Riverdale e-Village

Technical Report*

Siembab Planning Associates

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Contents

1
From Transit Village to e-Village

This Technical Report has two purposes. The first is to provide the conceptual basis for an e-Village, showing how cyber development can reinforce and extend transit oriented development. The second is to describe the mechanics of developing the Riverdale e-Village.

Technological capabilities have expanded faster than the consciousness, theories and methods of how to use them. Applying the capabilities of new digital technologies to the urban economic and transportation challenges of our time leads to innovative and unique solutions.

Village of Riverdale and Transit Oriented Development

Transit Oriented Development (TOD) is "the design and development of land around transit stations that encourage people to use mass transit within a neighborhood, between neighborhoods and throughout a region. TOD brings more people and more businesses to a station area, increasing the sense of community and promoting a thriving market place." It can, therefore, "spur neighborhood revitalization in disinvested areas."

This definition appears in the Northeastern Illinois Planning Commission's (NIPC) *Building a Regional Framework* series of publications. It captures the complex nature of potential TOD beneficiaries and benefits, which include the region (less congestion and better air quality), the public transit operators (more ridership), and the local jurisdiction (economic revitalization). In other words, TOD holds the promise of improving regional transportation <u>and</u> local economic development.

The Village of Riverdale is motivated primarily by the prospect of the economic revitalization of its downtown area. The large public investment in the Metra commuter rail system is an asset that the Village can leverage.

The Village of Riverdale has two stops (Riverdale and Ivanhoe) on the Metra Electric commuter rail line that connects the Southern Suburbs to the Chicago Loop. A TOD plan for the Riverdale stop, located adjacent to the Village's secondary commercial area, was completed in 2001. Implementation of that plan is currently pending.

The Village of Riverdale received an Illinois Tomorrow Corridor Planning Grant in 2002 to create a transit oriented development plan for its Ivanhoe stop adjacent to its main street (144th Street) and commercial core/civic center. This grant was distinctive in that it was partially used to design an *e-Village*, a 21st Century version of a transit village.

From Transit Oriented Development to Transit Village

The *transit village* is a model of what can be accomplished at each transit stop through TOD. Urban researchers Michael Bernick and Robert Cervero, in their book *Transit Villages in the 21st Century* (McGraw Hill, 1997) describe the ideal transit village:

> "At its core, the transit village is a compact, mixed use community, centered around the transit station that, by design, invites residents, workers and shoppers to drive their cars less and ride transit more. The transit village extends roughly one quarter mile from a transit station, a distance that can be covered in about 5 minutes by foot. The centerpiece of the transit village is the transit station itself and the civic and public spaces that surround it. The transit station is what connects village residents and workers to the rest of the region, providing convenient and ready access to downtown, major activity centers like a sports stadium, and other popular destinations." (page 5)

The transit village is a feature of a compact urban form that is explicitly intended to reduce the high level of dependence on personal automobiles. Low density suburban housing tracts and shopping malls are features of an urban form that require dependence on personal automobiles. Congestion, air pollution, high costs of road system expansion, high costs of road system maintenance, global warming, and dependence on oil are driving the search for ways to reduce the automobile's share of trips-taken, and the number of vehicle-miles-traveled (VMT).

Transit villages are also a politically acceptable solution for higher density infill development. Chicagoland, like other economically successful regions in the nation, is currently addressing the challenge of absorbing growth. In general, growth can be directed to either low density, single function suburban districts on the periphery or to higher density, mixed-use infill in existing urban areas. Higher density, mixed-use at transit stops will be built through TOD projects.

A transit village implies the existence of a vibrant, self-contained market place for housing, labor, and a variety of goods and services. This makes places in need of economic revitalization good candidates for TOD.

Transit Village Characteristics

With an appropriate TOD project, rail-adjacent downtowns like Riverdale's can become ideal transit villages. According to Cervero and Bernick, there are three physical characteristics which significantly increase transit ridership and distinguish transit villages from other urban settings.

