16 | 1098 | 16 | 1217 | 17 |
| 1328 | 19 | 1430 | 25 | | | | | | |

Manning's n Values num= 3

| Sta | n Val | Sta | n Val | Sta | n Val |
|-----|-------|-----|-------|------|-------|
| 578 | .04 | 993 | .025 | 1010 | .04 |

Bank Sta: Left Right Coeff Contr. Expan.
 993 1010 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 578 990 14 F

StonyBrookDari en1-dup. txt
F

1010 1430 14

Upstream Embankment side slope = 0 hori z. to 1.0 verti cal
 Downstream Embankment si de slope = 0 hori z. to 1.0 verti cal
 Maximum allowable submergence for weir flow = .98
 Elevati on at which weir flow be gins =
 Energy head used in spi llway desi gn =
 Spi llway height used in desi gn =
 Weir crest shape = Broad Crested

Number of Bridge Coeffi cient Sets = 1

Low Flow Methods and Data

Energy
 Selected Low Flow Methods = Highest Energy Answer

High Flow Method
 Energy Only

Additional Bridge Parameters

Add Fricti on component to Momentum
 Do not add Weight component to Momentum
 Class B flow critical depth computations use critical depth
 inside the bridge at the upstream end
 Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTI ON

RIVER: StonyBrook
 REACH: StonyBrook RS: 10.1

INPUT

Descripti on: HEC2 - 8.100, DS face of Boston Post Road

| Station | | Elevati on | | Data | | num= | | 12 | |
|---------|------|------------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 925 | 15 | 956 | 11 | 990 | 9 | 990 | 6.5 | 1000 | 6 |
| 1010 | 6.5 | 1010 | 10.5 | 1018 | 14 | 1037 | 15 | 1063 | 21 |
| 1088 | 22 | 1140 | 30 | | | | | | |

| Manni ng' s n | | Val ues | | num= | | 3 | |
|---------------|-------|---------|-------|------|-------|-----|-------|
| Sta | n Val | Sta | n Val | Sta | n Val | Sta | n Val |
| 925 | .08 | 990 | .03 | 1010 | .05 | | |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 990 | 1010 | | 35 | 35 | 35 | | .3 | .5 |

| Ineffecti ve Flow | | num= | | 2 | |
|-------------------|-------|------|-----------|-----|------|
| Sta L | Sta R | Elev | Permanent | Sta | Elev |
| 925 | 990 | 14 | F | | |
| 1010 | 1140 | 14 | F | | |

CROSS SECTI ON

RIVER: StonyBrook
 REACH: StonyBrook RS: 9

INPUT

Descripti on: FEMA E, HEC2 - 8.000, DS cross secti on for Boston Post Road

| Station | | Elevati on | | Data | | num= | | 12 | |
|---------|------|------------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 925 | 15 | 956 | 11 | 990 | 9 | 990 | 6.5 | 1000 | 6 |
| 1010 | 6.5 | 1010 | 10.5 | 1018 | 14 | 1037 | 15 | 1063 | 21 |

StonyBrookDari en1-dup. txt
30

1088 22 1140

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
925 .08 990 .03 1010 .05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
990 1010 380 370 370 .3 .5

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook RS: 8

INPUT
Description: FEMA D, HEC2 - 7.000

Station Elevation Data num= 10
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
895 22.4 944 15 978 8.6 989 9 1000 2.7
1007 5.6 1008 8.7 1039 10 1103 15 1141 19.5

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
895 .095 989 .03 1008 .05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
989 1008 100 70 50 .1 .3

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook RS: 7

INPUT
Description: FEMA C, HEC2 - 7.100, US section for Old Kings Highway, copy of ds cross-section

Station Elevation Data num= 13
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
715 20 772 14 810 15 884 9 980 8.5
980 4 1000 2.5 1023 4 1023 8.5 1072 9
1100 11 1125 15 1275 20

Manning's n Values num= 3
Sta n Val Sta n Val Sta n Val
715 .12 1000 .03 1023 .05

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
1000 1023 50 40 25 .3 .5

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook RS: 6.4

INPUT
Description: HEC2 - 7.200, US face of Old Kings Highway South, Left bank station seems wrong

Station Elevation Data num= 13
Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
715 20 772 14 810 15 884 9 980 8.5

StonyBrookDari en1-dup. txt

| | | | | | | | | | |
|------|----|------|-----|------|----|------|-----|------|---|
| 980 | 4 | 1000 | 2.5 | 1023 | 4 | 1023 | 8.5 | 1072 | 9 |
| 1100 | 11 | 1125 | 15 | 1275 | 20 | | | | |

Manning's n Values num= 3

| | | |
|-----------|-----------|-----------|
| Sta n Val | Sta n Val | Sta n Val |
| 715 .12 | 1000 .03 | 1023 .05 |

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.

| | | | | | | |
|------|------|----|----|----|----|----|
| 1000 | 1023 | 40 | 40 | 40 | .3 | .5 |
|------|------|----|----|----|----|----|

Ineffective Flow num= 2

| | | | |
|-------|-------|------|-----------|
| Sta L | Sta R | Elev | Permanent |
| 715 | 1000 | 9.7 | F |
| 1023 | 1275 | 9.7 | F |

BRIDGE

RIVER: StonyBrook
 REACH: StonyBrook RS: 6.25

INPUT

Description: Old Kings Highway South, internal bridge cross sections defined by HEC-2 sections 6.100 and 6.200

Distance from Upstream XS = 5
 Deck/Roadway Width = 30
 Weir Coefficient = 2.6

Upstream Deck/Roadway Coordinates

| | | | | | | | | | |
|--------|--------|---------|------|--------|---------|------|--------|---------|------|
| num= 4 | Sta Hi | Cord Lo | Cord | Sta Hi | Cord Lo | Cord | Sta Hi | Cord Lo | Cord |
| | 987 | 10.5 | 8.1 | 987 | 10.5 | 8.1 | 1011 | 10.5 | 8.1 |
| | 1011 | 10.5 | 8.1 | | | | | | |

Upstream Bridge Cross Section Data

Station Elevation Data num= 13

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 795 | 20 | 820 | 15 | 855 | 12 | 966 | 9.6 | 987 | 10.5 |
| 987 | 3.4 | 994 | 2.4 | 1007 | 3 | 1011 | 2.9 | 1011 | 10.1 |
| 1021 | 9.9 | 1113 | 12 | 1288 | 20 | | | | |

Manning's n Values num= 3

| | | |
|-----------|-----------|-----------|
| Sta n Val | Sta n Val | Sta n Val |
| 795 .04 | 987 .025 | 1011 .04 |

Bank Sta: Left Right Coeff Contr. Expan.

| | | | |
|-----|------|----|----|
| 987 | 1011 | .3 | .5 |
|-----|------|----|----|

Ineffective Flow num= 2

| | | | |
|-------|-------|------|-----------|
| Sta L | Sta R | Elev | Permanent |
| 795 | 1000 | 9.7 | F |
| 1023 | 1288 | 9.7 | F |

Downstream Deck/Roadway Coordinates

| | | | | | | | | | |
|--------|--------|---------|------|--------|---------|------|--------|---------|------|
| num= 4 | Sta Hi | Cord Lo | Cord | Sta Hi | Cord Lo | Cord | Sta Hi | Cord Lo | Cord |
| | 987 | 10.5 | 8.1 | 987 | 10.5 | 8.1 | 1011 | 10.5 | 8.1 |
| | 1011 | 10.5 | 8.1 | | | | | | |

Downstream Bridge Cross Section Data

Station Elevation Data num= 13

| | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 795 | 20 | 820 | 15 | 855 | 12 | 966 | 9.6 | 987 | 10.5 |
| 987 | 3.4 | 994 | 2.4 | 1007 | 3 | 1011 | 2.9 | 1011 | 10.1 |
| 1021 | 9.9 | 1113 | 12 | 1288 | 20 | | | | |

StonyBrookDari en1-dup. txt

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 795 .04 987 .025 1011 .04

Bank Sta: Left Right Coeff Contr. Expan.
 987 1011 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 795 992 8 F
 1013 1288 8 F

Upstream Embankment side slope = 0 horiz. to 1.0 vertical
 Downstream Embankment side slope = 0 horiz. to 1.0 vertical
 Maximum allowable submergence for weir flow = .98
 Elevation at which weir flow begins =
 Energy head used in spillway design =
 Spillway height used in design =
 Weir crest shape = Broad Crested

Number of Bridge Coefficient Sets = 1

Low Flow Methods and Data

Energy
 Selected Low Flow Methods = Highest Energy Answer

High Flow Method
 Energy Only

Additional Bridge Parameters

Add Friction component to Momentum
 Do not add Weight component to Momentum
 Class B flow critical depth computations use critical depth
 inside the bridge at the upstream end
 Criteria to check for pressure flow = Upstream energy grade line

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook RS: 6.1

INPUT

Description: HEC2 - 5.100, DS face of Old Kings Highway South,
 repeated

previous cross section, added 1 ft to each elevation

Station Elevation Data num= 8
 Sta Elev Sta Elev Sta Elev Sta Elev Sta Elev
 858 16 940 10 992 9.5 992 4 998 2
 1013 10 1050 11 1120 12

Manning's n Values num= 3
 Sta n Val Sta n Val Sta n Val
 858 .06 992 .035 1013 .12

Bank Sta: Left Right Lengths: Left Channel Right Coeff Contr. Expan.
 992 1013 30 30 40 .3 .5

Ineffective Flow num= 2
 Sta L Sta R Elev Permanent
 858 992 8 F
 1013 1120 8 F

CROSS SECTION

StonyBrookDari en1-dup. txt

RIVER: StonyBrook
 REACH: StonyBrook

RS: 5

INPUT

Description: FEMA B, HEC2 - 5.000

| Station | | Elevation | | Data | | num= | | 8 | |
|---------|------|-----------|------|------|------|------|------|-----|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 858 | 15 | 940 | 9 | 992 | 8.5 | 992 | 3 | 998 | 1 |
| 1013 | 9 | 1050 | 10 | 1120 | 11 | | | | |

| Manning's n | | Values | | num= | | 3 | |
|-------------|-------|--------|-------|------|-------|-----|-------|
| Sta | n Val | Sta | n Val | Sta | n Val | Sta | n Val |
| 858 | .06 | 992 | .035 | 1013 | .12 | | |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 992 | 1013 | | 145 | 140 | 130 | | .3 | .5 |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook

RS: 4

INPUT

Description: HEC2 - 4.000

| Station | | Elevation | | Data | | num= | | 15 | |
|---------|------|-----------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 905 | 20 | 946 | 10 | 968 | 9 | 973 | 7.5 | 991 | 7.3 |
| 991 | 5.8 | 992 | 4 | 1008 | 3.6 | 1020 | 7.4 | 1034 | 8 |
| 1037 | 9 | 1097 | 9 | 1138 | 10 | 1182 | 15 | 1206 | 20 |

| Manning's n | | Values | | num= | | 3 | |
|-------------|-------|--------|-------|------|-------|-----|-------|
| Sta | n Val | Sta | n Val | Sta | n Val | Sta | n Val |
| 905 | .06 | 991 | .035 | 1020 | .12 | | |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 991 | 1020 | | 50 | 50 | 45 | | .1 | .3 |

CROSS SECTION

RIVER: StonyBrook
 REACH: StonyBrook

RS: 3

INPUT

Description: HEC2 - 3.000

| Station | | Elevation | | Data | | num= | | 11 | |
|---------|------|-----------|------|------|------|------|------|------|------|
| Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev | Sta | Elev |
| 902 | 20 | 946 | 10 | 984 | 7.1 | 989 | 7.2 | 989 | 4.8 |
| 1005 | 4.4 | 1005 | 7.2 | 1021 | 6.4 | 1025 | 8.4 | 1035 | 9.5 |
| 1070 | 9.4 | | | | | | | | |

| Manning's n | | Values | | num= | | 3 | |
|-------------|-------|--------|-------|------|-------|-----|-------|
| Sta | n Val | Sta | n Val | Sta | n Val | Sta | n Val |
| 902 | .06 | 989 | .035 | 1005 | .12 | | |

| Bank Sta: | Left | Right | Lengths: | Left | Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|------|---------|-------|-------|--------|--------|
| | 989 | 1005 | | 45 | 50 | 55 | | .1 | .3 |

