City of Rolla, Missouri
Downtown Plan

September 2009
Meramec Regional Planning Commission
# 4 Industrial Drive
St. James, Missouri  65559
573-265-2993

In cooperation with:

Rolla Downtown Business Association
10450 Vineyard Drive
Rolla, MO 65401
# Table of Contents

Rolla Community Facts .......................................................................................................................... 5  
Redevelopment Plan ............................................................................................................................... 7  
Planning Process ................................................................................................................................... 9  
Summary of Meetings of RDBA Advisory Committee ........................................................................... 16  
ROLLA DOWNTOWN WOULD BE THE BEST POSSIBLE PLACE IF...................................................... 21  
Archways and Directional Signage ......................................................................................................... 25  
Rolla Traffic Flow Optimization .......................................................................................................... 39  
Town Bound: Bringing Students Downtown ......................................................................................... 50  
Sample: Market Research Survey ......................................................................................................... 65  
Rolla Downtown Public Square and Farmer’s Market ........................................................................ 72  
ARTS DISTRICT: ROUNDABOUT AND FOUNTAIN ......................................................................... 83  
Pine Street Beautification of Downtown Rolla ......................................................................................... 94  
Wi-Fi Rollout in Rolla .......................................................................................................................... 107  
Rolla Arts District Streetscaping and Trees ......................................................................................... 119  
Downtown Rolla Tourism Branding Proposal ...................................................................................... 133  
Pedestrian and Biking Trail System .................................................................................................... 149  
Parking Lot and Visitors Park at the Corner of 6th Street and Elm Street ........................................... 164
Rolla Downtown Business Association

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Bill Mousadakos Mike Samaras
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Rolla Downtown Business Association

Vision Statement:

The Rolla downtown will be a vibrant, friendly, attractive and safe destination that is known for its diversity and unique character.
Rolla Community Facts

Although information about the Rolla Downtown specifically is not available, the following information about the city proper is important to gain an understanding of the needs of the citizens as they apply to the downtown area. Action items identified as part of this plan include data gathering for the downtown area, allowing for additional analysis of that area only.

Rolla is a city of about 18,000, located at the intersection of I-44 and U.S. 63, halfway between St. Louis and Springfield, and an hour south of the state capital—Jefferson City.

The City of Rolla is home to Missouri University of Science and Technology, Missouri’s premier technological research university. The city has a history that predates the Civil War. Located in the south central Ozarks Highland region, Rolla offers an abundance of recreational opportunities. Outdoor attractions are plentiful, with numerous springs, forested hills and rivers. The Rolla parks system has over 304 acres including over 10 miles of walking trails, an outdoor water park and a state of the art indoor fitness complex.

The City was an important site during the Civil War, because the southwest branch of the Pacific Railroad ended in Rolla and the opening of Route 66 in Missouri was celebrated in Rolla. Rolla is a community that values and promotes the arts, as clearly seen by the number of concerts, lectures, and exhibitions held each year.

To better understand where a community is going, it is also important to look at its past. The first European-American settlers in Phelps County arrived in the early 1800s. They worked as farmers and iron workers along the local rivers, such as the Meramec, the Gasconade and the Little Piney. John Webber built the first house in what became the City of Rolla in 1844. In 1853, railroad contractor Edmund Ward Bishop, considered to be the founder of Rolla, settled in the area. The state officially established Rolla as a town in 1858.

There are two accounts of how Rolla got its name. Although usually regarded as folk legend, one account comes from a competition with neighboring Dillon, MO, to be designated the county seat. When Rolla was made the county seat in 1861, the residents of Dillon were then allowed to choose the name of the new city and named it Rolla, after a good-for-nothing hunting dog. A more viable account is that Mr. Webber was said to prefer the name Hardscrabble, used to describe the soils in the region, but Mr. Bishop wanted the name Phelps Center. New settlers from North Carolina voted to name the town after their hometown of Raleigh but chose to spell the Missouri version phonetically.

Having many settlers from the South, residents of Rolla leaned toward the Confederacy during the American Civil War. The town was taken by Union forces in June 1861, building two minor forts during their occupation—Fort Wyman and Fort Dette.

Rolla, historically known as a transportation and trade center, was the original terminus of the St. Louis and San Francisco Railroad. Today the Burlington Northern Santa Fe (BNSF) Railway runs directly through the town.

Rolla was a regular stop along U.S. Route 66, as it is located almost exactly halfway between the larger cities of St. Louis and Springfield. Today Interstate 44, U.S. Route 63, and Route 72 all run through Rolla.
According to the United States Census Bureau, the city has a total area of 11.3 square miles, of which 0.09 percent is water. Rolla has a mix of a humid subtropical and humid continental climate.

As of the census of 2000, there were 16,367 people, 6,514 households, and 3,543 families residing in the city. The population density was 1,448.7 residents per square mile. There were 7,221 housing units at an average density of 639.2/sq mi. The racial makeup of the city was 89.2 percent White, 2.92 percent African American, 0.46 percent Native American, 4.6 percent Asian, 0.12 percent Pacific Islander, 0.73 percent from other races, and 1.69 percent from two or more races. Hispanic or Latino of any race were 1.72 percent of the population.

There were 6,514 households, of which 26.2 percent had children under the age of 18 living with them, 41.0 percent were married couples living together, 10.6 percent had a female householder with no husband present, and 45.6 percent were non-families. Some 35.9 percent of all households were made up of individuals, and 11.4 percent had someone living alone who was 65 years of age or older. The average household size was 2.20 persons, and the average family size was 2.88 people.

Some 20.1 percent of the city’s population was under the age of 18, 25.3 percent from 18 to 24, 25.2 percent from 25 to 44, 16.4 percent from 45 to 64, and 13.0 percent who were 65 years of age or older. The median age was 28 years. For every 100 females, there were 112.1 males. For every 100 females age 18 and over, there were 114.2 males.

The median income for a household in the city was $26,479, and the median income for a family was $38,975. Males had a median income of $31,861 versus $19,625 for females. The per capita income for the city was $15,916. About 13.8 percent of families and 22.0 percent of the population were below the poverty line, including 22.3 percent of those under age 18 and 13.8 percent of those age 65 or over.
Redevelopment Plan

Goal of the Plan

The Rolla Downtown Business Association (RDBA) is providing this plan for redevelopment as a framework for the downtown that is tailored to local needs and opportunities. Having completed many of the recommended actions of the 2001 Rolla Downtown Plan by Nore V. Winter, the RDBA believes that the downtown merchants should once again group to determine additional goals and objectives that will assist the downtown in reaching its vision. This plan is intended to be a vehicle for new life, economic vigor and long-term viability of downtown Rolla. For the purposes of this plan, the Rolla Downtown is defined in the map on the following page.
Planning Process

In the past few years, the city of Rolla has realized a substantial redevelopment of the downtown in terms of esthetics. The city, working with Nore V. Winter in 2001, completed a plan that offered recommendations for improvement of many physical aspects of the downtown. The city has worked diligently to complete many of the recommendations and is now poised to move to the next planning level. This planning process focused on the Main Street approach to planning, addressing four main areas of concern: Design, Organization, Promotion, and Economic Restructuring. In 2009, the RDBA contacted the Meramec Regional Planning Commission to facilitate the development of the new plan. RDBA members and downtown building owners and business operators dedicated significant time to the development of this plan and the result of such cooperative efforts is a plan that reflects the community’s vision for the business district and charts a course of action demonstrating the public support and private investment commitment to the area. Details of task force meetings may be found in Attachment A.

Goals for the downtown

The following action plan was completed for the downtown, using input gathered from task force attendees at meetings held in April-July 2009. Additionally, action items listed in the Downtown Plan by Winter in 2001 that were not completed as of July 2009 have also been incorporated into this plan.

Address all three main entrances to downtown area.

Obtain better mix of retail, including those used by student and senior populations, niche/specialty shops, convenience store and restaurants.

Improve/increase downtown appearance and activities, especially nighttime.

Increase or improve downtown marketing efforts.

Address downtown parking issues.

Strengthen Rolla Downtown Business Association.

Address empty, rundown buildings.

Address lighting issues.
<table>
<thead>
<tr>
<th>Action Item</th>
<th>Deadline</th>
<th>Recommended Person/Group Responsible</th>
<th>Funding Needed</th>
<th>Additional Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal 1: Address all three main entrances to downtown area.</strong></td>
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</tr>
<tr>
<td>Appoint sub-committee (MS&amp;T?) for fact-finding. Includes investigation of what other towns have done.</td>
<td>January 2010</td>
<td>RDBA, City, Chamber</td>
<td>No</td>
<td>Additional action items may be needed, based upon results of facts obtained. Suggest that committee investigate property ownership, historic attributes, etc.</td>
</tr>
<tr>
<td>Place Entryway “Gateway” at Pine/Hwy. 63 Complete design concept that ties in with other entrances Billboard welcome to downtown at 63/Pine</td>
<td>December 2010</td>
<td>City, Missouri S&amp;T and RDBA</td>
<td>$8,000 - $10,000 per year</td>
<td>Refer to MS&amp;T student proposal: “Archways and Directional Signage” in Attachment B</td>
</tr>
<tr>
<td>Improve North entrance (Pine and Hwy. 63) corridor streetscape Work with M S &amp; T to develop concept B.**Continue the streetscape design along key ped/bike routes</td>
<td>December 2010</td>
<td>Missouri S&amp;T and city (assistance from sorority/fraternity houses)</td>
<td></td>
<td>Refer to MS&amp;T student proposal—Rolla Traffic Flow Optimization—in Attachment C</td>
</tr>
<tr>
<td>Change to 2-way traffic hwy 63 to 10th street Review report prepared by M S &amp; T students. If agreed, implement proposal.</td>
<td>June 2010</td>
<td>City</td>
<td>$800-$2000</td>
<td></td>
</tr>
<tr>
<td><strong>Goal 2: Obtain better mix of retail, including those used by student and senior populations, niche/specialty shops, convenience store, and restaurants.</strong></td>
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</tr>
<tr>
<td>Poll student/senior populations for wants/needs.</td>
<td>June 2010</td>
<td>RDBA, City, Chamber, MS &amp; T</td>
<td>No</td>
<td>Survey via student e-connection. Survey for general wants/needs, then pull out those things that are feasible for downtown.</td>
</tr>
<tr>
<td>Survey those who live downtown and/or work downtown for wants/needs.</td>
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<tr>
<td>Inventory existing use, and identify gaps.</td>
<td>June 2010</td>
<td>RDBA, City, Chamber</td>
<td>No</td>
<td></td>
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<tr>
<td>Action Item</td>
<td>Deadline</td>
<td>Recommended Person/Group Responsible</td>
<td>Funding Needed</td>
<td>Additional Notes</td>
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</tr>
<tr>
<td>Investigate markets and availability of space for: Deli C-Store Restaurant Clothing/shoes</td>
<td>December 2010</td>
<td>RDBA, Chamber, MS&amp;T Students</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Inventory/investigate residential above retail Identify issues that impact Educate business owners on funding that assists</td>
<td>June 2010</td>
<td>RDBA, City, Chamber, MS&amp;T Students with help from Wan, DS</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Conduct a demographics study of area surrounding downtown to determine wants/needs</td>
<td>Jan 2010</td>
<td>MS&amp;T Students</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Consider a web site (interactive) that shows businesses and downtown activities.</td>
<td>Jan 2010</td>
<td>RDBA, City, Chamber, MS&amp;T</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>Recruit investors and businesses</strong></td>
<td>On-going</td>
<td>City, RDBA, RREC, Chamber</td>
<td></td>
<td></td>
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<tr>
<td><strong>Invest in civic facilities</strong></td>
<td>On-going</td>
<td>City</td>
<td></td>
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<tr>
<td><strong>Implement design guidelines</strong></td>
<td>December 2010</td>
<td>City</td>
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</tbody>
</table>

**Goal 3: Improve/increase downtown appearance and activities, especially nighttime.**

<table>
<thead>
<tr>
<th>Action Item</th>
<th>Deadline</th>
<th>Recommended Person/Group Responsible</th>
<th>Funding Needed</th>
<th>Additional Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify market for/possible location of Finer Dining and Casual Dining establishments to remain open in evening</td>
<td>December 2010</td>
<td>MS&amp;T Students, RDBA, City, Chamber</td>
<td></td>
<td>The types of dining establishment may be determined through the survey to be conducted as part of 5.2, 5.3 and/or 5.5</td>
</tr>
<tr>
<td>Identify market for/possible location of Banquet / Reception</td>
<td>June 2011</td>
<td>MS&amp;T Students, RDBA, City, Chamber</td>
<td></td>
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</tr>
<tr>
<td>Identify market for/possible location of Theater (Performing Arts)</td>
<td>December 2010</td>
<td>MS&amp;T Students, RDBA, City, Chamber</td>
<td></td>
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</tr>
<tr>
<td>Investigate the possibility of reviving the Uptown Theatre. If agree with MS&amp;T student findings, implement their plan.</td>
<td>Short Term: June 2010</td>
<td>MS&amp;T Students, RDBA, City, Chamber</td>
<td>Short term: None</td>
<td>Refer to MS&amp;T students proposal—Town Bound: Bringing Students Downtown—Located in Attachment D.</td>
</tr>
<tr>
<td></td>
<td>Long Term: (If revival is to be completed): June 2012</td>
<td></td>
<td>Long term (If revival is to be completed): $300,000-$1,000,000</td>
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<tr>
<td>Action Item</td>
<td>Deadline</td>
<td>Recommended Person/Group Responsible</td>
<td>Funding Needed</td>
<td>Additional Notes</td>
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<tr>
<td>Art Walk</td>
<td>June 2011</td>
<td>MS&amp;T Students, RDBA, City, Chamber</td>
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<tr>
<td>Investigate similar activities in other locations and report</td>
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<tr>
<td>Appoint a sub-committee to plan and implement</td>
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<tr>
<td>Music Festivals/ Culinary Festivals/ Spring Juried Arts Festival</td>
<td>June 2011</td>
<td>MS&amp;T Students, RDBA, City, Chamber</td>
<td></td>
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<tr>
<td>Appoint sub-committees to plan and implement each</td>
<td></td>
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<tr>
<td>Place a roundabout and water feature.</td>
<td>October 2010</td>
<td></td>
<td>$100,000</td>
<td>Refer to MS&amp;T student plan—Arts District: Roundabout and Fountain—located in Attachment F.</td>
</tr>
<tr>
<td>Investigate needs of Farmer’s Market</td>
<td>October 2009</td>
<td></td>
<td></td>
<td>Refer to MS&amp;T student plan—Rolla Downtown Public Square and Farmer’s Market—located in Attachment E.</td>
</tr>
<tr>
<td>Conduct beautification activities along Pine Street, including murals, lighting and benches</td>
<td>June 2010</td>
<td></td>
<td>$107,130</td>
<td>Refer to MS&amp;T student plan—Pine Street Beautification -- located in Attachment G</td>
</tr>
<tr>
<td>11. **Assist business owners by offering ways to renovate storefronts in a compatible manner.</td>
<td>On-going</td>
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<tr>
<td>12. **Place information center downtown, with phones, newspapers, restrooms and outdoor seating.</td>
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<tr>
<td>13. Initiate free wireless service</td>
<td>December 2009</td>
<td></td>
<td>$14,000 + rent per month</td>
<td>Refer to MS&amp;T student plan—Wi-Fi Rollout in Rolla—located in Attachment H.</td>
</tr>
<tr>
<td>Develop Arts District adjacent to downtown</td>
<td>December 2010</td>
<td></td>
<td>$90,000-$295,000</td>
<td>Refer to MS&amp;T student plan—Rolla Arts District Streetscaping and Trees—in Attachment I</td>
</tr>
<tr>
<td>Action Item</td>
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<td>Funding Needed</td>
<td>Additional Notes</td>
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<td><strong>Goal 4: Increase/improve downtown marketing efforts.</strong></td>
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<td>Produce a Brochure w/map</td>
<td>December 2009</td>
<td>RDBA</td>
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<td>Billboard</td>
<td>December 2009</td>
<td>RDBA</td>
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<tr>
<td>Additional regular radio announcement to shop locally</td>
<td>June 2010</td>
<td>RDBA</td>
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<tr>
<td>Downtown newsletter (monthly) on-line as well as hard copy</td>
<td>June 2010</td>
<td>RDBA</td>
<td>Ads from businesses</td>
<td>Both in and out of Rolla</td>
</tr>
<tr>
<td>Set up downtown web site with links to individual businesses</td>
<td>June 2010</td>
<td>RDBA</td>
<td>Ads from businesses</td>
<td></td>
</tr>
<tr>
<td><strong>Install a public information system</strong></td>
<td>Sept. 2010</td>
<td>RDBA, Chamber, City</td>
<td></td>
<td>Refer to MS&amp;T student report—Downtown Rolla Tourism Branding Proposal—located in Attachment J</td>
</tr>
<tr>
<td>Develop/implement branding and marketing plan</td>
<td>Jan 2010 and ongoing</td>
<td>RDBA, Chamber, City</td>
<td>(Refer to MS&amp;T student report—“Downtown Rolla Tourism Branding Proposal” in Attachment J)</td>
<td>Refer to MS&amp;T student report—Pedestrian and Biking Trail System—located in Attachment K.</td>
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<tr>
<td><strong>Goal 5: Address downtown parking issues.</strong></td>
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<tr>
<td>Promote the walkable-community aspects of downtown Rolla</td>
<td>December 2010/ongoing</td>
<td>RDBA, City, Chamber</td>
<td>MS&amp;T student proposed pedestrian and biking trail=$9,626</td>
<td>Refer to MS&amp;T student report—Pedestrian and Biking Trail System—located in Attachment K.</td>
</tr>
<tr>
<td>Initiate campaign for walking</td>
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<tr>
<td>Continue to consider walkability when planning for downtown</td>
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<tr>
<td>Need aggressive enforcement</td>
<td>December 2009/ongoing</td>
<td>City/Assistance from RDBA</td>
<td></td>
<td>Refer to MS&amp;T student plan—Parking Lot and Visitor’s Park at the Corner of 6th Street and Elm Street—located in Attachment L.</td>
</tr>
<tr>
<td>Form downtown parking committee</td>
<td>Sept 2009</td>
<td>City, MS&amp;T Students</td>
<td>6th and Elm parking lot and visitor’s center=$256,000</td>
<td>Refer to MS&amp;T student report—Pedestrian and Biking Trail System—located in Attachment K.</td>
</tr>
<tr>
<td>Investigate city/private owners parking partnership</td>
<td>June 2010</td>
<td>City, MS&amp;T Students</td>
<td></td>
<td>Refer to MS&amp;T student report—Pedestrian and Biking Trail System—located in Attachment K.</td>
</tr>
<tr>
<td>Action Item</td>
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<td>Additional Notes</td>
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<tr>
<td>Investigate use of parking permits / meters</td>
<td>June 2010</td>
<td>City, MS&amp;T Students</td>
<td></td>
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<tr>
<td>6.**Landscape parking lots</td>
<td>December 2010</td>
<td>City</td>
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</tbody>
</table>

**Goal 6: Strengthen Rolla Downtown Business Association.**

| Establish special business district                   | June 2010 | RDBA, Property Owners, City         | $5,000 in attorney fees          | Refer to Missouri Revised Statutes Chapter 71         |
| Develop/maintain an interactive website               | December 2009 |                                    |                                 |                                                       |
| Establish RDBA dues                                   |           |                                      |                                 |                                                       |
| Add special events to existing schedule of events     |           |                                      |                                 |                                                       |
| Submit DREAM Initiative application                   | August, 2009 | City                                |                                 |                                                       |

**Goal 7: Address empty, rundown buildings.**

| Talk to building owners to find our needs             | December 2010 | RDBA, Chamber, City                |                                 |                                                       |
| A. Low interest loans                                 |           |                                      |                                 |                                                       |
| B. Assistance with getting tenants                    |           |                                      |                                 |                                                       |

**Goal 8: Address lighting issues.**

| Exchange double festival lights with Pine Street singles | November 2009 | City of Rolla/RMU                |                                 |                                                       |
| Evaluate existing lighting                             | November 2009 | City of Rolla                     |                                 |                                                       |

** Denotes items included in the Winter 2001 Downtown Plan that have not yet been addressed.
### Summary of Meetings of RDBA Advisory Committee

#### Meeting 1:

The first meeting of the RDBA Advisory Committee was held on April 30, 2009. Following an introduction by Lonna Sowers, RDBA chairman, John Petersen, Rolla community development director, talked about the importance of downtown planning. Steve Hargis, city of Rolla public works director, reviewed the 2001 Winter Rolla Downtown Plan and discussed the accomplishments in the downtown since 2001. Connie Willman, Meramec Regional Planning Commission planning and development manager, divided attendees into three focus groups and lead in a SWOT analysis, identifying strengths, weaknesses, opportunities and threats for the downtown. Results follow:

#### Group 1 Responses

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
<th>OPPORTUNITIES</th>
<th>THREATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proximity to MS&amp;T</td>
<td>Lack of night club or nicer restaurant</td>
<td>Interest in mixed use development</td>
<td>Transient college student population</td>
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<tr>
<td>63 Hwy &amp; I-44</td>
<td></td>
<td></td>
<td>Inconsiderate business owners</td>
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<tr>
<td>Railroad</td>
<td>Downtown closes at 5 p.m.</td>
<td>Rolla West</td>
<td></td>
</tr>
<tr>
<td>Compact</td>
<td>Empty buildings</td>
<td>Partnership with the University</td>
<td>Short sighted</td>
</tr>
<tr>
<td>Good Condition</td>
<td>Railroad</td>
<td></td>
<td>Natural disaster</td>
</tr>
<tr>
<td>Brick Sidewalks</td>
<td>Hard to navigate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diverse mix of uses</td>
<td>No defined area</td>
<td>Tie to the Arts/Retail</td>
<td>Waynesville/St. Robert</td>
</tr>
<tr>
<td>Residential Business</td>
<td>Lack of eclectic university shops:</td>
<td>Route 66</td>
<td></td>
</tr>
<tr>
<td>Festival Lot</td>
<td>International foods</td>
<td>Stable Economy</td>
<td></td>
</tr>
<tr>
<td>Available Parking</td>
<td>Gift stores</td>
<td>Hotel</td>
<td></td>
</tr>
<tr>
<td>Space availability</td>
<td>Lack of c-store</td>
<td>Scheduled events</td>
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<tr>
<td>Safe area</td>
<td>Under utilized</td>
<td>Daily</td>
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<tr>
<td>Walkable</td>
<td>No destination stores</td>
<td>Weekly</td>
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<tr>
<td>Centrally located</td>
<td></td>
<td>Develop new businesses</td>
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<tr>
<td>Viable businesses</td>
<td></td>
<td>2-way traffic with temporary closures</td>
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<tr>
<td>Willingness to visit downtown and do events in the area</td>
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<td>Positive perception</td>
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<tr>
<td>Low-interest loan program</td>
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<td></td>
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<tr>
<td>Local ownership of property</td>
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## Group 2 Responses

