

JONESFIELD TOWNSHIP - SECTION 1

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters, for Turbines T-83 and T-84 in Section 1.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating. Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not included in the Special Land Use permit are not part of this request.

A summary of how the proposed wind turbines comply with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE's design parameters is provided below. Items highlighted in green comply with the



zoning ordinance. Items in pink need further consideration.

| Table 1 - Township Zoning Standards Section 1 | | | | | |
|---|--------------------------------------|------------------|--|--|--|
| Standards Zoning Requirements T-83 (499') T-84 (499') | | | | | |
| Setback from Property Lines | (499') * 1.0x Tip Height** | 0' *** 0' *** | 0' *** 171' *** 0' *** 171' *** | | |
| Setback from Road Right-of- Way | (499') * 1.0x Tip Height** | 1,445' | 2,450' | | |
| Sound | 60 dBA | NRO Mode 105 | NRO Mode 105 | | |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}On October 29, 2020, the ZBA granted variance(s) for various setback(s) from property lines.

| Table 2 - DTE Design Parameters Section 1 | | | | |
|---|--------------------------------------|--|--|--|
| Standards | Requirements | T-83 (499') | T-84 (499') | |
| Turbine Spacing | 1,000 Feet Apart | 1,535' | 1,535' | |
| Turbine Height* | 500 Feet | 499' | 499' | |
| Setback from Public Roads | (748.5)* 1.5x Tip Height** | 1,445' | 2,450' | |
| Setback from Non-participating Parcels | (748.5)* 1.5x Tip Height | 815' | 990' | |
| Setback from an Inhabited Structure on a Non-Participating Parcel*** | 1,320 Feet | 1,445' | 1,860' | |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | Greater than 1,000' | |
| Setback from a Village | 1,320 Feet | 4.45 miles | 4.15 miles | |
| Shadow Flicker 30 Hours per Year Turbine contributes to shadow flicker of over 30 hours on the surrounding homes Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | | | | |
| Sound at Non-Participating Property Lines | 55 dBA | NRO Mode 105 | NRO Mode 105 | |
| Sound at Non-Participating Inhabited Structures | 45 dBA | NRO Mode 105 – See comment below | NRO Mode 105 – See comment below | |
| *Based off tallest turbine model GE 2.82-127 | - tip height of 499'. Vestas to | urbine has a tip height of 49 | 92'. | |
| **Tip Height is defined as the distance betwe | en the ground and the highe | st point of the WTGs | | |

^{***}Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings

Additional Considerations for Review:

Sound at Non-Participating Inhabited Structures – Receptor 1410 (non-participating home) north of Turbines 83 and 84 is indicated to receive 45 dBA in Table 4 of the sound model. However on Figure 9, the receptor is clearly located inside the 45 dBA contour line. The applicant needs to clarify this discrepancy. If the receptor exceeds the 45 dBA limit, the applicant shall implement additional noise reduction measures.



JONESFIELD TOWNSHIP - SECTION 2

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters, for Turbines T-79 and T-80 in Section 2.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating. Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not included in the Special Land Use permit are not part of this request.

A summary of how the proposed wind turbines comply with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE's design parameters is provided below. Items highlighted in



green comply with the zoning ordinance. Items in pink need further consideration.

| Table 1 - Township Zoning Standards Section 2 | | | | | |
|---|-------------------------------------|---------------------------------|--------------|--|--|
| Standards Zoning Requirements T-79 (499') T-80 (499') | | | | | |
| Setback from Property Lines | (499')* 1.0x Tip Height** | 75' *** 247' *** 257' *** | 408 '*** | | |
| Setback from Road Right- of-Way | (499')* 1.0x Tip Height** | 2,345' | 1,830' | | |
| Sound | 60 dBA | NRO Mode 105 | NRO Mode 106 | | |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}On October 29, 2020, the ZBA granted variance(s) for various setback(s) from property lines.