CROSS SECTION

StonyBrookDari en1-dup. txt

RIVER: StonyBrook
REACH: StonyBrook

RS: 2

INPUT

Description: HEC2 - 2.000

| Station | | Elevation | | Data | | num= 13 | | | |
|---------|-------|-----------|-------|------|-------|---------|-------|------|-------|
| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev |
| 902 | 20 | 954 | 9 | 986 | 8 | 990 | 5 | 1000 | 2.7 |
| 1010 | 5 | 1011 | 7 | 1022 | 7 | 1025 | 5 | 1046 | 5 |
| 1050 | 7 | 1097 | 8 | 1255 | 20 | | | | |

| Manning's n | | Values | | num= 3 | |
|-------------|-------|--------|-------|--------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 902 | .06 | 986 | .035 | 1050 | .12 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|-------|--------|--------|
| | 986 | 1050 | | 260 | 300 | | .1 | .3 |

CROSS SECTION

RIVER: StonyBrook
REACH: StonyBrook

RS: 1

INPUT

Description: FEMA A, Confluence with Goodwives River, HEC2 - 1.000

| Station | | Elevation | | Data num= 10 | | | | | |
|---------|-------|-----------|-------|--------------|-------|------|-------|------|-------|
| Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev | Sta | El ev |
| 909 | 20 | 928 | 15 | 937 | 10 | 972 | 5 | 994 | 2 |
| 1000 | 1 | 1022 | 2 | 1034 | 5 | 1044 | 10 | 1077 | 20 |

| Manning's n | | Values | | num= 3 | |
|-------------|-------|--------|-------|--------|-------|
| Sta | n Val | Sta | n Val | Sta | n Val |
| 909 | .09 | 972 | .03 | 1034 | .06 |

| Bank Sta: | Left | Right | Lengths: | Left Channel | Right | Coeff | Contr. | Expan. |
|-----------|------|-------|----------|--------------|-------|-------|--------|--------|
| | 972 | 1034 | | 0 | 0 | | .1 | .3 |

SUMMARY OF MANNING'S N VALUES

River: StonyBrook

| Reach | River Sta. | n1 | n2 | n3 | n4 |
|------------|------------|--------|------|-----|------|
| StonyBrook | 48 | .06 | .05 | .09 | |
| StonyBrook | 47 | .06 | .05 | .09 | |
| StonyBrook | 46 | .06 | .05 | .06 | .035 |
| StonyBrook | 45 | .16 | .03 | .18 | |
| StonyBrook | 44 | .11 | .035 | .11 | |
| StonyBrook | 43.4 | .11 | .035 | .11 | |
| StonyBrook | 43.25 | Bridge | | | |
| StonyBrook | 43.1 | .11 | .035 | .11 | |
| StonyBrook | 42 | .11 | .035 | .11 | |
| StonyBrook | 41 | .085 | .035 | .04 | |
| StonyBrook | 40 | .12 | .04 | .12 | |
| StonyBrook | 39.4 | .12 | .04 | .12 | |
| StonyBrook | 39.25 | Bridge | | | |
| StonyBrook | 39.1 | .1 | .04 | .15 | |
| StonyBrook | 38 | .1 | .04 | .15 | |
| StonyBrook | 37 | .07 | .05 | .07 | |
| StonyBrook | 36.4 | .07 | .05 | .07 | |

StonyBrookDari en1-dup. txt

| | | | | |
|------------|--------|---------|-------|-------|
| StonyBrook | 36. 25 | | | |
| StonyBrook | 36. 1 | Bri dge | | |
| StonyBrook | 35 | . 08 | . 04 | . 055 |
| StonyBrook | 34 | . 08 | . 04 | . 055 |
| StonyBrook | 33 | . 05 | . 04 | . 055 |
| StonyBrook | 32 | . 045 | . 04 | . 04 |
| StonyBrook | 31 | . 1 | . 04 | . 07 |
| StonyBrook | 30 | . 09 | . 035 | . 05 |
| StonyBrook | 29 | . 1 | . 035 | . 1 |
| StonyBrook | 28. 4 | . 1 | . 035 | . 1 |
| StonyBrook | 28. 25 | Bri dge | | |
| StonyBrook | 28. 1 | . 1 | . 04 | . 08 |
| StonyBrook | 27 | . 1 | . 04 | . 08 |
| StonyBrook | 26. 4 | . 1 | . 04 | . 08 |
| StonyBrook | 26. 3 | . 1 | . 04 | . 08 |
| StonyBrook | 26. 25 | Bri dge | | |
| StonyBrook | 26. 2 | . 1 | . 04 | . 1 |
| StonyBrook | 26. 1 | . 1 | . 04 | . 1 |
| StonyBrook | 25 | . 08 | . 039 | . 085 |
| StonyBrook | 24 | . 08 | . 039 | . 085 |
| StonyBrook | 23 | . 08 | . 039 | . 085 |
| StonyBrook | 22. 4 | . 03 | . 025 | . 03 |
| StonyBrook | 22. 3 | . 03 | . 025 | . 03 |
| StonyBrook | 22. 25 | Bri dge | | |
| StonyBrook | 22. 2 | . 03 | . 025 | . 03 |
| StonyBrook | 22. 1 | . 1 | . 03 | . 1 |
| StonyBrook | 21 | . 1 | . 03 | . 1 |
| StonyBrook | 20 | . 08 | . 03 | . 08 |
| StonyBrook | 19. 4 | . 08 | . 03 | . 08 |
| StonyBrook | 19. 25 | Bri dge | | |
| StonyBrook | 19. 1 | . 06 | . 03 | . 1 |
| StonyBrook | 18 | . 06 | . 03 | . 1 |
| StonyBrook | 17 | . 1 | . 03 | . 1 |
| StonyBrook | 16 | . 04 | . 03 | . 04 |
| StonyBrook | 15. 4 | . 04 | . 03 | . 04 |
| StonyBrook | 15. 25 | Bri dge | | |
| StonyBrook | 15. 1 | . 04 | . 03 | . 055 |
| StonyBrook | 14 | . 04 | . 03 | . 055 |
| StonyBrook | 13 | . 06 | . 03 | . 06 |
| StonyBrook | 12 | . 06 | . 03 | . 06 |
| StonyBrook | 11 | . 05 | . 03 | . 06 |
| StonyBrook | 10. 4 | . 05 | . 03 | . 06 |
| StonyBrook | 10. 25 | Bri dge | | |
| StonyBrook | 10. 1 | . 08 | . 03 | . 05 |
| StonyBrook | 9 | . 08 | . 03 | . 05 |
| StonyBrook | 8 | . 095 | . 03 | . 05 |
| StonyBrook | 7 | . 12 | . 03 | . 05 |
| StonyBrook | 6. 4 | . 12 | . 03 | . 05 |
| StonyBrook | 6. 25 | Bri dge | | |
| StonyBrook | 6. 1 | . 06 | . 035 | . 12 |
| StonyBrook | 5 | . 06 | . 035 | . 12 |
| StonyBrook | 4 | . 06 | . 035 | . 12 |
| StonyBrook | 3 | . 06 | . 035 | . 12 |
| StonyBrook | 2 | . 06 | . 035 | . 12 |
| StonyBrook | 1 | . 09 | . 03 | . 06 |

SUMMARY OF REACH LENGTHS

Ri ver: StonyBrook

| Reach | Ri ver Sta. | StonyBrookDari en1-dup. txt Left | Channel | Ri ght |
|------------|-------------|-------------------------------------|---------|--------|
| StonyBrook | 48 | 1000 | 1030 | 1050 |
| StonyBrook | 47 | 1040 | 1120 | 1080 |
| StonyBrook | 46 | 150 | 135 | 120 |
| StonyBrook | 45 | 650 | 650 | 610 |
| StonyBrook | 44 | 35 | 40 | 45 |
| StonyBrook | 43. 4 | 44 | 44 | 44 |
| StonyBrook | 43. 25 | Bri dge | | |
| StonyBrook | 43. 1 | 65 | 65 | 70 |
| StonyBrook | 42 | 350 | 400 | 440 |
| StonyBrook | 41 | 400 | 440 | 430 |
| StonyBrook | 40 | 30 | 35 | 35 |
| StonyBrook | 39. 4 | 50 | 50 | 50 |
| StonyBrook | 39. 25 | Bri dge | | |
| StonyBrook | 39. 1 | 50 | 50 | 50 |
| StonyBrook | 38 | 790 | 730 | 630 |
| StonyBrook | 37 | 55 | 50 | 45 |
| StonyBrook | 36. 4 | 22 | 22 | 22 |
| StonyBrook | 36. 25 | Bri dge | | |
| StonyBrook | 36. 1 | 40 | 35 | 25 |
| StonyBrook | 35 | 90 | 70 | 50 |
| StonyBrook | 34 | 240 | 265 | 270 |
| StonyBrook | 33 | 240 | 235 | 230 |
| StonyBrook | 32 | 340 | 360 | 370 |
| StonyBrook | 31 | 500 | 720 | 750 |
| StonyBrook | 30 | 550 | 600 | 300 |
| StonyBrook | 29 | 15 | 45 | 50 |
| StonyBrook | 28. 4 | 50 | 50 | 50 |
| StonyBrook | 28. 25 | Bri dge | | |
| StonyBrook | 28. 1 | 45 | 40 | 35 |
| StonyBrook | 27 | 400 | 400 | 400 |
| StonyBrook | 26. 4 | 85 | 80 | 75 |
| StonyBrook | 26. 3 | 71 | 71 | 71 |
| StonyBrook | 26. 25 | Bri dge | | |
| StonyBrook | 26. 2 | 55 | 55 | 55 |
| StonyBrook | 26. 1 | 290 | 280 | 230 |
| StonyBrook | 25 | 150 | 150 | 150 |
| StonyBrook | 24 | 150 | 150 | 150 |
| StonyBrook | 23 | 264 | 264 | 264 |
| StonyBrook | 22. 4 | 25 | 25 | 25 |
| StonyBrook | 22. 3 | 325 | 325 | 325 |
| StonyBrook | 22. 25 | Bri dge | | |
| StonyBrook | 22. 2 | 105 | 105 | 105 |
| StonyBrook | 22. 1 | 320 | 290 | 270 |
| StonyBrook | 21 | 270 | 310 | 340 |
| StonyBrook | 20 | 35 | 35 | 35 |
| StonyBrook | 19. 4 | 43 | 43 | 43 |
| StonyBrook | 19. 25 | Bri dge | | |
| StonyBrook | 19. 1 | 55 | 50 | 45 |
| StonyBrook | 18 | 445 | 445 | 440 |
| StonyBrook | 17 | 970 | 975 | 980 |
| StonyBrook | 16 | 45 | 40 | 35 |
| StonyBrook | 15. 4 | 55 | 55 | 55 |
| StonyBrook | 15. 25 | Bri dge | | |
| StonyBrook | 15. 1 | 35 | 35 | 35 |
| StonyBrook | 14 | 440 | 455 | 470 |
| StonyBrook | 13 | 30 | 35 | 40 |
| StonyBrook | 12 | 90 | 100 | 110 |
| StonyBrook | 11 | 25 | 25 | 25 |
| StonyBrook | 10. 4 | 62 | 62 | 62 |
| StonyBrook | 10. 25 | Bri dge | | |
| StonyBrook | 10. 1 | 35 | 35 | 35 |

| StonyBrookDari en1-dup. txt | | | | | |
|-----------------------------|-------|---------|-----|-----|-----|
| StonyBrook | 9 | | 380 | 370 | 370 |
| StonyBrook | 8 | | 100 | 70 | 50 |
| StonyBrook | 7 | | 50 | 40 | 25 |
| StonyBrook | 6. 4 | | 40 | 40 | 40 |
| StonyBrook | 6. 25 | Bri dge | | | |
| StonyBrook | 6. 1 | | 30 | 30 | 40 |
| StonyBrook | 5 | | 145 | 140 | 130 |
| StonyBrook | 4 | | 50 | 50 | 45 |
| StonyBrook | 3 | | 45 | 50 | 55 |
| StonyBrook | 2 | | 260 | 300 | 350 |
| StonyBrook | 1 | | 0 | 0 | 0 |

