



The Township of Asphodel-Norwood

5 Year Surface Treatment Plan - 2016-2020

Purpose and Background

In June of 2013, a 6 Year Hardtop Road Plan or Surface Treatment Plan was presented to Council and was approved to be set into action.

To date the Plan has been followed year by year with the exception of 2015 with the removal of Birdsall Line, the Boundary Road with Otonabee-South Monaghan. Otonabee-South Monaghan was unable to participate due to some unforeseen budgetary issues arising.

The Plan is and will be a great tool to refresh and move forward with. The first 6 years of the expiring Plan took an approach of "Lets Fix What We Have Now``.

Some of the highlights the expiring Plan achieved were:

- Less time agreeing on potential projects
- Bridged communication between Council and Staff
- Maintained a steady budget figure annually
- Moving forward sense of direction
- Public awareness of projects
- Having a Plan in place for a new Council to look at while they get acquainted with their new positions.

The following information that will be seen throughout the Plans was collected and estimated by Public Works Staff. Annually, each step of the Plan will be re-estimated with current market values, to as close of an estimate as possible to enter into that year`s budget. The estimates within the Plan are for materials only.

If this Plan is approved and implemented, the focus will be on dealing with some issues that surface annually in budget talks, as well as a focus on protecting the existing surface treatments that are currently maintained by the Township.



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2016

In 2016, the Township is at the end of the list for re-construction of existing surface treated roads with the completion of Birdsall Line. Focus can shift now to maintenance layers on existing roads as well as consideration for new construction that will be laid out within this Plan.

Single Lift Maintenance Layer Projects (see map for locations)

Asphodel 3rd Line South of Centre Line - 3.05kms

- Patch and repair blemishes and deficiencies
- Repair culvert frost heaves
- Single lift surface treatment, Class 6 aggregate in a 200 high performance emulsion
- Total \$55,000

Dummer-Asphodel Boundary Road (West of County Road 38) - 1.4kms

- Patch and repair blemishes and deficiencies
- Single lift surface treatment, Class 6 aggregate in a 200 high performance emulsion
- Total \$14,500 (Asphodel Norwood's portion of the project - 50/50)

Double Lift Surface Treatment Projects (see map for locations)

As noted above, 2016 will see the completion of the last existing surface treated road and a completion of the "Lets Fix What We Have Now" approach with Birdsall Line. As well in 2016 the last step of the Dummer-Asphodel Boundary Road will also be completed with the surface treatment. This will be the first new surface treatment installation. The Dummer-Asphodel Boundary Road completion will be pending the efforts made in 2015 to correct the frost heave issues and eliminate the major soft spots during the spring months.



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Birdsall Line joint project with Otonabee-South Monaghan - 2.85kms

- Culvert replacement and any required ditching
- Pulverize 3.45km of existing surface treatment*
- Re-gravel, re-grade and re-shape
- Double lift of surface treatment, base layer of a Class 2 aggregate (5/8 limestone) in a 150 high performance emulsion, and a top layer of a Class 6 aggregate (3/8 clear limestone) in a 150 high performance emulsion.
- Total \$91,000 (Asphodel Norwood's portion of the project – 50/50)

*it is recommended the existing surface treatment north of County Road 2 be pulverized and returned to a gravel surface.

Dummer-Asphodel Boundary joint project with Douro-Dummer - 4.15kms

- Double lift of surface treatment for 4.15km, Base layer of a Class 2 aggregate in a 150 high performance emulsion, and a top layer of a Class 6 aggregate in a 150 high performance emulsion
- Total \$84,000 (Asphodel-Norwood's portion of the project-50/50)

2016 Combined Total \$244,500 (Total includes compaction equipment rental over and above road construction costs laid out)



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2017

During the author's time in the current role of Manager of Public Works, annually during budget talk issues with, the road on problem hills throughout the Township always arise.

The problem with the hills is during heavy rainstorms, trenches are cut within the travelled portion of the road parallel with the ditch. Sometimes these trenches can reach depths of 15cm. Discussion on surface treating the roads on hills to seal them and remove the high labor cost and liability threat of these areas has been considered.