| Table 2 - DTE Design Parameters Section 2 | | | | | | |
|--|---------------------------------------|--|--|--|--|--|
| Standards | Requirements | T-79 (499') | T-80 (499') | | | |
| Turbine Spacing | 1,000 Feet Apart 2,240' | | 2,205' | | | |
| Turbine Height* | 500 Feet | 499' | 499' | | | |
| Setback from Public Roads | (748.5) * 1.5x Tip Height** | 2,345' | 1,830' | | | |
| Setback from Non- participating Parcels | (748.5)* 1.5x Tip Height | 905' | 765' | | | |
| Setback from an Inhabited Structure on a Non- Participating Parcel*** | 1,320 Feet | 2,265' | 1,715' | | | |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | Greater than 1,000' | | | |
| Setback from a Village | 1,320 Feet | 3.77 miles | 4.19 miles | | | |
| Shadow Flicker | 30 Hours per Year | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | | | |
| Sound at Non-Participating Property Lines | 55 dBA | NRO Mode 105 | NRO Mode 105 | | | |
| Sound at Non-Participating Inhabited Structures | | | | | | |
| *Based off tallest turbine model GE 2.82- | 127 - tip height of 499'. Vestas to | urbine has a tip height of 492 | 2'. | | | |
| **Tip Height is defined as the distance between the ground and the highest point of the WTGs | | | | | | |

^{***}Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings

Additional Considerations for Review:



JONESFIELD TOWNSHIP - SECTION 3

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters, for Turbines T-71, T-72, T-73, and T-74 in Section 3.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating. Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not included in the Special Land Use permit are not part of this request.

A summary of how the proposed wind turbines comply with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE's design parameters is provided below. Items highlighted **green**

E Tittabawassee Rd

Paragrammer Rd

T-73

T-74

Dice Rd

Dice Rd

comply with the zoning ordinance. Items in pink need further consideration.

| Table 1 - Township Zoning Standards Section 3 | | | | | | |
|--|--------------------------------------|---------------------|--|------------------|-----------------|--|
| Standards Zoning Requirements T-71 (499') T-72 (499') T-73 (499') T-74 (499') | | | | | | |
| Setback from Property Lines | (499') * 1.0x Tip Height** | 72' *** 293' *** | 0' *** 74' *** 0' *** 74' *** | 0' *** 0' *** | 69' *** | |
| Setback from Road Right-of-Way | (499')* 1.0x Tip Height** | 1,210' | 1,555' | 1,840' | 1,350' | |
| Sound | 60 dBA | NRO Mode 105 | NRO Mode 105 | NRO Mode 105 | NRO Mode 105 | |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}On October 29, 2020, the ZBA granted variance(s) for various setback(s) from property lines.

| Table 2 - DTE Design Parameters Section 3 | | | | | |
|--|-------------------------------|---|---|---|---|
| Standards | Requirements | T-71 (499') | T-72 (499') | T-73 (499') | T-74 (499') |
| Turbine Spacing | 1,000 Feet Apart | 2,110' | 2,110' | 1,280' | 1,280' |
| Turbine Height* | 500 Feet | 499' | 499' | 499' | 499' |
| Setback from Public Roads | (748.5)* 1.5x Tip Height** | 1,210' | 1,555' | 1,840' | 1,350' |
| Setback from Non- participating Parcels | (748.5)* 1.5x Tip Height | 765' | 1,585' | 780' | 1,050' |
| Setback from an Inhabited Structure on a Non-Participating Parcel*** | 1,320 Feet | 1,355' | 1,660' | 1,725' | 1,455' |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | Greater than 1,000' | Greater than 1,000' | Greater than 1,000' |
| Setback from a Village | 1,320 Feet | 4.34 miles | 4.27 miles | 3.76 miles | 3.52 miles |
| Shadow Flicker | 30 Hours per Year | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes |
| Sound at Non- Participating Property Lines | 55 dBA | NRO Mode 105 | NRO Mode 105 | NRO Mode 105 | NRO Mode 105 |
| Sound at Non- Participating Inhabited Structures | 45 dBA | NRO Mode 105 – See comment below | NRO Mode 105 – See comment below | NRO Mode 105 | NRO Mode 105 |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings

Additional Considerations for Review:

Sound at Non-participating Inhabited Structures – Receptor 1050 is labeled as participating in the Sound Model and is expected to receive 46 dBA. However, this receptor is not part of the Special Land Use Permit application and therefore, not participating. The applicant shall implement additional noise reduction measures to meet the 45 dBA requirement.



JONESFIELD TOWNSHIP - SECTION 4

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters, for Turbines T-62, T-63, T-64, and T-65 in Section 4.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating. Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not included in the Special Land Use permit are not part of this request.