SUMMARY OF CONTRACTION AND EXPANSION COEFFICIENTS
 Ri ver: StonyBrook

| Reach | Ri ver Sta. | Contr. | Expan. |
|------------|-------------|---------|--------|
| StonyBrook | 48 | .1 | .3 |
| StonyBrook | 47 | .1 | .3 |
| StonyBrook | 46 | .1 | .3 |
| StonyBrook | 45 | .1 | .3 |
| StonyBrook | 44 | .3 | .5 |
| StonyBrook | 43. 4 | .3 | .5 |
| StonyBrook | 43. 25 | Bri dge | |
| StonyBrook | 43. 1 | .3 | .5 |
| StonyBrook | 42 | .1 | .3 |
| StonyBrook | 41 | .1 | .3 |
| StonyBrook | 40 | .1 | .3 |
| StonyBrook | 39. 4 | .3 | .5 |
| StonyBrook | 39. 25 | Bri dge | |
| StonyBrook | 39. 1 | .3 | .5 |
| StonyBrook | 38 | .1 | .3 |
| StonyBrook | 37 | .3 | .5 |
| StonyBrook | 36. 4 | .3 | .5 |
| StonyBrook | 36. 25 | Bri dge | |
| StonyBrook | 36. 1 | .3 | .5 |
| StonyBrook | 35 | .1 | .3 |
| StonyBrook | 34 | .1 | .3 |
| StonyBrook | 33 | .1 | .3 |
| StonyBrook | 32 | .1 | .3 |
| StonyBrook | 31 | .1 | .3 |
| StonyBrook | 30 | .1 | .3 |
| StonyBrook | 29 | .3 | .5 |
| StonyBrook | 28. 4 | .3 | .5 |
| StonyBrook | 28. 25 | Bri dge | |
| StonyBrook | 28. 1 | .3 | .5 |
| StonyBrook | 27 | .3 | .5 |
| StonyBrook | 26. 4 | .3 | .5 |
| StonyBrook | 26. 3 | .3 | .5 |
| StonyBrook | 26. 25 | Bri dge | |
| StonyBrook | 26. 2 | .3 | .5 |
| StonyBrook | 26. 1 | .1 | .3 |
| StonyBrook | 25 | .1 | .3 |
| StonyBrook | 24 | .1 | .3 |
| StonyBrook | 23 | .1 | .3 |
| StonyBrook | 22. 4 | .3 | .5 |
| StonyBrook | 22. 3 | .3 | .5 |
| StonyBrook | 22. 25 | Bri dge | |
| StonyBrook | 22. 2 | .3 | .5 |

| | | | StonyBrookDari en1-dup. txt | |
|------------|--------|---------|-----------------------------|-----|
| StonyBrook | 22. 1 | | . 1 | . 3 |
| StonyBrook | 21 | | . 1 | . 3 |
| StonyBrook | 20 | | . 3 | . 5 |
| StonyBrook | 19. 4 | | . 3 | . 5 |
| StonyBrook | 19. 25 | Bri dge | | |
| StonyBrook | 19. 1 | | . 3 | . 5 |
| StonyBrook | 18 | | . 1 | . 3 |
| StonyBrook | 17 | | . 1 | . 3 |
| StonyBrook | 16 | | . 3 | . 5 |
| StonyBrook | 15. 4 | | . 3 | . 5 |
| StonyBrook | 15. 25 | Bri dge | | |
| StonyBrook | 15. 1 | | . 3 | . 5 |
| StonyBrook | 14 | | . 1 | . 3 |
| StonyBrook | 13 | | . 1 | . 3 |
| StonyBrook | 12 | | . 1 | . 3 |
| StonyBrook | 11 | | . 3 | . 5 |
| StonyBrook | 10. 4 | | . 3 | . 5 |
| StonyBrook | 10. 25 | Bri dge | | |
| StonyBrook | 10. 1 | | . 3 | . 5 |
| StonyBrook | 9 | | . 3 | . 5 |
| StonyBrook | 8 | | . 1 | . 3 |
| StonyBrook | 7 | | . 3 | . 5 |
| StonyBrook | 6. 4 | | . 3 | . 5 |
| StonyBrook | 6. 25 | Bri dge | | |
| StonyBrook | 6. 1 | | . 3 | . 5 |
| StonyBrook | 5 | | . 3 | . 5 |
| StonyBrook | 4 | | . 1 | . 3 |
| StonyBrook | 3 | | . 1 | . 3 |
| StonyBrook | 2 | | . 1 | . 3 |
| StonyBrook | 1 | | . 1 | . 3 |

Duplicate Effective Model Output

StonyBrookDari en1. rep

HEC-RAS Version 4.1.0 Jan 2010
 U. S. Army Corps of Engineers
 Hydrologic Engineering Center
 609 Second Street
 Davis, California

```

X      X  XXXXXX   XXXX      XXXX      XX      XXXX
X      X  X       X   X      X   X      X   X      X
X      X  X       X   X      X   X      X   X      X
XXXXXXXX XXXX     X       XXX  XXXX     XXXXXX     XXXX
X      X  X       X   X      X   X      X   X      X
X      X  X       X   X      X   X      X   X      X
X      X  XXXXXX   XXXX     X   X      X   X      XXXXX
    
```

PROJECT DATA

Project Title: StonyBrookDari en1
 Project File : StonyBrookDari en1. prj
 Run Date and Time: 4/13/2011 2:09:56 PM

Project in English units

Project Description:
 Stony Brook, Darien, CT

Profile Output Table - Standard Table 1

| Reach Slope | Vel | River Chnl | Sta Flow Area | Profile Top Width | Q Total Froude # | Min Ch El (ft) | W. S. El ev (ft) | Crit W. S. (ft) | E. G. El ev (ft) | E. G. |
|---------------------|-----|------------|---------------|--------------------|------------------|----------------|------------------|-----------------|------------------|-------|
| StonyBrook 0.002129 | 48 | 3.67 | 150.41 | 100-yr 36.71 | 538.00 | 104.80 | 110.83 | | 111.03 | |
| StonyBrook 0.002176 | 48 | 3.60 | 149.42 | 100-yr(encr) 29.00 | 538.00 | 104.80 | 110.95 | | 111.15 | |
| StonyBrook 0.002094 | 48 | 2.97 | 104.97 | 10-yr 28.61 | 312.00 | 104.80 | 109.41 | | 109.55 | |
| StonyBrook 0.002123 | 48 | 3.42 | 132.98 | 50-yr 33.33 | 450.00 | 104.80 | 110.33 | | 110.51 | |
| StonyBrook | 48 | | | 500-yr | 807.00 | 104.80 | 111.20 | | 111.60 | |

| | | | | StonyBrookDari en1. rep | | | | |
|------------|------|--------------|--------|-------------------------|-------|--------|--------|--------|
| 0.003735 | 5.10 | 164.70 | 39.27 | | 0.39 | | | |
| StonyBrook | 47 | 100-yr | | 538.00 | 99.70 | 103.84 | 103.84 | 105.37 |
| 0.031416 | 9.93 | 54.18 | 17.70 | 538.00 | 1.00 | 99.70 | 103.83 | 105.37 |
| StonyBrook | 47 | 100-yr(encr) | | 538.00 | 1.01 | 99.70 | 102.74 | 103.92 |
| 0.031865 | 9.98 | 53.90 | 17.67 | 312.00 | 1.01 | 99.70 | 103.45 | 104.85 |
| StonyBrook | 47 | 10-yr | | 312.00 | 1.01 | 99.70 | 103.45 | 104.85 |
| 0.033656 | 8.69 | 35.89 | 15.52 | 450.00 | 1.00 | 99.70 | 105.81 | 106.27 |
| StonyBrook | 47 | 50-yr | | 450.00 | 1.00 | 99.70 | 105.81 | 106.27 |
| 0.031978 | 9.50 | 47.37 | 16.92 | 807.00 | 0.52 | 99.70 | | |
| StonyBrook | 47 | 500-yr | | 807.00 | 0.52 | 99.70 | | |
| 0.007601 | 6.32 | 281.67 | 311.13 | | | | | |
| StonyBrook | 46 | 100-yr | | 538.00 | 95.00 | 102.19 | | 102.20 |
| 0.000253 | 1.22 | 756.86 | 324.51 | 538.00 | 0.08 | 95.00 | 102.97 | 102.99 |
| StonyBrook | 46 | 100-yr(encr) | | 538.00 | 0.10 | 95.00 | 101.62 | 101.62 |
| 0.000304 | 1.44 | 468.09 | 99.65 | 312.00 | 0.07 | 95.00 | 101.97 | 101.98 |
| StonyBrook | 46 | 10-yr | | 312.00 | 0.08 | 95.00 | 102.76 | 102.78 |
| 0.000168 | 0.93 | 582.51 | 285.03 | 450.00 | 0.10 | 95.00 | | |
| StonyBrook | 46 | 50-yr | | 450.00 | 0.10 | 95.00 | | |
| 0.000226 | 1.12 | 688.68 | 309.67 | 807.00 | | 95.00 | | |
| StonyBrook | 46 | 500-yr | | 807.00 | | 95.00 | | |
| 0.000309 | 1.42 | 954.95 | 364.21 | | | | | |
| StonyBrook | 45 | 100-yr | | 538.00 | 96.80 | 101.74 | | 102.07 |
| 0.004116 | 7.31 | 478.54 | 336.71 | 538.00 | 0.63 | 96.80 | 102.59 | 102.86 |
| StonyBrook | 45 | 100-yr(encr) | | 538.00 | 0.50 | 96.80 | 101.07 | 101.51 |
| 0.004314 | 6.32 | 315.13 | 115.65 | 312.00 | 0.67 | 96.80 | 101.49 | 101.86 |
| StonyBrook | 45 | 10-yr | | 312.00 | 0.65 | 96.80 | 102.35 | 102.64 |
| 0.004939 | 7.12 | 266.79 | 294.17 | 450.00 | 0.62 | 96.80 | | |
| StonyBrook | 45 | 50-yr | | 450.00 | 0.62 | 96.80 | | |
| 0.004461 | 7.30 | 395.70 | 320.74 | 807.00 | | 96.80 | | |
| StonyBrook | 45 | 500-yr | | 807.00 | | 96.80 | | |
| 0.003755 | 7.64 | 694.60 | 375.17 | | | | | |
| StonyBrook | 44 | 100-yr | | 538.00 | 95.40 | 99.33 | 98.06 | 99.77 |
| 0.003092 | 5.57 | 163.30 | 112.42 | 538.00 | 0.52 | 95.40 | 100.44 | 100.78 |
| StonyBrook | 44 | 100-yr(encr) | | 538.00 | 0.38 | 95.40 | 98.32 | 98.63 |
| 0.002441 | 4.73 | 113.64 | 24.00 | 312.00 | 0.50 | 95.40 | 98.93 | 99.35 |
| StonyBrook | 44 | 10-yr | | 312.00 | 0.53 | 95.40 | 100.62 | 100.97 |
| 0.003269 | 4.61 | 84.89 | 37.79 | 450.00 | | 95.40 | | |
| StonyBrook | 44 | 50-yr | | 450.00 | | 95.40 | | |
| 0.003393 | 5.40 | 123.79 | 85.02 | 807.00 | | 95.40 | | |
| StonyBrook | 44 | 500-yr | | 807.00 | | 95.40 | | |

| | | | | | | | | | |
|----------|------|--------|--------|------------|--------------|--------|-------|-------|--------|
| 0.001896 | 5.34 | 378.12 | 234.11 | StonyBrook | Darien1.rep | 0.42 | | | |
| 0.008845 | 43.4 | 75.13 | 54.84 | StonyBrook | 100-yr | 538.00 | 95.40 | 98.48 | 98.18 |
| 0.002645 | 7.88 | 110.60 | 24.00 | StonyBrook | 100-yr(encr) | 538.00 | 0.83 | 95.40 | 100.31 |
| 0.008644 | 43.4 | 52.99 | 35.41 | StonyBrook | 10-yr | 312.00 | 0.40 | 95.40 | 97.73 |
| 0.008830 | 6.31 | 66.82 | 37.32 | StonyBrook | 50-yr | 450.00 | 0.78 | 95.40 | 98.20 |
| 0.008057 | 43.4 | 102.29 | 112.85 | StonyBrook | 500-yr | 807.00 | 0.82 | 95.40 | 99.34 |
| | 9.00 | | | | | | 0.83 | | 98.94 |
| | | | | | | | | | 100.57 |