"These are the three dimensions, or 3-Ds, of what we believe
make for successful transit villages: Density, Diversity, and
Design. By *density*, we mean having enough residents and
workers within a reasonable walking distance of transit stations
to generate high ridership. By *diversity*, we mean a mixture of
land uses, housing types, and ways of circulating within the
village. And by *design*, we mean physical features and site
layouts that are conducive to walking, biking and transit
riding." (ibid, page 73)

Design and *density* become manifest through bricks and mortar
construction and are determined by traditional physical design expertise
including economics, urban design, architecture, and landscape
architecture. But the third D, d*iversity*, is the key to successful long term
transportation behavior outcomes, yet it is not determined by physical
design, nor can it be built with bricks and mortar, except in the most
general way.

For physical proximity to reduce demand for automobility, all the right
stuff has to be available. Land use and building-type influence but do not
determine the functions that will appear there. Market forces -- the
interplay between market size, capture rate, and cost of a bricks and
mortar storefront -- determine the tenants of the retail and office buildings.
The tenants determine the mix of functions that will be within walking
distance of residences. And market forces do not necessarily bring about a
functionally integrated mix of businesses, services, and residences.

In other words, the retail mix might attract a high proportion of the
adjacent residents, but will be unlikely to satisfy much of the residents'
total demand for retail. And a very small percentage of the residents are
likely to work in the transit village's office space. Basically, spatial market
dynamics generate very complex needs for mobility.

Diversity is influenced by *density*. Higher density implies that more
residents will be within walking distance of more businesses in the same
small area. A transit village with a higher density will have either a wider
mix of different functions (convenience retail, consumer goods, food
service, government service, education, health care, and jobs) or more
variety within the mix (many different restaurants, many clothing stores).

However, without resorting to extreme densities, it is unlikely that any
transit village can provide but a fraction of the functions that residents
travel to access. A regional center of 500,000 square feet of gross leasable
area will typically contain only about 100 or so different retail shops.
While this may provide the variety <u>within</u> the retail function useful to
comparison-shopping, it does not provide a full mix of functions. There
are no education, government, health care, office employment, or social
service functions.

In fact, "mixture of land uses" in the Cervero/Bernick definition of *diversity* may provide too lax a standard for successful TODs and transit villages. Many practitioners assume that several stories of housing above "restaurants, markets, cafes and retail shops" at street level will result in "less traffic and less parking problems" (see "Glendale Envisions a New Urban Village," Los Angeles Times, July 1, 2003).

In order to guarantee less traffic and parking problems, a more specific development standard is needed. Something closer to a mixture of *functions* that occupy the buildings needs to satisfy a high percentage of local needs. The reason that it is not the standard may be the difficulty, if not the impossibility, of accomplishing it with a purely bricks and mortar solution.

Functional integration is the term originating in cyber planning for the condition where the mix of functional opportunities balances with the needs of the local population. *System-wide functional integration* refers to the condition where aggregate resident-needs closely match the functional opportunities over a segment of the rail system.

When the total functions available at the collection of rail stops along the line satisfy a high percentage of trip purposes, the rail system will gain a competitive advantage over personal automobiles.

Limitations of TOD

There are very few contemporary transit villages in America. Interestingly, there are a number of 19th Century transit villages in Chicagoland, due to its long history with the gamut of passenger rail systems. Riverside to the southwest and Oak Park to the west have rail-oriented commercial cores, but widely different residential densities; places like Glen Ellyn and Wheaton to the west have recently improved their historical transit village origins by adding high density housing TODs; and Flossmoor in the Southern Suburbs also has a rail-oriented commercial core – to name a few.

However, none of these excellent transit villages examples have approached a desirable level of functional integration. Most are in fact auto-oriented. Single-function retail malls and office parks thrive throughout the Chicago suburbs.

The limited number of fully realized transit villages even in such a transit-rich metropolis as Chicago is an indication that a purely bricks and mortar approach to reducing auto-dependence is inherently limited in what it can accomplish.

In addition to the failure to achieve a high level of functional integration, other factors that limit the effectiveness of TOD include:

- The time it takes to physically add the bricks and mortar buildings to an area.

   Building can take from two to ten years depending on a variety of regulatory and financial factors. This time frame makes TOD a long run strategy, at best, for both local economic development and increases in transit usage. At the same time, the need for regional automotive alternatives and economic revitalization in specific places are urgent matters.

- The cost of the new construction and additional public improvements.

