NOT FOR PUBLICATION WITHOUT THE
APPROVAL OF THE APPELLATE DIVISION

SUPERIOR COURT OF NEW JERSEY
APPELLATE DIVISION
DOCKET NO. A-3072-16T2

IN THE MATTER OF
THOMAS ORBAN/SQUARE
PROPERTIES, LLC, FRESHWATER
WETLANDS GENERAL PERMIT 6
NO. 1103-03-0003.1 FWW070001,
CHALLENGED BY SAVE
HAMILTON OPEN SPACE.

APPROVED FOR PUBLICATION

August 29, 2019

APPELLATE DIVISION

Argued February 27, 2019 - Decided August 29, 2019

Before Judges Accurso, Vernoia and Moynihan.

On appeal from the New Jersey Department of Environmental Protection.

Stuart J. Lieberman argued the cause for appellant Save Hamilton Open Space (Lieberman & Blecher, PC, attorneys; Stuart J. Lieberman, of counsel and on the brief; Jordan Michael Asch, on the briefs).

Afiyfa Hakim Ellington argued the cause for respondent Thomas Orban/Square Properties, LLC (Giordano Halleran & Ciesla, PC, attorneys; Paul H. Schneider and Afiyfa Hakim Ellington, on the brief).

Bruce A. Velzy, Deputy Attorney General, argued the cause for respondent Department of Environmental Protection (Gurbir S. Grewal, Attorney General, attorney; Jason Wade Rockwell, Assistant Attorney General, of counsel; Bruce A. Velzy, on the brief).

Deanna K. Tanner of the Pennsylvania bar, admitted pro hac vice, argued the cause for amicus curiae Delaware Riverkeeper and Delaware Riverkeeper Network (Aaron Joseph Stemplewicz and Deanna K. Tanner, attorneys; Aaron Joseph Stemplewicz and Deanna K. Tanner, on the brief).

The opinion of the court was delivered by

ACCURSO, J.A.D.

Save Hamilton Open Space (SHOS), a local citizens group, challenges the Department of Environmental Protection's issuance of a freshwater wetlands general permit 6 (GP6) to Thomas Orban/Square Properties, LLC in connection with the construction of a shopping center in Hamilton Township and the denial of SHOS's request for an adjudicatory hearing. SHOS raises three issues on appeal: first, it contends the GP6 is substantively non-compliant due to the misuse of the New Jersey Geological Survey Report, GSR-32 methodology to calculate recharge analysis in wetlands areas contrary to the Department's own rules; second, it contends the Department has never before permitted use of the GSR-32 methodology to calculate groundwater recharge in wetlands areas, and it is thus a new application requiring formal rulemaking; and third, it contends it was entitled to an adjudicatory hearing. Amici Curiae Delaware Riverkeeper and Delaware Riverkeeper Network support SHOS's position, contending "strict compliance with storm water management rules are of critical importance to New Jersey," and echoing its

arguments that the Department's issuance of the GP6 was arbitrary and capricious and its denial of a hearing improper.

Having reviewed the record, we determine SHOS's argument that it was entitled to an adjudicatory hearing is without sufficient merit to warrant discussion in a written opinion, R. 2:11-3(e)(1)(E); see In re Freshwater Wetlands Statewide Gen. Permits, 185 N.J. 452, 471 (2006) (holding third-party objector to development application lacked particularized property interest warranting an adversarial hearing before an administrative law judge). Because we cannot, however, discern where the agency has explained why Square Properties' use of the GSR-32 methodology to calculate recharge is consonant with the Department's regulations, which appear to expressly prohibit its use in these circumstances, we vacate the GP6 permit and remand for further fact-finding. In light of our disposition, we do not address SHOS's argument that the agency needed to proceed through rulemaking.

Although the engineering calculations underlying Square Properties' stormwater plan are complex, the issues before us are not. The matter has over a decade-long procedural history, most of which is irrelevant to the issues we decide. Suffice it to say that Square Properties, owner of a roughly five acre, heavily wooded site along Route 33 in Hamilton, applied for site plan approval

for a shopping center in 2006. SHOS participated in the public hearings as an objector.

As both a condition of its approval and part of a settlement agreement with SHOS, Square Properties agreed to apply for a GP6 permit to fill two areas of isolated, non-tributary wetlands of intermediate resource value, and that SHOS and its consultant, Princeton Hydro, would have the opportunity to review the stormwater plans and consult regarding stormwater management on the site. SHOS has maintained throughout the history of this matter that the wetlands areas on the property, essentially bowl-like depressions in the middle of the site, not only absorb all of the site's stormwater runoff but also runoff from neighboring properties resulting from the natural topography of the area. SHOS's members, several of whose backyards abut the site, contend nearby basements and backyards will be flooded unless Square Properties ensures its development of the site continues the vitally important function the existing wetlands currently provide for stormwater management in the surrounding area.

