

Importance of PORTS

(to me)

CSCL Prevention First
2016

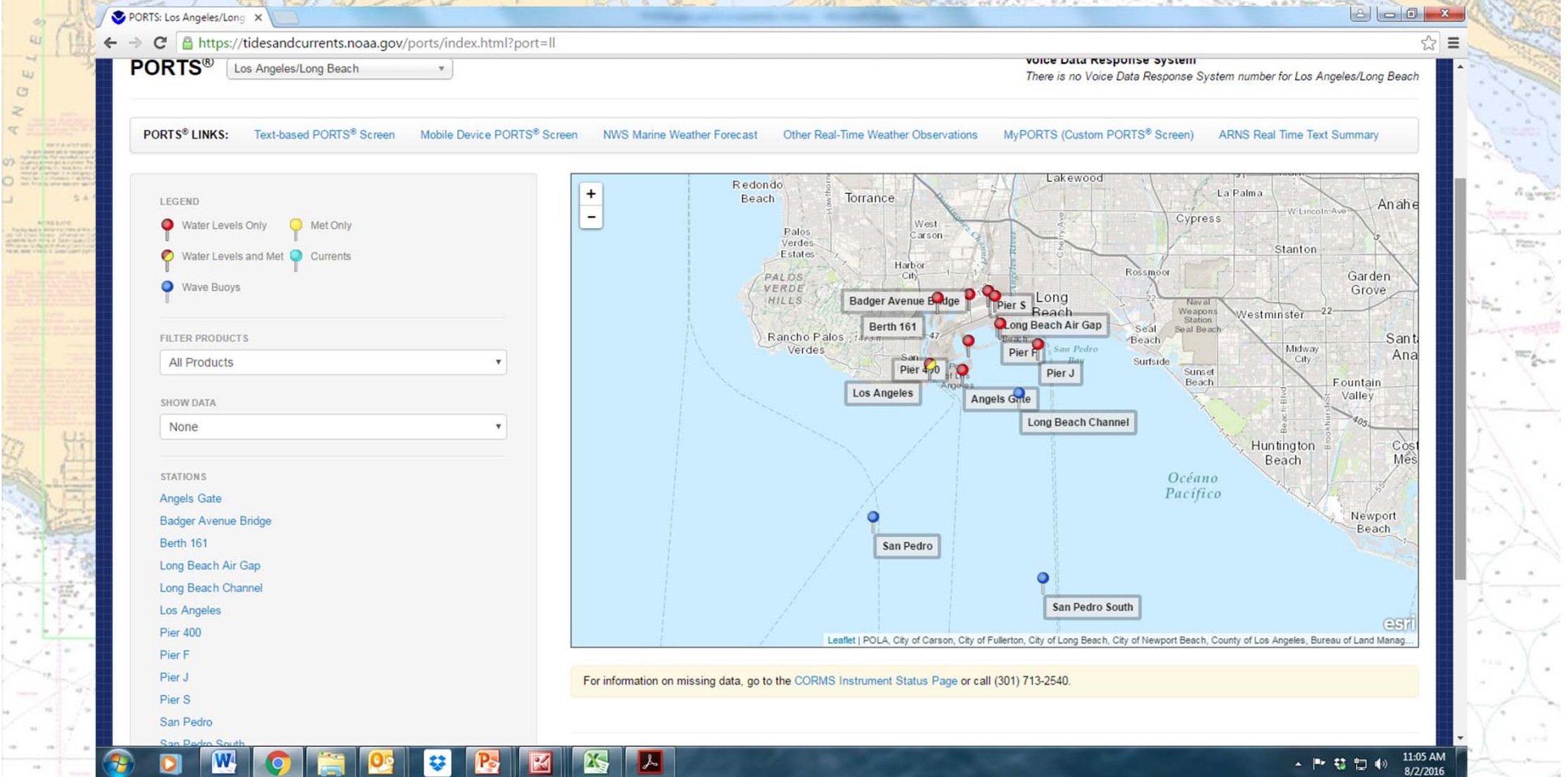
John Z. Strong
Vice President
Jacobsen Pilot Service
Chairman
LA/LB Harbor Safety Committee

Keep commerce moving safely



LA/LB PORTS

(Physical Oceanographic Real-Time System)