Annually the hills are pushed to the end of the construction season to be ditched to aid the storm water in exiting the road. It seems that unforeseen circumstances such as storms or water main leaks, takes the workforce away from Capital Construction projects leaving minimal time to complete capital projects let alone dealing with the hills.

For this 5 Year Surface Treatment Plan, it is recommended by staff to make these problem hills a priority and include them in this Plan, as well as a greater focus on maintenance layers to protect existing surface treatments.

Single Lift Maintenance Layer of Surface Treatment (see map for locations)

Old Orchard Road - approx. 2kms

- Patch and repair of blemishes and deficiencies
- Single lift of surface treatment, Class 6 aggregate in a 200 high performance emulsion
- Total \$37,000

Asphodel 6th Line South of County Road 2 - approx. 1.6kms

- Patch and repair of blemishes and deficiencies
- Single lift of surface treatment, Class 6 aggregate in a 200 high performance emulsion
- Total \$29,000



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River Road from Park Lane to half a km West of Asphodel 6th Line - approx. 2.5kms

- Patch and repair blemishes and deficiencies
- Single lift of surface treatment, Class 6 aggregate in a 200 high performance emulsion
- Total \$43,500

Double Lift of Surface Treatment, New Construction (see map for locations)

As mentioned in the introduction for 2017, a focus will be put on some of the roads with problem hills throughout the Township. The hills will be ditched first, the road will be widened if needed and gravel will be placed before surface treatment is applied. A typical double layer of surface treatment consists of a base layer of a Class 2 aggregate (5/8 limestone gravel) and a top layer of a Class 6 aggregate (3/8 clear limestone chips). It is recommended that 2 layers of the Class 2 aggregate be used. A slightly thicker coat is achieved and a stronger finished product. However, a rougher ride may be felt on the finished product. A good example of the finished product of this method would be the Asphodel 10th Line from Highway 7 to the railway tracks. This method was used because of the heavy truck traffic in this area.

- **Centre Line from the Westwood intersection East 1km (known as Pederson's Hill)**
- Ditch both sides of road
- Widen if needed to a 7 meter width
- Place 5cms of gravel full width
- Double layer of surface treatment, 2 layers of Class 2 aggregate in a 150 high performance emulsion
- Total \$39,000



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Asphodel 4th Line and Sand Road, North on Asphodel 4th Line - 1.2kms (known as Jones' Hill)

- Ditch both sides of road
- Widen if needed to a 7 meter width
- Double layer of surface treatment, 2 layers of a Class 2 aggregate in a 150 high performance emulsion
- Total \$46,800

Asphodel 10th Line South of Centre Line - .8kms (known as Fergusons' Hill, surface treat from Centre Line intersection to toe of hill south side)

- Ditch both sides of road
- Widen if needed to a 7 meter width
- Double layer of surface treatment, 2 layers of a Class 2 aggregate in a 150 high performance emulsion
- Total \$27,200

2017 Combined Total \$222,500 (Total includes compaction equipment rental over and above road construction costs)



2018

It is recommended in 2018 that a focus still be made on some of the roads with problem hills throughout the Township. As well it is important to keep a focus on maintenance layers to protect existing surface treated roads. Also at this time it is a good opportunity to start looking at hot mix asphalt surfaces within the village.

Single Lift Surface Treatment Projects (see map for locations)

Asphodel 7th Line North of Centre Line - 2.45kms

- Patch and repair blemishes and deficiencies
- Single lift of surface treatment, Class 6 aggregate in a 200 high performance emulsion
- Total \$41,650

Asphodel 8th Line South of Highway 7 - .7kms

- Patch and repair blemishes and deficiencies
- Single lift of surface treatment
- Total \$13,000

Trent View Estates - 2.45kms

- Patch and repair blemishes and deficiencies
- Single lift of surface treatment
- Total \$45,000

Industrial Drive and Mill Street

- Patch and repair blemishes and deficiencies
- Single lift of surface treatment
- Total \$18,000



