THE BIG BOX BILL OF RIGHTS

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ABSTRACT

On May 9, 1950, a fledgling businessman named Sam Walton bought a main street storefront in Bentonville, Arkansas and opened a discount variety store called Walton’s 5 & 10. Business was good. By 2011, Walton’s 5 & 10 had spawned 10,130 additional locations in 27 countries and converted a sleepy Ozark mountain town into home of the world’s largest retailer: Wal-Mart Stores, Inc. The ascendance of Walmart and similar big box developers during the latter part of the twentieth century instigated a profound transformation of Bentonville’s city fabric, one that paralleled a larger makeover of the suburban landscape in North America.

This thesis asserts that the environment associated with one of these developments—the Walmart Home Office and Supercenter—is under-performing the citizens of Bentonville in eight critical ways. The project seeks to redress the physical crisis associated with this development by proposing eight corresponding amendments to the Bentonville City Charter. These amendments are collectively known as The Big Box Bill of Rights and cover eight topics:

Money, Commerce, Passage, Program, Legibility, Parking, Water, and Speech

The proposed mechanism for implementing the Amendments is a Bentonville Public Works Project, to be designed and administered at the municipal level. The project contends that the massive tax subsidies provided to Walmart by local municipalities—subsidies intended to cover site infrastructure costs—constitute the license for a contemporary public works project. The proposal therefore re-imagines the site of the Walmart Home Office, and specifically the legal right-of-way along Sam Walton Boulevard, as an expanded physical and legal armature for civic and commercial life in Bentonville.

Ultimately, a re-designed right-of-way will leverage contemporary growth patterns, bringing the design of civil infrastructure back into the public fold while streamlining the redundancy that results from uncoordinated private development. By critically embracing the logic of big box retail, a re-imagined Walton Boulevard can emerge as a new and robust public node in the city, reclaiming Walmart street and Walmart town for the people of Bentonville.

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THE BIG BOX BILL OF RIGHTS
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INTRODUCTION

BIG BOXES AND DEVELOPERS

This project explores the political and economic logic of big box retail developments in an attempt to gain a critical understanding of the dominant role that financial capital plays in the formation of contemporary urban space.

The escalating scale of big box developments has transformed the morphology of commercial space and with it, the character of the urban landscape in North America. In an attempt to better understand this upheaval, the thesis examines the complex relationship between the largest and most prolific retail developer in the world—Wal-mart Inc.—and a small municipality in Northwest Arkansas—Bentonville.

For the past fifteen years, detractors have developed a lengthy and well-researched critique of Wal-mart’s corporate business model and the impact that it has on the lives of workers and shoppers. These accounts typically focus on issues of social justice and economics. Low wages, poor benefits, discriminatory hiring practices and union-busting are common rallying cries. This thesis considers none of these matters.

Instead, this project focuses on the extent to which the political and economic logic of Wal-mart development practices defines the character, program and function of U.S. cities. This is not a small matter. As of December 2011, Wal-mart, Inc. operated 4,468 retail operations in the U.S. alone. The collective footprint of these efforts is larger than the island of Manhattan. The physical impact of these developments on the urban landscape in the U.S. is difficult to overstate.

THE SEEN AND UNSEEN

This project, however, provides more than another big box redesign; more than another swipe at the political and economic culture of Wal-mart. This project, at its core, represents a plea for urban designers and planners to decisively re-engage the invisible systems of urbanism.

The thesis makes the case that the most essential design considerations in big box environments are not the buildings and oversized parking lots. Instead, the most critical elements reside beyond the visible realm, inhabiting the space of the financial and political systems that engulf the big boxes.

In this project, TIF Districts, tax breaks, property rights, land sales and parking requirements emerge as the unseen currency of urban design—the invisible operations

that drive the production of urban space. These systems provide the structural logic within which investors conceive of and produce retail big boxes. As such, they are properly within the domain of urban planners and designers.

PUBLIC AND PRIVATE

This thesis also probes the relationship between PUBLIC AND PRIVATE interests—and specifically between developers and government—in cities. It scrutinizes the way that municipalities delegate responsibility for planning and design and the way that developers do not.

This project further asserts the importance of balancing interests and obligations. In Bentonville, the public-private seesaw act takes place between the municipal planning authority and Wal-mart. The big box landscape, in fact, is one that emerges from a complex series of financial relationships between developer and municipality. A closer examination of the dynamic between these two critical actors reveals a compelling paradox: while much of the new infrastructure associated with big boxes is planned, programmed and built by developers—much of it is paid for by the government with public dollars. Ironically, the laissez-faire landscape of Wal-mart capital and consumption appears to be more John Maynard Keynes than Adam Smith.

MASTERPLANS AND MANAGEMENT PLANS

This thesis finally proposes that cities stop developing MASTERPLANS and begin developing MANAGEMENT PLANS. While masterplans dictate forms and outcomes; management plans define components and processes. In the most basic sense, this project recommends that municipal authorities design physical infrastructure and script the way that private developers interact with it. The project suggests that cities manage change, but not prescribe it.

Master plans are increasing irrelevant, an anachronism within the context of contemporary capitalist cities. Master plans are too slow and too detached from the productive forces of urban form to have any real impact on design outcomes. Worse, they often attempt to formalize productive systems that cannot be tamed through architecture while seeking to architecturalize systems that resist formal solutions.

The fundamental program in this project, therefore, is CHANGE MANAGEMENT.

The thesis suggests that integrative geometry—and specifically the introduction of a grid—offers one effective mechanism to implement this transformation. In this case the grid is not based on a unit of real estate development but rather on a unit of parking: the 9’ x 18’ space.

Roger Sherman and Dana Cuff

The tradition of town planning in the United States provides us with important historical precedents that illuminate potentially powerful relationships between geometry and real estate. Two instructive models include The Rectangular Survey of 1785 and The Commissioner’s Plan of 1811. Both of these efforts utilize descriptive geometry in an attempt to tame the excesses of unfettered real estate speculation. The examples are described and critiqued in Chapter 3.

CHAPTER ONE: WAL-MART IS HUGE

Chapter One provides an introduction to the world of Wal-mart urbanism, quantifying the full impact of Wal-mart’s development practices on the physical landscape. It takes us through the scope of development and documents the profound impact that Wal-mart urbanism has had on the town where it emerged: Bentonville, Arkansas.

CHAPTER TWO: THE BIG BOX BILL OF RIGHTS

Chapter Two considers the political landscape surrounding Wal-mart. It critiques the current political and economic realities that are associated with the landscape of big boxes. This appraisal comes in the form of an eight-part manifesto. The document, known as The Big Box Bill of Rights, is proposed as an amendment to the Bentonville City Charter.

The Big Box Bill of Rights begins with the assertion that citizens should have the right to more fully utilize the private infrastructure that is paid for with municipal dollars (Amendment One). The Bill of Rights goes on to secure seven additional rights related to design, financing and management of big box developments. These rights involve:

Amendment 1: Money
Amendment 2: Commerce
Amendment 3: Passage
Amendment 4: Program
Amendment 5: Legibility
Amendment 6: Parking
Amendment 7: Water
Amendment 8: Speech

CHAPTER THREE: BIG BOX OPERATIONS

In Chapter Three The Big Box Bill of Rights is manifested in a set of eight Big Box Operations that collectively comprise a contemporary public works project. The goal of the public works project is to improve the physical environment surrounding big
box stores in Bentonville.

This thesis asserts that the massive tax subsidies provided to Wal-mart by local municipalities—subsidies intended to cover site infrastructure costs—constitute the license for such a contemporary public works project. The public works project is offered as one way for municipalities to address the systemic inadequacies of the current model.

The public works project rests on two fundamental principles: the first involves the adherence to a rationalized geometric structure; and the second involves a commitment to planning the site for change.

The Big Box Operations specifically seek to reduce the externalities and inefficiencies associated with big box developments by imposing a rationalized geometric grid across the entire site. The grid provides a framework within which managers can begin to balance critical systems. The eight recommended operations:

- **Operation 1**: Implement the Grid
- **Operation 2**: Expand the Right-of-Way
- **Operation 3**: Rationalize the Lots
- **Operation 4**: Coordinate Services
- **Operation 5**: Guarantee Passage
- **Operation 6**: Insert Program
- **Operation 7**: Consolidate Parking
- **Operation 8**: Slow the Water

**CHAPTER FOUR: RENOVATING THE HOME OFFICE**

Chapter Four takes the eight operations out for a test run at Wal-mart's Home Office while attempting to retrofit and infill the site.

**CHAPTER FIVE: DESIGN DISCOURSE FOR A NEW SUBURBIA**

Chapter Five considers the broader implications of concentrating municipal investment in the form of big box infrastructure. What area the implications for the roles of the architects and planners? What would be the repercussions for larger development patterns across the North American landscape?

Ultimately, this project hopes that by critically embracing the logic of big box retail, a re-imagined Walton Boulevard can emerge as a new public node in the city, reclaiming Wal-mart street and Wal-mart town for the people of Bentonville.
01 WALMART IS HUGE
WAL-MART IS BORN

WALTON’S 5 & 10

On May 9, 1950, a fledgling businessman named Sam Walton bought a main street storefront in Bentonville, Arkansas and opened a discount variety store called Walton’s 5 - 10. He sold whirly pops, wax lips and Ol’ Roy coloring books. Business was good.

By 2011, Walton’s 5 - 10 had spawned 10,130 additional locations in 27 countries and converted a sleepy Ozark mountain town into home of the world’s largest retailer: Wal-Mart Stores, Inc. Today, Wal-mart reports annual revenues of 400 billion dollars.

If Wal-mart were a country, it would have the world’s 26th largest economy, right behind Austria. The Wal-mart model is the ubiquitous form of retail in the United States—truly the gold standard for commercial sales in the United States. In 2010, consumers in the United States purchased more than 7% of their retail goods at a Walmart or a Sam’s Club store. In 2011 Wal-mart’s domestic sales exceeded 2% of the gross domestic product in the United States.

