

IBM's Smarter Cities Challenge

Omaha

Report





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1. Executive summary

Omaha, Nebraska, was one of the 33 cities selected to receive a Smarter Cities Challenge® grant from IBM in 2012 as part of IBM's citizenship efforts to build a Smarter Planet®. Since the program's inception in 2010, 64 cities have received Smarter Cities Challenge grants, and many of these have already made great progress on the road to becoming more instrumented, interconnected and intelligent (additional information is available at www.smartercitieschallenge.org).

During three weeks in October 2012, a team of five IBM experts worked to deliver recommendations on a key challenge identified by Mayor Jim Suttle and his senior leadership team: *Attain sustainable and balanced growth of Omaha*.

The challenge

Omaha has a history of successful public-private partnerships and committed philanthropic organizations. The city's economy has been healthy, partially due to these fundamentals. Growth and economic development in Omaha has been impressive when compared to national and international development. Home to five Fortune 500 companies and other major businesses, the city's economy includes well-established non-profit organizations, a strong medical community and sustained job creation.

This prosperous development, however, has not been evenly distributed. It has led to a stretched City with substantial fiscal, economic and social sustainability issues. Some areas of the city are unable to participate equally in its successes. They are faced with issues such as high unemployment, poverty and inadequate labor skills, which impacts the city as a whole.

Citizens have a choice between urban and suburban living, but Omaha's primary growth has been in the western suburbs with low-density populations. This trend of suburban sprawl is more pronounced than in most other US cities and can, in part, be attributed to the fact that Omaha is in a unique position of having planning and annexation authority three miles outside of its incorporated boundary. As a result, the overall population density per square mile shrank from 6,172 in 1950 to 3,162 in 2012. This reduced density affected the city's financial stability, the sustainability of service levels and the potential for long-term economic growth.

To rebalance growth, it will be necessary to make the "cost of choice" transparent to citizens.

Findings

The IBM team identified four root causes:

Greenfield versus infield development

In past decades, thanks to relatively low land prices and attractive off-balance financing arrangements, greenfield development has offered major financial advantages over redeveloping in Omaha's inner core. Combined with a predominant preference of citizens to live in spacious suburban areas, this has led to an enormous western expansion of the city. The relative disadvantage of business and real estate development in older parts of town has led to more sections of the inner city being vacated.

From a government perspective, this means that a disproportionate, wider area must be serviced: a low-density area of greenfield developments in addition to the existing older parts of the city with less economic activity and fewer inhabitants than before.

Planning

Over the years, the City has developed numerous plans that would have benefited from collaborative planning with a holistic view of development. This system of planning would make possible the development of neighborhoods as a concerted effort to prevent suboptimal outcomes. To cater to the societal challenges in parts of the city, real estate development and the provision of housing, education, health care and other services should go hand in hand, jointly focused on the optimal outcome for a particular neighborhood.

Sharing information

Due to siloed plan execution, data is not easily accessible between departments and institutions. The lack of a central data repository prevents the City from making informed decisions accounting for interdependencies between different focus areas such as education, health care and public transport.

Communication and awareness

Citizens are generally unaware of the broader strategy envisioned for their city, and lack knowledge about the services it provides and their associated cost. If information is not easily accessible to both businesses and citizens, it results in a barrier to economic growth and inhibits the support and engagement of citizens and other stakeholders.

Recommendations

A holistic view of the city is needed to address these findings and achieve balanced economic growth.

The IBM team grouped its recommendations into three categories:

1. Increase the revenue base.
 - a. Differentiate City levies according to actual costs, taking into account usage, density and distance. This should rebalance the costs of urban versus suburban development.
 - b. Improve and extend existing incentives to promote inner-city development.
2. Facilitate economic development.
 - a. Enhance collaborative planning, development and execution of projects. Governance and execution should be done in partnership with City, business, non-profit and other community stakeholders.
 - b. Strengthen the entrepreneurial base, especially start-ups.
 - c. Develop plans for catalyst projects focused on surrounding areas to optimize their social, economic and financial impact.
 - d. Simplify procedures for licenses and permits to help remove barriers to new development.
 - e. Strengthen building code enforcement to increase the city's vitality and attractiveness.
3. Develop systems and processes that provide insight to drive aligned investment and shared decision making.
 - a. Create a data warehouse to enable informed decision making.
 - b. Promote access to the Internet to bridge the digital divide.
 - c. Improve access to public information and promote awareness and engagement of citizens and other stakeholders.
 - d. Establish a development scorecard to measure the effectiveness of initiatives.

Conclusion

The City's revenue base must be improved and should reflect the true cost of suburban sprawl. Targeted development and investments should be done collaboratively in public-private partnerships. Finally, the sharing of data will lay the foundation for both informed decision making and engaging citizens and other stakeholders. Combining these three elements in one holistic approach, with key performance indicators to measure actual effects, will be critical to the success of this transition.

- Improve the revenue base with levies reflecting the true cost of suburban sprawl.
- Execute targeted and joint economic development in public-private partnerships.
- Collect, structure and share data to enable informed decision making while promoting awareness and engagement of all stakeholders.

2. The challenge

A. The Smarter Cities Challenge

In 2010, IBM Corporate Citizenship launched the Smarter Cities Challenge to help 100 cities around the world over a three-year period become smarter through grants of IBM talent. Omaha, Nebraska, was selected through a competitive process as one of 33 cities to be awarded a Smarter Cities Challenge grant in 2012. Since the program's inception in 2010, more than 64 cities have received Smarter Cities Challenge grants, and many of these have already made great progress on the road to becoming more instrumented, interconnected and intelligent (additional information is available at www.smartercitieschallenge.org).

During a three-week period in October of 2012, a team of five IBM experts from the US, The Netherlands, Germany and China worked in Omaha to deliver recommendations around key issues for Mayor Jim Suttle and a wide range of stakeholders to address the challenge: *Attain sustainable and balanced growth of Omaha.*

B. The challenge

The City of Omaha has a bold future based upon the pursuit of innovation and collaboration to facilitate the growth and vitality of the community. It has a history of successful public-private partnerships and a committed philanthropic community. This “safe community” includes well-established non-profit organizations, a strong medical community, sustained job creation and the headquarters of five Fortune 500 companies and other major businesses. As the city seeks to grow, there are a number of progressive steps it can take to assure seamless success in its efforts.

“Omaha cannot forget how to invest in its future.”

Mayor Jim Suttle

That being said, there is a “cost of choice” that must be considered while pursuing growth. To date, while Omaha’s growth has been strong, it has been imbalanced, based upon disjointed, disparate information and planning efforts.

Prosperous development has not been evenly distributed and has led to a stretched City with substantial fiscal, economic and social sustainability issues. Some areas of the city are unable to participate equally in its successes. They are faced with issues such as high unemployment, poverty and inadequate labor skills, which impacts the city as a whole.

Citizens have a choice between urban and suburban living, but Omaha’s primary growth has been in the western suburbs with low-density populations. This trend of suburban sprawl is more pronounced than in most other US cities and can, in part, be attributed to the fact that Omaha is in a unique position of having planning and annexation authority three miles outside of its incorporated boundary. As a result, the overall density per square mile fell from 6,172 in 1950 to 3,162 in 2012.

This reduced density affected the city’s financial stability, the sustainability of service levels and the potential for long-term economic growth. To rebalance growth, it will be necessary to make the “cost of choice” transparent to citizens.

“Omaha is in a transitional moment and how we handle moving from suburban living to an urban city will define us.”

Community stakeholder

Table 1 outlines some of the City’s most important ambitions, based on its various plans and master plans. (Appendix C provides a schematic overview of the Downtown Omaha 2030 Master Plan.)

C. Approach

The IBM Smarter Cities Challenge team connected with a cross-section of constituents and community groups across the City of Omaha, all with a vested interest in making the city “smarter.” During three weeks in October 2012, the IBM team conducted nearly 100 interviews with representatives of more than 40 organizations: more than half from the government, with the remainder from business and other community organizations. They performed research on the current situation, demographics and data. In addition to conducting and analyzing the results of these interviews and research, the IBM team joined an “issue tour” to further observe the situation, and conducted its own best-practice research on other Smarter Cities® models in order to formulate its recommendations.

System	Management	What if a city could...?	Outcomes
Business	Coordinate planning and service delivery	Create a dominant economic engine for the metro region	Value-added business creation, innovation and job opportunities
Citizens	Market city’s image and branding	Be a great place to live, work, visit, play and learn	Attracting new residents, especially into the core of the city
Citizens	Invest in education, health, housing and public safety	Be home to the unique civic and cultural resources of the region, and have distinct neighborhoods, districts and corridors	Improved transparency and awareness of cost of choice for all citizens
City services	Manage land use	Have a comprehensive system of integrated, diverse, open spaces for public use, and cultivate a culture of design excellence	Sense of place within an urban landscape
Transport	Invest in transportation infrastructure and public transportation, improving quality of basic infrastructure	Be a multi-modal environment for everyday living, using various means of transportation	Improved accessibility of the city, energy efficiency of transport system
City services	Manage land use	Comprise a series of integrated “park once” districts	Improved accessibility of the city
Communication	Invest in communication infrastructure	Become a “wired city”	Improved quality of life through access to information and the Internet

Table 1
Priorities defined by Omaha’s various plans

3. Context for recommendations

Despite the obstacles it faces, Omaha is moving forward while attempting to tackle the core issue of the “cost of choice.” It must better understand the city’s components in order to drive better-informed decision making throughout the community. Omaha is searching for new ways to explain the causal relationships between key aspects of its city life.

The IBM team believes that it is helpful to think of urban environments as a “system of systems.” In essence, attributes we value in high-functioning urban environments, such as culture, mobility and safety, “emerge” from the interaction of a variety of private and public networks. Just as police alone do not create public safety and museums do not solely create urban culture, no single system determines whether an urban environment is thriving or declining. These systems act in parallel, have innumerable interdependencies and are subject to non-linear dynamics.

Based on research IBM conducted with the City of Portland, Oregon, a model of balanced economic growth, illustrated by Figure 1, was developed. The team also used this model during this Smarter Cities challenge.

Cities are not centrally managed; more often than not, they operate through the mutual interdependence of many semi-autonomous systems. Even in the face of financial challenges, cities are thought to be catalysts for the economic growth and job creation that, on the whole, can help tip the global economy toward increased growth. It is precisely due to this interconnected network of attributes that cities can serve as engines of development. They are hubs for labor skills and education, attracting businesses and leading to industry “clusters” that create efficiencies and competitive advantages to drive growth.

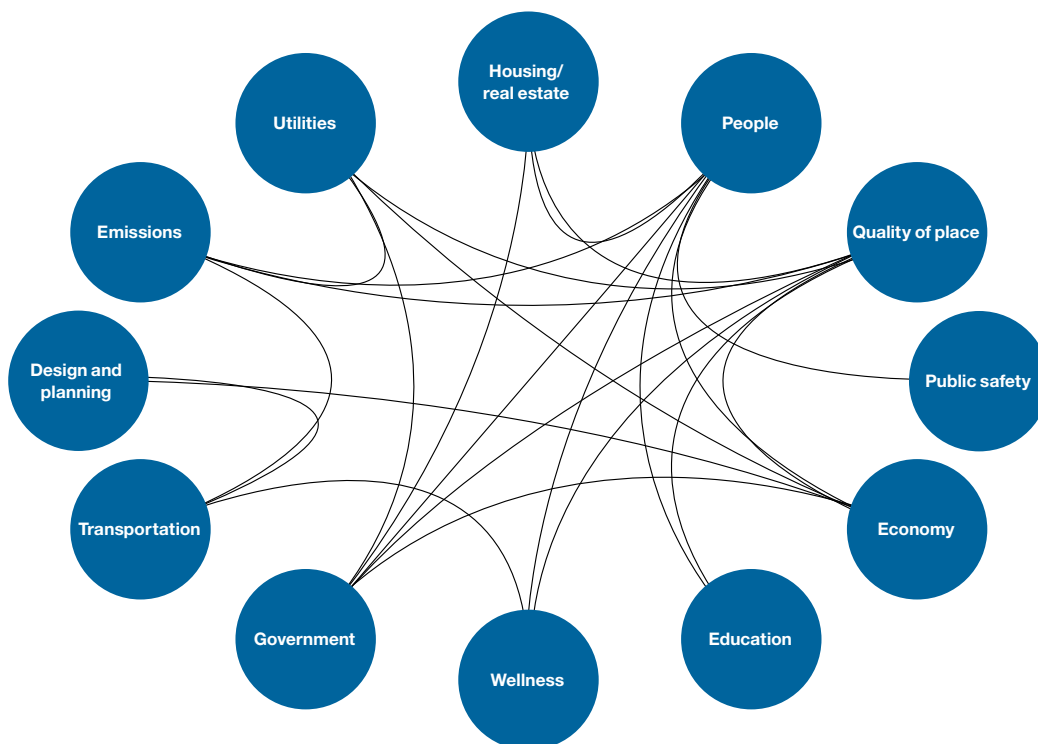


Figure 1
Model of balanced economic growth

Cities encapsulate a broad array of systems including the overall economy and individual attributes such as housing and real estate, people, quality of place, public safety, education, wellness, government, transportation, design and planning, emissions and utilities. Viewing a city as a system of systems can provide insight about how its leaders should drive decisions and investments.

