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Anne A. Gharaibeh

Jordan University of Science and Technology, Department of Urban Planning

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Enhancing the Historical Identity of Jerash by Introducing Greenway Culture

Dr. Anne A. Gharaibeh

Jordan University of Science and Technology, Department of Urban Planning

As a city state and as one of the Roman ten cities (Decapolis) Jerash (Gerasa) in Jordan have been populated for over two thousand years. Jerash is divided into two halves; the historic quarter and the modern quarters. Historical areas need to become part of everyday culture that adds a sense of unique identity and not just a historical site to preserve. There are many issues at risk in Jerash. These include quality of life, historical identity, cultural identity, transportation, public safety, and health. The aim of this paper is to protect the past Roman traces while adapting to present demands for green open spaces and greenways. It is proposed that a network of greenways may enhance the cultural and historical value and enrich the city identity and quality of life. This study analyzes the existing conditions and suggests phases for the proposed greenway planning. The compacted modern city is lacking recreational open places and is strongly lacking the historical reference due to the strict disengagement. The main problem is to define the appropriate space organization for a local scale in Jerash. The paper also discusses the feasibility and prospect solutions for such proposal.

Keywords: Greenway planning, Jerash, Jordan, new urbanism, planning, historic and cultural preservation, cultural identity.

Introduction

Jerash's (Gerasa) formal Roman town plan was first laid down around AD 70. It reflected the typical Roman scheme of a main colonnade street (Cardo) intersected by smaller colonnade side streets (Decumanus). Local investments in agriculture, industry and services boosted regional and international trade flourishing Jerash with a golden age for over 200 years (Khouri and Casule, 1996). Later civilizations settled and developed the city such as the Umayyad and Ottoman periods till it was periodically demolished by series of earthquakes in 363, 551, 749, and 1927AD.

Jerash has developed dramatically in the last century due to its strategic location in the heart of Jordan and the growing importance of the tourism industry to the city. According to the records of the city of Jerash, modern re-inhabitation can be traced back to the 1870's when the first waves of immigrants from the north started during the second half of the nineteenth century when the Syrians (Shwam) and the Circassians camped nearby the old ruins and later extended progressively to the east of the Jerash Valley, but within the premises of the historical city wall (Figure 1). The foundation of the Municipality of Jerash (1st city council) goes back to the year 1910.

The city of Jerash sits at the foot of series of surrounding mountains (Gelaad Mountains). The city is bisected by a river called "Chrysorhoas" (Golden River) which runs north to south (i.e. Jerash Valley). The Temples and main social activities of the Roman city took place on the west aspect of the river valley, while

the commons occupied the eastern aspect of the valley. Even in the heat of summer seasons, when the surrounding hills are brown and arid, the walnut and poplar trees which line the stream banks are always green and pleasant to the eye. The area was forested in ancient times, and agriculture that grew in the valley used to feed the copper smelters working in the western hills, among other uses (El-Khalili, 2005). According to the 2007 Jordanian Department of Statistics (census bureau), Jerash has about 41,500 inhabitants. Moreover, the city is the administrative center for the Governorate of Jerash that is serving a population of 156,675 in 2007.

Aiming to achieve sustainable development, Jerash is suffering many obstacles, as related to the urban system and infrastructure of the city (Al-Kheder and Khrisat, 2007). Several efforts were made to overcome the problem of segregation between tourists' activities and the modern quarters, however actual connections are still tenuous. The modern quarters is growing rapidly creating traffic congestions and population densification and sprawl at the same time. Continuous development of surrounding lands is growing by the day causing major urban sprawl problem.

This study addresses the possibilities that a greenway system can increase the level of connectivity between historical sites and the contemporary modern quarters within the urban and cultural context of the city of Jerash. This would be especially significant, since previous efforts made to preserve the old site, such as the Jerash Preservation Project by the Ministry of Tourism and Antiquities did not reflect any significant change regarding the identity of the city and the wellbeing of its residents.

