



# Iowa Capitol Complex | Master Plan

July 8, 2009

State of Iowa Department of Administrative Services  
& Capitol Planning Commission

Confluence

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# Preliminary

## July MP Update

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## Preface

This booklet was designed to give you a brief preview of the July 17th State Capitol Master Plan Update Steering Committee meeting. We have made great progress in the past two months and look forward to presenting you with that progress in the near future. While the information included is preliminary and more of a progress report, the following pages exhibit the anticipated graphic format of the final Master Plan update. We ask that you look through the attached information prior to our meeting and bring your comments to our next Steering Committee meeting.

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# Concept Plan Alternatives

## Background

The concept for this Master Plan is based on an update of the 2000 Master Plan. This document considers four options and a phasing plan for updating the concept. These options are intended to look at long term land use and campus form alternatives, rather than projected space needs (see attached illustrations). The phasing plan and recommendations for the Capitol Complex south of Grand Avenue are common to all of the alternatives.

## Principles

The vision and concept for this Master Plan builds upon the principles identified in the 2000 Master Plan. These principles include:

### Historic and Civic Architecture

Maintaining the precedent for the highest quality of civic architecture found in the Capitol, gardens and symmetrical building compositions of the E.L. Masqueray plan. Recommendations for future buildings do not call for an historic revival, but for a return to the principles of civic quality and respect for the primacy of the Capitol Building.

### Seat of State Government

The significance of the Capitol Complex as a symbol to the people of Iowa cannot be overstated. It represents the State's proud heritage and is a harbinger of greater things yet to come. As Iowa's civic garden, the grounds of the Capitol Complex bring people together to play, celebrate, and get to know their neighbours. As the seat of state government, the Capitol Complex demonstrates the commitment of the Legislature to Iowa's citizens. The recent restoration of the Capitol is not complete until the Capitol gardens, as envisioned in the E.L. Masqueray plan, are restored on the east, west, north and south axes, including reconstruction of the Court Avenue bridge.

### Efficient and Accessible Government

State offices exist solely to serve the needs of Iowans, and so should be welcoming and easy to navigate.

## Good Neighbor

Civic buildings on the Capitol Complex constitute a strong physical presence for the State and a strong point of identity for the City of Des Moines.

## Maintenance

Absent from the Capitol Complex for many years has been conscious maintenance of the principles of its conception. The endurance of a vital and healthy Capitol Complex requires awareness of present and future conditions through preventive maintenance.

## Infrastructure and Energy Conservation

In the past, many decisions concerning accommodation for state employees have been driven primarily by considerations of minimizing capitol costs. An objective of the Master Plan is to guide decisions toward longer term economic benefits.

## Sustainable Development

Applying sustainable development principles is a priority in the Master Plan to ensure environmentally sound development. With the goal of reducing the carbon footprint of the Complex, the plan will address issues of sustainable site planning, energy efficiency, water safeguarding, material and resource conservation, indoor environmental quality, and solid waste reduction.

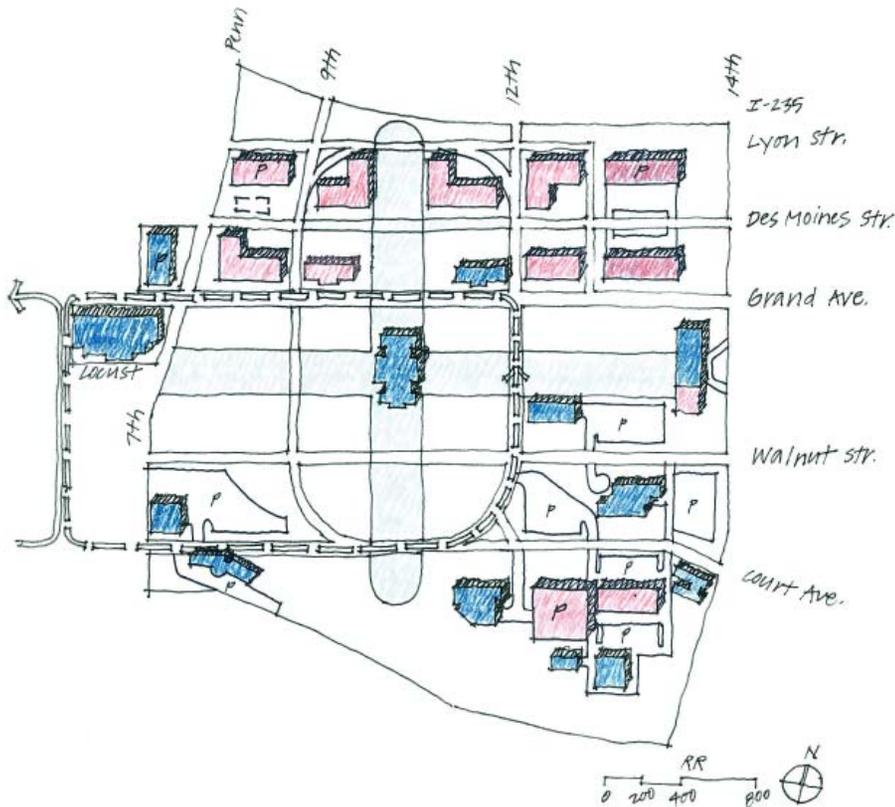
## Recommendations South of Grand (all options)

- 40,300gsf is added to the Grimes Building and the existing building renovated.
- Proposed below grade addition to the Capitol and below grade parking east of the Capitol deleted.
- Surface parking in the Capitol Garden deleted.
- New surface parking added east of the Lucas Building, accessible from Walnut Street.
- East, West and South Capitol Gardens completed, including Court Avenue bridge.
- Proposed mirror of the Lucas Building deleted to preserve Capitol views and open space.
- Potential building site south of Walnut west of Dey deleted.
- Potential Building site on Lot 3 retained. This site could accommodate a 120,000gsf building.
- Proposed parking structure east of Judicial retained. This structure could accommodate 409 spaces.
- Shuttle loop shortened, in conjunction with streetcar implementation, to serve a counterclockwise route (6th, Court, 12th, Grand) and function as a campus peplemover.
- Connect from the South Garden to regional trail system. Enhance transit waiting areas.
- Enhance views to the Capitol Complex from future extension of MLK way.

## Recommendations North of Grand (all options)

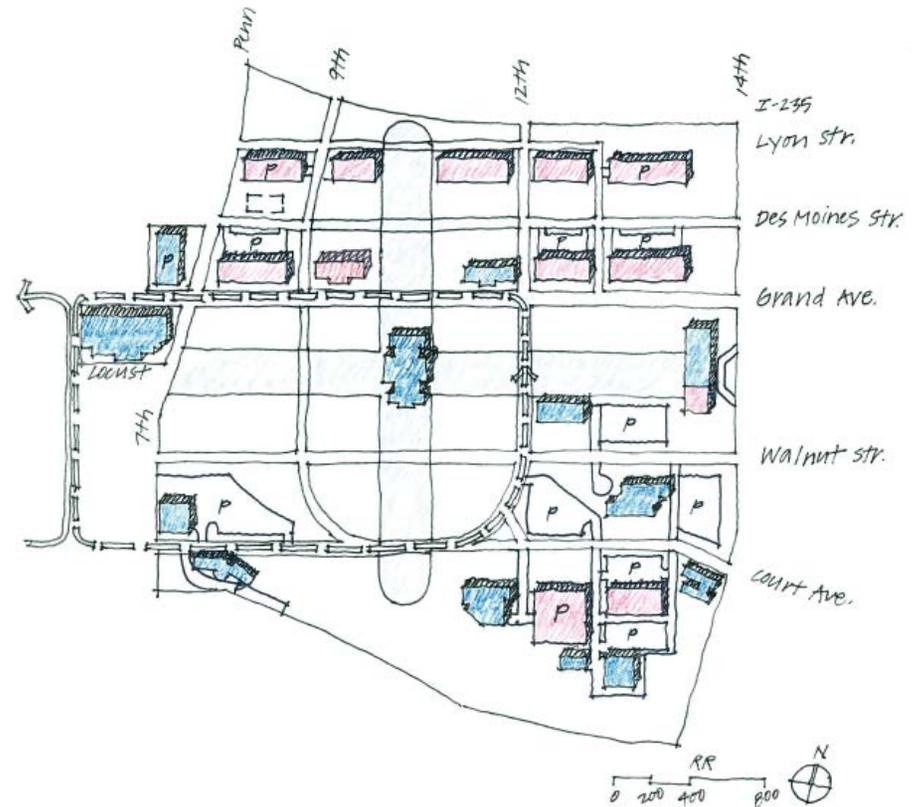
- Extend campus north (Pennsylvania to 14th extending to I-235).
- Eventually, replace the following buildings: Wallace (229,300gsf), Workforce (108,500gsf); Parker (118,500gsf), Mercy Capitol (325,900gsf) and Carriage House.
- Build two new parking ramps with a total of 610 spaces.
- Preserve Ola Babcock (91,000gsf) and the Parking Ramp at Pennsylvania (883 spaces)
- Develop the North Capitol Gardens
- Improve the pedestrian environment on Grand Avenue by widening and landscaping the sidewalks and accommodating two traffic lanes westbound and one traffic lane eastbound.
- Limited Des Moines Street to local traffic between 9th and 12th streets to encourage pedestrian circulation. Traffic on Des Moines Street is primarily directed to I-235 access on the east and west sides of the Complex, with little need for through movement.
- Site buildings, where possible, to have views of the Capitol dome from their main entrances to reinforce the association with the Complex.

