



# A CLEAN CITY FOR EVERYONE

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A Final Transition Team Report  
for Mayor Lauren McLean

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# 1 EQUITY, ENGAGEMENT AND PUBLIC HEALTH

Inherent in the desire to foster a clean city for all is the recognition that all residents have a fundamental right to equal access to parks and recreation facilities and services; clean air and water; transportation and housing; and the business, economic, cultural and natural areas that make Boise a thriving community. We recommend that the City of Boise adopt a health equity and environmental justice lens to guide the creation and implementation of policies used to make Boise a clean city for everyone. This approach aims to reduce inequitable distributions of environmental harms, secure equitable access to services and natural amenities, and ensure that traditionally underrepresented residents have a voice in city decision-making processes.

Our recommendations place special emphasis on two overarching groups: traditionally underserved populations and vulnerable populations. Research has shown that individuals and communities within these groups tend to live closer to poor environmental conditions, live further from environmental amenities, and experience worse health outcomes. We use these two terms in the following ways:

- Traditionally underserved<sup>1</sup> populations include groups of individuals that historically have had limited access to city services and/or opportunities for development. The main identified barriers these populations face are socioeconomic, physical, cultural, ethnic, gender-identity-related or related to racial discrimination.
- Vulnerable populations include children, older adults, communities of color, low-income communities, refugees, pregnant women, immigrant groups, indigenous peoples, the differently able, occupational groups whose workers are exposed to environmental impacts and people with chronic medical conditions. This term is commonly used in the context of public health to recognize populations that have a higher risk for poor health as a result of the barriers they experience to social, economic, political and environmental resources and limitations due to illness or disability. Poverty and its common consequences such as malnutrition, homelessness, poor housing and other side effects is a major contributor to vulnerability.

With this in mind, we first advise conducting a Community Environmental and Health Equity assessment, which will identify existing environmental and health inequities across the city and serve as the starting point for future policy development.

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1 Note to Mayor's Office Staff and Equity Committee: We considered a number of different terms here, including "underrepresented," "frontline," and "marginalized." Our aim was to use a term that would best capture the populations that are facing any kind of barriers to access and opportunities for services and development. These groups are not necessarily only traditionally marginalized or underrepresented. We are open to changes in terms if you see fit.

Embracing the values of equity and justice in providing access to Boise's natural, cultural and service amenities and making a focused effort to address persistent racial, ethnic and social disparities will allow the City of Boise to make significant progress towards benefiting all community members. To increase representation of historically underrepresented groups in policymaking, we advise that city departments conduct internal race, ethnicity and social equity plans. Implementing racial equity best practices will remove barriers and strengthen Boiseans' connections to each other and our community, thereby creating equitable opportunities for all. Building on the findings of the proposed Community Environmental and Health Equity Assessment, we advise the city to take corresponding actions that will ensure equal access to environmental amenities such as parks and sidewalks.

To rethink and potentially restructure how the city engages with community members, we advise the city to lead a broad stakeholder group in developing a Blueprint for Equitable Civic Engagement. This Blueprint will outline strategic objectives for improving community involvement processes across the city. In a related vein, we suggest that the city reorient the goals of the existing Office of Community Engagement, create a new Community Involvement Commission, and shift the role of Geographic Area Planners from PDS to the Office of Community Engagement.

Additionally, we suggest that the city explore alternative decision-making models such as community benefit agreements and participatory budgeting as possible ways of providing new access points to diverse cross-sections of the community. We recognize access to the built environment, housing in particular, as a key component of environmental access. Because of this pressing concern, we advise the city to take steps toward removing racially restrictive language from home ownership documents. Finally, we recommend creating a Youth Council on Climate Action to help ensure that youth interests are represented and to foster new environmental leaders.

Boiseans face two significant environmental health threats: poor air quality and extreme heat. Climate change will intensify smoky air and heat waves, so we propose a range of policies which aim to reduce the negative health impacts of these two phenomena, and which focus especially on vulnerable populations. To address poor air quality, we first advise that Boise establish a community air monitoring network to gather real-time data on pollution levels. Additionally, we advise that the city more proactively consider ways to protect residents from wildfire smoke, including making specialized air filters available and establishing clean air shelters in existing public spaces. To address extreme heat, we propose specific infrastructure updates aimed at reducing heat and also suggest city-led emergency responses that can be taken during heat waves.

Finally, we highlight the importance of environmental education and the valuable work already being done by city-operated programs such as the Boise WaterShed, Foothills Learning Center, and Boise Urban Garden School. We suggest ways that these existing programs can be made more accessible to a wider range of visitors.



## HIGHLIGHT PROJECT

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### COMMUNITY ENVIRONMENTAL AND HEALTH EQUITY ASSESSMENT

A crucial first step in creating equitable policies is identifying existing environmental and health inequities. The Community Environmental and Health Equity Assessment will evaluate the state of environmental equity within the City of Boise and serve as a starting point for developing policies that can reduce inequities in the future. We recommend that the city use the findings from this Assessment to begin forming an implementation plan which will prioritize equity-focused policies. Beyond this first assessment, we recommend that the city conduct periodic evaluations in the future to ensure that equity and health remain at the forefront of policy planning and implementation. While Boise can pursue many equity-focused policies immediately, we recommend that the city develop more significant policy in collaboration with affected community members and the organizations which represent them.

#### PARTICIPATORY ENVIRONMENTAL JUSTICE<sup>2</sup>

First, we recommend that the city conduct an internal evaluation of city staff demographics and decision-making procedures to understand the extent to which traditionally underserved groups are or are not represented in staff positions, and the extent to which these groups do or do not have a role in determining the policies that affect Boiseans' environments and well-being.

#### DISTRIBUTIONAL ENVIRONMENTAL AND HEALTH JUSTICE

Next, we advise that the city evaluate the geographic distribution of environmental and health benefits and harms and compare these distributions to neighborhood demographic information. The goal of this assessment is to understand whether and where there are disparities in access to environmental and health amenities or disproportionate exposure to environmental and health harms among traditionally underserved communities. This evaluation would then serve as the starting point for focused interventions aimed at reducing environmental and health inequities.

The city should evaluate environmental and health harms including air pollution, noise pollution, light pollution, flooding, extreme heat, distance from green spaces and facilities regulated by the United States Environmental Protection Agency (e.g. hazardous waste sites, Superfund sites

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2 We draw on the Environmental Protection Agency's Office of Environmental Justice's definition (<https://www.epa.gov/environmentaljustice>) of environmental justice: "The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys: the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work."

and brownfields). We recommend that the city also evaluate the distribution of environmental amenities such as parks and open spaces, tree canopy cover, sidewalks, bikeways and walkability.<sup>3</sup> As part of this process, we suggest engaging actively with community members and community groups in the data collection and evaluation process, and offering open opportunities for city staff to engage directly with citizens. Community members and groups may also be able to provide valuable qualitative feedback on their experiences of the environmental amenities and impacts beyond the quantitative assessment outlined above.

## WORKPLACE ENVIRONMENTAL JUSTICE

In addition to evaluating the geographic distribution of environmental harms and amenities, we suggest the city research and assess workplace environmental exposures. While data limitations make these assessments more difficult to perform, we suggest partnering with researchers, labor unions and community-based organizations to begin the process of better understanding occupational environmental and health hazards. In its evaluation, the city should prioritize workplaces<sup>4</sup> which employ large numbers of employees from traditionally underserved communities. Examples of workplaces and sectors that have been found to experience high levels of exposure to toxins include agriculture, construction, car washes, nail salons and back-of-house restaurant work.

## DIVERSIFY REPRESENTATION

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### DEVELOP DEPARTMENTAL RACE, ETHNICITY AND SOCIAL EQUITY PLANS

In order to enhance diverse representation among city staff and ensure that city services are accessible to all Boiseans, the city should develop race, ethnicity and social equity plans<sup>5</sup> for all city departments. The aim of these plans are twofold: first, they allow for internal evaluations of city staff demographics, and set clear plans for ensuring representation and retention of staff

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3 While data for many of these variables are already publicly available in City databases, additional data can be obtained from: EPA's EnvironAtlas (<https://enviroatlas.epa.gov/enviroatlas/interactivemap/>) database, EPA's Enforcement and Compliance History Online (ECHO) (<https://echo.epa.gov/>), EPA's Toxics Release Inventory (TRI) (<https://www.epa.gov/toxics-release-inventory-tri-program>), and remote sensing imagery.

4 For example, see recent reporting (<https://www.idahostatesman.com/news/local/investigations/article234701417.html>) by The Idaho Statesman's Nicole Foy.

5 As examples, see the City of Portland's Department of Parks and Recreation's five-year Racial Equity Plan (<https://www.portlandoregon.gov/parks/74187>) and reports conducted by Green 2.0 (<https://www.diversegreen.org/the-challenge/>).



from traditionally underserved communities. Among other things, this may involve the city actively recruiting staff from underrepresented community spaces to ensure a more diverse workforce. Second, these plans evaluate a given department’s level of engagement with underserved communities, and the extent to which their programming is widely accessible.

## YOUTH COUNCIL FOR CLIMATE ACTION

Each successive generation will experience larger climate change-related impacts; yet, youth have little to no direct voice in municipal policy. We recommend the development of a Youth Council for Climate Action (“YCAC”) to unite youth voices from across Boise to advise city staff on climate action. The city could effectively communicate with the YCAC and through a designated staff member or through routine meetings with YCAC members. Not only will this council bring a new set of voices to municipal policy-making, but it will further foster new environmental leaders.<sup>6, 7</sup> Several youth-led, grassroots climate justice organizations are already active in Boise, including Sunrise Movement, Extinction Rebellion, Fridays for Future and Boise State University’s Climate Change Club. We recommend that the YCAC include representatives from each of these organizations to best represent the goals, needs and recommendations from diverse voices in the youth climate movement.

# INCREASE ACCESS AND ENGAGEMENT

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## ENSURE EQUAL ACCESS TO CITY SERVICES

The Community Environmental and Health Equity Assessment will identify communities and neighborhoods with less access to city amenities such as parks, sidewalks and public transit. After identifying these gaps, the city should make concrete plans to ensure equal access to all amenities. This may involve, for example, expanding sidewalk coverage and ensuring that public transit routes connect all communities to parks and open spaces. We also recommend that the city build an inventory of current partnerships and connections to organizations serving traditionally underrepresented communities.

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6 Examples of existing youth-led climate councils include the Los Angeles Youth Council for Climate Action (<https://www.lamayor.org/mayor-garcetti-convenes-inaugural-meeting-youth-council-climate-action>) and the Portland Youth Climate Council (<https://pdxclimatecouncil.wixsite.com/youth>).

7 The importance of integrating youth into city climate planning was recently described in a report by the Federal Reserve Bank of San Francisco here (<https://www.frbsf.org/community-development/publications/community-development-investment-review/2019/october/the-critical-role-for-young-people-and-schools-in-resiliency-planning/>).

In addition to addressing the geographic distribution of amenities, the city should work to ensure that its programming is accessible to traditionally underserved communities. As a first step, we recommend that the city expand its relationships with community stakeholders and strengthen its engagement with traditionally underserved communities, with the goal of better understanding and providing for these communities' needs. Additionally, the city should focus on ensuring that digital resources are culturally responsive and representative of communities across Boise by making materials and signage available in commonly spoken non-English languages and reducing or eliminating fees for culturally-specific organizations to use city-owned public spaces.

## IMPROVE STRUCTURES FOR ONGOING COMMUNITY ENGAGEMENT

Improving the quality and equity of community involvement and creating opportunities for more community members to work as partners with our city should be a top priority. This theme cuts across the work of many, if not all, transition committees, and is a topic of central concern for the Clean City Committee.

### DEVELOP A BLUEPRINT FOR EQUITABLE CIVIC ENGAGEMENT

As a starting point, we envision a process in which the city engages a broad group of stakeholders to draft a Blueprint for Equitable Civic Engagement - a plan that outlines strategic objectives for improving community involvement processes. The Blueprint would be developed primarily by Boise residents with the support of select city staff members. While the details of this plan would be left to the stakeholder group to develop, we suggest the following as policies which might be considered: (1) expanding the existing Office of Community Engagement's purpose, (2) establishing a new Community Involvement Commission, and (3) shifting the Geographic Area Planner position into the Office of Community Engagement.

### REFOCUS THE OFFICE OF COMMUNITY ENGAGEMENT

The Office of Community Engagement leads the effort to help our city and community work better together, and we applaud their work. We suggest, however, that their mission could evolve. Through better two-way dialogue, the primary goal of this office should be to open new pathways for our community to be involved in our city's governance. Each person within our community has the potential to be a stakeholder if the city makes entry points for engagement open to them. The Office of Community Engagement could house a range of community-focused commissions or councils, including the proposed Community Involvement Commission (see below) as well as potential councils for renters, neighborhood business districts, human rights and food policy. We

recognize that building effective community involvement groups is demanding, and hope that the Office of Community Engagement might help to ease this process and integrate best practices.

A key area of city work that has a high need for community involvement is planning and development. The Planning and Development Services Department (PDS) has worked hard to engage neighborhood associations and deserves praise for their support in developing neighborhood plans and providing a variety of tools to help strengthen our neighborhoods. Neighborhood Associations and the efforts of volunteer leaders in these groups are necessary for identifying the complex needs within our neighborhoods, and collectively deciding how we want our city to accommodate the pressures of growth. An existing challenge for the city is finding processes that allow more partnership in the development process beyond formal public hearings. Recognizing the need for PDS staff to remain relatively neutral throughout these procedures, we suggest that the Office of Community Engagement could play a more active role with neighborhood associations in planning and development processes.

