

United States Court of Appeals For the First Circuit

No. 21-1188

HISTORIC BRIDGE FOUNDATION; FRIENDS OF THE FRANK J. WOOD BRIDGE;
NATIONAL TRUST FOR HISTORIC PRESERVATION IN THE UNITED STATES,

Plaintiffs, Appellants,

v.

PETE BUTTIGIEG, in his official capacity as Secretary of the
United States Department of Transportation; TODD JORGENSEN, in
his official capacity as the Administrator of the Maine Division
of the FHWA; STEPHANIE POLLACK, in her official capacity as
Deputy Administrator of the Federal Highway Administration;
BRUCE VAN NOTE, in his capacity as Commissioner of the Maine
Department of Transportation,

Defendants, Appellants.

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MAINE

[Hon. Lance E. Walker, U.S. District Judge]

Before

Kayatta and Barron, Circuit Judges,
and Talwani,* District Judge.

Andrea C. Ferster, with whom Phelps Turner and Conservation
Law Foundation were on brief, for appellants.

Elizabeth S. Merritt for National Trust for Historic
Preservation in the United States, appellant.

Jonathan M. Dunitz, with whom Martha C. Gaythwaite and Verrill
Dana, LLP were on brief, for Waterfront Maine, Brunswick, LLC,

* Of the District of Massachusetts, sitting by designation.

amicus curiae.

Sommer H. Engels, with whom Jean E. Williams, Acting Assistant Attorney General, Environment and Natural Resources Division, U.S. Department of Justice, Ellen J. Durkee, Joshua P. Wilson, and Gregory M. Cumming, Attorneys, Environment and Natural Resources Division, U.S. Department of Justice, and Silvio Morales, Attorney, U.S. Department of Transportation, were on brief, for Pete Buttigieg, Todd Jorgensen, and Stephanie Pollack, appellees.

Thomas A. Knowlton, Deputy Attorney General, with whom Aaron M. Frey, Attorney General, and James Billings, Chief Counsel, Maine Department of Transportation, were on brief, for Bruce Van Note, appellee.

January 4, 2022

KAYATTA, Circuit Judge. The Frank J. Wood Bridge ("the Bridge") has served for nearly ninety years as a key connection between Topsham and Brunswick in Maine. Now though, it is potentially unsafe and getting worse. So the question is, what to do? The state of Maine has decided to tear it down and replace it with a modern bridge. Friends of the Frank J. Wood Bridge and other historic preservation groups (collectively, "the Friends") would rather the state rehabilitate the Bridge to preserve its historic nature and that of the surrounding area. The Federal Highway Administration (FHWA) eventually approved Maine's decision. The Friends then asked the United States district court to review and set aside that approval. In a careful opinion, the district court considered and rejected the numerous arguments made by the Friends in seeking to set aside the decision to replace the Bridge. On de novo review, we now affirm all of the district court's holdings, save one. Our reasoning follows.

I.

A.

The Frank J. Wood Bridge is a riveted steel through-truss bridge constructed in 1932 to connect the towns of Topsham and Brunswick, Maine. It is a "key vehicular and pedestrian connection" between those communities, carrying pedestrians, bicyclists, and nearly 19,000 vehicles a day across the Androscoggin River. The Bridge is also a part of the Brunswick

Topsham Industrial Historic District, which includes the historic Cabot Mill and Pejepscot Paper Company.

Prompted by the collapse of a truss bridge in Minnesota that caused thirteen deaths and a hundred injuries, the governor of Maine issued an executive order in 2007 directing the Maine Department of Transportation (MDOT) to "reassess the safety of Maine's bridges and take appropriate action to mitigate any safety concerns." MDOT prepared a report, which provided a "comprehensive overview of the state of Maine's bridge infrastructure" and identified forty-four fracture-critical bridges¹ within the state, including the Frank J. Wood Bridge.

In 2015, MDOT launched the Frank J. Wood Bridge Improvement Project to address the Bridge's "poor structural conditions and load capacity issues" and to improve "mobility and safety . . . for pedestrians and bicyclists." MDOT hired an engineering firm to present preliminary design plans for several alternatives and to assess the potential cost of each alternative. MDOT used its consultant's studies and analysis to create a Preliminary Design Report (PDR), which was open for public comment prior to the publication of a final report in 2017.