# Concept Plan Alternatives



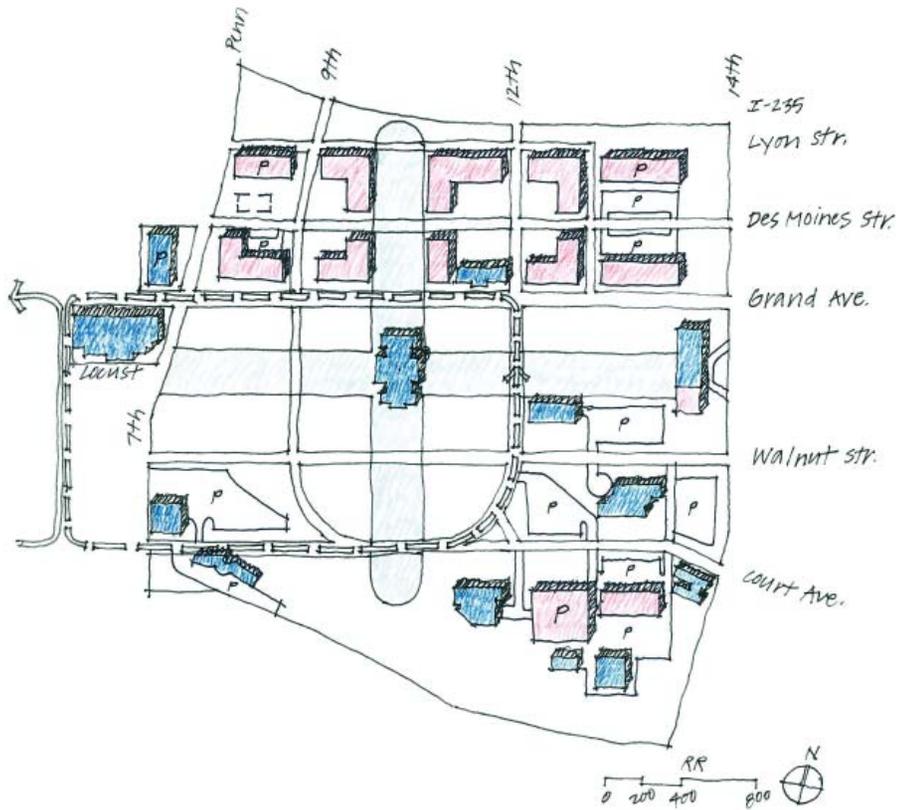
## Option A: Loop

This option will mirror the character of the campus loop road (Finkbine/Dey) north of Grand. A smaller, Ola Babcock-like building replaces the Workforce Building. The green quality of the North Mall will be emphasized. North of Grand, seven new buildings will be added for a total of 1,416,000gsf (633,500gsf net increase).



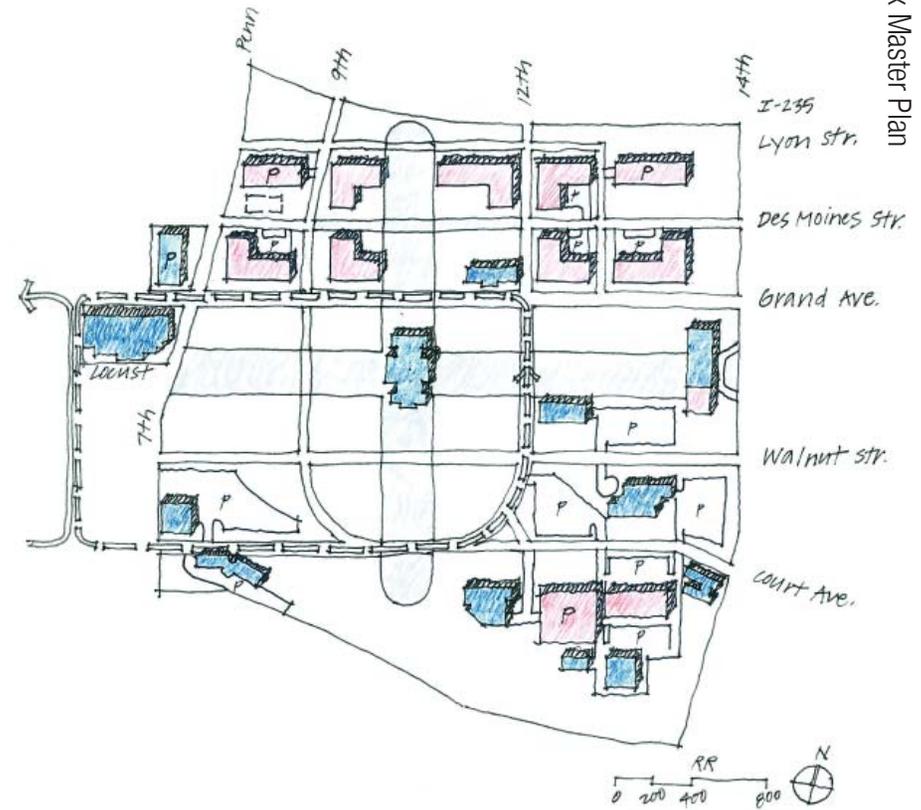
## Option B: Linear

This option will front buildings in along Des Moines Street and Grand Avenue. A central, linear open space will be developed along Des Moines Street. North of Grand, seven new buildings will be added for a total of 1,176,000gsf (393,500gsf net increase). A smaller, Ola Babcock-like building replaces the Workforce Building. All proposed buildings maintain a sustainable east/west orientation.



### Option C: Garden Frontage

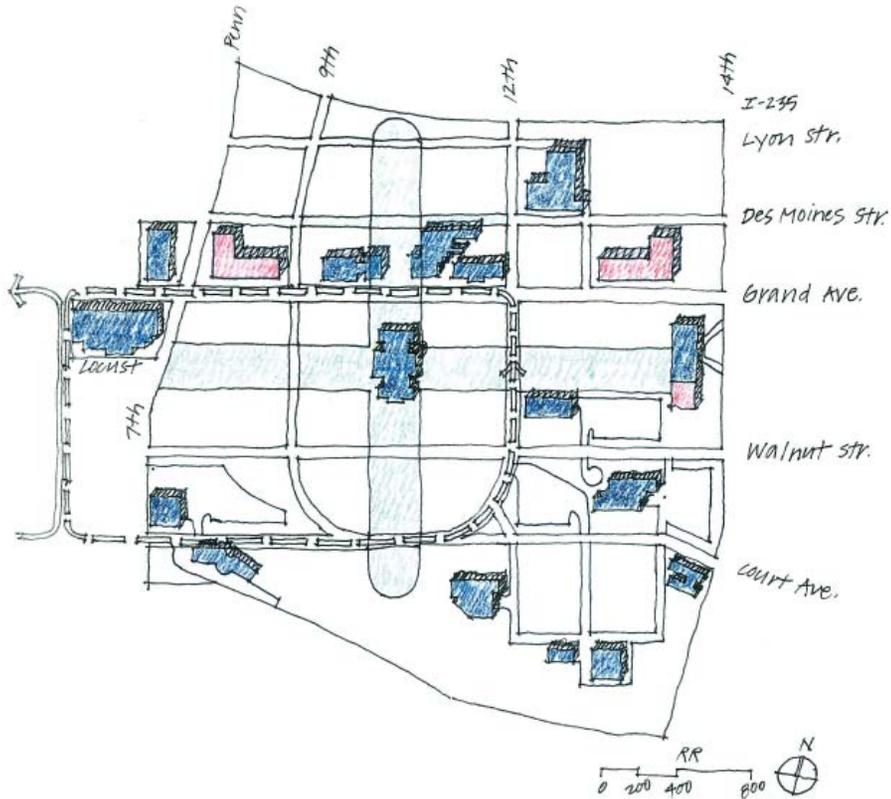
This option will front buildings on the North Capitol Gardens and spatially encloses other green spaces in the North Mall. The north/south Capitol axis is reinforced. North of Grand, eight new buildings will be added for a total of 1,728,000gsf (945,500gsf net increase).



