

Source: Community Development - Planning

Agenda Item No:

To: City Council
 From: City Manager and Staff

Council Meeting Date: Oct 21, 2013

Re: Proposed Policy for the Repair, Maintenance and Treatment of Columbia's Brick Streets (case #13-206)

EXECUTIVE SUMMARY:

Attached for Council consideration is a proposed policy resolution for the repair, maintenance and treatment of Columbia's exposed and covered brick streets. The Historic Preservation Commission (HPC) began work on this proposed policy in April of 2012 as a follow up to tracker #3295 (staff to work with the HPC to evaluate the cost of rehabilitating existing brick street versus the installation and maintenance of a concrete street). Specifically, the HPC was asked by the Public Works Department to provide direction on the repair, maintenance and treatment of brick streets. Many of Columbia's brick streets are in need of repair, and ongoing street maintenance and utility work often affects covered and uncovered brick paved streets. This policy provide technical direction on maintenance, repair, situations of disturbance, and a mechanism for the Council or property owners to initiate the "daylighting" or uncovering of presently paved-over brick streets.

The draft policy resolution is provided for discussion purposes. Further Council action setting a public hearing is required to bring back the proposed policy as a formal policy resolution.

DISCUSSION:

Including Short Street, which is currently being rebuilt as a part of the Doubletree Hotel development, there are a total of nine uncovered brick streets in Columbia. Twenty-one additional streets are known to have sections of brick pavement under asphalt (see map). Columbia's brick streets, according to City records, were built from 1909-1915, and were recognized by the HPC as "Most Notable" historic property in 2009. Deferred maintenance over the last century has left many of the brick streets in need of repair. After extensive research by a Professional Engineer (PE), the HPC has recommended repair and reconstruction techniques with emphasis on the following:

1. Replacement of existing sand/gravel bases with concrete to accommodate higher traffic and weight loads and to create a level surface with a long life-cycle less sensitive to soil shifts and other weather and environmental conditions; and
2. The storage and then re-use of existing brick pavers shall be given first priority, followed by the purchase of matching salvaged pavers.

Due to condition and location, the HPC recommends the City repair the following streets with the suggested reconstruction techniques within 20 years:

1. Cherry Street from Fourth Street east to Seventh Street including the intersections of Fifth and Sixth Street
2. Seventh Street from Locust Street south to Elm Street
3. Waugh Street from Broadway south to Locust Street
4. Sanford Street

The policy further provides direction on the maintenance, disturbance and repair of covered brick streets. A core zone is identified with boundaries of Fourth Street, Ash Street, College Avenue and Rollins Street. Within the Core Zone, the policy recommends no brick paving be removed in the course of street or utility work, and provides direction on funding processes and prioritization for the daylighting of covered brick streets. Outside of the core zone, the HPC recommends storing brick pavers for future use on other streets if the course of street or utility work on covered brick streets necessitates their removal. The policy further recommends the Council develop an ordinance allowing a majority of property owners on a street outside the core zone to initiate and fund the daylighting of their covered brick street if so desired.

Many cities have brick street policies and programs, citing benefits in placemaking/district enhancement, historic preservation, heritage tourism, longer life-cycles reducing costs over time, traffic calming, and

aesthetic considerations. The HPC researched programs in Orlando, FL, Davenport, IA, Fort Wayne, IN, Grand Rapids, MI, and Champaign, IL.

In the course of working on this policy proposal, the HPC met with members of the Disabilities Commission and community, and the proposed policy resolution was publicized for public review on the September 3, 2013 HPC meeting agenda, where public comment was taken. The HPC also solicited comments from the Public Works Department on the draft and the present draft reflects those comments.

Attached please find an infographic for the proposed policy which includes a map of uncovered and covered brick streets, the September 3, 2013 HPC meeting minutes, correspondence with Troy Balthazor (Great Plains ADA Center Specialist), and a brochure on the benefits of restoring brick streets produced by the West Central Neighborhood Association of Fort Wayne, IN. The HPC has technical construction and design reference materials available should they be requested.

FISCAL IMPACT:

None.

VISION IMPACT:

<http://www.gocolumbiamo.com/Council/Meetings/visionimpact.php>

2 Vision Statement: Columbia protects and encourages the expression of its historic and natural character, uniting the community with sustainable, healthy planning and design, beautifying the streets and lives of its citizens.

2.1 Goal: Columbia will preserve its existing character and enhance the city's natural and man-made aesthetics.

2.1.3 Strategy: Establish neighborhood areas to feature distinct characteristic "looks," guide development and improve property appearance, and provide assistance to homeowners in order to foster neighborhood pride.

2.2 Goal: Historic areas will be identified, valued, and preserved through education, enforcement, and incentives.

2.2.1 Strategy: Develop a policy of identification, financial incentives such as tax abatement and tax credits, and resources for monitoring to encourage historic preservation.

SUGGESTED COUNCIL ACTIONS:

Acceptance of the report. Council may direct staff to bring back a policy resolution for public hearing.

