

2008 VA HURRICANE EVACUATION STUDY

Hampton Roads Planning District Commission Briefing

April 16, 2008

Stewart Baker
VDEM Hurricane Program Manager

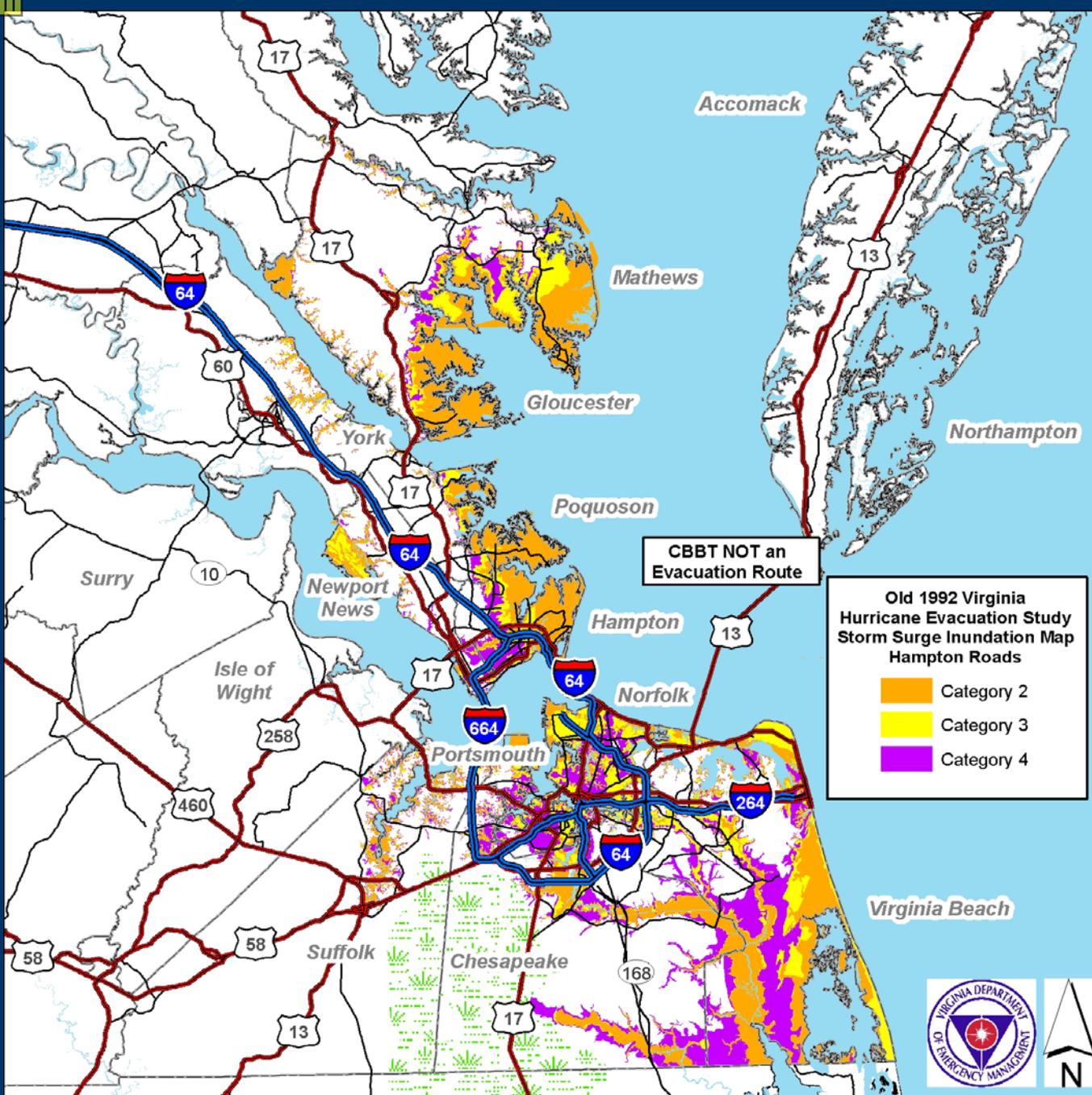




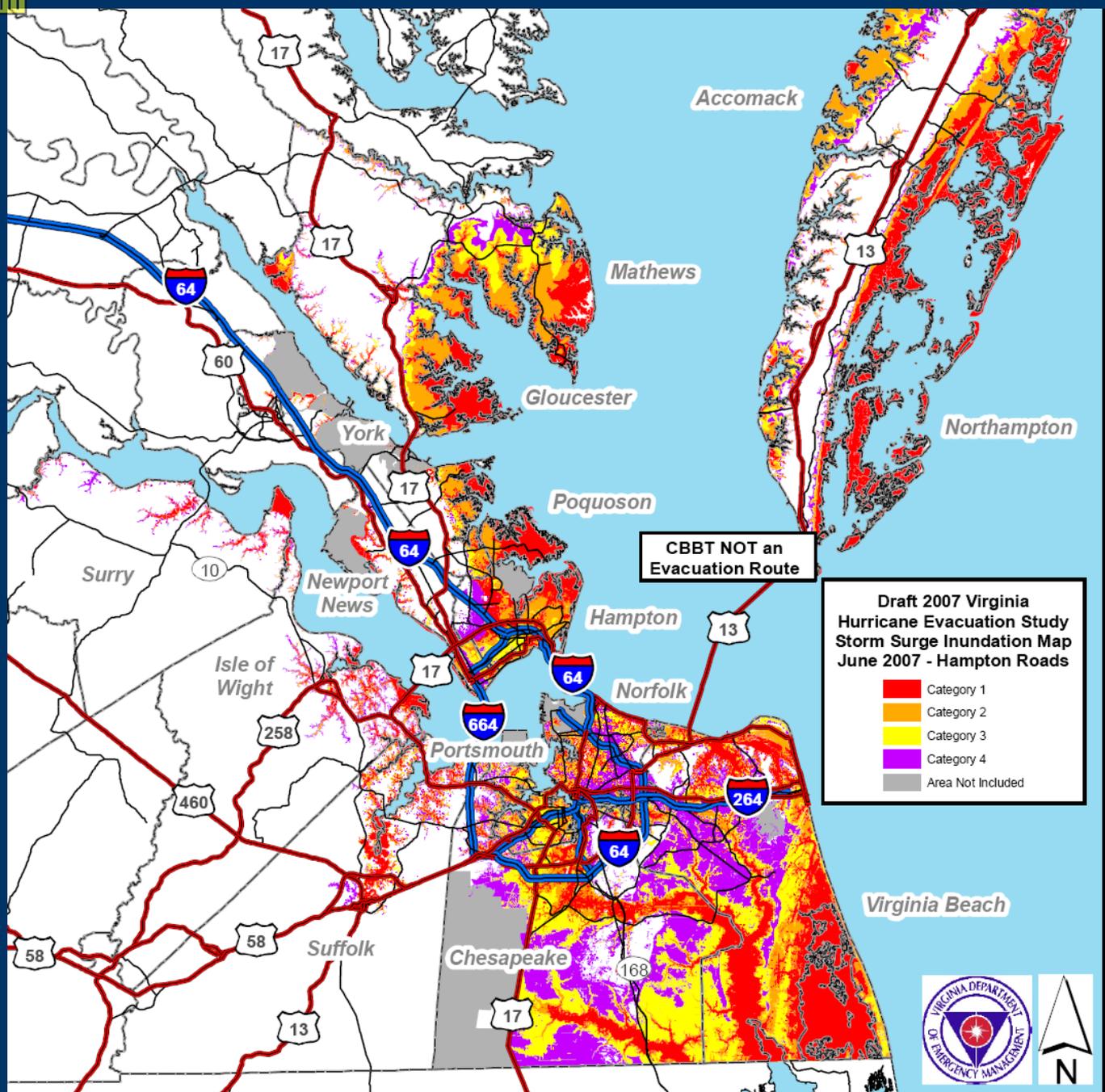
BASE HAMPTON ROADS DATA FOR DESIGNATED LOCALITIES:

- SOUTHSIDE
- CHESAPEAKE
- ISLE OF WIGHT
- NORFOLK
- PORTSMOUTH
- SUFFOLK
- SURRY
- VA BEACH
- PENINSULA
- HAMPTON
- NEWPORT NEWS
- POQUOSON
- YORK

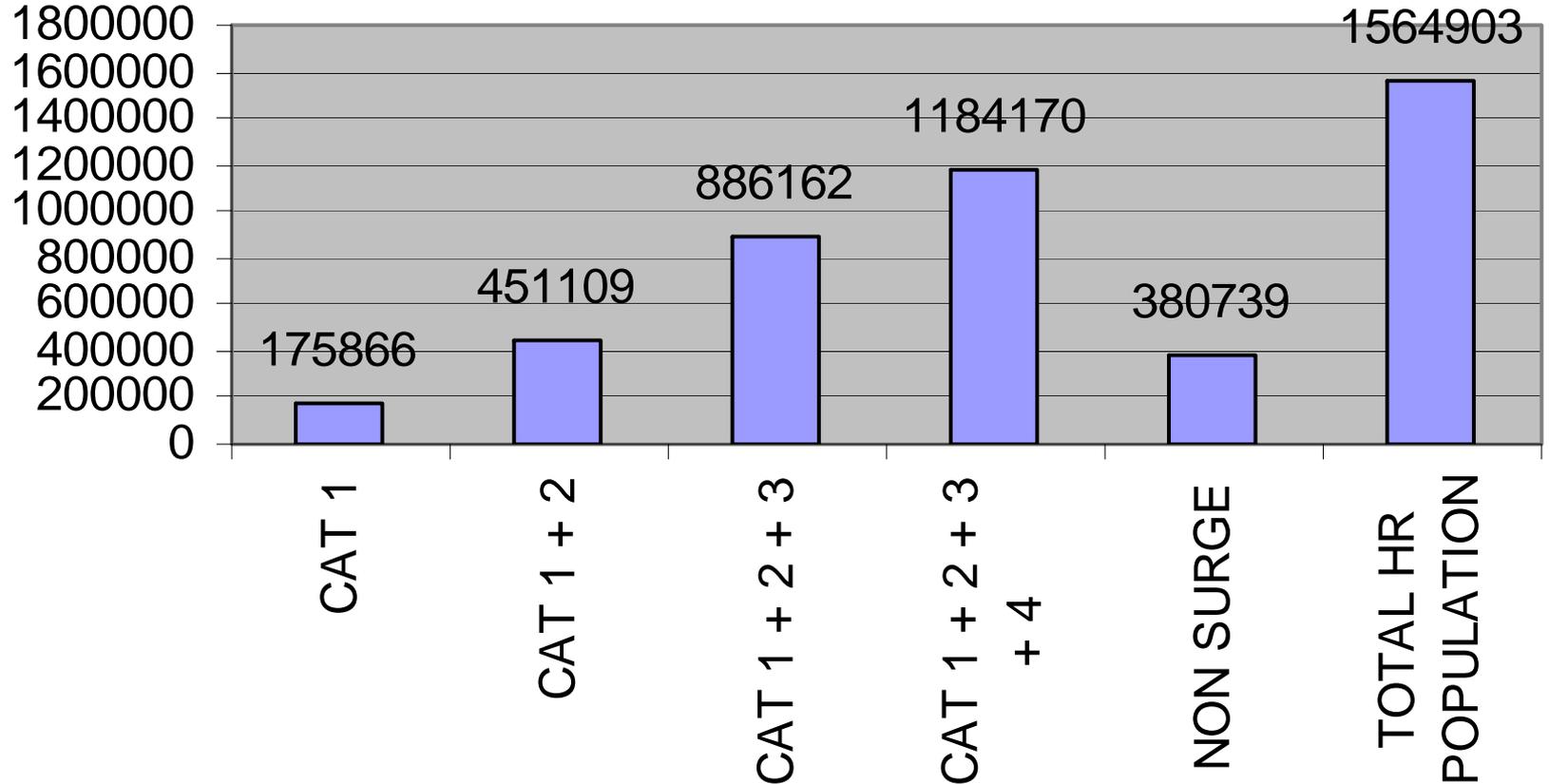
1992 STORM SURGE IMPACT AREAS



