

## **National Transportation Safety Board**

## Office of Aviation Safety Washington, D.C. 20594-2000 December 18, 2017 ATTACHMENT 10 to the METEOROLOGY FACTUAL REPORT DCA17FA076

Additional weather products discussing high wind conditions issued by the National Weather Service Detroit/Pontiac WFO in the days leading up to and including the accident day (prior to the accident time).

Submitted by: Mike Richards NTSB, AS-30 FLUS43 KDTX 062106 HWODTX Hazardous Weather Outlook National Weather Service Detroit/Pontiac MI 405 PM EST Mon Mar 6 2017

MIZ047>049-053>055-060>063-068>070-075-076-082-083-071000-

Midland-Bay-Huron-Saginaw-Tuscola-Sanilac-Shiawassee-Genesee-Lapeer-

St. Clair-Livingston-Oakland-Macomb-Washtenaw-Wayne-Lenawee-Monroe-

405 PM EST Mon Mar 6 2017

This hazardous weather outlook is for Southeast Michigan.

.DAY ONE...Tonight

There is a chance of thunderstorms late tonight. These storms are not expected to be severe but could produce a wind gust near 40 mph. Storm motion will be west to east around 40 mph.

.DAYS TWO THROUGH SEVEN...Tuesday through Sunday

The chance for thunderstorms will continue into Tuesday morning as a cold front pushes through the region.

Windy conditions will develop behind a second cold front on Wednesday. Gusts will likely reach 40 mph and could reach 50 mph during the afternoon.

.SPOTTER INFORMATION STATEMENT ...

Spotter activation will not be needed tonight. \$\$

LCZ460-LEZ444-LHZ361>363-421-422-441>443-462>464-071000-Lake St. Clair-

Michigan Waters of Lake Erie from Detroit River to North Cape MI-Lake Huron from 5NM east of Mackinac Bridge to Presque Isle Lt beyond 5 NM off shore-

Lake Huron from Presque Isle Light to Sturgeon Point MI beyond 5NM off shore-

Lake Huron from Sturgeon Point to Alabaster MI beyond 5NM off shore-Outer Saginaw Bay SW of Alabaster to Port Austin MI to Inner Saginaw Bay-Inner Saginaw Bay SW of Point Au Gres to Bay Port MI-

Port Austin to Harbor Beach MI-Harbor Beach to Port Sanilac MI-Port Sanilac to Port Huron MI-

Lake Huron from Port Austin to Harbor Beach beyond 5NM Off Shore-Lake Huron from Harbor Beach to Port Sanilac beyond 5NM Off Shore-Lake Huron from Port Sanilac to Port Huron beyond 5NM Off Shore-405 PM EST Mon Mar 6 2017

This hazardous weather outlook is for portions of Lake Erie, Lake Huron and Lake St Clair.

.DAY ONE...Tonight

There is a chance of thunderstorms late tonight. These storms are not expected to be severe but could produce a brief wind gust near 35 knots. Storm motion will be to the northeast around 40 knots. .DAYS TWO THROUGH SEVEN...Tuesday through Sunday The chance for thunderstorms will continue into Tuesday as a cold front pushes through the region.

Small craft advisories are in effect Tuesday for all marine areas. A gale watch remains in effect for all marine areas Wednesday. Please see the latest marine weather message or forecast for details.

.SPOTTER INFORMATION STATEMENT...

Spotter activation will not be needed tonight.

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You can obtain your latest National Weather Service forecasts online at www.weather.gov/detroit.

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FLUS43 KDTX 070846 HWODTX Hazardous Weather Outlook National Weather Service Detroit/Pontiac MI 346 AM EST Tue Mar 7 2017 MIZ047>049-053>055-060>063-068>070-075-076-082-083-080900-Midland-Bay-Huron-Saginaw-Tuscola-Sanilac-Shiawassee-Genesee-Lapeer-St. Clair-Livingston-Oakland-Macomb-Washtenaw-Wayne-Lenawee-Monroe-346 AM EST Tue Mar 7 2017 This hazardous weather outlook is for portions of southeast Michigan. .DAY ONE...Today and Tonight There is a chance of thunderstorms through early afternoon. Storms are not expected to be severe, but they will have the potential to produce wind gusts to 45 mph. Wind gusts to 40 mph are possible from early this morning through mid-afternoon as a cold front passes through the area. .DAYS TWO THROUGH SEVEN...Wednesday through Monday Strong winds are expected to develop Wednesday behind a second cold front. Gusts to 50 mph, possibly higher, are expected from mid-morning through evening. A wind advisory or high wind watch may be required. .SPOTTER INFORMATION STATEMENT ...

