

Economic Impact Statement

Office of Legislative Oversight

Bill 40-21

Individual Water Supply and Sewage Disposal Systems – Amendments

SUMMARY

The Office of Legislative Oversight (OLO) anticipates that enacting Bill 40-21 would have a net negative impact on economic conditions in the County in the *short-term*. By requiring owners of private septic systems to pump-out the sewage treatment units at least once every five years, the Bill would increase expenses for certain households. While certain licensed waste haulers based in the County would benefit from meeting the likely higher demand for more pump-out services, OLO anticipates that a significant portion of affected residents may “import” pump-out services from waste haulers based outside the County, resulting in a net decrease in economic activity in the County.

However, OLO anticipates that several factors would mitigate the potential short-term negative impacts over the *long-term*. These factors include the likelihood of the five-year pump-out requirement reducing (a) repair/replacement costs for owners of septic systems, (b) defrayed expenses for faulty septic systems that home sellers incur in residential real estate transactions, and (c) repair/replacement costs for home buyers who unknowingly purchase homes with faulty septic systems.

It is important to note that OLO cannot estimate the magnitude of the short- or long-term impacts of enacting Bill 40-21 due to various unknowns, particularly the number of septic system owners who would comply with the change in law and the precise market share of local waste haulers for pump-out services. Moreover, this analysis does not account for the opportunity cost of using funds from the Water Quality Protection Charge (WQPC) to partially reimburse owners for septic system pump-outs or reductions in negative economic externalities related to human health problems and contaminated ground and surface water quality caused by faulty septic systems.

BACKGROUND

Bill Description

The goal of Bill 40-21 is to “improve the operation of septic systems in the County thereby reducing potential human health problems and improving ground and surface water quality.” Under current law, there are no requirements for the maintenance and inspection of an individual sewage treatment system (hereinafter “septic system”) after its design and construction, unless there is a reported problem. If enacted, the Bill would require an owner of an individual sewage disposal system to pump-out the sewage treatment unit of the system at least once every five years. To offset the cost to

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owners, the Bill would also authorize the use of WQPC funds to “partially reimburse” property owners for septic system pump-outs. Finally, the Bill would clarify certain definitions concerning individual water supply and sewage disposal.¹

Primary Stakeholders

The economic impacts from enacting Bill 40-21 would occur through owners of individual sewage disposal systems being required to pump-out the units at least once every five years and the County partially reimbursing owners for these costs. If the Bill achieves its goal of increasing the frequency of septic system pump-outs in the County, the following residents and businesses would experience economic impacts:

- **Owners of the current and future stock of septic systems who otherwise would not pump-out their systems on a five-year basis in the absence of enacting Bill 40-21.** Currently, there are an estimated 18,922 individual septic systems in the County, with the majority located in the Up-County and Mid-County. See attached graph of Demographic Index and Septic System Locations.

However, the number of residents who would increase septic system pump-outs due to the change in law is unknown for several reasons. First, the County lacks data on the frequency of pump-outs for septic systems. Therefore, OLO is unable to isolate the number of owners who do not perform pump-outs at least once every five years. Second, it is difficult to estimate the percentage of owners who would comply with the requirement, as compliance would likely depend on the ability of the Department of Environmental Protection (DEP) and/or Department of Permitting Services (DPS), the coordinating County agencies, to educate owners on the importance of routine pump-outs. (See more on compliance in the next section.)

- **Licensed waste haulers based in the County that would perform pump-out services for owners who otherwise would not pump-out their systems on a five-year basis in the absence of enacting Bill 40-21.** There are currently 47 waste haulers that have been issued a Sewage Sludge Utilization License by DPS in accordance with COMCOR 27A00.01.13. While DPS does not have the business locations, OLO approximates that 10, or 21%, of the licensed waste haulers are based in the County.

However, OLO is unable to estimate County-based waste haulers’ market share for pump-out services because the County does not collect data on the frequency of pump-outs nor the businesses that perform these services.

¹ See Introduction Staff Report Montgomery County Council, [Bill 40-21, Individual Water Supply and Sewage Disposal Systems – Amendments](#), Introduced on November 2, 2021.