   TOD is often limited in its scope and impact by scarce public funds for collateral development or a limited potential market, which fails to attract the needed level of private investment.

- The risk of density increasing automobile congestion.

   Whatever the density, infill development has the chance of generating a great deal of automobile traffic if the transit and pedestrian assumptions do not hold true. The transit assumptions are largely dependent on achieving system-wide functional integration. This downside risk is often at the heart of community objections to dense development proposals, and for good reason.

- The relatively modest system-wide changes possible through bricks and mortar additions.

   According to Brookings Institution Senior Fellow Anthony Downs, the livable communities strategy is "partly confounded by the fact that 85% of the developed portions of the nation that will exist in 2020 were already in place as of 2000. Even if radical changes in the form of the to-be-added 15% could be achieved – which is not likely – that would not substantially change the patterns already in place today, which will necessarily dominate the overall picture in 2020." (Downs, 2001)

Transit Village to e-Village

Digital networks, formed through the convergence of computers and telecommunications, are changing the fabric of modern society. The transition is most apparent in the organizational form of private enterprise. Large scale businesses are moving from centralized bureaucracies to network structures which are inherently more flexible and adaptable. This transition is being facilitated by the capabilities of very cost-effective digital technologies. (See Manuel Castells, The Internet Galaxy, Oxford University Press, 2001)

Integration of the same capabilities into spatial reorganization of towns and regions can quickly and affordably result in the benefits of compact urban form without extensive new construction. The terms used to describe these compact outcomes are e-Villages and Cyber Regions.

This document presents the plan for the *Riverdale e-Village.* The Chicago-based planning firm of Farr and Associates and its subcontractors (Farr Team) have been responsible for the traditional TOD plan. The Los Angeles based firm of Siembab Planning Associates (Siembab Team) produced the Riverdale Transit e-Village plan.

The next section describes an e-Village and its cyber planning process in more detail, identifies the Network Station as its engine, and places the e-Village in the context of regional cyber strategy.

2
Cyber Development: The Network Station and e-Village

Cyber development is the process of simultaneously modernizing place, enterprise, and circulation. It incorporates the capabilities of digital technologies into urban development <u>and</u> enterprise development. It is a new synthesis between land use, transportation, and telecommunications, not a technological fix. Cyber planning is necessary for development, and development produces Network Stations, e-Villages and Cyber Regions.

Emergence of Cyber Development

Digital technology has become an essential tool for regional mobility and economic development only in the last few decades. Regulatory changes favoring competition in telecommunications markets and technological advances in digital networks are the two main factors that have created substantial variations among regions in terms of network infrastructure and utilization. Cyber development addresses the opportunities and challenges created by a technology marketplace of rapidly innovating goods and services that are closely linked to success in many endeavors.

The 1984 AT&T Divestiture Agreement was a key part of a government strategy to encourage competition in local exchange, intra-state toll, long distance, and customer premises equipment markets. The transition from a single, integrated, regulated utility uniformly serving over 93% of the population to a plethora of distinct competitive markets with widely varying penetration rates has been influenced by the phenomenon of technological convergence. Technological convergence refers to networks in and between computers becoming indistinguishable from computers in and between networks.

The federal government has consciously encouraged competition and technological convergence in order to obtain high rates of innovation in digital networks and gain the price efficiencies of market competition. Post-Divestiture, the government has encouraged the formerly distinct markets of cable television, telephony, broadcast telephone, direct broadcast satellites, and terrestrial microwave to invest in digital technology and compete in each others markets. Since the early 1990s, the federal government has aggressively encouraged commercial development of the public airwaves which has resulted in a bonanza of digital wireless services and products.

Adding to the pace of innovation, the federal government also fostered the commercialization of its ARPANET into today's Internet. This is perhaps the most powerful transfer of technology in history -- from purely

government applications into worldwide commercial use. A Commerce Department report released on February 5, 2002, found that 54% of all US citizens were using the Internet in September, 2001. That is 26% more people than in September, 2000. The Department estimates that 2 million new users in the United States are going online each month.

