APPENDIX C
TRIBUTARY DRAINAGE PEAK DISCHARGE CALCULATIONS

POINT PRECIPITATION FREQUENCY ESTIMATES FROM NOAA ATLAS 14

Arizona 32.245636 N 110.843699 W 2598 feet

from "Precipitation-Frequency Atlas of the United States" NOAA Atlas 14, Volume 1, Version 4
G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley
NOAA, National Weather Service, Silver Spring, Maryland, 2006

Extracted: Tue Jul 1 2008

Confidence Limits | Location Maps | Other Info. | GIS data | Maps | Help | Docs | U.S. Map

Precipitation Frequency Estimates (inches)

AEP* (1-in-Y)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
2	0.30	0.45	0.56	0.75	0.93	1.07	1.12	1.26	1.44	1.55	1.74	1.96	2.26	2.53	3.29	4.00	4.89	5.48
5	0.42	0.65	0.80	1.08	1.33	1.50	1.55	1.72	1.93	2.10	2.36	2.67	3.10	3.46	4.50	5.37	6.50	7.28
10	0.51	0.77	0.96	1.29	1.60	1.80	1.86	2.05	2.28	2.48	2.79	3.19	3.72	4.13	5.35	6.31	7.55	8.47
25	0.62	0.94	1.17	1.58	1.95	2.19	2.26	2.47	2.73	2.98	3.36	3.92	4.60	5.07	6.51	7.54	8.85	9.93
50	0.70	1.07	1.33	1.79	2.21	2.49	2.57	2.81	3.08	3.37	3.81	4.50	5.31	5.84	7.42	8.48	9.80	11.01
100	0.79	1.20	1.49	2.00	2.48	2.79	2.90	3.16	3.43	3.77	4.26	5.12	6.09	6.66	8.38	9.45	10.72	12.06
200	0.87	1.33	1.64	2.21	2.74	3.10	3.24	3.52	3.80	4.19	4.73	5.79	6.93	7.55	9.40	10.45	11.63	13.08
500	0.98	1.50	1.85	2.50	3.09	3.52	3.72	4.02	4.30	4.76	5.38	6.74	8.16	8.83	10.83	11.80	12.80	14.41
1000	1.07	1.63	2.02	2.72	3.36	3.84	4.10	4.43	4.70	5.21	5.88	7.53	9.18	9.90	11.98	12.87	13.68	15.40

* These precipitation frequency estimates are based on an annual maxima series. AEP is the Annual Exceedance Probability.
Please refer to the documentation for more information. NOTE: Formatting forces estimates near zero to appear as zero.

* Upper bound of the 90% confidence interval Precipitation Frequency Estimates (inches)

AEP** (1-in-Y)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
2	0.34	0.51	0.64	0.86	1.06	1.20	1.26	1.42	1.60	1.69	1.89	2.13	2.47	2.77	3.61	4.34	5.31	5.96
5	0.48	0.73	0.90	1.21	1.50	1.68	1.75	1.93	2.16	2.28	2.57	2.91	3.38	3.79	4.94	5.83	7.06	7.91
10	0.57	0.87	1.08	1.46	1.80	2.01	2.08	2.29	2.54	2.69	3.04	3.47	4.06	4.52	5.87	6.86	8.20	9.20
25	0.70	1.06	1.31	1.77	2.19	2.44	2.53	2.76	3.04	3.25	3.66	4.27	5.03	5.56	7.15	8.21	9.64	10.84
50	0.79	1.20	1.49	2.01	2.49	2.77	2.88	3.14	3.44	3.68	4.16	4.92	5.85	6.42	8.18	9.25	10.69	12.05
100	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14	4.68	5.64	6.76	7.38	9.30	10.37	11.77	13.27
200	0.99	1.50	1.86	2.51	3.11	3.47	3.66	3.96	4.29	4.62	5.25	6.42	7.77	8.45	10.55	11.55	12.85	14.44
500	1.12	1.71	2.12	2.86	3.54	3.98	4.24	4.56	4.90	5.32	6.04	7.61	9.30	10.04	12.33	13.23	14.28	16.11
1000	1.23	1.87	2.32	3.13	3.87	4.39	4.71	5.08	5.40	5.88	6.69	8.60	10.63	11.39	13.81	14.57	15.39	17.41

* The upper bound of the confidence interval at 90% confidence level is the value which 5% of the simulated quantile values for a given frequency are greater than.
** These precipitation frequency estimates are based on an annual maxima series. AEP is the Annual Exceedance Probability.

