

What Baking Cookies Can Tell Us about Teaching Sustainability [Experiential Learning, Applied Research, & Formative Evaluation]

Jonathan Rosenbloom
Drake University Law School



Today's Menu

1. Ingredients:
Content for a Course on Sustainability
2. Recipe:
Applied Research / Experiential Learning
3. Taste Test:
Formative Evaluation



Today's Menu

1. Ingredients:
Content for a Course on Sustainability



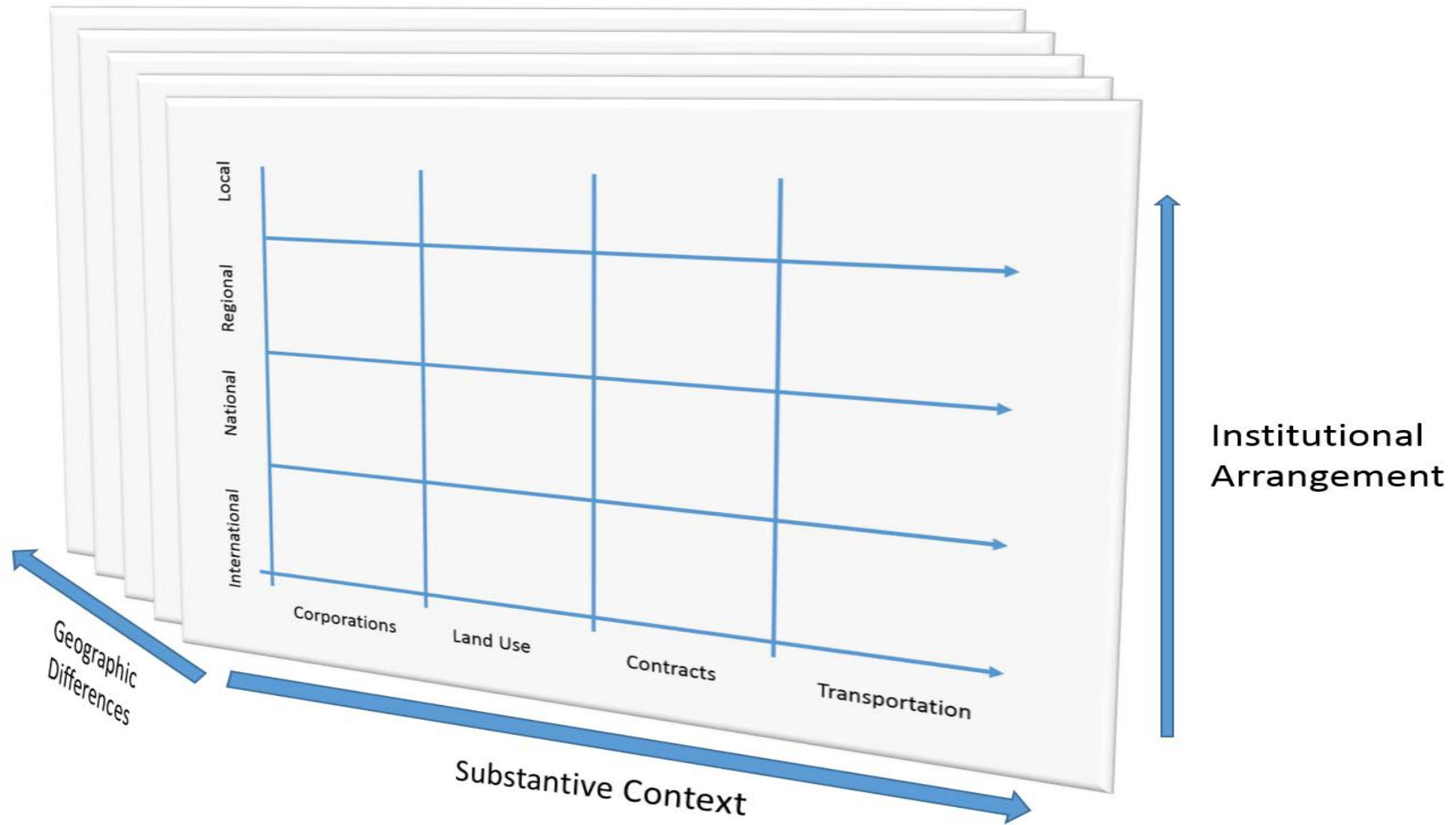
2. Recipe:
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Ingredients: Crossroads