<table>
<thead>
<tr>
<th>STRENGTHS</th>
<th>WEAKNESSES</th>
<th>OPPORTUNITIES</th>
<th>THREATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attractive:</td>
<td>Perceived lack of parking</td>
<td>Route 66 – capitalize</td>
<td>Negative attitudes of business owners:</td>
</tr>
<tr>
<td>Sidewalks</td>
<td>Lack of central focus</td>
<td>Railroad history - capitalize</td>
<td>Not pro-active</td>
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<td>Bump-outs</td>
<td>No open public space</td>
<td>Events on Campus:</td>
<td>Not customer oriented</td>
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<tr>
<td>Facades</td>
<td>Entrance to Pine at 12th St.</td>
<td>Tie-in keep downtown</td>
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<tr>
<td>Restoration</td>
<td>Not welcoming/friendly</td>
<td></td>
<td>Lagging economy</td>
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<tr>
<td>Compact</td>
<td>Perceived barrier</td>
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<tr>
<td>Variety of shops and services</td>
<td>Railroad doesn’t stop</td>
<td>Attract MS&amp;T students to downtown area more often</td>
<td></td>
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<tr>
<td>Sense of Community</td>
<td>Empty rundown buildings</td>
<td></td>
<td>No use tax for internet purchases</td>
</tr>
<tr>
<td>Accessible proximity to RHS and MS&amp;T</td>
<td>Need better mix of retail and more restaurants open in the evenings.</td>
<td>Designate Rolla as a Historic Town. Use I-44 billboards and signage to advertise.</td>
<td>Neighboring cities competing for business and development</td>
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<tr>
<td>Lack of crime</td>
<td>Need shops with residential focus:</td>
<td></td>
<td>Market outside of Rolla</td>
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<tr>
<td>City Hall, Library and RPD commitment</td>
<td>Specialty food</td>
<td></td>
<td></td>
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<tr>
<td>Residential properties</td>
<td>Ice cream</td>
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<td></td>
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<tr>
<td>Strong partners:</td>
<td>Deli</td>
<td></td>
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<tr>
<td>City</td>
<td>Grocery</td>
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<td>RDBD</td>
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<td>Events:</td>
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<td>Summerfest</td>
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<td>Arts</td>
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<tr>
<td>St. Pat’s</td>
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<td></td>
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<tr>
<td>Trick or Treat</td>
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<td>Car Shows</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Christmas Parade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scale – walkability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Local Flavor:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Alex’s Pizza</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Leonna’s Kitchen</td>
<td></td>
<td></td>
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<tr>
<td>Readers Corner</td>
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<td></td>
<td></td>
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<tr>
<td>D. Brooke’s</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The Grotto</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>STRENGTHS</strong></td>
<td><strong>WEAKNESSES</strong></td>
<td><strong>OPPORTUNITIES</strong></td>
<td><strong>THREATS</strong></td>
</tr>
<tr>
<td>----------------</td>
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</tr>
<tr>
<td>Close to Campus</td>
<td>Lack of parking in close proximity</td>
<td>Residential</td>
<td>Other shopping districts: Southside Forum</td>
</tr>
<tr>
<td>Large daytime population: Courthouse, RMU, City Hall</td>
<td>Unenforced parking</td>
<td>Way to let people on Hwy 63 know how to get to downtown: Bill board, Landscaping</td>
<td>Rolla West, Internet shopping</td>
</tr>
<tr>
<td>May local property owners</td>
<td>One way streets, Truck parking on streets</td>
<td>Co-op bill boards: I-44, 63 &amp; Pine</td>
<td>Economy fears</td>
</tr>
<tr>
<td>Large institutions: Banks, City, Library</td>
<td>Vacant buildings</td>
<td>More signs to direct people</td>
<td>Negative talk</td>
</tr>
<tr>
<td>Building investors</td>
<td>RDBA needs more marketing</td>
<td>Arts district close to downtown</td>
<td>Bad perception of downtown</td>
</tr>
<tr>
<td>Housing downtown</td>
<td>Not enough marketing to let people know about downtown and how to find it</td>
<td>College Students: Market to them</td>
<td>Lack of support</td>
</tr>
<tr>
<td>Quality public infrastructure: Festival lots</td>
<td>Not enough lighting, too dark</td>
<td></td>
<td>Age of community – young people not interested in downtown shopping</td>
</tr>
<tr>
<td>History</td>
<td>Only certain kinds of businesses can fit in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Events – well done</td>
<td>Lack of retail</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Festival lots: Bandshell, Train</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Affordable buildings for investment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Campus growth for buildings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-interest loan program</td>
<td></td>
<td></td>
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<tr>
<td>Have a Night Art Walk / Events: Small scale, Live local band, Potter, Artists</td>
<td></td>
<td></td>
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<tr>
<td>Inexpensive rent for new business</td>
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</tbody>
</table>
Participants were then asked to rank the Weaknesses and Threats. Each participant was given ten dots to use for voting. The results follow:

**Weaknesses:**

- Uninviting Entrance at Pine – 23 votes
- Need a better retail mix – 17 votes
- Night life draws are lacking (downtown closes at 5:00 p.m.) – 17 votes
- Inconsiderate shop owners (customer service/parking) – 16 votes
- Lack of unique university shops (cool stuff) – 11 votes
- Need for more marketing – 10 votes
- Lack of parking within close proximity to businesses – 10 votes
- Unenforced parking – 9 votes
- C-Store needed – 9 votes
- One way streets / traffic flow issues – 8 votes
- Need stronger RBDA – 8 votes
- No use tax on internet purchases – 7 votes
- Empty, rundown buildings – 4 votes
- Lack retail stores – 2 votes
- Generational issues – 2 votes
- Other shopping areas (Southside, Forum, Rolla West) – 2 votes
- Lighting – 1 vote
- Transient student population – 1 vote
- Other communities shopping (St. Robert/Waynesville) – 1 vote
- Central Area – 0 votes
- Railroad doesn’t stop in downtown – 0 votes
- No defined area – 0 votes
- Fears about Economy – 0 votes
- Natural Disaster – 0 votes
- Perceived as difficult area – 0 votes
Participants were asked to answer two questions.

*Characteristics of an ideal downtown are:*

*Rolla downtown would be the best possible place if:*

Responses were as follows:

**CHARACTERISTICS OF AN IDEAL DOWNTOWN ARE...**

- Aesthetic / Attractive
- Welcoming
- Friendly
- Clean
- Well-lit
- Safe
- Diverse
- Retail shops
- Arts / Entertainment mix
- Niche / Specialty shops
- Great restaurants
- Unity of purpose
- Kid friendly
- Accessible
- Vital
- Busy
- Unique Character
- Heritage
Supportive community
Night life – (vibrant not strippers)
Convenient
Good signage
Visibility
Have public art

ROLLA DOWNTOWN WOULD BE THE BEST POSSIBLE PLACE IF…
…the best place to see and be in Rolla!
…it had a unique destination: U.S.P. – Unique Selling Proposition.
…it had a special attraction worth seeing / visiting.
…it had a supportive community with diverse shops, restaurants and entertainment.
…convenient shopping / great visibility/ good signage / vibrant atmosphere and good night life activities.

The phrases offered in answer to these questions were used to craft a draft vision statement for the downtown.

Meeting 2:
The second meeting of the RDBA Advisory Committee was held on May 21, 2009. Participants were asked to review the two drafts of the Vision Statement and make recommendations. Participants chose the following draft vision statement, which was a combination of the two drafts:

The Rolla downtown will be a full-service, mixed-use destination that is known for its unique character, and is welcoming, safe and accessible for citizens and visitors of all ages.

John Petersen presented information on a proposed Arts District. Although the district will be adjacent to the downtown and not part of this plan, consideration will be given to the downtown planning as it might impact the Arts District.

MRPC staff presented a list of consolidated, prioritized weaknesses and threats identified at the first meeting. The results were a list of 12 major goals, including:
Address north entrance of downtown area at Pine Street;
Obtain better mix of retail, including those used by student and senior populations, niche/specialty shops, convenience store and restaurants;
Improve/increase downtown nighttime activities;
Improve customer service;
Increase/improve downtown marketing efforts;
Address downtown parking issues;
Address downtown traffic flow issues, especially one-way streets;
Strengthen Rolla Downtown Business Association;
Address issue of no tax on internet purchases;
Address empty, rundown buildings;
Address generational issues that impede downtown progress;
Address lighting issues.

Participants reviewed the list and made comments. Participants then divided into three groups to complete a list of action items to address each goal. Participants worked on action items for the first 6 goals.

Meeting 3:

Meeting 3 was held on June 16, 2009. MRPC staff presented the second draft of the Vision Statement. Consensus of the committee was to use the second draft presented at the May meeting as it was drafted. The final Vision Statement follows:

*The Rolla downtown will be a vibrant, friendly, attractive and safe destination that is known for its diversity and unique character.*

Participants then reviewed the action plan compiled at the May meeting, along with additions made by MRPC staff for consideration. Committee members made a few changes, including:

Change Goal 1 to read: Address all three main entrances to downtown area
Delete Goal 4: Improve customer service

Participants then divided into three groups to identify action items to address the remaining six goals. Committee members chose to:

Delete Goal 7: Address downtown traffic flow issues, especially one-way streets, as this goal has been listed as an action item in Goal 1
Delete Goal 11: Address generational issues that impede downtown progress
Delete Goal 9: Address issue of no tax on internet purchases, as this item has been placed on the ballot

The committee met again in July to review the final draft of the plan and made changes prior to completion of the plan.

SURVEY

Additional input was gathered via a survey of 80 downtown building owners and business operators. The survey results, although limited, were incorporated into the goals, objectives and action plan.
ATTACHMENT B

MS&T Student Work Plan

Archways and Directional Signage
Work Plan

Archways and Directional Signage

Prepared For:
The City of Rolla, Missouri
&
Project Champions
Dan Klinsky
Steven Scholz
Prepared By:

Keela Davis (kedh85@mst.edu)
A.V.N.S karthik (kvadh8@mst.edu)

June 26, 2009
Executive Summary

Rolla is a city in Phelps County, Missouri, United States, midway between the larger cities of St. Louis and Springfield. This work plan is prepared to help the community of Rolla build archways and directional signage to bolster its efforts to rejuvenate its appearance and provide better accessibility to its tourists, residents and students. The addition of archways and directional signs will increase visibility and awareness of each downtown district and provide enough information to direct traffic to the different districts, which comprises a vital part of the community’s initiative to improve and beautify the environment while bringing a historic and an eye catching appeal to the entire community of Rolla.

It is proposed to implement two types of informational and directional displays to improve downtown district identity and easily guide tourists, residents, and students to each district. Archways will be placed in seven strategic locations on main entrances and exits within the districts and signages will be located at four high-traffic locations helping to direct people to the Arts, Business, and University District. The archways and signages will be grand, monumental, and will have an eye catching appeal.

The districts within Rolla are classified into three different colors. The Arts District is being classified with Red distinction and will have markings with Gold inscriptions, the Business District is classified with Blue Color Distinction, and the University District is classified with traditional green color. These Colors will be used on all signage giving the districts a unique and vibrant distinct recognition throughout the City.

The timeline for this project is estimated to be approximately 10 months. The entire project is divided into three phases. The first phase is to establish the Infrastructure, the second phase will be to reach a consensus on the design and to select a contractor based on the proposed bid scenario, and the final phase will be to prepare a blue print and to construct the archways and signage.

The recommended management plan is to establish a Downtown improvement committee, which would be responsible for governance and management of the downtown improvement projects. The committee will also be overlooking the funding for the various projects involved in the improvement of the community of Rolla.
Table of Contents

Executive Summary 2
1.0 Introduction 4
  1.1 Objective 4
2.0 Scope of Work 5
3.0 Work Breakdown Structure 6
  3.1 Signage Locations 6
  3.2 Design 7
  3.3 Schedule 8
  3.4 Milestones 9
4.0 Budget 9
5.0 Management Plan 10
6.0 Funding 10
7.0 References 10
1.0 Introduction

The City of Rolla is looking to further develop its downtown regions, namely the Arts District, Business District, and University District. With the new distinctions of the downtown regions, the City of Rolla aims to improve accessibility for tourists, residents, and students. The addition of archways and signs will increase visibility and awareness of each district and provide enough information to direct traffic to each area which comprises a vital part of the community’s initiative to improve and beautify the environment while bringing a historic and an eye catching appeal to the entire community of Rolla. The archways are used symbolically in representation of the gateway to each of the designated districts. The signs will be used to clearly identify the route to each district. These landmark features will provide visitors with location identity similar to those found in other successful revitalized areas.

The archways and signs are designed to have a district specific identity namely Gold Zone Logo to the Arts District, Blue Zone logo to the Business District (shown left), and Green Logo to the Missouri University of Science and Technology District. Through improving the visual appeal, strengthening its identity, and the addition of directional and promotional signage, new business opportunities are likely to arise, providing the community with additional employment and economic opportunities. The implementation of the proposed archways, signage, and other downtown improvement projects, downtown Rolla would be recognized for its beauty, uniqueness, and rich heritage.

1.1 Objective

The objective of this document is to detail the steps and processes required to facilitate the construction of the archways and signage in downtown Rolla. The current plan will implement seven archways and four interchangeable and expandable directional signs placed in strategic locations throughout the downtown area (example right, Figure 2). This plan is to provide direction and assistance to the City of Rolla which may be scaled up or down according to city requirements or preferences.
2.0 Scope of Work

The proposed project is to implement archways and directional signage in a concerted effort with other projects to further develop downtown Rolla. The archways and signage will serve two purposes. The first function is to direct tourists, residents, and students to the downtown districts. The second purpose is to give identity and increase visibility and awareness of each of the districts shown below in Figure 3.

The region outlined in red is the Business District and the yellow region is the Arts District.

![Figure 3. Business and Arts Districts in Downtown Rolla, Missouri.](image)

It is proposed to construct seven archways and four directional sign units in strategic locations. This is the current scope of the project, but the City of Rolla is not bound within those limits and this proposal lends itself to reduction or expansion as deemed appropriate.
3.0 Work Breakdown Structure

Two types of informational and directional displays will be implemented to improve downtown district identity and easily guide tourists, residents, and students to each district.

3.1 Signage Locations

Archways will be placed in seven strategic locations on main entrances and exits within the districts. The following map in Figure 4 shows the Business District archways in blue and the Arts District archways in red.

![Figure 4. Map of archway locations.](image)

Directional signage will be placed in higher traffic locations around town displaying directional information to the Business, Arts, and University Districts. Signs will be placed at Hwy 63 and 6th Street, Hwy 63 and 10th Street, Hwy 63 and Pine Street, and Hwy 72 and Salem Avenue as shown in the Figure 5.
3.2 Design

The archways will be grand and monumental in nature constructed of limestone, raw timbers, and wrought iron with each district’s logo highlighted at the apex of the archway. The exact design and configuration will dictate construction costs. Inspiration for the design has in part come from the following archway in Tampa, Florida at the entrance to their historical district (Figure 6).

Figure 5. Directional signage locations.

Figure 6. Archway to historical district in Tampa,
Three possible options for the archway design have been selected. Option A is similar to the above pictured archway with two exceptions being the concrete bases constructed of limestone and the brick posts replaced with wrought iron in continuation of the iron arch. Option B is similar to Option A, but with the posts made of stout rustic wood posts as opposed to wrought iron. Option C is also similar to the archway pictured above, but with brick extending all the way through the arch with a cutout for the district logo.

The directional signs will be constructed of wood and wrought iron consistent with archway themes and will be interchangeable to grow in parallel with the downtown region similar in concept to Figure 7.

Figure 7. Directional Signage drawing.

3.3 Schedule

In order to facilitate an efficient and consistent improvement plan for the downtown districts, it is recommended to establish a Downtown Improvement Committee. This committee will be responsible for coordinating and executing all downtown improvement projects. Upon creation of the Downtown Improvement Committee, funding will need to be obtained. Once a funding source and amount is established, it is suggested that a contractor be selected based on a competitive open bid process. The construction plans will need to be finalized among the Downtown Improvement Committee and the contracting firm and then presented to the city for approval. Finalized plans will then be executed in the construction of the archways and signs. Figure 8 displays anticipated schedule.
This project is anticipated to take 10 months to reach completion.

### 3.4 Milestones

The milestones for this project are:

- Establishment of a Downtown Improvement Committee
- Acquisition of funding adequate to complete project
- Selection of building contractor
- Fully constructed archways and signage

### 4.0 Budget

The budget for the complete activity as such cannot be determined as of now and would need industry specific contractors to establish an exact construction budget. The proposed estimates are approximations.

<table>
<thead>
<tr>
<th>Expense</th>
<th>Cost</th>
<th>Quantity</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Archway (Option A)</td>
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<td>$315,000</td>
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<td>Expense</td>
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<td>Quantity</td>
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</tr>
<tr>
<td>Archway (Option B)</td>
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<tr>
<td>Directional Sign</td>
<td>$8,000</td>
<td>4</td>
<td>$32,000</td>
</tr>
<tr>
<td>Contractor Fee</td>
<td>(15%)</td>
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<td>$43,650</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td></td>
<td><strong>$334,650</strong></td>
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**Table 2. Option B Budget**

<table>
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<tr>
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<th>Quantity</th>
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<td>Archway (Option C)</td>
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<tr>
<td>Directional Sign</td>
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<td>4</td>
<td>$32,000</td>
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<tr>
<td>Contractor Fee</td>
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<td>$43,650</td>
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<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>$334,650</strong></td>
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</table>

**Table 3. Option C Budget**

Option A - The involvement of extensive iron design work will result in an increase in the cost of the archways. This is most probably be the higher end version and is expected to cost around $45,000 per archway.

Option B - The presence of the wood will result in a comparatively lesser costs for the building of the archways. This is expected to cost around $37,000 per archway.
Option C – The final option is to have a complete brick construction and leave the top for the iron design work which would almost closely result in the same costs as that of Plan B but will again be related to the design work involved for the iron done on the top. This will be the approximate costs as specified in the table above.

5.0 Management Plan

Considering the need for many archways and signs, it is recommended to utilize an open competitive bid process based on the City of Rolla’s timeline and budget. The development of a committee to oversee all of the downtown initiatives is highly suggested to maintain consistency in theme and coordination of efforts. Potential committee members are Mr. Steven Scholz and Mr. Dan Klinsky who are downtown Rolla entrepreneurs and have been active in communicating a vision for the establishment and betterment of the downtown districts and Mr. Steve Hargis currently serving as the Director of Public Works who has strived to obtain and manage resources in order to improve the downtown districts. The committee would be responsible for governance and management of the downtown improvement projects.

6.0 Funding Sources

The funding available to the project is yet to be determined. Possible sources include downtown developers, local investors, and state and federal grant funding agencies. Early identified grant agencies include Missouri Arts Council, Department of Natural Resources, and Missouri Alliance for Historic Preservation. The Downtown Improvement Committee will have to play a significant role in making possible arrangements for acquiring funds for the fulfillment of the desired projects.
7.0 References

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hossdocvetman@cox.net
PO Box 5150
Scottsdale, AZ 85261

Steven Scholz
info@stevenpaulsalon.com
11609 N 84th St.
Scottsdale, AZ 85260

Archway design - Ybor City, Tampa, Florida
www.ybor.org
City of Rolla
www.rollacity.org

Missouri Arts Council
http://www.missouriartscouncil.org/

Department of Natural Resources
www.dnr.mo.gov

Missouri Alliance for Historic Preservation
http://www.preservemo.org/
ATTACHMENT C

MS&T Student Work Plan:

Rolla Traffic Flow Optimization
Work Plan

Rolla Traffic Flow Optimization

Prepared By:
Jay Lang
Chuan Yan

Prepared For:
The City of Rolla, Missouri

June 26, 2009
Executive Summary

The city of Rolla, MO, is planning to bring more people back to downtown. Many plans have been proposed, and among these plans, is a traffic study to improve traffic and pedestrian flow through the downtown area. This plays a key role which affects other proposed project plans such as parking lots, downtown mobility, and bicycle path. The objective of this study is to reduce the traffic complexity and make the traffic and pedestrian flow smoothly.

Information gained from 5 previous studies lead to the decision to focus on two solutions and one optional solution. The solution for making it easier to get through downtown is traffic signal optimization, while maintaining safety for pedestrians by applying a descriptive sign at a busy intersection. An available option is proposed to sample traffic flow after the implantation of the signal changes.

The work plan of the project will contain the following detailed steps in three areas, the first changing traffic signal timing and sequencing with pedestrian crosswalks to be considered. The second includes a sign for pedestrians at a dangerous intersection, and the third part of the work plan includes traffic flow sampling.

The estimated time for this project to be completed is about 5 weeks. A start date of July 7th is projected with operations finishing up by August 14th. However, this timeline can be reduced if the client does not select the data sampling option. If this is desired the project duration would only take 3 weeks.

Steve Hargis (Director of Public Works) for the city of Rolla, Missouri will manage and coordinate the implementation of the project. Steve will assign the appropriate maintenance crew to implement the signal timing changes at the desired intersections, and crosswalk locations. The final cost of the project is estimated to be $804.64 for the baseline and $2004.64 for baseline w/ data sampling option.
INTRODUCTION

Currently, Rolla, MO, is planning initiatives to attract more people to downtown. However, according to analysis by Rolla Downtown Business Association (RDBA), the difficulty of reaching Pine Street from the north has a negative effect on populations coming to the downtown area [1].