Spotter activation will not be needed today and tonight. \$\$

LCZ460-LEZ444-LHZ361>363-421-422-441>443-462>464-080900-Lake St. Clair-

Michigan Waters of Lake Erie from Detroit River to North Cape MI-Lake Huron from 5NM east of Mackinac Bridge to Presque Isle Lt beyond 5 NM off shore-

Lake Huron from Presque Isle Light to Sturgeon Point MI beyond 5NM off shore-

Lake Huron from Sturgeon Point to Alabaster MI beyond 5NM off shore-

Outer Saginaw Bay SW of Alabaster to Port Austin MI to Inner Saginaw Bay-Inner Saginaw Bay SW of Point Au Gres to Bay Port MI-Port Austin to Harbor Beach MI-Harbor Beach to Port Sanilac MI-Port Sanilac to Port Huron MI-

Lake Huron from Port Austin to Harbor Beach beyond 5NM Off Shore-Lake Huron from Harbor Beach to Port Sanilac beyond 5NM Off Shore-Lake Huron from Port Sanilac to Port Huron beyond 5NM Off Shore-346 AM EST Tue Mar 7 2017

This hazardous weather outlook is for portions of Lake Erie, Lake Huron and Lake St Clair.

.DAY ONE...Today and Tonight

There is a chance of thunderstorms through early afternoon. Storms will have the potential to produce wind gusts to 40 knots.

Small craft advisories remain in effect for all nearshore waters today and into this evening. A brief period of gale-force winds may

develop from mid- morning through early afternoon as a cold front pushes through the area. Please see the latest Marine Weather Message or forecast for details.

.DAYS TWO THROUGH SEVEN...Wednesday through Monday A Gale Watch remains in effect for all marine areas on Wednesday, and lasts through Wednesday night for the northern half of Lake Huron. .SPOTTER INFORMATION STATEMENT...

Spotter activation will not be needed today and tonight. \$\$

You can obtain your latest National Weather Service forecasts online at www.weather.gov/detroit.

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WWUS73 KDTX 071625 **NPWDTX URGENT - WEATHER MESSAGE** National Weather Service Detroit/Pontiac MI 1125 AM EST Tue Mar 7 2017 MIZ047>049-053>055-060>063-068>070-075-076-082-083-080930-/O.NEW.KDTX.HW.A.0002.170308T1500Z-170309T0300Z/ Midland-Bay-Huron-Saginaw-Tuscola-Sanilac-Shiawassee-Genesee-Lapeer-St. Clair-Livingston-Oakland-Macomb-Washtenaw-Wayne-Lenawee-Monroe-Including the cities of Midland, Bay City, Bad Axe, Saginaw, Caro, Sandusky, Owosso, Flint, Lapeer, Port Huron, Howell, Pontiac, Warren, Ann Arbor, Detroit, Adrian, and Monroe 1125 AM EST Tue Mar 7 2017 ...HIGH WIND WATCH IN EFFECT FROM WEDNESDAY MORNING THROUGH WEDNESDAY EVENING...

The National Weather Service in Detroit/Pontiac has issued a High Wind Watch, which is in effect from Wednesday morning through Wednesday evening.

HAZARDOUS WEATHER...

\* STRONG WIND GUSTS AROUND 40 MPH TODAY WILL DIMINISH DURING THE AFTERNOON AND THEN REDEVELOP EVEN STRONGER WEDNESDAY.

\* WESTERLY WIND GUSTS FREQUENTLY GREATER THAN 50 MPH ARE EXPECTED BY LATE WEDNESDAY MORNING. GUSTS NEAR 60 MPH ARE POSSIBLE.

\* THE STRONG WIND WILL CONTINUE INTO WEDNESDAY EVENING BEFORE DIMINISHING.

IMPACTS...

\* TREE DAMAGE AND NUMEROUS POWER OUTAGES WILL BE POSSIBLE.