FISCAL and VISION NOTES:					
City Fiscal Impact Enter all that apply		Program Impact		Mandates	
City's current net FY cost	\$0.00	New Program/ Agency?	No	Federal or State mandated?	No
Amount of funds already appropriated	\$0.00	Duplicates/Expands an existing program?	No	Vision Implementation impact	
Amount of budget amendment needed	\$0.00	Fiscal Impact on any local political subdivision?	No	Enter all that apply: Refer to Web site	
Estimated 2 year net costs:		Resources Required		Vision Impact?	Yes
One Time	\$0.00	Requires add'l FTE Personnel?	No	Primary Vision, Strategy and/or Goal Item #	2.1
Operating/ Ongoing	\$0.00	Requires add'l facilities?	No	Secondary Vision, Strategy and/or Goal Item #	2.2
		Requires add'l capital equipment?	No	Fiscal year implementation Task #	

Introduced by _____ Council Bill No. _____ PR ##-13 _____

A POLICY RESOLUTION

Adopting a policy on the repair, maintenance and restoration of brick paved streets in the City of Columbia.

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. The City Council of the City of Columbia, Missouri adopts the following repair, maintenance and restoration of brick paved streets policy:

- A. Objective: The objective of the City of Columbia's repair, maintenance and restoration of brick paved streets policy is to provide direction to the Department of Public Works as to the treatment of exposed and covered brick streets during routine maintenance, capital improvements, and other utility and street work.
- B. Foundation for City Council actions: Columbia's Community Vision, accepted by City Council on February 4, 2008, states under Community Character, the City of Columbia protects and encourages the expression of its historic and natural character, uniting the community with sustainable, healthy planning and design, beautifying the streets and lives of its citizens; Columbia's Brick Streets were recognized by the Historic Preservation Commission as Most Notable Property in 2009.

C. Overall guiding principles:

- 1. No removal of covered or exposed brick pavement within a recognized Core Brick Street Zone:

The City Public Works department shall not remove any brick pavement – covered or exposed – within the following core zone boundary, from north to south inclusive of Ash and Rollins streets and east to west inclusive of Fourth Street and College Avenue.

- 2. Repair, maintenance and restoration of currently exposed brick streets:

The following provisions shall apply to any currently exposed brick street within the city limits of Columbia:

- i) No currently exposed brick street can be paved over with any other paving material.
- ii) No currently exposed brick pavement can be permanently removed.

iii) If any work performed on exposed brick streets requires removal of the pavement, pavement shall be restored using the displaced bricks as a first priority. Any additional pavement required shall be from a supply of salvaged or purchased matching historic pavement.

iv) If any area larger than 500 square feet is disturbed, the repair shall include concrete pavement installed to the current city standard beneath the brick pavement.

v) The City of Columbia shall fund as necessary for the repair, maintenance and restoration of all exposed brick streets from the following variety of funding sources: 2015 Capital Improvements Sales Tax Bond, Transportation Sales Tax, County Road Rebate Tax, and any other federal and/or state grants as needed for completion. The annual budget account is called, Annual Historic Brick Street Renovation, account C00234 [ID:12].

vi) All currently exposed brick streets shall be re-laid as described in (iv) within a period of twenty (20) years in the following order:

- (1) Cherry Street from Fourth St. east to Seventh St. – including the intersections of Fifth and Sixth Streets.
- (2) Seventh Street from Locust St. south to Elm St.
- (3) Waugh Street from Broadway St. south to Locust St.
- (4) Sanford Street.

3. Repair, maintenance and restoration of currently covered brick streets within the core zone:

The following provisions shall apply to any currently covered (via paving material) brick street within the city limits of Columbia:

i) No brick pavement shall be permanently removed within the core zone described above.

ii) All maintenance and restoration of streets within the core zone shall be done with first priority to using salvaged or purchased paving brick that matches the historic brick.

iii) If, during the course of any street work, it is necessary to remove brick pavement, the brick shall be replaced as described in 2.iv prior to replacement of current exposed pavement, or -if the work is performed in a priority street as described in iv) below - the brick shall be cleaned and stored for replacement when an entire block of the street is restored with exposed brick.

iv) Funding as indicated in section 2.v shall also be allocated during each budget cycle to uncover the following prioritized list of covered brick streets within the core zone.

- (1) Elm Street from Fifth Street east to Hitt St.
- (2) Cherry Street from Seventh St east to Hitt St.
- (3) Eighth Street from Walnut St. south to Elm St.
- (4) Ninth Street from Walnut St. south to University Ave.
- (5) Walnut Street from Eighth St. east to St. Joseph St.
- (6) Broadway St. from Fourth St. east to Waugh St.

v) Public Works, with input from the Historic Preservation Commission, shall periodically update the above list by adding streets based upon public interest.

4. Repairs, maintenance and restoration of covered brick pavement outside of the core zone:

- i) An ordinance shall be adopted to allow a majority (percentage to be established) of the property owners living on a portion of at least one block of a street with historic brick pavement to request that their street be restored using either historic or modern brick pavers dependent upon availability and subject to a special assessment of property tax to pay for the expense of such work.
- ii) If any work is done upon a covered brick street outside of the core zone, any removed brick shall be cleaned and stored for use in maintenance and repairs of other streets. Priority shall be given to using salvaged brick for maintenance and restoration of streets within the core zone over the same work on streets outside of the core zone.