The heart of the dispute concerns Square Properties' use of the GSR-32 methodology to calculate groundwater recharge. Square Properties sought a GP6 permit issued under the authority of the Freshwater Wetlands Protection Act, N.J.S.A. 13:9B-1 to -30, and its implementing regulations, N.J.A.C. 7:7A-

1.1 to -22.20, to disturb less than one acre of isolated freshwater wetlands. N.J.A.C. 7:7A-5.6(a).[1] The parties agree Square Properties' proposed shopping center qualifies as a "major development" under N.J.A.C. 7:8-1.2, and thus is required to "comply in its entirety with the Stormwater Management Rules at N.J.A.C. 7:8." N.J.A.C. 7:7A-4.3(b)10. In order to satisfy the minimum design and performance standards for groundwater recharge in accordance with N.J.A.C. 7:8-5.4, Square Properties elected to "[d]emonstrate through hydrologic and hydraulic analysis that the site and its stormwater management measures maintain 100 percent of the average annual pre-construction groundwater recharge volume for the site." N.J.A.C. 7:8-5.4(a)2(i)(1).

Square Properties used the GSR-32 methodology to calculate pre-construction groundwater recharge volume for the site. In its comments to the Department on behalf of SHOS, Princeton Hydro objected to use of the GSR-32 methodology on two bases. First, it noted the New Jersey Geological Survey Report establishing the GSR-32 methodology states that wetlands were "eliminated from the analysis . . . because the direction of flow between ground-water and surface water or wetlands depends on site specific factors

[1] After the permit in this case was issued, the Department renumbered the relevant regulations, 49 N.J.R. 3849(a) (Dec. 18, 2017). The parties have referenced the regulatory numbers in effect when the Department approved the permit. We do the same.

and can also change seasonally." Emanuel G. Charles, et al., New Jersey Geological Survey Report GSR-32: A Method for Evaluating Ground-Water-Recharge Areas in New Jersey, N.J. Dep't of Envtl. Prot. & Energy, Div. of Sci. & Research, 6 (1993), https://www.nj.gov/dep/njgs/pricelst/gsreport/gsr32.pdf. The Report states that "[r]echarge (or discharge) from surface-water bodies, wetlands and hydric soils are not evaluated using the method. These areas are eliminated from the assessment." Id. at 1.

The Geological Survey Report explains that "[w]hether a wetland or surface-water body recharges ground water or receives discharge from ground water depends on the relative levels of the water table and the surface water and on the degree of interconnection between them." Id. at 92. Thus, one assumption limiting the accuracy of all recharge values generated by the GSR-32 methodology is that "[t]here is no addition (recharge) or subtraction (discharge) of ground water from surface-water bodies and wet areas." Id. at 44. The Report concludes:

> From the standpoint of a soil-water balance model used in this report, the fact that the recharge or discharge status of the wetlands does not depend on the factors used in the recharge simulations precludes the use of the model to quantify any recharge they may supply. Other modeling methods exist that can simulate recharge from surface water.

[Id. at 94 (emphasis added).]

Second, Princeton Hydro maintained that 4.14 of the site's 4.8 acres drain to "isolated and perched wetland systems located in closed depressions," and as a result, "rainfall and runoff which flows into these areas can only become groundwater recharge or potentially evapotranspiration."[2] Because of those site specific conditions, it contended Square Properties' "pre-development groundwater recharge analysis significantly under predicts the existing conditions at the site and consequently under predicts the potential post development deficit."

The Department apparently agreed in 2013 that use of the GSR-32 methodology was inappropriate. It wrote to Square Properties in August of that year, advising its application failed to meet the Department's Stormwater Management Rules at N.J.A.C. 7:8, and specifically noted the following:

> Groundwater Recharge: The presence of hydric soils (Othello) onsite precludes the use of GSR-32 in determining recharge. There is a certain amount of recharge occurring through the isolated wetland areas but this classification under GSR-32 yields zero recharge. Therefore, the spreadsheet underestimates recharge under existing conditions and consequently a

[2] The Geological Survey Report states "[e]vapotranspiration refers to water that is returned to the atmosphere from vegetated areas by evaporation from the soil and plant surfaces (dew and rain) and soil water that is taken up by plant roots and transpired through leaves or needles. Infiltrated water that is not returned to the atmosphere . . . becomes ground water." GSR-32 at 3.

> lower post development deficit. Please see the relevant public comments from Princeton Hydro representing "Save Hamilton Open Space."

