

# VESSEL TRAFFIC RISK ASSESSMENT (VTRA) 2010

3D Relative Risk Profile Comparison  
Vessel Time Exposure

## CASE S – DP 415 + Bunkering

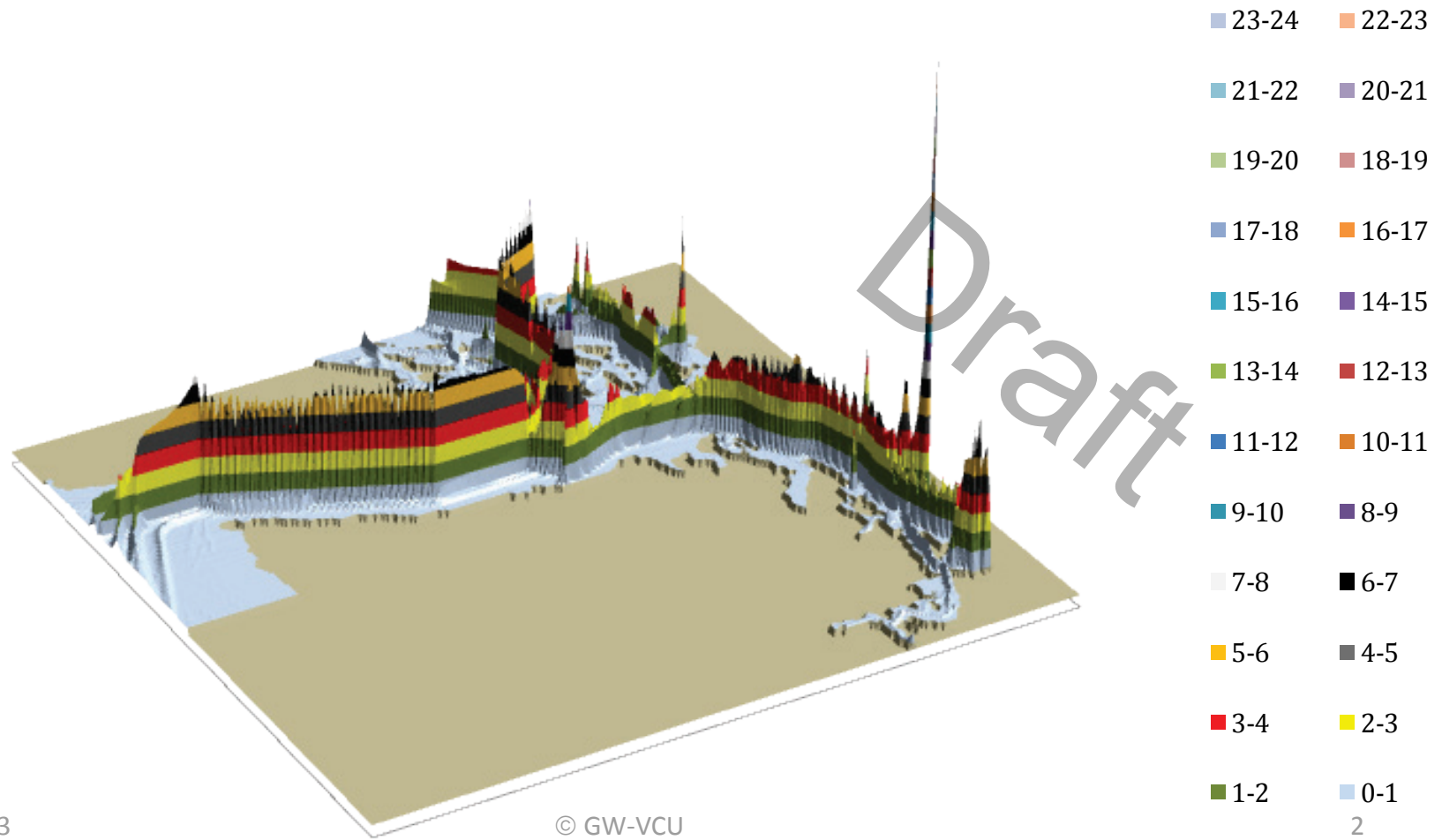
Dr. J. Rene van Dorp and Dr. Jason R.W Merrick