¹ A fracture-critical bridge has elements that lack "redundancy," such that the failure of one of those elements "may ultimately lead to a catastrophic failure of the entire bridge."

Between the preliminary and final reports, an inspection of the Bridge was completed in June 2016. That inspection revealed that the Bridge is "structurally deficient" and is therefore unable to support some legal vehicle weights. So MDOT placed weight limits on vehicles that may cross the Bridge. At the time of the FHWA's final report under review, five-axle trucks and other commercial vehicles that weigh more than twenty-five tons were required to take a detour. The FHWA predicted that "[c]ontinued deterioration will likely result in further [weight restrictions] . . . and eventual closure" if the Bridge is not either rehabilitated or replaced.²

To ensure that a roadway connection remained between these communities, MDOT considered in detail three alternatives to "no action": Two involved rehabilitating the Bridge to extend its service life by 75 years -- the only difference between these two alternatives was that one proposed an additional sidewalk. The third alternative involved building a new steel girder bridge on a curved alignment just upstream from the current Bridge, which

² Though outside the record, we note that MDOT has recently restricted the traffic over the Bridge even further in response to new information revealed by a September 2021 inspection. Now, no commercial vehicle or vehicle that weighs over ten tons (such as fire engines and school buses) may traverse the Bridge. See News Release, MDOT, All Commercial Vehicles Prohibited from Frank J. Wood Bridge (Nov. 23, 2021), <https://www.maine.gov/mdot/news/>; News Release, MDOT, New Restriction for Frank J. Wood Bridge (Oct. 18, 2021), <https://www.maine.gov/mdot/news/>.

would last for 100 years and would include sidewalks and five-foot shoulders on both sides to accommodate pedestrians and bicyclists.³ MDOT estimated how much the construction and maintenance of each alternative would cost. These estimates included myriad cost assumptions and in-the-weeds decision points, for which MDOT primarily deferred to its consultant. MDOT then considered how to compare the alternatives -- either by discounting future costs to current dollar equivalents (what the parties call the "life-cycle cost analysis") or by comparing the total costs without taking into account when those expenses would be incurred (what the parties call the "service-life analysis"). Although it calculated life-cycle costs using a discount rate, MDOT principally relied on non-discounted future costs as the better basis upon which to compare the alternatives. Its calculations revealed that replacing the Bridge would cost \$17.3 million over the expected 100-year life of the new bridge,⁴ while rehabilitating the historic Bridge would cost \$35.2 million over 75 years.⁵ Based on that

³ MDOT also considered three other alternatives but rejected them prior to detailed study: (1) building a new bridge on the same alignment, which would take longer than the other alternatives and require a detour; (2) building a new bridge downstream from the current Bridge, which would cause the river's water to rise substantially; and (3) rehabilitating the Bridge for a 30-year life, which would be imprudent because of the scope of repairs needed.

⁴ \$13.7 million, if discounted.

⁵ \$20.8 million, if discounted.

\$17.9-million differential and other benefits of a modern bridge, MDOT concluded that it would seek to build a new bridge and demolish the Frank J. Wood Bridge.

B.

Because federal funds would be used to construct the replacement bridge, MDOT was required to apply to the FHWA, a division of the federal Department of Transportation (DOT), for approval of its plan. See 23 U.S.C. § 106 (detailing DOT's review and oversight process for projects receiving federal funds). When federal funds are sought for projects that may implicate historic sites, two congressional enactments concerned with preserving those sites come into play: The National Environmental Policy Act (NEPA) and section 4(f) of the Department of Transportation Act ("section 4(f)"). See also 54 U.S.C. § 306108 (requiring all federal agencies to "take into account the effect of [any] undertaking on any historic property").

NEPA is primarily a procedural statute, aimed at ensuring agencies will carefully consider detailed information concerning the environmental impacts of their actions. NEPA does not mandate any specific outcome; it only requires agencies to conduct environmental studies. DOT v. Pub. Citizen, 541 U.S. 752, 756 (2004). But a full Environmental Impact Statement (EIS) is only required when a proposed action will "significantly" impact the "quality of the human environment." 42 U.S.C. § 4332(2)(C).

