

Recreation on Levee Systems in Northeastern Kansas

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Introduction

Our objective in this research project was to determine what differences between cities along the Kansas River from shying away from utilizing the full potential of levee infrastructures while others are benefiting from their recreational use. To answer this, we focused on three major concepts: (1) identifying the public's interest in using levees as a source of recreation, (2) understanding potential concerns that might be related to environmental, safety or personal issues and (3) investigating what financial or infrastructure stipulations would have to be met in order to satisfy the project. We looked at three different areas that are located along the Kansas River in Northeastern Kansas.

I. Manhattan

a. Public Interest

After the Rock Island Railroad line stopped operation in 1980, between Manhattan, Alma, and Burlingame, the pursuit for the development of a recreation area that would incorporate both the abandoned railroad and a portion of the Kansas River levee system into a hiking/biking/walking trail was exasperated. The city already owned the levee system and the discontinuation of the railroad line, the ownership of the right of way was given to the adjacent property owners. During that time, Kent Glasscock served as the chair for the City of Manhattan Parks and Recreation Advisory Board. He said that concept of Linear Park came about because of the Rock Island Line and Ownership which provided the opportunity to meet the recreation needs of the community.

With differing opinions from property owners, local businesses, and residents, the City of Manhattan held several public hearings in the summer of 1985. In July 1985, the City Parks and Recreation Director Terre DeWesse said the meeting was one of two being held by consultants studying the feasibility of the proposal. According to DeWesse, the city wants to hear from everyone, for or against, the concept of developing the park (MGOD Speak Out July 1985). During several public hearings conducted by the Wichita consulting firm, two general themes were observed. One, from property owners who are next to the proposed route of the trail system, was concern for privacy and disruption. The major area of concern was along the right of way of the abandoned Rock Island railroad in west Manhattan. Property owners were concerned about the number of people drawn to the proposed trail and security. One owner said the proposed route would “slash through a residential neighborhood and put a large number of people in his back yard.” There were also concerns expressed about conflicts with the ownership rights for people who hold property next to the railroad right of way. The other general theme apparent at the meeting was support for the concept. Supporters generally pointed out that the trail would be heavily used and that it could enhance adjoining property values. (MGOD – Hearing July 1985). In August, multiple hearings continued to have similarly split groups with major concerns on the justification of the cost of the project. With a strong following from many residential and business supporters, the city enlisted the help of the Planning Development Services, Inc. out of Wichita, Kansas to propose the idea for a Linear Park/Trail in the fall of 1985.

(1) THE PLAN – Map Linear Park/Trail Manhattan KS Sep 1985

1. Proposed sports complex (+/- 110 acres). Trail would provide safe pedestrian access.
2. Residential use South of Railroad R.O.W. would require privacy screening and access across trail
3. Trail would provide safe pedestrian access to shopping center

4. Trail would have a safe pedestrian crossing at Seth Child road by passing under existing bridge on highway
5. The existing railroad bridge would provide a pedestrian crossing to the south side of wildcat creek and then west under Seth Child road to the park and residential area
6. This area has the potential of becoming a nature trail which could be connected to the park and zoo to the east
7. The existing railroad bridge provides a pedestrian crossing over Wildcat Creek. Additional property must be purchased to provide a connection to the park and zoo to the north.
8. If the trail is located in the railroad R.O.W. provisions need to be made to protect the residential area to the north. Provide for privacy and security.
9. Provide a pedestrian bridge for safe crossing of Ft. Riley Blvd. if this trail alignment is used.
10. If the trail alignment along the creek is used it may be possible to have a grade separation between pedestrians and cars by going under the bridges at this location
11. If the trail turns north at this point it could cross at a traffic light at the intersection of South Manhattan Avenue and the southern arterial. If the trail turns south and follows Wildcat Creek it could cross South Manhattan Ave. under the bridge at the creek
12. This park area could be developed as a picnic area with access from the levee trail
13. Pedestrian safety is provided by grade separation of the trail and K-177. It may be possible to provide better pedestrian access to the east river bank by using the underside of the K-177 Bridge.
14. This is a good location for high intensity uses of the river bank due to its location near downtown.
15. A pedestrian bridge would be a good, safe pedestrian connection between downtown and the trail and river bank.
16. The east river bank is a recreation facility now and would be more accessible by development of trail.
17. The road which provides access to the sewage treatment plant could also provide access to the trail. A small parking lot could be provided at this location. If a nature study area is developed along the river this could be a point for access to it without the need to travel for a long distance along the trail before getting to the area. This would also be a good location for a restroom and drinking fountain as utilities would already be available at the sewage treatment plant.
18. A nature study area could be developed along the river bank in this area. It could be developed in cooperation with the University or other interest organizations/groups.
19. Pedestrian crossing of the railroad could be done safely by going under the bridge
20. This existing park area could be expanded in use and facilities if the trail came to this point.
21. Pedestrian crossing of the highway could be done safely by going under the two bridges at this location.
22. This is an entry point to the trail. The levee is at the same elevation as the road.
23. Acquire right of way for future trail extension.