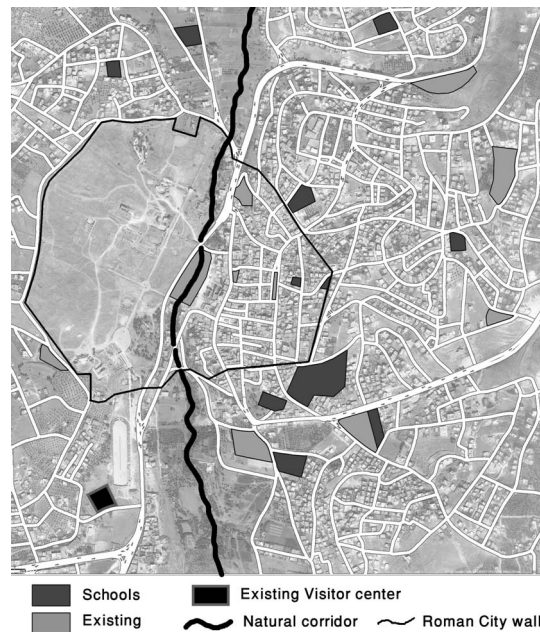


Figure 1. Location map of Jerash; its ancient wall; the green areas; the natural green corridor; the schools; and the existing visitor centre. Map by the author.

Background/Literature Review

The idea and concept of greenways dates back to the beginning of the twentieth century when it was identified by Frederick Law Olmsted (Little, 1990). Reacting to the need to escape the automobile, William Whyte coined the word greenway in 1959 in his book: *The Last Landscape* (Searns, 1995). Greenways received strong support from the President Reagan Commission on Americans Outdoors in 1985 which resulted in their 1987 report. The report recommended the communities to establish greenways, corridors of private and public recreation lands to allow easy access to open spaces close to where they live, and to link together the rural and urban spaces in the American landscape.

Greenways are also being defined as linear spaces containing elements planned, designed and managed for multiple purposes including ecological, recreational, cultural, aesthetic, historical and other purposes compatible with the concept of sustainable land use (Ahern, 1995). An additional definition is also made by the European Greenways Association (2000) which identified the greenway as a non-motorized transport route for daily trips, utility trips, or recreational purposes. These greenways may be restored former transport routes partly or completely decommissioned and now being used as pedestrians, cyclists, people with limited mobility, roller skaters, cross-country skiers, horse riders, etc' (European Greenways Association 2000). Fabos classified greenways into three major categories: first, greenways of ecologically significant corridors and natural systems; second, recreational greenways; and third, greenways with historical heritage and cultural values (Fabos, 1995).

In *Tracing the Evolution of Greenways*, three distinct stages or generations can be identified (Searns, 1995). **Generation 1** (–1960's). These are the axis, boulevards and parkways that first linked urban spaces – the ancestral greenways. Examples include: Via Appia Antica which goes back to 312 B.C. (Richardson, 1992) and now turned into a pedestrian greenway, Rome, Italy (Markel, 2004); and Chahar Bagh, Isfahan, Iran as a boulevard for the public laid down and built in 1590 A.D. (Blair and Bloom, 2000). **Generation 2** (1960's –1985). These are trail-oriented, primarily recreational, greenways and linear parks that provide access to rivers, streams, ridgelines, rail beds and other corridors within the urban fabric. These emphasize non-motorized travel. Examples are all over the USA, Canada, and Europe such as the Platte River Greenway, Denver, CO, USA; and Sky Line Drive, Virginia, USA. **Generation 3** (1985 onward). These are the emerging multi-objective greenways that address needs of wildlife, flood damage reduction, water quality, education and other infrastructure needs in addition to urban beautification and recreation. Many examples are present in mega cities such as Tokyo, Japan and Berlin, Germany.