Please refer to the documentation for more information. NOTE: Formatting prevents estimates near zero to appear as zero.

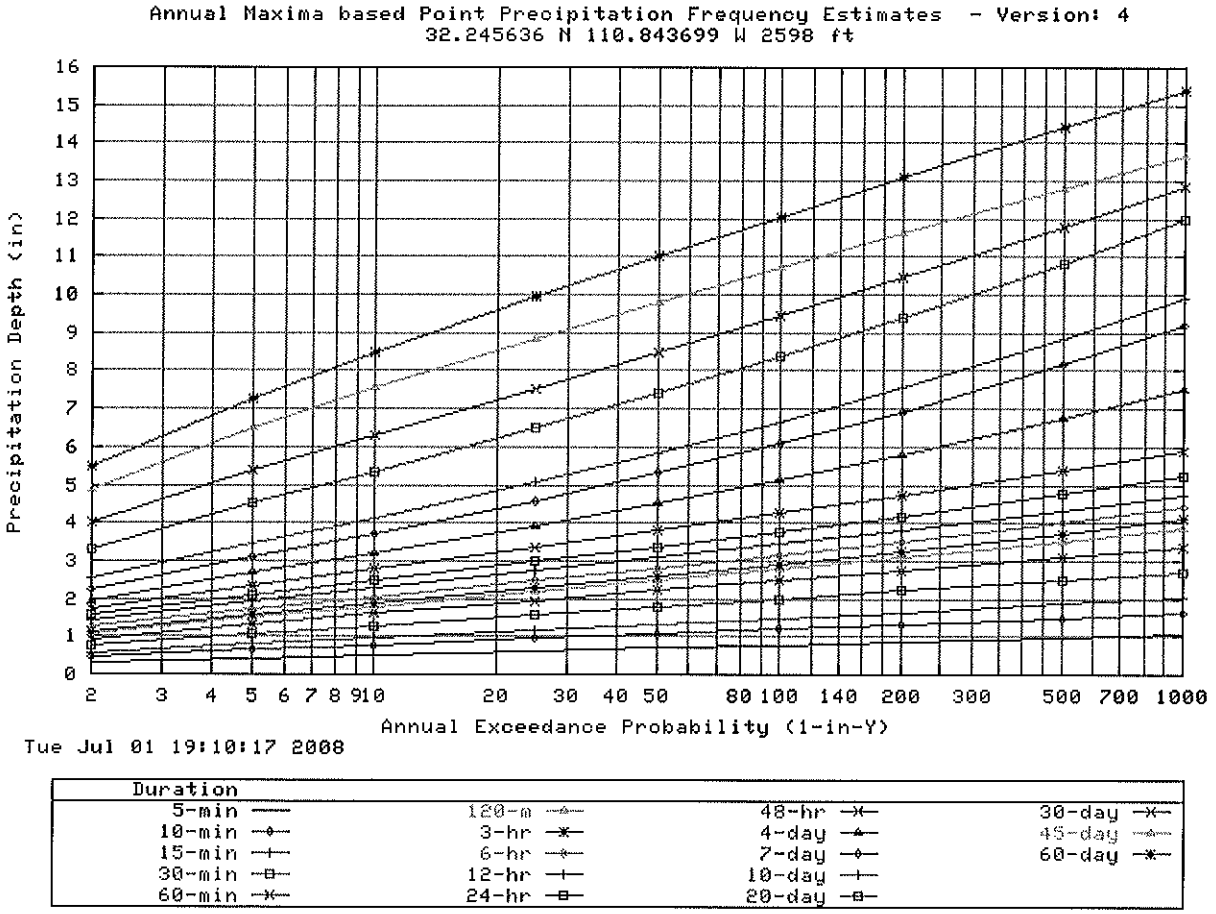
* Lower bound of the 90% confidence interval Precipitation Frequency Estimates (inches)