StonyBrook 43.25 Bridge

| | | | | | | | | | |
|----------|------|--------|--------|------------|--------------|--------|-------|-------|-------|
| 0.002986 | 43.1 | 105.47 | 111.09 | StonyBrook | 100-yr | 538.00 | 94.00 | 98.12 | 96.69 |
| 0.001835 | 5.55 | 121.74 | 24.00 | StonyBrook | 100-yr(encr) | 538.00 | 0.49 | 94.00 | 99.24 |
| 0.001911 | 43.1 | 85.12 | 83.25 | StonyBrook | 10-yr | 312.00 | 0.35 | 94.00 | 97.44 |
| 0.002577 | 3.92 | 98.41 | 101.43 | StonyBrook | 50-yr | 450.00 | 0.38 | 94.00 | 97.89 |
| 0.004396 | 43.1 | 121.13 | 271.56 | StonyBrook | 500-yr | 807.00 | 0.45 | 94.00 | 98.64 |
| | 7.31 | | | | | | 0.61 | | 97.47 |
| | | | | | | | | | 99.45 |

| | | | | | | | | | |
|----------|------|--------|--------|------------|--------------|--------|-------|-------|-------|
| 0.002830 | 42 | 171.29 | 105.01 | StonyBrook | 100-yr | 538.00 | 94.00 | 97.97 | 98.36 |
| 0.002001 | 5.27 | 118.17 | 24.00 | StonyBrook | 100-yr(encr) | 538.00 | 0.48 | 94.00 | 99.09 |
| 0.001997 | 42 | 111.58 | 78.26 | StonyBrook | 10-yr | 312.00 | 0.36 | 94.00 | 97.32 |
| 0.002546 | 3.90 | 148.18 | 95.54 | StonyBrook | 50-yr | 450.00 | 0.39 | 94.00 | 97.74 |
| 0.003726 | 42 | 232.02 | 126.54 | StonyBrook | 500-yr | 807.00 | 0.45 | 94.00 | 98.50 |
| | 6.59 | | | | | | 0.56 | | 97.59 |
| | | | | | | | | | 99.07 |

| | | | | | | | | | |
|----------|------|--------|--------|------------|--------------|--------|-------|-------|-------|
| 0.003420 | 41 | 186.59 | 136.57 | StonyBrook | 100-yr | 538.00 | 93.10 | 96.81 | 96.27 |
| 0.007819 | 5.15 | 74.44 | 23.59 | StonyBrook | 100-yr(encr) | 538.00 | 0.52 | 93.10 | 97.08 |
| | 41 | | | StonyBrook | 10-yr | 312.00 | 0.74 | 93.10 | 96.01 |
| | 7.62 | | | | | | | | 95.73 |
| | 41 | | | | | | | | 96.32 |

| StonyBrookDari en1. rep | | | | | | | | | |
|-------------------------|-------|--------|--------------|--------|------|-------|-------|-------|-------|
| 0.005177 | 5.16 | 96.83 | 91.44 | | 0.61 | | | | |
| StonyBrook | 41 | | 50-yr | 450.00 | | 93.10 | 96.51 | 96.07 | 96.79 |
| 0.003943 | 5.17 | 149.59 | 116.65 | | 0.55 | | | | |
| StonyBrook | 41 | | 500-yr | 807.00 | | 93.10 | 97.57 | | 97.78 |
| 0.002342 | 4.95 | 310.38 | 188.47 | | 0.45 | | | | |
| StonyBrook | 40 | | 100-yr | 538.00 | | 90.80 | 94.48 | | 95.04 |
| 0.006418 | 5.99 | 89.82 | 28.77 | | 0.60 | | | | |
| StonyBrook | 40 | | 100-yr(encr) | 538.00 | | 90.80 | 96.02 | | 96.27 |
| 0.001876 | 3.96 | 135.73 | 30.00 | | 0.33 | | | | |
| StonyBrook | 40 | | 10-yr | 312.00 | | 90.80 | 93.57 | 92.68 | 93.94 |
| 0.005699 | 4.83 | 64.64 | 26.60 | | 0.55 | | | | |
| StonyBrook | 40 | | 50-yr | 450.00 | | 90.80 | 94.16 | 93.18 | 94.65 |
| 0.006129 | 5.57 | 80.77 | 28.01 | | 0.58 | | | | |
| StonyBrook | 40 | | 500-yr | 807.00 | | 90.80 | 95.52 | | 96.21 |
| 0.005729 | 6.66 | 128.05 | 58.32 | | 0.59 | | | | |
| StonyBrook | 39.4 | | 100-yr | 538.00 | | 90.80 | 93.61 | 93.47 | 94.65 |
| 0.016253 | 8.21 | 65.55 | 26.69 | | 0.92 | | | | |
| StonyBrook | 39.4 | | 100-yr(encr) | 538.00 | | 90.80 | 95.94 | 93.46 | 96.20 |
| 0.001876 | 4.08 | 131.92 | 30.00 | | 0.34 | | | | |
| StonyBrook | 39.4 | | 10-yr | 312.00 | | 90.80 | 92.70 | 92.68 | 93.54 |
| 0.020606 | 7.39 | 42.23 | 24.52 | | 0.99 | | | | |
| StonyBrook | 39.4 | | 50-yr | 450.00 | | 90.80 | 93.23 | 93.18 | 94.25 |
| 0.018709 | 8.11 | 55.51 | 25.77 | | 0.97 | | | | |
| StonyBrook | 39.4 | | 500-yr | 807.00 | | 90.80 | 95.04 | 94.24 | 95.94 |
| 0.008510 | 7.64 | 105.67 | 32.02 | | 0.71 | | | | |
| StonyBrook | 39.25 | | | | | | | | |
| StonyBrook | 39.1 | | 100-yr | 538.00 | | 89.40 | 93.81 | 92.76 | 94.22 |
| 0.004651 | 5.12 | 105.08 | 58.78 | | 0.52 | | | | |
| StonyBrook | 39.1 | | 100-yr(encr) | 538.00 | | 89.40 | 94.88 | 93.57 | 95.71 |
| 0.006822 | 7.32 | 73.50 | 25.00 | | 0.60 | | | | |
| StonyBrook | 39.1 | | 10-yr | 312.00 | | 89.40 | 92.83 | 92.16 | 93.13 |
| 0.005846 | 4.42 | 70.62 | 50.70 | | 0.55 | | | | |
| StonyBrook | 39.1 | | 50-yr | 450.00 | | 89.40 | 93.41 | 92.54 | 93.79 |
| 0.005255 | 4.95 | 91.00 | 55.10 | | 0.54 | | | | |
| StonyBrook | 39.1 | | 500-yr | 807.00 | | 89.40 | 95.17 | 93.36 | 95.60 |
| 0.003020 | 5.29 | 152.55 | 146.96 | | 0.45 | | | | |
| StonyBrook | 38 | | 100-yr | 538.00 | | 89.40 | 93.49 | | 93.96 |

| StonyBrook Dari en1. rep | | | | | | | | | |
|--------------------------|-------|--------|--------------|--------|------|-------|-------|-------|-------|
| 0.005064 | 5.81 | 136.95 | 55.84 | 538.00 | 0.56 | 89.40 | 94.97 | | 95.27 |
| StonyBrook | 38 | | 100-yr(encr) | | | | | | |
| 0.002163 | 4.41 | 134.89 | 28.97 | 312.00 | 0.36 | 89.40 | 92.24 | | 92.72 |
| StonyBrook | 38 | | 10-yr | | | | | | |
| 0.009232 | 5.71 | 72.80 | 48.56 | 450.00 | 0.70 | 89.40 | 93.02 | | 93.48 |
| StonyBrook | 38 | | 50-yr | | | | | | |
| 0.006115 | 5.76 | 111.48 | 51.49 | 807.00 | 0.60 | 89.40 | 95.03 | | 95.45 |
| StonyBrook | 38 | | 500-yr | | | | | | |
| 0.002860 | 5.64 | 264.11 | 114.16 | | 0.45 | | | | |
| StonyBrook | 37 | | 100-yr | 538.00 | | 85.40 | 92.75 | | 92.83 |
| 0.000645 | 2.77 | 327.26 | 98.78 | 538.00 | 0.18 | 85.40 | 93.06 | | 93.35 |
| StonyBrook | 37 | | 100-yr(encr) | | | | | | |
| 0.003283 | 4.30 | 125.09 | 17.00 | 312.00 | 0.28 | 85.40 | 91.17 | | 91.25 |
| StonyBrook | 37 | | 10-yr | | | | | | |
| 0.000776 | 2.57 | 187.30 | 78.23 | 450.00 | 0.19 | 85.40 | 92.14 | | 92.23 |
| StonyBrook | 37 | | 50-yr | | | | | | |
| 0.000711 | 2.74 | 269.56 | 90.87 | 807.00 | 0.19 | 85.40 | 94.53 | | 94.61 |
| StonyBrook | 37 | | 500-yr | | | | | | |
| 0.000516 | 2.88 | 532.97 | 146.67 | | 0.17 | | | | |
| StonyBrook | 36.4 | | 100-yr | 538.00 | | 85.40 | 92.72 | 88.84 | 92.80 |
| 0.000662 | 2.80 | 323.83 | 98.33 | 538.00 | 0.19 | 85.40 | 92.87 | 88.84 | 93.17 |
| StonyBrook | 36.4 | | 100-yr(encr) | | | | | | |
| 0.003524 | 4.42 | 121.86 | 17.00 | 312.00 | 0.29 | 85.40 | 90.98 | 87.89 | 91.17 |
| StonyBrook | 36.4 | | 10-yr | | | | | | |
| 0.001493 | 3.48 | 89.75 | 75.73 | 450.00 | 0.27 | 85.40 | 91.82 | 88.49 | 92.11 |
| StonyBrook | 36.4 | | 50-yr | | | | | | |
| 0.001900 | 4.33 | 104.02 | 86.64 | 807.00 | 0.31 | 85.40 | 94.51 | 89.82 | 94.58 |
| StonyBrook | 36.4 | | 500-yr | | | | | | |
| 0.000523 | 2.89 | 529.01 | 145.31 | | 0.17 | | | | |
| StonyBrook | 36.25 | | | | | | | | |
| StonyBrook | 36.1 | | 100-yr | 538.00 | | 86.00 | 91.01 | 90.39 | 92.23 |
| 0.010952 | 8.87 | 60.63 | 60.85 | 538.00 | 0.78 | 86.00 | 92.00 | 90.38 | 92.79 |
| StonyBrook | 36.1 | | 100-yr(encr) | | | | | | |
| 0.007366 | 7.13 | 75.48 | 15.00 | 312.00 | 0.56 | 86.00 | 90.44 | 89.32 | 90.99 |
| StonyBrook | 36.1 | | 10-yr | | | | | | |
| 0.006125 | 5.99 | 52.05 | 49.03 | 450.00 | 0.57 | 86.00 | 91.43 | 90.00 | 91.80 |
| StonyBrook | 36.1 | | 50-yr | | | | | | |
| 0.003571 | 5.41 | 129.75 | 69.46 | 807.00 | 0.45 | 86.00 | 92.57 | 91.51 | 93.02 |
| StonyBrook | 36.1 | | 500-yr | | | | | | |