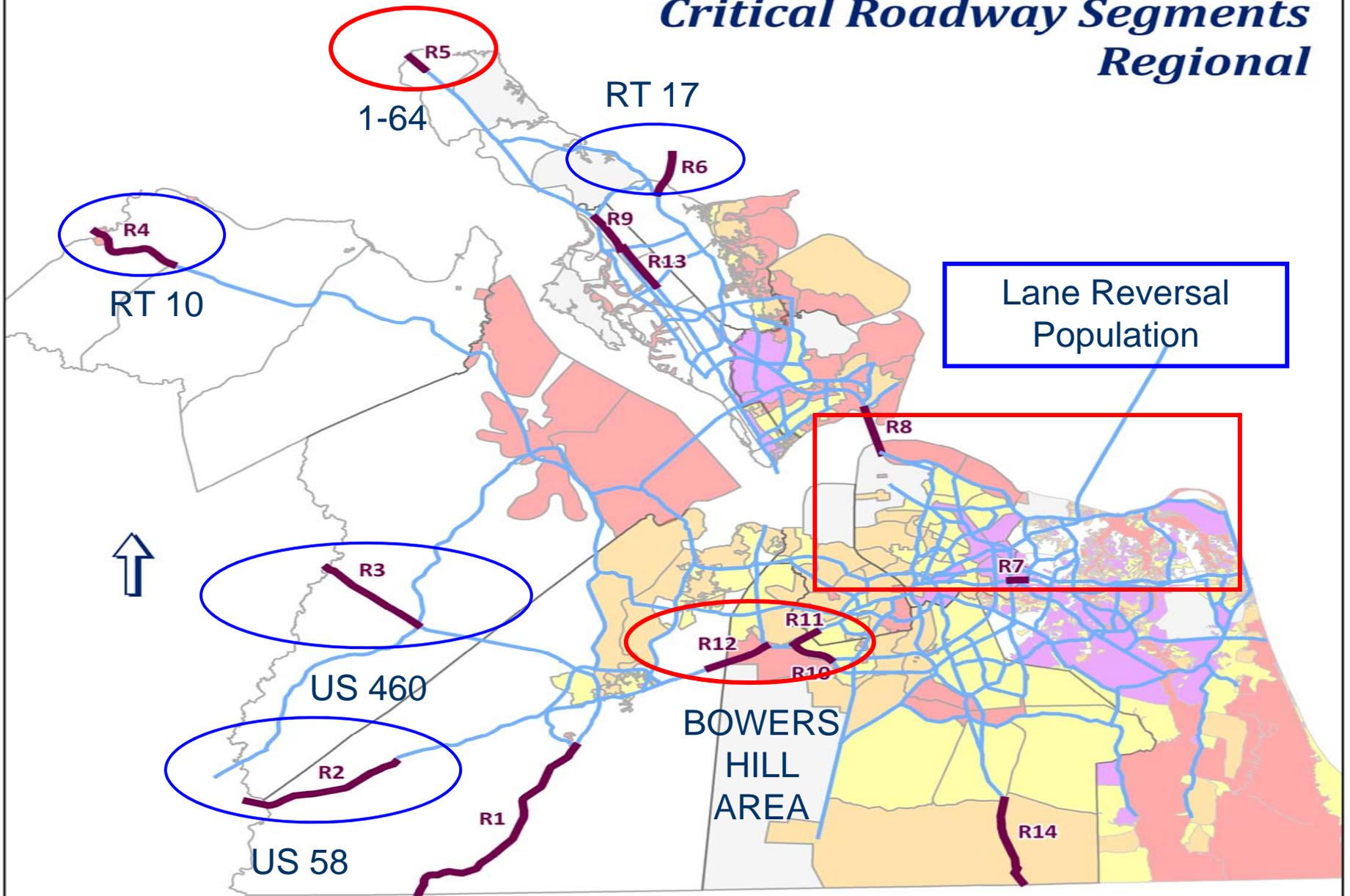
2008 STORM SURGE IMPACT T AREAS



POPULATION IMPACT BY STORM CATEGORY



Critical Roadway Segments Regional



Out of Region Evacuees by Storm Category w/Shadow Evacuees (% of Total Population)