ADOPTED this _____ day of _____, 2013.

ATTEST:

City Clerk

Mayor and Presiding Officer

APPROVED AS TO FORM:

City Counselor

Proposed Brick Streets Policy Highlights:

1. Streets in the core zone:

- Exposed brick streets will not be paved over/no bricks removed
- Paved streets covering brick will not have bricks permanently dug up and removed

2. All Currently Exposed Brick Streets:

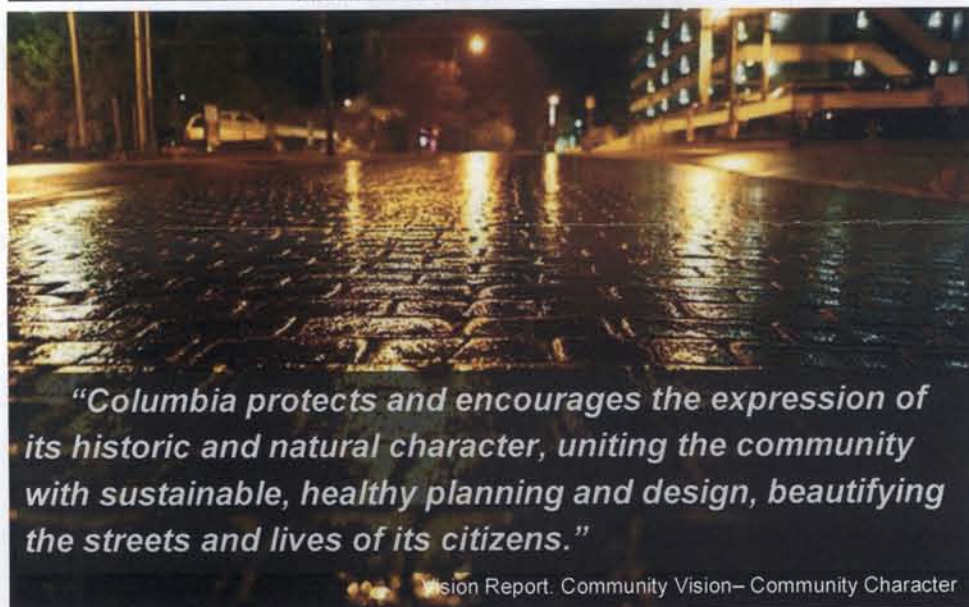
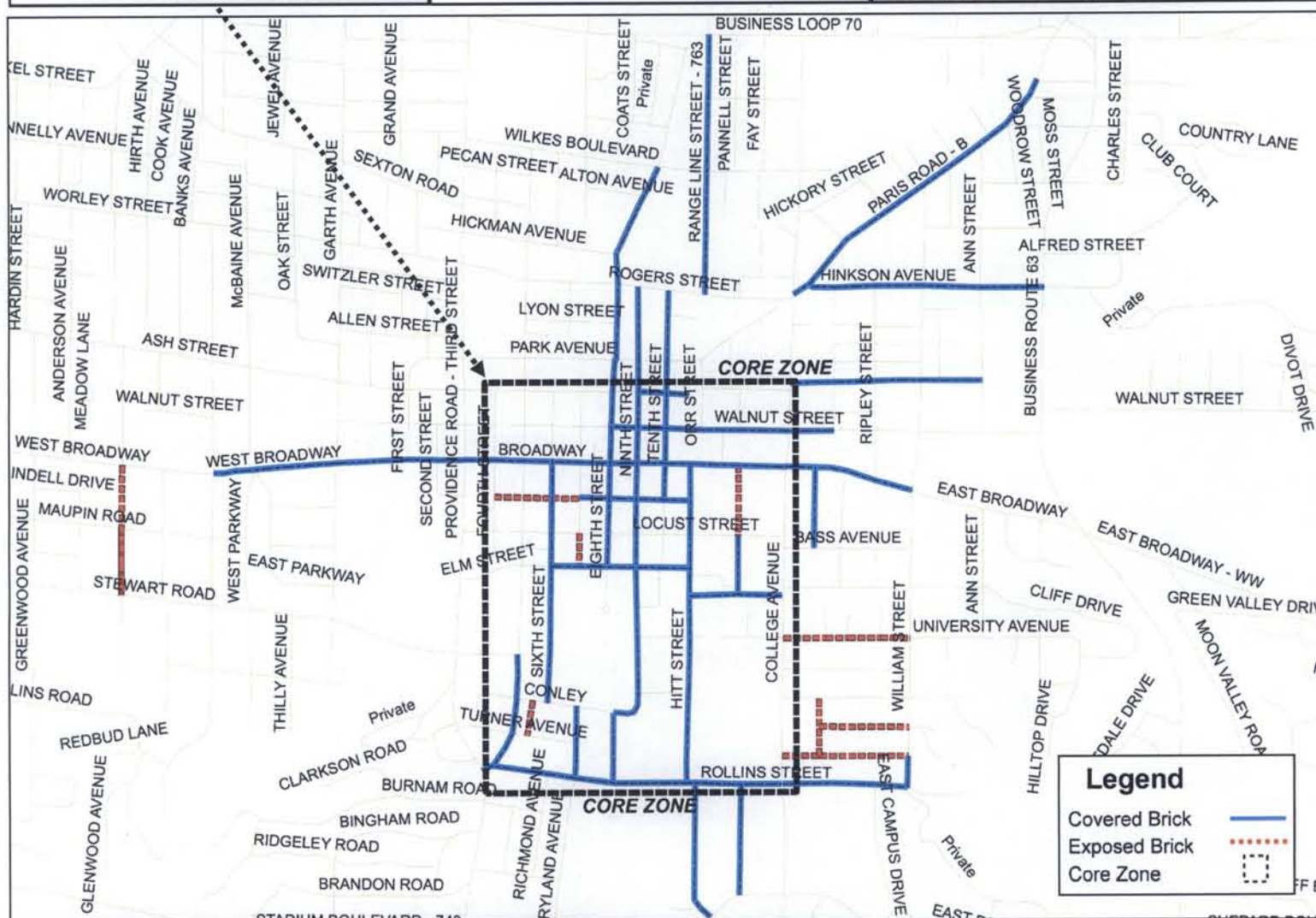
- Will not be removed or paved over
- Maintained and repaired with salvaged bricks when possible
- Built to current City standards if more than 50 sq. feet is disturbed
- Should be re-laid within 20 years to City standards to address repair needs (priority order suggested under Section 2.6)