\* THE LONG DURATION OF THE EVENT WILL ALSO MAKE MINOR STRUCTURAL DAMAGE POSSIBLE.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A High Wind Watch means there is the potential for a hazardous

high wind event. Sustained winds of at least 40 mph...or gusts of

58 mph or stronger may occur. Continue to monitor the latest forecasts.

\* Prepare, plan and stay informed. Visit

http://go.usa.gov/c7kkP

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FLUS43 KDTX 071748 **HWODTX** Hazardous Weather Outlook National Weather Service Detroit/Pontiac MI 1248 PM EST Tue Mar 7 2017 MIZ047>049-053>055-060>063-068>070-075-076-082-083-080900-Midland-Bay-Huron-Saginaw-Tuscola-Sanilac-Shiawassee-Genesee-Lapeer-St. Clair-Livingston-Oakland-Macomb-Washtenaw-Wayne-Lenawee-Monroe-1248 PM EST Tue Mar 7 2017 This hazardous weather outlook is for portions of southeast Michigan. .DAY ONE...Today and Tonight Wind gusts around 40 mph during the afternoon will diminish by early evening. The gusty wind will occur as cooler air moves in behind the front the moved through the region this morning. .DAYS TWO THROUGH SEVEN...Wednesday through Monday A high wind watch is in effect from late Wednesday morning through Wednesday evening. Strong winds are expected to develop Wednesday

behind a second cold front. Frequent gusts to 50 mph are likely with

gusts to 60 mph possible. Please see the latest forecasts and statements for additional details.

.SPOTTER INFORMATION STATEMENT ...

Spotter activation will not be needed today and tonight. \$\$

LCZ460-LEZ444-LHZ361>363-421-422-441>443-462>464-080900-Lake St. Clair-

Michigan Waters of Lake Erie from Detroit River to North Cape MI-Lake Huron from 5NM east of Mackinac Bridge to Presque Isle Lt beyond 5 NM off shore-

Lake Huron from Presque Isle Light to Sturgeon Point MI beyond 5NM off shore-

Lake Huron from Sturgeon Point to Alabaster MI beyond 5NM off shore-Outer Saginaw Bay SW of Alabaster to Port Austin MI to Inner Saginaw Bay-Inner Saginaw Bay SW of Point Au Gres to Bay Port MI-

Port Austin to Harbor Beach MI-Harbor Beach to Port Sanilac MI-Port Sanilas to Port Huron MI

Port Sanilac to Port Huron MI-

Lake Huron from Port Austin to Harbor Beach beyond 5NM Off Shore-Lake Huron from Harbor Beach to Port Sanilac beyond 5NM Off Shore-Lake Huron from Port Sanilac to Port Huron beyond 5NM Off Shore-1248 PM EST Tue Mar 7 2017

This hazardous weather outlook is for portions of Lake Erie, Lake Huron and Lake St Clair.

.DAY ONE ... Today and Tonight

A gale warning is in effect today for Saginaw Bay. Small craft advisories remain in effect for all other nearshore waters today and into this evening. Please see the latest Marine Weather Message or forecast for details.

.DAYS TWO THROUGH SEVEN...Wednesday through Monday A Gale Watch remains in effect for all marine areas on Wednesday, and lasts through Wednesday night for the northern half of Lake Huron. .SPOTTER INFORMATION STATEMENT...

Spotter activation will not be needed today and tonight. \$\$

You can obtain your latest National Weather Service forecasts online

at www.weather.gov/detroit.

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FLUS43 KDTX 072126 HWODTX Hazardous Weather Outlook National Weather Service Detroit/Pontiac MI 425 PM EST Tue Mar 7 2017 Miz047>049-053>055-060>063-068>070-075-076-082-083-080900Midland-Bay-Huron-Saginaw-Tuscola-Sanilac-Shiawassee-Genesee-Lapeer-St. Clair-Livingston-Oakland-Macomb-Washtenaw-Wayne-Lenawee-Monroe-

425 PM EST Tue Mar 7 2017

This hazardous weather outlook is for portions of southeast Michigan.

.DAY ONE...Tonight

No hazardous weather is expected at this time.

