
**Confirmed Tornado
Milverton to Conestogo Lake, Ontario
August 19, 2005**

Date- Local: Friday, August 19th, 2005
UTC: Friday, August 19th, 2005

Time- Local: 1240
UTC: 1640

Location: Milverton to Conestogo Lake

Region: Huron - Perth

Classification: Confirmed Tornado

Category: A

Casualties: None

Track Length: 17064 m

Width: 1000 m

Motion: 244

Damage Estimate: None available

F-Scale Rating: F2

Code: AH, BS

Damage Survey: Yes, done by Randy Mawson

Spotter Reports: None

Other Documents:

Damage survey providing images of the damage with corresponding waypoints, and map showing location of waypoints

Map showing the track map of all confirmed tornados for August 19, 2005

Document outlining the observations from the helicopter fly over of the area as well as a map of waypoints and description of what was observed at each point

Several OSPC logged reports

Many newspaper articles detailing the tornados, eyewitness accounts, and damages

Tornado F-Scale Assessment

Brad L. Rousseau

Tornado Data Production Assistant, Environment Canada

June 7th, 2010

Classification: Confirmed Tornado.

Date: Friday, August 19th, 2005

Location: Milvértion to Conestogo Lake, Huron - Perth Region

Assessment: F2

F-Code: AH, BS

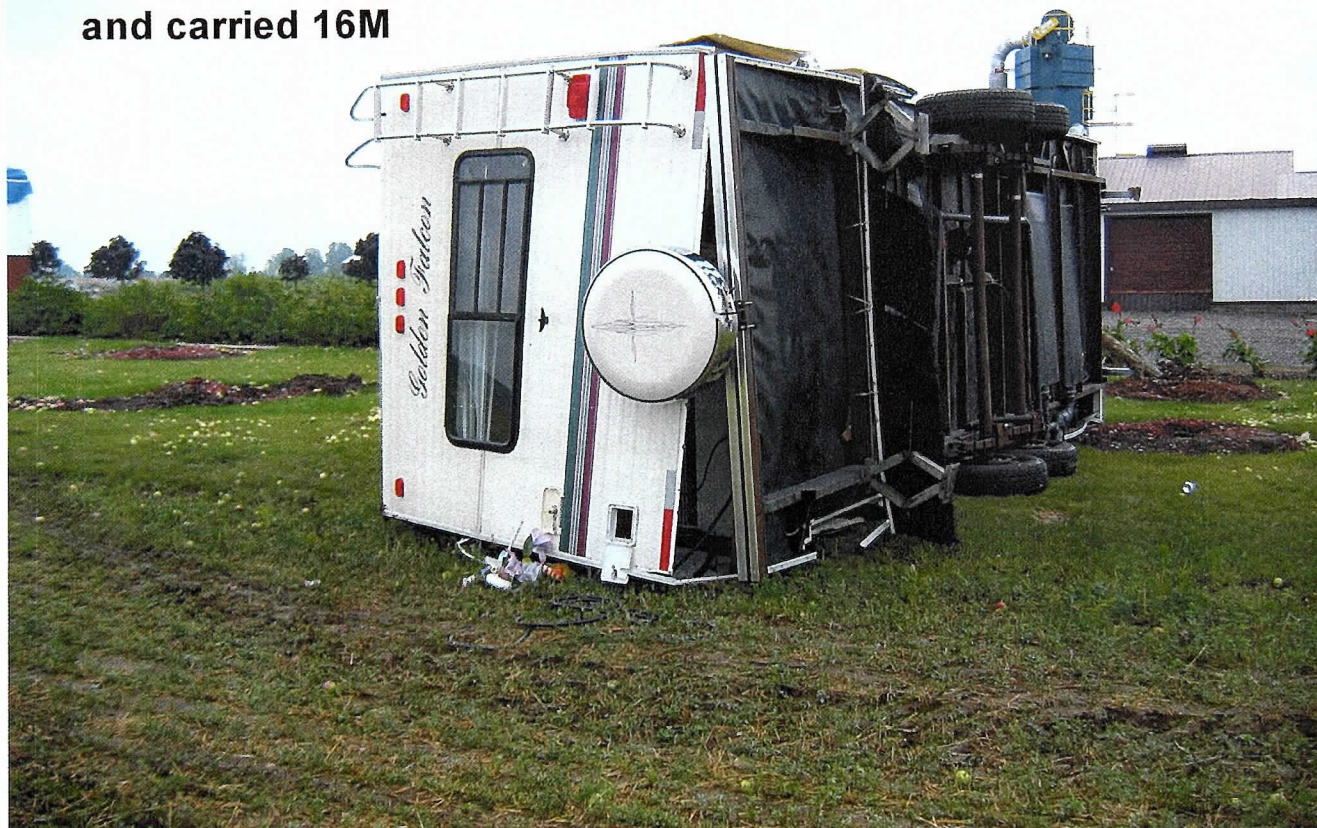
Explanation of Assessment: Roof completely removed from home, as well as cottages destroyed. BS; Barns destroyed with one barn completely removed from foundation. There was also extensive tree damage; trees snapped and uprooted.

