Department of Environmental Protection
Statement of Estimated Regulatory Costs (SERC)

Division: Water Resource Management
Rule Number: Chapter 62-640, F.A.C.
Rule Description: Biosolids
Contact Person: Maurice Barker

Please remember to analyze the impact of the rule, NOT the statute, when completing this form.

A. Is the rule likely to, **directly or indirectly**, have an adverse impact on economic growth, private-sector job creation or employment, or private-sector investment in excess of $1 million in the aggregate within 5 years after the implementation of the rule?

1. Is the rule likely to reduce personal income?	☒ Yes	☐ No
2. Is the rule likely to reduce total non-farm employment?	☒ Yes	☐ No
3. Is the rule likely to reduce private housing starts?	☐ Yes	☒ No
4. Is the rule likely to reduce visitors to Florida?	☐ Yes	☒ No
5. Is the rule likely to reduce wages or salaries?	☐ Yes	☒ No
6. Is the rule likely to reduce property income?	☒ Yes	☐ No

Explanation:

The revised rule may significantly reduce biosolids land application rates (i.e. the amount of biosolids applied per acre on an annual basis) by an estimated 75%. In 2019, just under 94,000 dry tons of Class B biosolids were applied to biosolids land application sites on about 80,000 acres of the currently permitted 92,377 acres in Florida. Reduced land application rates would necessitate permitting about 4 to 10 times more land to accommodate the current quantity of land applied Class B biosolids.

As haulers have already permitted land application sites closer to the domestic wastewater facilities that generate biosolids, any additional sites are expected to be at greater distances from these facilities. This could result in longer hauling distances. Additionally, some existing sites may cease land application completely, either because the site may not be suitable for land application or because the land owner may not want to subject their property to ground water or surface water quality monitoring. The additional site monitoring requirements for ground water and surface water will also increase operational costs, so some biosolids site permittees, especially for smaller sites, may choose to cease operations.

Under the proposed rule, some portion of currently land-applied Class B biosolids are expected to be disposed of in landfills or be converted to Class AA biosolids. The reduction in land application rates, loss of land application sites, and shift away from land application could result in:

- **Loss of biosolids hauling contracts**
- **Loss of jobs with biosolids hauling companies.**
- **Loss of grass production and income for land owners.**
- **Increased operational expenses for biosolids haulers, and;**
- **Loss of cost savings and production for cattle ranchers and hay farmers.**

Under the revised rule, biosolids land application rates will drop by an average of 75%. Some farmers indicate an economic value of about $60 per acre in fertilizer savings through biosolids land application. In 2019, approximately 80,000 acres were utilized for the land application of biosolids, which would represent a current fertilizer cost savings of approximately $4,800,000. This would be a loss of $3,600,000 in cost savings annually if 75% less biosolids can be applied per acre. Not all 80,000 acres receive sufficient quantities of biosolids to represent the $60 per acre savings. However, the $60 savings is conservative when compared to past EPA estimates of $160 value per acre, which included the costs to spread the material and not just the cost of fertilizer itself. Any loss of production is not included in this SERC, as it is unknown. Industry comments suggested an annual $3,000,000 loss in cost savings based on the quantity of Class B biosolids, and a $40 fertilizer value per acre based on a complete loss of Class B biosolids.

If any of these questions are answered "Yes," presume that there is a likely and adverse impact in excess of $1 million, and the rule must be submitted to the legislature for ratification.

B. Is the rule likely to, **directly or indirectly**, have an adverse impact on business competitiveness, including the ability of persons doing business in the state to compete with persons doing business in other states or domestic markets, productivity, or innovation in excess of $1 million in the aggregate within 5 years after the implementation of the rule?

1. Is the rule likely to raise the price of goods or services provided by Florida business?

   ☒ Yes ☐ No

2. Is the rule likely to add regulation that is not present in other states or markets?

   ☒ Yes ☐ No

3. Is the rule likely to reduce the quantity of goods or services Florida businesses are able to produce, i.e. will goods or services become too expensive to produce?

   ☒ Yes ☐ No

4. Is the rule likely to cause Florida businesses to reduce workforces?

   ☒ Yes ☐ No

5. Is the rule likely to increase regulatory costs to the extent that Florida businesses will be unable to invest in product development or other innovation?

