



# Creating Sustainable Homeowner Associations

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A guide for improving social, financial, and environmental sustainability in your community

## Preface

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There are approximately 4,500 individual homeowner associations (HOAs) and condo associations in the Denver metro area alone. This form of community-scale governance stands to have a significant influence on sustainability issues such as the energy efficiency of buildings, waste management, and water conservation.

Historically, HOAs have not been thought of in the context of sustainability. Still, there is an immense, untapped opportunity to use their governing framework as a tool for implementing community-scale sustainability improvements.

Our neighborhoods and homes are part of an extensive network of the built environment that we interact with every day. HOA communities serve as valuable leverage points for introducing and exemplifying sustainability standards at the residential level.

CAP Management commissioned this guidebook in partnership with a team of graduate students from the Masters of the Environment program at the University of Colorado Boulder. The team created this guidebook as part of CAP Management's commitment to a triple bottom line approach to HOA management – addressing social, environmental, and financial sustainability. CAP Management recognizes the potential and the importance of implementing sustainability improvements in HOA communities. In an industry known to resist change, CAP is determined to be an advocate and an authoritative voice for sustainability among HOAs.

This guidebook is a roadmap to help HOAs create more sustainable communities. It contains best practices, relevant case studies, and useful resources for HOA board members to help them implement sustainability improvements in their communities.

Sustainability is becoming increasingly important for HOAs to consider as factors of climate change and other external threats worsen. Sustainable communities can mitigate long-term expenditures on utilities and investments like energy, water and infrastructure. Additionally, home buyers are increasingly considering sustainability as a factor when buying homes.

The team put together this guidebook by working with CAP Management, interviewing sustainability professionals in various fields, and speaking with HOA board members to determine the sustainability aspects that are most applicable and accessible to HOAs. The common standards that HOAs abide by present their communities with a substantial opportunity to implement change. The team emphasizes the importance of leveraging this type of community-scale governance to implement a wide scope of sustainability practices, ranging from energy and water efficiency, to composting, to more sustainable landscaping.

The creation and proliferation of a higher standard of HOA sustainability will serve the purpose of building communities that are not only more environmentally conscious and responsible but will build communities that are more resilient in the face of increasing fluctuations of the natural environment due to climate change.

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# 1

## Community



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## Introduction

There are many benefits to living in a community in which residents feel connected to one another. Research shows that people who feel they belong to a community are generally happier than those who do not.<sup>1</sup> While many people are active in communities outside those in which they live, such as those related to hobbies or work, people can be involved in their residential community as well. In an HOA, residents have a vested interest in keeping their community clean, well-functioning and fun! A well functioning HOA requires communication, collaboration and teamwork between community members – all tasks which are easier to accomplish when neighbors know each other.

## Building Strong and Resilient Communities

Resilience is the ability to recover rapidly from hardship and come back as strong as before – potentially even stronger. The concept is useful not only in the context of disasters, but in regards to minor disagreements and mishaps within an HOA. Resilient HOAs can quickly get back on their feet after a setback, such as a special assessment or misunderstanding among board members.

**Tip:** When planning an event, consider the local context of the community. What activities are easily accessible in the neighborhood? What hobbies do residents enjoy?

## Recommended Action: Get to Know Neighbors to Build Community

Board members and residents alike should make an effort to get to know their neighbors. Individuals can take this into their own hands by stopping to say hello when they walk past one another in the HOA or inviting a neighbor over for dinner.

A more formal approach is to form a social committee (*see: Governance*) who is tasked with planning social events to bring community members together. The HOA should set aside money in the budget for social events, which takes the burden of supplying food or activities away from individual residents. Many communities host movie nights, ice cream socials or barbecues as a way to strengthen community relationships and remind residents that they have a network they can rely on.

## Best Practices for Communicating with Residents

Regular and transparent communication between board members and residents is essential to the effective governance of an HOA. In many HOAs, there is a lack of communication between residents and the board, which often results in fines or disagreements. Some renters may not even know their home is in an HOA until they receive a fine for unknowingly violating the association's bylaws. Keeping residents in the loop about community rules and upcoming events is critical to the successful functioning of the HOA.

## What You Can Do:

1. Check with the HOA management company to make sure new residents are provided with important information about the community upon move-in.

A welcome packet should include emergency contact information for the management company and HOA board members, a copy of the association's governing documents, and details about recurring social events.

2. Create a monthly newsletter.

Board members have the most insight about the happenings of the HOA and should curate a regular newsletter. If board members don't have the time to dedicate to a newsletter, consider creating a communications team or committee to develop it. Not only will this improve communication within the HOA and ensure that residents are kept up-to-date, but committees serve as an opportunity to get residents involved in their community and work together to achieve a common goal.

3. Create a social media group.

An online platform for community members to connect can keep residents up-to-date on community matters and help them become more involved in the community. Before deciding what platform to use for the group, survey residents to find out which social media sites they use most frequently and which would be best for communicating HOA matters and sharing events. Facebook and LinkedIn are popular choices for forming groups.

## Promoting Diversity

Diversity of race, socioeconomic status and age are all important aspects of a vibrant and healthy community. Diverse communities provide people with different backgrounds an opportunity to interact with each other, which some researchers believe has a positive impact on people's identities – it makes them better able to identify with humanity as a whole.<sup>2</sup>

There are relatively few diverse, mixed-income communities in the United States, and most of them are in New York, San Francisco and Los Angeles.<sup>3</sup> This means neighborhoods throughout the rest of the country are mostly homogeneous, and HOAs are no different. However, there are several things HOAs can do to make every resident feel welcome.

### Recommended Actions:

#### Be Inclusive To Renters.

There are many ways to be more inclusive to renters, such as creating specific communication practices or onboarding procedures for renters to make sure they feel welcome in the community. For ease of access, keep HOA information for renters housed in a single location, such as a resource page on the HOA's website. Some HOA boards have a rental ambassador: a renter who attends board meetings on behalf of other renters in the community. Consider this or other creative solutions to make renters feel at home.

In many HOAs, board members don't know which residents are homeowners and which residents are renters. To serve renters equally, board members first need to identify them. If the HOA's governing documents don't require homeowners to disclose whether they are renting their unit, provide each new resident of

the community with a set of tips to follow if they are renting. This could be as simple as disclosing to the board that they are a new renter, allowing board members to include them in HOA communications going forward.

#### Educate Off-Site Owners About Housing Vouchers.

Many off-site owners avoid the federal housing voucher program because they don't want to include the government in their rental relationship or create additional paperwork for themselves. Some also hold stereotypes of voucher holders and preconceptions about what they might be like as tenants, or worry that the tenant won't be able to pay rent. The best solution to these issues is homeowner education. The Department of Housing and Urban Development, which runs the voucher program, has several educational resources on their website, including the Housing Choice Voucher [Fact Sheet](#).<sup>4</sup> Consider distributing this to off-site owners in the HOA in order to promote socioeconomic diversity of residents.



## Sharing Resources

The cohousing model offers several ideas for sharing resources that can enhance the living experience in HOA communities. Residents of cohousing communities live private lives in their homes or apartments, but share access to common spaces and goods such as community gardens, tool sheds and music rooms. Cohousing revolves around the concept of intentional community, but creating relationships with neighbors isn't the only benefit – it can also cut costs. Having access to shared resources means residents don't have to purchase certain goods independently, which can reduce their cost of living; utilities like the internet can be much cheaper when an entire community splits the cost.

Other amenities, such as clubhouses or exercise rooms, may not cut costs, but increase quality of life for residents. With the right coordination and leadership from the board, shared amenities can be made available to HOA residents.

### Recommended Action: Create a Committee to Research Possibilities

1. Invite all community members to a meeting at which board members can gauge interest in various goods and discuss the benefits of shared resources. Expensive equipment such as lawn mowers and snow blowers are a good place to start, as they are used infrequently and much more affordable when shared. As another example, musical instruments and art supplies could be kept in a common space and available to all residents.
2. Invite a cohousing resident to a meeting to discuss their experience living in a tight-knit community where amenities are enjoyed by all.



### Recommended Actions, continued:

3. After deciding which items to pursue, consider how to pay for them. If the HOA is in a good financial standing, dues may not need to be raised. Keep in mind that some shared resources will reduce living expenses for residents.
4. Larger resources, such as tool sheds or community gardens, can be expensive to purchase. However, relying on the expertise and teamwork of community members to build them can lower costs and serve as an opportunity for residents to improve social cohesion.

### Supporting Healthy Lifestyles

Where people live can have a significant impact on their health. For example, living near a power plant, where air quality tends to be poor and toxic chemicals are at risk of leaching into nearby waterways, can lead to negative health outcomes. Living near a grocery store or exercise facility, on the other hand, can lead to improved health outcomes. For example, studies show that people who live near gyms spend more time being physically active.

Although the location of the HOA will not change, amenities and social services can always be improved to ensure healthy and happy outcomes for residents. Social networking, opportunities for exercise, and access to healthy food are all critically important to human health.

“Implement now; perfect as you go.”

- Chris Crigler, President of CAP Management

### Example: Gym in Decline

An HOA in Denver once had a gym, but it was not well-maintained and eventually the cost for repairs became too much for the association to afford – the gym was closed. Although there are parks and running trails nearby to provide residents other opportunities for exercise, losing the gym was a mishap that could have been avoided. People who have access to a gym not only exercise more, but have better cardiovascular health outcomes.<sup>60</sup> The purpose of an HOA is to preserve the value and integrity of the property, and amenities that impact the health and wellness of residents should not be overlooked.



### Recommended Actions:

1. **Keep residents engaged in the community** by hosting regular social events (*see: Building Strong and Resilient Communities*).
2. **Keep exercise equipment in the HOA clean and running smoothly** with regular maintenance and appropriate funding for upkeep.
3. **Host group fitness classes.** If any residents in the community are fitness instructors, ask if they would like to volunteer to lead a class. Alternatively, the association could hire an instructor from a local studio for an hour. To make things even simpler, there are plenty of at-home workouts on Youtube that could be projected on a big screen in a common area. Survey residents to find out what type of workouts they'd prefer in a group setting.
4. **Build a community garden.** In addition to providing fresh, healthy produce for residents, a garden can promote connection with nature and build useful skills. Garden boxes are often expensive to purchase pre-built, but can be affordable when expertise and labor are contributed by community members. [This guide](#) to organizing a community garden from NC State University provides a thorough overview of various types of gardens and how to start one.
5. **If there is a farmers market near the HOA, advertise the date and time to residents.** If there isn't one close by, contact the local market to see if a few vendors are interested in participating in a smaller weeknight market closer to the HOA. Surveying neighbors about their interest in a market first will ensure that vendors know there is enough purchasing power in the community to justify an additional market night.



# 2

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## Governance



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## Introduction

Homeowners Associations are a form of community-scale government, which makes them particularly well suited to establish, maintain and regulate sustainability improvements in their communities. In addition to environmental and financial sustainability, social sustainability is a key factor in keeping communities strong, resilient, happy and healthy.