Several letters were submitted throughout the fall and summer of 1985 in both opposition and support of the proposed Linear Trail.

“I believe this project enjoys a wide base of support within the community of Manhattan. Those of us on the Riverside Parkway Committee intend to work on education the public to expand that base of support further.” – John Strickler

“The League wishes to expresses its support for the concept of the Riverside Parkway now being proposed. The league believes that this system could help provide efficient transportation routes to places of employment, shopping areas and schools as well as providing a community recreation area. A well designed trail system would provide a safe route for bicyclists and pedestrians where none exists at present.” – Carol Peak

“We are very much in favor of this park. It is a now or never situation and we would hate it in 20 years to have missed this opportunity. Parks are so very important to our well-being whether they are well used or not.” – Larry and Delia Marcellus

b. Environmental, Safety and Other Concerns

Perhaps one of the most critical questions of establishing any recreation area on a levee system is whether or not it is safe for the public. In a letter from Philip Rotert of the U.S. Army Corps of Engineers, Kansas City District, he stated that “trail development along flood levees are endorsed by this office when properly constructed, maintained and supervised. I encourage the city of Manhattan to feel free to contact this office to discuss any aspect of this recreation facility. “

According to Kent Glasscock, one of the other major concerns during the Linear Trail project was lighting along the trail. However, research suggested that the public would be able to self-police itself and therefore no lighting was added along the trail. Other technical concerns included the request for authorization to stabilize the bank on the Big Blue River and getting gates approved which would be designed to allow walking and biking access across the levee. Private property owners were extremely resistant to the proposal of Linear Trail and responded with comments like those listed below:

1. A trail such as has been described would provide an excellent access to property owner's backdoors with small possibility of detection. This would constitute an open invitation to thieves, etc.
2. Can the city afford new projects of this type where there is apparently problems maintaining what we have now.
3. There is enough commotion in our backyard now with unlimited barking dogs all hours of the day and night.
4. Property rights have not clearly been established to the trail in question. I and others will take legal steps as necessary to establish and preserve our rights to the area. – Homer K. Caley

I might add the fact that if they try to purchase the ground, the prices is going to be very high. – Max E. Cramer

In the event the City of Manhattan tries to convert the abandoned trackage into some type of parkway, we would be happy to enter into negotiations to purchase our interest. However, we are not in favor of the parkway. – Lamar and Ruth Ratcliff

c. Financial Involvement

The ultimate concept of the Linear Trail was as the community grew it would provide a park that would 360 to the community with limited vehicular crossings. In order to fund such an enormous project, Kent Glasscock, president of the Parks and Recreation Advisory Board, recommended to the city that bond issues would advance several parks and recreation concepts including Anneberg Park and the Linear Park/Trail. The city embarked on the process by which they approached adjoined landowners to the abandoned railroad and asked them to donate their land for the project. Those that did not choose to donate their land were eventually bought out of their property until the city purchased all of the right of way along the trail. In 1986, the bond issue, with support of 64% of voters, used a portion of the proceeds to be dedicated directly to Linear Park. The debt service became part of the city and today the city maintains the Linear Trail/Park through its budget.