   ☐ Yes ☒ No

6. Is the rule likely to make illegal any product or service that is currently legal?

   ☐ Yes ☒ No

Explanation:

As the proposed rule revisions increase the cost of biosolids management, biosolids management companies will need to increase fees for their services. Also, as the demand for landfilling or transferring biosolids to Class AA biosolids treatment facilities increases, existing landfills and Class AA biosolids treatment facilities may increase fees for their services. Additionally, biosolids might be transferred out-of-state for management or disposal.

If more biosolids are transferred to landfills, (including out-of-state landfills), or transferred to Class AA biosolids treatment facilities, the workforce that currently manages biosolids land application programs may be reduced.

If any of these questions are answered "Yes," presume that there is a likely and adverse impact in excess of $1 million, and the rule must be submitted to the legislature for ratification.

C. Is the rule likely, **directly or indirectly**, to increase regulatory costs, including any transactional costs (see F below for examples of transactional costs), in excess of $1 million in the aggregate within 5 years after the implementation of this rule?

1. Current one-time costs	**$0 (current existing conditions)**
2. New one-time costs	**$10,000,000 – $400,000,000**
Continuing Class B	**$10,000,000**
Class AA	**$300,000,000 - $400,000,000**
3. Subtract 1 from 2	**$10,000,000 - $400,000,000**

4.	Current recurring costs	**$36,000,000**
5.	New recurring costs	**$30,000,000 - $60,000,000**
	Continuing Class B	**$60,000,000 + $36,000,000**
	Convert to Class AA	**$30,000,000 – $40,000,000**
6.	Subtract 4 from 5	**$60,000,000 to continue Class B** **$30,000,000 - $40,000,000 to shift to Class AA**
7.	Number of times costs will recur in 5 years	**5**
8.	Multiply 6 times 7	**$300,000,000 to continue Class B** **$150,000,000 - $200,000,000 to shift to Class AA**
9.	Add 3 to 8	**$310,000,000 to continue Class B** **$450,000,000 - $600,000,000 to shift to Class AA**

If 9. is greater than $1 million, there is likely an increase of regulatory costs in excess of $1 million, and the rule must be submitted to the legislature for ratification.

D. Good faith estimates (numbers/types):

1. The number of individuals and entities likely to be required to comply with the rule. *(Please provide a reasonable explanation for the estimate used for the number of individuals and methodology used for deriving the estimate).*
   - **Approximately 114 site permittees (number is slightly less because some permittees have multiple sites)**
   - **114 agricultural land owners (ranches, farms, etc.)**
   - **104 domestic wastewater treatment facilities**
   - **9 biosolids treatment facilities**
   - **47 septage management facilities**
   - **Unknown number of biosolids haulers (approximately 6 – 12, as there is some duplication with the site permittees). DEP does not permit haulers.**

2. A general description of the types of individuals likely to be affected by the rule.

   Entities currently involved with the land application of biosolids will be directly affected by the new rule - site permittees, the land owners of sites (e.g. ranchers and farmers), facilities and utilities currently sending biosolids for land application, and biosolids transporters.

E. Good faith estimates (costs):

1. Cost to the department of implementing the proposed rule:

   ☒ None. The department intends to implement the proposed rule within its current workload, with existing staff.

   ☐ Minimal. *(Provide a brief explanation).*

   ☐ Other. (Please provide a reasonable explanation for the estimate used and methodology used for deriving the estimate).

2. Cost to any other state and local government entities of implementing the proposed rule:

   ☐ None. This proposed rule will only affect the department.

   ☐ Minimal. *(Provide a brief explanation).*

   ☒ Other. *(Please provide a reasonable explanation for the estimate used and methodology used for deriving the estimate).*

   The majority of biosolids are generated by utilities owned and operated by local government entities. Therefore, estimates for one-time capital costs and recurring costs will primarily affect local governments entities. This includes 104 domestic wastewater treatment facilities that treat and land apply biosolids, an unknown but significant number of small wastewater treatment facilities that send biosolids to larger treatment facilities, and biosolids treatment facilities that treat and land apply biosolids. Not included are utilities potentially indirectly affected by the increasing costs of biosolids management resulting from increased demand on management options other than land application (e.g. landfill tipping fees, Class AA biosolids treatment facilities, etc.).

3. Cost to the department of enforcing the proposed rule:

   ☒ None. The department intends to enforce the proposed rule within its current workload with existing staff.