A summary of how the proposed wind turbines comply with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE's design parameters is provided below. Items highlighted in **green** comply with the

E Tittabawassee Rd

T-62

T-63

Dice Rd

zoning ordinance. Items in pink need further consideration.

| Table 1 - Township Zoning Standards Section 4 | | | | | |
|---|------------------------------|------------------|--|-----------------|------------------|
| Standards Zoning Requirements T-62 (499') T-63 (499') T-64 (499') ALT-T-65 (499') | | | | | |
| Setback from Property Lines | (499')* 1.0x Tip Height** | 0' *** 0' *** | 0' *** 350' *** 0' *** 350' *** | 550' | 0' *** 0' *** |
| Setback from Road Right-of-Way | (499')* 1.0x Tip Height** | 1,525' | 2,465' | 1,585' | 1,155' |
| Sound | 60 dBA | NRO Mode 105 | NRO Mode 105 | NRO Mode 105 | NRO Mode 105 |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}On October 29, 2020, the ZBA granted variance(s) for various setback(s) from property lines.

| Table 2 - DTE Design Parameters Section 4 | | | | | |
|--|-------------------------------------|---|---|---|---|
| Standards | Requirements | T-62 (499') | T-63 (499') | T-64 (499') | ALT-T-65 (499') |
| Turbine Spacing | 1,000 Feet Apart | 1,345' | 1,345' | 1,390' | 1,835' |
| Turbine Height* | 500 Feet | 499' | 499' | 499' | 499' |
| Setback from Public Roads | (748.5)* 1.5x Tip Height** | 1,525' | 2,465' | 1,585' | 1,155' |
| Setback from Non- participating Parcels | (748.5) * 1.5x Tip Height | 1,790' | 1,000' | 765' | 1,115' |
| Setback from an Inhabited Structure on a Non-Participating Parcel*** | 1,320 Feet | 1,850' | 2,380' | 1,690' | 1,360' |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | Greater than 1,000' | Greater than 1,000' | Greater than 1,000' |
| Setback from a Village | 1,320 Feet | 4.43 miles | 4.21 miles | 4.00 miles | 4.35 miles |
| Shadow Flicker | 30 Hours per Year | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes |
| Sound at Non- Participating Property Lines | 55 dBA | NRO Mode 105 | NRO Mode 105 | NRO Mode 105 | NRO Mode 105 |
| Sound at Non- Participating Inhabited Structures | 45 dBA | NRO Mode 105 - See comment below | NRO Mode 105 | NRO Mode 105 | NRO Mode 105 - See comment below |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings

Additional Considerations for Review:

Sound at Non-participating Inhabited Structures – Receptor 1047 is labeled as participating in the Sound Model and is expected to receive 46 dBA. However, this receptor is not part of the Special Land Use Permit application and therefore, not participating. The applicant shall implement additional noise reduction measures to meet the 45 dBA requirement.

Sound at Non-participating Inhabited Structures – Receptor 1045 is considered a participant agreement parcel in the Sound Model and is expected to receive 46.7 dBA. However, this receptor is not part of the Special Land Use Permit application and therefore, not participating. The applicant shall implement additional noise reduction measures to meet the 45 dBA requirement.

Shadow Flicker – In Appendix A of the shadow flicker report, Receptor 748 is modeled to have 26.5 hours of shadow flicker. However, the contour map of Section 4, it appears the red 30-hour contour line crosses directly over the home. The applicant needs to clarify this discrepancy. If the receptor exceeds the 30-hour limit, the applicant shall implement shadow flicker mitigation measures for this home.



JONESFIELD TOWNSHIP – SECTION 9

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters, for Turbines T-66 and T-67 in Section 9.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating. Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not included in the Special Land Use permit are not part of this request.



A summary of how the proposed wind turbines comply with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE;s design parameters is provided below. Items highlighted in **green** comply with the zoning ordinance. Items in **pink** need further consideration.

| Table 1 - Township Zoning Standards Section 9 | | | | | |
|---|------------------------------|------------------|------------------|--|--|
| Standards Zoning T-66 (499') T-67 (499') | | | | | |
| Setback from Property Lines | (499')* 1.0x Tip Height** | 0' *** 0' *** | 0' *** 0' *** | | |
| Setback from Road Right-of-Way | (499')* 1.0x Tip Height** | 1,805' | 1,340' | | |
| Sound | 60 dBA | NRO Mode 105 | NRO Mode 105 | | |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}On October 29, 2020, the ZBA granted variance(s) for various setback(s) from property lines.