An original budget of \$15,000 from the City of Manhattan had been set aside to begin the Linear Trail project. Nine Firms submitted proposals on the Feasibility Study. Four firms were selected

for an interview on April 10, 1985, which included Landplan Engineering, Ochsner-Hare & Hare, Site Planning Associate, Planning Development Services, Inc. Eventually Planning Development Associates, Inc. was hired as the consulting firm to make a seven phase study including the following elements:

1. Phase One: Inventory and Analysis of Existing Park System as it ties into and relates to the proposed linear trail parkway system.
2. Phase Two: Conduct Site and Needs Analysis for Trail Facility including a survey of pertinent elements of the community as potential users.
3. Phase Three: Establish Design Criteria for the trail system.
4. Phase Four: Evaluate Operational Considerations such as maintenance and operational factors and access to the trail.
5. Phase Five: Develop Three Alternative Concept Plans.
6. Phase Six: Perform Feasibility Analysis after one design alternative has been selected.
7. Phase Seven: Prepare Master Plan for Feasible Desired Alternative.

Linear Park Bids

Bids were opened Wednesday, October, 21 for Phase 1 of the Linear Park System. The low bid was submitted by The Osborne Company, in the amount of \$126, 452 with Phase 1 to be completed between November 12, 1987 and April 5, 1988. Phase 1 included the levee, three under bridge improvements near US highway 24 and the Blue River, and will have terminal entrances at Casement Avenue and S. Manhattan Avenue where they intersect with the levee. When developing the Linear Park budget for the Bond Issue, it was necessary to utilize a portion of the Bond Issue funds to accomplish the entire levee section and complete Phase 1. This left approximately \$395,000 to acquire and build Phase 2.

Railroad Bridges

| | | | | |
|---|-----------------|----------|-----------|------------------|
| Bridge over Ft. Riley Blvd. | Bridge No. 1450 | 212 Tons | \$4240.00 | |
| Bridge over Wildcat Creek (Poliska Lane) | Bridge No. 1454 | 84 Tons | \$1680.00 | |
| Bridge over Wildcat Creek (Childs Rd) | Bridge No. 1464 | 103 Tons | \$2060.00 | (Seth Childs Rd) |

Total Weight: 399 Tons

Purchase price to the City of Manhattan for these structures based on the weights provided would be \$7,980.00

II. Lawrence

a. Public Interest

The goal to develop a levee trail system and recreational area in Lawrence, Kansas began to take shape as soon as the early 1970's according to Ernie Shaw the Director of Parks and Rec in Lawrence, Kansas. According to Shaw, at the time Lawrence was extremely underdeveloped and had very limited access to trails and paths with public access. Lawrence understood the need for a safe environment and healthy living community so they proposed the idea of using the levee for their starting point which is located near the North End of Lawrence. According to commissioners and public works director Matt Bond this was a process that did not happen overnight and was an ongoing process that took 5 to 6 years to complete.

The city, as well as its residents, and local businesses were very opinionated on the subject and voiced their concerns in public hearings and meetings held in the 1970's. The city of Lawrence wanted to hear from everyone on the issue and a total of 25 public hearing and meetings were held in the 5-6 year long and drawn out process. During the meetings and hearings some of the biggest issues that were brought up had to deal with property rights, added noise and disruption in the area. Many opposers of the trail voiced concerns about their property rights being violated and some even said it would make their property a prime place for vandalism to occur. There was also a concern voiced that said the trail would mitigate many liability risks if a person were to get hurt on the levee and there would be numerous safety concerns which would outweigh the risks of building the levee trail. However those in favor of the trail said it would be a wonderful

idea to get people more involved in exercising activities. They also said the trail could be used for a number and variety of events to help bring people into the community while promoting the well-being of the town. Supporters also said it would help strengthen their community by promoting social bonding, and help detour negative behavior by keeping youth active and educated. Another plus to the trail that supporters promoted was the excellent location allowing a connection to different business and access points. This addition would allow cyclists a beneficial way to get to their point of interest without having to drive in a vehicle which would save them money in transportation costs over time.

