

Wesselman Road Trunk Line – Financial Feasibility

A analysis prepared for
Concerned Citizens of Western Hamilton County

By

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1.0. Introduction and Summary

This memorandum reports the results of an analysis of the financial feasibility of the Wesselman trunk line. Financial feasibility means that there are sufficient revenues to pay for the line without a subsidy from existing users.

Other important issues such as:

- Whether MSD is building this line when there are other projects that could have a more beneficial effect on human health and the environment? For example, MSD is committed to spending \$1.5 billion to correct overflows in the existing system. The trade-off between expanding the system and correcting the system is beyond the scope of this analysis.
- Whether the population growth implications of a financially feasible line create other community problems about which the Commissioners should be aware? For example, MSD assumes that the number of residential units in the vicinity of this line will more than double. The consequences of this expansion on schools, roads and other public services are not considered here.

MSD's phased trunk sewer line of approximately six miles along Wesselman road is estimated to cost \$14 million and has a completion date of 2010. My analysis finds the line is financially feasible with tap-in fees of \$3,675 per new residence. This is a 50% increase in tap-in fees. Without this increase in existing tap-in fees the Wesselman line can be built only if there is a subsidy from current ratepayers.

The subsidy from existing ratepayers may come in two forms. The first is a payment of about \$2.25 million to cover the shortfall of fees over costs. The second is a loan free of interest. The interest on the loan is worth about \$2 million. The pace of residential construction depends on economic factors such as regional economic growth and interest rates. Since the line will not be completed for six years (2010) it may take to 2020 to build the 3600 new residences MSD sees benefiting from this line. There is, then, the likelihood that absent a large increase in tap-in fees, this line will receive from existing ratepayers an interest free loan.

In forming this opinion I reviewed:

- *QUEST Master Plan*
- Hamilton County 2001 Building Permit Data, Green Township
- Memorandum: Johnson to Wall, *Eaglesnest WWTP*, Dec 1, 2003
- Maps depicting the Wesselman Road line
- Fact Sheets for Wesselman Road Trunk
- Memoranda: Tom Schwiers (MSD) to Radha Ayalasomayajula (Rivers Unlimited), *Wesselman Project Data*, November 20, 2003 and December 4, 2003
- Memorandum: MSD internal, November 5, 2001

2.0. Description of the Wesselman project

MSD's latest description of this project is:

The project, as originally conceived, began at the Taylor Creek Pump Station, located at Wesselman Road and Taylor Creek, and then followed Wesselman Road to the intersection of Wesselman Road and Dent Drive. The sewer left Wesselman Road and paralleled the old C & O right-of-way to the end of Virginia Court. Completion to Virginia court is estimated to occur in 2010.

Project design was covered in two Capital Improvement Projects, CIP Nos. 95-44 and 96-43. CIP No. 95-44 was to include design from the pump station to 1000' east of Rybolt Road. This design contract was split into two segments, with the split occurring at Hearne Road. CIP No. 96-43 then picked up the design and extended the sewer to Virginia Court.

	<u>Flow</u>	<u>Length (ft)</u>	<u>Customers</u>	<u>Cost</u>
whole	7.6 MGD	31,992	4,736	\$14.4 mil

*Assessment Document for Taylor Creek Wastewater Treatment Plant. Cost based on Engineer's estimate.

3.0 Operational savings

The completed Wesselman trunk will afford operational savings by eliminating three pump stations: Westchase Park Pump Station, Hampton Pointe Pump Station, and the Glenview Pump Station. A generous estimate of the savings is \$2 million.¹ The estimate is based on annual savings of about \$125,000 per year from the three stations beginning when the line is operational, about 2010. The thirty-year, present value of this annual flow is about \$2 million.²

The estimate is generous because:

- It assumes that completing the line is sufficient to eliminate the stations (evidence indicates that the Westchase pump station will require a subsequent project whose cost is not included in the cost of the Wesselman line); and,
- There is no cost to decommission and demolish the pump stations.

When completed in 2010 the Wesselman line will deliver sewage that now goes to Wesselman Woods WWTP to Taylor Creek WWTP. Increased treatment costs at the Taylor Creek plant are likely to be offset with saving in treatment costs at Wesselman WWTP. I assume there is no cost to decommission and demolish the Wesselman WWTP.³

¹ This estimate is of 2007, this year represents the midpoint of the remaining construction spending.