| Table 2 - DTE Design Parameters Section 9 | | | |
|---|---------------------------------------|---|--|
| Standards | Requirements | T-66 (499') | T-67 (499') |
| Turbine Spacing | 1,000 Feet Apart | 1,405' | 1,405' |
| Turbine Height* | 500 Feet | 499' | 499' |
| Setback from Public Roads | (748.5) * 1.5x Tip Height** | 1,805' | 1,340' |
| Setback from Non- participating Parcels | (748.5) * 1.5x Tip Height | 815' | 1,265' |
| Setback from an Inhabited Structure on a Non- Participating Parcel*** | 1,320 Feet | 1,710' | 1,580' |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | Greater than 1,000' |
| Setback from a Village | 1,320 Feet | 3.02 miles | 2.75 miles |
| Shadow Flicker | 30 Hours per Year | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes |
| Sound at Non- Participating Property Lines | 55 dBA | NRO Mode 105 | NRO Mode 105 |
| Sound at Non- Participating Inhabited Structures | 45 dBA | NRO Mode 105 - See comment below | NRO Mode 105 - See comment below |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings

Additional Considerations for Review:

Sound at Non-participating Inhabited Structures – Receptor 1873 is a non-participating parcel and is expected to receive 46 dBA. The applicant shall implement additional noise reduction measures to meet the 45 dBA requirement.



JONESFIELD TOWNSHIP – SECTION 10

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters, for Turbines T-75 and T-76 in Section 10.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating.
Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were



not included in the Special Land Use permit are not part of this request.

A summary of how the proposed wind turbines comply with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE's design parameters is provided below. Items highlighted in **green** comply with the zoning ordinance. Items in **pink** need further consideration.

| Table 1 - Township Zoning Standards Section 10 | | | |
|---|--------------------------------------|------------------|--------------|
| Standards Zoning Requirements T-75 (499') T-76 (499') | | | |
| Setback from Property Lines | (499') * 1.0x Tip Height** | 0' *** 0' *** | 108' *** |
| Setback from Road Right-of- Way | (499') * 1.0x Tip Height** | 1,290' | 1,550' |
| Sound | 60 dBA | NRO Mode 105 | NRO Mode 105 |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}On October 29, 2020, the ZBA granted variance(s) for various setback(s) from property lines.

| Table 2 - DTE Design Parameters Section 10 | | | |
|--|------------------------------------|---|---|
| Standards | Requirements | T-75 (499') | T-76 (499') |
| Turbine Spacing | 1,000 Feet Apart | 2,475' | 2,475' |
| Turbine Height* | 500 Feet | 499' | 499' |
| Setback from Public Roads | (748.5)* 1.5x Tip Height** | 1,290' | 1,550' |
| Setback from Non- participating Parcels | (748.5)* 1.5x Tip Height | 765' | 770' |
| Setback from an Inhabited Structure on a Non-Participating Parcel*** | 1,320 Feet | 1,415' | 1,490' |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | Greater than 1,000' |
| Setback from a Village | 1,320 Feet | 2.52 miles | 2.96 miles |
| Shadow Flicker | 30 Hours per Year | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes |
| Sound at Non- Participating Property Lines | 55 dBA | NRO Mode 105 | NRO Mode 105 |
| Sound at Non- Participating Inhabited Structures | 45 dBA | NRO Mode 105 - See comment below | NRO Mode 105 - See comment below |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings

Additional Considerations for Review:

Sound at Non-participating Inhabited Structures – Receptor 1873 is a non-participating parcel and is expected to receive 46 dBA. The applicant shall implement additional noise reduction measures to meet the 45 dBA requirement.

The applicant has a proposed a substation in this Section. That site plan will be reviewed at a later meeting.



JONESFIELD TOWNSHIP – SECTION 11

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters, for Turbine T-81 in Section 11.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating. Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not included in the Special Land Use permit are not part of this request.



A summary of how the proposed wind turbine complies with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE's design parameters is provided below. Items highlighted in **green** comply with the zoning ordinance. Items in **pink** need further consideration.

| Table 1 - Township Zoning Standards Section 11 | | | |
|---|--------------------------------------|--|--|
| Standards Zoning Requirements T-81 (492') | | | |
| Setback from Property Lines | (492') * 1.0x Tip Height** | 0' *** 345' *** 0' *** 345' *** | |
| Setback from Road Right-of-Way | (492')* 1.0x Tip Height** | 1,300' | |
| Sound 60 dBA Normal Operation | | | |
| *Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'. | | | |