In addition to habitat protection and water quality, Generation 3 greenways are currently pursuing other objectives, including historic preservation by using greenways to highlight area culture and heritage (Toccolini et. al, 2006; Searns, 1995). Greenways are now associated with schools. In 1981, Anne Lusk suggested

that more schools be developed adjacent to greenway corridors and that school children adopt segments of urban greenways that they can care for, learn from, and help protect (Searns, 1995). Urban greenways, especially along rivers, streams and shoreline corridors, are ideal 'living museums'. Greenways also provide a counter-balance to urbanization in an affordable way. When compared with large non-linear open spaces, linear parks and greenways require a relatively small amount of land to accomplish their objectives and can be woven into the urban fabric with minimal disruption (Searns, 1995).

The methodology to introduce greenways into existing structural masses is not a straightforward assignment. However, it is more associated with the concept of creating linear connectivity between open spaces, such that greenways are seen as site-specific and contextually-bounded features. Such a network can be seen as a reminiscence of previous methodologies associated with ecology (McHarg, 1969; and Turner, 1998).

In *Role of Greenways for Cultural and Historical Continuity in New Urbanism: a Case Study for Halic*, Hosgor and Yigiter (2007) progressed in their methodology by first discussing the negative effects of the modern quarters over the identity of the old city of Halic (Istanbul). Then, areas of interest were identified and classified into historical features, educational centers, or green spaces. Later, a network of greenway linkage was proposed to interconnect these areas. Hosgor and Yigiter (2007) define greenways as linkages that have cultural identity benefits, and that help to maintain the cultural and historical continuity of urbanized societies.

In another study, a four-phased methodology for Lambro River Valley Park network, Italy, was identified and implemented (Toccolini et. al, 2006). Analysis indicated that 80% of available green spaces are connected through existing ecological networks and trails, however, their project proposed to increase and enhance the level of network's connectivity. The fact that existing networks are able to serve 80% of the green lots, made their work easier and manageable. The four phases of the ecological network configuration which the project implemented include: Phase 1: analysis of the landscape resources, the existing green trail and historical route networks; Phase 2: assessment of each element; Phase 3: composite assessment; Phase 4: definition of the Greenways Plan. Upon completion of the Italy project, the total network length allowed an average of 1.5m of route per resident. The network density was in total a little over 2km/km².

In *Role of Urban Greenway Systems in Planning Residential Communities: a Case Study from Egypt*, Imam (2006) used an approach that involves a multi-phase planning process adopting an urban design approach and emphasizing the examination of natural as well as cultural resources, and existing urban systems within the development area.

Imam's proposed the Cairo Plan Development involving the following four phases: Phase 1: An environmental and resources inventory and analysis of natural,

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recreational and cultural greenways; and identification of site opportunities and constraints. Phase 2: Formulation of goals and objectives. Phase 3: Development, refinement and evaluation of plan alternatives; and formulation of development concept. Phase 4: Implementation plans (General Development Plan).

It is thus safe to conclude that greenways in all their forms have played a significant role in structuring the development of urban and sub-urban areas. They constitute a basic organizing structure of the landscape. They are the links and nodes, the spatial corridors and exterior rooms that give a development its character (Imam, 2006). However, it can be said that the development of greenways is a site-specific process that must honor the existing cultural, historical, and urban assets of the place and serve to address the demands of a better quality of life and progress.

Goals and objectives

This study examines the possibility of introducing the concept of greenway systems in cities with valued historical identity such as the city of Jerash, aiming to enhance urban connectivity between historical/cultural, natural and recreational elements in an effort to elevate the quality of life within the city and reviving its cultural and historical identity.

Within the Middle East region, such green network concept is relatively new, and on the other hand, the city of Jerash represents a very special case since it holds both ancient and modern quarters within its ancient city wall and urban texture. The lack of controlled urban planning and land use strategies and the protective role imposed by the government to preserve the historical features of the old city diminished the opportunities of cross-linkage with the recent city. In order to meet existing challenges, this study attempts to overcome the adverse activities of urbanization and the mandate over the historical quarter by introducing greenways as a concept of urban development methodology.

