HOUSE OF REPRESENTATIVES STAFF ANALYSIS

BILL #: CS/CS/HB 1191 Use of Phosphogypsum
SPONSOR(S): Infrastructure Strategies Committee, Transportation & Modals Subcommittee, McClure and others
TIED BILLS: **IDEN./SIM. BILLS:** CS/CS/SB 1258

REFERENCE	ACTION	ANALYST	STAFF DIRECTOR or BUDGET/POLICY CHIEF
1) Transportation & Modals Subcommittee	14 Y, 3 N, As CS	Johnson	Hinshelwood
2) Infrastructure & Tourism Appropriations Subcommittee	14 Y, 0 N	Hicks	Davis
3) Infrastructure Strategies Committee	14 Y, 5 N, As CS	Lewis	Harrington

SUMMARY ANALYSIS

Phosphogypsum (PG) is calcium sulfate, which is created during the phosphate manufacturing process. For every ton of phosphorus produced, approximately five tons of PG is made. Under federal Environmental Protection Agency (EPA) guidelines, PG may be used for certain agricultural and research purposes under certain conditions. PG may also be used for other purposes with EPA approval.

The bill authorizes the Department of Transportation (DOT) to undertake demonstration projects using PG from phosphate production in road construction aggregate material. The bill requires DOT to conduct a study to evaluate the suitability of using PG as a construction aggregate material. DOT may consider any prior or ongoing studies of PG's road suitability in the fulfillment of this duty. The study and a determination of suitability must be completed by April 1, 2024. Upon DOT's determination of suitability, PG from phosphate production may be used as a construction aggregate material in accordance with the EPA's approval for use.

The bill provides that PG 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 allowed use in this state. The bill also provides that PG may be placed in a PG stack permitted by the Department of Environmental Protection.

The bill has an indeterminate fiscal impact on state government and the private sector. The bill has no fiscal impact on local governments. See Fiscal Analysis Section.

The bill provides an effective date of July 1, 2023.

FULL ANALYSIS

I. SUBSTANTIVE ANALYSIS

A. EFFECT OF PROPOSED CHANGES:

Current Situation

Phosphogypsum (PG) is calcium sulfate, which is created during the phosphate manufacturing process. For every ton of phosphorus produced, approximately five tons of PG is made. PG is a durable product. It is stacked while wet and hardens to hold its shape. In the United States, the use of PG has been limited to certain agricultural applications and scientific research. In other countries, PG is looked at as a beneficial material that can be used in agriculture, forestry, building materials, concrete and more.[1]

In Florida, there are currently about 1 billion tons of PG stacked in 24 stacks with 30 million new tons generated each year.[2]

Federal Regulation of Phosphogypsum

Under federal Environmental Protection Agency (EPA) rules, PG is defined as the solid waste byproduct which results from the process of wet acid phosphorus production.[3]

In 1989, stacking of PG became necessary when the EPA banned the use of PG. In 1992, this rule was modified to allow the use of PG with a low average radium-226 concentration for agricultural application as a soil amendment.[4]

Under the EPA's rules, each person who generates PG must place all PG in stacks. PG may be removed from a PG stack only as expressly provided by the EPA's rules. After a PG stack has become an inactive stack, the owner or operator must assure that the stack does not emit more than a specified amount of radon-222 into the air.[5] However, PG may be lawfully removed from the stack for use for outdoor agricultural research and development and agricultural field use if certain requirements are met.[6] PG may also be used for distribution for indoor research and development if certain conditions are met.[7] PG may not be removed from a stack and distributed or used for other purposes without EPA approval.[8]

In 2019, the Fertilizer Institute petitioned the EPA for approval of additional uses of PG on government road construction projects. On October 14, 2020, the EPA approved the Fertilizer Institute's request to use PG in government road construction projects subject to certain terms and conditions. Under the Clean Air Act, the EPA may approve a request for a specific use of PG if it is determined that the proposed use is at least as protective of human health as placement in a stack.[9]

Upon further review, the EPA found that the Fertilizer Institute's request did not provide all the information required for a complete request. On June 30, 2021, the EPA withdrew its previously granted conditional approval to use PG in government road construction projects. The decision was effective immediately, and PG remains prohibited from use in road construction.[10]