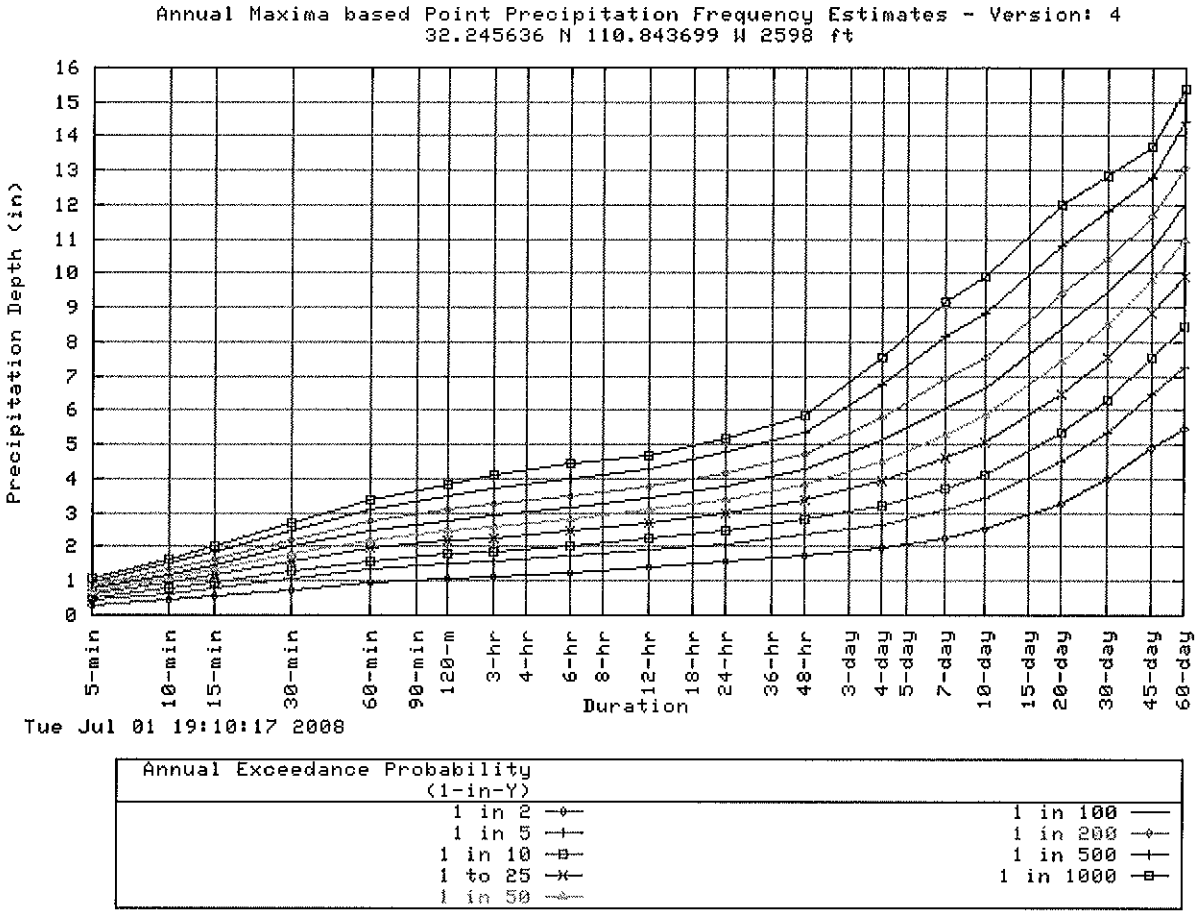
AEP** (1-in-Y)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
2	0.27	0.40	0.50	0.67	0.83	0.96	1.01	1.14	1.30	1.43	1.61	1.81	2.08	2.32	3.02	3.69	4.51	5.04

5	0.38	0.57	0.71	0.96	1.18	1.34	1.39	1.54	1.73	1.93	2.17	2.46	2.84	3.16	4.11	4.94	5.99	6.70
10	0.45	0.68	0.85	1.14	1.41	1.59	1.65	1.82	2.03	2.27	2.57	2.93	3.39	3.76	4.87	5.80	6.95	7.75
25	0.54	0.82	1.02	1.37	1.70	1.92	1.99	2.17	2.41	2.71	3.06	3.55	4.14	4.57	5.86	6.87	8.11	9.06
50	0.60	0.92	1.14	1.54	1.90	2.16	2.23	2.43	2.69	3.04	3.44	4.03	4.73	5.20	6.62	7.66	8.93	10.00
100	0.67	1.01	1.26	1.69	2.10	2.38	2.47	2.69	2.95	3.37	3.80	4.53	5.34	5.85	7.37	8.46	9.70	10.89
200	0.73	1.10	1.37	1.84	2.28	2.60	2.71	2.94	3.21	3.70	4.17	5.02	5.99	6.51	8.16	9.25	10.43	11.74
500	0.80	1.22	1.51	2.03	2.51	2.87	3.01	3.27	3.55	4.12	4.64	5.70	6.87	7.43	9.18	10.24	11.34	12.78
1000	0.85	1.29	1.61	2.16	2.68	3.08	3.24	3.53	3.80	4.45	5.00	6.24	7.58	8.14	9.97	10.99	12.01	13.53