It is aimed that by assessing the current level of connectivity between the preserved and the modern quarters of the city, this study will develop a methodology for greenway planning for the ancient city of Jerash and will discuss the possible alternatives to improve the connectivity. It is hoped that this intervention will introduce visitors of the archeological site to the modern quarters and its commercial activities, enhancing the financial situation of the city, increasing the level of connectivity among the new areas, and providing safer and pleasant experience to the pedestrians. The study proposes the connectivity between possible green spaces and their relation to existing public places, such as schools, plazas, and markets, and offers a process to enhance this connectivity.

Methods

Many lessons may be learned from Imam, 2006; Toccolini et al., 2006; Hosgor and Yigiter, 2007; and McHarg, 1969; and Turner, 1998. However, the issue of greenways remains contextually, ecologically and culturally bound.

In the case of Jerash (Gerasa) as a historical city that currently present a mixed type of land use ranging between protective archaeological quarter and a more recent urban sprawl, the assessment of historical, ecological, and modern assets in the city is the first step towards identifying the site characteristics. A SWOT analysis matrix showing the strengths, weaknesses, opportunities and threats was carried out initially to assess the value of these assets, and later the study underwent several phases that progress into a hierarchical process according to the following steps:

- Phase 1: An ethnographic-based SWOT analysis to evaluate the different variables that should be taken into account in the proposal of greenways planning strategy.
- Phase 2: Introducing and explaining the level of connectivity between the two parts of the city, and the classification of such connections, by the analysis of existing connections.
- Phase 3: Conducting a survey of land use showing schools, residential and commercial areas as prospect destinations in addition to the historically preserved site and the existing parks and municipal and governmental land.
- Phase 4: Finding where green areas may be introduced and proposing greenways within the context of the city.
- Phase 5: Proposing a network of greenways to maximize the urban connectivity, elevating the quality of life and reviving the cultural and historical identity of Jerash.
- Phase 6: Discussing phases and opportunities in the proposed greenway network by consulting the local community, stakeholders, and engaging in participatory activities.

Results

The municipality had paid slight attention to the changes that the city underwent. These activities include water and sewage infrastructure, street paving, and building of sidewalks with limited widths. Currently, the modern quarters is extending outside the remains of the city wall (fig. 1). Over the past years several developing projects tried to revive the downtown area and the main axial road and traffic flow within the city. Some of the most important steps made are the reallocation of the bus and car station which was located by the ancient Baths (i.e. on the eastern side of the valley within the modern quarter region) and now it is located outside the city walls to the southwest of the city. The Ministry of Tourism and Antiquities implemented a project to increase the connectivity, renovate some of the old buildings, prevent building on the archaeological site and modify city access. It also supervised renovation teams who renovated a good number of the buildings in the archeological site including the city gates and the hippodrome.

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According to the Tourism Statistical Bulletin issued by the Ministry of Tourism and Antiquities (2009), the archeological site in Jerash annually received 279,810 of foreign visitors and 60,600 of local visitors. The city used to receive more visitors when Jerash Annual festival was going on in the 80s and 90s. However the majority of the visitors did not use or visit the modern quarters of the city, for there was no motive or activity, nor there was a proper display of cultural and social life.

The results of the ethnographic study surveying the local public view revealed many aspects related to the economy, character, quality of life, and well-being of the city. The evaluation of the modern quarters' buildings on both sides of the ancient city wall revealed a prospect opportunity to benefit from. A survey of the public and private schools revealed an estimate of the number of children and youth, and thus residents who are booming in numbers calling for safe mobility and availability of services. The survey of public parks and open areas showed that there is very little done with this regard. The city has only one local park towards the far south of the city. The valley is mainly cultivated and the only other public place is the plaza downtown by the ancient Baths site. Table 1 provides a briefing of the results of the analysis. It is summarizing the points in a form of city strengths, weaknesses, opportunities, and threats (SWOT).