Traffic flow for the downtown area is served by the one-way pair of Pine and Rolla Streets. This pair has been in existence since the late 1950’s. Since that time, many have speculated on how this could be changed to improve traffic circulation in and to the downtown area. There were two proposed approaches. The first is to reverse the direction for Rolla and Pine St. The second proposal was to change Rolla and Pine Street from one way pairs to two directions from 10th Street to 12th Street. Table I shows the analysis of these two methods.
TABLE I. Analysis of two previously proposed methods.

<table>
<thead>
<tr>
<th>Advantage</th>
<th>Disadvantage</th>
</tr>
</thead>
</table>
| Reverse Direction | Easy to come to downtown from the north | • Cost for changing signals and signs  
• Potential significant increase in accidents  
• Traffic volume reduces 20% on Pine  
• Travel time through CBD will remain the same. |
| Change to two direction from 10ST to 12ST & Pine. | Easy to go to 10ST from North | • Potential significant increase in accidents because of large traffic volume on 10ST.  
• Reduce Parking lots  
• Cost for changing signals and signs |

Based on the information previously mentioned, and reports completed from past engagements at traffic flow optimization [2], the aim of this project is to improve traffic light signals both for pedestrians, and drivers in order to make traffic flow smoothly through the Rolla downtown area.

OBJECTIVES

The objective of this document is to outline the steps and processes to facilitate the change of traffic signal timing and sequencing, along with the design and installation of a descriptive sign for pedestrians on Pine Street and 12th Street. Setting up monitoring equipment at designated locations for data collection is also a key objective in this report. The recommended changing for timing and sequence is shown in TABLE II.
TABLE II: Recommended Changing for timing and sequence

<table>
<thead>
<tr>
<th>Location</th>
<th>Phase</th>
<th>GR</th>
<th>YL</th>
<th>Phase</th>
<th>GR</th>
<th>YL</th>
<th>Offset</th>
</tr>
</thead>
<tbody>
<tr>
<td>7th &amp; Pine</td>
<td>N</td>
<td>29s</td>
<td>4s</td>
<td>E/W</td>
<td>21s</td>
<td>4s</td>
<td>0s</td>
</tr>
<tr>
<td>8th &amp; Pine</td>
<td>N</td>
<td>29s</td>
<td>4s</td>
<td>E/W</td>
<td>21s</td>
<td>4s</td>
<td>9s</td>
</tr>
<tr>
<td>9th &amp; Pine</td>
<td>N</td>
<td>29s</td>
<td>4s</td>
<td>E/W</td>
<td>21s</td>
<td>4s</td>
<td>18s</td>
</tr>
<tr>
<td>10th &amp; Pine</td>
<td>N</td>
<td>18s</td>
<td>4s</td>
<td>E/W</td>
<td>32s</td>
<td>4s</td>
<td>27s</td>
</tr>
<tr>
<td>11th &amp; Pine</td>
<td>N</td>
<td>25s</td>
<td>4s</td>
<td>E/W</td>
<td>25s</td>
<td>4s</td>
<td>36s</td>
</tr>
<tr>
<td>12th &amp; Pine</td>
<td>N</td>
<td>25s</td>
<td>4s</td>
<td>E/W</td>
<td>25s</td>
<td>4s</td>
<td>45s</td>
</tr>
</tbody>
</table>

3.0 SCOPE OF WORK

Upon verification of the budget, and the confirmation of moving forward with the project, a signal movement diagram will be created for each of the 7 traffic signals. From here a two-person maintenance crew will be assembled by Steve Hargis to complete the job. This crew will be assigned a work vehicle, and provided the appropriate tools to complete the assignment. The maintenance crew will locate to the intersection of 7th and Pine Street, and begin changing the signal timing offsets, and sequence intervals for red, yellow, green, walk, and don’t walk. After finishing at this location, the crew will continue north to 12th and Pine Street, stopping and adjusting the same signal parameters for each traffic light along the way. The traffic light at 10th and Rolla will be the final signal to be changed. A crosswalk sign will be designed and ordered, upon delivery a work crew will be coordinated, and installation of the sign will be completed at the crosswalk of 12th and Pine Street. If option B.3 is accepted, Crews will set-up monitoring equipment at all intersections between 7th and Pine Street to 12th and Pine Street and begin collecting traffic volume data. The work schedule is as follows

4.0 PROJECT SCHEDULE

The project is anticipated to take no more than 5 weeks which includes time for the following:

Sign-off on the budget and work plan

The completion of the movement diagrams for each traffic signal [3]

Assign appropriate maintenance crew

Dispatch selected crew to first traffic signal

Complete all traffic signal timing and sequencing changes

Design and order cross-walk sign

Assign appropriate maintenance crew to install cross-walk sign

Set up traffic volume monitoring equipment at designated intersections

Collect and compile traffic volume data
Figure 1. Gantt Chart

Figure 1 shows the gantt chart for this project. The schedule for this project will begin on July 7\textsuperscript{th} with the signoff of the budget; the duration for this task is 10 days due to getting all of the major players onboard with the project. Once the project is signed off, movement diagrams for each traffic light need to be completed by July 22\textsuperscript{nd}. From here, Steve will assign and dispatch a two-man crew to complete the timing and sequencing of each traffic light by July 27\textsuperscript{th}. Designing and ordering the crosswalk sign is schedule to be completed by July 23\textsuperscript{rd}, and the installation should be completed by July 24\textsuperscript{th}. Finally, if the city elects to follow up with monitoring the traffic flow, then monitoring devices can be in place by July 31, and collecting the data can be completed by August 14\textsuperscript{th}. This five-week schedule is not aggressive, and should not interfere with daily maintenance performed by the city maintenance crews.

5.0 BUDGET

<table>
<thead>
<tr>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sign off budget and work plan</td>
<td>10 days</td>
<td>Mon 7/6</td>
<td>Fri 7/6</td>
</tr>
<tr>
<td>Complete movement diagram for each traffic signal</td>
<td>3 days</td>
<td>Mon 7/6</td>
<td>Wed 7/8</td>
</tr>
<tr>
<td>Assign maintenance crew to job</td>
<td>1 day</td>
<td>Thu 7/6</td>
<td>Thu 7/6</td>
</tr>
<tr>
<td>Dispatch maintenance crew to find signal locations</td>
<td>1 day</td>
<td>Fri 7/8</td>
<td>Fri 7/8</td>
</tr>
<tr>
<td>Complete all traffic signal timing changes</td>
<td>1 day</td>
<td>Mon 7/13</td>
<td>Mon 7/13</td>
</tr>
<tr>
<td>Design and order crosswalk sign</td>
<td>2 days</td>
<td>Wed 7/8</td>
<td>Thu 7/8</td>
</tr>
<tr>
<td>Assign maintenance crew and mask at location</td>
<td>1 day</td>
<td>Fri 7/8</td>
<td>Fri 7/8</td>
</tr>
<tr>
<td>Set up monitoring equipment at desired locations</td>
<td>1 day</td>
<td>Fri 7/8</td>
<td>Fri 7/8</td>
</tr>
<tr>
<td>Collect and compile traffic volume data</td>
<td>10 days</td>
<td>Mon 8/8</td>
<td>Fri 8/14</td>
</tr>
</tbody>
</table>

TABLE III: Budget Information
Table III shows the total budget for improving the traffic flow in the downtown area. There are two options available. The first is a baseline option, which includes changing traffic signal timing and sequencing from the intersection of 7th and Pine to the intersection of 12th and Pine, along with the 10th and Rolla Street traffic signal. Also included in the baseline budget is the installation of a new pedestrian crosswalk sign located at 12th and Pine Street. The total baseline budget is $804.56. An optional traffic volume data collection is recommended, with this option the total package will come to $2,004.64. This cost is estimated at $200.00 per intersection, where all intersections form 7th and Pine Street to 12th and Pine Street will be monitored.

<table>
<thead>
<tr>
<th>Item</th>
<th>Task</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Traffic signal timing change @ 7th and Pine 8th and Pine 9th and Pine 10th and Pine 11th and Pine 12th and Pine 10th and Rolla Rate: $94.33 per hour</td>
<td>$754.64</td>
</tr>
<tr>
<td>2</td>
<td>Pedestrian crosswalk sign @ 12th and Pine</td>
<td>$50.00</td>
</tr>
<tr>
<td>3</td>
<td>Traffic volume data collected at 7th and Pine to 12th and Pine</td>
<td>$1,200.00</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total Budget Amount (Baseline)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Total Budget Amount (Baseline w/ option)</strong></td>
</tr>
</tbody>
</table>

6.0 MANAGEMENT PLAN

Steve Hargis (Director of Public Works) for the city of Rolla, Missouri will manage and coordinate the implementation of the project. Steve will assign the appropriate maintenance crew to implement the signal timing changes at the desired intersections, and crosswalk location. Steve will ensure the project be complete on time and on budget.

The selected maintenance crew will give the Director of Public Works real time updates on the status of each signal change. They will report any interruptions to the desired work. Steve will take the appropriate measures to provide solutions to problems that may arise.

7.0 REFERENCES


[3]. Rolla Signal Plan by Eagle Signal
APPENDIX A. SATELLITE IMAGE FOR ROLLA DOWNTOWN
APPENDIX B. ROLLA DOWNTOWN PEAK HOUR TRAFFIC VOLUME
APPENDIX C. EAGLE SIGNAL, MOVEMENT DIAGRAM
ATTACHMENT D

MS&T Student Work Plan:

Town Bound: Bringing Students Downtown
Work Plan

Town Bound: Bringing Students Downtown

Prepared For:

The City of Rolla, Missouri

Prepared By: Ryan Francka
Yvette Simon

June 29, 2009
Executive Summary

The City of Rolla is in need of building a relationship between the Downtown Business District and Missouri S&T. An interaction of this nature will hugely benefit both parties involved while improving the economy of the city as a whole. The streets linking the downtown to the University extend from the 10th to the 12th street and, at this point, have no businesses that attract the students from S&T. This obvious disconnect breaks the University and downtown into two separate worlds.

There are 5 spheres of improvement proposed to solve this problem. They are to collect additional data regarding student interests and opinions, collaboration with the University and student organizations, immediate implementation of a free shuttle service as well as conducting an information dissemination program for business owners. Marketing efforts need to be made specifically directed toward the student population. The final proposal is to renovate the Uptown Theatre and open a discount movie house in its place.

The work plan includes steps for each of the above proposed ideas. For data collection, a market research company’s services are to be contracted, student data is to be collected and analyzed. Establishing collaboration with the various student organizations on campus as well as University groups involve contacting their representatives followed by the funding and host of events downtown. Immediate action items comprise placing into operation a free shuttle service that runs daily from Havener Center to the Downtown. Simultaneously, informational seminars are to be held when business owners in the downtown district are given ideas on how to successfully attract and market to students. An effective marketing plan is one that exploits all forms of communication such as the radio, school newspaper, email newsletters, and online social networking tools. Finally, the revival of the Uptown Theatre entails contracting the services of a developer, sufficient advertising and placing it into functional use.

The estimated schedule for this project extends over a period of up to two years for the Uptown Theatre to be put into service, up to one year for data collection through surveys. Hosting events downtown and marketing will be a year round process.

The budget for this project, excluding the renovations to the Uptown Theatre, range from approximately $4,200 to $8,000 annually. The renovations to The Uptown Theatre are estimated to be at minimum $300,000.
Table of Contents

Rolla Community Facts .......................................................................................................................... 5
Redevelopment Plan ........................................................................................................................................... 7
Planning Process .......................................................................................................................................................... 9
Summary of Meetings of RDBA Advisory Committee ...................................................................................... 16
ROLLA DOWNTOWN WOULD BE THE BEST POSSIBLE PLACE IF ........................................................................... 21
Archways and Directional Signage .......................................................................................................................... 25
Rolla Traffic Flow Optimization ............................................................................................................................ 39
Town Bound: Bringing Students Downtown ............................................................................................................ 50
Sample: Market Research Survey ............................................................................................................................ 65
Rolla Downtown Public Square and Farmer’s Market ............................................................................................. 72
ARTS DISTRICT: ROUNDABOUT AND FOUNTAIN ............................................................................................... 83
Pine Street Beautification of Downtown Rolla ........................................................................................................... 94
Wi-Fi Rollout in Rolla .............................................................................................................................................. 107
Rolla Arts District Streetscaping and Trees ............................................................................................................. 119
Downtown Rolla Tourism Branding Proposal ....................................................................................................... 133
Pedestrian and Biking Trail System ....................................................................................................................... 149
Parking Lot and Visitors Park at the Corner of 6th Street and Elm Street ............................................................... 164

Background

Currently, Downtown Rolla and Missouri University of Science & Technology are in a state of disconnect. It takes little foresight to tell that both communities are liable to benefit greatly if a connection is established. The streets that are considered to be the heart of Downtown Rolla are almost devoid of businesses that hold attractions for the student community. Rolla is heavily populated by students and has numerous small businesses that need student support to help thrive in the competitive world of supermarkets and fast food chains. Students on the other hand, need places to go to that can afford them an economical solution for entertainment as well as daily necessities. A key fact not to be overlooked is that a student-predominant clientele may have different requirements than a regular mixed customer base. Bringing students downtown and providing them with fun, affordable ways to spend their time is the start to building a lasting mutually symbiotic relationship.

Proposal

In order to draw students and faculty from the University to Downtown Rolla, 5 distinct spheres of improvement are proposed. The area targeted to get a facelift extends from 10th street to the 12th street near campus. There are several vacant buildings in this area currently that have great potential for new businesses. There are also many shops currently located in the area that can benefit from our proposed ideas.
First, we believe it is imperative to collect additional data. We recommend a market research survey be performed by hiring an outside company. This will better help us understand which new commercial businesses appeal to S&T students. These businesses could then be contacted and recruited for the Rolla area.

The next proposed idea is to collaborate with the various student organizations on campus, and on a higher level, with S&T in general. Working with student organizations as well as providing additional funding to these organizations could entice students to hold events and festivities downtown increasing exposure to the area. Extra funding is always beneficial to student organizations and would be of minimal cost to the downtown business association.

We also propose the immediate implementation of the following ideas. Providing a shuttle from the University to Downtown Rolla en route to Wal-Mart; the already existing shuttle owned and operated by Missouri S&T could make an additional stop in the downtown areas at minimal costs to the University. Secondly, informing the Rolla Downtown Business District in the betterment of the marketability of the area. Learning how to advertise specifically to what appeals to students (discounts, etc.) would be big help. This would also include organizing events that would cater to students such as a photo scavenger hunt sponsored by the downtown businesses.

Subsequently, these downtown events and businesses will be subjected to strategic marketing plans to draw in students and faculty. We recommend utilizing the media better by means of radio, newspaper, and the internet. KMNR our student run radio station and The Missouri Miner our student run newspaper could prove to be very useful marketing tools. We have recommended investing in having some advertisements created for the downtown business district or businesses in general and using these resources. Our primary idea is what is being called the Community e-Connection. Similar to the already existing campus e-Connection this would be a monthly e-mail sent out to the entire campus informing them of what is going on in the community for that month.

To wrap up our proposal, we strongly recommend The Uptown Theatre be renovated and revived into a discount movie house. The Uptown Theatre is in need of significant repairs and this would be an incredible undertaking however, we feel that it would be beneficial to the community. For more information on this and all areas, please see the Work Breakdown Structure.

Work Breakdown Structure

Data Collection

First, contract the services of a market research survey company and have them create and perform a survey that gathers data on preferred businesses of student at S&T. Analyze the results of these surveys. Once this has been done businesses or franchise companies can be contacted and put together with
locations for lease. We have included a few contacts for companies we would be interested in seeing come to the Rolla downtown business district in Appendix A. A few types of businesses we could see students in Rolla visiting downtown include:

- A Bookstore
- Ice Cream Shop
- Quick Food
- Bar & Grill Style Restaurant (S&T Theme)
- Video Gaming Store
- Collaborate with the University

Contact the Student Organizations on campus and Residential Life. Then help fund and organize events such as Treasure hunts, Photo Scavenger hunts and International Food fests. A list of student and other organizations at S&T are included in Appendix A.

The city’s role is to fund and host events downtown and not necessarily plan the event. Encouraging student participation from the beginning stages such as planning and organizing can be advantageous as both a marketing tool as well as in achieving the end goal of bringing students downtown. Finally, it is important to offer prize incentives and market the event via all channels possible.

Collaboration with S&T organizations such as Residential Life, Student Life, and International Affairs can help build a cohesive relationship with the students at S&T as well as provide new means of getting the word out through flyers and emails sent out on the listserv.

**Immediate Action**

Place into service a free shuttle that helps to bring students downtown en route to other commonly frequented spots such as Wal-Mart. For this, first contact the Transportation Department at Missouri S&T and set up an arrangement to provide a daily shuttle that makes four round trips. The route will start from Collegiate Station go to Havener Center then to Downtown Rolla on 10th Street and finally to Wal-Mart. This will be merely an extension of the currently existing hydrogen fuelled shuttle. Once set up, market the availability of the shuttle service via channels discussed below and place it in service as soon as possible.

An overall Downtown Improvement Strategic Plan for student attraction is vital and is to be done by organizing seminars for all existing and prospective businesses in the downtown area, where information
is disseminated regarding effective methods directed at attracting students, including but not limited to offering student discounts where feasible. Further, the information gathered from the market research survey regarding student interests is to be made available to these business owners to help optimize their strategy.

Fig. 1 Proposed Shuttle Service Path

Marketing strategy

This is responsible for making a success of all other efforts to draw students to downtown. To start with, introduce a downtown specific email newsletter that reaches students (Community e-Connection), much like the current newsletter that contains information about campus events. Simultaneously, collaborate with campus radio KMNR to advertise fun events downtown, as well as with Residential Life and the University to post flyers in all residential halls and to be handed out in Havener Center at meal times. At the beginning of each fall semester, set up a generic downtown informational stall at freshman, transfer and international orientation. Use means such as online social networks that students are familiar with, such as Facebook, to announce upcoming events and activities. Once the shuttle bus is in service, advertise upcoming events, shops and restaurants downtown on the bus.

Revival of Uptown Theatre

This starts with contacting the present owner and contracting a developer to plan and execute the renovation. Advertising the new discount movie house is to begin when renovation begins, and extend well after its opening to the public. Research and ascertain the most popular movies among college students (Star Trek marathon, Star Wars series, Ladies Night, Rocky Horror Picture Show night) and
advertise the movies to be played in the first few months. Offer student concessions. Bring in famous personality for the grand opening and put movie house into operation.

Fig2. (Left) The Current Uptown Theatre, (Right) Renovated Theatre

Schedule

The schedule for this work plan has been updated and now includes a more descriptive breakdown of each task. The schedule can be seen in Appendix B.

Budget

The total budget for our proposal is to be determined. This most expensive part of this project is the renovations to the Uptown Theatre. The second highest investment is the Market surveys to be performed. While we propose providing students organizations with $2,000 annually this number could be adjusted at the RDBA’s discretion.

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Research Survey</td>
<td>$2,000-$5,000</td>
</tr>
<tr>
<td>Student Event Funding</td>
<td>$2,000 annually</td>
</tr>
<tr>
<td>Shuttle Service Funding/Advertising</td>
<td>$1,000 annually</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>S&amp;T Advertising</td>
<td>$200-$1,000</td>
</tr>
<tr>
<td>Uptown Theatre Renovations</td>
<td>$300,000-$1M</td>
</tr>
</tbody>
</table>

Management Plan

John Petersen – Coordinate with Market Survey Company and represent the City of Rolla

John Petersen – Oversee the coordination of the Downtown Business Association efforts with Missouri S&T

References

Maps and Streetview photos provided by: Maps.google.com


Appendix A.

Contact Information

Data Collection
Survey Design and Analysis
Edward Halteman, PhD
ed@survey-design-and-analysis.com
ph: 303-818-3679
SurveyDNA.com

Edwards Halteman, PhD
Survey DNA
Ed@SurveyDNA.com

JD Woods
Senior Research Consultant
Infosurv, Inc. | 3340 Peachtree Road NE, Suite 1450 | Atlanta, GA 30326 | USA
(404) 846-6878 (direct) | (404) 506-9114 (fax)
jd.woods@infosurv.com | web: www.infosurv.com

Potential Business Ventures

Cold Stone Creamery Franchise

Kevin Garrett
Guaranteed Great, Inc
101 Plaza Drive
Wildwood, MO 63040
kevin@guaranteedgreat.com
Ph: 636-821-1084

Gloria Jean's Gourmet Coffees Franchising Corp.
28 Executive Park, #200
Collaboration

Student Council – Public Relations Committee
Selin Acar
sa8h9@mst.edu

Collaboration (cont’d)

Inter-Fraternity Council – Public Relations Committee
Fredrick Linch
folbq2@mst.edu

International Student Club – Vice-President
Devang Dasani
dadc6f@mst.edu

Residential Life
Missouri University of Science and Technology  
205 West 12th Street  
Rolla, MO  65409-0510  
Phone:573-341-4218  

Marketing  
KMNR Radio Station  
218 Havener Center  
1346 N. Bishop Ave.  
Rolla, MO 65409-1440  
Ph: 573-341-4273  

The Miner (School Newspaper)  

www.missouri-miner.com
Appendix B.

Schedule
Appendix C.

Data Collection Information
Sample: Market Research Survey

Demographic Information

Age

Sex

Nationality

Level of education

Which of the following types of restaurants would you like to see in Rolla?

Family

Italian

Seafood

Steakhouse

American Bar & Grill

Irish Bar & Grill

Mexican

Indian

BBQ

Chinese

Fast food

Ice cream parlor

Sandwich shop

Coffee Shop

Other (please specify)

Which of the following new restaurants you would like to see in Rolla?

