The Florida Senate

BILL ANALYSIS AND FISCAL IMPACT STATEMENT

(This document is based on the provisions contained in the legislation as of the latest date listed below.)

Prepared By: The Professional Staff of the Committee on Fiscal Policy

BILL:	CS/SB 1258
INTRODUCER:	Transportation Committee and Senator Trumbull and others
SUBJECT:	Use of Phosphogypsum
DATE:	April 12, 2023
REVISED:	

	ANALYST	STAFF DIRECTOR	REFERENCE	ACTION
1.	Price	Vickers	TR	**Fav/CS**
2.	Carroll	Rogers	EN	**Favorable**
3.	Price	Yeatman	FP	**Pre-meeting**

Please see Section IX. for Additional Information:

COMMITTEE SUBSTITUTE - Substantial Changes

I. Summary:

CS/SB 1258 authorizes the Florida Department of Transportation (FDOT) to undertake demonstration projects using phosphogypsum from phosphate production in road construction aggregate material.

The bill authorizes the FDOT to conduct a study to evaluate the suitability of using phosphogypsum as a construction aggregate material. The FDOT may consider any prior or ongoing studies of phosphogypsum's road suitability. The study and a determination of suitability must be completed by January 1, 2024.

Upon the FDOT's determination of suitability, the bill authorizes the use of phosphogypsum from phosphate production as a construction aggregate material in accordance with the conditions of the United States Environmental Protection Agency's approval for such use.

Lastly, the bill provides that phosphogypsum placed in a phosphogypsum stack system permitted by the FDEP or used in accordance with an allowed use expressly specified in EPA regulations or pursuant to an express EPA approval for the specific use is not solid waste and is an allowable use in this state.

The FDOT is expected to incur costs associated with conducting the study required by the bill, which costs are expected to be absorbed within existing resources. See the "Fiscal Impact Statement" heading.

The bill takes effect July 1, 2023.

II. Present Situation:

Phosphogypsum Stacks

The production of fertilizer from phosphoric rock is a major industry in Florida. Unfortunately, the process results in wastewater and byproducts that are difficult to manage. The process produces phosphoric acid, wastewater, and gypsum to produce a slurry that is pumped to the top of a stack of gypsum. There, it is held until it seeps below and is redistributed to cooling ponds. It is critical that this acidic water not overflow the reservoir on the top of the stack or the cooling ponds. A phosphate plant relies heavily on its system of pipes and pumps to distribute the acidic water so as to prevent overflows, particularly during heavy rains.[1]

According to the United States Environmental Protection Agency (EPA):

> Phosphogypsum is a solid waste[2] byproduct that results from processing phosphate ore to make phosphoric acid that is later used in fertilizer. Because the phosphate ore contains uranium and radium, phosphogypsum also contains these radionuclides. The radium is of particular concern because it decays to form radon, a cancer-causing, radioactive gas.[3]

Florida Polytechnic University's Florida Industrial and Phosphate Research Institute (FIPRI) notes that there are about one billion tons of phosphogypsum stacked in 24 stacks[4] in Florida and, each year, about 30 million new tons are generated.[5] Stacking became necessary, according to the FIPRI, as a matter of legal necessity when the EPA banned the use of phosphogypsum in 1989. The EPA subsequently allowed the lawful removal and distribution of phosphogypsum from a stack for outdoor agricultural purposes,[6] for indoor research and development,[7] and for other purposes under certain conditions.[8]

Phosphogypsum may not be lawfully removed from a stack and distributed or used for any purposes not expressly specified in the provisions for outdoor agricultural use and for indoor research and development.[9] A request that EPA approve distribution and/or use of phosphogypsum for any other purpose must be submitted in writing containing specified