#### ESTABLISH A COMMUNITY INVOLVEMENT COMMISSION

Within the city's existing Office of Community Engagement, we propose establishing a new Community Involvement Commission, which will focus on building equitable involvement as a core value practiced in every city department. This commission will be composed of volunteer community members, whose focus will be evaluating city programs, procedures and commission/council/board selection processes, and guiding the implementation of objectives put forward in the Blueprint for Equitable Civic Engagement. As an example, the commission might evaluate the distribution of city grants; do certain neighborhoods or organizations receive disproportionate grant funding from the city? Do certain neighborhoods need additional support in accessing grant opportunities? Should a grant's eligibility standards be changed to increase the scope of the applicant pool? The commission would also be asked to play a supporting role in developing department-specific race, ethnicity and social equity plans. Finally, commission members would be tasked with researching community engagement best practices and other city governments which Boise might model.

#### RECATEGORYIZE GEOGRAPHIC AREA PLANNERS

Geographic Area Planners are currently assigned by PDS to work with neighborhood associations on neighborhood planning concerns. However, due to the need for PDS to remain situated as an arbiter, rather than an advocate, the involvement of Geographic Area Planners with neighborhood leaders has been curtailed. For this reason, we suggest that the role of Geographic Area Planner be shifted to the Office of Community Engagement and given the latitude to work more closely with neighborhood associations. In this altered role, Geographic Area Planners would not have planning authority, but could serve more explicitly as a liaison between neighborhood leaders and PDS.

The Geographic Area Planning Liaisons (GAPL) would be invited to participate in larger planning decision-making when PDS planners believe early neighborhood perspectives are important. Rather than ask development interests to facilitate neighborhood engagement, trained GAPLs would initiate and facilitate those conversations. The GAPLs would be tasked with developing relationships with neighborhoods by attending and perhaps even initiating neighborhood association meetings and getting to know the unique issues within their planning region. They would further help build neighborhood association capabilities to engage in neighborhood planning work and identify appropriate city resources for neighborhood needs.

## EXPLORE ALTERNATIVE DECISION-MAKING MODELS

### COMMUNITY BENEFITS AGREEMENTS

Traditionally, Community Benefits Agreements (CBAs) are negotiated between a private developer and a community coalition to define the local benefits that will be incorporated into a specific project.<sup>8</sup> Benefits can include environmental elements, such as inclusion of public space and incorporation of green infrastructure; labor requirements, such as hiring locally or employing a unionized workforce; or even affordable housing concerns, such as including a specified number of affordable housing units in a development project. We recommend that the city explore using CBAs for Boise to enhance the amenities offered in underserved communities.

### PARTICIPATORY BUDGETING

We recommend that the city consider participatory budgeting, which is a process by which community members decide how to allocate a certain part of a public budget. In this approach, residents develop and vote on proposals for projects they would like to see funded, following which a city can divide available public funding between community-selected projects. This cycle is typically integrated into the existing budgeting process. Because participatory budgeting has a history of increasing engagement with underserved communities, we advise exploring how the participatory budgeting model may complement existing city grant programs such as Energize Our Neighborhoods.

## ELIMINATE RACIALLY RESTRICTIVE COVENANTS FROM HOME OWNERSHIP DOCUMENTS

Because racially restrictive language still exists in the covenants, conditions and restrictions (CC&R) documents that govern some neighborhood associations, and because these contracts

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<sup>8</sup> The City of Portland initiated a pilot CBA for several municipal projects, details here: <https://www.portlandoregon.gov/omf/70745>

have been shown to result in racially segregated neighborhoods and environmental inequalities, we recommend that the city investigate ways of making the removal of such language easier for homeowners.<sup>9, 10, 11</sup> This process may include advocating for homeowners associations to remove restrictive covenants from CC&R documents by their own volition or creating policies that allow for individual homeowners to strike racially restrictive language from their home's documents.<sup>12</sup>

## ENVIRONMENTAL HEALTH IMPACTS

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Poor air quality and extreme heat are two significant environmental health threats that impact some groups more than others. In addition to the specific recommendations below, we suggest that the city work with the public health sector to monitor the prevalence of diseases that are exacerbated by climate change alongside actual environmental conditions in order to more fully understand, track and respond to these health threats. For example, this effort may involve monitoring air quality levels and high heat days and the corresponding incidences of heart and lung disease exacerbations.

### ADDRESS IMPACTS OF POOR AIR QUALITY

#### COMMUNITY AIR MONITORING NETWORK

In collaboration with local universities and community-based organizations, we propose that Boise develop a network of air monitoring stations to provide more spatially-detailed

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9 See recent reporting by The Idaho Press' Rachel Spacek: [https://www.idahopress.com/news/local/no-persons-other-than-persons-of-the-white-race-racist/article\\_167d13e1-59ce-5f03-b1e1-771709da5e4b.html](https://www.idahopress.com/news/local/no-persons-other-than-persons-of-the-white-race-racist/article_167d13e1-59ce-5f03-b1e1-771709da5e4b.html)

10 Taylor, Dorceta E. *Toxic Communities : Environmental Racism, Industrial Pollution, and Residential Mobility*. New York: NYU Press, 2015.

11 Rothstein, Richard. *The Color of Law: A Forgotten History of How Our Government Segregated America*. Liveright Publishing, 2017.

12 As an example, look to legislation passed in the State of Washington: [https://depts.washington.edu/civilr/covenants\\_law.htm](https://depts.washington.edu/civilr/covenants_law.htm)

information about air quality across the city.<sup>13, 14, 15</sup> An air monitoring network would allow policymakers to identify differences in pollution exposure across neighborhoods, and subsequently to identify communities that are more exposed to pollution than others. Additionally, pollutant data from an air monitoring network could increase the city’s understanding of the relative impact of wildfire smoke and other sources of particle pollution on overall air quality levels. Lastly, pollutant maps made from air monitoring network data can help policymakers identify specific point sources of air pollution that could be addressed through targeted policies.

## ADDRESS THE IMPACTS OF WILDFIRE SMOKE

Boise’s air pollution is not only the result of vehicle emissions. During fire season (roughly May through October), wildfire smoke contributes substantially to particle pollution, which can exacerbate lung diseases such as asthma and chronic obstructive pulmonary disease, as well as increase the risk of heart attacks and strokes.<sup>16</sup> Smoke exposure is already a major health concern in the Treasure Valley,<sup>17</sup> but we anticipate that under climate change, the number of smoky days and their intensity will increase significantly.<sup>18</sup> This means that even if we could eliminate vehicle emissions tomorrow, we would still face very serious air quality problems. While the city may not be able to prevent wildfires, it can adapt to increasing levels of summer smoke. Best practices for protecting residents from wildfire smoke are still emerging and an

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13 One of the most developed examples of a comparable program is New York City’s Community Air Survey (NYCCAS), which is operated jointly by the City’s Department of Health and a local university. (<https://www1.nyc.gov/site/doh/data/data-publications/air-quality-nyc-community-air-survey.page>)

14 A great resource for developing this program is the Public Health Institute’s 2018 report, “Guidebook for Developing a Community Air Monitoring Network: Steps, Lessons, and Recommendations from the Imperial County Community Air Monitoring Project” (available here - [https://s3-us-west-1.amazonaws.com/trackingcalifornia.org/CAMN-Guidebook\\_pdf.pdf](https://s3-us-west-1.amazonaws.com/trackingcalifornia.org/CAMN-Guidebook_pdf.pdf)).

15 The Treasure Valley Canopy Network is currently engaged with a researcher at Portland State University to analyze pollution measurements from their PurpleAir project. These may be useful partners for building out a fuller monitoring network.

16 Balmes, John R. “Where There’s Wildfire, There’s Smoke.” *New England Journal of Medicine* 378, no. 10 (March 8, 2018): 881–83. (<https://doi.org/10.1056/NEJMp1716846>)

17 See recent reporting from Boise State Public Radio on this topic here: <https://www.boisestatepublicradio.org/post/wildfire-smoke-contributes-air-quality-plummeting-west#stream/0>

18 Liu, Jia Coco, Loretta J. Mickley, Melissa P. Sulprizio, Francesca Dominici, Xu Yue, Keita Ebisu, Georgiana Brooke Anderson, Rafi F. A. Khan, Mercedes A. Bravo, and Michelle L. Bell. “Particulate Air Pollution from Wildfires in the Western US under Climate Change.” *Climatic Change* 138, no. 3 (October 1, 2016): 655–66. (<https://doi.org/10.1007/s10584-016-1762-6>).

area where policy innovation is needed. While this means that there is not a simple and clear path forward for the City of Boise, it is also an opportunity for the city to lead in developing new policy responses. To this end, we suggest more extensive research into policy responses to wildfire smoke, but the following are several preliminary policy ideas to begin with:

- (i) Focus efforts on protecting vulnerable groups. Children, older adults, pregnant women, those who work outdoors and individuals with existing heart and lung disease are more susceptible to adverse health impacts of wildfire smoke. Install high efficiency particulate air, or “HEPA,” filters in buildings occupied by these higher risk populations (e.g. daycare centers, schools, assisted living facilities hospitals, etc.).
- (ii) Establish public clean air shelters in existing public spaces. As a model, look to Seattle’s clean air shelters, which were created by installing high-tech filters that eliminate smoke and other pollutants in spaces already used by the public.<sup>19</sup> Additionally, Seattle’s shelters use sensors to track air quality indoors and outdoors, and include doors that prevent dirty outdoor air from coming inside. Clean air shelters can be jointly established as cooling centers for high-heat days (see Address the Impacts of Extreme Heat, below).
- (iii) The city may pursue creating incentives for homeowners and/or renters to install HEPA filters, and work with labor organizations to make particulate respirator masks (e.g. N95 or P100 masks) more readily available to individuals working outdoors, as these workers are more frequently exposed to smoke.
- (iv) Work with local media and organizations providing services to vulnerable populations to ensure poor air quality warnings reach those at greatest health risk.

## ADDRESS THE IMPACTS OF EXTREME HEAT

Most years, extreme heat causes more deaths than any other weather event,<sup>20</sup> and scientists predict that in the 21st century, heat waves will become hotter, longer and more frequent.<sup>21</sup> We advise the city to address extreme heat through infrastructure changes and by updating emergency responses to high heat days. Because specific populations are particularly

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19 For more information, see: <https://www.citylab.com/environment/2019/06/seattle-air-quality-smoke-wildfires-shelters-where-find-safe/592519/>

20 Oleson, K. W., A. Monaghan, O. Wilhelmi, M. Barlage, N. Brunzell, J. Feddema, L. Hu, and D. F. Steinhoff. “Interactions between Urbanization, Heat Stress, and Climate Change.” *Climatic Change* 129, no. 3 (April 1, 2015): 525–41. (<https://doi.org/10.1007/s10584-013-0936-8>).

21 Meehl, Gerald A., and Claudia Tebaldi. “More Intense, More Frequent, and Longer Lasting Heat Waves in the 21st Century.” *Science* 305, no. 5686 (August 13, 2004): 994–97. (<https://doi.org/10.1126/science.1098704>).

susceptible to heat-related health effects, the city should prioritize these approaches among vulnerable populations.<sup>22</sup> Infrastructure changes to reduce heat include the following:

- Target tree planting to increase shade.
- Ensure all bus stops have shelters or some form of shade.
- Create pocket parks in high-heat neighborhoods.
- Install reflective or green roofs on city-owned properties.
- Shift from traditional pavement to “cool pavement.”

Examples of emergency responses to dangerous heat levels include:

- Work with local media and organizations serving vulnerable populations to ensure heat warnings reach those at greatest health risk.
- Public cooling shelters in conjunction with public clean air shelters.

## ENVIRONMENTAL EDUCATION

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We advise that the city educate and engage its various constituent communities about the health impacts of climate change and the ways that climate mitigation and adaptation activities can improve their health. City-run programs already provide valuable environmental education opportunities, which we support, and for which we offer suggestions for emphasizing climate change. Two key ways in which access to all three city-run environmental education centers should be expanded for historically underserved communities include offering Spanish language programming and providing free transportation to and from program sites for school groups.

## BOISE WATERSHED

The Boise WaterShed serves a valuable role in educating Treasure Valley youth and the general public on water quality, renewal and conservation. Boise should place special emphasis on developing programming and interpretation that highlights the significant impacts of climate change on water systems in the Treasure Valley, as well as ways individuals can reduce water use.

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<sup>22</sup> Kovats, R. Sari, and Shakoor Hajat. “Heat Stress and Public Health: A Critical Review.” *Annual Review of Public Health* 29, no. 1 (2008): 41–55. (<https://doi.org/10.1146/annurev.publhealth.29.020907.090843>).



## FOOTHILLS LEARNING CENTER

As the Treasure Valley's landmark foothills ecology education center, the Foothills Learning Center plays a critical role in providing education on high desert ecological systems, pollinators, fires and conservation. We recommend building on this asset to enhance its reach and impact. We encourage the city to provide full or partial scholarships to the Foothills Learning Center to fund summer camp participation for youth of historically underserved communities. Beyond this, we recommend implementing signage and tours about climate change and its potential impacts on Boise's foothills ecologies at the Foothills Learning Center site.

## BOISE URBAN GARDEN SCHOOL

The Boise Urban Garden School (BUGS) programming could be expanded to include signage on climate change and its potential impacts on Boise's farming community. Already an asset to the city, BUGS provides educational programming in organic gardening, pollinator systems and plant-based cooking. BUGS also produces over two tons of vegetables and fruits annually for use in cooking classes and for donation to local food pantries. By building climate awareness into BUGS programming, the city could enhance BUGS' positive impact.

## SUMMARY OF RECOMMENDATIONS FOR EQUITY, ENGAGEMENT AND PUBLIC HEALTH

### 100 DAYS

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- Convene stakeholders and begin the Community Environmental and Health Equity Assessment.
- Build an inventory of current partnerships and connections with organizations of traditionally underrepresented communities.
- Declare a commitment to drafting a Blueprint for Equitable Civic Engagement.

### 1 YEAR

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- Collaborate with community-based organizations to complete the Community Environmental and Health Equity Assessment.
- Develop departmental race, ethnicity and social equity plans.
- Establish a Youth Council for Climate Action and appoint liaisons from among city staff.
- Begin targeted expansion of access to city services, such as parks, sidewalks and environmental programming.
- Refocus the Office of Community Engagement.
- Shift Geographic Area Planners from PDS to the Office of Community Engagement.
- Determine the feasibility of incorporating community benefits agreements and participatory budgeting into city operations.
- Develop mechanisms for the removal or voidability of racially restrictive language from covenants, conditions and restrictions between homeowners and homeowners associations.