Effective and efficient HOA leadership is critical to upholding and bolstering social sustainability in communities. A board that values and prioritizes input from its residents can build better trust among its community members and help residents feel more empowered in their community.

Many of the decisions board members make include building color, lawn maintenance, and permitting of new buildings or renovations. However, there is more to a community than its appearance. The primary purpose of an HOA is to protect property values and serve the interests of the community.

Given that HOA boards are already established in their communities and recognize residents' collective needs, they have the power to serve their neighborhoods much more broadly and sustainably than many currently do. The HOA governance structure can help empower residents to be changemakers in their communities by providing them with a platform and resources to make change happen.

**HOA boards can use their resources and influence to make sure that apparent non-sustainability related decisions – like repainting a building – are done with a sustainability mindset. All projects should aim to have the smallest environmental impact possible. This could include requiring projects to contract with eco-conscious construction and roofing companies that sustainably source new materials and responsibly dispose of old ones. (For more about responsible sourcing, see Built Environment).**



## Leveraging the Buying Power of the HOA

HOAs have the unique ability to use community dues, fines and fees to implement sustainability projects that would otherwise be unachievable by individual homeowners. Many boards struggle with how to implement the sustainability initiatives around their community that residents want to see.

With a specific sustainability goal in mind, an HOA can use its collective buying power to fund projects such as:

- Community gardens and greenspaces
- Upgrades to community rainwater infrastructure
- Energy retrofits for the community or communal areas
- Installation of solar panels or EV charging stations
- Water-smart irrigation upgrades
- Purchasing of services that are otherwise offered only to individual consumers, such as door-to-door compost pick-up

Community-wide sustainability upgrades can help drive down costs on energy, water, infrastructure, and building maintenance in the long run, and upkeep property values. As sustainability continues to gain relevance as an important part of a homebuyer's interests, 61% of homebuyers now cite sustainability as an important aspect of their home buying decision.<sup>5</sup>

## Creating Sensible Bylaws

Every HOA has a set of bylaws through which they operate and regulate their decision-making process. An HOA board should:

- Conduct yearly reviews of their bylaws, ensuring that residents can easily access and understand the bylaws.
- Use a sustainability mindset when writing and revising bylaws. For example, some bylaws create restrictions on solar panels, xeriscaped lawns, home gardens, and clotheslines. These types of rules inhibit sustainability initiatives.

Bylaws don't need to be prohibitive; they can serve to encourage sustainability at a community-wide level, such as:

- Plant low water-intensity and native plants (*see: Water*).
- Design new or redone hard surfaces (such as parking lots) to be permeable or semipermeable.
- Leave existing trees and greenery to the maximum extent possible when doing construction or renovation.
- Contract with “eco-conscious” construction and landscaping companies (*see: Water and Building Management*).

## Best Practices for Meetings and Decision-Making

Researchers studying how private governance can positively impact surrounding communities have noted the effectiveness of HOAs encouraging their residents to participate in the voting process of community elections and decisions.<sup>6</sup>

### Wondering how to prioritize community-wide projects?

Send out a survey asking residents to rank their choice of projects. This way, the board can make an informed decision about how to best serve the community's desires and needs.



HOA meetings allow residents to interact with the board in a way that encourages democratic decision-making. Equity in decision making is a key element to making well-rounded, thoughtful decisions that work best for the entire community. When all residents are represented, the board is better able to address the community's needs.

## Recommended Actions:

- Give information to all residents about upcoming meetings in advance. This allows ample time for residents to plan on availability for the HOA meeting, if they're interested in attending and voicing any concerns they may have.
- Have a virtual component or be recorded to allow residents who are unable to attend to participate or watch later.
- Record and share meeting minutes to keep owners and residents informed.

## Practicing Transparency

Many HOAs use an online portal, which allows residents to view the most pertinent information communicated during meetings, keeping them informed and updated with ease. Transparency often leads to less frustration and less confusion about the happenings around the community. Keeping information easily accessible is a simple way to increase transparency between the board and residents.

### Altitude Community Law in Denver recommends the following steps for practicing transparency:

- Encourage attendance at all membership and board meetings
- Take board action via electronic mail sparingly
- Promptly disclose conflicts of interest
- Adopt a conduct of meetings policy that encourages member input and treats all members uniformly
- Go above and beyond required notice procedures when providing notice of meetings
- Communicate all major decisions and why they were made to members



## Promoting Board Member Diversity

An equitable HOA board represents the diversity of the neighborhood in terms of race, gender, and age of residents. This proportionate representation of the community on the board allows residents to feel more comfortable bringing issues to the board.

Because board positions are voluntary, there's no requirement for a board to be diverse. However, there are benefits to board diversity: a more diverse board can better anticipate and react to resident concerns. For example, a multi-generational community will have a mixture of older adults and younger families with kids – a board that represents both of these groups will better address the needs of all residents.

In addition to a diverse board, the board should have an odd number of members to prevent any stalemates in votes. For more on the importance of diversity, see *Community*.



## Forming Committees

Encouraging residents to actively participate in committees can ensure resident voices are taken into account regarding HOA matters. Committees can also help alleviate some of the burdens of responsibility from the HOA board. Committees come in many forms, from informal teams to standing committees or special task committees:

- A standing committee is established for ongoing subject areas, such as a sustainability committee or an events planning committee. A standing sustainability committee can design a more nuanced, specialized sustainability plan than the board alone. Finding what works best for individual communities will ensure the successful implementation of sustainability initiatives.
- A special task committee is formed for a specific project, such as an upcoming project that requires a review of bidders. Once the committee completes the project it will disband.

Implementing a standing sustainability committee in an HOA ensures that a team of passionate residents will always improve sustainability in the community.

### Example: The Village of Five Parks

The Village of Five Parks Design Review Committee reviews and approves all improvements constructed upon a lot or home. By utilizing the Design Review Committee, the HOA Board at Village of Five Parks has more time to focus on other important decisions and tasks.

**Starting a committee** is as simple as finding a topic that will generate interest among other residents or something the board needs help managing. Once a topic is decided upon, a committee can be started with the following steps:

1. Prove there's sufficient interest in the topic.
2. Create a charter. Include business, reporting, responsibilities, and expectations in the charter; the committee will operate according to those guidelines.
3. Board members review the charter and make adjustments.
4. Board members vote on the creation of the committee.
5. Board members appoint members to the committee or create an application process.

### Example: The Villas Townhouse Association

The Villas Townhouse Association formed a sustainable community committee to add additional working capacity for sustainability projects within the community. The committee defined sustainability as:

1. Environmental Sustainability, which concerns the ecological and carbon impact of the community.
2. Social Sustainability, which concerns the community's communication, engagement, participation, and overall social wellness of the residents.
3. Fiscal Sustainability, which concerns the financial health of the association as well as cost-savings initiatives.



# 3

## Financials



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## Introduction

Sound financials increase the ability of a homeowners association to recover from unforeseen circumstances. Yet in 2016, 72% of HOAs were underfunded.<sup>7</sup> Without proper budgeting, urgent maintenance projects can be delayed, jeopardizing the health and safety of residents.<sup>8</sup> Financial literacy, appropriate reserve funding, and long term planning are all key components of keeping an association well-funded.

## Operating Expenses

Operating expenses cover the maintenance of structures and areas which the HOA is responsible for, such as utility bills, landscaping costs, and exterior building repairs. Operating expenses should be reviewed regularly by the board to avoid mismanagement. The annual budget should include an estimate of operating expenses for the year based on solid data (such as past spending and costs), with wiggle room for any unexpected repairs or maintenance.

Regularly reviewing the actual cost of an operating expense allows the board to catch any discrepancies early and make adjustments accordingly. For example, if the total cost of maintenance for one month was \$11,000, but the budget only allocated \$5,000, an association will be in serious debt if this trend continues to go unnoticed. A board that annually reviews its operating budget and adjusts accordingly will increase its financial capacity.<sup>9</sup>

## Recommended Actions:

When reviewing operating expenses, the board should evaluate opportunities for cost-saving measures. Utilities such as water, sewer, and electricity are all opportunities for cost savings. By comparing the year to year expenses, the board can see if costs have increased significantly within the past year. If so, there are a variety of conservation and efficiency measures that can help decrease these costs (*see: Water, Energy, Built Environment*).<sup>10</sup>

Likewise, realigning tasks and responsibilities to consolidate vendor contracts can cut down on operating expenses. If the association contracts with more than one vendor for a particular service, such as having multiple landscaping companies perform different tasks, consolidating services by choosing only one vendor with one contract can lead to cost savings.

Keep track of both immediate and long-term costs. Paying attention to broad categories of expenses on an income statement, including administrative, utilities, grounds, and maintenance will allow the board to catch red flags early. Income statements are useful tools in reviewing actual expenses compared to budgets. Keeping an up to date comparative income statement will show the current month's expenses vs. expenses from prior months and assist in identifying red flags or opportunities for avoiding future costs.

In the example below, the association is over its monthly budget by more than \$600 in water and sewer spending. The association is over its monthly budget for trash removal by over \$2,000. Identifying disparities in actual spending versus budgeting early allows for reassessment of spending and improves the financial stability of the association.

### Income statement sheet example:

Account Name	MTD Actual	MTD Budget	MTD \$ Var.	YTD Actual	YTD Budget	YTD \$ Var.	Annual Budget
<b>Income</b>							
<b>Fee / Assessment Income</b>							
Assessments	71,226.29	71,222.25	4.04	794,209.55	783,444.75	10,764.80	854,667.00
Monthly Reserve Transfer	0.00	-36,655.41	36,655.41	-366,554.60	-403,209.59	36,654.99	-439,865.00
Late Fees	0.00	0.00	0.00	1,350.00	0.00	1,350.00	0.00
Legal Reimbursement/Income	14,865.91	0.00	14,865.91	15,020.91	0.00	15,020.91	0.00
Lien Fees	0.00	0.00	0.00	-95.00	0.00	-95.00	0.00
Keys and Fobs	0.00	0.00	0.00	388.70	0.00	388.70	0.00
Fines	0.00	0.00	0.00	225.00	0.00	225.00	0.00
<b>Total Fee / Assessment Income</b>	<b>86,092.20</b>	<b>34,566.84</b>	<b>51,525.36</b>	<b>444,544.56</b>	<b>380,235.16</b>	<b>64,309.40</b>	<b>414,802.00</b>
<b>Total Operating Income</b>	<b>86,092.20</b>	<b>34,566.84</b>	<b>51,525.36</b>	<b>444,544.56</b>	<b>380,235.16</b>	<b>64,309.40</b>	<b>414,802.00</b>
<b>Expense</b>							
<b>Utilities</b>							
Gas & Electricity	1,689.09	1,833.33	144.24	14,697.92	20,166.67	5,468.75	22,000.00
Water & Sewer	4,409.88	3,743.16	-666.72	57,414.82	41,174.84	-16,239.98	44,918.00
Storm Water	0.00	846.58	846.58	6,694.11	9,312.42	2,618.31	10,159.00
Trash Removal	4,867.56	2,036.91	-2,830.65	28,520.70	22,406.09	-6,114.61	24,443.00
Phone/Cable/Internet	1,269.26	1,145.83	-123.43	19,744.19	12,604.17	-7,140.02	13,750.00
<b>Total Utilities</b>	<b>12,235.79</b>	<b>9,605.81</b>	<b>-2,629.98</b>	<b>127,071.74</b>	<b>105,664.19</b>	<b>-21,407.55</b>	<b>115,270.00</b>





To use the model on the previous page, first, fill out the input section, which is basic information such as the total number of units or homes within the association and the current reserve balance, as well as reserve contribution and reserve interest. Next, the variables that should be considered in the model are:

- Starting balance
- Annual reserve contribution
- Reserve percent increase
- Projected expenses
- Other streams of income or costs, such as loans, special assessments, or interest income

The end year total balance will be a sum of all the inputs and outputs, or the “cash flow”, of the reserve fund. The model allows for experimentation with different estimations or theoretical costs. Doing so will allow board members to see what the reserve fund would look like 10 years down the line with different amounts of annual contributions or project costs.