November 2013



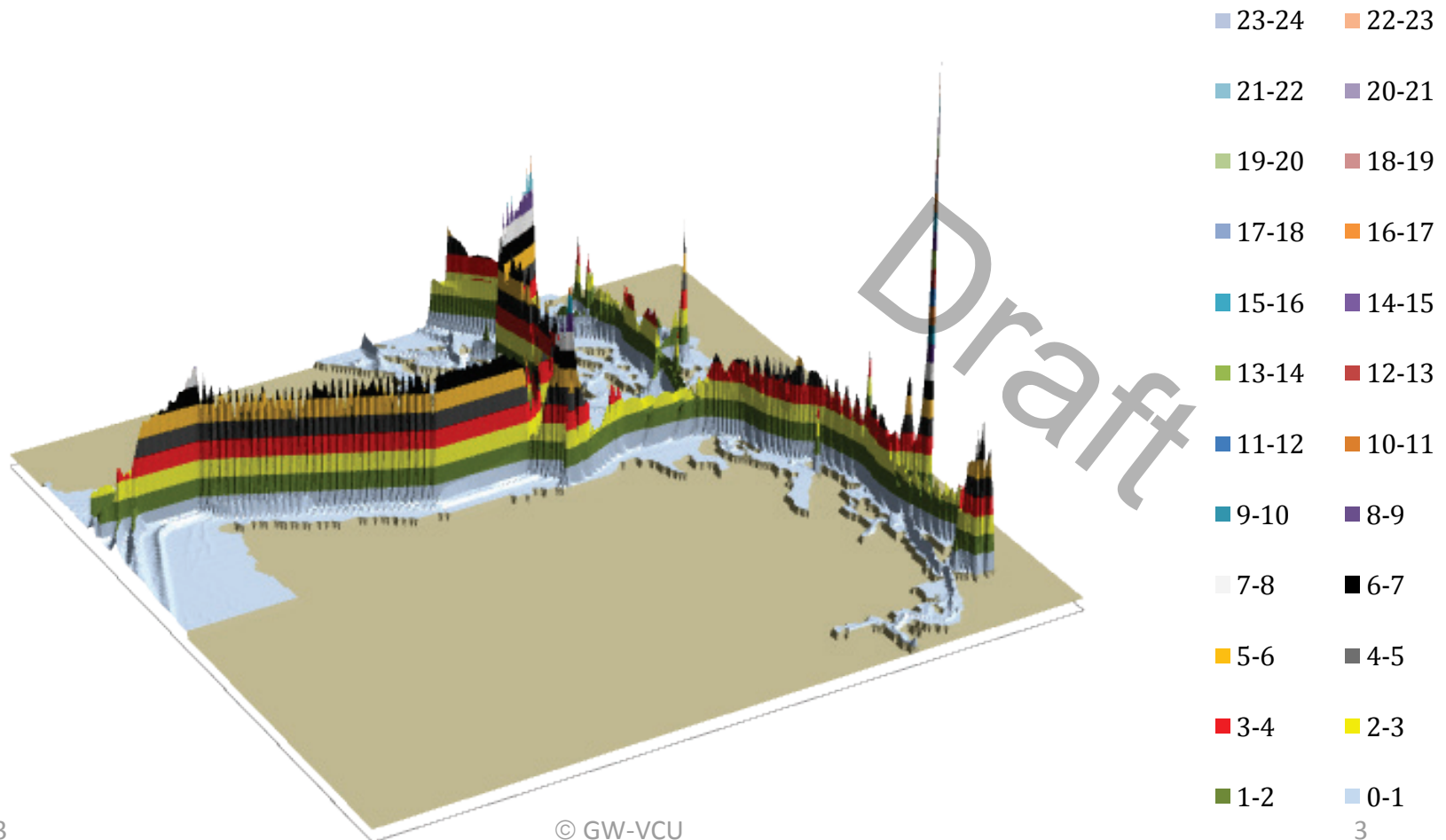
# VESSEL TRAFFIC RISK ASSESSMENT (VTRA) 2010