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City as a Classroom

A. Identify Key Partners (Greater DSM Partnership) & Incorporate Regional and Existing Plans

- Capital Crossroads
- The Tomorrow Plan
- DART Forward 2035

B. Four Key Steps

- Identify of Local Challenges
 - Input / Feedback (ex. damage/costs from flooding)
- Review of Existing Local Laws
 - Input / Feedback (ex. reg. of parking lots or street design)
- Research Best Practices & Viability
 - Input / Feedback (ex. maximum v. minimum lot sizes)
- Draft analysis and ordinance amendment
 - Input / Feedback



Project Guide / Syllabus

13 10.7.14	Surveying the Landscape / Best Practices	Reading: <ul style="list-style-type: none"> Review the web site: http://libguides.law.drake.edu/Sustainability 	Due: Each group is responsible for researching one ordinance from another jurisdiction that is wholly or partially addressing the challenge that <u>your</u> are confronting. This is the beginning step of a key aspect of your report—finding a solution. As always, push the envelope—we can always pullback.	Karen Wallace, Reference Librarian and Professor of Law Librarianship
14 10.20.14	Surveying the Landscape / Best Practices <u>(con't)</u>		Due: Each group will give a 5 minute (MAXIMUM) presentation describing what other local government ordinances have been adopted relevant to your project and sustainability. We will have 10 minutes of discussion after each presentation to explore creative solutions you think may work . Your presentation should include how other cities are measuring sustainability in relation to your project and challenges. These local government ordinances will help support your final proposal. Thus, you should make sure they are well written and justified.	Christopher Draper , CEO, <u>Meidh</u> Corporation; Larry James, Jr. (01') , <u>Faegre Baker Daniels</u> LLP
15 10.21.14	Drafting Sustainability into Local Legislation	Reading: <ul style="list-style-type: none"> Douglas E. Abrams, <i>Plain-English Drafting for the Age of Statutes</i>, Michigan Bar Journal (June 2009). <p>A good reference for legislative drafting, but NOT required reading, is: Kenneth L. Rosenbaum, <i>Legislative Drafting Guide: A Practitioner's View</i>, FAO Legal Papers Online #65 (Feb. 2007) (on TWEN).</p>		Jeffrey D. Lester, City Attorney, City of Des Moines
16 10.27.14	Sustainability in Action, Topic Area 3: Corporations	Reading: <ul style="list-style-type: none"> William H. Clark, Jr., Larry <u>Vranka</u>, <i>The Need and Rationale for the Benefit Corporation</i> (Jan. 26, 2012) (edited version). 	Report: A rough draft of each group's Initial Report is due. This report should describe your area of research, its connection to the regional plans, the current local laws governing your area, why the laws are not sustainable, and what other cities are doing to address similar issues.	Adam Hammes, <u>Proximity</u>

Sample Student Slide 1: McDonald's in Clive, IA



- Local Code requires restaurants to provide 15 parking spaces per 1,000 sq. ft. floor area.
- 4,000 square foot fast food restaurant would have to provide a minimum of 60 parking spaces.
- Lot could be four or five times the size of the restaurant.

Sample Student Slide 2: The Shoppes at Three Fountains, West Des Moines, Iowa



- Developers often build parking lots over the minimum to respond to a perceived need.
- Local city code required a minimum of 448 parking spaces for the development, but 691 parking spaces were built.