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INFORMATION SOURCES, METHODOLOGIES, AND ASSUMPTIONS

OLO anticipates that enacting Bill 40-21 would increase transactions for pump-out services between owners of the current and future stock of septic systems in the County and licensed waste haulers. If so, affected owners would experience a net decrease in household income, whereas affected businesses would experience a net increase in revenue. Importantly, these effects would occur in the *short-term*—defined here as one five-year cycle for the pump-out requirement. As discussed below, various factors may offset the household income and business revenue effects in the *long-term*.

Predicting the magnitude of the transactions for pump-out services and their overall economic impacts is not possible due to the aforementioned data limitations. For this reason, the goal of this analysis is to anticipate whether enacting the Bill would likely result in a net positive or negative impact on overall economic conditions in the County.

Methodology: OLO uses two methodologies in this analysis. First, OLO performs a qualitative assessment of the potential long-term impacts of enacting Bill 40-21. This assessment is based on interviews with several local realtors with experience in transactions for homes with septic-systems and personnel from DPS and DEP.

Second, to assess the short-term net impacts of enacting the Bill, OLO uses input-output (I-O) analysis, a form of quantitative macroeconomic analysis based on the interdependencies between different economic sectors or industries within a national, state, or regional economy.² I-O analysis is a methodology commonly used by local planners, policymakers, and investors to estimate how changes in economic activity affect other rounds of spending across all sectors within a specified economy. Importantly, the effect on other rounds of spending diminishes over time due to “leakages,” or “money that no longer circulates within the economy because of savings, taxes, or imports.”³

To clarify the concepts, consider the following illustration: On the one hand, households that experience a short-term decrease in income from pump-out service costs may reduce spending at restaurants based in the County, which in turn would decrease the restaurant revenues. The negative economic effects would diminish from leakages, like the restaurant owners using savings to cover operating expenses. On the other hand, local waste haulers that experience increased revenue may hire more employees who reside in the County. These residents may increase their spending at local restaurants. The positive economic effects would also diminish from leakages, like residents using a portion of their income gains to patronize businesses based outside the County.

To perform the I-O analysis for Bill 40-21, OLO uses the Regional Input-Output Modeling System (RIMS II) final-demand multiplier for the Waste Management and Remediation Services industry and Household sector. The RIMS II multipliers, developed by the U.S. Bureau of Economic Analysis,⁴ measure the ripple effects of changes in economic activity in terms of four measures:

² For a non-technical description of I-O analysis, see <https://www.investopedia.com/terms/i/input-output-analysis.asp>.

³ U.S. Bureau of Economic Analysis, *RIMS II: An Essential Tool for Regional Developers and Planners*, December 2013, G-3, https://apps.bea.gov/regional/rims/rimsii/rimsii_user_guide.pdf.

⁴ Ibid.

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- Output (sales): total market value of industry output;
- Value-Added: total value of income generated from production (equivalent to gross domestic product);
- Earnings: employee compensation plus net earnings of sole proprietors and partnerships; and
- Employment: number of full- and part-time employees.⁵

Industries with relatively high multiplier values for these measures result in greater output, value-added, earning, and employment for every additional dollar of economic activity in those industries. There are multipliers for 64 industries in the County. **Table 1** presents the values of the RIMS II Waste Management and Remediation Services industry and Household sector multipliers.

Table 1. RIMS II Waste Management and Remediation Services and Household Multipliers for Montgomery County

Sector	Output	Earnings	Employment	Value-Added
Waste Management and Remediation Services	1.4719	0.2432	4.4732	0.7979
Household	0.7951	0.1587	3.8028	0.4936
Difference	0.6768	0.0845	0.6704	0.3043

Short-Term Estimates: Using the Rims II multipliers, OLO estimates short-term net changes in output, earnings, employment, and value-added in the County for increased transactions for pump-out services between owners of the current and future stock of septic systems in the County and licensed waste haulers.