   ☐ Minimal. *(Provide a brief explanation).*

   ☐ Other. *(Please provide a reasonable explanation for the estimate used and methodology used for deriving the estimate).*

4. Cost to any other state and local government of enforcing the proposed rule:

☐ None. This proposed rule will only affect the department.

☒ Minimal. *(Provide a brief explanation).*

One existing septage management facility and one biosolids land application site are currently regulated by a delegated local program. Although numerous small domestic wastewater treatment facilities are regulated by delegated local programs, the proposed change should not increase their enforcement costs, as biosolids disposal options are already addressed in facility permits. If more biosolids are transported to landfills or large biosolids treatment facilities producing Class AA biosolids, this may actually reduce the costs for compliance review by the delegated local programs for facilities choosing these biosolids management options over land application.

☐ Other. *(Please provide a reasonable explanation for the estimate used and methodology used for deriving the estimate).*

F. Good faith estimates (transactional costs) likely to be incurred by individuals and entities, including local government entities, required to comply with the requirements of the proposed rule. (Includes filing fees, cost of obtaining a license, cost of equipment required to be installed or used, cost of implementing processes and procedures, cost of modifying existing processes and procedures, additional operating costs incurred, cost of monitoring, and cost of reporting, or any other costs necessary to comply with the rule).

☐ None. This proposed rule will only affect the department.

☐ Minimal. *(Provide a brief explanation).*

☒ Other. *(Please provide a reasonable explanation for the estimate used and methodology used for deriving the estimate).*

Continuing Land Application of Class B Biosolids
Note: It is unlikely that all of the approximately 94,000 dry tons of Class B biosolids currently land applied in Florida will continue to be land applied.

Estimated capital cost for permitting new land application sites: $10 million

- **Using industry estimate of 400,000 additional acres necessary, industry estimates $200 per acre for permitting, or a one-time cost of $80 million.**
- **Estimate of an average of $20,000 average cost per site to fulfill permitting requirements.**
- **Estimate of 4 times the number of sites or 114 x 4 = 456 new sites or $9,120,000 (rounded up to $10 million).**

Recurring costs

- **Using industry estimates of $8 per acre cost to land apply biosolids at 500,000 acres would equate to approximately $4 million new recurring costs (industry estimates $17 million.)**
- **Industry believes that the remaining land in Florida acceptable for this land application is limited; some of this area is within springs watersheds. Industry predicts having to use disposal sites in North Florida and South Georgia, adding 150-350 miles to biosolids transportation at a cost of $3.00 per mile. Using 94,000 dry tons or 470,000 wet tons, each truck carrying 25 wet tons equals 18,800 loads at a round trip of 500 miles (250 mile trip). At a cost of approximately $3 per mile, this equals $28,200,000 annually. Industry estimates $42 million annually.**

Additional monitoring (no new sites): $1 million annually (rounded)

- **Ground water – if all 114 sites, (3 wells each), require quarterly monitoring of $500 per quarter, this totals to $684,000 annually.**
- **Surface water monitoring – This is not required for all sites, but there are likely multiple locations possible per site. An approximate estimation is 114 samples quarterly at $500 per sample, which totals to $228,000 annually.**
- **Cost of monitoring for an estimated 456 sites is estimated at $4 million.**
- **Industry estimates a $7,800,000 annual cost for ground water monitoring and $1,300,000 annual cost for surface water monitoring. Additionally, industry estimates an overall cost (recurring and one-time cost) as high as $36,000,000 for ground water and surface water monitoring.**

Converting to Class AA (Fertilizer)

Estimated capital cost: $300 million - $400 million (industry estimates $430 million)

- **Miami-Dade County's estimate for Class AA: $100,000,000**
- **Miami-Dade represents about 25-33% of Class B biosolids currently land applied.**
- **St. Petersburg reported spending approximately $94 million for a Class AA project, which will treat a smaller quantity of biosolids. The facility may need modifications, which will add to the current expense.**
- **Smaller facilities do not have the scale to achieve the same capital cost per dry ton as Miami-Dade, so the Miami Dade estimate could be conservative.**
- **Private regional facilities serving small facilities would reduce capital costs, but would increase operational costs (e.g. transportation, and dewatering)**

Estimated recurring cost: $30 million - $40 million (industry estimates $43 million)

- **Miami-Dade estimate is $10 million Operation & Maintenance annually.**
- **Miami-Dade represents about 25-33% of Class B biosolids land applied.**
- **Smaller facilities do not have the scale to achieve as low a cost per dry ton as Miami-Dade.**
- **Regional facilities would also not have the same scale as Miami Dade, due to the county's dense population compared to the less dense area that a regional facility could serve. Regional facilities would also have higher transportation costs.**

Innovative Technologies – These were not evaluated. DEP is not aware of a technology used at full scale for any extended time period, and so does not have enough information to make an analysis.

