

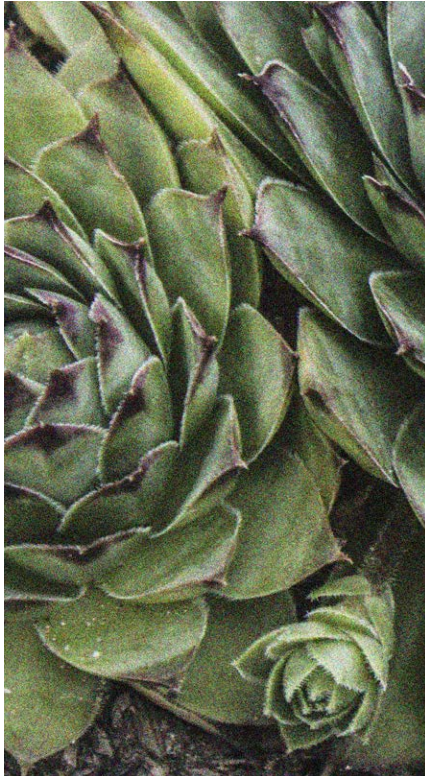
A scenic landscape photograph featuring a large body of water in the middle ground, surrounded by dense evergreen forests. In the background, a range of mountains is visible under a hazy, orange-tinted sky, suggesting a sunset or sunrise. The foreground is filled with dark, silhouetted trees. Overlaid on the image is the title 'LIVING LANDSCAPES' in large, white, sans-serif capital letters.

LIVING LANDSCAPES

A SEATTLE PARKS PROJECT

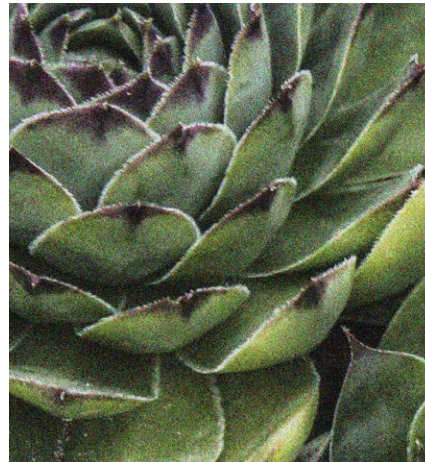


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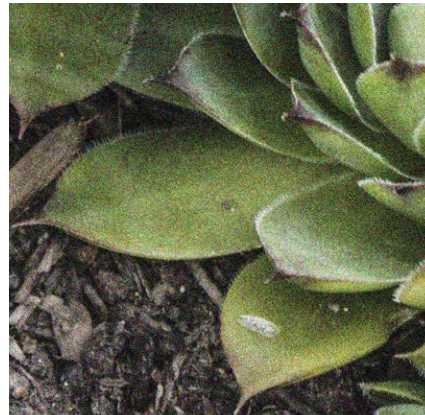


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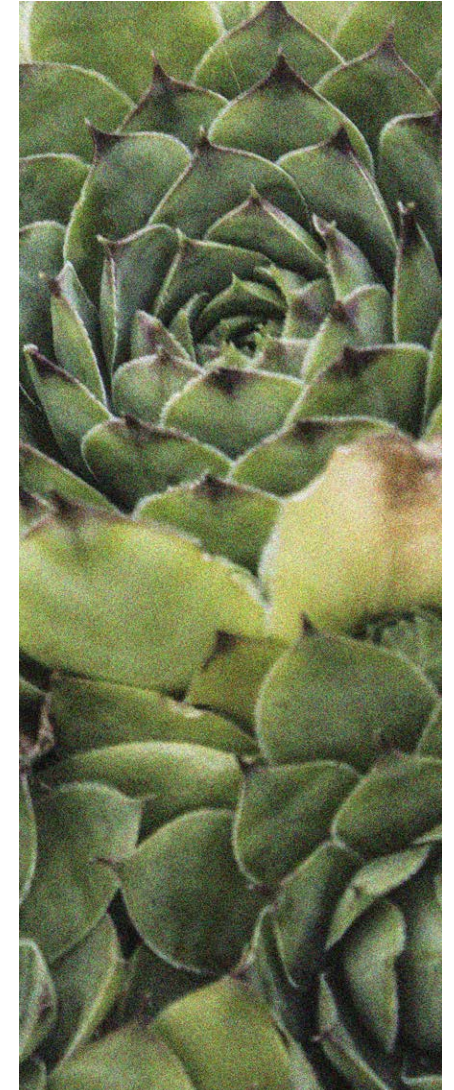


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THANK YOU

We have many people to thank for the success of this project. Throughout our research and process of this project, all of the people we have had a chance to interact with have been very supportive and excited about this undertaking.

This document is dedicated to everyone that has guided us throughout this time.



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PROJECT STATEMENT

The Living Landscapes in Seattle Parks Project aims to take the existing plant communities within Seattle and integrate them into the Seattle Parks and Recreation's goal and mission statement of a "Healthy, Healthy, Strong" and accessible environment. Green space appeals to all people regardless of race, gender or age and with the increasing amount of urban development, green space becomes more and more important to prioritize and improve upon. The Living Landscapes in Seattle Parks Project will propel Seattle and the Seattle Parks and Recreation department onto the forefront of environmental stewardship and valuable place-making for our current generation and future generations to come.

Living Landscapes are plant communities that showcase community character, sustain robust urban ecosystems, and create human well being. The goals of the Living Landscapes in Seattle Parks Project will establish resources and processes that will promote and assess outstanding living landscapes in Seattle Parks.

RESEARCH QUESTION

How can Seattle Parks and Recreation create beautiful, functional and sustainable Living Landscapes?

What is valuable about a living landscape?

What public Living Landscapes are highly functional and sustainable?

How can communication be improved across all groups participating in park design, construction, maintenance and oversight?



MEET THE TEAM



MARGOT
CHALMERS

A stylized, handwritten signature of Margot Chalmers in black ink.

Margot Chalmers is a Masters student in landscape architecture at the University of Washington. She received a B.A. in environmental studies and minors in studio art and animal science from the University of Vermont, and received honors on her creative arts thesis about the applications of intensive rotational grazing in prairie restoration. Margot has held a career with the National Park Service and holds a particular interest in the impacts of visitor use patterns upon natural resources, having focused on reducing the spread of noxious invasive species. She finds the Living Landscapes project exciting in that it seeks to strengthen under-served communities within Seattle through the provision of diverse, attractive parks that lend a strong sense of place, ownership and belonging.



JAEN GOMEZ
CERVANTES

A stylized, handwritten signature of Jaen Gomez Cervantes in black ink.

Jaen Gomez Cervantes is a recent graduate from the University of Washington in Landscape Architecture and minored in Ecological Restoration. He is interested in designing and creating ecologically sustainable landscapes that also address social issues within our community. Growing up in the Northwest has influenced his passion for working with nature. He has a strong interest in creating projects that incorporate science and art while also providing function.

MEET THE TEAM



ARTHUR
UNG

Arthur Ung

Arthur Ung graduated from the University of Washington's Bachelor of Landscape Architecture in the Spring of 2016. He also received a minor in Ecological Restoration and currently works at Cambium Inc., a Design/Build/Maintenance Firm. His fondest memories are of parks and still enjoys going to parks purely for the diverse people one might find there as well as the endless possibilities and adventure. This document is especially important to him because he believes vegetation and planting provides unprecedented benefits that should be integrated into the urban framework. Successful planting in the parks systems has the potential to provide respite for humans while contributing to the natural environment and offsetting the negative human impacts of the changing climate.



PHILIP
VANDEVANTER

*Philip
VanDevanter*

Philip VanDevanter is an undergraduate landscape architecture student at Washington State University. He grew up in the forest and shoreline parks of Vashon Island, WA and developed a deep passion for promoting open space for all community members. He hopes that the Living Landscapes project helps feed a growing conversation about the possibilities for urban plant communities to provide captivating and restorative park environments.



CH. 1.0

PROJECT FRAMEWORK

HEALTHY



PEOPLE

Creates restorative experiences through interaction with healthy environments.

HEALTHY



ENVIRONMENT

Large areas: Creates diverse habitat and provides many ecosystem services
Small areas: Together, can create a web of interconnected landscapes

STRONG



COMMUNITY

Engages volunteers in shaping the park landscape
Educates students and the youth
Creates unique neighborhood identity



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CH. 1.1

HEALTHY

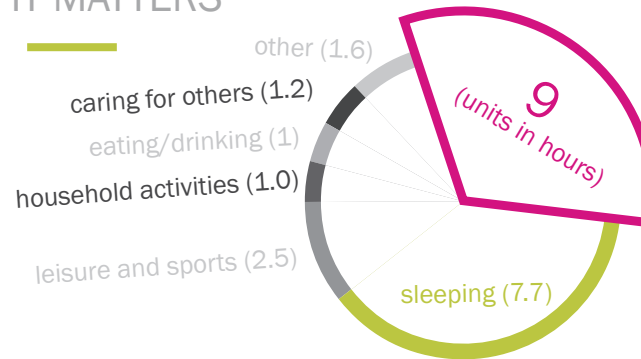
PEOPLE

Healthy People are vital to the success of a city. By improving the quality of life for our Seattle residents, we are effectively creating a better city.

EDUCATIONAL BENEFITS

WHY IT MATTERS

The average employed person aged 25-54 with children spends 9 hours a day working or doing work related activities.



Which equates to 37% of a day working. With the amount of time spent working, it is important that the quality of our worker's mental health be at the highest quality.

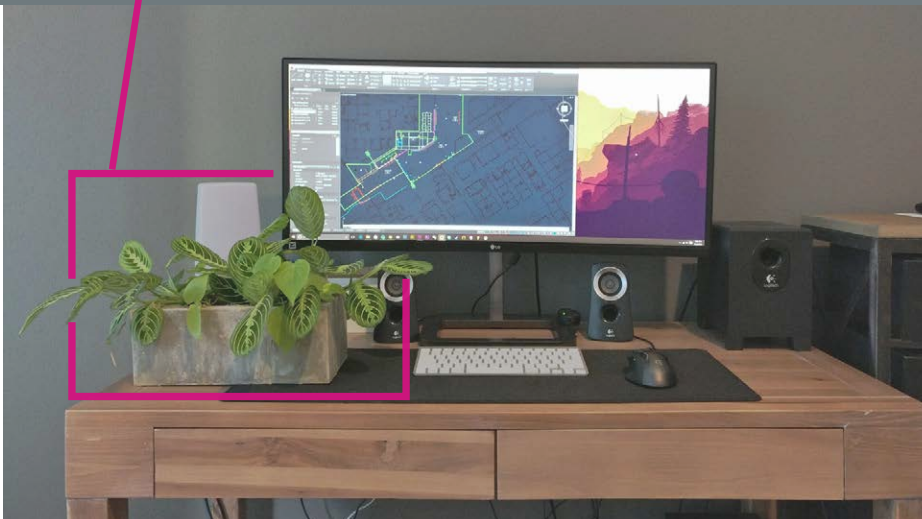
WORKING AND STRESS CAN LEAD TO INEVITABLE MENTAL AND PHYSICAL FATIGUE

PLANTS

increased productivity on computer tasks by

12%

Natural areas can help improve mental fatigue and restore focus



Having a natural view outside of a dorm window can improve:

Test Scores
Attention
Effectiveness
Recovery from stress



COMFORT / PLACE-MAKING

WHY IT MATTERS

Being attached to a space makes you more likely to **promote environmental stewardship and responsibility**

People become attached to a peaceful and **restorative green space** because of its ability to offer **mental and physical respite**



People prefer
NATURAL

over

HARDSCAPE SETTINGS

and a study found that urban residents dislike and fear treeless common spaces.



The addition of planting dramatically changed their perceptions of those spaces.



LAND



VEGETATION



HAPPY PEOPLE

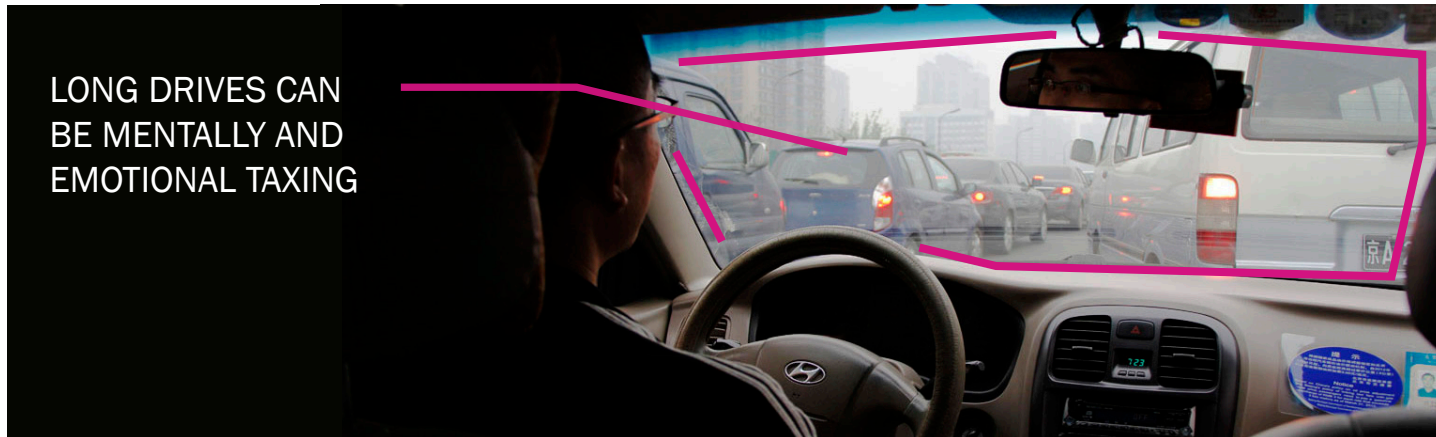
HEALTHY PEOPLE

ALLEVIATING STRESS

WHY IT MATTERS

COMMUTING IS A HUGE PART OF OUR CULTURE AND DAILY ROUTINE

LONG DRIVES CAN
BE MENTALLY AND
EMOTIONAL TAXING



A STUDY
DEMONSTRATED THAT

A beautiful and managed
route with vegetation

was selected **more than half
the time**

compared to a

faster, shorter
non-scenic route

Commuters reported feeling slightly
more relaxed when they could **look
out and enjoy interesting vegetation.**

One of the easiest ways to
reduce roadside stress is to
incorporate thoughtful landscaping



WALKABILITY / PHYSICAL HEALTH

WHY IT MATTERS

WITH THE INCREASING DEVELOPMENT OF TECHNOLOGY, OUR GENERATION LACKS ENGAGEMENT WITH THE OUTDOOR ENVIRONMENT



U.S adults are
overweight

1/3 of that
population
is obese

Although much of America's
poor health is due to nutrition
A level of activity is also a factor
in the issue

WHAT'S THE SOLUTION?