## SUMMARY OF RECOMMENDATIONS FOR EQUITY, ENGAGEMENT AND PUBLIC HEALTH

- Install HEPA air filters in schools and any other city-owned buildings that house populations which are especially vulnerable to the health effects of wildfire smoke.
- Establish public clean air shelters and cooling centers in existing public spaces by ensuring that they have access to air conditioning and sufficient air filtration. Publicize the availability of these shelters on high-heat and high-smoke days.
- Work with labor organizations to make particulate respirator masks readily available to individuals working outdoors during high-smoke days.
- Implement targeted tree planting in neighborhoods with proportionately less tree canopy and with larger vulnerable populations.
- Shift from using traditional pavement to cool pavement.
- Implement system to provide high heat and air quality warnings and ensure warnings reach vulnerable populations.
- Establish public cooling shelters in conjunction with proposed public clean air shelters.
- Expand climate-related programming at the Boise WaterShed, Foothills Learning Center and Boise Urban Garden School.
- Develop Spanish language programming at the Boise WaterShed, Foothills Learning Center and Boise Urban Garden School.
- Provide full or partial scholarships to Foothills Learning Center summer camps for students from historically underserved communities.

## 4 YEARS

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- Conduct routine Environmental Justice and Health Equity Assessments.
- Continue expansion of access to city services, such as parks, sidewalks and environmental programming.
- Collaborate with public health specialists to monitor relationships between climate sensitive diseases and environmental conditions.
- Build a community air monitoring network across the city.
- Establish resources for HEPA air filters to be installed in community buildings not owned by the city that house populations which are especially vulnerable to the health effects of wildfire smoke (e.g. daycare centers, assisted living facilities and hospitals).
- Establish financial incentives for homeowners or renters to install HEPA air filters in their homes.
- Ensure all bus stops have shade and/or shelters.
- Create pocket-parks in high-heat neighborhoods.
- Install reflective or green roofs on city-owned properties.
- Make free transportation available for school groups to visit the Boise WaterShed, Foothills Learning Center and Boise Urban Garden School.

## 2 RESILIENCE AND CLIMATE PLANNING

The greater Boise region is one of the most geographically isolated cities in the country, and our population is projected to increase substantially by 2040.<sup>23</sup> This major population shift intersects with changing environmental conditions, including chronic hazards such as droughts, extreme winter weather and heatwaves, and shock events such as flooding, landslides and wildfires. Societal stressors also include aging infrastructure, food security, economic diversity, education quality, healthcare and affordable housing - topics Idahoans are broadly concerned about.<sup>24</sup> These shocks and stressors pose serious threats to our community's health, economic capacity, and way of life and ultimately our resilience.

This section details our suggestions for increasing community resilience to a wide range of shocks and stressors, with a special focus on identifying, mitigating and adapting to the impacts of climate change. These recommendations are designed to serve and protect our community now, and as we grow in the future.

First, we advise the City of Boise to participate in developing a regionally focused resilience strategy that:

1. Fosters social and environmental equity.
2. Identifies and addresses environmental public health issues, such as exposure to wildfire smoke.
3. Promotes long-term sustainability options, infrastructure resilience and resource management.
4. Effects urban development decisions as we grow into the future.
5. Prepares our community to respond and recover from future hazardous events.

To help lead these efforts, we recommend that the city hire a full-time Chief Resilience Officer.

In addition to this region-wide resilience planning process, we advise a number of steps be taken to build technical capacity within Boise. Establishing a Climate Science Advisory Committee and collaborating with existing climate-focused research efforts - including various centers at Boise State University, the University of Idaho and the Idaho National Laboratory - will help bring

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23 See recent work by the Community Planning Association of Southwest Idaho: <https://compassidaho.org/CIM2040-2.0/growth/>

24 See results from Boise State's 2020 Idaho Public Policy Survey: <https://www.boisestate.edu/sps/2020-idaho-public-policy-survey/>

leading science advances into the policy process. With the help of these institutions, we further advise the city to conduct a Climate Vulnerability Assessment within Boise to better understand how climate impacts will affect our human systems, ecosystems and infrastructure systems. This assessment will serve as the starting point for developing targeted climate adaptation policies.

A key area of city operations that is deeply linked to both climate mitigation and adaptation is urban forestry. Beyond being our city's namesake, trees capture and store carbon as well as reduce extreme heat. For these reasons, we advise the city to focus tree canopy expansion in targeted neighborhoods.

Finally, we advise the city to respond to a changing climate by reducing greenhouse gas emissions. The city has already made significant efforts towards this goal, including conducting greenhouse gas inventories and setting the goals of clean electricity for city operations by 2030 and clean electricity city-wide by 2035. New steps we recommend include setting specific greenhouse gas reduction goals, making greenhouse gas inventories publicly available and obtaining natural gas use data, which Intermountain Gas Company has not made available.



## HIGHLIGHT PROJECT

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### INITIATE A REGIONAL RESILIENCE STRATEGY

We define resilience as “the capacity of individuals, communities, institutions, businesses and systems within a [population center] to survive, adapt and grow no matter what kinds of chronic stresses and acute shocks they experience.”<sup>25</sup> The City of Boise is poised to be a regional leader in developing a comprehensive Treasure Valley resilience strategy, and we see a clear path for the city to initiate this process in collaboration with the Boise State Hazard and Climate Resilience Consortium (HCRI), the Global Resilient Cities Network (GRCN) and a wide range of regional community stakeholders.

We propose the city lead a coordinated effort to identify our region's strengths and vulnerabilities with respect to resilience, prioritize the challenges we face to become resilient, and find collaborative solutions to enhance our resilience. To lead these efforts, we advise the city to hire a Chief Resilience Officer (CRO) (see more details on the CRO below). The CRO will collaborate with Boise State's Hazard and Climate Resilience Institute (HCRI) and regional partners to carry out the following assessments for the greater Treasure Valley:

- A valley-wide vulnerability and risk assessment that identifies how a range of potential shocks and stressors overlap with assets, including (but not restricted to) critical

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<sup>25</sup> We draw on the 100 Resilient Cities definition, available here: <http://www.100resilientcities.org/faq/>

infrastructure, population centers, sites of future urban growth, open spaces, natural resources, recreation areas, transportation, vulnerable communities and businesses.

- A resilience inventory which identifies initiatives and projects in the region that are already building resilience.
- A Regional Resilience Assessment,<sup>26</sup> using the 100 Resilient Cities Resilience Index tools, which will allow us to develop a quantitative and qualitative resilience baseline for the Treasure Valley with respect to (1) Leadership and Strategy, (2) Health and Well-being, (3) Economy and Society and (4) Infrastructure and the Environment. The outcome of this assessment are metrics that allow us to measure the performance of future resilience projects, ultimately enhancing our region’s resilience capacity.
- A resilience strategy specific to the City of Boise, which lists the city’s priorities for enhancing resilience. This report will include a list of actionable projects, mechanisms to fund the projects and metrics to assess the success of future projects.

## SPECIFY LANGUAGE FOR CLIMATE POLICY GOALS

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In climate change policy, the following three terms - mitigation, adaptation and resilience - help to specify distinct goals. While many policies provide both mitigation and adaptation benefits (sometimes referred to as co-benefits), the two have distinct meanings.<sup>27</sup> We suggest adopting these terms in the place of more generalized terms such as “sustainability” for climate planning purposes, as they provide greater specificity to the intended outcome of a policy.

- **MITIGATION:** Actions that reduce greenhouse gas emissions
- **ADAPTATION:** Actions that protect against climate change impacts
- **RESILIENCE:** The ability of a socio-ecological system to withstand climate change impacts

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26 A summary of the 100 Resilient Cities resilience strategy approach is available here: <https://www.100resilientcities.org/how-to-develop-a-resilience-strategy/>. Additional, related publications are available here: <https://www.100resilientcities.org/publications/>. The EPA’s resilience toolkit is available here: <https://www.100resilientcities.org/strategies/santa-fe/>. Several examples of city resilience strategies which utilize the 100 Resilient Cities framework include Seattle (<https://www.100resilientcities.org/strategies/seattle/>) and Santa Fe (<https://www.100resilientcities.org/strategies/santa-fe/>).

27 Grafakos, S., C. Pachteau, M. Delgado, M. Landauer, O. Lucon, and P. Driscoll. “Integrating Mitigation and Adaptation: Opportunities and Challenges.” In *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network*, edited by C. Rosenzweig, W. Solecki, P. Romero-Lankao, S. Mehrotra, S. Dhakal, and S. A. Ibrahim, 101–38. Cambridge University Press, 2018. (<http://www.cambridge.org/th/academic/subjects/earth-and-environmental-science/climate-change-and-climate-change-and-cities-second-assessment-report-urban-climate-change-research-network#yXvTIMYqbl9AbtFX.97>).

## HIRE A CHIEF RESILIENCE OFFICER (CRO)

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A Chief Resilience Officer would coordinate resilience-building and climate policy efforts through the following activities:

- Working with the Climate Science Advisory Committee to develop actionable climate-related policies based on the best available science.
- Inventorying and analyzing existing efforts related to resilience and building from existing efforts.
- Building relationships with regional stakeholders who will participate in the process.
- Collaborating with the Boise State Hazard and Climate Resilience Consortium to complete the resilience strategy process and report writing.
- Coordinating and managing reporting and metrics on future projects, updating the resilience strategy annually.
- Participating in the Global Resilience Cities Network.

## ESTABLISH CLIMATE SCIENCE ADVISORY COMMITTEE

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Establish a Climate Science Advisory Committee which will provide technical assistance for climate policy development, greenhouse gas monitoring, evaluation of policy impacts and access to recent science advances. The committee will be composed primarily of scientists and researchers. This group will perform regular city-wide climate assessments every ~3 years, which will allow the city to continuously adapt to a changing environment and to evaluate policy progress.

Members of the committee can initially be solicited from state higher education institutions. In particular, there is a clear opportunity to partner with Boise State University and their emerging Hazards and Climate Resilience Consortium, which has already established an interdisciplinary network of scholars conducting resilience-related research.



# EVALUATE THE CITY OF BOISE'S CLIMATE VULNERABILITIES

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## CONDUCT A CLIMATE VULNERABILITY ASSESSMENT

As part of larger resilience planning efforts and building on Dr. John Abatzoglou's "Boise Climate Adaptation Assessment" (BCAA), we advise the city to conduct a finer-scale, spatially explicit climate vulnerability assessment in Boise.<sup>28</sup> While the BCAA is a useful first cut at understanding broad climate impacts in Boise, much more needs to be done to understand where these impacts will occur within the city and which communities are most at risk.

Drawing on expertise from the Climate Science Advisory Panel and Boise State's Hazard and Climate Resilience Institute (HCRI), the Assessment should separately analyze potential climate impacts on human systems, natural systems and infrastructure systems. The human systems component of the Assessment should incorporate demographic and population data to better understand how different groups may experience these impacts unevenly. This analysis is crucial for ensuring that equity is central to climate planning. Finally, a version of the Assessment should be created which has minimal technical language and is broadly accessible.

## COLLABORATE FOR KNOWLEDGE PRODUCTION

A number of organizations and networks are already working hard to understand climate change in Idaho. We advise collaborating with these groups in order to better share knowledge and resources, and to reduce costs of the city taking on these activities alone. Examples include, but may not be limited to:

- a. Idaho Climate-Economy Impacts Assessment<sup>29</sup>
- b. Boise State Hazard and Climate Resilience Institute (HCRI)<sup>30</sup>
- c. Boise State Energy Policy Institute (EPI)<sup>31</sup>
- d. Idaho National Laboratory's Center for Advanced Energy Studies (CAES)<sup>32</sup>

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28 An example of a climate vulnerability assessment which the City might model include the City of Portland's Climate Change Preparation Strategy: Risk and Vulnerability Assessment (<https://beta.portland.gov/bps/climate-action/history-and-key-documents-climate-planning-and-action-portland>)

29 <https://www.uidaho.edu/president/direct-reports/mcclure-center/iceia>

30 <https://www.boisestate.edu/research-hcri/>

31 <https://www.boisestate.edu/epi/>

32 <https://caesenergy.org/>

## EXPAND CANOPY COVER IN TARGETED NEIGHBORHOODS

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Trees play an important role in climate change mitigation through the capture and storage of carbon,<sup>33</sup> as well as adaptation through reducing heat exposure.<sup>34</sup> As such, trees are an important neighborhood asset. The Treasure Valley Canopy Network (TVCN) mapped Boise's canopy cover in 2013<sup>35</sup> and calculated the percent canopy coverage per neighborhood. This useful evaluation should serve as the starting point for developing a tree canopy plan that aims to increase canopy coverage by a certain percentage over a certain timeframe.<sup>36</sup> This plan should specifically target planting in neighborhoods which have already been identified to have lower levels of canopy cover, and further, in neighborhoods with high proportions of vulnerable and/or historically underserved residents. Any concerted effort to expand canopy cover should also ensure that sufficient support is provided to existing city forestry operations to complete this work. Additionally, resources should be allocated for upkeep and monitoring of trees beyond their initial planting to ensure their longevity. Finally, we support strengthening requirements to preserve existing trees, which may involve a critical evaluation of the Boise Tree Ordinance.

## SET GREENHOUSE GAS REDUCTION GOALS

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The City of Boise has already conducted greenhouse gas (GHG) inventories in 2005, 2010, 2015 and 2018, which are broken down by sector and available for both community-wide emissions and municipal-only emissions. These reports should be made public and are a strong starting point for setting future GHG reduction targets.