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[1] Failure of phosphogypsum stacks can occur for other reasons; *e.g.*, *see* wfla.com, Stacks, water and waste: What the Piney Point leak means for Tampa Bay | WFLA (last visited March 8, 2023).
[2] Under the EPA's rules, "phosphogypsum" is defined as the solid waste byproduct which results from the process of wet acid phosphorus production. 14 C.F.R. §61.20(1)(b).
[3] *See* epa.gov, Subpart R: National Emission Standards for Radon Emissions From Phosphogypsum Stacks | US EPA (last visited March 7, 2023).
[4] Section 403.4154(1)(d), F.S., defines "phosphogypsum stack" as any defined geographic area associated with a phosphoric acid production facility in which phosphogypsum is disposed of or stored, other than within a fully enclosed building, container, or tank.
[5] *See* fipr.floridapoly.edu, Phosphogypsum Stacks (floridapoly.edu) (last visited March 7, 2023).
[6] 40 C.F.R. §61.204.
[7] 40 C.F.R. §61.205.
[8] 40 C.F.R. §61.206.
[9] 40 C.F.R. §61.206(a).

information. A request may be approved by the Assistant Administrator for Air and Radiation if he or she determines that the proposed distribution and/or use is at least as protective of public health, in both the short term and the long term, as disposal of phosphogypsum in a stack or a mine.[10] If a request is granted, each of the following requirements must be satisfied:

- The owner or operator of the stack from which the phosphogypsum will be removed must annually determine the average radium-226 concentration at the location in the stack from which the phosphogypsum will be removed, as specified;
- All phosphogypsum distributed in commerce by the owner or operator of a phosphogypsum stack, or by a distributor, retailer, or reseller, or purchased by the end-user, shall be accompanied at all times by specified certification documents;[11] and
- The end-user of the phosphogypsum must maintain specified records.[12]

EPA Approval for Use in Road Construction and Subsequent Withdrawal

On October 14, 2020, the EPA approved a request from The Fertilizer Institute (TFI) to allow phosphogypsum to be used in government road construction projects, subject to certain terms and conditions.[13] Effective July 7, 2021, the EPA withdrew its approval: "Upon further review, EPA has determined that the approval was premature and should be withdrawn because the request did not contain all of the required information. With this action, phosphogypsum remains prohibited from use in road construction projects."[14]

TFI responded:

> Importantly, the EPA withdrew the PG [phosphogypsum] road base approval based solely on procedural grounds, and its withdrawal did not contradict TFI's robust risk assessment in support of the use of PG in road construction. In fact, the decision to withdraw the categorical approval to use PG in road construction definitively left the window open for site specific projects to be considered for EPA approval based on the same scientific merits which focus on safe, sustainable use. We concur with EPA's scientific evaluation and conclusion that the risk associated with the use of PG in road construction is no greater than stacking the material or placing it in mines.
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> TFI will continue to work with the EPA and other stakeholders so that the United States can join with the numerous countries throughout South

[10] 40 C.F.R. §61.206(c).
[11] Those that conform to 40 C.F.R. § 209(c).
[12] 40 C.F.R. §61.206(d).
[13] *See* the EPA New Release, EPA Approves Use of Phosphogypsum in Road Construction | US EPA (last visited March 13, 2023). To review the terms and conditions, *see* the EPA letter to The Fertilizer Institute, October 14, 2020, available at document (epa.gov) (lasts visited March 13, 2023). To review The Fertilizer Institute's supporting documents, *see* EPA, Request to Use Phosphogypsum in Government Road Projects: Supporting Documents | US EPA (last visited March 13, 2023).
[14] *See* 86 F.R. 35795, available at Federal Register :: Withdrawal of Approval for Use of Phosphogypsum in Road Construction (last visited March 13, 2023).

America, Asia, Europe, Africa, and Canada that permit the safe and environmentally conscious beneficial use of PG.[15]

Other stakeholders are awaiting the outcome of TFI's ongoing efforts to achieve EPA approval of the use of phosphogypsum in road construction.