By creating a vibrant environment
full of beautiful and walkable
landscapes, people will be more
motivated to step outside for more...

ACTIVE
LIVING



MODERATE EXERCISE SUCH AS WALKING 30 MINUTES A DAY CAN HELP REDUCE:

RISK OF HEART
DISEASES



HIGH BLOOD
PRESSURE



DIABETES



STROKE







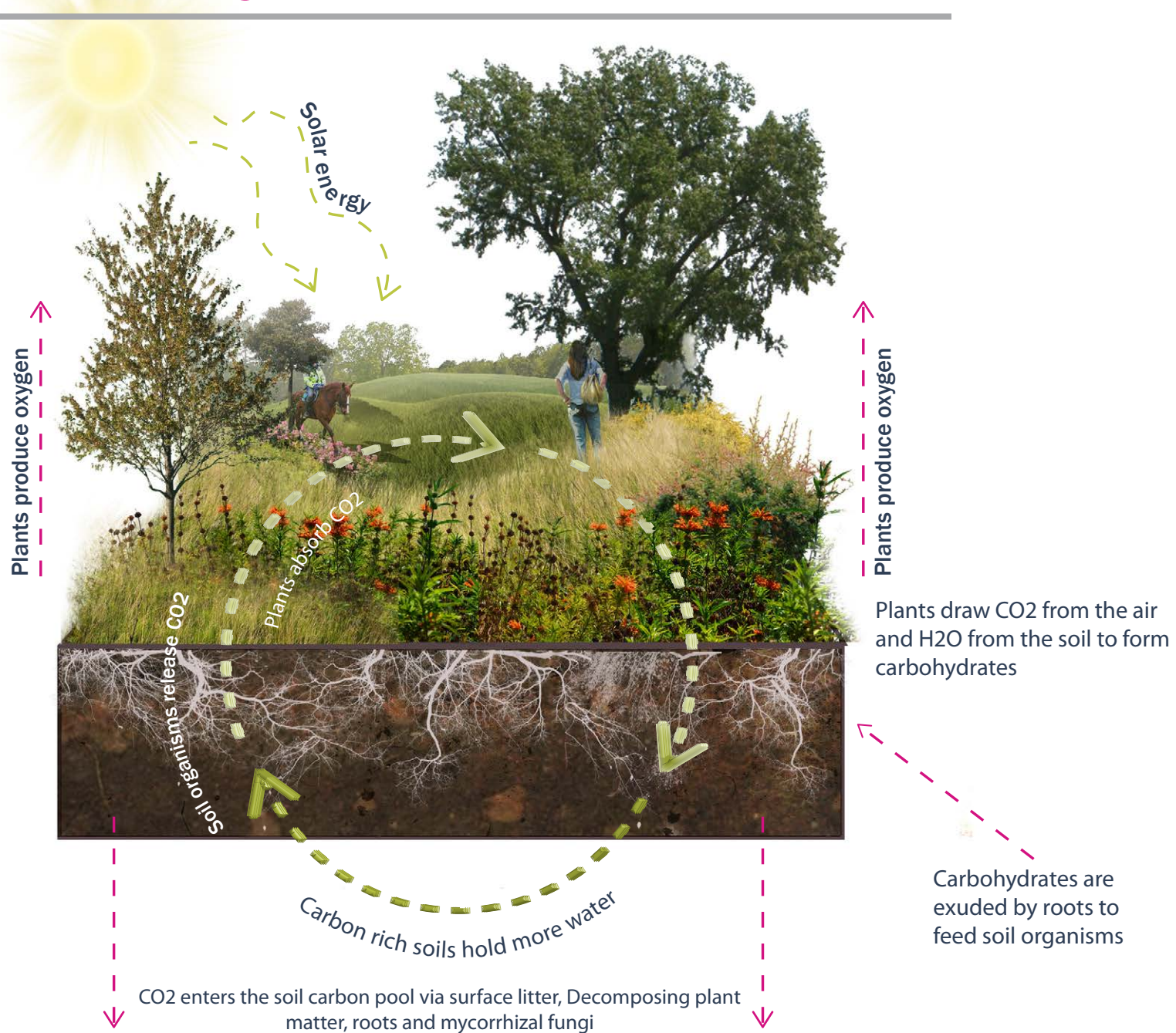
CH. 1.2

HEALTHY

ENVIRONMENT

With the increasing amount of urban development, it becomes increasingly more important to prioritize green, vegetative space. This is necessary for the health of the people as well as the health of our planet.

CARBON SEQUESTRATION



WET/ DRY DEPOSITION

1. Dry Deposition

Particulate matter from air collects on leaves and woody surfaces

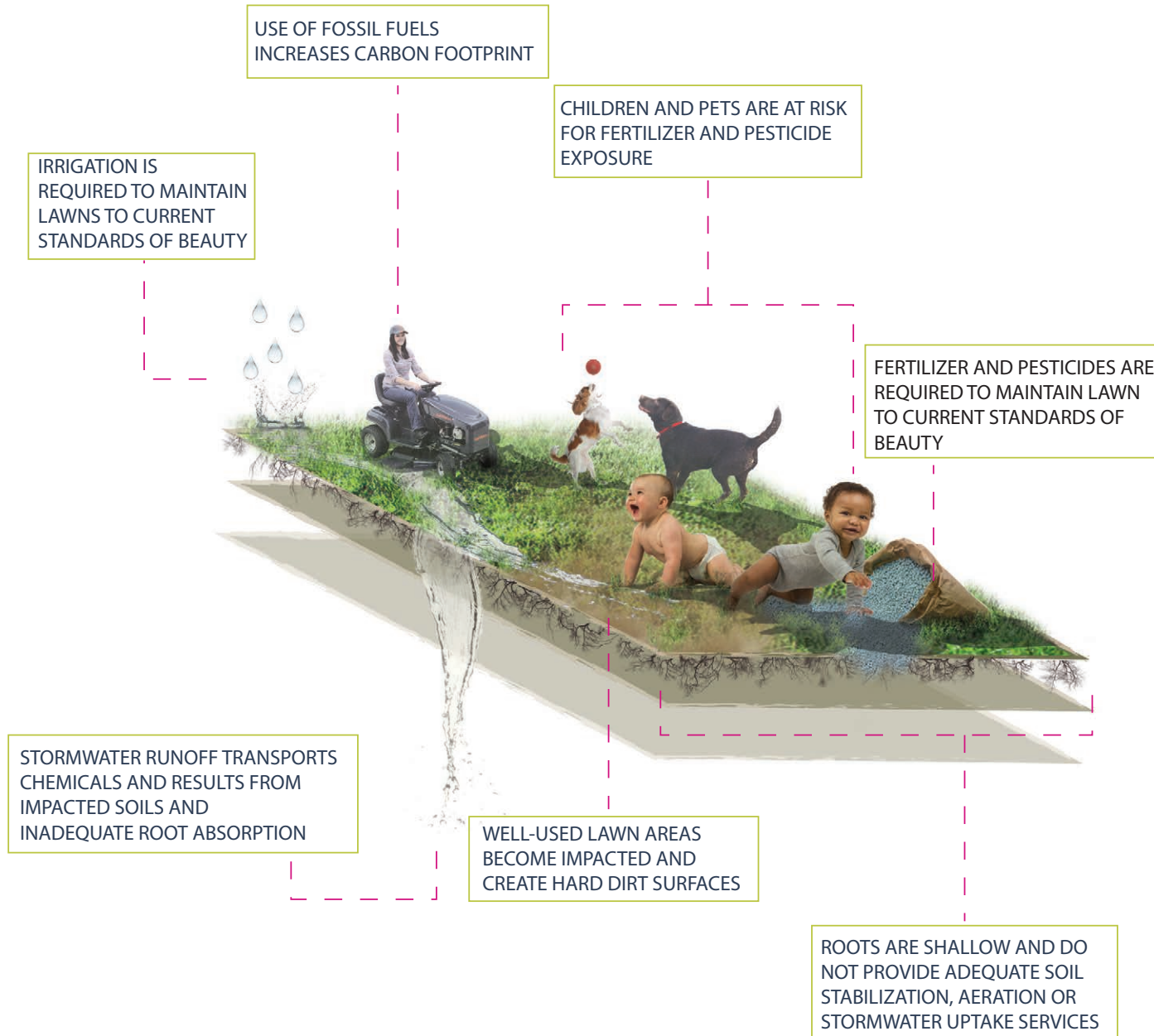
2. Wet Deposition

Particulate matter gathered on leaves and woody surfaces are washed away

Vegetation reduces wind speed
and slows the spread of
particulate air pollutants



NEGATIVE IMPACTS OF LAWN



HEALTHY ENVIRONMENT

NEGATIVE IMPACTS OF LAWN

“Lawns use more equipment, labor, fuel and agricultural toxins than industrial farming, making lawns the largest agricultural sector in the United States.”

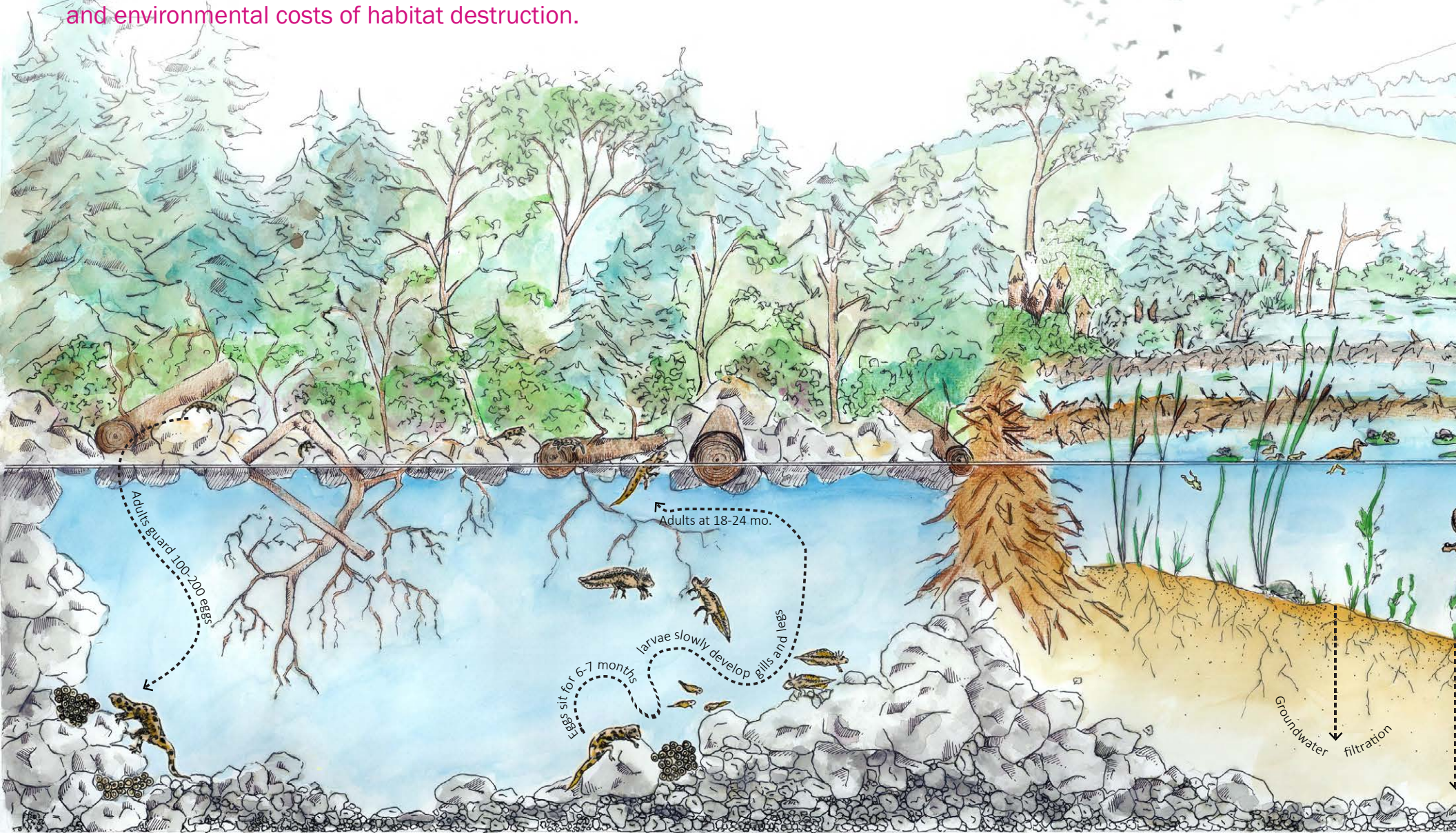
Richard Burdick, “The Biology of Lawns,”
Discover, 2003