b. Environmental, Safety and Other Concerns

One of the most prevalent questions that comes up when deciding to establish a recreation area is the concern for safety and its environmental impacts it could have on various animals and water control measures that exist when building and designing such items on top of levees and building near floodplains. One major concern with the city of Lawrence was the fact that were they wanted to design and build their recreational site in an area not owned by the city. The levee system they had in mind was owned by the US Army Corps of Engineers and access had to be granted to the city in order to build there. When speaking to the US Army Corp of Engineers Kansas City District over the telephone they informed me that they encouraged the use of recreation along their levee systems as long as structural use and safety considerations are taken into effect to ensure the safeness and wellbeing of the people using that levee system. They informed me also that they were required to go by and meet all federal guidelines according to certain standards of government officials. After being somewhat reluctant to accept Lawrence's guidelines, they finally approved the site. After the city of Lawrence started the building process they had to meet many guidelines promoted by the US Army Corps of Engineers, such as proper

materials, traffic guidelines, and conducting routine inspections on the levee to ensure structural stability. Erosion was also a concern for bank stability and many truckloads of rocks were hauled in and put on steep slopes of the levee to help prevent erosion and aid in stability. The US Army Corp of Engineers also have certain guidelines to meet when boat ramp plans are implemented or set forth. Not only were the federal guidelines tough to meet but also the environmental aspect of the design was a major challenge according to Mark Hacker who is the assistant director for the City of Lawrence. The city implemented a park into the trail that is called Riverfront Park which is an attractive park to dog walkers as well as bicyclists. The only downside to the park is that it was the site of an old landfill site and many cleanup activities had to take place in order to fulfill the guidelines and needs of the people. The old site was monitored by the Kansas Department of Health and Environment and they ask the city to monitor the old landfill site which is the Riverfront Park now very closely. When obtaining the site the City of Lawrence had to go through a bioremediation process of cleaning it up. This includes covering the old soil site with new topsoil up to 2 to 3 feet deep. Since the landscape of the site was constantly changing the city decided to improve soil quality and structure by seeding and planting native grasses to the site to help hold the soil in place and help in vegetative cover management. Many volunteers have stepped forward in helping the city conserve this site such as the Audubon Society, Boy Scouts, and district conservation soil scientists. All of these efforts ensure wildlife has an excellent habitat to thrive in. Along with these other concerns also came the fact that small bridges had to be built in areas with low water crossings or places that held water. There are a numerous amount of small bridges along the levee trail which had to be implemented into the designing process. Along with the bridge designs, the installation of guard rails were adding along the trail in areas to prevent from going off, into, slipping or falling down the steep banks.

These are great examples of just a few of the many environmental concerns as well as safety concerns that had to be put into the designing and planning processes.

c. Financial Involvement

The main goal for the commissioners of Lawrence at the time the levee system was being built was to minimize costs and keep them as low as possible while maintaining a safe, wonderful environment for recreationalists. In order to fund such a large daunting project the city commission did a number of things to keep cost down. Since much of the land surrounding the levee system was private property the city contacted the landowners wanting to see if they were wanting to donate their land for the project. Many landowners opposed and raised a major uproar in the community. This then forced the city of Lawrence to settle agreements with the landowners to purchase their land. Many landowners were even still reluctant to sell some their land which caused many legal battles and issues that had to be settled in the court system. These are a few examples of some of the letters that were sent to commissioners during the time of the buying process.

“I have worked very hard for my land and to have someone just come in here and try to take it away from me and try to offer me a cheap lowball offer just disgusts me. We do not need this levee system as there are plenty of other places around town to go and recreate. I will go through every legal step and process in order to protect my land from a bunch of clowns that are trying to take it away from me.” – Dave Resner

“I am sick and tired of being harassed by the city of Lawrence about my land. Go and build a trail somewhere else. This land has been in my family for over 4 generations and I plan to keep it that way.” – Marvin Jarred

After the land issue was settled in 1973 a bond issue was to be brought into action. A voting was to take place and eventually the bond issue passed with 71% of voters in favor of levee trail.

