



February 22, 2026

Submitted via regulations.gov

Chris Wright, Secretary
Department of Energy
Office of Fossil Energy and Carbon Management
Forrestal Building, Room 3E-042, 1000 Independence Avenue SW
Washington, DC 20585

RE: Comment for Notice of Application by ST LNG, LLC for Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Nations (25-155-LNG)

Dear Secretary Chris Wright,

On behalf of all of our youth clients, including our clients in *Lighthouse v. Trump* and *Genesis v. EPA*, and in the interest of America's children and youth, Our Children's Trust provides these comments on the Department of Energy's Office of Fossil Energy and Carbon Management's "ST LNG, LLC; Application for Long-Term Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Nations" for a multi-contract authorization to export domestically produced liquefied natural gas (LNG) in a volume equivalent to approximately 460 billion cubic feet of natural gas per year from its proposed deepwater port export terminal project, which is unjustified by law, science, economic prosperity, energy security, or any other reason. In addition to being illegal, the ST LNG DWP Development Project, to be located off the southeast coast of Matagorda, Texas, will unleash fossil fuels, like LNG, that our clients are currently suffering directly through their inhalation and exposure to the localized pollution and the heat-trapping greenhouse gases from fossil fuels, resulting in further dangerous disruptions of the climate system on which these youths' health and lives depend.

As the Nation's only law firm dedicated to representing children and youth whose constitutional rights are being infringed by government conduct that causes and contributes to climate change, we write to advise you that your decision-making process must be consistent with protecting the rights to life, personal security, family autonomy, bodily integrity, the practice and transmission of cultural and religious traditions, and children's equal protection of the law. U.S. Const. amend. V, XIV, § 1. Here, you are engaged in an unconstitutional agency action to implement the President's Executive Orders 14154 and 14156 in violation of U.S. Const. amend. V, XIV, § 1. Your multiplicity of actions pursuant to those Executive Orders, including this effort to support this proposed project, also violate the separation of powers, by exceeding the authority DOE has been delegated by Congress and by engaging in conduct that has a significant effect on U.S. public health, welfare and the economy, while lacking any scientific integrity as Congress

has mandated. DOE has no statutory authority to deprive children and youth of their fundamental rights listed above.

1. The fossil fuel air pollution that approving this proposed project will enable, from extraction, shipping, and combustion of fossil fuels, is demonstrably harmful to the lives, health, and welfare of children. The best available science is clear by more than a preponderance of the evidence or substantial evidentiary standards (>99%) that every ton of greenhouse gas emissions contributes to dangerous climate change and worsens the health and welfare of children. Scientific consensus by the IPCC and all scientific agencies of the federal government through the National Climate Assessment is that EVERY TON OF CO₂ MATTERS and causes further harm, and that every ton of CO₂ not emitted lessens the harm. The scientific consensus establishes that we are already well past safe thresholds for CO₂ in the atmosphere. The United States Supreme Court and Montana Supreme Court recently held that the rights of young people can be protected by government “without requiring everyone else to stop jumping off bridges or adding fuel to the fire.” The United States Constitution prohibits you from “adding fuel to the fire” pursuant to the President’s Executive Orders, and Congress has too.
2. Any reduction of fossil fuel pollution promotes the health and welfare of the population, especially children and youth, whose well-being is most relevant to the Nation’s long-term productive capacity. Greenhouse gases have immediate climate and health consequences in the communities where our clients live irrespective of global climate change consequences.
3. The evidence is also crystal clear that wind and solar are the least expensive forms of energy today and the efficiencies gained with electrification lower overall energy demand and cost by 57%. In contrast, fossil fuels are inefficient, depletable, polluting, require continual mining, transport and combustion, create energy security threats, have outsized externalities that far outweigh their economic value to society, and cause innumerable life-threatening dangers to children. Fossil fuel greenhouse gas emissions cause unhealthy local air quality, trap heat, accelerate and elongate wildfire smoke seasons, strengthen storm systems and flooding, and cause exploding train cars, bursting pipelines, contaminated water, oil spills on beaches and dead marine life, to name a few. For example, Dr. Geoffrey Heal testified at the September 16-17, 2025 *Lighthiser v. Trump* preliminary injunction hearing in the U.S. District Court for the District of Montana in Missoula that one ton of coal produces 2.5 tons of CO₂ pollution and only \$125 worth of electricity. Using a low-end social cost of carbon of \$200/ton, one ton of coal produces \$500 in costs to society, which is \$375 more than the electricity it produces is worth. Consumers pay that price. Children pay far more in their bodies, burdens they carry for their lives. But through your unconstitutional conduct, you have also ceased looking at the social cost of carbon or otherwise valuing the externalities involved in greenhouse gas pollution. **No regulation or deregulation should be adopted or agency action approved that allows for any new sources of fossil fuel greenhouse gas pollution, explicitly or implicitly subsidizes their**

enormous costs on children and the public, or places barriers to renewable energy and electrification. Any related dismantling of reliable, valid, and peer-reviewed climate science should also cease immediately.

4. DOE approving this long-term, multi-contract authorization to export domestically produced LNG advances the President's agenda to “unleash” fossil fuels and continue fossil fuel pollution, violating the rights of children secured by the U.S. Constitution. This proposed project is also in furtherance of eliminating the so-called “Green New Deal” referenced in the President’s Executive Orders, even though no such “Green New Deal” exists. It is unnecessary, reckless, harmful to energy security and American Prosperity, and is nonsensical, as we have repeatedly commented and argued to the federal government in public comments and litigation. With respect, and in accordance with your statutory mandate and constitutional obligations, you should be doing everything in your power to prevent new sources of, and eliminate existing, fossil fuel pollution instead of “unleashing it” through regulatory, permitting, and leasing efforts. Importantly, you should be clearing the way for a rapid transition towards renewable energy and the electrification of all energy sectors (the least expensive energy and modalities, and the energy of the future).
5. High courts of other nations, the European Court of Human Rights, and the United Nations General Assembly have affirmed the human right to a clean, healthy, and sustainable environment, and the fundamental importance of a life-sustaining climate system as essential to other human rights. Courts across the U.S., the world, and at the International Court of Justice have specifically ruled that governments allowing fossil fuel pollution causes constitutional injuries and human rights violations. International Court of Justice, Advisory Opinion on the Obligations of States in Respect of Climate Change, General List No. 187, July 23, 2025. Every nation has a legal and moral obligation to cease its conduct that perpetuates fossil fuel use and climate change and to take measures (like in these agency actions) to substitute renewable energy for fossil fuels. *Id.* (countries, including U.S., have an obligation to “use all means at [their] disposal” to “prevent significant harm to the environment” including the climate system); *see also* Inter-Am. Ct. H.R., Advisory Opinion OC-32/25, Climate Emergency and Human Rights, Requested by the Republic of Chile & the Republic of Colombia (May 29, 2025).
6. As adults implementing federal law, how children and future generations are affected by your methods and actions should be your most important lens, as they are the most vulnerable, the politically powerless, and the least capable of protecting themselves. They bear the burden of fossil fuel pollution and climate change. The U.S. Supreme Court says children require special protection under the law. *See, e.g., Brown v. Bd. of Educ.*, 347 U.S. 483, 494 (1954) (government cannot impose harm to black children through segregated education that “may affect their hearts and minds in a way unlikely ever to be undone.”); *Plyler v. Doe*, 457 U.S. 202, 226 (1982) (government-imposed lifetime of hardship on children is an “area of special constitutional sensitivity”); *Weber v. Aetna Cas. & Sur. Co.*,

406 U.S. 164, 175 (1972) (laws “imposing disabilities” on children for choices of parents is “illogical and unjust”).

7. In support of these comments, we refer you to the docket in *Lighthiser v. Trump*, No. 25-0054 (D. Mont.), which includes numerous expert declarations that should guide your decision making in this action. *See, e.g.*, Declarations of Dr. Jacobson, Dr. Running, Dr. Jenkins, Dr. Heal, Dr. Stiglitz, Dr. Byron, Dr. Balmes, Dr. Van Susteren, and Mr. Podesta. You are already in possession of all of these filings. Please include them in the public comment record. An authorization to export LNG from this project would be based on false facts and unreliable reports on climate change that have been refuted by multiple scientists. John Podesta and Dr. Steven Running testified on the long-lasting harm to young people from climate change in a September 16-17, 2025 hearing on a motion for preliminary injunction in the U.S. District Court. Mr. Podesta’s testimony emphasized that the Endangerment Finding is a scientific finding that should not be distorted by politics, and Dr. Running’s testimony outlines the flaws in the DOE’s recent draft report, *Impacts of Carbon Dioxide Emissions on the U.S. Climate*. As a federal agency, you are aware of those proceedings and have access to transcripts which should also be incorporated into the public record.
8. We refer you to the declarations of Nicole Hughes, Dr. Heal, Dr. Stiglitz, and Dr. Jacobson that prove how this entire enterprise of unleashing more fossil fuels that you are engaged in, while blocking wind and solar energy, is harming energy reliability, energy abundance, jobs, the cost of energy, in addition to the health harms. We incorporate by reference the transcripts of testimony from witnesses at the September 16-17, 2025 hearing in *Lighthiser v. Trump*, which your attorneys were present at, and which should be in their possession.
9. We also refer you to the record in *Genesis v. EPA*, No. 25-2473 (9th Cir.), including the attached amicus briefs on children’s rights and health. Finally, we refer you to the trial testimony and court findings in *Held v. Montana*, No. CDV-2020-307 (Mont. 1st Jud. Dist. Ct.), where leading scientists testified that fossil fuels endanger children’s health and that powering every state in the nation on 100% clean renewable energy is not only technically feasible right now but is economically beneficial and will save states and consumers billions of dollars in energy bills. Judge Kathy Seely’s Findings of Fact, Conclusions of Law, and Order, *Held v. Montana* (Mont. 1st Jud. Dist. Aug. 14, 2023) is attached. *See* Expert Reports of Dr. Jacobson and Dr. Running and Trial Testimony here: <https://heldvmontana.ourchildrenstrust.org/>.
10. Climate change is causing a public health emergency that is *already* adversely impacting the physical and mental health of American children through, among other impacts, extreme weather events, rising temperatures and increased heat exposure, decreased air quality, altered infectious disease patterns, food and water insecurity, and economic hardship. Children are uniquely vulnerable to climate change impacts because of their developing bodies, higher exposure to air, food, and water per unit body weight, unique

behavior patterns, dependence on caregivers, political powerlessness, and longevity on the planet. EPA has reported as such. EPA, *Climate Change and Children's Health and Well-Being in the United States*, EPA 430-R-23-001 (2023), <https://www.epa.gov/cira/climate-change-and-childrens-health-and-well-being-united-states>. The protection of constitutional rights of children, by following the science, is of the utmost importance and must be incorporated in all relevant rulemakings and policies. Children rely on, and their health and safety depend on, DOE fulfilling its duty to protect children's rights to life. Children have no vote and no political power. Their reliance interests, and that of their families, is entitled to great weight. As youth plaintiff Jorja wrote during the preliminary injunction hearing in her case, *Lighthiser v. Trump*: "People get a choice on how fast they go on the highway. We can't choose how much coal is driven through my town" and therefore how much coal dust enters her lungs, and CO₂ that enters the atmosphere.

11. Children and young people, including our clients, are already suffering injury with long-lasting and irreversible consequences at present levels of fossil fuel heating and pollution. The government has knowingly created a dangerous situation and is knowingly enhancing that danger through these regulatory processes in a manner that shocks the conscience, all in service of implementing the President's Executive Orders, including EO 14154: Unleashing American Energy and EO 14156: Declaring a National Energy Emergency. *See* the District Court's opinion that found that fossil fuel exposure and climate change present a "children's health emergency." *Lighthiser v. Trump*, 2025 WL 2930569, at *4 (D. Mont. Oct. 15, 2025).

Please include all referenced evidence above and below in the administrative record. We will provide any of the cited evidence on request. However, it is already in your possession and should be included. Please send us a detailed response to our comments, notification of further comment opportunities, and all analyses and decision documents to the address and email listed below.

Sincerely,

/s/

Julia Olson

Co-executive Director and Chief Legal Counsel

julia@ourchildrenstrust.org

Our Children's Trust

P.O. Box 5181

Eugene, OR 97405

Attachments:

1. Brief of Amici Curiae Children's Rights Advocates in Support of Appellants' Opening Brief, *Genesis B. v. EPA*, No. 25-2473 (9th Cir. Jul.9, 2025), ECF No. 18.1.

2. Brief of Amici Curiae Medical Professionals and Health Advocacy Organizations in Support of Plaintiffs-Appellants and Reversal, *Genesis B. v. EPA*, No. 25-2473 (9th Cir. Jul. 23, 2025), ECF No. 24.1.

3. *Held v. Montana*, No. CDV-2020-307, 2023 WL 5229257 (Mont. 1st Jud. Dist. Aug. 14, 2023)

Attachment 1

No. 25-2473

**IN THE UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT**

GENESIS B. (G.B.), a minor, by and through her Guardian, G.P., et al.,
Plaintiffs—Appellants,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al.,
Defendants—Appellees,

Appeal from the United States District Court
Central District Court of California
(No. 2:23-cv-10345-MWF-AGR)

**BRIEF OF AMICI CHILDRENS RIGHTS ADVOCATES IN SUPPORT OF
APPELLANTS' OPENING BRIEF**

Bernard P. Perlmutter

Fla. Bar No. 455260
Children and Youth Law Clinic
University of Miami School of Law
1311 Miller Drive
Coral Gables, FL 33146
bperlmutterlaw.miami.edu

Douglas A. Ruley

Fla. Bar No. 1048894
Environmental Justice Clinic
University of Miami School of Law
1311 Miller Drive
Coral Gables, FL 3314
druley@law.miami.edu

Abigail L. Fleming

Fla. Bar No. 1017989
Environmental Justice Clinic
University of Miami School of Law
1311 Miller Drive
Coral Gables, FL 33146
afleming@law.miami.edu

Counsel for Amici

CORPORATE DISCLOSURE STATEMENT AND RULE 29 STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1 and 29(a)(4)(A), Amici Children and Youth Law Clinic and the Environmental Justice Clinic (collectively “the Clinics”) at the University of Miami School of Law are not publicly-held corporations, do not issue stock, and do not have a parent corporation and consequently there exists no publicly held corporation which own 10 percent or more of the Clinics’ stock.

Amici received the written consent of parties to file this brief. No counsel for any party authored any part of this brief, and no party, their counsel, or anyone other than Amici has made a monetary contribution intended to fund its preparation or submission.

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INTEREST OF AMICI CURIAE

Pursuant to Federal Rule of Appellate Procedure 29(b), *amici* children’s rights and social justice advocates respectfully submit this brief in support of the Plaintiffs-Appellants’ Opening Brief. All parties have consented in writing to the filing of this brief. 9TH CIR. R. 29-2(A). *Amici* are children’s rights advocates and legal scholars interested in developing the role of the law in protecting children’s rights and advancing social justice. A list of *amici* appears as signatories to this brief. *Amici* are specifically interested in this case to ensure that courts recognize the judicial role in protecting children against the detrimental impacts of climate change.

SUMMARY OF THE ARGUMENT

The district court erred in dismissing the Plaintiffs’ claims for lack of standing by failing to recognize that children suffer distinct and cognizable injuries when federal policies facially and intentionally discriminate against them. The Discounting Policies challenged in this case—which systematically devalue long-term environmental and health impacts through discounting mechanisms—deny children equal treatment under the law. The Plaintiffs, vulnerable Children, allege concrete, particularized harm rooted in facially discriminatory policies that disadvantage children as a class—both as a matter of legal doctrine and social reality.

The denial of equal protection constitutes injury-in-fact. The district court’s overreliance on the generalized grievance doctrine ignores longstanding precedent

on the judicial cognizability of facially discriminatory classifications—particularly when applied to identifiable, politically powerless groups such as children. The children present independent and viable theories for relief, well-grounded in Supreme Court precedent that justifies denial of the motion to dismiss and development of a full factual record.

Moreover, precedent recognizes the special role of the judiciary in protecting children where children are explicitly excluded from influencing policies detrimental to them. Children are uniquely and disproportionately harmed by climate change. Defendants' system of subsidies and programs promoting fossil fuel use causes climate change, yet children are unable to influence these harmful government policies. Historically, the Supreme Court has stepped in to protect vulnerable groups with limited access to the political process, including children harmed because of circumstances beyond their control.

This precedent underscores the Court's duty to protect children from Defendants' discriminatory policies that exacerbate the harms of climate change. That responsibility is especially urgent here, as neither children nor society can endure the irreversible damage caused by the Defendants' continued action in creating policies that promote fossil fuels. The Court must act now and reverse the district court's dismissal of Plaintiffs' equal protection claim.

ARGUMENT

I. Children are entitled to equal protection and precedent demands that the Court prohibit Defendants from imposing lifetime hardships on children for reasons beyond their control.

The Fourteenth Amendment’s Equal Protection Clause “is essentially a direction that all persons similarly situated should be treated alike.” *City of Cleburne v. Cleburne Living Ctr.*, 473 U.S. 432, 439 (1985) (citing *Plyler v. Doe*, 457 U.S. 202, 216 (1982)). It was designed to abolish laws that “suggest the kind of ‘class or caste’ treatment” by “imposing special disabilities upon groups disfavored by virtue of circumstances beyond their control.” *Plyler*, 457 U.S. at 216, n.14. The Supreme Court also has made clear that “neither the Fourteenth Amendment nor the Bill of Rights is for adults alone.” *In re Gault*, 387 U.S. 1, 13 (1967). This statement resonates powerfully here, where the Plaintiffs—minor Children—seek equal treatment under the law.

Yet, leading scholars have shown how the “adult rights-bearing archetype” dominates constitutional jurisprudence and marginalizes the interests of children.¹ With few exceptions, the United States legal system has been built on an adult-centered legal framework based on the historical fact that children were seen as “objects of lawmaking rather than participants.”² This approach has led to analytical

¹ Catherine E. Smith, *The Adult Rights-Bearing Archetype and How It Stifles Young People’s Equal Protection*, 19 DUKE J. CONST. L. & PUB. POL’Y 140, 150-79 (2024).

² Barbara Bennett Woodhouse, *The Courage of Innocence: Children as Heroes in*

missteps and troubling outcomes for youth by eroding their legal protections and entrenching their political powerlessness.

Children must be fully considered in equal protection analyses, especially where government policies treat them as a subordinate class.³ The Court need not limit Children’s equal protection claims to an uncertain “suspect class” threshold to accept a discrimination claim that flows from their particularized harms.⁴ A proper equal protection analysis requires the Court to address not only whether children are treated differently, but whether that different treatment is consistent with constitutional principles of fairness and equity considering children’s unique status.⁵ Children are among the most vulnerable members of society and possess unique claims to protection when government policy denies them full and equal access to life, liberty, and security.⁶

Here, the Discounting Policies, by their design and effect, subordinate children’s rights and interests for reasons beyond their control. (First Amended Complaint (“FAC”) ¶¶ 39, 48, 57–61, 67–68, 76, 93, 97–99, 109–112, 197, 231–32, 351). The Children allege that while Defendants’ policies do not name children

the Struggle for Justice, 2009 U. ILL. L. REV. 1567, 1577 (2009); Barbara Bennett Woodhouse, Children’s Rights, in *Handbook of Youth and Justice* 377, 382–83 (Susan O. White ed., 2001).

³ Smith, *supra* note 1, at 142–46.

⁴ *Id.* at 174–76.

⁵ *Id.* at 142–46.

⁶ *Id.*

directly, they structurally devalue long-term impacts, thereby privileging adult-present interests over the futures of children. These Discounting Policies value future harms less simply because they fall on children or future generations. As such, the Discounting Policies create a systemic devaluation of children's lives and lifetime hardships on children for reasons outside their control.

Important precedents of the Supreme Court express special solicitude for children in our society when the government inflicts a lifetime hardship on them, effectively relegating them to a subordinate status. In two foundational children's rights cases, *Levy* and *Weber*, the Supreme Court recognized that the Equal Protection Clause prohibits the government from imposing lifetime hardships on children for reasons beyond their control. In *Levy v. Louisiana*, 391 U.S. 68 (1968), the Court applied the Equal Protection Clause to children to strike down law denying wrongful death compensation to child of unwed parents.

And in *Weber v. Aetna Casualty & Surety Co.*, 406 U.S. 164, 165 (1972), dependent unacknowledged illegitimate children sought aid from the judiciary when they were barred from recovering under Louisiana workmen's compensation laws after the death of their biological father. The father's legitimate dependent children, however, did not face this same bar. *Id.* The Supreme Court held that discrimination based on status of birth violates children's equal protection rights under the Fourteenth Amendment. *Id.* at 175. The Supreme Court noted that, while it is

“powerless to prevent the social opprobrium suffered by [the illegitimate] children, [] the Equal Protection Clause does enable us to strike down discriminatory laws relating to status of birth.” *Id.* at 175–76.

Likewise, in *Plyler*, the Court held that punishing children for their status—something they cannot control—was constitutionally impermissible. *Plyler*, 457 U.S. 202. This logic applies with equal force to this case: children are being systematically disadvantaged by Discounting Policies that assign lesser value to their future well-being. Here, the Children are being denied equal protection because of their youth, a status they cannot change. The facial age-based discrimination is neither neutral nor justified. It perpetuates a structural inequality where children, especially those from frontline communities,⁷ are disproportionately burdened by climate harms while receiving less protection under federal regulatory policies.

Moreover, the structural discrimination mirrors past legal regimes struck down by the Supreme Court, such as laws penalizing children for their race. In the Supreme Court’s landmark ruling of *Brown v. Board of Education*, African American children were denied admission to equitably resourced public schools due to their race. 347 U.S. 483, 487–88 (1954). Acknowledging the particular

⁷ Frontline communities are those that are first and most directly impacted by climate change and environmental hazards. These communities often include people of color, Indigenous peoples, low-income populations, and others who face systemic barriers to political, economic, and environmental resources.

vulnerabilities of the child plaintiffs in *Brown*, a unanimous Court observed, “Segregation with the sanction of law . . . has a tendency to retard the educational and mental development of Negro children and to deprive them of some of the benefits they would receive in a racially integrated school system.” *Id.* at 494. Accordingly, the Supreme Court held that segregation in public schools violates children’s equal protection rights under the Fourteenth Amendment and provided a remedy to vulnerable children with no control of their circumstances. *Id.* at 496.

As in *Brown*, where the Court recognized the constitutional injury inflicted on children through state-sanctioned inequality, the discrimination at issue here similarly warrants judicial intervention. *Id.* The Equal Protection Clause guarantees that no person, including the Children here, will be subordinated by law due to circumstances beyond their control. *Weber*, 406 U.S. at 175. (“[I]mposing disabilities on the illegitimate child is contrary to the basic concept of our system that legal burdens should bear some relationship to individual responsibility or wrongdoing.”). The Discounting Policies systematically devalue children’s futures and impose disproportionate harms on them. Such treatment is incompatible with constitutional principles of fairness and equity, and this Court should reverse the district court’s error in dismissing Plaintiffs’ equal protection claim.

II. Unequal treatment under the law is a cognizable injury-in-fact.

The district court erred in dismissing the Children’s Equal Protection claim by failing to recognize that the denial of equal treatment itself constitutes a concrete injury-in-fact under Article III. Supreme Court and Ninth Circuit precedent make clear that stigmatic harm from facially discriminatory policies is judicially cognizable, even absent tangible or immediate harm. The Children plausibly allege that Defendants’ Discounting Policies facially devalue their futures in violation of Equal Protection, and this is sufficient to establish standing.

The district court’s holding fails to recognize Supreme Court precedent that the denial of equal protection constitutes Article III injury-in-fact. *See Ne. Fla. Chapter, Associated Gen. Contractors of Am. v. Jacksonville*, 508 U.S. 656, 666 (1993). This Court also has held that “equal treatment under law is a judicially cognizable interest that satisfies the case or controversy requirement of Article III, even if it brings no tangible benefit to the party asserting it.” *Davis v. Guam*, 785 F.3d 1311, 1315 (9th Cir. 2015). And other circuits concur—denial of equal treatment is sufficient to constitute Article III injury-in-fact. *Lutheran Church—Missouri Synod v. FCC*, 154 F.3d 487, 493 (D.C. Cir. 1998); *see, e.g., Am. Civ. Liberties Union of N.M. v. Santillanes*, 546 F.3d 1313, 1319 (10th Cir. 2008); *Sullivan v. Benningfield*, 920 F.3d 401, 407 (6th Cir. 2019); *Peyote Way Church of God, Inc. v. Thornburgh*, 922 F.2d 1210, 1214 n.2 (5th Cir.1991); *Hassan v. City of*

New York, 804 F.3d 277, 289, 294 (3d Cir. 2015); *Planned Parenthood of S.C. Inc. v. Rose*, 361 F.3d 786, 790 (4th Cir. 2004).

In *Jacksonville*, the Supreme Court held that the denial of equal treatment resulting from the imposition of a barrier is itself sufficient to establish injury-in-fact. *Jacksonville*, 508 U.S. at 666. Similarly, in *Heckler v. Mathews*, 465 U.S. 728 (1984), the Court noted that a discriminatory classification is itself a penalty, and the right to equal treatment without the necessity of showing actual harm is enforceable. Impermissible unequal treatment is a discrete injury because it stigmatizes the disfavored group and creates barriers to benefits accessible to the favored groups. *Heckler*, 465 U.S. at 739.

The district court mischaracterized the children’s stigmatic harm as abstract, when the Supreme Court has repeatedly held that stigmatic injury stemming from unequal treatment is redressable and sufficient for standing. *Heckler*, 465 U.S. at 739–40. The children allege that the Discounting Policies overtly prioritize present-day adult interests at the expense of children, codifying an official value judgment about whose lives and futures matter more. (FAC ¶¶ 67–68, 57–61, 112, 197, 351). This is a stigmatic harm rooted in status-based subordination, not a generalized policy disagreement or a simple “displeasure with the EPA’s economic analyses” as the district court states in its Order dismissing the Children’s claims.

The real-world consequences of these discriminatory policies are not speculative, nor limited to stigmatic harms. The Children experience disruptions to their education due to extreme weather, respiratory harms from wildfire smoke, flooding of their homes, and the psychological toll of living with an increasingly unstable climate. (FAC ¶¶ 31–112). The Children are not simply “concerned bystanders,” as the district court implied, (Order at 13), but are victims of Defendants’ discriminatory Discounting Policies and have suffered harms. These are tangible harms, linked directly to the regulatory frameworks that drive agency decisions. (FAC ¶¶ 107, 3, 5, 31–106, 124, 152, 197, 264, 274, 285, 303, 308, 314, 319–23, 329–31, 348, 352, 379).

Moreover, the Children have alleged that Defendants apply discounting metrics that systematically devalue long-term harms that disproportionately impact children. (FAC ¶¶ 108, 122, 2). These policies operate as a facial classification: they assign diminished legal weight to injuries expected to occur further in the future, which disproportionately affects those who will live longer into that future—children. As a result, Defendants deprioritize policies that would mitigate environmental and health risks likely to manifest decades from now, at precisely the time when today’s children become adults. Thus, the challenged Discounting Policies value current adult interests more than the long-term health and welfare of children, thereby operating as a facially discriminatory classification.

The Supreme Court routinely has found standing when facially neutral policies disparately affect an identifiable group. *United States v. Windsor*, 570 U.S. 744, 772–74 (2013); *Plyler*, 457 U.S. at 220. This mirrors the reasoning in *Hecox v. Little*, 104 F.4th 1061 (9th Cir. 2024), where facially neutral criteria constituted constructive discrimination. Here, the Children allege that Defendants’ Discounting Policies constructively classify and deprioritize their interests by systematically reducing the weight assigned to long-term environmental harms. Rather than a generalized grievance, this is an allegation of facially unequal valuation under federal policy, which the Ninth Circuit has recognized as sufficient to establish standing. *See Hecox*, 104 F.4th at 1078 (holding statute that discriminated against trans-female athletes had both discriminatory purpose and was facially discriminatory). By demanding that the Children show particularized harm, the district court created a standing threshold that would invalidate nearly all structural Equal Protection challenges to facially neutral policies. Such a rule is especially dangerous for children, whose exclusion from political representation necessitates heightened judicial vigilance.⁸

The district court also improperly conflated eventual adult status with lack of harm in childhood. (Order at 13). That logic was rejected in *Plyler*, where the Court acknowledged that denying rights or protections during childhood can cause lifelong

⁸ Smith, *supra* note 1, at 174–76.

injuries, regardless of future adult status. *Plyler*, 457 U.S. at 223. In *Plyler*, undocumented immigrant children sought the Supreme Court’s judicial protection when they were excluded from Texas public schools. *Id.* at 205. The Supreme Court provided a remedy, noting, “more is involved in these cases than the abstract question whether [the statute] discriminates against a suspect class, or whether education is a fundamental right.” *Id.* at 223. The Supreme Court protected the child plaintiffs regardless of whether their fundamental rights were being infringed or they were recognized as a suspect class. *Id.* That a 17-year-old will soon be 18 does not render the harm of unequal valuation any less real—or less unconstitutional.

Furthermore, the Supreme Court recently reaffirmed that a plaintiff need not wait for full economic consequences to establish standing where government action inflicts unequal treatment based on status. In *Diamond Alternative Energy, LLC v. EPA*, the Court held that fuel producers had Article III standing to challenge EPA’s approval of California’s emissions waiver—even though the producers were not the direct objects of regulation—because the waiver predictably and disproportionately diminished their market prospects. No. 24-7, 2025 WL 1716141, at *7–22 (U.S. June 20, 2025). The Court emphasized that injury from being disadvantaged by a facially neutral regulation is sufficiently concrete if linked to a predictable chain of causation and redressability through judicial relief. *Id.* at *12–13, *18–19. Like the fuel producers, the Children here allege discriminatory government treatment—via

Discounting Policies—that systematically deprioritize their futures. Most certainly, evidence confirms that invalidating the Discounting Policies would make a difference for the Children because the Environmental Protection Agency would value children equally to adults, limiting climate pollution and alleviating economic, physical, and mental health harm to the Children. *Diamond Alternative Energy*, 2025 WL 1716141, at *10. Thus, under *Diamond*, these Children’s allegations are beyond sufficient to establish a judicially cognizable injury.

Therefore, the district court erred in dismissing the Children’s claims for lack of standing. Binding precedent from the Supreme Court and this Circuit recognizes that the denial of equal treatment alone constitutes a judicially cognizable injury-in-fact. Because the Children plausibly allege that Defendants’ Discounting Policies facially and disproportionately devalue their lives and futures, this Court should reverse the district court’s ruling and allow their Equal Protection claim to proceed.

III. Climate change uniquely affects children, and yet they are powerless to change government policies that perpetuate climate change.