## Budgeting

The primary purpose of a budget is to measure and control finances. Budgets also allow HOAs to financially plan for their wants and needs. The board is responsible for establishing and monitoring the budget.

To create an accurate budget, board members should look for spending trends from year to year. Does the total amount spent on landscaping maintenance or water utility bills continually cost more than the budget allocates?

Comparing past expenses against annual budgets can assist the association in identifying spending patterns for certain services and help plan accordingly. If water bills almost always cost more than the amount allocated, it's time to rethink the utility budget and check for any major leaks or areas of waste (*see: Water*).

Moreover, sustainability and community building projects should be built into the annual budget. Many HOA boards cite a lack of funding as the top reason for why they do not host community events or install sustainability measures. Building the expenses for these projects into the annual budget allows HOAs to undertake more projects than standard maintenance projects. Resilient HOAs build financial capacity through budgeting for extra projects that improve the quality of life for residents in the community.



## Recommended Actions:

Ensuring board members are financially literate, creating a finance committee, and hiring a certified public accountant (CPA) are all ways to build the financial capacity of the board. If board members are struggling to manage finances, attending an educational training or online webinars are effective ways to increase financial literacy.<sup>17</sup>

The Community's Association Institute (CAI) is a resource for training, online webinars, and information on financial management. Building the financial capacity of the board will create financial resilience for the HOA, allowing the association to bounce back from unforeseen expenses.

The CAI Rocky Mountain Chapter holds course trainings at event centers throughout Colorado. To cover the basics, board members should consider attending the courses titled “The Essentials of Community Association Management,” and “Financial Management”, which walks participants through developing and maintaining budgets, as well as the financial planning process.

A transparent and well governed board will communicate with homeowners regarding association finances. Sharing information about budgeting, planning, and the reserve study with owners helps keep people informed about how their dues are being put to work by the association.



# 4

## Waste Management



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## 4 waste management

### Introduction

HOAs have a unique opportunity to closely regulate, recommend and implement waste reduction strategies. As a governing body, board members play a significant role in how waste is managed at a household level. The average American landfills 4.5 pounds of garbage every day.<sup>18</sup> Given that 3.36 million people live in HOAs in Colorado alone,<sup>19</sup> there is a significant potential for associations to encourage household waste diversion through education and awareness building, leveraging collective buying power, and developing sustainable waste removal

### Education and Awareness Building

Waste, in many of its forms, may seem impossible to avoid. Some materials must be thrown away – items such as styrofoam, cellophane, plastic straws and mixed-material coffee pods are typically one-time-use products and are not able to be recycled or composted. However, beyond a small number of materials, most common items can be diverted from the landfill.

When given a closer look, the standard definition of “waste” becomes much less clear. Many conceptions about waste are a byproduct of our systems of consumption and packaging. For example, many materials appear to be recyclable but are actually made with mixed materials and therefore need to be sent to the landfill. A big issue in this system is the wishfulness of well-intentioned citizens who want to recycle because they know it’s a good

thing to do. However, “wishcycling” is troublesome in that non-recyclable materials can contaminate batches of otherwise recyclable material, causing an unnecessary amount of recyclable materials to be sent to the landfill.

Providing residents with information and options to avoid sending otherwise recyclable or compostable materials to the landfill is a key step in making a direct, environmentally-friendly impact, with minimal additional costs or effort. Many HOA communities are responsible for providing waste services for their residents – but there is no requirement to provide any services beyond garbage pick-up, and many don’t. Empowering residents by providing them with landfill diversion options is the first step in reducing waste in an HOA community.



#### Remember: words matter!

When discussing waste and disposal, encourage use of the phrase “sending to the landfill” over “throwing away” – because there is no “away” – all garbage ends up somewhere once it’s thrown out.

### Recommended Actions:

**Educate and encourage residents** about why landfill diversion matters to build a community culture of reuse, waste reduction, and awareness. A community that collectively values landfill diversion has a much higher chance of effectively reducing their amount of landfill waste.

**Educate residents** on why landfill diversion matters (*see: Education, Waste Management; and Outreach, Energy*).

**Host in-person workshops or online webinars** to help build resident interest in waste diversion and help residents feel empowered to make an individual change to their habits.

**Share easy-to-read informational flyers** about accepted recyclable and compostable materials. Accepted recyclable materials can vary by region and by waste hauler.

### Diverting Waste

Each year, Americans produce more than 250 million tons of waste – and most of this goes to the landfill.<sup>20</sup> In 2017, nearly 140 million tons of waste was sent to landfills. Of that, nearly a quarter was compostable. When organic materials break down in a landfill, it produces a greenhouse gas called methane – a potent greenhouse gas, with a Global Warming Potential 86 times higher than carbon dioxide.<sup>21</sup> Much of this generated methane can be mitigated by composting organic materials. Currently, the vast majority of the waste produced is still not recycled or composted.

Residential neighborhoods have significant potential to improve recycling and composting practices, and reduce the amount of potent greenhouse gases being further added to the atmosphere.

## Recommended Actions:

### Reexamine Waste Contractors

Depending on where an HOA is located, the board may have several waste haulers to choose from. If this is the case, consider evaluating their services beyond price alone. In other words, choose a waste hauler that follows the best practices of sustainability. This includes practices such as transparent reporting about waste disposal, commitments to expanding recycling and composting programs, philanthropic community initiatives, and policies aimed at reducing greenhouse gas emissions generated by the company.

Leveraging the collective buying power of the HOA community (*see: Governance*) can help reduce the cost of providing environmental services that are otherwise not available at the municipal level. In areas where curbside compost is not a service offered by the town or city, a door-to-door compost pick-up is an option through companies such as [Scraps](#). While homeowners can sign up individually, using the buying power of the entire HOA community can reduce prices for everyone while providing a service that helps reduce the environmental footprint of the community.

## What To Do With Food Waste

The most effective way to divert compostable waste from the landfill is to revise restrictive HOA bylaws and implement progressive policy changes. This includes revising laws to allow for community garden space, including compost, and contracting with compost haulers to bring curbside compost pick-up to the HOA.

Compost is nature's way of recycling the nutrients in organic matter – mainly food, leaves and yard trimmings – into rich soil that helps retain more water and nutrients than other soils. Composting food scraps, inedible or unwanted food is a way to “recycle” the nutrients that are in that food while also removing it from the waste stream that goes to the landfill.

Food waste accounts for 22% of the materials in landfills.<sup>22</sup> As mentioned above, food waste and other organic matter is particularly harmful when landfilled due to its generation of methane gas. On average, Americans waste about one pound of edible food each day.<sup>23</sup>



*Yard trimmings and leaves are often overlooked in the context of compost, but yard waste makes up 6% of materials in landfills!<sup>24</sup>*

## Recommended Actions:

### Consider Municipal Compost Pick-Up

Contract with a commercial waste hauler for compost pick-up, or contract through private companies, such as [Scraps](#), that offer door-to-door pick-up for a subscription fee.

### Display Easy-To-Read Signs

If the HOA offers a central compost bin, display easy-to-read signs that provide information about what is and isn't compostable. It's also important to create an HOA resolution to establish rules and regulations regarding the usage of communal compost bins.

### Compost Locally

If the HOA has a community garden, start composting locally. Compost is an easy way to drive down fertilizer costs and produce a lush and prosperous garden. Don't worry about pests and stench – a well-maintained compost pile will rarely create such issues.

### Host Educational Events

Organize and host events that support best practices for food preservation and reducing food waste. Workshops about food preservation, canning and jarring are an engaging method to educate residents about different ways to reduce food waste. Effective education and communication about food waste reduction will help increase residential interest and awareness about composting.



## Reduce, Reuse, Recycle

Most people are aware of the “Three Rs”: Reduce, Reuse, Recycle. However, many overlook the silent “then” between each word, signifying the importance of the order: Reduce, then Reuse, then Recycle.

### How To Reduce:

If the association provides single-use plastic items such as cups or cutlery in amenity areas, shared kitchens, or lobbies, switch to reusable or compostable items. This will help reduce the amount of trash thrown away by the association.

### How To Reuse:

Appoint a resident position or committee to spearhead a reuse campaign (*see: Governance*). Encourage residents to save their unwanted items for reuse by neighbors. Oftentimes, when a resident has an unwanted item, such as a piece of furniture, they will leave it next to the HOA dumpster. This results in bulk item pick-up fees by the waste hauler, which the HOA will have to pay. Online resources such as NextDoor, Facebook Marketplace or a neighborhood listserv are effective ways to ask or inform neighbors about unwanted items. The association should consider creating their own Facebook page dedicated to item swapping.

### How To Recycle:

Provide smaller bins for garbage and larger bins for recycling as a subtle cue for residents prioritizing where to put their waste items.

**Tip:** Check the municipality’s website for pre-made posters to let residents know what’s accepted at the local recycling center



*Many HOA communities struggle with the frustrations of frequent fees charged by their waste hauler for incidences like overages, bulk items, hard to recycle items, and contamination. However, there are ways to avoid these fees.*

## Hard-to-Recycle & Toxic Materials

If there is sufficient interest, organize a Center for Hard to Recycle Materials (CHaRM) waste hauler to pick hard-to-recycle materials up from the curb or central waste location. While pick-up costs can vary based on items, a semi-regular pick-up event will likely cost less than regular contamination, bulk items, and overage fees – allocating a portion of the HOAs operating fee for such events can help save on unnecessary expenses.

Many cities host an annual “Trash Forgiveness Day”, where municipal waste-haulers will take anything that is left on the curb, free of charge. If such an option is offered by the local waste management company, send out notices and reminders to residents about the upcoming date and details. Such events lift the burden off the individual by eliminating a tedious trip to the dump, and help waste-haulers by consolidating the hard-to-dispose-of materials into one day of the year, providing ample time for preparation.