Attributes and influences

In this system of systems, all attributes of a city have an impact on other attributes.

Table 2 illustrates the direct and indirect ways in which a given primary attribute (y-axis) is influenced by others (x-axis). Where these influencers have a direct effect on the primary attribute, they are indicated with check marks; where there is an indirect effect, the space is blank.

For example, if our primary attribute is access to water, we see that it is directly influenced by population, housing and public safety. But we also know that it is indirectly influenced by all the attributes not checked with a mark.¹

Appendix D provides more information on the model from the Portland, Oregon, research.

Conditions

This model of a system-of-systems view works best when met by a set of conditions or parameters that determine the health of the systems and help drive improved performance. For example:

- City governance must be able to clearly set the vision and direction of a city, clearly communicate this direction to all constituents and gain buy-in and support.
- Citizens, businesses, agencies and other stakeholders must have access to information to actively engage in improving their quality of life. This includes widely available access to information about the city's vision, priorities and plans, and public awareness about the cost of choice.

	Population	Economy	Housing	Access to food	Access to water	Access to electricity	Wellness	Government services	Public safety	Education	Transportation	Emissions
Population	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Economy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Housing	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Access to food	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Access to water	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Access to electricity	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Wellness	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Government services	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Public safety	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Education	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Transportation	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Emissions	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Table 2
Attributes key to supporting balanced economic growth

- It is necessary to align the focus of public, private, philanthropy, community activists and programs to meet priorities and keep the system in balance.
- A city must provide for its citizens' basic needs, such as public safety, access to clean water and electricity, and a healthy business environment employing a population with the necessary skills and education to foster growth.

The following scenario helps to illustrate how the attributes of economic growth must work together. A new manufacturing plant wants to move into an Omaha neighborhood. For the business to succeed, these attributes must work in tandem:

- **Government services:** The manufacturer must be able to easily locate available plots of land in the desired location that meet its requirements, such as utilities and other infrastructure.
- **Education:** The company must know the average employability, skill and education profile of potential workers and the number of workers eligible to apply for positions.
- **Housing:** Potential workers will need access to affordable housing (housing that is no more than 30 percent of their income) in an area close to the new manufacturing plant.
- **Transportation:** Both employees and the company will need transit options that allow for choice in transportation. In order to positively impact health and emissions, this will mean a mix of automobiles, public transportation and pedestrian travel.
- **Health:** A transportation-friendly city has a direct positive impact on the obesity, fitness and overall health of its population.

To enable the model, the appropriate processes, technology, data and people must be aligned to support the development of this analytic-driven approach. At the heart of these enablers are four core principles:

- Make it easy for citizens and constituents.
- Connect it to other departments and organizations.
- Include all stakeholders.
- Measure the expected outcomes.

With this foundation, the IBM team assessed Omaha's readiness to instantiate the model and saw several key areas that needed to be addressed in order to embrace this model of economic development.

A. Findings

Over the past decades, growth and economic development in Omaha has been impressive when compared to national and international development. This prosperous development, however, has not been evenly distributed and has led to a stretched City with substantial fiscal, economic and social sustainability issues.

Although Omaha, compared to other cities, has an impressive combination of a progressive political leadership, strong and committed business society, wealth of non-profit organizations and volunteers, and leading philanthropic community, there are still gaps to be bridged.

To attain sustainable and balanced growth, the City must provide a framework of systems thinking to enable well-informed decisions and strategic investments. In the end, this will transform Omaha by extending success to "every zip code, closing long-standing gaps in employment, entrepreneurship, education and housing, and enhance other quality-of-life factors."² Planning and infrastructure decisions will be needed to support this sustainable growth, and stakeholders must collaborate and share information.

Greenfield versus infield development

While the city has done well achieving growth and giving citizens a choice between urban and suburban living, growth has primarily occurred in the western suburbs with low-density population, causing problems for the urban core. In past decades, thanks to relatively low land prices and attractive off-balance financing arrangements, greenfield development has offered major financial advantages over redeveloping in Omaha's inner core.

This off-balance financing is provided by Sanitary Improvement Districts (SIDs). SIDs give housing developers the authority to issue bonds, charge levies, and raise taxes and fees to buy and maintain unincorporated, adjacent land for housing development. The SID can install streets, sewers and power, and can buy land for public parks. This type of real estate development is kept outside the city's jurisdiction and finances.

A huge volume of Omaha's citizens prefer to live in spacious suburban areas. Residents, economic activities and new businesses have been moving from the downtown area to the newly developed suburbs, leading to a western expansion of the city. Omaha's suburban sprawl and reduced population density, described on p5, have impacted the City's ability to deliver services and maintain infrastructure under stretched finances. In general, property tax levy in Omaha is low, both historically and compared to other cities in Douglas and Sarpy counties.

While Omaha has comfortable averages in wealth, income and employment, parts of the city have not shared in these successes and suffer in a number of areas. Overall unemployment in Omaha is only around four percent compared to the eight percent national average; however, sections of northern Omaha experience unemployment as high as 25 percent, while parts of southern Omaha reach 14 percent.³ This situation has led to a vicious cycle of poverty, insufficient education and skills, concern about crime rates, and a lack of sufficient access to health care. Without urban core investment, and sound building-code management, public improvements fail to occur and the appearance and economic vitality of neighborhoods and business districts are degraded. Such deterioration discourages investment and job creation, contributing to the high unemployment rate and poverty in some communities. The "broken windows" concept⁴ can become pervasive, with concerns about actual and perceived safety further limiting the inner core's potential.

As a result, many businesses and middle-class residents with the financial means to do so have moved out of the area. To a lesser, but substantial, extent, this trend has also occurred in the midtown and downtown areas. As a consequence, it has been difficult to maintain and attract new businesses, partially due to a lack of a sufficiently skilled work force, but also as a result of other factors, such as insufficient public safety. This imbalanced situation poses a problem for the city as a whole.

"A city can't be healthy if the core is not healthy."

Business stakeholder

The geographical shape of Omaha – covering a wide area with a dramatically lower density compared to prior decades – is straining the City's fiscal sustainability. The added need to provide services to the new suburban areas has not been accompanied by proportional growth in tax revenue. At the same time, the cost of maintaining the downtown area has remained steady while its tax revenues have fallen. The higher costs and pressure to maintain consistent levels of service, maintenance and investment have caused the City to make difficult choices, such as delaying investment in capital improvement programs, while first responders have struggled to cover wide swaths of land within required time frames.

From a mobility perspective, Omaha remains a “20-30 minute city”, meaning that any place inside the city limits can be reached within that timeframe without any serious congestion. Residents prefer to travel by automobile, resulting in little focus on improving public transportation to a level capable of serving a modern city with a thriving core. This is also reflected by the fact that Omaha annually spends only \$40 per capita on public transportation, which is substantially lower than the national average of \$85. In addition to this trend's environmental impacts, it leaves the city's economy vulnerable to volatile gas prices. The IBM team heard in a majority of the interviews that people feel Omaha needs a modern, well-functioning public transportation system, with a special focus on the midtown and downtown areas.

Omaha must also face common societal trends in demographic changes. In the team's interviews with young professionals, city planners, housing developers and many others, these stakeholders pointed to a growing tendency for young professionals and “empty-nesters” to move toward an inner-city area, requiring it to provide appropriate housing options at market rates, as well as surrounding amenities to support residents' desired lifestyles. An aging population requires additional services and amenities. Omaha will need a different mix of housing types, such as condos and apartments, in different parts of the city to support these demographic shifts.

“The SID financing vehicle makes suburban development very cheap, and the bill is being paid by all taxpayers.”

Community stakeholder

During the past 40 years, several studies have shown that the cost of sprawl is a national issue. In Kentucky, researchers found that maintaining city infrastructure – such as sewers, roads and education – cost the city \$88.27 per household for every 1,000 new people added in dense populations, versus \$1,222.39 in lower-density suburban areas.⁵

Planning

Over the years, the City has developed numerous plans that would have benefited from collaborative planning with a holistic view of development. However, existing processes are inconsistent, lack transparency, and are not based on collaboration. This results in the City's common vision, planning and performance indicators not being well connected, making it difficult to measure performance.

A coordinated system of planning would make possible the development of neighborhoods as a concerted effort to prevent suboptimal outcomes. To cater to the societal challenges in parts of the city, real estate development and the provision of housing, education, health care and other services should go hand in hand, jointly focused on the optimal outcome for a particular neighborhood.

For example, until recent years, plans for attracting new businesses were not optimally connected with educational programs and housing requirements. Saddlebrook Elementary School, which combines the library and community center in one location (Nebraska's first joint-use facility), illustrates how municipal investments can be combined to create a winning outcome for both the City budget and the community.

“Preparing and planning of redevelopment projects is a matter of years. Clarity on City government priorities is necessary for a period longer than a mayor's term.”

Business stakeholder

Sharing information

Due to its siloed execution of plans, the City's data – such as that from educational, health care, library, police, fire, philanthropic and other organizations – is not easily accessible between departments and institutions.

The structure of an organization influences how information flows and how decisions are communicated. When people are grouped together, as in a department or agency, information sharing happens more easily. When people are in different departments, agencies or other internal or external organizations, information movement slows, and sometimes completely stops. This natural consequence of organizational structure is especially challenging when information needs to span multiple jurisdictions and includes the public.

In this context, technology can serve as a supporting tool for delivering information and facilitating both making decisions and communicating them. Understanding the implications of organizations (groups and boundaries) and key processes helps to identify the kinds of services the IT systems need to provide. Just because governance assigns decision rights to specific people doesn't mean that the decisions are now simple. Technology's role, in this case, is to provide insight to decision makers, their advisors and constituents.

Communication and awareness

If information is not easily accessible to both businesses and citizens, it results in a barrier to economic growth and inhibits the support, engagement and buy-in of citizens and other stakeholders. For example, when real estate developers want to redevelop an area within the inner core, it appears to be quite cumbersome to collect the right information about the land titles, houses, vacant lots and environmental issues relevant to that potential project. This raises the barrier for infill developments and puts them at a comparative disadvantage relative to greenfield developments, which are much easier and less risky. This situation discourages new business investments in the inner core and has a negative impact on that area's economic growth potential.

Citizens are generally unaware of the broader strategy envisioned for their city, impacting their engagement.

They do not understand questions such as:

- Why is the City investing in certain infrastructures?
- Why is the government subsidizing certain projects and not others?
- What services are provided by the City and what level of service can be expected at what cost?
- What does the City do with the taxes it collects, and how does it distribute those funds?
- How does citizen behavior influence the cost of public services?

The City must both push information to citizens, and give them the ability to seek out information as they need it. Citizens need to be educated on the goals and outcomes of economic development policies and investment decisions to gain their support.

“Citizens should have realistic expectations regarding city services and what they cost. It is a challenge to get the public educated.”

City leader

Historically, communication of the City's vision and policies to citizens has not resulted in a sufficient level of awareness and engagement. This could be tackled by a proactive outreach campaign using multiple media channels such as newspapers, TV, social media, town hall sessions or the web (for example, a community dialogue through an online, fully interactive collaboration event). This could be established as a means to simultaneously engage citizens, county and City employees, elected officials and other stakeholders.

4. Recommendations

The IBM team's recommendations support three key objectives aimed at improving Omaha's long-term economic development financially, economically and socially:

1. Achieve an increased revenue base through economic development.
2. Facilitate economic development that creates win-win situations and economic benefits for all.
3. Develop systems and processes that provide insight to drive aligned investment and shared decision making.

The recommendations were also developed with the following guiding principles in mind:

- Omaha's plans and regulations must accurately reflect the community's desires, resulting in a clear direction for Omaha's future and rapid approval of proposals that follow those plans.
- All stakeholders recognize data as becoming increasingly essential not only to systematic functions, but to myriad decisions that impact a city's future. Therefore, the City's ability to collect, analyze and share the data that can influence policy, investment and development decisions is critical.
- The data-driven system will need to accommodate the unique character of Omaha and leverage its rich base of stakeholders and non-profit organizations; there are many challenges that will have to be overcome.
- With City departments largely working in silo, the need for a systems-thinking framework is applicable across City departments with strong links and collaboration between organizations to support high-level joint planning.