.DAYS TWO THROUGH SEVEN...Wednesday through Monday

A high wind watch is in effect from late Wednesday morning through

Wednesday evening. Damaging winds are expected to develop Wednesday

behind a second cold front. Frequent gusts to 50 mph are likely with

gusts to 60 mph possible. Please see the latest forecasts and statements for additional details.

.SPOTTER INFORMATION STATEMENT...

Spotter activation will not be needed tonight.

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LCZ460-LEZ444-LHZ361>363-421-422-441>443-462>464-080900-Lake St. Clair-

Michigan Waters of Lake Erie from Detroit River to North Cape MI-Lake Huron from 5NM east of Mackinac Bridge to Presque Isle Lt beyond 5 NM off shore-

Lake Huron from Presque Isle Light to Sturgeon Point MI beyond 5NM off shore-

Lake Huron from Sturgeon Point to Alabaster MI beyond 5NM off shore-Outer Saginaw Bay SW of Alabaster to Port Austin MI to Inner Saginaw Bay-Inner Saginaw Bay SW of Point Au Gres to Bay Port MI-

Port Austin to Harbor Beach MI-Harbor Beach to Port Sanilac MI-Port Sanilac to Port Huron MI-

Lake Huron from Port Austin to Harbor Beach beyond 5NM Off Shore-Lake Huron from Harbor Beach to Port Sanilac beyond 5NM Off Shore-

Lake Huron from Port Sanilac to Port Huron beyond 5NM Off Shore-425 PM EST Tue Mar 7 2017

This hazardous weather outlook is for portions of Lake Erie, Lake Huron and Lake St Clair.

.DAY ONE...Tonight

Small craft advisories remain in effect for all nearshore waters tonight. Please see the latest Marine Weather Message or forecast for details.

.DAYS TWO THROUGH SEVEN...Wednesday through Monday The gale watch is updated to a warning for all marine areas on

Wednesday, and lasts through Wednesday night for the northern half of Lake Huron.

.SPOTTER INFORMATION STATEMENT...

Spotter activation will not be needed tonight.

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You can obtain your latest National Weather Service forecasts online

at www.weather.gov/detroit. BT

FLUS43 KDTX 080335 **HWODTX** Hazardous Weather Outlook National Weather Service Detroit/Pontiac MI 1035 PM EST Tue Mar 7 2017 MIZ047>049-053>055-060>063-068>070-075-076-082-083-090345-Midland-Bay-Huron-Saginaw-Tuscola-Sanilac-Shiawassee-Genesee-Lapeer-St. Clair-Livingston-Oakland-Macomb-Washtenaw-Wayne-Lenawee-Monroe-1035 PM EST Tue Mar 7 2017 This hazardous weather outlook is for portions of southeast Michigan. .DAY ONE...Tonight No hazardous weather is expected at this time. .DAYS TWO THROUGH SEVEN...Wednesday through Monday A High Wind Warning is in effect Wednesday for all of Southeast Michigan. Please see the latest forecasts and statements for details. .SPOTTER INFORMATION STATEMENT ... Spotter activation will not be needed today and tonight. \$\$ LCZ460-LEZ444-LHZ361>363-421-422-441>443-462>464-090345-Lake St. Clair-Michigan Waters of Lake Erie from Detroit River to North Cape MI-Lake Huron from 5NM east of Mackinac Bridge to Presque Isle Lt beyond 5 NM off shore-Lake Huron from Presque Isle Light to Sturgeon Point MI beyond 5NM off shore-Lake Huron from Sturgeon Point to Alabaster MI beyond 5NM off shore-Outer Saginaw Bay SW of Alabaster to Port Austin MI to Inner Saginaw Bay-Inner Saginaw Bay SW of Point Au Gres to Bay Port MI-Port Austin to Harbor Beach MI-Harbor Beach to Port Sanilac MI-Port Sanilac to Port Huron MI-Lake Huron from Port Austin to Harbor Beach beyond 5NM Off Shore-Lake Huron from Harbor Beach to Port Sanilac beyond 5NM Off Shore-Lake Huron from Port Sanilac to Port Huron beyond 5NM Off Shore-1035 PM EST Tue Mar 7 2017 This hazardous weather outlook is for portions of Lake Erie, Lake Huron and Lake St Clair. .DAY ONE...Tonight No hazardous weather is expected at this time. .DAYS TWO THROUGH SEVEN...Wednesday through Monday A Gale Warning is in effect for all marine areas on Wednesday, and

lasts through Wednesday night for the northern half of Lake Huron. Please see the latest marine weather statement or forecast for details. .SPOTTER INFORMATION STATEMENT... Spotter activation will not be needed today and tonight.