After the bond issue passed the city submitted bids to several different consulting engineering

firms that were interested in the project. After all the firms submitted their lowest bids the lowest bid that came in for the project was \$210,678 according to the parks and Recreation expenditure summary back in the 1970's. The project was proposed and the engineering firm starting the building of the levee trail which would go through several phases at a time. The City of Lawrence was also able to save a substantial amount of money on the project by applying for grants. The Recreational Trails Program which is a leader in trail funding in the United States was able to provide \$40,000 through their program to put toward the project. Two other grants from Kansans Wildlife and Parks Non Game Wildlife fund as well as a small percentage of tax dollars were also available to go towards the initial costs.

Topeka

a. Public Interest

Current public interest on the Topeka Levee System is more focused on bringing the levees up to modern standard, and less on trails. When the levees were constructed in the late 1950s or early 1960s, it was considered a good construction practice to include wooden parts underneath concrete floodwalls, Topeka utilities superintendent Don Rankin said. Over the decades, that wood started to rot, and while the levees aren't in imminent danger of failing, they do result in higher flood insurance premiums for businesses in the area that would be affected if the Kansas River were to flood in the future, he said:

“It doesn't mean in a flood they're going to necessarily fail, they may have a higher risk of failure in a true 100-year event.”

The Army Corps of Engineers has been working on an updated design, but right now federal money isn't available for construction. An estimate in the Corps of Engineers' 2009 feasibility

and environmental impact assessment put the cost of redoing the levees at about \$21 million, though it may be higher now because the cost of some construction materials has risen. Kansas Sen. Jerry Moran. Moran, a Republican, said Congress hasn't passed a bill appropriating money for this type of project by the Army Corps of Engineers for several years, but that he would continue to work to get the levees repaired. Under the 2009 plan, federal money would pay for about 65 percent of the cost of the new levees, and the city would contribute about \$8 million for the rest of the cost. The city has been saving toward the \$8 million goal, but the council may have to decide whether to keep holding out for federal funds or to attempt to raise the entire \$21 million itself. Doug Kinsinger, president and CEO of the Greater Topeka Chamber of Commerce and Go Topeka, said the cost of flood insurance along the Kansas River presents a challenge when attempting to attract companies to vacant properties near downtown.

“We've lost a major employer, and it's going to be more difficult to bring in a new employer,”

Hallmark spokeswoman Julie O'Dell said insurance was just one part of each plant's fixed costs, and fixed costs were one of several factors Hallmark weighed in deciding how to consolidate its operations.

“You can't just single out one piece, It was one factor of many.”

Preparing for floods may not seem urgent when Kansas is in a drought, and the river is at such a low level, but it takes about one year to build levees, so communities need to be ready before clouds start to gather.

The Problems

Table 1
Existing Conditions Reliability and Areas of Concern in Kansas River Units

| Levee Unit | Reliability Against the 1% Event | Key Problem Area |
|--------------|----------------------------------|--|
| Waterworks | 92.8% | Low factors of safety for floodwall sliding stability. |
| South Topeka | 84.2% | High probability of underseepage failure in earthen levee section. Low factors of safety for pump station strength and manhole uplift. Unacceptable probability of axial capacity failure in floodwall timber pile foundation. |
| Oakland | 2.9% | High probability of underseepage failure in earthen levee section. Low factors of safety for pump station and manhole uplift. Low factors of safety for floodwall sliding stability. |
| North Topeka | 14.1% | High probability of underseepage failure in two reaches of earthen levee section. Low factors of safety for pump station uplift. |
| Auburndale | 96.8% | No problem areas detected. |

The Plan

The selected plan includes recommendations for modifications to four existing levee units within the Topeka Flood Risk Management Project: the South Topeka Unit, the Oakland Unit, the North Topeka Unit, and the Waterworks Unit.