Wal-mart’s unprecedented economic expansion has also prompted unparalleled territorial expansion, radically transforming the physical scale and character of urban fabric in the United States. Today, 60 percent of U.S. residents live within 5 miles of a Wal-Mart location; 96 percent live within 20 miles. While Wal-mart’s use of the big box typology is by no means unique, with 4,468 domestic stores and counting, Wal-mart has emerged as the most prolific generator of urban form in the U.S. In 2008, the total floor area of Wal-mart retail locations in the U.S. exceeded the size of the footprint of Manhattan.

BENTONVILLE BEGINNINGS, BENTONVILLE BOOM

Within this context it’s hard to imagine that Bentonville began 175 years ago as a sleepy grid town in the foothills of the Ozark Mountains. It was originally founded in 1837 by a group of settlers from Tennessee who came to the Osage Prairie in search of land. The first public building, a two-story brick courthouse, was erected in 1841 by John and William Walker on the new town square—the same square that would

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1 Walmart Visitor Center Pamphlet, p.2
DOMESTIC WAL-MART SALES AS % OF U.S. GROSS DOMESTIC PRODUCT

PROJECTED POPULATION GROWTH IN BENTONVILLE
WAL-MART IS BIGGER THAN NEW YORK

Manhattan
640,088,063 sq ft
14,694 acres

Sam's Club

Super Center

Walmart
675,329,219 sq ft
15,503 acres

Discount Center

Neighborhood Market

14,694 ACRES

15,503 ACRES
see the birth of Walton’s 5 - 10 over one hundred years later.  

Wal-mart’s historic rise prompted a profound physical and demographic transformation in Bentonville:

Walton’s 5 - 10 was supplanted by a Walmart Superstore, Vision Center and Pharmacy. South Main Street—once a robust framework for commercial and civic life—was bypassed by Walton Boulevard, a six-lane arterial that is now home to a string of big box developments, including Wal-mart’s international corporate headquarters.

Additionally, between the years 1990 and 2010, Bentonville’s population tripled from 11,257 to 35,301. These population trends continue: by 2030 the city expects to boast 50,000 residents.  

As Wal-mart took off, Benton County, Arkansas became one of the 100 fastest growing counties in the United States.  

CURRENT U.S. TERRITORY OCCUPIED BY WALMART STORES
fastest growing regions in the United States.\textsuperscript{11}

The physical impact of this growth is apparent throughout Bentonville. One of the most notable examples is Northwest Arkansas Regional Airport (XNA), which opened in 1998. XNA is serviced by seven commercial airlines and offers fifty daily flights to sixteen destinations, including regional hubs like Dallas, Houston, Chicago, Los Angeles, Atlanta, Memphis, Orlando, Florida, Charlotte, Cincinnati and New York. Six major carriers fly out of Bentonville including:

- American/American Eagle Airlines
- Delta Air Lines
- Continental Express
- Northwest Airlift/Mesaba Airlines
- U.S. Airways-Express
- United and Allegiant Air

All of this growth can be traced in one way or another to the Wal-mart’s decision to locate and maintain their corporate headquarters in Bentonville.

\textbf{SUBURBAN NATION}

Wal-mart’s aggressive pursuit of market share and pattern of real estate acquisition advanced a suburban model of development, by-passing and replacing the logic and expanse of Bentonville’s historic downtown grid.

Today the original Bentonville grid--located in the northern portion of the city--is surrounded by the Wal-mart family of brands (see pp. 30-31). This growing family includes:

- The Wal-mart Corporate Office
- Wal-mart Distribution Center
- Walmart Supercenter
- Walmart Vision center
- Walmart Pharmacy
- Walmart Neighborhood Market
- Walmart Life Fitness Center
- Walmart Visitor Center
- Crystal Bridges Museum (an art museum financed by the Walton family)

Imagine, all of this Wal-mart, in a town of just 35,000.

The explosion of suburban morphology, of course, mirrors broader trends as today

well over half of the U.S. population lives in a suburban condition.12

CORPORATE MONEY

The unprecedented success of Wal-mart parallels an influx of corporate money. In effect, Bentonville’s growth is being fueled by international corporate investment, money with no direct connection to local conditions or economies. This situation is intensified by the fact that the Fayetteville-Springdale-Rogers Metropolitan Statistical Area is home to additional company headquarters including Tyson Foods and J.B. Hunt Transport Services--one of North America’s largest transport and logistics companies.

The situation is compounded by the fact that Wal-mart requires 1,300 of its vendors to maintain corporate branches or offices in the area. This means that companies like Coca-Cola, Procter and Gamble, Unilever, Motorola, Nestlé, Dell, General Mills, Kellogg Company, and PepsiCo have a presence in Bentonville. Most of the satellite offices for these corporations are housed in strip-malls or corporate office buildings at the periphery of town.

The nexus of suburban growth and corporate money represents a typical state of affairs in present-day U.S. cities. In this regard, Bentonville provides us with a prototypical model of late-twentieth century post-industrial growth.

IMAGINING A SECONDARY TRANSFORMATION

This thesis confronts this situation directly, resisting the temptation to lament the turn of events. Ultimately, it proposes that the best response to Wal-mart urbanism is a secondary transformation, one with equally radical implications.

This proposal seeks to bring the infrastructure of suburbia into line with logic of Wal-mart urbanism. It re-imagines the space surrounding Wal-mart big boxes as a legally public landscape; one that introduces an expanded right-of-way in an attempt to strike a more productive balance between development and infrastructure, between commerce and government.

The goal is not to condemn or censure the retail giant, but rather to leverage its enormous growth potential for public gain, protecting the City of Bentonville from the negative externalities associated with capital development while further liberating Wal-mart to do what it does best: money-make.

WALMART HAS 1300 VENDORS
Procter & Gamble

P&G

Pepsi

with offices in Bentonville...

Dell

Hart Better

Unilever

J.B. Hunt
02 THE BIG BOX BILL OF RIGHTS
AMENDING THE CITY CHARTER

This thesis challenges the dominant role that private and corporate interests exercise in the expansion of cities like Bentonville. Nowhere is this trend more apparent than in the development of commercial big boxes.

Since the first big box appeared in Eastchester, New York in 1971; this building typology has emerged as the primary form of commercial development in North America. A glance at a list of the ten largest retailers in the United States reveals that all are big box developers: Wal-mart alone has 3,029 Supercenters sites in the United States while Kroger operates 2,435 domestic retail stores. We can associate a number of physical trends with the emergence of the big box: increased lot sizes, larger building footprints, growing building setbacks and higher parking counts. This thesis argues that the convergence of these trends has had a negative impact on the quality of space in the contemporary suburb. It further argues that none of these variations has been more important than the diminishing scale of the public right-of-way in relation to the size of the private development lot. The increase in the size of commercial lots has, in effect, put the physical design of big box landscapes beyond the reach of the public right-of-way.

This shift had a critical impact on the built environment because it effectively prevented municipal planners from influencing significant swaths of space in the city. Today’s big box projects are planned, designed and built by developers with minimal input from the municipalities. While zoning regulations typically address functional issues such as minimum parking requirements, setbacks and storm water management; they fail to impact the quality of space surrounding the big box or guarantee access to the space. This trend is particularly problematic in situations where the cost of infrastructure is underwritten by the municipality.

This thesis seeks to redress the physical crisis of big box developments by proposing eight amendments to the Bentonville City Charter. Collectively, these amendments are known as THE BIG BOX BILL OF RIGHTS. The Big Box Bill of Rights is intended to bring the design of the physical landscape back into the public fold while simultaneously addressing the most egregious failings of big box developments.

It is important to note that the Bill of Rights will address these shortcomings not from the perspective of the consumer, but rather from that of the citizenry. Clearly, consumers are served quite well by the emergence of the big box; primarily in the form of lower prices, expanded choice and increased convenience. The benefits that accrue to the citizenry from these projects, however, are much less clear. The next section offers an examination and critique of this situation.


TOP TEN RETAILERS IN THE U.S.1

<table>
<thead>
<tr>
<th>Company</th>
<th>US sales ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wal-Mart</td>
<td>307,736,000</td>
</tr>
<tr>
<td>Kroger</td>
<td>78,326,000</td>
</tr>
<tr>
<td>Target</td>
<td>65,815,000</td>
</tr>
<tr>
<td>Walgreen</td>
<td>61,240,000</td>
</tr>
<tr>
<td>The Home Depot</td>
<td>60,194,000</td>
</tr>
<tr>
<td>Costco</td>
<td>58,983,000</td>
</tr>
<tr>
<td>CVS Caremark</td>
<td>57,464,000</td>
</tr>
<tr>
<td>Lowe’s</td>
<td>48,175,000</td>
</tr>
<tr>
<td>Best Buy</td>
<td>37,110,000</td>
</tr>
<tr>
<td>Sears Holdings</td>
<td>35,362,000</td>
</tr>
</tbody>
</table>

The following eight Amendments are hereby proposed to the City of Bentonville Charter.

**MONEY**
Amendment 1: Big box users have the right to expect that publicly financed infrastructure will accrue public benefits.

**COMMERCE**
Amendment 2: Local vendors have the right to compete on site with Big box developers.

**PASSAGE**
Amendment 3: Big box users have the right to access private big box developments by crossing public land.

**PROGRAM**
Amendment 4: Big box users have the right to access civic program.

**LEGIBILITY**
Amendment 5: Big box users have the right to know where municipal space ends and market space begins.

**PARKING**
Amendment 6: Big box users have the right to find a parking space easily, but not live their life in a sea of parking.

**WATER**
Amendment 7: Big box users have the right to know that the storm water run-off is not overloading the storm sewer, thereby flooding their own homes, those of their neighbors or additional municipalities downstream.