## P: Base Case 3D Risk Profile All FV - Vessel Time Exposure: 100% of Base Case VTE



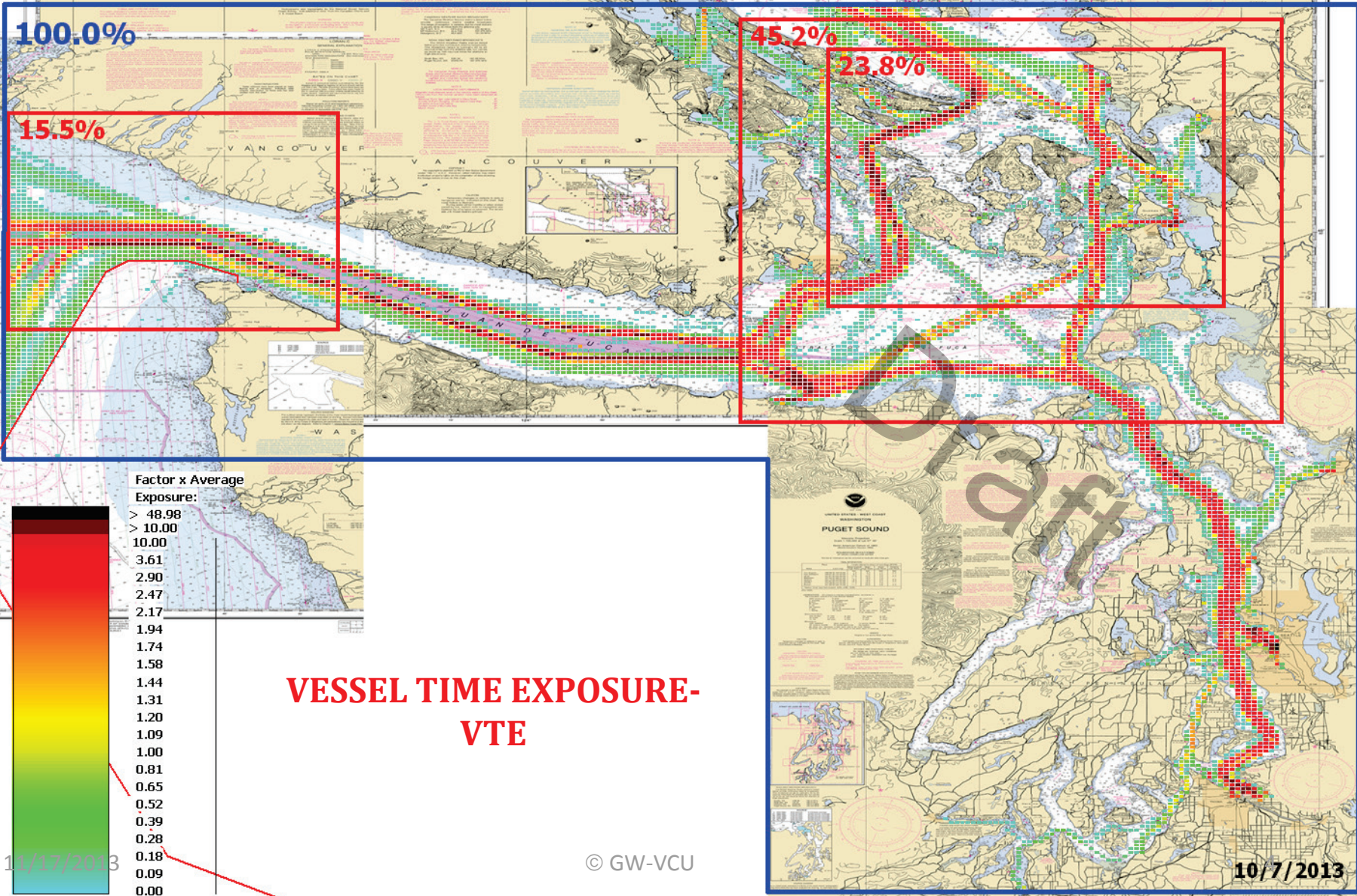
# VESSEL TRAFFIC RISK ASSESSMENT (VTRA) 2010

## S: DP 415 3D Risk Profile All FV - Vessel Time Exposure: 105% of Base Case VTE



# VESSEL TRAFFIC RISK ASSESSMENT (VTRA) 2010

P: VTRA 2010 - BASE CASE - All FV



- Factor x Average Exposure:
- > 48.98
  - > 10.00
  - 10.00
  - 3.61
  - 2.90
  - 2.47
  - 2.17
  - 1.94
  - 1.74
  - 1.58
  - 1.44
  - 1.31
  - 1.20
  - 1.09
  - 1.00
  - 0.81
  - 0.65
  - 0.52
  - 0.39
  - 0.28
  - 0.18
  - 0.09
  - 0.00