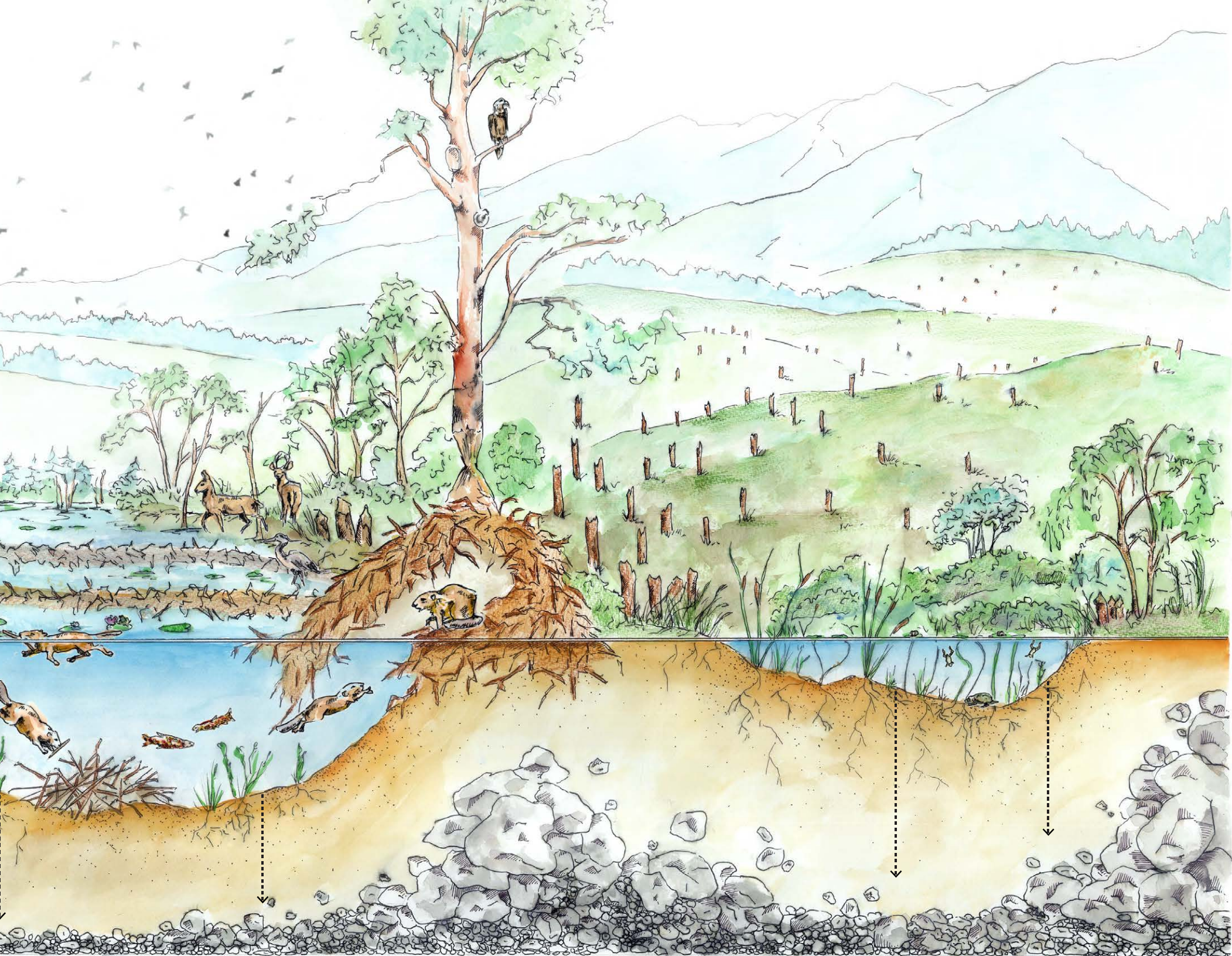
“The 50 million lawns in the United States consume 270 billion gallons of water every week...Each year, those lawns are slathered with 67 million pounds of pesticides and mowed by machines that use 580 million gallons of gasoline.”

Alan Burdick
Discover, 2003

HABITAT & ECOSYSTEMS

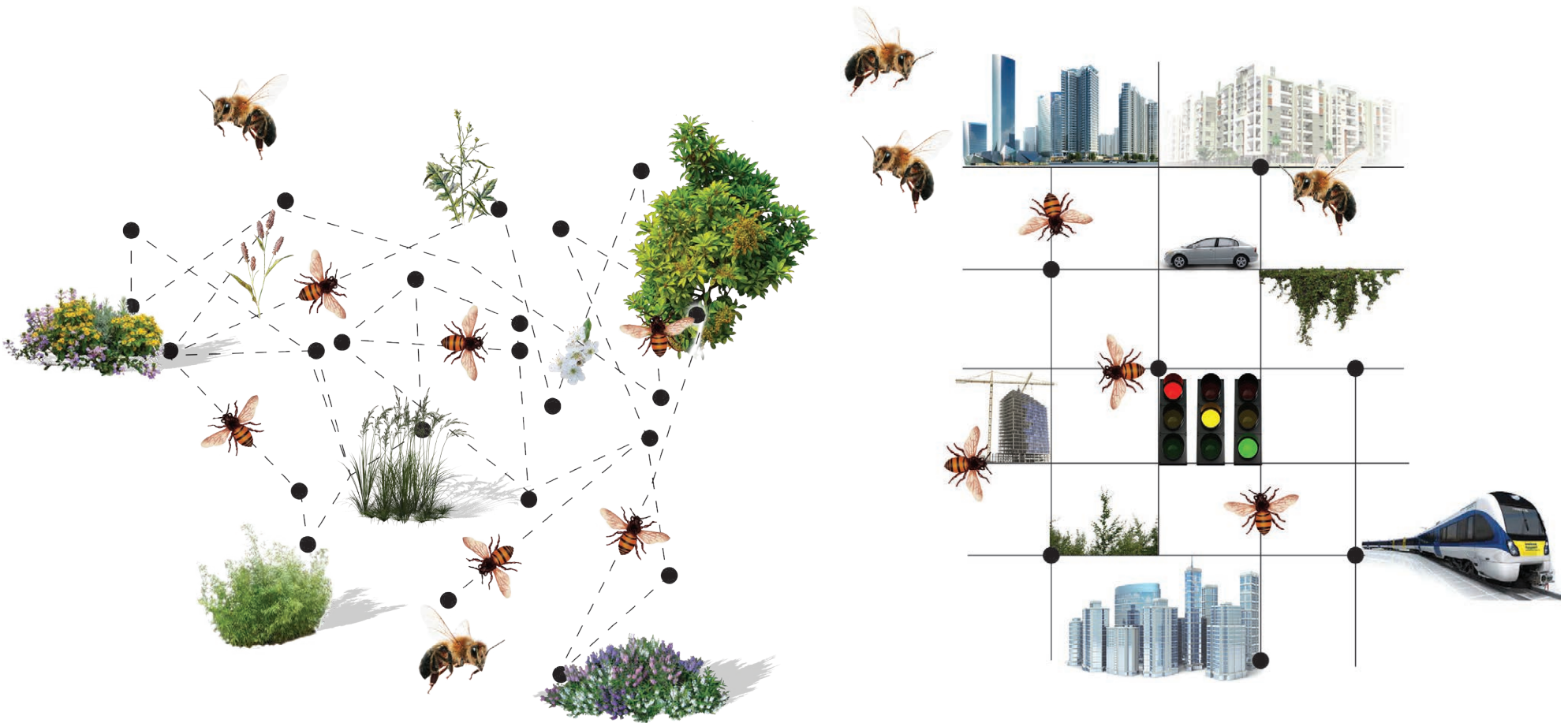
Habitat destruction lessens an area's ability to support essential ecological functions, resulting in expensive costs and potential negative effects upon human physical and emotional health. The provision and maintenance of healthy, diverse vegetation is essential in mitigating the fiscal, social and environmental costs of habitat destruction.



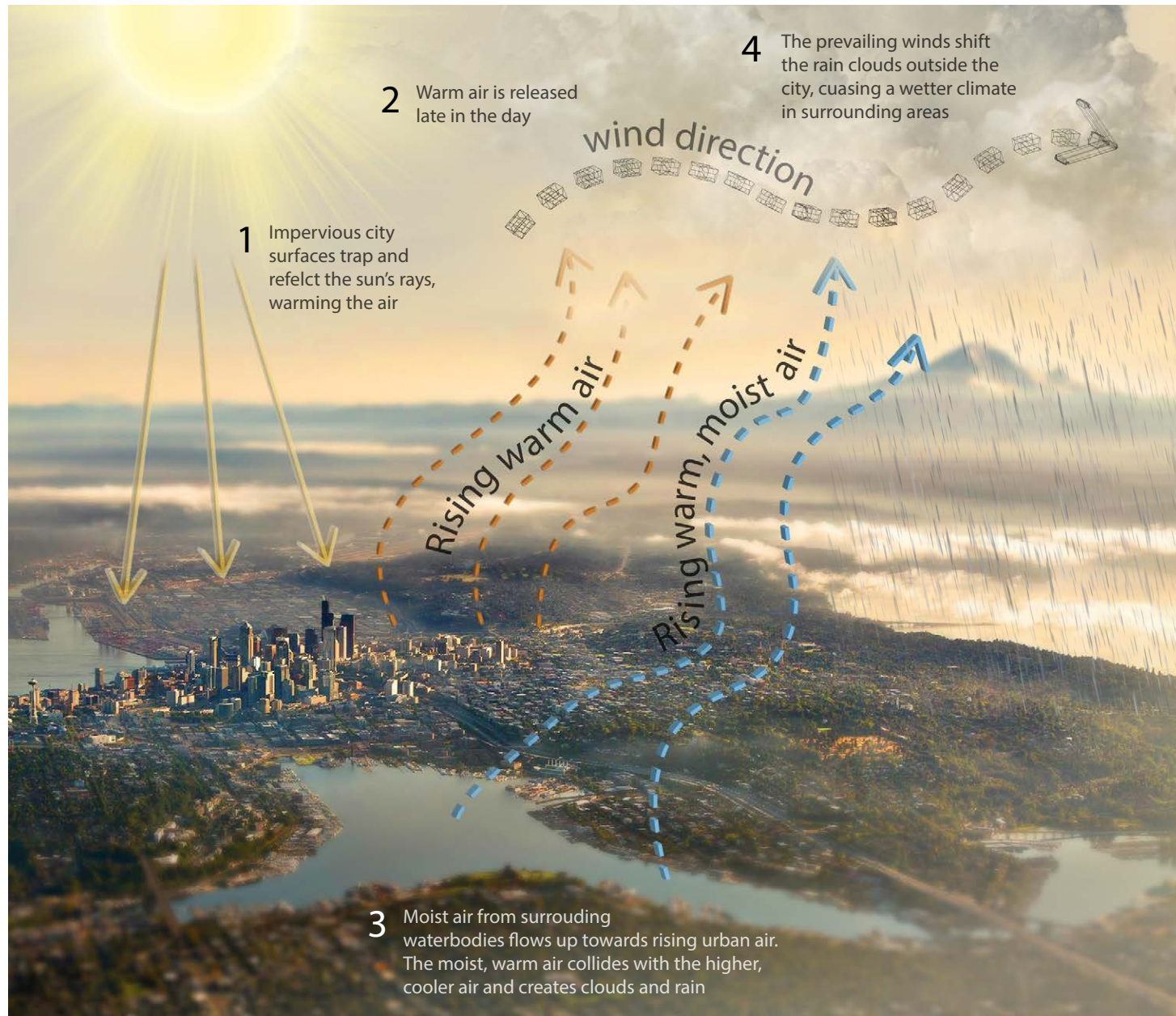


POLLINATOR PATHWAYS

Pollinators serve vast ecological and cultural values, and often share a mutual dependence with certain vegetative species. The urban matrix forms an inhospitable environment for pollinators. The addition of key vegetative species around the urban core will greatly benefit pollinator and vegetative health.



URBAN HEAT ISLAND EFFECT



HYDROLOGICAL SYSTEMS







CH. 1.3

STRONG

COMMUNITY

Strong communities can bind together to create large scale benefits. One way to improve community is to create spaces for them to meet, interact and develop ideas together. These spaces should be accessible and beautiful, and vegetation plays a key role in the success of community spaces.

STRONG COMMUNITY

EDUCATIONAL BENEFITS

TOP OF THE LINE LIVING LANDSCAPES FROM THE SEATTLE PARKS WILL FACILITATE MORE OPPORTUNITIES FOR:



OUTDOOR CLASSROOMS

96% of children illustrated an outdoor space when they were asked to recall their favorite places. With this in mind, it makes sense for children to spend as much time outdoors as possible. An outdoor classroom will potentially give the opportunity for children to associate fun with their learning.



FAMILY ORIENTED ACTIVITIES

Urban public green spaces that utilize managed vegetation has the potential to create spaces that friends and family can gather to relax, play, and exercise together.



CREATIVE PLAY/CHILD DEVELOPMENT

Attention Restoration Theory suggests that fatigue occurs after long periods of intense concentration similar to what students experience in school. Mental fatigue causes irritability and a lack of focus. Restoration Theory proposes the restorative benefits of nature and how it allows the mind and body to recharge.