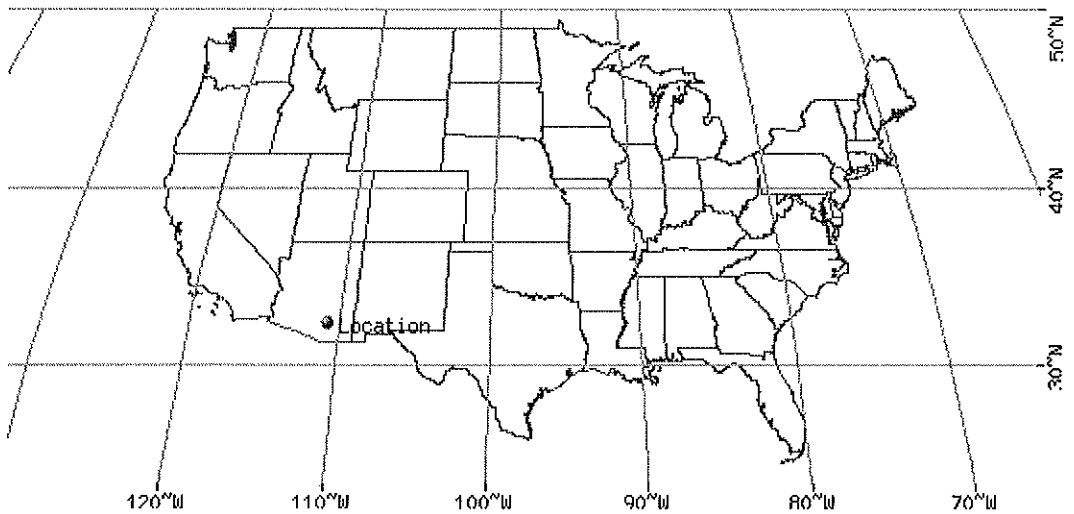
* The lower bound of the confidence interval at 90% confidence level is the value which 5% of the simulated quantile values for a given frequency are **less** than.
** These precipitation frequency estimates are based on an annual maxima series. AEP is the Annual Exceedance Probability.
Please refer to the documentation for more information. NOTE: Formatting prevents estimates near zero to appear as zero.