**SPEECH**
Amendment 8: Big box users have the right to access free speech zones, even within the space of a big box development.
AMENDMENT 1: MONEY

BIG BOX USERS HAVE THE RIGHT TO EXPECT THAT PUBLICLY FINANCED INI-

The massive tax subsidies provided to Wal-mart by local municipalities—subsidies
intended to cover site infrastructure costs—constitute the license for a contemporary
public works project. These images provide a small sampling of the MONEY given to
Wal-mart by local taxpayers to finance infrastructure and land acquisition.

In order gain perspective on the scope of this money transfer, consider the following
facts:

- 92% (84 of 91) of Distribution Centers receive subsidies.¹
- One-third of all retail locations receive subsidies.²
- 1000 stores have received subsidies.³
- Total subsidies exceeds $1 Billion.⁴

These subsidies come in all shapes and sizes and are dispersed throughout the United
States. The most common subsidies given to retail projects, however, are infrastructure
assistance and Tax Increment Financing Districts (TIF Districts).

The most common forms of subsidies given to Wal-mart developments are as fol-
lows:⁵

- Free or Reduced Price Land
- Infrastructure Assistance
- Tax Increment Financing
- Property Tax Breaks
- State Corporate Income Tax Credits
- Sales Tax Rebates
- Enterprise Zone Status
- Job Training and Worker Recruitment Funds
- Tax Exempt Bond Financing
- General Grants

Amendment 1 does not aim to stop these subsidies. Rather, it seeks to leverage the
enormous public expenditure made in big box environments for public gain.

## Public Subsidies Given to Wal-mart

<table>
<thead>
<tr>
<th>Development</th>
<th>Type</th>
<th>Subsidy</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Addison, IL</td>
<td>Discount</td>
<td>$3.5 Million</td>
<td>Infrastructure</td>
</tr>
<tr>
<td>Altoona, IA</td>
<td>Supercenter</td>
<td>$1.2 Million</td>
<td>Infrastructure</td>
</tr>
<tr>
<td>American Fork, UT</td>
<td>Supercenter</td>
<td>$1.2 Million</td>
<td>Infrastructure</td>
</tr>
<tr>
<td>Audobon, NJ</td>
<td>Supercenter</td>
<td>$1.2 Million</td>
<td>Infrastructure</td>
</tr>
<tr>
<td>Augusta, ME</td>
<td>Supercenter</td>
<td>$5.7 Million</td>
<td>Infrastructure (via TIF)</td>
</tr>
<tr>
<td>Baraboo, WI</td>
<td>Supercenter</td>
<td>$2.2 Million</td>
<td>Infrastructure (via TIF)</td>
</tr>
<tr>
<td>Bastrop, TX</td>
<td>Supercenter</td>
<td>$125,000</td>
<td>Property Tax Abatement</td>
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<tr>
<td>Beckley, WV</td>
<td>Discount</td>
<td>$7 Million</td>
<td>State Tax Credits</td>
</tr>
<tr>
<td>Belleville, IL</td>
<td>Discount</td>
<td>$350,000</td>
<td>Infrastructure (via TIF)</td>
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<tr>
<td>Biloxi, MS</td>
<td>Discount</td>
<td>$10 Million</td>
<td>Infrastructure (via TIF)</td>
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<tr>
<td>Birmingham, AL</td>
<td>Supercenter</td>
<td>$6.7 Million</td>
<td>Infrastructure (via TIF)</td>
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<tr>
<td>Bridgeview, IL</td>
<td>Discount</td>
<td>$1 Million</td>
<td>Infrastructure</td>
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<tr>
<td>Bullhead City, AZ</td>
<td>Supercenter</td>
<td>$2.1 Million</td>
<td>Infrastructure (via TIF)</td>
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<td>Cameron, MO</td>
<td>Discount</td>
<td>$1.2 Million</td>
<td>Infrastructure (via TIF)</td>
</tr>
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<td>Cathedral City, CA</td>
<td>Discount</td>
<td>$2.1 Million</td>
<td>Infrastructure</td>
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<td>Chesterfield, MO</td>
<td>Discount</td>
<td>$2.6 Million</td>
<td>Infrastructure</td>
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<tr>
<td>Colton, CA</td>
<td>Discount</td>
<td>$2.6 Million</td>
<td>Infrastructure</td>
</tr>
<tr>
<td>Commerce City, CO</td>
<td>Supercenter</td>
<td>$1.4 Million</td>
<td>Reduced Price Land</td>
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<td>Country Club Hills, IL</td>
<td>Supercenter</td>
<td>$12.3 Million</td>
<td>Infrastructure (via sales TIF)</td>
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<tr>
<td>Corona, CA</td>
<td>Discount</td>
<td>$2 Million</td>
<td>Property/Sales Tax Rebates</td>
</tr>
<tr>
<td>Covina, CA</td>
<td>Discount</td>
<td>$5.3 Million</td>
<td>Sales Tax Rebate/Parking Lease</td>
</tr>
<tr>
<td>Dallas, TX</td>
<td>Supercenter</td>
<td>$630,000</td>
<td>Reduced Price Land</td>
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<tr>
<td>Duarte, CA</td>
<td>Discount</td>
<td>$1.8 Million</td>
<td>Property Tax Abatement</td>
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<td>Eureka, MO</td>
<td>Supercenter</td>
<td>$5.3 Million</td>
<td>Reduced Price Land</td>
</tr>
<tr>
<td>Evergreen Park, IL</td>
<td>Discount</td>
<td>$5.3 Million</td>
<td>Site Prep/Infrastructure (TIF)</td>
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<td>Prescott, AZ</td>
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<td>Site Preparation</td>
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<td>Ravenna, OH</td>
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<td>$2.8 Million</td>
<td>Enterprise Zone/Infrastructure</td>
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<td>Redlands, CA</td>
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<td>Republic, MO</td>
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<td>Richland, MS</td>
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<td>Riverside, CA</td>
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<td>Rolling Meadows, IL</td>
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<td>San Diego, CA</td>
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<td>Site Preparation/Infrastructure</td>
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<td>Sand Springs, OK</td>
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</tr>
<tr>
<td>Zephyrhills, FL</td>
<td>Supercenter</td>
<td>Discount</td>
<td></td>
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</table>
AMENDMENT 2: COMMERCE

LOCAL VENDORS HAVE THE RIGHT TO COMPETE ON SITE WITH BIG BOX DE1

The scale of Wal-mart’s commercial expansion into North America is unprecedented. As of 2011 Wal-mart boasted over 4,468 locations including:1

- 3,016 Supercenters
- 633 Discount Stores
- 195 Supermarkets
- 14 Small formats
- 3,858 Walmart U.S.
- 610 Sam’s Clubs

The collective impact of these big box developments on local COMMERCE is difficult to overstate. Once Wal-mart infiltrates an economy, the impact on existing consumers and merchants is pervasive and irreversible. The introduction of Wal-mart into a community changes every part of the economic equation including price and wage structures, real estate markets, shopping routines and even traffic patterns.

Consider one 2003 study undertaken by advertisers Foote, Cone & Belding.2 The research examines a typical municipality—Oklahoma City—which contains all four Wal-mart store types including the Supercenter, Wal-Mart, Sam’s Club and Neighborhood Market. Remarkably, the study indicates that 93% of local residents shop at a Walmart store and that Wal-mart controls a full 27% of the grocery market.

Another study executed by Emek Basker at the University of Missouri suggests that the opening of a single Walmart outlet has significant and predictable effects on the local employment market: in the first year after a store opens, one hundred jobs are added in a typical county. These jobs, however, are all Walmart jobs and are offset by the loss of jobs at local retail establishments. After two years, three local retailers close; after five years, four local retailers close. Ultimately, at the end of the first five years, the initial job gain of one hundred drops to thirty. Again, the thirty new jobs are all Walmart jobs.3 Additional studies find causal relationships between Wal-mart and heightened local poverty rates.4

The purpose of Amendment 2 is to close the loop on the negative externalities generated by the Wal-mart economy. The fact that much of the infrastructure is publicly-financed suggests that local retailers be afforded the same advantages given to Wal-mart Inc. Local vendors must be allowed to compete directly with Wal-mart on the site of big box developments.

AMENDMENT 3 : PASSAGE

BIG BOX USERS HAVE THE RIGHT TO ACCESS PRIVATE BIG BOX DEVELOPMENTS

The right to PASSAGE, sometimes called the “freedom to roam,” emerges from an ancient legal tradition that guarantees the public’s right to enter and cross selected public and privately owned land.

In Scotland this tradition was codified in The Land Reform (Scotland) Act of 2003, a law that legally guarantees the right to universal land access in Scotland. The act legally assures citizens the right to enter or cross land for recreational, educational and other specified purposes. This access is most often utilized to cross through or walk one of Scotland’s 540 private golf courses, particularly in locations where the courses would otherwise block access to the sea.

The custom—while often associated with Scotland, England and Wales—is also upheld in Nordic countries including Finland, Iceland, Norway, Sweden and Baltic countries like Estonia, Latvia and Lithuania.

Amendment 3 emerges from these traditions, assuring that the citizenry is not denied access to space within their own community. In Bentonville, this guarantee is manifested through an expanded legal right-of-way. This expansion insure an accessible connection between the street and the space of the big box.

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Kingsbarns Golf Links, a private Scottish course with typical greens fees of £195.00, is accessible to the general public under the Tithe Land Reform (Scotland) Act 2003. This allows the general public access to the sea. Retrieved from http://www.golfscotland.com/courses/kingsbarns.asp on 15 November 2011.
AMENDMENT 4 : PROGRAM

BIG BOX USERS HAVE THE RIGHT TO ACCESS CIVIC PROGRAM.

Was the concept of civic PROGRAM a casualty of North America’s suburban transformation? The process of suburbanization, which began during the last two decades of the nineteenth century and continues to this day, appears to have squeezed civic space out of cities like Bentonville.

Today, most of the prominent civil programs in Bentonville continue to occupy the main town square, a space that emerged in the mid-nineteenth century. The town square currently accommodates a number of civic programs including the Benton County Court, the Bentonville Convention & Visitor’s Bureau and even the Walmart Visitor’s Center.