| StonyBrookDari en1. rep | | | | | | | | | |
|-------------------------|------|--------|--------------|--------|-------|-------|-------|-------|--|
| 0.003724 | 6.43 | 223.11 | 93.57 | | 0.48 | | | | |
| StonyBrook | 35 | | 100-yr | 538.00 | 86.00 | 90.70 | 90.70 | 91.75 | |
| 0.011558 | 8.65 | 84.89 | 54.50 | | 0.79 | | | | |
| StonyBrook | 35 | | 100-yr(encr) | 538.00 | 86.00 | 91.39 | | 92.41 | |
| 0.010489 | 8.10 | 66.41 | 15.00 | | 0.68 | | | | |
| StonyBrook | 35 | | 10-yr | 312.00 | 86.00 | 89.90 | 89.31 | 90.66 | |
| 0.010524 | 7.02 | 48.00 | 34.99 | | 0.72 | | | | |
| StonyBrook | 35 | | 50-yr | 450.00 | 86.00 | 90.34 | 90.34 | 91.39 | |
| 0.012499 | 8.41 | 66.73 | 47.11 | | 0.81 | | | | |
| StonyBrook | 35 | | 500-yr | 807.00 | 86.00 | 91.49 | 91.49 | 92.62 | |
| 0.010744 | 9.47 | 134.14 | 70.75 | | 0.78 | | | | |
| StonyBrook | 34 | | 100-yr | 538.00 | 87.90 | 89.70 | 89.56 | 90.20 | |
| 0.018331 | 6.95 | 112.33 | 87.47 | | 0.94 | | | | |
| StonyBrook | 34 | | 100-yr(encr) | 538.00 | 87.90 | 90.40 | 90.40 | 91.44 | |
| 0.020727 | 8.85 | 70.87 | 33.68 | | 1.01 | | | | |
| StonyBrook | 34 | | 10-yr | 312.00 | 87.90 | 89.24 | 89.13 | 89.62 | |
| 0.019726 | 5.86 | 73.44 | 84.94 | | 0.93 | | | | |
| StonyBrook | 34 | | 50-yr | 450.00 | 87.90 | 89.53 | 89.43 | 89.99 | |
| 0.018936 | 6.59 | 97.78 | 86.54 | | 0.94 | | | | |
| StonyBrook | 34 | | 500-yr | 807.00 | 87.90 | 90.20 | 89.95 | 90.79 | |
| 0.015963 | 7.72 | 157.57 | 95.17 | | 0.92 | | | | |
| StonyBrook | 33 | | 100-yr | 538.00 | 84.50 | 86.63 | | 86.94 | |
| 0.008772 | 5.34 | 129.15 | 80.36 | | 0.68 | | | | |
| StonyBrook | 33 | | 100-yr(encr) | 538.00 | 84.50 | 87.51 | | 88.02 | |
| 0.007600 | 6.04 | 96.70 | 35.40 | | 0.64 | | | | |
| StonyBrook | 33 | | 10-yr | 312.00 | 84.50 | 86.17 | | 86.37 | |
| 0.008266 | 4.30 | 92.70 | 77.09 | | 0.63 | | | | |
| StonyBrook | 33 | | 50-yr | 450.00 | 84.50 | 86.47 | | 86.74 | |
| 0.008506 | 4.96 | 116.24 | 79.22 | | 0.66 | | | | |
| StonyBrook | 33 | | 500-yr | 807.00 | 84.50 | 87.01 | | 87.46 | |
| 0.010219 | 6.50 | 159.88 | 83.02 | | 0.76 | | | | |
| StonyBrook | 32 | | 100-yr | 538.00 | 81.20 | 83.96 | 83.96 | 84.40 | |
| 0.013409 | 7.29 | 121.66 | 139.28 | | 0.85 | | | | |
| StonyBrook | 32 | | 100-yr(encr) | 538.00 | 81.20 | 84.34 | 84.34 | 85.37 | |
| 0.017485 | 9.26 | 70.98 | 33.33 | | 1.00 | | | | |
| StonyBrook | 32 | | 10-yr | 312.00 | 81.20 | 83.59 | 83.59 | 83.97 | |
| 0.012699 | 6.31 | 77.96 | 99.39 | | 0.81 | | | | |
| StonyBrook | 32 | | 50-yr | 450.00 | 81.20 | 83.83 | 83.83 | 84.25 | |
| 0.013265 | 6.98 | 104.70 | 125.32 | | 0.84 | | | | |
| StonyBrook | 32 | | 500-yr | 807.00 | 81.20 | 84.28 | 84.28 | 84.76 | |

| | | | | StonyBrookDari en1. rep | | | | |
|------------|-------|--------------|--------|-------------------------|-------|-------|-------|-------|
| 0.012963 | 7.85 | 172.99 | 170.25 | | 0.86 | | | |
| StonyBrook | 31 | 100-yr | | 538.00 | 72.00 | 77.74 | 76.47 | 78.48 |
| 0.006696 | 6.97 | 83.76 | 43.37 | | 0.60 | | | |
| StonyBrook | 31 | 100-yr(encr) | | 538.00 | 72.00 | 79.31 | | 79.72 |
| 0.003081 | 5.14 | 104.76 | 18.00 | | 0.38 | | | |
| StonyBrook | 31 | 10-yr | | 312.00 | 72.00 | 77.71 | | 77.97 |
| 0.002298 | 4.07 | 82.78 | 40.21 | | 0.35 | | | |
| StonyBrook | 31 | 50-yr | | 450.00 | 72.00 | 78.05 | | 78.48 |
| 0.003568 | 5.34 | 104.12 | 82.26 | | 0.44 | | | |
| StonyBrook | 31 | 500-yr | | 807.00 | 72.00 | 77.62 | 77.62 | 79.41 |
| 0.016596 | 10.77 | 79.41 | 35.87 | | 0.93 | | | |
| StonyBrook | 30 | 100-yr | | 538.00 | 70.00 | 75.88 | | 76.01 |
| 0.001879 | 4.39 | 376.76 | 436.11 | | 0.36 | | | |
| StonyBrook | 30 | 100-yr(encr) | | 538.00 | 70.00 | 76.15 | | 76.72 |
| 0.005749 | 6.95 | 98.37 | 28.43 | | 0.55 | | | |
| StonyBrook | 30 | 10-yr | | 312.00 | 70.00 | 74.55 | 74.55 | 75.15 |
| 0.007677 | 7.08 | 75.53 | 78.23 | | 0.69 | | | |
| StonyBrook | 30 | 50-yr | | 450.00 | 70.00 | 75.31 | 74.98 | 75.65 |
| 0.004229 | 6.03 | 159.33 | 177.81 | | 0.53 | | | |
| StonyBrook | 30 | 500-yr | | 807.00 | 70.00 | 77.23 | | 77.25 |
| 0.000391 | 2.37 | 1025.90 | 510.92 | | 0.17 | | | |
| StonyBrook | 29 | 100-yr | | 538.00 | 68.60 | 75.38 | | 75.54 |
| 0.000582 | 3.55 | 482.56 | 429.87 | | 0.24 | | | |
| StonyBrook | 29 | 100-yr(encr) | | 538.00 | 68.60 | 75.20 | | 75.53 |
| 0.001045 | 4.67 | 124.75 | 20.00 | | 0.33 | | | |
| StonyBrook | 29 | 10-yr | | 312.00 | 68.60 | 73.45 | | 73.65 |
| 0.000962 | 3.61 | 118.08 | 71.82 | | 0.30 | | | |
| StonyBrook | 29 | 50-yr | | 450.00 | 68.60 | 74.63 | | 74.82 |
| 0.000773 | 3.77 | 249.19 | 176.47 | | 0.28 | | | |
| StonyBrook | 29 | 500-yr | | 807.00 | 68.60 | 77.07 | | 77.12 |
| 0.000221 | 2.55 | 1276.95 | 512.64 | | 0.16 | | | |
| StonyBrook | 28.4 | 100-yr | | 538.00 | 68.60 | 75.35 | 71.87 | 75.51 |
| 0.000608 | 3.62 | 466.69 | 428.05 | | 0.25 | | | |
| StonyBrook | 28.4 | 100-yr(encr) | | 538.00 | 68.60 | 75.11 | 71.87 | 75.46 |
| 0.002091 | 4.77 | 112.74 | 18.00 | | 0.34 | | | |
| StonyBrook | 28.4 | 10-yr | | 312.00 | 68.60 | 73.37 | 70.96 | 73.59 |
| 0.001092 | 3.80 | 84.49 | 67.95 | | 0.32 | | | |
| StonyBrook | 28.4 | 50-yr | | 450.00 | 68.60 | 74.45 | 71.53 | 74.75 |
| 0.001111 | 4.42 | 104.97 | 151.93 | | 0.33 | | | |
| StonyBrook | 28.4 | 500-yr | | 807.00 | 68.60 | 77.06 | 72.80 | 77.11 |

| StonyBrookDari en1. rep | | | | | | | | |
|-------------------------|-------|---------|--------------|--------|-------|-------|-------|-------|
| 0.000223 | 2.56 | 1271.21 | 512.09 | | 0.16 | | | |
| StonyBrook | 28.25 | | | Bridge | | | | |
| StonyBrook | 28.1 | | 100-yr | 538.00 | 68.00 | 72.36 | 71.44 | 73.16 |
| 0.006966 | 7.18 | 74.95 | 53.49 | 538.00 | 0.65 | 68.00 | 74.04 | 74.42 |
| StonyBrook | 28.1 | | 100-yr(encr) | 538.00 | 68.00 | 74.04 | 71.43 | 74.42 |
| 0.003006 | 4.96 | 108.49 | 20.00 | 312.00 | 0.38 | 68.00 | 71.66 | 72.07 |
| StonyBrook | 28.1 | | 10-yr | 312.00 | 68.00 | 71.66 | 70.58 | 72.07 |
| 0.004680 | 5.12 | 60.90 | 41.50 | 450.00 | 0.52 | 68.00 | 72.24 | 72.84 |
| StonyBrook | 28.1 | | 50-yr | 450.00 | 68.00 | 72.24 | 71.12 | 72.84 |
| 0.005441 | 6.21 | 72.51 | 51.41 | 807.00 | 0.57 | 68.00 | 75.25 | 75.43 |
| StonyBrook | 28.1 | | 500-yr | 807.00 | 68.00 | 75.25 | 72.31 | 75.43 |
| 0.001075 | 4.13 | 531.74 | 379.51 | | 0.28 | | | |
| StonyBrook | 27 | | 100-yr | 538.00 | 68.00 | 72.08 | 71.54 | 72.85 |
| 0.008004 | 7.30 | 93.18 | 48.59 | 538.00 | 0.69 | 68.00 | 74.02 | 74.27 |
| StonyBrook | 27 | | 100-yr(encr) | 538.00 | 68.00 | 74.02 | | 74.27 |
| 0.001529 | 4.29 | 167.83 | 39.58 | 312.00 | 0.33 | 68.00 | 70.58 | 71.56 |
| StonyBrook | 27 | | 10-yr | 312.00 | 68.00 | 70.58 | 70.58 | 71.56 |
| 0.020088 | 7.93 | 39.61 | 23.10 | 450.00 | 1.00 | 68.00 | 71.19 | 72.33 |
| StonyBrook | 27 | | 50-yr | 450.00 | 68.00 | 71.19 | 71.19 | 72.33 |
| 0.016536 | 8.61 | 56.84 | 33.49 | 807.00 | 0.95 | 68.00 | 75.18 | 75.38 |
| StonyBrook | 27 | | 500-yr | 807.00 | 68.00 | 75.18 | | 75.38 |
| 0.001160 | 4.26 | 507.51 | 374.45 | | 0.29 | | | |
| StonyBrook | 26.4 | | 100-yr | 538.00 | 64.30 | 72.09 | | 72.12 |
| 0.000324 | 2.58 | 658.93 | 212.15 | 538.00 | 0.17 | 64.30 | 71.50 | 72.63 |
| StonyBrook | 26.4 | | 100-yr(encr) | 538.00 | 64.30 | 71.50 | | 72.63 |
| 0.013806 | 8.54 | 62.98 | 9.00 | 312.00 | 0.57 | 64.30 | 69.44 | 69.56 |
| StonyBrook | 26.4 | | 10-yr | 312.00 | 64.30 | 69.44 | | 69.56 |
| 0.001209 | 3.74 | 223.48 | 114.12 | 450.00 | 0.30 | 64.30 | 71.12 | 71.17 |
| StonyBrook | 26.4 | | 50-yr | 450.00 | 64.30 | 71.12 | | 71.17 |
| 0.000501 | 2.93 | 470.05 | 177.79 | 807.00 | 0.20 | 64.30 | 75.18 | 75.20 |
| StonyBrook | 26.4 | | 500-yr | 807.00 | 64.30 | 75.18 | | 75.20 |
| 0.000095 | 1.76 | 1440.32 | 277.95 | | 0.09 | | | |
| StonyBrook | 26.3 | | 100-yr | 538.00 | 63.50 | 71.65 | 67.38 | 71.99 |
| 0.001308 | 5.35 | 139.02 | 224.94 | 538.00 | 0.33 | 63.50 | 71.65 | 71.99 |
| StonyBrook | 26.3 | | 100-yr(encr) | 538.00 | 63.50 | 71.65 | 67.38 | 71.99 |
| 0.001307 | 5.35 | 139.06 | 30.00 | 312.00 | 0.33 | 63.50 | 69.16 | 69.41 |
| StonyBrook | 26.3 | | 10-yr | 312.00 | 63.50 | 69.16 | 66.33 | 69.41 |