WP 130 Facing SSW



WP 131 - Facing S

9M 5th Wheel Trailer weighing over 2000 kg was picked up and carried 16M



WP 131 Facing S

Entire roof removed. New roof framing had been replaced and tarped before we arrived. Apple trees snapped off in the foreground.



WP 132 Facing SE





At Conestogo Lake between WP
126 and 127 at Road 11 - facing W



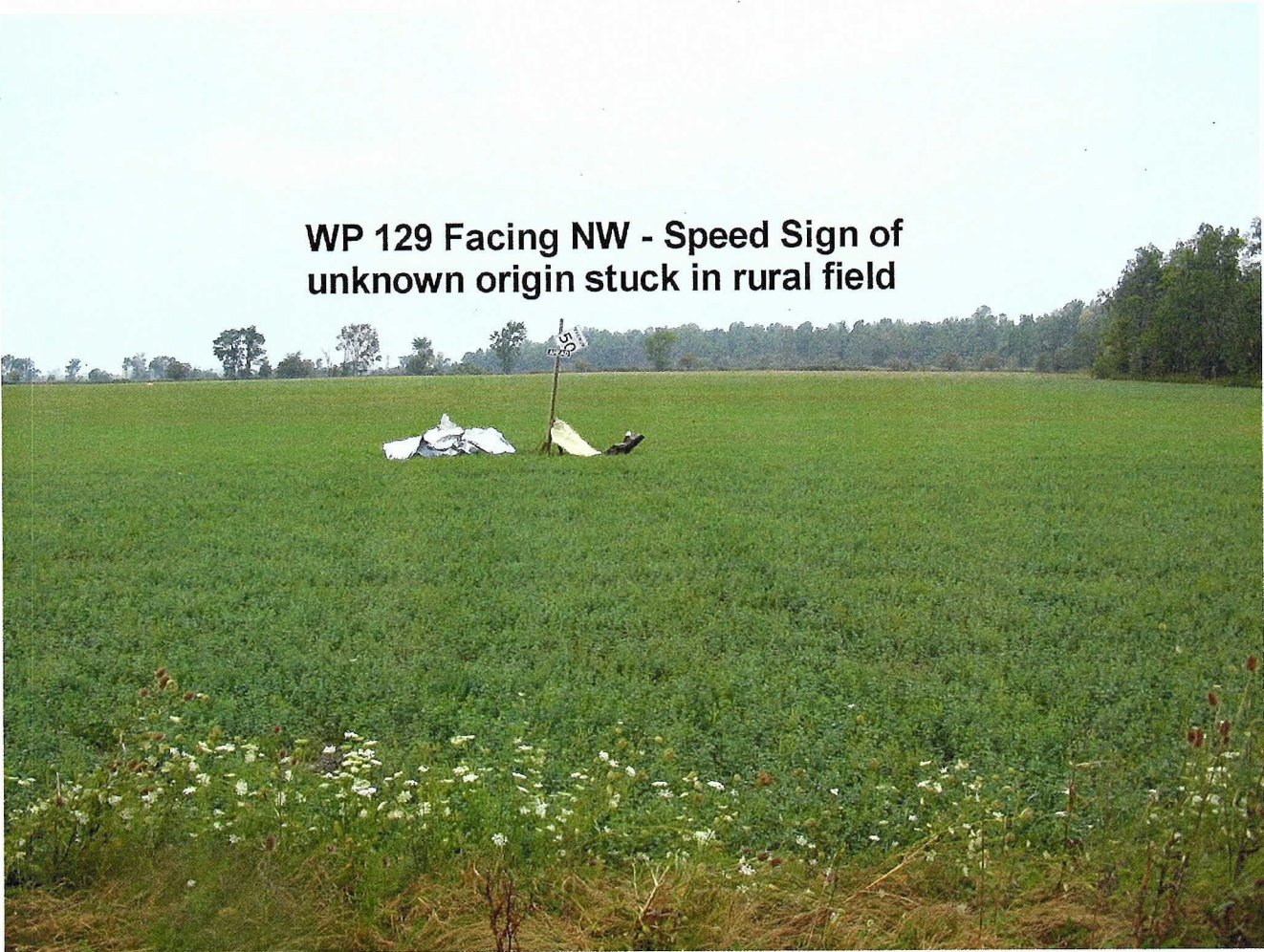


WP 128 at Conestogo Lake Facing E

Trees sheared off as tornado moved eastward



**WP 129 Facing NW - Speed Sign of
unknown origin stuck in rural field**

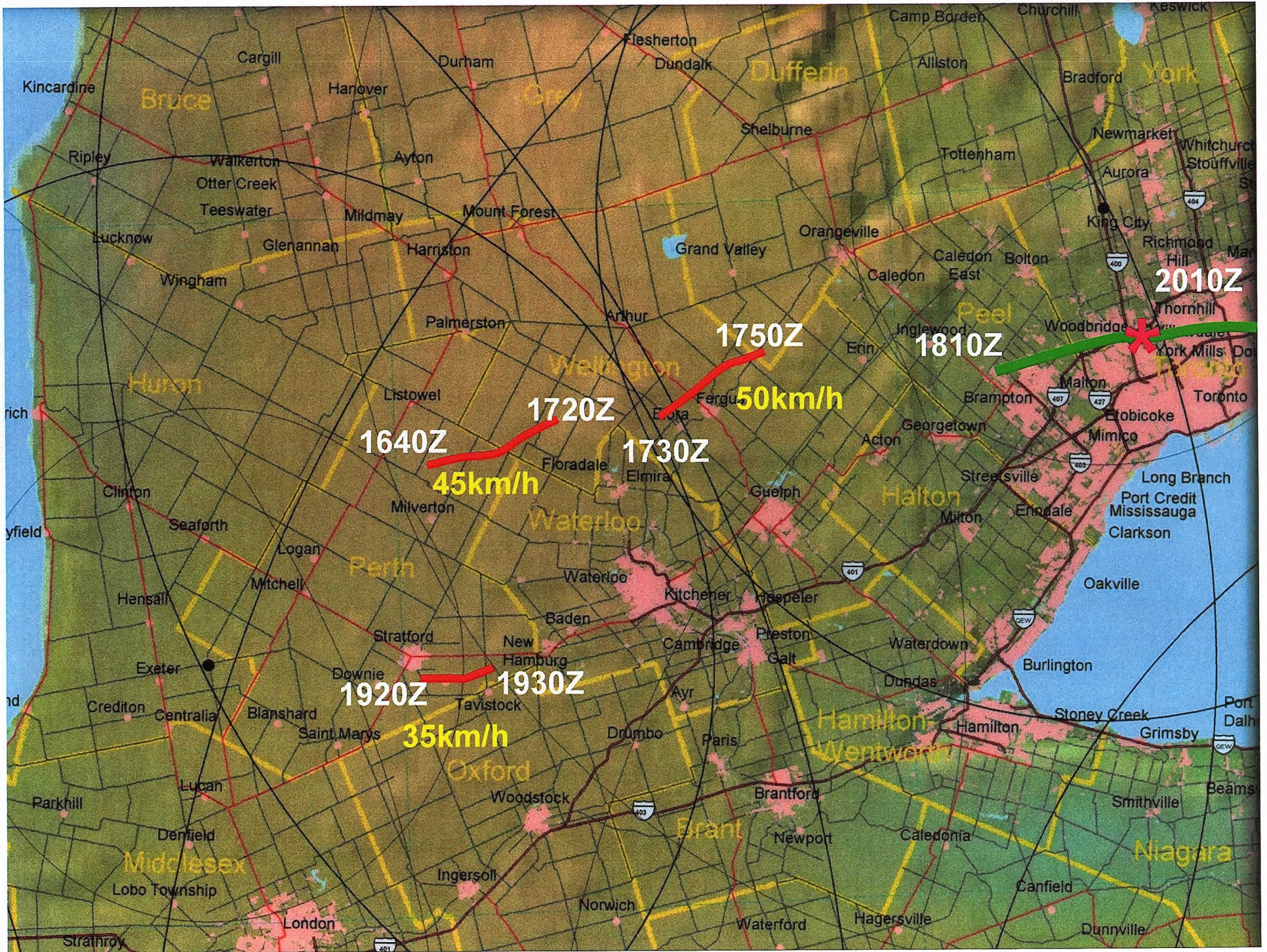




WP 130 Facing SSW: Foundation for fruit barn. Two occupants inside the building were slightly injured when the structure was entirely removed.







Below is an account of the helicopter recognizance.

Photos were very difficult to take in this type/configuration of helicopter. The helicopter is a Eurocopter Twin Star AS355F2R designed for observation as used by the OPP and based out of Sudbury. <http://www.opp.ca/fieldtrafficsupport/english/aviation.htm> The problem we discovered with taking still pictures was that the windows in the helicopter vibrated with the rotation of the blades making it difficult for the camera to focus. Rain was also occurring with droplets on the windows which confused the auto-focus mechanism even more. It is hoped that the OPP camcorder did not encounter this problem to the extent that I did.

The flight duration was approx 1 1/2 hours. Almost the entire flight time was performed at cruise speed while determining the beginning and end points of the tornado/damage paths.

As shown in the GPS way points, there were two distinct damage paths which were clearly defined from the air. We extrapolated along each path and to see if we could find any more damage. The ONLY damage I could see was an occasional very small circular patterns of crop damage which were perhaps 5 to 10 meters in diameter. Otherwise it was pretty evident where each track began and ended. Waypoint 087 was a mistake and should not be included as a point of interest.

