_____
PART 5: RUNUP2

for transect: CM-133-1

Station locations shifted by: -0.97 feet from their
original location to set the shoreline to
elevation 0 for RUNUP2 input

_____RUNUP2 INPUT CONVERSIONS_____
for transect: CM-133-1

Incident significant wave height: 1.76 feet

Peak wave period: 2.70 seconds

Mean wave height: 1.10 feet

Local Depth below SWEL: 17.15 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 = 17.15
Period, T = 2.30
Waveheight, H = 1.10
Deep water wavelength, L0 (ft)
L0 = g*T*T/twopi
L0 = 32.17*2.30*2.30/6.28 = 27.02
Deep water wave celerity, C0 (ft/s)
C0 = L0/T
C0 = 27.02/2.30 = 11.76
Angular frequency, sigma (rad/s)
sigma = twopi/T
sigma = 6.28/2.30 = 2.74
Hunts (1979) approximation for Celerity C1H (ft/s) at Depth D (ft)
y = sigma.*sigma.*D./g
y = 2.74*2.74*17.15/32.17 = 3.99
C1H = sqrt(g.*D./(y+1./(1 + 0.6522.*y + 0.4622.*y.^2 + 0.0864.*y.^4 +0.0675.*y.^5)))
C1H = 11.75
Shoaling Coefficient KsH
KsH = sqrt(C0/C1H)
KsH = sqrt(11.76/11.75) = 1.00
Deepwater Wave Height H0_H (ft)
H0_H = H/KsH
H0_H = 1.10/1.00 = 1.10

Deepwater mean wave height: 1.10 feet

_____END RUNUP2 CONVERSIONS_____

_____RUNUP2 RESULTS_____
for transect: CM-133-1

RUNUP2 SWEL:
8.90
8.90
8.90
8.90

8.90
8.90
8.90
8.90
8.90

RUNUP2 deepwater mean wave heights:
1.04
1.04
1.04
1.10
1.10
1.10
1.15
1.15
1.15

RUNUP2 mean wave periods:
2.18
2.30
2.41
2.18
2.30
2.41
2.18
2.30
2.41

RUNUP2 runup above SWEL:
1.22
1.22
1.23
1.31
1.31
1.31
1.38
1.38
1.38

RUNUP2 Mean runup height above SWEL: 1.30 feet

RUNUP2 2-percent runup height above SWEL: 2.87 feet

RUNUP2 2-percent runup elevation: 11.77 feet-NAVD88

RUNUP2 Messages:
No Messages

_____END RUNUP2 RESULTS_____

_____ACES BEACH RUNUP_____

Incident significant wave height: 1.76 feet

Significant wave height deshoaled using Hunt equation

Deepwater significant wave height: 1.54 feet

Peak wave period: 2.70 seconds

Average beach Slope: 1:30.69 (H:V)

ACES RUNUP CALCULATED USING 'Aces_Beach_Runup.m'

ACES Beach 2-percent runup height above SWEL: 0.78 feet

ACES Beach 2-percent runup elevation: 9.68 feet-NAVD88

ACES BEACH RUNUP is valid

_______________END ACES BEACH RESULTS_______________________

PART 5 COMPLETE____