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You can obtain your latest National Weather Service forecasts online at www.weather.gov/detroit.

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WWUS73 KDTX 080913

NPWDTX

**URGENT - WEATHER MESSAGE** 

National Weather Service Detroit/Pontiac MI

413 AM EST Wed Mar 8 2017

MIZ047>049-053>055-060>063-068>070-075-076-082-083-081900-

/O.CON.KDTX.HW.W.0002.170308T1500Z-170309T0000Z/

Midland-Bay-Huron-Saginaw-Tuscola-Sanilac-Shiawassee-Genesee-

Lapeer-St. Clair-Livingston-Oakland-Macomb-Washtenaw-Wayne-

Lenawee-Monroe-

Including the cities of Midland, Bay City, Bad Axe, Saginaw,

Caro, Sandusky, Owosso, Flint, Lapeer, Port Huron, Howell,

Pontiac, Warren, Ann Arbor, Detroit, Adrian, and Monroe

413 AM EST Wed Mar 8 2017

...HIGH WIND WARNING REMAINS IN EFFECT FROM 10 AM THIS MORNING TO 7 PM EST THIS EVENING...

HAZARDOUS WEATHER...

- \* Strong west to southwest winds will develop late this morning and continue through the afternoon and early evening.
- \* Long duration of sustained winds with speeds between 30 and 35 mph expected during the afternoon
- \* Damaging wind gusts between 50 and 60 mph

IMPACTS...

- \* Downed power lines and power outages
- \* Large tree limbs downed
- \* Downed trees possible
- \* Loose objects will be blown around
- \* Difficult driving conditions, particularly for high profile vehicles

\* The long duration of strong winds could cause some minor structural damage.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A High Wind Warning means a hazardous high wind event is expected

or occurring. Sustained wind speeds of at least 40 mph or gusts

of 58 mph or more can lead to property damage. \* Prepare, plan and stay informed. Visit http://go.usa.gov/c7kkP && \$\$ HLO

WWUS73 KDTX 081349 **NPWDTX URGENT - WEATHER MESSAGE** National Weather Service Detroit/Pontiac MI 849 AM EST Wed Mar 8 2017 MIZ047>049-053>055-060>063-068>070-075-076-082-083-090000-/O.CON.KDTX.HW.W.0002.170308T1500Z-170309T0000Z/ Midland-Bay-Huron-Saginaw-Tuscola-Sanilac-Shiawassee-Genesee-Lapeer-St. Clair-Livingston-Oakland-Macomb-Washtenaw-Wayne-Lenawee-Monroe-Including the cities of Midland, Bay City, Bad Axe, Saginaw, Caro, Sandusky, Owosso, Flint, Lapeer, Port Huron, Howell, Pontiac, Warren, Ann Arbor, Detroit, Adrian, and Monroe 849 AM EST Wed Mar 8 2017 ...HIGH WIND WARNING REMAINS IN EFFECT UNTIL 7 PM EST THIS EVENING ... HAZARDOUS WEATHER .... \* Strong winds from the west are already developing this morning. Further intensification will occur through the morning. \* Widespread damaging winds are expected. Sustained winds of 30 to 40 mph will gust in excess of 60 mph. \* Damaging wind will persist for several hours and will be the strongest between Noon and 5 PM local time. IMPACTS... \* Downed power lines and widespread power outages \* Downed trees and large limbs \* Loose objects will be blown around \* Difficult driving conditions, particularly for high profile vehicles \* The long duration of strong winds could cause some minor structural damage. PRECAUTIONARY/PREPAREDNESS ACTIONS... A High Wind Warning means a hazardous high wind event is expected or occurring. Sustained wind speeds of at least 40 mph or gusts of 58 mph or more can lead to property damage. \* Prepare, plan and stay informed. Visit http://go.usa.gov/c7kkP