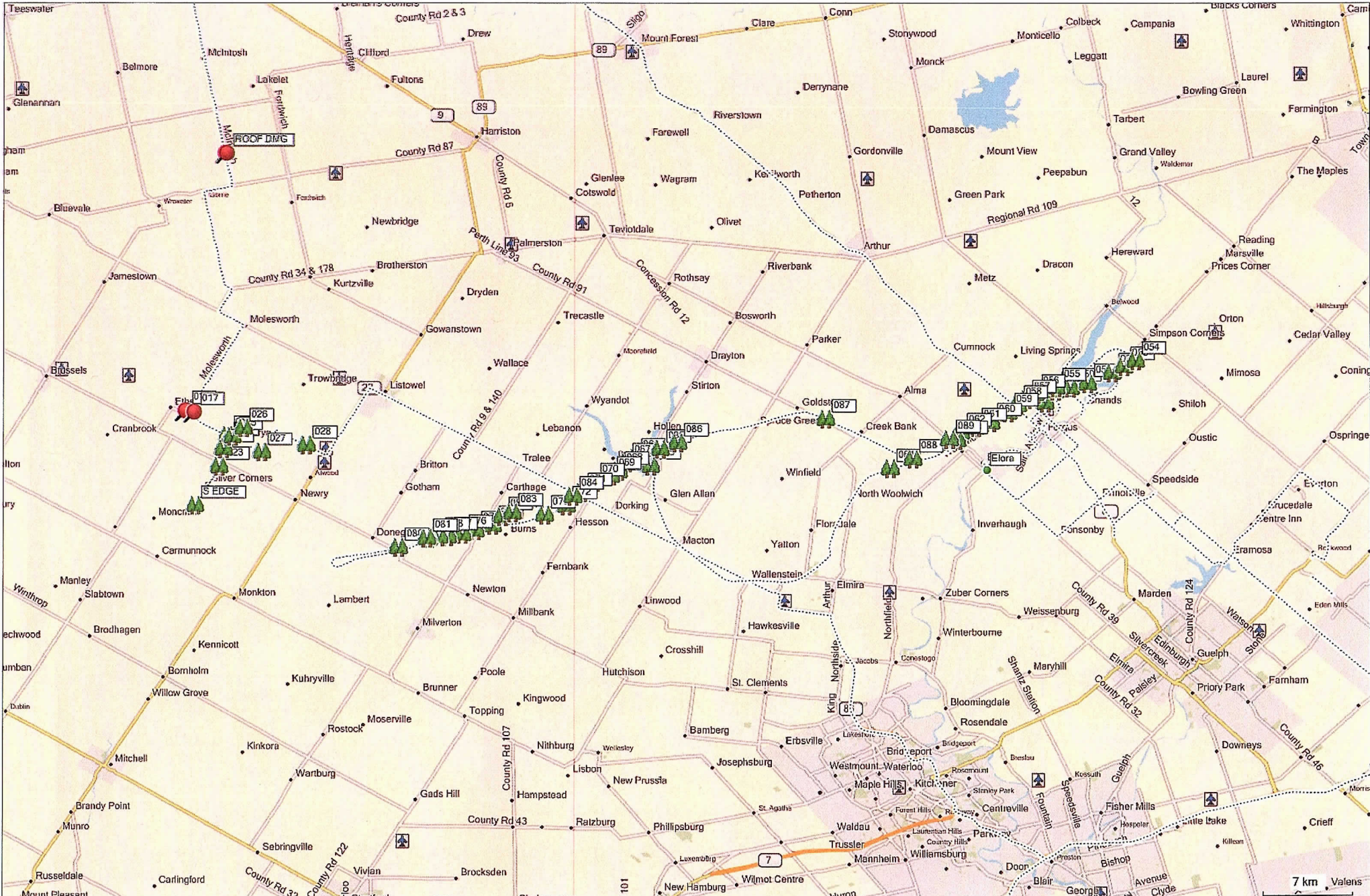
The damage path of each track varied in width throughout the path as did the extent of the damage. Damage varied from minor blow down of trees/crops both single direction and multi-direction to extensive structural damage of buildings/equipment and forested areas. Debris dispersion was perhaps 50% localized meaning that the trees/building damage was not carried any great distance. At the other 50% of locations we did notice damage strewn over distances estimated as far as 1000 meters or more. One noteworthy occurrence was a field with 100 or so sheep. In the adjacent field was a crop of corn (still standing **straight**) with an estimated 16 to 24 dead sheep scattered through and embedded within the corn crop. (Without a helicopter/airplane to spot these sheep, I doubt the farmer will be able to find them until harvest time when the corn is combined...ohh stinky) . Also noted was that some of the sheep were severely emaciated ...either caused by the fall and/or by flying debris. The greatest possible distance of any of the sheep being displaced is estimated at 500 meters.

The width of both paths varied anywhere from 10 meters to several hundred meters with the most intense destruction being in the center of that path diminishing to the outward edges.

The damage often seemed to be a "blow down" in a single direction (same as direction of path of storm) and at other times it was evident that damage was circular and debris field was wide raging as well as crop/tree damage was multi-direction. It was very difficult to

Helicopter Waypoints

48	Blow-down of 100s of trees