- a. South Topeka Unit. Levee under-seepage concerns will be addressed by installation of a control berm. Structural strength and uplift concerns will be improved by modifications of the Kansas Avenue Pump Station and three manholes. Approximately 2,000 linear feet of existing concrete floodwall on timber-pile foundations will be removed and replaced with a new floodwall on concrete piles following the same alignment and to the same height as the existing floodwall. The work in this unit will result in the removal of 7.5 acres of woodland habitat and appropriate mitigation measures are included in the Recommended Plan.
- b. Oakland Unit. An area of under-seepage concern will be controlled with a berm and a stability berm will be installed to improve the stability factor of safety of the existing floodwall. Structural modification of the East Oakland Pump Station will be implemented to address uplift failure concerns.
- c. North Topeka Unit: Two areas of low under-seepage reliability will be improved by installation of an under-seepage control berm and a series of pumped relief wells, respectively. One pump station that is no longer required, and currently poses an uplift failure risk, will be removed.
- d. Waterworks Unit: Landside stability berms will be installed to increase the reliability of an existing concrete floodwall protecting the primary water source for the City of Topeka and surrounding communities.

b. Environmental, Safety and Other Concerns

The Topeka Feasibility Report consists of a main report, with a stand alone Environmental Assessment (EA), and appropriate appendices to both the main report and EA. There are no anticipated significant environmental, cultural or social impacts from construction of the Selected (NED) Plan. The project has responded to all resource agency and interested party comments, and compensatory mitigation for environmental losses are included in the plan. The mitigation plan has undergone an appropriate incremental analysis commensurate with the small impacted area. Construction of the South Topeka Levee underseepage control berm will result in removal of 7.5 acres of floodplain habitat in the form of shrubs and secondary trees. The report has justified compensation, consisting of the planting of 15 acres of floodplain habitat in the North Topeka Unit. Temporary impacts due to construction and hauling of waste materials have been satisfactorily addressed in the plan. The plan has received Section 106 Clearance from the Kansas State Historic Preservation Office (SHPO) on August 25, 2006. The final U.S. Fish & Wildlife Service Coordination Act Report was received on March 16, 2007, and the Selected Plan will result in no significant impacts on endangered species. It was determined that there are no features or activities that will necessitate a Clean Water Act Section 404(b)(1) or Section 401 permit. The Clean Water Act Section 402 NPDES permit will be obtained from the Kansas Department of Health and Environment (KDHE) during design phase.

c. Financial Involvement

Project Costs. Based on a 4.625 percent discount rate and a 50-year period of analysis, the total equivalent average annual costs of the project, including operation, maintenance, repair, replacement, and rehabilitation (OMRR&R), are estimated to be \$1,168,100.

Operation, Maintenance, Repair, Rehabilitation, and Replacement (OMRR&R). Future OMRR&R practices would remain the same as current operations for inspection and monitoring, levee mowing, vegetation control, outfall cleaning, maintenance of wells, etc. Additional cost will be added by the project with respect to maintenance of six new relief wells and temporary pumping of the well header during high flood events. The appropriate Operation and Maintenance manuals will be updated accordingly at the conclusion of the project design and construction period. The total estimated annual cost of operation, maintenance, repair, rehabilitation, and replacement for the recommended plan is \$13,000

The selected plan would reduce average annual flood damages by about 67 percent and would leave average annual residual damages estimated at \$7,438,000. Annual average economic benefits are estimated to be \$15,427,600; net average annual benefits are \$14,259,500. The system wide benefit-to-cost ratio is 13.2 to 1.

Project costs are allocated to the Flood Risk Management purpose. Based on the October 2008 price levels, the estimated first cost to the plan is \$21,157,000. In accordance with the cost sharing provisions of Section 103 of the Water Resources Development Act (WRDA) of 1986, as amended by Section 202 of WRDA 1996, the Federal share of the total project cost would be \$13,752,000 (65 percent) and the non-Federal share would be \$7,405,000. The non-Federal costs include the costs of lands, easements, rights-of-way, relocations, and dredged (LERRD) or excavated material disposal areas, estimated at \$1,279,000.