The recommendations were developed assuming a consistent implementation horizon. These horizons include:

- **Horizon 1:** For recommendations that can be implemented within six months
- **Horizon 2:** For recommendations that can be implemented within 12-18 months
- **Horizon 3:** For recommendations that will require more than 18 months to be implemented

Increase the revenue base

These recommendations seek to answer:

- Which measures could the City take to stimulate economic development, leading to increased revenue?
- What incentives should the City provide? How can cost- and usage-based instruments be used?
- Can the City extend the success of its jointly planned development projects to benefit surrounding areas?
- How can the City mobilize private funds to promote new businesses?

Recommendation 1: Differentiate revenue sources

The City should identify new and additional revenue sources, considering methodological options for usage-based charging schemes that take into account geographical and population-density factors as well as ways to capture value from development projects.

Scope and expected outcomes

One situation affecting the City budget is that the tax revenue from low-density suburbs does not fully fund the increased costs of providing services and maintaining infrastructure in the expanded city, according to interviews with the City Planning and Finance departments.

The cost of inaction would be a debt-loaded city budget that cannot sustain citizen services in the short or long term.

There are several usage-based options the City could implement as alternates to proposing tax increases, all of which are based on charging actual costs to the beneficiaries.

Cost recovery

Density-dependent property tax

The most straightforward option would be to inversely link property taxes to the population density of the area, better reflecting actual usage and long-term costs. Overall, this could be done in a budget-neutral way, where taxes increase in low-density areas and decrease in high-density areas. For a comparable example of changes to the property tax structure see San José, which used density as a differentiation factor for Park Impact Fees. However, this would require legislation by the State of Nebraska.

Special impact fee for annexed SIDs

When a SID is annexed, it could be designated as a special-assessment area with an impact fee imposed, allowing the City to recover actual long-term costs related with supporting a remote or low-density area rather than average property taxes. Special impact fees have been implemented across the US, such as in the cities of San Diego and Lancaster, California, and in the state of Colorado.

Require SIDs to build up sinking funds

When the City approves the establishment of a SID within the three-mile zone, it can require the SID to build up a sinking fund over a number of years to finance the long-term maintenance and replacement of infrastructure in that area. Upon annexation, a special-impact levy can be imposed to ensure the viability of the fund. Additionally, the City could require a minimum level of density in the new development, as well as conditions regarding the mix of housing types. Appendix E provides an example of using a sinking fund for a SID.

Usage- and distance-based service charges

For services such as waste collection, sewers, roads and parks, the City could calculate actual costs on the basis of distance, usage frequency and population density, then charge actual costs based on the service level provided. Appendix F provides an example from Lancaster, California, where its Urban Structure Program determined the long-term costs of suburban development, including a distance surcharge, that were included in an impact fee.

For waste collection, apart from density and distance factors, the City could consider a system in which a certain weight of waste and all recycling would be collected for free. Citizens who don't want to split recyclable waste would pay for the extra weight of waste they want collected. This type of fee structure has been applied in places such as Kansas City, Missouri, Germany and Belgium.

Accurate assessment of property values

Re-assessment of property values could lead to increased revenue and would eliminate perverse incentives, because undervaluation provides implicit tax increment financing (TIF).

Recommendation 1: Differentiate revenue sources (continued)

Scope and expected outcomes (continued)

Development value capture

On the development side, especially in downtown projects where the City plays a stimulating role, the City could explore new ways of value capture, such as:

Clawback

Currently, the City is using TIF to cover part of the investment costs for a certain redevelopment. Its contribution is based on a defined return on investment that the developer is expected to make on the project. If during development and execution it appears that the actual ROI will be higher than expected (to be checked by an independent auditor), the City should get a portion of the additional profit. That revenue could then be reinvested in new redevelopment projects.

Ad-hoc re-assessment of property value for properties surrounding TIF-funded areas

Once areas are redeveloped using TIF, the surrounding properties should witness a substantial increase in property value. Swift reassessment of property values can ensure the City captures appropriate additional tax revenue in a timely manner.

Proposed owner and stakeholders	Suggested resources needed
<p>Co-owners: Planning and Finance departments</p> <p>Stakeholders: Public Works (key contributor), Communication departments, citizens, real estate developers</p>	<p>Task force with Planning and Finance departments should be dedicated to work out options</p> <p>Three to four existing Full-Time Equivalents (FTEs) dedicating 50% of their time over a year</p>
Dependencies	Key milestones, activities and timeframe
<p>Some aspects of this recommendation may require state approval</p>	<ul style="list-style-type: none"> • Evaluate options for types of levy differentiation (horizon 1) • Decide which levy differentiations to apply (horizon 2) • Evaluate whether to apply value-capture options (horizon 2)

Priority

High

Recommendation 2: Improve incentives and tools for redevelopment

The City should evaluate and modify its existing tools and incentives, adding new ones as needed, to attract and support redevelopment projects that promote economic growth and increase revenue.

Scope and expected outcomes

Omaha's main incentive instrument for infill development is TIF. To promote inner-city development, application of TIF could be enhanced by extending the maximum period to 20-25 years. Based on research done in the Downtown Omaha 2030 Master Plan (see Appendix C), Nebraska has one of the shortest TIF periods of the 10 surrounding states. The City could implement a tiered approach in which only projects in the most vulnerable areas would qualify for the extended period. In general, TIF should not be used in areas with a low population density. Additionally, the current requirement that an area needs to be designated as "blight/substandard" before TIF can be applied is not helpful to promote swift redevelopments. Designating an "area of economic development" would be more appropriate. The state legislature approval will be required for these recommendations, but work should start now to bring Nebraska up to par with its surrounding states.

The cost of inaction for Omaha, and the entire state of Nebraska, would be an ever-increasing competitive disadvantage in investment compared to surrounding cities and states.

New instruments could also be considered to stimulate redevelopment in the inner city:

Business improvement districts

Companies and retailers could be charged a "business improvement" fee, with the resulting funding used to improve that particular neighborhood. This would, in turn, directly benefit those paying the fee. This has already been applied to some extent in Omaha, but also in other parts of the world, such as Amsterdam⁶.

Community facilities districts

The city could invest in a neighborhood's improvements to prepare it for development. In return, the developer or new property owners would be charged with a levy to repay the cost of the improvements. The City of San Francisco applied this in the mid 2000s.⁷

Partial-development fee waivers

The City could give fee abatements for services provided to make a certain area development-ready, such as waiving sewerage fees. To some extent, this is already applied in downtown Omaha, but could be used more structurally as an instrument to promote infill development.

Sales turn-back incentives

In addition to TIF, the government could consider giving back part of incremental sales tax generated by new businesses as a partial funding source for financing retail-focused real estate development.

SID within the city

For declining areas with measurable revenue potential, the City could establish a SID within a designated area. The new SID could then charge sufficient levies to cover all necessary investments and services. However, for legal and procedural reasons, this may be too cumbersome. It may then be easier and more straightforward to set up a special assessment district in which additional services could be levied appropriately to cover the costs.

Land bank

The City, partnering with banks to provide the upfront financing needs, could accumulate lots of vacant land, such as after the demolition of condemned property, in order to sell and trade lots that would create contiguous areas that can be commercially developed. The revenue from these new businesses should retroactively pay for the costs of initial financing.

Recommendation 2: Improve incentives and tools for redevelopment (continued)	
<p>Proposed owner and stakeholders</p> <p>Co-owners: Planning and Finance departments</p> <p>Stakeholders: Real estate developers and business owners</p>	<p>Suggested resources needed</p> <p>Cost estimation: No funding is required. All of these schemes should be self-financing by charging back for the part of the incremental benefits generated. Bridge financing, however, may be required for some of the instruments</p> <p>People: Task force of City Planning and Finance departments with two to three existing FTEs dedicating 30-50% of time over a year</p>
<p>Dependencies</p> <p>For some measures, state approval is necessary</p>	<p>Key milestones, activities and timeframe</p> <ul style="list-style-type: none"> Decide on the desired set of incentives (horizon 1) Establish guidelines and rules per incentive (horizon 2)
<p>Priority</p> <p>Medium</p>	

Facilitate economic development

These recommendations seek to answer the following questions:

- How can permit procedures be simplified to make it easier and less costly to engage in redevelopment projects?
- How can investment planning by different institutions be done more collaboratively to create win-win situations and economic benefits for all?
- What approach should be taken on building code enforcement to stimulate development projects to improve the perception and value of neighborhoods?
- What facilitating role can the City play on catalyst development projects that offer substantial multiplier effects?

Recommendation 3: Enhance collaborative and development planning

The City should institute a complementary approach for collaborative and development planning, aligning existing plans to ensure involvement of relevant stakeholders and exploring public and private partnerships for individual neighborhood redevelopment plans.

Scope and expected outcomes

The Omaha community has a history of standing up major projects with high visibility in the community. The next critical step in the planning model is to ensure that ongoing planning and governance is inclusive, repeatable and sustainable.

The cost of taking no action on this recommendation is that both City budget and processes remain the same, which will cause the City finances to be strained and growth inhibited. Additionally, without these changes the City will continue to suboptimize current development projects, missing out on the opportunity to partner across groups (for example education, health care, real estate) for better economies of scale and services for their citizens. The Mayor's Office, Planning department, and the Economic Development arm of the Chamber should initiate this.

Collaborative planning is a method designed to empower stakeholders. This is done by elevating them to the level of decision makers through direct engagement and dialogue with public agencies in order to solicit ideas, active involvement and participation in the community-planning process. This should not be just another "talk shop" but rather a planning of joint investments with real commitment to the joint project.

For the City of Omaha, collaborative planning should include the following:

Governance

This addresses the assignment of decision rights and an accountability framework to encourage specific behaviors. The City must determine how to organize and empower a voluntary process that is dependent on the goodwill of the participants. Since decision rights will continue to reside with established political bodies, the goal is to create a governance strategy that will generate influence through legitimacy, ownership, incentives and transparency. A key to this concept will be ownership and execution. Who takes the lead to ensure decided actions are completed?

Process

The process must involve interested citizen stakeholders, utilizing a consistent citywide model that can be replicated, managed and executed. It will be important to clearly identify key requirements including, but not limited to, project qualification and evaluation criteria. The IBM Smarter Cities Challenge Mecklenburg Report⁸ provides an example of comprehensive neighborhood economic planning.

Joint investment

Funding sources should be identified and deployed through a planning process under the joint guidance of the City and the Chamber's economic development arm. The alignment of agreed priorities and funding should be tightly linked. This group would evaluate the proposed community projects for impact on the overall economic development plan, advise the community on options for improving the project per the evaluation criterion, prioritize the projects and submit the enterprise capital project plan for review by political leaders.

Stakeholders

All relevant stakeholders to a proposed community project should be identified with specific roles and responsibilities. The proposed "Model of Balanced Economic Growth" (Figure 1) should be used to identify the relevant stakeholders, because they are not always obvious. Examples include community leaders and partnerships, public interest groups, businesses, health care organizations, educators, philanthropic organizations and citizens.

Technology

Today's changing communications landscape – especially the pervasive use of mobile devices and social media – has created new realities and challenges, and offers new opportunities to engage citizens in the planning process. This complements and reinforces the traditional in-person community meetings. The City should utilize a mixture of technology and human interaction to cast a broad net for as much feedback and input as possible.

Recommendation 3: Enhance collaborative and development planning (continued)

Scope and expected outcomes (continued)

Current and proposed examples

Examples of current partnerships are the Saddlebrook Community Center, a joint facility with the Saddlebrook Elementary School and the Saddlebrook Public Library, and the Alegent Creighton Clinic and pharmacy in the Barker Building. Future consideration could include an extension of the Omaha Public Schools Health Services to include an after-school service to all school-age children. If the school system is planning new school buildings or redeveloping existing ones, this should be done through a collaborative approach. The school authorities should develop a joint development and investment plan with other stakeholders such as health care service providers, the public library, city recreational services, retail developers and other possible investors. Together they could optimize the joint investments and create a financial, economic and social win-win situation.

Proposed owner and stakeholders	Suggested resources needed
<p>Owners: City Planning</p> <p>Stakeholders: Mayor's Office, Chamber of Commerce Economic Development, parties as noted above</p>	<p>People: One FTE project manager currently existing in City Planning and/or the Mayor's Office and an additional two to three part-time resources currently employed in City Planning</p> <p>Cost estimation: Current IT budget already exists to address many of these recommendations and should be leveraged</p>
Dependencies	Key milestones, activities and timeframe
<ul style="list-style-type: none"> Mayor's Office needs to provide a clear mandate for this vision and effort City Planning and Public Works need to establish a partnership and strong working relationship 	<ul style="list-style-type: none"> Develop a collaborative platform process and scorecard (horizon 1, first quarter 2013) Merge these into upcoming development plans (horizon 1, second quarter 2013) Plan execution per neighborhood and per project (horizon 2 and 3)
Priority	
<p>High</p>	

Recommendation 4: Manage catalyst projects

The City should expand on the process created as part of the Downtown Omaha 2030 plan to create a formal process to identify and manage “catalyst projects” throughout the city, engaging key business and community leaders, and using projected property tax appreciation to prioritize projects.