Square Properties responded the following October by explaining that the Geological Survey Report establishing the GSR-32 methodology "does not establish recharge rates for approximately 75 different hydric soils," among them Othello in Hydrologic Group D, which was identified on site. It explained that it substituted Holyoke, another soil in Hydrologic Group D, which is included in the Groundwater Recharge Spreadsheet database, based on the recommendation in the New Jersey Stormwater Best Management Practices Manual that "where a soil series identified at a land development site has not been included . . . the user should select a similar soil series from the program's database." Sandra A. Blick, et al., New Jersey Stormwater Best Management Practices Manual (hereinafter, Stormwater BMP Manual), N.J. Dep't of Envtl. Prot., 6-15 (Apr. 2004), https://njstormwater.org/bmp_manual/NJ_SWBMP_6%20print.pdf. Square Properties contended that by replacing Holyoke for Othello in the spreadsheet, the annual recharge deficit was increased by approximately thirty-two percent, which was acceptable because of the size of the proposed subsurface basin.

Princeton Hydro responded in March 2014, stating:

> The GSR-32 analysis has been revised substituting the Othello soil unit with the Holyoke series (non-hydric).

> However, the revised analysis does not address our comment that due to the site's unique topography, all rainfall must either become groundwater recharge or evapotranspiration. As such the calculated 13 in/yr [recharge] is likely a gross underestimation of the annual recharge capacity of the property. It is herein reiterated that the NJGS documentation for the GSR-32 analysis indicates that this application of the analysis is beyond the scope of the original GSR-32 method.

It also noted that Square Properties' assertion that the proposed size of the infiltration basin as meeting the requirements of the GSR-32 analysis was refuted in any event by the applicant's revised groundwater mounding analysis.[3]

Specifically, Princeton Hydro contended the applicant's revised mounding analysis used a hydraulic conductivity figure in its calculations based on test pits, the location of which do not appear on the revised utility plan. Further, the tested elevations did not correspond with the proposed bottom elevation of the stormwater systems and the soil logs suggested the facilities might be located "in fine grained material that is expected to have a

[3] Square Properties' expert defined groundwater mounding as the increase in the groundwater elevation as a result of the infiltration from the proposed stormwater management facilities. The applicant performed a groundwater mounding analysis "to evaluate the groundwater mounding expected to result from an underground stormwater infiltration basin, two (2) dry wells, a bioretention swale, and a detention basin[,] . . . and to determine whether the increased groundwater elevations will adversely impact nearby underground structures, including basements."

hydraulic conductivity level that is orders of magnitude lower than what is assumed in [Square Properties'] analysis." Princeton Hydro also maintained the "HydroCAD calculations use an infiltration rate that is not consistent with the measured testing," suggesting the soil testing had not been conducted in compliance with the Stormwater BMP Manual.

Finally, Princeton Hydro asserted the applicant's mounding analysis "has (apparently unknowingly) determined that during the 100 year storm[4] the infiltration basin will fail due to mounding." Princeton Hydro asserted that failure should also be expected in much smaller storms, and would result in outflow from the site at rates "obviously . . . in excess of the current conditions where there is no outflow observed due to the unique existing topography." Princeton Hydro noted the revised plan did not reflect the impact of off-site contributory drainage flowing onto the site from neighboring properties. It concluded by noting that:

> the site in its current condition is providing valuable water quality, recharge, and volume control benefits. The proposed design will eliminate this functionality and jeopardize the ability of the proposed system to

[4] See Am. Cyanamid Co. v. State, Dep't of Envtl. Prot., 231 N.J. Super. 292, 299-300 (App. Div. 1989) (explaining "the 100-year storm is not based on any actual storm" but is instead "a theoretical storm constructed . . . using mathematical models" to mimic "a storm of a size that is expected to occur once a century or have a one percent chance of occurring in any one year" (citing N.J.A.C. 7:13-1.2)).

> perform these functions for runoff originating within the property boundaries as is further detailed in this letter.

Square Properties responded to the Department that Princeton Hydro "agrees . . . that the infiltration basin meets the recharge requirements for the site in accordance with GSR-32." As to Princeton Hydro's comment that the GSR-32 methodology was not suitable for the site, Square Properties simply reiterated its assertion that it relied on the recommendation in the instructions for the Groundwater Recharge Spreadsheet to substitute soils when the soil identified on site was not included in the database.