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33 For more details on Boise's forest carbon capture, see the 2017 report, "Treasure Valley Forest Carbon: An assessment of community forest potential to mitigate the impacts of a changing climate" ([https://static1.squarespace.com/static/53486aaae4b0bccee3075974/t/5a6b669c9140b7634b46d65d/1516988070178/TVForestCarbonAssessment\\_2017-12.pdf](https://static1.squarespace.com/static/53486aaae4b0bccee3075974/t/5a6b669c9140b7634b46d65d/1516988070178/TVForestCarbonAssessment_2017-12.pdf)).

34 For more details on urban heat in the Treasure Valley, see the 2019 report, "Heat Watch Report: Treasure Valley, Idaho, USA" (<http://esfoundation.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=b10ac788374147cfa95469eff1f8b8a9d>).

35 See TVCN's Map the Canopy interactive map: <http://esfoundation.maps.arcgis.com/apps/OnePane/basicviewer/index.html?appid=b10ac788374147cfa95469eff1f8b8a9d>

36 Note that this goal was already set in the City of Boise's 2015 Community Forestry Strategic Management Plan (<http://pdsonline.cityofboise.org/pdsonline/Documents.aspx?id=201601041345556340>). We suggest a modification of this goal so that specific neighborhoods are targeted for canopy expansion efforts first.

We advise the city to set both community-wide and municipal greenhouse gas reduction targets for specific time increments into the future (for example, reduction goals for 2025, 2035 and 2050) from an established baseline year. Distinct reduction targets should be set for different sectors, and mitigation policies should be developed accordingly (e.g. policies aimed at reducing transportation emissions will be different than policies aimed at reducing commercial building emissions). As Boise's population grows, we would generally expect that more people will result in increased GHG emissions. For this reason, it may be useful to calculate both total emissions and per capita emissions to account for GHG reduction successes that might be harder to identify through only aggregate GHG analyses. GHG inventories should continue to be conducted regularly (roughly every 3 years) to monitor progress towards reduction goals, with results made public and presented in an accessible way. The methods used to conduct inventories should also be made public.<sup>37</sup>

A major challenge for completing GHG emissions inventories is the ability to access data from private energy utilities. Currently, Intermountain Gas has not complied with the city's requests for 2018 data. Without natural gas use data, a complete GHG inventory is not possible. Our understanding is that the current franchise agreement between the City of Boise and Intermountain Gas entitles the city to receive this data upon request. We advise that the city ensure the terms of its contract with Intermountain Gas are enforced, and that natural gas use data be provided as the utility initially agreed.

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<sup>37</sup> Several examples of polished, municipal GHG inventory reports include Salt Lake City, Utah ([http://www.slcdocs.com/slcgreen/SLC%20Community%20Carbon%20Footprint%20Report%20\(2\).pdf](http://www.slcdocs.com/slcgreen/SLC%20Community%20Carbon%20Footprint%20Report%20(2).pdf)); Missoula, Montana ([https://www.missoulacurrent.com/wp-content/uploads/2017/04/3.2017\\_missoulaemissionsinventory.pdf](https://www.missoulacurrent.com/wp-content/uploads/2017/04/3.2017_missoulaemissionsinventory.pdf)); Bend, Oregon (<https://www.bendoregon.gov/Home/ShowDocument?id=38856>); and Phoenix, Arizona (<https://www.phoenix.gov/oepsite/Documents/2015%20City%20of%20Phoenix%20GHG%20Report%20FINAL%20REPORT-072916.pdf>).

## SUMMARY OF RECOMMENDATIONS FOR RESILIENCE AND CLIMATE PLANNING

### 100 DAYS

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- Make the city's existing greenhouse gas inventories publicly available.
- Obtain natural gas energy use data from Intermountain Gas.
- Establish a Climate Science Advisory Committee.

### 1 YEAR

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- Appoint a Chief Resilience Officer.
- Work with Boise State University's Hazards and Climate Resiliency Consortium to initiate the regional Resilience Strategy and Boise Climate Vulnerability Assessment.
- Set specific greenhouse gas reduction targets.
- Begin targeted tree planting to expand canopy cover in specific neighborhoods.
- Evaluate and strengthen existing tree ordinance.

### 4 YEARS

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- Conduct routine greenhouse gas inventories to monitor progress towards greenhouse gas reduction targets.

# 3 CLEAN ENERGY

Defining Clean vs. Renewable Energy: Clean energy and renewable energy are often used interchangeably, yet they have distinct meanings. Per the most recent industry debates, the definitions are as follows:<sup>38</sup>

- **RENEWABLE ENERGY:** Refers to energy generated from self-renewing resources, the most common being wind, solar and hydroelectric. This also includes geothermal, wave or tidal energy and biomass generation. Nuclear and fossil fuels energy are not considered renewable energy sources.
- **CLEAN ENERGY:** Refers to energy derived from zero-greenhouse gas (GHG) emissions sources during the specific point of energy generation. This includes geothermal, wind, solar, hydroelectric and nuclear and importantly also includes energy saved through energy efficiency. Clean energy does not include fossil fuels (i.e., coal, natural gas or petroleum) and biomass (i.e., burning wood and waste) generation.
- **CLEAN, RENEWABLE AND LOCAL ENERGY:** The City of Boise seeks energy derived from renewable, zero-emissions sources that can be generated nearby. This includes geothermal, solar, wind and appropriately located hydroelectric. These five energy sources promote local and regional resilience, create well-paid and secure employment right here at home, allow our community to adapt to the impacts of a changing climate and mitigate and reduce the release of GHG emissions. We advocate for shifting towards clean, renewable and local energy in our report.

Boise has a unique opportunity to become a leader in renewable, clean and locally sourced energy. Additionally, Boise is poised to be the premiere geothermal city in the United States and to develop geothermal energy partnerships around the world. With abundant natural resources, geothermal, solar, wind and appropriately-located hydroelectric, the City of Boise seeks energy derived from renewable and zero-emissions sources that can be generated within our immediate region. The City of Boise should advocate for these five energy sources as well as energy efficiency as the city aims to become carbon neutral by 2030.

**NO ENERGY IS PERFECT.** From a carbon emissions standpoint hydroelectric and nuclear energy are considered clean, however, both have adverse impacts. There is not a solution to safely and strategically store spent nuclear waste and hydroelectric dams cause significant harm and damage to rivers, resulting in forced relocations of human settlements, and destroying ecosystems. Construction of wind turbines requires massive amounts of concrete which is one of the largest

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38 <https://www.utilitydive.com/news/the-devils-in-the-details-policy-implications-of-clean-vs-renewable/550441/>

producers of GHG emissions and requires rare earth minerals like neodymium and dysprosium, of which 86% are mined in China. Solar energy requires mining for photovoltaic (PV) materials and how to manage energy intermittency. The PV and wind turbine manufacturing industries are so new that solutions to properly recycle and reuse first generation materials have not been identified. Batteries storage also requires mining minerals and has unknown disposal issues.

**THE CLEANEST ENERGY IS THE ENERGY NOT CONSUMED.** Energy efficiency should become the first priority. It is estimated that at least 30% of energy in commercial buildings goes to waste. To achieve the goal of becoming carbon-free by 2030, it's important to remember that the cleanest and cheapest energy is the energy not used through energy efficiency programs. Every municipal, commercial and residential building in Boise should reach zero energy leaks by 2025. Technical support, financing mechanisms and public education will be essential. The first focus has been on city buildings and then commercial, industrial and institutional buildings and infrastructure. A key component of this will need to be upgrading technology for “smart grid” which would enable real-time demand response, IOT and efficiency optimization.

**SOME SOURCES OF ENERGY ARE BETTER.**<sup>39</sup> The City of Boise seeks energy derived from renewable, zero-emissions sources that can be generated nearby. This includes geothermal, solar, wind, appropriately located hydroelectric and energy efficiency. These five energy sources promote local and regional resilience, create well-paid and secure employment right here at home, allow our community to adapt to the impacts of a changing climate and mitigate and reduce the release of GHG emissions. It is only through renewable, zero-emission and locally sourced energy generation that the Boiseans can do their part to become resilient, adapt to changing climates and hopefully mitigate or prevent the impacts of changing weather patterns here at home and elsewhere.

The City of Boise should focus on public-private partnerships to work with the commercial sector to build a “smart grid,” while increasing renewable energy and storage. Strong coalitions are necessary to effectively align innovative policy to support clean, renewable and locally-sourced energy with sector-specific policy (i.e., electricity, heat, transport urban planning) that must all work hand-in-hand to achieve results and prevent global temperatures from rising and harmful climate changes to the Treasure Valley and our way of life.

For electricity, the City of Boise supports an increase of roof-top solar capacity as well as advocate for future purchasing power agreements between Idaho Power Co. and local geothermal, solar and wind generation sources. However, policy alone cannot prevent harmful changes to our climate. The City of Boise and its citizens seek to address and change politics, culture, business and social factors that will help alleviate real-world drivers of harm in ways that will preserve our identity and the values we hold dear.

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<sup>39</sup> <https://www.nytimes.com/2017/11/07/opinion/bipartisan-energy-efficiency.html>

## ESTABLISH A COMMUNITY ENERGY ADVISORY COMMITTEE

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Establish a Community Energy/Sustainability Advisory Committee, comprised of a diverse set of community members, to provide advice and recommendations to the city on ways to achieve community Clean Energy goals and serve as a liaison between the community and the City of Boise. This advisory committee could have several subcommittees structured around Geothermal Advocacy and Technical Development, Small and Large Scale Solar Opportunities, and Energy Efficiency. This advisory committee would be organized and managed by the Director of Energy Innovation and report into the City of Boise through the Public Works Department.

## CREATE A COMMUNITY ENERGY IMPLEMENTATION PLAN

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### UPDATE 2019 ENERGY PLAN

The City of Boise should take the next step and update the 2019 Energy Plan with detailed timelines, costs, financing, budgets and concrete implementation actions. Partner with NGO community already working on these issues, such as: Idaho Clean Energy Association (ICEA)<sup>40</sup> and the Clean Tech Alliance (CTA)<sup>41</sup> to advocate for a variety of clean energy approaches.

## BRAND BOISE AS THE PREMIERE GEOTHERMAL CITY IN THE UNITED STATES

The City of Boise had an unparalleled natural resource with its geothermal heat system. The city should develop ways to expand and market beyond the current system, which has remained generally stagnant since it was constructed. Boise and the surrounding region possess vast known quantities of geothermal heating potential and enhanced geothermal sources for electricity generation. Our unique geothermal system should be a point of pride, a brand story worth telling, and we should be looking to promote innovative ideas and infrastructure methods that facilitate growth in this unique-to-Boise, regenerative technology.

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40 <http://idahocleanenergy.org/>

41 <https://www.cleantechalliance.org/>



## HIGHLIGHT PROJECT

### DEVELOP AN ENERGY INNOVATION PROGRAM

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#### HIRE A DIRECTOR OF ENERGY INNOVATION

In order to ensure Boise becomes a premiere Clean Energy City in the United States, the city will need to appoint a Director of Energy Innovation. The Director of Energy Innovation's responsibility will be to direct and manage an Energy Innovation Program. The aim is to market, advocate, innovate, network and formulate the beginnings of a clean energy industry - with a chief focus on geothermal energy in southern Idaho. Under leadership of the Director, the Energy Innovation Program will network with existing clean energy and geothermal electricity entities (i.e., Ormat) that own clean energy and geothermal power plants with purchasing power agreements with regional electricity utilities (i.e., Idaho Power, Avista, Rocky Mountain Power, Bonneville Power Administration) as well as form partnerships with clean energy and geothermal industry, academic and government leaders from other regions in North America and around the world. The effort will build partnerships with the Boise Metro Chamber, the Idaho Clean Energy Association, regional public utilities and regional governments to advocate, build alliances and advance the benefits of clean and geothermal energy in Boise and southwest Idaho.

#### FOCUS ON GEOTHERMAL INNOVATION

The Energy Innovation Program will help design the future of geothermal development in Boise by hosting design competitions, assist private companies to attract capital and develop strategic niches in order to incubate innovative geothermal technologies beyond the heating district. This program will advocate for and seek policy changes for new geothermal industries in Boise and the southern Idaho region that will benefit from geothermal development including organic greenhouses, mushroom growing, onion dehydration, recreation, as well as electricity generation. The Program will investigate requirements and/or fee incentives for developers and private businesses who might benefit from a geothermal economy.

Expanding the current geothermal capacity and usage is another role of the Director of Energy Innovation and the Energy Innovation Program. Leadership of the Director will create a plan to use full capacity of the geothermal system. This plan will include developing the total cost to upgrade the systems, timelines, policy and finance obstacles, and incentives to add new commercial, residential, or industrial buildings onto the system. The plan will develop a funding mechanism to pay for system upgrades that may include changing hurdle rate (for payback on investment) for switching to geothermal within city infrastructure. Currently there is a 20-year payback requirement. Change 20-year proformas to 50-year proformas for capital costs



on geothermal systems and infrastructure improvements. The plan should also develop and explore public funding available from the federal government to assist with these infrastructure improvements and expansions. In addition, the plan will identify areas where state policy prevents geothermal development and strategize with city staff to address legislative changes that would support the expansion of geothermal heat and electricity generation in Idaho.

## **ADVOCATE FOR DISTRIBUTED GENERATION AND 20 YEAR POWER PURCHASE AGREEMENTS**

Be a strong proactive voice in favor of Idaho Public Utilities Commission (PUC) decisions that increase the ability for companies and residents to generate onsite solar and wind. One of the key positions to take is to push for a change to PUC rules and reinstate a standard 20 year timeline on Power Purchase Agreements (PPA) instead of the two year contract period granted by the PUC in 2015 (prior to 2015, PPAs were defined by the contract). Do so by both commenting on pending PUC decisions and also initiating actions directly with the PUC that are intended to favor onsite solar and wind generation. As a regulated utility, Idaho Power is limited in its capacity to adapt to a new--and more distributed and resilient--energy future. The City of Boise should encourage the PUC to help Idaho Power revise its business model to include incentives for distributed, small-scale generation projects. Calculate the amount of power that could be generated in the Boise urban core, and work with Idaho Power to make it a reality.