If an agency does not believe an EIS will be required, it will prepare -- like here -- an environmental assessment to document its conclusions. If an agency ultimately determines that that an EIS is not needed, it will issue a Finding of No Significant Impact explaining that decision. 40 C.F.R. §§ 1501.4(c), 1508.9(a)(1), 1508.13 (2018) (amended and reconfigured by 85 Fed. Reg. 43,304, 43,324 (July 16, 2020)).

Section 4(f), conversely, "imposes a substantive mandate." Neighborhood Ass'n of the Back Bay, Inc. v. Fed. Transit Auth., 463 F.3d 50, 64 (1st Cir. 2006). If a protected property is "use[d]," the agency may only approve the project if there is "no prudent and feasible alternative." 49 U.S.C. § 303(c). By regulation, an alternative is not feasible "if it cannot be built as a matter of sound engineering judgment," and an alternative is not prudent if, among other things, it "results in additional construction, maintenance, or operational costs of an extraordinary magnitude." 23 C.F.R. § 774.17.

In February 2018, the FHWA opened for public comment a preliminary Environmental Assessment under NEPA and a Draft 4(f) Evaluation, which analyzed the various alternatives for the Frank J. Wood Bridge. The FHWA adopted MDOT's cost estimates and concurred with MDOT's conclusion that a service-life analysis -- that is, one with no discounting -- was the most accurate methodology to compare the "expected real costs" of the

alternatives. Comparing only the non-discounted figures, the FHWA concluded that the rehabilitation alternatives were "not prudent due to [the non-discounted] Service Life Costs of extraordinary magnitude."⁶

The pro-preservation groups commented on these plans with expert evaluations of various aspects of the state and federal agencies' reports. One of plaintiffs' experts faulted the FHWA for failing to discount before comparing its future cost estimates for each alternative. The expert explained that, contrary to the decision made here, the FHWA's Office of Asset Management's "preferred method of comparing the costs of [] project alternatives" is to discount future costs. See DOT, FHWA, Life-Cycle Cost Analysis Primer (Aug. 2002). The expert then challenged "a few cost estimate items," but he simply stated assumptions without detailing his calculations and without reasoning why the agency's conclusions were erroneous. The expert concluded that, if his cost assumptions were used and discounted, rehabilitating the Bridge would actually be about 4% cheaper over the life of the project than replacing it, and thus "the replacement and rehabilitations options are essentially a push."

⁶ FWHA was also required to consider environmental impacts associated with the project alternatives under NEPA and other statutory schemes, but we do not discuss them here because plaintiffs have not challenged any of the agency's environmental conclusions.

The FHWA stood its ground. It issued a Final (Revised) Environmental Assessment and Final Section (4) Evaluation in February 2019 that maintained the conclusion that the rehabilitation alternatives were not prudent. The FHWA explained that it chose not to make a comparison of the discounted costs "the primary basis for a decision on this project" because discounting "is not an indicator of the actual costs a transportation agency will expend on an alternative over the timeframe used for the analysis" and because "[s]tate transportation agencies are not often able to set money aside today, and make interest earning investments, to pay for future work." The FHWA then averred -- without any further explanation -- that "[s]ervice life cost," i.e., the total money it would cost to construct and maintain a bridge without "translat[ing] or discount[ing] to current dollar equivalents," "provides a more accurate comparison of the expected real costs to an agency."

The FHWA concluded that the service-life cost differential -- \$17.3 million over 100 years versus \$35.2 million over 75 years, or 103.4% -- was of such an "extraordinary magnitude" that it may approve the replacement of the historic Bridge because any alternatives to this "use" would be imprudent. See 49 U.S.C. § 303(c). FHWA did not make a separate determination that the differential after discounting -- \$13.7 million over 100 years versus \$20.8 million over 75 years, or 51.8% -- was also of

such an "extraordinary magnitude" that it would be imprudent under section 4(f). After finding no prudent alternative, the FHWA approved MDOT's plan to construct a modern bridge upstream of the current Bridge and to tear down the historic Bridge when construction is finished. The next month, the FHWA issued a Finding of No Significant Impact, explaining why the project did not require a full Environmental Impact Statement.

C.