3. Covered Brick Streets in Core Zone:

- If covered bricks are disturbed, clean and store for future use
- Allocate funding to uncover priority covered bricks to City standards (will require Council action to appropriate funds)

Covered Brick Streets not in Core Zone:

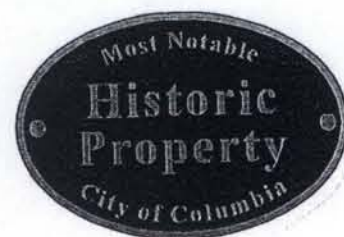
- If removed, bricks cleaned/stored for maintenance/repair of other streets
- Develop an ordinance for a financial and procedural mechanism if a majority of property owners desire to fund restoration of their covered street



"Columbia protects and encourages the expression of its historic and natural character, uniting the community with sustainable, healthy planning and design, beautifying the streets and lives of its citizens."

Vision Report. Community Vision—Community Character

This policy was developed by the Historic Preservation Commission to provide direction to the Public Works Department on the repair and maintenance of Columbia's historic brick Streets.



Brick Streets are recognized by the Historic Preservation Commission as Most Notable Historic Property (2009)

traffic calming • community character • cultural patrimony • downtown historic district • place making • district enhancing • vibrant aesthetic • longer lifecycle • sustainable • higher property values • economic development • heritage tourism

Bricks come back to city streets

By Emma Schwartz, USA TODAY

Seven years ago, the city of Winter Park, Fla., peeled the concrete off its main street as part of construction project and found a brick surface that had been laid about 80 years earlier.



Annapolis, Md.
recently re-paved
many of the streets
in the Historic
District with brick.

By Tim Dillon, USAT

Residents liked the old surface so much that the city decided to repave the street with the bricks. And the new pavement was so popular that many residents demanded brick streets in their neighborhoods. They even agreed to pay two-thirds of the cost of removing the asphalt from their blocks and re-laying the old bricks. Residents of four more blocks hope their streets will be redone in the next fiscal year.

In an era of more and faster cars and when commuting time is of essence, preserving or even re-laying streets with bumpy bricks seems out of place. But with the growth of cookie-cutter suburbs and strip malls, cities are trying to reduce sameness and make themselves more attractive by etching an identity in brick.

"There is a romantic appeal that people find attractive because it is different," says Dan Marriott of the National Trust for Historic Preservation. Brick streets are "on a scale that people appreciate."

Winter Park's brick restoration program is one of the most extensive in the country, but the city is not alone in its effort to preserve or bring back a method of paving that had all but disappeared during the last half century. Exactly how many towns and cities are returning to brick streets isn't known. But the trend seems to be going on in all parts of the country:

- Champaign, Ill., and Davenport, Iowa, are among dozens of cities that ban paving over brick streets with other materials. Both cities spend nearly \$100,000 a year to maintain brick streets.
- City officials in Cumberland, Md., plan to expand preservation of its brick streets to another 6 square miles. The city already protects brick streets within its historic downtown neighborhood.
- The city of Brooksville, Fla., is removing pavement to expose long forgotten brick streets. To keep the cost of exposing the city's 2 miles of uncovered brick streets low, the city uses prison labor, public works director Emory Pierce says.

- Amarillo, Texas, has spent \$200,000 already to restore one block of brick street. The city plans to restore part of another later this year, says city engineer Michael Smith.

- In Blair, Neb., city officials have shelved a proposal to pave over the city's dilapidated brick streets with asphalt after some of the 7,500 citizens urged them to keep the old surface for historical purposes.

Brick streets aren't just about public policy. Preservationists in Blair, lead tours of historic neighborhoods. In Pauls Valley, Okla., residents celebrate the city's old brick streets with an annual "Brickfest."