Once recyclable materials have been recycled and reusable materials have been donated or given away, there may be a handful of things left that have no other destination than the landfill – this is okay because reaching for the achievable goal of reduction is an important aspect of sustainability.

# 5

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## Water Use



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## Introduction

No matter the property-type of an HOA, water is essential. For communities of single-family homes, there are often substantial irrigated common areas and opportunities for green infrastructure. For HOAs with shared building components, the association is typically the account holder and pays for drinking water and water-caused property damage.

Sustainable water management can save HOAs money in monthly water bills and avoid costly property damage from flooding. Water conservation can happen both indoors and outdoors. Water-efficient landscaping practices and irrigation techniques can reduce an HOA's consumption. Indoors, upgrade appliances to water-efficient models. Green stormwater management can mitigate localized flooding and better retain water for irrigation. This chapter covers sustainable landscaping and irrigation, indoor water conservation strategies, and sustainable stormwater management practices.

## Improving Indoor Water Efficiency and Conservation

The majority of residential water use occurs inside the home. The average American family uses more than 300 gallons of water per day, and approximately 70% of that is indoor usage.<sup>25</sup> Many outdated fixtures such as showerheads, toilets, and faucets use an excess amount of water. Undetected leaks can further waste water. For example, a running toilet can waste as much as 200 gallons of water per day. However, simple fixes such as installing water-conserving technology and using water-smart practices can

lead to more effective use of water resources and cost savings.

## 10 Tips for Water Efficiency:

### 1. Develop a leak reporting system.

If a leak occurs from a shared or HOA controlled pipe, the association will have to cover the repair costs. Costs include drying the building, environmental testing (asbestos is common in older communities) and rebuilding or restoring damaged areas. Water damage can be incredibly expensive for an HOA, especially if water damages more than one unit. A leak reporting system can mitigate water damage. A monitoring system could also identify an anomaly in water usage in real-time, resulting in quicker action (especially if the leaking unit is vacant).

### 2. Have free or subsidized repairs of leaky faucets and toilets.

Incentivizing repairs for minor leaks can ensure leaks are fixed promptly and save the HOA money on its water bills.

### 3. Create rebate and incentive programs for homeowners to install water-efficient appliances such as toilets, faucets, and showerheads.

The extra incentive will aid homeowners and will benefit the community as a whole.

### 4. Monitor and maintain water heaters to ensure there are no leaks.

### 5. Install water sub-meters for each unit.

Water sub-meters measure and track water usage at a more localized level than a single water meter for the building. By installing sub-meters, the HOA can track individual unit water usage by installing sub-meters and better identify leaks within the home and building.

### 6. Monitor and maintain boilers monthly to check for corrosion.

### 7. Cover outdoor pools.

Covering an outdoor pool will help less water evaporate and save the HOA in heating bills.

### 8. Install flow restrictors or automatic sinks on common area bathrooms.

### 9. Upgrade water fixtures such as toilets, showerheads, faucets, and washing machines to low-flow, water-efficient models.

The EPA's [WaterSense](#) program has a list of certified products.

### 10. Monitor the HOA's monthly water bills and usage.

If there's an abnormal spike in usage or a price increase, check your water fixtures for leaks.

### What is WaterSense?

WaterSense is a voluntary partnership program sponsored by the EPA as both a label and certification for water-efficient products and a resource to help people save water. All WaterSense labeled products are certified to use at least 20% less water than standard models, work as well or better, and save energy compared to traditional models. Visit the [WaterSense](#) website for further information on water-efficient products and best practices for conserving water.



## Case Study: Shadow Wood Water Appliance Upgrades

In 2014, the Shadow Wood Condominium Association - a 318-unit HOA located in Denver, Colorado, partnered with Denver Water and CAP Management to increase its water efficiency. CAP Management conducted an audit of the units to determine if its water fixtures needed replacing with water-efficient models. CAP discovered approximately 72% of Shadow Wood's condos required upgrades.

Shadow Wood's Board purchased the water-efficient appliances at no additional charge to the homeowner and agreed to reimburse a portion of the installation cost. Shadow Wood replaced toilets, showerheads, and faucet aerators in 231 units. 96% of the identified condos opted for the change. The upgrades resulted in 3.6 million gallons of water saved annually, a 30% reduction in indoor water usage. The water conservation project saves approximately \$24,000 per year.<sup>26</sup>

## Best Practices for Landscaping and Irrigation

Maintaining landscapes is one of the most demanding areas of residential water usage. In dry, western states like Colorado, residential landscapes often require supplemental irrigation to keep grass and plants healthy. In the Mountain West, outdoor watering accounts for approximately 55% of total residential water use.<sup>27</sup> 63% of HOAs in Colorado are detached single-family homes that typically have lawns or other landscape features that need watering.<sup>28</sup> That's approximately 1.5 million homes. Poor irrigation system design and inadequate maintenance can lead to wasted water.

## Recommended Actions: Irrigation System Design and Smart Watering Practices

### 1. Water when the sun is down.

The sun's heat causes higher evaporation rates, so the best time to water is at night or early morning before the sun has risen. Outside of these times, water in the morning before the sun is at full strength, or in the evening when the sun is setting. The heat from the sun causes greater evaporation than when the sun is down.

### 2. Use "cycle and soak" watering methods.

"Cycle and Soak" is a watering method that waters plants in shorter cycles. Cycle and soak allows for more water to soak into the soil than traditional watering methods, resulting in healthier and more drought-tolerant plants.

### 3. Use drip irrigation when possible.

Drip irrigation is the most efficient method of irrigation. By delivering water directly to plants' roots, drip irrigation results in less water lost to wind or runoff. Drip irrigation uses 20 to 50% less water than conventional sprinklers. Drip irrigation can also be used on lawns when installed belowground.

### 4. Install a smart irrigation controller.

A smart irrigation controller automatically adjusts water output and frequency to deliver the correct amount of water to plants. When programmed correctly, a smart irrigation controller can automatically adjust water output and watering frequency based on rainfall, evaporation, soil moisture, and plants' water needs. Check out the EPA WaterSense program for verified labeled smart controllers.

### 5. Create an irrigation zone map.

An irrigation zone map describes each area of an HOA's landscape, delineates system type (sprinkler, drip irrigation, etc.), and marks the extent of the watered area. A zone map can help an HOA board when discussing their irrigation system. Irrigation zone maps enable HOA boards to speak directly about what sprinklers water which areas of the HOA's landscape. A board member can simply point to a zone on the map, and everyone will be able to follow. Zone maps help with the communication between HOA boards, management companies and landscape contractors.

### 6. Conduct an irrigation assessment of the landscape.

An irrigation assessment analyzes water consumption and the HOA's irrigation system's performance based on its landscape conditions. Irrigation assessments also provide recommendations to improve the efficiency of the system. Hire a certified Landscape Irrigation Auditor, who can be found. A Certified Landscape Irrigation Auditor can be found with the Irrigation Association. Many HOA management companies offer this service as well.

### 7. Hire an irrigation or landscape professional.

Hire a certified Irrigation Professional to design and maintain a water-efficient landscape. Irrigation Professionals can also help maintain an existing landscape by using best practices for water efficiency. When selecting an irrigation professional, check to see if they are certified by an EPA WaterSense labeled certification program. This certification ensures professionals are aware of water efficiency techniques.



## Tips for Irrigation System Maintenance and Management

1. Check the water pressure of the irrigation system. Set the water pressure to the manufacturer's recommended specifications to reduce misting, fogging, and uneven coverage.
2. Check the system at least monthly for leaks, broken, clogged, or misdirected sprinkler heads. Broken irrigation systems can waste water and increase the HOA's water bill.
3. Develop a reporting system for HOA residents to report any noticeable sprinkler failures. A standardized and accessible reporting system will allow the HOA to respond to sprinkler issues more rapidly.
4. Create an outdoor water budget to help conserve water. An outdoor water budget develops target levels of water usage. The amount of water can fluctuate depending on the month. A water budget can help a community keep track of water usage and ensure the landscape receives the correct water amount. The EPA WaterSense program has a free [water budgeting tool](#).

### What is xeriscaping?

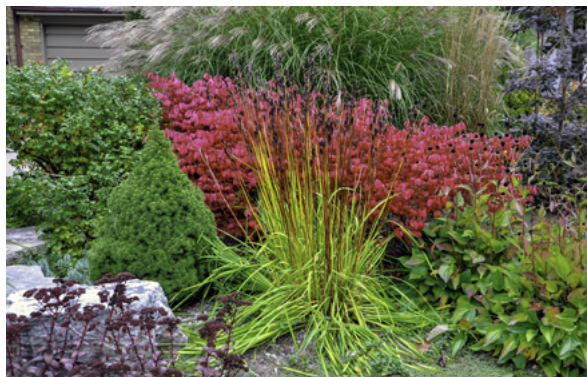
Xeriscaping is the optimal landscaping design for drought-prone regions. While xeriscaping promotes native and water-efficient plants, it doesn't mean your landscape won't be visually pleasing. There are many drought-tolerant and native plants that are both colorful and appealing. Visit [Colorado Waterwise](#) for more information.

## Landscape Design

A sustainable landscape can retain moisture, thereby reducing the amount of water needed for irrigation. For establishing new landscapes, the U.S. Environmental Protection Agency (EPA) recommends the following actions:

- Limit the removal of native vegetation and soils.
- Before installing new plants, amend soils with organic material such as straw and grass clippings, and contour it to hold water.
- During construction, minimize soil compaction by limiting areas where heavy equipment is used.
- Install temporary fencing around trees to protect their root zones.
- Grade steep slopes in the landscape to reduce water runoff or install plants with deep root zones to increase soil stabilization and prevent erosion.

For existing landscapes, talk with the HOA's landscaping contractor and ask if they follow the EPA guidelines for sustainable landscapes. If the current landscape management does not use sustainability practices, consider interviewing a qualified company with the Association of Landscape Contractors of Colorado.



## Plant Considerations

### Use native and low-water-use plants.

In general, native plants require only the amount of water naturally occurring in their habitat. In Colorado, [Water Wise Plants](#) is a resource for finding native plants to fit the local landscape. There are also non-native xeric plants that are water-efficient for dry climates as well. For the remaining landscape, opt for plants with low to no additional watering or other non-plant design features such as a rock garden or patio.

### Minimize use of turf grass.

Turfgrass, which is typically seen on lawns and sports fields, needs a significant amount of water to stay green. Consider the purpose of turfgrass lawns in the HOA. Are the lawns used for recreation and by pets? If a lawn does not have any purpose beyond aesthetic appeal, consider less water-intensive alternatives in that space, such as a xeric-landscape. Also, consider more purposeful landscapes such as a community garden. If a lawn is necessary for the community, use drought-resistant grasses such as buffalo grass or tall fescue.<sup>29</sup> The less turfgrass in an HOA, the less water is needed for irrigation.