ROAD SEG.	CAT 1		CAT 2		CAT 3		CAT 4	
	LOW	HIGH	LOW	HIGH	LOW	HIGH	LOW	HIGH
R2 – US 58	12,272	15,591	54,855	60,245	107,664	113,546	191,968	197,996
R3 – US 460	16,984	20,304	64,737	70,103	121,519	127,387	211,006	217,017
R4 – RT 10	2,391	2,757	7,885	8,477	13,801	14,443	22,948	26,617
R5 – I-64	53,425	63,952	121,326	137,251	207,244	224,081	384,034	401,669
R6 - RT 17	<u>5,355</u>	<u>6,532</u>	<u>13,108</u>	<u>14,932</u>	<u>23,280</u>	<u>25,212</u>	<u>43,736</u>	<u>45,756</u>
TOTALS	90,427	109,139	261,911	290,999	473,508	504,669	853,692	889,055
	5.8%	7%	16.7%	19%	30%	32%	54.5%	57%

EVACUATION CLEARANCE TIMES

1992 STUDY

Hours

		w/LR
● CAT 1	10.0	
● CAT 2	11.0	N/A
● CAT 3	16.15	12.43
● CAT 4	27.0	19.70

Above values w/o
traffic incidents

2008 STUDY

Hours

		w/LR
● CAT 1	13.0	N/A
● CAT 2	23.3	14.4
● CAT 3	35.5	22.1
● CAT 4	60.5	37.7

Above values w/o
traffic incidents

Worst Household Evacuation Commute Times on I-64 TO I-295

W/O Lane Reversal

CATAGORY

W/Lane Reversal

5 HRS 15 MIN

CAT 1

1 HR 30 MIN

15 HRS 20 MIN

CAT 2

7 HRS 45 MIN

27 HRS 45 MIN

CAT 3

15 HRS 30 MIN

53 HRS 10 MIN

CAT 4

31 HRS 45 MIN

PROJECTED OUT OF REGION PUBLIC SHELTER NEEDS @ 10%

INCLUDING TRANSPORTATION DEPENDENT AND SHADOW EVACUEES

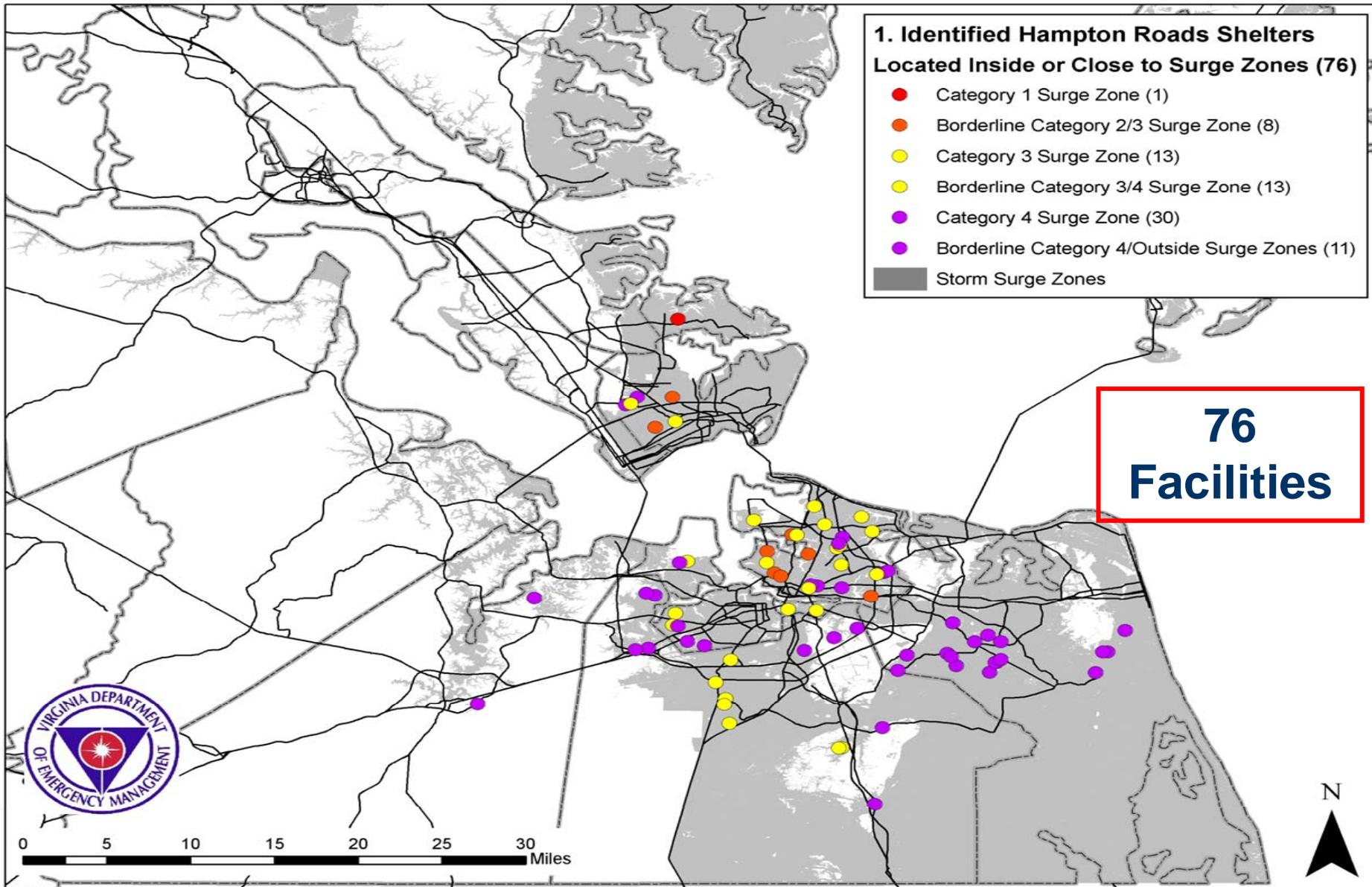
1992 STUDY

	HIGH
● CAT 1	N/A
● CAT 2	N/A
● CAT 3	20,500
● CAT 4	40,000

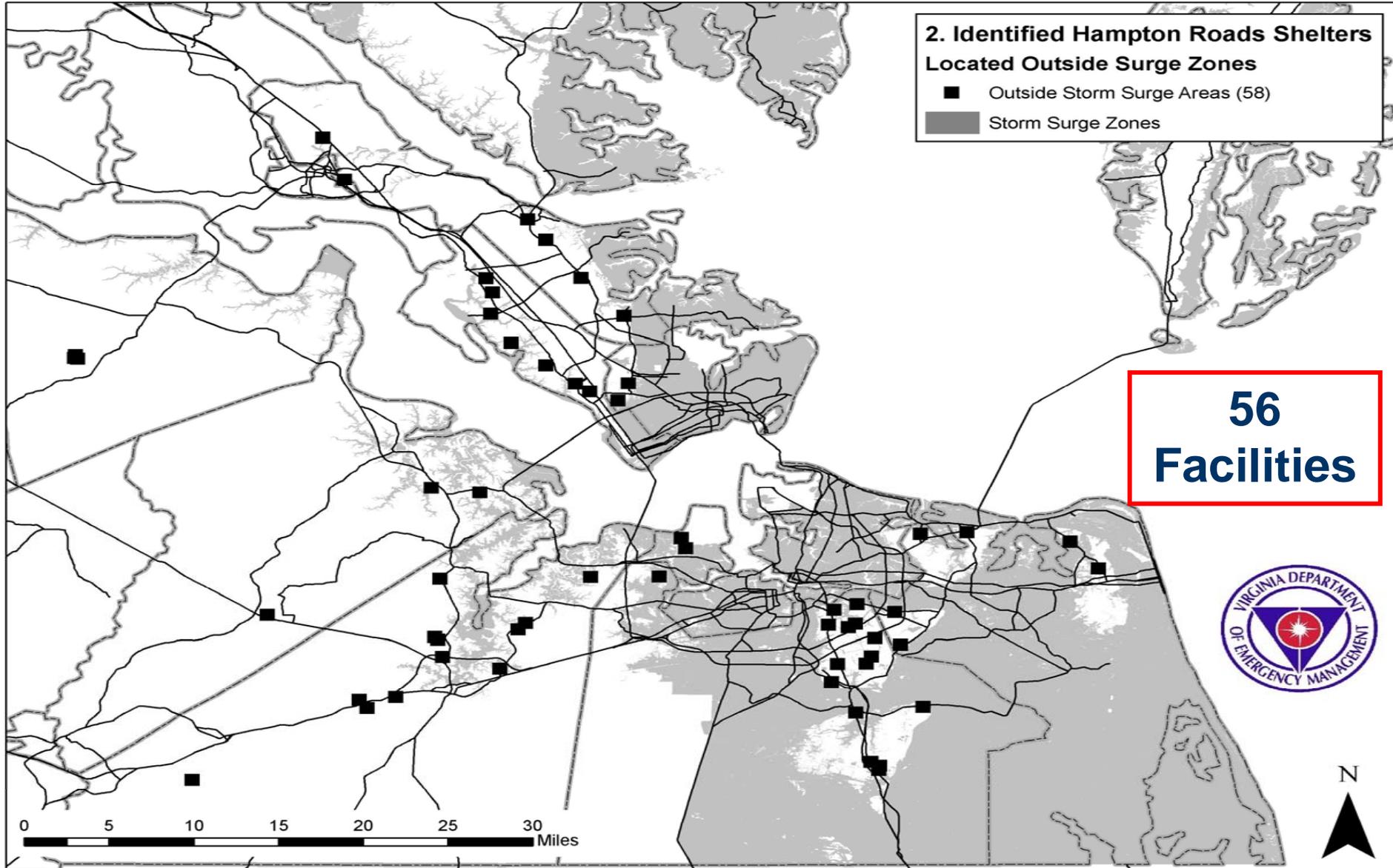
2008 STUDY

	LOW	HIGH
● CAT 1	9,043	10,914