**Tip Height is defined as the distance between the ground and the highest point of the WTGs

***On October 29, 2020, the ZBA granted variance(s) for various setback(s) from property lines.

| Table 2 - DTE Design Parameters Section 11 | | | |
|--|-------------------------------------|---------------------|--|
| Standards | Requirements T-81 (492') | | |
| Turbine Spacing | 1,000 Feet Apart | 3,250' | |
| Turbine Height* | 500 Feet | 492' | |
| Setback from Public Roads | (738) * 1.5x Tip Height** | 1,300' | |
| Setback from Non-participating Parcels | (738) * 1.5x Tip Height | 1,360' | |
| Setback from an Inhabited Structure on a Non-Participating Parcel*** | 1,320 Feet | 2,150' | |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | |
| Setback from a Village | 1,320 Feet | 2.50 miles | |
| Shadow Flicker | 30 Hours per Year | Meets Requirements | |
| Sound at Non-Participating Property Lines | 55 dBA | Normal Operation | |
| Sound at Non-Participating Inhabited Structures | 45 dBA Normal Operation | | |
| *Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'. | | | |
| **Tip Height is defined as the distance between the ground and the highest point of the WTGs | | | |
| ***Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings | | | |

Additional Considerations for Review:



JONESFIELD TOWNSHIP – SECTION 13

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters, for Turbines T-85 and T-86 in Section 13.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating.

Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not included in the Special

Dice Rd

T-86

T-85

Land Use permit are not part of this request.

A summary of how the proposed wind turbines comply with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE parameters is provided below. Items highlighted in **green** comply with the zoning ordinance. Items in **pink** need further consideration.

| Table 1 - Township Zoning Standards Section 13 | | | | |
|---|--------------------------------------|------------------|--|--|
| Standards Zoning Requirements T-85 (492') T-86 (492') | | | | |
| Setback from Property Lines | (492') * 1.0x Tip Height** | 925' | 0' *** 327' *** 0' *** 327' *** | |
| Setback from Road Right-of- Way | (492') * 1.0x Tip Height** | 1,625' | 1,635' | |
| Sound | 60 dBA | Normal Operation | Normal Operation | |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}On October 29, 2020, the ZBA granted variance(s) for various setback(s) from property lines.

| | Table 2 - DTE Design Parameters Section 13 | | | |
|--|--|---|---|--|
| Standards | Requirements | T-85 (492') | T-86 (492') | |
| Turbine Spacing | 1,000 Feet Apart | 2,200' | 2,200' | |
| Turbine Height* | 500 Feet | 492' | 492' | |
| Setback from Public Roads | (738)* 1.5x Tip Height** | 1,625' | 1,635' | |
| Setback from Non-participating Parcels | (738)* 1.5x Tip Height | 920' | 995' | |
| Setback from an Inhabited Structure on a Non-Participating Parcel*** | 1,320 Feet | 1,720' | 1,635' | |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | Greater than 1,000' | |
| Setback from a Village | 1,320 Feet | 1.88 miles | 2.25 miles | |
| Shadow Flicker | 30 Hours per Year | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | |
| Sound at Non-Participating Property Lines | 55 dBA | Normal Operation | Normal Operation | |
| Sound at Non-Participating Inhabited Structures | 45 dBA | Normal Operation | Normal Operation | |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings

Additional Considerations for Review:

Shadow Flicker – In Appendix A of the shadow flicker report, Receptor 1050 is modeled to have 28.6 hours of shadow flicker. However, the contour map of Section 13, it appears the red 30-hour contour line crosses directly over the home. The applicant needs to clarify this discrepancy. If the receptor exceeds the 30-hour limit, the applicant shall implement shadow flicker mitigation measures for this home.



JONESFIELD TOWNSHIP – SECTION 14

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters, for Turbines T-82 in Section 14.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating. Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not included



in the Special Land Use permit are not part of this request.

A summary of how the proposed wind turbine complies with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE's design parameters is provided below. Items highlighted in green comply with the zoning ordinance. Items in pink need further consideration.

| Table 1 - Township Zoning Standards Section 14 | | | |
|--|-------------------------------------|-------------|--|
| Standards | Zoning Requirements | T-82 (492') | |
| Setback from Property Lines | (492')* 1.0x Tip Height** | 510' | |
| Setback from Road Right-of- Way (492')* 1.0x Tip Height** | | 1,810' | |
| Sound 60 dBA Normal Operation | | | |
| *Based off of tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'. | | | |
| **Tip Height is defined as the distance between the ground and the highest point of the WTGs | | | |