The growing interest in brick streets has spawned a new wave in urban and suburban design and, in some cases, helped boost local economies. Architects and builders now market the "main street" of old American towns, designing new developments and in reviving the appearance of older cities. Cleveland, Tampa and Annapolis, Md., have turned to brick streets in an attempt to rejuvenate neglected downtown areas. Architects say that they are using bricks in new open-air shopping centers that are designed to replicate the feel of old downtowns.

To keep up with the demand, a few companies have begun making clay and even concrete bricks that match the quality and style of old pavers. Winter Park goes to one of the companies, Pine Hall Brick in Winston-Salem, N.C., when it comes up short. Pine Hall makes bricks to match the ones laid in the city during the 1920s.

A handful of suppliers, like John Gavin, stick to the old bricks. His Historical Bricks Inc. of Iowa City scours dumps across the country for bricks. Gavin says he's shipped bricks everywhere from the Caribbean to Long Island to Beverly Hills. "And we're proud to say 40 to 50 million pounds have been reclaimed in three years," he says.

Most brick roads were built around the turn of the 20th century. They made for a less dusty ride for passengers in Model-T Fords. But by the 1950s, concrete and asphalt had largely replaced brick roads because they made for a smoother ride. Brick thoroughfares were often paved over.

The return to brick streets can be costly. They can more than triple the price of asphalt — or more. Winter Park paid 14 times the cost of asphalt, or about \$7 a square foot, to redo its main street with brick.

Rod Storm, Blair's city administrator, worries that the city won't be able to afford maintenance on the brick pavement. "Budgets are tight. Funds are short. What things are you going to be able to preserve?" he says.

But some cities say the cost is worth it.

"They last. With a little repair they'll go another 100 years," says Eric Schallert, senior engineer in the Davenport, Iowa, Public Works department.

Brick streets last about 50 years, and repairs can be done by replacing only damaged bricks. Concrete has a similar life span but is more prone to potholes. Asphalt roads require resurfacing about every 15 years.

Advocates of brick streets also say that brick streets tend to slow speeding traffic and enhance property values.

In smaller towns that have smaller budgets, it's not so easy to do what Winter Park has done. Nor are there so always so many brick enthusiasts.

Bedford, Ohio, however, chose to keep its brick streets after two preservationists proved that the town could save money in maintenance over the long haul.

Earlier this year, many of the approximately 900 residents of Davenport, Okla., were up in arms when they learned that the town was seeking a state grant to pave over the bricks on their main street. A showdown was averted, town clerk Sue Osborne says, when the money for the project dried up.

Losing the bricks would have cost Davenport its identity, says Paula Sporleder, principal of the elementary school. "Without those streets, we're just another little town losing businesses and dying like every other place around here," she says.

Meeting Minutes
Historic Preservation Commission
September 3, 2013
Room 1A City Hall

Members Present: Robert Tucker, Brian Treece, Patrick Earney, Paul Prevo, Douglas Jones, Brent Gardner, Debby Cook

Members Absent w/ Notice: None

Staff Present: Rachel Bacon

- I. The meeting was called to order by Chairman Treece at 7:01 pm
 - A. 8/6/13 meeting minutes approved unanimously with motion by Commissioner Prevo and second by Commissioner Tucker.

- II. Staff Report
 - A. Demolition Permit Applications were reviewed for the following properties:
 1. 1800 Hillcrest St. (ca. 1960)
 2. 1804 Hill crest St. (ca. 1960)
 3. 114 S Ninth (Rome Rest, ca. 1915)

Commissioner Earney made a motion that HPC draft a letter to City Council encouraging them to work with the owners of 114 S. Ninth to allow them to preserve and expand their building by accommodating it's encroachment upon the public right of way. Commissioner Gardner seconded and it was unanimously approved.

 4. 2009 Mob Hill (ca. Unknown) HPC will contact City Parks staff to arrange a tour of the property for potential salvage
 5. 917 W. Walnut Ct. (ca 1955)
 - B. Updates to ongoing projects
 1. Intern John published a blog entry on the Frederick Building.
 2. HPC received a \$100 scholarship to send participants to the Statewide Conference
 3. The Most Notables Event planning is underway.
 4. A 106 review was received for the bank building at Bethel and Nifong. No historic properties are affected.

- III. Old Business
 - A. The commission discussed and made revisions to the brick street policy to reflect city comments. The revised policy will now go back to the Public Works Director to be recommended to City Council.
 - B. The HPF Grant application was reviewed. A motion to submit a grant application for a Historic Preservation Fund Grant to host a preservation trades work shop, hire a professional consultant to develop and carry out the work shop, and commission the City Channel to produce a highlight video of the work shop, was made by commissioner Prevo with second by commissioner Tucker and unanimously approved.

- IV. New Business
 - A. Dr. Nakhle Asmar is reconstructing the porch on the Niedermeyer Apartments and has asked HPC to recommend to City Staff that he be allowed to replace the porch railings at their current 24" height and not be required to construct 36" high railings as the porch is

generally less than 18" from grade, and the higher railings would greatly alter the character and appearance of the porch. Commissioner Gardner moved and commissioner Earney seconded that HPC draft a letter. The motion passed with a 6-1 vote in favor.