| StonyBrook Dari en1. rep | | | | | | | | | |
|--------------------------|-------|--------|--------------|--------|------|-------|-------|-------|-------|
| 0.001578 | 4.57 | 94.18 | 125.43 | 450.00 | 0.34 | 63.50 | 70.73 | 67.00 | 71.04 |
| StonyBrook | 26.3 | | 50-yr | | | | | | |
| 0.001388 | 5.07 | 122.49 | 192.36 | 807.00 | 0.34 | 63.50 | 74.67 | 68.45 | 75.06 |
| StonyBrook | 26.3 | | 500-yr | | | | | | |
| 0.000991 | 5.77 | 193.43 | 280.46 | | 0.31 | | | | |
| StonyBrook | 26.25 | | | | | | | | |
| Bri dge | | | | | | | | | |
| 0.019229 | 12.85 | 58.14 | 132.42 | 538.00 | 1.14 | 62.50 | 66.64 | 66.64 | 68.63 |
| StonyBrook | 26.2 | | 100-yr | | | | | | |
| 0.019229 | 12.85 | 58.14 | 30.00 | 538.00 | 1.14 | 62.50 | 66.64 | 66.64 | 68.63 |
| StonyBrook | 26.2 | | 100-yr(encr) | | | | | | |
| 0.021969 | 10.74 | 40.36 | 34.54 | 312.00 | 1.15 | 62.50 | 65.42 | 65.42 | 66.81 |
| StonyBrook | 26.2 | | 10-yr | | | | | | |
| 0.020062 | 12.11 | 51.60 | 38.44 | 450.00 | 1.14 | 62.50 | 66.19 | 66.19 | 67.96 |
| StonyBrook | 26.2 | | 50-yr | | | | | | |
| 0.017512 | 14.71 | 76.19 | 209.85 | 807.00 | 1.14 | 62.50 | 67.88 | 67.88 | 70.49 |
| StonyBrook | 26.1 | | 500-yr | | | | | | |
| 0.007015 | 7.87 | 156.35 | 160.97 | 538.00 | 0.69 | 61.00 | 65.28 | 64.12 | 65.89 |
| StonyBrook | 26.1 | | 100-yr | | | | | | |
| 0.010355 | 8.27 | 92.57 | 19.61 | 538.00 | 0.67 | 61.00 | 65.93 | | 66.74 |
| StonyBrook | 26.1 | | 100-yr(encr) | | | | | | |
| 0.006500 | 6.25 | 89.02 | 36.28 | 312.00 | 0.63 | 61.00 | 64.27 | | 64.66 |
| StonyBrook | 26.1 | | 10-yr | | | | | | |
| 0.006710 | 7.25 | 115.87 | 62.92 | 450.00 | 0.67 | 61.00 | 64.93 | | 65.45 |
| StonyBrook | 26.1 | | 50-yr | | | | | | |
| 0.005703 | 8.01 | 299.99 | 196.78 | 807.00 | 0.64 | 61.00 | 66.08 | 64.88 | 66.60 |
| StonyBrook | 25 | | 500-yr | | | | | | |
| 0.010639 | 8.19 | 82.81 | 45.05 | 538.00 | 0.81 | 58.40 | 62.48 | 62.26 | 63.45 |
| StonyBrook | 25 | | 100-yr | | | | | | |
| 0.009768 | 7.67 | 70.12 | 19.00 | 538.00 | 0.70 | 58.40 | 62.99 | | 63.90 |
| StonyBrook | 25 | | 100-yr(encr) | | | | | | |
| 0.010737 | 6.78 | 51.26 | 27.67 | 312.00 | 0.78 | 58.40 | 61.63 | | 62.32 |
| StonyBrook | 25 | | 10-yr | | | | | | |
| 0.010855 | 7.74 | 69.43 | 42.40 | 450.00 | 0.80 | 58.40 | 62.18 | 61.86 | 63.06 |
| StonyBrook | 25 | | 50-yr | | | | | | |
| 0.010410 | 9.36 | 120.22 | 52.45 | 807.00 | 0.83 | 58.40 | 63.26 | 63.05 | 64.46 |
| StonyBrook | 24 | | 500-yr | | | | | | |
| StonyBrook | 24 | | 100-yr | 538.00 | | 56.90 | 61.23 | 60.76 | 62.02 |

| StonyBrookDari en1. rep | | | | | | | | | |
|-------------------------|-------|--------|--------------|---------|------|-------|-------|-------|-------|
| 0.007988 | 7.46 | 94.27 | 47.19 | 538.00 | 0.71 | 56.90 | 61.73 | 60.71 | 62.54 |
| StonyBrook | 24 | | 100-yr(encr) | | | | | | |
| 0.008070 | 7.19 | 74.86 | 19.00 | 312.00 | 0.64 | 56.90 | 60.41 | 59.80 | 60.94 |
| StonyBrook | 24 | | 10-yr | | | | | | |
| 0.007465 | 6.00 | 59.15 | 29.87 | 450.00 | 0.65 | 56.90 | 60.99 | 60.36 | 61.66 |
| StonyBrook | 24 | | 50-yr | | | | | | |
| 0.007415 | 6.84 | 82.95 | 45.07 | 807.00 | 0.67 | 56.90 | 61.99 | 61.55 | 63.01 |
| StonyBrook | 24 | | 500-yr | | | | | | |
| 0.008315 | 8.70 | 132.86 | 55.16 | | 0.75 | | | | |
| StonyBrook | 23 | | 100-yr | 538.00 | | 55.40 | 59.26 | 59.26 | 60.43 |
| 0.013962 | 8.94 | 73.00 | 43.12 | 538.00 | 0.91 | 55.40 | 59.21 | 59.21 | 60.67 |
| StonyBrook | 23 | | 100-yr(encr) | | | | | | |
| 0.019576 | 9.71 | 55.43 | 19.00 | 312.00 | 1.00 | 55.40 | 58.30 | 58.30 | 59.26 |
| StonyBrook | 23 | | 10-yr | | | | | | |
| 0.017460 | 7.96 | 42.47 | 25.36 | 450.00 | 0.97 | 55.40 | 58.86 | 58.86 | 60.02 |
| StonyBrook | 23 | | 50-yr | | | | | | |
| 0.016421 | 8.82 | 57.87 | 29.28 | 807.00 | 0.97 | 55.40 | 60.05 | 60.05 | 61.44 |
| StonyBrook | 23 | | 500-yr | | | | | | |
| 0.012848 | 10.03 | 109.43 | 50.02 | | 0.91 | | | | |
| StonyBrook | 22.4 | | 100-yr | 800.00 | | 20.20 | 27.78 | | 27.93 |
| 0.000297 | 3.48 | 300.10 | 71.83 | 800.00 | 0.24 | 20.20 | 27.81 | | 27.98 |
| StonyBrook | 22.4 | | 100-yr(encr) | | | | | | |
| 0.000410 | 3.58 | 258.32 | 50.93 | 465.00 | 0.25 | 20.20 | 26.79 | | 26.87 |
| StonyBrook | 22.4 | | 10-yr | | | | | | |
| 0.000198 | 2.54 | 232.65 | 64.68 | 670.00 | 0.19 | 20.20 | 26.89 | | 27.05 |
| StonyBrook | 22.4 | | 50-yr | | | | | | |
| 0.000382 | 3.58 | 239.04 | 65.39 | 1200.00 | 0.27 | 20.20 | 32.49 | | 32.55 |
| StonyBrook | 22.4 | | 500-yr | | | | | | |
| 0.000071 | 2.46 | 745.23 | 129.66 | | 0.13 | | | | |
| StonyBrook | 22.3 | | 100-yr | 800.00 | | 20.50 | 26.84 | 24.60 | 27.70 |
| 0.002790 | 7.42 | 107.83 | 17.00 | 800.00 | 0.52 | 20.50 | 26.92 | 24.60 | 27.76 |
| StonyBrook | 22.3 | | 100-yr(encr) | | | | | | |
| 0.002697 | 7.33 | 109.18 | 17.00 | 465.00 | 0.51 | 20.50 | 26.46 | 23.35 | 26.79 |
| StonyBrook | 22.3 | | 10-yr | | | | | | |
| 0.001118 | 4.59 | 101.40 | 17.00 | 670.00 | 0.33 | 20.50 | 26.07 | 24.13 | 26.84 |
| StonyBrook | 22.3 | | 50-yr | | | | | | |
| 0.002817 | 7.08 | 94.61 | 17.00 | 1200.00 | 0.53 | 20.50 | 31.77 | 25.85 | 32.38 |
| StonyBrook | 22.3 | | 500-yr | | | | | | |
| 0.001354 | 6.26 | 191.60 | 17.00 | | 0.33 | | | | |

StonyBrook 22.25

Bridge

StonyBrookDari en1. rep

| | | | | | | | | |
|----------|------------|--------|--------------|---------|-------|-------|-------|-------|
| 0.006271 | StonyBrook | 22.2 | 100-yr | 800.00 | 17.10 | 20.80 | 20.80 | 22.43 |
| | | 10.32 | | | | | | |
| | | 78.24 | 38.51 | | 1.00 | | | |
| 0.008027 | StonyBrook | 22.2 | 100-yr(encr) | 800.00 | 17.10 | 20.87 | 20.87 | 22.55 |
| | | 10.39 | 23.00 | | 1.00 | | | |
| | | 77.02 | | | | | | |
| 0.006970 | StonyBrook | 22.2 | 10-yr | 465.00 | 17.10 | 19.82 | 19.82 | 20.95 |
| | | 8.58 | 33.36 | | 1.00 | | | |
| | | 54.70 | | | | | | |
| 0.006506 | StonyBrook | 22.2 | 50-yr | 670.00 | 17.10 | 20.44 | 20.44 | 21.89 |
| | | 9.72 | 36.61 | | 1.00 | | | |
| | | 69.56 | | | | | | |
| 0.005724 | StonyBrook | 22.2 | 500-yr | 1200.00 | 17.10 | 21.82 | 21.82 | 23.95 |
| | | 11.80 | 151.98 | | 1.00 | | | |
| | | 102.59 | | | | | | |
| 0.003279 | StonyBrook | 22.1 | 100-yr | 800.00 | 14.30 | 18.98 | 17.99 | 19.75 |
| | | 7.40 | 147.47 | | 0.63 | | | |
| | | 184.02 | | | | | | |
| 0.003396 | StonyBrook | 22.1 | 100-yr(encr) | 800.00 | 14.30 | 19.78 | | 20.52 |
| | | 6.87 | 23.00 | | 0.54 | | | |
| | | 116.44 | | | | | | |
| 0.005072 | StonyBrook | 22.1 | 10-yr | 465.00 | 14.30 | 17.51 | | 18.23 |
| | | 6.94 | 35.94 | | 0.73 | | | |
| | | 80.01 | | | | | | |
| 0.003999 | StonyBrook | 22.1 | 50-yr | 670.00 | 14.30 | 18.41 | 17.63 | 19.22 |
| | | 7.43 | 77.17 | | 0.68 | | | |
| | | 120.00 | | | | | | |
| 0.001869 | StonyBrook | 22.1 | 500-yr | 1200.00 | 14.30 | 20.43 | | 20.97 |
| | | 6.79 | 223.78 | | 0.50 | | | |
| | | 470.30 | | | | | | |
| 0.000996 | StonyBrook | 21 | 100-yr | 800.00 | 12.50 | 18.84 | | 19.12 |
| | | 4.95 | 204.38 | | 0.36 | | | |
| | | 425.41 | | | | | | |
| 0.002849 | StonyBrook | 21 | 100-yr(encr) | 800.00 | 12.50 | 18.91 | | 19.60 |
| | | 6.68 | 20.00 | | 0.48 | | | |
| | | 119.73 | | | | | | |
| 0.001991 | StonyBrook | 21 | 10-yr | 465.00 | 12.50 | 16.86 | | 17.26 |
| | | 5.34 | 82.31 | | 0.47 | | | |
| | | 137.09 | | | | | | |
| 0.001270 | StonyBrook | 21 | 50-yr | 670.00 | 12.50 | 18.14 | | 18.47 |
| | | 5.14 | 164.31 | | 0.40 | | | |
| | | 294.72 | | | | | | |
| 0.000697 | StonyBrook | 21 | 500-yr | 1200.00 | 12.50 | 20.35 | | 20.57 |
| | | 4.82 | 235.52 | | 0.31 | | | |
| | | 762.34 | | | | | | |
| 0.002945 | StonyBrook | 20 | 100-yr | 800.00 | 8.50 | 17.78 | | 18.58 |
| | | 7.22 | 43.64 | | 0.52 | | | |
| | | 125.51 | | | | | | |
| 0.003919 | StonyBrook | 20 | 100-yr(encr) | 800.00 | 8.50 | 17.69 | | 18.56 |
| | | 7.47 | 18.00 | | 0.54 | | | |
| | | 107.02 | | | | | | |
| 0.003876 | StonyBrook | 20 | 10-yr | 465.00 | 8.50 | 15.76 | | 16.40 |
| | | 6.42 | 19.02 | | 0.56 | | | |
| | | 72.78 | | | | | | |
| 0.003128 | StonyBrook | 20 | 50-yr | 670.00 | 8.50 | 17.11 | | 17.84 |
| | | 6.88 | 28.16 | | 0.52 | | | |
| | | 103.22 | | | | | | |
| | StonyBrook | 20 | 500-yr | 1200.00 | 8.50 | 19.06 | 17.01 | 20.08 |