COMMUNITY ENGAGEMENT

WHY IT MATTERS

Strong ties have a positive influence in their community in many ways, such as:

- ◆ Children/youth being less likely to participate in health-threatening behaviors like smoking, drinking, gang affiliation, and drug use
- ◆ Reduced suicide rates
- ◆ Lower rates of early mortality
- ◆ More adult guidance and role models
- ◆ Better physical health
- ◆ Less fear of crime

HOW DO WE FACILITATE COMMUNITY?



Casual interactions & organized events

inside green spaces creates neutral gathering spaces.

Social & cultural events are often held in parks and gardens



The presence of greenery and vegetation is directly related to:

- ◆ Rate of use of outdoor space
- ◆ Amount of social activity
- ◆ Vitality of neighborhood





CH. 2.0

AESTHETIC

QUALITY

What is beauty? Outdoor landscapes appeal to all people regardless of race, color or gender. With this in mind, we should be constantly working towards the improvement and development of beauty in the city of Seattle.



BEAUTIFUL SEATTLE

AESTHETIC BENEFITS

Right plant community,
right plant, right place.

Distilled meadow, forest edge and open woodland plant communities
enable a more diverse urban landscape experience.



BEAUTIFUL SEATTLE

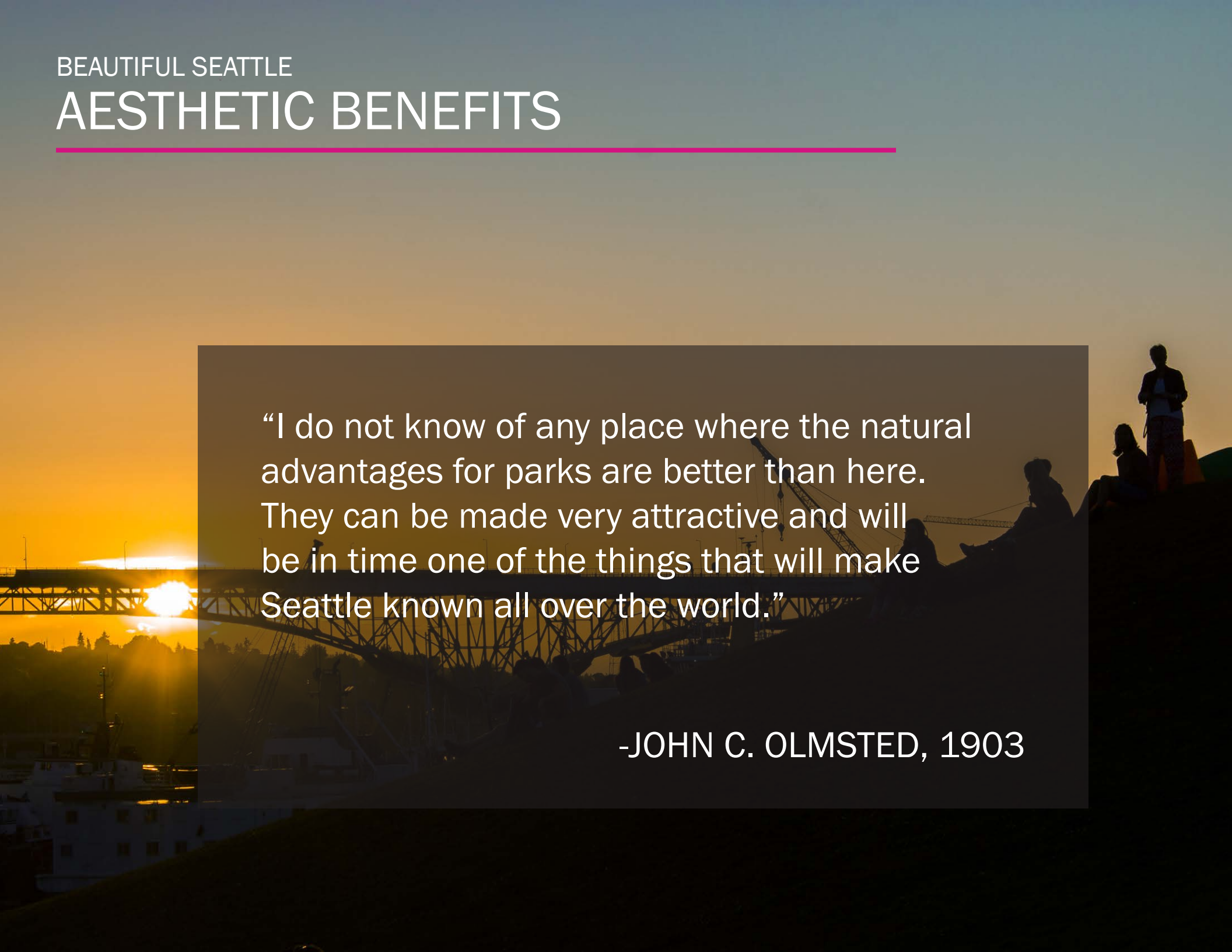
AESTHETIC BENEFITS

Vegetation is a program element, not just a landscape feature.

Interesting vegetation restores attention,
reinforces neighborhood character,
& entices and welcomes people into parks.

BEAUTIFUL SEATTLE

AESTHETIC BENEFITS

The background image is a composite. The left side shows a sunset over a bridge, with the sun low on the horizon, creating a bright orange glow. The bridge's steel structure is silhouetted against the sky. The right side shows a dark silhouette of a hill with several people sitting or standing on its crest, looking towards the sunset. The overall mood is peaceful and scenic.

“I do not know of any place where the natural advantages for parks are better than here. They can be made very attractive and will be in time one of the things that will make Seattle known all over the world.”

-JOHN C. OLMSTED, 1903

BEAUTIFUL SEATTLE

AESTHETIC BENEFITS

“The human soul is hungry for beauty; we seek it everywhere - in landscape, music, art, clothes, furniture, gardening, companionship, love, religion, and in ourselves. No one would desire not to be beautiful. When we experience the beautiful, there is a sense of homecoming.”

-JOHN O'DONOHUE

INTERNATIONAL CHILDREN'S PARK



CH. 3.0

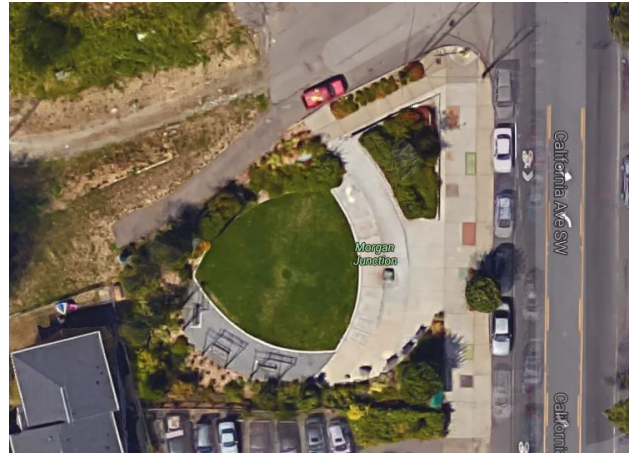
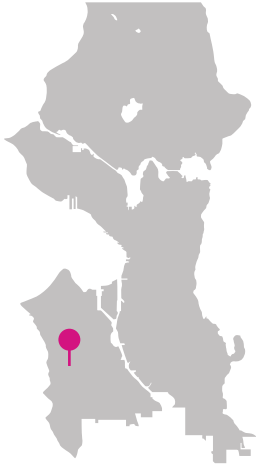
CASE STUDIES

This section displays some of the research we have conducted on a couple of local parks within Seattle. We have included examples of effective parks as well as some designs that are currently struggling and in need of improvement. The Case Studies show that our goals for this project are possible and there is precedent for strong design already implemented within our parks systems.

CASE STUDIES: SUCCESSFUL SPACE

MORGAN JUNCTION PARK

WEST SEATTLE, SEATTLE



REASONS FOR SUCCESS

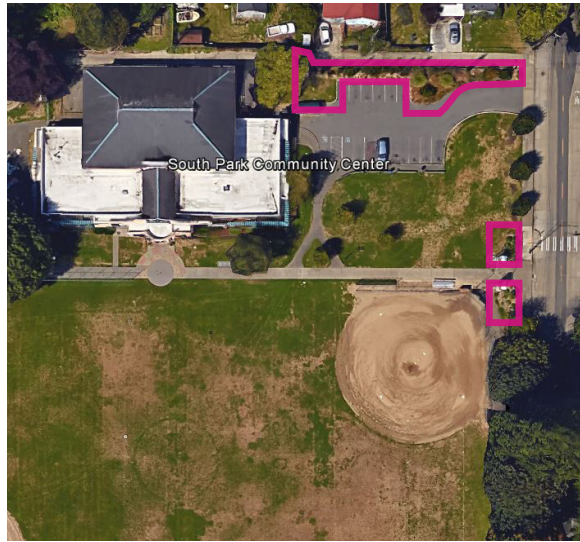
Maintained and planted by the community and simplified over time to adjust for increased circulation.

A high level of community input and engagement led by Barry White, coordinator of monthly work parties.

Morgan Junction Park serves as a community hotspot and gathering area as well as an emergency hub.

SOUTH PARK COMMUNITY CENTER

SOUTH PARK, SEATTLE



REASONS FOR SUCCESS

Strategic planting and location of beds to minimize trampling. Beds are in key locations of entry ways and parking areas to maximize visibility and feelings of sense of place.

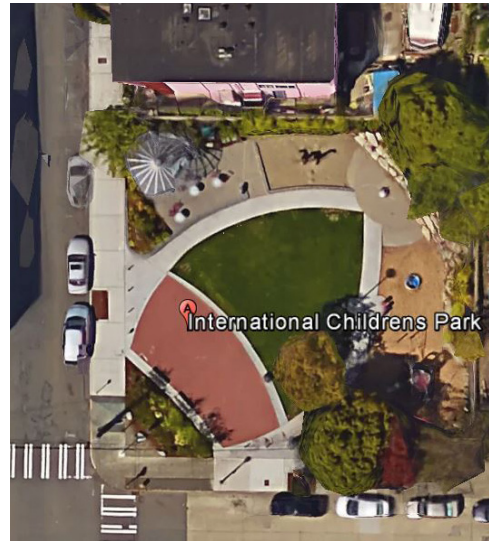
Unique planting palette creates neighborhood and community character and may encourage prolonged community stewardship.



CASE STUDIES: SUCCESSFUL SPACE

INTERNATIONAL CHILDREN'S PARK

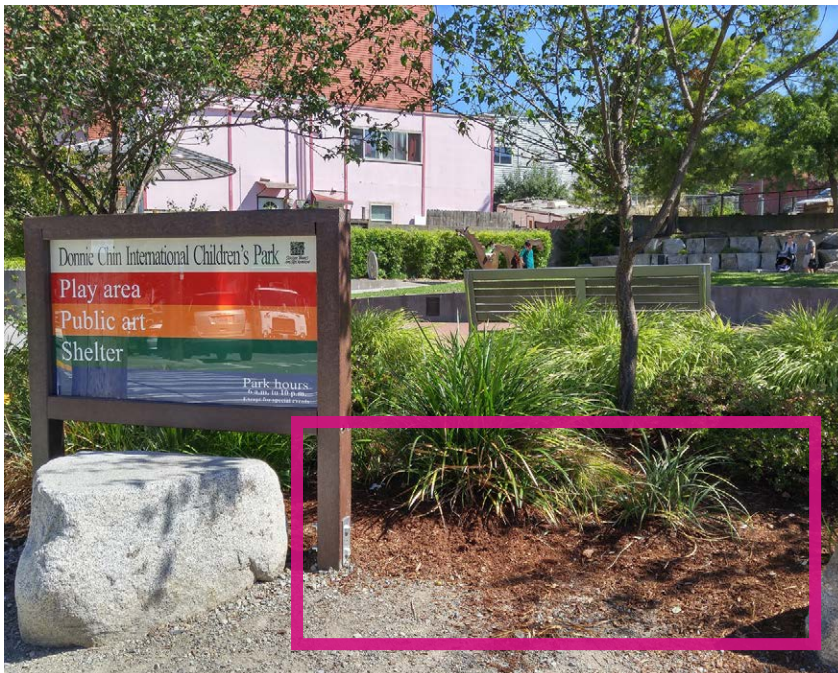
INTERNATIONAL DISTRICT, SEATTLE



REASONS FOR SUCCESS

Well maintained beds located in key areas of entrances. Beds provide a nice buffer between park and sidewalk and are elevated in areas that could have high traffic.

Utilizes appropriate scale of lawn to accommodate open programming for the neighborhood while still having planting beds large enough to create visual interest and impact.