Text version of tables



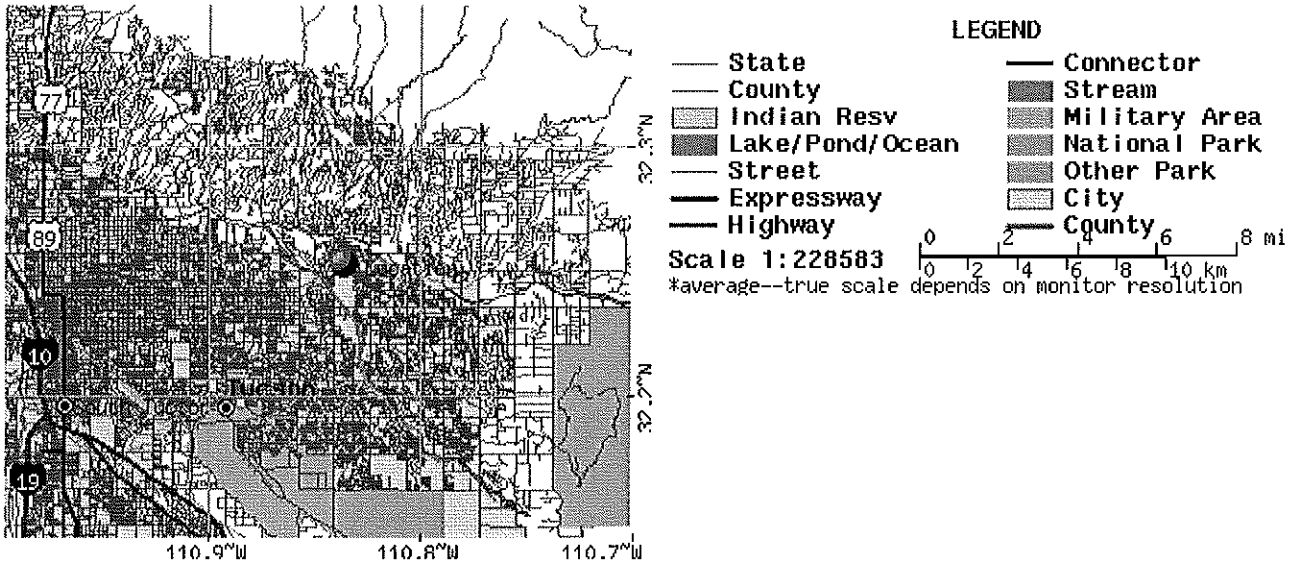


Maps -



These maps were produced using a direct map request from the U.S. Census Bureau Mapping and Cartographic Resources Tiger Map Server.

Please read disclaimer for more information.



Other Maps/Photographs -

View USGS digital orthophoto quadrangle (DOQ) covering this location from TerraServer; **USGS Aerial Photograph** may also be available
from this site. A DOQ is a computer-generated image of an aerial photograph in which image displacement caused by terrain relief and camera tilts has been removed. It combines the image characteristics of a photograph with the geometric qualities of a map. Visit the USGS for more information.

Watershed/Stream Flow Information -

Find the Watershed for this location using the U.S. Environmental Protection Agency's site.

Climate Data Sources -

Precipitation frequency results are based on data from a variety of sources, but largely NCDC. The following links provide general information
about observing sites in the area, regardless of if their data was used in this study. For detailed information about the stations used in this study,
please refer to our documentation.

Using the **National Climatic Data Center's (NCDC)** station search engine, locate other climate stations within:

+/-30 minutes ...OR... +/-1 degree of this location (32.245636/-110.843699). Digital ASCII data can be obtained directly from **NCDC**.

Find Natural Resources Conservation Service (NRCS) SNOTEL (SNOwpack TELemetry) stations by visiting the **Western Regional Climate Center's state-specific SNOTEL station maps.**

Hydrometeorological Design Studies Center
DOC/NOAA/National Weather Service
1325 East-West Highway
Silver Spring, MD 20910

(301) 713-1669
Questions?: HDSC.Questions@noaa.gov

Disclaimer

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD1 | Job #: 07125-01

Watershed Area: 17.8 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	39.0	1,576	0.0247	.020

Length of Watercourse (Lc): 1,576 feet | Mean Slope: 0.0247

Length to Cen. of Gravity (Lca): 788 feet | Weighted Basin Fac.: 0.020

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	80	99.	99.	0.958

Weighted Runoff Coef. (Cw): 0.880

Time of Concentration: 5.0 min

Rainfall Intensity (i) @ Tc: 10.68 in/hr

Runoff Supply Rate (q) @ Tc: 9.39 in/hr

PEAK DISCHARGE: 168 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.20	34
5-year	0.30	51
10-year	0.45	76
25-year	0.65	109
50-year	0.85	143

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD2 | Job #: 07125-01

Watershed Area: 21.4 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	45.0	1,720	0.0262	.022

Length of Watercourse (Lc): 1,720 feet | Mean Slope: 0.0262

Length to Cen. of Gravity (Lca): 860 feet | Weighted Basin Fac.: 0.022

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	65	99.	99.	0.958

Weighted Runoff Coef. (Cw): 0.821

Time of Concentration: 5.0 min

Rainfall Intensity (i) @ Tc: 10.68 in/hr

Runoff Supply Rate (q) @ Tc: 8.77 in/hr

PEAK DISCHARGE: 189 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.15	28
5-year	0.28	53
10-year	0.40	76
25-year	0.60	114
50-year	0.80	151

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD3 | Job #: 07125-01

Watershed Area: 3.9 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	23.0	586	0.0392	.022

Length of Watercourse (Lc): 586 feet | Mean Slope: 0.0392

Length to Cen. of Gravity (Lca): 293 feet | Weighted Basin Fac.: 0.022

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	65	99.	99.	0.958

Weighted Runoff Coef. (Cw): 0.821

Time of Concentration: 5.0 min

Rainfall Intensity (i) @ Tc: 10.68 in/hr

Runoff Supply Rate (q) @ Tc: 8.77 in/hr

PEAK DISCHARGE: 34 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.15	5.2
5-year	0.28	9.6
10-year	0.40	14
25-year	0.60	21
50-year	0.80	28