The total cost to households of pumping out 18,922 septic systems, the current estimated stock of units, per every five-year cycle is presented in **Figure 1**. Prior OLO analysis on septic systems in the County found that the price for each pump-out service ranges from \$350 to \$500, with a midpoint of \$425.⁶ The Figure presents cost estimates with the County's partial reimbursement of \$100, which is assumed in the Fiscal Impact Statement for Bill 40-21. With the \$100 reimbursement, the adjusted price per pump-out ranges from \$250 to \$400, with a midpoint of \$325.

As indicated in **Figure 1**, the total cost would vary significantly on the extent to which owners comply with the pump-out requirement. As previously stated, the County does not track the number of septic system owners who pump-out their units at least once every five years. However, it is worth noting that Fairfax County has achieved high levels of compliance for its five-year pump-out requirement. From FY17 to FY21, approximately 83% of the septic systems (17,899 out of 21,581) were pumped-out.⁷

To illustrate the short-term impacts of enacting Bill 40-21, **Figures 2-5** present estimates of the multiplier effects for every 10 percent increase in pump-out services given the current stock of septic systems (18,922) and the adjusted price range.

⁵ Ibid, 3 – 3 and 3 – 4.

⁶ Aron Trombka, *Life-Cycle Regulation of On-Site Wastewater Treatment Systems*, Office of Legislative Oversight, December 6, 2016.

⁷ Meeting with personnel from Fairfax County's Department of Health, Division of Environmental Health on November 23, 2021.

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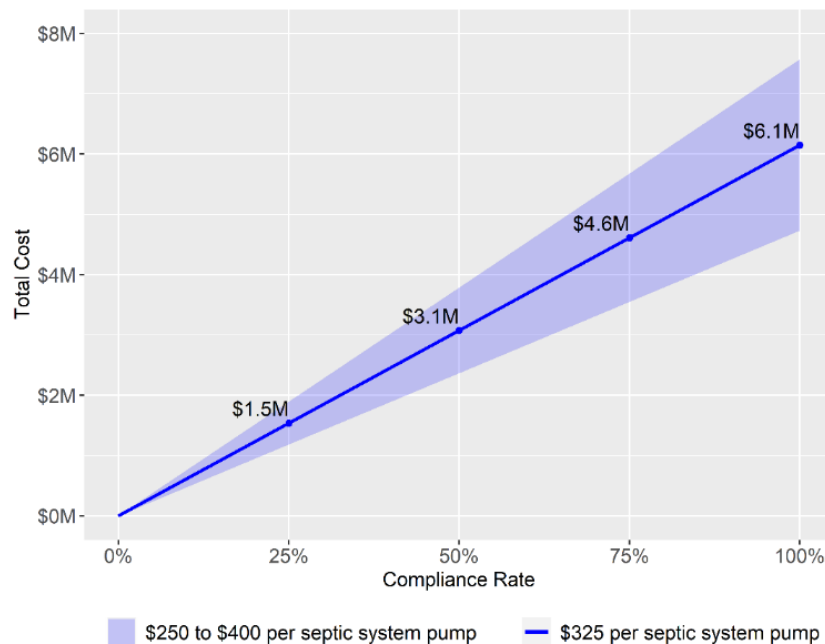
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The estimates vary by the percentage of pump-out services that County-based waste haulers perform. For every 10 percent increase in pump-out services to yield net positive economic impacts, County-based waste haulers would need to perform:

- greater than 54% of services for a net positive change in *output* (Figure 2),
- greater than 65% of services for a net positive change in *earnings* (Figure 3),
- greater than 62% of services for a net positive change in *value-added* (Figure 4), and
- greater than 85% of services for a net positive change in *jobs* (Figure 5).

Importantly, these estimates are significantly higher than the share of County-based businesses (21%) of the total number of licensed waste haulers. On this basis, the I-O analysis suggests that enacting Bill 40-21 may result in a net negative impact on economic conditions in the County in the *short-term*.