Princeton Hydro responded to those comments in July 2014, stating:

> 1. The annual recharge estimate is still low. Due to the site's unique closed depression topography all rainfall (~45 in/yr) must either become recharge or be evapotranspired by vegetation. As outlined in the GSR-32 documentation, a closed depression is out of the scope of the simple spreadsheet analysis. From a hydrologic perspective the represented 13 in/yr of recharge is too low. It is our strong professional opinion that this is a gross underestimate of existing conditions;
>
> 2. With respect to the mounding analysis, the applicant's professional now contends that the mound will intercept the basin bottom, as previously stated by Princeton Hydro, but insist[s] that it will not influence the operation of the basin. The mound is not shy of the basin bottom; it is three feet higher according to the calculations. It is Princeton Hydro's professional

> opinion that the mound will definitely impact the functioning of the proposed basin[.]

In a third point, Princeton Hydro noted the Stormwater Management Rule, N.J.A.C. 7:8-5.3, and the Stormwater BMP Manual placed "great value on natural systems that provide stormwater management services," and asserted the applicant's proposed filling of the wetlands resource was not consistent with the Rule.

In response, Square Properties provided the Department with yet another Groundwater Recharge Spreadsheet in September 2014, this one substituting "gravel pits," having an annual recharge of 15.9 inches, the highest annual recharge specified in the spreadsheet reference table, for the Othello soil identified on site. It did not respond to Princeton Hydro's assertion that all forty-five inches of annual rainfall on the site, due to its "unique closed depression topography," must either become recharge or be evapotranspired, rendering the site outside "the scope of the simple spreadsheet analysis." As to the comments regarding the mounding analysis, Square Properties asserted the groundwater mound was limited to the area within the subsurface infiltration basin and the average groundwater elevation is still below the bottom of the basin.

The Department contacted Princeton Hydro within weeks seeking its response. The Department's reviewing environmental engineer asked the

engineer at Princeton Hydro for "a list of all outstanding issues that have not been resolved." Noting "[w]e have had so many issues raised, commented, debated, answered and re-commented on this application," he stated Princeton Hydro's list "will be the basis going forward," which the Department would review and then "make a decision on the application." Princeton Hydro apologized for the delay in responding, said they would be "in touch," were "doing [their] best to keep up with multiple demand[s]" and "[i]n the meantime, our many prior review letters should be helpful for you to assess if the application is compliant with N.J.A.C. 7:8."

Princeton Hydro did not make any further response while the permit application was pending. Although Square Properties made further revisions to their plans, which were reviewed and commented on by the Department, neither entity copied SHOS or Princeton Hydro on any of their exchanges. This notwithstanding the several prior letters in the Department's file from SHOS's counsel, the most recent being from August 29, 2014, reminding of the underlying settlement agreement and asking "that the Department, Applicant and its consultants continue to provide the undersigned with copies of any and all documents and materials contemporaneous with their submission/mailing."

The Department continued to communicate with Square Properties, requiring it to account for off-site runoff, including from nearby homes, and

submit an updated mounding analysis. The Department noted that mounded water would partially rise into the infiltration basin at the peak of the 100-year storm, and that Princeton Hydro disputed the applicant's representation that the basin would continue to function as designed "because only some cells in the basin are affected." The Department also noted the mounding analysis showed increased ground water elevations of .3 feet for nearby homes, which the applicant contended was negligible as the existing ground water level was more than seven feet below grade.

In December 2015, the Department's reviewing environmental engineer completed a four-page summary engineering report of the application. The report noted the heavily wooded site "collects off-site contributory drainage" from two lots and several nearby homes, which "has been included in the analysis." The report confirmed that there was no runoff leaving the site, as "all stormwater runoff is either absorbed into the two wetland areas or evaporates."

The report stated the applicant's submitted calculations and stormwater report demonstrated that the dry wells, bio-retention swale and infiltration basins together would "retain and infiltrate all storms up to and including the 100-year storm, thus satisfying requirements under N.J.A.C. 7:8-5.4." Although noting Princeton Hydro "questioned the suitability of NJGSR-32

spreadsheet to model hydric soils onsite; applicant's engineer (RBS Engineering) submitted NJGSR-32 spreadsheet analyzing the recharge using both Othello and Holyoke soils to show that the proposed infiltration basin's capacity exceeds the recharge deficit by a wide margin."

As to the groundwater mounding analysis, the report noted the applicant's engineer's submitted calculations showing the maximum water surface level in the basin for the 100-year storm is approximately one foot below the emergency outlet elevation, precluding any discharge. And, assuming the basements of nearby homes are no more than seven feet below grade, the applicant's ground water mounding analysis showed that the highest, estimated ground water elevations will be half-a-foot or more below those basement floors.