A. Children are uniquely and disproportionately harmed by climate change.

Shockingly, and contrary to scientific consensus, the district court stated that “climate related harms will be experienced relatively equally by all people—both in the United States and around the world—who are alive at the time of their impacts.” (Order at 13). This erroneous, ill-informed assertion is contrary to an overwhelming

amount of evidence summarized in the factual allegations of the Children's complaint.

Raging seas, melting glaciers, and smoldering heat—this is the overwhelming evidence that we are experiencing global climate change.⁹ Due to increased CO₂ in the atmosphere produced by fossil fuel use, the earth's surface is warming at an unprecedented rate, leading to long-term increased temperatures and rising sea levels.¹⁰ Changes in temperature and sea levels cause intensified extreme weather events, such as flooding, hurricanes, wildfires, and droughts.¹¹ These events, leading to an increase of disease, food and water insecurity, and many other threats, severely affect children's physical and mental health.¹²

Children's heightened exposure and immature physiological development render them particularly susceptible to the detrimental effects of climate change.¹³ Children's asthma and respiratory issues are exacerbated by increased air pollution

⁹ W. Neil Adger, Jouni Paavola, Saleemul Huq & M.J. Mace eds., *Fairness in Adaptation to Climate Change* 1 (MIT Press 2006).

¹⁰ Intergovernmental Panel on Climate Change, *Summary for Policymakers, in Climate Change 2021: The Physical Science Basis* 5, 8–9 (V. Masson-Delmotte et al. eds., Working Group I contribution to the Sixth Assessment Report 2021), https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_SPM.pdf.

¹¹ U.S. Global Change Research Program, *Overview*, in Fourth National Climate Assessment: Chapter 1 (2018).

¹² Susie Burke et al., *The Psychological Effects of Climate Change on Children*, 20 CURR. PSYCHIATRY REP. 3 (2018).

¹³ *Id.* at 2.

stemming from the higher temperatures and wildfires caused by climate change.¹⁴ Children are exposed to more pollutants and contaminants than adults, as they “breathe more air, drink more water, and eat more food per unit of body weight.”¹⁵ The increased intake of pollutants and contaminants is harmful to children, and will be felt most acutely by low-income communities of color.¹⁶ These historically oppressed communities, forced to live near fossil fuel infrastructure and other sources of air pollution by racially explicit policies of the government,¹⁷ are unable to recover and prepare for climate change impacts.

In addition to children’s heightened exposure, children’s weak immune systems and underdeveloped organs make it difficult for their bodies to adapt to shifting climate patterns.¹⁸ Warmer temperatures increase the amount of pollen and

¹⁴ Allison J. Crimmins et al., *Executive Summary*, in *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment* 1 (U.S. Glob. Change Research Program 2016).

¹⁵ Perry E. Sheffield & Philip J. Landrigan, *Global Climate Change and Children’s Health: Threats and Strategies for Prevention*, 119 ENVTL. HEALTH PERSPECTIVES 291 (2011).

¹⁶ U.S. Env’t Protection Agency, *America’s Children and the Environment*, 3d ed. (2013), https://www.epa.gov/sites/production/files/2015-06/documents/ace3_2013.pdf.

¹⁷ RICHARD ROTHSTEIN, *THE COLOR OF LAW: A FORGOTTEN HISTORY OF HOW OUR GOVERNMENT SEGREGATED AMERICA* 54 (2017).

¹⁸ Neal Fann et al., *Ch. 3: Air Quality Impacts*, in *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment* 69, 77 (Allison Crimmins et al. eds., U.S. Global Change Research Program 2016), https://health2016.globalchange.gov/low/ClimateHealth2016_03_Air_Quality_small.pdf; Sheffield, *supra* note 15, at 291–93.

allergens produced by plants as well as particulate matter in the air, which “exacerbates respiratory disease and asthma in children.”¹⁹ Moreover, children have more difficulty adapting to heat than adults, as their thermoregulatory systems are not yet fully developed, which may cause dehydration, renal disorders, and heat-related morbidity.²⁰ Further, children are at risk of malnutrition due to land degradation and reduction of crop yields, as well as decreased protein in wheat, corn, and soy, caused by unpredictable temperatures and increased rainfall that result from climate change.²¹

Children are also particularly vulnerable to the mental health impacts of climate change.²² Children struggle to cope with the stressors associated with extreme weather events, such as fear of losing a loved one and the fear of displacement, because they lack capacity to regulate emotion.²³ Children’s difficulty regulating emotion hinders their ability to cope with the adverse effects of climate change, which, in turn places them at risk of developing post-traumatic stress, adjustment disorders, attachment

¹⁹ Crimmins, *supra* note 14.

²⁰ Sheffield, *supra* note 15, at 291.

²¹ Intergovernmental Panel on Climate Change, *Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse-Gas Fluxes in Terrestrial Ecosystems*, at 345-500 (2019), <https://www.ipcc.ch/site/assets/uploads/2019/11/SRCCL-Full-Report-Compiled-191128.pdf>.

²² Am. Psychiatric Ass’n, *How Extreme Weather Events Affect Mental Health*, 1, 3 (November 2019).

²³ *Id.*

disorders, sleep disorders, anxiety, depression, substance abuse, and phobias.²⁴ Already up to 45% of children suffer from depression following natural disasters.²⁵ And the frequency and magnitude of natural disasters will rise as climate change worsens.

Worse yet, children are climate change's foremost victims, and their own government is perpetuating it. The government has long understood the correlation between burning of fossil fuels and destabilization of the global climate.²⁵ Numerous reports from agencies including the United States Environmental Protection Agency and the White House Council on Environmental Quality identified the dangers of continuing to burn fossil fuels and proposed plans to reduce greenhouse gases more than three decades ago.²⁶ Although the government recognizes that "the evidence of human-caused climate change is overwhelming," it fails to act.²⁶

²⁴ Council on Env'tl. Health, *Global Climate Change and Children's Health, Policy Statement*, 136 AM. ACAD. OF PEDIATRICS 992, 993 (2015).

²⁵ Am. Pub. Health Ass'n, *Climate Changes Mental Health* 1 (n.d.), https://www.apha.org/getcontentasset/c3d96e63-c828-4233-ae8c-cac3accb48f6/7ca0dc9d-611d-46e2-9fd3-26a4c03ddcbb/climate_changes_mental_health.pdf?language=en.

²⁶ U.S. Global Change Research Program, *supra* note 11.

B. Children lack the rights and resources to influence government policies.

Children's ability to participate in politics that affect their own destinies is severely limited because they cannot vote, lack the economic resources to participate in our society's politics, and cannot initiate judicial action on their own.

In all fifty states and the District of Columbia, the age of majority is eighteen or older. Even mature minors cannot vote. U.S. CONST. amend. XXVI, § 1. Children cannot participate through the ballot box and must depend on guardians to make political decisions. Children also lack the economic power held by adults to influence climate policies. By law, minors are severely restricted in contributing to political action committees and candidates because contributed money must be in the child's own name and cannot be a gift to the child. Likewise, children cannot vote with their own dollars. They have little to no influence over their family's economic choices regarding clean energy and transportation, or food and goods with a low carbon footprint. Parents and guardians control these decisions. Without control of votes or economic resources, children are powerless to compete with well-resourced fossil fuel lobby groups. Industries involved in fossil fuel use rely on lobbying to heavily influence government policies that promote consumption and development of fossil fuels.

Moreover, children cannot initiate judicial action without an adult's assistance. When courts close their doors to youth, their only recourse is to become

defendants rather than plaintiffs. Youth climate activists are increasingly compelled to engage in civil disobedience, placing their bodies on the line to demand urgent action on the climate crisis.²⁷

Despite the limits placed on youth participation in politics, American youth have made important contributions in advocating for justice. Children of all ages have played pivotal roles in social justice movements, from young factory workers during the labor movement to the children who were jailed in the 1960s during the Birmingham Children's Crusade.²⁸ Children and youth have unique perspectives on their own needs and the courage and insight to advocate for long-term policies that protect their own and our collective future. The children in this case have already fully participated in politics up to their capacity under the law. They have walked to raise awareness, founded organizations, given speeches in front of local, state, federal, and global government bodies including the United Nations, visited the White House, and educated their communities about individual actions they can

²⁷ Sarah Nawaz et al., *Young Adults Are More Willing to Support or Engage in Climate-Focused Nonviolent Civil Disobedience*, Nat. Commc'ns (Mar. 25, 2025), <https://www.nature.com/articles/s41467-025-49762-7>.

²⁸ See Michael Schuman, *History of Child Labor in the United States—Part 1: Little Children Working*, Monthly Lab. Rev., Jan. 2017, at 6–7, <https://www.bls.gov/opub/mlr/2017/article/history-of-child-labor-in-the-united-states-part-1.htm>; *Children of Birmingham Fill the Jails*, Zinn Educ. Project (May 2, 1963), <https://www.zinnedproject.org/news/tdih/children-of-birmingham-fill-the-jails/> (reporting that over 1,000 children were arrested during the Children's Crusade in Birmingham on May 2–3, 1963).

take—all in the name of a safe and healthy climate. The efforts of children to advocate for justice are heroic and important, but children are ultimately limited in their ability to directly participate in the political process to protect their rights.

The judicial branch plays a crucial role in protecting vulnerable and politically marginalized groups, especially children.²⁹ The Supreme Court did not hold that any of these vulnerable parties either lacked standing or were required to seek recourse through the ballot box. Rather, “[t]he Nation’s courts are open to injured individuals who come to them” to “invoke a right to constitutional protection . . . even if the broader public disagrees and even if the legislature refuses to act.” *Obergefell v. Hodges*, 576 U.S. 644, 677 (2015). This Court should continue to protect children who do not have the same ability to influence the political branches of government or to participate in the political process as voting-age adults.

Children are not only future citizens and leaders; they have current rights and capacities to seek climate justice. In recognition of these rights, courts have identified a special obligation of the judiciary to step in to protect children against harmful government action. After all, the judiciary has a responsibility to ensure

²⁹ See Catherine E. Smith, Lauren Fontana, Susannah Pollvogt & Tanya Washington, Brief of Amici Curiae Scholars of the Constitutional Rights of Children in Support of Petitioners in *Obergefell v. Hodges* (Mar. 9, 2015), U Denver Legal Studies Research Paper No. 15-28, Georgia State University College of Law, Legal Studies Research Paper No. 2015-20, Available at SSRN: <https://ssrn.com/abstract=2626781> or <http://dx.doi.org/10.2139/ssrn.2626781>.

“that our government never oversteps its proper bounds or violates the rights of individuals.”³⁰ And unless someone like this Court, “cares a whole awful lot, nothing is going to get better.”³¹

C. Courts cannot rely on the political power of adults to protect children from harm.

As an example, one common misstep is for courts to assume that parents have the political power or will to protect their children from constitutional harm. However, this assumption often fails.³² Then, courts must be the saving grace to ensure children’s voices are not subordinated to the louder voices of the adult majority because young people cannot turn to the ballot box or exert economic power to influence the political process. This Court cannot rely on adults voting by proxy to vindicate children’s rights.

This idea “[r]est[s] on a faulty, and perhaps privileged, assumption that all children and parents are similarly situated, [however] the parent-as-proxy rationale obscures the importance and necessity of children’s rights.”³³ By contrast, a robust check on governmental action through children’s rights and intergenerational equity

³⁰ Confirmation Hearing on the Nomination of Elena Kagan to be Associate Justice of the Supreme Court of the United States, Senate Judiciary Committee, U.S. Senate (June 28, 2010).

³¹ DR. SEUSS, *THE LORAX* (1972).

³² Catherine E. Smith, *Children’s Equality Law in the Age of Parents’ Rights*, 71 KAN. L. REV. 539, 539 (2023).

³³ *Id.* at 545.

is necessary to eliminate systemic harm to young people and guarantee their access to justice and equal protection under the law. Where parents lack the political will or ability to protect their children, children's rights serve an important role as a constitutional backstop ensuring fidelity to our democratic ideals. To avoid subordinating children's rights to those of adults, this Court must steer clear of the flawed reasoning that treats children as adults and assume that adults will vote in children's best interests. Through avoiding these analytical missteps, this Court can fulfill its indispensable role in upholding the constitutional protection of children disproportionately harmed by climate change.

CONCLUSION

The Constitution requires that children be treated with equal dignity and respect, not devalued through policies that undercount the injuries they will face. Defendants' Discounting Policies violate the Equal Protection Clause by facially and intentionally deprioritizing children's welfare. This Court should reaffirm that children are rights-bearing individuals, not political afterthoughts, and reverse the district court's denial of standing.

Dated: July 9, 2025

Respectfully Submitted,

s/ Douglas A. Ruley

Douglas A. Ruley, Fla. Bar No. 1048894
Environmental Justice Clinic
University of Miami School of Law
1311 Miller Drive, Suite
Coral Gables, FL 33146
druley@law.miami.edu

s/ Bernard P. Perlmutter

Bernard P. Perlmutter, Fla. Bar No. 455260
Children and Youth Law Clinic
University of Miami School of Law
1311 Miller Drive
Coral Gables, FL 33146
bperlmutter@law.miami.edu

SIGNATORIES

Adam Benforado
Professor of Law
Drexel University Kline School of Law

Asha Brundage-Moore
Christopher N. Lasch Clinical Teaching Fellow
University of Denver Sturm College of Law

Sarah Medina Camiscoli
Assistant Professor of Law
Rutgers Law School

Jeremiah Chin
Assistant Professor of Law
University of Washington School of Law

Sacha M. Coupet
Morris I. Leibman Professor of Law
Loyola University Chicago School of Law

Nancy E Dowd
Emerita
UF Distinguished University Professor
David Levin Chair in Family Law
University of Florida Levin College of Law

James R. May
Dignity Rights Advocates

Susannah Pollvogt

Neoshia Roemer
Steton Hall University School of Law

Aníbal Rosario-Lebrón
Associate Professor
Rutgers Law School, Newark

Wyatt G. Sassman
Associate Professor of Law
University of Denver Sturm College of Law

Matthew Patrick Shaw
Associate Professor of Law
Associate Professor of Public Policy and Education
Vanderbilt Law School

Charisa Kiyô Smith
Professor of Law
CUNY School of Law

David B. Thronson
Professor of Law
Michigan State University College of Law

Robin Walker Sterling
Associate Dean of Clinical Education
Mayer Brown/Robert A. Helman Professor of Law
Northwestern Pritzker School of Law

Tanya Washington
Marjorie F. Knowles Chair in Law
Professor of Children's Constitutional Rights
Georgia State University College of Law

Jessica Dixon Weaver
Professor of Law
SMU Dedman School of Law

Barbara Bennett Woodhouse
Distinguished Professor of Law Emerita
Emory University

CERTIFICATE OF COMPLIANCE

I hereby certify the attached amicus brief is proportionally spaced, has a typeface of 14 points or more, and contains less than 7,000 words based on the word-processing system used to prepare the brief.

s/ Douglas A. Ruley
Attorney for Amici

Date: July 9, 2025

Attachment 2

No. 25-2473

IN THE
United States Court of Appeals
FOR THE NINTH CIRCUIT

◆◆◆

GENESIS B. (G.B.), a minor, by and through her Guardian, G.P.; et al.,
Plaintiffs-Appellants,
v.

The UNITED STATES ENVIRONMENTAL PROTECTION AGENCY;
et al.,
Defendants-Appellees.

On appeal from the United States District Court
for the Central District of California (No. 2:23-cv-10345-MWF-AGR)
Honorable Michael W. Fitzgerald

**BRIEF OF *AMICI CURIAE* MEDICAL PROFESSIONALS AND
HEALTH ADVOCACY ORGANIZATIONS
IN SUPPORT OF PLAINTIFFS-APPELLANTS AND REVERSAL**

KELLER ROHRBACK L.L.P.
Daniel P. Mensher
Alison S. Gaffney
1201 THIRD AVENUE, SUITE 3400
SEATTLE, WA 98101-3268
TEL.: (206) 623-1900

Counsel for Amici Curiae

CORPORATE DISCLOSURE STATEMENT

Pursuant to Federal Rule of Appellate Procedure 26.1 and 29(a)(4)(A), *amici curiae* certify they have no parent corporations and that no publicly held corporation owns more than 10% of the *amici curiae*.

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IDENTITY AND INTEREST OF *AMICI CURIAE*

Pursuant to Federal Rule of Appellate Procedure 29(a), *amici curiae* respectfully submit this brief in support of the Plaintiffs-Appellants. All parties have consented in writing to the filing of this brief. Fed. R. App. P. 29(a)(2). *Amici* are physicians, medical students, and non-profit organizations interested in promoting community health in the context of global climate change.

Amicus Kari Nadeau, MD, PhD, is the Chair of the Department of Environmental Health at Harvard School of Public Health, a physician at the Beth Israel Deaconess Hospital in Boston, and John Rock Professor of Climate and Population Studies. She practices Allergy, Asthma, and Immunology in children and adults, and researches the impacts of environmental factors, including air pollution and severe weather conditions, with a special emphasis on groups like children.

Amicus AAP-CA3 Climate Change & Health Committee is a committee of the American Academy of Pediatrics, California Chapter 3 (“AAP-CA3”). The Climate Change & Health Committee’s mission is to promote the health of San Diego and Imperial Counties’ children and ecosystems by empowering children through education and outreach to

protect their environmental resources and in turn improve their own mental and physical health.

Amicus Climate Health Now is a non-profit organization whose mission is to organize and mobilize the California health community to advocate for equitable systems-level climate action.

Amicus San Diego Pediatricians for Clean Air is a non-profit volunteer coalition of pediatricians who advocate for their patients and community.

Amicus UCSD School of Medicine Planetary Health Student Interest Group is an organization comprised of students interested in planetary health, sustainability, and greener health practices.

In addition to the *amici* described above, 49 physicians and medical students join this brief. All signatories are listed in Appendix A.

In sum, *amici* are organizations advocating for community and pediatric health and medical professionals whose practice involves treating children affected by climate change and who have developed expertise in how climate change is affecting children's mental and physical health outcomes. *Amici* submit this brief to highlight for the

Court the ways in which children are uniquely vulnerable to the adverse impacts of climate change.

Amici curiae certify that *amici* and their counsel were the sole authors of this brief and that they bore all costs of this brief, with no financial contributions from any party, party's counsel, or any other person not affiliated with *amici curiae* or their counsel.

INTRODUCTION

Climate change has been driven primarily by the increased burning of fossil fuels and the resulting steady and rapid increase in greenhouse gases (“GHGs”) in the atmosphere.¹ The major GHGs emitted include carbon dioxide (CO₂), methane, nitrous oxides, and fluorinated gases, with CO₂ accounting for over 76% of all GHG emissions.² These GHGs act like a greenhouse and trap heat within the earth's atmosphere, increasing global surface temperatures. The earth's temperature has risen by an average of 0.11° Fahrenheit (0.06° Celsius) per decade since

¹ *Extreme Weather and Climate Change*, Nat'l Aeronautics & Space Admin., <https://science.nasa.gov/climate-change/extreme-weather/> (last visited July 17, 2025).

² *Global Greenhouse Gas Overview*, U.S. Env't Prot. Agency (Mar. 31, 2025), <https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>.

1850, or about 2° F in total.³ This rise in temperature is creating new and dangerous conditions. Extreme weather events, for example, are on the rise, posing unique threats to humans. As extreme weather events increase in frequency and intensity, so does exposure to a range of potentially traumatic exposures, including injuries, bereavement, and threats to availability of food, shelter, and medical care.

While climate change affects all individuals, infants and children are uniquely vulnerable to climate-change related impacts. Not only are children's bodies more at risk from pollutants and heat, children are also especially vulnerable to harms that can occur as a result of displacement. For example, when children are forced to flee their homes due to environmental instability or extreme weather events, they are more vulnerable to physical injury and psychological trauma than adults.

In its decision below, the District Court reasoned that climate-related harms “will be experienced relatively equally by all people—both in the United States and around the world—who are alive at the time of

³ Rebecca Lindsey & Luann Dahlman, *Climate change: global temperature*, Climate.gov (May 29, 2025), <https://www.climate.gov/news-features/understanding-climate/climate-change-global-temperature>.

their impacts.” 1-ER-14. The court also stated that “[p]resent-day children will age and become adults,” and “[i]ndeed, much of the harm that will allegedly befall the Plaintiffs will occur when they are adults.” *Id.* In describing Plaintiffs-Appellants’ status as children primarily with respect to the time remaining before adulthood, the lower court overlooked the fact that children are not simply small adults. Physiologically, mentally, and emotionally, children are different. Their bodies and brains are still developing. Illnesses, injuries, or mental health conditions that occur during the vulnerable period of development that is childhood may have long-lasting effects that are different in quality than if the conditions had occurred in adulthood.

As a result, the effects of climate change will have, and are already having, a disproportionate impact on children’s health. *Amici* believe that an understanding of this disproportionate impact is critical to this Court’s consideration of Plaintiffs-Appellants’ arguments and claims.

ARGUMENT

Anthropogenic climate change has not only dramatically increased the surface temperatures of our planet, but has also substantially affected the “exposome,” the totality of environmental conditions

(physical, chemical, biological, and social factors) to which a person is exposed throughout their lifetime. This changing exposome presents real threats to all humans, but it presents a special threat to children, both because they are more sensitive to changes today, and because they will live longer portions of their lives in these riskier and less stable exposomes.

As explained below, children are uniquely vulnerable to the consequences of rising temperatures, to increased air pollution, to flooding and clean water insecurity, and to the psychological effects of experiencing traumatic events.

I. Children Are Uniquely Vulnerable to the Consequences of Rising Temperatures

A. Exposure to high temperatures can cause various illnesses among children.

As temperatures increase, heatwaves (a period of two or more consecutive days when the daily minimum apparent temperature in a particular city exceeds the 85th percentile of historical July and August temperatures (1981–2010) for that city)⁴ are increasing globally in

⁴ *Climate Change Indicators: Heat Waves*, U.S. Env't Prot. Agency (Apr. 18, 2025), <https://www.epa.gov/climate-indicators/climate-change-indicators-heat-waves>.

frequency and intensity. UNICEF predicts that by 2050, nearly every child on earth, 2.02 billion children, will be exposed to “high heatwave frequency” (defined as an annual average of 4.5 heatwaves or more).⁵

This is especially problematic because infants and children are sensitive to heat and are particularly vulnerable to severe heat. Their bodies lack robust thermoregulatory function at extreme temperatures.⁶ This is why, for example, small children cannot be left alone in parked cars on a warm day for any length of time. As extreme heat waves become more frequent, the danger to infants and children extends beyond the parked cars.

Children are particularly vulnerable to the health impacts of extreme heat because of their physiology. They have a smaller body mass to surface area ratio than adults, and, because they can lose more fluid

⁵ *559 million children currently exposed to high heatwave frequency, rising to all 2.02 billion children globally by 2050*, UNICEF (Oct. 25, 2022), <https://www.unicef.org/press-releases/heatwaves-report>; *The coldest year of the rest of their lives*, UNICEF (Oct. 2022), <https://www.unicef.org/media/129506/file/UNICEF-coldest-year-heatwaves-and-children-EN.pdf>.

⁶ Caroline J. Smith, *Pediatric Thermoregulation: Considerations in the Face of Global Climate Change*, 11 *Nutrients* 2010 (2019), <https://pmc.ncbi.nlm.nih.gov/articles/PMC6770410/pdf/nutrients-11-02010.pdf>.

quickly, they are more likely to become dehydrated than adults. In addition, children may not always have the judgment to limit their activities and to adequately hydrate themselves after they have spent extensive time in the heat, which is of particular concern when they are playing outside.⁷ For infants and children, extreme heat can cause various illnesses. One review found that common adverse effects of heat exposure in the pediatric population were heat-related illness, electrolyte imbalance, diarrhea, infections, asthma, and injury such as heat rash, heat stroke, or death.⁸ Plaintiffs-Appellants have experienced some of these adverse effects. 3-ER-337, FAC ¶ 83; 3-ER-339, FAC ¶ 90. Furthermore, an analysis of data from 3.8 million emergency department (“ED”) visits by children and adolescents found that temperatures above the minimum morbidity temperature, which is the temperature at which the risk of illness or death is lowest, accounted for an estimated 11.8% of

⁷ *Protecting Children and Maternal Health from Extreme Heat*, U.S. Env’t Prot. Agency (Mar. 20, 2025), <https://www.epa.gov/children/protecting-children-and-maternal-health-extreme-heat>.

⁸ Danielle Uibel *et al.*, *Association of Ambient Extreme Heat with Pediatric Morbidity: A Scoping Review*, 66 Int’l J. Biometeorology 1683–98 (2022), <https://pmc.ncbi.nlm.nih.gov/articles/PMC10019589/pdf/nihms-1799520.pdf>.

warm-season ED illnesses.⁹ Heat and air pollution have also been observed to synergistically increase the incidence of preterm birth and childhood asthma hospitalizations.¹⁰

Several studies suggest that heat associated with climate change also has adverse impacts on the mental health of children and adolescents, including increased mental health-related emergency room visits, and also affects children's ability to learn.^{11, 12} High heat exposure has been linked to deterioration in sleep, cognition, mood, and academic achievement. In California, an estimated one in five schools has no air

⁹ Aaron S. Bernstein *et al.*, *Warm Season and Emergency Department Visits to U.S. Children's Hospitals*, 130 *Env't Health Persps.* 017001 (2022), <https://pmc.ncbi.nlm.nih.gov/articles/PMC8767980/pdf/ehp8083.pdf>.

¹⁰ Bruce Bekkar *et al.*, *Association of Air Pollution and Heat Exposure With Preterm Birth, Low Birth Weight, and Stillbirth in the US: A Systematic Review*, 3 *JAMA Network Open* e208243 (2020), <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2767260>.

¹¹ Vera Clemens *et al.*, *Report of the intergovernmental panel on climate change: implications for the mental health policy of children and adolescents in Europe—a scoping review*, 31 *Eur. Child & Adolescent Psychiatry* 701–13 (2020), <https://link.springer.com/article/10.1007/s00787-020-01615-3>.

¹² Francis Vergunst & Helen L. Berry, *Climate Change and Children's Mental Health: A Developmental Perspective*, 10 *Clinical Psych. Sci.* 767–85 (2022), <https://journals.sagepub.com/doi/epub/10.1177/21677026211040787>.

conditioning, and another 10% need repair.¹³ As heat waves intensify, costs to keep classrooms cool also rise, creating a burden for all schools but particularly those that are already underfunded.

B. Increases in temperature can create further risk of bacterial infection, contaminated food sources, and vector-borne diseases for children.

Rising temperatures can also increase exposure to pathogens and toxins, while decreasing the availability of nutrients. For infants and young children, whose immune systems are not as robust as those of adults, this consequence of rising temperatures is especially dangerous.

Children, especially infants, are particularly susceptible to gastrointestinal infection caused by bacterial pathogens, such as Salmonella, in food and water. These infections are more frequent at higher ambient temperatures that promote bacterial replication.¹⁴

Additionally, warmer temperatures expose children to higher levels of toxic materials, which can have dramatic impacts on the development

¹³ Alejandra Reyes-Velarde, *Vomiting, cramps and lethargy: As heat rises, California kids are sweltering in schools with no air conditioning*, CalMatters (Oct. 1, 2024), <https://calmatters.org/environment/climate-change/2024/10/california-schools-air-conditioning-heatwave-climate/>.

¹⁴ Luma Akil *et al.*, *Effects of Climate Change on Salmonella Infections*, 11 Foodborne Pathogens & Disease 974–80 (2014), <https://pmc.ncbi.nlm.nih.gov/articles/PMC4346543/pdf/fpd.2014.1802.pdf>.

of their brains and bodies. For example, warmer water temperatures have been correlated with higher heavy metal concentrations, especially mercury, in fish.¹⁵ Increased consumption of contaminated fish can put children at risk for poor neurobehavioral development.¹⁶ Although consuming mercury as an adult is not ideal, because adult bodies are bigger, have fully developed brains, endocrine systems, and immune systems, mercury exposure presents a much lower risk to adults than children. Exposure to mercury, polychlorinated biphenyls, and other pollutants can interfere with children's growth, brain development, and the development of other key biological systems. The deficits thus created are not things kids grow out of; if a child's brain does not fully develop in childhood because of mercury poisoning it will not "grow of out it" as an adult. The damage has been done.

¹⁵ Jennifer A. Dijkstra *et al.*, *Experimental and Natural Warming Elevates Mercury Concentrations in Estuarine Fish*, 8 PLOS One e58401 (2013), <https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0058401&type=printable>.

¹⁶ Manuel Lozano *et al.*, *Exposure to mercury among 9-year-old children and neurobehavioural function*, 146 *Env't Int'l* 106173 (2021), <https://www.sciencedirect.com/science/article/pii/S0160412020321280?via%3Dihub>.

While increased temperature expose children to increased levels of pollutants, it decreases the availability of nutrients critical to children's development. Docosahexaenoic acid ("DHA") and other fatty acids are important for brain development. Although studies are preliminary, they suggest that increasing temperatures are associated with reduced levels of DHA in fish.¹⁷ This means that children are less likely to have the nutrients needed to fully develop. Increased ocean temperatures also reduce fish resources overall, further depleting the availability of these key nutrients for healthy development.¹⁸

Higher temperatures also increase the occurrence of harmful algal blooms ("HAB") that release toxins that enter food sources and cause

¹⁷ Stefanie M. Colombo *et al.*, *Projected declines in global DHA availability for human consumption as a result of global warming*, 49 *Ambio* 865–80 (2020), <https://link.springer.com/article/10.1007/s13280-019-01234-6>.

¹⁸ Jordan Davidson, *Ocean Warming Dooms Most Fish, Study Says*, EcoWatch (July 3, 2020, 11:48 AM), <https://www.ecowatch.com/ocean-warming-fish-survival-2646322671.html>.

waterborne diseases.^{19, 20} Throughout California and nationally, HABs are increasing in freshwater and marine ecosystems because of warming waters, stagnant or low water levels, and increased nutrient runoff. One primary toxin of concern is domoic acid, produced by the algae *Pseudo-nitzschia*. Domoic acid and other algal toxins can accumulate in shellfish and finfish. Domoic acid poisoning in humans is known as Amnesic Shellfish Poisoning and poses a risk to humans who consume contaminated seafood.^{21, 22}

Freshwater and estuarine HABs (FHABs) are also increasing in incidence, duration, and toxicity in California due to presence of

¹⁹ *Marine harmful algal blooms*, Off. Env't Health Hazard Assessment (Aug. 23, 2023), <https://oehha.ca.gov/climate-change/epic-2022/impacts-vegetation-and-wildlife/marine-harmful-algal-blooms>; *Indicators of Climate Change in California (2022): Marine Harmful Algal Blooms* (Nov. 1, 2022), <https://oehha.ca.gov/sites/default/files/media/epic/downloads/04marinehabs.pdf>.