An HOA can implement best practices of landscaping and irrigation by communicating with its landscaping contractor. Many best practices are simple changes that the landscaping contractor can adopt. Talk to them about their current practices and encourage them to adopt new techniques if necessary.

## Case Study: Cherry Creek 3 Landscape Revitalization

Cherry Creek 3 is an HOA of townhouses located in Denver, Colorado. Cherry Creek 3 had a traditional 1960's landscape of juniper bushes, volcanic rock, and approximately 7.9 acres of Kentucky bluegrass. Its landscape sorely needed an update.

In 2010, Cherry Creek 3 began a multi-year Landscape Improvement Program (LIP). The HOA wanted to conserve water, improve the aesthetic appeal of the HOA and increase property values. Cherry Creek 3 replaced the juniper trees with a xeric landscape of native and drought-resistant plants and replaced the volcanic rock with wood mulches. Underutilized turfgrass sections of the community were also replaced, with one of the most extensive areas converted into a community garden.

The HOA is experimenting with Dog Tuff™ grass, which uses less water and needs less mowing than traditional Kentucky Bluegrass. Cherry Creek 3's efforts resulted in a biodiverse landscape of over 100 plant and tree species and reduced their HOA's water bills. Cherry Creek 3 also had its landscape designed as a "Wildscape," giving the feel of a natural landscape and better attracts pollinator species such as bees and hummingbirds.

In partnership with Denver Water, Cherry Creek replaced 1,500 old sprinklers with more efficient MP Rotator Heads. MP Rotator heads are more efficient because it sprays in multiple directions at once at a slow rate. Water gradually soaks into the soil, reducing runoff and evaporation. As part of Cherry Creek 3's agreement with Denver Water, Denver Water promised rebates based on the summer's water savings.

Cherry Creek 3 used as much as 36 million gallons of water in 2008. However, in 2015, it used approximately 20-22 million gallons a year. In the 2010-2015 period, the HOA received more than \$40,000 in rebates for its irrigation efficiency from Denver Water. This money has helped to pay off the improvements to its landscape and irrigation system. Cherry Creek 3 continuously monitors its HOA's water usage and urges residents to conserve water. These efforts have helped reduce the monthly HOA maintenance fee.<sup>30</sup>

### Local Water Utilities

Local water utilities often provide more than drinking water. Many utilities offer information on water conservation strategies and programs to help communities achieve their water conservation goals. Many water utilities offer rebate programs for purchasing water-efficient fixtures.

[Denver Water](#) has a successful program to cover part of the cost of upgrading water inefficient toilets, sprinklers and irrigation controllers to WaterSense-labeled fixtures. Denver Water has personalized outdoor water use reports that can help set outdoor water efficiency goals and update progress. Many water utilities will also have online portals for monitoring the community's water use in real-time.

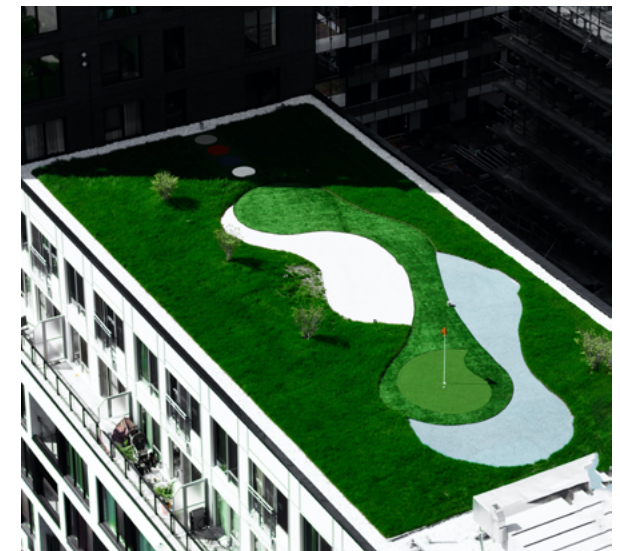
[ParkerWater and Sanitation District](#) in Colorado has an advanced utility monitoring portal named AquaHawk. AquaHawk allows the user to set alerts for watering anomalies, which can help identify leaks in real-time and save money in the process. Many water utilities have resources available regarding water conservation,

landscaping, xeriscaping, rules, and regulations, among other topics.

Developing partnerships with the local water utility can help the community achieve its water efficiency goals more cost-effectively and timely.

### Using Sustainable Stormwater Management

Stormwater runoff is a problem in the United States – an estimated 10 trillion gallons of untreated stormwater runoff enters waterways every year.<sup>31</sup> Runoff can contain everything from raw sewage and trash to hazardous chemicals polluting the environment and drinking water. Stormwater runoff can also cause flooding, which can destroy homes and landscapes. Fortunately, various methods range from high-cost infrastructure improvements to inexpensive techniques to improve water quality and keep communities safe.





## Gray vs Green Infrastructure

In water management, gray infrastructure is a traditional, engineered water management technique that relies on human-made materials such as concrete and asphalt to collect and funnel stormwater into waterways. Gray infrastructure is often expensive and difficult to update and usually does not improve water quality. Gray infrastructure can contribute to waterway flooding as well.

Green infrastructure is an alternative approach to water management that protects, restores, or mimics the natural water cycle. Green infrastructure is often cost-effective and encompasses various strategies such as green roofs, rain gardens, and permeable pavement to minimize erosion, flooding, and water pollution<sup>16</sup>. Other benefits include increased water supply, reduced costs, smog and heat mitigation<sup>15</sup>. Green infrastructure is not a total replacement for gray infrastructure but a complement. Some gray infrastructure is necessary for water treatment and transportation.



## Recommended Actions:

Green stormwater infrastructure projects can improve the resilience of HOA communities and protect property from floods. Below are several examples of green stormwater infrastructure.

### Install Rain Barrels

Rain barrels harvest and store runoff water from rooftops by placing the barrel at the building's downspout. Rainwater can then be used for outdoor watering. Check local and state laws regarding rainwater harvesting. *Note: The State of Colorado has restrictions on the residential collection of rainwater to 110-gallons at a time.*

### Install Bio and Dry Swales

Swales are dry or vegetated drainage paths that direct the flow of stormwater. Swales can help slow down runoff, prevent the destruction of landscaping, and increase water infiltration and filter pollutants.

### Install Bioretention Areas or Rain Gardens

Bioretention areas or rain gardens are vegetated, shallow depressions that allow water to pool so that it can slowly filter into the soil or evaporate into the atmosphere.

### Use Permeable Pavement

Unlike impervious surfaces like asphalt and concrete, permeable surfaces allow for the infiltration of rainwater into the underlying soil and groundwater. This process reduces the risk of flooding. Asphalt and concrete alternatives include porous asphalt and permeable pavers. Permeable pavement can be cost-effective in the long-run.

### Conserve Undeveloped Land

The protection of undeveloped open spaces and natural areas in and surrounding communities can have positive impacts. Land conservation can reduce the risk of stormwater runoff and preserve water quality. Areas of focus include steep hillsides, riverbanks and streambanks, and wetlands.

These are just a few examples of green infrastructure strategies. To learn more about green infrastructure and stormwater management, visit the [EPA website](https://www.epa.gov/green-infrastructure).

"I did then what I knew how to do. Now that I know better, I do better"

- Maya Angelou

## Case Study: Agua Dulce Homeowners Association

The Agua Dulce Homeowners Association is a community located in Tucson, Arizona. Agua Dulce is in a desert. It receives about 12 inches of rain per year, half of which falls between July and September. Summer monsoons can deposit an inch of rainfall during a storm. Monsoons flood and damage Agua Dulce's decomposed granite walkways.

Agua Dulce's pool filter discharge was eroding the landscape, and stormwater from their pool parking lot created a head cut - an abrupt vertical drop, where water erodes the ground below into a small pool.

With the assistance of Watershed Management Group - a Tucson-based nonprofit, Agua Dulce developed a plan to address their stormwater issues.

For the walkways, Agua Dulce created shallow basins along the sides of the path and used extra soil to raise it and create swales to direct water into the basins. They also backfilled the basins with mulch to reduce evaporation and planted native plants within them. For the pool discharge, Agua Dulce created a rock bowl and apron to slow down the water flow and reduce erosion. Agua Dulce placed rocks at the head cut base and installed basins and bioswales downstream to minimize erosion.

The HOA organized community action days to install the stormwater mitigation fixtures and created a water harvesting and erosion control committee to ensure the project's maintenance and continued success.

This effort had the added benefit of creating a greater sense of community within the HOA. Agua Dulce's efforts resulted in more vegetated landscapes and greater erosion control while lowering their outdoor water use. The improved neighborhood aesthetic also contributed to higher property values for the community.<sup>32</sup>







# 6

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## Energy Efficiency



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## Introduction

Implementing energy efficiency measures in an HOA is an opportunity for cost-savings through lower energy utility bills. In addition to saving money, HOA residents are eager to see sustainable change in their communities. Fifty-nine percent of HOA residents surveyed in 2019 by CAP Management responded that they were interested in seeing their association address energy conservation.<sup>33</sup>

When it comes to HOAs, energy efficiency and conservation actions can be performed at two different scales. The first scale is decision making at the individual resident level. Individual residents can take a variety of actions to save energy within their own homes or units, such as retrofitting kitchen appliances and LED lights, or turning off the lights when leaving the house. These actions are largely up to the individual resident to implement, but can be encouraged by the board with proper outreach and communication.

The second scale is decision making at the board level. The types of energy saving decisions a board can make largely depends on what structures the HOA is responsible for maintaining. HOA governing documents can vary drastically on upkeep and maintenance of building components from association to association.

Additionally, some associations have a central, shared heating ventilation and cooling system (HVAC), while for others, individual units have their own HVAC system.<sup>34</sup> If the board is responsible for maintaining windows or other

stripping detail, or if there is a shared HVAC or boiler system, the board has more power to directly implement energy efficiency measures regarding these structures.

## Promoting Education and Outreach

Although an HOA board typically cannot control how much energy individual residents use in their homes, the board can encourage energy conservation through education and outreach geared towards residents. There are a variety of methods boards can use to educate residents on energy conservation.

The HOA board can post flyers around common areas, post social media reminders, or use existing communications such as weekly newsletters to inform residents on energy saving tips. Educational flyers should be brief and to the point, and posted in highly trafficked areas.<sup>35</sup> Additionally, prompts and signage can be posted next to appliances such as shared computers in lobbies and lights in common areas to remind residents to turn them off when finished.<sup>36</sup>

### Pro Tip:

Flyers should be eye-catching and colorful! Experiment with different designs. Do any board members have a background in marketing or design? Board Members can share their skills by coming together as a group to design a few flyers. If designing a new one isn't an option, many municipalities and utility companies also have flyers available to download for free.

## Making Decisions about Energy

First, boards need to understand their responsibilities when it comes to maintenance. Start by identifying all the infrastructure the HOA is responsible for, including exterior and interior structures, as it is written in the governing documents. Determine if the HVAC, boiler and chiller systems are shared. Once all of the structures the board is responsible for are determined, the board should plan and prioritize.

