

Memorandum



CITY OF DALLAS

DATE August 21, 2015

TO Honorable Members of the Quality of Life & Environment Committee: Sandy Greyson (Chair),
Tiffinni A. Young (Vice Chair), Rickey D. Callahan, Mark Clayton, Philip T. Kingston, B. Adam McGough

SUBJECT **DCHHS Update: West Nile Virus**

On Monday, August 24, 2015, the Quality of Life & Environment Committee will receive an update on the 2015 West Nile virus season from Dallas County Health and Human Services. The briefing is attached for your review.

Please contact me if you have any questions or need additional information.

A handwritten signature in blue ink that reads "Joey Zapata".

Joey Zapata
Assistant City Manager

Attachment

c: Honorable Mayor and Members of the City Council
A.C. Gonzalez, City Manager
Warren M.S. Ernst, City Attorney
Craig D. Kinton, City Auditor
Rosa A. Rios, City Secretary
Daniel F. Solis, Administrative Judge
Ryan S. Evans, First Assistant City Manager

Eric D. Campbell, Assistant City Manager
Jill A. Jordan, P.E., Assistant City Manager
Mark McDaniel, Assistant City Manager
Jeanne Chipperfield, Chief Financial Officer
Sana Syed, Public Information Officer
Elsa Cantu, Assistant to the City Manager – Mayor & Council

DCHHS Update

West Nile Virus

August 24, 2015

Quality of Life & Environment Council Committee

Zachary Thompson

Director

Dallas County Health and Human Services

Dr. Christopher Perkins

Medical Director/Health Authority

Dallas County Health and Human Services



DCHHS
Safe families, healthy lives.

Dallas County Health and Human Services

West Nile Virus

Ongoing efforts

- Conducting spraying in contracted city whenever a trap is positive
- Conducting spraying in contracted cities with high abundance
- Continuing to issue weekly surveillance reports
- Remaining in communication with local, state, and federal
- Contractor for ground spraying

West Nile Virus

Cases

West Nile Virus 2015

Human Cases = 3

West Nile Fever = 1

- Dallas: 75217 (1)

West Nile Neuroinvasive Disease = 2

- Dallas: 75212 (1); 75214 (1)

Positive Mosquito Pools = 213

- Addison: 75001 (2); 75240 (1)
- Carrollton: 75006 (6); 75007 (3)
- Coppell: 75019 (8)
- Cedar Hill: 75104 (3)
- Dallas: 75203 (1); 75204 (1); 75210 (1); 75211 (3); 75212 (1); 75214 (1); 75215 (13); 75216 (2); 75218 (3); 75219 (1); 75224 (2); 75225 (1); 75228 (6); 75229 (9); 75230 (1); 75235 (1); 75236 (1); 75238 (1); 75241 (3); 75248 (1)
- DeSoto: 75115 (7)
- Duncanville: 75116 (1); 75137 (1)
- Farmers Branch: 75234 (11)
- Garland: 75040 (3); 75041 (2); 75042 (5); 75043 (1); 75044 (2)
- Glenn Heights: 75154 (2)
- Grand Prairie: 75050 (3); 75051 (2); 75052 (13)
- Highland Park: 75205 (2)
- Hutchins: 75141 (1)
- Irving: 75038 (1); 75060 (9); 75061 (8); 75062 (6); 75063 (3)
- Lancaster: 75134 (3)
- Mesquite: 75149 (17); 75150 (10); 75181 (1)
- Richardson: 75080 (1)
- Rowlett: 75088 (2); 75089 (2)
- Sachse: 75048 (2)
- University Park: 75205 (9); 75206 (1); 75225 (5)
- Wilmer: 75172 (1)

Dallas County West Nile Virus Cases
2002 to 2014

YEAR	HUMAN CASES	POSITIVE MOSQUITO TRAPS	HUMAN DEATHS
2002	34	42	3
2003	50	116	4
2004	16	108	
2005	44	190	1
2006	104	187	4
2007	23	117	
2008	9	40	
2009	16	124	1
2010		1	
2011	2	8	
2012	398	264	21
2013	16	192	2
2014	12	174	

West Nile Virus

Surveillance Report

Dallas County Health and Human Services Arbovirus Surveillance Report



Week 31 ending August 8, 2015

- In weeks 31 and 32, 76 pools of *Cx. quinquefasciatus* have tested positive for WNV to date.
- The vector index is increasing but remains below the historic threshold of 0.5 associated with large epidemics locally.
- Two cases of WNND were identified in Dallas County in weeks 31 and 32; three human cases have been reported to date.
- One imported case of CHIKV was reported in the city of Garland in Week 32; four human cases of imported CHIKV have been reported in Dallas County to date this year.