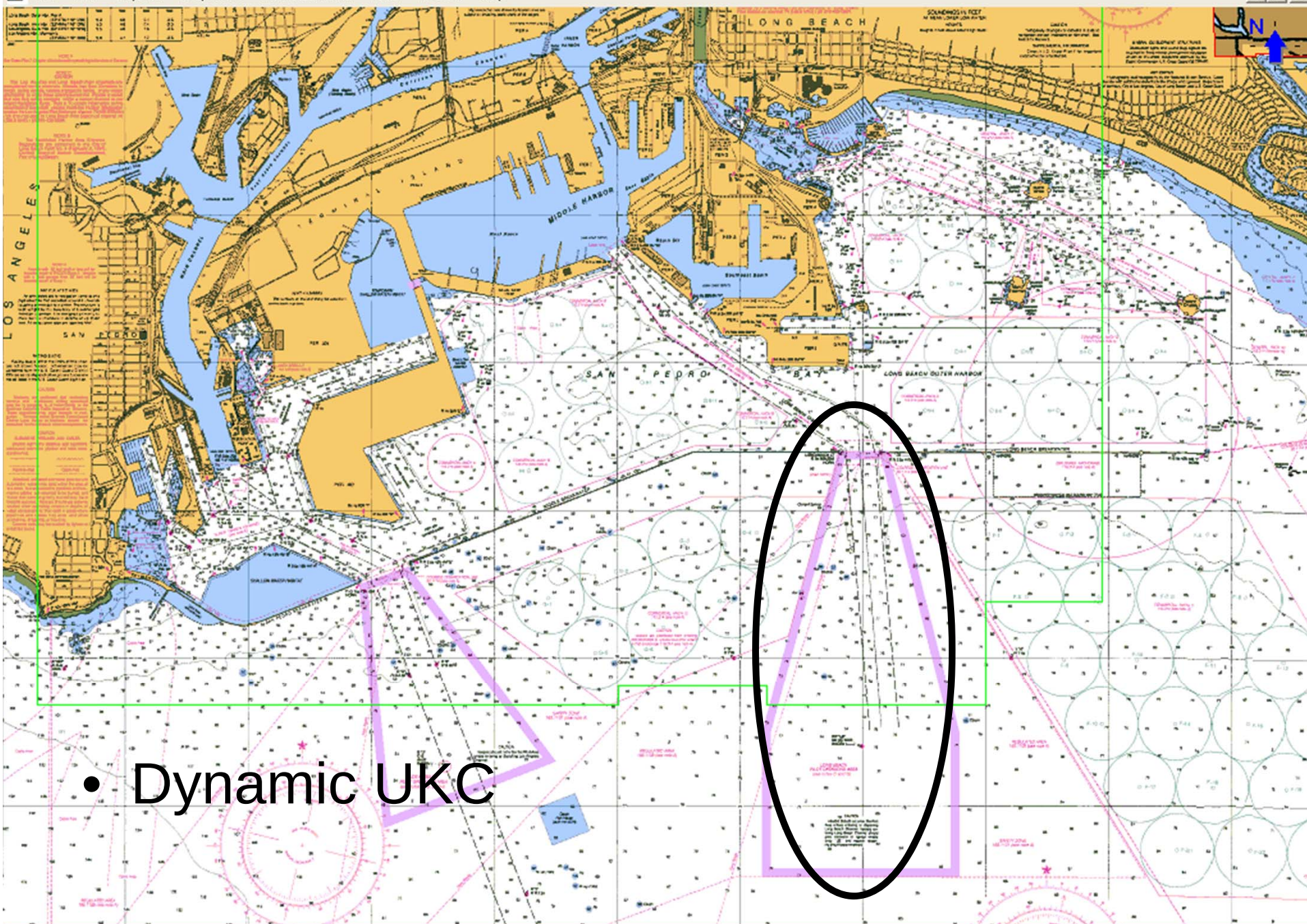


PORTS Mobile App

Los Angeles/Long Beach PORTS, NOAA/NOS 2016-08-02 08:28 PDT

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-----Water Levels (above MLLW)-----
Los Angeles          3.6 ft, Rising
-----Winds-----
      Spd Dir Gusts      Spd Dir Gusts
Pier S          2 kn SSW      4 Badger Avenue Brdg      *** kn *** ***
Berth 161        calm          Pier F          3 kn SSW      3
Pier 400         1 kn  S       1 Pier J          3 kn WSW      3
Angels Gate      5 kn  SW       7
-----Air and Water Temperature-----
      Air   Water      Air   Water
Pier F          70 °F          Los Angeles          68 °F
Angels Gate      69 °F          Long Beach Channel          71 °F
San Pedro              73 °F San Pedro South          74 °F
-----Barometric Pressure-----
Pier F          1016 mb Rising      Los Angeles          1017 mb Rising
Angels Gate      1017 mb Rising
-----Air Gap/Bridge Clearance (above water surface)-----
Gerald Desmond Brdg 157.9 ft, Decr.
-----Waves-----
Station      SigHt PkDir PkPer Station      SigHt PkDir PkPer
Long Beach Channel 3.4 ft 189°T 15 s San Pedro          2.3 ft 177°T 15 s
San Pedro South    2.6 ft 178°T 15 s
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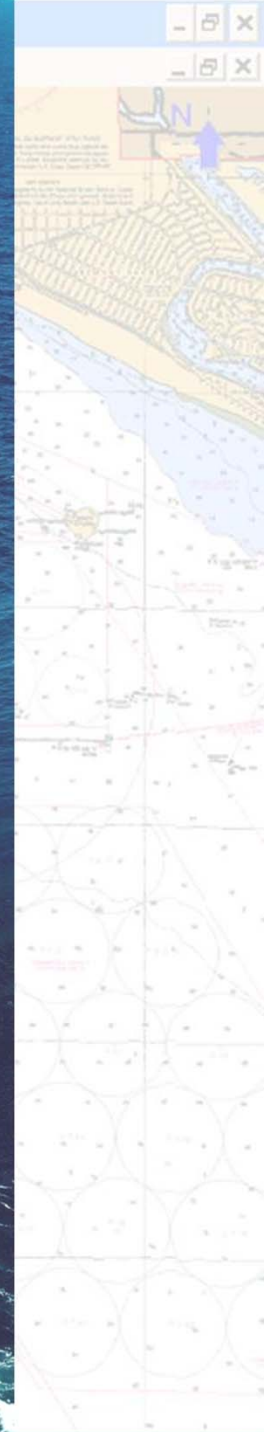
*** Data not displayed as a result of quality control monitoring. For information on missing data, go to https://corms.nos.noaa.gov/instrument_status.html or call (301) 713-2540.