Do certain structures need to be upgraded sooner than others, based on age and performance? Develop a plan for which projects should be addressed and when, and an estimate of the costs. Create an accurate annual budget for replacements and upgrades, as replacing building mechanics can be costly. For more information on budget and reserve planning, *see: Finance*.

Second, boards need to understand which of their bylaws inhibit energy efficient initiatives (*see: Governance*). Many bylaws that restrict residents from using clotheslines or installing solar panels end up encouraging more energy use than necessary. Can the board revise some bylaws and implement ones friendly to energy conservation? Create a streamlined approval process by the board, making it easy for residents to install the energy efficient measures they desire.

## Tips for maintenance and replacements:

### If the HOA is responsible for exterior windows or doors:

- Determine if there are air leaks coming from these places and weatherize using insulation materials such as caulk and weather strips to ensure all gaps are sealed. Insulation can be done by a professional or skilled homeowner with the proper materials.<sup>37</sup>

### If the HOA is responsible for shared HVAC or water heater systems:

- For HVAC systems, it is important to regularly replace air filters and have inspections and maintenance performed by a certified professional technician. Older HVAC systems that fail to keep desired temperatures should be replaced with energy efficient models, such as Energy Star certified technology.
- For older water heater or boiler systems, insulation of the heater itself and connected piping can avoid heat loss and extra energy used to make up for that loss. Again, if a system needs to be replaced, replace with an Energy Star rated model.<sup>38</sup>
- Install a smart thermostat. Smart thermostats regulate building temperatures automatically and keep temperatures within a specific range. These thermostats use less energy than a standard thermostat because the HVAC unit does not have to work as hard to bring temperatures up or down. Smart thermostats are a cost efficient investment that save money on utility bills.<sup>39</sup>

### For lighting fixtures the HOA is responsible for:

- LED light bulbs last 25 times longer than traditional incandescent light bulbs while using 75% less energy. LED light bulbs have the potential to last up to 3 years– this means less maintenance and replacement costs.<sup>40</sup> LED lights are often available for purchase at local hardware stores and are easy to replace. Both indoor and outdoor lighting fixtures can be replaced with LED lights.
- Outdoor lighting fixtures can also be installed with Energy Star rated compact fluorescent light bulbs, (CFL), motion sensors, or photocells that can detect daylight and turn lights off automatically.<sup>41</sup>



## Example: Lighting Retrofits at Shadow Wood

Shadow Wood, a 318 unit HOA in Denver, Colorado, participated in Xcel Energy's Multifamily Buildings Program Energy Assessment in 2017. Xcel was able to recommend upgrades such as replacing incandescent light bulbs with LEDs and installing low-flow shower heads. The total cost savings for the association from identified projects was estimated at over \$3,700 each year.

## Energy Considerations for Board Members

### Use or produce renewable energy.

Many HOAs have the ability to use or produce affordable renewable energy. There are several options when it comes to using renewable energy. First, some energy utility companies, such as Xcel Energy, offer customers a choice of where the energy that powers their home comes from, and offer rebates for those who chose renewable energy. No installation of solar panels by the association is necessary, as solar power is purchased directly from the grid. If the HOA pays electric bills for common areas, contact the local energy provider and ask if there are renewable energy options from the grid available. On average, energy from solar costs less than using fossil fuels, and prices continue to fall as technology develops.<sup>42</sup>

### Install solar panels on HOA-owned rooftops.

While installation costs can be high, the system is low maintenance and low cost once installed. Additionally, many solar companies have financing plans or leasing options available to help offset initial costs.



Other companies such as Unico Solar Investors build, maintain, and pay for solar installations, and building owners get a below market price on renewable energy.<sup>43</sup>

#### If the HOA has a pool, use solar for heat.

The cost of solar pool heating is competitive with gas and heat pumps, but with very low annual operating costs. In fact, swimming pool heating costs can be significantly reduced by installing a solar energy system. To ensure proper installation, consult a professional and consider local building codes.<sup>44</sup>

### Collaborating with Utility Companies

Collaborating with local utility companies lends credibility to energy-related recommendations. Some utility companies have programs through which energy experts conduct in-home visits to provide personalized recommendations for reducing energy consumption and savings on energy bills, such as Xcel Energy's Home Energy Squad program.<sup>45</sup> Home Energy Squad technicians perform insulation tests and upgrades such as weather stripping on exterior doors all during the same visit.

In general, a certified technician will walk through both the interior and exterior of the property, making notes of existing heating, cooling, and lighting systems. Once all the needed information is collected, the auditor will develop a customized report with recommendations on energy efficiency upgrades and what can be improved at the property. The report might also include metrics regarding the property's current energy consumption. Technicians from the utility may schedule a follow up meeting with residents to review findings and discuss next steps.

If such a program is available locally, the board may be able to work out a deal with the utility so that all homes in the association can participate. If these programs do not exist locally, many utility companies have rebate programs for installing energy efficient appliances or for those who purchase renewable energy from the grid.<sup>46</sup>



### Tracking and Understanding Energy Bills

HOAs are generally responsible for paying utility bills for common spaces such as clubhouses, pools, and lobbies. In order to understand how much energy common spaces are using, boards should keep track of total annual usage. Annual usage can most often be found on the HOA's utility account online. If not, adding up monthly usage from all bills that year will calculate the total amount of energy used. Energy bills show total usage in Kilowatt Hour (kWh). EnergyStar's Portfolio Manager is a free tool for tracking and benchmarking energy usage which can be found online at [EnergyStar.gov](https://energy.gov/energy-star/energy-star-portfolio-manager).<sup>47</sup>

HOA boards can set yearly energy use reduction goals by aiming to use less energy than the previous year. Goals should be documented and tracked monthly to ensure the goal is on the trajectory to be met. Tracking monthly energy use also allows the board to make any necessary changes the following month. To achieve energy goals, implementing technical changes around common spaces will help decrease energy usage.

The total annual usage of the most recent year can be compared to annual usage of past years in order to understand usage patterns. Is usage for the most current year higher, lower, or average? An average amount of energy usage for the past five years can be calculated by adding up the total usage for the past five years and dividing by five. The average yearly energy use can help boards stay on track to achieve energy reduction goals by providing a baseline for comparison.

# 7

## Building Management



Sustainable Building Management

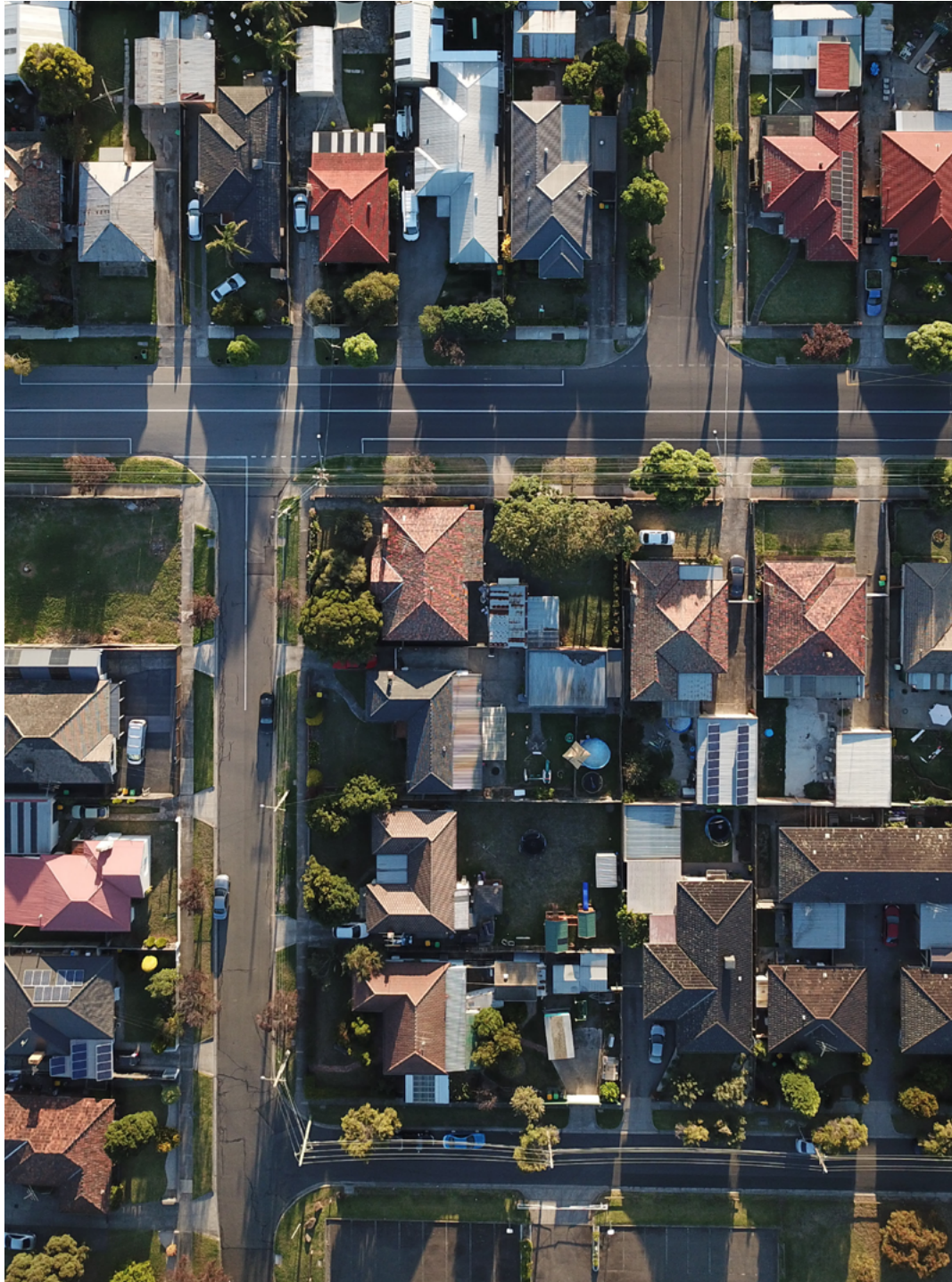
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Green Buildings

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Optimizing Site Potential

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## Introduction

HOAs come in all shapes and sizes. Whether it's a multi-story condominium complex in the heart of downtown or a neighborhood of single-family homes in the suburbs, the degree to which a building is maintained can affect social, financial, and environmental sustainability. This chapter explores how the core principles of sustainable building management can improve HOA communities.

## Practicing Sustainable Building Management

The energy consumption of residential buildings accounts for more than half of all building energy use in the United States.<sup>48</sup> While HOA communities typically do not have input in the initial construction, they are likely financially responsible for construction additions, repairs and renovation of existing structures. HOAs that keep up with maintenance will find cost savings in both utilities and critical repairs in the future.