49	Blow-down of 100s of trees
50	Part of Barn destroyed, much debris
51	Many trees blown-down
52	"
53	Tree damage but much lighter, guessing F0 ish
54	End of damage on far East side
55	Blow-down patch, many trees twisted and tops snapped off
56	Blow-down of trees- twisted, no one direction, 100s
57	"
58	Barn damage
59	100s of trees down in many directions
60	Barn damaged (green), swirling in crops and grass
61	100s of trees down in different directions
62	Municipal building destroyed
63	Roof to municipal building
64	Very little damage, some crop damage but very little since last point
65	Swath of tree tops snapped off in different directions
66	"
67	"
68	Half of barn roof off
69	Another part of a barn roof down
70	Broken tree tops
71	Barn roof major damage, debris from waypoint 70-71 from this barn
72	Tree tops broken/moved few meters away
73	Barn roof off- twisted trees, much debris, crops flattened
74	Barn down. or just roof
75	Trees and hay snapped and blown in swirling motion
76	More snapped off trees
77	Barn roof off and much debris
78	Barn destroyed
79	Piece of metal from 78, crops are flattened in some areas and twisted in others
80	Tree in field snapped, crops twisted, Farthest damage goes West
81	Part of a barn down, uprooted trees
82	More trees down
83	Ripped-off tree tops
84	Dead sheep- field of grazing sheep and in two fields over- about a dozen dead sheep- looked like they had been carried away (some blood and guts)
85	More trees down in swath
86	100s of trees twisted and snapped
54-80	Start and end of one track
87	No damage- disregard waypoint
88	Crop damage in swirling directions
89	Municipality building marked again