VESSEL TIME EXPOSURE-  
VTE

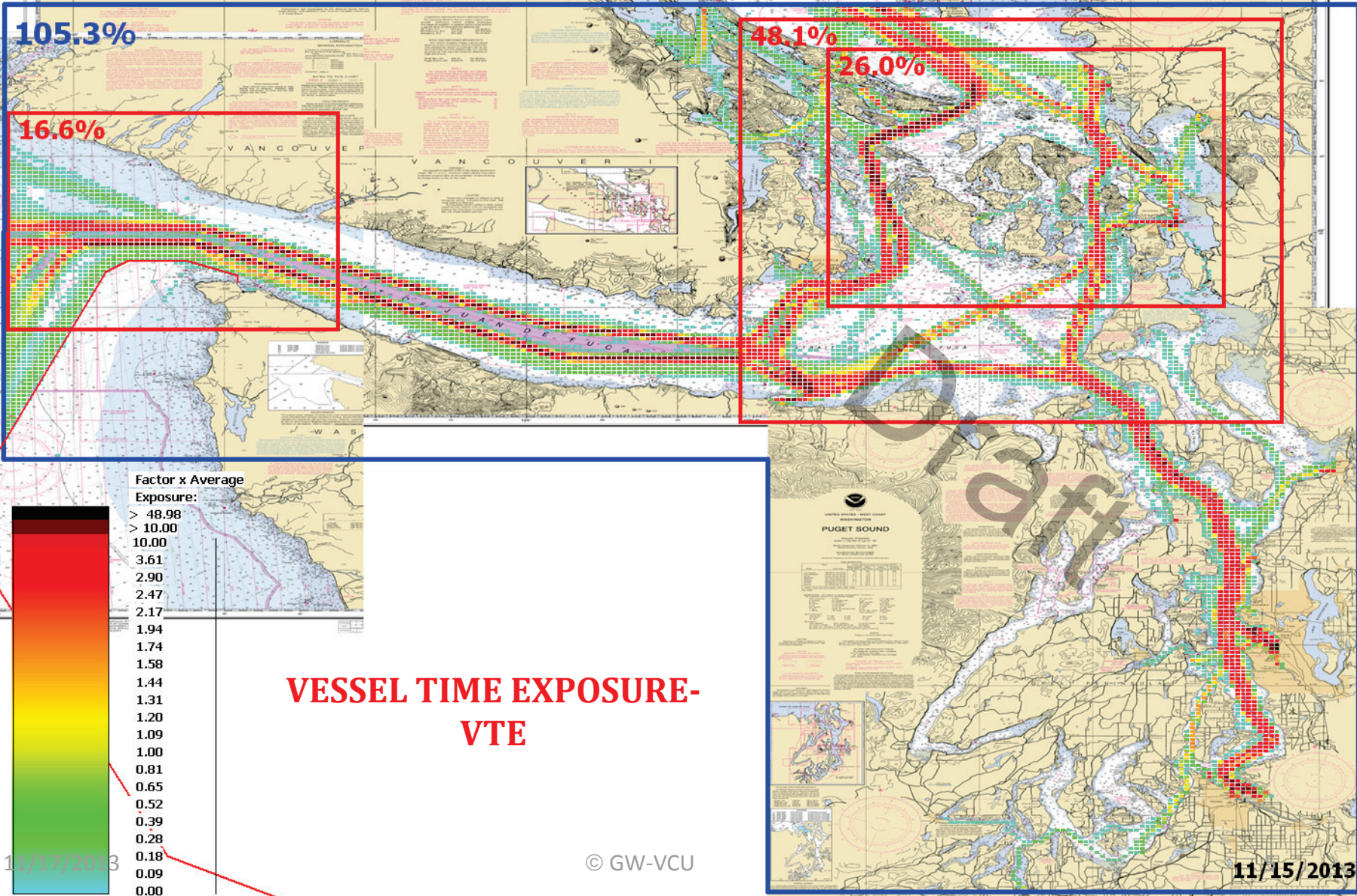
11/17/2013

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10/7/2013

# VESSEL TRAFFIC RISK ASSESSMENT (VTRA) 2010

S: VTRA 2010 - Delta Port - Cont. 67 and Bulk 348 - All FV



Factor x Average Exposure:

- > 48.98
- > 10.00
- 10.00
- 3.61
- 2.90
- 2.47
- 2.17
- 1.94
- 1.74
- 1.58
- 1.44
- 1.31
- 1.20
- 1.09
- 1.00
- 0.81
- 0.65
- 0.52
- 0.39
- 0.28
- 0.18
- 0.09
- 0.00