The Friends challenged the FHWA's decision in district court. They claimed that the agency acted arbitrarily and capriciously by failing to compare discounted life-cycle costs of the alternatives. They also made a slew of line-item challenges to various calculations of costs for each alternative, including whether the agency justified the decisions: (1) to include a \$4 million temporary bridge in the construction costs of rehabilitating the historic Bridge; (2) to charge only a \$1 million "premium" for a work trestle needed to construct the replacement bridge, rather than the full cost of the trestle; (3) to charge \$1.44 more per unit for "structural steel erection" to rehabilitate the Bridge than to replace it; (4) to estimate that a rehabilitated Bridge would need to be repainted three times over its 75-year lifespan at a cost of \$4 million per painting; and (5) to include two \$1 million future substructure rehabilitations in the rehabilitation alternatives' future costs,

considering that a recent rehabilitation in 2006 in combination with the current planned rehabilitation should last an additional 30-75 years.⁷

The district court rejected the preservation groups' challenges and affirmed each of FWHA's conclusions. Although it expressed some "skepticism" regarding certain cost estimates, the court nevertheless concluded that the challenged estimates were not "clearly erroneous or so implausible that they cannot be deemed to reflect administrative expertise about the actual costs associated" with rehabilitating the Bridge or building a new one. Plaintiffs appealed.

II.

Agency determinations under NEPA and section 4(f) are reviewed under the Administrative Procedure Act (APA) and accordingly "shall not be overturned unless 'arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.'" Conservation L. Found. v. FHWA, 24 F.3d 1465, 1471 (1st Cir. 1994) (quoting 5 U.S.C. § 706(2)(A)). "The task of a court reviewing agency action under the APA's 'arbitrary and capricious' standard is to determine whether the agency has

⁷ The plaintiffs also argued that a deck replacement scheduled for year 40 for the rehabilitated bridge was unnecessary until year 50 and that the new bridge's cost estimates did not include a similar deck replacement, but they did not press these arguments on appeal.

examined the pertinent evidence, considered the relevant factors, and 'articulate[d] a satisfactory explanation for its action including a rational connection between the facts found and the choice made.'" Airport Impact Relief, Inc. v. Wykle, 192 F.3d 197, 202 (1st Cir. 1999) (quoting Penobscot Air Servs., Ltd. v. FAA, 164 F.3d 713, 719 (1st Cir. 1999)). We review the district court's APA decisions de novo. Assoc. Fisheries of Me., Inc. v. Daley, 127 F.3d 104, 109 (1st Cir. 1997) (explaining that this court, in reviewing a decision based on the APA, applies "the same legal standards that pertain in the district court and afford[s] no special deference to that court's decision").

Although actions taken under NEPA and section 4(f) "are subject to a highly deferential abuse of discretion standard of review," Conservation L. Found., 24 F.3d at 1471, a court confronting a NEPA challenge should nevertheless "carefully review[] the record and satisfy[] itself that the agency has made a rational decision" to "ensure that agency decisions are founded on a reasoned evaluation of the relevant factors." Airport Impact Relief, 192 F.3d at 203. And section 4(f) is "more stringent where it applies." Save Our Heritage v. FAA, 269 F.3d 49, 58 (1st Cir. 2001); see also Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 415 (1971) (explaining that although "the Secretary's decision is entitled to a presumption of regularity," that does not "shield his action from a thorough, probing, in-depth review").

III.

We begin with the plaintiffs' line-item challenges to the cost estimates.⁸ To start, we see nothing irrational in the FHWA's decision to rely on the estimates prepared by MDOT based on conclusions by its contract engineering firm. And, following our de novo review of the record provided on appeal, we find no basis in the Friends' preserved arguments to reject any of the challenged estimates as either unsupported by substantial evidence or as arbitrary and capricious. Nor do we see any need to discuss them all in detail in view of the district court's careful review of the relevant estimates. That said, a few deserve a bit of attention: (1) the cost differential of structural steel erection between rehabilitating and replacing the Bridge; (2) the inclusion of a \$4 million temporary bridge in the cost estimates for the rehabilitation alternatives; and (3) the decision to include only a \$1 million dollar "premium" for an admittedly more expensive work trestle for the replacement alternative.