### Option D: Street Frontage

This option will front buildings along streets and spatially enclose other green spaces in the North Mall. Less emphasis will be given to the north/south Capitol axis. North of Grand, seven new buildings will be added for a total of 1,680,000gsf (897,500gsf net increase).

# Phasing



## Phase 1: Agriculture/DNR

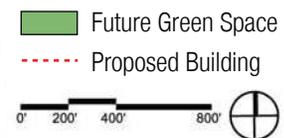
The recommended first phase of the development will be the relocation of agencies from the Wallace Building to leased space in downtown Des Moines and renovated space in Mercy Capitol. Mercy Capitol will be renamed the Iowa Green Center and accommodate model sustainable office configurations, a wellness and fitness center, conference and training facilities, daycare, bicycle and alternative transportation center and storage facilities. The first phase will include the replacement of the Wallace Building (229,399gsf) with a new Agriculture Building (252,000gsf). A new DNR building (282,000gsf) will be built on Grand Avenue east of 13th Street. Additionally, 40,300gsf is added by an addition to the Grimes Building.

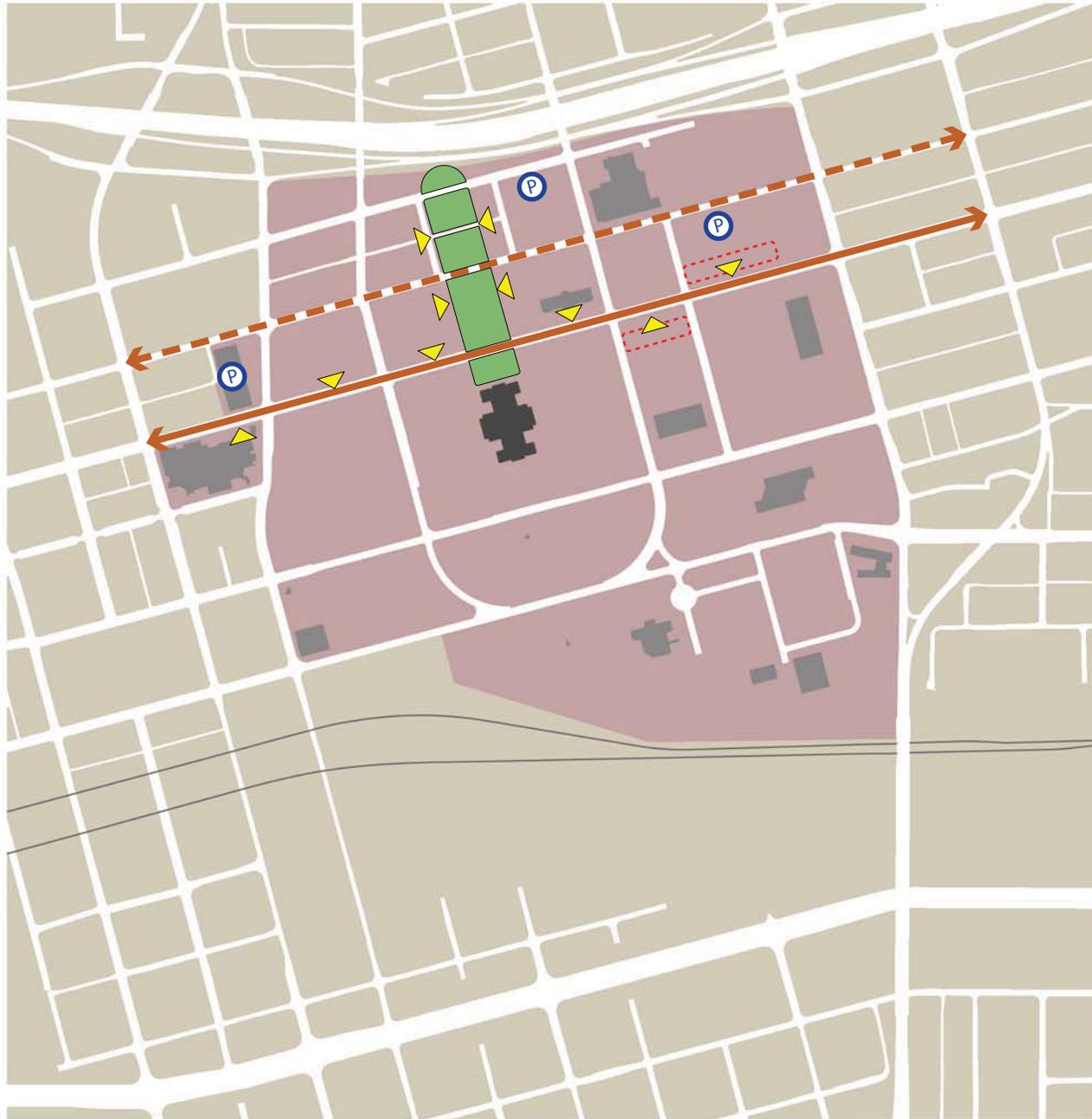
DNR and the Iowa Green Center will present an opportunity to showcase sustainability at the northeast area of the Complex. Removal of the Wallace Building and two new structures fronting Grand Avenue will enhance the identity of the North Mall area and create new gateways to the Complex.



## Building Groupings

This graphic is one of many options the team has discussed to date. The hand drawn graphics exhibited in the concept plan will be converted to a graphic similar to this once the committee agrees on a particular approach.