Red Robin

Cold Stone

TGI Friday
Tony Roma
Olive Garden
Red Lobster
IHOP
Cracker Barrel
Bennigan
Cheddar Restaurant
Cheesecake Factory
Starbucks
Other (please specify)
Which of the following new retail stores you would like to see in Rolla?
Abercrombie & Fitch
Hollister
American Eagle Outfitters
Old Navy
Gap
UGG Shoes
ALDO Shoes
Kenneth Cole
DSW Shoes
Alamo Shoes
Hot Topic
Lucky
Guess
Sephora
The Body Shop
Aéropostale
Other (please specify)

What is your average monthly expenditure on food?

<$50
$50 - $75
$75 - $100
$100 - $200
>$200

What is your average monthly expenditure on clothes?

<$50
$50 - $75
$75 - $100
$100 - $200
>$200

What is your average monthly expenditure on entertainment? (movies, parties, video-gaming)

<$50
$50 - $75
$75 - $100
$100 - $200
>$200

Sample: Understanding the customer

Choose all that apply: What are your hobbies?

Reading
Gaming
Listening to music
Playing an instrument (please specify)
Sports (please specify)
Automobile-related
Shopping
Cooking
Gardening
Acting/Theatre
Other (please specify) Art (please specify)
Choose all that apply: What are your interests?
Music
Movies
History
Art
Automobile-related
Sports
Politics
News
Shopping
Theatre
Gardening
Math/Science
Other (please specify) Choose the genres of movies that you are interested in
Sci-Fi
Horror/Thriller
Adventure
Drama
Action
Reality
Documentaries
Comedy
Romance
Fantasy

Choose the genres of music that you are interested in
Classic Rock
Soft Rock
Heavy Metal
Alternative Rock
Hip-hop
Pop
Country
Blues
New Age
Easy listening
Adult Contemporary
Disco
Grunge

Other (please specify)

What is the best channel to contact you?
Postal mail
Email
Text Messages (SMS)
Phone calls
Social Networks

If applicable, which of these is your favorite social network?
Facebook
MySpace
Twitter
LinkedIn
Orkut

Other (please specify) Open ended question: What is your all-time favorite restaurant?

Open ended question: What is your all-time favorite shop?

Open ended question: What is your all-time favorite hang-out?
ATTACHMENT E

MS&T Student Work Plan:

Rolla Downtown Public Square and Farmer’s Market
Work Plan

Rolla Downtown Public Square and Farmer’s Market

Prepared for:
The City of Rolla, Missouri

Dave Mckee
(dave.mckee@phelpscountybank.com)

Jodi Layman
(jodi.layman@phelpscountybank.com)

Prepared by:
Swathi Priya Pedavalli (spcpb@mst.edu)
Shriharsh Mirashi (smbp3@mst.edu)

June 25, 2009
Executive Summary:

Rolla’s Downtown has a need for a full fledged Public Square and a dedicated Farmer’s market. The basic idea in developing these places is to attract more people into the downtown and to improve the ailing businesses in the downtown district. Also as the city is developing an art district and a business district the location at which the public square is developed should lay at the centre of these districts; so, it will be a point of interest among the locals and the tourists. This public square will act as a proper recreation area for all the people coming downtown. Also in the near future, there is a possibility of Amtrak service being started from Rolla. Hence, this location will be the main attraction point as the tourists board and get down from enjoying the ride in the Amtrak.

The Farmer’s market would be held in the summer from May to September. In this project there is a need to get the farmers to setup stalls, to bring farmers from different locations, and to plan a weekend for the farmers’ market. All of this would be done in hopes of attracting several customers into the area.

The work plan includes several steps. The first step is to submit the proposal to the government along with a plan and to get the maximum funding possible. Once the funding is gathered, then we can make the necessary changes to the project based on funding. Then a contractor would be selected based on his experience with such projects. Once this step is completed, then the project can proceed with site selection, i.e. the parking lot towards the south end of the city hall.

This parking lot would then be worked upon to be converted into a public square. This conversion would be achieved by leveling, by landscaping, by paving walkways, and by placing statues and fountains to enhance the overall beauty of the public square. This project will take about 91 days to complete. After this conversion, the parking lot towards the east end in front of city hall would be worked upon. The two trees which occupy space in between the parking lot would be uprooted, and in this location, a small fountain and a statue of a historical figure could be placed. This is the lot where the farmer’s market would be conducted; when this lot is given a pleasing look, a lot of people could come and enjoy the farmer’s market.

Finally, the work plan discusses the issues with the farmers. Also, it will talk about who will be overlooking the total project from start to completion. With this information provided, the project can be completed with the given schedule.
## Table of Contents

Introduction  

1.1 Objective  
Scope of Work  
Work Breakdown Structure  
  Restating the Objective  
  Project Schedule  
Budget  
  External sources of funding  
  Progression reporting  
  Final Reporting  
Management Plan  
  Project Management  
  Project Execution  
  Procurement of Funds  
References  

1.0 Introduction:

Rolla, MO is a small city with a population of 17,000, and it lies at a great geographic location located on I-44 and in between two large cities, St. Louis and Springfield. It is a great place with a rich history and cultural heritage. The city also has a University, Missouri S&T, which provides a good flow of students from all over the world. Rolla is a place with serene surroundings and exciting locations for miles around like Lane springs, Meramec springs, Meramec Caverns, Lake of the Ozarks. Interstate 44 and Route 66 bring many travelers into the city. Also, Rolla hosts several festivals and events throughout the summer. So in total, Rolla has a good flow of people into the city.

While Rolla has a good flow of people, the downtown area of the city is not often visited by travelers or locals. This area does not have a public square or other attractions for the people to walk through, look at, and enjoy.

The scope of our work is to elevate the appearance of Rolla’s downtown and to attract the public in order to increase the sales made by the local businesses. There are few spots in the downtown which are to be highlighted and made more appealing. Our project is to turn the parking lot beside the City Hall into a public square and to also provide a facility to host a farmer’s market.

By completing this project, we will be able to draw local customers into the downtown area as well as increasing the flow of the general public and Missouri S&T students. This increased flow will subsequently increase the interaction between the University and the downtown area. We will be able to convert the lots into a public square, a farmer’s market, and a part into a regular parking lot with a new look. Also, we will be encouraging farmers to participate in the weekly farmer’s market event.

1.1 Objective:

The objective of this work plan is to provide an idea as to how the project goals of beautifying the public square and the farmer’s market can be done by installing an exotic fountain, statue, and recreation area for kids. Also, it provides some ideas as to how to get more farmers to come and participate in the farmers market.

2.0 Scope of Work:

In this project we are going to look at working with two parking lots that are marked in Red and Black color as shown in Fig 1. The parking lot that is marked in red will be modified and made into a public square. The approximate area of the parking lot in red is 47336 sq ft. It has the basic amenities for drinking water, electricity outlets and restrooms. The outer area is well paved with concrete walkways and trees provide shade as in fig 2a. The parking lot has a green cover along the entire boundary.

Fig 1. Location Map
This parking lot has a Pavilion (fig 2b) that hosts general events in summer and whenever the need be.

It had a landscaped area in front of the pavilion which could seat about a hundred people. So considering this pavilion, we thought of modifying this parking lot into a complete public square.

![Fig 2(a). Trees around parking lot](image1)

![Fig 2(b) Pavilion](image2)

![Fig 2(c) Seating area](image3)

Also this lot had a seating area (fig 2c) where people could come out have food or just spend some time sitting over here. There is a caboose of the Frisco line which is placed towards the west end of this parking lot as shown in fig 3. This caboose has to be re-modified into a walk-in historical museum. The history of Rolla city which began with the oncoming of Frisco Railroad will be depicted in this museum.

![Fig 3. Caboose in the parking lot that has to be remodeled into a walk in museum](image4)

As this lot had all these facilities, we thought of modifying it completely into a public square and not using it anymore for further parking. When we surveyed this place, we came to realize that not at any given time all the three parking lots in front of the City hall are full. Hence the parking from this lot can be shifted to the lots in front of the City hall.

So to start with the area at the centre of the parking lot has to be leveled and landscaped in order to accommodate more public during the festivals. Then some walkways need to be installed in this area; so that it is easily accessible from all the sides. Then an exotic fountain could be placed at the south east end of this lot. This fountain will be the main attraction of this public square.

![Fig 4. Sample Exotic Fountain](image5)
As this is a general public area we wanted to include a recreation area (Fig 5) for small kids so that the kids can have a share in the square’s use. Also if budget permits we can place a waterfall at the south west corner of the lot which will increase the overall atmosphere of the area.

Once this is done, the parking lot in front of the city hall and towards the east end can be modified. Here there are two trees that are at the centre of the parking lot. We thought of uprooting these trees and placing a small fountain as well as a sculpture or a statue of a historical figure. This will enhance the overall look of the farmers market.

3.0 Work Breakdown Structure:

3.1 Restating the Objective

The objective is to convert the existing parking lots into a Public Square and a Farmer’s Market to the Downtown of Rolla as well provide adequate parking.

3.2 Project Schedule:

The schedule shown below has mainly 2 phases of work. First phase is the remodeling of the parking lot towards the south of the city hall and turning it into a Public square. The first phase would require 91 days to be completed. The second phase is to beautify the parking lot in front of the city hall by placing in a small fountain and a statue. This phase will take about 21 days to be completed. The complete detail schedule will be explained as follows in the Gantt Chart shown below.

Fig 5. Sample Kid’s Recreation Area

Fig 6. Gantt Chart
The project will initiate with the selection of contractors which will take about first 30 days. Then it is followed by the procurement of the materials required, which would take about 20 days. The leveling of the parking lot is done once the contractor is selected and would take about 2 days. The next step would be the construction of the walkways at the aforementioned sites and will be completed in 4 days. 2 days are allocated for landscaping the parking lot. The recreation area, waterfalls and the fountain will be consecutively setup each taking 10 working days. Once the project reaches this phase, the parking lot to the east is undertaken for work. In this lot first the trees are uprooted within a day and the site is used for placing a statue and a fountain which would take about 3 days each.

The rough sketch about how the parking lots will look once this project is completed is shown below.

![Fig 7. Proposed Design for the Public Square](image)

### 3.3 Budget:

The budget for this project was just an approximate costing analysis. All the criteria for the work plan were considered and the budget approximation was made to its maximum possible accuracy, yet, there are some areas the budget of which will be clearer once the funding is approved and the project gets on the track. See table 1. below,

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Leveling Lot</td>
<td>TBD</td>
</tr>
<tr>
<td>Paving Walkways</td>
<td>$22000</td>
</tr>
<tr>
<td>Landscaping</td>
<td>$5000</td>
</tr>
<tr>
<td>Recreation Area</td>
<td>$10000</td>
</tr>
<tr>
<td>Exotic Fountain</td>
<td>$70000</td>
</tr>
<tr>
<td>Statue</td>
<td>$15000</td>
</tr>
<tr>
<td>Fountain</td>
<td>$15000</td>
</tr>
<tr>
<td>Waterfalls</td>
<td>$20000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>TBD</strong></td>
</tr>
</tbody>
</table>
Table 1. Cost Estimation Table for the proposal

External Sources of Funding:

Funding is the crucial part of the project. Once the proposal gets approved grants will be provided by the US Government. Apart from these funds, further funding can be collected from the local community, private businesses, and individuals. Some events and festivals could be organized, as well as fundraisers to generate the required money.

Progression Reporting:

Once the project is implemented it is important that a regular progress report be maintained and care should be taken that the work is getting done on time. The administrator or the project manager will be responsible for this, and will be scheduling the management meetings with the City officials. These meeting will allow the officials to maintain information on the project’s progress and will provide a brain trust to deal with unexpected problems.

Final Reporting:

Upon completion of the public square and the farmer’s market, the administrator or the project manager will compile a final report with a detailed listing of the works accomplished and the cost of the whole project. Also, he has to submit a report that summarizes all the necessary changes that were made from the initial proposal and the additional costs. This final report should be accessible by the public so that they can know how much effort the city officials have put into these projects, and it will also be helpful in estimating the cost of future projects.

4.0 Management Plan:

4.1 Project Management:

Our champions, Dave McKee and Jodi Layman, will be responsible for overseeing the project as a whole and will be working together to secure the funds for this project. They, along with the other Rolla city officials, may choose to appoint a project manager or a project management team for further project support. The project manager will be taking care of each milestone of this project and will keep the champions informed about the regular progress and if any problem persists.

4.2 Project Execution:

Dave McKee and Jodi Layman will be responsible for planning the project, finalizing the design of the public square, getting it approved by the City Council, and working towards the completion of the project.

They will be appointing a contractor who will be taking care of the whole project, and they will be responsible for the successful completion of the public square.

Apart from this, our champions have to work on getting a fee waiver for the farmers to set up their stalls for free, and they also will be responsible for making the required arrangements for promoting the farmer’s market event.
One more issue they have to concentrate on is changing the day of the event to a weekend because this will increase the participation of the public.

4.3 Procurement of Funds:

This can be accomplished by getting grants from the US Government, raising funds from the local community, and through private donors.
5.0 References:

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ATTACHMENT F

MS&T Student Work Plan:

Arts District: Roundabout and Fountain
WORK PLAN

ARTS DISTRICT: ROUNDABOUT AND FOUNTAIN

PREPARED FOR:
STEVEN SCHOLZ, DAN KLINSKI AND JOHN PETERSEN

PREPARED BY:
Pankaj Pai (pmp3k9@mst.edu)

and

Adam Parks (acpc00@mst.edu)
TABLE OF CONTENTS

Executive Summary 3

Background 4

Proposal 4

Work Breakdown Structure 5

Project Schedule 5

Detailed Schedule 5

Phase One – Roundabout 5

Phase Two – Landscaping 6

Phase Three – Fountain 7

Budget 7

Management Plan 8

Project Management 8

Project Execution 9

Funding 9

References 10
EXECUTIVE SUMMARY

The Arts District is an area just southeast of Downtown Rolla that is currently being developed into a retail and dining destination. Restaurants, shops, coffee shops, boutiques, and salons are among the consumer attractions that will be contained in the Arts District.

The 1909 Rolla Schoolhouse is currently being transformed into Benton Square, which will be one of the first consumer attractions to open in the Arts District. Just adjacent to this property is the intersection of Sixth Street and Cedar Street. Currently this intersection is a two way stop with power lines running east and west along the street in front of the schoolhouse. This area is to be transformed into a roundabout that will contain a large tiered fountain surrounded by flowers. The street corners surrounding the roundabout will be landscaped to allow pedestrians to sit and enjoy the fountain. Each inletting street will contain a traffic splitter to direct the traffic the correct way through the roundabout.

The project will be completed in three phases. The first phase is the roundabout. The power lines will be buried. The electrical and plumbing for the roundabout will be run into the intersection. The splitters and roundabout will be installed. The second phase will be the landscaping. Flower beds will be planted and lights will be installed. Timers that control the flower watering and the light timers will be installed also. The final phase is the installation of the fountain and water bath that will surround the fountain. Once this is completed, the fountain can be tested and unveiled to the public.

The budget for this project has been estimated by various local professionals. A city engineer has given estimates on the construction of the roundabout. The local utilities company will be the contact for burying the power lines. Subcontractors have been contacted and given estimates on running plumbing and electric. A local trade school and a subcontractor have been contacted to give estimates on building the pool to surround the fountain.

A list has been generated for the various companies and subcontractors that could be in charge of various components of the project. Since not all responsibilities have been designated to a specific company or subcontractor, open bids should be held to fill these responsibilities.
1.0 BACKGROUND

The Arts District is a developing area near Downtown Rolla around the intersection of Cedar Street and Sixth Street. Restaurants, salons, coffee shops, pet spas, and boutiques are among some of the types of businesses that will eventually be showcased in this area. In addition to the businesses, the area will be beautified with newly landscaped, pedestrian friendly walkways between the attractions.

Currently, there is a northbound/southbound two way stop along Cedar Street. Elevated power lines run east and west along the south side of Sixth Street. This intersection is a key entry way into the Arts District and the Rolla Downtown.

PROPOSAL

The objective is to construct a roundabout in the intersection of Sixth Street and Cedar Street. Encircled by the roundabout will be a grand, three-tiered fountain surrounded by beds of flowers. Figure 1 shows an example of a fountain. Surrounding the flowers will be a large stamped concrete truck skirt. The truck skirt will allow large trucks and emergency vehicles to complete a turn around the roundabout. The stamped concrete will create an artistic look to accent the fountain.

The four streets inletting to the roundabout area will each contain a splitter. The splitter will direct traffic in the correct direction into the roundabout. The stamped concrete of the truck skirt will be repeated in the pedestrian walkways that run through the four splitters from street to street. The four splitters will be large enough to accommodate a flower bed to match the flower bed surrounding the fountain.

The four corners surrounding the roundabout will be cut back accommodate the specifications of the roundabout. Along with cutting the road back, the above ground power lines will be buried underneath the sidewalk and roundabout along Sixth Street.

![Figure 1: Example of Fountain](image-url)

WORK BREAKDOWN STRUCTURE
PROJECT SCHEDULE

The work breakdown structure is separated into three main phases as seen in Table 1; building the roundabout, completing the landscaping, and installing the pool. The three phase schedule allows for the project to be funded over time.

<table>
<thead>
<tr>
<th>#</th>
<th>Task Name</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Roundabout and Fountain</td>
<td>28 days</td>
</tr>
<tr>
<td>2</td>
<td>Phase 1</td>
<td>20 days</td>
</tr>
<tr>
<td>3</td>
<td>Phase 2</td>
<td>3 days</td>
</tr>
<tr>
<td>4</td>
<td>Phase 3</td>
<td>5 days</td>
</tr>
</tbody>
</table>

Table 1: Project Phases

DETAILED SCHEDULE

PHASE ONE

Phase one of the project is to build the roundabout. Table 2 shows the approximate duration of the different parts of phase one. The first milestone in the project will be to bury the power lines. Rolla Municipal Utilities will be in charge of this part of the project. Once the power lines are buried, Rolla Public works or the subcontractor in charge of construction of the roundabout will be able to begin the clearing, grubbing, and grading of the roundabout area. During this time, the plumbing and electrical that will supply water to the fountain and flowers and electrical to the fountain and lights will need to be run into the roundabout. Water outlets will need to be installed under the flowerbeds.

The next step in the phase the base rock to be laid in the roundabout area, as well as where the traffic splitters will be. The base rock will provide elevation and stability for the fountain and truck skirt that will be installed later in the phase.

After the base rock is installed, the curb and gutter will be laid around the roundabout area and the traffic splitter. Once the curb and gutter have been installed, the stamped truck skirt can be put in the roundabout.

The final step in phase one will consist of laying concrete in the center of the roundabout and in the splitters. There will be areas not concreted that will be the flower beds which will be planted in phase two. This is also when the stamped concrete will run through the street and splitters. Once proper traffic signs have been installed, the intersection will be a fully functioning roundabout.
Table 2: Phase One

<table>
<thead>
<tr>
<th>ID</th>
<th>Task Name</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Phase 1</td>
<td>20 days</td>
</tr>
<tr>
<td>4</td>
<td>Bury Power Lines</td>
<td>4 days</td>
</tr>
<tr>
<td>5</td>
<td>Clear, Grub, and Grade</td>
<td>4 days</td>
</tr>
<tr>
<td>6</td>
<td>Run Plumbing and Electric</td>
<td>2 days</td>
</tr>
<tr>
<td>7</td>
<td>Lay Rock</td>
<td>2 days</td>
</tr>
<tr>
<td>8</td>
<td>Lay Curb and Gutter</td>
<td>2 days</td>
</tr>
<tr>
<td>9</td>
<td>Lay Skirt</td>
<td>3 days</td>
</tr>
<tr>
<td>10</td>
<td>Lay Concrete</td>
<td>3 days</td>
</tr>
</tbody>
</table>

Figure 2: Typical Roundabout Specifications
PHASE TWO

Phase two can take place any time after phase one has been completed and there exists a fully functioning roundabout. Table 3 shows the estimated durations of the various components of phase 2. Phase 2 should be shortest of the 3 phases. A watering timer will be installed to control the times and duration for which the flower beds will be watered. This is also when any lights that are outside of the fountain will be installed. A timer similar to the water timer will be installed to control the lights’ on and off times. Finally, the flowers, which will be ordered and supplied by a local flower shop, will be planted, and the timer can be tested for both the flowers and the lights.

<table>
<thead>
<tr>
<th>ID</th>
<th>Task Name</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>Phase 2</td>
<td>3 days</td>
</tr>
<tr>
<td>13</td>
<td>Install Watering Timer</td>
<td>0.5 days</td>
</tr>
<tr>
<td>14</td>
<td>Install Lights and Timer</td>
<td>0.5 days</td>
</tr>
<tr>
<td>15</td>
<td>Plant Flowers</td>
<td>1 day</td>
</tr>
<tr>
<td>16</td>
<td>Install Benches</td>
<td>1 day</td>
</tr>
</tbody>
</table>

Table 3: Phase Two

PHASE THREE

Phase three will begin with the installation of the tiered fountain. At this time the plumbing and electrical that has already been run into the fountain will be hooked up to the fountain and the pump.

Once the fountain has been installed, the local subcontractor or trade school that is in charge of building the pool that will surround the fountain can complete the pool, completing the final building portion of the project. The pool can now be filled and tested.

Finally, once the fountain is working properly, it can be unveiled to the public, completing the project. Specific durations and stages of phase 3 can be seen in Table 4 below.

<table>
<thead>
<tr>
<th>ID</th>
<th>Task Name</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Phase 3</td>
<td>5 days</td>
</tr>
<tr>
<td>19</td>
<td>Install Fountain</td>
<td>1 day</td>
</tr>
<tr>
<td>20</td>
<td>Build Pool</td>
<td>2 days</td>
</tr>
<tr>
<td>21</td>
<td>Fill Pool</td>
<td>0.5 days</td>
</tr>
<tr>
<td>22</td>
<td>Test Fountain</td>
<td>0.5 days</td>
</tr>
<tr>
<td>23</td>
<td>Unveil Fountain</td>
<td>1 day</td>
</tr>
</tbody>
</table>

Table 4: Phase Three

4.0 BUDGET

The budget for the project was estimated based on the discussion with different people who will be responsible for the various activities of the project.
Director of Public Works, Mr. Steve Hargis provided information in table 5 on current estimates of unit prices for streets. He also provided information on the general requirement and specification for roundabout constructions of MoDOT. Based on that the cost of civil work for the roundabout was calculated. The estimates for plumbing and electrical were determined based on information gathered from Mr. Jim Duncan.