JEFFERSON PARK RAIN GARDENS

BEACON HILL, SEATTLE

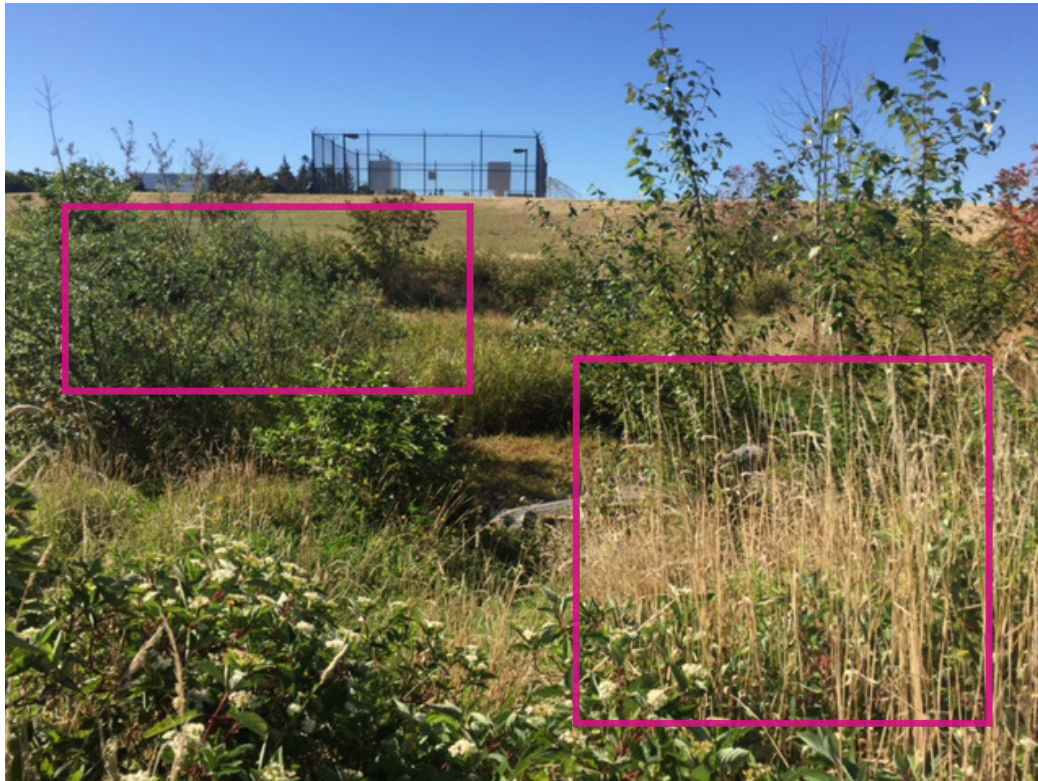


REASONS FOR SUCCESS

The rain gardens are centrally located for potential of highest visibility which allows for no CPTED hazards.

Plants are all low maintenance and does not require excessive watering or weeding. Planting provides diverse habitat for birds, insects, pollinators and other small animals.

The garden is highly functional and successfully filters stormwater.



CASE STUDIES: STRUGGLING SPACE
GEORGETOWN PARK
GEORGETOWN, SEATTLE



STRUGGLING FACTORS

Highly used soccer and play field, but park has no other features other than a tennis court and small playground.

Entire site is covered in lawn with no visual interest, vegetative planting, or artwork.



FLOWARE PARK

LESCHI, SEATTLE



STRUGGLING FACTORS

Has nice features such as an art installation at entrance and half a basketball court as well as a rubber play area.

Park has no planting as well as a very minimal tree canopy. No visual interest or soft fascination through planting. All lawn and impervious surfaces.







CH. 4.0

EQUITY IN PARKS

Equity is a hugely important element when it comes to green space. Lower income neighborhoods are currently in need of more than average attention in order to create a city with 100 percent coverage of successful Living Landscapes.

ACCESS TO VEGETATION

In 2015, Mayor Murray and Seattle City Council unanimously approved Resolution 31577, confirming that the City of Seattle's core value of race and social equity is one of the foundations on which the Comprehensive Plan is to be built. This resolution defined terms and directed staff to use an Equity Analysis to identify current disparities, create and report on equity measurements, and establish a stewardship structure that includes the expertise of those most negatively impacted by inequitable growth so that marginalized people can benefit from, and not be displaced or overly burdened by, future growth.

EQUITY

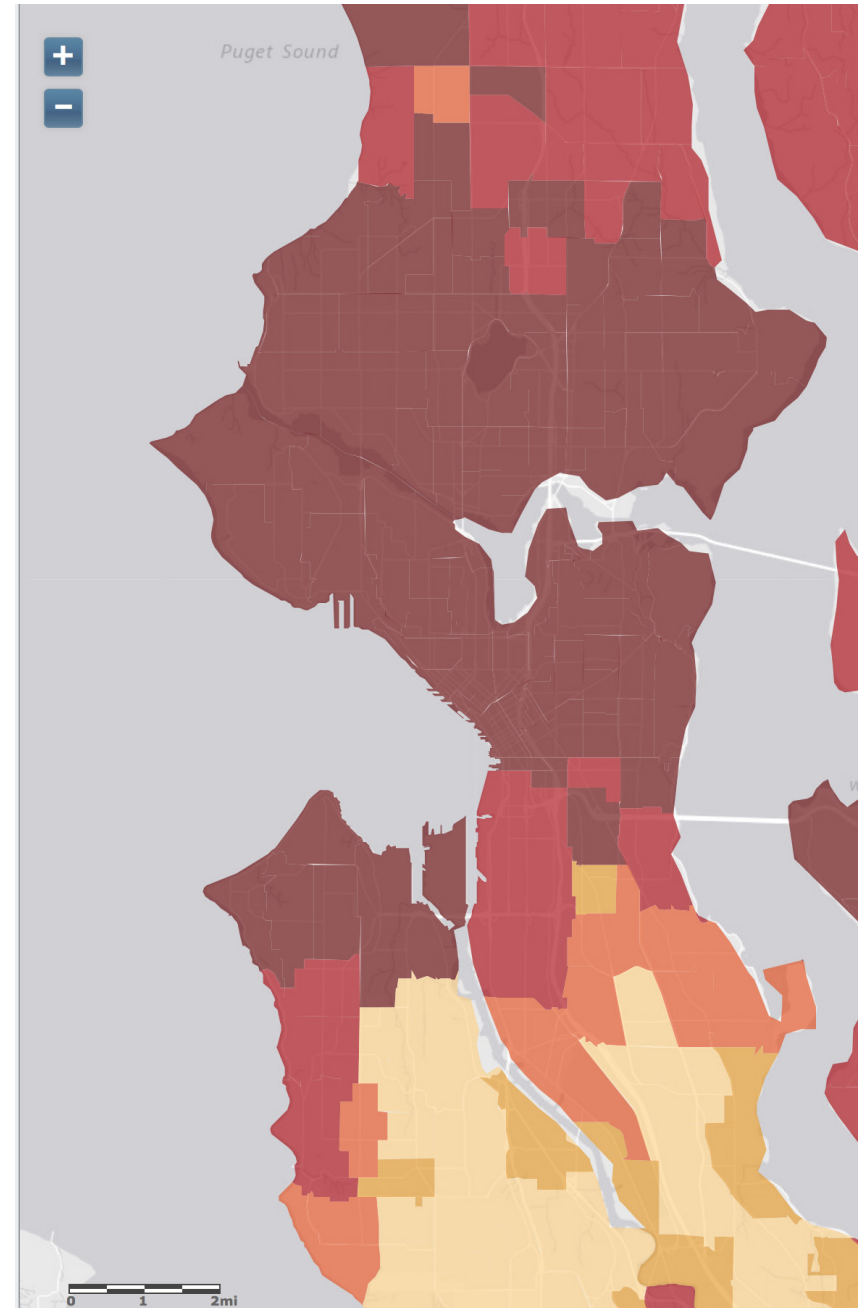
"Equitable growth will be achieved when Seattle is a city with people of diverse cultures, races and In- comes and all people are thriving and able to achieve their full potential regardless of race or means....taking into account past history and current conditions, so that quality of life outcomes such as access to quality education, living wage employment, healthy environment, affordable housing and transportation, are equitably distributed for the people currently living and working there, as well as for new people moving in."

-Seattle 2035 : Growth and Equity "Analyzing Impacts on Displacement and opportunity related to Seattle's Growth Strategy"

ACCESS TO OPPORTUNITY

Living within walking distance or with transit access to services, employment opportunities, amenities, and other key indicators of social, economic, and physical well-being.

The following map represents levels of access to opportunity (**very low**, **low**, **moderate**, **high**, and **very high**; Map 1 Right) as defined by a series of 20 indicators that represent five major categories of opportunity : Education, Economic health, Housing and Neighborhood Quality, Transportation/ Mobility, and Health and Environment.



Data from Puget Sound Regional Council Opportunity Index

HEALTHY VS UNHEALTHY

As part of the analysis, members of these communities helped create maps that further highlight the need and importance of Living Landscapes in this part of Seattle.

HEALTH IMPACT ANALYSIS

Studies and research done by Just Health Action, and Duwamish River Cleanup Coalition/Technical Advisory Group; conclude that some of the surrounding communities along the Duwamish Valley have the biggest gaps in Environmental Health relative to the rest of Seattle. While there are independent organizations and other agencies focused on improving these areas, it also provides SPD an opportunity to implement new design and equitable development strategies.

Figure B1. What makes South Park **healthy** and **unhealthy**?

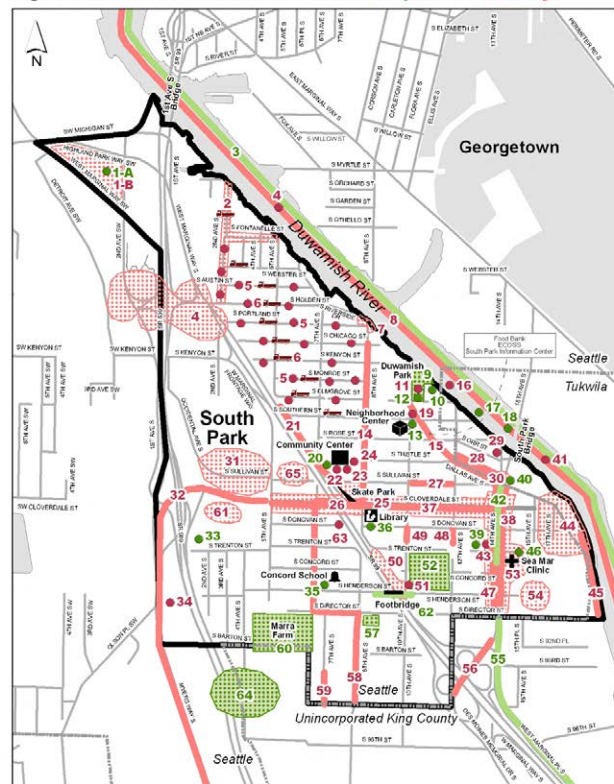
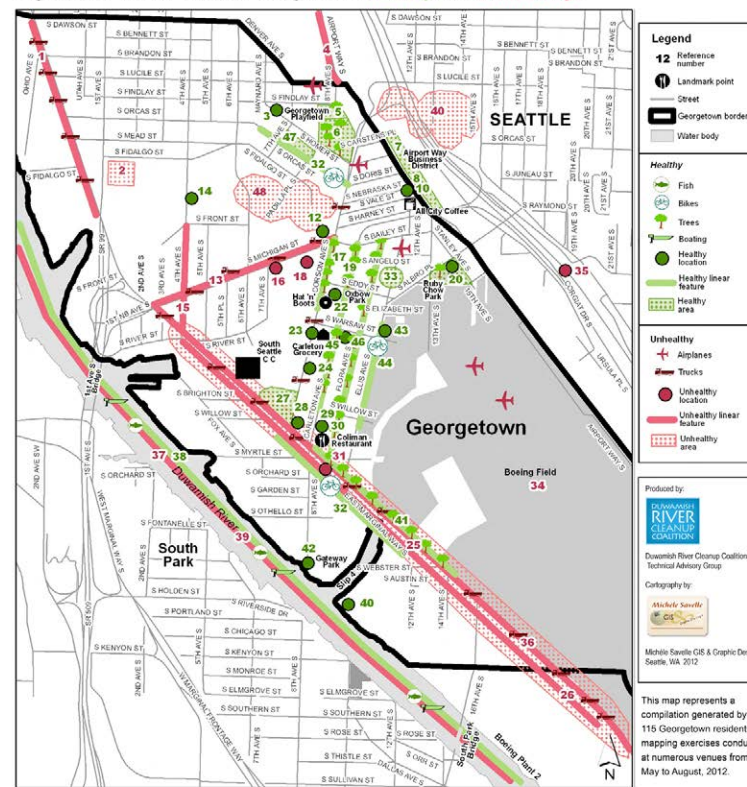


Figure B2. What makes Georgetown **healthy** and **unhealthy**?



- Just Health Action : Duwamish Valley Cumulative Impact Analysis: Using Science to Influence Decision-making in, Seattle, Washington

CONCLUSION

This research indicates that there is a direct correlation between open park spaces and what is associated with healthy amenities.



A dark blue circle containing the text 'CH. 5.0' in white.

CH. 5.0

RECOMMENDATIONS

The recommendations made in this chapter are based almost entirely on the suggestions and input from the different individuals we spoke to within and outside Seattle Parks and Recreation. Putting these thoughts and suggestions to action will effectively move Seattle Parks and Recreation closer toward their goals as well as create forward progress in project efficiency and transparency.

