November 16, 2026

The Honorable Dennis Watkins
Trumbull County Prosecuting Attorney
160 High Street N.W., Fourth Floor
Warren, Ohio 44481

SYLLABUS: 2026-012

1. A county engineer's statutory duty to prepare, maintain, and update the county's tax maps does not extend to all GIS-related mapping performed by the county. The engineer's tax map department may operate concurrently with GIS units maintained by the county auditor or other county offices, provided no office interferes with another's statutory duties.

2. Each county office may use GIS technology to fulfill its own statutory responsibilities, but only the county engineer may create, correct, or update the county's tax map as defined in R.C. 5713.09.

3. Although R.C. 5713.09 does not specify how tax maps must be provided to the county auditor, the tax maps are created and maintained "for the use of the county board of revision and the auditor." Therefore, the county engineer must furnish them to the county auditor in a format

that enables the auditor to readily perform the office's statutory functions, including GIS-based appraisal activities.

4. The county engineer's GIS-related costs may not be paid from the real estate assessment fund. That fund may be used only for expenses incurred by the county auditor or the county board of revision, including the auditor's costs of acquiring or using GIS.

5. The county auditor's authority under R.C. 325.31(B)(4) to use the real estate assessment fund for GIS and mapping technologies does not authorize the auditor to alter or correct the tax-map layers the engineer is required to maintain under R.C. 5713.09. However, the auditor may add appraisal-related GIS layers that do not disturb the engineer's tax-map content.

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OPINION NO. 2026-012

The Honorable Dennis Watkins
Trumbull County Prosecuting Attorney
160 High Street N.W., Fourth Floor
Warren, Ohio 44481

Dear Prosecutor Watkins:

You have requested my opinion regarding the county's use of geographic information systems (GIS), particularly for purposes of creating and maintaining the county's tax map. Based on the context you provided, I have framed your questions as follows:

1. Does the county engineer's duty to prepare and maintain the county's tax maps extend to all GIS-related mapping performed by the county, or may the engineer's tax map department operate alongside a separate GIS department under the county auditor or another county office, such as the sanitary engineer?

2. If a county engineer's tax map department and another GIS department can coexist, how are the respective mapping responsibilities of the

county engineer, the county auditor, and other county officers delineated in statute?

3. As R.C. 5713.09 requires that the tax maps be kept in the county auditor's office, may the county engineer provide the auditor with read-only access through the cloud to an electronic GIS tax map with all layers controlled and edited by the engineer's office, or must the engineer transfer the entire editable version of the GIS map to the auditor's custody?

4. If the county engineer is deemed solely responsible for the county's GIS functions, must those expenses be paid from the general fund, or does R.C. 325.31(B)(4) permit or require the county auditor's real estate assessment fund to pay any portion of the cost?

5. Does R.C. 325.31(B)(4), which permits a county auditor to fund GIS, mapping programs, and similar technological advances, imply that the auditor may create or alter GIS layers that constitute part of a county's tax map, or are such functions reserved for the county engineer?

For the reasons that follow, I conclude the county engineer is not entitled to exclusive control of the county's GIS technology. Only the engineer may create, maintain, and update the county tax maps. However, the

county auditor may use GIS for purposes related to property appraisal, and other county offices may employ the technology to fulfill their own statutory duties. As shown below, Ohio's legal framework is flexible enough to accommodate innovations in technology and rests on cooperation among county offices that utilize GIS.

I

A

Begin with the technology at issue. GIS is a computerized system for layered mapping and spatial analysis that integrates, stores, edits, analyzes, and displays geographically referenced data. *See* U.S. Geological Survey, Geographic Information Systems (GIS) Educational Resources, available at www.usgs.gov/centers/wetland-and-aquatic-research-center/science/usgs-geographic-information-systems-gis (accessed Nov. 16, 2026) [https://perma.cc/6TLJ-BVYL]; U.S. Geological Survey, What is a Geographic Information System (GIS)?, available at www.usgs.gov/faqs/what-a-geographic-information-system-gis (accessed Nov. 16, 2026) [https://perma.cc/3BR9-YVSX]. In simpler terms, it is a digital tool for creating and analyzing complex, multilayered maps. *Id.*