- B. The Most Notable Properties application is ready and one has already been received. Deadline for applications is September 30th. Apps will be reviewed at the October 2nd HPC meeting.
 - C. Officer Elections were held with the following slate unanimously approved:
 - 1. Chair: Robert Tucker
 - 2. Vice Chair: Patrick Earney
 - 3. Secretary: Brian Treece
 - D. Public Comment: Mr. Troy Balthazar from the disabilities commission, Mr. Joe Machens and Ms. Dawn Zetterberg all spoke about difficulties of navigating the existing brick streets in wheelchairs. Mr. Balthazar indicated that his commission is in favor of repairing existing exposed brick streets, but is opposed to uncovering any other streets with brick.
 - 1. Ms. Zetterberg indicated that she has no issue with the current brick crosswalks when asked.
- V. Meeting Adjourned at 8:10 on motion by commissioner Prevo and second by commissioner Tucker.

**Comments on Brick Streets Proposed Policy
From Troy Balthazar (email correspondence)**

From: Balthazar, Troy [mailto:balthazort@missouri.edu]
Sent: Tuesday, March 19, 2013 2:43 PM
To: Brent Gardner
Subject: RE: streets

Our meeting apparently didn't have much effect on you either! I should have got that message when I saw brick streets on the back of your business cards. It happens. Well, my email didn't really try to make the points you made, I pretty much focused on establishing some of my concerns with the streets, but also included other viewpoints and input. So it's a summary of the concerns that come up when I talk to people about the issue.

I would see our goal at this point to be educating both HPC and the community on plans on the table for brick surfaces, the concerns about brick surfaces, and the reasons why you believe that people should change their thinking when it comes to those concerns.

That said, and as I noted at the meeting, it is true that I didn't walk out of Booche's thinking that it was a good idea to proceed with anything but perhaps maintenance of the brick work that's already existing. I certainly understand that the changes in design and construction have started to try to take into account changes in level, deterioration, and other factors in order to improve the surface from the standpoints of both a maintenance and usability.

I'm advising against new development of brick streets and pedestrian features not because I don't recognize that the design has improved, but because of ALL of the factors that come into play in Columbia in March 2013. Regardless of whether we're better at using producing usable brick surfaces, that doesn't change the perception of brick streets as a poor design choice for areas that are commonly used by the public as accessible routes. There's the idea of tax money being used for a potentially inaccessible venture, that's a hot issue. All of the things listed in my email are the arguments that HPC is going to have to face either prior to moving forward or after the fact.

On the one hand, I'm trying to make what I think is a pretty good argument, and in everyone's best interest, that maybe development of new brick facilities isn't the way to go right now. At the same time, I'm honestly trying to help you understand the case against brick streets, and the fact that HPC is very likely to get some resistance on this.

Personally, I don't think the "ambiance" argument measures up to the broader issues on the other side of the table. From a design standpoint, I think that when you use more seams, you're going to have more breakdown, as we're seeing plenty of examples of downtown. Those are my primary personal concerns – if it wasn't public funding, I probably wouldn't be making the case as strongly as I may be making it. To me, I just don't see the need to press this when there are other opportunities for historic preservation that don't create the concerns that brick streets do.

I'd also like to reiterate that I value historic preservation and appreciate the work you and your committee do. The historic character of our community is one of the many reasons I love living here.

Let me know if you want to discuss it further, or if as you suggested you want me to communicate with someone else on the HPC. Thanks, I do appreciate you meeting with me and considering my viewpoints. -Troy

From: Balthazar, Troy <balthazort@missouri.edu>
Date: Wed, May 22, 2013 at 2:29 PM
Subject: [Planning]: RE: Historic Preservation Commission

To: "planning@gocolumbiamo.com" <planning@gocolumbiamo.com>
Cc: Chuck Graham <chuck2419@gmail.com>

Thank you for sending the proposed brick street comprehensive plan. I have provided your commission with detailed arguments against the use of brick in street and pedestrian facility development. To cut to the chase; I am staunchly in opposition to the entirety of item #2 on the proposed plan. I request that this section be removed and that no brick streets that are covered be considered in future planning for bringing back brick streets. I base this on the arguments I've made over the past months. If you plan to back #2 on this proposed plan, I would like to know your justification in relation to the points I've made, beyond ambiance. Thank you, and I look forward to hearing from you regarding revising the comprehensive plan, or why you as commissioners believe it's a good idea to bring back brick streets.

I am not against maintenance of existing exposed brick streets. Thank you, and talk to you soon

Acknowledgments

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Indiana Humanities Council

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Durable Goods:



(photo courtesy of Martin Blakley)

Restoring Historic Brick Streets

The Benefits of Restoring Brick Streets

Many cities and towns across the United States are recognizing the valuable resources they have in their historic brick streets. The streets help to define the historic character of older neighborhoods, and their durability speaks for themselves. In some communities, ordinances have been enacted to protect the integrity of their streets and others have developed comprehensive brick street restoration plans. An added benefit of restored brick streets is that they often spur increased redevelopment activity and historic home rehabilitation in the immediate area.



(photo by Jill Downs)

Street Assessment

Brick streets require restoration due to a few factors. Over time, the base that the bricks lay on may deteriorate to the point that it can no longer support the weight of the bricks.