Table 1: SWOT analysis matrix showing the strengths, weaknesses, opportunities, and threats of the city of Jerash in terms of the proposed greenway planning project.

<p>STRENGTHS</p> <ul style="list-style-type: none"> — Major point of attraction; Jerash is ranked second in the list of favorite destinations in Jordan. — Geographic location; the city location midway between major cities such as Amman and Irbid and Ajloun and Zarqa. — Biodiversity; the natural resources, water availability, fertile soils, and rural context. — Labor capacity among the youth. — Historical identity; the city wall running across the modern quarters and the historical part of the city. — Skilled craftsmanship. — The Annual festival. — Ethnic diversity. — The sense of security. 	<p>WEAKNESSES</p> <ul style="list-style-type: none"> — The relatively high urban density. — Low support from ecotourism projects on and local and governmental levels. — Scarce urban and local parks and green areas among the city wall. — Traffic congestion and poor traffic flow. — Narrow streets and lack of safe pedestrian transportation within the city. — Lack of lodging places and hotels in the city center. — Low cooperation between tourism agencies and the local government. — An isolated small museum located within the archeological site boundaries.
<p>OPORTUNITIES</p> <ul style="list-style-type: none"> — The valley as a natural resource with its Roman pools and 500-person theater as a historical site. 	<p>THREATS</p> <ul style="list-style-type: none"> — Identity loss causing degradation of tourism and degradation of the sense of the place of the modern quarters.

<ul style="list-style-type: none"> — The Bath site as a possible start of a greenway. — The city wall as an opportunity to create a greenway tracking its layout. — The Roman urban plan containing the Cardo and Decumanus. — Current urban sprawl decreasing density inside the city wall providing an opportunity for business in the city center. — The city invites investment in ecotourism, thus promoting new job opportunities. — The potential to create cultural and commercial activities to attract visitors to the city center such as a museum, hotels, and restaurants. 	<ul style="list-style-type: none"> — Maintaining the isolation between the archeological site and the city center. — Restricted economic growth due to poor services, transportation, identity, and recreation. — Degradation of natural resources and local cultures. — Straying away from sustainable methods causing downfall in many aspects hindering continuity of the city as a market place and as a tourist destination.
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Introducing and explaining the level of connectivity: After analyzing the circulation of both city’s residents and ruins’ visitors, the research found that these are two separate transportation habits. Visitors approach the ruins from a gate outside the city center and exit in the same place without visiting or having the possibility to access the city center. Residents on the other hand, have the same approach with the visitors to the ruins. The daily activities of residents and visitors are totally independent. The main street which runs through the heart of the city separates the modern quarter and the preserved archaeological site. In addition, the barbwire that surrounds the preserved ruins acts as a separator. As it is, there are no motivations to engage the archeological site visitors in the contemporary city. Therefore, motivating aspects, developmental projects, and street treatments are needed to activate such a behavior and benefit economically from the visitors of the archeological site. The modern quarter lacks the sense of significance that it could possess and transmit to the visitors seeking unique experience and engagement with the culture of the residents.

Land use analysis: Throughout history, The Golden River Valley was the natural corridor that runs through the center of the city dividing it into dual settlements. It acted as a recreational space as well as a source of food for its residents. Now the valley is still cultivated providing a great potential for preservation. The Roman Wall surrounding the city is partially intact however it can be traced quite easily with potential areas along its parameter in the north, west, and south. The part of the wall that dissects the modern quarters is quite tenuous and may be transformed to a narrow passageway. There are a good number of schools within the city walls and many more surrounding its parameters, however, only one local park is present (fig. 1). Most of the modern quarters are commercial on the ground floor and residential on the upper floors.