Florida Department of Environment Protection Phosphogypsum and Solid Waste Management Programs

The Florida Department of Environmental Protection's (FDEP's) Phosphogypsum Management Program administers and implements industrial wastewater permitting, compliance, and enforcement activities for the phosphate industry and regulates the design, construction, operation, and maintenance of phosphogypsum stack systems. Ensuring the proper closure and long-term monitoring and maintenance of those systems which have shut down, or which are otherwise required by rule to be closed, is the goal of the program.[16]

The FDEP issues permits for construction, operation, and closure of stack systems[17] and permits for discharge to surface waters under the National Pollutant Discharge Elimination System, as authorized by the EPA.[18] The FDEP also administers financial responsibility requirements intended to guarantee that owners and operators have the financial ability to properly close and manage phosphogypsum stack systems.[19]

The FDEP's Solid Waste Section of the Permitting and Compliance Assistance Program is charged with responsibility for rule development, solid waste policy, financial assurance compliance, and implementing the state's solid waste management program.[20] FDEP district offices receive technical assistance regarding the permitting, compliance, and enforcement activities associated with solid waste facilities. Such facilities can include landfills, material recovery facilities, transfer stations, composting and processing facilities, and waste tire management sites. The district offices manage permitting, compliance, and enforcement issues associated with such sites.[21]

The term "solid waste" is defined in Florida law to mean sludge[22] unregulated under the federal Clean Water Act or Clean Air Act, sludge from a waste treatment works, water supply treatment plant, or air pollution control facility, or garbage, rubbish, refuse, special waste, or other

[15] *See* tfi.org, TFI Statement on EPA Phosphogypsum Decision | TFI | The Fertilizer Institute (last visited March 13, 2023).
[16] For additional information, s*ee* floridadep.gov, Phosphate Management Program | Florida Department of Environmental Protection (last visited March 13, 2023).
[17] *See* ss. 403.4154 and 403.4155, F.S.
[18] The NPDES is a permit program that addresses water pollution by regulating point sources that discharge pollutants to waters of the U.S., created in 1972 by the Clean Water Act. The EPA authorizes state governments to perform many permitting, administrative, and enforcement aspects of the program. For more information, *see* epa.gov, National Pollutant Discharge Elimination System (NPDES) | US EPA (last visited March 16. 2023).
[19] Id.
[20] Section 403.705, F.S.
[21] *See* floridadep.gov, Solid Waste Section | Florida Department of Environmental Protection (last visited March 16, 2023).
[22] "Sludge" includes the accumulated solids, residues, and precipitates generated as a result of waste treatment or processing, including wastewater treatment, water supply treatment, or operation of an air pollution control facility, and mixed liquids and solids pumped from septic tanks, grease traps, privies, or similar waste disposal appurtenances. Section 403.703(34), F.S.

discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from domestic, industrial, commercial, mining, agricultural, or government operations, excluding certain recovered materials and post-use polymers.[23]

The FDEP currently may not regulate the following wastes or activities:

- Byproduct material, source material, and special nuclear material, the generation, transportation, disposal, storage, or treatment of which is regulated under chapter 404 or the federal Atomic Energy Act of 1954, ch. 1073, 68 Stat. 923, as amended.
- Suspended solids and dissolved materials in domestic sewage effluent or irrigation return flows or other discharges which are point sources subject to permits pursuant to chapter 403, F.S., concerning environmental control, or s. 402 of the Clean Water Act, Pub. L. No. 95-217.
- Emissions to the air from a stationary installation or source regulated under chapter 403, F.S., concerning environmental control, or the Clean Air Act, Pub. L. No. 95-95.
- Drilling fluids, produced waters, and other wastes associated with the exploration for, or development and production of, crude oil or natural gas which are regulated under Chapter 377, F.S.
- Recovered materials, post-use polymers, recovered materials processing facilities, or pyrolysis facilities, except as provided and under specified conditions.
- Industrial byproducts, under specified conditions.[24]

Additionally, sludge from an industrial waste treatment works that meets certain exemption requirements is not solid waste as defined in s. 403.703, F.S.