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Formative Evaluation: Architecture Crits



Formative Evaluation

Sustainability & Its Application

Rubric for Final Presentation

The following rubric will establish the foundation for grading the Final Presentation. Be sure to understand the different categories prior to the presentation.

Category (Points)	5	4	3	2	1
Substantive Content Challenge	Clear evidence of research to develop the challenge. Information presented is accurate and is highly relevant to ultimate proposal.		Research to develop presentation is evident but less than adequate to clearly indicate the challenge. Information omits key information. Key facts missing.		Presentation lacks evidence of research. Information presented includes multiple significant omissions or inaccuracies. Content does not support claim that there is an issue.
Category (Points)	5	4	3	2	1
Substantive Content Law & Connection to Challenge	Clear evidence of understanding of existing law and its connection to the challenge.		Research to explain existing law is evident but less than adequate to clearly indicate the challenge. Information omits key information. Key facts missing.		Presentation lacks evidence of research. Information presented includes multiple significant omissions or inaccuracies. Content does not support claim that there is an issue.
Category (Points)	5	4	3	2	1
Substantive Content Proposal	Clear evidence of connecting proposal to challenge. Clear drafting of law and understanding connection between law and challenge. Creative solution.		Research and drafting of proposal is satisfactory, but less than adequate to clearly meet the challenge. Some creativity of solution is missing.		Proposal is particularly weak to meet the challenge. Connection between the law and its impact is limited. Creativity of solution is missing.
Category (Points)	5	4	3	2	1
Visual Aids	Visual aids are easy to understand and augment the presentation.		Visual aids are somewhat difficult to follow or seem a bit extraneous.		Visual aids are distracting or difficult to understand.

Informal Peer Review

Presentation Comments - Message (Plain Text)

File Message LexisNexis®

Ignore X Delete Reply Reply All Forward Meeting More ▾

Quick Steps: Sustainability C... To Manager Done Team E-mail Create New Reply & Delete

Move Rules OneNote Actions Mark Unread Categorize Follow Up Translate Find Related Select Zoom

From: [Redacted]
To: [Redacted]
Cc: Jonathan D Rosenbloom
Subject: Presentation Comments

Hey guys!

Good job, here are a few comments that I have.

Try to spend a little less time on your outline

Why are you using only trees...seems like using aggregate of all vegetation would provide a fuller picture of benefits of vegetation and green space. Perhaps only focusing on trees may be unsustainable itself. It seems like flooding/ stormwater runoff, soil erosion and climate control are all within the aggregation of all vegetation. I really think that the broader definition provides a better picture, but for the sake of the project you only want to focus on trees, which is fine, but because your presentation is about sustainability, I would imagine that you would want to adopt the broadest definition possible. Maybe avoid the conflicting definitions and just state how you will define it.

Statistics on benefits from trees needed: flooding/ stormwater runoff, soil erosion and climate control are all within the aggregation of all vegetation.

(You talk about fertilizers and air quality; make sure you say aerial application of fertilizers not just application in general.)

What is the criminal mass of trees necessary for those benefits? Why don't the trees that Des Moines have now create those benefits?

Graphics for your benefits

The wood background difficult to read

Bold the benefits from the code provisions that you are citing; and I don't think you need to read the code provision.

Do you need to present the various definitions of sustainability??? Highlight the values?
Triple bottom line: how do you value the trade-offs?

Timeline for Reforestation Program

Can you get a number of people who have gotten a permit for voluntary purposes? Why does voluntary permitting need to be mandatory? Tie this in with mitigation of dead, diseased, and dying trees.

Required mitigation of dead, diseased, and dying...well wouldn't that just encourage keeping dead, diseased and dying trees planted?...Which would be ugly and could encourage the spread of ash borer...seems like requirement would be problematic.

Ash Borer: How many Ash Trees in Des Moines? (You said it; make this more of a focus!) When will it spread? Is there evidence from a forestry expert that the Ash Borer will actually come to Des Moines?