²⁰ *Climate Change and Freshwater Harmful Algal Blooms*, U.S. Env't Prot. Agency (Feb. 26, 2025), <https://www.epa.gov/habs/climate-change-and-freshwater-harmful-algal-blooms>.

²¹ Vera L. Trainer *et al.*, *Pelagic harmful algal blooms and climate change: Lessons from nature's experiments with extremes*, 91 *Harmful Algae* 101591 (2020), <https://www.sciencedirect.com/science/article/abs/pii/S1568988319300356>.

²² *Marine Biotxin Monitoring Program*, Cal. Dep't Pub. Health (Apr. 19, 2017), <https://www.cdph.ca.gov/Programs/CEH/DRSEM/Pages/EMB/Shellfish/Domoic-Acid.aspx>.

increased cyanobacteria blooms and the cyanotoxins they produce. They threaten drinking water supplies, wildlife, domestic animals, and human health.^{23, 24} Children are particularly vulnerable due to their smaller body weight, tendency to ingest more water during play, and developmental sensitivities.

Warmer temperatures also increase the geographical spread of disease vectors, such as the *Aedes* mosquito, that can impact infants' health outcomes. The *Aedes* mosquito is also the primary carrier for the Zika virus, responsible for the 2015–2016 outbreak in the Americas, including travel-associated cases in the U.S.²⁵ Cases of local Zika transmission occurred in Florida and Texas in 2016–2017. Infection in pregnancy can cause infants to develop microcephaly, severe brain malformations, and other birth defects.

²³ *Freshwater and Estuarine Harmful Algal Bloom (FHAB) Program*, Cal. Water Bds. (July 18, 2025), https://www.waterboards.ca.gov/water_issues/programs/swamp/freshwater_cyanobacteria.html.

²⁴ Chelsea A. Weirich & Todd R. Miller, *Freshwater harmful algal blooms: toxins and children's health*, 44 *Current Problems Pediatric & Adolescent Health Care* 2–24 (2014), <https://pubmed.ncbi.nlm.nih.gov/24439026/>.

²⁵ *Zika Cases in the United States*, U.S. Ctrs. for Disease Control & Prevention (Jul 1, 2025), <https://www.cdc.gov/zika/zika-cases-us/index.html>.

In California, climate change is contributing to the appearance of Dengue fever, Valley fever, and West Nile virus. Dengue fever is a mosquito-borne disease that is increasing in prevalence in the U.S.²⁶ In 2024, eighteen locally acquired cases were reported in California.²⁷ Children in endemic areas can get dengue at a very early age and have little protection against other serotypes. With a second infection, they are more likely to develop severe dengue. Similarly, West Nile virus is transmitted by mosquitoes and was first observed in California in 2003. With increasing temperatures, West Nile virus is likely to increase in prevalence in California.²⁸

²⁶ Noah Wheaton *et al.*, *Uncovering the surge: dengue fever on the rise*, 5 *Frontiers Epidemiology* 1478425 (2025), <https://www.frontiersin.org/journals/epidemiology/articles/10.3389/fepid.2025.1478425/full>.

²⁷ *Ongoing Risk of Dengue Virus Infections and Updated Testing Recommendations in the United States*, U.S. Ctrs. for Disease Control & Prevention (Mar. 18, 2025), <https://www.cdc.gov/han/php/notices/han00523.html>.

²⁸ Nicholas K. Skaff *et al.*, *Thermal thresholds heighten sensitivity of West Nile virus transmission to changing temperatures in coastal California*, 287 *Proceedings Royal Soc'y B: Biological Scis.* 20201065 (2020), <https://royalsocietypublishing.org/doi/epdf/10.1098/rspb.2020.1065>.

II. Children Are Uniquely Vulnerable to Increased Air Pollution from Climate Change

Increased air pollution is another major consequence of climate change. Climate-change driven air pollution includes increased particulate matter, wildfire smoke, and drought. Among children, air pollution can lead to health conditions including allergies, fungal infections, and asthma.

Children are also much more susceptible to air, water, and soil pollution because of a host of unique biological and behavioral factors.²⁹,³⁰,³¹ For example, the speed of development and the elaborate developmental programming and adaptation that occurs during these early stages of childhood make infants and young people highly susceptible to disruption by toxic chemicals and other stressors. The

²⁹ Frederica Perera, *Children's Health & the Peril of Climate Change* (2022).

³⁰ Frederica P. Perera, *Multiple Threats to Child Health from Fossil Fuel Combustion: Impacts of Air Pollution and Climate Change*, 125 *Env't Health Persps.* 141–48 (2017), <https://ehp.niehs.nih.gov/doi/epdf/10.1289/EHP299>.

³¹ *Principles of Pediatric Environmental Health*, Agency for Toxic Substances & Disease Registry (Feb. 15, 2012), https://www.atsdr.cdc.gov/csem/ped_env_health/docs/ped_env_health.pdf [https://web.archive.org/web/20240926183200/https://www.atsdr.cdc.gov/csem/ped_env_health/docs/ped_env_health.pdf].

developing bodies of infants and children lack fully developed biological defense mechanisms to detoxify chemicals, repair DNA damage, and provide immune protection. And, their narrower airways are vulnerable to constriction by air pollution and allergens.

Children have increased pathways of exposure to pollution, as well. And, children have a larger surface area to body mass ratio than adults, breathe at a faster rate and ingest more food and liquids relative to their body weight than adults, increasing their potential exposure to pollutants. They also spend more time outdoors in areas more likely to be contaminated with dangerous pollutants: infants crawl more frequently on the ground where particulate matter and other pollutants are measurably more concentrated. And, they have less effective filtration in nasal passages.^{32, 33}

³² *Children Are Not Little Adults!*, U.S. Env't Prot. Agency (July 15, 2025), <https://www.epa.gov/children/children-are-not-little-adults>.

³³ William D. Bennett *et al.*, *Nasal contribution to breathing and fine particle deposition in children versus adults*, 71 J. Toxicology & Env't Health 227–37 (2008), <https://pubmed.ncbi.nlm.nih.gov/18097948/>.

A. Increasing amounts of particulate matter in the atmosphere can adversely impact children's health outcomes.

Children around the world are exposed to very high levels of air pollution, which is associated with numerous respiratory symptoms and diseases. Several cities in California top the national list for the highest levels of particulate pollution and ozone levels.³⁴ For example, the American Lung Association has ranked Los Angeles as the worst in the nation with respect to ozone levels and fifth in the U.S. in year-round particle pollution, and San Diego is ranked eighth in the U.S. for ozone levels.³⁵ Plaintiffs-Appellants Zubayr and Muaawiyah both reside in Los Angeles. 3-ER-324, FAC ¶ 42.

The combustion of fossil fuels plays an outsized role in creating this air pollution, including directly, through emissions, and indirectly, through increasing frequencies of drought and more frequent and higher intensity wildfires. With respect to direct emissions, burning fossil fuels

³⁴ *The impacts of climate change put almost every child at risk*, UNICEF (Aug. 19, 2021), <https://www.unicef.org/stories/impacts-climate-change-put-almost-every-child-risk>.

³⁵ *State of the Air: 2025 Report* at pp. 12, 40, 41, Am. Lung Ass'n (2025), <https://www.lung.org/getmedia/5d8035e5-4e86-4205-b408-865550860783/State-of-the-Air-2025.pdf>.

releases massive amounts of air pollutants, such as particulate matter (“PM”), sulfur dioxide, nitrogen oxides, polycyclic aromatic hydrocarbons (“PAH”), and toxic metals such as mercury. Other pollutants, such as ozone, are formed indirectly when oxides of nitrogen (“NO_x”) react with volatile organic compounds (“VOC”) in the presence of sunlight.

Moreover, the global increases in temperature due to burning fossil fuels has increased the frequency and severity of wildfires, droughts, and sandstorms. These “natural” disasters, in turn increase air pollution, including significant increases in PM. PM is a complex mixture that includes both organic and inorganic particles, such as dust, pollen, soot, smoke, and liquid droplets. These particles vary greatly in size, composition, and origin: coarse particulate matter (with an aerodynamic diameter <10 µm, known as PM₁₀), fine particulate matter (<2.5 µm, known as PM_{2.5}), and ultrafine particulate matter (<0.1 µm, known as PM_{0.1}). All three of these types of PM have been associated with increased morbidity and mortality.³⁶ In fact, in 2021, based on convincing

³⁶ Ling Liu *et al.*, *Effects of Ambient Coarse, Fine, and Ultrafine Particles and Their Biological Constituents on Systemic Biomarkers: A Controlled Human Exposure Study*, 123 Env’t Health Persps. 534–40 (2015), <https://pmc.ncbi.nlm.nih.gov/articles/PMC4455587/pdf/ehp.1408387.pdf>.

association between PM_{2.5} and mortality, the World Health Organization lowered its air quality guideline for PM_{2.5} from 10 µg/m³ to 5 µg/m³.³⁷ The Lancet Commission on Pollution and Health also linked air pollution to multiple non-communicable diseases in children, including low birth weight, asthma, cancer, and neurodevelopmental disorders.^{38, 39} Exposure to PM is associated with acute and chronic respiratory symptoms, decreased lung function, worsening of asthma, and the development of chronic bronchitis.

Particles can cause various health problems depending on their type. Dust particles and particles of biological origin are most likely to be coarse particles (PM₁₀). Coarse particles can irritate eyes, nose, throat, and airways and penetrate deeply into the lungs. In contrast, particles produced by combustion are most likely to be fine particles (PM_{2.5}) and

³⁷ Barbara Hoffmann *et al.*, *WHO Air Quality Guidelines 2021-Aiming for Healthier Air for all: A Joint Statement by Medical, Public Health, Scientific Societies and Patient Representative Organisations*, 66 Int'l J. Public Health 1604465 (2021), <https://pmc.ncbi.nlm.nih.gov/articles/PMC8494774/pdf/ijph-66-1604465.pdf>.

³⁸ Richard Fuller *et al.*, *Pollution and health: a progress update*, 6 Lancet Planetary Health 535–47 (2022), <https://www.thelancet.com/action/showPdf?pii=S2542-5196%2822%2900090-0>.

³⁹ Philip J. Landrigan *et al.*, *The Lancet Commission on pollution and health*, 391 Lancet 462–512 (2018), [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(17\)32345-0/abstract](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(17)32345-0/abstract).

ultrafine particles (PM_{0.1}). Fine and ultrafine particles, which can penetrate into lung tissue and enter the blood, are associated with more severe respiratory disorders than coarse particles.

There is evidence suggesting that exposures to ambient air pollutants such as PM, ozone, and NO_x are related to incidence and exacerbations of asthma in both children and adults.^{40, 41, 42, 43, 44} A study, which included participants from California, found that early-life ozone exposure was associated with asthma and wheeze outcomes when

⁴⁰ Anil Nanda *et al.*, *Air Pollution Effects in Allergies and Asthma*, 42 Immunology & Allergy Clinics N. Am. 801–15 (2022), <https://pubmed.ncbi.nlm.nih.gov/36265977/>.

⁴¹ Jianzhao Bi *et al.*, *Acute Effects of Ambient Air Pollution on Asthma Emergency Department Visits in Ten U.S. States*, 131 Env't Health Persps. 47003 (2023), <https://ehp.niehs.nih.gov/doi/epdf/10.1289/EHP11661>.

⁴² Hamid Saeed Shaikh *et al.*, *Air pollution and increasing asthma hospitalizations: a looming healthcare crisis?*, 73 J. Pak. Med. Ass'n 739 (2023), https://www.researchgate.net/publication/369114735_Air_pollution_and_increasing_asthma_hospitalizations_a_looming_healthcare_crisis.

⁴³ Lana Mukharesh *et al.*, *Air pollution and childhood asthma*, 23 Current Op. Allergy & Clinical Immunology 100–10 (2023), <https://pmc.ncbi.nlm.nih.gov/articles/PMC11920647/pdf/nihms-2064921.pdf>.

⁴⁴ Gary Adamkiewicz *et al.*, *The Respiratory Risks of Ambient/Outdoor Air Pollution*, 41 Clinics Chest Med. 809–24 (2020), <https://pmc.ncbi.nlm.nih.gov/articles/PMC7665094/pdf/nihms-1634933.pdf>.

children are four to six years old.⁴⁵ A review conducted by the Health Effects Institute in the U.S. found that each 10 $\mu\text{g}/\text{m}^3$ increase in NO_2 was associated with a relative risk of asthma onset of 1.05 in children (12 studies).⁴⁶ Another systematic literature review found compelling evidence that exposures to $\text{PM}_{2.5}$, PM_{10} , and NO_2 contribute to risk of asthma development in childhood.⁴⁷ In meta-analyses exploring the associations between exposure to traffic-related air pollution (“TRAP”) and specific health outcomes, among children, each 5 $\mu\text{g}/\text{m}^3$ increase in exposure to PM with an aerodynamic diameter of $\leq 2.5\mu\text{m}$ ($\text{PM}_{2.5}$) was associated with a relative risk of asthma onset of 1.33 (five studies).⁴⁸

⁴⁵ Logan C. Dearborn *et al.*, *Early-Life Ozone Exposure and Asthma and Wheeze in Children*, 8 JAMA Network Open e254121 (2025), <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2832109>.

⁴⁶ H. Boogaard *et al.*, *Long-term exposure to traffic-related air pollution and selected health outcomes: A systematic review and meta-analysis*, 164 *Env’t Int’l* 107262 (2022), <https://www.sciencedirect.com/science/article/pii/S016041202200188X>.

⁴⁷ F. Perera *et al.*, *Towards a fuller assessment of benefits to children’s health of reducing air pollution and mitigating climate change due to fossil fuel combustion*, 172 *Env’t Rsch.* 55–72 (2019), <https://www.sciencedirect.com/science/article/abs/pii/S0013935118306455?via%3Diuhub>.

⁴⁸ Boogaard *et al.*, *supra* note 46.

Similar effects were observed for associations with asthma prevalence among children (21 studies).⁴⁹

In addition, chronic air pollution has been associated with increased rates of anxiety and depression in children, and episodic poor air quality has been associated with increased pediatric crisis presentations.

B. Wildfires are another key contributor to air pollution that impact children's health.

Higher temperatures lead to increased frequency and intensity of wildfires. Wildfires release large quantities of CO₂, carbon monoxide, and PM into the atmosphere. Wildfires often cause many additional toxins to be released into the atmosphere, especially if man-made structures and materials are also incinerated during a wildfire.

Increases in wildfires have led to increases in air pollution. Indeed, wildfires are estimated to contribute at least 25% of the PM in the atmosphere.⁵⁰ An estimated 7.4 million children in the U.S. were exposed

⁴⁹ *Id.*

⁵⁰ Marshall Burke *et al.*, *The changing risk and burden of wildfire in the United States*, 118 Proceedings Nat'l Acad. Scis. U.S. e2011048118 (2021), <https://www.pnas.org/doi/epdf/10.1073/pnas.2011048118>.

to lung-damaging wildfire smoke every year between 2008 and 2012.⁵¹ This number has risen in recent years as large forest fires in the western U.S. have become more frequent. Over the past two decades, the incidence of large wildfires, defined as fires that burn 10,000 acres or more, has increased, and 18 of the 20 largest wildfires from 1950 to 2023 occurred since 2000.⁵² Half of them—10 out of the 20 largest fires—occurred in 2020 and 2021.⁵³

Wildfire smoke can harm children’s health outcomes and increase the risk of respiratory symptoms in infants. For example, a study in San Diego County found that “[w]ildfire-specific PM_{2.5} was ~10 times more harmful on children’s respiratory health than PM_{2.5} from other sources, particularly for children aged 0 to 5 years.”⁵⁴ A 10-unit increase in PM_{2.5} (from non-smoke sources) was estimated to increase the number of

⁵¹ Stephanie M. Holm *et al.*, *Health effects of wildfire smoke in children and public health tools: a narrative review*, 31 J. Exposure Sci. & Env’t Epidemiology 1–20 (2021), https://pmc.ncbi.nlm.nih.gov/articles/PMC7502220/pdf/41370_2020_Article_267.pdf.

⁵² *Wildfires*, Off. Env’t Health Hazard Assessment (July 1, 2024), <https://oehha.ca.gov/climate-change/epic-2022/impacts-vegetation-and-wildlife/wildfires>.

⁵³ *Id.*

⁵⁴ Rosana Aguilera *et al.*, *Fine Particles in Wildfire Smoke and Pediatric Respiratory Health in California*, 147 Pediatrics e2020027128 (2021), <https://pubmed.ncbi.nlm.nih.gov/33757996/>.

emergency room and urgent care admissions by 3.7%, compared to an estimated 30.0% increase in emergency room and urgent care visits as a result of PM_{2.5} attributable to wildfire.⁵⁵

Additionally, California-focused studies have evaluated the effects of increasing wildfire smoke exposure on infant and child health. These studies have found increased risk of respiratory symptoms (nose and throat irritations, cough, bronchitis, wheeze, asthma attacks), medication usage, and physician visits.⁵⁶ For example, increases in pediatric respiratory visits were associated with Santa Ana wind-driven wildfire smoke and PM_{2.5} levels in San Diego County.⁵⁷ Other studies have evaluated the association between exposure to wildfire smoke from California fires during pregnancy and adverse birth outcomes. These

⁵⁵ *Id.*

⁵⁶ Nino Künzli *et al.*, *Health Effects of the 2003 Southern California Wildfires on Children*, 174 Am. J. Respiratory & Critical Care Med. 1221–28 (2006), <https://www.atsjournals.org/doi/epdf/10.1164/rccm.200604-519OC?role=tab>.

⁵⁷ Sydney Leibel *et al.*, *Increase in Pediatric Respiratory Visits Associated with Santa Ana Wind-Driven Wildfire Smoke and PM_{2.5} Levels in San Diego County*, 17 Annals Am. Thoracic Soc’y 313–20 (2020), <https://www.atsjournals.org/doi/epdf/10.1513/AnnalsATS.201902-150OC?role=tab>.

studies found that exposure to wildfire smoke was associated with increased risk of preterm birth or low birth weight.^{58, 59, 60, 61, 62, 63}

The adverse effects of exposure to wildfires on children's health are reflected in the allegations of Plaintiffs-Appellants in this case. *See* 3-ER-325, FAC ¶ 48 (alleging that Plaintiff Dani missed fifteen days of school because of “migraines, shakes, and congestion”); 3-ER-332–33, FAC ¶ 70 (alleging that Plaintiff Avroh obtained medical treatment to cauterize a

⁵⁸ Anna Claire G. Fernández *et al.*, *Retrospective analysis of wildfire smoke exposure and birth weight outcomes in the San Francisco Bay Area of California*, 1 *Env't Res.: Health* 025009 (2023), https://pmc.ncbi.nlm.nih.gov/articles/PMC10261910/pdf/erh_1_2_025009.pdf.

⁵⁹ Sandie Ha *et al.*, *Impacts of heat and wildfire on preterm birth*, 252 *Env't Rsch.* 119094 (2024), <https://www.sciencedirect.com/science/article/pii/S001393512400999X?via%3Dihub>.

⁶⁰ Sam Heft-Neal *et al.*, *Associations between wildfire smoke exposure during pregnancy and risk of preterm birth in California*, 203 *Env't Rsch.* 111872 (2021), https://web.stanford.edu/~mburke/papers/heftneal_etal_2021_PTB.pdf.

⁶¹ David M. Holstius *et al.*, *Birth weight following pregnancy during the 2003 Southern California wildfires*, 120 *Env't Health Persps.* 1340–45 (2012), <https://ehp.niehs.nih.gov/doi/epdf/10.1289/ehp.1104515>.

⁶² Anqi Jiao *et al.*, *Fine Particulate Matter, Its Constituents, and Spontaneous Preterm Birth*, 7 *JAMA Network Open* e2444593 (2024), <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2826108>.

⁶³ Sally Picciotto *et al.*, *Pregnancy exposure to PM_{2.5} from wildland fire smoke and preterm birth in California*, 186 *Env't Int'l* 108583 (2024), <https://www.sciencedirect.com/science/article/pii/S0160412024001697?via%3Dihub>.

blood vessel due to nosebleeds); 3-ER-330, FAC ¶ 62 (alleging that Plaintiff Noah developed asthma after exposure to wildfire smoke).

In sum, as wildfires become a regular occurrence every year, they will continue to be of concern to children exposed to smoke, displaced from their homes, and forced to live with the short- and long-term impact of these disasters on their mental and physical health.

C. Air pollution is increasing pollen concentrations, which can affect asthma and allergy conditions among children.

Additionally, climate change is increasing mold and pollen concentrations, duration of pollen season, and allergenicity of pollen. From 1990 to 2018, there have been increases in pollen concentration and longer pollen seasons in North America, 50% of which was attributed to anthropogenic climate change.⁶⁴ Higher temperatures and rising levels of CO₂ have resulted in longer growing seasons and increased pollen production. Consequently, children are also experiencing more allergy

⁶⁴ William R. L. Anderegg *et al.*, *Anthropogenic climate change is worsening North American pollen seasons*, 118 *Proceedings Nat'l Acad. Scis. U.S.* e2013284118 (2021), <https://www.pnas.org/doi/epdf/10.1073/pnas.2013284118>.

and asthma attacks from increased levels of airborne pollen.^{65, 66, 67} Some studies show that NO₂ and ozone via nitrification and oxidation increase pollen allergenicity.⁶⁸

D. Drought can result in increased fungal infections among youth.

During drought, as water sources dry up, soils aerosolize, increasing airborne pollution and dust storms, and pose risks for respiratory health and mortality.^{69, 70} These environmental changes

⁶⁵ *Id.*

⁶⁶ Bibek Paudel *et al.*, *Increased duration of pollen and mold exposure are linked to climate change*, 11 Sci. Reps. 12816 (2021), https://pmc.ncbi.nlm.nih.gov/articles/PMC8211740/pdf/41598_2021_Article_92178.pdf.

⁶⁷ James E. Neumann *et al.*, *Estimates of Present and Future Asthma Emergency Department Visits Associated With Exposure to Oak, Birch, and Grass Pollen in the United States*, 3 GeoHealth 11–27 (2019), <https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2018GH000153>.

⁶⁸ Shumin Zhou *et al.*, *Characterization of allergenicity of Platanus pollen allergen a 3 (Pla a 3) after exposure to NO₂ and O₃*, 278 Env't Pollution 116913 (2021), <https://www.sciencedirect.com/science/article/abs/pii/S0269749121004954?via%3Dihub>.

⁶⁹ Pattanum Achakulwisut *et al.*, *Effects of Increasing Aridity on Ambient Dust and Public Health in the U.S. Southwest Under Climate Change*, 3 GeoHealth 127–44 (2019), <https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2019GH000187>.

⁷⁰ Jesse D. Berman *et al.*, *Drought and the risk of hospital admissions and mortality in older adults in western USA from 2000 to 2013: a retrospective study*, 1 Lancet Planetary Health e17–e25 (2017),

have major effects on human health. For example, in California, sand and dust storms, which are increasing due to climate change, are spreading the fungus, *Coccidioides*. Inhaling spores of the fungus can cause Valley Fever (coccidioidomycosis). A report from the California Department of Public Health shows more than 4,000 cases of Valley Fever from January through April 2025. Doctors from Loma Linda have reported that youth cases are “up from the average, with five to 10 cases per month since the start of the year.”⁷¹

III. Children Are Uniquely Vulnerable to Flooding and Clean Water Insecurity

Climate change can contribute to increased flooding.⁷² Household water scarcity or flooding can lead to exposure to pollutants and vector-

<https://www.thelancet.com/action/showPdf?pii=S2542-5196%2817%2930002-5>.

⁷¹ Dean Fioresi, *Loma Linda Children’s Hospital doctors note spike in Valley Fever cases*, CBS News (June 23, 2025, 7:05 PM), <https://www.cbsnews.com/losangeles/news/valley-fever-inland-empire-loma-linda-childrens-hospital/>.

⁷² See, e.g., Hanbeen Kim & Gabriele Villarini, *Higher emissions scenarios lead to more extreme flooding in the United States*, 15 *Nature Commc’ns* 237 (2024), <https://www.nature.com/articles/s41467-023-44415-4>.

borne and parasitic diseases.^{73, 74, 75, 76, 77, 78, 79} When flooding occurs, the population is exposed to numerous dangerous toxins, algal blooms, and other contaminants. Water contamination can lead to further acute

⁷³ Muluken Azage *et al.*, *Effect of climatic variability on childhood diarrhea and its high risk periods in northwestern parts of Ethiopia*, 12 PLOS One e0186933 (2017), <https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0186933&type=printable>.

⁷⁴ Saverio Bellizzi *et al.*, *Health consequences of drought in the WHO Eastern Mediterranean Region: hotspot areas and needed actions*, 19 Env't Health 114 (2020), <https://ehjournal.biomedcentral.com/articles/10.1186/s12940-020-00665-z>.

⁷⁵ Jordan P. Emont *et al.*, *Epidemiological Investigation of a Diarrhea Outbreak in the South Pacific Island Nation of Tuvalu During a Severe La Nina-Associated Drought Emergency in 2011*, 96 Am. J. Tropical Med. & Hygiene 576–82 (2017), <https://pmc.ncbi.nlm.nih.gov/articles/PMC5361530/pdf/tropmed-96-576.pdf>.

⁷⁶ Abiodun Olusola Omotayo *et al.*, *Clean water, sanitation and under-five children diarrhea incidence: Empirical evidence from the South Africa's General Household Survey*, 28 Env't Sci. & Pollution Rsch. 63150–62 (2021), <https://link.springer.com/article/10.1007/s11356-021-15182-w>.

⁷⁷ Giulio A. De Leo *et al.*, *Schistosomiasis and climate change*, 371 BMJ m4324 (2020), <https://www.bmj.com/content/bmj/371/bmj.m4324.full.pdf>.

⁷⁸ M. E. Gorris *et al.*, *Coccidioidomycosis Dynamics in Relation to Climate in the Southwestern United States*, 2 GeoHealth 6–24 (2018), <https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1002/2017GH000095>.

⁷⁹ Bruce A. Wilcox *et al.*, *Vector-borne disease and climate change adaptation in African dryland social-ecological systems*, 8 Infectious Diseases Poverty 36 (2019), <https://idjournal.biomedcentral.com/articles/10.1186/s40249-019-0539-3>.

effects including mortality and loss of potable water supplies⁸⁰ as well as the propagation of vector borne diseases and water borne pathogens, infection through exposure, poisoning via toxic chemical exposure, and mold in homes.^{81, 82}

California is susceptible to flooding from various sources, such as tsunamis and flash floods.⁸³ Flooding increases hazards posed by sewage, chemicals, heavy metals, pathogens, and even hazardous waste from industrial and household sources.

Mold growth due to dampness after flooding also poses a health risk.⁸⁴ The risk of outbreaks of gastrointestinal illness has been linked to

⁸⁰ Eline Boelee *et al.*, *Water and health: From environmental pressures to integrated responses*, 193 *Acta Tropica* 217–26 (2019), <https://www.sciencedirect.com/science/article/pii/S0001706X18300883>.

⁸¹ Gennaro D'Amato *et al.*, *The effects of climate change on respiratory allergy and asthma induced by pollen and mold allergens*, 75 *Allergy* 2219–28 (2020), <https://onlinelibrary.wiley.com/doi/epdf/10.1111/all.14476>.

⁸² *Tomorrow's Coasts: Complex and Impermanent* at 151–66 (Lynn Donelson Wright & C. Reid Nichols eds., 2019).

⁸³ See *Flood*, Cal. Dep't Water Res., <https://water.ca.gov/Water-Basics/Flood> (last visited July 22, 2025).

⁸⁴ Parham Azimi & Joseph Allen, *Respiratory health harms often follow flooding: Taking these steps can help*, Harvard Health Publ'g (Nov. 9, 2022), <https://www.health.harvard.edu/blog/respiratory-health-harms-often-follow-flooding-taking-these-steps-can-help-202211092848>.

extreme precipitation and flooding, often due to an overflow of combined sewage systems and/or a lack of access to clean water.⁸⁵

Decreases in immunity can also result from malnutrition from dwindling crop yields or increased exposures to dioxins and toxic metals such as lead, cadmium, and mercury found in contaminated water.^{86,87,88}

IV. Children Are Uniquely Vulnerable to the Psychological Impact of Traumatic Events

Children are also uniquely vulnerable to the psychological impact of experiencing traumatic events such as extreme weather events. Globally, climate-related events have already contributed to more than

⁸⁵ David L. Paterson *et al.*, *Health Risks of Flood Disasters*, 67 Clin. Infectious Disease 1450–54 (2018), <https://academic.oup.com/cid/article/67/9/1450/4945455?login=false>.

⁸⁶ Fuller *et al.*, *supra* note 38.

⁸⁷ Ashwin Swaminathan *et al.*, *Will Global Climate Change Alter Fundamental Human Immune Reactivity: Implications for Child Health?*, 1 Children 403–23 (2014), <https://pmc.ncbi.nlm.nih.gov/articles/PMC4928742/>.

⁸⁸ Rebecca T. Emeny *et al.*, *Prenatal exposure to mercury in relation to infant infections and respiratory symptoms in the New Hampshire Birth Cohort Study*, 171 Env't Rsch. 523–29 (2019), <https://pmc.ncbi.nlm.nih.gov/articles/PMC6561090/pdf/nihms-1521217.pdf>.

50 million children being forced to leave their homes.^{89, 90} In the U.S., over 900,000 displacements, many of them involving children, occurred in 2019 as a result of disasters.⁹¹ The 2018 Camp Fire in California displaced roughly 50,000 people.⁹² Many of them were school-aged children. A total of 4,832 students and staff members were evacuated from schools in the Paradise Unified School District, which suffered extensive damage to its school buildings.⁹³ Many of those students experienced severe and long-term impacts on their mental health from the trauma of the fire and the prolonged evacuation as well as the loss of

⁸⁹ *Climate mobility and children*, UNICEF, <https://www.unicef.org/innocenti/projects/climate-mobility-and-children> (last visited July 17, 2025).

⁹⁰ Mariam Traore Chazalnoël *et al.*, *Children on the Move: Why, Where, How?*, UNICEF (Nov. 3–4, 2020), https://environmentalmigration.iom.int/sites/g/files/tmzbd11411/files/documents/children-on-the-move_-_why-where-how.pdf.

⁹¹ *Global Report on Internal Displacement 2020*, Internal Displacement Monitoring Ctr. (Apr. 2020), <https://www.internal-displacement.org/global-report/grid2020/>.

⁹² Hannah Hennighausen & Alexander James, *Catastrophic fires, human displacement, and real estate prices in California*, 66 J. Housing Econ. 102023 (2024), <https://www.sciencedirect.com/science/article/abs/pii/S1051137724000421>.