Competition inspired by technological innovation set new market dynamics in motion. Coherent public sector cyber strategy, policy and initiatives at the local and regional levels which are only now beginning to emerge, are a response to new challenges and opportunities, such as the following:

- The substantial investment required to provide facilities-based competition in the "final mile" has limited competition in the local exchange market to the most dense or commercially successful cities or districts within cities. Without one or more competitive local exchange carriers (CLECs), public officials frequently worry that the incumbent local exchange carrier (ILEC) will not be pressed to make the appropriate investments to modernize the distribution and switching plant.

- Inter-industry competition and open markets created opportunities for public sector organizations, such as rail transportation authorities, utility districts, and municipal corporations, to join with private sector partners to build network facilities in order to lower their own costs, introduce competition where private competition has failed to materialize, or obtain discretionary bandwidth.

- Web page design, key word selection, and registration with search engines have all become important factors for the modern business to manage. This applies to existing businesses selling traditional products – but now selling to an international audience. It also applies to entirely new products that would not have existed without the Web. "[These examples] don't represent new ways of selling the same old things but new ways of creating new markets for products or services that would not have existed in the 'old economy'." (Esther Dyson, "On Web, Imagination Knows No Bounds." Los Angeles Times, September 11, 2000)

- Average annual improvements in price-performance ratios for digital network technologies are unprecedented. Capabilities increase while prices decrease. This makes digital network technologies essential to business success as the competitive market rewards those firms that can reduce their costs of production and distribution. Land, labor and buildings do not share the price performance profile of cyber technology. Therefore, substitutions of cyber technology for land, labor and buildings can yield substantial benefits.

- The customer premises equipment market has become more competitive and innovative. In 1980, a handset in a New England village store was virtually the same as the one on a Hollywood producer's desk. It was designed by Bell Labs and manufactured by Western Electric. Product innovations were limited to shape and color. Today, most household consumers, governments, non-profit community organizations, and businesses small to large, struggle to understand their options. Identifying their needs, linking those needs to a line of products and making a cost-effective purchase decision is beyond the capabilities of many organizations.

- In the post-Divestiture market place, devices at the customer's premises have required an entirely separate capital investment by each consumer. Formerly, the consumer leased the equipment with the costs bundled with the price of basic telephone service. As noted, virtually every consumer had similar equipment. Competition has resulted in a vast difference within a single community in network access. The disparity in the ability to access digital networks has been labeled the *digital divide.* The disparity can be measured in terms of race, age, education, income, and residential location.

- The access disparity worsens at the level of network <u>utilization</u>. Each device requires an organized enterprise-purpose and a certain amount of technical knowledge by the staff for it to be routinely used. Many high-end technologies sit under-utilized because the usage has not been built into normal business practices, or few people know how to master the device's user-interface. Video conferencing is an example.

Creative and powerful strategies to address the challenges and capitalize on the opportunities are only now beginning to emerge. Although much has been made about regional vitality depending on high capacity network <u>infrastructure</u>, network <u>utilization</u> is a more effective objective. Even in places with poor infrastructure, nothing attracts investment in supply like increasing demand.

Cyber Planning and Development Defined

State of the art cyber development is an aggressive, strategic <u>use</u> of digital networks as an enterprise transforming and a space transforming activity.

Cyber planning and development are realized through four initiatives:

- Modernization of place. Retrofits existing commercial, civic, and industrial <u>centers</u> with technology and virtual functions so that the new mix of functions in each will provide the goods, services, and economic opportunities needed by those in the adjacent market area.

- Modernization of enterprise. Provides the leadership and technical assistance for using the tools of e-commerce and e-business to create more agile, demand- responsive, distributed organizations, no matter the industry. Public institutions, non-profit organizations, and private firms of all sizes are candidates for modernization.

- Modernization of circulation. Retrofits streets to accommodate a mix of vehicle types and introduces a family of neighborhood vehicles, including GEM cars, golf carts, Segways, Vespa scooters, and so forth.

- Coordination of the other three cyber initiatives with each other and with the ongoing transportation, land use, and economic initiatives in the region.

This definition of cyber development differs from current transportation and economic perspectives on digital technology. It may be useful to review these existing models in order to appreciate the intellectual challenge of incorporating new thinking, and to understand what cyber development is not. Transportation and economic institutions have each incorporated the stunning capabilities of digital technology conservatively, within existing concepts.