- Clearing, Grubbing and Grading: $4.00 per square yard
- 4” of Asphalt: $11.00 per square yard
- 8” Rock Base: $6.50 per square yard
- 4” Thick Concrete Sidewalk (4 to 6 feet in width): $3.00 per square foot
- 6” Thick Concrete Driveway: $4.75 per square foot

(12 foot minimum width for a single and 20 foot minimum width for a double)

**Table 5: Estimates for roundabout material and labor**

<table>
<thead>
<tr>
<th>Project</th>
<th>Cost</th>
</tr>
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<tbody>
<tr>
<td><strong>Phase 1</strong></td>
<td></td>
</tr>
<tr>
<td>Bury power Lines</td>
<td>TBD</td>
</tr>
<tr>
<td>Clear, Grub and Grade</td>
<td>$3741</td>
</tr>
<tr>
<td>Run plumbing and Electrical</td>
<td>$5000</td>
</tr>
<tr>
<td>Lay Rock</td>
<td>$6080</td>
</tr>
<tr>
<td>Lay Curb and gutter</td>
<td>$10,734</td>
</tr>
<tr>
<td>Lay Skirt</td>
<td>$11,192</td>
</tr>
<tr>
<td>Lay Concrete</td>
<td>$10,896</td>
</tr>
<tr>
<td><strong>Phase 2</strong></td>
<td></td>
</tr>
<tr>
<td>Install Watering Timer</td>
<td>$ 1500</td>
</tr>
<tr>
<td>Install Lights andTimers</td>
<td>$ 1500</td>
</tr>
<tr>
<td>Plant Flowers</td>
<td>TBD</td>
</tr>
<tr>
<td>Install Benches</td>
<td>TBD</td>
</tr>
<tr>
<td><strong>Phase 3</strong></td>
<td></td>
</tr>
<tr>
<td>Install Fountain</td>
<td>$12000</td>
</tr>
<tr>
<td>Build pool</td>
<td>TBD</td>
</tr>
</tbody>
</table>
Table 6: Estimated Budget till Date

<table>
<thead>
<tr>
<th>Fill Pool</th>
<th>TBD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Fountain</td>
<td>TBD</td>
</tr>
</tbody>
</table>

Total Bid Amount to Date: $62,643

An estimate for the entire project has been given by Steve Hargis at $100,000

5.0 MANAGEMENT PLAN

PROJECT MANAGEMENT

Director of Public Works, Rolla, Mr. Steve Hargis, along with Mr. Dan Klinski and Steven Scholz will be responsible for overlooking the whole management of the roundabout and fountain project at the crossing of Sixth Street and Cedar Street.

5.2 PROJECT EXECUTION

Initially the proposed roundabout project will have to be approved by the Public Works Department of the city of Rolla.

Rolla Municipal Utilities shall be responsible for removal of the existing overhead power lines and burying the same. The lines will also have to be rerouted to the different properties along the two blocks. The total length of the streets along which the lines need to be re-laid is 523 feet along Walnut and Olive and 439 feet along Seventh Street and Fifth Street.

Mr. Steve Hargis and the Public Works department of the city will be responsible for the construction of the roundabout according to MoDOT standards and requirements.

Either of Rolla Technical institute or a separate private contractor shall be responsible for the construction of the pool for the fountain. In case of a subcontractor, bids shall be invited publicly and the contract should be awarded to the lowest bidder.

Jim Duncan will be responsible for running the plumbing and electrical lines to the center of the roundabout for running the fountain. Also he shall be responsible for the timer circuits and control boxes for the lighting enhancements for the fountain and irrigation for the planters in the fountain area.

Fountain is to be ordered from a subcontractor. The subcontractor will be responsible for shipping the fountain to the site as well as installing it.

The city of Rolla will be responsible for the maintenance of the roundabout, which will include watering of the planters and the lighting systems.

FUNDING

Responsibility of funding the project will be shared by the city and Mr. Steven Scholz and Mr. Dan Klinski. Possible grants might be available from state and federal governments.
6.0 REFERENCES

Champions:

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Troy Mitchell
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Email: tmitchell@rolla.k12.mo.us

Rolla Municipal Utilities – Bury Power Lines
Vicky Carson
Phone: (573) 364-1572

Other Subcontractors:

Jim Duncan – Plumbing and Electrical
Phone: (573) 341-4247
ATTACHMENT G

MS&T Student Work Plan:

Pine Street Beautification of Downtown Rolla
Work Plan

Pine Street Beautification of Downtown Rolla

Prepared For:

The City of Rolla, Missouri

Prepared By:

Stephanie Hurtado (sdhhdc@mst.edu)
Allen Liu (yl6pc@mst.edu)

June 25, 2009
To: Dave McKee and Jodi Layman  
Cc: John Petersen, Dr. Karl Burgher and Michael Orlando  
From: Stephanie Hurtado and Allen Liu  
Date: June 25, 2009

Executive Summary

Rolla is a college town located at the junction of Interstate Highway 44 and US-63, halfway between St. Louis and Springfield. The town has a population of approximately 18,000 people and is continuously growing. Being at the heart of downtown Rolla, Pine Street should be made as attractive as possible. We intend to beautify Pine Street and consequently bring people and business into downtown Rolla.

This proposal consists of three sub-projects: The first sub-project is to put murals on the buildings on Pine Street. The second sub-project is to repaint the sidewalks and insert functional items such as benches, light posts, flowers and speakers. The third sub-project is to put art works on the road, namely drawings on the pavement. If all three sub-projects are carried out, Pine Street will surely look more colorful and attractive.

Section 3 describes of the detailed work breakdown structure, and it is to aid the program manager in completing the project from start to finish. Upon the approval of the proposal, the funding request is to be made. When the funding is obtained, the bidding process can start, and the contractors/artists can be hired. The first job to be done is the facades painting sub-project, i.e. murals. The artist will create their murals on the selected buildings, and the process could take about one month. Next, the sidewalk contractor will recondition the sidewalk and insert the items on the sidewalk for approximately 2 weeks. Finally, the artists can work on the drawings on the asphalt road of Pine Street, and this takes roughly 4 weeks. Because some prep work of later sub-projects can be done before the completion of the previous sub-project, the total estimated duration of the project is only 103 days (about 5 months).

Section 4 has a table of estimated budget. It includes the prices for all items and labor costs, and the total sums up to be $107,130 to complete all the proposed projects. Section 5 is the management plan and it states each responsibility and the individuals who are responsible for it. This project is important
and can have a great effect on the businesses on Pine Street, as well as the City of Rolla. By making Pine Street a beautiful destination, local residents will spend more time in Downtown, the businesses will become more stable, and Rolla will attract more visitors.

Table of Contents

1.0 Introduction 3
1.1 Objective 3
2.0 Scope of Work 97
3.0 Work Breakdown Structure 100
3.1 Project Schedule 100
Table 1. Schedule outline 100
3.2 Project Phases and Milestones 100
3.2.1 Acquiring funding 100
3.2.2 Phase 1: Mural Painting 100
3.2.3 Phase 2: Sidewalk Recondition 101
3.2.4 Phase 3: Road Painting 101
4.0 Budget 101
5.0 Management Plan 103
5.1 Project Management 103
5.2 Project Execution 103
5.3 Procurement of Funds 103
6.0 References 104
Appendices 104
Appendix A – Complete Schedule Chart 105

1.0 Introduction
Rolla is a college town located at the junction of Interstate Highway 44 and US-63, halfway between St. Louis and Springfield. The town has a population of approximately 18,000 people and is continuously growing. Being the county seat of Phelps County, Rolla has a unique American Civil War history and has served as a trading and transportation center. Not only is Rolla the home of Missouri University of Science and Technology, it also hosts the US Geological Survey with many facilities and centers.

Pine Street runs longitudinal though the heart of Rolla’s business district and it is sought to be the focus of Rolla. However, it is not as busy as one would expect. For variety of reasons, Pine Street hasn’t successfully attracted people either locally or remotely. Due to the lack of attendance, many small businesses on Pine Street are struggling to survive. Special attention and action need to be called to revive Downtown Rolla.

Some ideas have been brought up previously to help revive Downtown Rolla, such as reversing the traffic flow on Pine Street and bringing new businesses. According to Rolla City Engineer Steve Hargis, reversing the direction of Pine Street is not feasible because of its cost and complexity. On the other hand, introducing new businesses to Pine Street is fairly difficult due to the low marketability and attractiveness of the street.

Alternatively, we intend to beautify Pine Street. By making Pine Street an attractive destination, local residents will spend more time in Downtown, and the businesses will naturally be attracted to move in. The following is our proposal of Pine Street beautification, and the step-by-step work breakdown structure of making it happen. Hopefully, Downtown Rolla will become a more popular place to go for both locals and visitors.

### 1.1 Objective

The objective is to make Pine Street as attractive as it can be. The actions include: painting murals on the buildings, repainting the sidewalk and inserting functional items such as benches, light posts, flowers and speakers, and creating art works on the road, namely drawings on the pavement. The painting on the facades and the asphalt has to be done professionally to ensure the great look. The items to be inserted on the sidewalk have to be specially selected to match the tone and style of the whole street.

### 2.0 Scope of Work
Most of the buildings on both sides of Pine Street could be brightened up. Not only were they built in different sizes and shapes, but they were also covered in dull colors. One way to do this is to put murals on the buildings. By painting the murals on the buildings, we can combine art with the history of Rolla. The old buildings will not look old anymore. Instead, they will make people actually stop and look at them (compare Figure 1-a and 1-b). If the murals are displayed more extensively, Rolla can even attract people from nearby cities and towns to come visit. Cuba, MO is a perfect example of using murals to create a destination in downtown.

![Figure 1-a. A building on Pine Street](image1)

![Figure 1-b. An example of a mural on a building](image2)

Although still very usable, the sidewalks along Pine Street have their colors faded away. We propose to clean the surface of the sidewalks and repaint them to give the bricks a fresh look (compare Figure 2-a and 2-b). To enhance the sidewalks’ attractiveness and functionality, the following items should be placed: benches, flowers, light posts and trashcans. We also suggest that a couple speakers to be installed on each corner of the street.
Another thing we can do to immediately add colors and excitement to the street is to have artworks on the road (compare Figure 3-a and 3-b). We intend to have the paintings done on two sections of Pine Street: 10th to 11th and 11th to 12th street. This is to avoid the conflict with the traditional road painting for St. Patrick’s Day parade. Also, by painting only two sections of the street, we can see the effect before we invest too much money on having the whole street painted. The beautiful paintings on the road are highly expected to be able to attract people from all over the places.
3.0 Work Breakdown Structure

3.1 Project Schedule

The outlined schedule is shown below. As seen in Table 1, basically all three sub-projects begin after the funding is obtained. Then the first sub-project, i.e. mural painting, can start right away. Some preparation for sub-projects 2 and 3 can start at the same time as sub-project 1; however, the major construction and painting has to be done sequentially. For example, the purchasing of benches and light posts can start while the murals are been put on the buildings, but the painting of the sidewalk won’t start until the mural sub-project is completely done. More detailed schedule is shown in Appendix A.

Table 1. Schedule outline

<table>
<thead>
<tr>
<th>ID</th>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pine Street Beautification Project</td>
<td>103 days from 7/6/09 to 11/25/09</td>
<td>M W T W T F S M W T W T F S S M W T W T F S S</td>
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<tr>
<td>2</td>
<td>Obtain Funding</td>
<td>2 months from 7/6/09 to 9/23/09</td>
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<td></td>
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<td>3</td>
<td>Mural Painting</td>
<td>20 days from 6/31/09 to 7/10/09</td>
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<td></td>
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<tr>
<td>8</td>
<td>Painting</td>
<td>1 month from 9/1/09 to 10/1/09</td>
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<td></td>
</tr>
<tr>
<td>9</td>
<td>Sidewalk Recondition</td>
<td>40 days from 6/31/09 to 8/23/09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Contractor work on project</td>
<td>2 weeks from 10/1/09 to 10/25/09</td>
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<td></td>
</tr>
<tr>
<td>18</td>
<td>Road Painting</td>
<td>2 weeks from 10/25/09 to 11/1/09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Painting</td>
<td>2 weeks from 11/1/09 to 11/25/09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Painting</td>
<td>2 weeks from 11/25/09 to 12/1/09</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Project Phases and Milestones**

Excluding the acquirement of funding, there are three major phases of this project: mural painting, sidewalk recondition and road painting. The completion of acquirement of funding as well as the completion of each phase can be set as a milestone.

**Acquiring funding**

The fundraising period can take as long as 2 months since grant proposals need to be approved by a large group of people. The hiring process will need to be done right after the funding has been established. This way all requests and contracts can be accurate agreements. After all the necessary funding is acquired (first milestone), there will be approximately 3 months left to complete the project.

**Phase 1: Mural Painting**
To start the project, one has to determine which buildings and which facades the murals are to be put on. This takes only two days. At the same time, the bid can be opened to artists who are interested in painting the murals. The source of the mural painting artists can be found at Viva Cuba (see Reference). The city of Cuba has many professional murals in downtown, and Viva Cuba can provide information about how to find the artists as well as price estimates. Then, within three days, the business owners have to be notified and to agree on the proceeding of the project. Next, the sidewalks will be closed to allow the preparation of facades to take place. The painting of the murals can start as soon as the preparation of the facades is done. The artists are to finish the painting in approximately one month. Upon the completion of the mural painting, the second milestone is reached.

Phase 2: Sidewalk Recondition

The sidewalk recondition phase starts with the estimation of the total area of construction and determination of the numbers of items to purchase as well as where they should be installed. This takes only two days. Then one week is allowed for purchasing the items and hiring the contractors. The businesses will be notified again for the sidewalk construction. The contractor will then work on the project, including cleaning and sanding the old bricks on the sidewalks, repainting it red, install all benches, trashcans and light posts. The project manager should keep in mind that the items purchased and the color of the sidewalk paint are to match the tone of the street. After the contractor finishes the sidewalk sub-project (third milestone reached), the planters are then placed by the local florist. Lastly, the speakers are installed in each corner of Pine Street, and are all connected to the public library, which the music is to be played.

Phase 3: Road Painting

To minimize the blockage of the street for road painting, one section is to be done at a time. Prior to closing down the sections, carefully designed detour is to be made. Parked cars will also be given a week notice of the closing of the street and be asked to move. We can then start with the 10th street to 11th street section and quickly finish the cleaning of the asphalt (1 day). Then the artists can create their drawings in this section for two weeks. Then the same procedure can be done for the 11th street to 12th street section. Three artworks (each is a square) can be fitted in each section of the street, so there are a total of 6 square drawings. The suggested topics for the drawings are: Railroad, Civil War, Old Route 66, St. Pat’s Day, Missouri S&T, and perhaps a picture of the old Rolla downtown.

4.0 Budget

All of the expense estimates are determined from different sources near Rolla. The area of the whole block was measured to formulate the painting labor. These measurements were gathered from aerial pictures on the MODot website.

The first $22,130 will be allocated to purchasing the items around the area, while the rest is labor cost. The estimate data is shown below. Overall, the budget for the whole improvement project is approximately $107,130.
The cost for painting the road (Phase 3), is a very rough estimate. We have not yet found the accurate pricing for the specific job. We estimated the price according to the cost of the murals, and since the painting is done on the ground, we thought the price should be lower. $5,000 is estimated to be the cost of each square drawing. The total of 6 square drawings results in the $30,000 budget for the road painting job.

<table>
<thead>
<tr>
<th></th>
<th>QTY</th>
<th>Resource</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painting Murals</td>
<td>5 @ $10,000</td>
<td>Cuba Murals</td>
<td>$50,000</td>
</tr>
<tr>
<td>Sidewalk contract</td>
<td>Labor 2 weeks</td>
<td>MODot</td>
<td>$5,000*</td>
</tr>
<tr>
<td>Benches</td>
<td>10 @ $319/each</td>
<td>Benches.com</td>
<td>$3,190</td>
</tr>
<tr>
<td>Old-Style Light Posts</td>
<td>10 @ $806/each</td>
<td>Raytechstore.com</td>
<td>$8,060</td>
</tr>
<tr>
<td>Trash Cans</td>
<td>10 @ $605/each</td>
<td>Uline.com</td>
<td>$6,050</td>
</tr>
<tr>
<td>Blooming Plants</td>
<td>24 containers @ $170/each</td>
<td>Something Special Florist</td>
<td>$4,080</td>
</tr>
<tr>
<td>Speakers for each street corner</td>
<td>10 (130 watts &amp; 5 inch) @ $75/each</td>
<td>Radio Shack</td>
<td>$750</td>
</tr>
<tr>
<td>Painting Road</td>
<td>6 pieces @ $5,000/each</td>
<td>Unknown</td>
<td>$30,000*</td>
</tr>
</tbody>
</table>

Estimated Total $107,130

Table 2. Budget (* The numbers marked by an asterisk indicate rough estimates.)
5.0 Management Plan

5.1 Project Management

Rolla’s elected mayor will be responsible for overseeing the project as a whole. Yet, the Rolla
Association of Downtown Businesses will be the focal point of contact. Dave McKee & Jodi Layman
will report to John Peterson on the progress of Downtown renovation. The Rolla Downtown Business
Association will report to John Peterson at the end of this year on the progress of the site and if spring
launch date is still on track. The Rolla Downtown Business Association will meet to review the
adequacy of 5 hours per week to develop content.

5.2 Project Execution

It is critical that the project manager raises money for the project. This can be accomplished by
donations through corporate companies that attend the Missouri S&T Career Fair. Also funding can be
obtained through private donations such as local businesses. Though, primarily one should apply for
government grants, which is a long process.

After the funding has been established then the hiring process should begin. MODot should be the first
contractor to contact. Consequently after the painting jobs are done, then the rest shouldn’t take long.
The speakers can be installed at any point of the renovation.

Finally, it should officially be integrated into the community, and should be maintained by the city of
Rolla.

5.3 Procurement of Funds

These costs could be funded by grants from entities including the Government, large corporations and
MODot.
6.0 References

Benches:
http://www.Benches.com

Trashcans:
http://www.uline.com

Light Posts:
http://www.raytechstore.com

Area Measurements:
http://ims.missouri.edu/moims2008/step1AOI.aspx

Cuba Murals:
www.cubamomurals.com/

Miscellaneous Pricing Information:

MODot
http://www.modot.gov/business/

Appendices
Appendix A – Complete Schedule Chart
ATTACHMENT H

MS&T Student Work Plan:

Wi-Fi Rollout in Rolla
Work Plan

Wi-Fi Rollout in Rolla

Prepared for:
James R. Sowers

June 29, 2009

Prepared by:
Hemant Bishnoi
Amendra Koul
TABLE OF CONTENTS

Executive Summary  109

1.0 INTRODUCTION  110
   1.1 Objective  110

2.0 SCOPE OF WORK  110

3.0 Work Breakdown Structure  112
   3.1 Restating the Objective  112
   3.2 Project Schedule  112
      3.3 Phase I  112
      3.4 Phase II  112
      3.5 Phase III  113

4.0 MANAGEMENT plan  113

5.0 COST estimate  114

6.0 REFERENCES  115

APPENDIX A: Schedule  115
APPENDIX B: Traditional and Robust Approach  117
Executive Summary

The City of Rolla is located in the Phelps County of Missouri and is an important center for federal education and research in science and technology. It is the home of the Missouri University of Science and Technology, originally started as Missouri School of Mines and Metallurgy in 1870. This work plan was prepared in response to a class project to assist the city of Rolla step into 21st century by initiating a free wireless service for the community. This is a part of a bigger dream which envisions Rolla downtown and arts district to be a center of business and public attraction.

Our team started work by meeting with various internet service providers in Rolla which are interested and are capable in providing wireless internet service. It was determined that wireless service hardware setup for Wi-Fi can be done by Wave Internet Technologies whereas the internet service will be provided by Fidelity Communications. Two approaches have been proposed to implement free Wi-Fi. The first one is traditional approach which uses a central tower with four wireless access points (WAP) mounted on it. The second is what we call a robust approach which proposes setting up a distributed system of WAP for better connectivity in the region.

The work plan is developed keeping in mind the intended coverage area, bandwidth and demand of such wireless service may evolve with time. The project is divided into 3 phases. In order to build a Wi-Fi network with low start-up cost, initial phase proposes to implement a traditional approach using an existing tower on 900 Pine building with at most 4 WAPs. This will be followed by a testing for reception quality around the downtown and arts district to check the effectiveness of this approach. With help of continuous feedback from Fidelity on the internet traffic and also feedback from the users, it will be determined if the traditional approach meets the minimum requirements in terms of signal strength, speed and coverage. The reasons for failure of this approach could be poor reception within concrete buildings, chances of single point failure and uneven distribution of signal strength throughout the downtown and arts district. Variation to this approach includes installing a new tower on a state owned building to avoid rental cost and installation of additional WAPs to make-up for poor receptions in certain areas. With time and availability of funds, this system will be upgraded to a more robust Wi-Fi network consisting of many WAPs around and within the city with possible

The robust approach is the most reliable method to establish a high quality internet service. With the help of outdoor WAPs spread across the city pointing required direction, signal can directed to reach within concrete buildings with less leakage of the service outside the boundary of downtown and arts district. If one WAP fails then overlapping covered area of neighboring WAP may be helpful. Costs can be reduced by using a shared line instead of a dedicated line. The only drawback is maintenance of these WAPs and determination of locations to plant these wireless access points. Nevertheless, the city must aim for robust approach considering many advantages it has over the traditional approach.
1.0 INTRODUCTION

The city of Rolla is located in the Phelps county of Missouri, mid-way between the large cities of St. Louis and Springfield. The town is famous for being the home of the Missouri University of Science and Technology, the finest technological university in the mid-west and also for hosting the best ever St. Patrick’s day. Situated on highway I-44 and being close to vacation hotspots like Ozark lakes and Meramec springs, the city of Rolla experiences a plethora of travelers passing through it especially during spring and summer.