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Event type	Tornado (vetted)
Event start date	2005-8-19 UTC (exact)
Event start time	16:50:00 UTC (estimate)
Event duration	00:30:00 (rough)
Entered by	seifertm (2006-08-23 15:00:54)
Event version	latest
fcst region	HURON - PERTH
meso region	LISTOWEL - MILVERTON - NORTHERN PERTH COUNTY
Latitude/Longitude	43 ° 34' N 80 ° 55' W
Location	0 KM N of Milverton
Hail	no
Hail size descriptor	N/A
Hail diameter	N/A
Hail depth	N/A
Wind	no
Gust speed	N/A
Wind direction	N/A
Wind intensity	N/A
Rain	no
Rain amount	N/A
Rain duration	N/A
Tornado	yes
Tornado intensity	F2 (measured)
Lightning	no
Lightning Intensity	N/A
Mesocyclone	no
Funnel Cloud	no
Waterspout	no
Narrative	From Milverton to Conestogo Lake (west of Elmira) between 12:50 pm and 1:20 pm. Intermittent F2 tornadic damage path 25 km long and up to 1 km wide. 28 foot motor home carried 50 feet. Numerous trees down. Cottages damaged. Barns destroyed. (Info entered from AWCN.)
Confidence	confirmed
Warning Criteria	met or exceeded
Source	Other
MSC initiated report of event	N/A
Contact name	N/A
Contact phone	N/A
Contact email	N/A
Contact address	N/A
Number of fatalities	N/A
Fatality comments	N/A
Number of injuries	N/A
Injury comments	N/A
Damage amount	N/A
Damage comments	N/A
Power outage	N/A

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Event type	Thunderstorm (vetted)
Event start date	2005-8-19 UTC (exact)
Event start time	17:00:00 UTC (estimate)
Event duration	00:01:00 (rough)
Entered by	seifertm (2006-08-23 18:57:39)
Event version	latest
fcst region	HURON - PERTH
meso region	LISTOWEL - MILVERTON - NORTHERN PERTH COUNTY
Latitude/Longitude	43 ° 44' N 80 ° 57' W
Location	0 KM N of Listowel
Hail	no
Hail size descriptor	N/A
Hail diameter	N/A
Hail depth	N/A
Wind	yes
Gust speed	N/A
Wind direction	N/A
Wind intensity	F0
Rain	no
Rain amount	N/A
Rain duration	N/A
Tornado	no
Tornado intensity	N/A
Lightning	no
Lightning Intensity	N/A
Mesocyclone	no
Funnel Cloud	no
Waterspout	no
Narrative	Barns demolished, trees down, debris path across hwy 86, roads closed. (Note: possibly time event was reported, not time of event itself.) ***changed event time to 1700z based on radar***/seifert.
Confidence	confirmed
Warning Criteria	met or exceeded
Source	Public
MSC initiated report of event	N/A
Contact name	The Weather Network Stormline
Contact phone	N/A
Contact email	N/A
Contact address	N/A
Number of fatalities	N/A
Fatality comments	N/A
Number of injuries	N/A
Injury comments	N/A
Damage amount	N/A
Damage comments	N/A
Power outage	N/A