But where are new civic spaces in Bentonville being built? Where are the spaces capable of serving programs that transcend the consumer marketplace? Perhaps a more important question is this: given the emergence of the big box as the dominant commercial typology, what civic programs—if any—can emerge within its unique morphology?

Amendment 3 addresses this concern by requiring that Bentonville’s civic realm expand at a rate equal to that of big box environments.

The Arkansas Calendar of Events for Fall 2011 through the Winter 2012 lists over 840 activities in Arkansas.1 They fall into the following categories:


Each of these categories represents a host of programs—the likes of which can and should be accommodated within the space of a big box development. Amendment 4 guarantees that appropriate spaces will be set aside and developed within the new expanded right-of-way for this purpose.

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1 Arkansas Department of Parks & Tourism, "Arkansas: the Natural State: Calendar of Events Fall 2011-Winter 2012."
CIVIC PROGRAM
Civic Program in the Public Space of the City. This scene took place at the building of the Benton County Courthouse on April 11, 1928. The public space is across the plaza from the original Walton's 5-10.
Image courtesy of the Rogers Historical Museum, Rogers, Arkansas.
AMENDMENT 5: BIG BOX USERS HAVE THE RIGHT TO KNOW WHERE MUNICIPAL LANDS END.

Kevin Lynch’s 1960 seminal publication of *The Image of the City* thrust the topic of **legibility** into the mainstream discourse on cities. The study had a significant impact on the emerging field of urban design as well as related disciplines including human geography and psychology, both of which focus on the relationship between environment, human spatial behavior and human perception.¹

The study utilizes citizen’s mental images of the cityscape to construct a common visual framework while asserting that people use such frameworks to read and understand space in the city. Lynch claims specifically that five phenomena—paths, edges, districts, nodes and landmarks—provide a critical set of cues to allow citizens to navigate space in the city.² Cities that demonstrate these well defined criteria are deemed legible and clear.

Lynch did his research during the 1960s in Boston, Jersey City and Los Angeles—settings that bear little physical relationship to the contemporary suburban environment. Still, it is interesting to speculate on issues of legibility within big box developments in cities like Bentonville. To what extent are commercial big box developments such as the Wal-mart Home Office and Supercenter legible, given Lynch’s definition of the term?

The first component of legibility that Lynch introduces are Paths. He asserts that Paths are critical because they represent the only means of moving through the space of the city. Lynch’s research found that, for many people, Paths formed the predominant image of the city. He therefore offers them as the most important measure of legibility in the city.

**Paths.** These can take a variety of forms including streets, walkways, transit lines, canals or railroads.³ Lynch goes on to point out that successful paths are typically associated with one or more spatial characteristics including extreme width or narrowness, distinctive facade designs, proximity to other urban features or visual exposure to other parts of the city.

Paths in the contemporary big box environments, of course, are difficult to locate. This trend is related to the rise of the arterial and a corresponding decline in the importance of streets, grids and sidewalks. Typical suburban morphology concentrates movement in one primary path—the arterial. Secondary paths—such as feeders, local roads and even sidewalks are de-emphasized. As a result, cities like Bentonville don’t have as many paths as they used to.

But what about the paths that do remain? Do they have the capacity to enhance legibility in the urban environment?

Typically, the answer is no. While some sidewalks remain, the decline of pedestrian

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IPAL SPACE ENDS AND MARKET SPACE BEGINS.
infrastructure and lack of connection between adjacent private developments means that sidewalks can be difficult to find. Furthermore, where sidewalks do exist, they are typically discontinuous and often not well maintained. Interestingly, the elements that most often comprise paths in suburban big box environments are paving textures and plantings—exactly the elements that Lynch deems least effective at creating successful connections.  

**EDGES.** Edges, unlike paths, create boundaries. While paths connect; edges typically separate. But edges, Lynch says, can also serve to unite disparate elements. They do not have to be impenetrable. A street, for example, can distinguish two regions while simultaneously providing visual connection.  

So what is the capacity of a street like Sam Walton Boulevard to provide an effective edge? Unfortunately, the extreme width of the space within the right-of-way precludes the ability of many arterial boulevards to act as visual connectors between adjacent big box developments. This is certainly the case with Sam Walton Boulevard. Additionally, the relative lack of sidewalks hinders the ability of street edges to double as a paths. Together, these factors condemn arterial roadways like Walton Boulevard to act as separators rather than uniters.  

**DISTRICTS.** According to Lynch, Districts are defined by a shared set of formal characteristics. In order for a district to achieve legibility, the physical elements within it must share a number of common characteristics. These can be textures, spaces, forms, details, symbols, building types, uses, activities, inhabitants, degrees of maintenance or even topographies. But districts must do more than share formal characteristics. Districts must also be distinguishable from other Districts. That is, they must be unique.  

As we consider the capacity of big box commercial developments to act as Districts, we quickly see that they fulfill the former condition but not the latter. Most big box developments, in fact, demonstrate startling internal consistency: they are composed of low-slung horizontal buildings, utilize a material palette of insulated stucco and precast concrete, utilize extensive aluminum and glass storefront, are surrounded by a common asphalt parking lot, employ signage extensively for way-finding and advertising purposes and position their main entrance directly adjacent to the parking lot. However, these characteristics are true of virtually all big box developments in North America. As a result, few of them are memorable in any way and therefore do not promote legibility.  

**NODES.** Nodes often occur at the juncture of Paths. They are not necessarily marked by a memorable physical form, but strong forms increase the likelihood that these junctures can become Nodes. Nodes often occur where modes of transportation intersect, apparently because these are the places where people make navigational

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"There is a shift from the model of the polis founded on a centre, that is, a public centre or agora, to a new metropolitan spatialization that is certainly invested in a process of de-politicization, which results in a strange zone where it is impossible to decide what is private an what is public."

Giorgio Agamben, "Metropolis"  

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If we consider the Home Office development from this perspective, its location along a particularly undistinguished stretch of Sam Walton Boulevard disqualifies it from being a node. It is true that many other big box developments occur at the intersection of highway interchanges, however. In this regard, they could certainly be considered Nodes.

Another way that we might consider the concept of Nodes involves the internal structure of big box developments. Do Nodes exist within the morphology of these environments? The lack of clearly defined vehicular or pedestrian Paths makes the emergence of Nodes extremely unlikely within the current structure of developments like the Wal-mart Home Office.

**LANDMARKS.** Landmarks are prominent and unique elements that provide a method of orientation that is external to the observer. Landmarks can be large or small, but are more effective when they are conspicuously located, enjoy marked contrast from their physical surroundings and exhibit a singular form.

Big box developments typically exhibit none of these characteristics. In areas where there is little commercial development, perhaps big box developments are distinguishable from the otherwise undeveloped land. This is not the case, however, with the Wal-mart Home Office which currently resides along a largely developed stretch of Sam Walton Boulevard.

Looking inward, it is difficult to locate landmarks within the developments themselves. Perhaps one can designate anchor stores as Landmarks, but this is a stretch given the undistinguished formal character of these structures. In order for an observer to identify an anchor store as a Landmark, she would have to engage in a high level of abstraction: for example, examining a plan of the development. This would not fulfill the definition of legibility as intended by Lynch.

Clearly, many of the physical cues that Lynch associates with the concept of legibility are missing from big box environments like the Wal-mart Home Office and Supercenter. The charge of Amendment 4 is to provide such developments with new clarity and distinctiveness. This is required both at the urban scale and within the scale of the development itself.

Of course, this transformation cannot happen strictly on the terms established by Lynch. His concepts were developed over fifty years ago in urban environments that bear little or no resemblance to Bentonville. Instead, the fulfillment of Amendment 4 will require a new formal structure to emerge: one which takes into account the unique structure of big box urbanism while offering a simultaneous critique and re-structuring of this idiosyncratic form of development.

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BIG BOX USERS HAVE THE RIGHT TO FIND A PARKING SPACE EASILY, BUT NOT NEEDED.

The space designated for PARKING in retail developments is too high and needs to be reduced. A study undertaken by the Parsons Transportation Group in 2002 examined the relationship between parking requirements and actual parking loads at 17 Home Depot Stores. The research clearly indicates that the quantity of parking required by code far exceeds that required by actual automobiles. Consider the following data, which examines the parking situation on the 5th busiest day of the year:

**PEAK PARKING OCCUPANCY AND MINIMUM PARKING REQUIREMENTS**

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<tr>
<th></th>
<th>Description</th>
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<tbody>
<tr>
<td>5,377</td>
<td>Peak Occupancy Estimated for 5th busiest day of the year</td>
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<tr>
<td>9,002</td>
<td>Parking Spaces Supplied</td>
</tr>
<tr>
<td>10,855</td>
<td>Parking Spaces Req'd at 5 per 1000 sf</td>
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</table>

Even if the peak occupancy was equal to the spaces required by code, it would mean that 360 days a year Home Depot parking lots maintain excess capacity. The fact that required parking exceeds the actual load by a multiple of two suggests that a significant opportunity exists to reduce parking infrastructure.

Not surprisingly, we see the same phenomenon at work in Wal-mart’s Home Office, where in fact the parking lot maintains a parking capacity that is actually 25% above that required by code.

A second factor which cuts required parking capacity is the concept of **SHARED PARKING.** This concept is outlined in The Big Box Operations.

Amendment 5 takes this evidence and begins with two assumptions:

- **Zoning Codes overestimate the parking load for big box developments**
- **Private Infrastructure = Redundant Infrastructure**

In an attempt to remedy this situation, Amendment 5 calls for the consolidation of parking infrastructure across private developments. In order to fully realize parking efficiencies, this effort is best coordinated by the municipality. Ultimately, Amendment 5 is a call to collectivize parking as a piece of public infrastructure.

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They live their life in a sea of parking.