Note, local government's may experience revenue issues related to the pandemic that may impact their ability to comply with the proposed requirements.

G. An analysis of the impact on small business as defined by s. 288.703, F.S., and an analysis of the impact on small counties and small cities as defined by s. 120.52, F.S. *(Includes:*

- *Why the regulation is needed [e.g., How will the regulation make the regulatory process more efficient? Required to meet changes in federal law? Required to meet changes in state law?];*
  This regulation is needed to reduce the quantities of nutrients, particularly phosphorus, that potentially impact Florida's waters. Degradation of water quality results in algae blooms and potentially reduced tourism and recreational activities. Although the implementation of the rule will adversely affect certain small businesses and counties, it will serve to protect the interests of other small businesses and counties.
- *The type of small businesses that would be subject to the rule;*
  Private biosolids treatment facilities, septage management facilities, biosolids transporters; and ranchers and farmers.
  - **Many biosolids land application sites (ranchers and farmers) may cease accepting biosolids which not only affect them financially, but also affect the biosolids treatment facilities and septage management facilities who use the sites.**
  - **Small biosolids treatment facilities may close if they cannot acquire land application sites or afford to permit new sites.**
  - **Septage management facilities may close, meaning septage may need to be transported longer distances to other suitable facilities.**
- *The probable impact on affected small businesses [e.g., increased reporting requirements; increased staffing; increased legal or accounting fees?];*
  Because the revised rule could result in significantly reduced biosolids land application rates, significant amounts of additional land will need to be acquired. This could increase permitting costs and operational

costs. Additionally, some sites may not comply with the seasonal high water table requirements and may not be able to provide reasonable assurance as outlined in Chapter 2020-150, Laws of Florida to continue applying. Also, some sites may stop accepting biosolids as mentioned previously, and it may be necessary to procure additional land, likely at farther distances than current sites. Additional monitoring requirements will increase operational costs. These costs may result in an untenable situation for some biosolids treatment facilities and septage management facilities, which could cause them to close. Lastly, the reduction in biosolids application rates, as well as the potential loss of biosolids, will result in the loss of a valuable fertilizer resource, cost savings, and crop production (hay/pasture) for ranchers and farmers.

- *The likely per-firm regulatory cost increase, if any).*
  This depends on the type of operation, the size of the site or facility, and the location of the facility.

A small business is defined in Section 288.703, F.S., as "…an independently owned and operated business concern that employs 200 or fewer permanent full-time employees and that, together with its affiliates, has a net worth of not more than $5 million or any firm based in this state which has a Small Business Administration 8(a) certification. As applicable to sole proprietorships, the $5 million net worth requirement shall include both personal and business investments."

A small county is defined in Section 120.52(19), F.S., as "any county that has an unincarcerated population of 75,000 or less according to the most recent decennial census." And, a small city is defined in Section 120.52(18), F.S., as "any municipality that has an unincarcerated population of 10,000 or less according to the most recent decennial census."

The estimated number of small businesses that would be subject to the rule:

☐ 1-99 ☒ 100-499 ☐ 500-999
☐ 1,000-4,999 ☐ More than 5,000
☐ Unknown, please explain:

☐ Analysis of the impact on small business:
Small businesses would likely include most of the nine biosolids treatment facilities and all 47 septage management facilities permitted by DEP. Also included would be some of the biosolids hauling/land application companies (DEP does not issue hauling permits).

The primary issue is the small volume of biosolids handled by these small businesses. The "unit cost" of managing a dry ton of biosolids will likely be much higher for these entities. As a result, the cost to build and treat to Class AA is probably not financially feasible. Additionally, these facilities operate on

a local basis, and are unable to haul biosolids long distances or permit non-local sites. While small volumes can make the increased costs more manageable, these small businesses will likely not have reasonable options if Class B land application is no longer feasible (a current issue in the Panhandle where septage haulers have limited disposal options).