Phosphogypsum is a solid waste as defined in current law and is regulated in Florida pursuant to waste and industry-specific requirements[25] and the FDEP's rules and permitting requirements.[26] The FDEP advises that while phosphogypsum is currently defined as a solid waste, "phosphogypsum stack systems are not regulated as solid waste management facilities, as they are separately regulated under the FDEP's rules for siting, construction, operation, closure and long-term care of phosphogypsum stack systems in Florida."[27]

Florida Department of Transportation Road Construction Material

Generally speaking construction aggregate materials are mined resources that provide the basic material for concrete, asphalt, and road base. The Florida Department of Transportation's (FDOT's) rule defines the term "aggregate" to mean a granular construction material such as sand, limerock, limestone, gravel, shell, slag, and crushed stone; manufactured materials such as shales, slates, and clays; and recycled material such as crushed concrete used as specified, or for

[23] Section 403.703(35), F.S.
[24] Section 403.7045(1), F.S.
[25] See ss. 403.4154 and 403.4155, F.S.
[26] Chapters 62-672 and 62-673, F.A.C.
[27] *See* FDEP email to committee staff, March 16, 2023 (on file in the Senate Transportation Committee).

other construction materials and uses not yet developed, but which may have potential usage by the FDOT.[28]

The FDOT has implemented a standardized method for producers of construction aggregates to apply for, receive, and maintain FDOT approval of construction aggregate sources for use on FDOT projects. The FDOT's primary methods of determining acceptability of aggregate are source and product approval, and maintenance of an on-going quality control program as monitored by the FDOT.[29]

Current law reflects legislative intent that the FDOT continue to expand its current use of recovered materials in its construction programs.[30] The Legislature declares it to be in the public interest to find alternative ways to use certain recyclable materials that currently are part of the solid waste stream and that contribute to problems of declining space in landfills.

To determine the feasibility of using certain recyclable materials for paving materials, the FDOT may undertake demonstration projects using the following materials in road construction:

- Ground rubber from automobile tires in road resurfacing or subbase materials for roads;
- Ash residue from coal combustion byproducts for concrete and ash residue from waste incineration facilities and oil combustion byproducts for subbase material;
- Recycled mixed-plastic material for guardrail posts or right-of-way fence posts;
- Construction steel, including reinforcing rods and I-beams, manufactured from scrap metals disposed of in the state; and
- Glass and glass aggregates.[31]

The FDOT must review and revise existing bid procedures and specifications for the purchase or use of products and materials to eliminate any procedures and specifications that explicitly discriminate against products and materials with recycled content, except where such procedures and specifications are necessary to protect the health, safety, and welfare of the people of this state.[32]

The FDOT must also review and revise its bid procedures and specifications on a continuing basis to encourage the use of products and materials with recycled content and shall, in developing new procedures and specifications, encourage the use of products and materials with recycled content.[33]

The FDOT has participated in at least two experimental projects using phosphogypsum on secondary roads in Columbia County and in Polk County.[34]

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[28] Rule 14-103.003(3), F.A.C. Section 337.261, F.S., defines "construction aggregate materials" to mean crushed stone, limestone, dolomite, limerock, shell rock, cemented coquina, sand for use a component of mortars, concrete, bituminous mixtures, or underdrain filters, and other mined resources providing the basic material for concrete, asphalt, and road base.
[29] Rule 14-103.002(1), F.A.C.
[30] Section 336.044(1), F.S.
[31] Section 336.044(2), F.S.
[32] Section 336.044(3), F.S.
[33] Section 336.044(4), F.S.
[34] *See* fipr.floridapoly.edu, Phosphogypsum for Secondary Road Construction (floridapoly.edu) (last visited March 16, 2023).

III. Effect of Proposed Changes:

Use of Recyclable Material in Construction (Section 1)

The bill amends s. 336.044(2), F.S., authorizing the Florida Department of Transportation (FDOT) to undertake demonstration projects using phosphogypsum from phosphate production in road construction aggregate material.