All spaces currently exist on the home office site. Just 2,789 spaces are required by local code. That means there is already 25% excess capacity. That's before any shared parking reductions.
BIG BOX USERS HAVE THE RIGHT TO KNOW THAT THE STORM WATER RUN-OFF FROM THEIR OWN HOMES, THOSE OF THEIR NEIGHBORS OR ADDITIONAL MUNICIPALITIES

As we re-consider the infrastructure on the Wal-mart Home Office site, no issue presents a greater challenge than WATER—and specifically storm water.

Big boxes contribute a massive amount of storm water to local sewer systems. Consider that the Walmart Supercenter across the street from the Home Office site sheds 33,750,000 Gallons of water each year. This is run-off that would otherwise be absorbed into the ground and never reach the sewer system.

Extending beyond the scope of Bentonville, the total annual Wal-mart Watershed for Supercenters equals 101,790,000 billion gallons.1 Their are two elements of big box design that exacerbate the issue of storm water management:

- The first is the increase in impervious surface area that results from large roofs and expansive asphalt parking lots. This water is drained, piped, detained and eventually released into the storm sewer system. The enormous loads generated by big box developments are a major contributor to flooding issues.

- The second is the mechanization of storm water management. The typical engineering solution to this issue is to "pipe-and-pond" the water. This approach does little more than delay the release of water, while eventually transferring the water—which is now polluted—to another site. A more constructive approach is the "low impact" approach, which involves slowing, spreading and soaking the water to minimize or eliminate the release of polluted run-off into the storm sewer.2

Amendment 6 guarantees that the storm water run-off generated by big boxes is retained on site where the run-off was generated. It seeks to prevent big box developments from exacerbating the already difficult problem of flooding.

1 See Appendix 3 for calculations.
OFF IS NOT OVERLOADING THE STORM SEWER, THEREBY FLOODING THEIR DOWNSTREAM.

WAL-MART HOME OFFICE SITE HAS IMPERMEABLE SURFACE
WAL-MART WATERSHED IS 101 BILLION GALLONS PER YEAR
AND THAT'S JUST FOR THE SUPERCENTERS

IMPERMEABLE SURFACE
AMENDMENT 8: SPEECH

BIG BOX USERS HAVE THE RIGHT TO ACCESS FREE SPEECH ZONES, EVEN V

The issue of free SPEECH in shopping malls has a long and contentious history, much of which has played out in the federal court system.

In 1968 the United States Supreme Court issued a ruling in Amalgamated Foods Employees Union Local 590 v. Logan Valley Plaza which equated the civic value of a private shopping mall with that of a traditional main street. The case involved a shopping center whose owner prevented union members from engaging in the peaceful protest of a non-union establishment inside of the shopping center. The union contested this exclusion on the grounds that the mall represented a public environment and that their actions were therefore protected under the First Amendment. The Supreme Court ultimately upheld the union's position in a ruling that prevented developers from limiting "...the use of that property by members of the public in a manner that would not be permissible were the property owned by a municipality." 2

The Supreme Court backtracked on these protections in a subsequent decision, Lloyd Corp. v. Tanner. This case involved a group of protestors who were handing out anti-war literature at Lloyd Center Mall in Portland, Oregon. The mall owner admonished the protestors to stop distributing the pamphlets or face arrest. While the District Court ruled in favor of the protestors, the U.S. Supreme Court ultimately reversed the decision on the grounds that the protests were not "directly related" to the owners of the shopping center. The Supreme Court also pointed out that the protestors had the opportunity to move their political activity to the sidewalks outside the mall, land that was publicly owned by the City of Portland. 3

Subsequent Supreme Court decisions tended to delegate these matters to the states. In the 1980 decision Pruneyard Shopping Center v. Robins, a group of high school students began to hand out flyers in opposition to a U.N. resolution against Zionism. Security personnel from the mall asked the protesters to move to the public sidewalk at the perimeter of the mall. In this case, the California Supreme Court upheld the student's right to protest in the mall and the U.S. Supreme Court upheld the decision. 4 The outcome of the case reinforced a State's right to utilize police power and sovereignty to expand on liberties contained in the Bill of Rights. 5

Amendment 7 will bypass the contentious issues that arise when citizens engage in public protests on private property. It will do so by inserting clearly marked municipal land within the space of big box developments. Amendment 7 brings an expanded legal right-of-way into suburbia.

WITHIN THE SPACE OF A BIG BOX DEVELOPMENT.

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SPEECH

OVERTURN CITIZENS UNITED
03 BIG BOX OPERATIONS
BIG BOX OPERATIONS

Just as The Big Box Bill of Rights takes aim at the political and economic landscape surrounding the big box, the following public works project presents a set of systemic interventions aimed at improving the physical environment surrounding big box stores in Bentonville.

REDUNDANCY AND INEFFICIENCY

The most visible impact of big box developments on the physical landscape comes in the form of buildings and parking lots. At the Wal-mart Home Office, parking lots devour 1,124,283 SF of the site while big boxes consume another 903,510 SF of real estate. These massive objects cast a long shadow across the landscape, forming the character of the land and an impression of the site.

Yet, the true impact of big box developments emerges from more than the physical presence of asphalt surfaces and stucco boxes. The real effect of big box developments involves their intersection with the multiple ecologies that exist both on the site and within the commercial economy of the city. The real impact of big box developments occurs where the idiosyncratic logic of commercial development intersects with the political, economic, and ecological systems of the city.

The establishment of a set of Big Box Operations begins with the assertion that many of the ecologies associated with big box developments lack equilibrium. This lack of balance is an inevitable result of the exacting and uncompromising logic of big box economics. While the capitalist logic of big boxes fashions efficiencies in some areas—lowering consumer prices, for example—it destroys efficiencies in others, like providing parking and storm water solutions. In general, big box developments are not able to cultivate structural efficiencies in areas that require a holistic or longer term view. Infrastructure design is a primary example of this phenomenon.

The redundancy and subsequent inefficiency that exists in the infrastructure associated with big box developments is remarkable. This problem is primarily attributable to the transfer of design responsibility from the public to the private sector that occurred during the last one hundred years. The structure of the nineteenth century city rested on the provision of a clearly defined legal-right-of-way. This construction was paid for by the municipality and delivered the basic infrastructure required for urbanism. Until about 1920 this included a street, sewer, essential utilities and perhaps a sidewalk. This equation, of course, shifted dramatically as the infrastructural requirements associated with automobiles increased in scale.

In 2012 the distribution of responsibilities for civil infrastructure has markedly shifted. Big box developers today design, build and maintain the massive infrastructures associated with parking and storm water management. Unfortunately, developers are not well-equipped to deal with the long-range planning, financing and management of these systems. As a result, they have every incentive to externalize the costs associated with these systems—leaving municipalities and ultimately citizens to deal with the results. These externalities manifest themselves in many ways: downstream
flooding resulting from overloaded storm sewers, massive unused parking lots due to uncoordinated transportation infrastructure, lack of safe walkways for pedestrians and the heat island effect due to inadequate planting and consideration of surfaces. The list is long and a testament to the inefficiency and redundancy of the present system.

So what can be done to address this situation? The level of cooperation that would be required between private developers to execute this work efficiently is virtually impossible given the financial pressures that the competitors face. Companies like Wal-mart have almost no incentive to make the long-term investments that would be required to design and maintain a highly integrated infrastructural landscape.

The actions of big box developers makes this fact quite clear: first, in their unwillingness to actually design and manage these landscapes; and second, in their demand that municipalities continue to cover the cost of these systems through various methods of public financing. The various financial mechanisms that are used to execute this work are described in Amendment 1. Some of the most common include Tax Increment Financing and Property Tax Breaks.

With this in mind, the project proposes the following eight Big Box Operations with two goals in mind: first, to re-mediate the increasingly untenable situation associated with redundant and inefficient infrastructure; and second, as a means of implementing The Big Box Bill of Rights.

Each operation seeks to rebalance a prevailing ecology within the big box environment.

The BIG BOX OPERATIONS are as follows:

1. Implement the Grid
2. Expand the Right-of-Way
3. Rationalize the Lots
4. Coordinate Services
5. Guarantee Passage
6. Insert Program
7. Consolidate Parking
8. Slow the Water

Two prevailing principles are at work in each of these operations:

The first is the imposition of a rationalized, INTEGRATIVE GEOMETRY. Historically, planners have imposed abstract geometry in an attempt to reduce the externalities and inefficiencies associated with land speculation. In the next section we will look at two such instances, the Rectangular Survey of the United States and the Commissioner’s Plan of 1811.

The second is the necessity to PLAN FOR CHANGE as a necessary component of the development process. While this may sound obvious, current legal and infrastructural scenarios are surprisingly resistant to the phenomenon.
Before moving through the Big Box Operations, it is useful to preview the final design proposal.

The dimensional logic of the entire proposal is built on the logic of a grid. The grid provides an infrastructural framework within which to manage primary site ecologies. These ecologies include storm water, parking, circulation and buildings. The selected module is 9' x 18', the dimension of a single parking space.

The infrastructural grid allows designers to re-imagine the physical components of the development process as interchangeable parts that can be swapped out to accommodate the inevitable change mandated by the capitalist logic of big box retail.

In this scenario trees, planter boxes, automobiles and parking spaces achieve equivalence.

Pages 51 and 52 allow us to view a potential snapshot in the lifespan of the Home Office development. The fundamental components of development are as follows:

**3 ZONES OF TREES**

- First, a static zone for water retention (denoted by the yellow tone) adjacent to Sam Walton Boulevard.
- Second, a static zone for parking (denoted by the dark green) at the interior of the lot, where the least desirable parking spaces reside.
- Third, a change zone for parking (denoted by light green) located at the perimeter of the lot, adjacent to the big boxes and the most desirable parking spaces.

**3 ZONES OF WATER MANAGEMENT**

- First, a retention zone adjacent to Sam Walton Boulevard.
- Second, a filtration and infiltration zone at the interior of the lot. This zone features a significant quantity of permeable surface and bio-swales to carry water from the impermeable zone to the retention zone.
- Third, an impermeable zone that corresponds with the primary parking zone.