Scope and expected outcomes

The plan created by City leadership, business leaders and citizens to revitalize the downtown area serves as a model for how the community can identify and manage catalyst projects across the city. A catalyst project is defined as a significant investment of private and public resources aimed at providing a base of economic support for the surrounding community or greater Omaha. This might include an anchor business, significant investment in public transportation alternatives or large mixed-use neighborhood development. Beyond the catalyst project itself, the initiative should bring together all the pieces necessary to focus on the larger area surrounding it.

The cost of not taking advantage of this recommendation would represent a lost opportunity to realize the full potential benefits for all citizens and the City of Omaha.

Building on current success, there are two primary aspects to this recommendation:

Extend planning

Catalyst projects should feed into or drive neighborhood collaborative planning (Recommendation 3) so that the areas around catalyst projects are actively managed. The City should modify the planning process as a catalyst project becomes “real” to account for the current needs within a 1-5 block radius around the catalyst project. During interviews, many developers stated that help managing and planning for the space around the development was important to accelerate or increase the success rate of the project. As an example, the new Cancer Center will use an empty lot to provide for 1,200 parking spaces. If the City had engaged in modified catalyst project planning, alternatives could have been identified for shuttle bus parking and other public transportation that would have allowed for a better use of that space.

Prioritization

The City should ensure catalyst project prioritization criteria uses cross-organizational indicators. Typically, planning and organizations use what is commonly referred to as “silo” criteria – metrics that primarily advance the specific goals of the organization. For example, library investments are assessed based on the degree to which they reduce the distance between residents and library facilities. Roads are repaved based on lifecycle assessments, condition analysis and utilization rates. While the application of these silo criteria make perfect sense within these organizations, they may not lead to optimal capital allocation decisions across organizations. There appear to be three potential sources of value in cross-agency capital planning:

1. Operational value when the sharing of land or facilities lowers capital or operating costs (joint uses)
2. Customer value when the synergistic deployment of capital increases its utilization, such as schools or affordable housing
3. Strategic value when capital is allocated among the various organizations where they generate the greatest public value

Since Omaha's economic health is dependent almost exclusively on the health of its neighborhoods, the economic development of neighborhoods should be the central preoccupation. Identifying the right prioritization criteria to determine how to make aligned investment in catalyst projects is key to driving the best design and plan for the city and its citizens.

Recommendation 4: Manage catalyst projects (continued)	
Proposed owner and stakeholders	Suggested resources needed
<p>Owner: City Planning</p> <p>Stakeholders: Chamber of Commerce Economic Development</p>	<p>People: One FTE project manager currently existing within the City Planning group</p> <p>Cost estimation: Additional costs for this recommendation will be minimal as this should be an enhancement to funded initiatives already underway in the City Planning department</p>
Dependencies	Key milestones, activities and timeframe
<p>Sponsorship and leadership buy-in from Mayor, City Planning head, Chamber of Commerce and City Council</p>	<ul style="list-style-type: none"> • Develop measurement indicators (horizon 1) • Develop cross-organization metrics for prioritization (horizon 1) • Develop an approach to monitor and report short-, mid- and long-term impacts of catalyst project before, during and after development (horizon 1) • Extend catalyst project planning into neighborhood collaborative planning (Recommendation 3) (horizon 2)
Priority	
<p>Medium</p>	

Recommendation 5: Enhance permit and licensing processes

Because the permit and licensing process makes up a significant portion of the land use and real estate management process as it exists today in Omaha, the City should enhance the recently initiated Permits and Inspections Technology Roadmap to assist in the ongoing effort to streamline the process, share information and, ultimately, improve service to the public.

Scope and expected outcomes

The City Planning and Public Works departments play key roles for the city in land use and real estate management. It is imperative for real estate development to ensure developers can easily move between these two departments to complete the necessary actions related to permits and licensing in a timely manner. However, doing business with the City in regards to permits and licensing is currently difficult and delays the time to realize projects. This hampers economic development.

The Planning department is responsible for preparing and maintaining the City's Comprehensive Plan, preparing the capital improvement program, administering and enforcing zoning and subdivision regulations, enforcing building codes, carrying out ordinances for permits and inspection, implementing community development and economic development programs, enforcing the minimum dwelling standards ordinance, condemning and removing hazardous buildings, and fulfilling the role of the City's redevelopment authority.

The Public Works Department is responsible for street and sewer maintenance, which includes the planning, design and construction of street and sewer projects, and reviewing privately financed projects to see that standards for public improvements are met.

The end-to-end management of licensing and code enforcement requires a partnership between Public Works and City Planning. Today, processes and interaction points are not well defined or smoothly executed.

There are concerns about the timeliness, accuracy and consistency of applications with permits and licensing, as well as the code-enforcement process. Comments regarding the current process included:

- It is difficult to get a definitive decision on a project.
- Various departments often change their minds, and there are conflicts between departments, leading to extra costs and longer timelines, particularly for commercial and industrial developments.
- The process should focus on the proper outcome and not the particular steps to reach the right answer: use functional requirements rather than prescribe how goals or standards should be achieved.

The City should complement the 2011 implementation of the Permits and Inspections Technology Roadmap with the Accela application (see Recommendation 6). The applied technology should allow for a seamless process flow enabling data sharing with both the public and interested departments.

Advocate a "one-stop shop"

In an effort to gain consistency in decision making related to the development process, an aide to the Mayor should be given overall responsibility to coordinate resolution of development-process issues between departments when they arise. The advocate should guide, monitor and check the permitting process to assure a timely resolution. In this process, online workflow-management tools should be used to get automatic and timely warnings about possible delays.

Performance measurement is a key input for continuous process improvement (see Recommendation 11).

Recommendation 5: Enhance permit and licensing processes (continued)

Proposed owner and stakeholders	Suggested resources needed
<p>Owners: City Planning, Public Works, Mayor's Office</p> <p>Stakeholders: Real estate developers, interested citizens, neighborhood and community service organizations</p>	<p>People: One FTE project manager in the Mayor's Office, who is pulled from an existing resource in either City Planning or Public Works</p> <p>Cost estimation: Reallocation of headcount from either City Planning or Public Works to the Mayor's Office. The IT budget for the Accela application is already funded so there is no incremental cost impact from this recommendation.</p>
Dependencies	Key milestones, activities and timeframe
<ul style="list-style-type: none"> • Confirm performance management reporting focus • Deployment of the Accela application, which includes permits and licensing, is already in progress 	<ul style="list-style-type: none"> • Develop a licensing and permit scorecard (horizon 1) • Name a "one-stop shop" advocate (horizon 1)
Priority	
<p>High</p>	

Recommendation 6: Improve building-code enforcement and engage citizens in reporting issues

The City should improve its code-enforcement process, measurement and visibility, while engaging citizens in improving conditions in their own neighborhoods and establishing public-private partnerships to raze condemned properties as a first step to redevelopment.

Scope and expected outcomes

Based on the “broken windows” theory, code enforcement is necessary to influence the overall health and vitality of a community. Omaha has a current backlog of more than 4,500 violations. A key step in the City’s effort to improve code enforcement is the technology implementation of the Accela application, which includes a module on Code Enforcement, planned to be deployed in 2013.

Not moving forward with this recommendation would hinder the development of blighted properties in the city, which would in turn stagnate economic development, particularly in north and south Omaha. This recommendation focuses particularly on three key ideas to enhance current work:

More frequent inspections

In problem areas of many cities, increasing the frequency of inspections, coupled with fines for inaction, are an effective means of disincentivizing owners from allowing property to deteriorate. Developers agreed during interviews that problems with effectively and efficiently enforcing code regulations or demolishing condemned lots were a deterrent for them to invest in the core of Omaha. Aggressively managing the backlog and imposing milestones through a system of fines would help clean up areas under development. Clarifying the actions that will be taken against violators can include:

- Developing a timeline for violations to be remedied, such as the first fine at 30 days and the second at 45 days
- Using public-private partnerships, similar to Detroit’s BlightBusters⁹ (detailed below), to monitor the neighborhood and help owners take action
- Developing a reporting and tracking mechanism to share with citizens and developers

Public-private blight control

Given its strong non-profit community, Omaha should investigate similar public-private arrangements to achieve successes similar to those achieved in Detroit. During 18 years, Detroit’s BlightBusters group has painted 684 homes, and boarded up and secured 379 abandoned buildings. These blight-control teams have seen great success in renovating homes with code violations, as well as demolishing abandoned buildings. This work has helped reduce the backlog of condemnations and demolitions in Detroit, and provided private funding and volunteers to do this work. Similar organizations exist in Phoenix and Memphis.

Citizen engagement

By providing a platform to report code and vacancy issues, such as seeclickfix.com¹⁰, or multiple entry points, such as phone, web or text, the City will improve its understanding of problem locations, increase awareness, and resolve to fix problems. This approach puts the citizen and neighborhood at the center of the solution and drives accountability at an individual level. Once the City rolls out the technology in 2013, it will need to ensure communication and change-management elements of implementation are well planned, with a clear push to ensure inclusion of neighborhood citizens. The use of social networking platforms to publicize these tools and overall results can also increase awareness and understanding. Specifically, the project should:

- Select a neighborhood to pilot this approach, and work with community leaders to determine the best reporting mechanism (web, text or phone) for that group of citizens.
 - Develop a reporting and tracking mechanism to share with citizens.
 - Use performance measures to determine how to handle various complaints.
 - Provide a feedback mechanism to citizenry that is accessible, publicized and easy to use.
-

Recommendation 6: Improve building code-enforcement and engage citizens in reporting issues (continued)

Proposed owner and stakeholders	Suggested resources needed
<p>Owner: Code Enforcement/Field Inspectors (sit within City Planning department)</p> <p>Stakeholder: Citizens, property owners, developers</p>	<p>People:</p> <ul style="list-style-type: none"> • One FTE project manager from City Planning • Technology resources are already assigned and working on this effort <p>Cost estimation: Minimal cost impact, as the technology budget has already been allocated to work on this recommendation</p>
Dependencies	Key milestones, activities and timeframe
<ul style="list-style-type: none"> • Confirm performance management reporting focus • Recommendation 8 	<ul style="list-style-type: none"> • Develop a code enforcement scorecard (horizon 1) • Develop a citizen engagement pilot (horizon 1) • Determine the model and approach for the public-private blight patrol (horizon 1) • Publish code enforcement KPIs on a regular basis to key stakeholders (horizon 2) • Extend code enforcement measures to the citizen engagement platform (horizon 2 and 3) • Develop a working public-private blight patrol program (horizon 2 and 3). • Implement the Accela Code Enforcement module in 2013
Priority	
<p>Medium</p>	

Recommendation 7: Expand the entrepreneurial base

The City should expand its entrepreneurial base as a means to grow the economy, build up the revenue base and coincide with more development in the inner core of the city.

Scope and expected outcomes

Economic growth can be the result of cities and states attracting established companies into an area or from within, including locally based start-ups and small and medium businesses (SMB) focusing on innovation. Omaha was recently recognized in *Details* magazine as one of the top US cities catching “start-up fever.” While a city’s role in fostering expansion of the entrepreneurial base should be done with caution, it can encourage the activity within the greater community and provide support and services by collaborating with universities and private organizations. The key is to focus

on high-quality, high-growth companies that can make a difference rather than simply encouraging all start-ups.

The cost of inaction is losing entrepreneurial companies and leaders to surrounding areas that can provide a more attractive, desirable city business network and infrastructure.

Foster small and medium businesses and start-ups

Any community wanting to expand its entrepreneurial base must look at building an ecosystem of support, led by entrepreneurs and supported by various public and private stakeholders. In Omaha, that appears to already be happening through the *Silicon Prairie News*, Start-Up Weekend and Hack Omaha, which is a a day-long developer session where coders are given government data to make it useful. This group could look at specific issues facing Omaha, such as understanding the cost of services based on factors such as population density or public transportation efficiencies. The City should work with the universities to strengthen programs targeting entrepreneurs, such as Proof of Concept Centers or innovation programs. Examples of the Proof of Concept Center model exist in health care for Kansas City¹¹ and InnovationWorks in China¹². The City should also provide information and resources to places such as the Kauffman Center for Entrepreneurship and the SME Toolkit¹³, which provides guidance and templates for start-up businesses. The IBM team learned that entrepreneurs have recommended a bi-annual meeting between established businesses and start-ups to address business challenges in Omaha. To implement such a recommendation, the City should:

- Create a co-owned initiative between the Chamber and the Mayor’s Office to explore ways to more aggressively support and exploit entrepreneurial activities.
- Engage or broaden university engagement in developing Proof of Concept Centers and/or business incubators, possibly extending support from key business leaders for building usage, mentoring, direct inquiries and other support functions. Proof of concept centers and business incubators share similar goals of stimulating innovation and entrepreneurship, but are designed to add value at different moments in the development of a business idea¹⁴.
- Locate Proof of Concept Centers in or near the inner city. Create an environment for entrepreneurs similar to what Hot Shops¹⁵ has become for artists.
- Bring together key stakeholders in the entrepreneurial community to see how they might be able to help solve issues, such as the Hack Omaha example.
- Identify metrics by which to measure progress.
- Create an Entrepreneur Advisory Council bringing together the established business leaders with the up-and-coming business founders. The council would have two objectives: to provide mentorship and to brainstorm ways to solve business challenges. Other stakeholders would include the Chamber, two universities and serial entrepreneurs.