## **INCENTIVIZE BUSINESS INVESTMENTS IN RENEWABLE POWER**

Idaho Power currently offers significant incentives for energy conservation by companies. Support a business model evolution for Idaho Power that would also incentivize companies to create significant energy infrastructure within their operations. These infrastructure projects by companies would help both the city and Idaho Power to meet their clean energy goals. Examples of such projects could include cogeneration from industrial waste heat or steam, or methane digesters from agricultural operations.

## **INCREASE ENERGY EFFICIENCY IN ALL BUILDINGS**

### **CREATE A NET ZERO ZONING RULE AND/OR INCENTIVIZE NET ZERO**

When increasing square footage, the new footprint energy consumption has to match the previous energy footprint. Offset the new demands of the property via energy efficiency. Establish tax/rebates/incentives to make newly constructed buildings on track to net zero emissions by 2030 (or set another date).

## DEVELOP ENERGY EFFICIENCY FINANCING TOOLS

The split incentive problem is where the owner of a building is not incentivized to improve the energy efficiency of a building, as the tenant is responsible for the energy bill. One of the ways to resolve this is via financing. The City of Boise needs private/public partnerships to establish energy efficiency financing tools, such as an Energy Efficiency Revolving Loan Fund for (1) Residential buildings, and (2) Commercial and Industrial. One approach, that avoids issues with rules that govern how public funds are used, would be to work with private capital to fund actual projects, but have city support/education/outreach and technical support. Consider supporting a mechanism to allow low interest loans to low income homeowners, as well as incentives for landlords to do energy efficiency improvements on residential and commercial properties.

## DEVELOP PROGRAMS TO IMPROVE ENERGY EFFICIENCY IN EXISTING BUILDINGS

This may include working with industry partners to create benchmarking and auditing programs. Implement systems for controls and interfaces for consumer behavior change - such as real time feedback systems. This can be started first in city buildings.

## INCENTIVIZE HEAT PUMPS

The city should pursue incentives for the installation of heat pumps for both commercial and residential buildings from Idaho Power. The use of heat pumps could expand the city's geothermal system and will increase electric use and reduce the use of natural gas. As such, it could justify incentives that would help pay for the marketing and expansion of the system. We see this as a win-win for both Idaho Power, the city and energy customers.

## CREATE A CITY-WIDE WEATHERIZATION PROGRAM

Create a city-wide weatherization program for residential homes to increase energy efficiency. Targeting low- to moderate-income households would help reduce the financial burden of energy bills. Explore the Department of Energy's Weatherization Assistance Program for Low-Income Persons<sup>42</sup> as a potential funding source. Provide technical assistance to low-income persons to encourage and assist them in applying for such programs.

## DEVELOP COMMERCIAL BUILDING CODES

Develop Commercial Building Codes that increase energy efficiency, construction waste

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<sup>42</sup> <https://www.benefits.gov/benefit/580>

recycling, water conservation, etc. Consider LEED, IgCC and/or WELL standards to outline above code measures to incorporate into code or be the code.

## REQUIRED ENERGY EFFICIENCY AUDITS AS PART OF REAL ESTATE HOME INSPECTIONS

We recommend that the City of Boise require an energy audit for every time a house/commercial property is sold - as part of the standard home inspection when a real estate transaction occurs. This type of disclosure could be very important for home buyers - in looking at how to improve energy performance of a building.

## INCREASE RENEWABLE AND CLEAN ENERGY GENERATION

In addition to increasing geothermal electricity generation from known regional quantities, Boise should advocate for and implement an increase in solar power generation. The city should increase large-scale solar power plants and develop solar plants for city operations use and publicize funding projects for commercial solar projects. Additionally, the city should continue to encourage small-scale, distributed solar projects. For example, the city can create demonstration project areas, such as near the Boise Airport or City Hall. The city can offer local tax credits for rooftop solar projects to incentivize distributed solar projects, or partner with NGO efforts (such as Solarize the Valley) to pay residents to turn rooftops into power generation. There will be a need to amend the zoning code to offer development credits to projects that incorporate rooftop solar on office buildings, commercial and industrial properties and multi-family dwellings.

The city could also expand solar thermal projects. An effort to revitalize Idaho's approach to utility management will also be important. Idaho Power continues to challenge efforts for small-scale solar because its business model does not accommodate grid management for distributed generation well. The city will need to collaborate with the Idaho Public Utility Commission and the Idaho Power to explore new business models that would allow Idaho Power to move towards distributed energy generation. Every Boisean should have the right to be an energy entrepreneur, investing in rooftop solar and allowing their homes to help create income when they are not using the power.

Electrification of our transportation grid will have a huge effect on our existing electrical grid infrastructure. As they grow in number, EVs present an immense technical and financial burden for utilities due to a substantial increase in demand for electricity for charging. We need to be strategic about this increased need and make sure it comes from clean generation. The clear benefit is that these increases represent equal decreases in demand for fossil fuels, gas and diesel. Boise needs to work closely with Idaho Power to manage this issue; efficiency, new clean energy supply and management technology will all be needed to see the benefits of electric mobility.

Similar to solar, the city should pursue policy to support the expansion and development of wind energy in the region. When opportunities arise to redesign irrigation dams, water diversion structures or spillways on the Boise River, the city should seriously consider their removal or repurpose them to produce small scale hydroelectric energy generation similar to repurposing water barriers into the Boise Whitewater Park.

In any energy development, the city will need to work collaboratively with Idaho Power. In doing so, the city should continue to push for and pursue community solar with Idaho Power and the PUC. Past projects were not designed for success, however, doing community market research to understand what residents and businesses want/need will be critical in order for the program to succeed.

## INCREASE DISTRIBUTED ENERGY GENERATION AND STORAGE

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### HIGHLIGHT PROJECT: DEVELOP A MICROGRID PILOT PROJECT AT THE BOISE AIRPORT FOR ENERGY RESILIENCE

The City of Boise should take leadership by developing a microgrid demonstration project. The Boise airport could be a good candidate and a microgrid feasibility analysis should be conducted in 2020. A large microgrid project should be a demonstration for how to develop resilient energy systems that can withstand natural disasters and long-term power outages. While in Idaho, we haven't yet faced wildfire devastation in urban areas, we are very familiar with wildfires destroying more rural communities. Boise can learn from the hard lessons of the 2019 California wildfire season.

## INCENTIVIZE AND ENCOURAGE THE PRIVATE SECTOR TO CREATE MICROGRIDS

In the fall of 2019, it is estimated that the California economy suffered more than \$2 billion in losses just from power outages designed to prevent catastrophic wildfires seen in prior years.<sup>43</sup> A number of businesses shut their doors during this time due to unrecoverable losses. When the power is out for five days and perishables are not refrigerated, the consequences are huge. A food processing plant in the Central Valley reported losses of over \$3 million in just one week.<sup>44</sup>

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<sup>43</sup> Coran, Mario. The Guardian. California power outages Cost Businesses. October 11, 2019. (<https://www.theguardian.com/us-news/2019/oct/11/california-power-outages-cost-business-wildfires>).

<sup>44</sup> Concentric Power. Interview 11.25.19.

A number of institutions and businesses are developing microgrids and searching for the right battery system as a backup. To ensure economic resilience, additional incentives should be offered to businesses that establish microgrids.

## **CREATE ENERGY STORAGE MAP FOR EMS SUPPORT**

Additionally, the city should encourage energy storage systems as back up and set up relationships with businesses and residents to lease their system to EMS in emergency events. This could be mapped, and the data shared with EMS in times of need.

## **ELECTRIFICATION OF TRANSPORTATION**

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### **ELECTRIC CARS, TRUCKS AND COMMERCIAL VEHICLES**

Shifts from private to public transport, better urban design and integration of transportation technology have the potential for large gains in efficiency in terms of an individual's transportation footprint. Electric cars are a quick-to-deploy technology transition that helps tackle climate change and improve urban air quality. It will take time to solve public transportation issues as will the change required to realize the benefits of smart urban design and technology. Electric vehicles provide the most immediate return, a single EV will reduce 5-10k lbs. of CO<sup>2</sup> per year and most in our community will continue to drive their own personal vehicle until major efforts to change this dynamic come to fruition. We need to focus on the barriers to adoption including cost, range anxiety, lack of dealer incentive, supportive infrastructure, test drive opportunity and public awareness. Commercial vehicles may provide an even bigger benefit as their use will continue longer into the future; models are being developed for every industry with awareness being the only barrier in many cases. Electrification of our transportation grid will represent a significant energy supply change, new demands for electricity will increase significantly. The clear benefit is that these increases represent equal decreases in demand for fossil fuels, gas and diesel. To fully realize the benefits, we need to ensure new demand is matched with new clean energy generation.

### **SET GOALS TO TRANSITION THE CITY FLEET**

The city has a fleet of 1,100 vehicles. Today the city owns seven electric sedans, one electric motorcycle and a number of electric golf carts. The city fleet manager should produce a report showing a schedule of fleet turnover, and a stakeholder group should be formed to build a plan that outlines our city transition to a 100% electric fleet. As technology is rapidly changing, the city should produce an annual review inclusive of charging infrastructure needs, city fleet uses and the most current recommendations. There are many barriers to this transition, and if our city expects and wants our community to make this transition, they are in a great position to lead and help break down those barriers.

## UPDATE THE CITY PURCHASING POLICY FOR FLEET PURCHASES

The city fleet purchasing policy was last updated in 2008, the EV market has only come of age in the past few years. Purchasing decisions must analyze factors beyond immediate cost. A more dynamic purchasing process would include factors such as lifetime cost, environmental benefits and the opportunity to lead by example. Again, readiness of technology will vary across fleet platforms and the city must develop a better system for prioritizing decisions to recognize these dynamics.

## CHANGE INTERNAL CITY POLICY TO INCENTIVIZE EVS AND REMOVE INCENTIVES FOR NON EVS

Review and change city employee benefits that currently include subsidized parking incentives for non-electric vehicles. Add new city employee benefits of free parking in city garages and parking structures for city employees who own and drive their electric vehicles to and from work. CCDC is willing to make this same change but has resisted until the city itself takes the lead. Many of our downtown employers could be encouraged to follow, especially if we find a way to highlight their commitment, and it starts with the city leading by example.

## UPDATE CITY ORDINANCE TO SIMPLIFY DOWNTOWN EV PARKING BENEFIT

We have few tools as a city to incentivize citizens to make the transition to electric vehicles. One of those tools is to provide parking benefits in our downtown metered parking district. Ordinance 6-1-B-8 Zero Emission Vehicle Permit was approved in 2007. At this time many electric vehicles were converted traditional vehicles and the city needed to inspect the vehicle to prevent abuse. Almost all EVs on the road today are factory models and the registration provides an easy verification. This inspection is viewed as a major inconvenience and a barrier to some for this benefit, the city should consider eliminating this requirement for factory model EVs. The other barrier to this program is public awareness, we need to find ways to increase promotion.

## CREATE ZONING SOLUTION FOR EV READY HOUSING

International Building Code being adopted for 2020 will include language to require EV ready outlets, 22V-40A, in all new construction but this won't help us in Boise as the State of Idaho limits our building code. The cost of adding a circuit and outlet in a new home is less than \$100, retro-fits can run several thousand creating a barrier to those interested in purchasing an EV. This problem gets worse in rental properties. We should find ways to add this requirement in our zoning ordinance. All new single family and multi-unit housing should be EV ready.

## INCREASE SPONSORSHIP AND SUPPORT FOR EV TRANSITION PUBLIC AWARENESS

Boise is behind other municipalities building conditions to support the transition to electric vehicles. Many of the barriers are related to public perception and lack of exposure. Dealers have resisted bringing in inventory as electric vehicles lack early maintenance issues that support the dealer business model. This has created a lack of opportunity to sit and test drive new vehicles. The city has engaged in several public events, but they need to do more, including increased sponsorship of the better opportunities, support for staff time involved in these efforts and invest in tools for these events to get greater ROI. The city could also use the airport to help build public awareness, requiring the car promotion in the airport lobby to be an electric vehicle, upgrading the Park and Ride shuttle to an electric bus, adding electric infrastructure and incentives for taxis and plug in services for long-term parkers. The city could add information on their own website highlighting the city commitment to upgrading their fleet and programs associated with facilitating our community transition to an electric transportation grid. The benefits of speeding up this transition include better air quality and lower greenhouse emissions; it is worth the small amount required to get maximum value out of these events.



### HIGHLIGHT PROJECTS:

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1. Create Energy Innovation Program.
2. Brand Boise as Geothermal City.
3. Develop a Microgrid Pilot Project at the Boise Airport for Energy Resilience.

### 100 DAYS

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- Announce the City of Boise will set goals to use only renewable and zero-emission clean energy from locally sourced generation that includes geothermal, solar, wind and appropriately-located hydroelectric.
- Establish a Citizens Energy Advisory Committee.
- Hire a Director of Geothermal Innovation.
- Establish a Geothermal Advocacy and Technical Development Committee.
- Review and change city employee benefits that include subsidized parking incentives for non-electric vehicles. Add new employee benefits of free parking in city garages and parking structures for employee owned electric vehicles.
- To help build Public Awareness of the benefits an electric transportation grid provide our community, look to increase sponsorship, involvement and tools used in support of not-for-profit events with a mission to help our community make this important transition.



## SUMMARY OF RECOMMENDATIONS FOR CLEAN ENERGY



### HIGHLIGHT PROJECT

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Develop a Microgrid Pilot Project at the Boise Airport for Energy Resilience.

### 1 YEAR

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- Work to advocate for distributed solar policies
- Create an Office of Geothermal Innovation
- Form a stakeholder group that outlines our city transition to a 100% electric fleet. This plan should include process for annual reporting towards this goal, along with changes in models related to our fleet needs.
- Update our city Purchasing Policy for Fleet Vehicles to prioritize electric vehicles.
- Update Zero Emission Vehicle ordinance to eliminate the need for vehicle inspection, this eliminates a barrier to this benefit for electric vehicle owners.
- Use Zoning Ordinance to require EV ready infrastructure in all new housing permits.
- Establish local tax credits for rooftop solar projects.
- Establish a demonstration microgrid project.