## Green Buildings: What Are They?

Although green building certifications are primarily designed for new construction, the sustainability principles in these programs could offer valuable insight for how an HOA's facilities could be managed in the most efficient way. Green buildings are designed, constructed, and operated to reduce or eliminate negative impacts on the environment.<sup>49</sup> Green buildings have economic, social, and environmental benefits, such as:

- Reducing operating costs
- Enhancing building value
- Enhancing occupant health
- Reducing waste
- Enhancing and protecting biodiversity
- Improving the overall quality of life

There are several different green building certifications, of which the most popular in the United States is the Leadership in Energy and Environmental Design (LEED) developed by the U.S. Green Building Council. Other certifications include the Building Research Establishment Environmental Assessment Method (BREEAM) and the WELL Building Standard. Visit the corresponding websites for further information on green buildings and rating systems.

## Recommended Actions:

### Optimize Building Maintenance

**1. Develop a partnership with the maintenance company so that contractors become familiar with the buildings.**

Consistent work by a single contractor will make maintenance more efficient; it can also help make the HOA a priority client.

**2. Monitor and upkeep energy and water efficiency systems.**

Establishing a monitoring system will allow the community to track its efficiency (*see: Energy and Water*).

**3. Create a long-term budget that accounts for incremental improvements and repairs to the built environment *before* the end of its operational life.**

Use the HOA's most recent reserve study to plan for future infrastructure expenses. Many HOAs tend to defer critical infrastructure repairs, such as fixing the sewer system or repairing stairs, until necessary. Delay can lead to higher costs, safety concerns, and unhappy residents (*see: Finance*).

**4. Upgrade to more efficient equipment.**

Energy and water-efficient equipment will reduce the HOA's operating costs (*see: Energy and Water*).

## Optimize Energy and Water Use

HOA boards should consider energy reduction strategies such as obtaining energy from renewable sources or purchasing renewable energy credits (RECs). RECs can help offset a community's fossil fuel use. A REC is not a direct purchase of renewable energy; instead, it gives the buyer certified proof that they are buying renewables directly from the grid. RECs grant the benefits of renewable energy without installing energy systems such as solar panels onto HOA buildings. Contact the HOA's local utility to inquire about purchasing renewable energy.

The energy consumption of residential buildings accounts for more than half of all building energy use in the United States. While HOA communities typically do not have input in the initial construction, they are likely financially responsible for construction additions, repairs and renovation of existing structures. HOAs that keep up with maintenance will find cost savings in both utilities and critical repairs in the future.

## Use Green Building Materials

Green building materials are created from renewable and sustainably-sourced resources. Using these materials can reduce the maintenance and replacement costs over the course of a building's life. It also can conserve energy, improve occupant health, and offer greater design flexibility.<sup>50</sup> Materials made from recycled and repurposed resources can also reduce construction waste and lower a construction project's environmental footprint.

## Helpful tips:

1. Prioritize the use of green or low-impact construction materials when planning a new construction project.
2. Hire a contractor and builder who adhere to green building principles. These contractors will use sustainable materials and ensure the reduction of construction waste and proper disposal or recycling. See the [Colorado Green Building Guild](#) for a directory of vetted building contractors and architects who adhere to sustainable building principles.



Lafayette Villas West HOA in Lafayette, CO

3. The EPA has a list of designated products that reduce the environmental impact of the material. Use this guide when planning the next construction project. Sustainable alternatives include:

- Building insulation created with recycled paper
- Roofing materials made from recycled rubber or plastic
- Carpet made from recycled plastic bottles
- Patio blocks created from recovered plastic and rubber

## Case Study: Villas West Recycled-Shingle Roof

Lafayette Villas West Homeowners Association, located in Lafayette, Colorado, consists of condominiums and apartment-style homes. After experiencing hail damage in July 2019, Villas West needed to replace its roof. Rather than replacing it with a traditional asphalt tile roof, the community elected to use shingles made of upcycled rubber and plastic.

Upcycling is the concept of repurposing recycled materials into a new, higher quality product. The installed shingles are a class 4 impact resistant shingle – the highest hail resistant shingle on the market. This roofing material also reduces smog, lasts longer and is more sustainably manufactured than traditional shingles. The complete roof installation is estimated to have repurposed 9,042 plastic milk bottles and 130 tires and has the smog reducing properties of 52 trees. Additionally, this high-quality shingle allowed Villas West to purchase a less expensive insurance policy for its roof.



## Reduce the Heat Island Effect

Heat islands occur when developed areas experience higher temperatures than surrounding, rural areas. Heat islands happen because dark surfaces such as buildings and pavement absorb and re-emit heat from the sun more than natural landscapes.<sup>54</sup> HOAs can mitigate the urban heat island effect by:

- Increasing the number of trees and vegetation, especially near buildings
- Installing green roofs and cool pavement

### Case Study: Walnut Lofts Cool Roof

Walnut Lofts is a community located in the Five Points neighborhood of Denver, Colorado. Five Points, a historically black community, has undergone a rapid revitalization within the past 20 years. The HOA itself is a single multi-unit building.

Walnut Lofts HOA in Denver, CO



In the spring of 2020, Walnut Lofts had to replace its roof, as its current roof had reached the end of its life. The HOA was looking for a low-cost and environmentally sustainable solution. With help from the HOA management company, Walnut Lofts replaced its roof with GacoRoof Ultra, a solvent-free 100% silicone-based roofing material. This product is white, meaning it will reflect more solar radiation and reduce heat transfer into the building better than a traditional roof. The roof installation supports Denver's city-wide effort to reduce the urban heat island effect's impacts. Cool roofs can reduce a building's energy consumption by an estimated 10 to 15%.

The cool roof's construction was zero-waste. Because the roofing product adheres to the existing roof material, the old roof did not need to be removed. The construction of the roof diverted over 18,000 square feet and 8,000 pounds of material from the landfill.

## Enhance Indoor Air Quality

Air quality affects human health. To ensure healthy indoor air quality for residents:

- Change indoor air filters every three months, especially in multi-unit residential buildings.
- If the board is responsible for maintaining heating, ventilation, and air conditioning (HVAC) structures, service these systems at least once every six months.
- Use cleaning products that are low in volatile organic compounds (VOCs). Low VOC products emit low levels of harmful pollutants. Visit the LEED and GreenSeal websites for resources to identify low VOC products.

## Optimize Building Site Potential

A building's location affects the accessibility, security, energy consumption, and lifespan of the building and the local ecosystem.<sup>55</sup> When considering the construction additions, HOA boards should minimize land disturbance by selecting previously developed land or retrofitting existing buildings.

When the HOA needs more space, repurpose unused or underutilized amenities. In many HOAs (mostly aging ones), sections of the property had to be abandoned. Common examples are pool rooms, fitness centers and parking lots. Abandonment can happen because upkeep became too expensive, but these spaces can be repurposed for new uses. Consider low-cost options that benefit the community; for example, an unused tennis court could be repurposed into a pop-up farmers market or event space.

# 8

## Transportation



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## 8 transportation

### Introduction

At first glance, it may appear that HOAs have no control over what transportation options are available in their neighborhoods, but that isn't necessarily true. Although many transportation decisions are made by local or state governments, community members who demonstrate a will to make their neighborhood safer or more sustainable are often capable of doing so. Before making the case for new mobility options, speed-reduction features or other transportation infrastructure in their neighborhood, residents should harness the power of collective action by collecting signatures from their neighbors. Below is a list of several strategies HOAs can use to improve their sustainability and increase transportation options for residents.

### Encouraging Alternative Modes of Transportation

As of 2016, more than 75% of Americans drove to work alone every day;<sup>56</sup> this means the overwhelming majority of HOA residents also likely drive to work. Many people drive to work because they believe it's their only option, whether or not that's true. For residents to make use of sustainable transit options, they need to know what exists in their neighborhood – but this is only the first step. In order to make the best use of these options, residents should be actively encouraged to take them.

### Recommended Actions:

Board members should develop a plan to encourage residents to use alternative modes of transportation such as light rail, buses, bicycles or carpooling. If board members don't have the bandwidth to take on such a project, they should consider establishing a transportation committee. Delegating the task to interested residents not only frees up time for board members to work on other matters, but provides residents an opportunity to be involved in the planning process in their community. To develop a transportation plan, follow the steps below:

1. Survey residents to find out how they get around. What modes of transportation are they already using? What would they like to see more of?

2. Research transportation options in the area. Is there a bus stop within a quarter mile of the neighborhood? Is there a bike path or bike lanes to connect residents to the hubs where they work? The board needs to know what modes of transportation are accessible from the HOA in order to promote them.

3. Identify goals for the plan. What are the ideal outcomes? Which transportation options will be promoted? How much should driving be reduced?

4. Keep the community involved; throughout development, communicate the goals of the plan and its status with residents.

5. Once the plan is written, make it publicly available and explain the plan's goals and intentions to residents.

### Example: Denver's Neighborhood Transportation Management Program

Denver's Neighborhood Transportation Management Program (NTMP) aims to work with the city's neighborhoods to establish local transportation priorities, implement projects that support those priorities and help inform the establishment of city-wide mobility and safety programs. The NTMP partners with neighborhoods by giving residents a say in what transportation looks like in their neighborhoods. By conducting public meetings and neighborhood surveys, and creating stakeholder committees, the program ensures that the infrastructure built in various neighborhoods is what residents really want and need.



**Tip:** Engage residents by asking them to provide input on the HOA's new transportation plan. As mentioned earlier, establishing a transportation committee or team can include additional community members in the planning process. Whether or not a new committee is established, inviting residents to provide questions or comments will ensure the plan reflects the true needs of the community.

## Planning for Bicycle Infrastructure

Several types of infrastructure exist to make traveling safe and efficient for cyclists, with bike lanes and paths being the most common. Other types of bicycle infrastructure include advanced stop lanes, bike-specific signaling, bike-share programs and bike storage.

### HOAs and Bikes

Most bicycle infrastructure is planned and paid for by the city. However, this doesn't mean HOAs are powerless in determining what cycling looks like in their neighborhood. For complex projects, such as protected bike lanes, HOA leaders will need to collaborate with government employees. Before making a request, read the most recent transportation and master plans for the city to ensure the infrastructure requested isn't already planned for that neighborhood. Additionally, talk to community members to gain their support. Proposals from residents are more likely to be accepted by local government if they are presented with proof of considerable support in the neighborhood; in fact, many transportation departments cannot act on requests from residents unless a certain number of signatures is collected.



## Recommended Actions:

### Collaborate with local government

If cycling feels unsafe in or around the HOA, research what types of infrastructure will work best within the context of the community to improve safety. The National Association of City Transportation Officials has developed several guides related to cycling, including the Urban Bikeway Design Guide and the Bike Share Station Siting Guide. Once a consensus has been reached regarding what will work best, communicate the board's vision with residents to gain their support and collect signatures. Finally, reach out to the city's transportation department to make the request.