⁹³ Sara Hamideh *et al.*, *Wildfire impacts on education and healthcare: Paradise, California, after the Camp Fire*, 111 Nat. Hazards 353–87 (2022), https://pmc.ncbi.nlm.nih.gov/articles/PMC8500817/pdf/11069_2021_Article_5057.pdf.

their homes and schools, including sensitivity to triggers, difficulty focusing, and disruptive behavior.⁹⁴

Traumatic events that occur during childhood can have long-lasting effects, including the development of anxiety and depression. Research indicates that the link between exposure to traumatic events in childhood and the development of depression and anxiety may be related to the nervous system's automatic responses to stressors, which include the activation of stress hormones that help place the body on alert, ready to respond to threats.⁹⁵ If this nervous system state of readiness occurs frequently or becomes chronic, that may increase the risk of depressive and anxiety disorders due to heightened cortisol levels.⁹⁶ Childhood is a critical time for neurological development, and both chronic stressors and acute traumatic events during that time will significantly shape an individual's development.

⁹⁴ *Id.*

⁹⁵ Cheyenne Downey & Aoife Crummy, *The impact of childhood trauma on children's wellbeing and adult behavior*, 6 Eur. J. Trauma & Dissociation 100237 (2022), <https://www.sciencedirect.com/science/article/pii/S2468749921000375>.

⁹⁶ *Id.*

The children who are Plaintiffs in this case have already begun experiencing the impact of climate change and displacement on their mental health, and they experience anxiety about future disasters and how these will transform the world they live in. *See* 3-ER-328–29, FAC ¶¶ 57–60; 3-ER-331–332, FAC ¶¶ 67–68; 3-ER-323, FAC ¶ 37; 3-ER-339, FAC ¶ 91.

CONCLUSION

Climate change is dramatically increasing children’s exposure to heat and pollutants and destabilizing their homes, education, and futures. Children, like the Plaintiffs in this case, are being exposed to multiple climate change stressors that are affecting their mental and physical wellbeing, from development in utero to adolescence. Due to their physiology and because they are still developing, children are at higher risk of adverse health effects from exposure to these stressors than adults. These will include both short- and long-term effects. As more children are concurrently exposed to climate change and toxic stressors, cumulative effects of multiple climate change stressors have been observed. It is imperative that we protect the health and wellbeing of children both now and in the future.

RESPECTFULLY SUBMITTED this 23rd day of July, 2025.

By: s/ Alison S. Gaffney

KELLER ROHRBACK L.L.P.

Daniel P. Mensher

Alison S. Gaffney

1201 Third Avenue, Suite 3400

Seattle, WA 98101-3268

Tel.: (206) 623-1900

Counsel for Amici Curiae

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Case Number(s) 25-2473

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R. 32-2(a).

s/ Alison S. Gaffney

Alison S. Gaffney

APPENDIX A

Organizations

- American Academy of Pediatrics - CA3 San Diego and Imperial Counties Climate Change and Health Committee
- Climate Health Now
- San Diego Pediatricians for Clean Air
- UCSD School of Medicine Planetary Health Student Interest Group

Medical Professionals

- Naomi Bardach, MD: Pediatrics and Health Policy (San Francisco, CA)
- Bruce Bekkar, MD: Obstetrics and Gynecology (San Diego, CA)
- Luis Castellanos, MD, MPH: Cardiovascular Medicine (San Diego, CA)
- Crystal Doan Stephens, MD: Pediatrics (San Diego, CA)
- Rebecca Dudovitz, MD, MSHS: General Pediatrics (Los Angeles, CA)
- Maricor C. Javier, MD: Pediatrics (San Diego, CA)
- Sydney Leibel, MD, MPH: Allergy/Immunology (San Diego, CA)
- Hilary Lin, MD: Pediatric Hospital Medicine (Orange, CA)
- Jonathan Lu, MD: Family Medicine (San Jose, CA)
- Katherine Mandeville, MD, MS: Pediatric Emergency Medicine (San Diego, CA)
- Karina Maher, MD: General Pediatrics (retired)
- Cynthia Mahoney, MD: Climate Health and Air Pollution (CA)
- Ashley McClure, MD: Internal Medicine (Oakland, CA)
- Amanda Millstein, MD: Pediatrics (Oakland, CA)
- Kari Nadeau, MD, PhD: Allergy/Immunology (Boston, MA)
- Vi Nguyen, MD: Environmental Health (San Diego, CA)
- Priyanka Patel, MD: Neonatal-Perinatal Medicine (Los Angeles, CA)
- Anthony Proai, MD: Pediatrics (San Diego, CA)
- Wendy Ring, MD, MPH: General Practice (Eureka, CA – retired)
- Alex Sherriffs, MD: Family and Community Medicine (Fresno, CA)
- Laurie Tyrrell, MD: Pediatrics (San Diego, CA)

- Sara Valladolid, MD: Pediatrics (San Diego, CA)
- Jong Yun, MD: Radiology (San Diego, CA)
- Vanessa Forsythe, RN MSN: Credentialed School Nurse (retired)

Medical Students

- Gabriela Araujo
- Suneel Banerjee
- Sophie Chang
- Lauren Cueto
- Cindy Flores
- Danielle Gallandt
- Carlos Antonio Garcia Tovar
- Danielle Hjerpe
- Sandy Hu
- Anisah Husman
- Angela Francesca Jimenez
- Joseph-Camron Johnston
- Erin Kim
- Elida Kocharian
- Jesse Kuehn
- Gabriela Lopez Ruano
- Isabella Molina
- Kat Nurminsky
- Miranda Olson
- Monique Ortiz, MPH
- Claire Perrin
- Rohini Prabhakar
- Naren Ramesh
- Lui Suzuki-Williams
- Sabeeca Vadakkan
- Daisy Valdivieso

Attachment 3

2023 WL 5229257 (Mont.Dist.) (Trial Order)
District Court of Montana,
First Judicial District.
Lewis and Clark County

Rikki HELD, et al., Plaintiff,
v.
STATE of Montana, et al., Defendant.

No. CDV-2020-307.
August 14, 2023.

West Codenotes

Held Unconstitutional

[Mont. Code Ann. §§ 75-1-201\(2\)\(a\), 75-1-201\(6\)\(a\)\(ii\)](#)

Findings of Fact, Conclusions of Law, and Order

Melissa Hornbein, via email: hornbein@westernlaw.org.

Barbara Chillcott, via email: chillcott@westernlaw.org.

[Roger Sullivan](#), via email: rsullivan@mcgarveylaw.com.

[Dustin Leftridge](#), via email: dlefridge@mcgarveylaw.com.

Nathan Bellinger, via email: nate@ourchildrenstrust.org.

Mathew dos Santos, via email: mat.dossantos@ourchildrenstrust.org.

[Andrea Rodgers](#), via email: andrea@ourchildrenstrust.org.

[Philip L. Gregory](#), via email: pgregory@gregorylawgroup.com.

David M.S. Dewhirst, via email: David.dewhirst@mt.gov.

[Derek Oestreicher](#), via email: derek.oestreicher@mt.gov.

Timothy Longfield, via email: timothy.longfield@mt.gov.

Morgan Varty, via email: morgan.varty@mt.gov.

[Emily Jones](#), via email: emily@joneslawmt.com.

Lee McKenna, via email: lee.mckenna@mt.gov.

[Mark Stermitz](#), via email: mstermitz@crowleyfleck.com.

Kathy Seeley, Judge.

PROCEDURAL HISTORY

***1** On March 13, 2020, sixteen Montana youth (collectively Plaintiffs or Youth Plaintiffs) filed a Complaint for Declaratory and Injunctive Relief (Doc. 1) against the State of Montana, the Governor, Montana Department of Environmental Quality, Montana Department of Natural Resources and Conservation, Montana Department of Transportation, and Montana Public Service Commission (collectively Defendants or State). Plaintiffs' Complaint challenged the constitutionality of the State's fossil fuel-based state energy system, which they allege causes and contributes to climate change in violation of their constitutional rights guaranteed under [Article II, Section 3](#); [Article II, Section 4](#); [Article II, Section 15](#); [Article II, Section 17](#); [Article IX, Section 1](#); [Article IX, Section 3 of the Montana Constitution](#); and the Public Trust Doctrine. (Doc. 1 ¶¶ 3-4).

Specifically, the Complaint challenged the constitutionality of fossil fuel-based provisions of Montana's State Energy Policy Act, [Mont. Code Ann. § 90-4-1001\(1\)\(c\)-\(g\)](#); a provision of the Montana Environmental Policy Act (MEPA), [Mont. Code Ann. § 75-1-201\(2\)\(a\)](#) (MEPA Limitation), which forbids the State and its agents from considering the impacts of greenhouse gas (GHG) emissions or climate change in their environmental reviews; and the aggregate acts the State has taken to implement and perpetuate a fossil fuel-based energy system pursuant to these two statutory provisions. (Doc. 1 ¶¶ 4, 105, 108, 118).

Youth Plaintiffs asked the Court for a declaration of law concerning their constitutional rights; a declaration of law that the fossil fuel-based provisions of Montana's State Energy Policy, [Mont. Code Ann. § 90-4-1001\(1\)\(c\)-\(g\)](#), are unconstitutional; a declaration of law that the MEPA Limitation is unconstitutional; and a declaration of law that Defendants' past and ongoing affirmative aggregate actions to implement a fossil fuel-based energy system—carried out in furtherance of the State Energy Policy and perpetuated through the MEPA Limitation—are unconstitutional. (Doc. 1, Requests for Relief # 1-5). The Complaint further requested injunctive relief to enjoin Defendants from subjecting Plaintiffs to the fossil fuel-based State Energy Policy, [Mont. Code Ann. § 90-4-1001\(1\)\(c\)-\(g\)](#), the MEPA Limitation, and aggregate acts; order Defendants to prepare a statewide GHG accounting; order Defendants to develop a remedial plan to reduce statewide GHG emissions; retain jurisdiction until Defendants have fully complied with the Court's orders; and, if necessary, appoint a special master to review the remedial plan for efficacy. (Doc. 1, Requests for Relief # 6-9). Plaintiffs also requested an order awarding Youth Plaintiffs their reasonable attorneys' fees and costs, and any such further or alternative relief as the Court deems just and equitable. (Doc. 1, Requests for Relief # 10-11).

On April 24, 2020, Defendants filed a motion to dismiss pursuant to [Mont. R. Civ. P. 12\(b\)\(1\), 12\(b\)\(6\), and 12\(h\)\(3\)](#). (Doc. 11). After briefing and oral argument, the Court issued an Order on Motion to Dismiss on August 4, 2021, (Doc. 46), partially granting and partially denying Defendants' motion to dismiss.

***2** The Court found that Plaintiffs' requests for the Court to order Defendants to develop a remedial plan, to retain jurisdiction over the matter until Defendants complied with the remedial plan, and, if necessary, appoint a special master to assist the Court in reviewing the remedial plan exceeded the Court's authority under the political question doctrine. (Doc. 46 at 21). Nevertheless, the Court held that prudential standing considerations did not merit dismissal because the Court “may grant declaratory relief regardless of injunctive relief. The court possesses the authority to grant declaratory or injunctive relief, or both.” (Doc. 46 at 22).

Finally, the Court declined to dismiss Plaintiffs' challenge to MEPA for want of administrative exhaustion, finding that “Youth Plaintiffs properly brought this action in district court rather than through the administrative review process.” (Doc. 46 at 24). The Order granted Defendants' motion with respect to Plaintiffs' Requests for Relief # 6, 7, 8, and 9, and denied Defendants' motion with respect to Plaintiffs' Requests for Relief # 1, 2, 3, 4, and 5.

Defendants filed their Answer on September 17, 2021, (Doc. 53), denying virtually all allegations in the Complaint and raising several affirmative defenses.

Pursuant to the December 27, 2021, Scheduling Order (Doc. 61), the parties engaged in discovery throughout 2022.

On May 6, 2022, Defendants filed a Motion for Clarification of Order on State's Motion to Dismiss pursuant to [Rule 60\(a\), Mont. R. Civ. P.](#) (Doc. 84), seeking clarification on whether Plaintiffs' Request for Relief # 5 had been dismissed by the August 04, 2021, Order on Motion to Dismiss. Plaintiffs filed a Response in Opposition on May 20, 2022. (Doc. 102).

On June 10, 2022, Defendants filed a Petition for Writ of Supervisory Control (OP 22-0315), requesting the Montana Supreme Court exercise supervisory control and “dismiss Request for Relief 5 from this case.” On June 14, 2022, the Supreme Court denied the Petition. (OP 22-0315).

On June 15, 2022, the Court issued an Order Partially Granting Defendants' Motion to Modify Scheduling Order and Setting Scheduling Conference. (Doc. 145) (Modified Scheduling Order). The Modified Scheduling Order governed the timeline thereafter. Pursuant to the Modified Scheduling Order, the parties engaged in discovery through January 9, 2023 — including disclosing expert witnesses (Docs. 222, 227), rebuttal expert witnesses (Docs. 240, 242), and conducting dozens of depositions.

On June 30, 2022, the Court issued an Order on Defendants' [Rule 60\(a\)](#) Motion for Clarification (Doc. 158), clarifying that “requests for injunctive relief contained in the complaint were dismissed, except for Request for Relief 5.” (Doc. 158 at 3).

On July 19, 2022, Defendants filed a Motion for Independent Medical Examination, or, in the Alternative, Motion to Strike Opinions and Testimony of Plaintiffs' Expert Dr. Lise Van Susteren Pursuant to [Rule 35\(a\), Mont. R. Civ. P.](#) (Doc. 163), alleging that Plaintiffs' allegations of mental health impacts as a result of climate change had placed their mental health at issue. (Doc. 163 at 2). On October 14, 2022, the Court issued an Order denying Defendants' motion (Doc. 225), ruling that IMEs were unwarranted because “Plaintiffs have not placed their mental health at the center of this case, nor is it really and genuinely in controversy,” (Doc. 225 at 6), and because “Defendants have not established good cause for the requested examinations.” (Doc. 225 at 7).

On July 20, 2022, Defendants filed a Second Motion for Clarification of Order on State's Motion to Dismiss pursuant to [Rule 60\(a\), Mont. R. Civ. P.](#) (Doc. 167). Defendants' second motion for clarification sought clarification from the Court as to why Plaintiffs' Requests for Relief # 1, 2, 3, 4, and 5 “don't violate the political question doctrine.” (Doc. 167 at 3). On September 22, 2022, the Court issued an Order (Doc. 217), denying Defendants' Second [Rule 60\(a\)](#) Motion for Clarification of Order on State's Motion to Dismiss.

***3** On September 30, 2022, pursuant to the Modified Scheduling Order, Plaintiffs disclosed their expert witnesses and expert disclosures. (Doc. 222). On October 31, 2022, Defendants disclosed their expert witnesses and expert disclosures. (Doc. 227). On November 30, 2022, the parties exchanged rebuttal expert disclosures. (Docs. 239, 242).

Discovery closed on January 9, 2023. Between the parties, discovery included the completion of thirty-six depositions, the exchange of twenty-two expert reports, the exchange of over 50,000 pages of documents, and responses to dozens of interrogatories.

On February 1, 2023, Plaintiffs and Defendants file motions *in limine*. Plaintiffs filed seven motions *in limine* (Docs. 260, 262, 264, 266, 268, 270, 272) and Defendants filed seven motions *in limine* (Docs. 284, 286, 288).

On February 1, 2023, Defendants filed a Motion for Summary Judgment pursuant to [Mont. R. Civ. P. 56](#). (Doc. 290). On February 14, 2023, Plaintiffs filed a response brief opposing summary judgment. (Doc. 299). Plaintiffs filed sixteen declarations from Plaintiffs, experts, and counsel in support of their response brief (Docs. 300-315). On February 28, 2023, Defendants filed a reply. (Doc. 332).

On March 16, 2023, Governor Greg Gianforte signed House Bill 170 into law, repealing the Montana State Energy Policy, [Mont. Code Ann. § 90-4-1001](#).

On March 31, 2023, Defendants filed a Motion to Partially Dismiss for Mootness pursuant to [Mont. R. Civ. P. 12\(b\)\(1\), 12\(b\)\(6\), and 12\(h\)\(3\)](#). (Doc. 339). Defendants moved to dismiss Plaintiffs' claims premised on the Montana State Energy Policy Act, [Mont. Code Ann. § 90-4-1001](#), on the ground that the repeal of [Mont. Code Ann. § 90-4-1001](#) (HB 170) mooted claims concerning the statute.

On April 14, 2023, Plaintiffs filed a Response Brief in Opposition to Defendants' Motion to Partially Dismiss for Mootness. (Doc. 354). Plaintiffs filed nine declarations from experts in support of their response. (Docs. 355-363).

On April 26, 2023, unable to reach agreement on a joint proposed Pre-Trial Order, the parties submitted separate proposed pre-trial orders. (Docs. 366, 367). On April 27, 2023, a Final Pre-Trial Conference was held with the Court.

In response to Judge Moses' April 6, 2023, Order on Summary Judgment in *MEIC, et al. v. DEQ, et al.*, Yellowstone County Cause No. DV-56-2021-1307, the Montana Legislature adopted House Bill 971, an amendment to clarify the MEPA Limitation. On May 10, 2023, Governor Greg Gianforte signed into law HB 971, which clarified [Mont. Code Ann. § 75-1-201\(2\)\(a\)](#). The clarifications in HB 971 explicitly prohibit Montana's agencies from considering “an evaluation of greenhouse gas emissions and corresponding impacts to the climate in the state or beyond the state's borders” in their MEPA reviews.

On May 12, 2023, the Court heard oral argument on Defendants' Motions for Summary Judgment, Motion to Partially Dismiss for Mootness, and Motion to Stay Proceedings.

On May 18, 2023, Defendants filed a Motion to Dismiss MEPA Claims based on the enactment of HB 971. (Doc. 376). On June 1, 2023, Plaintiffs filed a response brief opposing Defendant's motion to dismiss the claims. (Doc. 382). Defendants filed a reply and request for oral argument on June 9, 2023. (Doc. 385).

On May 19, 2023, Governor Gianforte signed into law Senate Bill 557, amending several provisions of MEPA, [Mont. Code Ann. § 75-1-201](#).

***4** On May 23, 2023, the Court issued an Order on Defendants' Motions to Partially Dismiss for Mootness and For Summary Judgment. (Doc. 379). As to Defendants' Motion to Partially Dismiss for Mootness (Doc. 343), the Court granted Defendants' motion and dismissed without prejudice Plaintiffs' claims involving the State Energy Policy and Defendants' aggregate acts taken pursuant to and in furtherance of the State Energy Policy on redressability and prudential standing grounds. (Doc. 379 at 3-4). The Court denied Defendants' motion for summary judgment and allowed Plaintiffs' MEPA claims to proceed to trial. (Doc. 379 at 20-26).

On June 1, 2023, the Court issued an order on the remaining motions *in limine*. (Doc. 381). The Court granted Plaintiffs' motion # 2; granted in part and denied in part Plaintiffs' motions # 3 and 5; and denied Plaintiffs' motions # 4, 6, and 7. The Court granted Defendants' motions # 1, 4, 5, 6, 7; and denied Defendants' motions # 2 and 3.

On June 2, 2023, Defendants filed an Emergency Petition for Writ of Supervisory Control with the Montana Supreme Court (OP 23-0311), requesting again that the Supreme Court exercise supervisory control and reverse this Court's denial of the State's motion for summary judgment. The State also asked the Supreme Court to stay the trial set to begin June 12, 2023.

On June 6, 2023, the Montana Supreme Court denied the Emergency Petition for Writ of Supervisory Control. (OP 23-0311). The Supreme Court observed that Defendants had “not demonstrated that HB 971's amendments alter the allegations the Plaintiffs make in the Complaint” concerning the MEPA provision. (OP 23-0311 at 3).

On June 7, 2023, this Court entered the Final Pre-Trial Order governing this proceeding. (Doc. 384). In addition to “supersed[ing] the pleadings as to the remaining issues and govern[ing] the course of the trial of this case,” (Doc. 384 at 38), the Court's Final Pre-Trial Order denied Defendants' Motion to Dismiss MEPA Claims (Doc. 376). (Doc. 384 at 38).

Trial began June 12, 2023, and ended on June 20, 2023.

On June 19, 2023, while trial was proceeding, Defendants filed a Bench Memorandum on the Constitutional and Procedural Limits of the Montana Environmental Policy Act. (Doc. 396). On June 25, 2023, Plaintiffs filed a response (Doc. 402). This briefing discussed in detail SB 557.

FINDINGS OF FACT¹

The Findings of Fact and Conclusions of Law are based on the evidence and arguments presented at trial. The Court heard live testimony from twenty-seven witnesses. Plaintiffs presented testimony from twenty-four witnesses and Defendants presented testimony from three witnesses. The Court admitted one hundred sixty-eight of Plaintiffs' exhibits and four of Defendants' exhibits.

I. PARTIES

A. Plaintiffs

1. Plaintiffs are youth citizens of Montana. When the Complaint was filed in March 2020, Plaintiffs were from two to eighteen years old. They are now between five and twenty-two years old.

2. Plaintiffs are Rikki Held, Lander Busse, Saniel Sandoval, Kian Tanner, Georgianna Fischer, Kathryn Grace Gibson-Snyder, Olivia Vesovich, Claire Vlases, Taleah Hernandez, Badge B., by and through his guardian Sara Busse, Eva L., by and through her guardian Mark Lighthiser, Mica K., by and through his guardian Rachel Kantor, Jeffrey K., by and through his guardian Laura King; Nathaniel K., by and through his guardian Laura King, Ruby D., by and through her guardian Shane Doyle, and Lilian D., by and through her guardian Shane Doyle.

*5 3. Rikki Held is from Broadus, Montana, was eighteen years old when this case was filed, and is currently twenty-two years old.

4. Lander Busse is from Kalispell, Montana, was fifteen years old when this case was filed, and is currently eighteen years old.

5. Sariel Sandoval is from Ronan, Montana, and lives on the Flathead Indian Reservation. She was seventeen years old when this case was filed and is currently twenty years old.

6. Kian Tanner is from Bigfork, Montana, was fourteen years old when this case was filed, and is currently eighteen years old.

7. Georgianna Fischer is from Bozeman, Montana, was seventeen years old when this case was filed, and is currently twenty-one years old.

8. Kathryn Grace Gibson-Snyder is from Missoula, Montana, was sixteen years old when this case was filed, and is currently nineteen years old.

9. Olivia Vesovich is from Missoula, Montana, was sixteen years old when this case was filed, and is currently twenty years old.

10. Claire Vlases is from Bozeman, Montana, was seventeen years old when this case was filed, and is currently twenty years old. 11. Taleah Hernandez is from Poison, Montana, was sixteen years old when this case was filed, and is currently nineteen years old.

12. Badge B. is from Kalispell, Montana, was twelve years old when this case was filed, and is currently fifteen years old.

13. Eva L. is from Livingston, Montana, was fourteen years old

when this case was filed, and is currently seventeen years old.

14. Mica K. is from Missoula, Montana, was eleven years old when this case was filed, and is currently fifteen years old.

15. Jeffrey K. is from Montana City, Montana, was six years old when this case was filed, and is currently nine years old.

16. Nathaniel K. is from Montana City, Montana, was two years old when this case was filed, and is currently five years old.

17. Ruby D. is from Bozeman, Montana, was twelve years old when this case was filed, and is currently fifteen years old.

18. Lilian D. is from Bozeman, Montana, was nine years old when this case was filed, and is currently twelve years old.

B. Defendants

19. Defendants are the State of Montana, Governor Greg Gianforte, Montana Department of Environmental Quality, Montana Department of Natural Resources and Conservation, Montana Department of Transportation, and Montana Public Service Commission.

20. The State of Montana is a governmental entity.

21. Greg Gianforte is the current Governor of Montana. He is sued in his official capacity.

22. As Governor, Governor Gianforte is charged with seeing that the State's laws are faithfully executed, including the Constitution. [Mont. Const. Art. VI, Sec. 4](#).

23. Governor Gianforte has supervisory authority over the principal departments of the executive branch.

24. Governor Gianforte holds cabinet meetings, communicates with other state officers, oversees budget expenditures, and has authority to issue executive orders. [Def. Answer, Doc. 11 ¶ 84].

25. Defendant Montana Department of Environmental Quality (DEQ) is a department of the State of Montana.

26. DEQ is the primary administrator of Montana's environmental regulatory, environmental cleanup, environmental monitoring, pollution prevention, and energy conservation laws. [Def. Answer, Doc. 11 ¶ 88].

*6 27. DEQ is mandated to ensure that projects and activities for which it issues permits, licenses, authorizations, or other approvals comply with Montana's environmental laws and rules (including MEPA) to maintain and improve Montana's natural environment. [Agreed Facts, Final PTO, Doc. 384 at 2; Def. Answer, Doc. 11 ¶ 88].

28. DEQ is mandated to comply with the Montana Constitution and state law. [CD 1308:6-12].

29. DEQ issues air quality permits for applications that demonstrate compliance with all applicable requirements of the Federal and/or Montana Clean Air Act and their implementing rules, including but not limited to coal and natural gas-powered energy plants, coal mining operations, and oil and gas refineries. [Agreed Facts, Final PTO, Doc. 384 at 2; Def. Answer, Doc. 11 ¶ 90].

30. DEQ prepares environmental review documents under MEPA, including for projects related to fossil fuels, such as natural resource extraction and power generating facilities. [CD 1313:21-1315:13].

31. DEQ has authority to certify certain pipelines that meet the definition provided in the Major Facility Siting Act, [§ 75-20-104\(9\)\(b\), MCA](#), and that comply with the requirements of the Major Facility Siting Act. [Agreed Facts, Final PTO, Doc. 384 at 2; Def. Answer, Doc. 11 ¶ 91].

32. DEQ permits coal mining for applications which meet the requirements set forth in Titles 82 (Minerals, Oil, and Gas) and 75 (Environmental Protection). DEQ has issued permits for surface coal mining in Montana on state, private, and federal land. [Agreed Facts, Final PTO, Doc. 384 at 2; Def. Answer, Doc. 11 ¶ 92].

33. Pursuant to its statutory authority, DEQ has discretion to deny and revoke permits. [SN 1392:24-1393:6].

34. Since 2011, pursuant to the MEPA Limitation, DEQ has not analyzed in its environmental review documents the cumulative impacts of the permits it issues on GHG emissions or climate change. [AH 846:1-3, 818:11-819:10].

35. Defendant Montana Department of Natural Resources and Conservation (DNRC) is a department of the State of Montana.

36. DNRC prepares environmental review documents under MEPA. [Shawn Thomas Perpetuation Deposition, 42:1-16].

37. DNRC manages the resources of the state trust lands through the State Board of Land Commissioners (Land Board). [Agreed Facts, Final PTO, Doc. 384 at 2; Def. Answer, Doc. 11 ¶ 95].

38. DNRC regulates, permits, and authorizes activities that result in GHG emissions in Montana. [Agreed Facts, Final PTO, Doc. 384 at 2].

39. DNRC issues leases, permits, and licenses for uses of lands under its jurisdiction, including licenses for exploration and leases for production and extraction of oil and gas in Montana and permits for drilling. [Agreed Facts, Final PTO, Doc. 384 at 2].

40. DNRC has exercised its authority to grant easements for the operational rights-of-way for interstate pipelines, with the approval of the Land Board, and issues land use licenses for the construction of rights-of-way and other activities on state lands and waterways for the construction and operation of interstate pipelines, which are used to transport fossil fuels. [Agreed Facts, Final PTO, Doc. 384 at 2; Def. Answer, Doc. 11 ¶ 95].

41. DNRC, through its Forestry Division, is responsible for planning and implementing forestry and fire management programs, as well as authorizing and permitting commercial timber sales on trust lands. [Agreed Facts, Final PTO, Doc. 384 at 3; Def. Answer, Doc. 11 ¶ 97].

*7 42. Defendant Montana Department of Transportation (MDT) is a department of the State of Montana.

43. MDT is responsible for state planning in the transportation sector and is charged with collecting and enforcing fuel taxes. [Agreed Facts, Final PTO, Doc. 384 at 3].

44. Defendant Montana Public Service Commission (PSC) is a governmental entity.

45. PSC regulates, supervises, and controls public utilities, common carriers, railroads, and pipelines. [Agreed Facts, Final PTO, Doc. 384 at 3].

46. PSC sets standard-offer contracts for qualifying facilities

and utility rates. [Agreed Facts, Final PTO, Doc. 384 at 3].

47. PSC is responsible for the safety of interstate pipelines, including crude oil or petroleum products that operate within or through Montana. [Agreed Facts, Final PTO, Doc. 384 at 3].

48. Defendants' performance of their respective governmental functions has resulted in the extraction, transportation, and consumption of fossil fuels. [Agreed Facts, Final PTO, Doc. 384 at 3].

49. The extraction, transportation, and consumption of fossil fuels results in GHG emissions. [Agreed Facts, Final PTO, Doc. 384 at 3].

50. Defendants authorize the operation of coal-fired powerplants in Montana. [Def. Answer, Doc. 11 ¶ 118].

51. The drilling for and production of oil in Montana is authorized by Defendants. [Def. Answer, Doc. 11 ¶¶ 90, 96].

52. Montana has an abundance of energy sources, including fossil fuels yet to be extracted. [PE 944:24-946:4; PE-37].

53. The Montana Legislature enacted [Mont. Code Ann. § 90-4-1001](#) (repealed) and the MEPA Limitation as amended. [Def. Answer, Doc. 11 ¶ 82].

54. Montana's State Energy Policy was codified at [Mont. Code Ann. § 90-4-1001](#). [Def. Answer, Doc. 11 ¶ 112].

55. [Mont. Code Ann. § 90-4-1001](#) was enacted by the Montana Legislature in 1993 and amended in 2011. [Def. Answer, Doc. 11 ¶ 115].

56. The Montana Legislature repealed [Mont. Code Ann. § 90-4-1001](#) in 2023. The Governor signed the repeal, HB 170, into law on March 16, 2023. 57. The provisions of MEPA governing environmental reviews are codified at [Mont. Code Ann. § 75-1-201](#).

58. In 2011, the Montana Legislature amended MEPA to limit the scope of environmental reviews—enacting the MEPA Limitation, which prohibited Montana's agencies from considering in their MEPA reviews “actual or potential impacts beyond Montana's borders ... [or] actual or potential impacts that are regional, national, or global in nature.”

59. The Montana Legislature adopted amendments to clarify the MEPA Limitation in 2023. The Governor signed the clarifying legislation, HB 971, into law on May 10, 2023.

60. The MEPA limitation now provides that Montana's agencies are prohibited from considering “an evaluation of greenhouse gas emissions and corresponding impacts to the climate in the state or beyond the state's borders.” [Mont. Code Ann. § 75-1-201\(2\)\(a\)](#) (enacted by HB 971, 68th Legislature (2023)).

61. The 2023 Montana Legislature amended various provisions of MEPA that pertain to legal challenges to MEPA environmental reviews.