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[1] Phosphate Innovation Initiative, *PG Questions & Answers: What is Phosphogypsum (PG)?,* https://phosphateinnovation.com/qa/ (last visited Mar. 8, 2023).
[2] Florida Industrial and Phosphate Research Institute, *Phosphogypsum Stacks*, https://fipr.floridapoly.edu/about-us/phosphate-primer/phosphogypsum-stacks.php (last visited Mar. 11, 2023).
[3] 14 C.F.R. § 61.201(b).
[4] *Supra* note 2.
[5] 14 C.F.R. § 61.202.
[6] 14 C.F.R. § 61.204.
[7] 14 C.F.R. § 61.205.
[8] 14 C.F.R. § 61.206(a).
[9] Environmental Protection Agency (EPA), *Request to Use Phosphogypsum in Government Road Projects: Supporting Documents.* https://www.epa.gov/radiation/request-use-phosphogypsum-government-road-projects-supporting-documents (last visited Mar 8, 2023).
[10] *Id*.

Construction Aggregates Certified for Use by Department of Transportation

Aggregates are raw materials such as gravel, crushed stone, and sand. When combined with a binding medium such as water, cement, or asphalt, aggregates form compound materials, including asphalt concrete.[11] Section 334.044(10)(d), F.S., authorizes the Department of Transportation (DOT) to adopt rules relating to approval of aggregate and other material sources.

Section 334.179, F.S., provides that notwithstanding any law, rule, or ordinance to the contrary, a local government may not adopt standards or specifications that are contrary to DOT's standards or specifications for permissible use of aggregates that have been certified for use. The term "certified for use" means that the aggregates have been certified by the producer in accordance with DOT rules.[12]

DOT's rules regarding aggregates[13] provide a standardized method for producers of construction aggregates to apply for, receive, and maintain DOT approval of construction aggregate sources for use on DOT projects. Source and product approval, and maintenance of an on-going effective Quality Control Program comprise DOT's primary methods of determining acceptability of aggregate on DOT projects.[14]

DOT's Aggregate Acceptance Unit within the Materials Office ensures the quality of aggregates in Florida's transportation system by approving and monitoring aggregate sources. It develops, reviews and recommends changes to DOT's policies and specifications for aggregate materials used in construction. It also conducts ongoing DOT research and evaluation of aggregate performance, base materials including new aggregate sources and recyclable waste products.[15]

Use of Recyclable Materials in Road Construction

Current law provides legislative intent that DOT continue to expand its current use of recovered materials in its construction programs.[16]

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, DOT 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.[17]

DOT 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.[18] DOT must also review and revise its bid procedures and specifications on a continuing basis to encourage the use of

[11] Association of Equipment Manufacturers, *Construction Aggregates 101: What They Are (And Why They Matter)* (July 8, 2021), https://www.aem.org/news/construction-aggregates-101-what-they-are-and-why-they-matter (Last visited Mar. 8, 2023).
[12] Section 334.179, F.S., does not apply to a multicounty independent special district created by a special act of the Legislature.
[13] R. 14-103, F.A.C.
[14] R. 14-103.002, F.A.C.
[15] DOT, *Aggregate Acceptance*, https://www.fdot.gov/materials/laboratory/geotechnical/aggregates/laboratory.shtm (last visited Mar. 8, 2023).
[16] S. 336.044(1), F.S.
[17] S. 336.044(2), F.S.
[18] S. 336.044(3), F.S.

products and materials with recycled content and shall, in developing new procedures and specifications, encourage the use of products and materials with recycled content.[19]

Resource Recovery and Management

Chapter 403, part IV, F.S., relates to environmental resource recovery and management and is intended to provide for a coordinated statewide solid waste management program.[20]

For purposes of that part, the term "solid waste" is defined to mean sludge 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 discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from domestic, industrial, commercial, mining, agricultural, or governmental operations.[21]

Section 403.7045(1)(f), F.S., provides that industrial byproducts may not be regulated pursuant to the act, if:

- A majority of the industrial byproducts are demonstrated to be sold, used, or reused within 1 year.
- The industrial byproducts are not discharged, deposited, injected, dumped, spilled, leaked, or placed upon any land or water so that such industrial byproducts, or any constituent thereof, may enter other lands or be emitted into the air or discharged into any waters, including groundwaters, or otherwise enter the environment such that a threat of contamination in excess of applicable department standards and criteria or a significant threat to public health is caused.
- The industrial byproducts are not hazardous wastes.[22]

Sludge from an industrial waste treatment works that meets these exemption requirements is not solid waste.