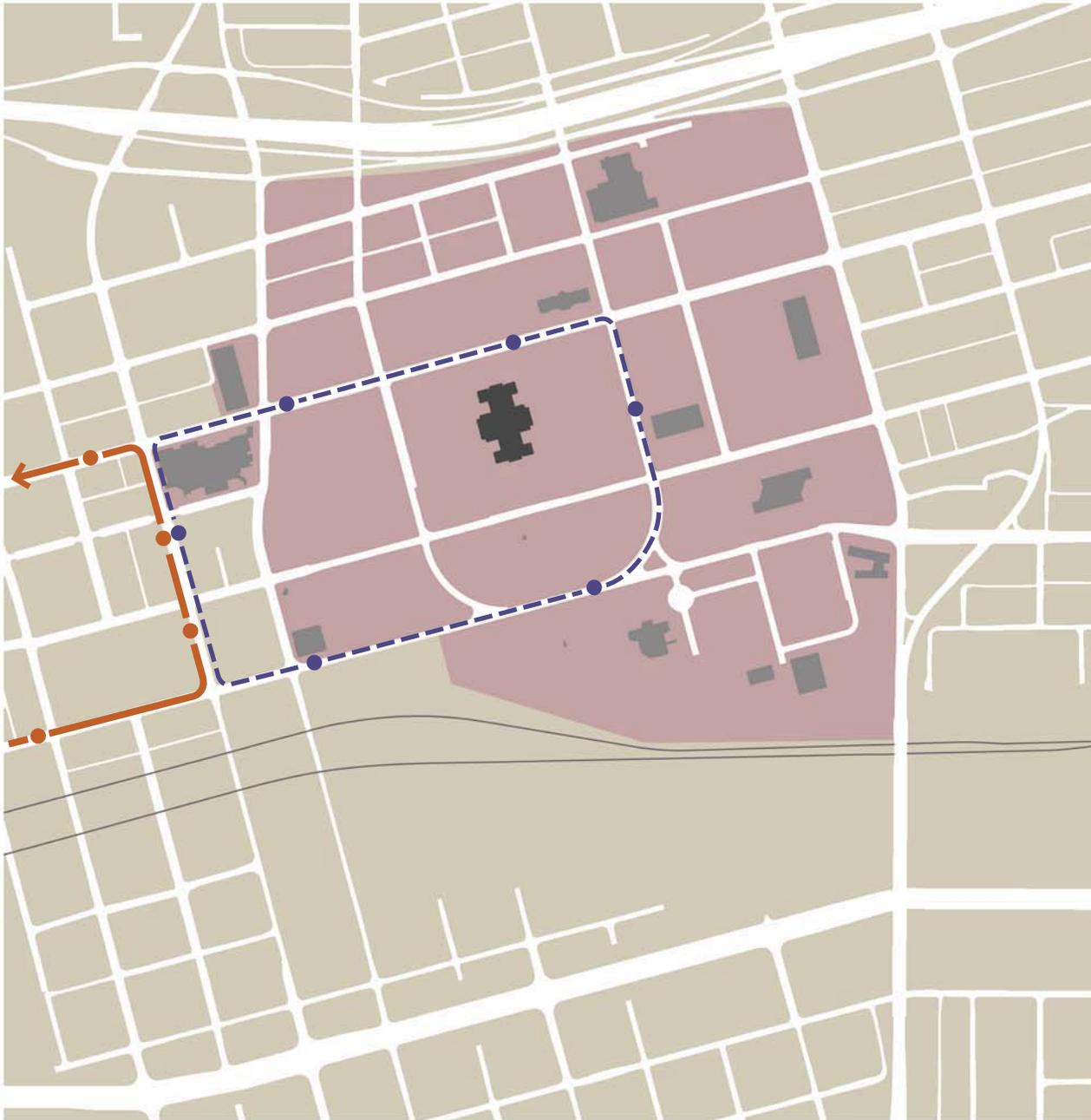


## Building Orientation

This diagram will be used to exhibit building relationships with adjacent green spaces, plaza, streets, and associated parking. It will also discuss the solar orientation or each building to address the sustainability issues discussed.

- Future Green Space
- Proposed Building
- Building Orientation
- Secondary Road
- P Parking





## Proposed Capitol Shuttle Line

This diagram will be used in the final documents to describe the anticipated route of both the City of Des Moines proposed streetcar and the potential Iowa State Capitol shuttle. The exhibit now simply shows the anticipated route at this time and still can change as the plan evolves.

## Sustainability

The Capitol Complex master plan will guide Des Moines and the State of Iowa into 21st century sustainable practices. The Capitol Complex should become a living laboratory, placing Iowa's most advanced sustainability features where they are highly visible as a state model. These features will use proven renewable energy sources wherever possible, and also create demonstration project that have the potential to take root on a larger scale.

The Sustainable Development Principles section from the 2000 Capitol Complex Master Plan took the best sustainability principles of the day and organized them along the same lines as the newly introduced LEED green building standard. Many of these forward-thinking guidelines have since become standard practice for well-planned projects. The sustainable development principles in this updated plan break new ground by blending the following elements together: Successful and relevant parts of the 2000 Master Plan Sustainable Development Principles section, elements of LEED, America's most widely recognized green building standard, and new cutting edge sustainable strategies for ensuring responsible power and water management and strong environmental leadership on the Complex.

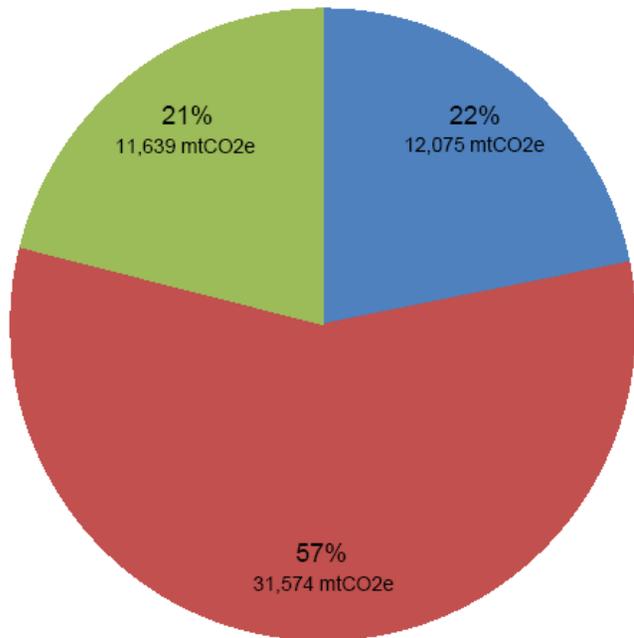
## Carbon Footprint

In order to effectively cut carbon emissions at the Capitol Complex, an accurate carbon footprint must be established. The Capitol Complex has completed a carbon footprint for the year 2008 as part of their cutting-edge practices. This exercise shows the major sources of carbon emissions at the complex and gives insight into future improvements. According to the 2008 carbon footprint, 79% of all CO<sub>2</sub> output from the Capitol Complex comes from building energy use, so reducing carbon dioxide output depends on greater building energy efficiency. The charts below give a breakdown of the overall footprint and its major components:

### Guidelines

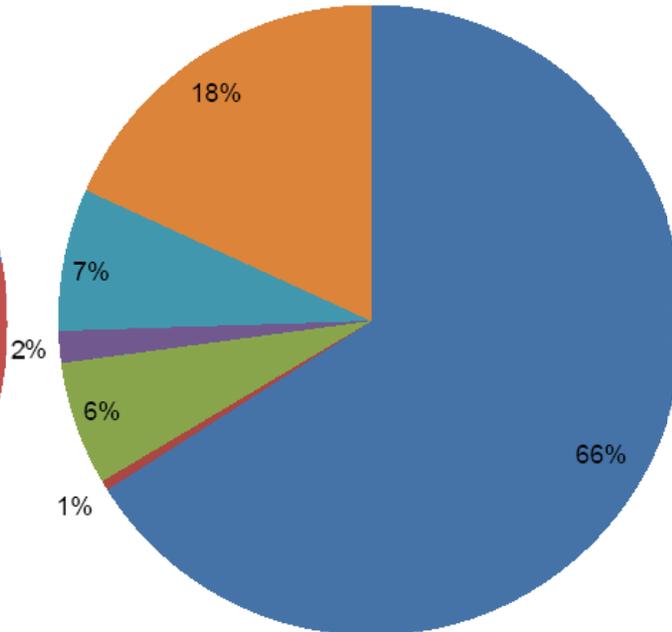
- Update the Capitol Complex Carbon Footprint on an annual basis
- Account for all possible CO<sub>2</sub> sources
- Use annual results to refine and focus sustainability goals for the Capitol Complex

Overall Carbon Footprint breakdown  
Iowa State Capitol Complex  
Total Carbon Footprint = 55,288  
Metric Ton Equivalent Co2 (mtCO2e)



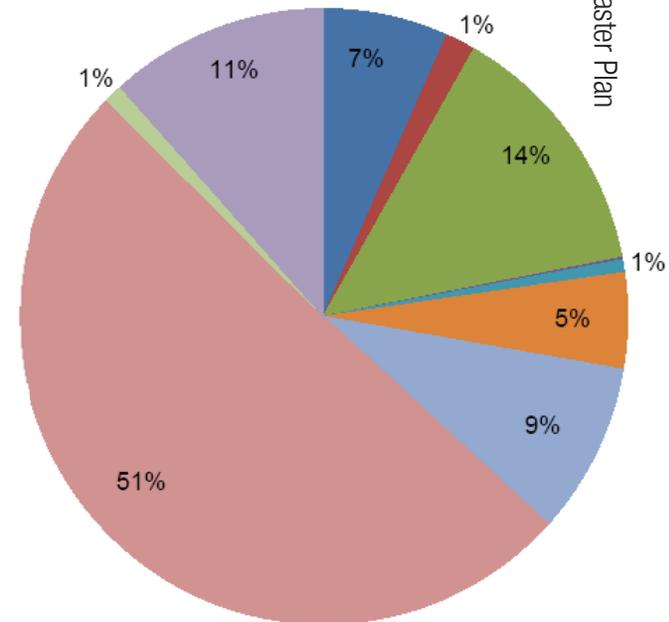
- Building Natural Gas
- Building Electric
- Vehicle use

Transportation Carbon Footprint Breakdown  
Iowa State Capitol Complex



- Staff on Capitol Complex
- Legislators in Session
- Legislators to/from District
- Legislative Staff
- Visitors, Daily
- Fleet Vehicles

Gas Usage - 12,075 mtCO2e  
Central Energy and Public Safety excluded



- Hoover
- Jessie Parker
- Lucas
- New Historical 3 (#23019)
- Ola Babcock Miller
- Rowhouse
- Statehouse Cafeteria
- Vehicle Dispatch 1 (#40021)
- Vehicle Dispatch 2 (#40022)
- Wallace