- Dynamic UKC

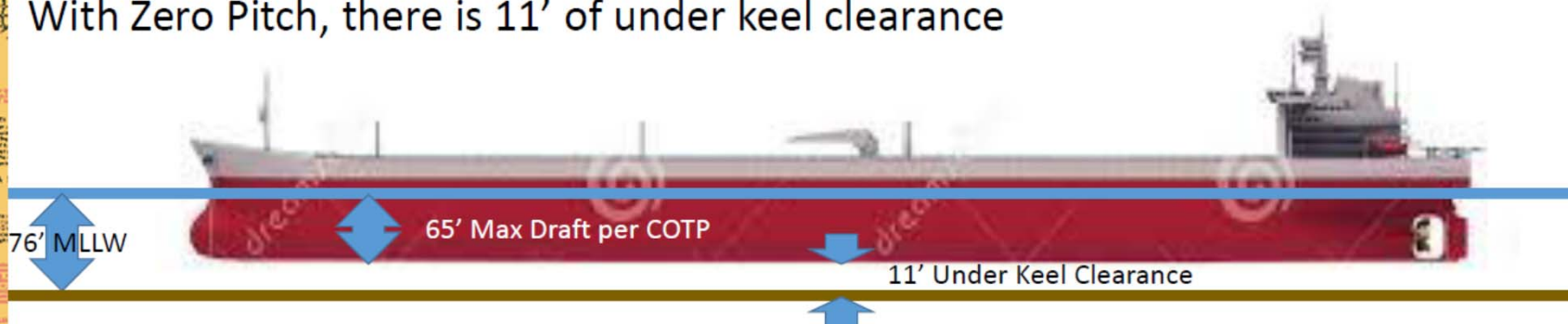
The Largest Tanker

1096 X 230 X 65

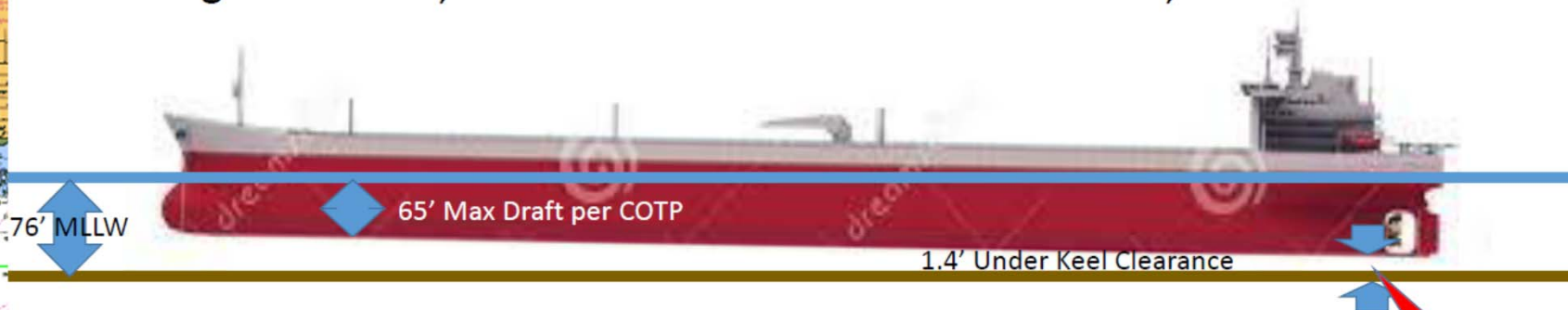




With Zero Pitch, there is 11' of under keel clearance



With 1 degree of Pitch, there is a 9.6' increase in draft for a 1,100 foot tanker:

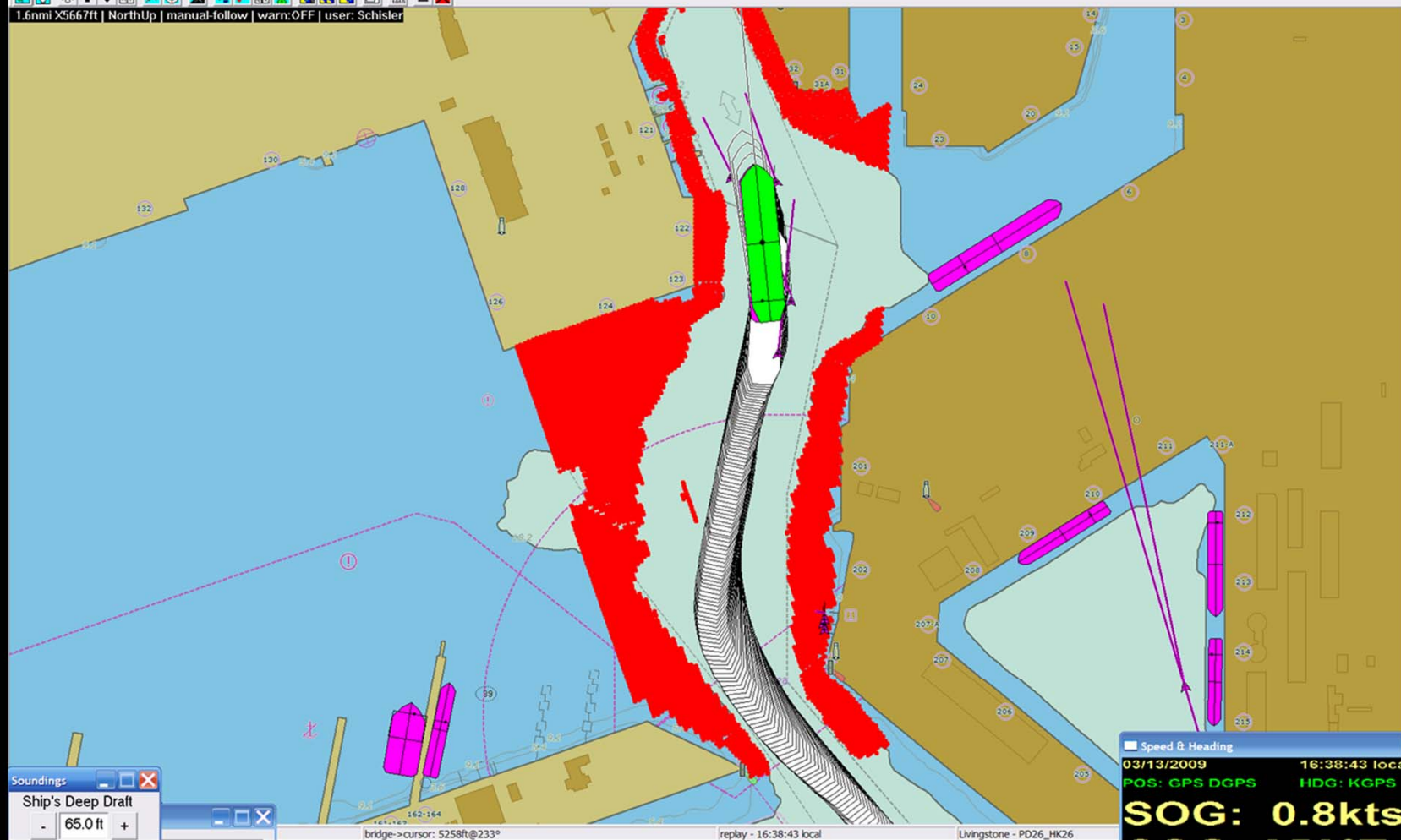


POLB dredged to 76 feet from approach channel to Pier T121 (Tesoro and Pier T121 Users)

1.4' UKC!!



Control Display Vessels Charts Routes Configuration Hide Help Exit
 1.6nm X5667ft | NorthUp | manual-follow | warn:OFF | user: Schisler



UKC

Los Angeles/Long Beach PORTS, NOAA/NOS 2016-08-02 08:28 PDT

-----Water Levels (above MLLW)-----
 Los Angeles 3.6 ft, Rising

-----Winds-----

	Spd	Dir	Gusts		Spd	Dir	Gusts
Pier S	2 kn	SSW	4	Badger Avenue Brdg	*** kn	***	***
Berth 161	calm			Pier F	3 kn	SSW	3
Pier 400	1 kn	S	1	Pier J	3 kn	WSW	3
Angels Gate	5 kn	SW	7				

-----Air and Water Temperature-----

	Air	Water		Air	Water
Pier F	70 °F		Los Angeles		68 °F
Angels Gate	69 °F		Long Beach Channel		71 °F
San Pedro		73 °F	San Pedro South		74 °F

-----Barometric Pressure-----

Pier F	1016 mb	Rising	Los Angeles	1017 mb	Rising
Angels Gate	1017 mb	Rising			

-----Air Gap/Bridge Clearance (above water surface)-----
 Gerald Desmond Brdg 157.9 ft, Decr.