| | | | | | | | | | |
|----------|------|--------------|---------|------------|-------------|-------|-------|-------|--|
| 0.003114 | 8.43 | 211.11 | 96.97 | StonyBrook | Darien1.rep | 0.55 | | | |
| 0.003603 | 19.4 | 100-yr | 800.00 | 8.50 | 17.50 | 15.66 | 18.42 | | |
| 0.004405 | 7.73 | 103.53 | 31.74 | 0.57 | 8.50 | 17.45 | 15.66 | 18.39 | |
| 0.004816 | 19.4 | 100-yr(encr) | 800.00 | 0.58 | 8.50 | 17.45 | 15.66 | 18.39 | |
| 0.003679 | 7.80 | 102.63 | 18.00 | 0.58 | 8.50 | 17.45 | 15.66 | 18.39 | |
| 0.003922 | 19.4 | 10-yr | 465.00 | 0.62 | 8.50 | 15.49 | 14.31 | 16.22 | |
| | 6.89 | 67.51 | 18.24 | 0.62 | 8.50 | 15.49 | 14.31 | 16.22 | |
| | 19.4 | 50-yr | 670.00 | 0.56 | 8.50 | 16.88 | 15.20 | 17.70 | |
| | 7.24 | 92.50 | 26.00 | 0.56 | 8.50 | 16.88 | 15.20 | 17.70 | |
| | 19.4 | 500-yr | 1200.00 | 0.61 | 8.50 | 18.67 | 16.91 | 19.90 | |
| | 9.13 | 179.58 | 74.81 | 0.61 | 8.50 | 18.67 | 16.91 | 19.90 | |

StonyBrook 19.25 Bridge

| | | | | | | | | | |
|----------|-------|--------------|---------|-------|-------|-------|-------|-------|--|
| 0.006169 | 19.1 | 100-yr | 800.00 | 11.10 | 15.82 | 15.46 | 17.55 | | |
| 0.006169 | 10.54 | 75.92 | 51.52 | 0.88 | 11.10 | 15.46 | 17.94 | | |
| 0.007352 | 19.1 | 100-yr(encr) | 800.00 | 0.66 | 11.10 | 16.76 | 15.46 | 17.94 | |
| 0.007540 | 8.72 | 91.75 | 17.00 | 0.66 | 11.10 | 16.76 | 15.46 | 17.94 | |
| 0.002644 | 19.1 | 10-yr | 465.00 | 0.90 | 11.10 | 14.42 | 14.21 | 15.66 | |
| | 8.94 | 52.01 | 34.04 | 0.90 | 11.10 | 14.42 | 14.21 | 15.66 | |
| | 19.1 | 50-yr | 670.00 | 0.94 | 11.10 | 15.14 | 15.00 | 16.83 | |
| | 10.43 | 64.27 | 42.61 | 0.94 | 11.10 | 15.14 | 15.00 | 16.83 | |
| | 19.1 | 500-yr | 1200.00 | 0.61 | 11.10 | 17.62 | 16.73 | 18.53 | |
| | 8.64 | 251.58 | 74.84 | 0.61 | 11.10 | 17.62 | 16.73 | 18.53 | |

| | | | | | | | | | |
|----------|-------|--------------|---------|-------|-------|-------|-------|-------|--|
| 0.003679 | 18 | 100-yr | 800.00 | 11.10 | 16.00 | 16.90 | | | |
| 0.004012 | 8.35 | 147.27 | 53.76 | 0.68 | 11.10 | 16.00 | 16.90 | | |
| 0.007038 | 18 | 100-yr(encr) | 800.00 | 0.61 | 11.10 | 16.64 | 17.56 | | |
| 0.005339 | 8.02 | 116.44 | 22.29 | 0.61 | 11.10 | 16.64 | 17.56 | | |
| 0.007297 | 18 | 10-yr | 465.00 | 0.87 | 11.10 | 14.20 | 13.91 | 15.15 | |
| | 8.33 | 71.27 | 31.52 | 0.87 | 11.10 | 14.20 | 13.91 | 15.15 | |
| | 18 | 50-yr | 670.00 | 0.80 | 11.10 | 15.15 | 14.62 | 16.18 | |
| | 8.79 | 106.37 | 42.73 | 0.80 | 11.10 | 15.15 | 14.62 | 16.18 | |
| | 18 | 500-yr | 1200.00 | 0.97 | 11.10 | 16.16 | 16.16 | 18.03 | |
| | 12.02 | 156.08 | 55.85 | 0.97 | 11.10 | 16.16 | 16.16 | 18.03 | |

| | | | | | | | | | |
|----------|------|--------------|--------|------|-------|-------|-------|--|--|
| 0.000614 | 17 | 100-yr | 800.00 | 9.00 | 15.95 | 16.14 | | | |
| 0.000726 | 3.86 | 514.20 | 332.79 | 0.27 | 9.00 | 16.49 | 16.71 | | |
| | 17 | 100-yr(encr) | 800.00 | 0.26 | 9.00 | 16.49 | 16.71 | | |
| | 3.95 | 274.53 | 55.74 | 0.26 | 9.00 | 16.49 | 16.71 | | |
| | 17 | 10-yr | 465.00 | | 9.00 | 13.50 | 13.78 | | |

| StonyBrookDari en1. rep | | | | | | | | | |
|-------------------------|-------|---------|--------------|---------|------|-------|-------|--|-------|
| 0.001370 | 4.27 | 122.12 | 54.99 | | 0.37 | | | | |
| StonyBrook | 17 | | 50-yr | 670.00 | 9.00 | 14.80 | | | 15.08 |
| 0.001019 | 4.37 | 252.55 | 144.06 | | 0.33 | | | | |
| StonyBrook | 17 | | 500-yr | 1200.00 | 9.00 | 15.90 | | | 16.34 |
| 0.001434 | 5.86 | 498.64 | 324.00 | | 0.41 | | | | |
| StonyBrook | 16 | | 100-yr | 800.00 | 7.00 | 16.02 | | | 16.02 |
| 0.000022 | 0.81 | 1765.89 | 471.54 | | 0.05 | | | | |
| StonyBrook | 16 | | 100-yr(encr) | 800.00 | 7.00 | 16.34 | | | 16.39 |
| 0.000144 | 2.12 | 515.51 | 87.40 | | 0.12 | | | | |
| StonyBrook | 16 | | 10-yr | 465.00 | 7.00 | 13.42 | | | 13.44 |
| 0.000109 | 1.43 | 654.34 | 353.24 | | 0.10 | | | | |
| StonyBrook | 16 | | 50-yr | 670.00 | 7.00 | 14.88 | | | 14.88 |
| 0.000042 | 1.02 | 1251.86 | 432.51 | | 0.07 | | | | |
| StonyBrook | 16 | | 500-yr | 1200.00 | 7.00 | 16.07 | | | 16.08 |
| 0.000047 | 1.20 | 1791.20 | 473.29 | | 0.07 | | | | |
| StonyBrook | 15.4 | | 100-yr | 800.00 | 7.00 | 16.02 | 10.87 | | 16.02 |
| 0.000022 | 0.81 | 1765.43 | 471.51 | | 0.05 | | | | |
| StonyBrook | 15.4 | | 100-yr(encr) | 800.00 | 7.00 | 16.34 | 10.87 | | 16.39 |
| 0.000144 | 2.12 | 515.55 | 87.54 | | 0.12 | | | | |
| StonyBrook | 15.4 | | 10-yr | 465.00 | 7.00 | 13.42 | 9.73 | | 13.43 |
| 0.000110 | 1.43 | 652.62 | 352.66 | | 0.10 | | | | |
| StonyBrook | 15.4 | | 50-yr | 670.00 | 7.00 | 14.87 | 10.46 | | 14.88 |
| 0.000042 | 1.02 | 1251.07 | 432.49 | | 0.07 | | | | |
| StonyBrook | 15.4 | | 500-yr | 1200.00 | 7.00 | 16.07 | 11.98 | | 16.08 |
| 0.000047 | 1.20 | 1790.22 | 473.22 | | 0.07 | | | | |
| StonyBrook | 15.25 | | | | | | | | |
| StonyBrook | 15.1 | | 100-yr | 800.00 | 6.50 | 13.84 | 12.41 | | 14.00 |
| 0.001044 | 4.18 | 325.59 | 159.80 | | 0.28 | | | | |
| StonyBrook | 15.1 | | 100-yr(encr) | 800.00 | 6.50 | 14.92 | 12.31 | | 15.05 |
| 0.000704 | 3.47 | 296.11 | 63.93 | | 0.21 | | | | |
| StonyBrook | 15.1 | | 10-yr | 465.00 | 6.50 | 12.62 | 10.16 | | 12.82 |
| 0.001378 | 4.23 | 170.78 | 101.63 | | 0.31 | | | | |
| StonyBrook | 15.1 | | 50-yr | 670.00 | 6.50 | 13.31 | 12.16 | | 13.50 |
| 0.001290 | 4.41 | 248.62 | 129.77 | | 0.30 | | | | |
| StonyBrook | 15.1 | | 500-yr | 1200.00 | 6.50 | 15.88 | 12.99 | | 15.94 |
| 0.000370 | 2.95 | 793.77 | 277.97 | | 0.17 | | | | |
| StonyBrook | 14 | | 100-yr | 800.00 | 6.50 | 13.79 | | | 13.96 |