Sections 403.4154 and 403.4155, F.S., provide for a PG management program within the Department of Environmental Protection (DEP). DEP's Phosphate Management Program regulates the design, construction, operation, and maintenance of PG stack systems, the wastewater systems associated with the chemical plants that process phosphate ore into fertilizer products.[23]

Effect of the Bill

The bill authorizes DOT to undertake demonstration projects using PG from phosphate production in road construction aggregate material.

The bill requires DOT to conduct a study to evaluate the suitability of using PG as a construction aggregate material. DOT may consider any prior or ongoing studies of PG's road suitability in the fulfillment of this duty. The study and a determination of suitability must be completed by April 1, 2024.

Upon DOT's determination of suitability, PG from phosphate production may be used as a construction aggregate material in accordance with the EPA's approval for use.

The bill provides that PG 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

[19] S. 336.044(4), F.S.
[20] S. 403.702(1), F.S.
[21] S. 403.703(35), F.S.
[22] Section 403.703(14), F.S., defines the term "hazardous waste" to mean solid waste, or a combination of solid wastes, which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible or incapacitating reversible illness or may pose a substantial present or potential hazard to human health or the environment when improperly transported, disposed of, stored, treated, or otherwise managed. The term does not include human remains that are disposed of by persons licensed under ch. 497, F.S.
[23] Department of Environmental Protection, *Phosphate Management Program,* https://floridadep.gov/water/phosphate (last visited Mar. 15, 2023).

allowed use in this state. The bill also provides PG may be placed in a DEP-permitted PG stack system.[24]

The bill has an effective date of July 1, 2023.

B. SECTION DIRECTORY:

Section 1. Amends s. 336.044, F.S., relating to the use of recyclable materials in construction.

Section 2. Creates s. 337.02611, F.S., relating to phosphogypsum as a construction aggregate material; study.

Section 3. Amends s. 403.7045, F.S., relating to the application of act and integration with other acts.

Section 4. Provides an effective date of July 1, 2023.

II. FISCAL ANALYSIS & ECONOMIC IMPACT STATEMENT

A. FISCAL IMPACT ON STATE GOVERNMENT:

1. Revenues:

   None.

2. Expenditures:

   There is an indeterminate negative fiscal impact to the State Transportation Trust Fund associated with DOT incurring expenditures to conduct a study to evaluate the suitability of PG as a construction aggregate material for use in road construction. The bill does not provide a specific appropriation to cover the cost of this study, therefore, any costs incurred would be absorbed within existing DOT resources.

B. FISCAL IMPACT ON LOCAL GOVERNMENTS:

1. Revenues:

   None.

2. Expenditures:

   None.

C. DIRECT ECONOMIC IMPACT ON PRIVATE SECTOR:

The bill does not require the use of PG as a construction aggregate material in road construction. However, if the study concludes that PG is suitable for such use, and if PG is at some future time actually used in road construction, the private sector may benefit from the abundant supply of PG and may benefit from the resulting resolution of PG stacks. The fiscal impact is indeterminate.

D. FISCAL COMMENTS:

None.

[24] DEP permits PG stacks under ss. 403.4154 and 403.4155, F.S.

III. COMMENTS

A. CONSTITUTIONAL ISSUES:

1. Applicability of Municipality/County Mandates Provision:

Not applicable. The bill does not appear to affect county or municipal governments.

2. Other:

None.

B. RULE-MAKING AUTHORITY:

None.

C. DRAFTING ISSUES OR OTHER COMMENTS:

None.

IV. AMENDMENTS/COMMITTEE SUBSTITUTE CHANGES

On March 15, 2023, the Transportation & Modals Subcommittee adopted one amendment and reported the bill favorably as a committee substitute. The amendment provides that PG 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 allowed use in this state. The amendment also provides that PG may be placed in a PG stack permitted by DEP.

On April 17, 2023, the Infrastructure Strategies Committee considered one amendment, which was adopted, and reported the bill favorably as a committee substitute. The amendment extends from January 1, 2024, to April 1, 2024, the date by which FDOT must complete the study to evaluate and determine the suitability of using phosphogypsum as a construction aggregate material.

The staff analysis has been updated to reflect the committee substitute.