-----Waves-----

Station	SigHt	PkDir	PkPer	Station	SigHt	PkDir	PkPer
Long Beach Channel	3.4 ft	189°T	15 s	San Pedro	2.3 ft	177°T	15 s
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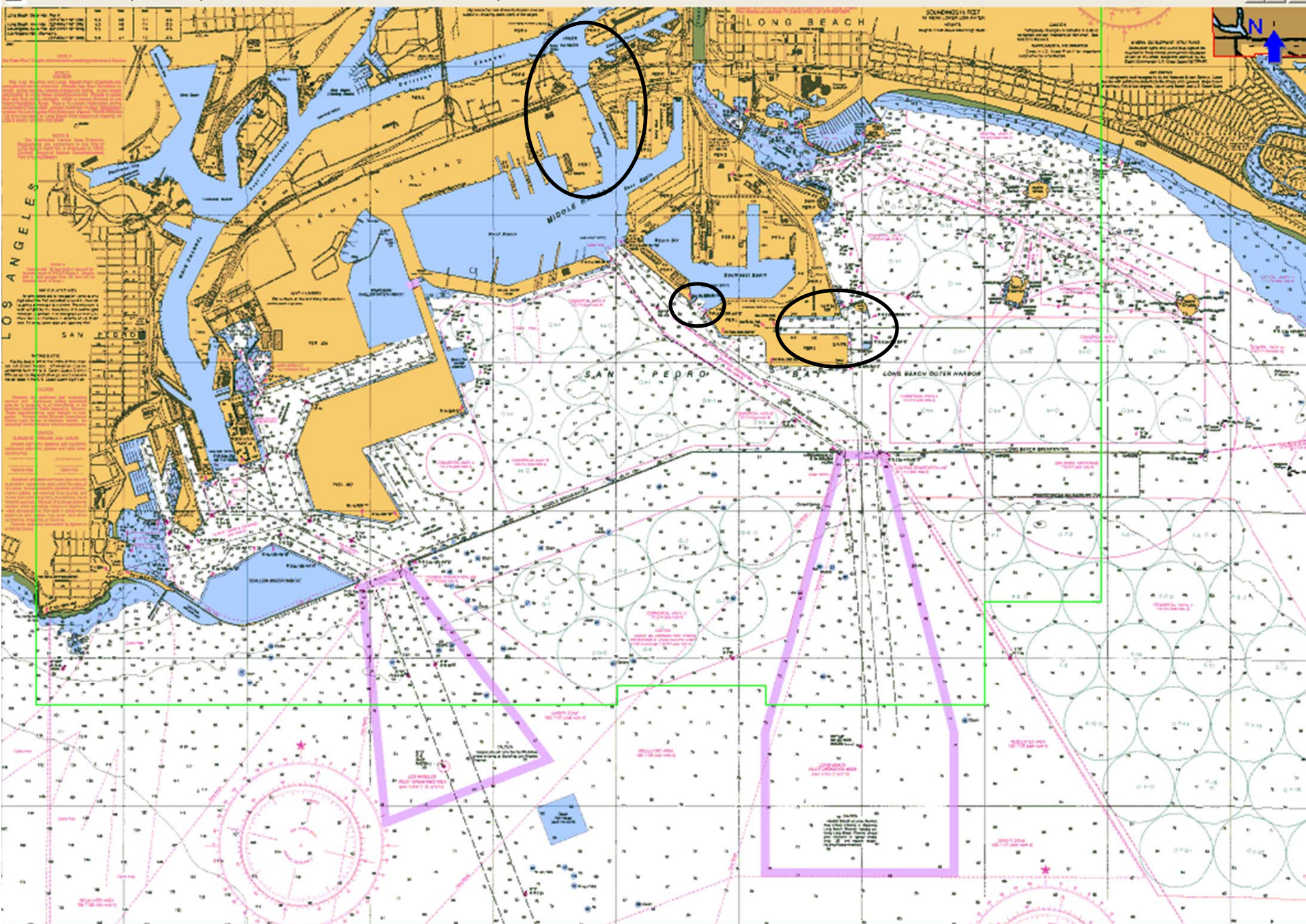
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Wind Force Table

Wind force in knots	wind force in m/s	force in tonnes 1000m ²	5000 m ²	7500 m ²	10000 m ²	12000m ²	14000m ²	16000m ²
5	2.5	0.3	1.74	2.60	3.5	4.2	4.9	5.6
10	5	1.4	6.94	10.42	13.9	16.7	19.4	22.2
15	7.5	3.1	15.63	23.44	31.3	37.5	43.8	50.0
20	10	5.6	27.78	41.67	55.6	66.7	77.8	88.9
25	12.5	8.7	43.40	65.10	86.8	104.2	121.5	138.9
30	15	12.5	62.50	93.75	125.0	150.0	175.0	200.0
35	17.5	17.0	85.07	127.60	170.1	204.2	238.2	272.2
40	20	22.2	111.11	166.67	222.2	266.7	311.1	355.6
45	22.5	28.1	140.63	210.94	281.3	337.5	393.8	450.0
50	25	34.7	173.61	260.42	347.2	416.7	486.1	555.6

$V^2/18 =$ tonnes per 1000 m²

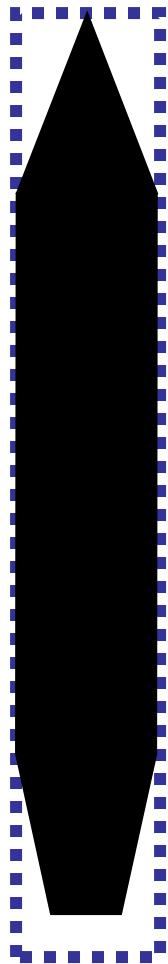
V = wind speed in m/sec





Effect of Wind on Vessel Swept Path

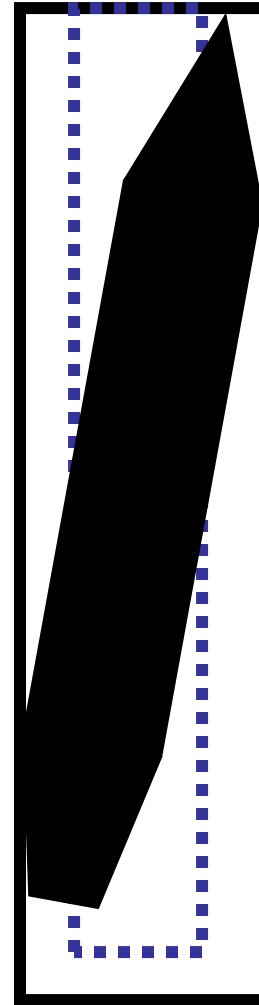
144'



Under No
Wind
Conditions

LOA 1200'