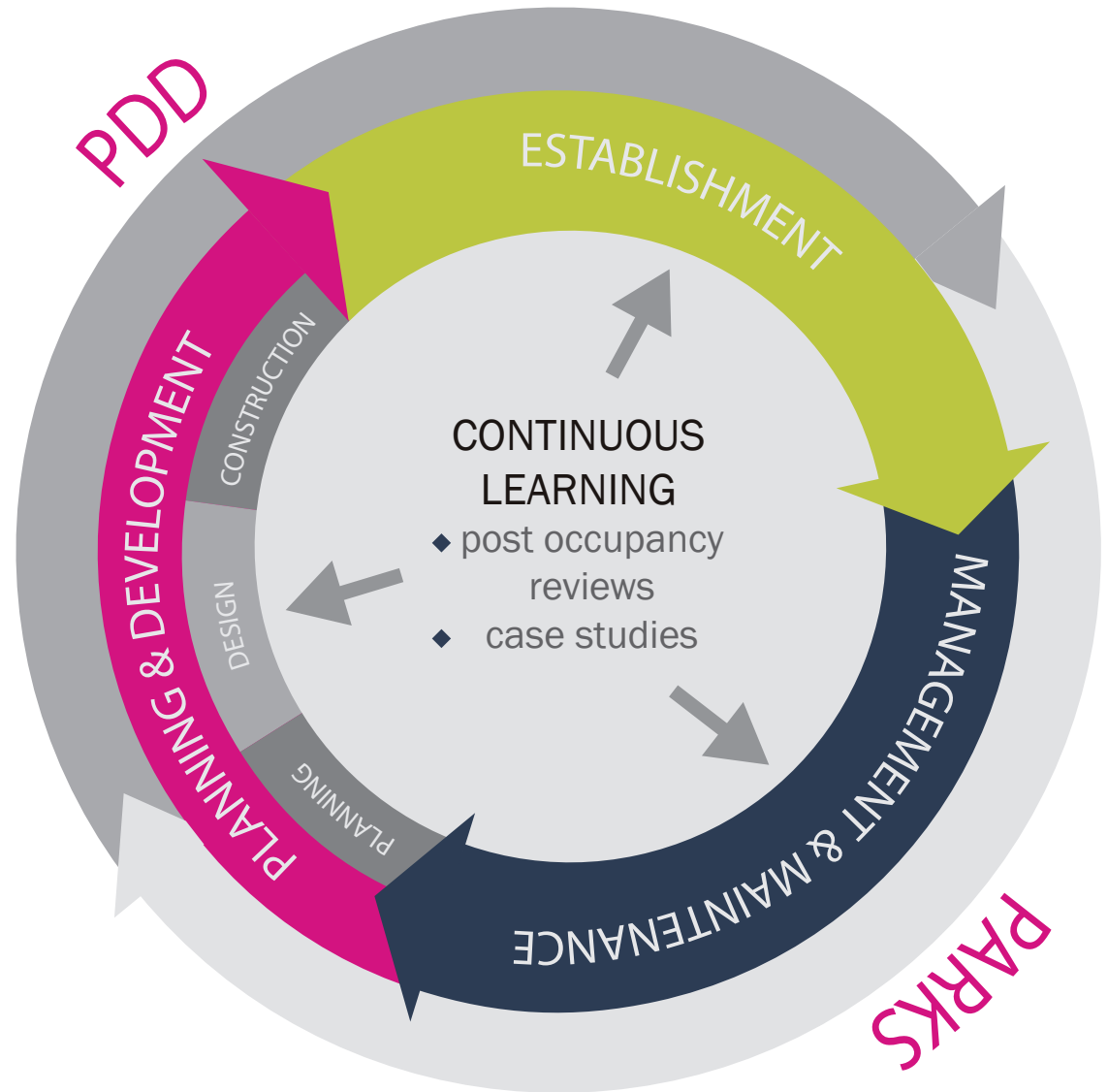
RECOMMENDATIONS

PROPOSED INTERNAL PROCESSES DIAGRAM

Processes within a department are critical to its operation and success. In order for us to develop a working method of communication and effective work processes, we had to talk to a number of organizations and individuals throughout the process of the internship. In total, we spoke to 48 different individuals on their experiences and perspectives within the department.

PLANNING & DEVELOPMENT

Mandatory Members of the Planning and Development Phase should always include the project managers, senior gardeners and maintenance leads and members. After project completion, design intent and maintenance strategies are not relayed to management and maintenance teams, often resulting in uninformed decisions. Such decisions may include the removal or alteration of planting beds due to a lack of resources or project comprehension.



PROPOSED ESTABLISHMENT PHASE

The proposed solution to the epidemic of lost landscapes is to find funding of an Establishment Phase. This is a phase during the project where project managers and design consultants will work with the management and maintenance crews, bridging the gap of communication in order to ensure a design realizes its full potential. The design consultants should be required to provide maintenance plans and the design consultant's relationship to the park and Maintenance teams should be ongoing and continuous. The proposed Establishment Phase should be baked into the contract for a certain number of years depending on the project.

MANAGEMENT & MAINTENANCE

It is important to find ways to allow maintenance workers to find value in their work. The disconnect between planning and development and the management and maintenance teams leads to confusion during a project regarding what should be done at the site and why. This creates a working environment where members of the team possess no attachment or relationship with the park. Planting beds are pulled out and converted to lawn due to a lack of understanding of the purpose of those beds, as well as a lack of resources and time to care and maintain the Living Landscape. Combating this issue can be accomplished by finding ways to improve the skill-set of maintenance workers. Programs such as D.I.R.T Corps, an organization that focuses on education of the environment, could be part of the training for maintenance staff. Also, simple practices like studying a "Plant of the day," demonstrating to workers the ecological benefits of different plant material and why they should be caring for them.

WESTCREST PARK

BEACON HILL, SEATTLE

CURRENT USE



ADDRESS

9000 8TH AVE. SW

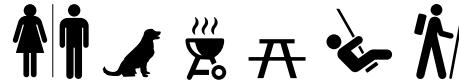
SIZE

8.4 ACRES OPEN SPACE/PATHS

DESIGNER

SITE WORKSHOP

PROGRAMMATIC FEATURES



A very open landscape featuring an off leash dog area on one side, as well as large open, meadow fields and play areas overlooking the Seattle city skyline.



BEST FEATURES



SWALES

The minimal planting design of the swales are effective at minimizing weed pressure. The slopes of the garden, as well as the placement and material buffer between human circulation prevent trampling and help maintain its health.



MEADOW

The large open fields are improved through the seeding of meadow species in order to create a large natural looking field. The vegetation allows for pollinators to use the site and the design element requires very minimal maintenance and attention.

STRUGGLING FEATURES



HILL SIDES

Due to the grade of some of the hills, the slides located in these areas may begin to present a CPTED issue. It is difficult for parents to monitor children at play and the area does harbor sleepers in the landings.

PLAY AREA PLACEMENT

The play area is far away from both the parking lot and the comfort stations. However, it is placed to provide a view of the park and the Seattle skyline. The large open nature of the park makes this play area feel particularly safe.

RECOMMENDATIONS

| TOPIC AND DISCUSSION | CURRENT STANDARD OR BMP | CONSIDERATION |
|---|--|--|
| Meadows: Meadows could be mowed once a year or not at all (West Seattle Reservoir). | BMP 5.8.2 - Section 2 currently reads: “One mowing every 2 to 3 years may be sufficient for woody brush control. Firebreak areas may require frequent mowing to maintain. Mowing heights should be approximately 4 to 5 inches or as determined by species composition. Preserve native herbaceous plants such as wildflowers or bulbs.” | Mapleleaf and West Seattle Reservoir had some issues in the past with crews mowing several times a year, suggesting that the BMP is up-to-date but not implemented in several cases. |
| Meadows: Meadows will require spot treatment of invasive plants (Mapleleaf). | “ Scotch broom and other noxious weeds colonize many meadow areas, especially if the vegetative cover is weak or not intact. If invasive brush is a minor problem, hand grubbing or spot spraying with a broadleaf herbicide are both options. When invasive brush is a major problem, it may be necessary to mow the meadow on an annual basis. Mowing should be timed to avoid disturbing wildlife. Spring should be avoided to allow protection for ground nesting birds. The site should be monitored for other wildlife activity before mowing occurs. Mowing should also be done before seed set of the targeted species. Mowing heights should be a minimum of 6 inches high to prevent excessive grass clippings and to minimize exposing bare ground. “ | None. |

RAW NOTES

NOTES BY KAREN GALT:

K. Galt notes from Jefferson Park Site Walk for Post Occupancy Evaluation 7-28-2016

Successes:

- Strawberry bush becoming good screen around water utility fencing by CC
- Turf looks good right around play area, high use area
- Ornamental grasses seem to handle variable weather/climate conditions better than shrubs over time
- Manzanita is establishing well in several locations, and Mexican Feather Grass in most locations it was used
- Soft mow edge around rain gardens and generally otherwise leaving the rain gardens alone (some weed pulling for invasives) seems to be working well for plants and birds.
- Soil mix on lid area seems to be able to hold enough soil moisture for irrigation to be effective when working
- Bioretention areas were seeded rather than plugs or pots for sedges; they have filled in very well.
- There is activation throughout the park with pathways and destinations so all parts of the park are activated and used, which is helpful in keeping it feeling a safe and comfortable environment and deters crime

Observations/Issues for future design consideration:

- Suckering type rosas are difficult to keep in intended shrub bed areas
- (not part of 4-yr old project, but more recent): slopes around spray park are struggling both in shrub beds in terms of good plant coverage, and turf in terms of irrigation; drip irrigation gets cut during maintenance activities or exposed by new travel routes through shrub beds; longer miscanthus (?) grasses seem to be doing well
- Fully consider the actual weather/climate/microclimate environment in selecting plant palette – look for unexpected wind exposure for example (Vine maple in full sun example, irrigation is working, but trees are still stressed in full sun)
- Slope shrub bed maintenance could be improved with herbicide, but proximity to play area limits options
- Persistent issues with pump functionality, not enough of this type in our system to be fully able to troubleshoot and maintain which means specialists are needed to help; parts ordering can take time
- A drinking fountain closer to the playfield is desired by community
- Minor encampment issue on NW facing slope, out of sight lines from park and adjacent streets
- Park CS interior paint non-standard colors (even though picked by Parks Architect); eventually will become Parks standard colors as graffiti is painted over.
- Illegal vehicle access to park interior is ongoing issue; has fairly permeable edges in multiple locations → could look at specific entry points and ways to add barriers; SPU is going to add signage specifically about sensitivity of lid area to vehicles
- No strong sense of main entry; that was planned for via CC expansion, but that timeline is unknown
- Solar panels have had issues (need more information on what)
- Limited graffiti around park, mostly near skate park idea of formalizing graffiti wall as rotating artist graffiti art wall had been discussed during design but determined not to pursue



RECOMMENDATIONS: REDEFINE BEAUTY IN THE LANDSCAPE

SHIFTING THE AESTHETIC OF BEAUTY

“Just as knowledge of art history and theory should inform aesthetic appreciation of art, knowledge of natural history and ecological theory should inform aesthetic appreciation of nature”

– Jason Boaz Simus, *Disturbing Nature's Beauty: Environmental Aesthetics in a New Ecological Paradigm*

We must shift our perception of a beautiful, cared-for landscape from that of a manicured lawn to that of a naturally-occurring, naturally-evolving landscape

RECOMMENDATIONS

EXISTING ORDINANCES

ORDINANCE 122311

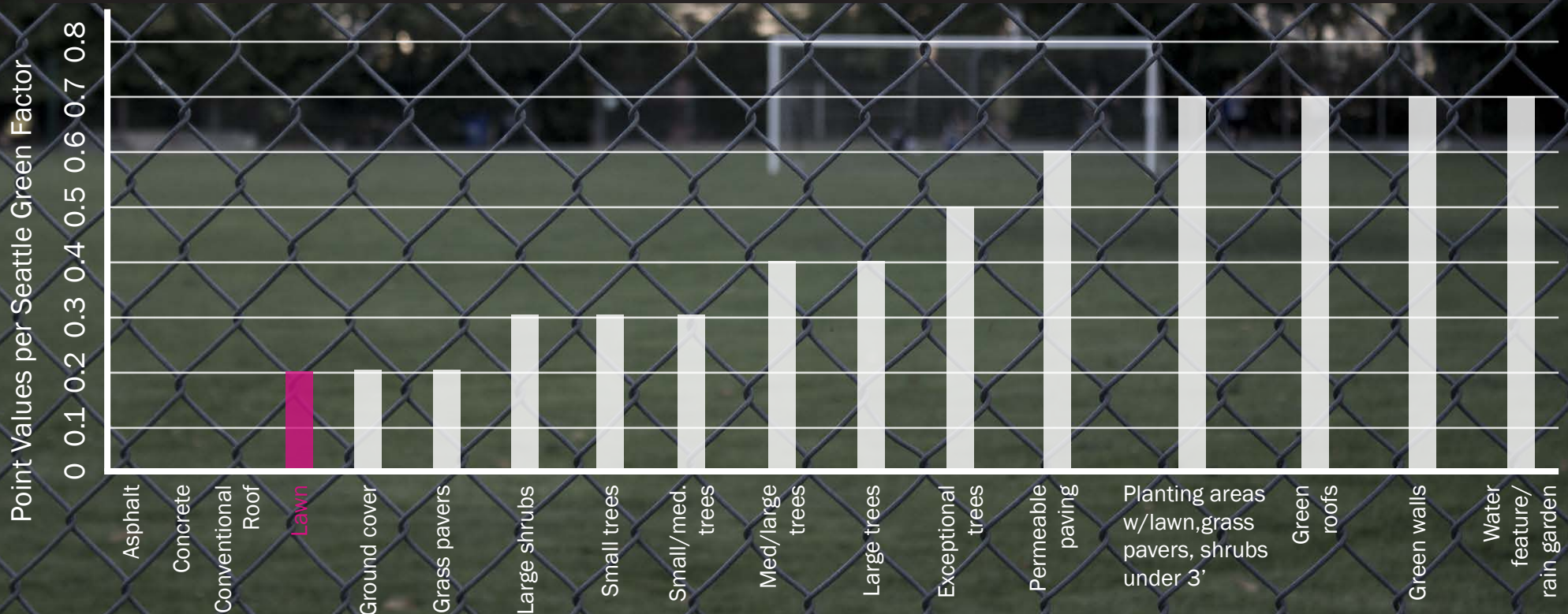
“City of Seattle Ordinance 122311 requires the equivalent of 30% of a parcel in the commercial zones to be vegetated by using the Seattle Green Factor. The Green Factor encourages maximizing the “vegetation potential” of the rights-of-way through planting of layers of vegetation and larger trees in areas visible to the public..”