| Table 2 - DTE Design Parameters Section 14 | | | |
|--|--------------------------------------|---|--|
| Standards | Requirements | T-82 (492') | |
| Turbine Spacing | 1,000 Feet Apart | 3,235' | |
| Turbine Height* | 500 Feet | 492' | |
| Setback from Public Roads | (738') * 1.5x Tip Height** | 1,810' | |
| Setback from Non-participating Parcels | (738')* 1.5x Tip Height | 815' | |
| Setback from an Inhabited Structure on a Non-Participating Parcel*** | 1,320 Feet | 1,655' | |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | |
| Setback from a Village | 1,320 Feet | 1.89 miles | |
| Shadow Flicker | 30 Hours per Year | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | |
| Sound at Non-Participating Property Lines | 55 dBA | Normal Operation | |
| Sound at Non-Participating Inhabited Structures | 45 dBA | Normal Operation | |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings

Additional Considerations for Review:

Shadow Flicker – In Appendix A of the shadow flicker report, Receptor 1148 is modeled to have 28.7 hours of shadow flicker. However, the contour map of Section 14, it appears the red 30-hour contour line crosses directly over the home. The applicant needs to clarify this discrepancy. If the receptor exceeds the 30-hour limit, the applicant shall implement shadow flicker mitigation measures for this home.



JONESFIELD TOWNSHIP – SECTION 16

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters, for Turbines T-68 and T-69 in Section 16.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating. Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not



included in the Special Land Use permit are not part of this request.

A summary of how the proposed wind turbines comply with Section 612(i) of the Jonesfield Township zoning ordinance requirements and DTE's design parameters is provided below. Items highlighted in **green** comply with the zoning ordinance. Items in **pink** need further consideration.

| Table 1 - Township Zoning Standards Section 16 | | | | |
|---|--------------------------------------|------------------|--------------|--|
| Standards Zoning T-68 (492') T-69 (499') | | | | |
| Setback from Property Lines | (499') * 1.0x Tip Height** | 69' *** | 68' *** | |
| Setback from Road Right-of- Way (499')* 1.0x Tip Height** | | 1,520' | 1,230' | |
| Sound | 60 dBA | Normal Operation | NRO Mode 105 | |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}On October 29, 2020, the ZBA granted variance(s) for various setback(s) from property lines.

| Table 2 - DTE Design Parameters Section 16 | | | |
|---|-------------------------------------|---|---|
| Standards | Requirements | T-68 (492') | T-69 (499') |
| Turbine Spacing | 1,000 Feet Apart | 2,380' | 2,380' |
| Turbine Height* | 500 Feet | 492' | 499' |
| Setback from Public Roads | (748.5)* 1.5x Tip Height** | 1,520' | 1,230' |
| Setback from Non-participating Parcels | (748.5) * 1.5x Tip Height | 1,025' | 900' |
| Setback from an Inhabited Structure on a Non- Participating Parcel*** | 1,320 Feet | 1,480' | 1,365' |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | Greater than 1,000' |
| Setback from a Village | 1,320 Feet | 2.15 miles | 2.19 miles |
| Shadow Flicker | 30 Hours per Year | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes |
| Sound at Non-Participating Property Lines | 55 dBA | Normal Operation | NRO Mode 105 |
| Sound a Non-Participating Inhabited Structures | 45 dBA | Normal Operation | NRO Mode 105 |
| *Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'. | | | |

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings

Additional Considerations for Review:

Shadow Flicker - In Appendix A of the shadow flicker report, Receptor 1191 is modeled to have 29.4 hours of shadow flicker. However, the contour map of Section 16, it appears the red 30-hour contour line crosses directly over the home. The applicant needs to clarify this discrepancy. If the receptor exceeds the 30-hour limit, the applicant shall implement shadow flicker mitigation measures for this home.



JONESFIELD TOWNSHIP – SECTION 21

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters, for Turbines T-70 in Section 21.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating. Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not included in the Special Land Use permit are not part of this request.