Over the past several decades, local governments have adopted GIS for a wide range of tasks, such as real

estate parcel mapping, natural resource management, public health monitoring, infrastructure planning, community zoning, and crime mapping. *See* Phil Goldstein, *GIS in State and Local Government: How Geographic Information Systems Aid Agencies*, available at https://statetechmagazine.com/article/2022/01/gis-state-and-local-government-how-geographic-information-systems-aid-agencies-perfcon (accessed Nov. 16, 2026) [https://perma.cc/KZ9K-537K]. Each type of geographic data can be placed on its own layer within the GIS map, allowing the map to be viewed, updated, and analyzed one layer at a time. *See, e.g.*, Holmes County GIS Hub, available at https://holmes-county-gis-holmesgis.hub.arcgis.com (accessed Nov. 16, 2026) [https://perma.cc/W6TH-J6BM]. The Ohio Geographically Referenced Information Program helps to coordinate GIS activity and data-sharing between state and local agencies. *See* Dept. of Administrative Services, OGRIP, available at https://das.ohio.gov/technology-and-strategy/OGRIP (accessed Nov. 16, 2026) [https://perma.cc/BRN7-EQR9].

GIS offers significant advantages over traditional surveying and mapmaking. For example, "[u]pdating paper maps requires redrafting of the original and printing of a new map. Due to the great expense, conventional maps are not often updated. GIS allow[s] greater ease in updating, since the information is easily accessed by the computer." Ron J. Aschenbach, Note, *Geographic Information Systems as a Decision Making*

Tool, 52 Ohio St. L.J. 351, 358 (1991). This advantage is especially relevant to keeping county tax maps up to date and accurate. *See* R.C. 5713.09. As explained in your opinion request, "An Ohio GIS Tax Map integrates essential property data like parcel boundaries, owner names, legal descriptions, survey data, and unique parcel IDs (PID) with geographic features (roads, municipalities, township[s], sections, rivers, etc.) and administrative info into digital layers, allowing for analysis and efficient management, driven by hardware, software, data, people, and specific methods for county assessment and public access."

With that background in mind, I turn to Ohio's statutory framework underpinning tax maps, property appraisals, and GIS functions in county government.

B

R.C. 325.14 and R.C. 5713.09 assign the county engineer responsibility for making, correcting, and updating the county's tax maps. A county tax map must "show all original lots and parcels of land, and all divisions, subdivisions, and allotments thereof" as well as the names of property owners and real estate transfers. R.C. 5713.09. As my predecessor explained, "The county auditor and county board of revision use county tax maps in the course of assessing real property for purposes of taxation, and hearing complaints and revising such assessments, respectively." 2019 Ohio

Atty.Gen.Ops. No. 2019-001, Slip Op. at 1; 2-1, citing R.C. 319.28(A), 5713.01, 5713.03, 5713.09, and 5715.01(B).

My predecessor ultimately concluded that tax map responsibilities cannot be delegated to the county auditor or any other office. 2019 Ohio Atty.Gen.Ops. No. 2019-001, at paragraph one of the syllabus. Therefore, the county engineer is solely responsible for appointing the necessary assistants, supervising them, and setting their salaries. *Id.*; *see* R.C. 5713.09 and 5713.10. The costs of preparing and maintaining tax maps, including the salaries of assistants, are paid from the county general fund. *See* 2019 Ohio Atty.Gen.Ops. No. 2019-001, Slip Op. at 7-9; 2-7 to 2-8.

The county auditor, on the other hand, is responsible for assessing all real estate in the county for taxation. R.C. 5713.01(A). "At least once every six years, the auditor determines the true and taxable values of each lot or parcel of real estate, as well as the improvements on each lot, and places the taxable values of each lot on the auditor's tax list and the county treasurer's duplicate list for the appropriate tax year." 2018 Ohio Atty.Gen.Ops. No. 2018-011, Slip Op. at 1; 2-95; *see also* R.C. 5715.33 and 5715.34. The auditor may hire employees or contract with professional appraisers to perform the assessment. R.C. 5713.01(E).