**DEDICATED PEDESTRIAN PASSAGE**

This occurs at the perimeter of the lot (denoted by grey tone). This space provides pedestrian passage while accommodating the insertion of additional civic program and small-scale, local retail outlets.

**BIG BOXES AT THE PERIMETER**

These buildings will continually renovate or relocate in order to accommodate shifting market demands.
PLANTER BOX

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AUTOMOBILE

18'

9'

18'

9'
THE ROLE OF INTEGRATIVE GEOMETRY

THOMAS HUTCHINS AND THE RECTANGULAR SURVEY OF THE UNITED STATES

The first underlying principle involves the imposition of a standardized, integrative geometry to the site.

The Rectangular Survey of the United States, commonly referred to as the Jeffersonian Grid, represents perhaps the first attempt to rationalize the physical structure of the land speculation process. In 1785 the Continental Congress decided to sell land holdings northwest of the Ohio in an attempt to retire its massive debt from the Revolutionary War. Until that point land in and around New England was being bundled and sold in six-mile-square townships. Within these increments, however, no attempt was made to rationalize or standardize development practices. Instead, decisions were made solely in response to local topographic conditions. The concept of a one mile square standard family farm, conceived of on purely economic terms with no regard given to natural characteristics, did not yet exist.1

This all changed when Congress instructed the Geographer of the United States, Thomas Hutchins, to head to the nexus of the Pennsylvania border and the Ohio River. Once there, he was to strike a westward line along which to project a range of townships. Each township would in turn be divided into thirty-six lots.2 The lots would eventually be sub-divided into half-lots, and the half-lots into quarter lots. The quarter lot, of course, remains a familiar concept as it comprises the standard unit of residential development in the U.S. today.

The positive impact of the Rectangular Survey on the regulation of real estate sales is difficult to overstate. The successful history of land speculation in the U.S. is due in no small part to the geometric regularity and predictability of land parcel sizes. In this regard the 1785 survey succeeded in rationalizing a market that might otherwise have been plagued by leftover lots and awkward adjacencies.

Yet the impact of the 1785 survey goes beyond the legal realm. Anyone who has ever flown over the Midwest can attest to the overwhelming formal order that the survey imparts on the physical arrangement of land. The survey also defines the local road system, thereby penetrating the realm of geometric abstraction by defining the way that we use and experience the land.

The 1785 survey falls short, however, in its ability to regulate or rationalize the actual development of parcels at the scale of the quarter lot and below. This phenomenon is apparent in contemporary patterns of suburban development. These patterns, which consist primarily of residential cul-de-sacs, commercial malls, and big box developments typologies; exhibit

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internal logics that remain virtually untouched by the structure of the 1785 survey.

THE COMMISSIONER'S PLAN OF 1811

The Commissioner's Plan of 1811 provides a seminal demonstration of the power that geometry holds to tame the uncertainties of a fickle real estate market. Prior to 1811, land owners in New York City still described legal boundaries using the unique physical details of site such as fences, creeks, stones and roads.3

The introduction of the grid completely revolutionized the legal and conceptual understanding of land in Manhattan. Land was re-born as real estate; a commodity that could be bought, sold and re-packaged for economic gain. This transformation diminished the importance of locale while catalyzing speculation and development to the extent that, by the mid-nineteenth century, real estate assumed a position equal to finance and commerce as a principal source of wealth on the island.4

Of course, not everyone was enamored with the technocratic efficiency of the grid: “These are men who would have cut down the seven hills of Rome,” Clement Clarke Moore carped about the plan’s authors in his 1818 “A Plain Statement, Addressed to the Proprietors of Real Estate, in the City and County of New-York.”5 It was the grid’s unrelenting devotion to geometry, however, that lent the concept its immense formal and conceptual power. The grid was ultimately successful because of its ability to satisfy the desire of real estate speculators for absolute predictability.

The grid exhibited value beyond pure economics, however. Perhaps the greatest virtue of the grid involved its ability to generate private value while guaranteeing a well-proportioned and predictable venue for public life. The fact that this venue—the street—remains intact today is testament to its power as a conceptual and physical framework for balancing public and private interests.

These concepts—geometric regularity, absolute predictability, and the ability to satisfy public and private interests—are ones that will carry forward into the design of the first Big Box Operation.

PLANNING FOR CHANGE

CHANGE, WHAT CHANGE?

The first underlying principle is the need for municipalities to **PLAN FOR CHANGE**. The economic life of a big box development is quite short—typically 5-7 years in its first incarnation. One of the primary goals of the Big Box Operations is therefore to identify which physical elements are most amenable to change. This project proposes that variable elements are deemed short-term commodities and left within the domain of the marketplace.

The following scenario begins with the idea that buildings are among the most malleable elements on the site. The flexibility of big box structures emerges from a variety of physical and economic factors: relatively fast construction schedules, inexpensive construction costs, ease of renovation and vulnerability to the demands of free-market capitalism. Given these characteristics, it is not surprising that big box structures are often the first elements in developments to turn over or be torn down.

Conversely, infrastructural elements such as parking lots and storm sewers are among the most difficult elements to change. Their size makes them resistant to relocation, modification and reduction. They last a long time and require relatively little maintenance. It is common, therefore, to drive by an abandoned big box store and see that the parking and sewer system are still intact. This all-too-common scene results from the differential life cycles of buildings and infrastructure.

In an attempt to address this situation, this project proposes that long and short term elements be distinguished from one another:

**LONG TERM ELEMENTS = STATIC ELEMENTS.** These elements include a significant portion of the parking infrastructure, the pedestrian passages and the entire storm water management system.

**SHORT TERM ELEMENTS = CHANGE ELEMENTS.** These elements comprise buildings and shade trees, a portion of which are housed in planting boxes and therefore considered mobile.

The following diagrams describe a scenario in which long-term elements remain in place while short-term elements move in space to accommodate shifting market conditions.

The (1) **BASELINE CONDITION** represents an abstract description of the site elements and their relative position within an emerging, time-sensitive site logic. We begin with 4 zones: 2 are changeable, 2 are static.

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*Roger Sherman, 2005*


“It is precisely this question—how to provide sufficient looseness with regard to future scenarios—that constitutes the principal paradox of urban development today...The wicked, change-based nature of most urban problems today suggests that it is only by deriving new urban patterns based upon an understanding of urban processes that one might then proceed to propose how else the city might look.”

1 Roger Sherman, 2005

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1 BASELINE CONDITION

ZONES:

a CHANGE ZONE: BLDGS

b CHANGE ZONE: PARKING

c STATIC ZONE: TREES

d STATIC ZONE: WATER

2 PARTIAL RETROFIT

OPERATIONS:

+ 3 BIG BOXES

↔ LOTS TREES

- 114 TREES

TRANSPORT TO NURSERY
The Change zones (A,B) remain in play as the ratio of trees and parking spaces shifts to accommodate variations in programmatic requirements and economic conditions. Zones A and B are where the buildings and the most desirable parking spaces go.

The Static zones (C,D) are planted with trees year round and do not change. This is where the storm water is retained and the least desirable parking spaces go.

In the (2) PARTIAL RETROFIT CONDITION, three big boxes are added to the mix. These insertions resemble the actual commercial mix on the site today, with one big box added. This scenario is intended to build the logic for a retrofit of the site. In this scenario we see a resulting shift of trees both on the site and in a nearby tree nursery. These trees can be made available to other commercial sites or re-purposed for additional uses. Bear in mind that the goal is to provide as many trees as possible while still accommodating parking requirements for the retail program.

In the (3) FULL RETROFIT + INFILL CONDITION, ten retail and office buildings are added to the mix. This increases the square footage and profitability of the site. Again, temporary trees are re-arranged to maximize parking for the new occupants while 362 trees are sent to the nursery.

The (4) FULL RETROFIT + INFILL CONDITION describes the insertion of a pedestrian passageway to guarantee access across the development. This addition again requires that trees in the temporary zone relocate to fulfill the evolving spatial logic of the development. Additionally, 580 trees relocate to a nursery.

In the (5) MILD RECESSION CONDITION, a downturn in the economy causes one of the big boxes to close. Additionally, the Wal-mart Home Office relocates to another site. Both structures are razed. As a result of this economic shift, 580 trees are imported from the nursery to cover the land vacated by the big boxes.

In the (6) BEGINNING RECOVERY CONDITION, a new big box emerges on the site formerly held by the Wal-mart Home Office. Several of the smaller retail and office sites on the northern portion of the site go out of business but a new retail outlet opens on south portion of the site. At critical mass of program and capital investment begins to accumulate on the southern edge of the site. A portion of the temporary trees relocate to accommodate this shift while 105 trees are moved off-site to the nursery.

“Rather than assuming stability and explaining change...architects must learn to assume change and explain stability.”

Roger Sherman, 2009

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3  FULL RETROFIT + INFILL

OPERATIONS:

+ 10 RETAIL BLDGS

เซ็ TREES(304,436),(367,525)

- 362 TREES TO NURSERY

4  FULL RETROFIT + INFILL

OPERATIONS:

+ PASSAGE

 TREES(304,683),(367,772)

- 580 TREES TO NURSERY
5 MILD RECESSION CONDITION

OPERATIONS:

+ 580 TREES
⇔ TREES
→ 2 BIG BOXES

6 BEGINNING RECOVERY CONDITION

OPERATIONS:

+ 1 BIG BOX
⇔ TREES
⇔ BIG BOX
→ 1 BIG BOX
→ 6 RETAIL BLDGS
→ 105 TREES
MANAGING FOR CHANGE

WHO MANAGES FOR CHANGE?

Given the short economic lifespan of big boxes, developers have little incentive to deal with infrastructural issues in a proactive or long-term manner. This trend is not an indication of poor business practice or a lack of foresight on the part of developers; rather, it is the result of the difference between the lifespan of big boxes and infrastructure. The fact that infrastructure outlives buildings provides a negative incentive for developers to make significant investments in the site.

