PART 5: RUNUP2

for transect: CM-159-1

Station locations shifted by: -0.19 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

RUNUP2 INPUT CONVERSIONS
for transect: CM-159-1

Incident significant wave height: 4.69 feet

Peak wave period: 13.47 seconds

Mean wave height: 2.94 feet

Local Depth below SWEL: 19.57 feet

Mean wave height deshoaled using Hunt approximation for
celerity assuming constant wave energy flux.
References: R.G. Dean and R.A. Dalrymple. 2000. Water

Wave Mechanics for Engineers and Scientists. World
Scientific Publishing Company, River Edge New Jersy

USACE (1985), Direct Methods for Calculating Wavelength, CETN-1-17
US Army Engineer Waterways Experiment Station Coastel Engineering
Research Center, Vicksburg, MS

also see Coastal Engineering Manual Part II-3
for discussion of shoaling coefficient

Depth, D = 19.57
Period, T = 11.45
Waveheight, H = 2.94
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*11.45*11.45/6.28 = 671.69
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 671.69/11.45 = 58.65
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/11.45 = 0.55
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 0.55*0.55*19.57/32.17 = 0.18
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 24.32
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(58.65/24.32) = 1.55
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 2.94/1.55 = 1.89

Deepwater mean wave height: 1.89 feet

END RUNUP2 CONVERSIONS

RUNUP2 RESULTS
for transect: CM-159-1

RUNUP2 SWEL:
8.80
8.80
8.80
8.80

8.80
8.80
8.80
8.80
8.80

RUNUP2 deepwater mean wave heights:
1.80
1.80
1.80
1.89
1.89
1.89
1.99
1.99
1.99

RUNUP2 mean wave periods:
10.88
11.45
12.03
10.88
11.45
12.03
10.88
11.45
12.03

RUNUP2 runup above SWEL:
0.65
0.71
0.80
0.67
0.75
0.82
0.70
0.79
0.88

RUNUP2 Mean runup height above SWEL: 0.75 feet

RUNUP2 2-percent runup height above SWEL: 1.65 feet

RUNUP2 2-percent runup elevation: 10.45 feet-NAVD88

RUNUP2 Messages:
Nonfatal Error, Check Output

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 4.69 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 2.65 feet

Peak wave period: 13.47 seconds

Average beach Slope: 1:44.17 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 2.68 feet

ACES Beach 2-percent runup elevation: 11.48 feet-NAVD88

ACES BEACH RUNUP is valid

______________END ACES BEACH RESULTS______________________

PART 5 COMPLETE____