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WWUS83 KDTX 081502 **SPSDTX Special Weather Statement** National Weather Service Detroit/Pontiac MI 1002 AM EST Wed Mar 8 2017 MIZ047>049-053>055-060>063-068>070-075-076-082-083-081815-Midland-Bay-Huron-Saginaw-Tuscola-Sanilac-Shiawassee-Genesee-Lapeer-St. Clair-Livingston-Oakland-Macomb-Washtenaw-Wayne-Lenawee-Monroe-Including the cities of Midland, Bay City, Bad Axe, Saginaw, Caro, Sandusky, Owosso, Flint, Lapeer, Port Huron, Howell, Pontiac, Warren, Ann Arbor, Detroit, Adrian, and Monroe 1002 AM EST Wed Mar 8 2017 ...HIGH WIND WARNING IN EFFECT ... Wind gusts have rapidly increased this morning. Between 9 AM and 10 AM, there have been widespread southwest wind gusts between 40 and 60 MPH. These strong winds will persist through the afternoon. Wind gusts this strong will be capable of bringing down trees, large tree limbs and power lines. Driving will also be difficult, especially high profile vehicles. As a reminder, never go near downed power lines. There have already been reports of trees and power lines down. \$\$

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WWUS73 KDTX 081646 NPWDTX URGENT - WEATHER MESSAGE National Weather Service Detroit/Pontiac MI 1146 AM EST Wed Mar 8 2017 MIZ047>049-053>055-060>063-068>070-075-076-082-083-090000-/O.CON.KDTX.HW.W.0002.000000T0000Z-170309T0000Z/ Midland-Bay-Huron-Saginaw-Tuscola-Sanilac-Shiawassee-Genesee-Lapeer-St. Clair-Livingston-Oakland-Macomb-Washtenaw-Wayne-Lenawee-Monroe-Including the cities of Midland, Bay City, Bad Axe, Saginaw, Caro, Sandusky, Owosso, Flint, Lapeer, Port Huron, Howell, Pontiac, Warren, Ann Arbor, Detroit, Adrian, and Monroe 1146 AM EST Wed Mar 8 2017 ...HIGH WIND WARNING REMAINS IN EFFECT UNTIL 7 PM EST THIS

## EVENING ...

HAZARDOUS WEATHER ...

\* Sustained winds of 35 to 40 mph with gusts of 45 to near 60 mph are ongoing.

\* Further intensification of winds is anticipated over the next several hours. Wind gusts up to 65 mph will be possible at times between Noon and 5 PM local time.

IMPACTS...

- \* Downed power lines and widespread power outages
- \* Downed trees and large limbs
- \* Loose objects will be blown around
- \* Difficult driving conditions, particularly for high profile vehicles
- \* The long duration of strong winds could cause some minor structural damage.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A High Wind Warning means a hazardous high wind event is expected or occurring. Sustained wind speeds of at least 40 mph or gusts

- of 58 mph or more can lead to property damage.
- \* Prepare, plan and stay informed. Visit

http://go.usa.gov/c7kkP

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JVC

WWUS83 KDTX 081720 SPSDTX **Special Weather Statement** National Weather Service Detroit/Pontiac MI 1220 PM EST Wed Mar 8 2017 MIZ047>049-053>055-060>063-068>070-075-076-082-083-082030-Midland-Bay-Huron-Saginaw-Tuscola-Sanilac-Shiawassee-Genesee-Lapeer-St. Clair-Livingston-Oakland-Macomb-Washtenaw-Wayne-Lenawee-Monroe-Including the cities of Midland, Bay City, Bad Axe, Saginaw, Caro, Sandusky, Owosso, Flint, Lapeer, Port Huron, Howell, Pontiac, Warren, Ann Arbor, Detroit, Adrian, and Monroe 1220 PM EST Wed Mar 8 2017 ...HIGH WIND WARNING IN EFFECT... Winds will continue to gust between 50 and 65 MPH this afternoon. There have been reports of large trees, tree limbs and wires being blown down all over Southeast Michigan. Extensive power outages

have also been reported. The persistent winds will lead to

additional trees and power lines being blown down. Motorists will

also have difficulty driving, especially high profile vehicles. If you must travel this afternoon, be alert to debris in the roads. As a reminder, never go near downed power lines. \$\$

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