### 4 YEARS

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- Develop and position Boise as the Premiere Geothermal City in the United States.

# 4 EFFECTIVE LAND USE

As Boise grows and changes, so do its planning and land use needs. In this section we highlight the need for Boise to move to form-based zoning codes and encourage broad stakeholder and neighborhood participation in the rezoning decision process. Those with development interests, community interests and neighborhood interests should all feel welcome at the table especially early in the planning process. We also recommend that the city considers updates that protect those currently living in hazard zones, as well as future residents of hazards zones (e.g., previous and new development in floodplains and the wildland urban interface).

We recommend that the City of Boise participates as an active partner with regional planning and environmental quality agencies to ensure a clean and sustainable future for Boise and the greater Boise region through joint planning and resource allocation. Adopting green infrastructure, preserving and maintaining open spaces and reducing light pollution are a few recommendations to consider.

## PLANNING AND ZONING

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### IMPROVE THE NEIGHBORHOOD PLANNING PROCESS

Boise should encourage its neighborhood associations to engage in the planning and development processes. Neighborhood associations have historically compiled neighborhood plans that set forth neighbors' visions for their part of town. Planners and city-level decision makers should seek to consult these plans and request input from neighborhood associations during the process of considering land use applications. We recommend that the city propose revisions to city ordinance to give more weight to neighborhood plans to keep them relevant and foster trust and engagement with neighborhood associations. To continue to grow trust and engagement with neighborhood associations, the city should commission a task force to propose a plan to address and direct neighborhood association engagement throughout the permitting and entitlement process. The task force could propose a blueprint for equitable civic engagement with a focus on neighborhood association input and participation. In doing so, the task force should consider how to make the neighborhood planning process as approachable and understandable as possible for residents volunteering to serve their neighborhoods. City staff should strive to maintain frequent contact with neighborhood association representatives through the city's Geographic Area Planning Program, providing resources and education regarding the planning and approval processes. In order to best listen to its stakeholders' intentions and concerns regarding land use within the city, we recommend that staff train

Boise’s Planning and Zoning Commissioners in how to listen to all voices, maintain a big-picture perspective, and understand their role in interpreting comprehensive plan guidance versus simply enforcing zoning codes.

## **UPDATE BOISE’S ZONING CODES**

Boise’s zoning code needs to be updated to better reflect the comprehensive plan as outlined in Blueprint Boise, recognizing that Blueprint Boise will also need updates to better reflect regional goals for managing growth. We recommend a form-based-oriented code. We recommend that the decisions behind this rewrite include diverse stakeholder and regional consideration.

In defining the scope and process of a zoning update, planners need to consider the “who” behind recommendations. Conflicts of interest and the proximity of those doing the work to the outcomes of the policy recommendations are areas for particular attention. We need to be sure that use and recommendations of outside consultants aligns with local stakeholder and neighborhood needs.

## **EMPOWER HAZARD ZONES TO PROTECT VULNERABLE POPULATIONS**

The city’s resilience strategy and climate vulnerability assessments should highlight the location of our most vulnerable populations with respect to hazard zones. In considering these results, we recommend that city staff mobilize to propose updates to zoning policy that will either restrict building subdivisions or major infrastructure in high hazard zones (e.g., restrict building in flood zones), or update building codes to reduce risk within hazard zones (e.g., firewise landscaping in wildfire zones). To build awareness regarding hazard zones, staff should update and revise policies to require realtors to disclose hazard zone information to property buyers, and to provide recommendations for reducing buyers’ risk to hazard events (e.g., flood hazards, previous flooding at properties and wildfire hazards) if they buy a property. In that vein, we recommend that staff collaborate with Idaho’s educational institutions to establish hazard education programs for residents living in hazard zones.

Boise should increase enforcement of firewise landscaping policies for new properties within the Wildland Urban Interface, especially where they have not historically been enforced. We recommend that staff study policy with the aim of proposing tax incentives or grant opportunities for Wildland Urban Interface residents who reduce fuels around their property. One small step Boise could take to underline this priority is the reinstatement of the chipper truck program for Wildland Urban Interface residents.

# FOOD SYSTEMS

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## HIRE A FOOD SYSTEMS PLANNER

Access to fresh local foods builds a healthier and more resilient city. Rapid growth and equally rapid loss of farmland, is a compelling reason to focus on our local food system. Locally grown foods provide various benefits including enhanced food security and nutrition, as well as reduced environmental degradation. We propose hiring an Food System Planner<sup>45</sup> who would work with Geographic Area Planning Liaisons to lead a strategic planning process to perform the following roles:

1. Helping Geographic Area Planners and PDS professionals to introduce and enhance urban agriculture into Neighborhood Plans. Coordinate with food and hunger professionals to identify and address neighborhood vulnerabilities and food deserts, identify opportunities to expand fresh food access, expand SNAP coverage at farmers markets and help address hunger in our schools.
2. Help facilitate the establishment of a permanent farmers market location.
3. Develop programs aimed at reducing food waste. Support community gardens and non-profit efforts to educate our community about food and health, food production, food processing and preservation and protecting food producing lands.
4. Help establish a local Food Policy Council.<sup>46</sup> Bring together a diverse group of stakeholders from the local food system and collaborate to advocate and develop policy recommendations on a wide range of food-related topics including equity, access, anti-hunger, farm-to-school, waste, processing, land management, workforce and economic development.

## ESTABLISH A PERMANENT HOME FOR A FARMERS MARKET

Development pressure from urban growth is consuming the Treasure Valley's farmland at a rapid pace.<sup>47</sup> Preserving farmland is critical for ensuring food security into the future. The 2017 census identifies over 80% of our farms in Ada County to be under 50 acres, 50% are under nine acres

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45 For example, see a similar position in Washington, D.C. (<https://www.agritecture.com/blog/2019/11/19/agritecture-exclusive-dc-set-to-become-3rd-major-us-city-to-hire-a-director-of-urban-agriculture>).

46 As an example, see the City of New Haven's Food Policy Council (<http://nhfoodpolicycouncil.org/>) and the Philadelphia Food Policy Advisory Council (<https://phillyfpac.org/>).

47 See recent work by Boise State's Dr. Jodi Brandt: <https://www.boisestate.edu/hes/projects/urban-growth-and-farmland-loss-in-the-western-united-states-and-implications-for-human-well-being/>.

or small family farms.<sup>48</sup> While we have lost significant farmland in the past few decades, over 1,000 of these small pieces of land under 50 acres still remain, many representing small family farm opportunities. One of the biggest challenges for these small farming operations is access to markets. Farmers markets are incubators; they provide low barriers to entry for new farmers and small farm-based food businesses. A vibrant farmers market becomes a central hub for farmers to share information, explore product storage and distribution and connect with other non-farmers market institutional buyers. We suggest that the city provide a small piece of land to serve as a permanent home for a farmers market in Boise, either through allocating an existing piece of city-owned property or purchasing a new property. The city may further convene stakeholders to in a charrette-style process to envision this new public gathering place. The co-benefits of established farmers markets are numerous. Beyond year-round access to fresh healthy local food, farmers market can serve as gathering places for diverse cultural, ethnic and socio-economic groups. Farmers markets build neighborhood vibrance, and this new vibrant gathering place could serve as a hub for other community food needs, community events, celebrations, education and a natural place of public engagement.

## INFRASTRUCTURE

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### COLLABORATE WITH REGIONAL STAKEHOLDERS TO PRESERVE BOISE'S EXISTING ASSETS

Boise is surrounded by agencies and communities facing similar opportunities and problems. This proximity offers numerous opportunities for collaboration, many of which are already well-established. We recommend that the City of Boise take advantage of the potential for partnership wherever it can to maximize efficiency and exploit shared benefits. Boise should constructively engage with associations such as the Community Planning Association of Southwest Idaho, the Treasure Valley Partnership, and relevant agencies such as the Idaho Department of Environmental Quality and Idaho Public Utility Commission to be an active participant in ensuring a clean and sustainable future for Boise through joint planning and resource allocation. To the extent the city has been in stalemate with certain regional partners, we recommend that it embark with refreshed dialogue toward inclusive planning as a community, not just individual cities. The city's leadership team looks forward to working with state and regional partners to address the pressures on our working lands, and the importance and opportunity they provide us in terms of agricultural productivity and carbon sequestration. We hope other stakeholders in our state will recognize the need to preserve these vital lands for their current use and keep them safe from overdevelopment.

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<sup>48</sup> See the Census of Agriculture's Ada County Profile: [https://www.nass.usda.gov/Publications/AgCensus/2017/Online\\_Resources/County\\_Profiles/Idaho/](https://www.nass.usda.gov/Publications/AgCensus/2017/Online_Resources/County_Profiles/Idaho/).

## DEVELOP GREEN INFRASTRUCTURE

From prioritization of sustainability in the construction of municipal projects to working with and incentivizing citizen-led projects geared toward reducing the city's overall carbon footprint, we recommend that Boise consider opportunities for the following projects and more within city limits:

- Urban agriculture
- Reflective roofs
- Small and large-scale solar
- Greywater systems
- Passive building construction
- Tree planting
- Neckdowns
- Permeable pavement and bioswales
- Firewise landscaping
- Xeriscaping
- Community gardens
- Shade shadow protection
- Electric vehicle-enabled parking

To expand opportunities for projects like these, the city should work with community partners to study new funding sources and alternatives, such as a micro-loan platform and tax-exempt financing for community-led projects.

## PRESERVE OPEN SPACE AND BENEFICIAL CITY INFRASTRUCTURE

We recommend that the City of Boise actively seeks its neighborhoods' support in identifying, advocating for and raising money to expand the city's Open Space Reserve. Boise's neighborhood associations have a history of successfully leading grassroots efforts to finance the preservation of areas they identify as geographically significant for maintaining Boise's close-to-nature character. We believe the city should explore means of supporting these efforts through non-traditional financing methods and especially through strategic application of foothills and waterway levy funds.

We recommend Boise conduct a comprehensive survey to map the wetlands and riparian areas of the Boise River and its tributaries, as well as to identify opportunities for side channel restoration and vegetation enhancement. We will conduct a study of where open space is in short supply, and where existing trails or open space reserves could be made contiguous. The city could use the results of these studies to create an actionable plan for targeted areas that deliver multiple ecosystem services and recreational benefits to Boiseans. In order to respect property rights while signaling to owners that additional applications exist for their properties, the city should create general zoned maps rather than targeting specific parcels. In order to make it more simple for deed owners to come before the Open Space and Clean Water Advisory Committee, the city could reconsider and reorient the application process for grants to be made to accommodate the rapid pace of deedholders' life circumstances. The application for land grants would then be simpler, allowing residents to more quickly and easily bring forward an idea and receive support from city staff to build and submit the full-fledged application.<sup>49</sup>

## PROTECT OUR DARK SKIES AND REDUCE LIGHT POLLUTION

Boise is fortunate to still be sufficiently early in its growth to where it has opportunities to preserve its largely unpolluted night skies. We recommend that Boise conduct a night sky study for Boise and plan to use the information gathered there to propose an ordinance aimed at reducing night sky pollution. Our hope is that by encouraging smarter lighting solutions we can improve safety for residents, protect wildlife and reduce overall energy use.

Recent reporting from Boise State Public Radio<sup>50</sup> highlights concern that population increases in Boise lead to light pollution that affects the Central Idaho Dark Sky Reserve<sup>51</sup> and could put the reserve at risk of losing its status as the only dark sky reserve in the United States and one of 15 certified dark sky reserves in the world. Light pollution from Boise is beginning to pollute the dark skies in Stanley, wilderness areas near the Sawtooth Mountain Range and favorite camping destinations like Redfish Lake, Deadwood Reservoir and Galena Summit. Boise is the gateway to the Central Idaho Dark Sky Reserve and growth in Boise directly impacts the region's astro-tourism industry. We want to protect this amazing dark sky reserve that creates jobs, protects our economy, supports our values and provides scientific opportunities to learn about the cosmos.

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49 See resources on the benefits of public farmers markets here: <https://www.pps.org/category/public-markets>.

50 <https://www.boisestatepublicradio.org/term/dark-sky-reserve#stream/0>

51 <https://idahodarksky.org/wp-content/uploads/2018/05/Dark-Sky-MAP-FLYER-10.25x13.pdf>

## INSTITUTE BUILDING STANDARDS TO PROTECT BIRDS

Develop Commercial Building Codes that substantially reduce the amount of glass in all new buildings to (1) reduce both heating and cooling costs and (2) reduce the incidence of bird collisions. Review the standards and requirements of the LEED Green Building Rating System Pilot Credit #55: Reducing Bird Collisions, for applicability to new construction and commercial buildings scheduled for capital improvement. The American Bird Conservancy<sup>52</sup> is a research, education and advocacy organization dedicated to the conservation of birds in North America. The American Bird Conservancy and the Smithsonian reported that collisions with buildings likely kill between 365 million and 1 billion birds annually in the United States, with a median estimate of 599 million. An ordinance template<sup>53</sup> and examples of existing ordinances<sup>54</sup> are available as a starting point.

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52 <https://abcbirds.org/>

53 <https://abcbirds.org/wp-content/uploads/2015/05/Model-ordinance-based-on-LEED-pilot-credit-55.pdf>

54 <https://abcbirds.org/wp-content/uploads/2017/01/Legislation-Summary-Final-September-2016.pdf>





### HIGHLIGHT PROJECT

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Move to a form-based zoning code and include broad stakeholder involvement in the rewrite process.

### 100 DAYS

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- Rework the community involvement model in the process to update our zoning code, restarting this process is important but not more important than bringing a broader group of stakeholders into this early phase.
- Establish a task force to begin looking for and recommending locations for a permanent farmers market. Work to define if, why and how our city is engaged in this effort and who might be interested in partnership.
- Determine ordinances suggested by the International Dark Sky Association<sup>55</sup> that could be enacted to reduce light pollution in Boise, as well as ordinances suggested by the American Bird Conservancy<sup>56</sup> that could be enacted to reduce bird collisions with buildings.