Figure 1. Total Cost to Households Affected by Pump-Out Requirement Per five-year Cycle



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Figure 2. Effect of Pump-Out Requirement on *Output* Per 10% Increase in Compliance

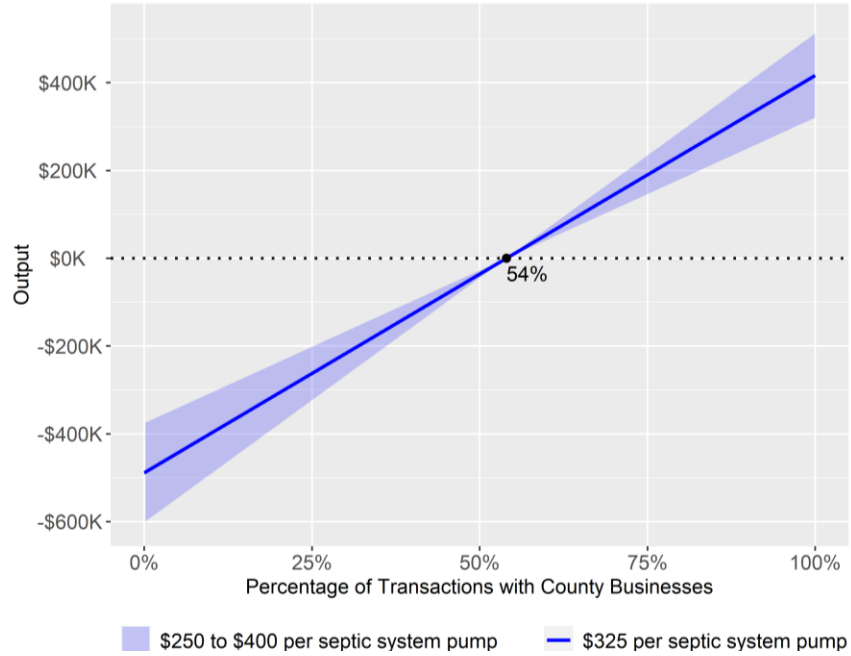
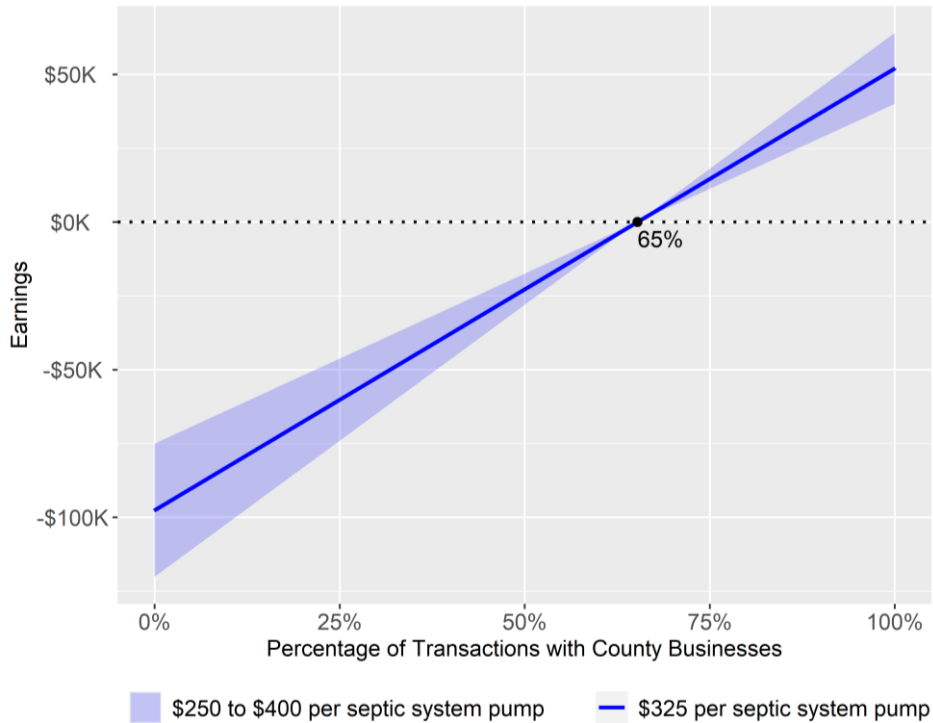