62. SB 557 was introduced on March 27, 2023, passed by the Legislature, and signed into law by the Governor on May 19, 2023.

*8 63. SB 557 enacted a new provision, [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#), which eliminates the preventative, equitable remedies for MEPA litigants who raise GHG or climate change issues. The new subsection provides in part:

[a]n action alleging noncompliance or inadequate compliance with a requirement of parts 1 through 3, including a challenge to an agency's decision that an environmental review is not required or a claim that the environmental review is inadequate based in whole or in part upon greenhouse gas emissions and impacts to the climate in Montana or beyond Montana's borders, cannot vacate, void, or delay a lease, permit, license, certificate, authorization, or other entitlement or authority unless the review is required by a federal agency or the United States congress amends the federal Clean Air Act to include carbon dioxide as a regulated pollutant.

[Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#) (enacted by SB 557, 68th Legislature (2023)).

64. Defendants cited [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#) and SB 557 as foreclosing redressability in this case in their June 19, 2023, Bench Memorandum on the Constitutional and Procedural Limits of the Montana Environmental Policy Act. (Doc. 396).

II. CLIMATE SCIENCE AND PROJECTIONS.

A. Climate Science

65. Dr. Steven Running is a University Regents Professor Emeritus of Global Ecology in the College of Forestry and Conservation at the University of Montana. [SR-2]. Dr. Running currently co-chairs the standing Committee for Earth Science and Application from Space of the National Academy of Science. In 2007, Dr. Running shared the honor of the Nobel Peace Prize as a chapter Lead Author for the 4th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). [P193]. Dr. Running provided expert testimony in the general areas of the climate system, including the energy balance and imbalance, the physics of GHG emissions that are driving climate change, the global carbon cycle, the global hydrologic cycle, how they control this energy imbalance, and then how human caused fossil fuel development is harming Montana's ecosystems and hydrology. Dr. Running is a well-qualified expert, and the Court found his testimony informative and credible.

66. Dr. Cathy Whitlock is Regents Professor Emerita of Earth Sciences and a Fellow of the Montana Institute on Ecosystems at Montana State University (MSU). Dr. Whitlock was lead author of the 2017 Montana Climate Assessment, and in 2020 co-authored a state-level Montana Climate Solutions Plan and a 2021 special report of the Montana Climate Assessment entitled Climate Change and Human Health in Montana. Dr. Whitlock was also co-lead author of the 2021 Greater Yellowstone Climate Assessment. Dr. Whitlock provided expert testimony explaining how human-caused fossil fuel development and the resulting release of CO₂ into the atmosphere are harming Montana's ecosystems, water supplies, communities, and the Plaintiffs themselves. Dr. Whitlock also discussed recent trends and future projections in temperature, precipitation, snow accumulation and snowmelt, and stream runoff in Montana and explained how they affect terrestrial ecosystems, communities, and the livelihoods of people that depend on these ecosystem services. Dr. Whitlock's testimony included projections for Montana's future based on continuing or increasing the present rate of GHG emissions. Dr. Whitlock's testimony primarily focused on the effect GHG emissions in Montana. Dr. Whitlock is a well-qualified expert, and the Court found her testimony informative and credible.

*9 67. There is overwhelming scientific consensus that Earth is warming as a direct result of human GHG emissions, primarily from the burning of fossil fuels. [SR 102:10-103:9, 125:11-22, 141:18-20; CW 257:14-25; P6, P13, P23, P34, P223, P143; SR-22].

68. Fossil fuels include coal, crude oil or its derivatives (such as gasoline or jet fuel), and natural gas. [PE 901:24-902:8].

69. While several GHGs are emitted from the burning of fossil fuels, carbon dioxide (CO₂) is the GHG most responsible for trapping excess heat within Earth's atmosphere. [SR 114:20-116:10].

70. Science is unequivocal that dangerous impacts to the climate are occurring due to human activities, primarily from the extraction and burning of fossil fuels. [SR 103:5-9; P6, P23, P34, P223, P143; SR-46, SR-47].

71. A substantial portion of every ton of CO₂ emitted by human activities persists in the atmosphere for as long as hundreds of years or millennia. As a result, CO₂ steadily accumulates in the atmosphere. [SR 166:2-10, 168:2-10; CW 279:14-20, 314:20-315:8, 318:2-5].

72. The cumulative effect of GHG emissions causes the impacts to the climate being experienced today. [SR 168:2-16]. Human activity and the burning of fossil fuels have accelerated the accumulation of CO₂ to the point that 42% of the total accumulation of CO₂ emissions has happened in the last thirty years. [SR 141:16-142:2; SR-42].

73. It has long been understood that certain GHGs, including CO₂ and methane (CH₄), trap heat in the atmosphere, causing the Earth to warm. [SR 107:16-25]. An American, Eunice Newton Foote, was one of the first scientists to research and write about the ability of atmospheric carbon dioxide to affect solar heating in the 1850s. [SR 108:22-109:3; SR-14].

74. In 1896, Svante Arrhenius, a Swedish chemist, wrote that the practice of burning fossil fuels emitting CO₂ could one day warm the planet. [SR 108:1-8]. Arrhenius, and other early climate scientists, understood that the more CO₂ that was added to the atmosphere, the more the surface of the Earth would warm. [SR 108:8-13]. At the time of Arrhenius's work, atmospheric CO₂ levels were approximately 295 parts per million (ppm). Pre-industrial levels were approximately 280 ppm. [SR 109:22-25; SR-14].

75. In 1958, Dr. David Keeling began the modern monitoring of atmospheric CO₂ at Mauna Loa, Hawaii, a remote location not near any local CO₂ sources. [SR 111:12-21]. Keeling's data, now replicated at dozens of stations worldwide, proved that CO₂ has continued to rise every year from 1958 to the present from an initial concentration of 315-316 ppm in 1958, to an annual mean level of around 424 ppm today. [SR 112:22-113:4, 113:16-114:8]. The curve showing a long-term increase in CO₂ concentrations has become known as the "Keeling Curve." [SR 110:22-111:11, 113:20].

76. Between 1960 and 2000, CO₂ levels rose at about 2 ppm per year, but since approximately 2000, CO₂ levels are rising at about 3 ppm per year, primarily from fossil fuel emissions. [SR 117:14-20, 118:1-12, 121:9-11; SR-21].

Keeling Curve

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77. CO₂ levels have fluctuated throughout history, but the rate of increase in atmospheric CO₂ is 100 times faster than in natural CO₂ fluctuations and cycles, and it is happening in a very short timeframe that is unprecedented in the geologic record. [SR 119:20-121:11; SR-19].

***10** 78. The continuous rise in atmospheric CO₂ has caused global, national, and Montana air temperatures to rise, as measured by meteorological stations. Total global temperature rise over the last 120 years is on average 2.2°F, or about 1.2°C. [SR 132:19-22; SR-38; CW 262:4-21; CW-18, CW-19, CW-20].

79. Montana is heating faster than the global average because higher latitudes are heating more quickly. [CW 263:20-264:7].

80. Montana is warming, and the rate of warming is increasing. [CW 266:15-16].

81. The Earth has warmed by 1.3 to 2.2°F in only the last thirty-five years, as atmospheric CO₂ concentrations have risen from 350 ppm to over 420 ppm today. [SR 130:14-18; SR-35, SR-64]. It previously took 140 years for the Earth to warm by 0.9°F. [SR-35]. The Earth is heating more quickly now. 2020 was the second warmest year on record, and land areas were record warm. The ten warmest years on record have occurred since 2005, and since 1981, a new global temperature record has been set every three years. Since 1980, the Earth has not experienced a single year with below long-term average temperatures. [SE 131:20-132:10; SR-37].

82. The Earth's energy imbalance (the difference in energy from sun arriving at the Earth and the amount radiated back to space) is what climate scientists describe as the most critical metric for determining the amount of global heating and climate change we have already experienced and will experience as long as the Earth's energy imbalance exists. [SR 122:1-15, 129:17-20; SR-

34]. Scientists measure and calculate how much extra energy, or heat, is being retained in Earth's systems, like oceans, ice, air, and land surface, compared to what Earth's natural balance would be if more heat escaped our atmosphere. [SR 122:1-15, 129:21-130:4].

83. The Earth's energy imbalance is currently significant and is due to accumulation of energy within Earth's oceans, ice, land, and air, with the energy measured in joules and the rate of additional energy measured in watts per square meter. [SR 124:14-125:18]. A watt is the addition of one joule of energy in one second, which is then averaged by the area of the Earth to yield watts per square meter. From 1971 to 2018, the Earth gained about 360 zeta joules of heat (a zeta is a unit with 21 zeros; a trillion has 12 zeros). [SR-29]. Adding this much energy over forty-eight years yields an energy imbalance of about 0.5 W m^{-2} . However, the rate of energy addition has continued to increase due to increasing GHG emissions and the Earth's energy imbalance for 2010 to 2018 is about 0.9 W m^{-2} . [SR 122:14-24; SR-29; P79].

84. 358 zeta joules are enough energy to bring Flathead Lake to boil 40,000 times over. [SR 125:3-6; SR-30].

85. As long as there is an energy imbalance, the Earth will continue to heat, ice will continue to melt, and weather patterns will become more extreme. [SR 127:7-22, 131:9-15, 137:6-9, 149:2-14]. If more GHGs are added to the atmosphere and more incoming energy received from the sun is trapped as thermal energy, the Earth's climate system will continue to heat up. [SR 125:7-22].

86. The scientific consensus is that CO_2 from fossil fuel pollution is the primary driver of Earth's energy imbalance. [SR 117:21-118:12; 125:11-22]. Due to the buildup of CO_2 from about 280 ppm to 419 ppm in the last 140 years (and to a lesser extent other GHGs), more solar energy is now retained on Earth and less energy is released back to space. [SR 130:8-14; P20, P22, P79; SR-14].

***11** 87. The buildup of CO_2 and the current Earth energy imbalance is due to anthropogenic changes in the environment, not natural variability. [SR 103:5-9, 121:7-11].

88. Approximately 89% of annual anthropogenic CO_2 emissions, or 35 gigatons of CO_2 , is attributable to burning fossil fuels. [SR 115:9-17; SR-20]. Approximately 11% of annual anthropogenic CO_2 is from land use change, which includes wildfires, agricultural burning, and deforestation. [SR 115:18-22, 116:7-15; SR-20]. This means that fossil fuel use is around 10 times as large as other sources of emissions due to human management. [SR 115:15-21]. In terms of the CO_2 humans emit each year, approximately 48% of these emissions end up in the atmosphere, 29% are absorbed in back up in the biosphere, and 26% are absorbed by the oceans. [SR 115:7-117:10; SR-20].

89. Until atmospheric GHG concentrations are reduced, extreme weather events and other climactic events such as droughts and heatwaves will occur more frequently and in greater magnitude, and Plaintiffs will be unable to live clean and healthy lives in Montana. [SR 128:22-129:5, 131:5-15, 149:2-150:7; SR-45; LVS-44].

90. There is scientific certainty that if fossil fuel emissions continue, the Earth will continue to warm. [SR 106:15-18, 168:20-24; SR-46, SR-47].

91. Each additional ton of GHGs emitted into the atmosphere exacerbates impacts to the climate. [SR 106:15-18, 188:3-6; CW 279:14-20, 314:20-315:8, 318:2; P143].

92. Every ton of fossil fuel emissions contributes to global warming and impacts to the climate and thus increases the exposure of Youth Plaintiffs to harms now and additional harms in the future. [SR 168:17-169:7; CW 279:14-20, 314:20-315:8, 318:2-5; PE-40].

B. Climate Change Projections.

93. Computer models used by scientists are an important tool for predicting climate change and are reasonably relied upon by members of the scientific community. [SR 90:23-91:9].

94. Projections indicate atmospheric CO₂ and other GHGs will increase the severity of all impacts to the climate for the foreseeable future, absent drastic reduction in fossil fuel use and the resulting GHG emissions. [SR 106:1-18, 169:22-170:10, 170:16-22; CW 269:14-18; SR-46, SR-47].

95. There is a strong scientific consensus that as GHG emissions continue to increase, impacts to the climate will become more severe. [SR 106:15-18, 137:3-9; SR-43].

96. The yearly days in Montana with extreme heat, meaning temperatures over 90 degrees, is expected to increase by 11 - 30 days by midcentury, and by as much as two months by the end of the century. [CW 273:6-20; CW-24, CW-28]. At the same time, the number of days above freezing will increase by weeks to months in the future. [CW 273:6-20, 275:21-276:7; CW-27; P222].

97. Projections indicate a high-emission scenario results in 9.8°F of warming in Montana by 2100, relative to temperatures in 1971-2000. An intermediate emission scenario projects an increase of 5.6°F in Montana by 2100, relative to temperatures in 1971-2000. [CW 270:1-271:9; CW-23; P222].

98. According to the Intergovernmental Panel on Climate Change (IPCC), “Climate change is a threat to human well-being and planetary health (*very high confidence*). [SR-48]. There is a rapidly closing window of opportunity to secure a liveable and sustainable future for all (*very high confidence*) The choices and actions implemented in this decade will have impacts now and for thousands of years (*high confidence*).” [SR 149:15-150:7; P143; SR-48, SR-63; LB-43].

***12** 99. According to the IPCC, “[i]n the near term, every region of the world is projected to face further increases in climate hazards (*medium to high confidence*, depending on region and hazard), increasing multiple risks to ecosystems and humans (*very high confidence*). Hazards and associated risks expected in the near-term include an increase in heat-related human mortality and morbidity (*high confidence*), food-borne, water-borne, and vector-borne diseases (*high confidence*).” [SR-46, SR-47; [LB-42](#)].

III. CLIMATE CHANGE HARMS CHILDREN AND SPECIFICALLY THE YOUTH PLAINTIFFS.

100. Dr. Lori Byron obtained a Doctor of Medicine degree in 1984. She has been a board-certified pediatrician since 1988. Dr. Byron earned a M.S. in Energy Policy and Climate from Johns Hopkins in 2020. From 1988- 2015, Dr. Byron worked with the Indian Health Service in Crow Agency, Montana, providing primary care, emergency care, and public health services to Crow Indian children. Dr. Byron now works as a pediatric hospitalist at SCL Health in Billings, Montana. Dr. Byron has decades of experience caring for children who have suffered Adverse Childhood Events (ACEs). Over the past decade, Dr. Lori Byron and her husband, Dr. Rob Byron, have made presentations on climate change and health locally, nationally, and internationally. Dr.

Lori Byron finished a six-year term on the Executive Committee of the Council on Environmental Health and Climate Change with the American Academy of Pediatrics and a six-year term on the Children's Health protection Advisory Committee with the Environmental Protection Agency (EPA). Dr. Byron was an author on the 2021 report "Climate Change and Human Health in Montana: A Special Report of the Montana Climate Assessment," as well as other climate and health publications.

101. Dr. Byron provided expert testimony that climate change and the air pollution associated with it are negatively affecting children in Montana, including Youth Plaintiffs, with a strong likelihood that those impacts will worsen in the absence of aggressive actions to mitigate climate change. Dr. Byron outlined ways in which climate change is already creating conditions that are harming the health and well-being of the Youth Plaintiffs. Dr. Byron testified that reducing fossil fuel production and use, and mitigating climate change now, will benefit the health of the Youth Plaintiffs now and for the rest of their lives. Dr. Byron is a well-qualified expert, and the Court found her testimony informative and credible.

102. Dr. Lise Van Susteren is a board certified general and forensics clinical psychiatrist, in practice for thirty years. She is a Clinical Associate Professor of Psychiatry and Behavioral Sciences at George Washington University in Washington, D.C. In 2009, Dr. Van Susteren co-convened one of the first conferences on the psychological effects of climate change. In 2013, Dr. Van Susteren worked with Dr. James Hansen and other experts on a paper, Assessing "Dangerous Climate Change": Required Reductions of Carbon Emissions to Protect Young People, Future Generations and Nature. (Hansen et al., 2013). In May 2018, Dr. Van Susteren received the Distinguished Fellow award of the American Psychiatric Association, its highest membership honor. Dr. Van Susteren has helped develop youth climate anxiety assessment tools, conducted research and reviewed data in assessing the mental health of young people faced with climate change. Dr. Van Susteren provided expert testimony on the physiological harms caused by climate change to Montana's youth, including the Youth Plaintiffs, the psychological harms caused by the MEPA Limitation, and the availability of remedies to alleviate Plaintiffs' psychological injuries. Dr. Van Susteren is a qualified expert, and the Court found her testimony credible.

*13 103. Michael Durglo, Jr., is a member of the Confederated Salish and Kootenai Tribes (CSKT). He has a Bachelor of Science degree in Environmental Science from Salish Kootenai College. Mr. Durglo has worked in different capacities for the CSKT for over three decades. In his current role as Head of the Tribal Preservation Department and Chairman of the Climate Change Advisory Committee (CCAC), Mr. Durglo has worked extensively with tribal elders and youth on climate related issues. He has been involved with the Institute for Tribal Environmental Professionals' Climate Change Adaptation Planning Workshop, and he served as the co-chair of the National Tribal Science Council and the chair of the EPA Region 8 Tribal Operations Committee, consisting of EPA tribal environmental directors in Montana, Wyoming, Colorado, Utah, and North and South Dakota. He has taught workshops and seminars on climate adaptation planning throughout North America. Mr. Durglo is a qualified expert and the Court found him informative and credible.

104. Children are uniquely vulnerable to the consequences of climate change, which harms their physical and psychological health and safety, interferes with family and cultural foundations and integrity, and causes economic deprivations. [LB 473:12-24, 474:12-477:12; LVS 1177:5-8, 1202:6-24, 1215:13-24, 1217:2-1222:11; MDJ 597:9-18, 600:23-604:14, 609:23-610:10; LB-9, LB-15, LB-16; LVS-11, LVS-25].

105. Children are at a critical development stage in life, as their capacities evolve, and their physiological and psychological maturity develops more rapidly than at any other time in life. [LB 474:12-477:12, 485:10-486:1; LVS 1177:10-21, 1213:7-23, 1215:13-24].

106. The brains and lungs of children and youth are not fully developed until around age 25. [LB 474:18-25; LVS 1213:7-16].

107. All children, even those without pre-existing conditions or illness, are a population sensitive to climate change because their bodies and minds are still developing. [LB 473:12-24, 474:12-477:12; LVS 1177:2-1178:12, 1213:7-23; LB-9; LVS-11].

108. The physical and psychological harms are both acute and chronic and accrue from impacts to the climate such as heat waves, droughts, wildfires, air pollution, extreme weather events, the loss of wildlife, watching glaciers melt, and the loss of familial and cultural practices and traditions. [LB 498:12-25, 524:11-22; LVS 1178:13-1179:6, 1196:6-11, 1200:7-1201:25, 1202:6-24, 1204:21-1205:19, 1206:19-1209:12, 1218:2-16, 1219:25-1220:11, 1221:19-21; MDJ 595:18-596:2, 597:6-18, 600:23-604:14, 606:11-607:2, 608:1-13, 609:23-610:10].

109. Climate change can cause increased stress and distress which can impact physical health. [LB 526:8-16; LVS 1188:16-24; LVS-15]. Dr. Van Susteren observed that Youth Plaintiffs testified to specific personal consequences. For example:

- a. Grace feels fearful due to the glaciers disappearing from a state she loves.
- b. Sariel has suffered significant distress due to the impacts of climate change on culturally important plants, and snow for creation stories. Her cultural connection to the land increases this impact.
- c. Mica has experienced a sense of loss from having to stay inside due to wildfire smoke.
- d. Olivia expressed despair due to climate change.
- e. Claire has been impacted by fear and loss from glaciers melting, and anxiety over whether it is a safe world in which to have children.

110. Heat waves are associated with significant psychological stress. Increased heat and temperature negatively affect cognition and are linked to increased incidence of aggression and exacerbation of pre-existing mental health disorders. [LVS 1197:1-1198:7, 1200:7-12; LVS-29].

111. Children have a higher risk of becoming ill or dying due to extreme heat. [LB-15, LB-16].

112. Drought is associated with anxiety, depression, and chronic despair. [LVS 1200:24-1201:25].

113. Wildfires, including those witnessed by Badge, are traumatic. Being surrounded by wildfires can make the world feel unsafe and the inability to breathe clean air creates anxiety. [LVS 1202:6-24, 1204:21-1205:19].

***14** 114. The threat of loss can be enough to cause mental health harms, especially when there are no signs the future will be any different. [LVS 1203:15-1204:6].

115. As climate disruption transforms communities, some Plaintiffs are experiencing feelings that they are losing a place that is important to them.

116. The IPCC has found, with *very high confidence*, that climate change has “detrimental impacts” on mental health and the harms to mental health are expected to get worse. [LVS 1185:12-1186:3, 1192:23-1194:9, 1195:6-13; P127; LVS-23, LVS-24].

117. The 2021 report, Climate Change and Human Health in Montana, found that “[t]he mental health impacts of climate change are profound and varied.” [LVS-27]. Extreme weather events, prolonged heat and smoke, and environmental change can all impact mental health and increase feelings of disconnectedness and despair. [LVS 1196:6-11; P31; LVS-28].

118. Exposure to extreme heat can cause heat rash, muscle cramps, heatstroke, damage to liver and kidney, worsening allergies, worsening asthma, and neurodevelopmental effects. [LB 485:2-9; P31; LB-13, LB-14].

119. The psychological harms caused by the impacts of climate change can result in a lifetime of hardships for children. [LVS 1194:4-9, 1210:2-1211:2, 1213:24-1215:4; P127; LVS-12].

120. The physiological features of children make them disproportionately vulnerable to the impacts of climate change and air pollution. [LB 474:14-25, 475:4-10; LVS 1213:7-23; LB-9, LB-10; LVS-11].

121. Children have a higher basal metabolic rate, which makes it harder for them to dissipate heat from their bodies. [LB 475:14-21].

122. Children breathe in more air per unit of time than adults and consume more food and water proportional to their body weight, making children more susceptible to polluted or contaminated air, water, or food. [LB 476:21-477:12].

123. Typical child behavior and physiology—which involves spending more time recreating outdoors and more difficulty self-regulating body temperature—render children more susceptible to excess heat, poor air quality, and other climate change impacts. [LB 476:21-477:12, 481:9-19].

124. Childhood exposure to climate disruptions and air pollution can result in impaired physical and cognitive development with lifelong consequences. Air pollution can trigger or worsen juvenile idiopathic arthritis, leukemia, and asthma in children. [LB 482:9-21, 502:4-22; [LB-25](#); LVS 1205:20-1206:8, 1207:18-1208:3].

125. The air quality where Plaintiffs live has been negatively impacted by smoke from wildfires contributed to by climate change.

126. Allergies are increasingly prevalent among children and anthropogenic climate change is extending the allergy season and exacerbating allergy symptoms. An increase in these symptoms can affect children's physical and psychological health by interfering with sleep, play, school attendance, and performance. [LB 484:25-485:9, 508:2-16; LVS-30].

127. Climate change is contributing to an increase in the severity and frequency of asthma in children. Six million children in the U.S. ages 0-17 have asthma, which translates to approximately one in every twelve children. [LB 485:7-8, 503:1-14, 505:4-25; [LB-26](#), [LB-30](#)].

***15** 128. Children who have pre-existing respiratory conditions, including asthma, are especially vulnerable to climate impacts, including increasing air pollution and rising temperatures. Wildfire smoke has harmed the health of Plaintiffs Olivia, Jeffrey, and Nate, all who have pre-existing health conditions, and other Plaintiffs, including Badge and Eva. [LB 505:12-506:20, 508:23-509:1; [LB-28](#)].

129. Plaintiffs Olivia and Grace are distressed by feeling forced to consider foregoing a family because they fear the world that their children would grow up in. [LB 497:4-21; LVS 1214:21-1215:1, 1221:19-1222:5; GGS 208:3-22].

130. Plaintiffs Rikki, Kian, Claire, and Taleah, face economic deprivations, including barriers to keeping family wealth and property intact and decreased future economic opportunities.

131. Extreme heat threatens the health of competitive athletes, including Kian, Georgi, Claire, and Grace. [LB 490:6-491:15; LB-18].

132. For indigenous youth, like Ruby, Lilian, and Sariel, extreme weather harms their ability to participate in cultural practices and access traditional food sources, which is particularly harmful to indigenous youth with their place-based cultures and traditions. [LB 491:23-493:9; MDJ 579:19-580:9].

133. Because of their unique vulnerabilities, their stages of development as youth, and their average longevity on the planet in the future, Plaintiffs face lifelong hardships resulting from climate change. [LB 474:14-25, 475:4-10; LVS 1177:2-1178:12, 1189:1-6, 1194:4-9, 1210:2-1211:2, 1213:7-23, 1215:13-24].

134. Youth are more vulnerable to the mental health impacts of climate change because younger people are more likely to be affected by the cumulative toll of stress and have more adverse childhood experiences (ACEs). ACEs increase the likelihood of cumulative trauma that leads to mental and physical illness, as well as an increased risk of early death. [LB 521:14-16, 5236-15; LVS 1210:2-1211:2; [LB-33](#); LVS-31].

135. ACEs can cause prolonged fear, anxiety, and stress, cognitive impairments, and unhealthy risk behaviors. ACEs can also cause long-term health impacts including increased risk of obesity, diabetes, heart disease, depression, strokes, chronic obstructive pulmonary disease, and broken bones. [LB 516:3-20, 519:16-520:4, 522:17-523:2; [LB-34](#)].

136. Children born in 2020 will experience a two to sevenfold increase in extreme events, particularly heatwaves, compared with people born in 1960. [LB 495:1-11, 497:1-3; P45; LB-20].

137. According to the IPCC, “Climate change is a threat to human well-being and planetary health (*very high confidence*).” The IPCC stated, “Without urgent, effective, and equitable mitigation and adaptation actions, climate change increasingly threatens ecosystems, biodiversity, and the livelihoods, health and wellbeing of current and future generations (*high confidence*).” [LB 530:11-533:9; LB-43, LB-44; P143; SR-61].

138. The unrefuted testimony at trial established that climate change is a critical threat to public health. [LB 536:10-537:14].

139. Actions taken by the State to prevent further contributions to climate change will have significant health benefits to Plaintiffs. [LB 534:25-535:9].

IV. CLIMATE CHANGE IS ALREADY ADVERSELY AFFECTING MONTANA'S NATURAL ENVIRONMENT.

140. Anthropogenic climate change is impacting, degrading, and depleting Montana's environment and natural resources, including through increasing temperatures, changing precipitation patterns, increasing droughts and aridification, increasing extreme weather events, increasing severity and intensity of wildfires, and increasing glacial melt and loss. [JS 655:2-658:10, 659:6-660:11; *see generally* SR, CW, DF; CW-56; DF-20].

***16** 141. Climate change impacts result in hardship to every sector of Montana's economy, including recreation, agriculture, and tourism. For example, private water supplies will be harmed. [SR 144:13-145:17; CW-52].

142. Montana has already warmed significantly more than the global average. [CW 263:12-17, 263:20-264:7; CW-18, CW-19].

143. All parts of Montana have seen a long-term trend of increasing mean annual temperatures since 1950. Winter and spring have warmed the most [CW 267:18-268:20; CW-21; P6].

144. There is a scientific consensus that rising temperatures in Montana are due to rising GHG concentrations, primarily CO₂. [SR 103:5-9, 117:25-118:12; CW 269:18-25].

145. Montana's snowpack has been decreasing and is likely to continue decreasing with warmer temperatures, as a long-term trend caused by impacts to the climate. [CW 283:11-19; CW-33, CW-35, CW-55; DF 421:12-23].

146. Montana's April 1, Snow Water Equivalent, which is an important metric for how much water will be available during the dry summer months in Montana, has been declining since the 1930s. [CW 284:23-286:15; CW-34].

147. The decline in snowpack is directly attributed to elevated temperatures due to high levels of GHG emissions. [CW 283:11-19, 288:3-10].

148. Warming temperatures in Montana are resulting in more precipitation falling as rain instead of snow, particularly in western Montana. This results in reduced snowpack and shorter snowpack runoff duration in the spring and summer. Warming temperatures and rapid snowmelt and rain-on-snow events have been a major cause of spring flooding in Montana. [CW 291:17-292:20].

149. Extreme spring flooding events are consistent with climate change, including more spring precipitation, which can cause flash flooding when rain falls on snow. [SR 144:24-145:8; SR-44]. Spring flooding is expected to increase in frequency with increased climate change. [CW 291:15-292:20].

150. The 2018 Shields River flooding and the 2022 Yellowstone River flooding event are examples of rain on snow and heavy precipitation events that will be more frequent with climate change. [CW 291:15-292:20].

151. Dr. Dan Fagre holds a Ph.D. from the University of California, Davis. He joined the National Park Service as a research scientist in 1989 and, in 1991, he became the Climate Change Research Coordinator at Glacier National Park as part of the nationwide United States Global Change Research Program. His position was transferred to the United States Geological Survey (USGS), where he served until his retirement in 2020, after which he has continued as Scientist Emeritus. At Glacier National Park, Dr. Fagre helped develop a national climate change research program within the National Park Service, coordinating with other scientists at national parks from Florida to Alaska. He built a research program centered on Glacier Park as a representative mountain ecosystem, engaging faculty and scientists from Montana universities and across the U.S. [P190]. Dr. Fagre is a well-qualified expert, and his testimony was informative and credible.

152. Glacier National Park is a major driver of the regional economy and a source of fresh water for countless communities. [Def. Answer, Doc. 54 ¶ 159; DF 404:10-406:10, 407:1-3, 408:11-25, 426:2-17; DF-13].

*17 153. The glaciers in Glacier National Park were an early focus of the U.S. Geological Survey climate change research because they are excellent indicators of impacts to the climate. Located above the rest of the mountain ecosystem, glaciers

respond only to climatic forces that affect summer temperatures that melt ice and snow and winter snow accumulation (i.e., snowpack). [DF 394:15-396:1, 396:25-397:17].

154. Of the approximately 146 glaciers present in Glacier National Park in 1850, only twenty-six glaciers larger than twenty-five acres remained in 2015. 82% of Glacier Park's glaciers are gone and there has been a 70% loss of area of all glaciers. [DF 418:1-8, 422:25-424:4; DF-17, DF-20].

155. Since 1900, glaciers in Glacier Park lost 66% of their area, making Montana the largest region for glacier loss in the U.S. lower forty-eight. Agassiz Glacier, Grinnell Glacier, Jackson Glacier, Sperry Glacier, and Thunderbird Glacier have all experienced significant retreat. [DF 409:9-23, 410:23-415:5, 412:13-21, 415:12-416:20; P61-P64; DF-8, DF-15, DF-16, DF-18, DF-20, DF-21].

156. The scientific consensus is that the retreat of Glacier Park's glaciers over the past century is due to human GHG emissions (mainly CO₂ from fossil fuel burning). [DF 409:24-410:19, 416:21-417:15, 422:8-19, 424:5-11, 428:13-24].