### 1 YEAR

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- The inclusive process of reworking our zoning code has a well-defined process and timeline, and is actively being worked on.
- Reorient and streamline the Foothills and Waterways Levy application process to accommodate the rapid pace of deedholders' life circumstances.
- Hire an Urban Agriculture Liaison to work as a partner with the team of newly re-established Geographic Area Planners. Ideally, this would fall within

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<sup>55</sup> <https://www.darksky.org/our-work/lighting/public-policy/policy-makers/>

<sup>56</sup> <https://abcbirds.org/>

## SUMMARY OF RECOMMENDATIONS FOR LAND USE

the framework of a re-envisioned Office of Neighborhoods and Equitable Community Involvement.

- Establish stakeholder group to envision what type of placemaking we envision around our new permanent location for our farmers market.
- Update policies to require realtors to disclose hazard zone information to potential home buyers.
- Outreach to ACHD, regional municipalities, Idaho Power and businesses including local land developers to enact or support lighting ordinances and regulations that will limit and reduce light pollution.
- Develop and test public outreach methods that educate citizens living within hazard zones on ways to reduce their household risk.

## 4 YEARS

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- All zones in our city have been given the opportunity to be defined within a unique neighborhood, and all neighborhood associations have been provided a roadmap for how to establish an approved neighborhood plan. City has established goals for all neighborhoods with interest to have an approved plan.
- Update or create zoning policies to better protect populations living or working within hazard zones.
- Educate citizens on the benefits of reduced light pollution and market Boise as the basecamp and gateway to the most stellar astro-tourism opportunities in the United States.
- Implement education campaign for people living within hazard zones, and provide incentives or grant programs that facilitate the reduction of household risks.

# 5 CLEAN WATER

We recommend that the City of Boise take action to enhance and protect our clean, vibrant waterways. As Boise grows, the City of Boise should work proactively to nurture our watershed and conserve water resources for all who depend on water for survival. Four trends affect future water quality and availability: population growth, climate change, increases in agricultural irrigation efficiency and infrastructure changes to accommodate urbanization. As the climate changes and more people come to the Treasure Valley, planning now will ensure a resilient community as precipitation rates trend downward as demand for water service increases.<sup>57</sup> Historical uses and its location through the City of Boise demands that the Boise River is channelized and controlled, and it remains so for public safety. However, we have abundant opportunities to reclaim some ecological functions that support fish habitat, riparian vegetation and flood mitigation.

## WATER AVAILABILITY, CONSERVATION AND RENEWAL

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According to the Treasure Valley Water Atlas,<sup>58</sup> both snowpack and streamflows in the Boise watershed have declined steadily since the 1940s. This decline is comparable to the rest of the Pacific Northwest, and is attributed to climate change. By contrast, groundwater, which is the source of the City of Boise’s drinking water, has increased through time because of infiltration from agricultural irrigation and unlined irrigation canals.

Over the past 15 years, urban land has increased 10% in the Treasure Valley, largely through conversion of farmland to urban uses. This increase has proven challenging for water use. At home, per-capita water use<sup>59</sup> in Idaho is among the highest in the nation.

According to the Boise Climate Adaptation Study, “Human-caused climate change is projected to result in further declines in low flows in the Boise River due to an advancement in the timing of mountain snowmelt, increases in evaporative demand and the extended period of warm and dry conditions during the summer months.” These low flows are “detrimental to water quality and aquatic life.” A decrease in low flows can be reversed by planting additional riparian vegetation

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57 Treasure Valley Water Atlas

58 <https://www.boisestate.edu/hes/tvwa/>

59 <http://boisestatepublicradio.org/post/why-idahoans-use-more-water-home-anyone-else-country#stream/0>

that would shade the Boise River and its tributaries. This vegetation should be planted now not only to keep water temperatures lower in the future, but also to hold riverbanks in place and to reduce sediment and pollutants flowing into the river.

The City of Boise should influence factors in how our community adapts to this future.

## EXPAND CONSERVATION AND EDUCATION OPPORTUNITIES

We recommend that the City of Boise promotes water conservation by incentivizing smaller residential lots and water-smart landscaping. Much of our household water needs are for landscaping; we recommend that the City of Boise expands and provides robust public education for reducing household water consumption similar to Utah's Slow the Flow campaign.<sup>60</sup> Residential water use efficiency programs can reduce household water use up to 60%.

We should also continue the city's public outreach program to increase acceptance of renewed water (such as through the existing Pure Water Brew program), and continue to engage school groups at the WaterShed. A common misnomer is that citizens think groundwater as clean and pristine and water from a treatment facility as dirty and contaminated; however, in actuality we treat all the water we drink, and renewed water is no different from groundwater. Dispelling water myths will lead to greater acceptance of treated water.

## REVISE CODES TO SUPPORT WATER CONSERVATION AND PERMEABLE HARDSCAPES

The city should continue to adopt and require new plumbing standards to reduce water use. City buildings can be used as an opportunity to pilot innovative approaches to water recycling and continue to follow the city's green building code (for example, building facilities that are net zero for water use). The city could also offer development incentives for high performance buildings that treat and reuse stormwater.

The city should increase adoption of permeable hardscapes and create more opportunities for infiltration in the built environment as lands convert from agricultural uses to urban uses, or as land within the city redevelops. Our groundwater supply depends on infiltration, so when lands convert from permeable open farmland to impermeable urban or suburban development, recharge is diminished or lost. The city should consider options such as permeable pavements in parking areas, treatment wetlands to reduce pollutant runoff that also provides habitat for wildlife and pollinators and set-asides for natural open space. The city should conduct research on other communities who are taking such approaches, as well as adopt LEED™ site development standards for permeability and watershed function.

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<sup>60</sup> <https://slowtheflow.org/>

## CONDUCT PROACTIVE MANAGEMENT AND PLANNING

The city needs to develop a proactive plan as it transitions from an agricultural to a city approach when dealing with water management and develop a coordinated approach to conservation and climate adaptation, such as the approach taken by Denver Water.<sup>61</sup>

One suggestion would be to create a Treasure Valley Water Board to help regional stakeholders forge relationships for water management and mitigate future crises. Partnering with irrigation districts, regional municipalities, environmental groups, industries and recreationists will create a foundation for future management. This is similar to the Lower Boise Watershed Council, which has managed water quality collaboratively for more than 25 years, but would be focused on water availability, distribution and Boise River conservation, rather than exclusively on water quality standards.

Planning for water rights should be a priority for the city and will be important for a growing population; additional capacity will be needed by 2058 (Master Water Plan for the Years 2015 to 2065).<sup>62</sup> At every opportunity, the city should strive to use conservation as a primary tool for accommodating more people. This will enable the city to grow within natural resource limits to the extent possible, and avoid putting rural and urban interests into conflict as has happened in other areas in the West.

## WATER QUALITY, BOISE RIVER HEALTH AND INFRASTRUCTURE

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The Lower Boise Watershed Council,<sup>63</sup> the state-designated Watershed Advisory Group for the Boise River, works collaboratively to keep the Boise River healthy, fishable and swimmable. This means limiting the pollutants that enter the river. The primary water quality issues for the Lower Boise River include low dissolved oxygen, bacteria (E. coli), phosphorous, sediment and high temperatures. Reducing runoff, as well as making sure the water temperature doesn't get too high, helps improve water quality. The city is already a part of the Watershed Council and has zoning in place to protect stream banks along the main stem of the Boise River. To continue to improve water quality, the city should broaden its view to include the creeks, tributaries and canals that feed the Boise River.

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<sup>61</sup> <https://www.denverwater.org/>

<sup>62</sup> <https://idwr.idaho.gov/files/legal/suez-water-idaho-imap/IMAP-20170428-Suezs-Master-Water-Plan-for-the-Years-2015-to-2065.pdf>

<sup>63</sup> <https://www.lowerboisewatershedcouncil.org/index.html>



## HIGHLIGHT PROJECT

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### SURVEY AND ACQUIRE VITAL LAND PARCELS ALONG THE RIVER, TRIBUTARIES AND WETLANDS

The city should conduct a comprehensive survey of the wetlands and riparian areas of the Boise River and its tributaries. According to the Boise River Enhancement Plan,<sup>64</sup> conservation and protection of existing functional and high quality wetland and riparian areas is the highest priority action. These high priority sites for conservation and protection include Fort Boise, Barber Pool Conservation Area, Eagle Island and the reach between Barber Pool and Warm Springs.

Funds from the Foothills and Waterways Open Space Levy should be used to acquire land parcels surrounding key tributaries that would be beneficial for preserving water quality and ecological function. The city should begin with a study to identify areas with high potential for revegetating riparian areas, or for constructing treatment wetlands or beaver dam analogues (structures made of willow and wood that mimic historic beaver activity). Such projects offer four key benefits: shading side channels to reduce instream water temperatures, settling out sediment that would otherwise impair the main stem Boise River, providing wildlife and pollinator habitat and improving water holding capacity in the watershed (acting more like a sponge, improving reliability and quality of water supply and reducing flood risk to structures).

### REFRESH WATERSHED MAPS AND RIPARIAN LAND USE PLANS

The city should explore new technologies for flood mapping. Advances in remote sensing technologies and machine learning allow for high-resolution historic flood mapping and predictive flood risk assessments. We advise the city to engage with local researchers and/or remote sensing organizations such as Cloud to Street<sup>65</sup> to develop updated flood and flood risk maps. This work could be solicited as part of the Climate Science Advisory Committee's assessments.

We recommend that the city finds innovative sources of funding to support natural infrastructure approaches to solve water quality problems. We must recognize that a healthy watershed can be a partner in water quality treatment and attaching a value to that can light the way towards investing in ecosystem-based solutions rather than focusing exclusively on expansion of water treatment facilities.

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<sup>64</sup> [http://www.boiseriverenhancement.org/wp-content/uploads/2016/08/Boise\\_River\\_Enhancement\\_Plan\\_100215\\_lowres.pdf](http://www.boiseriverenhancement.org/wp-content/uploads/2016/08/Boise_River_Enhancement_Plan_100215_lowres.pdf)

<sup>65</sup> <https://www.cloudtostreet.info/>

## EXPAND RIPARIAN ZONE ENHANCEMENTS

The City of Boise should maintain the vegetative buffer required by zoning ordinance along the Boise River, and where possible, plant a diversity of riparian species to stabilize the streambanks and enhance resilience (versus a monoculture of plant species). The historic floodplain forests were a mix of cottonwood, willow, alder, water birch, Wood's rose and other riparian shrubs that extended far beyond the current width.

The city should seek opportunities to restore the native black cottonwood forest in undeveloped river reaches, and take action to restore flow in areas where black cottonwoods may be experiencing degradation. Black cottonwoods provide important habitat for blue herons and bald eagles in their nesting seasons.

## CONSTRUCT INSTREAM ENHANCEMENTS

We recommend that the City of Boise prioritizes developing collaborations with irrigation districts to craft site-specific solutions for water quality improvement along the Boise River main stem. Such projects could include improving existing irrigation diversion dams to enable more natural flow and sediment transport. While working on such projects, the city could also seek benefits for neighborhood open space and recreation access. Additionally, barriers to enhancement projects (both instream and riparian) should be removed by modifying city codes to facilitate a streamlined permitting process for such projects.

## IMPLEMENT SOURCE CONTROL OF POLLUTANTS

The city should aim for a reduction of nitrogen and phosphorus found in lawn fertilizers, as well as herbicides, that end up in our creeks and rivers. To accomplish this, the city should develop educational programs to encourage residents to consider approaches to lawn and garden care that respect water quality and pollinators. The city should use an Integrated Pest Management approach to maintain city parks and public areas to minimize use of pesticides and herbicides.

## CREATE A COORDINATED APPROACH TO FLOODPLAIN MANAGEMENT

The City of Boise should create a Treasure Valley Water Board (as outlined in the Water Availability, Conservation and Renewal section), and task this organization with protecting a wider buffer along the Boise River in downstream reaches that are currently agricultural. Preserving key lands today would enable a more functional Boise River in the future, reducing floodplain risks and promoting habitat. Such preservation and conservation efforts should be undertaken

collaboratively, with similar zoning among different cities, as well as engagement with local land trusts and other non-governmental organizations.

Through this water board, opportunities to restore Boise River side-channels can be created, either by daylighting piped creeks (such as the Cottonwood Creek Daylighting Project<sup>66</sup> in Julia Davis Park), or by participating in projects in undeveloped areas along the Boise River. Restoring the complexity of the river in open areas allows for braiding the river channel and planting additional riparian vegetation, which leads to more shade, lower in-stream temperatures and expanded wildlife, bird, fish and pollinator habitat. This also improves the ability of the Boise River to pass flood flows safely.

Additionally, the city should develop cottonwood and willow riparian forest by allowing the river to access more land. Reconnecting and re-establishing the floodplain through setting levees back, excavation, conservation easements and municipal zoning would bring widespread benefits to vegetation. In addition, the city should conduct streambank conservation and reinforcement to reduce erosion and sediment load. These can be combinations of engineered and natural materials for supporting riparian vegetation. The city should also consider vulnerability to flooding along the river and require appropriate building codes and public education for such hazard areas.

## IMPROVE BOISE RIVER INFRASTRUCTURE AND INSTREAM FUNCTIONS

The Lower Boise River is a highly channelized and controlled system, with more than 20 diversion structures that provide flood protection, irrigation diversions and other engineering services that have allowed the city to embrace the riverbanks. Historically, the river would have been composed of multiple channels that would have covered much of the floodplain where the city now stands. Continuing to maintain these structures, as well as enhance and adapt their function to provide better ecosystem services and multiple benefits to city residents and wildlife, will help to ensure safety as well as improving the health and ecological function of the river.

The city should investigate the possibility of using existing diversion structures along the Boise River for low-head hydropower generation in support of the city's Clean Energy goals. This will also improve other natural functions (i.e., fish habitat) of the Boise River by building engineered log jams to force channel migration into areas of accessible floodplain and away from developments or other vital infrastructure. The city should identify where such human-made structures could improve river functions. The Boise River Enhancement Plan<sup>67</sup> offers a good guide for places to begin considering such interventions.