Figure 3. Effect of Pump-Out Requirement on *Earnings* Per 10% Increase in Compliance



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Figure 4. Effect of Pump-Out Requirement on *Value-Added* Per 10% Increase in Compliance

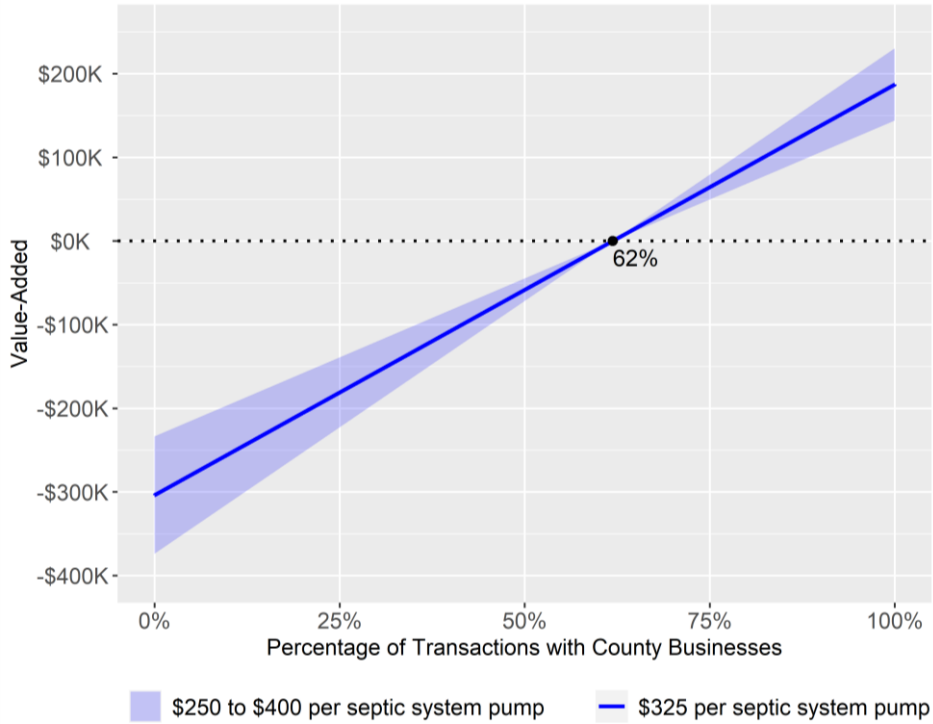
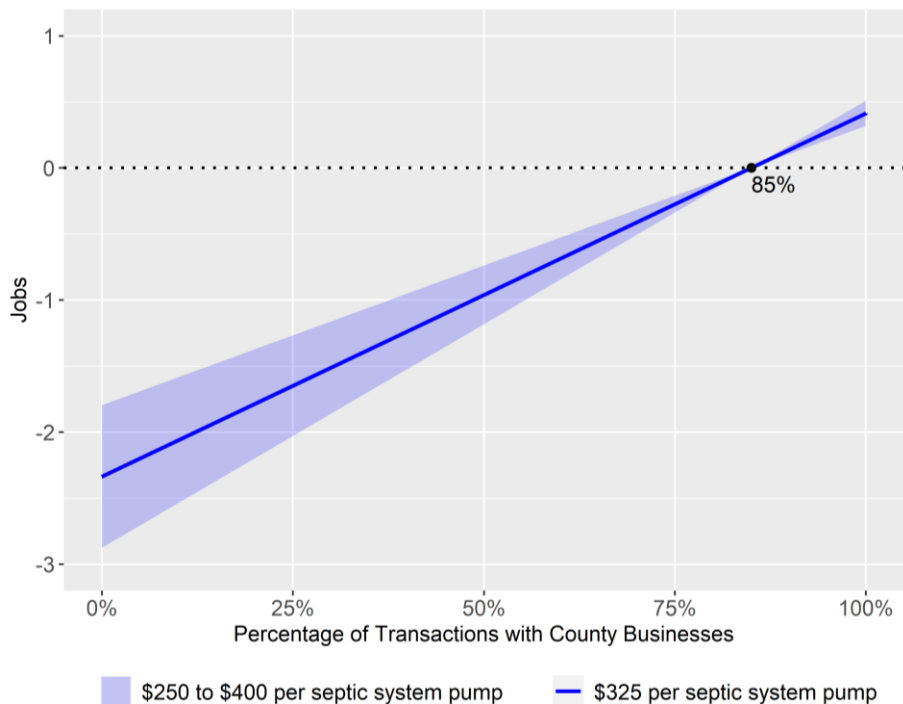