The city is gearing up for a change of makeup with ideas that can make the town livelier than ever. Downtown and arts district of Rolla, situated in the heart of the city, are being envisioned as the center of both business and public attraction. The strategic location of the city should be fully utilized to bring more people and business to downtown and arts district of the city. Attracting people off the interstate is especially important as it not only gives city a chance to show its hospitality but also will make Rolla build a good reputation in the region. In light of this vision, a work plan for implementing free Wi-Fi service throughout the downtown and Arts district of Rolla is proposed here.

Free Wi-Fi can help city services do their jobs better. It can be viewed as a social service to those who cannot afford private high-speed services. For Rolla “middle of everywhere”, this will be an economic development exercise which will put Rolla into the list of fewer 100 cities/towns* in the world to have free community wireless access zones.

1.1 Objective

The objective of this project is to install free Wi-Fi network in the downtown and arts district of Rolla. The quality of this service in the end is intended to be of the highest standard with excellent signal strength and coverage in the streets of downtown and arts district. This document details the steps and processes that can be followed for successful installation of a high quality, city owned, free Wi-Fi network for everyone.

2.0 SCOPE OF WORK

As mentioned before the areas will be brought under this free wireless scheme are Rolla downtown and the arts district. Figure 2.1 gives an aerial view of this region.
To setup free municipal wireless access in the city of Rolla, one can think of many possible solutions. These solutions are restricted mainly by budget, time to build and problems concerning mounting of outdoor WAPs. It has been decided to start with a low cost installation which will be beta tested first and through feedback of the community users the prototype and the bandwidth will be modified to better serve the city’s needs. This will help city start with a lower budget, quick installation and also with time the city can get an estimate of how much bandwidth it needs to buy and quality of connectivity required for achieving the intended objective. Initially this low cost alternative is expected to provide good Wi-Fi connectivity at most places within the downtown and arts districts although some locations might not get good coverage. The locations with good and stable signal strength will be declared as Wi-Fi hotspots.

The work in broken down into different phases, each of which after release will be tested and upon feedback from users, necessary improvements will be made. The initial phase proposes to use the existing infrastructure available from Wave Internet Technologies with shared network internet services from Fidelity Communications. Additional outdoor access points can be installed in the city to bring

Figure 2.1. Aerial view of Rolla downtown and arts district
certain areas under better connectivity. This solution might not be very effective in the long run especially if the demand increases. Moreover it is expected that people sitting inside buildings may not get good coverage by this type of installation. Most of the buildings in downtown are made of concrete which hinders wireless connection strength to be made available inside of a building.

If this initial phase is working as expected, then city may choose to setup a new tower on a state-owned building and replicate the previous setup. This will help city save the cost of rent on the previously privately owned building. Such incremental upgradation steps are taken primarily to keep the costs low while better understanding the requirement of the city.

Eventually if traditional approach or a modified version of traditional approach does not work out with support from the local businesses and community, city will take a final step to implement a robust network or a hybrid (combination of traditional and robust approach) approach with many WAPs distributed in throughout the region with shared or dedicated line depending upon the budget and demand. This will be the final step to attain the intended objective.

3.0 Work Breakdown Structure

3.1 Restating the Objective

The objective is to rollout free Wi-Fi throughout the downtown and arts district in the city of Rolla.

3.2 Project Schedule

The project schedule is given in Appendix A. The project consists of three phases which have been proposed to setup free Wi-Fi in the city of Rolla starting with low budget and more flexible options to bring about changes based on feedback from the users. This will also give the City of Rolla the opportunity to acquire the funds meanwhile, to upgrade to a better and reliable Wi-Fi connection.

Appendix B gives the two approaches, traditional and robust, which were proposed earlier to build a Wi-Fi network in the city.

3.3 Phase I

This phase involves an initial survey on the existing capabilities of the wireless internet provided using the tower mounted on 900 Pine building. Work basically involves testing the connection strength throughout various places in downtown and arts district in Rolla. If most of the streets, corners of the downtown and arts district and within the buildings receive moderate or good connection then city can start providing Wi-Fi using this tower.

Outdoor wireless access points may be installed in the far-east corners of the arts district for better connectivity in that region. Asynchronous shared lines with 3Mbps download and 512Kbps upload speed will be taken from Fidelity. Some parts of the city will have better signal reception than those far from the WAPs. These places in the downtown and arts district will be called Wi-Fi hotspots. Billboards and signs will be put to direct people to these hot-spots.

3.4 Phase II
This phase will begin with collecting feedback from the users and the internet service provider. Users will help in determining the reliability and quality of the service. Bandwidth usage information will be taken from Fidelity to check if an upgrade is required. If traffic increases the city will choose buy more bandwidth and in case better connectivity is required inside the building then city will move towards implementing phase 3. However in case this is working just fine then city can replicate the setup of Wave Internet Technologies by installing a new tower on top of a state-owned building to save monthly rent of the building. This would be a fresh installation but again the signal strength and capabilities of this location of the tower need to beta-tested. This can prove out to be expensive if this location of the building is not strategic as it can result in placing more than necessary outdoor access points throughout the downtown and arts district.

3.5 Phase III

The first two phases are essentially based on traditional approach. Traditional approach might not work for a variety of reasons. It is important to mention that this is a single point failure system. If the transmission of signal from the main tower fails then the city is without Wi-Fi for the amount of time spent in fixing it. Good signal strength within concrete buildings in downtown area is not guaranteed. The motivation to go for robust approach come from the fact that poor Wi-Fi is worse than no Wi-Fi. Phase 3 will start with a survey of the Rolla downtown and arts district to see where WAPs can be installed. Once the locations are decided, people who own the business and houses at those locations would be notified to see if they are willing to let city put up Wi-Fi WAP on their buildings. These WAPs can also be mounted atop light poles and pillars etc. Wave Internet Technology will then start its work to install this system of WAPs around the city. To start with shared lines will be taken from Fidelity. The phase will end up with testing of this network to conclude that all the WAPs are constructively located. Once this is done there will be no more need to identify wireless hotspots as this approach will guarantee speed, reliability and similar signal strength all over Rolla downtown and arts district.

4.0 Management plan

Wave Internet Technologies will be in charge of installing the hardware for wireless network and setting up the Wi-Fi. Their job includes surveying the area for reception quality, installing any additional equipment necessary to facilitate both traditional and robust approaches proposed here, setting up a wireless LAN and network for proper functionality of this setup, maintenance and support for their network.

Fidelity is in charge of providing the internet service. There job includes installation cost of cables and equipment for WAPs, monitoring bandwidth and traffic in different zones, maintenance of the cables and the equipment that they have installed.

The city of Rolla is in charge of putting up billboards advertizing free Wi-Fi service near exits 184 to 189 for incoming traffic from the interstate I-44. After implementation of phase 1 the city needs to put up signs to direct people to Wi-Fi hot-spots. The responsibility of the city also includes collecting surveys and feedback from the city to find how the community is responding to this initiative and also see if the local businesses are willing to pay an annual fee to assist city in maintaining and running such Wi-Fi system.
## 5.0 COST estimate

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<tr>
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<th>Traditional approach</th>
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<th>Robust approach</th>
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<tr>
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<td>(Wave Internet)</td>
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<td><strong>Bandwidth per month</strong></td>
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Costs are approximate and subject to change.
6.0 REFERENCES

1) http://en.wikipedia.org/wiki/Municipal_wireless_network

2) http://www.nycwireless.net/2009/05/fox-5-news-talks-about-getting-online-in-nyc-parks-this-summer/

3) http://blogs.sun.com/bobp/entry/wifi_gadgets_and_applications (reference for picture on title page)

APPENDIX A: Schedule
<table>
<thead>
<tr>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Predecessors</th>
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<tr>
<td>1 Wi-Fi Rollout in Rolla</td>
<td>55 days</td>
<td>Wed 6/17/09</td>
<td>Tue 7/1/09</td>
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</tr>
<tr>
<td>2 PROJECT SURVEY</td>
<td>12 days</td>
<td>Wed 6/17/09</td>
<td>Thu 7/2/09</td>
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<td>3 Wave Internet Tech: Discute the proposal</td>
<td>2 days</td>
<td>Wed 6/18/09</td>
<td>Thu 6/19/09</td>
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<td>2 days</td>
<td>Fri 6/19/09</td>
<td>Mon 6/22/09</td>
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</tr>
<tr>
<td>5 Joint meeting with Wave internet and Fidddy</td>
<td>1 day</td>
<td>Tue 6/22/09</td>
<td>Tue 6/23/09</td>
<td>4</td>
</tr>
<tr>
<td>6 Search for possible funds</td>
<td>7 days</td>
<td>Wed 6/23/09</td>
<td>Thu 6/24/09</td>
<td>5</td>
</tr>
<tr>
<td>7 PHASE I</td>
<td>22 days</td>
<td>Fri 7/3/09</td>
<td>Mon 7/6/09</td>
<td>2</td>
</tr>
<tr>
<td>8 Install shared internet in two WAPs on 000 pine building</td>
<td>1 day</td>
<td>Fri 7/3/09</td>
<td>Fri 7/3/09</td>
<td></td>
</tr>
<tr>
<td>9 Testing of service</td>
<td>1 day</td>
<td>Mon 7/6/09</td>
<td>Mon 7/6/09</td>
<td></td>
</tr>
<tr>
<td>10 Monitor internet traffic and collect feedback from community</td>
<td>28 days</td>
<td>Tue 7/7/09</td>
<td>Mon 7/13/09</td>
<td>9</td>
</tr>
<tr>
<td>11 Identify locations that can be used to install additional WAP</td>
<td>2 days</td>
<td>Tue 7/7/09</td>
<td>Wed 7/8/09</td>
<td>6</td>
</tr>
<tr>
<td>12 PHASE II</td>
<td>10 days</td>
<td>Tue 8/4/09</td>
<td>Mon 8/17/09</td>
<td>7</td>
</tr>
<tr>
<td>13 Install new tower on state-owned building, City Hall</td>
<td>5 days</td>
<td>Tue 8/4/09</td>
<td>Mon 8/10/09</td>
<td></td>
</tr>
<tr>
<td>14 Install new WAPs tower and additional WAPs in city</td>
<td>2 days</td>
<td>Tue 8/4/09</td>
<td>Wed 8/10/09</td>
<td>13</td>
</tr>
<tr>
<td>15 Install shared internet lines to WAPs</td>
<td>2 days</td>
<td>Thu 8/4/09</td>
<td>Fri 8/4/09</td>
<td>14</td>
</tr>
<tr>
<td>16 Testing of service</td>
<td>1 day</td>
<td>Mon 8/7/09</td>
<td>Mon 8/17/09</td>
<td>15</td>
</tr>
<tr>
<td>17 PHASE III</td>
<td>11 days</td>
<td>Tue 8/18/09</td>
<td>Tue 9/1/09</td>
<td>12</td>
</tr>
<tr>
<td>18 Discuss: an annual fee from the businesses</td>
<td>2 days</td>
<td>Tue 8/18/09</td>
<td>Wed 8/19/09</td>
<td></td>
</tr>
<tr>
<td>19 Search for additional federal/state funding</td>
<td>5 days</td>
<td>Tue 8/18/09</td>
<td>Mon 8/25/09</td>
<td></td>
</tr>
<tr>
<td>20 Install WAPs at determined locations around the city</td>
<td>5 days</td>
<td>Tue 8/25/09</td>
<td>Mon 8/31/09</td>
<td>13</td>
</tr>
<tr>
<td>21 Install shared dedicated internet lines to WAPs</td>
<td>5 days</td>
<td>Tue 8/25/09</td>
<td>Mon 8/31/09</td>
<td>13</td>
</tr>
<tr>
<td>22 Testing of service</td>
<td>1 day</td>
<td>Tue 9/1/09</td>
<td>Tue 9/1/09</td>
<td>21</td>
</tr>
</tbody>
</table>
APPENDIX B: Traditional and Robust Approach
ATTACHMENT I

MS&T Student Work Plan:

Rolla Arts District Streetscaping and Trees
Rolla Arts District Streetscaping and Trees

for

Dan Klinski and Steven Scholz
for The Arts District

by

Derek Schler (djsn8c@mst.edu)
Norb Ziemer (nlz2nd@mst.edu)

June 26, 2009
Executive Summary

The project goal is to create an arts district within the City of Rolla, MO, in order to add warmth and charm to the downtown district of Rolla, while also cultivating ties with Missouri S&T. Rolla has key resources to be leveraged, including historical buildings dating back to the Civil War, antique shops, and architecture which are difficult to replicate today. This project involves intentional placement of trees along streets and sidewalks (which also help “green” the area), as well as public seating areas and aesthetically finished pavement (pavers / stamped concrete),

The project successfully deployed in Scottsdale serves as a reference basis, accelerating the application of similar elements into the Rolla downtown district. Funding will be sought through grants, foundations, and public/ private partners. The work plan outlines the steps required to facilitate the beautification of Rolla’s Arts district. This includes: planting trees along Cedar Street from 10th to 5th Street, constructing public seating areas throughout the district, and installing a pergola on the south side of 6th Street. The arts district will be a user friendly area for pedestrians and will attract new business development and customer traffic.

The Rolla streetscaping project is partitioned into three phases: approving a final design for the project, obtaining signoff and project funding, and implementation/construction. One tree will be planted on the corner where each key street intersects with 6th Street. These trees will serve as visual markers as to your location within in the Arts District. The type of tree planted will be the namesake of the respective street intersecting with 6th Street. This means there will be an Elm tree planted at 6th and Elm the intersection, an Oak tree planted at the 6th and Oak intersection, an Olive tree planted at the 6th and Olive intersection, a Cedar tree planted at the 6th and Cedar intersection, and a Walnut tree planted at the 6th and Walnut intersection.

The increased foot traffic in the Arts District will spur demand for public seating. There are three properties - owned by Dan Klinski and Steven Scholz - at the heart of the Arts District that are ideal locations for larger public seating areas. The final properties that could be used for public seating areas are the two northern corners where 6th Street intersects Cedar Street. This is where the proposed fountain will be located and having seating around it will allow people to enjoy its presence. The seating design will be similar to the second property except it may not be square, depending upon how far the fountain project cuts into the sidewalk. Each area has three benches.

The biggest decision to make regarding the public seating is what to pave it with, either decorative/stamped concrete or paving stones/brick. The main advantage of stamped concrete is that it cost considerably less than stones or brick, and it can be reinforced with steel or mesh. The advantage of using paving stones or brick is that the feel of an antiquated Arts District is more real.
A range of funding options will be explored for this project. The Economic Development Administration may have funding at the federal level that may align with project activities. At the state level, there may be dollars for historical preservation, beautification, and “greening.”

Project budget is estimated at $89,000-$295,000, ranging from basic to luxury component selections. It is assumed that the City of Rolla will take responsibility of maintaining the improvements made to the Arts District as well as overseeing the administration of grant funding awards. The city may also work closely on this with the Rolla Regional Economic Commission. These efforts will have the effect of building up the Rolla community.
Introduction

The overarching goal of this endeavor is to develop an arts district theme and culture in the City of Rolla, MO. The belief is that it will add warmth and charm to the downtown district of Rolla, while simultaneously cultivating ties with Missouri S&T and its stakeholders. The arts district will develop a user friendly area for pedestrians and commerce, attracting new business development and customer traffic. The artists want to brand neighborhoods in conjunction with other projects dealing with signage.

Dan Klinski and Steven Scholz have a proven track record of developing an arts-centric downtown district, having cultivated an arts district in Scottsdale, AZ. Scottsdale also has close ties with a regional academic institution, namely Arizona State University in Tempe, AZ.

Rolla has some key resources to be leveraged and deployed in this effort. Some of those include historical buildings (dating back to the Civil War), antique shops, and architecture that would be difficult to replicate today. The project deployed previously in Scottsdale, AZ will serve as a basis for reference. This will accelerate the application of similar elements into the Rolla downtown district.

The goal is to develop and nurture an arts district theme within the city of Rolla, MO and to foster a culture that is welcoming to pedestrians and passersby. Additionally, it is anticipated that these efforts will aid in strengthening the strategic ties between the city/community of Rolla and the academic institution and its stakeholders at Missouri University of Science and Technology. These efforts will have the effect of building up the Rolla community brand and enhance the “green” elements in the town.

1.1 Objective

The objective of this document is to outline the steps and processes required to facilitate the beautification of the Rolla Arts district. This currently includes, but is not limited to: planting trees along Cedar Street from 10th to 5th Street, constructing public seating areas throughout the district, and installing a pergola on the south side of 6th Street. The belief is that it will add warmth and charm to the downtown district of Rolla, while simultaneously cultivating ties with Missouri S&T and its stakeholders. The arts district will develop a user friendly area for pedestrians and commerce, attracting new business development and customer traffic. The artists want to brand neighborhoods in conjunction with other projects dealing with signage.
Scope of Work

The proposed streetscaping of the Rolla Arts district will be broken up into three phases: deciding upon a final design for the project, getting approval and funding for the project, and actually implementing the project construction.

The city of Rolla will first need to decide upon a design that is both aesthetically pleasing and within budget. Within the overall design there are four components that will need to have a design selected. These are: the trees along Cedar Street, the trees planted at each corner of 6th Street, the pergola, and the public seating.

2.1 Planting of Trees along Cedar Street

The current plan is to plant trees along Cedar Street from 10th to 5th Street to act as a guide from the proposed arch way to the Arts District. The only requirement for this part of the project is for the trees to not become obstructive. This could mean several closely spaced trees could be planted as long as their spread is relatively small or it could also mean that fewer “large spread” trees could be planted (Table 1). There is even the option of alternating trees along the street.

Among the types of Cedar trees that could be used to line this strip of road are the Eastern Red Cedar, the Northern White Cedar, and the Oriental Arborvitae. If the type of tree is expanded to include all evergreen trees, then some of the trees that could be selected are the Arborvitae - Degroot's Spire, the Arborvitae – Techny, the Arborvitae-Pyramidalis, and the Arborvitae – Nigra.

<table>
<thead>
<tr>
<th>Tree</th>
<th>Height</th>
<th>Spread</th>
<th>Spacing from Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Red Cedar</td>
<td>30-50 ft</td>
<td>10-20 ft</td>
<td>40-80 ft</td>
</tr>
<tr>
<td>Northern White Cedar</td>
<td>40-45 ft</td>
<td>12-15 ft</td>
<td>48-60 ft</td>
</tr>
<tr>
<td>Oriental Arborvitae</td>
<td>18-25 ft</td>
<td>10-12 ft</td>
<td>40-48 ft</td>
</tr>
<tr>
<td>Arborvitae-Techny</td>
<td>15-20 ft</td>
<td>4-6 ft</td>
<td>16-24 ft</td>
</tr>
<tr>
<td>Arborvitae-Nigra</td>
<td>20-30 ft</td>
<td>4-10 ft</td>
<td>16-40 ft</td>
</tr>
<tr>
<td>Arborvitae-Pyramidalis</td>
<td>15-25 ft</td>
<td>3-5 ft</td>
<td>15-20 ft</td>
</tr>
<tr>
<td>Arborvitae - Degroot's Spire</td>
<td>6-12 ft</td>
<td>3-5 ft</td>
<td>15-20 ft</td>
</tr>
</tbody>
</table>

Table 1: Tree heights, spreads, and recommended spacing.
2.2 Corner Trees

Rather than plant trees along the north and south facing streets, it has been proposed to plant one tree on the corner where each of these streets intersects with 6th Street. These trees will serve as a visual marker at to where in the Arts District you are located. The type of tree planted would be the namesake of the street intersecting with 6th Street. This means that there would be an Elm tree planted at the intersection of 6th and Elm, an Oak tree planted at the intersection of 6th and Oak, an Olive tree planted at the intersection of 6th and Olive, a Cedar tree planted at the intersection of 6th and Cedar, and a Walnut tree planted at the intersection of 6th and Walnut.

Seeing as these trees are serving as land marks, it would make sense to have tree benches around them. Tree benches are basically benches that wrap around the tree and provide seating under the shade of the tree. The tree benches can be selected from three different price ranges (Picture 1, Picture 2, and Picture 3).

<table>
<thead>
<tr>
<th>Basic Price~$864</th>
<th>Mid Range Price~$1500</th>
<th>Luxury Price~$2200</th>
</tr>
</thead>
</table>

**Pergola**

A pergola is a structure used to develop a garden feel on a walkway or sidewalk, through use of pillars, beams, lattice and foliage. It has similarities to a gazebo but can be extended over a longer stretch of pavement. Pergolas have historical roots back to England and Italy.
Modern pergola designs tend to favor wood over stone structures, and are thus more affordable and increasing in popularity. Generally, pergolas are either made from a weather-resistant wood, such as red cedar (Picture 5) or, formerly, of redwood, or are painted or stained white or gray (Picture 4).

Prices shown may provide a rough representation; however, a cursory web search suggested there is a wide range of variability in pergola pricing. Another option is to narrow down pergola style considerations and issue a Request for Proposals to local carpentry contractors/shops. Since the construction market is lagging, carpentry contractors may have availability and may be hungry for local work like this.

Public Seating

With the increase in foot traffic to the Arts District, there will be an increased demand for public seating. There are three properties at the heart of the Arts District that would be ideal locations for larger public seating areas. All three of these properties are currently owned by Dan Klinski and Steven Scholz.

The first property is the old school house that Mr. Klinski and Mr. Scholz are renovating on 6th street between Walnut and Cedar. The two corners on this property are the areas best suited for this kind of project. Below is a drawing (Drawing 1) providing the basic concept for the seating areas.
The two squares to the left and right are 20’x20’ and could hold several benches for seating. The center rectangle is a leeway for the parking lot behind the seating areas that will aid in reducing traffic congestion. There is enough room per area to allow for six benches.

The second property that could be used as a public seating area is the property directly across from this one on the corner of Walnut and 6th Street. The design would be similar, but there would be no need for the leeway in between the seating areas and each area would only be 20’x20’. There is enough room on the property for two seating areas and enough room for three benches per area.