## Building Standards and LEED

LEED is an internationally recognized certification system that measures how well a building or community performs across all the metrics that matter most: energy savings, water efficiency, CO2 emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts. Over the past decade, LEED has become the most widely used green building standard outside of single family construction. Most US municipalities use LEED as a minimum sustainable building standard on all new construction and major renovation projects, to ensure optimal performance in the following categories: Sustainable Sites, Energy Efficiency, Water Efficiency, Materials and Resources, Indoor Environmental Quality, and Innovation. [www.usgbc.org](http://www.usgbc.org)

### Guidelines

- Seek high-level (Gold or better) LEED Certification on all new construction and major renovation projects on the Capitol Complex
- Mandate building all new construction and major renovation projects to LEED Standards if certification is not possible
- Consider LEED for Existing Building certification for all existing buildings on the Capitol Complex.
- Consider LEED for Commercial Interiors for all interior renovation and Tenant Improvement projects
- Use the various LEED rating systems as a strategic guide for all building and operations-related projects on the Capitol Complex
- Rehabilitate buildings and reuse existing structural shells

## Building Energy

Buildings consume more than 50% of all energy produced in the United States. Reduced energy consumption benefits the Capitol Complex from both environmental and economic standpoints. The Capitol Complex Gets power from MidAmerican Energy, who currently generates 51% of their power through burning coal. The Building Energy section of this document strives to support the goals of Governor Culver's sustainability-focused Executive Order No. 6. [http://publications.iowa.gov/6275/1/06-080221\[1\].pdf](http://publications.iowa.gov/6275/1/06-080221[1].pdf)

### Guidelines

- Proper orientation. A building with its long sides facing North-South (opposite page top) will use approximately 6-8% less energy in Des Moines than a building with its long sides facing East-West (opposite page bottom), due to less heat gain in the Summer and more in the Winter, as shown on the sun path diagrams. These savings continue for the life of the building, and bring proportional savings in mechanical system initial costs because systems are designed for lower peak loads. This measure can translate to \$13,000-\$17,500 in annual energy cost savings for a 145,000 square foot office building, based on national average office building energy use
- Pursue LEED Certification on all new construction projects
- Energy Star certify new and existing buildings
- Conduct comprehensive life cycle cost analyses of current energy usage and future needs for each building. Investigate possible economies through resource sharing with other state buildings
- Commission/recommission all buildings
- Exceed state energy codes where possible
- Consider natural ventilation, heating and cooling during portions of the year

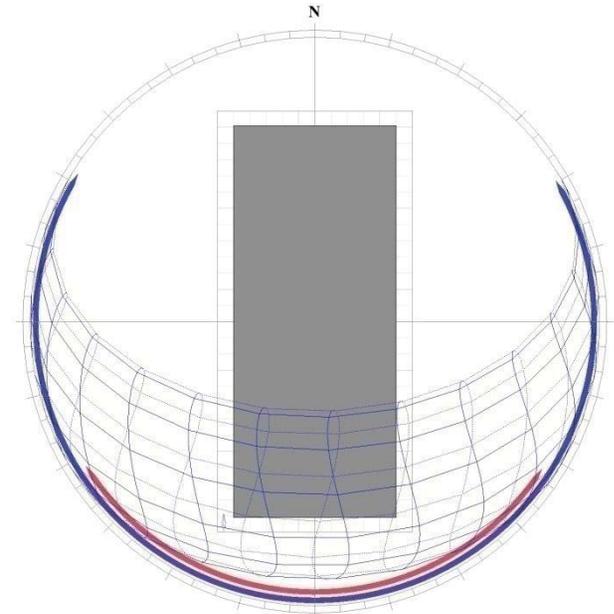
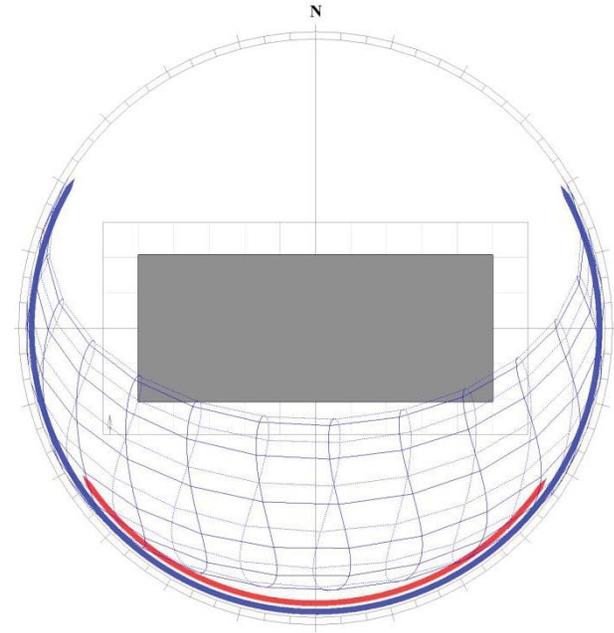
- Consider waste heat recovery systems
- Consider renewable energy sources
- Design new buildings to take full advantage of natural daylight, thereby reducing energy consumption and costs.
- Add detailed metering equipment to monitor building performance and take corrective steps when performance is lagging

## Cutting Edge Sustainability

Make the Capitol Complex a guiding light for the City of Des Moines and the State of Iowa by considering the following strategies for areas of the complex, either as demonstration projects or as large-scale solutions as appropriate.

### Guidelines

- Consider Geothermal heating and cooling wherever possible
- Consider augmenting Geothermal systems with solar hot water collectors
- Consider a “Road Energy System” that functions as a giant solar hot water heater under asphalt, capturing solar energy from the streets for use in buildings, melting snow on roads in winter, greatly increasing pavement life, and eliminating the need for chemical de-icer.
- [http://www.ooms.nl/english/pages/divisie\\_gww/road\\_energy\\_systems.html](http://www.ooms.nl/english/pages/divisie_gww/road_energy_systems.html)
- Consider small-scale wind generation in appropriate zones on campus
- Consider photovoltaic installations in appropriate zones on campus
- Consider installation of a Living Machine or Membrane Bioreactor to treat wastewater on campus for irrigation and other non-potable purposes



## Water Efficiency

- Strive to reduce building water use by 50% from 1992 EPA targets
- Progressively replace existing fixtures with water-conserving fixtures
- Introduce a water recovery system (gray water)
- Consider water-conserving cooling towers
- Use no potable water for irrigation by watering ground with reclaimed water or eliminating irrigation all together (utilize indigenous plant material, mulching, and drought-resistant plants; limit high maintenance beds to special locations; design lawn areas to facilitate reduced mowing and greater organic maintenance)

## Stormwater Management and Site Planning

Des Moines currently gets about 3/4 of its water from the Raccoon and Des Moines Rivers. The remaining 1/4 is groundwater pumped from beneath Water Works Park. The proximity of Des Moines' water source to the city makes water pollution control critically important. This section deals with the closely intertwined issues of Site Planning and Stormwater Management.

### Guidelines

- Only use potable water for potable needs; used reclaimed water whenever possible for everything else
- Eliminate impervious surfaces wherever possible
- Filter stormwater runoff in rain gardens and through other natural means. Where

full infiltration is not possible, filter storm water through a bioswale or rain garden before draining to a dedicated storm water line, as shown in the diagram to the right, taken from the City of Des Moines informational website on rain gardens

- [http://www.ci.des-moines.ia.us/departments/pr/ProjectsandEducation/rain\\_gardens.htm](http://www.ci.des-moines.ia.us/departments/pr/ProjectsandEducation/rain_gardens.htm)
- Review landscape improvements for consistency with the Capitol Complex master Plan and sustainability goals
- Avoid development of previously undeveloped land, using surface parking lots and infill sites instead
- Explore means of reducing or eliminating use of chemical de-icer
- Landscape to control erosion, reduce heat island effect (shade trees, light colored materials) and minimize habitat disturbance
- Identify, replace, and repair habitat links
- Utilize alternative transportation facilities (pedestrian, bicycle, carpools, shuttles, commuter rail, public transit) (Refer to new transportation section)
- Encourage mixed land use (trip reduction, walk to work, errands, daycare) per Don's section
- Efficiently site buildings per guidelines in the Building Energy Section
- Support Green Des Moines and the local community in reclaiming their own sustainable goals [www.greendm.org](http://www.greendm.org)

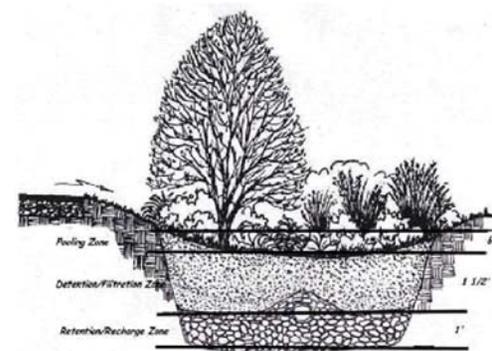
## Sustainability – Storm Drainage

In speaking with the Capitol grounds maintenance staff and others during our previous visits we learned that the Capitol grounds pays a storm water surcharge of \$7000 per month for the excess runoff created by the grounds. By implementing best management practices and viewing the campus storm water comprehensively, the Capitol should be able to eliminate this reoccurring monthly expense.