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Double Layer Surface Treatment of Roads on Problem Hills (see map for locations)

Centre Line from County Road 45 to Asphodel 8th Line - 1.5kms

- Ditch and widen road to 7 meters as needed
- Culvert replacement
- Sub grade stabilization across swamp area
- Re-gravel, re-grade and re-shape
- Double lift of surface treatment for 1.5km
- Total \$79,000

Centre Line from Cameron Line East 1km

- Ditch and widen road to 7 meters as needed
- Re-gravel, re-grade and re-shape
- Double lift of surface treatment
- Total \$42,000

Asphodel 6th Line North of Highway #7 - .6kms

- Ditch both sides of road
- Re-gravel if needed
- Double lift of surface treatment
- Total \$28,000

2018 Combined Construction Total \$266,650 (Total includes compaction equipment rental over and above road construction costs)



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2019

Again in 2019 a continued effort will be made to incorporate solving some of the roads on problem hills as well as maintaining a maintenance program on the existing surface treatment. Maintenance layer planning depends solely on the condition of the road at this point. As long as existing surface treatment is reasonably sound and the road bed has maintained a proper cross section, a maintenance layer can be applied.

Single Lift Surface Treatment Projects for (See map for locations)

Asphodel 10th Line South of Highway #7 – 3.25 kms

- Patch and repair blemishes and deficiencies
- Single lift of surface treatment
- Total \$55,000

Asphodel Heights and Asphodel 3rd Line South of County Road 2 – 4.85 kms

- Patch and repair blemishes and deficiencies
- Single lift of surface treatment
- Total \$88,000



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Double Lift Surface Treatment, New Construction (see map for locations)

Asphodel 4th Line North of Highway 7 - 1.5kms (just past rail crossing)

- Ditch both sides if needed
- Widen to a 7 meter width
- Culvert replacement
- Re-gravel, re-grade and re-shape
- Asphalt apron at rail crossing
- Total \$79,000

Asphodel 7th Line from Centre Line 1km South (Kloosterman Hill)

- Brush and ditch both sides
- Widen to a 7 meter width
- Culvert replacement
- Re-gravel, re-grade and re-shape
- Total \$51,500

2019 Combined Total \$273,500



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2020

It needs to be stressed again that at this point, 5 years out from the creation of the Surface Treatment Plan, the Plan may need to be altered and a larger focus may need to be put into maintenance layers to protect existing surface treatment. A continuation into the needs on problem hills will be maintained. Additional work on the Centre Line in 2019 will compliment the first Surface Treatment Plan completed in 2013.

Single Lift Maintenance Layer of Surface Treatment (see map for locations)

Asphodel 2nd Line South of County Road 2 - 3.15kms

- Patch and repair blemishes and deficiencies
- Single lift of surface treatment
- Total \$56,000

Asphodel 12th Line South of Highway 7 - 1km

- Patch and repair blemishes and deficiencies
- Single lift of surface treatment
- Total \$18,000

Asphodel 5th Line North of Highway 7 - 3.05km

- Patch and repair blemishes and deficiencies
- Single lift of surface treatment
- Total \$53,000



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Double Lift Surface Treatment Projects (see map for locations)

Centre Line from Asphodel 8th Line - 2.5kms west (1km west of Asphodel 7th Line)

- Ditch both sides
- Widen if needed to a 7 meter width
- Culvert replacement
- Re-gravel, re-grade and re-shape
- Double layer of surface treatment
- Total \$130,000

2020 Combined Total \$257,000



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Summary of Costs

	Single Lift:	Double Lift:	Total:
2016	\$ 69,500.00	\$175,000.00	\$244,500.00
2017	\$109,500.00	\$113,000.00	\$222,500.00
2018	\$117,650.00	\$149,000.00	\$266,650.00
2019	\$143,000.00	\$130,500.00	\$273,500.00
2020	<u>\$127,000.00</u>	<u>\$130,000.00</u>	<u>\$257,000.00</u>
TOTAL	<u>\$566,650.00</u>	<u>\$697,500.00</u>	<u>\$1,264,150.00</u>