Figure 5. Effect of Pump-Out Requirement on *Jobs* Per 10% Increase in Compliance



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Long-Term: While the I-O analysis suggests that enacting Bill 40-21 may have net negative economic impacts in the *short-term*, several factors likely would mitigate the economic costs over the *long-term*. OLO consulted with several local realtors with experience in transactions for homes with septic-systems as well as personnel from DPS and DEP. They identified the following costs associated with improper maintenance of septic systems:

- Improper maintenance can reduce the life expectancy of septic systems, requiring owners to incur higher repair/replacement costs over the long-term.
- Improper maintenance can affect residential real estate transactions. Although septic system inspections are not required by State or County law, prospective buyers often request them. When septic systems fail inspection, owners often reduce the price of their homes to defray the cost of septic system repairs/replacements.
- Moreover, home buyers do not always request inspections. For instance, buyers may want to increase the competitiveness of their offers or lack familiarity with septic systems. As a result, home prices may not properly account for septic system repair/replacement costs that buyers incur after purchasing homes, resulting in a market inefficiency.

Based on qualitative evidence, OLO anticipates that the five-year pump-out requirement likely would reduce repair/replacement costs for owners, bolster home values, and reduce risk for home buyers. Over the *long-term*, these positive economic impacts would mitigate the anticipated negative impacts of enacting Bill 40-21 in the short-term. However, data and time limitations prevent OLO from estimating the magnitude of these impacts over the long-term.

Scope Limitations: It is important to note that the I-O analysis and qualitative assessment does not account for several factors that would likely influence the economic impacts of enacting Bill 40-21. These factors include:

- opportunity cost of using funds from the Water Quality Protection Charge to reimburse owners for septic system pump-outs; and
- reduction in negative economic externalities related to human health problems and contaminated ground and surface water quality caused by the faulty septic systems.

VARIABLES

The primary variables that would affect the economic impacts of enacting Bill 40-21 are the following:

- number of septic system owners who do not perform pump-outs at least once every five years;
- percentage of these owners who would comply with the pump-out requirement;
- average price for each pump-out service;
- market share of County-based waste haulers for pump-out services;
- total annual repair/replacement costs for septic systems;
- percentage of septic system inspections in residential real estate transactions; and
- total annual defrayed septic system expenses in residential real estate transactions.

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IMPACTS

WORKFORCE ■ TAXATION POLICY ■ PROPERTY VALUES ■ INCOMES ■ OPERATING COSTS ■ PRIVATE SECTOR CAPITAL INVESTMENT ■ ECONOMIC DEVELOPMENT ■ COMPETITIVENESS

Businesses, Non-Profits, Other Private Organizations

OLO anticipates that enacting Bill 40-21 would have conflicting impacts on private organizations in the County in terms of several of the Council’s priority indicators.⁸

The Bill would have targeted, positive impacts on licensed waste haulers based in the County. If septic system pump-outs increase due to the change in law, these businesses likely would experience net revenue increases from pump-out services, which would result in net increases in business income holding all else equal. The magnitude of increases in business revenues and incomes largely would depend on owner compliance with the five-year pump-out requirement and local waste haulers’ share of the market for pump-out services, with greater owner compliance and market share having a positive effect on these indicators. It is worth noting, however, that local waste haulers may experience a net decrease in revenues from septic system repairs/replacements over the long-term.