To start this process we have identified all hard surface parking areas on campus and have begun to analyse how much water is leaving our site. The attached map exhibits the areas in square feet (SF) for each respective parking lot. We have a total of 1,570,620 SF or 36.05 Acres of parking. 85% to 90% of the rainwater that falls on the parking lot is swept away into the storm sewer, disappearing in seconds, and causing distress downstream.

The last parking lot project completed by the State along Grand Avenue is a great start in getting the runoff quantity decreased. We anticipate that many of the principles applied to that parking lot will be applied to the rest of the Capitol grounds. This lot combined the use of bio-swales and permeable paving. The other options as we move forward are the use of detention basins; both on the individual site or in a regional basin. In some cases the use of underground detention is also warranted, but this is the most costly of all the options. The addition of water loving plants and bio-swales throughout the campus will also promote storm water infiltration.

When the analysis is complete we expect to have a comprehensive approach to storm water for the entire campus that may include all of the options listed above. These discussions are ongoing with the City of Des Moines as well as the Capitol maintenance staff and we look to have a recommendation to the Steering Committee in September.





Total Paved Parking Lot Area

A.	166,330
B.	55,480
C.	81,190
D.	37,690
E.	15,860
F.	82,720
G.	82,180
H.	140,700
I.	33,050
J.	78,000
K.	157,460
L.	19,820
M.	32,790
N.	48,580
O.	20,090
P.	96,760
Q.	105,280
R.	129,380
S.	115,850
T.	71,410
Total:	1,570,620 Sq. Ft.



# Transportation

## Current Demands and Facilities

### Streets & Traffic Volumes

Streets serving the Capitol area remain much as they were in 2000. However, certain important changes have occurred in the meantime:

- Locust Street was converted from one-way to two-way operation, as recommended in the 2000 plan.
- Court Avenue was re-stripped for three lanes from its previous four-lane section, a variant of the recommendation for a 2-lane with median section in the 2000 plan.
- I-235 was rebuilt to provide an extra lane in each direction and to improve previously awkward ramps and merges.

As a result of those changes, especially the I-235 improvements, traffic volumes have changed in the Capitol area. Figure 1 shows average daily traffic volumes as counted by the Iowa Department of Transportation (IDOT) in 2008, and Figure 2 shows volumes for the afternoon peak hour (4:00 – 5:00 p.m.). Notably, a shift in traffic from local streets to I-235 occurred resulting in lower volumes on many streets in 2008 than in 2000. For instance, Grand Avenue west of 14th St. carried 9,420 vehicles per day in 2008, down from the 10,700 it carried in 2000, a 12% decrease. I-235 now carries 8% more traffic in the Capitol area than it did in 2000.



Figure 1: Year 2008 Average Daily Traffic Volumes

Source: IDOT



Figure 2: Year 2008 PM Peak Hour (4-5 PM) Daily Traffic Volumes

Source: IDOT

## Transit

Transit service to the Capitol area has increased since 2000. Nine routes now pass by the Capitol versus four routes previously. New, peak period service has been implemented to serve commuting employees better. Additionally, the D-Line shuttle between the Capitol and downtown Des Moines began service with 10 minute frequency, consistent with the recommendation of the 2000 Master Plan.

In 2008, the State began participating in DART's employer-purchased pass, allowing state employees to ride buses simply by showing their employee identification cards. As a result of these actions, and the effect of higher fuel costs, more employees now ride the bus to work; it is estimated that approximately 5% of employees ride the bus, nearly double the number riding in 2000.

Ridership on the D-Line shuttle averages approximately 750 boardings per day, of which the Capitol area generates 17% of the total. The shuttle is funded jointly by the State, the City of Des Moines and Downtown Partnership. The State's share for the last year was one-third of the total operating cost (\$120,000 of \$360,000). Annual ridership is approximately 187,500 passengers, so the overall cost per rider is \$1.92. Apportioning the state's contribution to Capitol area boardings alone yields a cost per rider of \$3.76. It is possible that the state benefits from rides beginning elsewhere and ending near the Capitol area boardings alone yields a cost per rider of \$3.76. It is possible that the state benefits from rides beginning elsewhere and ending near the Capitol area, so that the State's cost per rider would be less than that based on boardings alone. Near the Capitol, the shuttle's most heavily used stops are at 12th/Walnut, 6th/Grand, and at 12th/Grand.

## Walking and Biking

The share of employees walking and cycling to work is estimated to be about 1.5%. Sidewalks are typically available on all streets leading to and from the Capitol area. Marked crossings are provided at signalized intersections and at selected mid-block locations on Grand, Walnut and Court. Lights and signs have been added to highlight mid-block crossing, particularly on Court Ave.

Due to changes in building security, many doors previously opening to walkways are now closed. Pedestrians often need to navigate to open doors that may not be available from

the street sidewalk. However, walkways rarely surround buildings, so pedestrians are occasionally left with uncertain paths or directions to reach lobby entrances. The Capitol building is the most notable example of this limitation on pedestrian access.

Cyclists share the road with general traffic. The City of Des Moines is currently preparing a bicycle master plan that will identify future bike routes and facilities.

## Employee Commuting

Estimates of employee commuting habits have been made based on observed parking use, transit usage and estimates of total employment. The current patterns are shown in Table 1.

Employee Commuting			
Table 1	Mode	2009 Estimated % of Employees	1996 Estimated % of Employees
	Drive Alone	82%	85.1%
	Rideshare	12%	9.5%
	Transit	5%	2.4%
	Walk & Bike	0.5%	3%
	Other	0.5%	--
	Total	100%	100%

Ridesharing and transit use have increased over the last 13 years, due largely to higher fuel costs in recent years. As a result, fewer employees drive alone to work. This estimate, while believed to be reasonably accurate, should be verified through an employee travel survey to establish a reliable baseline for future planning. Such a survey could also provide useful information about geographic commuting patterns and offer insights into locations where increases in ridesharing, transit use, walking and biking could occur.

## Parking

Parking on the Capitol Complex primarily consists of surface lots and one major parking ramp. The ramp, already planned at the time of the 2000 Master Plan, was subsequently constructed and opened to the public. Table 2 lists the number of parking spaces for both on-street and off-street locations in the Capitol Complex. The off-street supply reported here reflects information provided in a State sponsored parking study from 2006 as well as field observations of street parking. Supply figures have not been updated or validated since 2006.

Existing Parking Supply				
		Stalls*	Handicap Stalls	Total Stalls
Table 2	Off-Street			
	Lots	3,344	227	3,571
	Garage	862	21	883
	Total Off-Street	4,206	248	4,454
	On-Street	230		240
	Mercy Hospital	186		186
	Grand Total	4,622	248	4,880

\* Based on 2006 data - current inventory not verified  
 Source: Snyder & Associates; Tilghman Group

## Visitor Parking

Approximately 500 spaces are dedicated to visitor parking. This amounts to 11% of the Capitol's off-street supply. Additionally, visitors and employees have equal access to 990 spaces, split between two locations. Figure 3 shows locations of visitor parking. Visitors, of course, can also park on the street.



Figure 3: Current Visitor Parking Locations

## Changes to Off-Street Supply

Since 2000, parking supply on the Capitol Complex has increased by approximately 1,100 spaces. This gain is due largely to the parking ramp at Grand/Pennsylvania, expansion of Lot 16 and to new lots at the Public Safety Building and the Judiciary Building. Pending acquisition of Mercy Hospital, parking supply will increase by another 186 spaces.

## Parking Utilization

Use of parking was briefly observed on a weekday during April 2009. Based on that sample, Table 3 summarizes parking utilization.