● CAT 2	26,191	29,099
● CAT 3	47,351	50,467
● CAT 4	85,369	88,905

CURRENT SHELTERS IN STORM SURGE ZONES



CURRENT SHELTERS OUT OF STORM SURGE ZONES



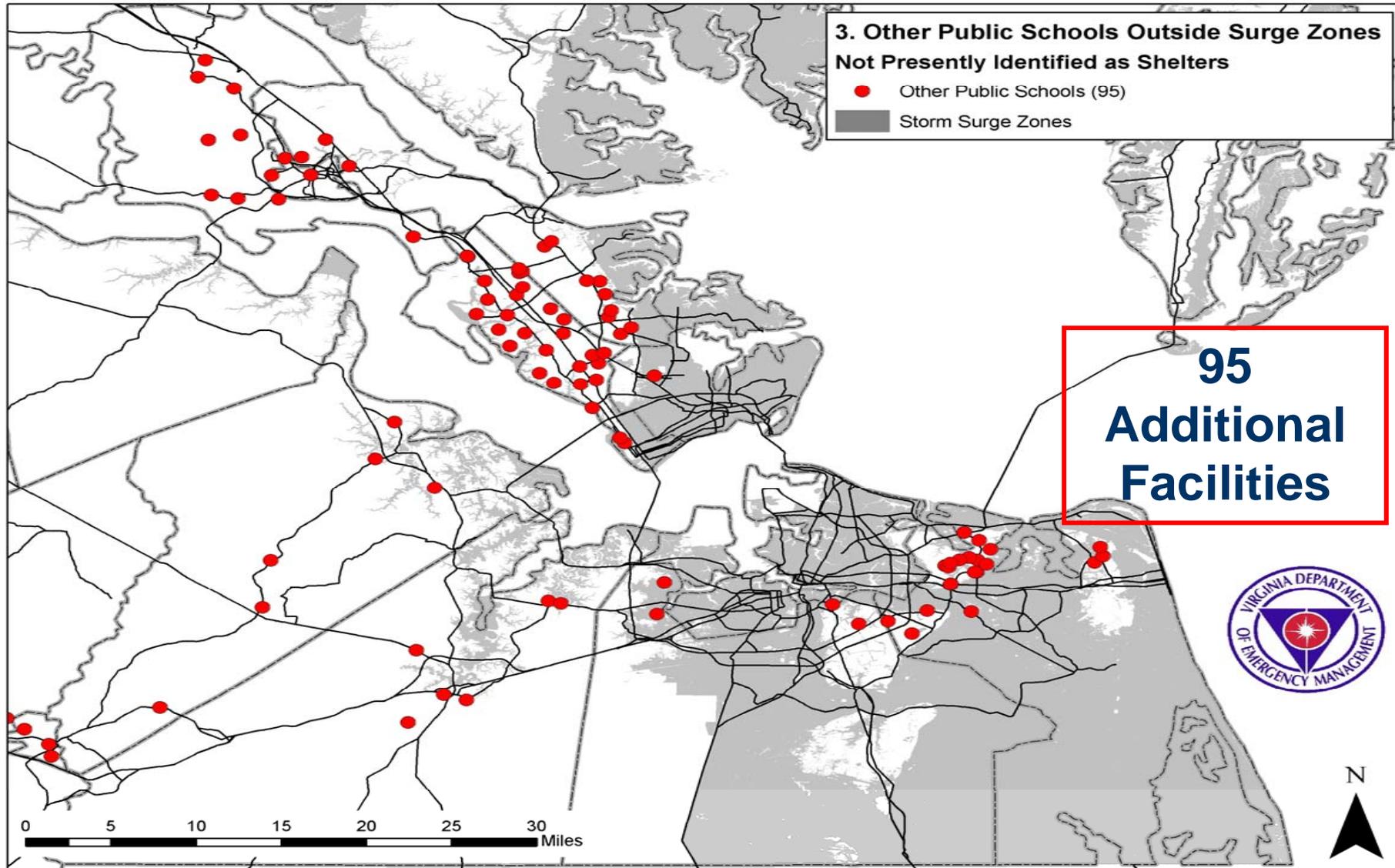
PRELIMINARY HAMPTON ROADS PUBLIC SHELTER DEMAND & DEFICIT

- Event Summary
- CAT 1 – Demand Met
- **CAT 2 - Demand 36,223**
@ Deficit (2,784)
- **CAT 3 – Demand 80,618**
@ Deficit (39,475)

- Worst Case Event
 - **CAT 4**
– Demand 126,430
@ HR Deficit (96,053)

These values are based on localities acting individually and not regionally.

OTHER PUBLIC SCHOOLS OUT OF STORM SURGE ZONES





Planning for Local Refuges of Last Resort

- 21 Designated Hurricane Risk Localities
- 4 Localities have reviewed the use of some facilities, or have just begun the search process for possible facilities.
- None have included ROLR in their Local Plans to date



SUMMARY

- Questionable that significant numbers of vulnerable citizens may actually evacuate in a CAT 3 or 4 event due to Worse Household Commute Times
- There is a need for increased Regional:
 - **Shelter/Refuge of Last Resort facilities & planning**
 - **Shelter-In-Place guidance & training**

SUMMARY – CONT.

- Local Shelter/ROLR capacity can increase through more cooperative intra-jurisdictional cooperation & MOUs
- Funding for regional facility hardening can increase Local Shelter/ROLR capacities reducing the overall number of Out of Region evacuees

QUESTIONS?