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66 <https://www.boiseriverenhancement.org/boise-river/cottonwood-creek-daylighting-project/>

67 [http://www.boiseriverenhancement.org/wp-content/uploads/2016/08/Boise\\_River\\_Enhancement\\_Plan\\_100215\\_lowres.pdf](http://www.boiseriverenhancement.org/wp-content/uploads/2016/08/Boise_River_Enhancement_Plan_100215_lowres.pdf)



## SUMMARY OF OBJECTIVES FOR CLEAN WATER



### HIGHLIGHT PROJECT

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Survey and acquire vital land parcels along the river, tributaries and wetlands.

### 100 DAYS

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- Continue the city's public outreach program to increase acceptance of renewed water.
- Conduct research on communities that are using natural infrastructure approaches to watershed management and identify approaches that could be applicable to Boise.
- Commission a Public Works project to proactively plan and change the city's approach to water management from an agricultural to a city-oriented approach.

### 1 YEAR

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- Co-create a Treasure Valley Water Board to develop a coordinated approach with surrounding stakeholders to conservation and climate adaptation focusing on the Lower Boise River Basin.
- Launch a public outreach campaign to encourage water conservation.
- Conduct a comprehensive survey to map the wetlands and riparian areas of the Boise River and its tributaries.
- Conduct a study to identify where Boise River functions could be improved, such as fish habitat and restoration of the native black cottonwood forest.

## SUMMARY OF OBJECTIVES FOR CLEAN WATER

- Modify the zoning code as follows:
  - a. Incentivize smaller residential lots and water-smart landscaping.
  - b. Continue to adopt and require new plumbing standards to reduce water use.
  - c. Incentivize development approaches that encourage water infiltration, such as permeable pavements, swales and treatment wetlands.

## 4 YEARS

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- Begin planning for water rights that will be needed for a growing population.
- Based on the wetlands and tributaries survey, use funds from the Foothills and Waterways Open Space Levy to acquire parcels in key tributaries that would be beneficial for preserving habitat and water quality.
- Implement projects to restore Boise River side-channels and improve in-stream functions, based on the outcome from studies undertaken in Year 1.
- Investigate the possibility of using existing diversion structures along the Boise River for low-head hydropower generation in support of the city's Clean Energy goals.

## 6 ZERO WASTE

If we take the approach of equity and environmental justice, we should rid ourselves of the concepts of “throw away” and “waste.” The concept of waste encompasses everything we experience. While we limit this section to solid waste, the philosophy of zero waste could be expanded to nearly every facet of our lives, as we strive to help one another, and our natural systems, reach their fullest potential. “Waste” should be re-thought as a feedstock for another process and “away” should be re-thought of as “here.”

Waste Management is a primary service in our city—it’s required. This creates an opportunity for us in that we have the ability to measure our solid waste and to innovate new solutions that work for this geography. Zero Waste is a long-term strategic vision. Many communities have chosen to define “zero waste” differently, according to the U.S. Environmental Protection Agency.

To get this effort moving, we recommend creating a new Citizen’s Advisory Committee to work with Public Works on creating a renewed solid waste plan that modernizes the city’s current 2007 Solid Waste Plan, and further define what Zero Waste means for Boise.<sup>68</sup> As the city has reclassified “water treatment” to “water renewal;” it may be time to consider a similar approach to change our language from “waste management” to possibly “resource recovery.”

Measuring solid waste through auditing (both at source and disposal) is one of the best ways to track our real impact on the environment. The sustainable and livable cities of the future will recapture the value of these resources, creating circular economy initiatives that protect natural resources, clean our air and water, and make us more efficient, prosperous and competitive. Our initiatives should be focused on the need to evaluate the highest and best use of our local resources to make the greatest progress in the shortest time. Organic waste, cardboard and construction debris are all contenders for areas of high priority recovery gain.

Boise processes twice the volume of commercial waste than it processes residential waste, so as we look for new ideas, it seems commercial waste programs study and action planning would be a great opportunity for our initial focus. Food waste is a particularly critical issue and one we should be targeting as high priority - as currently one-third of all food produced for human consumption is lost or wasted. Ideally we work on programs to prevent food from becoming waste in upstream processes; food production, processing and transportation is resource intensive. When food waste decays in our landfill, it produces methane, a greenhouse gas 87 times more potent than carbon dioxide. When food scraps are separated and composted, we eliminate the landfill problem and we gain a product that could enhance our soil’s carbon capture

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68 <https://www.epa.gov/transforming-waste-tool/how-communities-have-defined-zero-waste>

capacity. Given the scale and nature of our commercial organic waste, a more efficient model might be anaerobic digestion, providing biogas as a product. There is no end to the opportunities available to us in solid waste management and recovery.

We believe Boise wants to be known as an environmental leader. To achieve this requires a commitment to planning and building a world-class resource recovery mission. Perhaps, as this suggests we must have a starting point, something to capture the concept, like renaming our solid waste services to something more descriptive of the work it must become, something like Boise Resource Recovery or Boise Zero Waste, just for openers.



## HIGHLIGHT PROJECT:

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### ZERO WASTE STRATEGIC PLAN AND ADVISORY COMMITTEE

## DEVELOP ZERO WASTE STRATEGIC PLAN

A number of cities across the US have set ambitious zero waste goals. The C40 Initiative says that: “The mayors of the world’s great cities recognize that bold action on waste management is key to making our urban centers cleaner, healthier, more resilient and inclusive.” Since 2007, Boise’s Public Works Department has gone above and beyond in fulfilling many of the goals defined in Boise’s 2007 Solid Waste Plan and is poised to take it to the next level.

The Public Works Department is currently in the middle of auditing our solid waste at the landfill as well as our recycling at Western Recycling. This data is the starting point for this new plan as it helps us to understand where our biggest opportunities exist.

## CREATE A ZERO WASTE ADVISORY COMMITTEE

A citizens’ Resource Recovery Advisory Committee would define what “Zero Waste” means for our community and create appropriate goals flowing from that definition. Actionable opportunities should be explored, detailed and prioritized. The structure of this committee should include dialogue with all city departments, our partners in solid waste and recycling, and community and neighborhood leaders. We should also look to volunteers who bring experience and expertise to share, and community members who have a passion for this topic and a willingness to work and learn.

## **BRAND AND PROMOTE GOOD ZERO WASTE PRACTICES**

The Public Works Department should promote appropriate resource recovery by providing a toolkit for community members and businesses to quickly, easily and consistently recognize the appropriate bins for disposal. Beyond education, the Department could celebrate and recognize businesses and individuals committed to the vision of zero waste. These could include a branded Boise Green Business program highlighting measurable progress, as well as recognition for individuals in the community who bring innovative ideas to the city.

## **INCREASE ORGANIC WASTE COMPOSTING**

Organic waste represented 40% of solid waste after the last citywide audit, prior to the creation of the residential compost program in 2017. This program is described as being one of the most successful programs the city has in solid waste, with greater than 95% participation rates. Organic waste should continue to be one of our highest priorities.

The residential compost program is gaining in popularity and Public Works is studying options for expansion. To make it more economically sustainable, the city could consider creating a cost incentive that drives the cost of landfill waste higher and the cost of composting lower.

## **ESTABLISH A COMPOSTING GRANT PROGRAM**

A more immediate solution is home or residential composting, we need tools to teach and incentivize our community to begin composting at home. We could also create models for neighborhood scale composting, especially in neighborhoods with community gardens, appropriate open space or parkland. The city could create a small grant program for these small scale composting operations that are managed by volunteer neighborhood gardeners. Small neighborhood composting stations can be built for \$500 to \$2,500 and we could allow innovation to determine best practices.

## **CREATE PROGRAMS FOR COMMERCIAL ORGANIC WASTE**

Capturing and diverting commercial organic food waste is likely to be expensive, so the Citizens' Resource Recovery Advisory Committee should think of this as a process. The long-term solution would likely be anaerobic digestion, but we would need programs to bridge this gap, such as educational initiatives for how to reduce food waste in restaurants and institutions with large-scale food service. Options could include diversion of foods to food banks or donated food distribution centers. The city could also seek out private enterprises with interest in food waste composting and consider providing the transportation needs to get these efforts off the ground.

## REUSE AND RECYCLE (REDUCE, REUSE, RETHINK AND REFUSE)

According to the US Environmental Protection Agency Waste Management Hierarchy,<sup>69</sup> the most desirable form of waste management is “source reduction and reuse,” followed next by “recycling/composting.” The city should take this to heart and encourage the growth of reuse initiatives ahead of recycling. Examples of these efforts might include reusable grocery bags and new ideas for incentivizing their use, reusable cups at coffee shops and fast food operations, and reusable to-go packaging and services. The city could offer an annual prize for innovation and we might include categories for these efforts to capture broad participation.

## REFOCUS THE HEFTY®ENERGYBAG® PROGRAM ON PLASTICS REDUCTION

The Hefty bag program is a pragmatic approach to wasteful and environmentally harmful single use plastics. This program is still fairly new, and while it closes the loop on items we can recover from this waste stream. We believe that more information and transparency is needed in exactly what this process is and why it’s only an interim solution to plastic waste. Perhaps the city should share the carbon emissions. We believe that the conversation around the Hefty®EnergyBag® program should illuminate the issues with plastics, the lack of good solutions and to help the community understand the importance of reducing our use of single use plastics. Single use plastics are a complicated problem; our program should be structured to reduce their use as the first priority, with pragmatic solutions like this as secondary. As part of the city’s commitment to transparency, adding more detail on the use of pyrolysis via the website should be a simple first step.

## RECOGNIZE AND PROMOTE REUSE EFFORTS

The city should encourage the growth and development of reuse initiatives, and businesses and nonprofits that support and promote durable goods reuse within the city. Examples of these efforts might include reusable grocery bags and new ideas for incentivizing their use, reusable cups at coffee shops and fast food operations, reusable to to-go type packaging and services. The city could offer an annual prize for innovation, and we might include categories for these efforts to capture broad participation.

## FIND A LOCAL SOLUTION FOR CARDBOARD

Cardboard represents 40% of our recycled material by weight, and, even more significantly, it occupies a much larger percentage of the volume taken up during transport. Cardboard lacks

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69 <https://www.epa.gov/homeland-security-waste/waste-management-hierarchy-and-homeland-security-incidents>

a strong market value, so businesses have no monetary incentive to compress and palletize cardboard. The city should seek a regional solution that provides higher value in collaboration with businesses that have set waste reduction goals to maximize the opportunity to discover a good approach.

## **CREATE A CONSTRUCTION AND DEMOLITION TRANSFER SITE**

Construction and demolition debris are another potential opportunity to significantly reduce landfill waste by turning it into something useful. Creating a city-owned transfer site would enable capture of the material for separation and reuse, diverting it from the landfill and working to create better incentives for construction waste. This potential should be looked at as a part of developing a more robust Demolition and Debris Ordinance.

## **LANDFILL DIVERSION**

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### **MAKE HAZARDOUS WASTE DROP-OFF SITES EASIER TO FIND**

Removing hazardous waste from our landfill must continue to be a high priority. We do this now by moving the drop-off sites around making it easier to reduce, reuse and divert such materials. While this does help to ensure access to all zones in the city, at the same time it creates a bit of confusion as to where to go, which becomes a barrier to easy access. The landfill is a fixed location for hazardous waste, but only on Friday and Saturday. Creating a phone app has been suggested as a way to help quickly identify the current location of hazardous waste drop-off sites.

### **REVIEW AND ADJUST THE RATE STRUCTURE FOR HAULING TRASH**

While we have no control over county tipping rates at the landfill, we can change rates for hauling trash and recycling. Setting rates by cart sizing and frequency of pickup and increasing rates for landfill waste are opportunities to raise revenue and set better incentives. Many residents have requested more frequent recycling pickup and while this comes with increased cost, we should consider give residents this option, just as we should consider less frequent trash pickup. While we need to change this philosophy, we will also need to consider new programs to prevent misuse. Our current contamination rates in our recycling programs are low, but we could see this spike as rates change. Rates should be a primary tool that have long-term strategy aligned with our zero waste goals. We need a plan to slowly adjust rates to achieve desired results. Rate setting for commercial waste may provide more immediate benefits. It will help to focus efforts especially as we may need programs to audit and tag abuse, as landfill waste rates need to increasingly grow allowing recycle rates to become more attractive.

## SUMMARY OF RECOMMENDATIONS FOR ZERO WASTE



### HIGHLIGHT PROJECT

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Zero Waste Strategic Plan and Advisory Committee.

### 100 DAYS

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- Commit Boise to being a Zero Waste city.
- Establish a Solid Waste Advisory Committee; allow this committee to define what “Zero Waste” means for the City of Boise.
- Fund development of Solid Waste Strategic Plan.
- Focus on plastics reduction goals - and increase transparency on Hefty®EnergyBag® Program.

### 1 YEAR

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- Identify, initiate and create purpose for Solid Waste Advisory Committee.
- Finish audits of landfill, recycled and hazardous waste streams.
- Create program to promote businesses and individuals committed to the vision of zero waste.
- Produce a toolkit for community members and businesses that provides quick reference for waste/recycle/hazardous waste questions and instructions.
- Review, create long-term plan and change the rate structure for hauling trash.
- Create a grant program for neighborhood or multi-unit housing scale composting solutions.
- Create a program to recognize Reuse efforts, promote Reuse as a solution.
- Complete new demolition ordinance.
- Make it easier to find our rotating Hazardous Waste drop-off sites.



## 4 YEARS

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- Approve and begin to implement actions from Boise’s updated Solid Waste Strategic Plan.
- Determine the rate at which the city will achieve zero waste goal based on cost assessment.
- Expand residential compost program processing facilities to allow continued growth of this highly popular and useful program.
- Create a Staged Plan for city-wide Commercial Food Waste Diversion.
- Create a construction and demolition transfer site, make it mandatory.



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