The information needed for property appraisal extends far beyond what appears in the county engineer's tax map. For instance, the county auditor must consider recent sales of comparable properties, zoning and building regulations, the value of improvements, utility connections, agricultural use, and rights to coal, minerals, oil, and gas. *See* R.C. 5713.03, 5713.31, and 5715.01(A); Adm.Code 5703-25-07, 5703-25-11, and 5703-25-12. GIS enables auditors to visualize these factors as distinct layers of information on a digital map. As noted in your opinion request, GIS may also be integrated with other software used in the appraisal process. R.C. 325.31(B)(4) and Adm.Code 5703-25-55 therefore allow the auditor to use money from the real estate assessment fund to pay for GIS, "mapping programs," and similar technology "related to the assessment of real property for taxation purposes." Adm.Code 5703-25-55(B). R.C. 5713.01(F) likewise allows the auditor to enter contracts after competitive bidding for "goods or services related to the auditor's duties as assessor, including contracts for mapping [and] computers . . . ." Thus, the statutory framework above clearly contemplates GIS as an integral tool for county auditors to perform their work.

II

First among your questions, you asked whether the county engineer's tax-map-related duties extend to all GIS mapping performed by the county. The short

answer is no. The statutory framework does not support such a broad reading. Instead, the engineer's tax map department may coexist with a county auditor-controlled or other county GIS unit, provided each office refrains from interfering with the other's statutory duties.

Unlike the statutes governing a county auditor's real estate assessments, the tax map statutes make no reference to GIS. *Compare* R.C. 325.14, 5713.09, and 5713.10 *with* R.C. 325.31(B)(4) and 5713.01(F). However, when a statute imposes a duty but not the mode of performing that duty, the responsible officer may adopt any reasonable method to accomplish it. *See, e.g.*, 2025 Ohio Atty.Gen.Ops. No. 2025-013, Slip Op. at 7-8; 2-97, citing *State v. Gaul*, 117 Ohio App.3d 839, 850 (8th Dist. 1997); *State ex rel. Attorney General v. Morris*, 63 Ohio St. 496, 512 (1900); *Jewett v. Valley Ry. Co.*, 34 Ohio St. 601, 608 (1878). Based on this principle, the county engineer may use GIS technology to create, maintain, and update the tax maps.

Nothing in R.C. 5713.09 indicates that tax maps were intended to be comprehensive records of the county's geographic features. Rather, the maps record a limited range of information—property boundaries, ownership, and real estate transfers. *Id.* Thus, I conclude that the law does not vest the county engineer with exclusive authority over the county's use of GIS mapping. Instead, the county auditor and county engineer may

each employ this technology to carry out their duties with respect to geospatial analysis or making maps.

III

Having concluded that the county engineer's tax map duties do not give that office exclusive control over the county's GIS, your next question is how Ohio law delineates the respective mapping responsibilities of the engineer and auditor, as well as other county officers.

Each county officer's powers and duties are defined by statute, whether expressly or by necessary implication. *See, e.g.*, 2025 Ohio Atty.Gen.Ops. No. 2025-015, Slip Op. at 10; 2-108. In other words, each officer may only color within the lines that the Revised Code draws. At the same time, public officers may reasonably employ any technology that is suited to their legal duty, provided the law does not prescribe a particular method of accomplishing it. *See generally State ex rel. Attorney General v. Morris*, 63 Ohio St. 496, 512 (1900); *Jewett v. Valley Ry. Co.*, 34 Ohio St. 601, 608 (1878). Under this principle, the county engineer may use GIS to prepare, maintain, and update the county's tax maps, even though the law is silent on the technological means of mapmaking. R.C. 325.14 and 5713.09. By the same token, other county offices may use GIS technology to carry out duties assigned to them by statute, unless a law prescribes a different method. And, as previously explained, the Revised Code expressly

permits the county auditor to use GIS for purposes related to property appraisal. R.C. 325.31(B)(4) and 5713.01(F); *see also* Adm.Code 5703-25-55(C)(1)(h).