So long as the use of phosphogypsum is prohibited by federal law, as is currently the case, the FDOT would not be authorized to undertake any such demonstration project. Such a demonstration project could only occur in accordance with conditions or limitations specified in any United States Environmental Protection Agency (EPA) approval for use of phosphogypsum in such a demonstration project.

Study and Use of Phosphogypsum as a Construction Aggregate Material (Section 2)

The bill creates s. 337.02611, F.S., requiring the FDOT to conduct a study to evaluate the suitability of using phosphogypsum as a construction aggregate material. The FDOT may consider any prior or ongoing studies of phosphogypsum's road suitability. The study and a determination of suitability must be completed by January 1, 2024. Upon the FDOT's determination of suitability, the bill authorizes the use of phosphogypsum from phosphate production as a construction aggregate material in accordance with the conditions of the EPA approval for such use.

Again, until such time as the EPA approves such use, the FDOT would be prohibited from any use of phosphogypsum as a road construction aggregate material. Such use could only occur if the EPA issues an approval, and only under the conditions imposed by the EPA.

Wastes and Activities Not Regulated by the FDEP (Section 3)

The bill amends s. 403.7045, F.S., providing that phosphogypsum used in accordance with an allowed use expressly specified in EPA regulations or pursuant to an express EPA approval for the specific use is not solid waste as defined in s. 403.703, F.S., and is an allowable use in this state. The bill restates current law that phosphogypsum may be placed in a phosphogypsum stack system permitted by the Florida Department of Environmental Protection (FDEP).

The FDEP advises that excluding phosphogypsum as a solid waste "would conflict with existing permitting and regulatory framework. Like the state provisions under section 403.7045(2)(c), F.S., under federal regulations at 40 CFR 261.4(b), phosphogypsum, along with process water from phosphoric acid production, are solid wastes that are not hazardous wastes. Accordingly, the proposed statutory revision in Section 3 of the bill, where phosphogypsum would not be a solid waste, creates uncertainty in the application of both the state and federal hazardous waste exemptions for phosphogypsum."[35]

[35] FDEP email to committee staff, March 16, 2023 (on file in the Senate Transportation Committee).

Effective Date (Section 4)

The bill takes effect July 1, 2023.

IV. Constitutional Issues:

A. Municipality/County Mandates Restrictions:

None.

B. Public Records/Open Meetings Issues:

None.

C. Trust Funds Restrictions:

None.

D. State Tax or Fee Increases:

None.

V. Fiscal Impact Statement:

A. Tax/Fee Issues:

None.

B. Private Sector Impact:

Indeterminate. Should the EPA approve the use of phosphogypsum in road construction, the private sector may benefit from a reduction of the number of phosphogypsum stacks in the state. A literature review suggests the existence of opposing opinions relating to the advantages and disadvantages of exposure to phosphogypsum.

C. Government Sector Impact:

The FDOT will incur costs associated with conducting the study required by the bill, which costs are expected to be absorbed within existing resources.

VI. Technical Deficiencies:

None.

VII. Related Issues:

None.

VIII. Statutes Affected:

This bill substantially amends the following sections of the Florida Statutes: 336.044 and 403.7045.

This bill creates the following section of the Florida Statutes: 337.02611.

IX. Additional Information:

A. Committee Substitute – Statement of Substantial Changes:
(Summarizing differences between the Committee Substitute and the prior version of the bill.)

CS by Transportation on March 20, 2023:
The committee substitute removes ambiguity by separating the provision that use of phosphogypsum in accordance with an allowed use expressly specified in the United States Environmental Protection Agency (EPA) regulations or pursuant to an express EPA approval for the specific use is not solid waste and is an allowed use in this state from the restatement of current law authorizing placement of phosphogypsum in a stack system permitted by the Florida Department of Environmental Protection.

B. Amendments:

None.