157. The current ice retreat of Glacier Park's glaciers is in response to modern, human-caused warming of the region. [DF 428:13-24].

158. Computer models project the loss of Glacier Park's glaciers if fossil fuel emissions continue to rise. [DF 425:9-23].

159. The loss of Glacier National Park's glaciers will affect the water sources of many communities, stream and river hydrology, local economies, and the recreational opportunities of several Plaintiffs because they will be denied access to natural resources enjoyed by previous generations of Montanans. [DF 404:10-406:10, 407:1-3, 408:11-25, 426:2-17; DF-13].

160. If GHG emissions are reduced glaciers would slow their melting, eventually stabilize, and then begin to grow again. [DF 428:1-12].

161. Climate change results in water levels in Montana's rivers and lakes that are routinely well below normal levels in summer and fall months and water temperatures that are well above historical levels. [JS 686:18-687:4, 690:7-17, 692:22-25, 693:2-7; JS-25].

162. Dr. Jack Stanford received his Ph.D. in Freshwater Ecology at the University of Utah. [JS-2]. He is Professor Emeritus at the Flathead Lake Biological Station (FLBS) of the University of Montana. He was the Director and Bierman Professor of Ecology at the University of Montana (1980-2016). His primary area of research is aquatic ecosystem processes, including influences of human activities. He has published over 220 scientific papers and books on aquatic ecosystem processes, including influences of human activities. [P194]. Dr. Stanford is a well-qualified expert, and his testimony was informative and credible.

163. Montana is part of the northern Rocky Mountain region. The northern Rocky Mountains are a headwaters region, including for the Missouri River system to the East and the Columbia River System to the West, where most of the water originates as snow. [Def. Answer, Doc. 54 ¶ 157].

164. Montana is a key “water tower” of the Continent. Water that drains from the Rocky Mountains feeds three of the great rivers of North America: the Columbia, the Saskatchewan, and the Missouri-Mississippi. Snow at high elevations provides eighty-five percent of the fresh water that people use in Montana. [DF 405:22-406:10, 407:16-409:1; DF-13; JS 656:21-657:7].

*18 165. The accumulation of winter snowpack in the mountains naturally acts as a reservoir for the hotter, drier months, gradually melting with onset of spring, and in summer providing continuous flow downstream, which is critical in the period of less precipitation and warmer temperatures. [SR 152:2-18]. Some accumulations are held in mountain glaciers which add meltwaters to the flow paths. [DF 407:16-409:1; DF-13].

166. Precipitation also is retained in lakes and wetlands where a large share of runoff penetrates into the ground, feeding aquifers that store water or augment river and stream flows. [JS 655:20-24, 657:13-17, 660:12-661:7; JS-4].

167. Montana's river and lake ecosystems are interconnected with each other and with aquatic and terrestrial ecosystems beyond Montana's borders. [JS 646:2-647:2]. The interconnectivity of Montana's river and lake ecosystems includes being connected with groundwater and atmospheric waters. [JS 661:8-12; JS-4, JS-8, JS-9; P82].

168. The rivers of Montana are interlinked and their flows and the quantity of materials (e.g., sediments) that they naturally transport are now, without functioning glaciers, increasingly dependent on seasonal rain and snow. These river networks transport and deliver the water and materials that sustain the natural and cultural (human) elements of Montana's ecosystems. [JS 661:8-664:18, 646:2-647:2; JS-4; DF-19].

169. Montana's water resources are critically important to Youth Plaintiffs and all Montana citizens and to many people beyond the State's borders. Montanans must have a dependable supply of clean freshwater. [JS 659:6-19; JS-25].

170. Anthropogenic climate change is disrupting the natural range of variation in the flow paths of Montana's river systems. Compared to the 1960s, the summer streamflow in Montana's rivers has decreased by approximately 20% and stream temperatures have increased between 1-2°C. [JS 666:15-667:20; JS-10, JS-25].

171. As a result of anthropogenic climate change:

- a. Surface temperatures in Flathead Lake are too warm for bull and cutthroat trout to sustain their historic populations. [JS 687:5-14].
- b. The Flathead River is experiencing low streamflow and a decline in cutthroat trout populations due to warm temperatures and low water. Bull trout populations have also declined in Flathead Lake. [JS 687:5-14].
- c. The Missouri River is experiencing discharge declines, and increase in stream temperatures, fishing restrictions, and algae blooms. [JS 687:15-688:25].
- d. The Clark Fork River is experiencing low streamflow and discharge declines. [CW 292:21-293:18; CW-42].
- e. The Yellowstone River is experiencing discharge declines, low streamflow, increasing temperatures, fish die offs due to diseases, record-setting floods, a decline in brown trout populations, and algae blooms. [JS 676:4-25, 689:9-690:1].
- f. The Powder River is experiencing low streamflow and a decline in water quality. [JS 690:7-17].
- g. The Madison River is experiencing increased temperatures, declining discharge, fishing closures, a decline in brown trout populations, algae blooms, fish die offs and river closures. [JS 692:2-10].

h. The Blackfoot River is experiencing declining discharge, increased temperatures, and river closures. [JS 692:22-25].

i. The Smith River is experiencing record low flows in June, increased temperatures, and fishing restrictions. [JS 693:2-7].

j. The Shields River is experiencing low flows and river closures. [JS 693:9-10].

***19** k. The Bitterroot River has experienced increased temperatures, a reduction in bull trout habitat, algae blooms, and fishing closures. [JS 693:12-22].

172. One impact of anthropogenic climate change to Montana's aquatic ecosystems is that runoff (spring spate) from snowmelt is days to weeks earlier. Loss of snowpack also accelerates warming and water loss owing to reduced reflection than would occur if the snowpack was sustained. [JS 670:20-671:2].

173. Low water levels and abnormally warm water temperatures create harmful conditions for fish and other aquatic organisms. [JS 671:3-17].

174. Access to boating and fishing on certain rivers and lakes in Montana has been limited, and in some instance completely foreclosed, because of low river flows or high-water temperatures. These changes limit the ability of some Plaintiffs to fish and access the State's rivers and lakes for sport or recreation. [SR 152:25-153:9, 153:10-13; JS 679:7-15].

175. Wildfires resulting from climate change have caused nitrogen levels in Montana's lakes to increase. This has caused nutrient imbalances that threaten the plant and animal life in the lakes. [JS 683:1-684:4].

176. If GHG emissions continue to rise, impacts to the climate will further harm Montana's wildlife and fisheries, and the ability of Plaintiffs to hunt and fish. [JS 679:7-15; 687:8-14].

177. The western United States, including Montana, has experienced a trend of increased drought and heat stress from climate change, which has killed trees and altered ecosystem dynamics, and this trend toward hotter and drier summers will continue in the future. [SR 106:1-18, 146:18-21, 156:2-17; CW258:24-259:8, 283:3-10; CW-44].

178. Droughts in Montana are more expansive and longer term which negatively affects stream systems: aquifer systems become depleted due to reduced infiltration of streamflow and rainfall. Where aquifers contribute significantly to base flow maintenance in Montana streams, the outcome is even more extreme and with sustained drying. [JS 677:7-678:1].

179. Anthropogenic climate change is producing a shift from snow to rain earlier in the year, and flooding from intense but extreme, short-duration flooding is more commonly occurring today than in the past (especially in the spring). That ultimately means less water is retained in the drainage network. [JS 676:12-25].

180. Increases in the frequency, duration, and/or severity of drought and heat stress associated with climate change are fundamentally altering the composition, structure, and biogeography of forests in Montana. [SR 106: 1-14]. There is already evidence of accelerating forest mortality in western forests, and this acceleration is clearly tied to increasing temperatures and plant water stress. [SR 156:2-17, 163:9-164:2].

181. Montana's forests are being drastically altered due to the combination of drought, pest infestations, and wildfires. [SR 156:12-157:15].
182. Climate scientists have long known that increasing temperatures intensify drought conditions, and the combination of drier and hotter weather leads to larger, more frequent, and severe wildfires. [SR 106:1-14, 157:2-158:6].
183. The wildfire season in Montana is two months longer than it was in 1980s. [SR 159:7-13]. The lengthening of the fire season is largely due to declining mountain snowpack, earlier spring snowmelt, decreased summer precipitation, and warmer summer temperatures leading to deficits in soil and fuel moisture—which are all due to increasing GHG emissions. [SR 106:1-14, 156:24-157:13, 159:18-160:6, 160:22-24; SR-54; CW 305:3-24; CW-47].
- *20** 184. The extent of area burned in the U.S. each year has increased since the 1980s. According to National Interagency Fire Center data, of the ten years with the largest acreage burned, all have occurred since 2004, including the peak year of 2021. This period coincides with many of the warmest years on record nationwide. [SR 158:4-11; SR-52].
185. Wildfires in Montana are expected to become significantly worse in the coming years without immediate steps to reduce GHG emissions. [SR 106:1-24; CW 306:11-307:11; CW-49].
186. The effects of anthropogenic climate change, including rising temperatures, changing precipitation patterns, and drought conditions, create challenges and uncertainty for farmers. [CW 312:2-313:15].
187. Climate change affects wildlife, and some species will be more sensitive to impacts to the climate than others. Species may adapt, move, or go extinct. For example, the American pika and Snowshoe hares are considered highly sensitive to climate change due in large part to their dependence on subalpine habitat and snow cover, which is also projected to decline. [SR-59; P72; DF 406:11-15]. Dependence on climate-sensitive habitats like seasonal streams, wetlands and vernal pools, seeps and springs, alpine and subalpine snowfield areas, grasslands and balds, is a large driver of species sensitivity. [SR 164:5-16, 165:6-166:6].
188. Rising temperatures will increase the number of freeze-free days in Montana and increase in the number of days above 90°F. [CW 273:6-20, 275:18-276:7; P6; CW-24, CW-27].
189. There will be increasing seasonal variation in Montana's precipitation, with more precipitation falling in the spring and fall and less in the winter and summer. The change in precipitation timing and a decrease in precipitation during the summer months, combined with increasing summer temperatures, will contribute to increasing risk of summer drought conditions in parts of Montana and more precipitation falling as rain as opposed to snow. [CW 281:4-21; CW-30, CW-35; P6, P34].
190. Increasing temperature will offset small increases in precipitation by increasing rates of evaporation and transpiration and will make late-summer and fall droughts highly likely and increasingly severe. [CW 283: 3-10].
191. The current decline in Montana snowpack and snow accumulation is projected to continue. The loss of snowpack and snow accumulation is primarily driven by increasing temperatures, which are caused by anthropogenic GHG emissions. [CW 283:11-19, 284:23-285:21, 286:9-15, 287:15-288:10, 290:20-291:9; CW-35].
192. Spring runoff in Montana is projected to increase through the 21st century because of warmer temperatures and earlier snowmelt. Increased January-April runoff will lead to increasingly low streamflow in July-September. [CW 293:8-18].

193. The science is clear that there are catastrophic harms to the natural environment of Montana and Plaintiffs and future generations of the State due to anthropogenic climate change. [SR 105:9-21, 149:15-150:7]. The degradation to Montana's environment, and the resulting harm to Plaintiffs, will worsen if the State continues ignoring GHG emissions and climate change. [SR 105:22-106:18, 137:10-15, 168:17-169:7, 169:19-21; CW 318:2-5, 316:17-317- 14; DF 428:6-12; JS 712:8-12].

V. CLIMATE CHANGE IS ALREADY HARMING PLAINTIFFS.

194. The unrefuted testimony established that Plaintiffs have been and will continue to be harmed by the State's disregard of GHG pollution and climate change pursuant to the MEPA Limitation.

***21** 195. Plaintiff Rikki Held lives on her family's ranch twenty miles outside of Broadus, Montana. Broadus is a ranching community in Southeastern Montana, with a population of approximately 450 people in the town and approximately 2000 in Powder River County.

a. Rikki has experienced climate change-related harms to herself and her family ranch, including harms from flooding, severe storms, wildfires, and drought.

b. The Powder River runs through Rikki's ranch. The ranch includes five pivot fields and pine-covered hills. Rikki and her family have raised cattle on the ranch, grew crops to feed cattle, and owned horses.

c. Rikki started riding horses and herding livestock when she was four. Rikki grew up involved in ranching activities, working with livestock, haying, and fixing fences.

d. Rikki's grandparents are from Broadus and her dad grew up in Broadus.

e. Rikki and her family run a motel that rents rooms to travelers. Rikki often works for the family motel business. The primary source of Rikki's family's income is the ranch (currently leased) and motel business. Loss of this income affects Rikki personally.

f. Impacts to the climate are already harming Rikki's home, family, community, income, and way of life.

g. Rikki was often required to work outside on the ranch regardless of the temperatures or air quality. Rikki's physical well-being has been harmed by wildfires and wildfire smoke, as well as extreme heat.

h. In 2012, the Ash Creek fire burned seventy miles of power poles, causing the loss of electricity on Rikki's ranch for a month. Electricity is required to access water for both cattle and Rikki's house on the ranch, so the loss of electricity harmed both cattle and Rikki.

i. Climate change has impacted the snowpack on the ranch in recent years, with snow typically not lasting through the winter. Reduced winter snowpack means less natural water available for cattle. As a result, the cattle must rely on water tanks, which are far apart and expensive to install. With less water, there is also less grass available for the cattle to eat.

j. With less water and grasses, cattle travel further for water and food, and lose weight. This means the cattle are not as valuable and the ranch profits and income declined.

k. Wildfires have closed roads around Broadus limiting the number of people that can reach Rikki's family motel business, causing lost income for Rikki and her family.

l. Climate change has caused increased variability in water levels in the Powder River. Rikki's family relies on the river to water their livestock. Increasingly, the river levels are extremely low while at other times the river floods.

m. In 2017, the Powder River flooded and eroded the riverbank on Rikki's ranch, undercutting a fifty-year-old fence. Since then, continued flooding has eroded about fifty feet of riverbank, with floodwaters that nearly reach Rikki's home.

n. Rikki experiences stress and despair from how climate change impacts her well-being, the well-being of her family, and the well-being of other Montanans. Montana is Rikki's home and seeing how climate change is impacting Montana and her family ranch is a heavy emotional burden for Rikki.

o. Rikki faces economic harm, including barriers to keeping family wealth and property intact and decreased future economic opportunities.

***22** 196. Plaintiffs Lander Busse and Badge B. are brothers, living in Kalispell, Montana.

a. Lander and Badge enjoy hunting and fishing.

b. Lander and Badge hunt with their parents and grandparents. Hunting is an important family activity.

c. Lander and Badge's ability to hunt and fish is inhibited due to climate change consequences, including extreme heat and wildfires.

d. Climate change has adversely impacted Lander and Badge's ability to fish by rendering certain waterways impassible by raft due to low instream levels or too-warm water temperatures, which harm fish and decrease their populations.

e. Lander and Badge have had their ability to fish limited or foreclosed due to fishery closures as a result of climate change-induced conditions in Montana's rivers. Lander and Badge have also had their access to rivers limited for other recreational activities.

f. The extreme temperatures and smoke have at times made hunting unbearable and impossible for Lander and Badge. Smoky conditions have also impacted their fishing activities.

g. Due to climate change, the wildfire smoke in Kalispell, and in other parts of Montana where Badge recreates, makes it difficult for Badge to breathe and triggers a cough, which negatively impacts his health and well-being.

h. In 2018, a wildfire near the Busse's home forced their family to prepare to evacuate. Preparing to evacuate was a traumatic experience for Lander and Badge. Badge is worried that wildfires will continue to threaten his home.

i. Lander has seasonal pollen allergies, which are worsening due to the increased pollen count and a changing climate.

j. Lander is an accomplished musician and theater performer and often performs outdoors. Climate change and wildfires have hampered his ability to perform music and theater at a high level and have negatively impacted his physical well-being.

k. Badge is named after the Badger-Two Medicine, an area where he frequently recreates and fishes. Wildfires in the Badger-Two Medicine have destroyed trees and have degraded areas important to Badge and where he enjoys visiting and recreating, which has had a powerful emotional impact on Badge. Badge experiences a sense of loss and distress knowing that the area is being damaged and degraded due to climate change. Badge feels as if a part of him were lost in the Badger Two-Medicine fire.

l. Badge is passionate about skiing and has skied for as long as he can remember. Climate change is reducing Badge's ability to participate in this important recreational activity.

m. Badge is anxious when he thinks about the future that he, and his potential children, will inherit.

n. Lander and Badge care deeply about protecting Montana's environment, which is an integral part of their family traditions, culture, and identity. Witnessing the current impacts of climate change in Montana is traumatic for both Lander and Badge.

o. Lander and Badge are experiencing the loss of ties to the land in Montana.

197. Plaintiff Sariel Sandoval is a member of the Confederated Salish and Kootenai Tribes and is from Ronan, Montana.

a. Sariel and her family have a deep connection to the natural world, and have a unique connection to the land, the natural environment, and the seasons. Climate change is harming Sariel's culture and tribal practices. Sariel went to a Salish language immersion school called Nkwusm in Arlee. At school, Sariel was taught her native language and learned about the Salish culture.

***23** b. Sariel was excited to receive her Salish name, which means "Person Who Brings the Cedar." Cedar has important cultural significance because it provides a connection through the land to the Creator.

c. Sariel feels a strong sense of connection to her community. She believes that carrying on her community's traditions is important because it is their way of life and reflects their connection to the land.

d. Gathering and using sweet grass and bear root is important to Sariel culturally and spiritually.

e. Sariel is concerned about how climate change affects the seasons because her culture is very ingrained with the land and the seasons. It also affects plants and foods her tribe needs to survive, and she is concerned that these changes will change the community itself. Because of earlier-than-normal snowmelt and the consequent drying of mountain streams as a result of climate change, plants used in Salish and Kootenai medicines are becoming scarcer and more difficult for tribe members to gather.

f. Coyote Stories are a culturally important type of Creation Story that can only be told when there is snow on the ground. Sariel is concerned because the snow is not staying on the ground as long, and she does not know what will happen to the stories when there is no more snow.

g. Climate change impacts Sariel's ability to partake in cultural and spiritual activities and traditions, which are central to her individual dignity. Climate change has disrupted tribal spiritual practices and longstanding rhythms of tribal life by changing the timing of natural events like bird migrations.

h. Sariel worked at Blue Bay Campground the summer after she graduated high school. Sariel lost a few weeks of work and income due to the nearby Finley Point fire (also known as the Boulder 2700 Fire) in 2021. The fire also led to the road being shut down, homes being lost, and people being evacuated.

i. Sariel is often unable to see the mountains near her home due to wildfire smoke.

j. Berry picking is a staple cultural activity for Sariel and her family. Some huckleberry bushes are not producing fruit because of drought and Sariel must travel higher up into the mountains to find healthy huckleberries.

k. Climate change has a profound emotional impact on Sariel, who experiences stress and despair about the impacts her community is facing due to climate change.

l. Sariel was greatly distressed when she learned that Montana was almost at the point of no return with respect to climate change.

198. Plaintiff Kian Tanner lives on his family's property in Bigfork, Montana.

a. Kian's property has been degraded by wildfire smoke.

b. Kian is a passionate fly fisher and has fished with his dad since he was about four years old. Kian hopes he will be able to preserve this tradition and fish for the next fifty years or more.

c. The warmer water temperatures, lower oxygen levels, and declining instream flows due to climate disruption are harming Montana's rivers and fish. These climate impacts have decreased fishing opportunities for Kian as he has had to cancel fishing trips due to wildfires. Not being able to fish is devastating for Kian.

d. Kian lives near and enjoys visiting and recreating in Glacier National Park, which is a very special place for Kian. He is distressed he will never be able to see the natural glaciers as they have historically existed, and as other generations experienced them.

*24 e. Kian enjoys downhill and cross-country skiing, which is an activity he does with his mom, who taught him to ski. Kian cross-country skis on his family's property. Impacts to the climate have reduced his opportunities to downhill and cross-country ski.

f. Increased smoke in the summer has harmed Kian's ability to play soccer, fish, and otherwise recreate outside, activities which are crucial for his emotional health and foundational to his family. Kian's soccer practices have been cancelled due to heat and wildfire smoke.

g. The smoke often forces Kian to seek refuge indoors, which makes him feel very claustrophobic.

h. Kian's fears about impacts to the climate take an emotional toll on him and he feels a heavy burden to carry the mantle of the generation that must address climate change.

199. Plaintiff Georgianna Fischer (Georgi) is from Bozeman, Montana.

a. Georgi's family has lived in Montana for generations. Georgi's great grandmother, Mary "Polly" Wisner Renne, is someone that Georgi admires because of her work to protect Montana's environment. Renne was a key figure in establishing protections for the Lee Metcalf Wilderness Area.

b. Georgi is a competitive Nordic skier. She has competed on the national level, including Junior National Championships, U.S. National Championships, and the 2021 NCAA competition. She trains eleven months of the year, six days a week. Georgi's ability to compete and participate in Nordic skiing has been directly impacted by climate disruption. Declining winter snowpack has inhibited Georgi's ability to complete necessary and appropriate training and hinders her ability to continue to compete at a high level, which adversely impacts her health and mental well-being.

c. In recent years there has not been enough snow to groom trails or create tracks in the snow to Nordic ski race until January, although historically tracks were created in November.

d. Georgi's summer Nordic skiing training has been impacted by wildfires and wildfire smoke. Practices have been cancelled or curtailed due to smoke and the smoke prevents Georgi from training at a high intensity. Georgi is increasingly worried about the long-term effects that the exposure to heavy wildfire smoke while training has on her health and respiratory system. Extreme heat also harms Georgi and her ability to recreate and train outdoors. The heat has caused her to feel dizzy, nauseous, generally unwell, and has caused persistent nosebleeds that led Georgi to seek medical attention.

e. Georgi enjoys paddleboarding, rafting, backpacking, hiking, and other outdoor activities. Georgi's recreation on Montana's rivers has been impaired due to low water levels and stream flows. Georgi and her family have had to cancel river rafting trips, including one on the Smith River, due to low stream flow.

f. Georgi experiences feelings of despair and hopelessness because of the declining winter snowpack and what that trend entails for her snow-based sport.

200. Kathryn Gibson-Snyder (Grace) is from Missoula, Montana.

a. Grace's recreation on Montana's rivers and streams has been affected due to both low water levels and flooding conditions. Because of climate change, Grace's access to the Clark Fork River for recreational activities has been increasingly impaired, limiting her ability to enjoy activities important to her health and family.

***25** b. Grace enjoys many outdoor activities, including long-distance biking, hiking, soccer, and kayaking.

c. Grace has been harmed by wildfire smoke and extreme heat; which have adversely impacted her ability to play competitive soccer. Smoke and heat have led to fewer soccer practices and the cancellation of games. Wildfires have impacted Grace's ability to go outside, enjoy outdoor activities, and have placed her safety, health, and well-being at risk.

d. One of Grace's environmental community education events was cancelled due to wildfire smoke.

e. Grace has had hiking activities impacted by wildfire smoke.

f. Grace experiences psychological harms, is distressed from day-to-day climate conditions, and is anxious about climate change. It is devastating for Grace to think that Montana's special landscapes, like Glacier National Park's glaciers, will not exist as they have in the past, or at all, when she is older.

g. Even though Grace would like to raise children in Montana, she questions whether she can morally bring children into the world, because of her knowledge and fear of the world that her children would grow up in if climate change is not ameliorated.

201. Plaintiff Olivia Vesovich is from Missoula, Montana.

a. Olivia has exercise-induced asthma and is therefore particularly vulnerable to smoke-filled air. In smoky conditions, Olivia feels she is suffocating if she spends more than thirty minutes outdoors. During smoky conditions, Olivia is forced to stay inside and reduce or eliminate the outdoor activities she enjoys. Olivia has been forced to spend recent summers away from Montana due to the smoke-filled air and her asthma.

b. Olivia suffers from spring pollen allergies, which force her to stay indoors and prevent her from engaging in the recreational activities she enjoys. Olivia's spring allergies cause her eyes to swell shut and can cause eye pain for weeks at a time. Olivia's allergies have become progressively worse in recent years.

c. Olivia is affected emotionally and psychologically by climate change, and experiences bouts of depression when she thinks about the dire projections of the future. Olivia would like to have children of her own, but she questions whether this is an option in a world devastated by the effects of climate change.

d. Olivia experiences psychological harms and is distressed from day-to-day climate conditions and is anxious about climate change. There are days when Olivia feels paralyzed by the impacts and threats of climate change and she fears that it is too late to address climate change.

e. For Olivia, climate anxiety is like an elephant sitting on her chest and it feels like a crushing weight. This climate anxiety makes it hard for her to breathe.

202. Plaintiff Claire Vlases is from Bozeman, Montana.

a. Claire works as a ski instructor at Big Sky Resort, and her ability to earn money is harmed by climate disruption, which is decreasing Montana's winter snowpack and the number of days Claire can work. Claire has been sent home from her job as a ski instructor without working her scheduled shift, and without pay, because of insufficient snow. Claire relies on her income as a ski instructor, so the lost income is a financial hardship for her.

***26** b. Claire regularly visits Glacier National Park where she loves to hike. Seeing the loss of glaciers in Glacier National Park is terrifying for Claire and reduces her enjoyment of the park. Claire's ability to enjoy hiking in Glacier National Park has also been diminished due to increasing wildfire smoke, which obstructs the beautiful views and is harmful to her health.

c. Claire has been harmed by the reduced snowpack in Montana and the related impacts to winter sports and tourism.

d. Claire's ability to run cross-country has been harmed by extreme heat and wildfire smoke. Claire has had cross-country practices cancelled due to dangerously smoky air quality conditions. The heat and smoke make it difficult for Claire to train and compete.

e. Claire's family has water rights to Bozeman Creek. Claire and her family use the water for drinking, plumbing, watering their garden, and all other water needs at their home.

f. Claire's water security is threatened by Montana's melting glaciers, declining snowpack, and increasing summer drought conditions, which lead to water scarcity and low water levels in Bozeman Creek.

g. As an individual born with a disability, Claire relies on the outdoors for recreational therapy to replace the physical therapy her insurance stopped providing when she was ten years old. The outdoors helped Claire to grow strong and she continues to rely on activities like skiing, biking, hiking, and running to maintain her physical health. Claire depends on a clean and healthful environment for her physical and mental health and well-being.

h. Climate change impacts harm Claire's mental health, causing her to feel stress, anxiety, and a sense of helplessness about the future.

203. Plaintiff Taleah Hernandez is from Poison, Montana, and lives on the Flathead Indian Reservation.

a. Taleah has been forced to remain inside for extended periods of time during the summer because of poor air quality caused by excessive wildfire smoke. Wildfires have caused Taleah to lose electricity at her home and forced her to prepare to evacuate her home. The Boulder 2700 fire in 2021, forced Taleah to cut down trees around her property for fire safety.

b. Taleah works outdoors with horses and other animals. Dangerous air quality conditions created by wildfire smoke have caused Taleah to miss days of work, lose pay, and lose opportunities to ride horses.

c. Wildfires and wildfire smoke have prevented Taleah from participating in outdoor recreation activities, including hiking and paddleboarding on Flathead Lake.

d. Changes in weather and climate patterns, including warming winter temperatures, have reduced the number of opportunities Taleah has to ice skate on Flathead Lake in the winter.

e. Wildfires and wildfire smoke have caused Taleah physical and emotional distress.

204. Plaintiff Eva L. is from Livingston, Montana.

a. Eva enjoys many outdoor activities, including backpacking, climbing, and cycling, which are central to her family life.

b. Eva has been harmed by wildfire smoke in Montana on numerous occasions, and Eva has suffered eye, nose, and throat irritation and headaches because of the smoky air.

c. Eva and her family had a family trip to Glacier National Park negatively impacted by excessive wildfire smoke, which posed risks to Eva's health and safety.

d. Eva has been harmed by the impacts of extreme flooding. In 2018, flooding along the Shields River damaged a bridge and rendered impassable for more than a year the primary route from Eva's home to the town of Livingston. A temporary bridge was also washed away due to extreme flooding. Eva's family eventually decided to relocate because of this hardship. Being cut off from town was very stressful for Eva and her family.

*27 e. Eva moved to Livingston and now lives near the Yellowstone River. Eva feels a strong connection to the river. In 2022, there was major flooding along the Yellowstone River, including in Livingston. [CW-41; JS-11]. Eva helped fill sandbags to hold back the flood waters. [P108, P109]. A park near Eva's home was underwater. [P110]. Eva saw her community and close friends lose property due to flooding.

f. The 2022 flooding in Livingston caused Eva acute emotional distress, panic, and dread. Parks and other public places she often visits were significantly damaged, preventing her enjoyment of them.

g. Eva's access to the Yellowstone River in summer 2016 was significantly curtailed, as a 180-mile portion of the river was closed for several weeks due to a parasite growth in cutthroat and rainbow trout perpetuated by abnormally high air temperatures and historically low river flows.

h. Eva has experienced forced relocation and the loss of ties to the land.

i. Eva has had her ability to access Montana's rivers for other recreational activities limited due to river conditions.

j. Wildfire smoke has impacted Eva's ability to hike and spend time outdoors with her family.

k. Eva is anxious about how she, her family and community can adapt to the devastation of public resources and infrastructure as the impacts of climate change worsen. Eva is increasingly anxious about the climate change impacts she and her family are experiencing. She is distressed that climate change will worsen if action is not immediately taken.

205. Plaintiff Mica K. is from Missoula, Montana.

a. Rising temperatures and wildfires resulting from climate change make it difficult for Mica to recreate outdoors and participate in activities he loves, and which are important to his health and well-being.

b. Mica has been forced to spend extended periods of time indoors and has lost school recess time because of wildfire smoke. In 2019, a forest fire started approximately one mile from Mica's home, and Mica is anxious that, as climate change worsens, he may lose his family home.

c. Wildfire smoke has impacted Mica's training as a long-distance runner. Mica is an avid runner, running his first half-marathon when he was nine. He runs regularly with his dad. Running is a way for Mica to be in nature and relieve stress. Running in smoke makes Mica feel sick, so he cannot run as much due to increasingly smoky summers in Missoula. Smoke has limited Mica's ability to train and compete in sports.

d. Mica gets frustrated when he is required to stay indoors during the summer because of wildfire smoke.

e. Mica's family now avoids camping and other outdoor activities in August and September due to wildfire smoke and its negative effect on Mica's health.

f. Mica was recently diagnosed with exercise-induced asthma, which puts him at greater risk for respiratory hardship when the air is smoky.

g. Mica's favorite animal is the pika. Mica understands the pika is uniquely vulnerable to climate impacts, and its survival is in jeopardy due to climate change.

h. Mica's outdoor recreation activities such as enjoying the views of glaciers in Glacier National Park are disrupted by climate change. Seeing the glaciers recede in Glacier National Park is depressing for Mica.

i. Climate change causes Mica to feel anxious, stressed, and depressed, and makes it hard for him to sleep at times.