Many governmental functions beyond tax map drafting may involve the use of GIS. For example, the engineer's office might use the technology to map county roads, bridges, and culverts. R.C. 5543.04. The engineer must also record permanent easements for drainage improvements in the county's GIS or other mapping systems. R.C. 6131.14. Likewise, the sanitary engineer may use it to develop and update the county's general plans for solid waste disposal, water supply, and sewerage. *See* R.C. 343.04, 6103.05, and 6117.06. Other county offices could use this technology to create and "provide maps based on crime data, the locations of resources for citizens, where fires are being spotted and other useful information." Phil Goldstein, *GIS in State and Local Government: How Geographic Information Systems Aid Agencies*, available at https://statetechmagazine.com/article/2022/01/gis-state-and-local-government-how-geographic-information-systems-aid-agencies-perfcon (accessed Nov. 16, 2026) [https://perma.cc/KZ9K-537K]. Your own county, for example, "maintains a comprehensive [GIS] map of registered sex offenders" to inform local communities and promote public safety. *See* Trumbull County GIS/Tax Map, available at https://www.co.trumbull.oh.us/Auditor/GIS (accessed Nov. 16, 2026) [https://perma.cc/D6CJ-SWC3]; *see also*

Trumbull County GIS Hub, https://share-tcoh-gis.hub.arcgis.com/pages/opendata (accessed Nov. 16, 2026) [https://perma.cc/8MPJ-JCDR].

It is beyond the scope of this opinion to catalog all the potential uses of GIS in county government. The board of county commissioners must ultimately determine how to allocate GIS resources within the county.[1] *See* R.C. 307.01. With that caveat, I conclude that each county office may use GIS mapping technology to fulfill its statutory duties, provided its use does not interfere with the responsibilities of another office.

IV

Next, you ask whether the county engineer may satisfy R.C. 5713.09's requirement that tax maps be kept in the auditor's office by providing read-only access, or whether the engineer must provide editable versions. If the tax maps were provided in read-only format, you note in this scenario that all GIS layers—not just the tax map—would be controlled and edited exclusively by the engineer's office.

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[1] Where an automatic data processing board has been established, that board may assume authority to coordinate and approve countywide information technology resources, subject to the county commissioners' authority over contracts and appropriations. *See* R.C. 307.84 to 307.847; *see also* 2005 Ohio Atty.Gen.Ops. No. 2005-025, at 2-256 to 2-259, and 1990 Ohio Atty.Gen.Ops. No. 90-034.

R.C. 5713.09 does not specify the technological means by which the engineer transfers tax maps to the auditor's custody, much less whether the GIS-based tax map data should be locked from editing. As I stated earlier, when a statute imposes a duty without prescribing the method of performance, the officer may adopt any "reasonable manner" that does not conflict with other state laws. *State ex rel. Preston v. Ferguson*, 170 Ohio St. 450, 459 (1960). However, the same law also states that the tax maps are "*for the use* of the county board of revision and the auditor." R.C. 5713.09 (Emphasis added).

Harmonizing these principles, if providing read-only access would prevent the auditor from adding appraisal-related layers to the tax map, then that format would not be acceptable because it impedes the auditor's ability to *use* the map and perform the office's statutory duties. *See* R.C. 5713.01, 5713.03, and 325.31(B)(4). If the Trumbull County Auditor relies on GIS in assessing real estate, the county engineer must provide the tax map to the auditor's office in a format that is usable for that purpose.

V

You next ask whether, if the county engineer were solely responsible for all the county's GIS functions, the related expenses must be paid from the general fund, or whether R.C. 325.31(B)(4) permits or requires the

auditor's real estate assessment fund to pay any portion of the cost. Because I have already concluded that the engineer does not have exclusive authority over GIS functions, I address this question only to clarify the proper allocation of GIS-related expenses.

As a general rule, the board of county commissioners determines what equipment is "reasonably necessary for the proper and convenient conduct" of each county office. R.C. 307.01. Unless the county commissioners have delegated authority over information technology resources to an automatic data processing board, *see* R.C. 307.84 to 307.847, the commissioners may determine whether GIS equipment furthers the necessary operations of a county office and authorize its purchase or lease. *Id.*; *see also* 2005 Ohio Atty.Gen.Ops. No. 2005-025, at 2-256 to 2-259, and 1990 Ohio Atty.Gen.Ops. No. 90-034.

R.C. 5713.10 requires the county engineer to pay the salaries of tax map drafters from the county general fund. *See* 2019 Ohio Atty.Gen.Ops. No. 2019-001, Slip Op. at 7-10; 2-7 to 2-10. Although that statute does not address the cost of equipment used to prepare tax maps, R.C. 315.11 more broadly provides that the cost of tools, instruments, and other equipment of the county engineer's office may be paid from the general fund with approval from the county commissioners. GIS is a commonly used—if not essential—tool for drafting and maintaining tax maps. It follows that

GIS-related expenses may be paid from the general fund in accordance with R.C. 315.11.