The final properties that could be used as a public seating area are the two northern corners of 6th Street where it intersects with Cedar Street. This area is where the proposed fountain is to be located and having seating around it would allow for people to better enjoy its presence. The design for the seating would be similar to the second property except that it may not be square. This all depends on how far the fountain project cuts into the sidewalk. There is enough room on each area for 3 benches.

The biggest decision to make regarding the public seating is what to pave it with. There are two possible options available: stamped concrete (Picture 6) and paving stones/brick (Picture 7). The main advantage of stamped concrete is that it cost considerably less than stones or brick. Poured concrete pavements—in addition to their versatility in surface finish options—are also able to be reinforced for longevity by using wire and/or fiber mesh as well as reinforcing bars. The advantage of using paving stones or brick is that the feel of an antiquated Arts District is more real.
Stamped Concrete ~ $5-20/ft^2  
Brick ~ $10-$50/ft^2


Between the two lots and two corners, there is enough space for six public seating areas. This comes to a total area of about 4000 ft^2. Going by the estimated cost per square foot for each of the paving types, the Stamped Concrete will cost $20,000-$80,000 and the Brick will cost $40,000-$200,000.

3.0 Work Breakdown Structure

The Gantt chart (Figure 1) presents an overview of the project components and milestones. This represents a best case scenario – where tasks may be begun in parallel – for the project, with a project completion date in September 2009.
The Gantt chart in Figure 2 presents an overview of the project components and milestones as in the previous chart. However, this chart represents a more realistic scenario—with sequential tasks—for the project, with a project completion in November 2009.

### 4.0 Budget

Listed below are the estimated costs for each price range. Each of the pieces of the project can be selected from anyone of the three price brackets and combined with items from other price brackets.

<table>
<thead>
<tr>
<th>Basic</th>
<th>Mid Range</th>
<th>Luxury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trees</td>
<td>$2,100</td>
<td>$2,100</td>
</tr>
<tr>
<td>Benches</td>
<td>$7,680</td>
<td>$19,980</td>
</tr>
<tr>
<td>Paving</td>
<td>$40,000</td>
<td>$60,000</td>
</tr>
<tr>
<td>Pergola</td>
<td>$39,600</td>
<td>$52,800</td>
</tr>
<tr>
<td>Total</td>
<td>$89,380</td>
<td>$134,880</td>
</tr>
<tr>
<td></td>
<td></td>
<td>$295,140</td>
</tr>
</tbody>
</table>
A range of different funding options will be explored and evaluated for this project. For example, the Economic Development Administration may have funding at the federal level that may align with some of the proposed project activities. At the state level, there may be dollars for historical preservation and beautification as well as for the greening of city areas. One advantage may be the capability to leverage one funding source (e.g. state dollars) to the second source (e.g. federal) to provide multiplication for project match.

5.0 Management Plan

It is assumed that the City of Rolla will take responsibility of maintaining the improvements made to the Arts District as well as overseeing the administration of grant funding awards. The city may also work closely on this with the Rolla Regional Economic Commission, a registered 501 (c) 3 corporation. This non-profit organization will have the ability to serve as a pass through for grant dollars received and will likely have knowledge of grants administration.
6.0 References

Picture 1.

Picture 2.
http://www.chaboyaptsa.org/CIMG0017.JPG

Picture 3.

Picture 4.

Picture 5.
http://www.homedepot.com/webapp/wcs/stores/servlet/ProductDisplay?storeId=10051&langId=-1&catalogId=10053&.productId=100592168&categoryID=503219

Picture 6.
http://www.overlandparkconcrete.com

Picture 7.
ATTACHMENT J

MS&T Student Work Plan:

Downtown Rolla Tourism Branding Proposal
Downtown Rolla Tourism Branding Proposal
Work Plan

Prepared for: Lonna Sowers and Scott Grahl

Prepared by: Susmitha Akula and Michael Cann

June 24, 2009
Executive Summary

Rolla City is in Phelps County, Missouri, midway between the larger cities of St. Louis and Springfield. Rolla was founded in 1858 where it served as a major transportation and trading hub during westward expansion. Even though Rolla is a scenic place rich with history and culture, the city lacks a strong brand presence.

The goal of this project is to develop a branding and marketing plan that would coordinate with existing promotional efforts of the city of Rolla and the Rolla Area of Chamber of commerce to promote the Downtown Business District, Arts District, and Missouri S&T to tourists and visitors by capturing the city’s history and its uniqueness.

This project has three inherent phases built into it, based off of the time it will take to complete the various projects. There is the current and immediate phase which can be completed within three weeks. This phase will generally have projects that don't require much capital startup and minimal planning to implement. The short term phase which can be completed in approximately two to three months. These types of projects tend to be more involved and require additional coordination to complete. Lastly a long term phase which will take longer than three months and more than likely closer to six months to a year. These projects are the ones that will truly make a lasting influence on the people coming to visit Rolla.

Some of the budget estimates for the proposed projects are:

- Tri-fold Pamphlet - $2000 (recurring as needed)
- Billboards – 12000 /month (6 bill boards)
- Brick Crosswalks - $24,000

All the above amounts are rough estimates and might vary significantly by the time of culmination of the projects. More details could be found in the section 6.0 Cost Estimates.

Foremost a project committee from Rolla Chamber of Commerce, Rolla City Council, and a MS&T liaison at a minimum must be created. This work group will help refine and determine what projects should be undertaken or discarded.

This project will help city of Rolla in establishing itself as a strong brand for tourists and visitors and as a result will help the businesses in downtown thrive. These benefits combined create more opportunities for local citizens and visitors alike to enjoy what Rolla has to offer.
# Table of Contents

1.0 Introduction......................................................................................................................4  
   1.1 Objectives......................................................................................................................4  
2.0 Scope of Work...................................................................................................................4  
3.0 Work Breakdown Structure..............................................................................................5  
   3.1 Phase I: Current and Immediate Implementation Projects............................................5  
   3.2 Phase II: Short Term Implementation Projects..............................................................6  
   3.3 Phase III: Long Term Implementation Projects.............................................................7  
   3.4 Additional Projects and Events......................................................................................8  
4.0 Management Plan...........................................................................................................8  
   4.1 Project Management Plan..............................................................................................9  
   4.2 Project Management Resources....................................................................................10  
5.0 Project Schedule............................................................................................................10  
6.0 Cost Estimates...............................................................................................................11  
7.0 References....................................................................................................................11  
   Appendix A.......................................................................................................................12  
   Appendix B- Network Diagrams.......................................................................................13
1.0 Introduction

Rolla was founded in 1858 where it served as a major transportation and trading hub during westward expansion. The Frisco Rail Line and Route 66 both were stops in Rolla making it a popular stop point for travelers and these thoroughfares still exist today and make up part of the historic downtown district in Rolla. It is this history combined with Rolla's art district, the Missouri Science and Technology Campus, and existing businesses that we are going to market for tourism and visitors to explore the "Middle of Everywhere". Therefore the emphasis should lie in promotion of the city which includes the fact that Rolla is a safe, clean, attractive community in which values of family, community, hard work and education remain strong. The city wishes to highlight the importance of rich history surrounded by one of the best natural preserves in the country.

1.1 Objective

Rolla has a need for a unified effort to attract visitors, students, and tourists to its various districts including its downtown and arts district. The scope of this project is to create a homogeneous approach to all projects that are currently underway in Rolla and those that will be in the future. This will include recommending new projects to be undertaken and creating a comprehensive management plan.

2.0 Scope of Work

This project has three inherent phases built into it, based off of the time it will take to complete the various projects. There is the current and immediate phase which can be completed within three weeks, the short term phase which can be completed in approximately two to three months, and a long term phase which will take longer than three months and more than likely closer to six months to a year. Each phase will be covered individually and expounded upon what should be accomplished during each phase in the section 3.0 Work Breakdown Structure.

Each project to be undertaken must work within the color scheme of green, amber, and blue to be branded for the downtown area. Also all projects should emphasize Rolla's historic lineage. For example projects that update the streetlamps should try and mimic the lamps the lined Pine Street in Rolla's early history. Signs emplaced in the Arts District should have a similarity to signs in downtown area, but possibly with a different color added to denote the district or certain flair to set it apart. Most importantly each district, building, and street should have a unique feel, but a commonality between them should exist pointing to Rolla's history.

Another major component of this project is the actual management of these projects. To manage, organize, and plan the branding of Rolla will take extensive planning and coordination between numerous groups and councils and will be covered in more depth in section 4.0 management plan.
3.0 Work Breakdown Structure

These phases are not inclusive of all the projects that are currently going on in Rolla or those that are proposed. Each phase is based off time to complete and is just used for planning purposes. A working document that tracks all ongoing projects will also need to be created will be covered in more depth in section 4.0. Again each project needs to consider the Rolla’s history in their statements of work and ensure it fits in with the entire project’s scope.

3.1 Phase I: Current and Immediate Implementation Projects

Projects that can be accomplished within three weeks of the project start date will be included in Phase I. Phase I will also include those projects that are currently underway. This phase will generally have projects that don’t require much capital startup and minimal planning to implement. The following are projects that are recommended for Phase I.

<table>
<thead>
<tr>
<th>Proposed Project</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tri-fold Pamphlet</td>
<td>A pamphlet that is continually updated with current businesses, restaurants, historic sites in downtown Rolla.</td>
<td>Should be placed in strategic locations downtown, and other surrounding towns such as Cuba and the Fort Leonard Wood area.</td>
</tr>
<tr>
<td>Map Placards and Map Signs</td>
<td>Large Maps in the downtown area at strategic location will help people on foot navigate to places of interest.</td>
<td>At points of interest and along foot paths in downtown. Also at Fort Leonard Wood and other visitors centers in surrounding towns could benefit from maps</td>
</tr>
<tr>
<td>Billboards</td>
<td>Billboards along major routes heading through and by Rolla will help bring about more awareness of the town</td>
<td>Along Routes 44, 72, and 63</td>
</tr>
<tr>
<td>Link on MS&amp;T Website for RDBA</td>
<td>A link with an event calendar and page for Rolla on MS&amp;T’s webpage would help link the campus to downtown</td>
<td>Internet</td>
</tr>
</tbody>
</table>

Figure 1- Phase I Projects
Note that all these projects concentrate on getting information disseminated about Rolla and its districts. This phase lays the groundwork for future projects and is a quick way to make an immediate impact. Along with being easy to implement these projects are also relatively cheap. Another big factor with this phase is the necessity to update each item. These projects must be considered on a recurring basis as maps, pamphlets, billboards, and links all will be needed with new information as it presents itself.

3.2 Phase II: Short Term Implementation Projects

Projects that can be accomplished in approximately two to three months fall into Phase II. These types of projects tend to be more involved and require additional coordination to complete. The projects listed below all have a minor construction requirement because of which they fall into Phase II.

<table>
<thead>
<tr>
<th>Proposed Project</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Business/Historical/Arts District Signage</td>
<td>Use an established and consistent color scheme to make a unified appearance in Rolla</td>
<td>All of Rolla</td>
</tr>
<tr>
<td>*Foliage Insertion along Pine</td>
<td>Inclusion of trees along pine street would help give shade to walkers and make the area more aesthetically pleasing</td>
<td>Pine Street</td>
</tr>
<tr>
<td>Brick Crosswalks</td>
<td>Change over concrete crosswalks to brick to give the area an older feel</td>
<td>Crosswalks along Pine street</td>
</tr>
<tr>
<td>*Free Wi-Fi</td>
<td>Create a free wireless network that would be able to be accessed in the downtown arts and business district</td>
<td>Downtown Arts and Business District</td>
</tr>
<tr>
<td>Bike/Walking trails into the downtown area</td>
<td>Connect the Missouri S&amp;T Campus and the downtown area with new bike and walking trails</td>
<td>Missouri S&amp;T to Downtown</td>
</tr>
</tbody>
</table>

* Denotes additional information can be found in a separate work plan

The projects that fall into Phase II tend to be related to minor beautification projects. It is these projects particularly that need close management to ensure that all construction contractors work within the framework given to them.

3.3 Phase III: Long Term Implementation Projects
Phase III will contain long term projects that have a long lead time and that will require a substantial amount of capital and planning. These projects are the ones that will truly make a lasting influence on the people coming to visit Rolla. This makes it crucial that the projects are managed closely and that the contractors share the vision of all the parties involved on the management team.

<table>
<thead>
<tr>
<th>Proposed Project</th>
<th>Description</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Facade Remodeling</td>
<td>Remodel local downtown businesses to their 19TH century facades creating a unique look</td>
<td>Downtown</td>
</tr>
<tr>
<td>Downtown visitors center</td>
<td>A small building or location that has an outdoor map and corkboards for local businesses to post flyers and events. Building would be a stop location for anyone walking downtown to see what was going on. It would also serve as a welcome center to downtown Rolla</td>
<td>Situated in the center of the downtown business district</td>
</tr>
<tr>
<td>Attract additional businesses</td>
<td>Need to market to additional businesses that students at MS&amp;T want. A local survey and release of information would be necessary to attract these businesses.</td>
<td>Business would be localized in downtown</td>
</tr>
<tr>
<td>*Additional Parking lot/Garage</td>
<td>Create a new parking lot to serve as a gateway to both the central business district as well as the proposed arts district.</td>
<td>The vacant lot at the southwest corner of 6th and Elm Streets</td>
</tr>
<tr>
<td>*Traffic Flow Modification</td>
<td>Improve the traffic circulation in and to the downtown area</td>
<td>Downtown</td>
</tr>
<tr>
<td>*Farmers Market</td>
<td>Improve existing or relocating the current farmers market to increase visibility of the event</td>
<td>Downtown (currently behind City Hall)</td>
</tr>
<tr>
<td>*Decorative Fountain</td>
<td>Emplace a large decorative fountain to create a recognizable and memorable meeting point downtown</td>
<td>Intersection of 6th and Cedar Street</td>
</tr>
</tbody>
</table>

*- Denotes additional information can be found in a separate work plan

Figure 3- Phase III Projects
3.4 Additional Projects and Events

To implement these proposals listed above, the following plan of action should be used for efficient use of resources as well as to get greater mileage out of the work being done. The following events are specifically chosen so that they will provide a cost effective publicity and advertisement to Rolla city and also will increase the involvement of all the stakeholders and create a sense of ownership among them.

(a) Conduct a competition in which all the S&T students and Rolla residents could participate in which they have to write an article or an essay on Rolla (what is unique about Rolla) – Its history, about the university, the downtown, all the events that they like to attend in Rolla, their favorite places in Rolla, the relationship between the University and the city and so on with the best essay winning a prize.

(b) Conduct a photo competition in which all the stakeholders can participate. The pictures can include rare historic events of Rolla and everything about the city Rolla, its annual events. The article and the pictures that win the competition along with the highlights of general history and the annual events of the city and pictures depicting how visitors and tourists can enjoy the events with their families could be published in local print media and strategically in others cities.

(c) Create a dedicated page on the S&T website for this well articulated and well laid out article. Since social media marketing is one of the most effective tools, we can also publish the article as blogs on Facebook, MySpace, twitters, and also Youtube (video channel). These could be updated frequently with the latest information about the developments taking place in Rolla. This is a most cost effective way to increase the awareness and promote about the developments taking place in Rolla and the cost included would be many folds less and the number of people that could be reached and the kind of publicity this will produce will be lot greater when compared to conventional advertising.

(d) Conduct a beauty pageant, name the pageant winner as Miss Rolla… this event would involve not only youngsters but also their families and would create quite a buzz by making it an annual event which can culminate in a grand celebration.

(e) One way to increase the visitors to downtown is to move the farmers market to downtown and also have some stores that could provide fast moving goods like groceries at reasonable prices, people can walk to these places buy things on a regular basis and this will help the students and local community from stop

Downtown Arts and Crafts Festival

Missouri S&T Campus
making regular trips to Wal-Mart and Kroger which are quite distant from campus and downtown area and in turn increase the revenue for the city. Also attract coffee shops, bread shops, Ice-cream parlors, etc to downtown

(f) We can also conduct a survey to find out which is the most visited place in downtown and also find how we can make downtown more attractive to the local community and S&T students (example: new stores, places to hangout such as bowling alleys)

(g) An information kiosk could be set up to give information on all the events and the contests being conducted at a strategic position in downtown.

(h) Have a 10K annual downtown run to bring additional tourists to Rolla's downtown area during a low tourist time of the year.

4.0 Management Plan

The management plan is the pivotal piece of this project that ensures all the projects are on time, on budget, and most importantly fit the historic theme that Rolla is trying to create. Each project's statement of work must be scrutinized to ensure that the contractor truly understands the concept of what the committee has in mind.

4.1 Project Management Plan

Foremost a project committee from Rolla Chamber of Commerce, Rolla City Council, and a Missouri S&T liaison at a minimum must be created. This work group will help refine and determine what projects should be undertaken or discarded. A chairperson for each party should be chosen, but each party should have more than one member to include additional personnel such as an accounting/budgeting person. Additional roles that will need to be taken are a minute taker for meetings, a contracting officer (if available), an IT person, and also someone who can manage the calendar of events.

This committee should first meet and determine exactly how they want to implement Rolla's historic theme and new colors. They should then determine what projects are currently underway and what projects are in works for the future. These projects should then be added to the respective phases listed above. Once all projects have been determined a prioritized list should be created so funding can be allocated.
Once all project work has been considered, different ideas should be solicited as recommended in paragraph 3.4. This will help all parties get in touch with the students and determine what it will take to bring additional students downtown.

Meetings should be held weekly to start, and then changed to bi-weekly as the initial projects become underway. Also at these weekly meetings people with invested interest in Rolla and those looking to undergo construction should attend to ensure that their construction projects conform to historic theme. Existing contractor representatives should also attend the meetings to provide updates with progress, issues, and concerns as necessary.

### 4.2 Project Management Resources

The project working group should maintain a record of available budgets to include funding and donations. This document will be very important as it will enable the group to see what party can use what funds for certain projects and how much additional funding must be raised.

A project software such as Microsoft Project (or similar software) should be used to track all ongoing and future projects. This will again play a large role into finances as it will enable to forecast the future for when monies will become used and free. This project calendar will also play a vital role in determining what contractors are being used at different times. This calendar will be a boon to those also who are trying to determine what projects are on schedule or falling behind. Also the initial phases recommended are only for planning purposes, once this project starts being managed and priorities have been determined the current calendar will dictate current, short, and long term projects.

Another important tracker should be map that coincides with the calendar. As numerous projects become undertaken there needs to be a way to ensure that projects don't overlap one another. A major construction project on Pine Street changing the flow of traffic will surely impede a project meant to install brick crosswalks along the same avenue.

### 5.0 Project Schedule

The projects recommended will all have various project schedules, but estimates have been included into one Gantt Chart (Appendix A, Figure 1). For those projects not listed in the Gantt Chart see the respective student Work Plan for that project.
6.0 Cost Estimates

The following is a list of estimated costs for the recommended projects found in sections 3.1 to 3.4. For those projects not listed see the respective student Work Plan for that project.

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<thead>
<tr>
<th>Project</th>
<th>Details</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tri-fold Pamphlet</td>
<td>Tri-fold, Dual Side, Gloss Paper, Full Color, quantity: 10,000</td>
<td>$2000 (recurring as needed)</td>
</tr>
<tr>
<td>Map Placards and Map Signs</td>
<td>Outdoor Signs (20), Indoor (20)</td>
<td>$12,000 (updated as needed)</td>
</tr>
<tr>
<td>Billboards</td>
<td>6 billboards</td>
<td>$12,000 per month</td>
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<tr>
<td>Link on MS&amp;T Website for RDBA</td>
<td>Created in conjunction with MST students</td>
<td>$0</td>
</tr>
<tr>
<td>*Business/Historical/Arts District Signage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Foliage Insertion along Pine</td>
<td>Includes cost of trees, cost new sidewalk.</td>
<td>$500 per tree</td>
</tr>
<tr>
<td>Brick Crosswalks</td>
<td>20 crosswalks at est. $1200 per crosswalk</td>
<td>$24,000</td>
</tr>
<tr>
<td>Business Facade Remodeling</td>
<td>Estimated cost</td>
<td>$20,000-$80,000 per building</td>
</tr>
<tr>
<td>Downtown visitors center</td>
<td>Cost can vary. Renovating a new building is recommended.</td>
<td>$5,000-$20,000 renovation TBD if constructed</td>
</tr>
<tr>
<td>Attract additional businesses</td>
<td>Student Project, additional building cost is TBD</td>
<td>TBD</td>
</tr>
</tbody>
</table>

*- Denotes additional information can be found in a separate work plan

Figure 4- Cost Estimate Chart
7.0 References

1. City of Rolla – www.rollacity.org

2. Rolla Chamber of Commerce: http://www.rollachamber.org


4. Destination Branding for Small Cities – By Bill Baker


6. www.iesbdc.org/resources/Major%20Media%20Types.doc

7. Champion Contacts: Lonna Sowers Scott Grahl

   (573) 466-0369 (573) 426-6943

   lonnas@fidmail.com sgrahl@rollacity.org

8. Program Manager: Dr. Karl Burgher

   Office: (573) 263-2111

   burgherk@mst.edu
Appendix A

<table>
<thead>
<tr>
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<tr>
<td>1</td>
<td>Immediate Implementation</td>
</tr>
<tr>
<td>2</td>
<td>Business, Historic, Restaurant Location Research</td>
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<tr>
<td>3</td>
<td>Trifold Pamphlet</td>
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<tr>
<td>4</td>
<td>Pamphlet Design</td>
</tr>
<tr>
<td>5</td>
<td>Pamphlet Printing</td>
</tr>
<tr>
<td>6</td>
<td>Pamphlet Placement</td>
</tr>
<tr>
<td>7</td>
<td>Pamphlet/Location Location Research</td>
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<td>Map Records and Map Signs</td>
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<td>Placard/Sign Design</td>
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<td>Placard/Sign Manufacturing</td>
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<td>Placard/Sign Placement</td>
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<td>Placard/Sign Location Research</td>
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<td>Billboards</td>
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<td>Billboard Printing/Creation</td>
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<td>16</td>
<td>Billboard Location Research</td>
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<td>18</td>
<td>MS&amp;T Coordination</td>
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<td>19</td>
<td>Content Determination</td>
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<td>20</td>
<td>Website Interface Design</td>
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<td>21</td>
<td>Implementation and Debugging</td>
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<td>Marketing and Networking</td>
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<td>Short Term Implementation</td>
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<td>24</td>
<td>Signage (See Signage Group Gantt Chart)</td>
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<td>Foliage Insertion on Pine</td>
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<td>Foliage Location Planning</td>
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<tr>
<td>27</td>
<td>Foliage Design</td>
</tr>
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<td>28</td>
<td>Implementation/Construction</td>
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<td>Brick Crosswalks</td>
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<td>Crosswalk Location Planning</td>
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<td>Crosswalk Design</td>
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<td>Crosswalk Construction</td>
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<td>Long Term Implementation</td>
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<td>35</td>
<td>Location Selection</td>
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<td>36</td>
<td>Design</td>
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<td>37</td>
<td>Construction</td>
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<td>38</td>
<td>Downtown Visitor Center</td>
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<td>39</td>
<td>Location Planning</td>
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<td>Location Procurement</td>
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<td>41</td>
<td>Design</td>
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<td>42</td>
<td>Construction</td>
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<td>43</td>
<td>Attract Additional Businesses</td>
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<td>44</td>
<td>Create MS&amp;T Survey</td>
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<td>45</td>
<td>Implement MS&amp;T Survey</td>
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<td>46</td>
<td>Review Results</td>
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<tr>
<td>47</td>
<td>Petition Addresses</td>
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<td>48</td>
<td>Receive Business Proposals</td>
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<tr>
<td>49</td>
<td>Determine Business Locations</td>
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</table>
Figure 1 - Gantt Chart

Appendix B

Phase I Network Diagram
Phase II Network Diagram

Phase III Network Diagram
ATTACHMENT K

MS&T Student Work Plan:

Pedestrian and Biking Trail System
Work Plan

Pedestrian and Biking Trail System

Prepared For:

The City of Rolla, Missouri

Prepared By:

Ben Johnson (bwj253@mst.edu)
Lisheng Shi (lsx9d@mst.edu)

June 29, 2009
EXECUTIVE SUMMARY

The City of Rolla, Missouri has a need for an improved bicycle and pedestrian pathway system in its Downtown and Arts Districts. The City is interested in connecting the two districts with bicycle right of ways (ROWs) painted on the streets and painting cross walks on the streets to improve assure safer pedestrian street crossings. ROW signs need to be installed throughout the ROW route to communicate route directions to both cyclists and auto drivers. The objective of the project is to develop a bicycle route with destinations of interest throughout the Downtown and Arts Districts for cyclists and pedestrians.