Nonetheless, the current political economy requires big box developers to design, build and manage infrastructure. This situation is highly inefficient, particularly given the fact that the infrastructure is often paid for by the municipality.

This proposal therefore turns the design, construction, financing and maintenance of site infrastructure over to the municipality. This political shift, while radical, is completely logical given the financial and life-cycle dynamics of infrastructure. Site infrastructure is simply too important to be left to the vagaries of the marketplace. Its continued functioning remains critical to the financial well-being of the site and, as we discovered in THE BIG BOX BILL OF RIGHTS, critical to the well-being of the big-box users.

The following diagram describes the current political relationship between developers and municipalities with regard to the design and maintenance of infrastructure. It also proposes a radical but logical re-arrangement of responsibilities.
## POLITICAL STRUCTURE OF CHANGE

### EXISTING ARRANGEMENT:

<table>
<thead>
<tr>
<th>Stores</th>
<th>Brands</th>
<th>Program</th>
<th>Development Mix</th>
<th>Buildings</th>
<th>Pedestrian Circulation</th>
<th>Parking Infrastructure</th>
</tr>
</thead>
</table>

- EASY TO CHANGE

### PROPOSED ARRANGEMENT:

<table>
<thead>
<tr>
<th>Stores</th>
<th>Brands</th>
<th>Program</th>
<th>Development Mix</th>
<th>Buildings</th>
<th>Pedestrian Circulation</th>
<th>Parking Infrastructure</th>
</tr>
</thead>
</table>

- EASY TO CHANGE

62
OPERATION 1: IMPLEMENT THE GRID

EXISTING FORMAL ORDER

A series of individual decisions made by private developers driven by short-term interests leads to a complex and illegible formal order. The design results from a series of accumulated decisions with little regard for larger efficiencies.
PROPOSED FORMAL ORDER

Operation 1 imposes a planning module of 60'-0". This is the space required to accommodate two perpendicular parking spaces and a middle drive aisle. A seam of 10'-0" is inserted in every other bay to provide for pedestrian passage.
OPERATION 2: EXPAND THE RIGHT-OF-WAY

1950

This proposal re-imagines Walton Boulevard as an expanded physical and legal armature for public life in Bentonville. The specific mechanism is an expanded legal right-of-way.

Historically, the right-of-way (i.e. the street) represented the commercial and civic spine of the city; the counterpoint to private interests and the venue for public culture. The contemporary right-of-way, now re-configured as an automotive boulevard, is no match for the private, corporate development of Wal-Mart, Inc. This thesis argues that a re-designed Walton Boulevard will leverage contemporary growth patterns, legally re-inserting public space into suburbia while streamlining the redundant infrastructure that results from uncoordinated private development.

The decline in the legal right-of-way has damaged the capacity of public infrastructure to bind the public space of the city. This decline has produced a scalar increase in private lot size. The scalar shift from small retail establishments like Walton's 5 - 10 (pictured above) to Walmart Superstores (next page) has transformed the urban fabric in Bentonville while dramatically altering the space of the city.

These two images illustrate a shifting retail model—one which which began with a 3500 sf storefront abutting the street and ended with a 200,000 sf superstore set back 800 feet from the street.
The negative impact of this shift on the public space of the street has been the topic of much discussion and analysis. The decline has produced a relative decrease in the legal right-of-way. What is not as well considered, however, is impact of the relative change in size between the legal right-of-way and the private development lot.

Between the years 1950 and 2011, South Main Street—once a robust framework for commercial and civic life—was bypassed by Walton Boulevard, a six-lane arterial that weakly connects a string of big box developments. Accompanying this shift was a massive increase in the size of the private lot: from just one acre to over one hundred acres. During this transformation, the size of the public right-of-way remained virtually unchanged—adding just two lanes of traffic.

Expanding the size and scope of the legal right-of-way will create a new public landscape capable of functioning as a civic realm in the corporatized, privatized, suburban realm. It will bring the infrastructure of suburbia into line with logic of Walmart urbanism.
EXISTING RIGHT-OF-WAY

RIGHT OF WAY IN 1950
LOT = .077 ACRES
A WALTON'S 5 - 10
B WALMART SUPERSTORE
C WAL-MART STORES INC, HEADQUARTERS

EXISTING RIGHT-OF-WAY
DEVELOPMENT = 109 ACRES

PUBLIC RIGHT-OF-WAY =
PROPOSED RIGHT-OF-WAY

DEVELOPMENT = 109 ACRES
OPERATION 3: RATIONALIZE THE LOTS

EXISTING BUILDING TYPOLOGIES

A fundamental organizing component of Big Box developments is Building Typology. Typically, there are four building types, each closely associated with a particular lot size, building size and program.

OFFICE

DRIVE THRU

INSTITUTIONAL

SERVICE

BIG BOX
COMPLICITY BETWEEN BUILDING TYPOLOGY, PROGRAM AND DEVELOPER

A concurrent logic that is less obvious, however, involves the relationship between building type, program and developer. In Walmart Supercenter developments, Wal-mart Inc. often purchases excess land for the development and then sells off the remaining shadow lots as a way to recoup land costs and control surrounding development. This means that adjacent commercial enterprises enjoy a different relationship with the primary tenant--typically a Supercenter--than non-commercial or institutional programs.

SHADOW LOTS

- SALLY BEAUTY SUPPLY
- IHOP
- FedEx Office
- Peel Mansion Museum & Heritage Gardens
- ?
- RETAIL
- OFFICE
- INSTITUTIONAL
- LOWE'S
- WAL-MART SUPERCENTER

BIG BOX
EXISTING LOT TYPOLOGY

Despite the consistency and predictability of lot requirements in big box developments, the proportions and size of lots is surprisingly idiosyncratic. Consider the wide range of shapes and sizes that exist within the nineteen lots that comprise the Home Office site today. The lots range in size between .11 acres and 32 acres. The shapes also vary tremendously. Many of the lots are not amenable to development unless combined with other lots.
RATIONALIZED LOT TYPOLGY

This proposal takes these same nineteen lots and re-sizes them to accommodate the typical programs and building types in big box developments. Two basic sizes exist: large and small. The large lots provide 10 acres of land for the big box building and service zone. This lot is smaller than the typical 20 acre big box lot. However, the 10 acre lot does not have to accommodate parking, which is now conceived of as collective infrastructure. The small lots are typically 1 acre and equivalent to the shadow lots in existing developments.
EXISTING LOT STRUCTURE

The structure of the lots are also subject to the vagaries of the development process. The existing lot structure at the Home Office is clearly the result of numerous individual decisions made by private actors over the course of many years.
RATIONALIZED LOT STRUCTURE

This proposal takes these same nineteen lots and re-structures them around collective parking infrastructure. The lots are serviced from the outside and accessed by the public from the inside. The lot width is variable to accommodate shifting market and program requirements.
OPERATION 4: COORDINATE SERVICES

EXISTING SERVICE DELIVERY

A series of individual decisions made by private developers over the years leads to a complex and fragmented service zone and a number of functional inefficiencies. These include:

- an overlap between automobile and truck traffic
- redundant infrastructure
- an inability to screen service zones from public sight
COORDINATED SERVICE DELIVERY

Operation 4 provides for a shared service zone at the exterior of the development. This strategy creates multiple efficiencies:

- eliminating overlap between automobile and truck traffic
- reducing redundant drives
- providing a visual screen between the space of retail and service
OPERATION 5: GUARANTEE PASSAGE

EXISTING PEDESTRIAN PASSAGE

Existing infrastructure for pedestrians is fragmented and discontinuous--the result of multiple individual decisions made without regard for a larger circulation strategy.
CONTINUOUS PEDESTRIAN PASSAGE

Operation 5 provides for a continuous pedestrian circulation system.
OPERATION 6 : INSERT PROGRAM

EXISTING PROGRAM DISTRIBUTION IN SUPERCENTER

The typical Supercenter floor plan focuses inward and does not provide space for local vendors.

PROPOSED PROGRAM DISTRIBUTION IN SUPERCENTER

The proposed Supercenter floor plan provides a service zone along the front face and retail space for local vendors outside.
NEW PROGRAM

The proposed program adds one big box as well as space for the local vendors and community meetings. The result is an increase in the mixed use capacity of the site and a decrease in the programmatic grain.
OPERATION 7: CONSOLIDATE PARKING

EXISTING PARKING DISTRIBUTION

Currently, drivers utilize a small percentage of the available parking infrastructure at any one time. The Home Office development possesses a 25% excess parking capacity (per the Bentonville zoning code). The most valuable and frequently used spaces reside close to the big box entrances; the less valuable and infrequently used spaces sit far from the big box entrances and close to Sam Walton Boulevard. The following diagram describes the parking distribution on a single day of the year.

![Diagram of parking distribution]
PROPOSED PARKING DISTRIBUTION

The proposed parking distribution maximizes parking spaces closest to the big box entrance. One-third of the least desirable spaces are planted with trees to increase water infiltration and reduce the heat island effect.
SHARE PARKING OPERATION: TIME OF DAY CLUSTERS

Operation 7 achieves efficiencies by coordinating development according to the requirements of program, time of day and even season. This strategy requires an increased zoning effort that takes into account such factors in order to achieve complementary clusters of development.

**TIME OF DAY FACTOR FOR WEEKEND PARKING DEMAND**

Adapted from ULI, The Dimensions of Parking, 5th Edition (2010), ULI, p.20
SHARED PARKING OPERATION : SEASONAL CLUSTERS

SELECTED SEASONAL FACTOR FOR PARKING CUSTOMER DEMAND

OPERATION 8 : SLOW THE WATER

WATER MANAGEMENT IN EXISTING DEVELOPMENT

Current water management strategies rely on engineering solutions to hold the water on site for a prescribed period of time before releasing it into the storm sewer. This scenario externalizes the problem of flooding and pollution to downstream communities.
WATER MANAGEMENT IN PROPOSED DEVELOPMENT

Operation 8 inserts an infiltration zone into the less desirable portion of the parking lot. The infiltration zone features a permeable surface to absorb water and a bio-swale to filter water. This middle zone both absorbs and filters storm run-off from the primary paved surfaces before depositing the water in the retention zone adjacent to Sam Walton Boulevard.