VESSEL TIME EXPOSURE-  
VTE

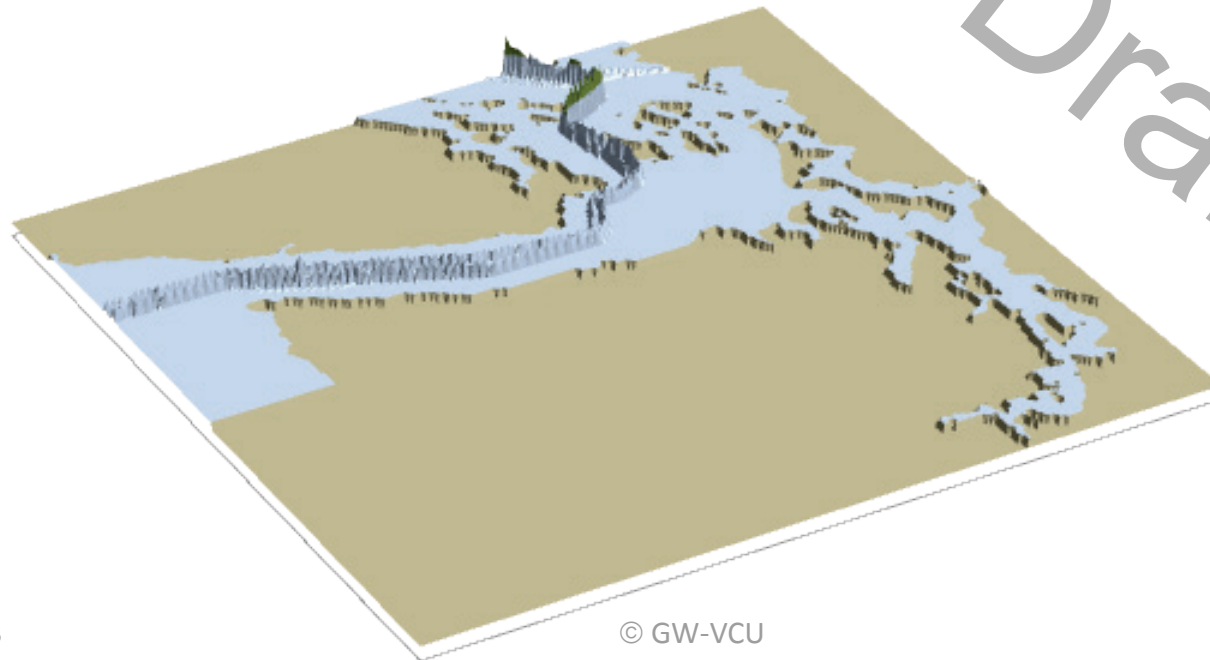
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11/15/2013

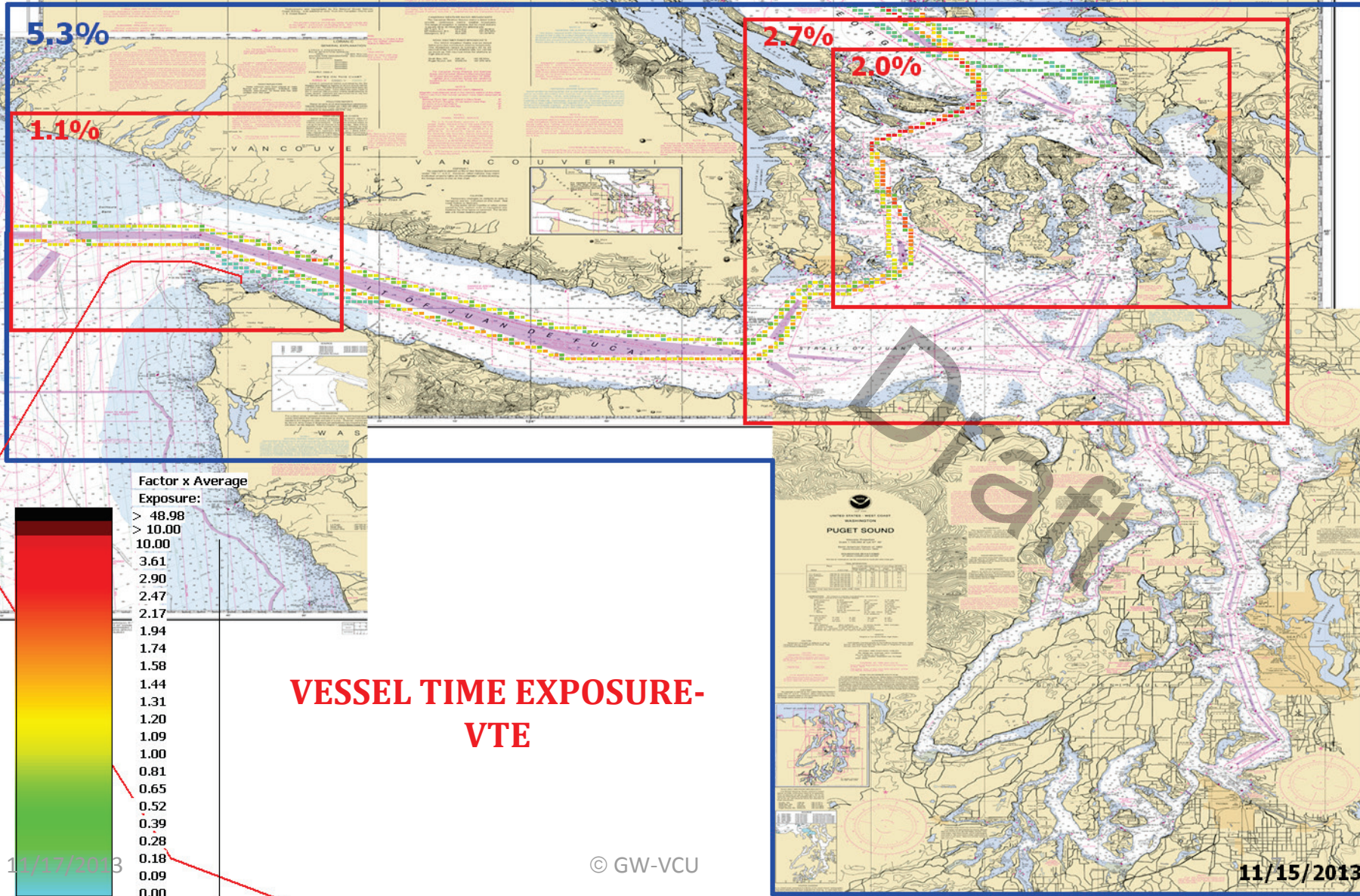
# VESSEL TRAFFIC RISK ASSESSMENT (VTRA) 2010