☐ There is no small county or small city that will be impacted by this proposed rule.

☒ A small county or small city will be impacted. Analysis:

Small counties and cities representing over 40 domestic wastewater treatment facilities could be significantly impacted by this proposed rule.

These facilities are primarily rural and handle a small volume of biosolids. Because of this, the "unit cost" of managing a dry ton of biosolids will likely be much higher for these entities, meaning the cost to build and treat to Class AA is probably not financially feasible. Additionally, these facilities operate on a local basis and are unable to haul biosolids long distances or permit non-local sites. While small volumes make the increased costs of landfilling or sending to a regional facility more manageable, these small facilities will face similar issues of likely not having any reasonable options available if the only reasonable current option is Class B land application and it becomes unfeasible.

Note, small counties and small cities may experience revenue issues in the short-term related to the pandemic that may impact their ability to comply with the proposed requirements.

☐ Lower impact alternatives were not implemented? Describe the alternatives and the basis for not implementing them.

A phosphorus-based rate for land application (based on site-specific criteria) results in a significant reduction in the quantity of biosolids that can be applied per acre. DEP is not aware of a feasible alternative to this reduced application rate.

Reducing the application rate would require approximately 4-10 times the amount of acreage to land apply the current amount of biosolids. This would be costly to all parties involved, and most biosolids currently land applied would likely shift to Class AA. Shifting to Class AA is extremely difficult in rural areas where small wastewater treatment facilities, biosolids treatment facilities, and septage management facilities do not have the benefit of economies of scale. Therefore, the likely alternative would be to landfill the biosolids, which would require dewatering the biosolids and having a willing landfill to dispose of the solids. These increased operational costs will likely be substantial, especially if the biosolids or septage must be transported long distances for disposal. Ultimately, ratepayers and home owners will bear the additional costs.

Even if additional land for land application is obtained, other provisions related to continued land application will increase costs. These include but are not limited to: increased biosolids monitoring, ground water monitoring, and surface water monitoring.

H. Any additional information that the agency determines may be useful.

☐ None.

☒ Additional.
Although a few innovative technologies have been proposed as an alternative to biosolids land application, there is, at best, very limited evidence that these could successfully serve as alternative management options. Also, the costs for these innovative technologies appear to be higher than current costs of Class AA technologies.

I. A description of any good faith written proposal for a lower cost regulatory alternative to the proposed rule which substantially accomplishes the objectives of the law being implemented and either a statement adopting the alternative or a statement of the reasons rejecting the alternative in favor of the proposed rule.

☒ No good faith written proposals for a lower cost regulatory alternative to the proposed rule were received.

☐ See attachment "A".

☐ Adopted in entirety.

☐ Adopted / rejected in part. *(Provide a description of the parts adopted or rejected, and provide a brief statement of the reasons adopting or rejecting this alternative in part).*

☐ Rejected in entirety. *(Provide a brief statement of the reasons rejecting this alternative).*

☐ See attachment "B".

☐ Adopted in entirety.

☐ Adopted / rejected in part. *(Provide a description of the parts adopted or rejected, and provide a brief statement of the reasons adopting or rejecting this alternative in part).*

☐ Rejected in entirety. *(Provide a brief statement of the reasons rejecting this alternative).*

☐ See attachment "C".

☐ Adopted in entirety.

☐ Adopted / rejected in part. *(Provide a description of the parts adopted or rejected, and provide a brief statement of the reasons adopting or rejecting this alternative in part).*

☐ Rejected in entirety. *(Provide a brief statement of the reasons rejecting this alternative).*

☐ See attachment "D".

☐ Adopted in entirety.

☐ Adopted / rejected in part. *(Provide a description of the parts adopted or rejected, and provide a brief statement of the reasons adopting or rejecting this alternative in part).*

☐ Rejected in entirety. *(Provide a brief statement of the reasons rejecting this alternative).*

☐ See attachment "E".

☐ Adopted in entirety.

☐ Adopted / rejected in part. *(Provide a description of the parts adopted or rejected, and provide a brief statement of the reasons adopting or rejecting this alternative in part).*

☐ Rejected in entirety. *(Provide a brief statement of the reasons rejecting this alternative).*

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