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD4 | Job #: 07125-01

Watershed Area: 4.7 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	28.0	896	0.0313	.022

Length of Watercourse (Lc): 896 feet | Mean Slope: 0.0313

Length to Cen. of Gravity (Lca): 448 feet | Weighted Basin Fac.: 0.022

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	65	99.	99.	0.958

Weighted Runoff Coef. (Cw): 0.821

Time of Concentration: 5.0 min

Rainfall Intensity (i) @ Tc: 10.68 in/hr

Runoff Supply Rate (q) @ Tc: 8.77 in/hr

PEAK DISCHARGE: 42 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.15	6.3
5-year	0.28	12
10-year	0.40	17
25-year	0.60	25
50-year	0.80	33

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD5 | Job #: 07125-01

Watershed Area: 16.3 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	29.0	1,332	0.0218	.022

Length of Watercourse (Lc): 1,332 feet | Mean Slope: 0.0218

Length to Cen. of Gravity (Lca): 666 feet | Weighted Basin Fac.: 0.022

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	65	99.	99.	0.958

Weighted Runoff Coef. (Cw): 0.821

Time of Concentration: 5.0 min

Rainfall Intensity (i) @ Tc: 10.68 in/hr

Runoff Supply Rate (q) @ Tc: 8.77 in/hr

PEAK DISCHARGE: 144 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.15	22
5-year	0.28	40
10-year	0.40	58
25-year	0.60	87
50-year	0.80	116

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD6 | Job #: 07125-01

Watershed Area: 6.1 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	15.0	870	0.0172	.022

Length of Watercourse (Lc): 870 feet | Mean Slope: 0.0172

Length to Cen. of Gravity (Lca): 435 feet | Weighted Basin Fac.: 0.022

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	65	99.	99.	0.958

Weighted Runoff Coef. (Cw): 0.821

Time of Concentration: 5.0 min

Rainfall Intensity (i) @ Tc: 10.68 in/hr

Runoff Supply Rate (q) @ Tc: 8.77 in/hr

PEAK DISCHARGE: 54 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.15	8.1
5-year	0.28	15
10-year	0.40	22
25-year	0.60	32
50-year	0.80	43

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD7 | Job #: 07125-01

Watershed Area: 67.5 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	44.0	2,566	0.0171	.035

Length of Watercourse (Lc): 2,566 feet | Mean Slope: 0.0171

Length to Cen. of Gravity (Lca): 1,283 feet | Weighted Basin Fac.: 0.035

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	0	99.	99.	0.000

Weighted Runoff Coef. (Cw): 0.567

Time of Concentration: 10.6 min

Rainfall Intensity (i) @ Tc: 7.86 in/hr

Runoff Supply Rate (q) @ Tc: 4.45 in/hr

PEAK DISCHARGE: 303 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.10	30
5-year	0.23	70
10-year	0.35	106
25-year	0.55	167
50-year	0.75	227

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD9 | Job #: 07125-01

Watershed Area: 1.6 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	2.0	307	0.0065	.018

Length of Watercourse (Lc): 307 feet | Mean Slope: 0.0065

Length to Cen. of Gravity (Lca): 153 feet | Weighted Basin Fac.: 0.018

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	100	99.	99.	0.958

Weighted Runoff Coef. (Cw): 0.958

Time of Concentration: 5.0 min

Rainfall Intensity (i) @ Tc: 10.68 in/hr

Runoff Supply Rate (q) @ Tc: 10.23 in/hr

PEAK DISCHARGE: 17 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.25	4.2
5-year	0.35	5.9
10-year	0.50	8.5
25-year	0.70	12
50-year	0.90	15

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD10 | Job #: 07125-01

Watershed Area: 0.7 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	3.0	287	0.0105	.018

Length of Watercourse (Lc): 287 feet | Mean Slope: 0.0105

Length to Cen. of Gravity (Lca): 143 feet | Weighted Basin Fac.: 0.018

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	100	99.	99.	0.958

Weighted Runoff Coef. (Cw): 0.958

Time of Concentration: 5.0 min

Rainfall Intensity (i) @ Tc: 10.68 in/hr

Runoff Supply Rate (q) @ Tc: 10.23 in/hr

PEAK DISCHARGE: 7.4 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.25	1.9
5-year	0.35	2.6
10-year	0.50	3.7
25-year	0.70	5.2
50-year	0.90	6.7