## S: DP 415 3D Risk Profile What-If FV - Vessel Time Exp.: 5% of Base Case VTE



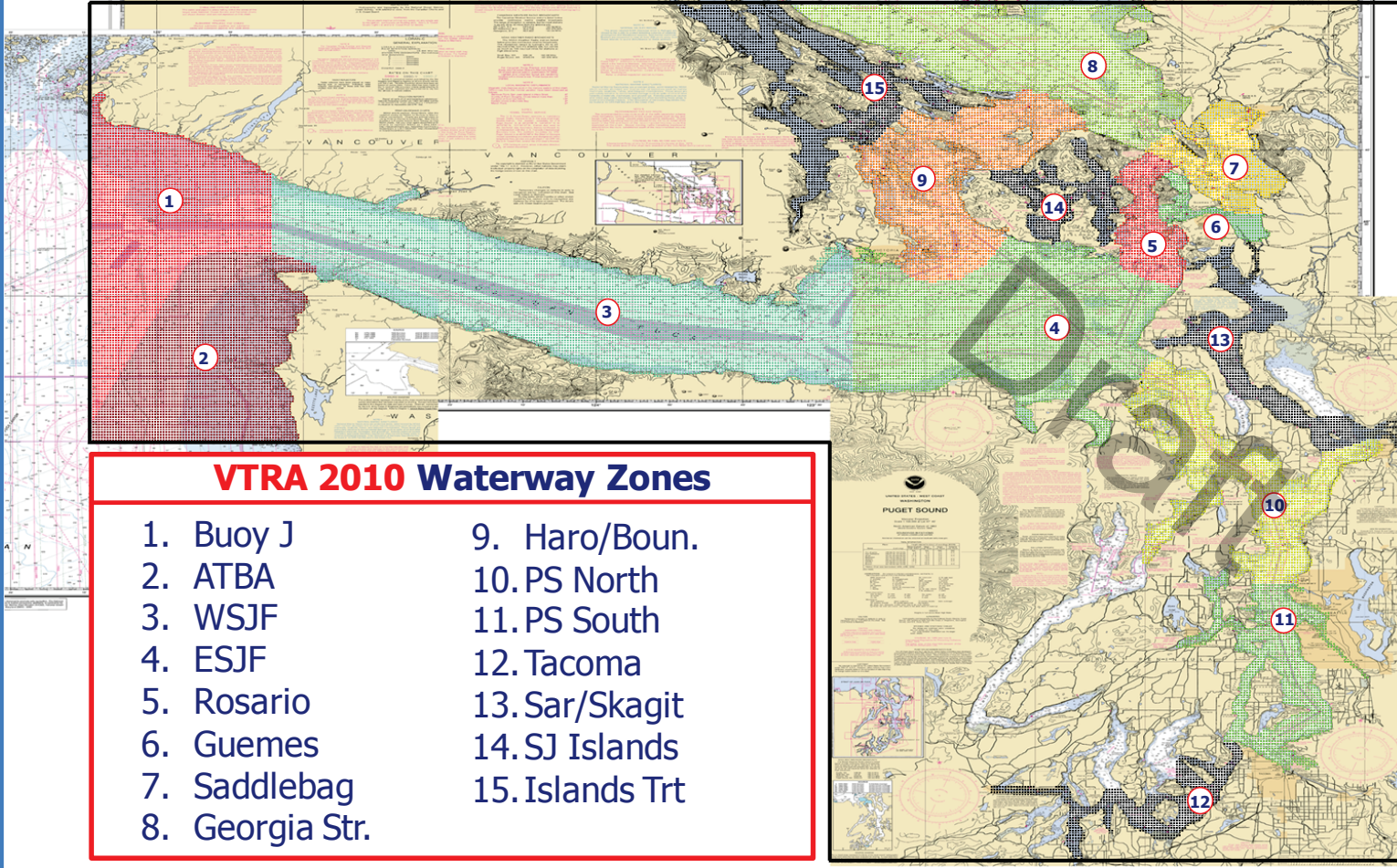
# VESSEL TRAFFIC RISK ASSESSMENT (VTRA) 2010