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Event type	Tornado (vetted)
Event start date	2005-8-19 UTC (exact)
Event start time	17:20:00 UTC (estimate)
Event duration	00:01:00 (rough)
Entered by	seifertm (2006-08-23 15:01:34)
Event version	latest
fcst region	WATERLOO - WELLINGTON
meso region	MOUNT FOREST - ARTHUR - NORTHERN WELLINGTON COUNTY
Latitude/Longitude	43 ° 40' N 80 ° 44' W
Location	3 KM NW of Glen Allan
Hail	no
Hail size descriptor	N/A
Hail diameter	N/A
Hail depth	N/A
Wind	no
Gust speed	N/A
Wind direction	N/A
Wind intensity	N/A
Rain	no
Rain amount	N/A
Rain duration	N/A
Tornado	yes
Tornado intensity	F2 (measured)
Lightning	no
Lightning Intensity	N/A
Mesocyclone	no
Funnel Cloud	no
Waterspout	no
Narrative	From Milverton to Conestogo Lake (west of Elmira) between 12:50 pm and 1:20 pm. Intermittent F2 tornadic damage path 25 km long and up to 1 km wide. 28 foot motor home carried 50 feet. Numerous trees down. Cottages damaged. Barns destroyed. (Info entered from AWCN.)
Confidence	confirmed
Warning Criteria	met or exceeded
Source	Other
MSC initiated report of event	N/A
Contact name	N/A
Contact phone	N/A
Contact email	N/A
Contact address	N/A
Number of fatalities	N/A
Fatality comments	N/A
Number of injuries	N/A
Injury comments	N/A
Damage amount	N/A
Damage comments	N/A
Power outage	N/A

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Event type	Tornado (vetted)
Event start date	2005-8-19 UTC (exact)
Event start time	17:35:00 UTC (exact)
Event duration	00:01:00 (exact)
Entered by	seifertm (2006-08-23 15:12:54)
Event version	latest
fcst region	HURON - PERTH
meso region	LISTOWEL - MILVERTON - NORTHERN PERTH COUNTY
Latitude/Longitude	43 ° 35' N 80 ° 53' W
Location	0 KM N of Mornington
Hail	no
Hail size descriptor	N/A
Hail diameter	N/A
Hail depth	N/A
Wind	no
Gust speed	N/A
Wind direction	N/A
Wind intensity	N/A
Rain	no
Rain amount	N/A
Rain duration	N/A
Tornado	yes
Tornado intensity	NA (estimated)
Lightning	no
Lightning Intensity	N/A
Mesocyclone	no
Funnel Cloud	no
Waterspout	no
Narrative	Tornado spotted and relayed to OPP Woman reported from her cottage- trees, hydro and damaged cottages Called OPP- 3 or 4 seperate calls from public that saw tornado. 8 in total calling in with damage
Confidence	probable
Warning Criteria	met or exceeded
Source	Public
MSC initiated report of event	N/A
Contact name	OPP
Contact phone	N/A
Contact email	N/A
Contact address	N/A
Number of fatalities	N/A
Fatality comments	N/A
Number of injuries	N/A
Injury comments	N/A
Damage amount	N/A
Damage comments	N/A
Power outage	N/A

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Event type	Tornado (vetted)
Event start date	2005-8-19 UTC (exact)
Event start time	17:35:00 UTC (estimate)
Event duration	00:01:00 (rough)
Entered by	seifertm (2006-08-23 15:10:34)
Event version	latest
fcst region	WATERLOO - WELLINGTON
meso region	MOUNT FOREST - ARTHUR - NORTHERN WELLINGTON COUNTY
Latitude/Longitude	43 ° 50' N 80 ° 51' W
Location	0 KM N of Palmerston
Hail	no
Hail size descriptor	N/A
Hail diameter	N/A
Hail depth	N/A
Wind	no
Gust speed	N/A
Wind direction	N/A
Wind intensity	N/A
Rain	no
Rain amount	N/A
Rain duration	N/A
Tornado	yes
Tornado intensity	NA (estimated)
Lightning	no
Lightning Intensity	N/A
Mesocyclone	no
Funnel Cloud	no
Waterspout	no
Narrative	Hwy 86 west, Tornado touchdown near Listowel.
Confidence	possible
Warning Criteria	met or exceeded
Source	Public
MSC initiated report of event	N/A
Contact name	The Weather Network Stormline
Contact phone	N/A
Contact email	N/A
Contact address	N/A
Number of fatalities	N/A
Fatality comments	N/A
Number of injuries	N/A
Injury comments	N/A
Damage amount	N/A
Damage comments	N/A
Power outage	N/A

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