From the transportation perspective, digital initiatives occur in two forms. One is as transportation demand management (TDM), a category that also includes car pooling. The practice of telecommuting, for example, is seen as reducing demand for travel by substituting telecommunications for a work trip.

Digital initiatives also occur as transportation system management (TSM). This leads to computer controlled traffic signals, freeway message boards and other "smart highway" enhancements.

In contrast, by integrating transportation concepts based on physical movement with cyber concepts such as virtual presence and time displacement, the power of digital technologies can be used to re-organize urban form in order to dramatically change the structure of demand for mobility services. In other words, the challenge is to use digital technologies to generate, not eliminate trips. But the trips generated will be shorter and the destinations fewer and more compact. Short average trip length terminating in a hierarchy of centers can be satisfied in many more ways than by the current modes of auto, rail, and bus.

From an economic perspective, digital initiatives if they are formulated at all, occur as a variant of the familiar *industrial attraction model* for economic development. In this model, a new telecommunications infrastructure is used to enhance the attractiveness of a place to industries that are information intensive, such as the securities industry. Earlier examples of the infrastructure/market approach include cities in the 1950s that developed municipal electricity generation capacity in order to sell

below market-rate power as a strategy to attract aluminum and other electricity intensive industries. The new Millennium version of this phenomenon is ensuring that target districts are rich in bandwidth.

In contrast, by integrating land use, transportation and cyber concepts, it is possible to modernize existing businesses, especially small business in any industry, so that they not only grow but become more agile; adopt a more distributed structure which requires less travel by employees and customers; and appear virtually as part of spatial revitalization efforts. For research findings supporting the proposition that economic growth depends on enterprise modernization through digital technologies, across all industries not just technology industries, see "What the IT Revolution Means for Regional Economic Development," Paul Sommers and Daniel Carlson, Brookings Institution, February, 2003.

The *build it and they will come* premise seems to work with highways but not digital networks. The emphasis needs to move from providing infrastructure to encouraging full utilization of whatever infrastructure exists. Network *use* is <u>directly</u> linked to many desirable economic outcomes. Consider the following observations:

> "You can be wired to the hilt, but without determination and a clear plan for its use, it is of little consequence… Integrated business applications and supportive government that understands, encourages, and applies technology to manage their cities are key elements to making a city [successful]… [Network utilization] must be pervasive throughout the community and systemic. It must be evident in everyday business, residential, healthcare, educational, cultural, and recreational pursuits of a city."

> John G. Jung, Presentation at Teleport '98 London: Cities and the Wireless Economy

> "If e-business is understood as the commercialization of the Internet by dot.com firms, this would be an interesting, innovative, and sometimes profitable business, but rather limited in its overall impact. If ….. the new economy is based on unprecedented potential for productivity as a result of the uses of the Internet by all kinds of business in all kinds of operations, then we are entering a new business world."

> Manuel Castells, *The Network Galaxy*, 2001, Page 5

> "For the most part, today's movement [to bring new technologies to low income communities] remains focused on closing the gap in access to technology as an end in itself. But isn't the real promise more profound and far more important? Isn't the real challenge about what people and institutions do with the technology once they have access to it? Isn't the

ultimate possibility to apply the technology's potential to address the underlying challenges that are the true source of fundamental divides in America?"

Mario Morino, from Keynote address at the Department of Commerce's "Networks for People Conference," 2000

Cyber Capabilities

Using technology – using technological capabilities – increases the capabilities of the user. The power of cyber development to contribute to regional transportation and economic development is based on core capabilities of digital networks. Five are discussed.

Spatially relocate urban functions

Digital networks make it possible to spatially relocate those urban functions that do not absolutely require face-to-face interaction. Access to electronic markets and virtual developmental resources can be moved into depressed areas, including declining shopping malls, abandoned central business districts, or residential slums. A broad array of services can be added virtually to neighborhood centers or other places convenient to consumers such as public transit stations. If pursued comprehensively at the regional scale, urban form can be consciously reorganized into an activity pattern easier to serve with public transportation and low impact private vehicles.

Temporally expand the window of access

Digital networks make it possible to expand access to information and some transactions to 24 hours a day, 7 days a week including holidays. This significantly improves service delivery to people who can't call or travel to the bricks and mortar service center during normal work hours.