S: VTRA 2010 - Delta Port - Cont. 67 and Bulk 348 - WhatIf FV



# VESSEL TRAFFIC RISK ASSESSMENT (VTRA) 2010

## DEFINITION OF 15 WATERWAY ZONES

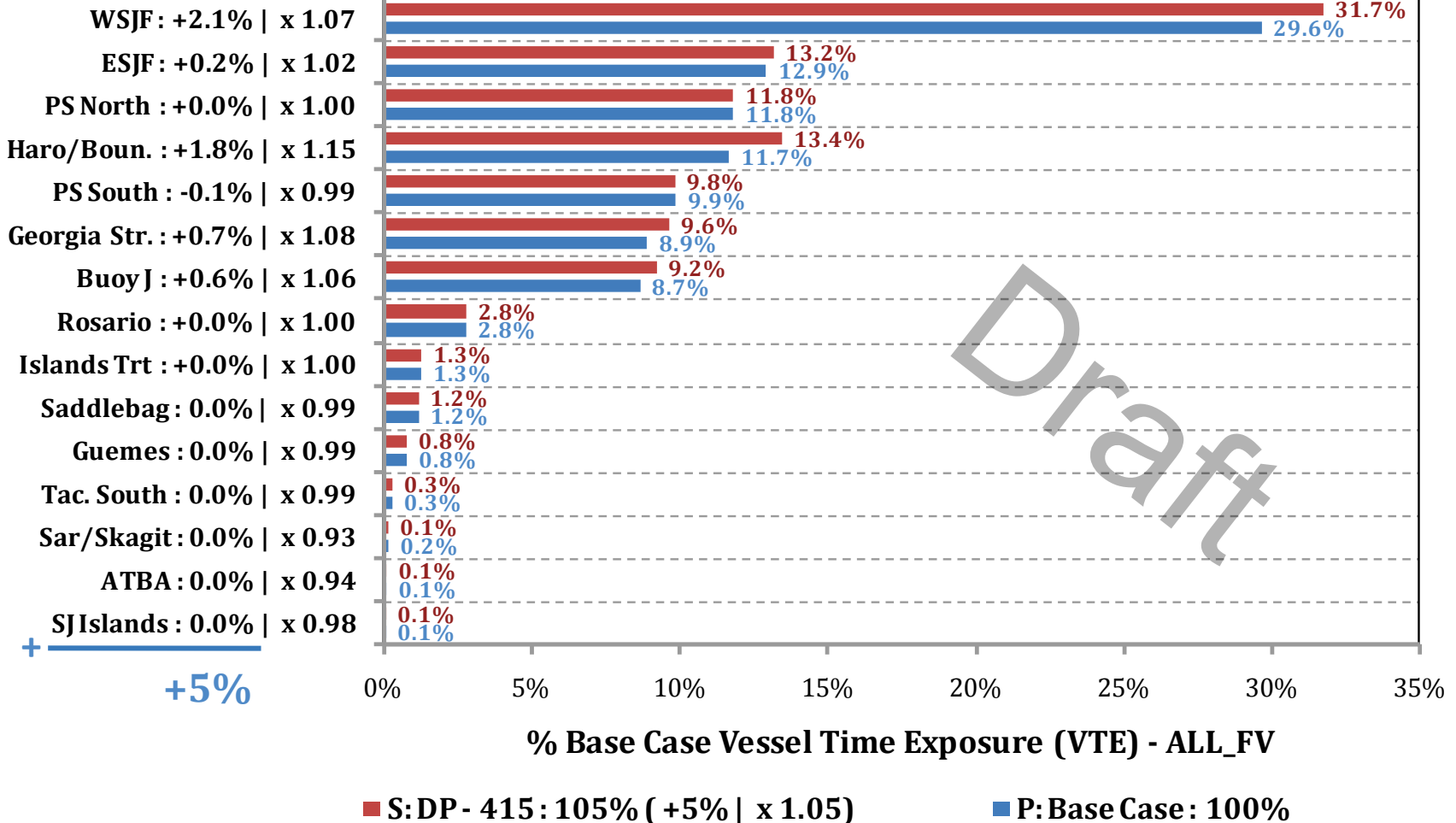




# VESSEL TRAFFIC RISK ASSESSMENT (VTRA) 2010

## % Base Case Vessel Time Exposure (VTE) - ALL\_FV

### Waterway Zone:



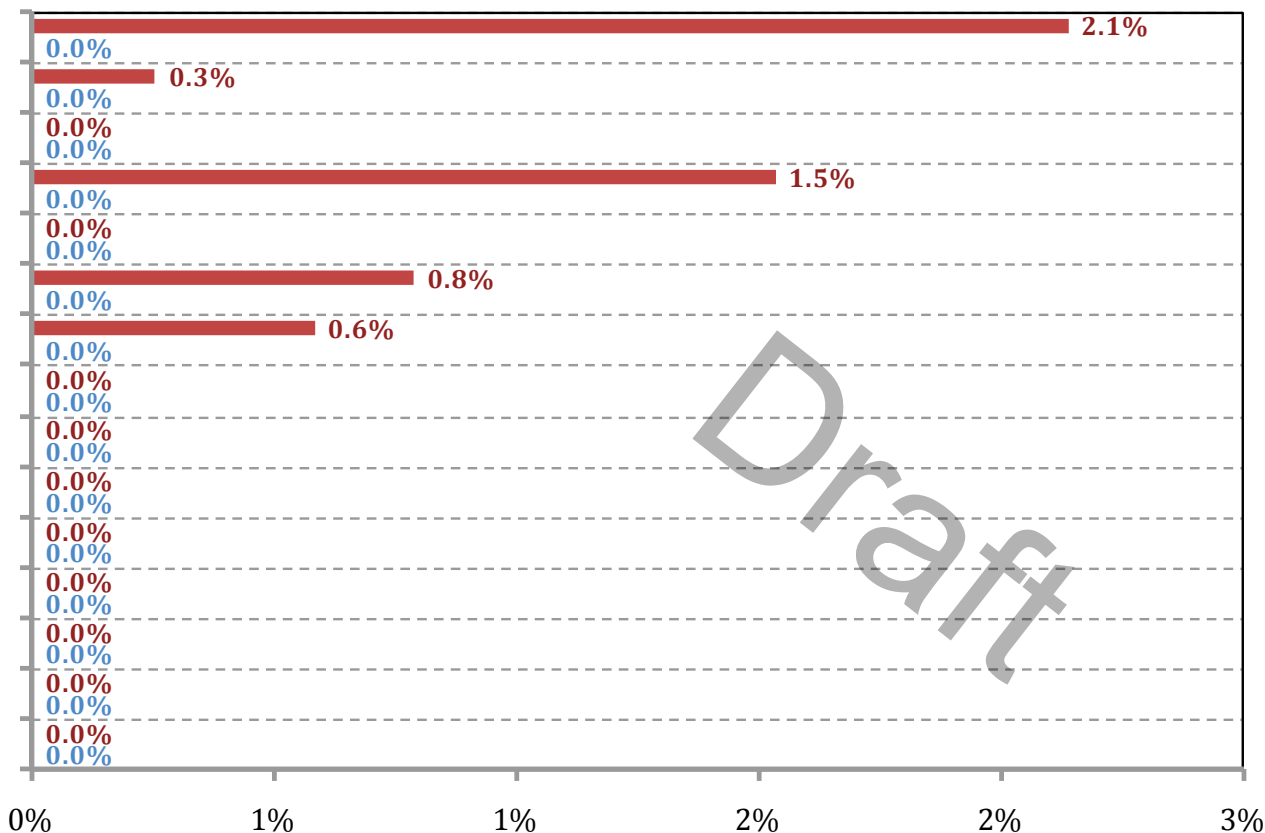
# VESSEL TRAFFIC RISK ASSESSMENT (VTRA) 2010

## % Base Case Vessel Time Exposure (VTE) - WhatIf

### Waterway Zone:

- WSJF : +2.1%
- ESJF : +0.3%
- PS North : 0.0%
- Haro/Boun. : +1.5%
- PS South : 0.0%
- Georgia Str. : +0.8%
- Buoy J : +0.6%
- Rosario : 0.0%
- Islands Trt : 0.0%
- Saddlebag : 0.0%
- Guemes : 0.0%
- Tac. South : 0.0%
- Sar/Skagit : 0.0%
- ATBA : 0.0%
- SJ Islands : 0.0%

+ **+5%**



## % Base Case Vessel Time Exposure (VTE) - WhatIf

■ S: DP - 415 : 5% (+5%)

■ P: Base Case : 0%