Parking Utilization (April 2009)			
	Occupied Spaces	Supply (Spaces)	Utilization
Lots	3,108	3,571	87%
Garage	640	883	72%
Off-Street Total	3,748	4,454	84%
Mercy Hospital	160	186	86%
On-Street	218	240	91%
Capitol Area Total	4,126	4,880	85%

Source: Tilghman Group

Observed demand included legislative use as the legislature was in session. It is estimated that legislators and their staff use approximately 420 parking spaces (subject to verification). In other words, legislative use accounted for 10% of total demand, not including lobbyists and other visitors to legislative offices and chambers.

Lots are heavily utilized with use at practical capacity. Practical capacity is the point at which a driver perceives the lot or garage to be full and has difficulty finding the last remaining open spaces. Practical capacity typically occurs when utilization reaches 85% - 90% of capacity in a self-park facility.

The garage operates with ample reserve capacity (243 open spaces), even though it houses motor pool and various departmental vehicles in addition to employee and visitor vehicles. The garage is also open to the general public. Its comparatively low level of use results in part from its location away from most state buildings (the majority of employees work on the east side of the Capitol Complex, whereas the garage is located on the west side). The garage functions as a spillover location when the legislature is in session. Anecdotally, it is said that some downtown employees use the garage as a park & ride location in order to benefit from free parking and a free shuttle ride downtown.

On-street parking is heavily utilized as it provides a convenient option for both employees and visitors. Vehicles may park on the street for free and generally without time restrictions.

Typically, 75 of those vehicles are available for daily use, with the remaining 144 assigned on a monthly basis to state agencies. Some agency vehicles are located elsewhere, away from the Capitol Complex. Motor pool vehicles are parked on the 3rd floor of the garage. The motor pool has grown by about 50 vehicles over the last 5 years, due mainly to an increase in demand resulting from higher fuel prices as employees find it less expensive to use a state vehicle than a personal vehicle for work-related trips.

For reference, parking for the Capitol area is provided in these proportions:

Current Parking Ratios	
Vehicles Parked per Employee	0.94
Spaces per Employee	1.01
Vehicles Parked per 1,000 sq. ft.	2.09
Spaces per 1,000 sq. ft.	2.25

## Parking and the Capitol's Image

Surface lots located in garden areas create a poor image for the Capitol. In particular, those lots located immediately east of the Capitol and north of the Lucas building diminish the grandeur of the Capitol and foster the impression of a temporary solution to parking, much like that of a construction zone. It is one thing to have an access road leading to the steps of the Capitol, but quite another to have a vast surface lot paved right to the edge of the steps with vehicles pointed directly at the building. The example of the West Terrace reclamation shows well the benefit of locating parking in more functionally appropriate areas in order to create more broadly useable public spaces near the Capitol. Indeed, retention of surface parking in the heart of the Capitol's gardens means that the Capitol is not yet fully restored.

## Parking Policies

Parking throughout the complex is provided free of charge and with little restriction of use. A previous system of assigning employee parking to lots based on their work sites was dropped once sufficient parking was provided. While free to the user, the lots and garage incur significant costs to the State to build, operate and maintain. The garage alone requires \$101,000 per year to operate, while lots require snow plowing and removal, cleaning, lighting, periodic resurfacing and restriping, as well as security patrols. No parking related revenue exists to help pay those expenses. These costs represent a taxpayer subsidy to employees and visitors who drive to the Capitol.

The State recently began participating in DART's employer-purchased transit pass, allowing state employees free rides on DART buses simply by showing their ID badges. While a useful benefit to some employees (also subsidized by the taxpayer), the offer of free transit rides is undercut by the policy of providing free parking. Furthermore, free parking provides no inducement to share rides.

## Future Needs

### Parking

Given anticipated employment growth on the Capitol Complex, Table 4 shows future parking needs, assuming the continuation of current parking policies.

Projected Employment and Parking Demand					
Table 4		Forecast of Employees by Year*			
		2009	2015	2020	2025
	Employees	4,411	4,597	4,824	5,062
		Vehicles Parking -- Current Transportation Policy			
	Employees	3,291	3,430	3,599	3,777
	Legislature	418	418	418	418
	Motor Pool	217	227	238	249
	Visitor	100	104	109	115
	Total Vehicles	4,026**	4,178	4,364	4,559
	<i>Increase over Existing</i>		152	338	533

\* Preliminary projections, pending verification

\*\* Does not include vehicles currently parking for Mercy Hospital's activities

Source: ZGF, Tilghman Group

Under current transportation policies, parking demand would grow 13% by 2025. While a manageable amount to accommodate over the next 16 years, opportunities exist to reduce growth in parking, as discussed in the section on Recommendations.

### Walking and Biking

An increase in commuting by bicycle and walking can be expected over the next decade. A younger workforce more accustomed to cycling and walking to work, and one tending to live closer to work will increase use of non-motorized modes of commuting. Accordingly, adequate facilities will be needed to meet such demands. Development of regional bike routes is already being examined by the City of Des Moines through a new bicycle master plan, presently underway. On the Capitol Complex, space for bike racks and provision of showers, changing areas and lockers will be needed.

## Recommendations

### Transportation Demand Management Plan

A principal recommendation of this Master Plan is to implement a Transportation Demand Management Plan for the Capitol Complex. The purpose of the TDM plan is to increase commuting options for employees and reduce the amount of parking to be constructed. Achieving that purpose will result in lower facility construction costs, increased equity in employee commuting benefits, and reductions in the Capitol's carbon footprint.

- Charging for parking. The price of parking is one of the most influential factors in employees' deciding how to travel to work. Generally, the price of parking should exceed the price of a transit pass.
- Continued provision of discounted bus passes.
- Assistance in organizing carpools and vanpools
- A guaranteed ride home in case of emergency
- A flexible transportation pass that allows for a combination of transit and parking use (in which the bus pass can also be used as a parking pass on a limited number of days each month), to address employees' varying commuting needs
- Facilities to support cycling including showers, changing rooms and lockers, as well as secure bicycle storage areas
- Provision of car-sharing vehicles for personal or business use
- Providing customized commute options for new employees so that they know the full range of choices and costs available to them.
- Promoting commute options through periodic transportation fairs, employee newsletters and other popular means of communication

A specific goal is to reduce driving alone by 10% over the next 10 years. That level of reduction would virtually negate any increase in parking demand on the Capitol Complex by 2020. Less parking would need to be constructed in the future, resulting in significant cost savings. As an illustration of savings, a reduction of 100 parking spaces yields a savings of \$2 million in construction cost, and an annual reduction in operating and maintenance costs of at least \$12,000.

An employee transportation survey should be administered to establish a reliable baseline for current commuting patterns. The survey should be designed so that response data can be mapped to determine important geographic characteristics as a step in identifying actions to improve commuting options. Follow-up surveys at least every other year, if not annually, would enable measurement of progress in meeting the commuting goals.

## Shuttle

Recent experience with the D-Line shuttle demonstrates that demand does exist for short trips between the Capitol, East Village and downtown Des Moines. However, certain improvements could increase its convenience and reliability for Capitola area employees and visitors. Two types of improvements are recommended:

### Route Independent Improvements

- Replace the current vehicle with a contemporary low-floor, double door model for easier boarding for all passengers, including those using wheelchairs.
- Review procedures for providing driver breaks so that shuttle service is constantly maintained.
- Review running time so that more consistent and reliable operation is achieved.

### Route Dependent Improvements

- Implement a Capitol Area shuttle, to connect with the proposed downtown streetcar on 6th Street. The shuttle would operate in a counterclockwise pattern along Court Avenue, to 12th Street, to Grand and to 6th Street. This route puts the shuttle within a short distance of all buildings on the Capitol Complex; the counterclockwise circulation recognizes that most employees will be located outside of the shuttle's loop so therefore would not need to cross the street to reach the shuttle if it operates counterclockwise. (This recommendation differs from the one in 2000 by reversing the shuttle's circulation; while the previous version provided for right-turns exclusively, easing the shuttle's trip, it would be better to ease the passenger's trip by reducing the number of people who must cross the street to or from the shuttle).

The streetcar, if implemented, would run east on Court Avenue, turning north on 6th Street, and then west on Grand. A possible extension around the Capitol has also been proposed. The streetcar would replace the D-Line shuttle.