First, we acknowledge that there is little, if any, explanation in the record for the difference in price estimates used for "structural steel erection" between the alternatives. We

⁸ The Friends also complain that the FHWA did not adequately consider a 30-year rehabilitation alternative, but we find that it reasonably concluded that a 30-year plan was imprudent due to the substantial repairs necessitated by the results of the 2016 inspection.

find no indication, though, that the Friends sought more of an explanation before the FHWA in the first instance,⁹ so there was no occasion for the agency to further explain itself and we decline to require a more fulsome explanation now.¹⁰ See Quincy Com. Ctr., LLC v. Mar. Admin., 451 F.3d 1, 6 (1st Cir. 2006) ("Ordinarily, a party forfeits its right to challenge agency action post hoc if it has failed to apprise the agency of its positions in a timely manner." (citing DOT v. Pub. Citizen, 541 U.S. at 764-66; Vt. Yankee Nuclear Power Corp. v. NRDC, 435 U.S. 519, 553 (1978); Valley Citizens for a Safe Env't v. Aldridge, 886 F.2d 458, 462 (1st Cir. 1989))).

Second, we have considered in particular the Friends' arguments concerning a \$4 million temporary bridge. The FHWA reasoned that rehabilitating the existing Bridge would close it to traffic for twenty months, resulting in detours. Estimating traffic volume (at 19,000 vehicles per day), the resulting time delays, and the value of that lost time to users (\$22,000 per day),

⁹ At oral argument, the Friends contended that they had raised the price differential of structural steel erection before the agency, so we asked them to file a supplemental letter indicating where they had done so. The citations they provided show general complaints about the myriad cost estimates undergirding the FHWA's decision, but none (as described by the Friends) specifically challenge the difference in the cost estimate of structural steel erection between alternatives.

¹⁰ Given the possibility that the estimates include labor as well as raw materials, there is nothing self-evidentially off-base about the differing estimates.

the agency calculated the bridge closure as imposing a user cost of \$13 million. To avoid that cost, the FHWA therefore adopted MDOT's decision to include the construction of a temporary bridge as part of the rehabilitation alternatives. The Friends argue that the avoided \$13 million cost is "fictional." But a longer drive in distance and time certainly has a cost. And apart from calling that cost fictional, the Friends do not challenge the assumptions or calculations made in monetizing it.

The Friends argue, instead, that before deciding to include a temporary bridge in the rehabilitation alternatives, the FHWA was required to find either that the social or economic impact of the detour was "severe" or that a detour would cause a "severe disruption" to the community. See 23 C.F.R. § 774.17. We think it would be unreasonable to conclude that all project design questions -- such as, for example, how much steel to use -- must be framed as separate alternatives to be compared against one another under the section 774.17 criteria. While we do not reject the possibility that some design judgments must indeed be treated as project alternatives subject to weighing under those criteria, the Friends offer no contextual or principled basis for why this particular design judgment should have been treated as a project alternative.

Further, the regulation on which the Friends rely provides that an alternative is not prudent if it "still causes

severe social [or] economic" impacts or "severe disruption to established communities" only "[a]fter reasonable mitigation." 23 C.F.R. § 774.17. The regulation thus presumes that the project design itself incorporates "reasonable mitigation" of possible disruption impacts. Notably, the applicable guidance for designing a bridge project provides that "[t]he method of maintaining traffic during construction must be considered for all bridge projects." MDOT, Bridge Design Guide 2-37 (Aug. 2003). A temporary bridge is one of the ways to handle (that is, mitigate) traffic issues during construction, one that is considered when there are "long detour routes, poor quality roads, or high traffic volumes." Id. at 2-39. Thus, following these types of considerations, the FHWA decided that using a temporary bridge would eliminate the need for a 20-month detour. Accordingly, there was no cause for the FHWA to determine whether the disruption to the community or economic impact was "still . . . severe" because the detour was eliminated "[a]fter reasonable mitigation," i.e., the decision to use the temporary bridge. 23 C.F.R. § 774.17.