Incentives

Following the federal government’s lead, a few states have instituted research and development (R&D) incentives to encourage technological advances and the hiring of R&D employees. According to research done by Chief Executive Group¹⁶, Minnesota and Louisiana lead in this area, primarily because they have allowed their state R&D tax incentive to be refundable. Even if a company is not making a profit, common among start-ups, they still receive a tax refund from the state. This can be incredibly important in providing cash to new companies. The New York State Office of Science, Technology and Academic Research has created a series of incentive options to encourage start-up and SMB growth, such as credits for employment and emerging technology. Omaha will need to:

- Identify advocates in the private sector and state legislature, consider partnering with the city of Lincoln, Nebraska, on incentives.
 - Research the options and the approach that best serves the needs of Omaha and Nebraska.
 - Obtain the approval of the state legislature.
-

Recommendation 7: Expand the entrepreneurial base (continued)

Proposed owner and stakeholders	Suggested resources needed
<p>Co-owners: Mayor's Office and the Chamber of Commerce's Director of Entrepreneurship and Innovation</p> <p>Stakeholders: Business leaders, Prairie Dog News and entrepreneurial community</p>	<p>People:</p> <ul style="list-style-type: none"> • Project manager from the Chamber of Commerce Director of Entrepreneurship Office • .25 from existing staff in the Mayor's Office <p>Cost estimations: Costs for this would come from outside the city's budget and be determined by the size and scope of options pursued</p> <p>Community investment as significant as \$500,000-\$1,000,000 may be needed to set up a Proof of Concept Center. There could be no up-front costs if only services and goods are exchanged</p>
Dependencies	Key milestones, activities and timeframe
<ul style="list-style-type: none"> • Partnership with Chamber of Commerce and willingness to lead this initiative • Buy-in for key business leaders and entrepreneurial community 	<ul style="list-style-type: none"> • Create a collaborative project team and define the scope between the Chamber and Mayor's Office (horizon 1) • Determine the approach to broaden entrepreneurial engagement and support (horizon 1) • Assess whether incentives focused on entrepreneurial activity are appropriate for Omaha and Nebraska (horizon 1) • Create entrepreneurial programs such as business incubators, proof of concept centers or innovation programs, building on what is already in place (horizon 2) • Propose incentives for consideration to state legislature (horizon 2) • Obtain state legislature approval (horizon 3)
Priority	
<p>Medium</p>	

Develop systems and processes that provide insight to drive aligned investment and shared decision making

These recommendations seek to answer:

- How can the data currently available within the different silos of the city be converted into shareable information?
- In what way can this contribute to more efficient government processes?
- How can technology support City leadership to improve informed decision making?
- How can the shared information be made accessible to the public in order to create more awareness and engagement?

Recommendation 8: Improve data sharing and informed decision making

The City should gather and consolidate data from trusted sources across organizations and community stakeholders. This would improve the ability to easily access relevant information on which to base decisions and allow information (both historical and future trends) to be presented in an intuitive way, including reporting, visualization, scenario analysis, simulations and predictions.

Scope and expected outcomes

Centrally stored trusted data is the prerequisite for business analytics and prediction. In Omaha today, data typically is not easily accessible, nor is it clear who owns the data or is the trusted source. For example, there are different population figures available, and it is unclear which should be considered the trusted source to be used. Relationships and interdependencies between information are very complex, and understanding the causal relationships is critically important to enable a model for economic development.

One example illustrates this complexity. If residents feel unsafe, they stop taking public transportation and drive more. When ridership declines on the public transit system, fixed costs remain the same, which can cause a city to decrease variable costs such as running fewer lines or reducing maintenance which further reduces the attractiveness of public transportation. Students, who make up a consistent market for public transportation, have more trouble getting to school on time, affecting their grades and possibly leading to a drop in graduation rates. If residents lose their jobs because transportation is not available, crime rates could potentially rise.

The cost of inaction is that the City of Omaha continues to be limited by an incomplete view of the data and, as a result, the insights that would allow them to drive different decisions and outcomes. They will never reach their vision of understanding the holistic view of how different city services relate to each other.

To create an environment that enables decision making based on current trusted information, Omaha should:

1. Identify the requirements for data.
 - Identify the data required to implement joint economic planning and the analysis required for desired outcomes
 - Identify the trusted source for the data (including sources in the public and nonprofit sectors)
 - Define requirements of the desired outcome
 2. Create an information warehouse that captures the data and create a foundation to gather historical information.
 - Information stored in the warehouse needs to be structured so that it can be easily located and used, while ensuring that security is appropriately implemented
 - Aggregate data from the various sources. Using a staged approach, consider relating available information to both address (for neighborhood impacts) and time (so that trends can be established). This is a critical component to understanding how social services change as neighborhoods develop or regress
 - Define how data will be fed into the warehouse and what criteria must be met
 3. Use this information to explore how neighborhoods have changed after investments were made in areas such as schools, libraries, parks, sidewalks, street lights, public safety or retail stores.
 4. Create visualizations of that information, tailored to the user, and provide the information in an intuitive way using role-based dashboards
 - Developers, political leaders, philanthropists, City leaders, citizens and other stakeholders have different information needs and should have role-based access to information to aid usage
 5. Open the warehouse and visualization tools to public access or communicate the information regularly.
 - For example, provide a dashboard similar to the Douglas County Health Department's community dashboard, including information on health care, education, employment and transportation
 6. Solicit the public's input based on citizens' use of warehoused information and common visualization tools.
 7. Consider scenario analysis, simulation and tools that provide economic business modeling and the ability to modify this model based on the actual results (for an example of how this could be done, see Appendix D).
-

Recommendation 8: Improve data sharing and informed decision making (continued)

Proposed owner	Suggested resources needed
<p>Owner: Mayor's Office IT Liaison (established in quarter 4 2012)</p> <p>Stakeholder: City Planning, Public Works, Mayor, DOT.comm (IT department)</p>	<p>People: Project manager (taking directions from the mayor)</p> <ul style="list-style-type: none"> • DOT.comm, a joint technology department serving Douglas County and City of Omaha leader (IT leader) • Data and data-modeling specialist • Business analyst • Business subject experts from Planning department and other City departments (as needed) part time for requirements gathering and user testing <p>Additional resources may be needed where existing resources cannot be shifted to work on this effort (for example data modeling specialists, business analyst)</p> <p>Cost estimation: Budget exists to complete some of this work. The incremental costs to complete the full recommendation would need a cost analysis to determine the appropriate additional hardware, software and programming needed</p>
Dependencies	Key milestones, activities and timeframe
<p>Data from all departments and relevant other organizations need to be available in an electronic form</p>	<ul style="list-style-type: none"> • Conduct analysis of current data (horizon 1) • Conduct analysis of current infrastructure and tools (horizon 1) • Gather requirements (horizon 1) • Design the structure of the warehouse (horizon 1 and 2) • Set up the warehouse (horizon 2) • Initiate reporting and visualization (horizon 2 and 3) • Decide on modeling tools (horizon 3)
Priority	
High	

Recommendation 9: Improve Internet accessibility

The City should improve Internet accessibility for its vulnerable population with the aim of providing affordable or free access to training, education, job opportunities, health care and other social services that drive and support economic development.

Scope and expected outcomes

There is a significant digital divide in Omaha, in particular for that part of the community experiencing high unemployment and low graduation rates. Computer skills and access are a concern, because both are needed to seek and apply for jobs in today's market. Bridging this divide is essential to create a balanced economic environment.

The cost of inaction on this issue is that the gap would continue to widen between populations unable to obtain Internet access and those able to afford it.

The IBM team determined that a number of institutions, including the public library and universities, already provide free, public access, but the queues of people waiting to use them indicate that supply does not meet demand. Omaha should consider implementing the following resources, a list partially based on the approach taken in Miami¹⁷:

- **eSeniors:** Centers for computer training to help seniors stay connected to family and utilize web-based resources. Implemented through libraries, universities, schools and community centers.
- **eParks:** Computer labs, which include public access to computers, online tutoring for school children and a portal for parents to use to assist their children with schoolwork – implemented through existing computer facilities at schools after hours, but requiring funding for surveillance and staff.
- **Rites of Passage Initiative:** This initiative, as undertaken by Miami-Dade Public Schools, includes a sixth-grade curriculum integrating computers and life skills, and a high school internship program to provide employment opportunities using technology. Applying it to Omaha would involve expanding the current nine “Communities in Schools” programs that serve 500 families.
- **NEToffices:** One-stop neighborhood shops for people to access city services including skills, jobs, health care, public transportation and social services through partnerships with grocery stores, schools and community centers that provide on-location kiosks (also implemented in other cities, such as Chicago).

The City of Omaha, along with organizations such as Heartland Workforce Solutions, the Empowerment Network, public libraries, Omaha Public Schools and universities, could use this approach to grow the base of people served. The City also could provide free wireless Internet access in the eastern corridor of Omaha. For example, Wireless Miami Beach provides free public access to all residents, visitors, and businesses across the city.

The project would require the City to:

- Strengthen relationships with libraries and universities to see how Internet access can be provided to the most vulnerable populations
 - Determine populations and geographies with most need
 - Identify potential non-profit and school partners to develop programs
 - Pilot a program to determine effectiveness, measurement and replication in other areas
-

Recommendation 9: Improve Internet accessibility (continued)	
Proposed owner and stakeholders	Suggested resources needed
<p>Owner: Mayor's Office, PR department</p> <p>Stakeholders: Omaha public schools, public library, universities, the Empowerment Network, Heartland Workforce Solutions</p>	<p>People: Combining work effort of Recommendations 9 and 10 would require one FTE added to the Mayor's Office, PR department</p> <p>Cost estimation: First source of funding should be to partner with the city philanthropists, and then determine the city's investment based on any arrangements that can be made</p>
Dependencies	Key milestones, activities and timeframe
<p>A resource to manage the project and/or work with private, non-profit entities</p>	<ul style="list-style-type: none"> • Secure the management resource and determine needs and funding (horizon 1) • Identify and agree on the pilot (horizon 1) • Implement the pilot and assess impact (horizon 2)
Priority	
<p>Medium</p>	

Recommendation 10: Lead through connections

The City should raise public awareness and understanding of its services and accomplishments vital to the growth of the city. This would create collaboration and improve citizen satisfaction through outreach and education to key constituents and engage citizens and stakeholders to establish ongoing dialogue.

Scope and expected outcomes

Creating change requires City leadership to expand the means of collaboration, communication and partnerships with external organizations and citizens. This starts with clear communication. EngageOmaha.com – a first of a kind, city to citizen social collaboration hub – is a good step in this direction and can be used as a stepping stone to do more.

The cost of inaction for this recommendation would be that citizens continue to be uninformed and uneducated on the impact of urban sprawl on city finances, and therefore unwilling to change and help city leaders drive the hard decisions.

Provide outreach and education

It is critical that City leadership communicates each relevant program with a clear vision, mission and sustained focus, thereby assuring effective community awareness by all key stakeholders and citizens. By effectively utilizing the concept of the system of balanced economic growth, the City can effectively communicate all of the recommended areas, from the cost of choice, collaborative planning, upgraded code enforcement, catalyst planning and entrepreneurship. Outreach and education should leverage a multi-channel approach, using web, phone, text, social media, flyers and newspaper articles. The City should partner with “high use” retailers, including grocery stores and banks, to create bulletin boards and computer or information kiosks.

Engage citizens and stakeholders in dialogue

One-way distribution of information is important, but two-way dialogue becomes even more important as a city wants to advance its priorities and potential. Omaha has made a great start in engaging citizens in a virtual town hall with EngageOmaha.com and should look for other ways to expand this approach. IBM's own experience in online brainstorming platforms is that creating “events” focused on a particular topic that targets a particular segment of the population increases effectiveness. It is important to have moderators prompting discussion. The City also should consider creating a citizen-centered platform to connect people to the programs, services and information they need, starting with segmenting constituents and their needs. Examples of this include Australia's Centrelink¹⁸ and Singapore's iGov 2010 strategy¹⁹.