1 PRIMARY PARKING ZONE: ASPHALT AT PARKING AND DRIVE AISLES / PERMEABLE SURFACE AT WALKWAYS
2 INFILTRATION ZONE: ASPHALT AT DRIVE AISLES / PERMEABLE SURFACE AT PARKING
3 RETENTION ZONE
04 RENOVATING THE HOME OFFICE
THE HOME OFFICE SITE

PEEL MANSION & HISTORIC GARDENS

WALMART SUPERCENTER

WATER STORAGE

110 ACRES
The dimensional logic of this proposal is built on a 9' x 18' parking space. This provides the primary unit for the infrastructural grid.

Given the project's commitment to change, the 162 square foot area is re-interpreted as a unit of exchange. Parking spaces and trees are continually swapped in order to accommodate the shifting demands of the site.
PLANTER BOX

18'

9'

AUTOMOBILE

93
BIG BOX OPERATIONS

04 PASSAGE

03 LOTS

02 RIGHT-OF-WAY

01 GRID
PROGRAM DIAGRAM:

MARKET

STATIC PARKING ZONE

INFILTRATION

FILTRATION

DRIVE INFORMATION

TREATMENT - DETENTION

DRIVE

DRIVE

TURN
05 DESIGN DISCOURSE FOR A NEW SUBURBIA
In this exercise we set out to discover how the political and economic logic of big box developments impacts the space of U.S. cities. We came to understand that the increasing scale of big box developments has transformed the structure and organization of commercial space while magnifying their influence on the surrounding urban landscape.

This, of course, is not news. Its the reason that for the past fifteen years countless architects have set out to reinvent the big box. Typical solutions involve an expansion of program (just add housing and civic function) or a re-investment in form (verticalize, densify and re-skin). Virtually none of these projects have been realized.

The fundamental problem with these types of proposals is that they seek to architecturalize issues that are ultimately systemic in nature. This project aspires to do more than design a better big box.

This thesis begins by accepting the banal, non-architectural character of big box construction. It next resists the temptation to burden developers with additional responsibilities such as adding program or attending to environmental matters. Instead, the project actually seeks to reduce the financial and managerial burden on big box developers by re-assigning the responsibility for infrastructure systems where it belongs—to local municipalities. This type of public-private arrangement more closely resembles the historical balance of power in U.S. cities.

This project strives to uncover and leverage the unseen mechanisms that lead to the production of space in big box developments. The financing and organization of public infrastructure, particularly systems involving parking and water, plays a critical role in the formation of these environments. This is particularly true in locations where market forces have overruled weak and fragmented government control structures.

As architects today we are struggling to maintain relevance. We find ourselves surpassed by the ascent of the landscape discourse, discredited by the monumental miscalculations of urban renewal, weakened by a seemingly endless recession. This project contends that one way to re-engage urban design issues is to seek out the mechanisms that produce urban space and intervene in bold but strategic ways. Such methods will require us to transcend the scale of typical form-based inquiries. This will be difficult and will require us to reset the traditional boundaries of our profession. But these are also the inquiries that will allow us to rejoin the conversation about the contemporary city—a conversation that is well underway and that desperately needs our attention.
CURRENT AND FUTURE INFRASTRUCTURAL NODES IN BENTONVILLE AND ROGERS
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BIG BOXES AND WAL-MART


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PARKING


INFRASTRUCTURE


Steinberg, Goodwin with Susan Wolfe, From the Ground Up: Building Silicon Valley


APPENDIX I

PARKING LOADS

1. All parking loads calculated per Bentonville Zoning Code, June 10 2003
2. Assumes 80% Net Floor Area each building

EXISTING LOADS

SUPERCENTER
196,638/RETAIL x .8 = 157,310 NFA
137,719 / 250 = 629
629 x .8 = 503 spaces

PEEL MUSEUM
6894 GFA / INSTITUTIONAL
6894 x .8 = 5515 / 200
= 27 spaces (no reductions)

CHINESE DRIVE-THRU
22 spaces

ARVEST BANK
5,960 GFA / BANK
5,960 x .8 = 4768 / 300
= 15.9 x .95 = 15 spaces

WALMART OUT BUILDING
10731 x .8 = 8585 / 300
= 28 spaces x .95 = 27 spaces

WALMART OUT BUILDING
44691 x .8 = 35,752 / 300
= 119 x .85 = 101 spaces

WALMART HOME OFFICE TOWER
47,947 (8) = 383,576 x .8 =
306,860 / 300 = 1023 spaces x .8 = 818 spaces

WALMART HOME OFFICE LOW-RISE BUILDING
364570 (1.5) = 546,855 x .8 = 437,484 / 300 = 1458 x .8 = 1166 spaces

IBERIA BANK
22,848 / BANK x .8
= 18,278 / 300 = 60 x .9 = 55 spaces

MIDAS BENTONVILLE
3839 / SERVICE x .8 = 3071
3071 / 200 + 5 = 20 spaces
EXISTING LOADS / CONT.

NORTHWEST HEALTH & LIFESTYLES
3432 (3) / OFFICE = 10,296 x .8
= 8235 / 300 = 27 spaces x .95 = 26 spaces

MURPHY’S OIL
887 GFA / GAS
887 x .8 = 709
= 709/200 + 5 = 9 spaces

TOTAL REQ’D PARKING = 2,789
EXISTING SPACES IN DEVELOPMENT = 3,054
TOTAL SPACES IN SOUTH HOME OFFICE LOT = 666
TOTAL EXISTING SPACES = 3,720
TOTAL AVAILABLE SPACES = 913
PERCENTAGE REDUNDANCY = 25%

PROPOSED LOADS

PEEL MUSEUM
6894 GFA / INSTITUTIONAL
6894 x .8 = 5515 / 200
= 27 spaces (no reductions)

RESTAURANT/ ABUELO’S MEXICAN FOOD EMBASSY
8757 x .8 = 7005 x 2/3 = 4,670 (dining area)
4,670 / 15 (tables and chairs) = 311 occupancy
311 / 4 = 77 spaces + 20 employee spaces
= 97 spaces x .7 (shared reduction) = 68 spaces

OFFICE:
51,229 x .8 = 40,983 / 300 =
136 spaces x .95 =
130 spaces x .9 (shared reduction)
= 117 spaces
x 2 STORIES = 234 spaces

25,949/RETAIL x .8 = 20,759 NFA
20,759 / 250 = 83
83 x .8 = 66 spaces

196,638/RETAIL x .8 = 157,310 NFA
137,719 / 250 = 629
629 x .8 = 503 spaces

MURPHY’S OIL
887 GFA / GAS
887 x .8 = 709
= 709/200 + 5 = 9 spaces
170,778/Retail x .8 = 136,662 NFA
137,719 / 250 = 546
546 x .8 = 437 spaces

SALLY'S BEAUTY:
25,460/Retail x .8 = 20,368 NFA
20,368 / 250 = 81
81 x .8 = 65 spaces

51,352/Retail x .8 = 41,081 NFA
41,081 / 250 = 164
164 x .8 = 131 spaces

RESTAURANT/DENNY'S:
5423 x .8 = 4338 x 2/3 = 2,892 (dining area)
2,892 / 15 (tables and chairs) = 192 occupancy
192 / 4 = 48 spaces + 20 employee spaces
   = 68 spaces x .7 (shared reduction) = 48 spaces

WALMART HOME OFFICE TOWER
47,947 (8) = 383,576 x .8=
306,860 / 300 = 1023 spaces x .8 = 818 spaces

WALMART HOME OFFICE LOW-RISE BUILDING
364570 (1.5) = 546,855 x .8 = 437,484 / 300 = 1458 x .8 = 1166 spaces

TOTAL PARKING REQ'D FOR BUILDINGS = 3,572 spaces

19,438/Assembly x .8 = 15,550 / 200 = 77 spaces
no reduction

27,332/Assembly x .8 = 21,865 / 200 = 109 spaces
no reduction

TOTAL PARKING LOAD FOR ASSEMBLY SPACES = 186
TOTAL PARKING REQ'D PARKING= 3,758 spaces
PROPOSED SPACES IN DEVELOPMENT = 3,139
TOTAL SPACES IN SOUTH HOME OFFICE LOT = 666
TOTAL AVAILABLE SPACES = 3805
TOTAL REDUNDANT PARKING = 47
STORM WATER CALCULATIONS

ANNUAL bentonville supercenter run-off = 33,750,000 gallons
1,954,922 sf = Supercenter Site
1,954,922 SF x .67 Impermeable Area = 1,309,797 SF = 30 acres
1 acre = 25,000 Gallons for 1" event
25,000 Gallons X 45 inches = 1,250,000 Gallons per acre per year
1,125,000 Gallons / acre X 30 acres = 33,750,000 Gallons

By extending these calculations to the 2913 Supercenters across the United States, we see that the potential problem is enormous.

walmart watershed = 98 BILLION gallons
33,750,000 Gallons x 3016 Supercenters in U.S. = 98,313,750 000 Walmart Watershed

Walmart Watershed = 101,790,000 billion gallons (Supercenters only)
## APPENDIX 3

### INTERVIEWS

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<th>Name</th>
<th>Position</th>
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<td>Troy Galloway</td>
<td>Director of Community Development</td>
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<td>10 Jan 2012</td>
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<td>Troy Davis</td>
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<td>Jim Wheeless</td>
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<td>John Burroughs</td>
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<td>11 Jan 2012</td>
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<tr>
<td>Steve Luoni</td>
<td>Professor</td>
<td>Fayetteville, AR</td>
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<tr>
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<td>University of Arkansas</td>
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<td>Chris Caplice</td>
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<td>21 Feb 2012</td>
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<tr>
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<td>20 April 2012</td>
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<td></td>
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