Finally, the Friends contend that the construction cost estimate for the work trestle needed to demolish the existing Bridge and build a new bridge is significantly "understated" and thus clearly erroneous. In support of this contention, they point to a report produced by a construction consultant hired by MDOT, which estimated the cost of the work trestle to be between

\$1.5 million and \$6.5 million. By contrast, the PDR cost estimate includes only a \$1 million "premium" for the work trestle. The Friends thus argue that the estimate for the work trestle was so off that it affected MDOT's cost estimates for the replacement bridge.

The administrative record shows that the FHWA adequately explained the figure. In response to questions received from the public, MDOT and the FHWA explained that "[g]enerally, the major bid items . . . include the cost of work platforms and trestles" such that construction estimates do not typically include a separate line item for a work trestle. But, because the site for this bridge project "is considered more difficult due to its topography," "an additional \$1 million was added" as part of "miscellaneous" costs. We thus do not see reason to conclude that adding "only" \$1 million to the estimate was unsupported by the evidence. In short, all but \$1 million of the work trestle cost was already covered by the estimates.

IV.

The historic preservation groups also contend that the FHWA acted arbitrarily and capriciously by failing to use a life-cycle cost analysis (i.e., discounting future costs) to compare the replacement and rehabilitation alternatives.¹¹ Even though the

¹¹ The Friends separately argue that, under NEPA, declining to use a life-cycle cost analysis is "highly controversial" and

agency calculated the life-cycle costs, it never purported to determine whether the difference in discounted costs was of an "extraordinary magnitude" because it placed primary weight on the non-discounted service-life costs.

Discounting future costs customarily increases the likelihood that there is an apples-to-apples comparison when deciding between two options with different future effects. See generally Amy Gallo, A Refresher on Net Present Value, Harvard Business Review (Nov. 19, 2014) (explaining that discounting is the "superior method" for businesses "compar[ing] projects and decid[ing] which ones to pursue"). Indeed, the federal guidelines we have seen on this topic -- including ones promulgated by DOT and the FHWA itself -- explain that discounting is the standard and preferred way to compare future costs. See, e.g., DOT, FHWA, Life-Cycle Cost Analysis Primer 9 (Aug. 2002) (explaining why life-cycle cost analysis, including discounting future costs, is important in considering "several alternatives" for

thus required FHWA to conduct a full EIS. See 40 C.F.R. § 1508.27(b)(4) (2018) (requiring agencies to consider "[t]he degree to which the effects on the quality of the human environment are likely to be highly controversial") (amended by 85 Fed. Reg. 43,304, 43,322 (July 16, 2020) (removing "consideration of controversy" from the calculus)). We disagree. Whether an agency compares cost estimates of various alternatives using the appropriate methodology has no bearing on whether there is a controversy over the effects on "the quality of the human environment." Id. Accordingly, this dispute is not the sort that would require an EIS under the then-existing regulations.

"implement[ing] . . . transportation improvement" such as deciding between "a steel girder bridge" and a "concrete girder bridge"); FHWA, Improving Transportation Investment Decisions Through Life-Cycle Cost Analysis, <https://www.fhwa.dot.gov/infrastructure/asstmgmt/lccafact.cfm> (last updated June 27, 2017); see also OMB, Guidelines and Discount Rates for Benefit-Cost Analysis of Federal Programs, 1992 WL 12667340, at *3 (Oct. 29, 1992) ("Discounting benefits and costs transforms gains and losses occurring in different time periods to a common unit of measurement," which is why "[t]he standard criterion for deciding whether a government program can be justified on economic principles is net present value"); EPA, Guidelines for Preparing Economic Analyses: Discounting Future Benefits and Costs 6-6 (Dec. 2010), <https://www.epa.gov/sites/default/files/2017-09/documents/ee-0568-06.pdf> ("Trade-offs (benefits and costs) in this context reflect the preferences of those affected by the policy, and the time dimension of those trade-offs should reflect the intertemporal preferences of those affected. Thus, social discounting should seek to mimic the discounting practices of the affected individuals."). We have been pointed to no agency guideline or regulation (nor have we located any) recommending a method akin to the service-life analysis applied here.

The FHWA maintains that no regulation actually requires it to discount costs. This appears to be true, and we are not

prepared to hold that failure to compare discounted future costs is per se arbitrary and capricious. But the fact that a life-cycle cost analysis is not required does not obviate the requirement for reasoned decisionmaking. The key inquiry is why the FHWA decided to forgo its own guidance and that of the Office of Management and Budget, which say that comparing discounted future costs is the way to go.