StonyBrookDari en1. rep

| | | | | | | | | |
|------------|------|---------|--------------|---------|------|------|-------|-------|
| 0.001095 | 4.26 | 318.31 | 157.21 | 800.00 | 0.28 | 6.50 | 14.86 | 15.01 |
| StonyBrook | 14 | | 100-yr(encr) | 800.00 | | | | |
| 0.000814 | 3.72 | 273.32 | 58.07 | 465.00 | 0.23 | 6.50 | 12.54 | 12.77 |
| StonyBrook | 14 | | 10-yr | 465.00 | | | | |
| 0.001511 | 4.39 | 163.30 | 99.51 | 670.00 | 0.32 | 6.50 | 13.24 | 13.45 |
| StonyBrook | 14 | | 50-yr | 670.00 | | | | |
| 0.001381 | 4.53 | 240.72 | 126.28 | 1200.00 | 0.31 | 6.50 | 15.87 | 15.93 |
| StonyBrook | 14 | | 500-yr | 1200.00 | | | | |
| 0.000375 | 2.96 | 789.96 | 277.61 | | 0.17 | | | |
| StonyBrook | 13 | | 100-yr | 800.00 | | 5.60 | 13.50 | 13.54 |
| 0.000656 | 2.61 | 576.21 | 222.68 | 800.00 | 0.21 | 5.60 | 13.78 | 14.25 |
| StonyBrook | 13 | | 100-yr(encr) | 800.00 | | | | |
| 0.004463 | 6.98 | 177.39 | 51.50 | 465.00 | 0.54 | 5.60 | 11.73 | 11.84 |
| StonyBrook | 13 | | 10-yr | 465.00 | | | | |
| 0.002633 | 4.18 | 244.84 | 174.29 | 670.00 | 0.40 | 5.60 | 12.82 | 12.88 |
| StonyBrook | 13 | | 50-yr | 670.00 | | | | |
| 0.000983 | 2.97 | 443.07 | 186.84 | 1200.00 | 0.25 | 5.60 | 15.77 | 15.79 |
| StonyBrook | 13 | | 500-yr | 1200.00 | | | | |
| 0.000207 | 1.75 | 1245.75 | 337.04 | | 0.12 | | | |
| StonyBrook | 12 | | 100-yr | 800.00 | | 5.50 | 13.45 | 13.52 |
| 0.000506 | 2.87 | 598.86 | 233.40 | 800.00 | 0.18 | 5.50 | 13.56 | 14.13 |
| StonyBrook | 12 | | 100-yr(encr) | 800.00 | | | | |
| 0.002308 | 6.18 | 146.80 | 33.00 | 465.00 | 0.39 | 5.50 | 11.59 | 11.77 |
| StonyBrook | 12 | | 10-yr | 465.00 | | | | |
| 0.001163 | 3.85 | 221.53 | 147.50 | 670.00 | 0.28 | 5.50 | 12.74 | 12.84 |
| StonyBrook | 12 | | 50-yr | 670.00 | | | | |
| 0.000752 | 3.34 | 435.92 | 222.19 | 1200.00 | 0.22 | 5.50 | 15.76 | 15.79 |
| StonyBrook | 12 | | 500-yr | 1200.00 | | | | |
| 0.000177 | 1.98 | 1223.16 | 338.45 | | 0.11 | | | |
| StonyBrook | 11 | | 100-yr | 800.00 | | 4.80 | 12.79 | 13.37 |
| 0.002250 | 6.09 | 139.84 | 69.94 | 800.00 | 0.45 | 4.80 | 13.43 | 13.90 |
| StonyBrook | 11 | | 100-yr(encr) | 800.00 | | | | |
| 0.001730 | 5.51 | 145.25 | 23.00 | 465.00 | 0.39 | 4.80 | 11.24 | 11.61 |
| StonyBrook | 11 | | 10-yr | 465.00 | | | | |
| 0.001839 | 4.84 | 95.98 | 21.19 | 670.00 | 0.40 | 4.80 | 12.15 | 12.67 |
| StonyBrook | 11 | | 50-yr | 670.00 | | | | |
| 0.002289 | 5.78 | 115.97 | 22.61 | 1200.00 | 0.45 | 4.80 | 15.49 | 15.73 |
| StonyBrook | 11 | | 500-yr | 1200.00 | | | | |
| 0.000761 | 4.59 | 568.37 | 355.60 | | 0.28 | | | |
| StonyBrook | 10.4 | | 100-yr | 800.00 | | 4.80 | 12.70 | 13.30 |

| StonyBrook Dari en1. rep | | | | | | | | | |
|--------------------------|------|--------|--------------|---------|------|------|-------|-------|-------|
| 0.002396 | 6.22 | 128.58 | 59.00 | 800.00 | 0.46 | 4.80 | 13.37 | 10.10 | 13.85 |
| StonyBrook | 10.4 | | 100-yr(encr) | | | | | | |
| 0.001774 | 5.56 | 143.96 | 23.00 | 465.00 | 0.39 | 4.80 | 11.18 | 8.80 | 11.56 |
| StonyBrook | 10.4 | | 10-yr | | | | | | |
| 0.001904 | 4.91 | 94.75 | 21.10 | 670.00 | 0.41 | 4.80 | 12.08 | 9.63 | 12.61 |
| StonyBrook | 10.4 | | 50-yr | | | | | | |
| 0.002385 | 5.87 | 114.22 | 22.49 | 1200.00 | 0.46 | 4.80 | 14.86 | 11.36 | 15.56 |
| StonyBrook | 10.4 | | 500-yr | | | | | | |
| 0.001821 | 6.74 | 178.07 | 198.86 | | 0.43 | | | | |

StonyBrook 10.25

Bridge

| | | | | | | | | | |
|------------|------|--------|--------------|---------|------|------|-------|-------|-------|
| StonyBrook | 10.1 | | 100-yr | 800.00 | | 6.00 | 11.77 | 9.93 | 12.59 |
| 0.003191 | 7.24 | 110.46 | 62.90 | 800.00 | 0.54 | 6.00 | 12.57 | 9.93 | 13.19 |
| StonyBrook | 10.1 | | 100-yr(encr) | | | | | | |
| 0.002633 | 6.33 | 126.41 | 20.00 | 465.00 | 0.44 | 6.00 | 10.80 | 8.81 | 11.20 |
| StonyBrook | 10.1 | | 10-yr | | | | | | |
| 0.002059 | 5.11 | 90.97 | 51.26 | 670.00 | 0.42 | 6.00 | 11.34 | 9.51 | 12.01 |
| StonyBrook | 10.1 | | 50-yr | | | | | | |
| 0.002934 | 6.58 | 101.85 | 58.58 | 1200.00 | 0.51 | 6.00 | 12.60 | 11.07 | 13.98 |
| StonyBrook | 10.1 | | 500-yr | | | | | | |
| 0.004516 | 9.45 | 126.94 | 71.17 | | 0.66 | | | | |

| | | | | | | | | | |
|------------|------|--------|--------------|---------|------|------|-------|--|-------|
| StonyBrook | 9 | | 100-yr | 800.00 | | 6.00 | 11.79 | | 12.37 |
| 0.002550 | 6.48 | 175.75 | 63.03 | 800.00 | 0.49 | 6.00 | 12.44 | | 13.09 |
| StonyBrook | 9 | | 100-yr(encr) | | | | | | |
| 0.002787 | 6.46 | 123.88 | 20.00 | 465.00 | 0.46 | 6.00 | 10.75 | | 11.11 |
| StonyBrook | 9 | | 10-yr | | | | | | |
| 0.001961 | 4.95 | 116.01 | 50.29 | 670.00 | 0.41 | 6.00 | 11.31 | | 11.85 |
| StonyBrook | 9 | | 50-yr | | | | | | |
| 0.002570 | 6.13 | 146.94 | 58.27 | 1200.00 | 0.48 | 6.00 | 12.77 | | 13.56 |
| StonyBrook | 9 | | 500-yr | | | | | | |
| 0.002916 | 7.73 | 242.71 | 72.92 | | 0.53 | | | | |

| | | | | | | | | | |
|------------|------|--------|--------------|---------|------|------|-------|--|-------|
| StonyBrook | 8 | | 100-yr | 800.00 | | 2.70 | 10.98 | | 11.49 |
| 0.002051 | 6.20 | 203.93 | 86.22 | 800.00 | 0.46 | 2.70 | 11.05 | | 11.88 |
| StonyBrook | 8 | | 100-yr(encr) | | | | | | |
| 0.003525 | 7.31 | 109.42 | 19.00 | 465.00 | 0.54 | 2.70 | 10.17 | | 10.48 |
| StonyBrook | 8 | | 10-yr | | | | | | |
| 0.001393 | 4.61 | 139.93 | 71.52 | 670.00 | 0.37 | 2.70 | 10.41 | | 10.94 |
| StonyBrook | 8 | | 50-yr | | | | | | |
| 0.002347 | 6.18 | 157.21 | 75.77 | 1200.00 | 0.48 | 2.70 | 11.91 | | 12.53 |
| StonyBrook | 8 | | 500-yr | | | | | | |

StonyBrookDari en1. rep

| | | | | | | | | | |
|------------|------|--------|--------------|---------|------|------|--|-------|-------|
| 0.002085 | 4.50 | 114.98 | 72.96 | | 0.36 | | | | |
| StonyBrook | 5 | | 50-yr | 670.00 | | 1.00 | | 9.78 | 10.14 |
| 0.002200 | 5.10 | 186.81 | 112.28 | | 0.38 | | | | |
| StonyBrook | 5 | | 500-yr | 1200.00 | | 1.00 | | 11.21 | 11.59 |
| 0.002048 | 5.73 | 423.12 | 210.23 | | 0.38 | | | | |
| StonyBrook | 4 | | 100-yr | 800.00 | | 3.60 | | 10.04 | 10.28 |
| 0.001161 | 4.21 | 350.32 | 192.55 | | 0.32 | | | | |
| StonyBrook | 4 | | 100-yr(encr) | 800.00 | | 3.60 | | 9.88 | 10.30 |
| 0.002213 | 5.17 | 154.83 | 29.00 | | 0.39 | | | | |
| StonyBrook | 4 | | 10-yr | 465.00 | | 3.60 | | 8.87 | 9.04 |
| 0.001057 | 3.42 | 172.53 | 68.17 | | 0.29 | | | | |
| StonyBrook | 4 | | 50-yr | 670.00 | | 3.60 | | 9.63 | 9.85 |
| 0.001162 | 4.00 | 275.30 | 168.68 | | 0.31 | | | | |
| StonyBrook | 4 | | 500-yr | 1200.00 | | 3.60 | | 11.07 | 11.31 |
| 0.001101 | 4.60 | 555.20 | 205.82 | | 0.32 | | | | |
| StonyBrook | 3 | | 100-yr | 800.00 | | 4.40 | | 8.82 | 8.82 |
| 0.011222 | 9.74 | 134.11 | 67.37 | | 0.84 | | | | 10.04 |
| StonyBrook | 3 | | 100-yr(encr) | 800.00 | | 4.40 | | 8.86 | 8.86 |
| 0.010609 | 9.52 | 134.85 | 60.00 | | 0.81 | | | | 10.01 |
| StonyBrook | 3 | | 10-yr | 465.00 | | 4.40 | | 7.77 | 7.77 |
| 0.012547 | 8.51 | 74.37 | 48.58 | | 0.84 | | | | 8.82 |
| StonyBrook | 3 | | 50-yr | 670.00 | | 4.40 | | 8.42 | 8.42 |
| 0.012072 | 9.44 | 108.69 | 58.40 | | 0.85 | | | | 9.62 |
| StonyBrook | 3 | | 500-yr | 1200.00 | | 4.40 | | 10.04 | 10.04 |
| 0.008016 | 9.75 | 252.26 | 124.18 | | 0.74 | | | | 11.12 |
| StonyBrook | 2 | | 100-yr | 800.00 | | 2.70 | | 6.67 | 6.67 |
| 0.015870 | 8.11 | 98.69 | 49.88 | | 1.02 | | | | 7.69 |
| StonyBrook | 2 | | 100-yr(encr) | 800.00 | | 2.70 | | 6.67 | 6.67 |
| 0.015868 | 8.11 | 98.69 | 49.88 | | 1.02 | | | | 7.69 |
| StonyBrook | 2 | | 10-yr | 465.00 | | 2.70 | | 6.02 | 6.02 |
| 0.016734 | 6.86 | 67.76 | 46.46 | | 1.00 | | | | 6.75 |
| StonyBrook | 2 | | 50-yr | 670.00 | | 2.70 | | 6.43 | 6.43 |
| 0.016100 | 7.68 | 87.28 | 48.65 | | 1.01 | | | | 7.35 |
| StonyBrook | 2 | | 500-yr | 1200.00 | | 2.70 | | 7.43 | 7.43 |
| 0.014314 | 8.41 | 146.70 | 83.23 | | 0.99 | | | | 8.52 |
| StonyBrook | 1 | | 100-yr | 800.00 | | 1.00 | | 6.36 | 4.16 |
| 0.000824 | 3.41 | 241.64 | 74.24 | | 0.31 | | | | 6.54 |
| StonyBrook | 1 | | 100-yr(encr) | 800.00 | | 1.00 | | 6.36 | 4.16 |
| 0.000879 | 3.43 | 233.32 | 62.00 | | 0.31 | | | | 6.54 |
| StonyBrook | 1 | | 10-yr | 465.00 | | 1.00 | | 4.80 | 3.45 |

| | | | | | | | | | |
|------------|------|--------|-------|-----------------------|------|------|------|------|------|
| 0.001581 | 3.40 | 136.83 | 59.73 | StonyBrookDarien1.rep | | 0.40 | | | |
| StonyBrook | 1 | 50-yr | | 670.00 | 1.00 | | 6.15 | 3.90 | 6.29 |
| 0.000701 | 3.03 | 226.25 | 72.35 | | 0.28 | | | | |
| StonyBrook | 1 | 500-yr | | 1200.00 | 1.00 | | 7.00 | 4.83 | 7.29 |
| 0.001088 | 4.36 | 291.00 | 80.00 | | 0.37 | | | | |