Omaha should consider:

- **Cost of choice:** Citizens need to understand the personal and civic costs of choice in order to raise awareness of the issues and challenges facing the City. It is important to explain costs in simple terms using everyday analogies such as whether the additional annual cost per citizen adds up to an iPad or a new car each year.
- **Development and planning outreach:** The City Planning office should develop or enhance an education and outreach program to educate land-use stakeholders, such as developers, realtors, contractors and residents, on the benefit and ease of infill or core city development requirements. This program should highlight key factors, including tips, frequently asked questions, checklists and resources. New process changes being introduced through Accela should also be addressed. The City should also consider further deploying MindMixer²⁰, the community engagement platform currently used by EngageOmaha.com, to conduct a collaborative online discussion between these same stakeholders to engage feedback and encourage new ideas. This technique has been used in Mecklenburg County, North Carolina, the state of Oregon, and in Seattle, Washington.
- **Entrepreneurial outreach:** Actively engaging and promoting a focus on entrepreneurial activities will help increase awareness of opportunities. The message can be spread through focused stories in entrepreneurial publications and speaking engagements at Hack Day or Start-Up Weekend.

The City will need to:

- Identify key messages and materials for outreach programs, along with the target audiences.
 - Develop a segmentation strategy based on demographic categories, and provide administrative information and services tailored to these groups.
 - Provide information on key city services to stimulate online collaboration and discussion through tools such as MindMixer and EngageOmaha.com.
-

Recommendation 10: Lead through connections (continued)	
Proposed owner and stakeholders	Suggested resources needed
<p>Owner: Mayor's Office, PR department</p> <p>Stakeholders: Citizens of Omaha</p>	<p>People: Combining work effort of Recommendations 9 and 10 would require one FTE added to the Mayor's Office, PR department</p> <p>Cost estimation: Additional budget needed for one FTE in Mayor's Office</p>
Dependencies	Key milestones, activities and timeframe
<p>Support from City departments on agreed mission, priorities and processes</p>	<ul style="list-style-type: none"> • Secure resources and determine needs and funding (horizon 1) • Identify and conduct the pilot (horizon 1) • Replicate the pilot to other key priorities (horizon 2) • Set up a citizen-centered platform (horizon 3)
Priority	
<p>Medium</p>	

Recommendation 11: Establish key performance indicators to drive outcomes

The City should establish a measurement system and metrics to effectively manage balanced economic development.

Scope and expected outcomes

Routine and visible key performance indicators (KPIs) are widely used in the public and private sectors as a technique to improve performance, both internally and externally. From an internal perspective, KPIs help manage expectations across departments and hold personnel accountable for their performance. From an external perspective, KPIs are a primary means of developing public accountability as they provide a mechanism for the public to review government performance.

The cost of inaction in developing this system of KPIs would be that an outcome-driven culture is harder to establish because success is not clearly defined. It also becomes more difficult to demonstrate what success the city has achieved in order to educate citizens on the progress being made.

Establish commitment to performance culture

Expressed commitment to develop a performance-based culture across the City should be established from the Mayor's Office. It would give permission to employees to devote the necessary time and resources required to develop a sustainable KPI program.

Develop a core set of KPIs

This strategy and approach will serve as a guide in developing, reporting and monitoring the KPIs. This will provide collaboration and continuity of execution across organizations, as well as develop KPIs for required cross-department coordination.

Use KPIs in decision-making

The KPIs should be used to report operational performance on a regular basis. Each department should incorporate KPIs into its departmental meetings, thereby improving transparency and providing performance-improvement opportunities for employees. The City of Chicago reports performance metrics to the public via a website²¹. This report covers a variety of topics, but includes permitting and citizen satisfaction. Key design points of the Chicago website include clear focus, frequency, performance targets, usable design and consistent delivery and updates.

Examining the recommendations provided to drive balanced economic growth performance indicators might include:

- **Collaborative planning metrics:** There should be a set system of review for all projects from inception to final execution to ensure all interests and targets are met. For example, the Joint Chamber/City Committee would also:
 - Measure existing and completed projects against their stated business cases
 - Publicize the results
 - Initiate improvements to the capital-planning process
- **Code enforcement measures:** Analytics tools would be used to formulate actions in response to performance gaps. Measures could include the number of violations in queue, age of violations (measured in days) or owner.
- **Process simplification metrics:** Measuring process performance is critical to drive continuous improvement efforts. Related to development projects, possible metrics could include:
 - Average number of business days a permit spends in a department
 - Average amount of time spent in queue
 - Total number requiring review
 - Total number of backlog
- **Informed measurement for public awareness:** Understanding how and why citizens look for information from the City is important to tailor new awareness campaigns. Possible metrics include end-user satisfaction ratings or the number of hits per site, by topic.

The City would need to:

- Identify the key KPIs currently tracked, and validate where and how data is captured.
 - Identify the desired performance targets or service levels, and agree with key constituents, including Planning and Public Works.
 - Shift to ongoing electronic dissemination of reports and scorecards, with review meetings focusing on issues and actions.
 - Produce a City government scorecard or mayoral dashboard for internal and external dissemination.
-

Proposed owner and stakeholders	Suggested resources needed
<p>Owner: Mayor's Office (to define the KPIs) and DOT.comm (to provide the technology)</p> <p>Stakeholders: Citizens, community organizations, businesses and all city departments</p>	<p>People:</p> <ul style="list-style-type: none"> • One FTE project manager (temporary to run project) • City personnel involved to provide requirements, help define KPIs and test (as needed) <p>Cost estimation: Additional budget needed for one FTE (temporary) in Mayor's Office. Technology assessment and cost analysis would be required to determine if additional hardware and software are needed and the incremental costs involved</p>
Dependencies	Key milestones, activities and timeframe
<ul style="list-style-type: none"> • Recommendation 8 (some parts) to ensure data is available to report on KPIs • Software to enable KPI reporting and progress tracking 	<ul style="list-style-type: none"> • Create measurement performance indicators (horizon 2) • Review performance to determine the areas of improvement (horizon 3)
Priority	
<p>High</p>	

5. Conclusion

The City of Omaha has a rich history and fabric of community partnership, business leadership, advanced education and philanthropic support. Intertwined in that “system of systems” is a geographic and community pattern of growth that, while steady, will stretch at the seams of the City’s ability to deliver critical services and maintain its path of positive development.

With an established unifying goal of attaining long-term, citywide, economic stability while addressing specific community needs, all members of City government and community stakeholders can follow a sustainable pattern of both greenfield development and infill redevelopment.

To do so, the community must execute the following:

- Create a fiscal model that, over time, will serve as a guide to achieve a sustainable revenue base.
- Develop a collaborative working pattern of decision making that aligns with and shares the City’s goals.
- Target a sustained vision of economic redevelopment that assures all community stakeholders are included and financial impacts are considered.

The future economic development of Omaha can be emboldened by the execution of this plan – a plan for which the IBM Smarter Cities Challenge team believes Omaha is ready and well positioned. In so doing, Omaha will have attained its full potential. Some of these decisions will not be easy to agree upon, but the discussion must be held.

“Great ideas survive great debates.”

Business stakeholder

6. Appendix

A. Acknowledgements

Name	Organization	Title
Anne Hindery	Non Profit Association of the Midland	CEO
Bridget A. Hadley	Planning Department, City of Omaha	Economic Development Planner
Chad Weaver	Planning Department, City of Omaha	Assistant Planning Director
Christian Christensen	Bluestone Development	Owner
Clifford Scott	Omaha Housing	Chief Executive Officer
Connie Spellman	Omaha by Design	Director
Curt Simon	Metro Transit	Executive Director
Daniel E. Burkey	Creighton University	Senior VP for Operation
Daniel Lawse	Campus Planning and Sustainability, Metropolitan Community College	Assistant Director
Darlus Malone	Planning Department, City of Omaha	Economic Development Intern
Dave Baker	Omaha Police Department	Deputy Chief
David Brown	Greater Omaha Chamber of Commerce	President and CEO
David Dover	Mayor's Office, City of Omaha	Deputy Chief of Staff
Derek Miller	City of Omaha Planning	Transportation Planner
Douglas Mertes	Certified Property Management Inc & CPM Realty	Client Development Manager
Gail Braun	Mayor's Office, City of Omaha	Grant Administrator
Gerry Reimer	Urban Village	Owner
Greg Youell	Metropolitan Area Planning Agency	Executive Director
James Thele	Omaha Planning Department – Housing And Community Development	Assistant Director, Program Administration And Planning
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Jan Kauk	Heartland Workforce Solutions	Executive Director
Jason Fisher	Lund Company	President
Jay B. Noddle	Noddle Companies	President & CEO
Jed Moulton	Planning Department, City of Omaha	Urban Design Manager
Jeff Schovaneck	Metropolitan Utilities District	Senior Design Engineer, Infrastructure Replacement
Jeff Slobotski	Silicon Prairie	Co-Founder & Chief Community Builder
Jerry Slusky	Smith, Gardner, Slusky Law	Partner
Jerry Torczon	Birchwood Homes	CEO
Jim Suttle	City of Omaha	Mayor
Joe Gudenrath	Omaha Downtown Improvement District Association	Executive Director

Name	Organization	Title
John Bachman	Pansing, Hogan, Ernst & Bachman	Attorney
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John L. Wilhelm	Creighton University	VP for Administration
John Lund	Lund Company	CEO
Jon Zellars	Metropolitan Utilities District	Senior Design Engineer, Relocations/Construction Coordinator
Kari Reed	ConAgra Foods	VP, Cause & Foundation
Ken Cook	Mutual of Omaha/East Campus Realty	President
Ken Hansen	University of Nebraska Medical Center	Assistant Vice Chancellor for Facilities Management & Planning
Kent E. Holm, CSM	Environmental Services, Douglas Country	Director
Kerri Peterson	Live Well Omaha	Executive Director
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Mikki Frost	Agent Health	Director Community Benefit and Health
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Robert Wood	Kuehl Capital	Managing Director
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Name	Organization	Title
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Thomas Mulligan	Omaha City Council	President
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Timothy W. Weander	Nebraska Department of Roads, State Headquarters	District Engineer
Todd Engle	Kuehl Capital	Managing Director
Todd Heistand	Nustyle Development Corporation	Owner
Todd Pfitzer	City of Omaha Public Works	City Engineer
Willie Barney	African-American Empowerment Network	President and Facilitator

B. Team biographies



Julia Bartlett
Global Program Leader,
IBM Innovation Programs

Julia Bartlett has more than 14 years' experience leading design, development and execution of business strategy, process engineering and client experience consulting engagements. She has been involved in the launch of more than seven different communication companies and has worked across multiple levels of client organizations and IBM to drive transformation.

In her current role, Bartlett leads the strategy and execution of global innovation programs, including Innovation Discovery, a premier client program sponsored by the IBM Chairman and Chief Executive Officer since the beginning of 2008. She also creates and manages internal innovation programs, teaching IBM sellers how to use IBM's capabilities to uncover new opportunities to innovate business models, operations, and products and services. Bartlett has been involved in the area of innovation for the past four years and has accumulated a wide range of strategy, business development and stakeholder management experience during this time.

Prior to joining IBM, Bartlett was a Senior Manager in the Customer Relationship Management practice at Accenture with nine years' consulting experience in managing large outsourcing projects. She led and implemented numerous customer experience and transformation projects spanning operations, call center outsourcing and customer strategy, with a particular focus on the energy and utilities, telecommunications and high technology industries. Bartlett started her career working in the non-profit sector, focusing on education reform in the state of Colorado through an initiative called Agenda 21. Some day, Julia would like to go back to non-profit pursuits to serve her greater community.

Julia received a Bachelor of Science in Accounting from the University of Denver, graduating with honors. She grew up on a farm, spent several years in Denver, Colorado, and now lives in Kansas City, Missouri, with her husband, two sons and their dog.



Mark Esseboom
Europe Market Support Leader
Director, Governmental Programs
IBM Netherlands

Mark Esseboom studied macro economics at the Erasmus University in Rotterdam, The Netherlands. After graduation in 1991, he worked in several jobs in that country's Ministry of Finance until 2003. This included working in the Directorate for Foreign Financial Relations where he dealt with issues

such as the Treaty of Maastricht, International Monetary Fund and World Bank policies and review of the European Agricultural Policy, as well as the Structural Funds, the European Union budget and the Dutch contribution thereto. During this period, Esseboom was seconded to the Dutch Permanent Representation to the EU (Brussels) from 1997 to 2000. After returning to the Ministry in The Hague, he became Head of EU Affairs for the whole Ministry.

At the end of 2003, he changed jobs and started with the Ministry of Economic Affairs and, after an interim job, became Director for Coordination, Strategy and International Affairs for ICT and Telecom policies. In January 2006, this Directorate also became responsible for energy policy due to an internal reorganization of the Ministry. In this position, he was responsible for managing a directorate of around 40 people.

In February 2007, Esseboom left government and joined the private sector. Since then he has been the Governmental Programs Executive for IBM Netherlands and also manages Governmental Programs Benelux. In that position, he is responsible for the relations and cooperation of IBM NL with the Dutch government. Furthermore, he plays a substantial role in IBM's Government Relations work at EU level. Main activities relate both to helping governments shape new, innovative policies and to setting up cooperation programs and the joint uptake of pilot projects. Since March 2012, Esseboom leads Governmental Programs' Market Support activities in Europe.