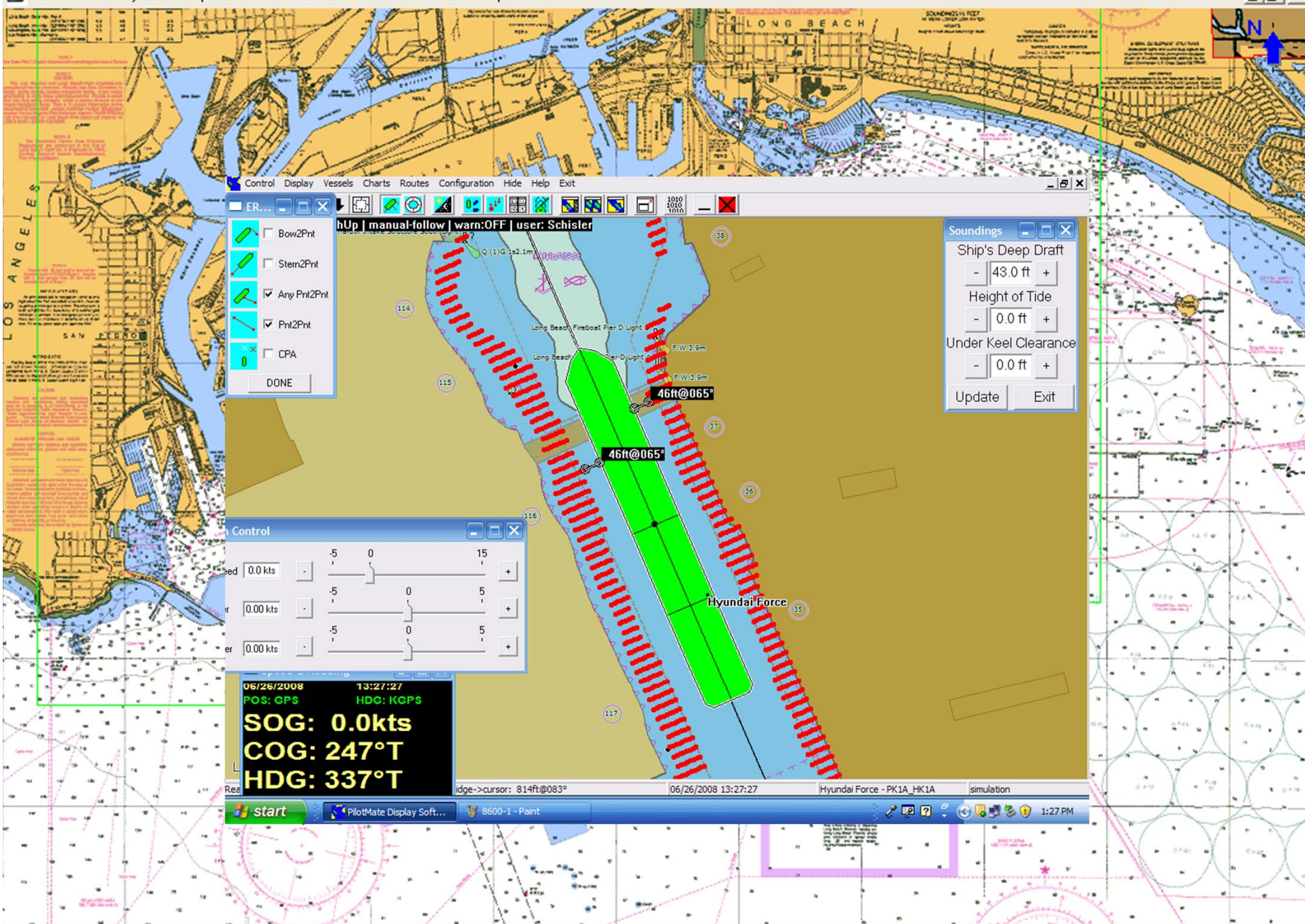
244 Feet of Swept Path



With 20
Knots of
Beam Wind



*Every 1
degree
of
leeway
adds 20'
to swept
path*



Pier F

2016-08-02 08:18:50 PDT

WIND SPEED 2.8 kts

WIND DIRECTION 182.1°t



WIND GUST 3.1 kts

TEMP 69.8°F

RH 83.5 %

BAROMETER 1016 mb

DEW POINT 64.6° F

Pier S

2016-08-02 08:18:51 PDT

WIND SPEED 1.5 kts

WIND DIRECTION 229.0°t



WIND GUST 3.8 kts

Pier J

2016-08-02 08:18:49 PDT

WIND SPEED 2.5 kts

WIND DIRECTION 262.6°t



WIND GUST 3.5 kts

Real time readings at the Pilot Station

Wind

Los Angeles/Long Beach PORTS, NOAA/NOS 2016-08-02 08:28 PDT

-----Water Levels (above MLLW)-----

Los Angeles 3.6 ft, Rising

-----Winds-----

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-----Air Gap/Bridge Clearance (above water surface)-----