On that question, the only reason given for rejecting the use of present-value discounting is that states usually do not set aside funds for future expenses, so there will be no rate of return as time goes by. But, while discounting "can be understood in terms of the economic return that could be earned on funds in their next best alternative use," it can also be understood as "the compensation that must be paid to induce people to defer an additional amount of current year consumption." DOT, FHWA, Life Cycle-Cost Analysis Primer 16 (Aug. 2002) (emphasis added). Moreover, the FHWA points to nothing about the funding here that distinguishes it from the funding for projects for which its guidance calls for discounting. And it seems to overlook the fact that the source of state funds -- taxpayers -- may well earn funds on set-aside dollars not spent today. See id. at 10 ("[T]ransportation agency officials are expected to explain and justify decisions concerning the expenditure of taxpayer dollars, [and] [d]ocumentation associated with the [life-cycle cost

analysis] process is a mechanism for transportation officials to demonstrate their good stewardship of the public's transportation infrastructure investment."). Perhaps the FHWA's avoidance of discounting implies it expected inflation to equal the expected rate of return over the next 75 years. But see id. at 16 ("Analytically, adjusting for inflation and discounting are entirely separate concerns, and they should not be confused by attempting to calculate both at once."). If so, it offered no support for such an implication. Cf. FCC v. Fox Television Stations, 556 U.S. 502, 515 (2009) (explaining that an agency must "display awareness that it is changing positions" and "must show there are good reasons for the new policy").

In the face of guideline after guideline explaining why agencies should discount future costs before comparing costs incurred across time, the agency must do more than simply assert that its choice is the "more accurate" one. Cf. Dist. 4 Lodge of the Int'l Ass'n. of Machinists & Aerospace Workers Loc. Lodge 207 v. Raimondo, 18 F.4th 38, 47 (2021) ("Importantly, the Agency subjected its estimates to peer review and . . . did indeed explain how its estimates comported with and were derived from the hard data that was available."). Nor does the provenance of the method used by the FHWA provide any confidence that the agency acted rationally. Even on appeal, defendants point to no literature or other support for use of the counterintuitive service-life method.

Rather, it was suggested by a town official with no apparent relevant expertise and criticized at the time by one of MDOT's own experts.

Tellingly, the federal defendants on appeal do not seem to really take issue with the idea that discounting is the proper and widely accepted best way to compare future costs. Rather, the gestalt of the FHWA's brief -- as opposed to the state agency's brief -- is that the failure to consider the discounted costs was harmless error. The FHWA contends that it did in fact discount costs, even though service-life analysis was the "primary basis" for its decision, and that the record is clear that the agency would have come to the same conclusion had it affirmatively relied on a discounted-cost comparison. After all, reasons the federal agency, adding \$7.1 million to a project that will otherwise cost only \$13.7 million (i.e., a 53% increase) could be seen as quite an extraordinary cost that taxpayers should not have to bear.

The Friends argue that if costs were both corrected (by sustaining their challenges to the various line-item estimates) and discounted to present value, the resulting delta would be less than 10%, and thus, according to the Friends, "legally inconsequential." But of course, we (like the district court) have rejected the Friends' challenges to the line items that they seek to reduce. So the point remains: Even with discounting to

present value, the Friends' preferred option would increase costs by over one-half.

That being said, and within boundaries not implicated here, it is for the FHWA, not this court (or counsel on appeal), to make the judgment call in the first instance regarding whether the 53% delta represents an extraordinary cost increase against which prudence counsels. See SEC v. Chenery Corp., 332 U.S. 194, 196 (1945) ("[A] reviewing court . . . must judge the propriety of [agency] action solely by the grounds invoked by the agency. If those grounds are inadequate or improper, the court is powerless to affirm the administrative action by substituting what it considers to be a more adequate or proper basis.").

v.

For the foregoing reasons, we affirm in part and vacate in part, with instructions that the matter be returned to the FHWA for the strictly limited purpose of allowing the agency to further justify use of the service-life analysis and/or to decide whether a 53% price differential represents a cost of an extraordinary magnitude under 23 C.F.R. § 774.17.