² The estimate is based on a 4.5% discount rate. This is a conservative rate. MSD borrowed \$40 million in 2000 at higher rates. Higher rates lower the present value of annual flows.

³ Comparison between project costs and operational savings should compare the costs of the entire project (and not just the current part of the project) with the savings and to remember that there has been large (75%) cost increases since the project was first proposed in 1998. News accounts place the cost in 1998 at \$8 million and in 2001 at \$14 million. It is reasonable to expect an additional cost increase.

4.0 Financial Feasibility

A subsidy to the construction of a trunk line may come in two forms.

- The first is a no interest loan. It occurs because cash flows for construction occur before the flows from tap-in fees and operational savings. During this interval, which may be a decade or more, the existing ratepayers-- by paying rates higher than they otherwise would-- provide a no interest loan to build the line.
- The second is a grant. It occurs because cash flows for line construction exceed the cash flows from tap-in fees and operational savings. Existing ratepayers-- by paying higher rates than the otherwise would--provide a grant to build the line.

To avoid a subsidy from existing ratepayers, the \$14 million Wesselman line will require, after operational savings of \$2 million, at least \$12 million in tap-in fees.

Under the existing fee arrangement, tap-in fees are \$480 for structures built prior to 1997 and \$2500 for structures built in 1997 and later. MSD estimates that there will be three types of users. Existing users who are already connected to the collection system; existing users who have an on-site system; and users from new construction.

- Existing users whose sewage is currently going to Wesselman WWTP do not pay tap-in fees. This includes those who used the Eaglesnest WWTP who collectively paid a \$25,000 tap-in fee in 1996.⁴ There are 1135 structures in this category.
- All On-site users (septic) pay a tap-in fee. I assume all of the on-site systems serve structures built prior to 1997 and pay a fee of \$480. There are 1560 structures in this category.
- Users in new construction pay tap-in fees of \$2500. This fee is in addition to fees for branch lines and laterals. There are 3600 structures in this category.

Below are estimates of the proceeds from tap-in fees.

Tap Fees	Users⁵	\$	\$
at \$480	1560	748,800	748,800
at \$2500	3601	9,002,500	
at \$3125	3601		11,253,125
Sub-Total		9,751,300	12,001,925
Operational Savings		2,000,000	2,000,000
Total		11,751,300	14,001,925
Shortfall		2,248,700	0

This calculation shows that without an increase in tap-in fees to \$3125 there will be a \$2.25 million shortfall. MSD's existing users will pay this shortfall.

⁴ Eaglesnest users also paid a demolition fee.

⁵ Estimated users from MSD November 5, 2001 Memorandum. A Dec 5, 2003 memorandum has a lower estimate of number of customers. Using the larger estimate in the 2001 memorandum exerts downward bias on tap-fees

The analysis assumes that all cash flows occur at the same time. This is a simplification. The cash outflows for construction is immediate. The cash inflows from tap-in fees occur over time, as do expected savings in pump station operations and maintenance. Tap-in fees, for example, are paid when service begins. With new construction spread out over a many years tap-in fees are spread out over many years. In the interim between paying for construction and receiving tap-in fees, existing ratepayers are providing zero interest financing. To avoid this subsidy tap-fees have to recover not only the \$12 million construction cost but also a return an interest premium. The calculation of this premium is dependent upon a number of variables but a conservative estimate is \$2 million,⁶ or about \$550 per new structure. To avoid providing a no interest loan, tap-in fees should be increased \$550 to \$3,675.⁷

5.0 Conclusion

The Wesselman road line is financially feasible only if there is an increase in tap-in fees. The analysis reveals that existing tap-in fees of \$2500 per unit fail to cover the trunk line costs. Working within the existing structure of capping tap-in fees for structures built prior to 1997, tap-in fees for structures built after 1997 must be about \$3,675 per unit or the existing ratepayers subsidize this line.

This conclusion is based on data supplied by MSD. The data was undocumented and at times in conflict with other data. This may be explained in part because the project which had it origins five years ago and is ongoing. Indeed, this is a project that began as a \$8 million undertaking and now costs \$14 million. An updated examination of its underlying rationale by MSD may reveal that material changes have occurred that make it no longer worth the expense.

⁶ \$12 million at 4.5% for 7.5 years is roughly \$2 million. Build out along the Wesselman line could take to 2010, a 7.5 year build out is conservative.

⁷ If functioning septic systems--those that protect human health and the environment--elect not to tap-in then financial feasibility will require a further increase in tap-in fees.