Formal Peer Review

Written Peer Review for [REDACTED]

[REDACTED], you have done a great job so far in the presentation! You are very knowledgeable and passionate about the subject and your presentation and report convey that well. The people of the Des Moines Partnership also seemed to recognize and respect the depth of your understanding of the subject. Here are some recommendations to be taken as a grain of salt for what is already a very good presentation and report.

1. Was it clear from the presentation and report what the issue, challenge, or problem is?

The report and presentation make clear that agricultural runoff is an issue in Iowa. We are unclear how the problem of agricultural run-off compares with other sources of water pollution. (There are statistics on the EPA website that detail the percentage of waters that are not in impairment due to agricultural nonpoint source pollution). We are also unclear as to why agricultural pollution is a growing concern for Iowa. (Describe the changes in agricultural production methods, and how current production methods may have more water quality consequences). It would also be good to have specific water quality numbers about nutrient impairment on all of Iowa's rivers. (How many are impaired and what is the source of impairment, probably available on the DNR's water quality website). Most importantly, the presentation does not make clear why agricultural runoff is a concern for the city of Des Moines and why the Des Moines Partnership should take a leadership role in addressing it.

2. Was the connection between the issue, challenge, or problem and the current state of the law clear from the presentation or the report?

The report made clear that agricultural runoff is not adequately regulated in Iowa, however the report falls short as to why not. First, we think it is necessary to at least mention in passing that nonpoint source pollution is not regulated under the CWA. Second, it is also worth mentioning why voluntary programs are not working (not just because they are voluntary b/c some voluntary programs can be very effective, but maybe because there is a lack of funding available or because the funding is not enough to cover the lost production, etc. Whatever it is, make sure you have statistics to support this.) Finally, it is not clear why the current set back requirement is not sufficient. (You mentioned the exceptions, but swallowed the rule, but then mentioned that the vegetative buffer was a good program.)

3. Were the proposals or solutions relevant to the issue, challenge, or problem?

Proposals: set back requirements and best practices—Why are these the two areas you've decided to focus on and have they been successful in other states? How will these proposals be implemented? Who will manage them? Inspect? Penalties? Where will

4. How was the flow of the presentation and the report?

The structure of the presentation was organized logically and convincingly. From the beginning of the presentation, the presentation makes a clear argument about the issues associated with agricultural runoff. While the component parts are likely in the right spots, we think that time could be allocated better between them. We recommend that the first slide be more specifically focused on agricultural runoff and its costs as opposed to Iowa agriculture. Second, we recommend that you spend less time in the beginning part of the presentation about runoff, and more time in the legal analysis and solutions. A few quick facts about runoff would be sufficient, and then a more comprehensive look at the state of the law could be provided. It might be best to have the barriers to implementation be under a separate heading, because the barriers and the problems are two different things, but we were a bit confused during the presentation about their difference.

5. What other pointers could help the presentation or report?

It would be effective to have a cost-benefit analysis about regulating agricultural pollution. Also, the barriers to implementation each need to be overcome and you need to provide solutions for overcoming these barriers. Scale—the EPA has a regulatory scheme that covers the entire nation, why is the scale of just Iowa's waters problematic, also, there are unique ways that states address diverse water bodies at a local level. Check out CA, they have regional water quality boards that regulate agricultural pollution. Scientific Understanding—there are a lot of modeling programs that predict how much a change in a particular practice can help to reduce pollution, see if you can find some of these tools. Also, what about partnerships with other state and federal government/ and land grant universities about conducting research. Finally, politics—what sort of bedfellows can be created with this issue, potentially coalitions between cities, industrial users, and environmental groups to break the political stalemate. Maybe this is where the Partnership's role is! (Building this coalition)

6. What other aspects of the presentation or report did you find successful?

You were very good at answering questions after the presentation and you have a very strong understanding of the problem, and conveyed that well. You knew your presentation well and did not have to rely on the slides. Also, the powerpoint itself had great graphics, photos, and overall design.