Finding and proposing green areas, and introducing greenways. Throughout ancient history, The Golden River Valley was the recreational and agricultural place for the city. The modern quarters maintained it as an agricultural site, however many buildings were introduced to the valley banks facing west and east. The Cardo runs parallel to the valley while two Decumanuses crossed the valley connecting the Cardo and the temple sites with the public sanctuaries. The modern street network webbed the east quarters and was not permitted into the archeological site which remained un-occupied since the Umayyad time. The only two pedestrian streets that prohibited car traffic are the south Decumanus Bridge connecting to the modern quarters and another short street (150m) to the south of the eastern bridge end. No other attempts were made to create greenways or pedestrian ways. Connecting the only park in the city with the green valley will be quite easy because no buildings are in the way and the park is in the parameter of the Valley. In benefiting from the greenway to serve the locals, especially the children and schools, we need to study the network and propose other green areas and introduce a greenway network.

The proposed greenway scenarios: The city with its potential open spaces and the many schools for children and youth calls for a significant number of greenways to achieve the continuity and connectivity in the modern quarters. It is proposed that series of steps are needed towards a greenway network that serves the purpose of connectivity for tourists, residents and children.

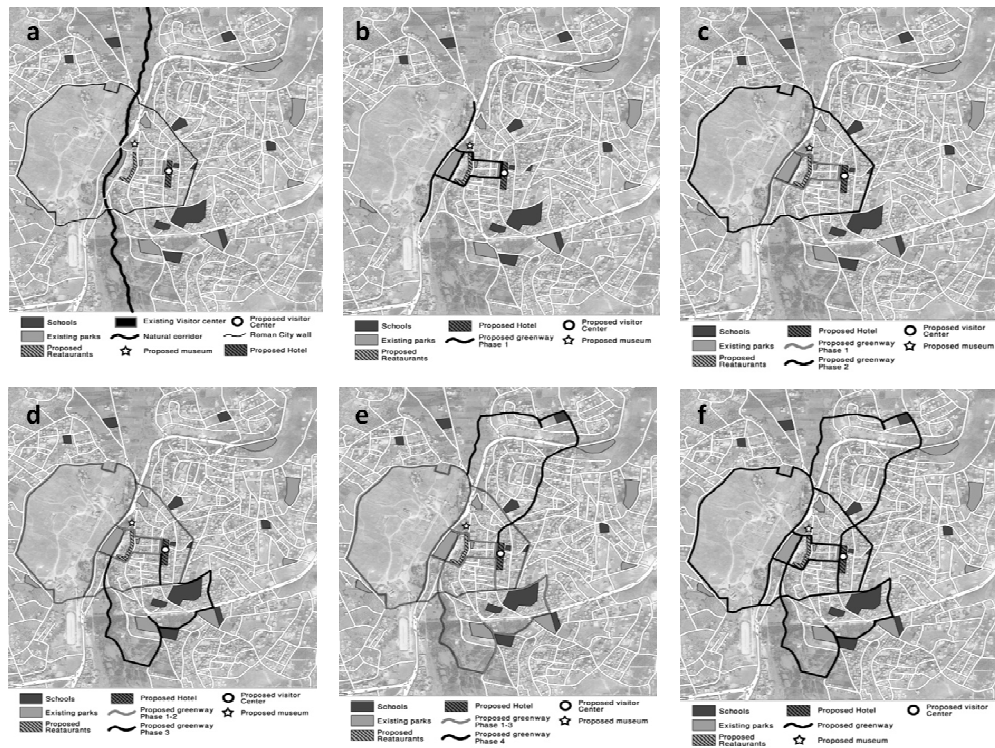


Figure 2. The five phases of the greenway network (a-e) and the overall network (f). By the author