Seattle Green Factor, 2007

CONCLUSION

Based on the existing City of Seattle Ordinance, we can observe that there is a clear preference in the type of landscape we create. “Maximizing vegetation potential through layers of vegetation” is an encouragement brought forward by the city, therefore, it is very reasonable for Seattle Parks and Recreation to attempt to abide by the suggested recommendations.

The graph also shows that Lawn is determined to be the lowest of ecological value and the least amount of points are awarded based on the creation of lawns.







CH. 6.0

APPENDIX

This section moves deeper into the details of the Functional Assessment section of the document. This section is still a Rough Draft.

INTRODUCTION

With the increase in urban sprawl and urban development, open green space becomes more and more sparse which in turn, increases the value and importance on the matter. With more than 80% of the country living in urban areas (Green Cities:Good Health, 2012), it is vital that the natural environment is integrated in our urban setting to both accommodate the people and animals that live in them. Nature in these settings can include places like parks, gardens, trees, small landscapes and natural areas, all of which provide immense benefits.

There has been an increasing amount of research demonstrating the immediate benefits that vegetative cover can have on the environment and people. These benefits can be broadly categorized in improved air and water quality, improvement to microclimate, increased vitality of the neighborhood which includes walkability, safety and comfort, as well as reduced urban heat island effects and many more (Green Cities: Good Health, 2012).

People have begun to quickly understand the importance and benefits of having a green city. Greenery serves the local community through improved health and also has the opportunity to create successful habitats for animal species. With increasing development, it is important for the Seattle Parks Organization to prioritize and maintain our green spaces and vegetative cover to its highest standard in order to fully realize the Seattle Parks mission of providing opportunities for play, education, contemplation, community and the promotion of stewardship towards the land.

EQUITY AND DISTRIBUTION

Introduction

When it comes down to green space in cities, there is a current issue of equity and distribution across the landscape. With the increasing importance of green space and all of its range of benefits, this becomes a large problem. Although generally the U.S is one of the most diverse populations compared to the rest of the world (Green Cities: Good Health. 2012), Seattle's population of non-white residents is only 30% (Seattle Race & Ethnicity Quick Statistics, 2010). Typically, parks are often located in neighborhoods of higher income and the parks that are located in lower income neighborhoods are underserved and lacking attention and resources (Crawford et. al., 2008). Expanding these natural facilities to a larger scope of ethnic groups, races and ranging socio-economic classes will greatly improve the issues of equity and access.

FUNCTIONAL ASSESSMENT

Ecological Benefits

Biometric solutions - urban environment functions as much like the "natural" environment as possible. Creates Healthy people, Healthy environment and Strong Community: **HEALTHY HEALTHY STRONG!**

Designing for biometric solutions involves closely examining the biological structure of forest ecosystems, and replicating ecosystem function through design solutions (Young, 101). Replicated biological forest structure includes features such as the "amount and density of plants, their spatial configuration, species mix, and age profiles" (Tennessee, 1). Ecological systems have been continually evolving for the most efficient and effective practices for millennia, creating resilient, diverse environments (Young, 100). Biometric solutions that mimic ecological functions reduce resource input, especially when compared with the input needed to maintain turf or lawn areas, which do not occur naturally in the Pacific Northwest. Furthermore, biometric solutions are essential in supporting the health of urban residents, the urban environment, and resilient local, regional, and national economies and ecosystems.

Site-appropriate vegetation plays a key role in biometric design, as it forms the basis for re-creating the layers of an urban forest to perform a multitude of ecological functions. These include: increasing and supporting biodiversity through habitat provision, supporting the hydrological system, increasing and supporting air quality, reducing the urban heat island effect, aiding in erosion control, building and maintaining soil quality, and creating and maintaining food and pollinator pathways.

Increasing and supporting biodiversity through habitat provision

Urban development transforms landscapes, as native habitat is replaced with human infrastructure. Habitat destruction lessens an area's ability to support essential ecological functions, affecting stormwater attenuation and water filtration, air quality, erosion control, soil quality, pollinator pathways, and the urban heat island effect, and has direct effects on aquatic, land, and avian species alike. The loss of environmental functions has expensive short- and long-term costs and the potential to negatively impact human physical and emotional health. The provision and maintenance of healthy, diverse native and naturally-occurring vegetation is essential in mitigating the fiscal, environmental, and social costs of habitat destruction.

Native and naturally-occurring woody plants are chosen to thrive in an area's particular microclimates such as Seattle's urban core, shorelines, or suburban streams; thus, they typically have higher rates of survival and lower maintenance costs. These plants are adapted to local site soil, climate, and grading conditions, and many have adapted natural defenses against pests (Native Plants for Wildlife Habitat, 2). For example, vegetation communities planted with perennial plants may spread naturally by seed, requiring less habitat disturbance and cost associated with planting (Korner et al., 24).

Because of their hardiness coevolution with other species in a micro-region, native and naturally-occurring woody plants are able to thrive and provide stable habitat for a variety of birds, amphibians, mammals, insects, fish and other creatures. Native plants and naturally occurring plants are often excellent sources of forage, refuge, and nesting habitat for aquatic and terrestrial wildlife and birds (Native Plants for Wildlife Habitat, 1).

Supporting the hydrological system: stormwater attenuation and water quality

Vegetation is essential for stormwater mitigation and water filtration within a site, as it functions across multiple vertical scales in collecting and distributing excess water. Shrubs and woody plants are often major components in a storm water mitigation system, and are excellent tools for a systems-based approach to stormwater mitigation and treatment. Root networks are able to slow water flow rates down as it passes through the soil, giving water "enough time to absorb into the ground instead of flowing into storm and sewer drains", decreasing the potential for flooding and the number of pollutants entering nearby waterways and the ocean (Young, 85). Native, absorbent vegetation may be used at the site-scale to impact larger regional watersheds and systems.

Federal, state, and local governments have been increasingly instituting low-impact development technology that features woody vegetation, such as green roofs, rain gardens, vegetated bioretention systems, and other means of watershed restoration developments as "the preferred approach to stormwater management in land development and redevelopment" (Clar et al., abstract). These low-impact development technologies feature native woody- and nonwoody vegetation as key components in filtering and cleaning stormwater. Sufficient and appropriate vegetation significantly reduces maintenance and labor costs.

Woody vegetation may be planted to offer diverse services and shade coverage to water treatment sites. It is important to include a mixture of vegetative species that cover the vertical structure of a forest ecosystem: the understory, lower-canopy, mid-canopy, and upper-canopy (Young, 92). A myriad of species in the shrub and seedling layer is important, as some thrive in sun and bloom earlier, before the tree canopy emerges overhead, while others are shade tolerant and prosper over the summer months. The canopy vertical structure, or the top layer of a forest, provides shade, keeping the forest floor moist and cool and allowing for healthy waterways. These two vertical structures play major roles in maintaining habitat health by keeping waters cool, banks stabilized, and loose sediment in check, providing optimal habitat for many aquatic species.

Carbon sequestration and improvements in air quality

Trees and vegetation absorb gasses and pollutants through their leaves during the photosynthesis process, helping to remove harmful contaminants in the air (Young, 84). Woody vegetation is especially important in carbon sequestration, as the amount of carbon stored in woody vegetation increases with its biomass (Leung et al., 177). The use of woody vegetation over grasses is especially important in carbon uptake, as the amount of carbon uptake increases with leaf longevity (Leung et al., 177). Typically, fast-growing species store more carbon before they reach ten years of age, while slow-growing species store more carbon over the long run (Leung et al., 177).

Woody vegetation is very effective in removing gaseous pollutants and particulate matters by dry deposition and wet deposition, as well as serving as an effective wind barrier to airborne particulate matter. Dry deposition refers to the “combined removal of particles from the atmosphere by gravity, Brownian motion, impaction and direct interception” (Leung et al., 177). Leaves, trunks, and branches hold airborne particles until they are washed away during rainfall, or absorb the particles via leaf surface stomata (Denloye, 3). Wet deposition includes wash-out deposition and occult deposition, as pollutants gathered on foliage, branches, and trunks are washed away with rain and snowfall (Denloye, 55). Additionally, “reduced wind-speeds in dense vegetation...have been shown to decrease particle deposition” into buffered areas (Setälä et al., 110).

The use of woody vegetation is much more effective than that of lawns and turf because trunks, branches and leaves are essential in carrying out dry deposition. Pollutant removal rate is based upon number and condition of stomata and foliage (Denloye, 55). In fact, “plants are more effective in particulate uptake if their branches are of more complex structure, or leaf and bark surfaces are rough or sticky. The structure and micro-roughness of their leaves also determine the patterns of particle deposition” (Leung et al., 177-178). Pollutants removed by woody vegetation include sulphur dioxide, nitrogen dioxide, ozone, nitric acid, ammonia, carbon monoxide, and other particulate matters under 10 Pm₁₀ (Leung et al., 178).

Studies have shown that “the ability of urban vegetation to remove air pollution is strongly associated with various parameters related to foliage” (Setälä et al., 110). Furthermore, vegetation planted in urban areas, buffering pollutant sources, are most effective in taking up air pollutants (Leung et al., 178). For example, a 15 meter-wide stand of birch trees (*Betula pendula* Roth) were planted around an open-cast coal mine in the Kansk Steppe, Russia. In one summer, the birch trees intercepted over 50% of the dust produced by the mine (Leung et al., 178). This illustrates the importance of woody vegetation in urban parks and public spaces, cleaning pollutant from streets, highways, automotive transport, and industrial production.

Efficient management is vital to the long-term contribution of woody vegetation in providing carbon sequestration and air pollutant uptake services. Management is necessary in maximizing the effectiveness in urban pollutant clearing and any additional carbon emissions due to decomposition of plant matter (Leung et al., 184). It should be noted that urban woody vegetation may cause increases in allergenic effects through pollen and fungal spores, and emit biogenic volatile organic compounds that may lead to ozone formation.

Reducing the urban heat island effect

The urban heat island effect describes the temperature difference between an urban space and the surrounding non-urban space (Qiu et al., 1307). Vegetation evapotranspiration “has great potential to reduce urban and global temperatures” by .5 to 4.0 degrees celsius (Qiu et al., 1307).

Today, 54% of the world’s population lives in urban environments. By 2050, it is estimated that 66% of people will live in an urban area (World’s population increasingly urban with more than half living in urban areas, 2014). The upshot in urban environment is simultaneous with a loss in vegetation and increase in hard, impervious structure that absorbs heat from the sun (Young, 21). Large amounts of heat are emitted from these hard, impervious structures, which consume and radiate solar radiations. Studies have shown that high densities of buildings and other urban structures, including paved surfaces, combined with characteristics of urban canyons, the production of anthropogenic heat, and losses in vegetation all contribute to an urban area’s heat island effect (Qiu et al., 1307).

The heat island effect “is considered one of the major problems in the twenty-first century posed to humans as the result of urbanization and industrialization of human civilization” (Leung et al., 174). Elevated urban temperatures hold a variety of negative social, human health and environmental effects, including discomfort and heightened threats of heat stroke and respiratory illnesses to citizens. Urban heat island effects also produce a heightened dependence on fossil fuels, as the need for cooling is increased (Leung et al., 174). This creates a positive feedback loop in which “the extra heat and energy outputs create higher levels of pollution, increasing carbon dioxide within the atmosphere” and causing air temperatures to rise (Young, 33).

Increasing the amount of woody vegetation in urban areas is proven to have reduced a city’s urban heat island effect and improve the urban microclimate, especially by reducing air temperatures in the summer (Qiu et al., 1308). Woody vegetation is able to reduce an urban area’s heat island effect through evapotranspiration, shading, and wind shielding (Young, 95). The leaves of woody vegetation shade areas below them and reduce the emitted levels of solar radiation (Young, 95). Although dependent on tree type, the amount of radiation transmitted “ranges from 6% to 30% in the summer and 10% to 80% in the winter”, greatly reducing the temperatures of below-vegetation surfaces throughout the entire year (Young, 96).

Because woody vegetation reduces the amount amount of energy used in structures, it helps reduce the level of greenhouse gasses entering the atmosphere (Young, 84). For example, a 2012 study in urban heat island effects was conducted in Everett and Seattle, and determined that the temperatures in Everett were lower largely due to the city’s increased vegetative cover (Young, 63). Studies have shown that “installing a green roof on a building provided savings in an annual and peak energy consumption” (Qiu et al., 1311). Total energy consumption of the studied building was reduced by 1%, with a 6% reduction when cooling the building and 0.5% reduction when heating it (Qiu et al., 1311).

Erosion control and soil quality: building, permeability, and remediation

Urban spaces are “associated with decreased soil-mediated ecosystem services, including storm water runoff mitigation”, erosion control, and soil aeration (Chen et al., 329). The urban environment is particularly prone to erosion issues. The combination of a lack of vegetation and prevalence of impacted and impervious surfaces in the urban landscape causes increased runoff, in turn leading to rapid slope degradation. The installation of woody vegetation is a very effective tool in controlling erosion, as roots stabilize soils and also contribute to reducing wind erosion and dust emissions (Leung et al., 178). In addition, it effectively strengthens the quality of soils and inhibits landslides (Myers, 1). Vegetation installment may function in mechanical and hydrological forms to “manage erosion and protect slopes [and] is relatively inexpensive, does not require heavy machinery on the slope, establishes wildlife habitat, and can improve the aesthetic quality of the property” (Myers, 1).

Mechanical contributions to inhibiting erosion include “physical interactions of either the foliage or root system of the plant with the slope” (Myers, 12). Hydrological mechanisms include “processes of water use and movement in the slope when living plant materials exist in the soil” (Myers, 12). An installment of mixed vegetation provides surface soil structure cohesion through fiber reinforcement of near-surface soil and by “binding soil structure together into a larger unit through tap or lateral root networks” (Myers, 14).