The Master Plan recommends that the streetcar, if built, turn around on 6th Street. Bringing the streetcar through the Capitol area would introduce overhead electrical lines and poles in conflict with important views of the Capitol, especially at 12th/Grand. Service on 6th would still put the streetcar within an easy walk of the western most buildings in the Capitol area including the Historical Center, the Wallace building site and the Public Safety Building.

## Car Sharing

The State should investigate implementation of a car-sharing program. The availability of a car at the worksite for personal or business trips during the day (or even overnight) can increase the number of employees' choosing to commute by transit, cycling or other modes. While the motor pool makes cars available for daily use, their use is restricted to business purposes. Thus, employees drive personal vehicles to work, then switch to motor pool vehicles for business trips. This results in two vehicles parking on the complex when only one is really needed. Car sharing could alleviate some parking pressure by allowing employees to use a car when needed for whatever purpose, but then be free to choose the most convenient commute mode that day.

## Parking

### Parking Locations

Figure 4 illustrates future parking locations. In order to support the expansion of a campus development pattern, parking should follow these guidelines:

- Locate parking near the edges of the Capitol Area, close to prominent routes of arrival. This means that parking would be clustered at the northwest corner, the northeast corner and the southeast corner to facilitate easy access from regional highways and arterials. Placing parking at the edges also captures traffic at the edges, thereby minimizing the number of vehicles passing through the Capitol area. This in turn reinforces pedestrian priority within the campus.
- Remove parking lots east of the Capitol (Lots 13, 14, 15 and 19). Removing those lots serves two important purposes: 1) it completes the Capitol's restoration by reclaiming the Capitol gardens, and; 2) it creates a genuine campus in the core of the Capitol area, giving pedestrians priority over vehicle storage.
- Replace parking removed from the Capitol gardens with a lot east of Lucas (285 spaces) and additional spaces north of Grand.
- Locate parking within a reasonable walking distance, about 800 feet, of buildings. Where possible, provide access to serviceable pedestrian tunnels.
- New buildings on the complex will mainly be located north of Grand Avenue. Accordingly, most new parking will also need to be built north of Grand Avenue.
- Lyon and Des Moines streets will become primary access routes to parking north of Grand. Given the amount of new parking required under current transportation policies and the relocation of lots from the Capitol gardens, a net increase of approximately 1,125 spaces is anticipated (this figure is preliminary and may change pending verification of building size and employment levels).

Table 5 shows parking quantities by area for Phase 1 based on preliminary projected employment growth. It also accounts for the recommended replacement of parking in the Capitol gardens.

Changes in Parking by Area, Phase 1 (Preliminary)				
	North of Grand	Existing	Future	Change
Floor Area		922,000	1,289,000	367,000
Parking Supply		2,050	3,275	1,225
Parking Ratio (Spaces/1000 GSF)		2.22	2.54	
Capitol Gardens (Grand to Walnut)				
Floor Area		776,000	808,000	41,000
Parking Supply		710	325	(385)
Parking Ratio (Spaces/1000 GSF)		0.93	0.10	
South of Walnut				
Floor Area		521,000	561,000	40,000
Parking Supply		1,690	1,540	(150)
Parking Ratio (Spaces/1000 GSF)		3.24	2.75	
Totals				
Floor Area		2,210,000	2,657,000	447,000
Parking Supply		4,450	5,140	690
Parking Ratio (Spaces/1000 GSF)		2.01	2.25	

Source: Tilghman Group

A shift from predominately surface parking to structured parking will increase the efficient use of land. Existing surface parking lots, essentially land banks, will be developed over time with new buildings and parking structures.

## Potential Parking Revenue

A preliminary estimate of revenue from parking fees indicates that over \$2 million per year could be generated if monthly parking rates were \$50, and visitor rates were \$1 per hour. Such rates would be at the lower end of market rates downtown and in East Village. Those rates are also comparable to rates charged at other state institutions such as Iowa State University and the University of Iowa. Parking revenue would off-set the cost of operating and maintaining parking on the Capitol Complex and could contribute funds to support other transportation programs such as the discounted transit pass and shuttle.

## Streets

As the Capitol complex is further developed following campus planning principles, its streets should also reflect more the characteristics of a campus. That entails providing superior pedestrian crossing, landscaping and street widths appropriate to the setting. A balance must be struck between the traffic functions that each street serves and the campus characteristics that they could support.

### Grand Avenue

This is historically an important street in Des Moines – it connects the City from east to west and in doing so connects the state fairgrounds and the Capitol to downtown. Its role has in part been duplicated by I-235 and will be again duplicated by the extension of Martin Luther King Boulevard (especially once it reaches past 14th Street).

While Grand does run breadth of the city, its cross section and capacity vary depending on its location. At its east and west ends, it has two lanes. West of downtown, it has four lanes, as it does past the Capitol between Pennsylvania and Hubbell Avenue. Between East 6th and 2nd Avenue downtown, it has two lanes for westbound traffic and one for eastbound. Through downtown, it is one-way westbound with three lanes. Changes to the regional highway system and accompanying shifts in traffic from surface

streets to the highways have left some portions of Grand Avenue oversized for the volume traffic using it. In particular, the four lane section through the Capitol Complex carries volumes befitting a two-lane street. Furthermore, the street appears very wide for its neighborhood given the low density of development, its modest traffic volume and limited use of on-street parking.

To strike a balance between maintaining sufficient traffic capacity for future needs, accommodating pedestrians with convenient and less intimidating crossings, and creating a streetscape that makes Grand worthy of its name, it is recommended that Grand be modified in these ways:

- Create a three-lane section between Pennsylvania and 14th with left-turn lanes at intersections and a landscaped median between intersections. Travel lanes would be 12' wide with an adjacent 4' bike lane. The total paved width of 16 feet for each direction of travel would allow for passing a stalled vehicle. The median would provide a refuge for pedestrians crossing the street, particularly at the mid-block location opposite the Capitol building, reducing crossing exposure to 16 feet of pavement at any one time. [INSERT FIGURE 5 – GRAND AVE SECTION BY CAPITOL]
- Retain the existing section of two-lanes westbound, one lane eastbound between 2nd Avenue and East 6th Street, while bulbing out sidewalks at the corners to reduce pedestrian crossing distance from the present 52 feet to 36 feet. Existing parallel parking would be retained in selected locations. Transit stops for both bus and the potential streetcar could also be bulbed out to provide a convenient boarding area without interfering with people on sidewalks or requiring transit vehicles to pull out of their lane. The street's cross-section would be compatible with the proposed streetcar. [INSERT FIGURE 6 – GRAND AVE SECTION WEST OF 6TH]

These changes would significantly increase landscaping along Grand between the river and East 14th Street, create wider sidewalks in most locations, and dramatically narrow pedestrians' crossing distances. The effect would be to create a street that enhances the Capitol and produces a strong visual linkage with downtown. As a result, Grand would better fulfill its function as a processional street for everyday traffic as well as for occasional parades.

## Court Avenue

Previous recommendations to construct a landscaped median on Court Avenue are seconded. The median would serve two purposes: 1) to provide a pedestrian refuge when crossing the street, and; 2) to enhance the landscape of this prominent street through the Capitol Complex.

## Des Moines Street

As the north portion of the campus is developed, Des Moines Street becomes a more important point of access for both vehicles and pedestrians. It already provides primary access to existing parking locations, which now total over 2,000 spaces north of Grand Avenue. By 2025, based on the preliminary land use recommendations, an additional 1,000 to 1,125 spaces would be needed north of Grand Avenue, depending on the effectiveness of recommended transportation demand management actions. It is probable that additional traffic controls would be necessary to accommodate growth in traffic on Des Moines street where it intersections with East 14th and 15th Streets, and with Pennsylvania and East 6th Street.

The cross-section should reflect the streets likely use. With parking located at the east and west edges of the Capitol Complex along Des Moines Street, vehicles would be captured on the west side before reaching East 9th Street, and on the east side before reaching East 12th Street. The existing pavement width of 36 feet would be sufficient to carry projected traffic loads by providing a three lane cross-section with up to two lanes in one direction. It may be practical to provide one lane entering the Capitol grounds and two lanes exiting the grounds. In this way, Des Moines west of East 9th Street would have one eastbound and two westbound lanes, while east of East 12th Street, it would have one westbound and two eastbound lanes. By capturing vehicles destined for parking at the edges, relatively little traffic would pass through the Complex on Des Moines. Accordingly, the cross-section between East 9th and East 12th could be reduced to two lanes. A narrower section 24 to 26 feet wide would be more appropriate as it passes through the north garden which would be a primarily pedestrian area.