7. What other aspects of the presentation or report did you find unsuccessful and why?

The presentation felt a little long, and as mentioned above, a lot of discussion could be taken out of the introduction. The slides are short enough in the introduction, but you had



FARMERS MARKET INCENTIVE PROGRAM:

A fresh opportunity for Des Moines

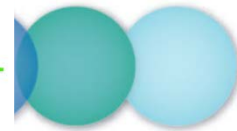
MEREDITH COONEY | JAKE HUGHES | ADAM KENWORTHY



Sustainable Procurement

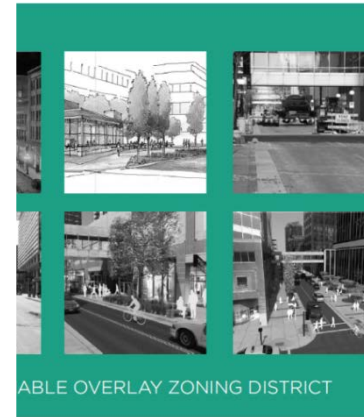
Des Moines Shopping Cart Save Green & Be Green

Amma Conde & Corey Longhurst



In the Environment: Potential Water Quality

Burns Thompson & Megan Hodges



Urban Infill Sustainable Development

REVITALIZING WALNUT STREET IN
DOWNTOWN DES MOINES

JACOB SHKOLNIK & DEREK SMITH

1 Angel, Rachel Bockert, Riley Brady, Darcy Dodge, Nicole Dyar, Kevin Granzow

ENERGY EFFICIENCY GAINS

How Initiating a 3-Step Program to Encourage Energy Efficiency can be used
to Address Sustainability Goals in the Greater Des Moines Region



A Presentation Report for the Greater Des
Moines Partnership created by Students of
Sustainability at Drake University Law School

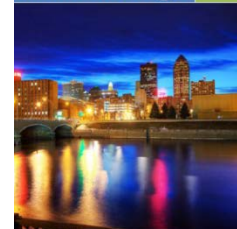
By: SHEILA KNOPLON-ODOLE, CHRISTOPHER SCOTT & ERICA SHANNON STUEVE

Sustainability Through Integrated Development

Economic and Social Benefits through
Centered Around Public Transportation

2011

Sustainability in Des Commercial Buildings



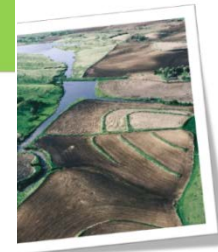
Des Moines: A Recipe for Growth



Christopher Frank
City Law School
Des Moines Partnership

John Crotty and Joel Radaj
Drake University Law School
Prepared for Greater Des Moines Partnership

Agricultural Runoff



Run Through It

Runoff to Agricultural Runoff

David M. Jensen

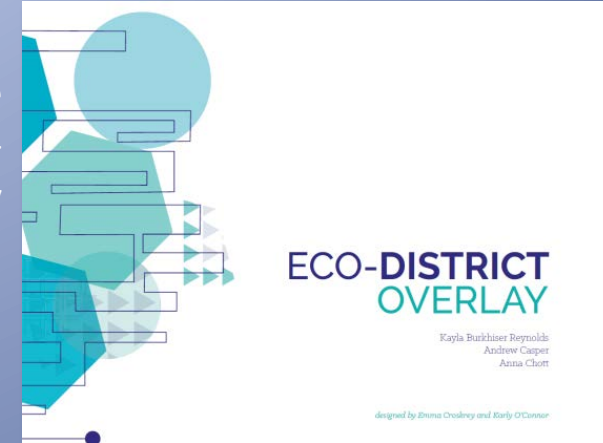
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2014-15 Sustainability & the Law Course