Mosquito Laboratory and Human Case Surveillance Data, Dallas

Week Ending	7/11	7/18	7/25	8/1	8/8	8/15*	YTD
MMWR Week	27	28	29	30	31	32	
West Nile Virus (WNV)							
Total Gravid-Traps Placed in Dallas County ^a	251	249	253	233	262	238	4,099
Number of Pools Tested (PHL; IL) ^{b,c}	220; 34	221; 38	219; 47	191; 45	224; 37	206; 35	2,917; 654
Number of Trap Results Currently Pending	0	0	0	0	~39	~44	
Average Number of <i>Cx. quinquefasciatus</i> per Trap ^d	46.9	36.1	37.8	33.6	25.9	24.8	34.5
Total Number of <i>Cx. quinquefasciatus</i> Trapped and Tested	7,535	7,495	7,949	6,896	5,978	5,609	97,768
PCR Positive <i>Cx. quinquefasciatus</i> Pools (PHL; IL) ^e	11; 0	23; 2	27; 3	42; 5	36; 3	28; 9	183; 26
WNV Infection Rate per 1,000 <i>Cx. quinquefasciatus</i> ^f	1.51	3.59	4.74	8.13	8.18	8.72	
Weekly Vector Index (VI) ^g	0.07	0.13	0.18	0.27	0.21	0.22	
Other miscellaneous positive tests (<i>Cx. restuans</i> ; RAMP) ^h	0; 0	0; 0	0; 1	0; 0	0; 0	0; 0	2; 2
Presumptive WNV Viremic Blood Donors	0	0	1	0	0	0	1
Confirmed WNV Human Cases (WNND; WNF) ^h	0; 0	0; 0	0; 1	0	1; 0	1; 0	2; 1
Chikungunya Virus (CHIKV) & Dengue Virus							
Total Biogents Sentinel-Traps Placed in Dallas County ⁱ	15	15	15	15	15	15	165
Average # of <i>Aedes</i> (<i>Ae. albopictus</i> ; <i>Ae. aegypti</i>) per Trap ^j	8; 2	9; 3	4; 1	7; 2	8; 1	3; 1	14; 2
Confirmed CHIKV Human Cases (AT; I) ^k	0; 0	0; 1	0; 1	0; 0	0; 0	0; 1	0; 4
Confirmed Dengue Human Cases ^l	0	0	1	0	0	0	1

- a. All gravid traps deployed in municipalities submitting data to DCHS since Week 27. Includes traps without mosquitoes, malfunctioning traps and traps with pending results
- b. Excludes traps without female *Culex quinquefasciatus* identified. Maximum of 50 female *Culex quinquefasciatus* per pool; more than 1 pool may be tested per trap
- c. PHL = Public health laboratory (DSHS, DCHHS) testing performed by viral culture or CDC RT-PCR protocol; IL = Testing from independent labs by alternate methods
- d. Average abundance of female *Culex quinquefasciatus* mosquitoes per trap night/week in gravid traps (excludes non-working traps)
- e. WNV infection rates calculated using a Maximum Likelihood Estimation (MLE). *Biggerstaff et al. PooledInRate, version 4.0; Microsoft Excel Add-In; CDC 2007*
- f. The Vector Index (VI) reflects the MLE adjusted for *Culex quinquefasciatus* abundance. $VI = \sum_{i=1}^{n_{pools}} N_i P_i$, where N_i is the average number of *Culex quinquefasciatus* mosquitoes collected per trap night and P_i is the estimated infection rate
- g. Pools of *Culex restuans* that tested positive for WNV by PCR testing; RAMP: pool of undifferentiated mosquito species that tested positive by RAMP testing
- h. Human WNV cases by week of report to health department. WNND: West Nile Neuroinvasive Disease; WNF: West Nile Fever
- i. All Biogents Sentinel (BSG)-traps deployed in municipalities submitting data to DCHS since Week 22. Includes traps without mosquitoes, malfunctioning traps and traps with pending results
- j. Average abundance of *Aedes albopictus* and *Aedes aegypti* mosquitoes per night/trap in BG-Traps (excludes non-working traps)
- k. Human CHIKV cases by week of report to health department (AT: Autochthonous case; I: imported)
- l. Human Dengue cases by week of report to the health department