The Department issued the GP6 permit in December 2015. SHOS timely challenged the permit and requested a hearing. Relying on comments presented to the Department by Princeton Hydro, SHOS reiterated its assertion that application of the GSR-32 methodology was inappropriate and grossly underestimated annual recharge. SHOS noted that Square Properties' engineer confirmed "the site does not produce any surface runoff and . . . also collects and provides direct volume control and groundwater recharge of runoff generated from off-site areas." Notwithstanding, the applicant's groundwater

recharge analysis "suggests that only thirty-percent (30%) of the on-site annual rainfall, all of which is captured by the existing closed depressions will become recharge." SHOS also maintained Square Properties' groundwater recharge analysis was "in direct conflict with the documented understanding of the site's hydrology" and its "mounding analysis fails to accurately reflect the proposed design and intended function of the infiltration basin."

The Commissioner issued an order upholding the permit and denying SHOS's request for a hearing, finding no statutory right or any particularized property interest entitling SHOS to an adjudicatory-type hearing. As to the merits, the Commissioner noted that under N.J.A.C. 7:8-5.4(a)(3), Square Properties "was required to show that no runoff would leave the [p]roperty post-construction." Addressing SHOS's contention that Square Properties underestimated the pre-construction recharge volume because the property experiences approximately forty-five inches of rain annually and Square Properties calculated it recharges between "10 and 13 inches, depending on the soil type selected for the areas of Othello soil," the Commissioner stated "[t]he method Square Properties used to calculate recharge is expressly allowed by the Department's rules, see N.J.A.C. 7:8-5.6(b), and SHOS has not provided an alternative method for calculating a more appropriate pre-construction recharge volume."

The Commissioner further noted that "even if the recharge analysis . . . underestimated the pre-construction recharge volume," Square Properties' separate stormwater analysis "supports the conclusion that, since all stormwater is retained onsite both pre- and post-construction, the appropriate groundwater recharge volume is likewise maintained as required by N.J.A.C. 7:8-5.4(a)(2)(i)(1)." Thus, while concluding "the analysis used by Square Properties was appropriate under these circumstances, the Commissioner found the stormwater analysis provides additional support for the Department's conclusion that the recharge requirement was satisfied."

Finally, the Commissioner found the agency's conclusion that Square Properties had demonstrated the maximum water level during the 100-year storm would be a foot below the emergency overflow drain, thus precluding any discharge, was reasonable and supported by the record. The Commissioner rejected SHOS's contention that Square Properties' own mounding analysis demonstrated the infiltration basin would fail in a 100-year storm because groundwater would rise above the bottom of the basin resulting in overflow. Instead, the Commissioner accepted Square Properties' assertion that its mounding analysis "showed that groundwater would rise above only

half of the twenty 'cells'[5] in the infiltration basin," leaving the other ten functioning and keeping the groundwater level from reaching the emergency overflow drain. SHOS appeals, reprising the arguments it made to the Commissioner.

Our assessment of the Commissioner's decision is governed by a familiar standard of review. "An appellate court reviews a final agency decision with deference, and will not reverse the ultimate determination of an agency unless the court concludes that it was 'arbitrary, capricious or unreasonable, or that it lacked fair support in the evidence, or that it violated legislative policies' expressed or implied in the act governing the agency." In re Freshwater Wetlands Gen. Permit No. 16, 379 N.J. Super. 331, 341 (App. Div. 2005) (quoting Campbell v. Dep't of Civil Serv., 39 N.J. 556, 562 (1963)). Our traditional deference to an agency's "specialized expertise," In re Freshwater Wetlands Prot. Act Rules, 180 N.J. 478, 489 (2004), "is even stronger when the agency, like DEP in regard to wetlands, 'has been delegated discretion to determine the specialized and technical procedures for its tasks,'" In re Freshwater Wetlands Gen. Permits, 372 N.J. Super. 578, 593 (App. Div. 2004) (quoting City of Newark v. Nat. Res. Council, Dep't of Envtl. Prot., 82 N.J. 530, 540 (1980)). Importantly, however, "[w]hile we must defer to the

[5] Each "cell" is a 30-foot by 30-foot area of the property.

agency's expertise, we need not surrender to it." N.J. Chapter of Nat'l Ass'n of Indus. & Office Parks v. N.J. Dep't of Envtl. Prot., 241 N.J. Super. 145, 165 (App. Div. 1990) (finding there was "simply nothing in this record to indicate why or how the DEP chose that [7:1] ratio for enhancement mitigation purposes").