Incentivizing bike usage

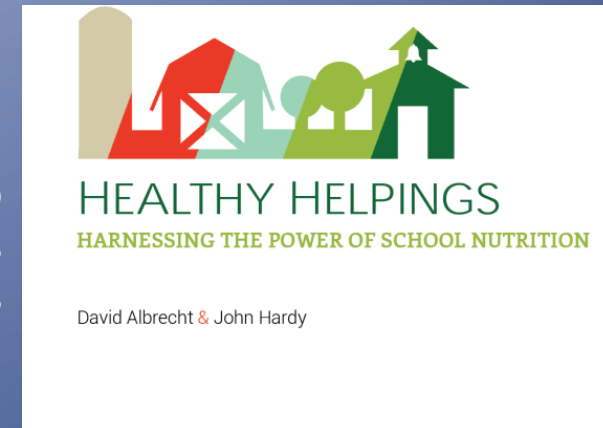
Encouraging sustainable development through an Eco-district Overlay



Diversifying food options through food trucks



Enhancing low-income access to nutritious and local foods through school lunch programs



Enhancing park management standards

Final Presentation before Policy Makers



Going Beyond the Class: Fellowship in Sustainability Law

- Refine, Improve, & Expand Ordinances
 - Analyze Input from Class Presentations
 - **Research Costs / Benefits**
 - Refine Initial Proposals & Further Research
 - Finalize Proposals & Draft Model Ordinances
 - Input / Feedback at Every Stage
- Advocate for Adoption
 - Windsor Heights, Ankeny, Des Moines, Johnston, Carlisle, etc.
- Consult on Local Sustainability Projects

Abstracts, Model Ordinances & Cost/Benefits

COMMUNITY RESILIENCE PROJECT: MODEL ORDINANCES

The model ordinance program provides standardized local laws aimed at developing economically strong and environmentally healthy communities. The following ordinances have been developed through a rigorous vetting process that has included public and private input and a broad survey of best practices from around the country and the world.

STORM MANAGEMENT



- **01-01: Parking Maximums**
Managing Stormwater Through Sustainable Parking Lots
- **01-02: Permeable Pavement**
Adapting to Stormwater Management Challenges
- **01-03: Shared Parking**
Working Together for Parking Solutions

The ordinance places a cap on parking lot sizes and provides flexible alternatives, thereby curbing the practice of mandating large parking lots with unneeded spaces.

The ordinance substitutes impervious surfaces with permeable pavement to naturally absorb and filter the water, while providing a durable surface cover.

The ordinance increases the efficiency of parking lots by allowing multiple users to share underutilized parking spaces.

ECONOMIC DEVELOPMENT



- **02-01: Sustainable Procurement**
Purchasing for the Future
- **02-02: Public Art Set Aside**
Educating through Art
- **02-03: Food Trucks**
A Desert Oasis

The ordinance considers alternative purchasing methods to positively impact human health and the environment, while being fiscally prudent.

The ordinance seeks to promote art, education, and culture by promoting public art projects.

The ordinance establishes a framework for permitting mobile food trucks and groceries to enhance health and increase pedestrian traffic and entrepreneurship.

WASTE MANAGEMENT



- **03-01: Pay-As-You-Throw**
Saving Money and Reducing Trash
- **03-02: Commercial Recycling**
Incorporating Recycling at Work
- **03-03: Multifamily Residential Recycling**
Ensuring Recycling in Density Housing

The ordinance seeks to reduce residential trash by charging customers by volume of trash in a manner similar to water and/or electricity.

The ordinance requires business and/or property owners to arrange for recycling services, inform their tenants about the services, provide recycling bins, and submit a recycling plan.

The ordinance requires all property owners to arrange for recycling services, provide tenants with information on the services and educational materials, supply recycling bins, and submit a recycling plan.

ENERGY EFFICIENCY



- **04-01: Energy Efficiency Inspections**
Information to Improve Decision-Making
- **04-02: Energy Conservation Compliance**
Promoting Wise Energy Use
- **04-03: Solar Energy Standards**
Clarity and Stability for the Solar Energy Industry

The ordinance requires a periodic energy efficiency audit for certain buildings and disclosure of the audit to potential purchasers and lessees.