### Work within the HOA

Smaller scale infrastructure, such as bike racks and storage, are easier for the HOA to handle on its own. When planning bike storage infrastructure for the HOA, the goal should be to provide enough secure parking for all residents in accessible locations. If access to bike storage is as convenient as access to vehicle parking, people are more likely to consider cycling a viable transportation option.<sup>57</sup>

### Safe and accessible bike storage for residents should be:

- in a convenient location
- secure
- easy to use and maneuver around
- protected against vandalism and well-lit
- well-connected (no barriers or dangerous surfaces between storage and the road)

After deciding what kind of bike storage (covered, uncovered or indoor) fits the HOA's budget and needs, craft a policy resolution to ensure proper use and upkeep of the new storage facilities. When developing the resolution, consider the following questions:

- Are parking spaces reserved or offered on a first-come basis?
- Will residents be charged a fee to use the facilities?
- Do residents need to register their bike with the board?
- Do residents need to provide their own lock?
- Are strollers, scooter, mopeds or other devices allowed to be stored there?
- Does providing new bike parking facilities mean that bikes are no longer allowed to be stored in other common areas?
- How will violation of the new policies be handled? Will residents be charged a fee for violations?

To read an example of a bicycle registration and parking resolution from a Condominium Unit Owners Association, click [here](#).

## Promoting Access to Transit

For public transportation to be considered a viable option, stops must be located close enough for people to access on foot, serviced frequently, safe, and provide shelter from inclement weather. Sometimes transit stops exist within walking distance of homes, but they're located on the other side of a highway or major road that make them difficult to reach on foot. All of these details should be considered when determining the true accessibility of transit.



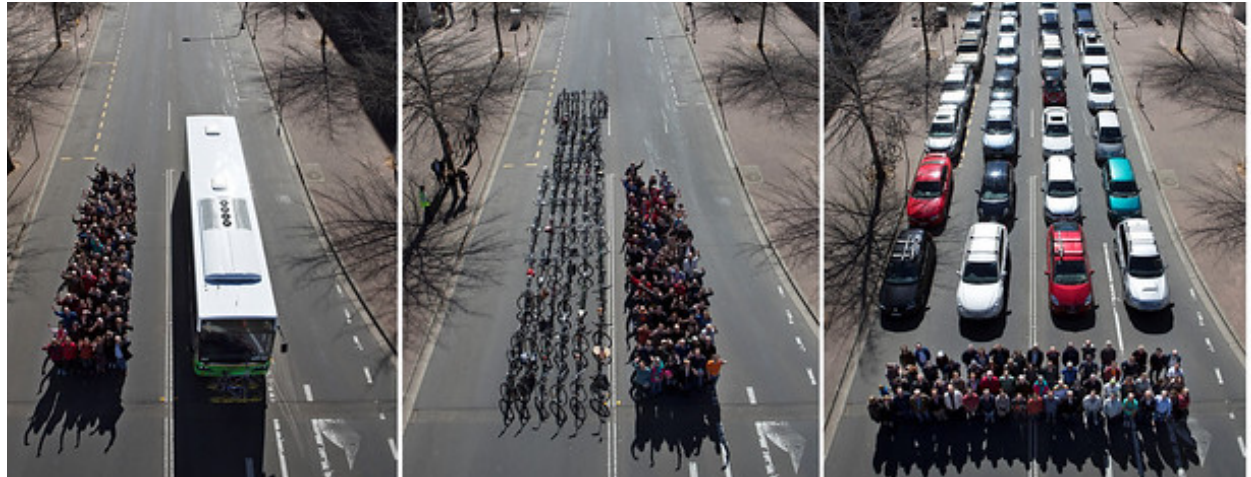
## HOAs and Transit

The location of bus stops and frequency of service is often determined by the city or local transit company; however, residents are often able to make requests. In Denver, public transportation is managed by the Regional Transportation District (RTD). Requests for service can be made by calling their customer help line. Although the process for requesting a stop may differ by agency, calling their customer service is always a good place to start if the process for making requests or contact information isn't listed clearly online.

### Example: Neighborhood EcoPass

EcoPass is an annual, unlimited bus and light rail pass made available to residents in Denver and Boulder, Colorado, by their employer or neighborhood. Nearly 50 neighborhoods in Boulder participate in the program, which increases access to transit, lowers single occupant vehicle rides and helps people reduce their transportation costs.<sup>58</sup> The price of the pass varies based on the transit needs of specific neighborhoods, but the City of Boulder provides a 50% subsidy for first time participating neighborhoods and a slightly reduced subsidy for renewing neighborhoods, which can mean significant savings for transit riders.

In places where a neighborhood-scale transit pass doesn't exist, contact the local transit company to see if there is interest in starting one. Transit companies want to see ridership increase, and the purchasing power held by large groups of people can often make a reduced price or subsidy from the city or transit company financially viable.



Street space required to transport 60 people on a bus, on bicycles and in cars.

Photo: Australia's Cycling Promotion Fund

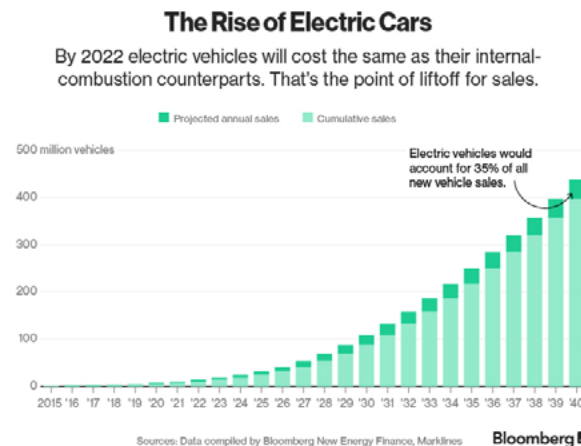
### Recommended Actions:

If the existing transit infrastructure does not meet the needs of residents, discuss the matter with other board members or residents at a meeting. If several residents have concerns about the lack of transit options, collect signatures or otherwise document their opinions. Transit companies are more likely to fulfill a request if there is significant interest throughout the neighborhood.

### Developing Electric Vehicle Infrastructure

Purchases of electric vehicles (EVs) have been increasing rapidly during the last decade. As of 2018, there were 1 million electric cars on the road, and that number continues to grow.<sup>59</sup> With more EVs on the road, charging stations have become increasingly common. Many parking garages and public recreation centers now have EV charging stations.

However, charging at home is often the most convenient and reliable. Charging overnight is typically the least costly time to charge, as most people are not using energy from the grid at that time. Unfortunately, charging at home can be complicated for residents who live in HOAs without private garages.



## HOAs and EVs

While residents in single-family homes can easily install their own charging units in their garages, residents of multi-family buildings (who may not have private garages) will likely need to develop a plan for charging stations in collaboration with the HOA. Even if residents own their parking space, they don't own the community's electrical infrastructure.

Fortunately, EVs are becoming more popular, which means there will likely be several residents in any multi-family building interested in EV charging.

As previously mentioned, there is power in numbers. Board members should gauge resident interest in charging stations before they move forward with a plan for installation; on the other hand, residents should confirm that several of their neighbors are interested before bringing the issue to the board. It's also important to keep in mind that even if most residents aren't currently interested in EV charging, future residents might be, and could be an incentive for them to choose the HOA.



## Recommended Actions:

Once the board has decided to move forward with EV charging, begin to draft a fair and forward-looking plan for installation. While drafting a plan for installation, consider these questions:

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*Will the charging stations be communal or installed in personal parking spaces?*

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This decision depends on the ownership of parking spaces in the HOA, as well as resident preferences. If residents own specific parking spaces, individuals would need to fund their own charging station. If parking spaces are communal, the association would need to decide which spaces to install stations in.

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*Who will pay for the cost of installation?*

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If stations are installed in personal spaces, the owner of the space should front the cost. Several grants are available to help fund communal charging stations, but they often don't cover the entire cost of installation – the rest would need to be funded by the HOA.

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*If additional charging stations are needed in the future, how will they be incorporated?*

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Installing a panel rather than individual charging units creates the capacity to charge several vehicles at once or add spots later on. Placing several stations close together is cost effective and simplifies the electrical infrastructure needed to support them.

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*How will users be charged?*

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Several companies provide charging stations that make charging user fees simple and even allow the HOA to determine how much profit they want to make. ChargePoint's smart charging stations, for example, allow users to set up accounts for recurring use or run credit cards for a pay-as-you-go option.

## Case Study: EV Charging at Embassy House

The Embassy House HOA in downtown Denver is proof that although navigating the process of installing EV charging stations in HOAs can be difficult, it is possible. The association's sustainability committee led the charge, identifying EV charging as a key opportunity to lower their carbon footprint. The committee researched what funding initiatives were available at the state and local level to help them finance the project. They eventually decided to seek funding through Charge Ahead Colorado, which provides grants for the purchase of electric vehicles and community-based Level 2 charging stations.

Charge Ahead Colorado requires grant seekers to conduct a survey in their community regarding interest in electric vehicles. Although no Embassy House residents owned an electric vehicle at the time of the survey, several expressed interest in purchasing one in the next year or two.

Deciding who will pay for the electricity used to charge vehicles and how users pay can be complicated, but Embassy House contracted ChargePoint to simplify the process. ChargePoint's smart charging systems allow drivers to pay per use, either by setting up an account or using a credit card (which is especially convenient for visitors). The HOA only installed one station with two charging ports, but the board expects they'll need additional chargers someday. For now, they hope the charging station will incentivize some Embassy House residents to purchase electric vehicles and that other people in the area will be inspired to do the same.



## Conclusion

Sustainability is becoming an increasingly important consideration in every industry, and everyone will need to adapt. Creating a sustainable future for an HOA begins with the decisions that a board and its community make today – nearly every decision that a board makes can be done so through a lens of sustainability and environmental consciousness. HOAs already have the structure in place to implement community-scale change through the strategic use of bylaws, fees and collective purchasing. Motivating and mobilizing interested residents to participate in sustainability projects, and

increase their participation in community decisions, is a major opportunity for the HOA board.

With this guidebook, HOA communities can be examples of using their governance structures to lead the way to sustainability and resilience, as forward-thinking communities that value the benefits of sustainability. The recommendations made in this guidebook will help HOA communities begin or improve upon their sustainability strategies. However, each HOA operates differently – sustainability upgrades and improvements can be continually made in a way that works best for each community.

Sustainability is not simply a goal that is achieved – it is not a box to be checked-off, nor is it something that can be bought – sustainability for an HOA community means continually making decisions that meet the current needs and desires of residents, and using available resources and money, without compromising the resources available for future decision-makers.

Implementing these strategies to improve sustainability would not be possible without the board members who generously volunteer their time and effort to be leaders in their communities. The role of HOA governance is critical to making these opportunities for sustainability come to fruition.

Sustainability for HOAs will look different in each community, but every community must make an effort. In our changing world, what is needed most is a myriad of sustainability solutions that can be adapted to various communities – the only bad option is one that sticks with the status quo.



The Depot at Village of Five Parks in Arvada, CO

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