Helen Geng
Executive for Client Satisfaction
IBM Growth Market Unit

Ms. Helen Geng has been IBM Executive for Client Satisfaction in Growth Market Unit since March 2011.

Prior to that, Geng was serving as Project Executive for World Expo 2010 in Shanghai, which was the biggest sponsorship project IBM engaged in with the Great China Group. She was responsible for leading and managing the government relationship and working with IBM across business unit resources to ensure efficient execution. Geng was recognized by both the Shanghai Expo Bureau and the General Manager of IBM Greater China Group (GCG) for her outstanding contribution to the event.

Geng's career spans more than 24 years across four companies, in the areas of marketing and business development. She joined IBM in 1998 as China ISV and Developer Relations Manager. In 2002, Geng was appointed GCG manager for the Market Intelligence group, and from 2006 to 2008 held the position of Senior Marketing Manager, System and Technology Group, for Asia Pacific.

Geng graduated from the National University of Defense Technology in China and earned a market research diploma from the University of Georgia. She completed the marketing executive education program in Wharton Business School, an IBM GCG marketing program for top talent, and is a member of the European Society for Opinion and Marketing Research.

She currently lives in Shanghai with her husband and son.



Mark O'Riley, Esq.
Office of the General Counsel
IBM Governmental Programs,
Technology Policy

Mark O'Riley manages IBM's global advanced computing technology public policy, including policy development with IBM's Research, Software and Systems groups. He is a member of IBM's Governmental Programs organization, which is a globally integrated corporate function providing worldwide public policy and government relations expertise. O'Riley also works with governments on key economic, governmental and societal issues, helping them solve problems and create strategies for the future.

O'Riley has held a number of product management positions since joining IBM in 1984. He has experience in the Public Sector market, including, federal, state and local government, as well as health care and education. He has served as Vice President for IBM United States Healthcare – Public Sector and Worldwide Director for IBM's UNIX platform.

He is a member of the Texas State Bar, the American Bar Association and National Bar Association, and he has held staff positions with former Atlanta Mayor Maynard Jackson and former United States Representative Parren Mitchell.

O'Riley earned a Bachelor of Arts degree with emphasis in Political Science and History from C.W. Post College of Long Island University, as well as Master of Public Administration in Public Finance from Atlanta University and Juris Doctor from George Washington University.



Anita Wilhelm
GBS Europe Business IT Leader
IBM Global Business Services,
Germany

Anita Wilhelm is a Program Manager and Business IT Leader within IBM Global Business Services (GBS) in Germany. She is responsible for the overall IT strategy, including tools, reporting and processes for all of Europe. She has worked for IBM for the past 27 years and has degrees in Business Administration and Computer Science (Verwaltungs- und Wirtschafts-Akademie Stuttgart) and a project management certification from George Washington University.

Wilhelm began her IBM career in Germany, then held worldwide positions as System Engineer, Marketing Brand Manager, Project Manager in Services and Program Manager in Business Operations. She had been on assignments in IBM offices in both London and Milan, where she was requested to work on projects to analyze and improve processes and achieve overall process optimization.

Recently, Wilhelm has been the Global Business Services Europe representative in the biggest global transformation program inside of IBM (Blue Harmony), which will enhance IBM to become a leading, globally integrated enterprise and will standardize and simplify internal processes across the world.

Wilhelm lives in Stuttgart, Germany, and she enjoys spending time with family and friends, traveling to learn about other cultures, and attending music concerts.

C. Downtown Omaha 2030 Master Plan

Downtown Omaha 2030 is a master plan developed in 2009 and 2010 by City Planning and key city leaders to define the long-term vision of growth and revitalization for the city.²²

The resulting mission statement for Downtown Omaha is:

Make Downtown Omaha a world-class place to live, work and play; a resource for residents and workers, regional visitors and tourists from around the globe.

This vision will come to life by adhering to the following guiding principles, key elements and development opportunities, and operational initiatives. This framework will help drive consistent city planning decisions and real estate development opportunities for the downtown area through 2030.

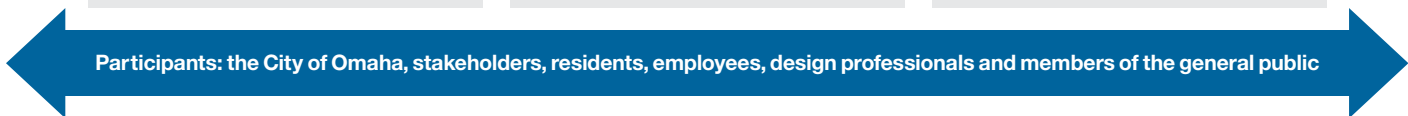
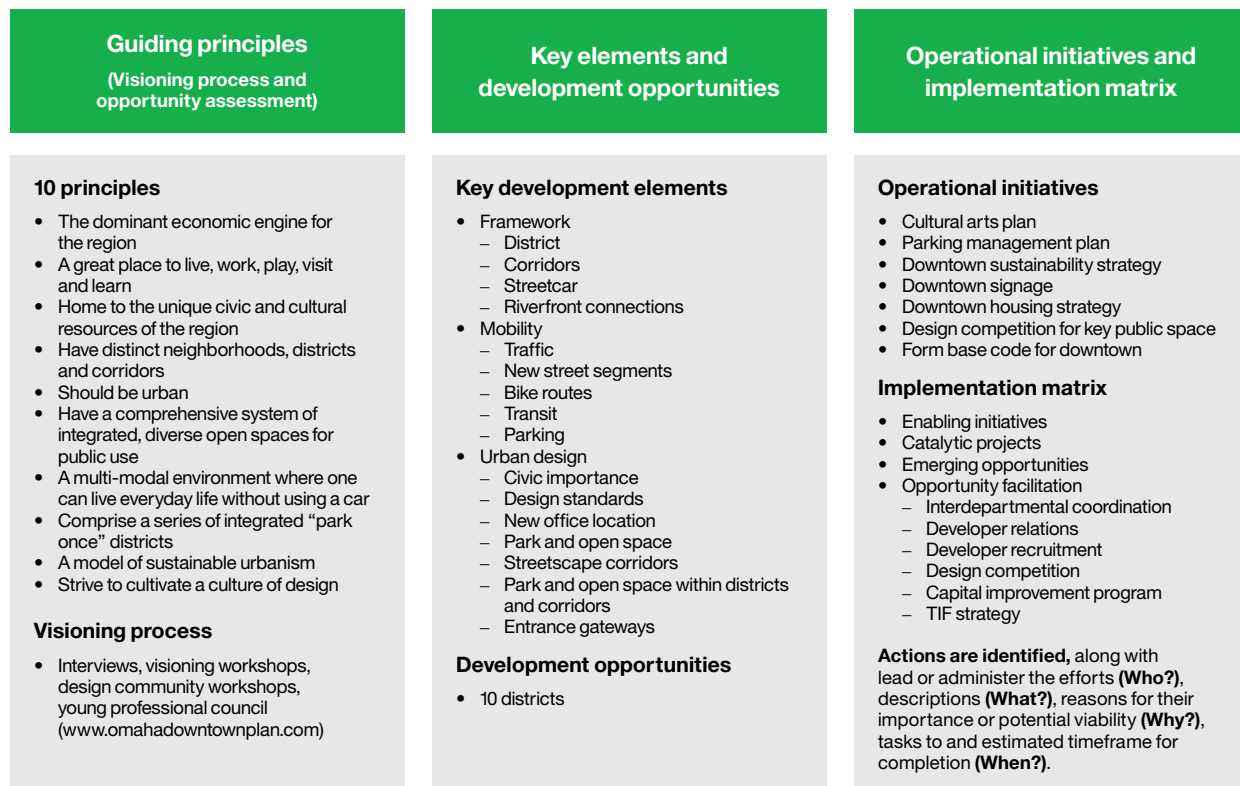
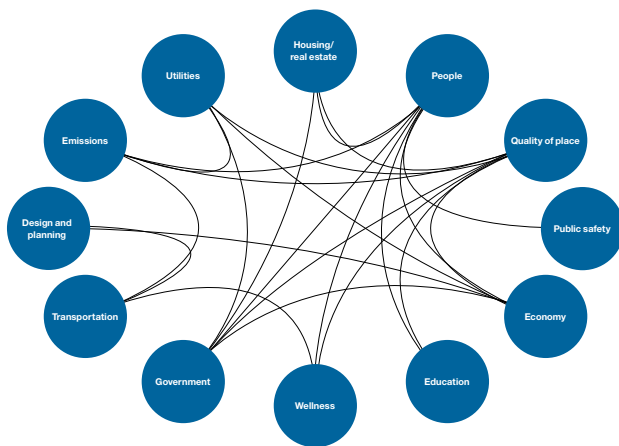


Figure 2
Overview of Downtown Omaha 2030 Master Plan

D. IBM system dynamics of Smarter Cities: City of Portland, Oregon

In 2010, the City of Portland and IBM collaborated to develop an interactive model that demonstrates the relationships that exist among the city's core systems in an effort to better understand the dynamic behavior of cities and help informed decision making. These systems included the economy, housing, education, public safety, transportation, health care and wellness, government services and utilities.



The resulting systems-thinking tool supports high-level city planning. Users learn how their city works as an interconnected system of systems as they explore interactive visual maps and simulate macro-level policy options. Value is created through its use in discovery, testing, communication and constituency-building for crucial City decisions and priorities.

Key to success was a strong partnership and process: working with City subject-matter experts, collecting data and foundational research, and providing for a flexible and rapid iteration process, helped to define the underlying interconnected structures that make up Portland.

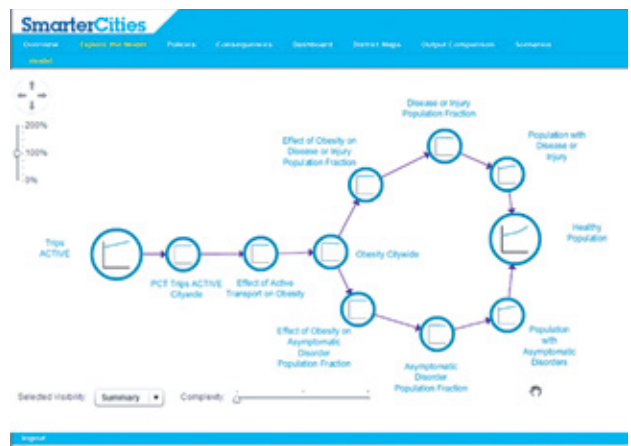
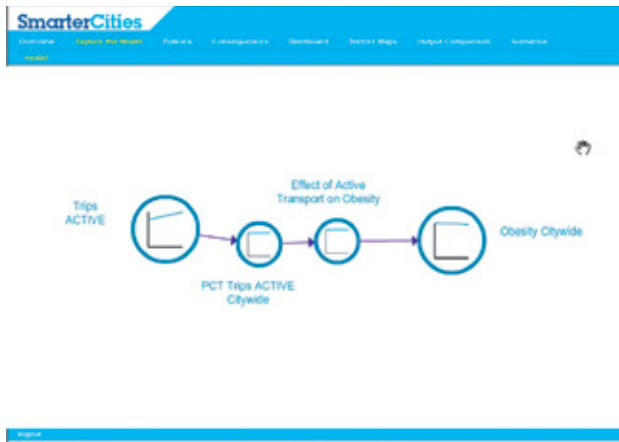


Figure 3 Systems thinking approach for smarter cities

The resulting computer simulation allowed Portland's leaders to see how City systems work together, and, in turn, identify opportunities to become a "smarter city."

The model was built to support the development of metrics for the Portland Plan, the City's roadmap for the next 25 years.