206. Plaintiffs Jeffrey K. and Nathaniel K. are brothers who grew up in Montana City, Montana.

*28 a. Jeffrey K. has pulmonary sequestration and is uniquely susceptible to respiratory complications, such as infections. Nathaniel K. also has respiratory issues. Both Jeffrey and Nate are therefore especially vulnerable to poor air quality, such as smoke-filled air caused by wildfires. [LB 4:87:21-488:11, 505:4-25].

b. The increasing length and severity of the wildfire season harms Jeffrey's and Nathaniel's health, especially given their young age and pre-existing respiratory health conditions. It has forced their family to make changes in daily activities. [LB 487:21-488:11, 505:4-25].

207. Plaintiffs Ruby D. and Lilian D. are from Bozeman, Montana. Shane Doyle is their father and he testified on their behalf.

a. Ruby and Lilian are members of the Crow Nation. Ruby and Lilian regularly travel to the Crow Reservation to visit family members and engage in traditional cultural activities.

b. Ruby's Crow name is Biachggata, which means "Pretty Woman." Lilian's Crow name is Malesch, which means "Loved by Many."

c. Abnormal and extreme weather conditions caused by climate change have impacted Ruby's and Lilian's ability to engage and otherwise partake in cultural practices that are central to their spirituality and individual dignity.

d. Ruby and Lilian visit their family on the Crow Reservation several times a year. Ruby and Lilian attend Crow Fair on the Crow Reservation every year. Crow Fair takes place each August and is a large gathering to celebrate cultural activities and events. Many people, including Ruby and Lilian, stay in teepees. Attending Crow Fair is a highlight for Ruby and Lilian. Ruby and Lilian love dancing at Crow Fair, and enjoy the parades, the rodeo, and doing family events.

e. In recent years, increasing temperatures at Crow Fair have made it hard to wear traditional regalia and participate in cultural activities because it is dangerously hot, sometimes over 100 degrees.

f. Wildfire smoke has also made it difficult for Ruby and Lilian to enjoy the Crow Fair.

g. It is a huge disappointment to Ruby and Lilian when they are unable to dance or participate in other events at the Crow Fair due to heat or smoke.

h. Crow Fair used to coincide with when chokecherries were ripe, which was important because many meals eaten at Crow Fair involved chokecherries. In recent years chokecherry harvest has become much harder to predict, and drought has meant there are less chokecherries available for the festival.

i. Ruby and Lilian pick chokecherries with their family as part of the Crow tradition. They enjoy participating in the process of picking the berries, processing them into syrup, and eating them. But due to drought and heat, fewer chokecherries are available and some stands that usually have berries had none. Increased wildfire frequency has impacted the ability of Ruby and Lilian to participate in these traditional cultural practices.

j. Ruby was diagnosed with asthma when she was eight years old and had an acute form of pneumonia. As a result, Ruby stays inside when it is smoky, and Lilian often stays inside too. This is a disappointment for Ruby and Lilian.

k. During the Bridger fire, which burned near Bozeman in 2020, Ruby and Lilian were worried to see a fire so close to their home and it brought up concerns about whether they were safe.

l. Climate disruption has impacted Ruby and Lilian's outdoor recreation activities, such as rafting, swimming, and floating. Drought has created low river conditions that have impacted Ruby and Lilian's ability to enjoy recreating on the river because it has such low flow.

***29** m. Ruby and Lilian believe that protecting Montana's environment and natural resources is important because in their culture taking care of the Earth is their responsibility.

208. The testimony of the Youth Plaintiffs and their guardian was credible and was undisputed.

VI. DEFENDANTS' ACTIONS CONTRIBUTE TO CLIMATE CHANGE AND HARM PLAINTIFFS.

209. Anne Hedges received a B.S. in environmental policy analysis and planning from the University of California at Davis in 1988 and a Master of Environmental Law, *magna cum laude*, from Vermont Law School in 1993. She is Co-Director and Director of Policy and Legislative Affairs at the Montana Environmental Information Center (MEIC). She directs MEIC's program work, including its legislative, regulatory, policy, and legal activities. She has worked at MEIC since 1993, and her work is focused on pollution-related policy issues in Montana, with a primary emphasis on impacts to air, water, landscapes, and climate from fossil fuels. Ms. Hedges is a well-qualified expert, and the Court found her testimony informative and credible.

210. Peter Erickson received a bachelor's degree in Geology in 1998 at Carleton College, Minnesota, as well as coursework in intermediate microeconomics and macroeconomics at the University of Washington. Mr. Erickson has worked as an environmental and climate policy and technical analyst in greenhouse gas emission accounting, most recently with the Stockholm Environment Institute, an international research institution providing, in part, technical analysis to government and NGOs on the details of climate policy and emissions accounting. Mr. Erickson has served on both national and international committees devoted to GHG emissions accounting: one convened by the International Council of Local Environmental Initiatives (ICLEI) to create a U.S. Community-scale GHG Emissions Accounting and Reporting Standard, and one convened

by the Greenhouse Gas Protocol to create the Greenhouse Gas Mitigation Goals Standard. [PI92]. Mr. Erickson testified about Montana's fossil fuel consumption, extraction, and infrastructure, focusing on three categories: (1) extraction of fossil fuels; (2) processing and transportation of fossil fuels; and (3) consumption of fossil fuels by end users. For each of these categories, Mr. Erickson quantified the amount of coal, oil, and gas and translated that in units of carbon dioxide (CO₂) emissions released from the fuels once they are combusted. Mr. Erickson added up all the coal, oil, and gas to determine the emissions associated with the extraction, consumption, and transportation of those fuels. In his opinion, emissions from Montana's fossil fuel consumption, extraction, and infrastructure are globally significant quantities. Mr. Erickson is a well-qualified expert, and the Court found his testimony informative and credible.

211. Defendants offered the testimony of Dr. Terry Anderson as an expert economist. Purporting to be based on data from the Energy Information Agency (EIA), Dr. Anderson provided extremely limited testimony in response to three questions: (1) the total greenhouse gas emissions for the world; (2) the 2020 greenhouse gas consumption emissions for the state of Montana; and (3) the 2022 greenhouse gas consumption emissions for the state of Montana. Dr. Anderson's testimony was not well-supported, contained errors, and was not given weight by the Court.

***30** 212. Defendants permit three types of fossil fuel-related activities: (1) extraction of fossil fuels; (2) processing and transportation of fossil fuels; and (3) consumption of fossil fuels by end users. [PE 914:12-915:3; PE-9].

213. Fossil fuel consumption includes any combustion, or burning, of these fuels, primarily for energy. Fossil fuel extraction is mining, pumping, drilling, or otherwise taking fossil fuels out of the ground for purposes of making fuels. Fossil fuel processing and transportation are activities that occur between that initial extraction and combustion by the end user, such as refining, or moving the fuels in bulk from one place to another. [PE 914:14-21; PE-11].

214. It is possible to calculate the amount of CO₂ and GHG emissions that results from fossil fuel extraction, processing and transportation, and consumption activities that are authorized by Defendants. [PE 915:13-21; P311; PE-10].

215. Data indicates that in 2019, the total annual fossil fuels extracted in Montana led to about 70 million tons of CO₂ being released into the atmosphere once the fuels were combusted, which is higher than many other countries, including Brazil, Japan, Mexico, Spain, or the United Kingdom. [PE 922:23-923:3, 928:18-929:11, 950:13-14; PE-17].

216. Data indicates that in 2019, total annual fossil fuels consumed in Montana led to about 32 million tons of CO₂ being released into the Atmosphere.

217. In 2019, total annual fossil fuels transported and processed in and through Montana led to at least 80 million tons of CO₂ being released into the atmosphere once those fuels were combusted. [PE 923:19-924:4, 950:14-15]. That is equivalent to all the GHG emissions from Columbia, which has 50 times the population of Montana. [PE 930:11-23; PE-17, PE-20].

218. Accounting for overlap among fossil fuels extracted, consumed, processed, and transported in Montana, the total CO₂ emissions due to Montana's fossil fuel-based economy is about 166 million tons CO₂. [PE 924:5-18, 950:16-18; PE-18]. This is a conservative estimate and does not include all the GHG emissions, including methane, for which Montana is responsible. [PE 928:5-9; PE-17].

219. The 166 million tons CO₂ due to Montana's fossil fuel-based economy is equivalent to the emissions from Argentina (with forty-seven million residents), the Netherlands (with eighteen million residents), or Pakistan (with 248 million residents). [PE 931:22-932:9; PE-22].

220. In terms of per capita emissions, Montana's consumption of fossil fuels is disproportionately large and only five states have greater per capita emissions. [PE 930:19-23, 938:23-25; PE-25].

221. The cumulative CO₂ emissions from all fossil fuels extracted in Montana since 1960 is 3.7 billion metric tons of CO₂. [PE 941:9-19; PE-26].

222. Montana is a major emitter of GHG emissions in the world in absolute terms, in per person terms, and historically. [PE 930:19-23].

223. Montana has six coal mines that Defendants authorize: Spring Creek Mine, Rosebud Mine, Decker Mine, Absaloka, Bull Mountain, and Savage Mine. [PE 942:16-943:5]. Montana also has the largest estimated recoverable coal reserves in the U.S., and Montana is a substantial exporter of coal. [AH 791:1-25; AH-7-AH-13; PE 946:1-3].

***31** 224. Montana's annual coal production is 34 million short tons of coal. [PE 946:5-22]. Montana's coal reserves, as of 2019, are 707 million short tons. [PE 945:21-25; PE-37].

225. Montana is a substantial producer of oil and gas in the U.S. Defendants authorize the drilling and production of oil and gas in Montana. [PE 932:18-933:5, 949:7-15].

226. Montana has approximately 4,000 oil producing wells with an annual oil production of twenty-three million barrels. As of 2019, Montana's oil reserves were 298 million barrels. [PE 946:23-947:8; PE-36, PE-37].

227. Montana has approximately 5,000 gas producing wells with an annual oil production of forty-three billion cubic feet. As of 2019, Montana's gas reserves were 613 billion cubic feet. [PE 947:14-19; PE-36, PE-37].

228. Between 1960 and 2019 the fastest growing category of fossil fuel consumption in Montana has been gas. [PE 942:11-12].

229. Montana is home to four state-authorized oil refineries. [PE 948:22-24, 949:10-15]. Montana's refineries process crude oil largely from Canada and Wyoming and distribute the refined product by railroad and pipeline throughout Montana and to nearby states. [PE 948:17-949:23; PE-38].

230. Montana's land contains a significant quantity of fossil fuels yet to be extracted. [Def. Answer, Doc. 54 ¶ 139; PE 945:21-946:4, 947:16-19, 945:1-25].

231. Montana's GHG emissions have grown significantly since the passage of the 1972 Montana Constitution. [AH 940:15-941:2; PE-27, PE-28].

232. Defendants continue to approve permits and licenses for new fossil fuel activities. [AH 862:1-5; SN 1354:12-16].

233. Defendants have authorized fossil fuel extraction, transportation, and combustion resulting in high levels of GHG emissions that contribute to climate change. [AH 831:22-832:1, 846:25-847:11, 845:14-846:3; AH-50-AH-61; PE 932:18-933:5].

234. In taking action to authorize fossil fuel extraction, since 2011 Defendants have not considered or disclosed GHG or climate change impacts in their environmental reviews because they were statutorily precluded from doing so. [AH 836:2-13, 845:14-846:3; AH-50-AH-61].

235. DEQ issues air quality permits to facilities that emit GHG emissions. [AH 788:13-23; Def. Answer, Doc. 11 ¶ 90].

236. DEQ has authorized fossil fuel extraction, transportation, and combustion, which generate GHG emissions, contribute to climate change, and harm Plaintiffs. [AH 845:14-846:24; AH-50-AH-61].

237. What happens in Montana has a real impact on fossil fuel energy systems, CO₂ emissions, and global warming. [PE 976:8-24; PE-40],

VII. THE MEPA LIMITATION AND ITS IMPLEMENTATION.

238. The 2011 MEPA Limitation provided in pertinent part:

(2)(a) Except as provided in subsection (2)(b), an environmental review conducted pursuant to subsection (1) may not include a review of actual or potential impacts beyond Montana's borders. It may not include actual or potential impacts that are regional, national, or global in nature.

239. While this case has been pending, Judge Moses held in *MEIC v. DEQ*:

Here, the plain language of [MCA 75-1-201\(2\)\(a\)](#) precludes agency MEPA review of environmental impacts that are ‘beyond Montana's borders,’ but it does not absolve DEQ of its MEPA obligation to evaluate a project's environmental impacts within Montana. DEQ misinterprets the statute. They must take a hard look at the greenhouse gas effects of this project as it relates to the impacts within the Montana borders.

*32 Order on Summary Judgment at 29:3-9, *MEIC v. DEQ*, No. DV-56-2021-1307 (Thirteenth Dist. Ct., April 6, 2023).

240. Eight days after Judge Moses' ruling, on April 14, 2023, HB 971 was introduced in the Montana Legislature. HB 971 was passed, sent to enrolling on May 1 and signed by the Governor on May 10, 2023. HB 971 clarifies the MEPA Limitation to say:

(2)(a) Except as provided in subsection (2)(b), an environmental review conducted pursuant to subsection (1) may not include an evaluation of greenhouse gas emissions and corresponding impacts to the climate in the state or beyond the state's borders. (b) An environmental review conducted pursuant to subsection (1) may include an evaluation if:

(i) conducted jointly by a state agency and a federal agency to the extent the review is required by the federal agency; or

(ii) the United States congress amends the federal Clean Air Act to include carbon dioxide emissions as a regulated pollutant.

[Mont. Code Ann. § 75-1-201\(2\)\(a\)](#) (enacted May 10, 2023) (new language underlined).

241. On May 19, 2023, various provisions of MEPA that pertain to legal challenges to MEPA environmental reviews were amended when the Governor signed SB 557 into law. SB 557 created [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#), which states:

(ii) An action alleging noncompliance or inadequate compliance with a requirement of parts 1 through 3, including a challenge to an agency's decision that an environmental review is not required or a claim that the environmental review was inadequate based in whole or in part upon greenhouse gas emissions and impacts to the climate in Montana or beyond Montana's borders, cannot vacate, void, or delay a lease, permit, license, certificate, authorization, or other entitlement or authority unless the review is required by a federal agency or the United States congress amends the federal Clean Air Act to include carbon dioxide as a regulated pollutant.

[Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#) (enacted by SB 557, 68th Legislature (2023)) (signed May 19, 2023).

242. Other components of SB 557 limit who can challenge an agency's final decision, the scope of the challenge, and require challengers to pay a fee to compile and submit a certified record to the reviewing court. [AH 825:4-826:18; AH-45].

243. Both the 2011 and 2023 versions of the MEPA Limitation allowed Projects to be permitted without consideration of their impacts that increase emissions of greenhouse gases. [AH 851:9-852:23; AH-51-AH-60].

244. The State has known of the dangerous impacts of GHG emissions and climate change for at least the last thirty years. [CW 256:6-15; AH 802:13-18; AH-25, AH-26; P17, P19].

245. State government and scientists have known about the international scientific consensus of the dangers posed by climate change since at least the 1990s when the IPCC started issuing climate assessment reports. The State also had access to the congressionally mandated national climate assessments undertaken in 2000, 2009, 2014, and 2017. [SR 139:12-140:1; AH 797:5-798:6, 802:13-18; CW 256:9-24; AH-32, AH-33, AH-34; P28, P262, P263].

*33 246. In 2007, Defendants DNRC, DEQ, and the Office of the Governor were made aware of the issues concerning the impacts of climate change in Montana, including rising temperatures, accelerating warming, and reduced snowpack, and the need for Montana to reduce its GHG emissions, as a result of the 2007 Montana Climate Change Action Plan and the 2007 Montana Greenhouse Gas Inventory and Reference Case Projections 1990-2020. [CW 243:14-244:3, 256:19-24; CW-12, CW-13, CW-14; AH 806:17-807:20; AH-35, AH-36, AH-37; P2, P18].

247. In 2017, Defendants DNRC, DEQ, and the Office of the Governor were again informed by the 2017 Montana Climate Assessment of the issues concerning the impacts of climate change in Montana. [CW 243:14-244:3; AH 832:12-24; AH-49; P6].

248. In 2019, when then Governor Steve Bullock promulgated Executive Order No. 8-2019 creating the Montana Climate Solutions Council, Defendants knew that “climate change poses a serious threat to Montana's natural resources, public health, communities, and economy,” and “Montanans understand that climate change is occurring and are concerned about the impacts it will have on current and future generations.” [AH 832:25-833:6; AH-49; P10].

249. In August 2020, when the Montana Climate Solutions Council released its final report, the Montana Climate Solutions Plan (Climate Solutions Plan), the State knew how climate change was already harming Montana and its residents, through rising temperatures, early snowmelt, earlier spring runoff, flooding, changes in water availability and stream temperatures, increase in forest mortality due to insects, and increasing wildfires. [CW 244: 7-22; AH 833:7-835:10; AH-49; P36].

250. The Climate Solutions Plan included thirty-seven recommendations and strategies to reduce Montana's GHG emissions. [AH 833:7-835:10; AH-49; P36]. Defendants have not implemented the recommendations. [AH 835:8-10].

251. In 2021, the report Climate Change and Human Health in Montana was distributed to State officials. [CW 245:2-246-1].

252. Prior to 2011, Defendants were quantifying and disclosing GHG emissions and climate impacts from fossil fuel projects, including, for example, the Silver Bow Generation Project, the Roundup Power Project (Bull Mountain), and the Highwood Generating Station. [AH 808:10-19, 808:20-809:18, 809:19-810:24, 811:8-24, 813:6-23; AH-38, AH-39, AH-40; P231, P224, P232, P225, P226, P229, P237].

253. Since 2011, because of the MEPA Limitation, Defendants have been statutorily prevented from considering climate change impacts and GHG emissions when conducting environmental reviews. [AH 814:6-21, 816:17-817:14, 818:11-819:10; SN 1361:6-9; AH-42].

254. The MEPA Limitation explicitly prohibits state agencies from considering the impacts of climate change and GHG emissions in environmental reviews under MEPA. [AH 814:22-815:9, 816:17-817:14, 818:11-819:10; SN 1361:6-9; AH-42].

255. Pursuant to the MEPA Limitation, the State has ignored GHG emissions and climate impacts when authorizing fossil fuels activities. [AH 814:22-815:9, 816:17-817:14, 818:11-819:10; AH-51-AH-60].

256. The MEPA Limitation constrains Defendants from making fully informed decisions through their environmental analysis about the scope and scale of the impacts to the environment and Montana's children and youth when conducting environmental reviews. [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#) attempts to constrain the authority of courts when reviewing agency permitting decisions and MEPA analyses.

257. If the MEPA Limitation is declared unconstitutional, state agencies will be capable of considering GHG emissions and the impacts of projects on climate change. [AH 807:23-808:19, 821:16-25; SN 1437:4-8; P231, P224, P232, P225, P226, P229, P237].

***34** 258. Montana's river and lake ecosystems are interconnected with each other, as well as aquatic and terrestrial ecosystems beyond Montana's borders. Because of this interconnectivity to ecosystems both within and beyond Montana's borders, any prohibition on the consideration of either impacts within Montana or regional impacts of climate change, is not scientifically supported. [JS 642:23-15, 646:2-647:2].

259. Defendants' application of the MEPA Limitation during environmental review of fossil fuel and GHG-emitting projects, prevents the availability of vital information that would allow Defendants to comply with the Montana Constitution and prevent the infringement of Plaintiffs' rights. [AH 810:13-24, 816:9-16, 820:16-821:11, 822:1-823:10; AH-51-AH-60].

260. The State authorizes energy projects and facilities within Montana that emit substantial levels of GHG pollution, including, but not limited to, projects that burn and promote the use of fossil fuels, but pursuant to the MEPA Limitation, Defendants do not consider climate change and GHG emissions and measure those individual and cumulative emissions against the standards the Montana Constitution imposes on the State to protect people's rights, before authorizing energy projects and facilities. [AH 818:25-819:10, 824:8-825:3; AH-51-AH-60].

261. The State issues permits, licenses, and leases that result in GHG emissions without considering how the additional GHG emissions will contribute to climate change or be consistent with the standards the Montana Constitution imposes on the State to protect people's rights. [AH 832:2-11, 841:23-844:9, 843:1-844:5, 844:19-846:3; AH-51-AH-60].

262. The State authorizes four private coal power plants to operate in the State, which generate 30% of Montana's energy production, without considering how the additional GHG emissions will contribute to climate change or be consistent with the standards the Montana Constitution imposes on the State to protect people's rights. [AH 792:1-21].

263. The State continues to permit surface coal mining and reclamation in Montana, which results in substantial GHG emissions, without considering how the additional GHG emissions will contribute to climate change or be consistent with the standards the Montana Constitution imposes on the State to protect people's rights. [AH 836:16-846:3; PE 934:14-15].

264. The State authorizes, through licenses and leases, the exploration for and extraction of oil and gas in Montana, without considering how the additional GHG emissions will contribute to climate change or be consistent with the standards the Montana Constitution imposes on the State to protect people's rights. [AH 793:6-18, 845:20-846:9].

265. Defendants have and continue to authorize projects, activities, and plans that cause emissions of GHG pollution into the atmosphere, all while ignoring the impacts of climate change and GHG emissions due to the MEPA Limitation. [AH 836:16-846:3; AH-51-AH-60; PE 932:18-933:5]. For example:

a. Defendants authorize and certify energy projects and facilities within the State of Montana that emit substantial levels of GHG pollution, including, but not limited to, projects that burn and promote the use of fossil fuels. [AH 836:16-846:3; PE 932:18-933:5].

b. DEQ approved the AM4 expansion of Rosebud Strip Mine in December 2015, a 12.1-million-ton coal mine expansion. Pursuant to the MEPA Limitation, DEQ refused to analyze how that decision would aggravate climate impacts. [AH 836:16-837:12; P259, P260, P277; AH-51].

***35** c. DEQ issued a MSUMRA permit to Bull Mountain Mine in January 2016, authorizing Bull Mountain Mine to produce 176 million tons of coal per year. DEQ refused, pursuant to the MEPA Limitation, to analyze how the decision would aggravate climate impacts. [AH 837:14-838:16; P243, P264; AH-52].

d. Between 2002 and 2014, DEQ issued twelve different permits for Signal Peak Energy to operate the Bull Mountain Mine. Since 2011, pursuant to the MEPA Limitation, DEQ refused, in its environmental assessments to consider how those GHG emissions would contribute to climate change or adversely impact Montana's environment and natural resources. [P245, P247, P256].

e. DEQ approved the TR3 expansion of Decker Mine in 2018, allowing for strip-mining of twenty-three million tons of coal. DEQ refused, pursuant to the MEPA Limitation, to analyze how that decision would aggravate climate impacts. [P236, P238, P250, P252, P257-258].

f. In 2020, DEQ approved revision to Spring Creek Mine, the largest coal mine in the State, allowing for recovery of additional seventy-two million tons of coal. In August 2019, DEQ refused, pursuant to the MEPA Limitation, to analyze impacts on the social cost of carbon and economic impacts from climate change in its EIS. [AH 841:23-842:20; P227, P248, P253, P255; AH-56].

g. DEQ authorized the operation of Colstrip Steam Electric Station—which produced 13.2 million metric tons of carbon dioxide equivalent (CO₂e), 38,015 metric tons methane, and 65,919 metric tons nitrous oxide in 2018. CO₂e is a metric measure used to compare the emissions from various greenhouse gases based upon their global warming potential (GWP). [P281, P285, P286].

h. In 2019, when DEQ issued its Record of Decision approving Western Energy's permit application to expand coal mining at Rosebud Coal Mine Area F, where “[t]he proposed mine permit application would add 6,746 acres and approximately 70.8 million tons of recoverable coal reserves to the Rosebud Mine, extending the operational life of the mine by eight years (at the current rate of production).” DEQ, pursuant to the MEPA Limitation, did not consider how those GHG emissions would contribute to climate change or adversely impact Montana's environment and natural resources. [AH 830:25-840:16; SN 1322:21-1323:2; P254, P277, P297; AH-54].

i. DEQ issued the air quality permit to Northwestern Energy for the Laurel Generating Station (now named the Yellowstone County Generating Station), a proposed gas-fired power plant. Pursuant to the MEPA Limitation, DEQ, in its environmental assessment, did not consider how the GHG emissions would contribute to climate change or adversely impact Montana's environment and natural resources. [AH 831:9-21, 844:19-845:13; P294; AH-57].

j. In May 2022, DEQ issued its Final EIS for Rosebud Mine Area B AM5, in Colstrip. Pursuant to the MEPA Limitation, the environmental assessment did not consider how GHG emissions would contribute to climate change or adversely impact Montana's environment and natural resources. [AH 840:20-841:22; P228; AH-55].

k. DEQ continues to issue permits for fossil fuel energy projects, including oil and gas pipelines and associated compressor stations, coal mines and coal facilities, oil and gas facilities, oil and gas leases, oil and gas drilling, petroleum refineries, industrial facilities that burn fossil fuels, and fossil fuel power plants. Pursuant to the MEPA Limitation, DEQ does not consider how a proposed project would contribute to climate change or adversely impact Montana's environment and natural resources. [AH 845:14-846:24; PE 949:7-15, 954:2-9; P138, P224, P232, P239, P240, P241, P242, P246, P249, P251, P264, P276, P277, P278, P279, P280, P281, P282, P285-301; AH-58, AH-59, AH-60].

***36** l. DNRC issues permits for fossil fuel projects, including coal mines and oil and gas extraction. DNRC does not consider how GHG emissions from projects will contribute to climate change or adversely impact Montana's environment and natural resources or violate the Constitution, because of the MEPA Limitation. [P217-217; P233, P234, P235, P265-P275, P283, P284].

266. Montana's annual, historical, and cumulative GHG emissions are increased by Defendants' actions to permit and approve fossil fuel activities with no environmental review of their impact on GHG levels in the atmosphere and climate change. [PE 932:18-933:5].

267. Defendants' actions cause emissions of substantial levels of GHG pollution into the atmosphere within Montana and outside its borders, contributing to climate change. [SR 164:18-166:16; PE 932:18-933:5].

268. The State's actions exacerbate anthropogenic climate change and cause further harms to Montana's environment and its citizens, especially its youth. [AH 845:14-846:2; P150].

VIII. THE MEPA LIMITATION PREVENTS FULL REVIEW OF THE TECHNOLOGICALLY AND ECONOMICALLY AVAILABLE ALTERNATIVES TO FOSSIL FUEL ENERGY IN MONTANA.

269. Dr. Mark Jacobson obtained a M.S. in Environmental Engineering, from Stanford University. Dr. Jacobson also obtained both a M.S. and later a Ph.D. in Atmospheric Sciences from UCLA. In 1994, Dr. Jacobson became an Assistant Professor in the Department of Civil & Environmental Engineering at Stanford. Since 2007, he has been a full professor in that Department. Dr. Jacobson was a co-founder and is Director of Stanford's Atmosphere/Energy Program, as well as a Senior Fellow at Stanford's Precourt Institute for Energy, and Stanford's Woods Institute for the Environment. Since 2008, Dr. Jacobson has been Director and Co-founder of The Solutions Project, an organization that utilizes the combined efforts of individuals in the fields of science, business, and culture to accelerate the transition to 100% renewable energy use in the United States. Starting in 1999, Dr. Jacobson began examining clean, renewable energy solutions. In 2015, this research culminated in the development of roadmaps to transition the all-sector energy infrastructures of each of the fifty United States to 100% clean, renewable energy by 2050, which Dr. Jacobson updated in 2022. Dr. Jacobson has published six textbooks of two editions each and over 175 peer-reviewed journal articles. Dr. Jacobson's career has focused on understanding air pollution and global warming problems and developing large-scale clean, renewable energy solutions to those problems. In this case, Dr. Jacobson summarized his research related to Montana and the feasibility of transitioning Montana swiftly from fossil fuels to clean and renewable energy in all sectors by mid-century, where all energy sectors include electricity, transportation, heating/cooling, and industry. Dr. Jacobson is a well-qualified expert, and his testimony was informative and credible.

270. The MEPA Limitation causes the State to ignore renewable energy alternatives to fossil fuels. [MJ 1030:7-1032:24, 1035:9-23, 1069:18-1071:8, 1066:6-17, 1067:10-20; MJ-15, MJ-62, MJ-63; AH 823:15-825:3; P312].

271. Non-fossil fuel-based energy systems across all sectors, including electricity, transportation, heating/cooling, and industry, are currently economically feasible and technologically available to employ in Montana. Experts have already prepared a roadmap for the transition of Montana's all-purpose energy systems (for electricity, transportation, heating/cooling, and industry) to a 100% renewable portfolio by 2050, which, in addition to direct climate benefits, will create jobs, reduce air pollution, and save lives and costs associated with air pollution. [MJ 1030:7-1032:24, 1035:9-23, 1069:18-1071:8, 1066:6-17, 1067:10-20; P312; MJ-15, MJ-62, MJ-63].

*37 272. It is technically and economically feasible for Montana to replace 80% of existing fossil fuel energy by 2030 and 100% by no later than 2050, but as early as 2035. [MJ 1072:4-23, 1100:9-1101:4; P312; MJ-62, MJ-63]. A number of countries around the world with populations far larger than Montana's relied on >95% wind, water, and sunlight (WWS) to power their electricity sectors in 2021. [MJ-44].

273. To replace fossil fuel energy, Montana would need to electrify all energy sectors with existing or near-existing appliances and machines, and then generate the electricity for all sectors with 100% WWS, namely onshore wind, utility-scale photovoltaics (PV), rooftop PV, geothermal power, and hydroelectric power. [MJ 1043:9-1045:8, 1045:15-1047:10; P312; MJ-12, MJ-15, MM8, MJ-19, MJ-20, MJ-29].

274. All-purpose Montana energy in 2050 can be met, for example, in one scenario, with 4.5 gigawatts (GW) of onshore wind, 3 GW of rooftop PV, 2.9 GW of utility-scale PV, 0.17 GW of geothermal electricity, and 2.7 GW of hydropower (which already exists). [MJ 1057:2-1058:15; MJ-29].

275. Converting from fossil fuel energy to renewable energy would eliminate another \$21 billion in climate costs in 2050 to Montana and the world. Most noticeable to those in Montana, converting to wind, water, and solar energy would reduce annual total energy costs for Montanans from \$9.1 to \$2.8 billion per year, or by \$6.3 billion per year (69.6% savings). [MJ-39]. The

total energy, health, plus climate cost savings, therefore, will be a combined \$29 billion per year (decreasing from \$32 to \$2.8 billion per year), or by 91%. [MJ 1061:20-1063:24; MJ-15, MJ-39, MJ-40, MJ-41, MJ-42].