Results/Recommendations

I. Manhattan

This project has taken a lot of time to get to this point. They have had to secure permits from the Corps of Engineers on the levee portion and the improvements to the west bank of the Blue River Section; The Kansas Department of Transportation for work under their highway bridges; the Kansas Department of Wildlife and Parks and U.S. Fish and Wildlife Service for the development of the trail in a designated bald eagle nesting area as well as entering into a specific agreement with the Union Pacific Railroad for development under their bridge and perimeter area.

Today, the use of the levee system and the abandoned railroad line provide an 11 mile trail which makes a 220 degree semi-circle within the City of Manhattan. According to Kent Glasscock, the reason the concept worked because as a general opinion the community felt it was safe. The lack of traffic and design provide both a pleasant scenery and the feel of actually going somewhere. Most importantly, he felt as though it satisfied the recreation and exercise needs of the community. The trail has been able to contribute to the health of the community in various ways. On the opening day of Phase 1 of the new Linear Park, a ribbon cutting ceremony with approximately 450 walkers utilized the trail in support of the March of Dimes Walk American Program. In a letter from the chairman, he wrote “Your effort in making the WalkAmerica/Teamwalk Day in Manhattan a success, is truly appreciated. Together we raised over \$10,600 to support birth defect research.” – Mike Brown. The park was also able to incorporate the trail into scenic areas within Manhattan without disrupting wildlife such as an eagle nesting area. The establishment of the park was also able to participate in the Rails to Trail Conservancy, a national non-profit organization, promoting the conversion of abandoned railroad corridors to recreational trails. Manhattan has plans to implement two last phases in order to

complete Linear Trail. The first, to complete the continuous loop system, and second, proceed with implementation in a manner which coincides with the expected development for northeast and northwest Manhattan. (Master Plan Report).

The progress of the city has been remarkable, as the city continues to grow, there is no doubt that the development of the linear trail/park was necessary. By taking advantage of the abandoned rail road and the levee system, Manhattan was able to transform an otherwise unusable space into an incredible asset to the community. I recommend that cities like Manhattan provide the information and framework they found necessary and helpful in developing a recreation area along a levee system. The success of the Linear Trail should be used as an example of what areas like this are capable of.

II. Lawrence

This project was a huge project that did not happen overnight and took close to 5 to 6 years to complete. The process involved extensive planning and coordination through several different agencies such as the US Army Corps of Engineers, Kansas Department of Transportation as well as many others. Many people had opposing views of the project which caused many legal battles to be fought over the trail to try and get everyone to agree on the same issue. Financial considerations and involvement was another major subject that had to be addressed as well as liability factors involved and safety concerns for the public.

As of today the levee system has seen great success and is being utilized in many different ways. The 10 mile trail on top of the levee provides many multiple use activities such as hiking, biking, camping, picnicking, and an excellent view of the Kansas River. The community is also able to rent out the levee and it has seen great success in holding events such as runs and bike races

bringing people into the community from neighboring towns. The city of Lawrence has kept up with the trail and maintained it to its fullest extent adding several additions and features year by year. To take a levee that was not being utilized for anything and turn it into place that people can spend time with their family and friends really helps strengthen the community and its involvement is a priceless experience in my opinion. Lawrence is a prime example of a success story of levee recreation that other towns need to follow in the near future.

III. Topeka

The Topeka levee system is facing a few obstacles at the moment. Some major construction and maintenance is mandatory as soon as a federal money gets approved. Many downtown residents are in fear of flood damage and may be forced to purchase flood insurance if the levees are not updated in time. As spring approaches the chance of flooding will greatly increase, and safety is the first issue that needs to be addressed. The public interest in levee trails is considerably low at this time, and right fully so. As a Topeka resident, I want to see the levees up to date and properly maintained before the discussion of a trails is seriously considered.

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