IBM and the City of Portland

- Joint research project to create a system dynamics simulation of the City of Portland
- Model will be used to explore the interconnection points between various parts of the city and advance the philosophy of multi-objective decision-making

City of Portland

Goals

- Discover unexpected points of connection and encourage their consideration and deeper exploration in the larger Portland Plan process

Contributions

- Data necessary to calibrate the model to Portland
- Access to city subject matter experts for each of the model subsystems
- Detailed feedback on the model and policy simulation results

IBM System Dynamics Team

Goals

- Calibrate and validate the model with a client city
- Build the IBM relationship with Portland

Contributions

- Necessary elements of the Smarter Cities System Dynamics model as a foundation for a Portland specific instance of the model
- IBM Smarter City expertise and systems modeling skills to convert City of Portland feedback into a calibrated model
- A hosted interface for the calibrated Portland model

Figure 4
Portland plan system dynamics

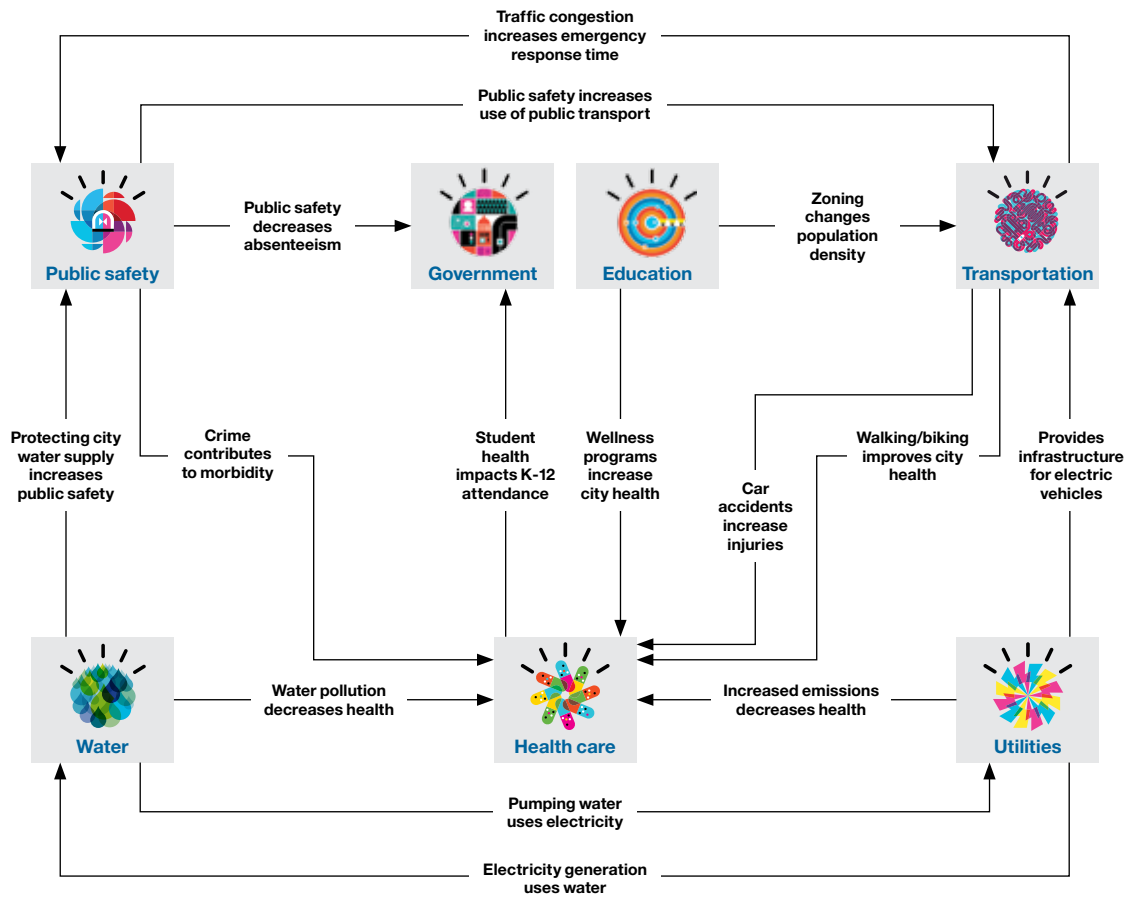


Figure 5
Example of interconnections of a city

A Smarter Cities simulation calibration project includes four phases:

- Data collection
 - Review the city’s main issues (hexagon brainstorming), identify data sources and gather data
- Causal logic refinement
 - Interviews with subject-matter experts on the specifics of how the city operates

- Simulation calibration
 - Review inputs and results of the subsystems with city experts; gather additional data needed for the model based on causal logic refinements
- Implementation
- Tune the model and review model behavior, including preparation of insights and final simulation. A video about the Portland example is available at <http://youtu.be/uBYsSFbBeR4>

E. Example of introducing a sinking fund into a SID

One option recommended for Omaha was the idea of requiring SIDs, at the moment they are founded, to build up a sinking fund for future capital improvements, such as major maintenance and replacements.

Figure 6 provides some insight into how this could work and what it would mean for property taxes in such a SID. It also shows what would happen after annexation if that area was to be designated a special assessment area.

In the existing situation, the levy within a SID is built up by two components. One levy pays off the debt that was incurred to fund the initial infrastructure investments in the development area (the dark blue line), which gradually declines over time. The second is the levy to pay for operational costs. For simplicity, it is assumed this is equal to the rate the City applies to all property (the pink line). In total, the levy paid in a SID (the purple line) is high at the start and gradually approaches the average level.

If a SID were required to build up a sinking fund, an additional levy would be required (the yellow line). This could start at a low level and then gradually grow to the level necessary to fully cover long-term costs related to the development area. The light-blue line illustrates the total impact levy. In the long term, this level would be lower than what a SID starts with, but would be higher than the normal city levy.

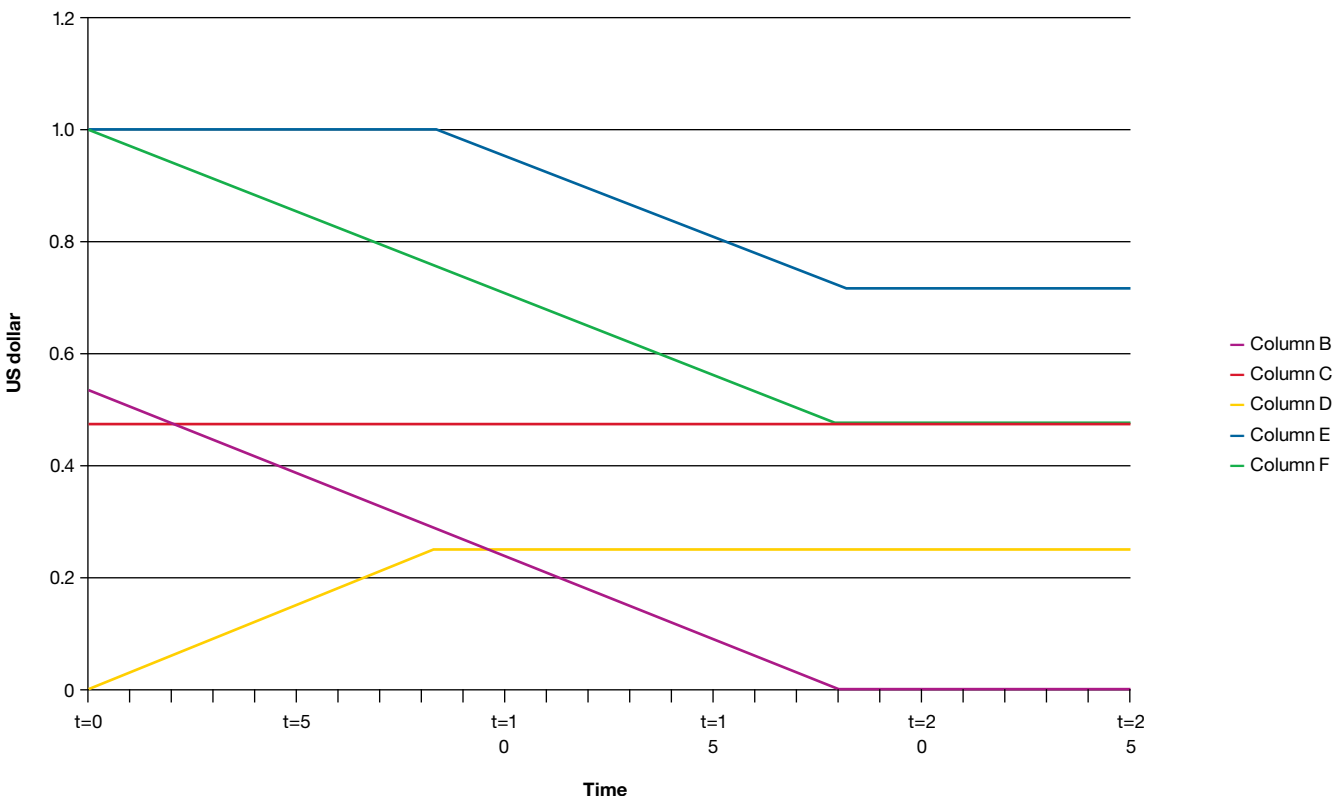


Figure 6
Graph illustrating a SID with and without a sinking fund

F. Urban Structure Program in the City of Lancaster

In the 1990s, the City of Lancaster, California, after many discussions with all stakeholders, found a solution to ensure the real costs of suburban sprawl were included in the fees charged. The City developed the so-called Urban Structure Program²³ in which the financial burden is charged to those who create it. The Development Impact Fee was quantified on the basis of the type and amount of infrastructure, facilities and services needed to serve new development, taking into account lifecycle costs. In addition, guidelines for the required service levels were developed.

The model contains infrastructure, capital improvement and operating costs. For distance-related City services such as road maintenance, street sweeping and community safety, a distance parameter was introduced in the model. Thus, the model includes the sprawl factor into the level of the fees applied.

Figure 7 provides an overview of the different elements that were taken into account in the new calculation method for the fees.

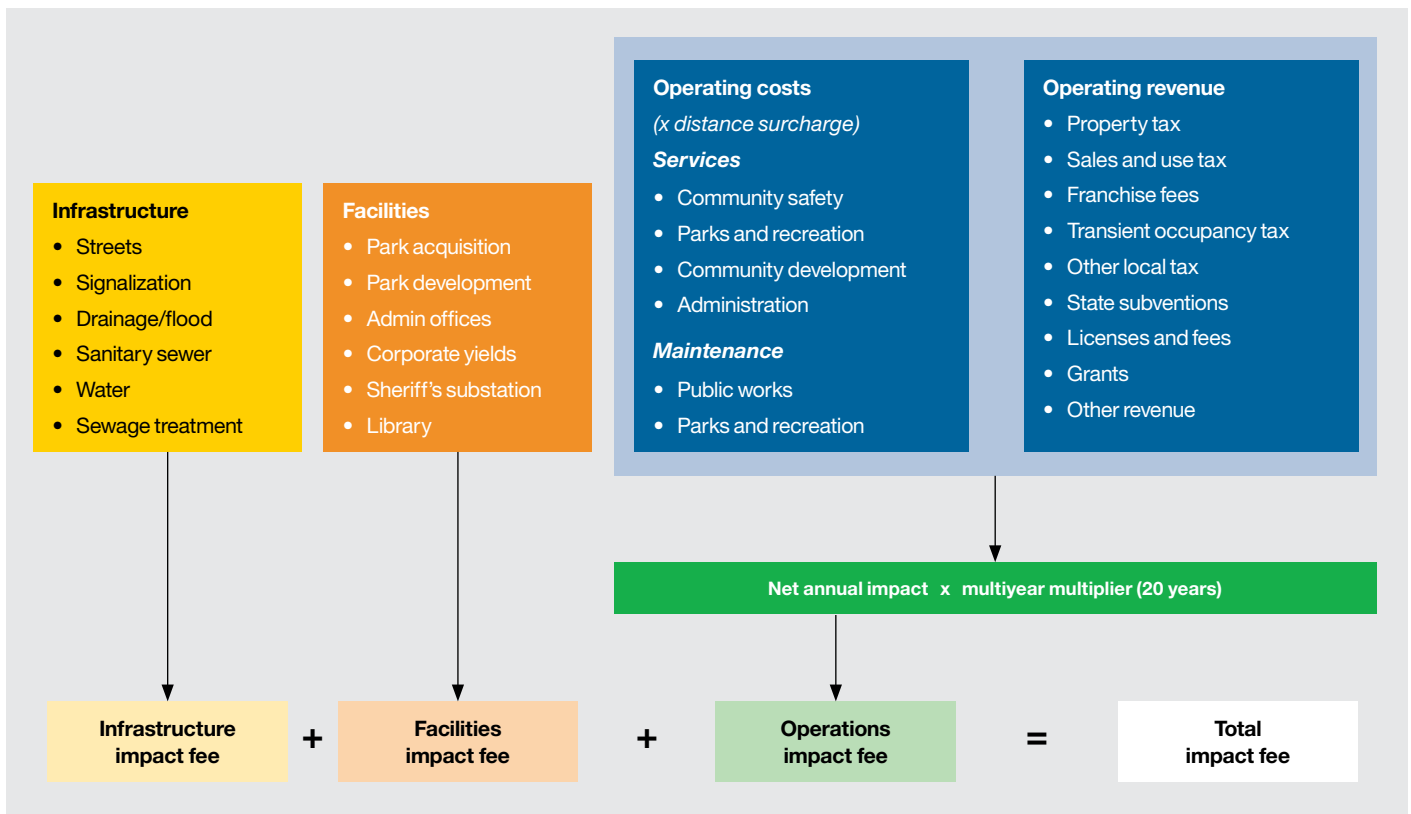


Figure 7
Fee structure for the Lancaster Urban Structure Program

G. References

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