Quality soil structure is essential to ecosystem health. Quality soil contains a balance of minerals, gasses, water, organic matter, and microorganisms (Young, 89). Vegetation plays an essential role in maintaining this balance, as it returns organic matter back into the soil and absorbs certain contaminants in the groundwater. Roots impact soil moisture through transpiration, aiding in decreasing the amount of contaminants in the soil (Morris et al., 691). As discussed earlier, roots provide aeration and soil permeability, helping to stabilize and slow the flow of water. As roots develop, they produce channels in the soil, making “pathways for soil gas transport as the roots shrink or decay, increasing the value of permeability” (Morris et al., 691).

Proper soil permeability is important in maintaining a biological balance that is essential to soil health and in maintaining a clean, replenished groundwater system. “Many urban waterways suffer from excess nitrogen (N) and phosphorus (P)” high enough to contribute to water-quality issues, leading to undesirable conditions harmful to human and ecological health such as “lower water clarity and oxygen levels, bad odor and taste, and the loss of desirable species” (Nidzgorski et al., 2016). Urban woody vegetation has been shown to reduce nutrient leaching into groundwater systems.

Trees and other woody vegetation species have been shown to differ from lawn and turf in that they are more likely to affect nutrient cycling, as “differences in nutrient cycling between trees and grasses are well documented in tropical savannas, where trees create ‘fertile islands’ with higher soil carbon C, N, and P in the sub-canopy soil than in open grassy areas, even in tropical savannas where the trees are not symbiotic N-fixers” (Nidzgorski et al., 2016).

In a 2016 study comparing the nutrient uptake between deciduous trees, conifers, and turf grasses in Baltimore, MD, found that “trees in grassy areas reduced P leaching into groundwater, with lower leaching under deciduous than evergreen trees” (Nidzgorski et al., 2016). The trees may be reducing phosphorus levels by increasing phosphorus storage or reducing phosphorus inputs from “atmospheric deposition, soil mineral weathering, and pet waste” (Nidzgorski et al., 2016).

The creation and maintenance of food and pollinator pathways

Pollination serves vast ecological and commercial values; agriculturally, pollination may directly serve commodity production, indirectly contribute to crop propagation, or contribute through a variety of food-chain relationships (Status of Pollinators in North America, 22). For example, “alfalfa seed, a bee-pollinated crop with an annual value of \$109 million (direct effect), is used to produce hay for livestock forage that is valued at \$4.6 billion per year (indirect effect)” (Status of Pollinators in North America, 22). In fact, United States honey bee pollination has an estimated value of 150\$ million, \$1.6-5.7 billion, \$9 billion, and \$18.9 billion (Status of Pollinators in North America, 23). Pollinator-dependant crops that are in particular danger if pollinator numbers plummet include cantaloupe, almonds, and squash; in fact, these crops require an increased need for pollinators, as their production has “nearly doubled over the last two decades” (Status of Pollinators in North America, 27).

However, it is harder to assign an estimated financial value on the ecological services that would be lost if pollinator species were to severely decline. The loss of pollinators would result in a variable loss of vegetative species that in turn “contribute to many ecosystem services of value to humans, such as water filtration, carbon sequestration, and flood and erosion control (Status of Pollinators in North America, 23).

The decline of pollinator species is gaining ground as one of the most pressing ecological issues of our era. Over the past 25 years, wild pollinator populations have declined in Asia, Europe, Central and South America, Australia, and Africa (Status of Pollinators in North America, 29). Nearly 400,000 species have plant-pollinator interactions, including those that produce human crops and provide sustenance to a myriad of birds, animals, insects and bugs (Status of Pollinators in North America, 16). Pollination is a “mutually beneficial interaction” as “pollinating animals receive some form of nutritional ‘reward’ for visitation and pollen delivery” (Status of Pollinators in North America, 16). In fact, pollen itself often serves as the primary food source for larval bees and is “an important source of protein for some flies, butterflies, birds, and bats” (Status of Pollinators in North America, 16). Some plants, such as Yucca, rely exclusively on one particular species of pollinator for reproduction, in turn providing that pollinator with an untempered source of pollen or nectar. Because so many species rely on pollinators for survival, their decline is a “form of global change that actually does have credible potential to alter the shape and structure of the terrestrial world” (Status of Pollinators in North America, ix).

Pollinators are most affected by global shifts, and as the world experiences as an increase in urban environments, habitat fragmentation and loss are significant threats to pollination success (Harrison et al., 879). The “inhospitable matrix” of the urban environment’s impermeable surfaces presents changes and reductions in pollinator populations and foraging behavior (Harrison et al., 879). As certain plant species rely on pollinators for reproductive success, the loss and fragmentation of viable pollinator habitat may have drastic consequences on world biodiversity. Studies have shown that “pollinators will avoid traveling to smaller, more isolated resource patches or will otherwise alter their visitation behavior in order to offset costs in time and energy” (Harrison et al., 887). Thus, the importance of maintaining flowering vegetation in parks around the city is imperative to the health and survival of vegetative species that depend on pollinators for reproduction and the pollinator species themselves.

Cultural Benefits

An opportunity to foster work and learning

Research has shown that areas that are able to incorporate nature can assist in remediating mental fatigue and help restore focus (Krueger; Flora, 2014). The result of this leads to a level of higher productivity in the classroom and in the workplace which demonstrates the power of creating lush and full planting beds within the parks. A lot of this information stems from Kaplan's (1995) attention restoration theory (ART), which discusses the aspect of recovery from mental fatigue.

The simple act of being able to simply look at nature and be in a natural environment can quickly promote recovery from stress (Shibata, 2004). Experiencing the natural world by looking out of a window of an office for example, can help facilitate productivity, job satisfaction and help workers stay more attentive. College students in dorms have demonstrated that having natural views from their windows improve their test scores and increase their capacity for attention and effectiveness (Krueger; Flora, 2014). With this information in mind, improving and adding to our planting bed inventory in the Seattle area is an investment in our future through students, as well as the livelihood of our workers.

This framework could foster the opportunity for the Seattle Parks and Recreation organization to promote these planting beds in order to create a happier, stress free and productive community. Common practices that could utilize these findings would be to ensure that our parks are in top condition. Having top of the line Living Landscapes will add incentive for allowing more opportunities for outdoor classrooms and outdoor learning. By fully utilizing our planting areas, families will be enticed by the pristine quality of our parks which will facilitate more adult-to-child interactions and creative play which is vital towards the development of children (Krueger; Flora, 2014), which demonstrates the justification towards the privatization towards successful Seattle Parks landscapes.

Benefits to the community through engagement

By investing in our existing planting beds and vegetative cover in our Seattle parks, that demonstrates to the public our willingness to prioritize the community's health and well being. A well-managed landscape is one of the most vital features in terms of promoting the development of social ties (Wolf; Rozance, 2013). This research has begun to demonstrate the power that physical features such as planting and trees can have on activating space to facilitate social contact and vital neighborhood spaces.

These findings create a strong justification towards why the Seattle Parks and Recreation can do everything they can to bring our planting beds up to its highest standard. With specificity towards trees, it has been found that the location and density of trees has a correlation to the amount of time people spend in an outdoor setting. Along with that, adults that have a higher exposure to green common spaces such as parks, have a stronger sense of the community in terms of other residents, as well as having a strong connection and tie to the neighborhood (Wolf; Rozance, 2013). Strong community relationships dramatically increase the likelihood of residents working together and looking out for one another. This social bond creates a community that is less likely to exhibit crime or other undesirable behaviors which creates a much more livable and enjoyable experience for Seattle residents.

Job & Volunteer Opportunities

By investing our work into the highest quality of vegetation in parks, we are in turn, investing in our community. “Friends of” organizations are nonprofit organizations dedicated towards the stewardship of Seattle lands. This is proof that the passion towards ideal landscapes are a priority for a number of people and organizations. This creates a level of urgency and justification towards getting behind the “Friends of” organization and validating their work through support. Improving the planting conditions of our parks will give more incentive and motivation to our non-profits to continue doing their work and do their work based on the quality at which Seattle Parks and Recreation has set the standard for. With more attention towards the planting creates the potential for more work parties of stewardship of those lands which in turn fosters growth and stimulates community engagement within Seattle.

Emotional, Mental & Health Benefits

Alleviation of stress and mental fatigue through the environment

With the current structure of a high density and fast paced environment, it is very common for people to feel stress and mental fatigue. Fortunately, the cure is quite simple and it lies within our built environments and green spaces. These spaces offer an unbeatable opportunity for cognitive respite. The investment in high quality managed landscapes helps people restore their inevitable levels of stress. Green spaces restore and rehabilitate the mind to focus and in the end, perform better in the work, school and social settings (Wolf; Flora, 2010).

Commuting is a huge part of our culture and daily lives. Unfortunately, it is also one of the most stressful part of someone’s day. A study demonstrated that when a non scenic expressway is compared to a beautiful and managed route with more vegetation, the vegetative route was selected more than half the time despite the fact that that option took longer. Commuters reported feeling slightly more relaxed when they could look out and enjoy interesting vegetation. One of the easiest ways to reduce roadside stress is to incorporate thoughtful landscaping (Wolf, 2010).

Benefits to physical health and walkability

With the growth and development of technology, young adults and children are finding less and less ways to become engaged with the outdoor setting. With this issue, 65% of U.S adults are overweight with one third of that population being obese (Wolf, 2008). Although much of this is due to poor nutrition, the level of activity is also a factor in this issue. By creating an urban environment full of beautiful and walkable landscapes, people will become more motivated to step outside for more active living. Moderate exercise such as walking for 30 minutes a day can contribute to reduced risks of heart diseases, high blood pressure, diabetes, stroke and cancer. With this in mind, why not invest in our outdoor spaces to make them the most engaging, walkable and interesting to look at?

Safety and Security

One part of a city’s walkability can be determined through its safety from crime and traffic (Wolf, 2010). A natural solution to this problem is to prioritize the pedestrian experience to the best of our capabilities. One of the strategies to accomplish this need is to have trees or mid-level vegetation as a buffer between traffic. “One study found a 46% decrease in crash rates across urban arterial and highway sites after landscape improvements.

were installed. Another study found that placing trees and planters in urban arterial roadsides reduced mid-block crashes by 5% to 20%,” (Wolf, 2010)

The anger and frustration often associated with driving can often lead to aggressive driving which has the potential to increase the chances of an accident (Wolf, 2010). A more pleasant landscape that drivers can escape to may be the solution that can offset the inevitable stress of commuting in traffic. With this in mind, it is important for us to integrate thoughtful landscapes in every possible area possible.

The mental benefits of play and adventure

With our rapidly changing world and access to technology, it is becoming more and more rare for children to be outdoors. Some schools are beginning to prioritize their lesson plans towards outdoor nature experiences to combat this issue, and this is the type of work that Seattle Parks and Recreation can be helping with. By ensuring that our outdoor spaces and management of Living Landscapes is at the highest quality, we are also ensuring success in our younger generations. Educational theory has demonstrated that contact with nature can improve a child’s ability to develop emotional, cognitive and spiritual connections to the environments around them. Educational theory also shows that nature can have a profound impact on their mental, emotional and social health through development of their imagination and creativity (Wolf; Flora, 2010). “A survey of architecture students, teachers, principals, and nursery school teachers found that 97% reported that the outdoors had been the most significant environment during their childhood,” (Wolf; Krueger; Flora, 2014). Natural areas have demonstrated an ability to increase productivity in computer tasks by 12%, helping in retaining focus and alleviating mental fatigue. Having a natural view outside of a dorm room window can help with test scores, attention, effectiveness and recovery from stress! This demonstrates the unprecedented power that managed landscapes can have on a child during their time of interaction and their future.

Meaningful placemaking and livable, comfortable landscapes

It all boils down to meaningful place making. We naturally gravitate towards natural environments and it is easy for us to identify and respond to them. Having a concrete sense of place makes people more inclined to take care of them and become stewards towards them. Place attachment and meaning all stem from a variety of situations and experiences especially dealing with outdoor settings like parks, green spaces, and natural environments. This emotional connection may assist in promoting environmental ownership and responsibility of one’s surrounding environments (Wolf; Flora, 2014). By successfully facilitating this connection, green spaces can gain the passion of individuals to protect and engage in a pro-environmental fashion (Vaske; Kobrin, 2001).

Greener neighborhoods in general with green common areas, can create social bonding between neighbors and improve a social setting (Kuo; Sullivan, 1998). This lends itself to creating a community that is comfortable with the spaces they interact in, as well as giving a community a chance to understand and gain confidence in their neighbors. Attachments very clearly form through interaction with said environment. People become attached to a peaceful and restorative green space because of its ability to offer mental and physical respite (Wolf; Flora, 2014). Individuals will form connections with places they use, therefore proximity to a green space is positively correlated to person’s ability to create a connection (Farnum; Kruger, 2005). Therefore, Seattle Parks and Recreation’s duty is then to create places with clear intention and care in order to facilitate the strongest bond and connection between people and landscapes.

Economic Benefits

Increased property values

Although there is a level of initial investment when it comes down to investing towards vegetation and Living Landscapes, there is the potential for that money to circulate back. It has been shown that having a presence of trees and vegetation in the yards increase the value of homes throughout the neighborhood (Wolf, 2010). The real estate market has also begun to show a direct correlation between how much people are willing to pay for a home and the proximity of that home to a park. Property values are typically higher if a park is nearby (Crompton, 2001). This demonstrates the immense value that people and home owners have towards open green space which lays down the need for these spaces to be managed to meet ideal standards.

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