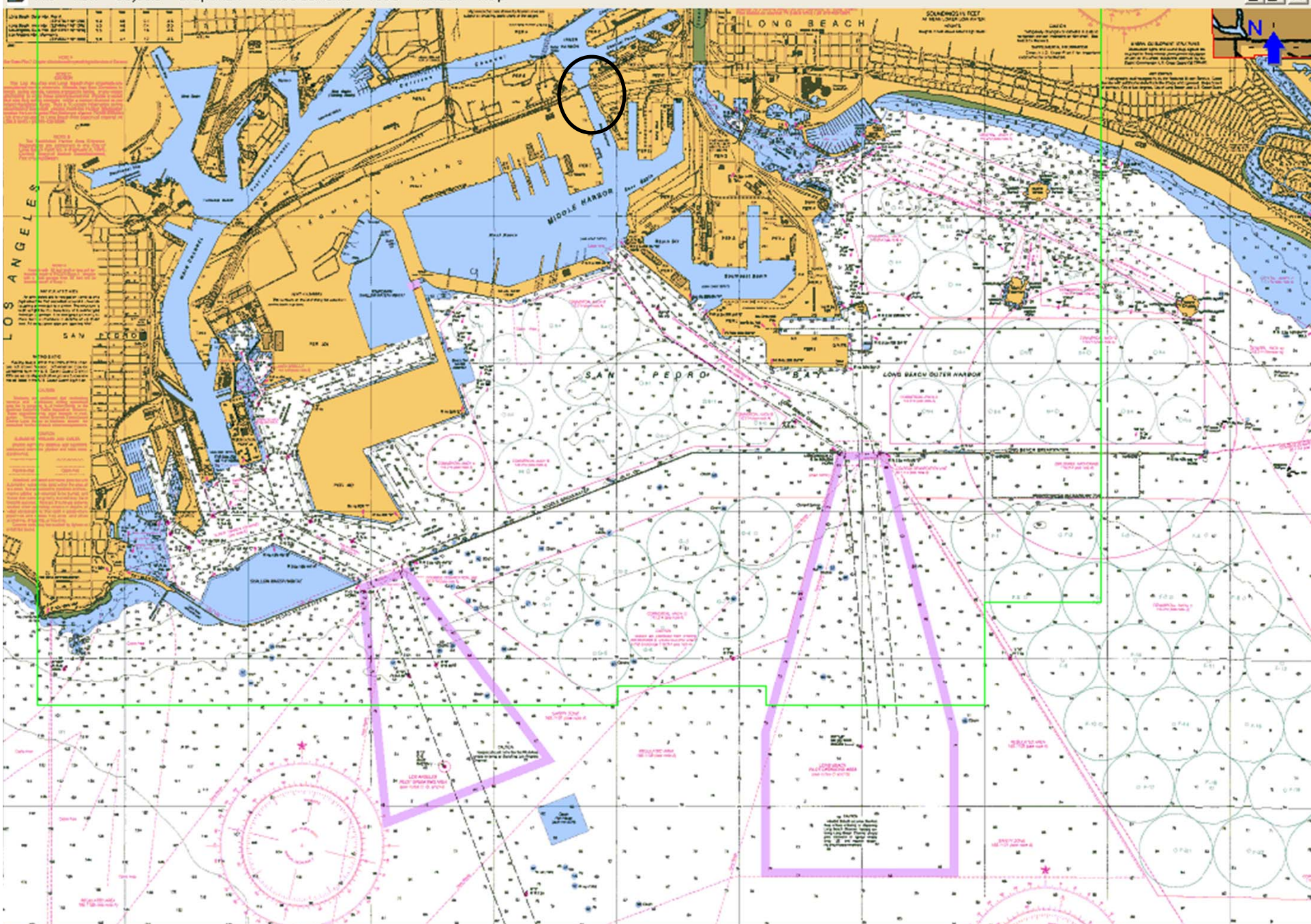
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3 feet Minimum Clearance





Air Draft

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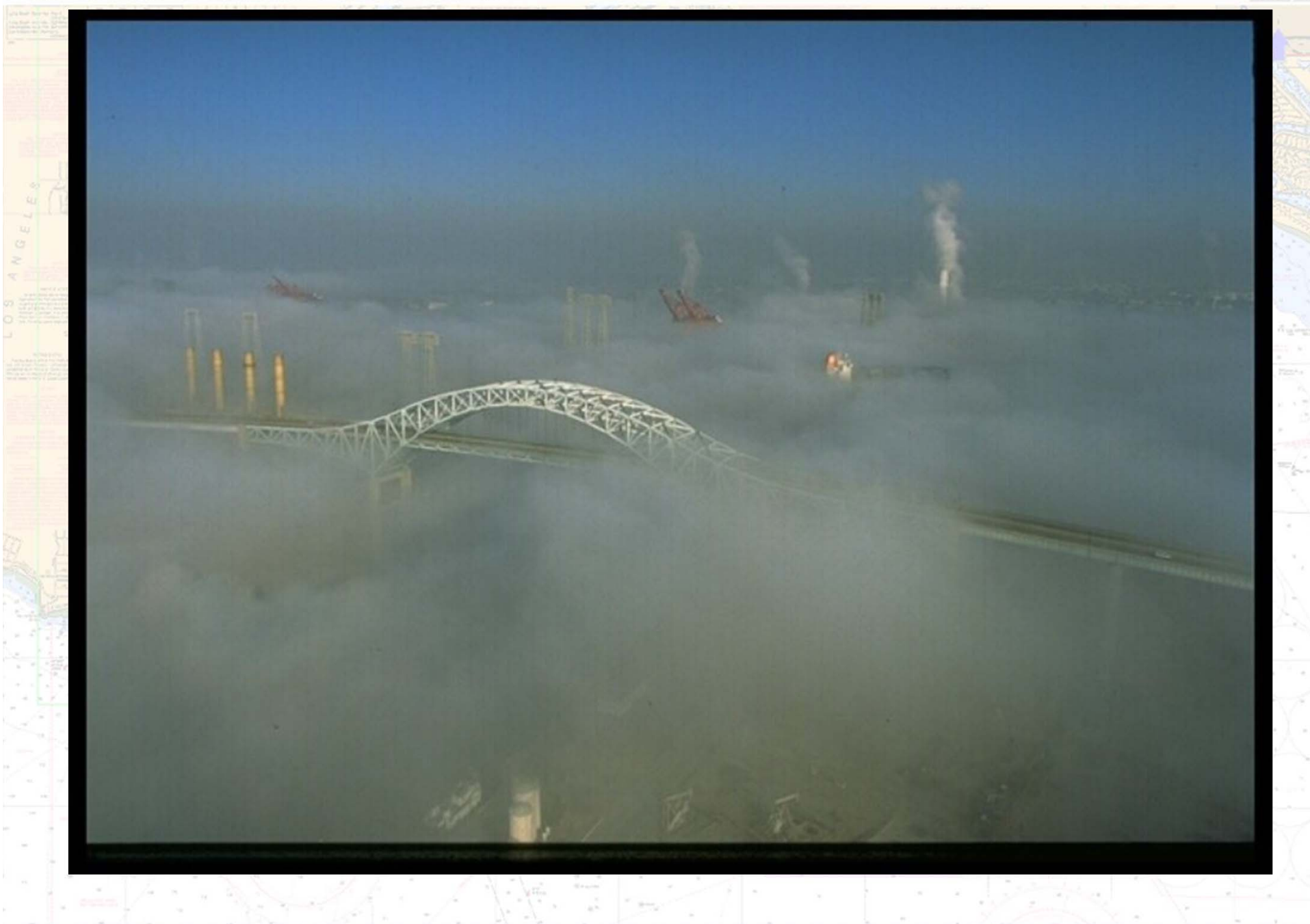
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-----Waves-----