We also extend substantial deference to an agency's interpretation of its own regulations, reasoning that "the agency that drafted and promulgated the rule should know the meaning of that rule." In re Gen. Permit No. 16, 379 N.J. Super. at 341-42 (quoting Essex Cty. Bd. of Taxation v. Twp. of Caldwell, 21 N.J. Tax 188, 197 (App. Div. 2003)). Of course, "an agency may not use its power to interpret its own regulations as a means of amending those regulations or adopting new regulations." Id. at 342 (quoting Venuti v. Cape May Cty. Constr. Bd. of Appeals, 231 N.J. Super. 546, 554 (App. Div. 1989)). And because a permitting decision by the Department is a quasi-judicial determination, reasoned fact-finding is essential. In re Freshwater Wetlands Gen. Permits, 372 N.J. Super. at 594. As Judge Conley explained in another case challenging the issuance of a GP6 permit:

> [N]o matter how great a deference the court is obliged to accord the administrative determination which it is being called upon to review, it has no capacity to review at all unless there is some kind of reasonable factual record developed by the

> administrative agency and the agency has stated its reasons grounded in that record for its action.
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> [Id. at 595 (alteration in original) (quoting State v. Atley, 157 N.J. Super. 157, 163 (App. Div. 1978)).]

Applying those standards here makes obvious to us the Department's issuance of the GP6 permit to Square Properties should be vacated. We can discern no reason for the Commissioner's conclusion that "[t]he method Square Properties used to calculate recharge is expressly allowed by the Department's rules." Indeed, the opposite would appear to be true. N.J.A.C. 7:8-5.6(b), the regulation the Commissioner cited in support of that statement, provides only that groundwater recharge "may" be calculated in accordance with the GSR-32 methodology.[6] But as the record appears to make abundantly clear, and as the agency itself concluded in 2013, the Geological Survey Report establishing the GSR-32 methodology "precludes the use of GSR-32 in determining recharge" for this site because of the presence of wetlands. See GSR-32 at 94.

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[6] Compare N.J.A.C. 7:8-5.6(a), which provides stormwater runoff "shall" be calculated in accordance with the USDA Natural Resources Conservation Service methodology, or the Rational Method for peak flow and the Modified Rational Method for hydrograph computations. The agency's choice of the permissive "may" for calculation of groundwater recharge in accordance with the GSR-32 methodology, plainly signals other alternatives, see N.J. Dep't of Envtl. Prot. v. Alloway Twp., 438 N.J. Super. 501, 512 (App. Div. 2015) (noting the "bedrock assumption" that statutory language is not meaningless or unnecessary), presumably in recognition of the expressed limitations of the GSR-32 methodology.

The Department, echoed by Square Properties, argues to us that because the Geological Survey Report "says that hydric soils are frequently in wetlands, have 'undetermined recharge value,' and are assigned a 'recharge value of zero,'"[7] that "Square Properties thus proceeded as allowed by the duly-promulgated GSR-32 Method." The Department, however, provides no authority for that conclusion, and we can find none.

Nowhere in the Geological Survey Report does it state that the GSR-32 methodology can be used to calculate the recharge value of wetlands simply by assigning them a recharge value of zero as the Department asserts. Rather, the

[7] The Department cites only the soil matrix in Appendix 5 of the Geological Survey Report, "Recharge Factors and Constants by Soil Series," which assigns a zero recharge factor for hydric soils such as Othello. It does not address the explanation provided in Appendix 7, "Development and Application of the Soil-Water Budget to the Method," for why those zero values for hydric soils were included in the Appendix 5 soil matrix, namely, that "[t]o include all 252 soil units [imported from the Soil Conservation Service's New Jersey soils database] in appendix 5, R-factor and R-constant values that yield zero-recharge were also included in appendix 5 for hydric soils (75)" not among the 159 soil units simulated. It also does not address Appendix 7's statement that hydric soils were assigned a recharge value of zero for use in Appendices 3 ("Recharge Soil Group by Soil Unit"), 4 ("Recharge Constants and Factors by Recharge Soil Group") and 5, but eliminated from the list of those slated for recharge analysis. Thus review of that explanation and those appendices would appear to make clear that hydric soils were assigned a zero value only to permit their inclusion in the list of all known New Jersey soils included in the soil databases, i.e., soil groups, units and series tables, not for actual use in calculating recharge using the GSR-32 groundwater recharge methodology, which the Report makes clear cannot be used to calculate the recharge value of wetlands.

Report devotes an entire appendix to explaining why "the recharge or discharge status of wetlands does not depend on the factors used in the recharge simulations" forming the basis of the GSR-32 method, thus "preclud[ing] the use of the model to quantify any recharge they may supply." Far from providing, as respondents assert, that the GSR-32 model can reliably compute the recharge value of wetlands, the Report, adopted at N.J.A.C. 7:8-5.6(b), appears to explain why the GSR-32 methodology would be unreliable and its use thus precluded for that task. Nowhere does the Geological Survey Report suggest how the GSR-32 methodology might be modified to calculate the recharge values of wetlands. Instead, the Report states "[o]ther modeling methods exist that can simulate recharge from surface water." GSR-32 at 94.