The real estate assessment fund, by contrast, is a special fund created for distinct and limited purposes. *See* R.C. 325.31(A) and 5705.09(F). Money in that fund may be used only to defray costs incurred by the county auditor or the board of revision, including the auditor's GIS-related expenses. R.C. 325.31(B); *see also* R.C. 5713.01(F) and Adm.Code 5703-25-55(C)(1)(h). The county commissioners may not transfer money from the real estate assessment fund to other county funds. R.C. 325.31(B). Thus, my predecessor concluded that money from the real estate assessment fund cannot be used to pay the county engineer's costs in making, correcting, or updating tax maps. 2019 Ohio Atty.Gen.Ops. No. 2019-001, Slip Op. at 7; 2-7 to 2-8. Based on the text of R.C. 325.31, I likewise conclude that the fund may not be used to pay the engineer's GIS-related expenses.

VI

Your final question is whether the county auditor's authority to fund GIS under R.C. 325.31(B)(4) implies authority to create or modify tax map layers. I conclude that the auditor may use GIS for appraisal functions but may not prepare or modify the required tax map content defined by R.C. 5713.09.

As I stated earlier in this opinion, the county auditor may employ GIS technology for tasks related to the auditor's official duties, such as property appraisals, but the county engineer retains sole authority to draft and update the underlying tax map. *See* R.C. 325.14, 5713.01, 5713.03, and 5713.09. R.C. 325.31 identifies the permissible uses of the real estate assessment fund, which covers expenses the auditor incurs in fulfilling the auditor's own statutory duties as chief assessor of the county. *See* 2019 Ohio Atty.Gen.Ops. No. 2019-001, Slip Op. at 5-7; 2-6 to 2-7. However, it does not enlarge the county auditor's substantive mapping authority.

R.C. 5713.09 requires the tax map to "show all original lots and parcels of land, and all divisions, subdivisions, and allotments thereof, with the name of the owner of each original lot or parcel and of each division, subdivision, or lot, all new divisions, subdivisions, or allotments made in the county, all transfers of property, showing the lot or parcel of land transferred, the name of the grantee, and the date of the transfer." The county auditor must not alter any of that information on the tax map. Nonetheless, the auditor may add appraisal-related layers to a GIS tax map so long as it does not disturb the map made and supplied by the engineer. *See* R.C. 5713.03, 5713.31, and 5715.01(A); Adm.Code 5703-25-07, 5703-25-11, and 5703-25-12.

If the auditor discovers errors in the tax map or determines that updates are needed, the auditor should notify the engineer so that the engineer's office may make the necessary corrections. *See* R.C. 5713.09; 2019 Ohio Atty.Gen.Ops. No. 2019-001. This cooperative approach ensures that each county office remains within its statutory role while both benefit from advancements in this mapping technology.

Conclusion

Accordingly, it is my opinion, and you are hereby advised that:

1. A county engineer's statutory duty to prepare, maintain, and update the county's tax maps does not extend to all GIS-related mapping performed by the county. The engineer's tax map department may operate concurrently with GIS units maintained by the county auditor or other county offices, provided no office interferes with another's statutory duties.

2. Each county office may use GIS technology to fulfill its own statutory responsibilities, but only the county engineer may create, correct, or update the county's tax map as defined in R.C. 5713.09.

3. Although R.C. 5713.09 does not specify how tax maps must be provided to the county auditor, the tax maps are created and maintained "for the use of the county board of revision and the auditor." Therefore, the county engineer must furnish them to the county auditor in a format that enables the auditor to readily perform the office's statutory functions, including GIS-based appraisal activities.

4. The county engineer's GIS-related costs may not be paid from the real estate assessment fund. That fund may be used only for expenses incurred by the county auditor or the county board of revision, including the auditor's costs of acquiring or using GIS.

5. The county auditor's authority under R.C. 325.31(B)(4) to use the real estate assessment fund for GIS and mapping technologies does not authorize the auditor to alter or correct the tax-map layers the engineer is required to maintain under R.C. 5713.09. However, the auditor may add appraisal-related GIS layers that do not disturb the engineer's tax-map content.

Respectfully,



D. ANDREW WILSON
Ohio Attorney General