Collapsed area of brick street
(photo by Jill Downs)

This results in a collapse and appears as a sunken section of street. Frequently, this area then gets filled in with asphalt. Other times, utility cuts in brick streets get repaired with asphalt or concrete. While this generally results in a level surface, it also compromises the historic appearance of the street.

The first step toward restoring a brick street to its proper integrity is to conduct a survey of the overall conditions of the street, curbs and guttering. It may be that more than just the street needs to be repaired and a



Area filled in with asphalt
(photo by Jill Downs)

comprehensive repair of all elements needs to be done. If a street has only a few patches to be leveled or concrete or asphalt to be removed, it is easy enough to do spot repairs. However, it may be the case that a street has so many areas to be repaired that it is better to remove and re-lay the entire section of street.

It is also possible that a brick street may have lost much of its original material due to ill-conceived patching or its historic surroundings have disappeared that it may not be worthwhile to repair the street at all. This street potentially may become a source of salvaged brick pavers for use in other streets.



Utility cut repaired with concrete
(photo by Jill Downs)

Based upon the results of the assessment, develop a plan for phased restoration, beginning with the worst or most important street(s) first. The remaining streets should be prioritized after these.

Financial Considerations

The initial cost to repair a brick street is high, but when it is compared over time to that of several pavings of the same street in asphalt, the cost is comparable. The most expensive component of brick street repair is labor. Many communities have saved on this expense by organizing a volunteer work force to help with the repair effort. Costs may also be saved by salvaging brick pavers rather than purchasing them from a supplier. One way to do this is to sacrifice a brick street or alley to provide pavers for another.

Another way to get salvaged bricks at little or no cost is to be aware of utility work being done on concrete or asphalt streets. Sometimes excavation work is required, and if below the paved surface is an old brick street, the pavers will be dug out along with the rest of the street. Don't forget, too, that when repairing a street, most of the existing pavers can be saved to be put back into the street.



Volunteers help to clean salvaged bricks
(photo by Jill Downs)

Possible funding sources include:

1. Municipal government street repair funds
2. Federal Transportation Enhancement program funds
3. Community Development Block Grant (CDBG) funds
4. County Economic Development Income Tax funds
5. Other municipal funding sources
6. Grants
7. Other donations
8. Raffles and other like fund-raisers
9. Special tax assessment for those affected by the project

Coordinating Efforts

Brick street restoration takes the coordination of many entities including several departments, such as street, engineering, and right-of-way, within a municipal government.

It is also best to consult with utilities providers to determine whether any underground utilities may need replacing or upgrading prior to restoring a brick street. It would be detrimental to fix the street only to have it be torn up in a few years to lay a new sewer line.

Volunteers can be recruited to do many jobs related to brick street restoration. They can help clean and stack salvaged bricks for future use, and they can remove, clean and stack bricks from a street to be repaired. They can also help re-lay the bricks and brush in the grout.

Brick Storage

Brick pavers should be stacked no more than five layers high (or no more than 350 bricks) onto pallets. Reverse the course of each layer. Wrap the pallets in shrink wrap to keep the bricks from falling off the pallet when being transported. If using wooden pallets, it is best to store the stacked brick pavers in an indoor facility.



*Cleaned, salvaged bricks stacked on a wooden pallet
(photo by Jill Downs)*

Basic Brick Street Construction

There are four components that constitute a brick street. They are:

1. **Grout** - The finished brick surface should be grouted with sand or with a dry mixture of sand and Portland cement in a 2:1 ratio. It is brushed into place with a stiff push broom.
2. **Brick paver layer (4 inches)** - A typical brick paver is about 8.5 in. X 3.5 in. X 4 in. About 4.5 to 5 bricks are needed to cover one square foot of area.



(photo by Jason Swisher)

3. **Sand layer (2 inches)**
4. **Concrete base (6 inches)** - Concrete is the most durable base for a brick street.

Repair Process

1. Determine size of area to be repaired.
2. Calculate number of bricks and volume of sand and concrete needed for area. Remember that not every brick



*Example of "toothed" edge after removing bricks
(photo by Jason Swisher)*

taken out of the street will be salvageable for reuse, so a surplus supply will need to be on hand.

3. Remove bricks from area. Pry out the first row by hand using prybars then use a back hoe to carefully pop out the rest. Do not cut the bricks - leave a "toothed" edge.
4. Scrape bricks of any caked-on dirt or concrete and stack them (no more than 5 layers high or a total of 350 bricks) on pallets, alternating the course of each layer, for reuse.

Volunteers cleaning bricks after removal from street (photo by Jill Downs)



5. Using a backhoe, excavate the repair area to a depth of one foot from the top surface of the street. This will allow room for the 6-inch concrete base, the 2-inch layer of sand, and the 4-inch brick layer.
6. Pour the concrete base (6 inches). Using a stiff garden rake or 2x4s as screed boards, level the concrete to a consistent 6 inches below the top surface of the street. Let the concrete solidify before moving to the next step.



*Application of the concrete layer. The wooden structure used here is helping to assure a uniform depth of concrete from the street surface
(photo by Jill Downs)*

7. Add the sand layer (2 inches). Using 2x4s as screed boards, level the sand with the crown of the street. Compact the sand with a tamper or plate compactor.