The project scope of work includes:

- painting an eight foot wide bicycle ROW along several streets in the Downtown and Arts District and signs to improve traffic flow along the ROW
- cross walk installations

The work breakdown structure involves a 110 day work plan managed by an appointed project manager of the City of Rolla. The project schedule requires the project manager (PM) to submit an interim report when fifty percent of the project is complete. A final report is also required at the time of the project’s completion. A high level of quality must be maintained to ensure the highest quality product while balancing the project budget. Funding sources for the project will most likely be both internal and external, which will be proposed to the Rolla community and urban development organizations by the PM.

The management plan involves appointment of the PM by Steve Hargis, PE—Director of Public Works. The PM will have access to the resources provided by the Rolla Public Works Department. PM responsibilities include fundraising, project planning and supervising, and project outreach with city officials, stakeholders, and the Rolla community.
Table of Contents

1.0 INTRODUCTION 152

1.1 Objective 152

2.0 SCOPE OF WORK 152

3.0 WORK BREAKDOWN STRUCTURE 156

3.1 Quality 156

3.2 Project Schedule and Major Milestones 157

3.3 Budget 159

3.4 External Sources of Funding 159

3.5 Interim Reporting 159

3.6 Final Reporting 160

4.0 MANAGEMENT PLAN 160

4.1 Project Management 160

4.2 Project Execution 160

5.0 REFERENCES 162

Figures and Tables

Figure 1: Bicycle Right of Way 153

Figure 2: Bicycle Trail Signage 154

Figure 3: Bike Route Identification on Pine Street 154

Figure 4: Cross Walk Identification 155

Figure 5: Future East 6th Street and Elm Street Intersection 155

Figure 6: Bicycle Right of Way Route in the Downtown and Arts Districts of Rolla 156

Figure 7: Project Gantt Chart 158

Table 1: Engineer’s Cost Estimate 159
INTRODUCTION

The City of Rolla is located in Phelps County, Missouri and is populated with approximately 17,000 residents. Attractions include a rich history that exists in Rolla’s downtown from the pre-civil war era, the famous Frisco Line railroad, and the Route 66 historic highway. The city is also the home of Missouri S&T with 10,000 members in the university community.

City planners do not believe that the full potential of these unique tourist opportunities has been developed. Their intention is to provide an improved experience to tourists and community members of the downtown and arts districts by providing comfortable walkways and bicycle paths to connect Rolla’s heritage and culture.

Objective

Although several bicycle and walkways exist within Rolla’s city limits, there is a lack of pedestrian and biking path continuity between Rolla’s Downtown and Arts Districts. Cyclists are required to share downtown streets with automotive traffic without designated cycling right of ways. The objective of this document is to provide a step by step process to facilitate the improvement of connectivity of these two districts with footpaths and bicycle routes and right of ways (ROWS) that have enough character and class to draw more of Rolla’s community to these districts. Path interconnectivity is a major objective of the City’s plan to stimulate and manage the foot and bicycle traffic in these areas.

Path destinations will include the university, parking areas, the farmers market, proposed public fountains, and Ber Juan Park. Foot and bicycle pathway improvements also address the expected increase of student walking and bicycle traffic in these two districts in the coming years. A sense of place in these districts will contribute to the commerce and unique experiences Rolla has to offer by developing travel connectivity to Rolla’s culture.

SCOPE OF WORK

The proposed pathway interconnectivity and corridor development within the Downtown and Art Districts in Rolla includes three following components:

Paint bicycle right of ways (ROWS) along streets identified in Figures 1 & 3
Cross walk installation to improve pedestrian safety to access to parking areas and other points of interest

Install signs to improve bicyclist and pedestrian traffic flow

Bicycle ROWs on city streets will be painted similar to the street in Figure 1. However, the ROW will be identified by two parallel six inch stripes of white acrylic paint that are eight feet apart as seen in Figure 3. The ROW will not be on the side of the road; instead, it will be painted directly on the street to be shared by both bicycles and auto traffic. This approach will not require additional road space for cyclists and it will also increase auto driver awareness of cyclists sharing the road and which part of the road cyclists will most likely be traveling. Fifty feet before street intersections where the ROW direction changes, signs similar to the sign in Figure 2 will be painted on the street to communicate to bicyclists and automobile drivers that the ROW will be turning soon.

Cross walks will be painted similar to the example in Figure 3. Cross walks will be installed to ensure safe pedestrians access to parking areas, residential areas, and other interesting attractions in the Downtown and Art Districts.

Proposed Footpath Corridor Improvement and Bicycle Right of Ways

Figure 2: Bicycle Right of Way³
Figure 3: Bicycle Trail Signage

Figure 4: Bike Route Identification on Pine Street
Figure 5: Cross Walk Identification

Figure 6: Future East 6th Street and Elm Street Intersection
Figure 7: Bicycle Right of Way Route in the Downtown and Arts Districts of Rolla

WORK BREAKDOWN STRUCTURE

The work schedule is summarized below and requires fund development, planning and design, bid package development, and project construction.

Quality

Although budget constraints are a necessary project component, a high level of construction quality must be maintained to ensure an attractive and thorough addition to Rolla’s Downtown and Arts Districts. Unacceptable quality control of the project will likely compromise the project objectives and goals of the City of Rolla.
An eight foot wide bicycle ROW is a necessary element of the project. The ROW width is important because it is a specification for several bicycle route funding grants.

Project Schedule and Major Milestones

The first component of the project schedule is to develop a detailed funding plan for the project. When this milestone is reached, the funds can be raised and the next steps can begin. Furthermore, the plans and designs for this project need to begin as soon as possible. This will allow a detailed plan outline for fundraising, which improves the chances of donors to provide funds for the project because it improves their confidence in the project’s organization, implementation, and stability.

To ensure that the project will not be impeded by harsh weather, the start date of the construction should be tentatively set to springtime, when the weather is typically milder. This will improve the estimate of the expected project duration, which will alleviate the City of Rolla from unexpected cost.

After funding for this project has been developed, the project will require minimal design. Upon design completion, a bid package will require compilation and then the City will need to advertise the project for thirty days. Responsive and responsible contractors who bid on the project will be required to enclose their bids in a sealed envelope and mailed to the City of Rolla Public Works Department at the end of the thirty day period. The bid opening should occur as soon as possible and a credible contractor will be awarded the project. The bid package preparation, advertisement, and opening will require approximately 47 days. Upon the City’s notice to proceed to the awarded contractor, the actual construction cost will require approximately 28 days.

The bicycle ROW construction will occur in two phases. First, the bicycle right of way route will be painted as the map outlines in Figure 6. Figures 3 and 5 provide an example of the actual finished ROWs on Pine and Sixth Streets, respectively. Next, the bicycle ROW project manager will need to contact the Missouri S&T Cycling Club to conduct a survey. The survey will consist of student input for signage along the bicycle ROW. To ensure a thorough design of cycling navigability, the project manager also needs to conduct a bicycle traffic flow study to identify areas with unclear directions. Either upright, vertical signs or signs painted on the asphalt will be installed or painted as needed by the discretion of the project manager.

The next step of construction involves painting the asphalt for pedestrians to allow safe access from walkways to parking lots. Figure 5 gives an example of the finished product at Sixth Street and Elm Street intersection, where a proposed parking area requires safe pedestrian access from the North side of Sixth Street. The cross walk of most importance is located at the intersection of Sixth Street and Pine Street, where a proposed parking lot is located. Additional cross walks identified by the project manager will require painting as well. The cross walk portion of the work should require seven or less days of construction.
This work plan is illustrated below in the Gantt Chart in Table 1. It is important to recognize the arbitrarily chosen starting date, July 20th. The actual start date is likely to be different than this date.

Figure 8: Project Gantt Chart
Budget

Table 1 details the cost estimate of the project as unit costs for each component of the project. These unit prices are unadjusted national estimates from RSMeans. The labor cost associated with installation of each component is included in the unit price of each component. The labor of each component is also unadjusted estimates from RSMeans for the local labor prices in Rolla. The extended totals have been combined to estimate the project cost as $9,626. The ROW and pathway maintenance has not been included in this cost estimate—only direct construction costs are included.

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Price</th>
<th>Extended Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bicycle ROW, Acrylic Waterborne 6&quot;</td>
<td>12,800</td>
<td>LF</td>
<td>$0.47</td>
<td>$6,016.00</td>
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<tr>
<td>2</td>
<td>ROW Arrows, Acrylic Waterborne</td>
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<td>SF</td>
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<td>3</td>
<td>Traffic Signs</td>
<td>20</td>
<td>EA</td>
<td>$79.50</td>
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</tbody>
</table>

**Table 1: Engineer’s Cost Estimate**

**External Sources of Funding**

Project funding sources have been identified and detailed below. These are external sources of funding from state and government agencies for urban development. Please note that the emphasis for this report is not to fund this project—instead, this report’s primary objective is to provide guidelines for implementation of the project’s design, planning, construction, and completion in an efficient manner. Further research is encouraged by the community and the project’s management team as they pursue this funding for this project.


Missouri Department of Transportation Safe Routes to Schools [http://www.modot.org/Safety/SafeRoutestoSchool.htm](http://www.modot.org/Safety/SafeRoutestoSchool.htm)


Missouri Department of Natural Resources (MDNR) Recreational Trails Program [http://www.mostateparks.com/grantinfo.htm](http://www.mostateparks.com/grantinfo.htm)

**Interim Reporting**

The project manager is responsible to submit one interim report during the project’s construction. The first deliverable is due at the time of the notice to proceed. The primary objective of this report is to
inform city officials and project stakeholders of all actual fund allocations, budget estimate
improvements, project progress, and any project changes that were unforeseeable at the beginning of
the project. The report shall identify any supplementary project steps to the original work plan
guidelines.

Final Reporting

The final report shall be compiled by the project manager and her staff and submitted to Rolla’s city
officials, project stakeholders, and shall be accessible to the Rolla community. The final report content
shall include according to the following information:

- Project Overview
- Actual Project Timeline
- Actual Project Budget
- Issues and challenges faced during the project, and methods of their resolution
- A detailed plan for operation and maintenance of the ROW system and cross walks

MANAGEMENT PLAN

Project Management

Mr. Steve Hargis and his staff will supervise the construction of this project. If Mr. Hargis chooses not
to be the project manager, he may appoint a project manager and management team for further support.
If a project manager is appointed, he or she will be required to update Mr. Hargis and his staff with any
components of the project deemed important by Mr. Hargis.

Operation and maintenance for the signage and bike lanes will be conducted by the City of Rolla,
Missouri.

Project Execution
Necessary responsibilities of the project manager for successful project execution include:

- Fundraising; this will likely require activity with both internal and external sources
- Supervising and finalizing project planning and development
- Bid package development, advertisement, opening, and awarding

Act as primary liaison with city officials, any stakeholders associated with the project, as well as the Rolla community throughout the project duration
REFERENCES


Missouri University of Science and Technology Cycling Club cyclers@lists.mst.edu, kicks@route66bicycles.com.

ATTACHMENT L

MS&T Student Work Plan:

Parking Lot and Visitors Park at the Corner of

6th Street and Elm Street
Executive Summary

The City of Rolla, Missouri has experienced parking problems in their Downtown District for a number of years. City planners and several entrepreneurs have implemented an attempt to draw more businesses to Rolla's Downtown District as well as to Rolla's new, developing Arts District. These efforts will ultimately intensify the parking issues in these areas, which means that the need for a parking lot area as well as a place for visitors to gather information is a must.

This project proposes the purchasing of a vacant lot on the corner of 6th Street and Elm Street in order to develop a parking lot and visitors park to ease the parking burden on the Arts and Downtown Districts. This proposed project will consist of an approximately half acre parking area, a quarter acre visitors park with electronic information kiosk, and landscaping that will mesh with the newly beautified downtown.

The work plan for this project shall contain the following sequence of events. First, the lot must be purchased through Invest Realty, Inc.. Next, the site must be prepared for construction. Once ready, the parking lot construction shall take place followed by the visitors area construction and finishing work.

The estimated project timeline is approximately 5 weeks. This timeline is broken down into the various steps of the construction schedule depicting the various activities that must occur throughout the project duration.

The estimated budget for this project is approximately $256,000. Over half of this estimated project total originates from the purchasing of the vacant lot. This cost may be offset through the compilation of funds by local businesses who plan to use the lot or through the application of government grants.

The proposed project shall be managed by the city's Director of Public Works, Mr. Steve Hargis, P.E.. Mr. Hargis will select a contractor to perform the construction as well as designate a person to monitor progress and quality of construction throughout the project. The area will be maintained by the City of Rolla, Missouri.
# Table of Contents

1.0 Introduction ......................................................................................... 4
   1.1 Objective ......................................................................................... 4

2.0 Scope of Work .................................................................................. 4

3.0 Work Breakdown Structure .............................................................. 7
   3.1 Project Schedule ........................................................................... 7
   3.2 Budget .......................................................................................... 8

4.0 Management Plan ............................................................................ 9
   4.1 Project Management ..................................................................... 9
   4.2 Project Execution ......................................................................... 9
   4.3 Procurement of Funds ................................................................. 9

5.0 References ....................................................................................... 10
1.0 Introduction

Rolla, Missouri is located in south central Missouri and has been titled "The Middle of Everywhere". The city was founded in 1858 and has since captured a very diverse history due to its railroads and nearby major highways. Today, Rolla lies at the intersection of the heavily traveled Highway 63 and Interstate 44, which is approximately half way between St. Louis and Springfield. This prime geographical location and the fact that Rolla is home to the Missouri University of Science and Technology has led Rolla to be a long standing and prosperous small town of America.

The current parking situation in the Downtown District of Rolla has been over burdened for many years. This issue has occurred because the downtown employees, downtown residents, and downtown shoppers all compete for parking spots. The layout of the Downtown District is also a limiting factor. As the current layout consists of two one way streets that service this area, which typically only provide parallel parking. In addition, there has recently been an increased effort to draw visitors and locals to the Downtown District as well as to the developing Arts District. Based on the fact that parking lots developed in this area have displayed signs of success by providing spaces for downtown employees and downtown visitors to use, such as City Hall parking lot, the vacant lot at the southwest corner of 6th and Elm Streets could be considered as public parking lot option.

There is also a need for a visitor information station in this area, as the new Arts District is developed and as the Downtown District regains popularity and appeal. As a gateway to both the Downtown District as well as the developing Arts District, this location is a prime location for a visitor information kiosk to provide visitors with a variety of information about the community.

1.1 Objective

The objective of this document is to outline the project steps in order to assist in the construction of this parking lot and visitors park at the southwest corner of 6th and Elm Streets. This would include the parking lot construction (approximately 80 parking spaces), the installation of the visitor information kiosk, and the landscaping and other streetscape improvements.

2.0 Scope of Work

The City of Rolla has proposed the purchase of a vacant lot at the southwest corner of 6th Street and Elm Street in order to develop a parking lot that will help alleviate some of the parking issues experienced by the Downtown and Arts Districts, as well as provide a location for visitors to gather information about these two destinations.
As you can see in the photograph (Figure 1), the area currently exists as a cleared grass lot. Figure 2 below illustrates a plan view of the proposed parking lot and visitors center layout. Figure 3 below displays a 3-dimensional view as an example of what the finished product could potentially look like.

Figure 1: Current Site

![Current Site Image]

Figure 2: Aerial View of Proposed Site Layout (NTS)
The first step in this process would be to attain the lot currently for sale through Invest Realty, Inc.

Secondly, the site would need to be prepped and parking lot construction would need to take place. The lot should be surrounded and intertwined with landscaping that matches the newly improved streetscape located along Pine Street and the landscaping of the previously constructed parking lots.

Next, the electronic kiosk should be loaded with historical, geographical, activity, weather, and any other viable visitor information. The kiosk should be located on the corner of 6th and Elm Streets, which will be an easily accessible location for visitors to both the Downtown and Arts Districts.

Figures 4-6 are more specific examples of the proposed items to be located at the parking lot and visitors center.
3.0 Work Breakdown Structure
3.1 Project Schedule

The 6th Street and Elm Street parking lot has previously been surveyed. Therefore, the project will commence when the vacant lot has been purchased. Once purchased, the lot will need to be cleared, grubbed, and graded for construction. Trash, grass, wood and unnecessary rock will be removed so there is a smooth surface. This site preparation work should take approximately three days. Around 3/4 of the available area will be given an 8" rock base followed by a 4" layer of asphalt for the parking lot, this will require approximately two days of construction. The electrical conduit shall be set in place before laying the asphalt, which will be the locations for the wiring for the lighting system. There will also be a concrete entrance and exit constructed along the Elm Street side of the lot, which will take roughly two days plus about one week for curing.

The remaining area will be designated for the kiosk, lighting structures, and landscape development. The 6" concrete pad kiosk area will be constructed next. While the concrete is curing for approximately one week, the asphalt parking lot light structures, parking spot lines, and parking blocks shall be set in place. The parking lot finishing will require approximately one week of construction. Once the concrete has set, the electrical wiring and network cables will be installed, which will take approximately one day. The kiosk and kiosk structure installation will take an additional one week.

As this project is being constructed at a busy intersection and near a railroad crossing, there will need to be appropriate cross walk painting done for pedestrians as well as signage installed notifying motorists of the pedestrian t

Then the landscaping such as flowers, sod, and trees will be put in to match the surrounding Downtown and Arts District areas. It will take about three more days for completion. The entire project should require roughly five weeks.

The Gantt Chart pictured below, illustrates the duration of each of the previously mentioned activities and provides a better overall depiction of the project construction schedule.
3.2 Budget

The budget for this project was prepared using information provided from Mr. Steve Hargis, P.E., from RS Means 2009 Building Construction Cost Data, and vendors found on the internet. The tabulated cost estimate results are displayed below. It is important to note that the purchasing of the lot contributes to over half of the total project costs. This will be discussed further in the Procurement of Funds section of this work plan. The total cost for the project was estimated to be approximately $256,000, which includes parking lot construction and finishing, visitors park construction, finishing, picnic tables, and kiosk costs, and the costs associated with landscaping.
4.0 Management Plan

4.1 Project Management

This project will be under the discretion of the City of Rolla's Director of Public Works, Mr. Steve Hargis, P.E.. Mr. Hargis will be the project manager of this project unless he elects to appoint someone else to that position.

4.2 Project Execution

This project design shall be finalized and developed in greater detail to the expectations of the Project Manager. Once this has been accomplished, the project shall be put out for bid in order to establish whom will be performing the construction. When a contractor has been selected it will be up to Mr. Hargis to perform inspections or to appoint someone to monitor the quality and progress of the project.
4.3 Procurement of Funds

This project has substantial price tag, mainly due to the cost of purchasing the lot. The price of the lot is listed at $129,900, which contributes to over half of the total project cost. The listing real estate agency for this property is Investment Realty, Inc. located in Rolla, who must be contacted in order to purchase the property.

There is a possibility that businesses in the area may like to contribute to this lot purchasing. This proposed parking lot would alleviate the burden for the business employees in the area, which would be convenient for the business owners not only along 6th Street but throughout the downtown area.

Mr. Hargis has also expressed that it might be possible to attain a governmental grant for this project, which would also aide in reducing some of the cost load.

5.0 References


http://www.treehugger.com/mall-parking-lot.jpg

http://www.picnictables.com/products/products-by-category.cfm?category ID=9&gclid=CKbF3MOgkpsCFRINDQodFy20oA


http://www.teleasy.com/index.html


http://www.urbanblight.org/index.html

http://www.publicdataweb.com/PDW/Com_Portfolio.html

http://www.invrelinc.com/inc/pmise?pid=2737