

Date September 10, 2012

Request from Robert Eikleberry, 4151 Hull Avenue, to discuss green alleys in the 400 block between Grand and Locust.

Moved by \_\_\_\_\_ to

COUNCIL ACTION	YEAS	NAYS	PASS	ABSENT
COWNIE				
COLEMAN				
GRIESS				
HENSLEY				
MAHAFFEY				
MEYER				
MOORE				
TOTAL				

**CERTIFICATE**

I, DIANE RAUH, City Clerk of said City hereby certify that at a meeting of the City Council of said City of Des Moines, held on the above date, among other proceedings the above was adopted.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my seal the day and year first above written.

MOTION CARRIED APPROVED

\_\_\_\_\_ Mayor

\_\_\_\_\_ City Clerk

31



Rauh, Diane <dirauh@dmgov.org>

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## Request to Speak Before the City Council - form submission

↑ message

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**website@dmgov.org** <website@dmgov.org>

Fri, Aug 31, 2012 at 2:25 PM

To: councilSpeak@gtp.dmgov.org

Cc: CityClerk@gtp.dmgov.org

First Name: Robert

Last Name: Eikleberry

Address: 4151 Hull Avenue

City: Des Moines

State: IA

Zip: 50317

Phone: 5155565197

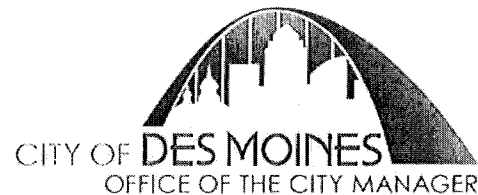
Email: blazsaddle@aol.com

Speaker(s): Robert Eikleberry, Patrick Boltinghouse

Meeting Date: Monday, September 10, 2012

Regarding: Green Alleys on the 400 block between Grand and Locust

May 13, 2011



The Honorable Mayor  
and  
Members of the City Council  
City of Des Moines

Re: "Green Alleys"

Dear Mayor and City Council Members:

On April 25, 2011, and as reflected in Roll Call No. 11-0703, the City Council received a request from the Historic East Village for "green alleys" from East 4<sup>th</sup> Street to East 6<sup>th</sup> Street between Locust Street and Grand Avenue. The Public Works Department has now contacted the cities of Dubuque, Iowa and Chicago, Illinois to learn their "green alley" construction techniques and best management practices for possible use of this type of alley construction in Des Moines.

"Green Alleys"

The City of Chicago, in their *Green Alley Handbook*, explains that "green alleys" can be achieved through a variety of techniques used separately or in combination. These techniques include:

- Technique 1: Alley Drainage Improvement through Proper Alley Pitching and Grading. All alleys, whether they are permeable or not, should be properly graded and pitched to allow water to run to the center of the alley and then to flow to the street. This prevents the need for additional sewer infrastructure and prevents adjacent properties from flooding.
- Technique 2: Permeable Pavement. Permeable pavement has pores or openings that allow water to pass through the surface and percolate through the existing subsoil. Permeable pavement comes in the form of permeable asphalt, permeable concrete, and permeable pavers. In areas where soils do not drain freely, permeable pavement can be used in combination with subsurface drainage systems, like pipe under drains or stormwater infiltration trenches to slow runoff and reduce stress on a combined sewer system.
  - Potential benefits include:
    - Reduces the rate and quantity of stormwater runoff
    - Reduces stress on the sewer system
    - Recharges ground water
    - Filters silt, pollutants, and debris
- Technique 3: High Albedo Pavement. High Albedo Pavement material is light in color and reflects sunlight away from the surface. With less sunlight absorbed by

pavement, less heat is radiated by the pavement. High Albedo Pavement, therefore, reduces the urban heat island effect. This reduces cooling costs, helps the survival of urban vegetation, and improves air quality.

➤ Potential benefits include:

- Reduces the urban heat island effect
- Can be used under a wide variety of site conditions
- Conserves energy by reducing cooling costs
- Improves air quality

- Technique 4: Recycled Construction Materials. Recycled construction materials can be incorporated in a variety of ways in "green alleys." Recycled concrete aggregate can be used in the concrete mix and as a base beneath surface paving. Ground tire rubber can be used in porous asphalt and reclaimed asphalt pavement in non-porous asphalt.