Further, the Commissioner does not explain why the agency concluded in 2013 that "[t]he presence of hydric soils (Othello) onsite precludes the use of GSR-32 in determining recharge," yet approved the applicant's use of the method when it issued the GP6 permit in 2015. The December 2015 four-page engineering summary report, on which the Commissioner relied, notes SHOS's objection to use of the GSR-32 methodology, but does not explain why its use is permitted by the regulations. Instead, the report merely states that the applicant submitted a GSR-32 spreadsheet "analyzing the recharge using both

Othello and Holyoke soils to show that the proposed infiltration basin's capacity exceeds the recharge deficit by a wide margin."

In its brief on appeal, the Department concedes that SHOS's assertion "that determining if wetlands are recharge or discharge areas, or neither, is beyond the scope of the GSR-32 method . . . . is literally accurate." It insists, however, that SHOS "misses the point that Square Properties agreed to substitute soil, pursuant to the [Stormwater BMP Manual]."

The Stormwater BMP Manual instructs users completing the Microsoft Excel-based Annual Recharge worksheet to estimate recharge under both pre- and post-development site conditions that

> [a]t the time of the [New Jersey Groundwater Recharge Spreadsheet's] development, all soil series mapped in New Jersey were included in its databases. Nevertheless, instances may arise where a soil series identified at a land development site has not been included. In such instances, the user should select a similar soil series from the program's database.
>
> [Stormwater BMP Manual at 6-15.]

The Manual makes plain, however, that the spreadsheet is based on the Geological Survey Report and "[a]ll pertinent GSR-32 databases and computational algorithms have been incorporated," and thus the spreadsheet "is governed, in part, by the assumptions and limitations of GSR-32." Id. at 6-5. Accordingly, if the presence of wetlands on site would preclude use of the

GSR-32 methodology, use of the Groundwater Recharge Spreadsheet would appear likewise precluded. Neither the Commissioner in his decision nor the Department in its brief explains how the Stormwater BMP Manual's instruction to users to select a similar soil series from the program's database when the identified soil is not included permits an applicant to rely on the GSR-32 methodology to calculate the recharge value of wetlands on a site.[8] But see In re Petition of Elizabethtown Water Co., 107 N.J. 440, 460 (1987) (stating "grounds upon which an administrative order must be judged are those upon which the record discloses that the action was based" and not upon an after-the-fact explanation) (quoting Sec. & Exch. Comm'n v. Chenery Corp., 318 U.S. 80, 87 (1943)). See also In re N.J.A.C. 7:1B-1.1 Et Seq., 431 N.J. Super. 100, 139 (App. Div. 2013) (stating "[a]n appellate brief is no place for an agency to try and rehabilitate [the agency's] actions").

[8] In support of its substitution of Holyoke for Othello in the Groundwater Recharge Spreadsheet, Square Properties noted the Geological Survey Report "defin[ing] methods for evaluating groundwater recharge in New Jersey . . . does not establish recharge rates for approximately 75 different hydric soils," and the Stormwater BMP Manual "recommends the user select an alternate but similar soil type in the spreadsheet analysis when the identified soil type is not included." As we noted, the Manual states "all soil series mapped in New Jersey" at the time the Spreadsheet was developed were included in its databases. Stormwater BMP Manual at 6-15. It would be difficult to conclude the Manual intends by that remark to instruct the user to substitute a soil type deliberately not mapped as part of the GSR-32 methodology for use in the spreadsheet, especially in light of its incorporation of "[a]ll pertinent GSR-32 databases and computational algorithms." Id. at 6-5.

Although the Commissioner concluded that even if the recharge analysis "underestimated the pre-construction recharge volume," Square Properties' separate stormwater analysis "further supports the conclusion that, since all stormwater is retained onsite both pre- and post-construction, the appropriate groundwater recharge volume is likewise maintained as required by N.J.A.C. 7:8-5.4(a)(2)(i)(1)." As underestimating pre-construction recharge volume would consequently appear to result in underestimating the potential post-construction deficit, and thus whether the project can meet required peak flow rate reduction consistent with containing all stormwater on site post-construction, we do not follow the Commissioner's logic. Underestimating pre-construction recharge volume would appear to render all the other calculations that depend on its accuracy, including the groundwater mounding analysis, suspect. A stormwater analysis based on underestimated existing conditions would appear likely to compound the error, not counteract it.