Screeding of the sand layer (photo by Jason Swisher)

8. Add the brick layer. The pavers should be laid closely together and with the raised name or lugs on the side—not the top or bottom. Cut bricks to fit odd-sized spaces with a water-cooled table saw.



Note that bricks are placed with raised name on the side (photo by Jason Swisher)

9. Once the brick surface is in place, brush in the grout, compact the surface, then brush in more grout. Continue this process until all gaps between the bricks are filled.



Preparing to brush in the grout (photo by Jason Swisher)

10. Mist the street surface with water to finish settling the grout.



Completed repaired brick surface (photo by Jason Swisher)

Equipment

Hammers	Prybars
Push brooms	Garden Rakes
Backhoe	Portable generator
Water-cooled table saw	Level
Brick hammer	Chisels
Putty knives	Shovels
Pallets	Wheelbarrow
Plate compactor	Tamper
Dump truck	String line
Sledgehammer	Hand saw
Cordless drill	

Materials

2 x 4s (screed boards)
Screws
Concrete
Extra brick pavers
Portland cement
Sand (masonry-grade fine)
Water (for cleaning tools and for watering street)

Salvaged Brick Pavers Suppliers

Gavin Historical Bricks

(John Gavin)

Iowa City, Iowa

(319) 354-5251

www.historicalbricks.com

Chicago Antique Brick, Inc.

Chicago, IL 60608

(312) 666-3257

sales@chicagoantiquebrick.com

www.chicagoantiquebrick.com

Schloss Paving Co.

Cleveland, OH 44125

(614) 416-8269

(614) 472-3260 (fax)

Brick Street Consultants

Royce Baier

Brick Street Restorers

440 East Pells Street

Paxton, IL 60957

(217) 379-3832

Communities with Brick Street Restoration Experience

Champaign, IL

Rock Island, IL

Zionsville, IN

Davenport, IA

Grand Rapids, MI

LaGrange, IN

Downers Grove, IL

Re: The Brick Street Policy

To: Mayor and Members of Council

From: The Columbia Disabilities Commission

Date: October 21, 2013

The Historic Preservation Commission has developed a set of policy recommendations, regarding brick streets in Columbia. This issue is extremely important to persons with disabilities and other pedestrians. Therefore, the Disabilities Commission requests that the Council not adopt the policy recommendations of the Historic Preservation Commission.

The Disabilities Commission does not make this request lightly. We oppose the expansion of brick streets, because they pose a threat to the safety of persons with disabilities, and they do damage to expensive and hard to get equipment, which is essential to the mobility and independence of disabled persons. This claim may seem extreme, but I assure you, it is not. Persons with disabilities are often physically fragile. As they roll across the bricks in their wheelchairs, the rough surface of the brick streets jar their bodies. One Commission member reports that she received a compression fracture, while crossing a brick intersection. Holes in the streets and damaged brick pavers at crossings present a hazard. A wheelchair can tip over, when encountering such barriers to accessibility. Such an accident can be devastating to a wheelchair user. Brick streets present a hazard to persons who use canes and crutches, which can become caught in the spaces between the bricks. Persons using mobility aids, such as walkers, experience a high risk situation, when a wheel of their equipment strikes a broken paver or hole in the surface, and a parent pushing a baby carriage, or a person wearing high heels can easily have an accident caused by the brick surface.

Power driven wheelchairs are quite expensive. Members of the Disabilities Commission report that their wheelchairs cost from \$9,000 to \$40,000. Funding for this essential equipment comes, most often, from either the Medicaid or Medicare programs. Replacement equipment is difficult to get approved, and it is likely to be even more difficult in the years ahead. Members report that their own equipment has been damaged, while traveling on brick surfaces.

While it has been stated that brick street construction is improved over past efforts, members of the Disabilities Commission note that in less than a year, recently installed brick crossings are broken and very difficult to pass over. This does not inspire confidence in claims that accessibility is no longer a problem with new construction techniques. The continued expenditure of limited street maintenance funds on such discredited materials is questionable at best, when there are so many demands for accessibility and ordinary maintenance throughout the city.

The claim that brick streets can meet ADA requirements for accessibility is unproven and we believe, very doubtful. The rough surfaces, the continuing need for maintenance, the lowering of the street surface at intersections, when existing surfaces are scraped away, all point to ongoing, serious problems with achieving adequate accessibility to the heart of the city, if an expansion of the brick streets is implemented.

The members of the Disabilities Commission recommend that Current brick streets be repaired, and that a controlled study be initiated to determine if the brick streets provide an accessible, cost effective surface. If they do not, as we strongly suspect, the city consider covering the bricks with more appropriate surfaces. Further, we recommend that no action be taken to pursue expanding the brick streets in Columbia.

There many things that are historic that have proven to be harmful to our community, which we do not want to see return. Deadly chemicals, environmental pollution, and the exploitation of child labor are examples of such historic realities. We do not want to go back to these practices. Brick streets endanger the safety of persons with disabilities, damage essential equipment, and cost the citizens of Columbia an inordinate amount of scarce funds. We ask that we not go back to this historic reality that is demonstratively harmful to a major part of our community.