A summary of how the proposed wind turbine complies with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE's design parameters is provided below. Items highlighted in **green** comply with the zoning ordinance. Items in **pink** need further consideration.

| Table 1 - Township Zoning Standards Section 21 | | | | |
|---|-------------------------------------|------|--|--|
| Standards Zoning Requirements T-70 (492') | | | | |
| Setback from Property Lines | (492')* 1.0x Tip Height** | 915' | | |
| Setback from Road Right-of-Way | (492')* 1.0x Tip Height** | | | |
| Sound 60 dBA Normal Operation | | | | |
| *Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'. | | | | |

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}On October 29, 2020, the ZBA granted variance(s) for various setback(s) from property lines.

| Table 2 - DTE Design Parameters Section 21 | | | |
|--|--------------------------------------|--|--|
| Standards | Requirements | T-70 (492') | |
| Turbine Spacing | 1,000 Feet Apart | 3,245' | |
| Turbine Height* | 500 Feet | 492' | |
| Setback from Public Roads | (738') * 1.5x Tip Height** | 1,080' | |
| Setback from Non-participating Parcels | (738')* 1.5x Tip Height | 905' | |
| Setback from an Inhabited Structure on a Non-Participating Parcel*** | 1,320 Feet | 1,490' | |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | |
| Setback from a Village | 1,320 Feet | 1.34 miles | |
| Shadow Flicker | 30 Hours per Year | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | |
| Sound at Non-Participating Property Lines | 55 dBA | Normal Operation | |
| Sound a Non-Participating Inhabited Structures | 45 dBA | Normal Operation | |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings

Additional Considerations for Review:

Shadow Flicker – In Appendix A of the shadow flicker report, Receptor 1210 is modeled to have 27.5 hours of shadow flicker. However, the contour map of Section 4, it appears the red 30-hour contour line crosses directly over the home. The applicant needs to clarify this discrepancy. If the receptor exceeds the 30-hour limit, the applicant shall implement shadow flicker mitigation measures for this home.



JONESFIELD TOWNSHIP - SECTION 22

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters, for Turbines T-77 and T-78 in Section 22.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating.
Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not included in the Special Land Use permit are not part of this request.



A summary of how the proposed wind turbines comply with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE's design parameters is provided below. Items highlighted in green comply with the zoning ordinance. Items in pink need further consideration.

| Table 1 - Township Zoning Standards Section 22 | | | | |
|---|--------------------------------------|--|----------------------------------|--|
| Standards Zoning Requirements T-77 (492') T-78 (492') | | | | |
| Setback from Property Lines | (492') * 1.0x Tip Height** | 0' *** 469' *** 0' *** 469' *** | 127' *** 429' *** 448' *** | |
| Setback from Road Right- of-Way | (492') * 1.0x Tip Height** | 1,295' | 2,485' | |
| Sound | 60 dBA | Normal Operation | Normal Operation | |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}On October 29, 2020, the ZBA granted variance(s) for various setback(s) from property lines.

| Table 2 - DTE Design Parameters Section 22 | | | | |
|--|------------------------------------|--|--|--|
| Standards | Requirements | T-77 (492') | T-78 (492') | |
| Turbine Spacing | 1,000 Feet Apart | 1,485' | 1,485' | |
| Turbine Height* | 500 Feet | 492' | 492' | |
| Setback from Public Roads | (738)* 1.5x Tip Height** | 1,295' | 2,485' | |
| Setback from Non- participating Parcels | (738) * 1.5x Tip Height | 1,325' | 900' | |
| Setback from an Inhabited Structure on a Non- Participating Parcel*** | 1,320 Feet | 1,605' | 2,440' | |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | Greater than 1,000' | |
| Setback from a Village | 1,320 Feet | 0.88 miles | 0.67 miles | |
| Shadow Flicker | 30 Hours per Year | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | |
| Sound at Non-Participating Property Lines | 55 dBA | Normal Operation | Normal Operation | |
| Sound a Non-Participating Inhabited Structures | 45 dBA | Normal Operation | Normal Operation | |
| *Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'. | | | | |
| **Tip Height is defined as the distance between the ground and the highest point of the WTGs | | | | |
| ***Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings | | | | |

Additional Considerations for Review:



JONESFIELD TOWNSHIP – SECTION 24

The comments below are based on conformance with the Jonesfield Township Zoning Ordinance and the approved Nov 18 resolution that incorporates DTE's design parameters for Turbines T-87 and T-88 in Section 24.

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating.

Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not included in the Special Land Use permit are not part of this request.



A summary of how the proposed wind turbines comply with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE's design parameters is provided below. Items highlighted in green comply with the zoning ordinance. Items in pink need further consideration.

| Table 1 - Township Zoning Standards Section 24 | | | | |
|--|-------------------------------------|------------------|------------------|--|
| Standards Zoning Requirements T-87 (492') T-88 (492') | | | | |
| Setback from Property Lines | (492')* 1.0x Tip Height** | 159' *** | 515' | |
| Setback from Road (492')* Right-of-Way 1.0x Tip Height** | | 1,855' | 1,850' | |
| Sound | 60 dBA | Normal Operation | Normal Operation | |

^{*}Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'.