276. Wind, water, and solar are the cheapest and most efficient form of energy. Cost per unit of energy in a 100% WWS system in Montana would be about 15% lower than a business-as-usual case by 2050, even when including increased costs for energy storage. New wind and solar are the lowest cost new forms of electric power in the United States, on the order of about half the cost of natural gas and even cheaper compared to coal. [MJ 1045:9-1047:10, 1062:8-1063:24; MJ-20].

277. According to a 2018 Montana DEQ report, Understanding Energy in Montana, Montana has significant solar energy potential, comparable to many other U.S. cities. [MJ 1086:21-1087:4; P9; MJ-50].

278. The new footprint over land required to implement a 100% renewable energy system in Montana would be only about 0.06% of Montana's land. Utility scale solar would occupy 0.01% of Montana's land (fourteen square miles), while new wind turbines, including the land around those turbines, which could be used for agriculture, open space, or more solar panels, would occupy about 0.05% (seventy-one square miles) of Montana's land. In comparison, Montana's oil and gas wells and associated infrastructure already occupy about 304 square miles of land (0.21% of Montana land area). [MJ 1079:25-1082:3; MJ-46].

279. There is an abundant supply of renewable energy and four ways to store renewable energy: heat storage (in water), cold storage (as ice), electricity storage (pumped hydropower, batteries, hydrogen fuel cells), and hydrogen as a form of storage (for use in long distance transportation and steel production). [MJ 1057:2-15, 1058:5-15, 1072:24-1073:7, 1076:9-1077:22, 1079:22-1082:8; MJ-15, MJ-19, MJ-45, MJ-62].

280. Montana's energy needs in 2050 under a 100% WWS roadmap would decline significantly (over fifty percent) as compared to a business-as-usual energy system due to a mix of gains in energy efficiency in vehicles and appliances, and through eliminating the significant amounts of energy required to extract, transport, and refine fossil fuels. [MJ 1045:9-1047:10; MJ-15, MJ-19, MJ-20, MJ-21, MJ-22, MJ-23, MJ-24, MJ-25, MJ-26, MJ-27, MJ-28, MJ-55].

***38** 281. Transitioning to WWS will keep Montana's lights on while saving money, lives, and cleaning up the air and the environment, and ultimately using less of Montana's land resources. [MJ 1061:4-1062:12, 1066:6-17, 1066:18-1067:20, 1079:22-1082:8; MJ-15, MJ-20-MJ-30, MJ-39, MJ-41, MJ-42, MJ-46, MJ-56, MJ-57, MJ-58, MJ-62].

282. The current barriers to implementing renewable energy systems are not technical or economic, but social and political. Such barriers primarily result from government policies that slow down and inhibit the transition to renewables, and laws that allow utilization of fossil fuel development and preclude a faster transition to a clean, renewable energy system. [MJ 1042:15-1043:2, 1059:9-1061:3, 1100:9-1101:4, 1103:11-1104:24; MJ-15, MJ-19, MJ-20, MJ-33, MJ-35, MJ-36, MJ-38, MJ-62, MJ-63].

283. Montana has abundant renewable energy resources that can provide enough energy to power Montana's energy needs for all purposes in 2050. [MJ 1058:2-15; MJ-15, MJ-19, MJ-29, MJ-30, MJ-46, MJ-47, MJ-48, MJ-50, MJ-61, MJ-62].

IX. THE 1972 MONTANA CONSTITUTION.

284. Mae Nan Ellingson was a delegate to the 1972 Montana Constitutional Convention. Ms. Ellingson's testimony was informative and provided useful context, including on the compilation of the records of the Constitutional Convention

proceedings on which Montana courts regularly rely. Ms. Ellingson was elected to the Constitutional Convention as a delegate from Missoula County.

285. The first “delegate proposal” advanced during the Constitutional Convention was for a constitutional provision on environmental quality.

286. [Article IX, Section 1 of the Constitution](#) states that “[t]he state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations.” This provision came about after long debate to strengthen the environmental article recommended by the Natural Resources Committee by including the words “clean” and “healthful.”

287. As reflected in the Constitutional Convention Transcripts (March 1, 1972, Vol. V 1230), Ms. Ellingson suggested the “legislature shall provide adequate remedies to prevent” language of [Article IX, Section 1](#) to assure greater protections of the current environment. She believed that if you are trying to protect the environment, you need the ability to sue or seek injunctive relief before the environmental damage is done—paying someone monetary damages after the harm is done does little good. This position was complemented by including the right to a clean and healthful environment in the Declaration of Rights in [Article II, Sec. 3 of the Montana Constitution](#). The decision to include the right to a clean and healthful environment as one of the unalienable rights included in the Bill of Rights passed by a large majority.

288. During the Constitutional Convention, there were concerns among the delegates over the constitutional rights for people under the age of eighteen, and Article II, Section 15 in the Declaration of Rights was included to ensure that Montana's youth have the same fundamental rights as adults. This section was adopted with broad support.

289. Delegates to the 1972 Constitutional Convention intended to adopt the strongest preventative and anticipatory constitutional environmental provisions possible to protect Montana's air, water, and lands for present and future generations.

CONCLUSIONS OF LAW

***39** 1. To the extent that any of the foregoing Findings of Fact incorporate Conclusions of Law or the application of law to fact, they are incorporated herein as Conclusions of Law.

2. This Court has jurisdiction over the parties and subject matter in this case.

3. The Conclusions of Law are conformed to the evidence presented at trial by both parties. [Mont. R. Civ. P. 15\(b\)\(2\)](#). The Court will address the constitutionality of [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#), which was enacted by SB 557 and addressed by both parties during trial and in trial briefing. *See, e.g.*, Docs. 390, 402.

I. PLAINTIFFS HAVE PROVEN STANDING.

A. Plaintiffs Have Proven Injury.

4. As described in the Findings of Fact, Youth Plaintiffs have experienced past and ongoing injuries resulting from the State's failure to consider GHGs and climate change, including injuries to their physical and mental health, homes and property, recreational, spiritual, and aesthetic interests, tribal and cultural traditions, economic security, and happiness.

5. Plaintiffs' mental health injuries directly resulting from State inaction or counterproductive action on climate change, on their own, do not establish a cognizable injury. *Steel Co. v. Citizens for a Better Env't.*, 523 U.S. 83, 107 (1998). However, Plaintiffs' mental health injuries stemming from the effects of climate change on Montana's environment, feelings like loss, despair, and anxiety, are cognizable injuries.
6. Every additional ton of GHG emissions exacerbates Plaintiffs' injuries and risks locking in irreversible climate injuries.
7. Plaintiffs' injuries will grow increasingly severe and irreversible without science-based actions to address climate change.
8. Plaintiffs have proven that as children and youth, they are disproportionately harmed by fossil fuel pollution and climate impacts.
9. Plaintiffs have proven that they have suffered injuries that are concrete, particularized, and distinguishable from the public generally.
10. Plaintiffs suffer and will continue to suffer injuries due to the State's statutorily mandated disregard of climate change and GHG emissions in the MEPA Limitation, and due to SB 557's removal of MEPA's preventative equitable remedies with [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#).

B. Plaintiffs Have Proven Causation at Trial.

11. The PSC is exempted from MEPA as a matter of law. [Mont. Code Ann. § 75-1-201\(3\)](#).²
12. There is a fairly traceable connection between the MEPA Limitation and the State's allowance of resulting fossil fuel GHG emissions, which contribute to and exacerbate Plaintiffs' injuries.
13. There is a fairly traceable connection between the State's disregard of GHG emissions and climate change, pursuant to the MEPA Limitation, GHG emissions over which the State has control, climate change impacts, and Plaintiffs' proven injuries. Unlike in *Bitterrooters Inc.*, the causal relationship between the permitted activities and the resulting environmental harms is reasonably close. *Bitterrooters for Planning, Inc. v. Mont. Dep't of Env'tl Quality*, 2017 MT 222, ¶ 25, 401 P.3d 712. The State authorizes fossil fuel activities without analyzing GHGs or climate impacts, which result in GHG emissions in Montana and abroad that have caused and continue to exacerbate anthropogenic climate change.
- *40 14. The Defendants have the authority under the statutes by which they operate to protect Montana's environment and natural resources, protect the health and safety of Montana's youth, and alleviate and avoid climate impacts by limiting fossil fuel activities that occur in Montana when the MEPA analysis shows that those activities are resulting in degradation or other harms which violate the Montana Constitution.
15. Montana's contributions to GHG emissions can be measured incrementally and cumulatively both in terms of immediate local effects and by mixing in the atmosphere and contributing to global climate change and an already destabilized climate system.
16. Montana's GHG contributions are not *de minimis* but are nationally and globally significant. Montana's GHG emissions cause and contribute to climate change and Plaintiffs' injuries and reduce the opportunity to alleviate Plaintiffs' injuries.

C. Plaintiffs Have Proven Redressability at Trial.

17. The psychological satisfaction of prevailing in this lawsuit does not establish redressability. *Steel Co.* at 107.

18. Defendants can alleviate the harmful environmental effects of Montana's fossil fuel activities through the lawful exercise of their authority if they are allowed to consider GHG emissions and climate change during MEPA review, which would provide the clear information needed to conform their decision-making to the best science and their constitutional duties and constraints, and give them the necessary information to deny permits for fossil fuel activities when inconsistent with protecting Plaintiffs' constitutional rights.

19. Montana's land contains a significant quantity of fossil fuels yet to be extracted. The State and its agents could consider GHG emissions and climate impacts and reject projects that would lead to unreasonable degradation of Montana's environment.

20. A reduction in Montana's GHG emissions that results from a declaration that Montana's MEPA Limitation is unconstitutional would provide partial redress of Plaintiffs' injuries because the amount of additional GHG emissions emitted into the climate system today and in the coming decade will impact the long-term severity of the heating and the severity of Plaintiffs' injuries.

21. It is possible to affect future degradation to Montana's environment and natural resources and injuries to these Plaintiffs.

22. Permitting statutes give the State and its agents discretion to deny permits for fossil fuel activities. *See, e.g., Mont. Code Ann. §§ 75-2-203 and -204* (discretion under Clean Air Act of Montana to prohibit facilities that cause air pollution); § 75-2-211(2)(a) (DEQ to provide rules governing suspension or revocation of air quality permits); § 75-2-218(2) (DEQ has discretion to deny air quality permits); § 75-2-217(1) (DEQ to provide rules governing suspension or revocation of operating permits); 75-20-301 (DEQ can only approve permits for Major Facility Siting Act facilities after considering numerous discretionary factors, including environmental impacts and public health, welfare, and safety); § 77-3-301 (state lands “may” be leased for coal if “in the best interests of the state”); § 77-3-401 (state lands “may” be leased for oil and gas if consistent with the Constitution); § 82-4-102(3)(a) (stating purpose of surface and underground mining and reclamation laws to vest DEQ with rulemaking authority to “either approve or disapprove” new strip mines or new underground mines); § 82-4-227 (DEQ has wide discretion to refuse mining permits).

*41 23. The State must either: 1) have discretion to deny permits for fossil fuel activities when the activities would result in GHG emissions that cause unconstitutional degradation and depletion of Montana's environment and natural resources, or infringement of the constitutional rights of Montana's children and youth; or 2) the permitting statutes themselves must be unconstitutional.

24. “[C]ourts should avoid constitutional issues whenever possible.” *Park Cnty. Envtl Council v. Mont. Dep’t of Envtl Quality*, 2020 MT 303, ¶ 54, 477 P.3d 288 (citing *Sunburst Sch. Dist. No. 2 v. Texaco, Inc.*, 2007 MT 183, ¶ 62, 165 P.3d 1079). Under the doctrine of constitutional avoidance, this Court clarifies that Defendants do have discretion to deny permits for fossil fuel activities that would result in unconstitutional levels of GHG emissions, unconstitutional degradation and depletion of Montana's environment and natural resources, or infringement of the constitutional rights of Montanans and Youth Plaintiffs.

II. MONT. CODE ANN. § 75-1-201(6)(a)(ii) IS NOT A BARRIER TO REDRESSABILITY BECAUSE IT IS FACIALLY UNCONSTITUTIONAL UNDER *PARK COUNTY*.

25. [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#) eliminates the preventative remedies available to MEPA litigants: vacatur and injunction. The State raised [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#) during trial as a barrier to redressability in this case, bringing it before the Court and making the issue unavoidable.

26. The Legislature is obligated under [Article IX, Sec. 1\(3\)](#) to provide “adequate remedies for the protection of the environmental life support system from degradation” and “to prevent unreasonable depletion and degradation of natural resources.” [Mont. Const. Art. IX, Sec. 1\(3\)](#).

27. “MEPA is an essential aspect of the State's efforts to meet its constitutional obligations, as are the equitable remedies without which MEPA is rendered meaningless.” *Park Cnty.* ¶ 89.

28. In *Park Cnty.*, a unanimous Court reasoned:

Montanans' right to a clean and healthful environment is complemented by an affirmative duty upon their government to take active steps to realize this right. [Article IX, § 1, Subsections 1 and 2 of the Montana Constitution](#) command that the Legislature ‘shall provide for the administration and enforcement’ of measures to meet the State's obligation to ‘maintain and improve’ the environment. Critically, Subsection 3 explicitly directs the Legislature to ‘provide adequate remedies to prevent unreasonable depletion and degradation of natural resources ...

Without a mechanism to prevent a project from going forward until a MEPA violation has been addressed, MEPA's role in meeting the State's ‘anticipatory and preventative’ constitutional obligations is negated. Whatever interest might be served by a statute that instructs an agency to forecast and consider the environmental implications of a project that is already underway—perhaps analogous to a mandatory aircraft inspection after takeoff—the constitutional obligation to prevent certain environmental harms from arising is certainly not one of them.

Id. ¶¶ 63, 72.

29. Pursuant to the Court's decision in *Park Cnty.*, [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#) is facially unconstitutional because it eliminates MEPA litigants' remedies that prevent irreversible degradation of the environment, and it fails to further a compelling state interest. *Park Cnty.* ¶¶ 63, 69-72.

III. ALL PLAINTIFFS' CONSTITUTIONAL CLAIMS ARE PREDICATED ON DEGRADATION OF MONTANA'S CLEAN AND HEALTHFUL ENVIRONMENT.

*42 30. All of Plaintiffs' claims hinge on whether the MEPA Limitation and [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#) violate [Mont. Const. Art. II, Sec. 3](#) and [Art. IX, Sec. 1](#).

a. The Public Trust Doctrine is already codified in the Montana Constitution in [Art. IX, Sec. 3](#). *Galt v. State*, 225 Mont. 142, 144, 146, 731 P.2d 912, 913, 914 (1987) (citing *Mont. Coal. for Stream Access v. Curran*, 210 Mont. 38, 682 P.2d 163 (1984) and [Mont. Const. Art. IX, Sec. 3\(3\)](#)).

b. Except for Plaintiffs' mental health injuries resulting from government inaction on climate change, the alleged equal protection, dignity, liberty, and health and safety violations all stem from harm to Montana's environment.

c. Plaintiffs' mental health injuries resulting from government inaction alone do not establish a cognizable, redressable injury.

d. It would be impossible for the Court to find that the MEPA Limitation and [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#) do not violate [Art. II, Sec. 3](#) and [Art. IX, Sec. 1](#), and then find that the statutes violate the Public Trust Doctrine or the rights to equal protection, dignity, liberty, or health and safety.

IV. DETERMINING WHETHER THE CONSTITUTIONAL PROVISIONS AT ISSUE ARE SELF-EXECUTING IS UNNECESSARY TO RESOLVE THIS CONTROVERSY.

31. It is possible to resolve this case without determining whether [Art. II, Sec. 3](#) and [Art. IX, Sec. 1](#) are self-executing.

32. A determination that a right is non-self-executing “does not end the inquiry. As here, (1) once the Legislature has acted, or ‘executed,’ a provision (2) that implicates individual constitutional rights, courts can determine whether that enactment fulfills the Legislature’s constitutional responsibility.” *Columbia Falls Elem. Sch. Dist. No. 6 v. State*, 2005 MT 69, ¶ 17, 109 P.3d 257 (citing *City of Boerne v. Flores*, 521 U.S. 507 (1997)).

33.

“Provisions that directly implicate rights guaranteed to individuals under our Constitution are in a category of their own. That is, although the provision may be non-self-executing, thus requiring initial legislative action, the courts, as final interpreters of the Constitution, have the final ‘obligation to guard, enforce, and protect every right granted or secured by the Constitution....”

Brown v. Gianforte, 2021 MT 149, ¶ 23, 488 P.3d 548 (citing *Columbia Falls Elem. Sch. Dist.*, ¶ 18 (quoting *Robb v. Connolly*, 111 U.S. 624, 637 (1884))).

34. Like in *Park Cnty.*, the question presented to the Court by this case “is straightforward: has the Legislature met its obligation to provide adequate remedies with which to prevent potential future environmental harms when it removes what appears to be the *only* available legal relief positioned to do so?” *Park Cnty.* ¶ 78. The MEPA Limitation, especially in conjunction with [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#), removes the only preventative equitable relief available to the public and MEPA litigants concerned about GHGs and climate change, which are degrading Montana’s environment.

V. THE MEPA LIMITATION IS SUBJECT TO STRICT SCRUTINY.

35. Any statute, policy, or rule which implicates a fundamental right must be strictly scrutinized and can only survive scrutiny if the State establishes a compelling state interest and that the action is narrowly tailored to effectuate that interest. *Park Cnty.* ¶ 84.

*43 36. The MEPA Limitation is subject to strict scrutiny because it implicates Plaintiffs’ fundamental right to a clean and healthful environment.

VI. THE MEPA LIMITATION VIOLATES THE MONTANA CONSTITUTION.

**A. MEPA Limitation violates Plaintiffs' Right to a Clean and Healthful Environment - [Mont. Const. Art. II, Sec. 3, 15;](#)
[Art. IX, Sec. 1.](#)**

37. Montana's Constitution provides: "All persons are born free and have certain inalienable rights. They include the right to a clean and healthful environment..." [Mont. Const. Art. II, Sec. 3](#). Consistent with the provision of these rights and responsibilities, the Montana Constitution further provides: "The state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations." [Mont. Const. Art. IX, Sec. 1\(1\)](#).

38. [Article II, Sec. 3](#) and [Article IX, Sec. 1](#) are to be read together, along with the Preamble to Montana's Constitution. *MEIC I*, ¶¶ 65, 77.

39. The right to a clean and healthful environment is a fundamental right protected by [Mont. Const. Art. II, Sec. 3](#) and [Art. IX, Sec. 1\(1\)](#). *MEIC I*, ¶ 64.

40. Montana's children under age eighteen, have a fundamental right to a clean and healthful environment. [Mont. Const. Art. II, Sec. 15](#). The right to a clean and healthful environment is intended to protect Montana's children and future generations.

41. During Montana's 1972 Constitutional Convention, delegates placed significant emphasis on protecting natural resources and improving Montana's environment. The Montana Supreme Court has recognized that "it was agreed by both sides of the debate that it was the convention's intention to adopt whatever the convention could agree was the stronger language." *MEIC I*, ¶ 75 (citing Convention Transcripts, Vol. IV at 1209, Mar. 1, 1972). The Montana Supreme Court has repeatedly found that the Framers intended the state constitution contain "the strongest environmental protection provision found in any state constitution." *Park Cnty.*, ¶ 61.

42. The Constitutional Framers "did not intend to merely prohibit that degree of environmental degradation which can be conclusively linked to ill health or physical endangerment." *MEIC I*, ¶ 77. As Delegate Foster noted: "[I]f we put in the Constitution that the only line of defense is a healthful environment and that I have to show, in fact, that my health is being damaged in order to find some relief, then we've lost the battle." *MEIC I*, ¶ 74 (citing Convention Transcripts, Vol. V at 1243-44, Mar. 1, 1972).

43. The right to a clean and healthful environment language in Montana's Constitution is "forward-looking and preventative language" which "clearly indicates that Montanans have a right not only to reactive measures after a constitutionally-proscribed environmental harm has occurred, but to be free of its occurrence in the first place." *Park Cnty.*, ¶ 62.

44. The right to a clean and healthful environment requires enhancement of Montana's environment. According to the Constitutional Delegates, "*our intention was to permit no degradation* from the present environment and affirmatively require enhancement of what we have now." *MEIC I*, ¶ 69 (quoting Convention Transcripts, Vol. IV at 1205, Mar. 1, 1972) (emphasis in original).

*44 45. Montanans' right to a clean and healthful environment is complemented by an affirmative duty upon their government to take active steps to realize this right. [Article IX, Sec. 1\(1\) and \(2\) of the Montana Constitution](#) command that the Legislature "shall provide for the administration and enforcement" of measures to meet the State's obligation to "maintain and improve" the environment. Critically, Subsection 3 explicitly directs the Legislature to "provide adequate remedies to prevent unreasonable depletion and degradation of natural resources." [Mont. Const. Art. IX, Sec. 1\(3\)](#); *Park Cnty.*,

46. The obligations of the Legislature found in [Article IX, Sec. 1](#) include providing "adequate remedies for the protection of the environmental life support system from degradation." [Mont. Const. Art. IX, Sec. 1\(3\)](#).

47. According to Delegate McNeil, “the term ‘environmental life support system’ is all-encompassing, including but not limited to air, water, and land; and whatever interpretation is afforded this phrase by the Legislature and courts, there is no question that it *cannot be degraded*” *MEIC I*, ¶ 67 (citing Convention Transcripts, Vol. IV at 1201, Mar. 1, 1972) (emphasis in original).

48. Montana's constitutional right to a clean and healthful environment prohibits environmental degradation that causes ill health or physical endangerment and unreasonable depletion or degradation of Montana's natural resources for this and future generations:

Our conclusions in *MEIC I* are consistent with the constitutional text's unambiguous reliance on preventative measures to ensure that Montanans' inalienable right to a ‘clean and healthful environment’ is as evident in the air, water, and soil of Montana as in its law books. [Article IX, Section 1, of the Montana Constitution](#) describes the environmental rights of ‘future generations,’ while requiring ‘protection’ of the environmental life support system ‘from degradation’ and ‘prevention of unreasonable depletion and degradation’ of the state's natural resources. This forward-looking and preventative language clearly indicates that Montanans have a right not only to reactive measures after a constitutionally-proscribed environmental harm has occurred, but to be free of its occurrence in the first place.

Park Cnty., ¶ 62.

49. Based on the plain language of the implicated constitutional provisions, the intent of the Framers, and Montana Supreme Court precedent, climate is included in the “clean and healthful environment” and “environmental life support system.” [Mont. Const. Art. II, Sec. 3; Art. IX, Sec. 1.](#)

50. Montana's climate, environment, and natural resources are unconstitutionally degraded and depleted due to the current atmospheric concentration of GHGs and climate change.

51. The right to a clean and healthful environment allows plaintiffs to obtain equitable relief before harm occurs. According to the Supreme Court:

When considering which remedies are ‘adequate’ in this context, we note that equitable relief, unlike monetary damages, can avert harms that would have otherwise arisen. It follows that equitable relief must play a role in the constitutional directive to ensure remedies that are adequate to prevent the potential degradation that could infringe upon the environmental rights of present and future generations. We are not alone in this conclusion. As Delegate Mae Nan Robinson pointed out during the 1972 Constitutional Convention: if you're really trying to protect the environment, you'd better have something whereby you can sue or seek injunctive relief before the environmental damage has been done; it does very little good to pay someone monetary damages because the air has been polluted or because the stream has been polluted if you can't change the condition of the environment once it has been destroyed.

***45** *Park Cray*, ¶ 64 (citing *MEIC I* ¶ 71).

52. “The essential purpose of MEPA is to aid in the agency decision-making process otherwise provided by law by informing the agency and the interested public of environmental impacts that will likely result from agency actions or decisions.” *Bitterrooters Inc.* ¶ 18.

53. “MEPA is an essential aspect of the State's efforts to meet its constitutional obligations.” *Park Cnty.*, ¶ 89; [§ 75-1-102, MCA.](#)

54. The stated policy of MEPA makes clear that the State should use “all practicable means” “so that the state may: (a) fulfill the responsibilities of each generation as trustee of the environment for succeeding generations; (b) ensure for all Montanans safe, healthful, productive, and aesthetically and culturally pleasing surroundings; (c) attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences” § 75-1-103, MCA.

55. By enacting and enforcing the MEPA Limitation, the State is failing to meet their affirmative duty to protect Plaintiffs' right to a clean and healthful environment, and to protect Montana's natural resources from unreasonable depletion.

56. The MEPA Limitation categorically limits what the agencies, officials, and agencies tasked with protecting Montana's clean and healthful environment can consider. The MEPA Limitation conflicts with the very purpose of MEPA, which is to aid the State in meeting its constitutional obligation to prevent degradation by “informing the agency and the interested public of environmental impacts that will likely result” from State actions. *Bitterrooters Inc.* ¶ 18; § 75-1-102(1), MCA (“The legislature, mindful of its constitutional obligations under Article II, section 3, and Article IX of the Montana constitution, has enacted the Montana Environmental Policy Act... [to] provide for the adequate review of state actions in order to ensure that: (a) environmental attributes are fully considered”).

57. The plain language of the MEPA Limitation bars agencies from considering GHG emissions and climate impacts for any project or proposal, even to assess whether the project complies with the Montana Constitution.

58. The MEPA Limitation is unconstitutionally contributing to the depletion and degradation of Montana's environment and natural resources and contributing to Plaintiffs' injuries. The MEPA Limitation deprives Plaintiffs of their constitutionally guaranteed rights under Mont. Const. Art. II, Sec. 3, and Art. IX, Sec. 1.

59. By prohibiting consideration of climate change, GHG emissions, and how additional GHG emissions will contribute to climate change or be consistent with the Montana Constitution, the MEPA Limitation violates Plaintiffs' right to a clean and healthful environment and is facially unconstitutional.

B. The MEPA Limitation Does Not Pass Strict Scrutiny.

60. The MEPA Limitation infringes on fundamental rights and must pass strict scrutiny. *Mont Cannabis Indus. Ass'n v. Montana*, 2012 MT 201, ¶ 16, 366 Mont. 224, 286 P.3d 1161 (“*Mont Cannabis Indus Ass'n* (2012)”); see also *Kloss v. Edward D. Jones & Co.*, 2002 MT 129, ¶ 52, 310 Mont. 123, 54 P.3d 1.

*46 61. Under strict scrutiny, “the government must show that the law is narrowly tailored to serve a compelling government interest.” *Mont Cannabis Indus. Ass'n* (2012), ¶ 16.

62. The State failed to show that the MEPA Limitation serves a compelling governmental interest.

63. The State did not put forward any evidence of a compelling governmental interest for the MEPA Limitation.

64. Undisputed testimony established that Defendants could evaluate “greenhouse gas emissions and corresponding impacts to the climate in the state or beyond the state's borders” when evaluating fossil fuel activities. Indeed, Defendants have performed such evaluations in the past.

65. Undisputed testimony established that clean renewable energy is technically feasible and economically beneficial in Montana.

66. Even if the State had established a compelling interest for the statute, the MEPA Limitation is not narrowly tailored to serve any interest.

67. The MEPA Limitation neither serves a compelling state interest nor is narrowly tailored and fails strict scrutiny.

ORDER

1. Based upon the foregoing Findings of Fact and Conclusions of Law the Court determines and declares that:
2. The Youth Plaintiffs have standing to bring the claims addressed herein.
3. Montana's GHG emissions have been proven to be fairly traceable to the MEPA Limitation.
4. Montana's GHG emissions and climate change have been proven to be a substantial factor in causing climate impacts to Montana's environment and harm and injury to the Youth Plaintiffs.
5. This judgment will influence the State's conduct by invalidating statutes prohibiting analysis and remedies based on GHG emissions and climate impacts, alleviating Youth Plaintiffs' injuries and preventing further injury.
6. By prohibiting analysis of GHG emissions and corresponding impacts to the climate, as well as how additional GHG emissions will contribute to climate change or be consistent with the Montana Constitution, the MEPA Limitation violates Youth Plaintiffs' right to a clean and healthful environment and is unconstitutional on its face.
7. Plaintiffs have a fundamental constitutional right to a clean and healthful environment, which includes climate as part of the environmental life-support system.
8. The 2023 version of the MEPA Limitation, [Mont. Code Ann. § 75-1-201\(2\)\(a\)](#), enacted into law by HB 971, is hereby declared unconstitutional and is permanently enjoined.
9. [Mont. Code Ann. § 75-1-201\(6\)\(a\)\(ii\)](#), enacted into law by SB 557 from the 2023 legislative session, is hereby declared unconstitutional and is permanently enjoined because it removes the only preventative, equitable relief available to the public and MEPA litigants.
10. In addition to the findings, conclusions, and declarations set forth above, injunctive relief is appropriate, prohibiting Defendants from acting in accordance with the statutes declared unconstitutional.
11. Judgment is hereby found in favor of the Plaintiffs as prevailing parties.
12. The Youth Plaintiffs requested an award of reasonable attorneys' fees and costs. (Doc. 1 at 104.). Pursuant to [Rule 54 \(d\)](#), [Mont. R. Civ. P.](#), Youth Plaintiffs shall submit their motion for fees and costs and documentation in support of their request for fees and costs, within fourteen days of the date of this Order. Defendants shall have fourteen days thereafter to respond, and

shall have the opportunity to request a hearing pursuant to the provisions of [Rule 43 \(c\)](#), [Mont. R. Civ. P.](#) The Court reserves jurisdiction to issue its final judgment to include the issue of attorneys' fees and costs.

*47 DATED this 14day of August 2023.

<<signature>>

Kathy Seeley

District Court Judge

cc: Melissa Hornbein, via email: hornbein@westernlaw.org

Barbara Chillcott, via email: chillcott@westernlaw.org

Roger Sullivan, via email: rsullivan@mcgarveylaw.com

Dustin Leftridge, via email: dleftridge@mcgarveylaw.com

Nathan Bellinger, via email: nate@ourchildrenstrust.org

Mathew dos Santos, via email: mat.dossantos@ourchildrenstrust.org

Andrea Rodgers, via email: andrea@ourchildrenstrust.org

Philip L. Gregory, via email: pgregory@gregorylawgroup.com

David M.S. Dewhirst, via email: David.dewhirst@mt.gov

Derek Oestreicher, via email: derek.oestreicher@mt.gov

Timothy Longfield, via email: timothy.longfield@mt.gov

Morgan Varty, via email: morgan.varty@mt.gov

Emily Jones, via email: emily@joneslawmt.com

Lee McKenna, via email: lee.mckenna@mt.gov

Mark Stermitz, via email: mstermitz@crowleyfleck.com

Footnotes

- ¹ Citations to the trial transcript, exhibits, and demonstrative slides are in brackets and identified by witness using their initials. For example, “SR-14”, refers to Steven Running demonstrative slide 14.
- ² Hereinafter, when the Court refers to Defendants or the State, the PSC is excluded.

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