➤ Potential benefits include:

- Reduce waste hauled to landfills
- Reduces the need to extract virgin natural resources
- Saves money

The City of Dubuque has used the pervious pavement technique on alleys with poor surfaces and poor drainage. To date, Dubuque has constructed three blocks of pervious pavement alleys using pervious asphalt on one block and pervious concrete pavers on the other two blocks. They report their experience to be positive and have planned seven additional blocks for pervious pavement. The benefits they have stated include:

- Solves drainage issues
- Improved neighborhood appearance
- Faster snow/ice melt-off
- Can be used where inadequate drainage exists

The drawbacks they have stated include:

- Waterproofing of adjacent buildings needed to prevent infiltration into basements
- Semi-annual sweeping required with standard street sweeper
- Bi-annual sweeping with vacuum sweeper recommended
- Stone filler in the concrete paver porous surface needs to be replenished bi-annually
- Increased construction cost compared to standard alley

### Cost

Based on the construction costs that the City of Dubuque incurred in the use of permeable pavements in three alleys, an average cost for an alley 300' in length by 16' in width is approximately \$70,000. This cost includes the surface and 16" of rock base for stormwater drainage.

The cost for milling off the old surface of an alley and placing a new standard Hot Mix Asphalt surface for the same size alley as above is approximately \$10,000. This is a feasible solution for an alley that has a poor surface but adequate drainage.

Summary

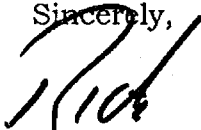
The use of "green alley" techniques is a viable option for use on alleys within the City of Des Moines. Due to the increased construction cost for "green alley" techniques, a funding source would need to be identified prior to implementation. The techniques to be used would be dependent on the specific alley locations and the conditions that exist at those locations, including the susceptibility of the adjacent properties' foundations to water damage. The specific techniques to be used would be determined in the design phase by the Engineering Department.

The alleys nominated by the Historic East Village Neighborhood Board for reconstruction using "green alley" methods are currently in sound, serviceable condition with adequate drainage. The surface of the alleys consists of a hot mix asphaltic cement concrete with a remaining service life of 10 years.

A future Council workshop session on the subject of "green alleys" will be scheduled to permit staff the opportunity to present additional details on "green alleys" and their possible application to the City of Des Moines.

If you have any questions or desire additional information, please do not hesitate to contact the Department of Public Works.

Sincerely,



Richard A. Clark  
City Manager

cc: William G. Stowe, Assistant City Manager-Public Works Director  
Jeb E. Brewer, City Engineer  
Bruce A. Braun, Street Maintenance Administrator

July 27, 2011

The Honorable Mayor  
and  
Members of the City Council  
City of Des Moines, Iowa



Dear Mayor and Council Members:

Following are questions and answers resulting from the July 25, 2011 Council Workshop on Green Alleys.

Q. What is the estimated lifecycle for both the pervious and impervious options?

A. According to Engineering, impervious alleys constructed of Portland Cement Concrete (PCC) or Hot Mix Asphalt (HMA) are designed to have a serviceable life of 50 years with proper maintenance. The serviceable life on a pervious alley is more difficult to determine due to the relatively short time they have been utilized and the design variables inherent in pervious pavement. According to the Asphalt Paving Association of Iowa (APAI) and the Iowa Concrete Paving Association (ICPA), pervious pavements made with PCC or HMA should have a serviceable life of 20-30 years depending on application, location, and proper maintenance. The City of Dubuque is predicting that the serviceable life of their pervious alleys constructed with concrete pavers should be in the range of 30-40 years with proper maintenance.

Q. Is there a type of pervious Portland Cement Concrete (PCC)?

A. Yes, pervious PCC pavement has been used in numerous locations, primarily in parking lot applications. The closest example of a pervious PCC pavement is in the parking lot at the Jasper Winery located on George Flagg Parkway. According to the ICPA, due to soils with poor permeability at this location, a subdrain system was constructed in conjunction with the rock base course to drain stormwater out of the base rock.

Q. What are the requirements to replace existing pavement with pervious PCC?

A. Depending on the location, soil type, etc., the existing pavement is required to be completely removed as well as 1-3 feet of material below grade. The excavated material is then replaced with drainable rock as well as a stormwater drainage system. Once the drainable base material is placed, the new pervious pavement is placed on top.

Q. Do we have data on soil conditions below alleys, especially in areas like East Village?

A. Research by the Engineering Department has revealed that six soil borings were taken in the vicinity of SE 8<sup>th</sup> and Market in the East Village Neighborhood. These borings showed that the soil at this location is composed of clay and silty clay material with poor permeability. If pervious pavement alleys are considered, soil borings and determination of soil types would be a part of the design process for the specific locations considered.

If you have any questions or desire additional information, please do not hesitate to contact me.

Best regards,

William G. Stowe  
Assistant City Manager—Public Works Director

WGS/lf

Cc: Bruce A. Braun, Street Maintenance Administrator