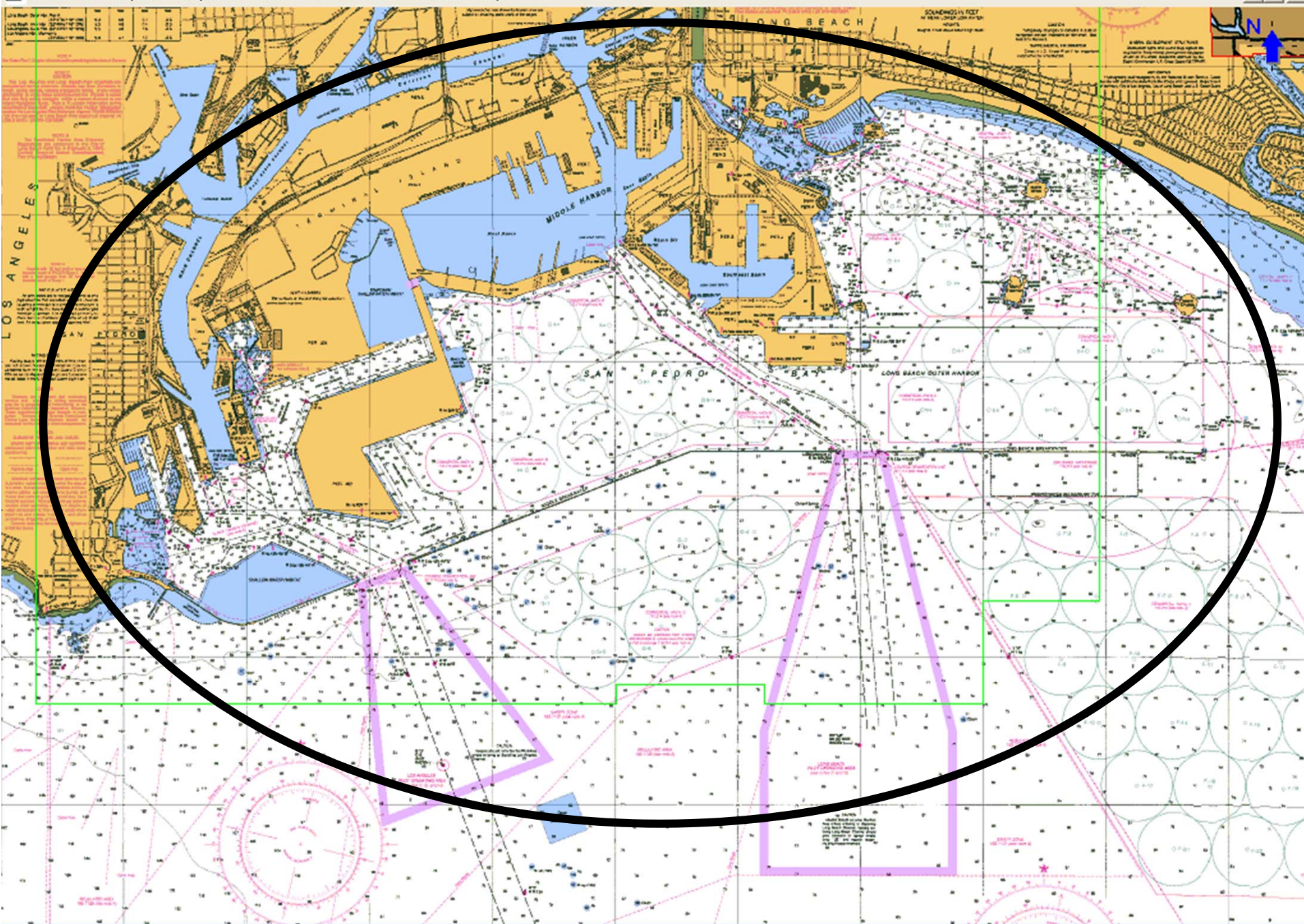
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Visibility

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NOAA products we use now

- tides, real time and predicted
- air gap
- wind
- CORMS
- soundings
- ENC's
- Mobile PORTS

NOAA products we would like

- Current meters
- Swell height forecast
- Visibility sensors
- PORTS transmitted on AIS