The ordinance requires owners of certain buildings that have not met minimum energy efficiency standards to make certain cost-effective energy improvements.

The ordinance puts in place clear regulations for solar energy permitting, siting, safety, zoning, easements, and access, and creates a solar energy "fast-tracking" program.

Abstracts, Ordinances, & Analyses

A maximum parking more accurately acco the true costs of par and helps reflect the impact.



MODEL ORDINANCE

AN ORDINANCE to amend the [applicable local code] to set forth in [Section ____] the [schedule of parking spaces], [maximum number], and creating a series of []

Be It Ordained by the [City Council] that the []

Section 1. That the [applicable local code] set forth in [Section ____] of the [] language concerning shared spaces shall read:

[the following is typical existing Schedule of spaces. In all zoning parking requirements], in connection with [residential, recreational, or dwelling] shall be provided in accordance with the [] parking facilities shall be primarily for the use of [] occupants, patrons, or employee [] purpose of complying with the [] required under this chapter for any [] for parking and storage of vehicle.

Section 2. That [Section ____] of the [] repealing [Section XXX-XXX] and enacting [] [insert revised schedule which reduces the [] of parking spaces] by fifty percent

Section 3. That the [applicable local code] repealing [Section XXX-XXX] and enacting [] as follows:

Citations and Reference

Childs, Mark. *Parking Spaces : Planning, And Engineers*. New York: []

Millard-Ball, "Putting on Their Feet the Shoes of the Poor"

Shoup, D. (2002). *The Trouble with Parking*. Victoria Transport Policy Institute

Raad, T. (2002). *Creating Regional Transportation Systems*. A Conference on Transportation Planning. <http://www.best.bc.ca/conference>

Metro Council Portland, OR (1994). *Local Land-Use Codes*. Available at: <http://www.metro-region.org>

Urban Land Institute (1994). *The Urban Land Institute*

U.S. Environmental Protection Agency. *Parking Alternatives: Making the Most of Limited Space*. D.C. Available on-line at: <http://www.epa.gov/transportation/parking/>

Willson, R.W. *Suburban Parking*. *Journal of the American Planning Association*

Examples of relevant code

City of Austin, TX. *City Code*

City of Grand Rapids, MI. *City Code* in Parking Requirements (2000)

City of Milwaukee, WI. *Zoning Ordinance* Adjustment to Number of Spaces

City of Redmond, WA. *Ordinance*

City of Portland, OR. *Ordinance*

Town of Bedford, MA. *Zoning Ordinance*

Town of Burlington, MA. *Zoning Ordinance*



MEMORANDUM

To: Windsor Heights, City Council and Planning & Zoning Commission
From: Andrew Duffelmeyer and Jonathan Rosenbloom, Drake Law School
Date: July 17, 2014
RE: Summary of Costs associated with Permeable Pavement

Summary

The following is a summary of existing studies concerning the short-term and long-term costs associated with permeable pavement. As the studies cited and discussed below indicate, permeable pavement provides a long-term cost savings over comparable impervious pavement options. The current research indicates that the short-term, initial cost of permeable pavement may, in some cases, be more expensive than impervious pavement. However, that same research suggests that permeable pavement may last longer and has fewer costs associated with maintenance, inlets, pipes, and detention pools, resulting in an overall decrease in costs over the life of the pavement. Importantly, we were unable to find a study that factored in or considered cost savings stemming from a reduced flow of stormwater when using permeable pavement. If water flows through permeable pavement are accurate, local governments stand to save additional costs by reducing the volume of water entering the municipal stormwater system, potentially resulting in less maintenance.

Analysis

The current research indicates the initial, upfront cost of permeable pavement to be, in some cases, more expensive than impervious pavement. A paper from the U.S. Department of Transportation, Federal Highway Administration (FHA) found the cost of permeable asphalt is approximately 10 to 15 percent higher than the cost of traditional asphalt, and the cost of

Success!