A state agency rendering a final agency decision must explain the specific reasons for its determination. See In re Freshwater Wetlands Gen. Permits, 372 N.J. Super. at 580. We cannot give deference to an agency's factfinding unless we have "confidence that there has been a careful consideration of the facts in issue and appropriate findings addressing the critical issues in dispute." Bailey v. Bd. of Review, 339 N.J. Super. 29, 33

(App. Div. 2001). The Supreme Court recently addressed the issue of administrative fact-finding, stating that "[a] lack of fair support is demonstrated by the decisionmaker's 'failure to consider all the evidence in a record,' or the 'complete misperception of the facts submitted in a record.'" US Masters Residential Prop. (USA) Fund v. N.J. Dep't of Envtl. Prot., ___ N.J. ___, ___ (2019) (slip op. at 29) (citations omitted).

"The requirement of findings is far from a technicality and is a matter of substance. It . . . is a fundamental of fair play that an administrative judgment express a reasoned conclusion. A conclusion requires evidence to support it and findings of appropriate definiteness to express it." N.J. Bell Tel. Co. v. Commc'ns Workers of Am., 5 N.J. 354, 375 (1950) (citation omitted). "[F]indings of fact [must] be sufficiently specific under the circumstances of the particular case to enable the reviewing court to intelligently review an administrative decision and ascertain if the facts upon which the order is based afford a reasonable basis for such order." Id. at 377. "When an agency's decision is not accompanied by the necessary findings of fact, the usual remedy is to remand the matter to the agency to correct the deficiency." In re Issuance of a Permit by Dep't of Envtl. Prot. to Ciba-Geigy Corp., 120 N.J. 164, 173 (1990); see In re State & Sch. Emps.' Health Benefits Comm'ns' Implementation of I/M/O Yucht, 233 N.J. 267, 280 (2018).

Because it is not possible on this record to determine why the Commissioner concluded Square Properties' use of the GSR-32 methodology to calculate groundwater recharge was consonant with the Department's regulations, we vacate the permit and remand for further fact-finding. In doing so, we note the Commissioner's failure to also address whether site specific factors, in addition to the expressed limitations of the GSR-32 model, required the applicant to use a different model to calculate recharge.[9] If it is the Department's position that the GSR-32 methodology can be used to calculate groundwater recharge on a site where wetlands are present, notwithstanding the Geological Survey Report's statement precluding use of the GSR-32 methodology to quantify recharge of wetlands, it should also address why that conclusion is permissible in the absence of formal rulemaking.[10] See In re Authorization for Freshwater Wetlands Statewide Gen. Permit 6, 433 N.J. Super. 385, 413-15 (App. Div. 2013).

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[9] Although the Commissioner in his decision stated that SHOS had not "provided an alternative method for calculating a more appropriate pre-construction recharge volume," such was not its burden. See Tanurb v. N.J. Dep't of Envtl. Prot., 363 N.J. Super. 492, 503 (App. Div. 2008). SHOS, however, insists in its brief that it suggested a water-budget for the site would be an appropriate alternative.

[10] We note in this regard that the Department in its brief did not respond to SHOS's allegation that the Department has never previously permitted use of the GSR-32 methodology to calculate groundwater recharge in such cases.

The Commissioner also fails to explain adequately his conclusion that the applicant's mounding analysis satisfactorily demonstrated compliance with the runoff quantity requirements under N.J.A.C. 7:8-5.4(a)(3), in light of Princeton Hydro's calculations showing the infiltration basis would fail in a 100-year storm. Although we have no hesitation in finding SHOS has no right to an adjudicatory hearing, we note that whether a third-party objector's due process rights may be satisfied by an agency's review process depends in significant part on the objector's ability to participate in the process. See In re Freshwater Wetlands Statewide Gen. Permits, 185 N.J. at 471-74.

We have neither the need nor the ability to resolve SHOS's claim that it was shut out of the agency review process in 2014. We note only that SHOS provided extensive comments through several years and that the permit was issued without a number of its well-documented concerns being substantively addressed. SHOS had a right to submit its arguments, views and data relevant to the permit to the Department through Princeton Hydro. See N.J.S.A. 52:14B-3.1(a). The Department likewise had an obligation to consider the submissions and "to make findings of fact and conclusions of law regarding those comments." Rinaldo v. RLR Inv., LLC, 387 N.J. Super. 387, 401-02 (App. Div. 2006); see N.J.S.A. 13:9B-9. In light of our remand for further fact-finding and SHOS's inability to comment on the applicant's last plan

revisions, we recommend the record be re-opened to permit SHOS to provide its comments on those plans to the agency.

We vacate the issuance of the GP6 permit and remand for further fact-finding consistent with this opinion. We affirm the Commissioner's decision that SHOS is not entitled to an adjudicatory hearing. We do not retain jurisdiction.

Affirmed in part, reversed in part.