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD11 | Job #: 07125-01

Watershed Area: 1.4 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	2.0	594	0.0034	.018

Length of Watercourse (Lc): 594 feet | Mean Slope: 0.0034

Length to Cen. of Gravity (Lca): 297 feet | Weighted Basin Fac.: 0.018

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	100	99.	99.	0.958

Weighted Runoff Coef. (Cw): 0.958

Time of Concentration: 5.0 min

Rainfall Intensity (i) @ Tc: 10.68 in/hr

Runoff Supply Rate (q) @ Tc: 10.23 in/hr

PEAK DISCHARGE: 14 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.25	3.6
5-year	0.35	5.1
10-year	0.50	7.2
25-year	0.70	10
50-year	0.90	13

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD12 | Job #: 07125-01

Watershed Area: 3.0 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	4.0	685	0.0058	.018

Length of Watercourse (Lc): 685 feet | Mean Slope: 0.0058

Length to Cen. of Gravity (Lca): 342 feet | Weighted Basin Fac.: 0.018

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	100	99.	99.	0.958

Weighted Runoff Coef. (Cw): 0.958

Time of Concentration: 5.0 min

Rainfall Intensity (i) @ Tc: 10.68 in/hr

Runoff Supply Rate (q) @ Tc: 10.23 in/hr

PEAK DISCHARGE: 31 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.25	7.9
5-year	0.35	11
10-year	0.50	16
25-year	0.70	22
50-year	0.90	28

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD16 | Job #: 07125-01

Watershed Area: 1.7 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	3.0	410	0.0073	.018

Length of Watercourse (Lc): 410 feet | Mean Slope: 0.0073

Length to Cen. of Gravity (Lca): 205 feet | Weighted Basin Fac.: 0.018

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	100	99.	99.	0.958

Weighted Runoff Coef. (Cw): 0.958

Time of Concentration: 5.0 min

Rainfall Intensity (i) @ Tc: 10.68 in/hr

Runoff Supply Rate (q) @ Tc: 10.23 in/hr

PEAK DISCHARGE: 17 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.25	4.4
5-year	0.35	6.1
10-year	0.50	8.7
25-year	0.70	12
50-year	0.90	16

HYDROLOGIC DATA SHEET FOR PIMA COUNTY FLOOD PEAK PROCEDURE

Pima County Regional Flood Control District

Client: PCRFCD | Prepared by: jco

Project Name: Pantano Wash Bank Protection | Date: 7/7/2008

Concentration Point: TD17 | Job #: 07125-01

Watershed Area: 1.1 ac | Watershed Type: Medium Density Urbanized

Watercourse Data By Reach

Reach No.	Height (Hi)	Length (Li)	Slope (Si)	Basin Factor (Nb)
1	3.0	256	0.0117	.018

Length of Watercourse (Lc): 256 feet | Mean Slope: 0.0117

Length to Cen. of Gravity (Lca): 128 feet | Weighted Basin Fac.: 0.018

Veg. Cover Type(s): Desert Brush | Veg. Cover Density: 25 %

RETURN PERIOD: 100-years

Rainfall Depths: Manual Input of Rainfal Depths by User

Duration:	5-min	10-min	15-min	30-min	60-min	2-hr	3-hr	6-hr	12-hr	24-hr
Point Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14
Areal Values (in)	0.89	1.35	1.68	2.26	2.79	3.12	3.26	3.54	3.84	4.14

Soils Data

Soil Type	Percent	Curve # (CN)	Adj. Curve # (CN*)	Runoff Coef. (C)
B	100	83.	87.32	0.567
C	0	.	.	0.000
D	0	.	.	0.000
Imp.	100	99.	99.	0.958

Weighted Runoff Coef. (Cw): 0.958

Time of Concentration: 5.0 min

Rainfall Intensity (i) @ Tc: 10.68 in/hr

Runoff Supply Rate (q) @ Tc: 10.23 in/hr

PEAK DISCHARGE: 11 cfs

Lesser Return Periods

Return Period	Ratio	Qpeak
2-year	0.25	2.7
5-year	0.35	3.8
10-year	0.50	5.4
25-year	0.70	7.6
50-year	0.90	9.8