In the first phase the tourist center must be moved to the modern quarters where tourists can be dropped off (Fig. 2a) to walk through the modern quarters when going to the ancient one, thus benefiting the economy of the place. This study proposed to create series of bed and breakfast hotels surrounding the tourist center. Running down towards the archaeological site, tourist may pass through series of restaurants and a proper museum. In the second phase an inner greenway loop is introduced to connect the modern quarters with the ancient one (Fig. 2b). In addition to the inner loop a greenway along the main street separating the ancient and the modern quarters may be introduced. This greenway runs parallel to the topography and Golden River Valley corridor. In the third phase, a greenway loop tracking the ancient city wall may be introduced to the tourists and can provide a chance for investment from the locals as well (Fig. 2c). This greenway reveals the hidden treasure of the wall. In the fourth phase a southern greenway that runs in the valley and returns back to the modern quarters' center provides an opportunity for an ecological path that serves the locals with school greenway and elevates the quality of life they run (Fig. 2d). At its far northern end, a 30-minute walk may bring tourists or residents to the Roman Pools site that supplied the Roman city many years ago with water. The fifth phase introduces the northern greenway that also runs through the valley and loops back into the city serving the public with a greenway taking them to their schools and to the ecological valley which contains the Roman pools and theater in the far north (Fig. 2e).

Discussion and conclusion

The assessment of the SWOT analysis identified that an interesting opportunity exists to build upon the strengths of the city of Jerash and to create a strategic network of greenways serving local needs and touristic demands.

As advised by another study, in order to achieve sustainability of the Jerash urban heritage, a careful consideration of the urban planning system in the modern quarters is needed (Kheder and Khrisat, 2007). Sustainability cannot be achieved without a careful planning for the urban life of the residents as it relates to the visitors. 72.22% of visitors to the archeological site are fascinated and want to return again (Kheder and Khrisat, 2007), thus, the greenway network is an opportunity to connect the ancient and modern quarters and to bring business to the locals.

The population growth is rapid and thus the urban growth needs to follow and encompass for such growth (Kheder and Khrisat, 2007). Because of the needed remedies to the current situation and the prospect future urban congestion, a greenway may be seen as a soft intervention dealing with harsh and complicated urban problems.

The total combination of the greenway network (Fig. 2f) was evaluated by Jerash residents who have a background in architecture or civil engineering. A total number of 8 students who reside in the city of Jerash and currently study architecture engaged in a workshop to evaluate the proposals. In addition, personal interviews

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with 7 Jerash residents were carried out to evaluate the proposed solutions. The content analysis of the interviews and the feedback regarding the greenways had the following concerns:

- The moving of the tourist center was greatly welcomed and the evaluators wanted to stress the fact that no busses should be parked there and that they should use the street to drop off only.
- The evaluators welcomed the creation of a proper museum in the modern quarters; however they suggested an alternative site on the hill towards the East and overlooking both the modern and the archeological quarters.
- The proposed restaurant area is currently partially and poorly functioning that way and it can use some regulations that will govern the way the buildings look, function, and serve. In addition, the evaluators stressed that the buildings should not exceed two floors so as not to block the view of the valley and to use the plaza as an outdoor area for the restaurants.
- The greenways may block important streets; therefore, it is advised that the greenways take no more than 4m of the street width where pedestrians can entertain a safe walk by the street.
- The greenways are sometimes cut by busy streets which might demand speed tables and traffic lights to give right of way to the greenway pedestrians.
- The topography is steep in two places around the city wall greenway and demands some sort of bridging.
- The evaluators were pleased to see some concern paid to the schools and the children in general who lack open recreational places and safe pedestrian traffic.
- The greenways that run in the valley are foreseen to create the bringing of nature and people together and are expected to obtain a healthier and safer ways for the public. However, the evaluators were not sure and doubted that such greenway may be welcomed by the valley farmers.

Further recommendations may calculate tourists' points of view on the proposed greenways. It is recommended that this plan be implemented in phases and evaluated along the way. Perhaps municipality workers may evaluate the proposals as well to benefit from their practical and daily experiences in the modern quarters and in dealing with the tourist. It is hoped that with this solution at hand, the quality of life in Jerash may be raised and a greenway culture may be introduced to the area.

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