^{**}Tip Height is defined as the distance between the ground and the highest point of the WTGs

^{***}On October 29, 2020, the ZBA granted variance(s) for various setback(s) from property lines.

| Table 2 - DTE Design Parameters Section 24 | | | | |
|--|-------------------------------------|---|--|--|
| Standards | Requirements | T-87 (492') | T-88 (492') | |
| Turbine Spacing | 1,000 Feet Apart | 1,950' | 1,990' | |
| Turbine Height* | 500 Feet | 492' | 492' | |
| Setback from Public Roads | (738')* 1.5x Tip Height** | 1,855' | 1,850' | |
| Setback from Non- participating Parcels | (738') * 1.5x Tip Height | 785' | 775' | |
| Setback from an Inhabited Structure on a Non- Participating Parcel*** | 1,320 Feet | 2,220' | 1,715' | |
| Setback from an Inhabited Structure on a Participating Parcel*** | 1,000 Feet | Greater than 1,000' | Greater than 1,000' | |
| Setback from a Village | 1,320 Feet | 1.33 miles | 1.16 miles | |
| Shadow Flicker | 30 Hours per Year | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | Turbine contributes to shadow flicker of over 30 hours on the surrounding homes | |
| Sound at Non-Participating Property Lines | 55 dBA | Normal Operation | Normal Operation | |
| Sound a Non-Participating Inhabited Structures | | | | |
| *Based off tallest turbine model GE 2.82-127 - tip height of 499'. Vestas turbine has a tip height of 492'. | | | | |
| **Tip Height is defined as the distance between the ground and the highest point of the WTGs | | | | |
| ***Inhabited Structure defined as residence, school, hospital, church or public library, or any other occupied buildings | | | | |

Additional Considerations for Review:



To: Jonesfield Township Planning Commission

From: Alan Bean, AICP - Spicer Group, Project Planner (alanb@spicergroup.com)

Jennifer Stewart, AICP - Spicer Group, Community Planner (jennifer.stewart@spicergroup.com)

RE: Review of DTE's Meridian Wind Park Special Land Use Permit Application – Site Plan Review

Review Standards:

For the purpose of this review, parcels with participation agreements are considered non-participating. Participation status was determined by the Special Land Use Permit and Appendix A of the application. The applicant has identified several parcels under participation agreements, and has indicated they consider these to be part of the application. Properties that were not included in the Special Land Use permit are not part of this request.

A summary of how the proposed wind turbines comply with Section 612(I) of the Jonesfield Township zoning ordinance requirements and DTE's design parameters is provided in the previous reports. Some additional considerations for the Planning Commission follow.

Additional Considerations for Review:

- Section 907(4)(E) of the zoning ordinance states any improvements shall maintain the stormwater run-off system at a pre-development rate and should not have any off-site impacts. At this time, DTE has not provided the documentation showing the proposed improvements meet this requirement.
- The Applicant has proposed noise reduced operation on several proposed turbines, however, there are four receptors that do not meet their self-imposed design parameters of 45 dBA at nonparticipating inhabited structures. The applicant shall be required to further mitigate the sound effecting these homes to ensure compliance with the 45 dBA requirement. The applicant shall also provide an updated sound modeling analysis that shows compliance with the approved special use permit. The receptors are:
 - o Receptor 1410 (Section 1)
 - o Receptor 1050 (Section 3)
 - o Receptor 1047 (Section 4)
 - o Receptor 1045 (Section 4)
- The applicant has agreed to shadow flicker mitigation if any home receives more than 30 hours of shadow flicker per year. They have provided a shadow flicker model that highlights how much shadow flicker each home in the Township is predicted to receive. However, we notice several inconsistencies between the Appendix A and Appendix B of that model. The applicant shall submit an updated model that clarifies the inconsistencies with the receptors listed below. If, after further review, these homes are modeled to receive more than 30 hours per year, the applicant shall implement the same mitigation measures as proposed for the other identified receptors.
 - o SR 748 (Section 4)
 - SR 1050 (Section 13)
 - o SR 1148 (Section 14)
 - o SR 1191 (Section 16)
 - o SR 1210 (Section 21)

- The applicant shall submit updated site plans that include the turbine model and height for each proposed turbine.
- The applicant is required to seek any applicable permits related to the construction of these turbines from the following jurisdictions: Saginaw County Road Commission, Saginaw County Drain Commission, and the MDEQ.