As illustrated in the I-O analysis, Bill 40-21 may have diffuse, negative impacts on businesses in the County. If septic system pump-outs increase due to the change in law, there would be an increase in transactions for pump-out services between owners of septic systems and licensed waste haulers. These transactions would result in net increases in expenses for the Household sector and revenues in the Waste Management and Remediation Services sector, holding all else equal. Although the multiplier effects for the Waste Management and Remediation Services sector is relatively higher across all four RIMS II measures (see **Table 1**), OLO anticipates that a significant portion of the businesses in this sector that would provide the pump-out services are based outside the County. This conclusion is based on County-based waste haulers constituting 21% of the licensed waste haulers according to an OLO estimate, whereas local waste haulers would need to perform anywhere from 54% to 85% of the services for net positive changes in output, earnings, value-added, and jobs to occur (see **Figures 2-5**). Thus, the Bill may result in economic leakages in the form of County households “importing” pump-out services.

Beyond these impacts, OLO does not anticipate that enacting Bill 40-21 would significantly affect private organizations in terms of the Council’s other priority indicators.

Residents

OLO anticipates that enacting Bill 40-21 would have net negative impacts on County residents in the *short-term* in terms of several of the Council’s priority indicators. However, OLO believes short-term negative impacts likely would reduce over the *long-term*.

⁸ Montgomery County Code, [Sec. 2-81B, Economic Impact Statements](#).

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Bill 40-21 would have conflicting, targeted impacts on any residents who otherwise would not pump-out their septic systems on a five-year basis in the absence of enacting the Bill. On the one hand, these residents would experience *minor* increases in septic system maintenance expenses in the short-term. As **Table 2** shows, for one household, the cost of pumping-out a septic system spread out across five years would increase annual household expenses by approximately \$65 with the partial reimbursement and \$85 without the reimbursement. On the other hand, these residents may incur lower repair/replacement costs over the long-term and/or mitigate defrayed expenses for faulty septic systems when they sell their homes in the future. Similarly, certain home buyers would benefit from reduced risk of significant repair/replacement costs for unknowingly purchasing homes with faulty septic systems.

Table 2. Pump-Out Service Costs Per One Septic System

	\$100 Partial Reimbursement			No Reimbursement		
	Min	Mid-point	Max	Min	Mid-point	Max
Cost Per five-year Cycle	\$250	\$325	\$400	\$350	\$425	\$500
Cost Per Year	\$50	\$65	\$80	\$70	\$85	\$100

As illustrated in the I-O analysis, Bill 40-21 may have diffuse, negative impacts on residents affected by any net decrease in economic activity caused from the economic leakages described above.

Beyond these impacts, OLO does not anticipate that enacting Bill 40-21 would significantly affect residents in terms of the Council’s other priority indicators.

DISCUSSION ITEMS

To limit potential economic leakages in the form of residents “importing” pump-out services from waste haulers based outside the County, Councilmembers may want to consider granting the partial reimbursement to owners of septic systems on the condition that they use County-based licensed waste haulers to perform the services. The Reforest Montgomery coupon, in which participating businesses are all based in the County, offers a potential model for Councilmembers to consider.⁹

⁹ See Montgomeryplanning.org, [Native Tree Discount](#).

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WORKS CITED

Introduction Staff Report for [Bill 40-21, Individual Water Supply and Sewage Disposal Systems – Amendments](#). Introduced on November 2, 2021.

Montgomery County Code. [Sec. 2-81B, Economic Impact Statements](#).

Montgomeryplanning.org, [Native Tree Discount](#).

U.S. Bureau of Economic Analysis. [RIMS II: An Essential Tool for Regional Developers and Planners](#). December 2013.

CAVEATS

Two caveats to the economic analysis performed here should be noted. First, predicting the economic impacts of legislation is a challenging analytical endeavor due to data limitations, the multitude of causes of economic outcomes, economic shocks, uncertainty, and other factors. Second, the analysis performed here is intended to *inform* the legislative process, not determine whether the Council should enact legislation. Thus, any conclusion made in this statement does not represent OLO's endorsement of, or objection to, the Bill under consideration

CONTRIBUTIONS

Stephen Roblin (OLO) prepared this report.