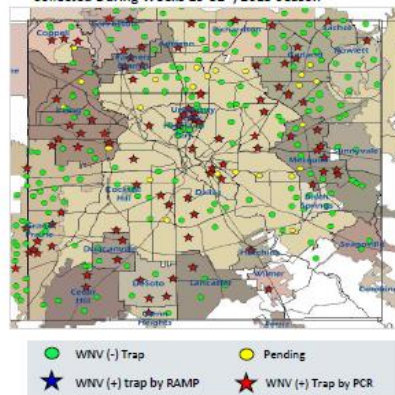
*Data as reported through 5:00 P.M. 8/14/2015



West Nile Virus

Surveillance Report

Figure 1: All WNV Negative and Positive Mosquito Traps Collected During Weeks 29-32*, 2015 Season



*Figure 1 only shows traps for which results were available; empty and malfunctioning traps were excluded. Almost all traps are at fixed sites.
 Note: Most recent 1-2 weeks data are preliminary and subject to change following receipt of data still pending. Data is current as of 8/14/15.

Figure 3: Cumulative WNV Positive *Cx. quinquefasciatus* Traps Year to date, 2015 Season

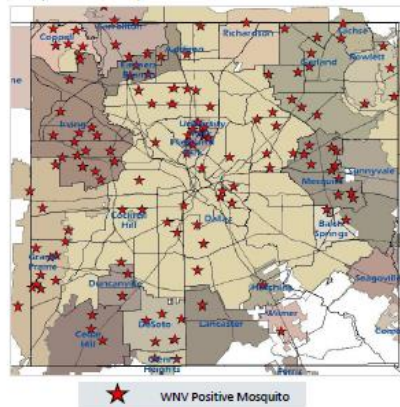
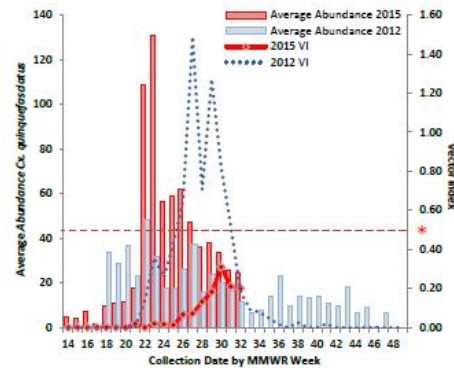
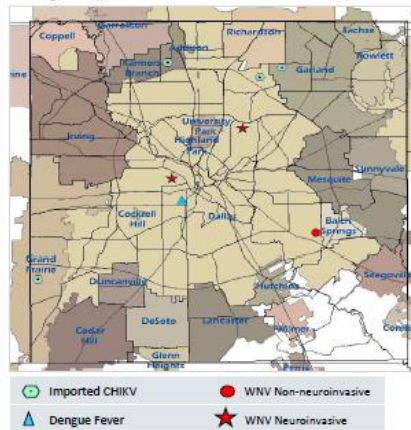


Figure 2: Average Numbers of Female *Cx. quinquefasciatus* per Trap-Night and Vector Index by Week: 2014 and 2015 Seasons



*vector index of 0.50 is the historical threshold at which intensified vector control measures can be considered

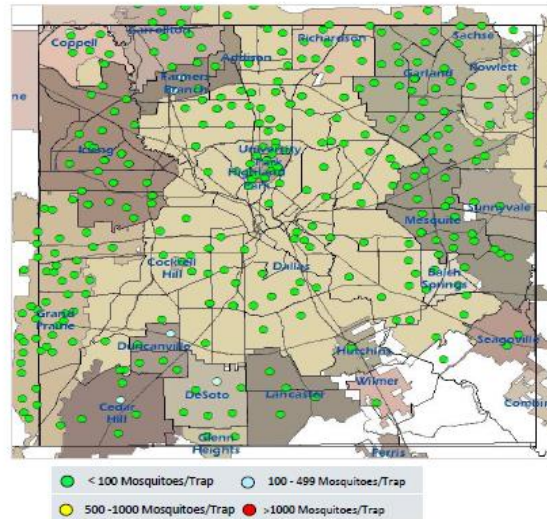
Figure 4: Arboviral Human Cases (WNV = 3; CHIKV = 4; Dengue = 1), 2015 Season



West Nile Virus

Surveillance Report

Figure 5: Trap Counts of Female *Cx. quinquefasciatus* During Weeks 29-32*, 2015 Season



*Figure 5: only shows traps for which results were available empty and malfunctioning traps were excluded. Almost all traps are at field sites.
 Note: Data shown represent the most recent trap counts for each address.

Figure 6: Average Numbers of Female *Ae. albopictus* and *Ae. aegypti* per Trap Night by Week: 2015 Season