Reduce cost per transaction

Automated machines, expert systems and Web sites are deployed by various enterprise types to reduce transaction costs. For the most part, these systems empower consumers to satisfy their information searches or complete their transactions in direct interaction with the network. This can range from making fundamental product design choices as in the role of Toffler's *prosumer* (a contraction of producer and consumer described in The Third Wave, William Morrow and Co., New York, 1980) to routine data entry associated with banking withdrawals from an ATM.

The following data quantify the benefits in different contexts.

The private sector provides many examples of significant cost savings from migrating customers to Web-based applications. The Air Transport

Association estimates that it costs airlines between $6 and $8 to print and distribute paper tickets, but only $1 for an e-ticket. The banking industry estimates that the cost of conducting basic transactions with a bank clerk is approximately $1, $0.25 at an ATM, but only $0.01 to $0.02 online. FedEx believes it saves $10 million a year from customers who track packages online instead of contacting its call center. Cisco, arguably the most successful user, and proponent, of e-business, states in its 1998 annual report that in that year the company saved over $360 million, 17.5 percent of operating expenses, by moving $4 billion of its business online.

Forester Research published the following cost per channel across industries in 2000.

Channel	Cost per Transaction
Telephone	$33
E-mail	$10
Web	$1.17

These transaction costs suggest that fewer people and less office space will be needed for routine tasks. This also means that some functions can appear virtually in many more places than they could if bricks and mortar were the only option. A bricks and mortar mall with 500,000 square feet requires from 100,000 to 500,000 people within 2 to 5 miles of the center in order to be economically viable. A clothing store of about 3,600 square feet requires annual sales per square foot of $185.

Shared portals to e-commerce such as a kiosk or a Network Station make it possible for a large retail mall, for example, to appear virtually in a small village center. In other words, virtual presence is not constrained by the same economic factors as bricks and mortar, such as market density and the number of cars that pass-by.

Empower small groups and individuals

Micro business – one to ten or more person-offices – can use digital technologies to perform a broad scope of functions previously requiring a much larger workforce.

Although a dramatic and unfortunate example, consider what a single individual accomplished as an employee of Reliant Resources Inc. of Houston. "With a fast computer, three telephone lines, a television tuned to weather reports, and a steady supply of coffee, Zanaboni bought and sold natural gas swiftly and aggressively. Regulators call it 'churning' and contend that she single-handedly cost households and business nearly $3 billion in the winter of 2000-01." ("How a Lone Trader Roiled the Energy Market," Los Angeles Times, April 20, 2003)

The Al Queda attacks on the World Trade Center are another tragic but powerful example. Less than a hundred people were able to plan and stage this devastating attack using computers, e-mail over the Internet, electronic funds transfer, ATMs, and telephones including pay, residential, cell, and satellite phones.

Another reason for empowerment is the lower cost per transaction discussed above for customer service, and applied here to intra-firm transactions.

Concur Technologies, quoted in Newspage.com Inc., August 30, 1999 cited the following savings for routine internal transactions:

Costs of Paper-Based Vs Electronic Activities

	Paper-Based	Electronic	Savings
Procurement	$98/Requisition	$10/Requisition	90%
Travel Expense Management	$36/Expense Report	$7/Expense Report	81%

E-commerce saved Bristol-Myers-Squibb $2.5 million per year in employee hiring expenses, and reduced the time required to process a new-hire from 1 week to 1 day.

This can mean that large firms need fewer people, or that few people can accomplish a great deal in a short span of time. Small and micro business should be able to prosper by mastering these technologies.

Substitute for land, labor, and buildings

In a growing economy, land, labor, buildings, and transportation costs inexorably rise over time. Digital technologies have historically declined in unit costs over time. Moore's Law, coined by Gordon Moore, co-founder of Intel in 1965, says essentially that digital capabilities double every 18 months for constant dollars. Therefore, productivity increases and costs decrease whenever a firm or a region can substitute digital technology for land, labor, buildings, or transportation.

To cite just one example, speech recognition technology is now routinely deployed by airlines to answer queries about flight arrivals and departures, and by telephone companies for directory assistance. This reduces the need for professional staff to perform routine, repetitive information tasks.

Transit Village Limitations -- Revisited

The capabilities described above are now available to planners and developers for quickly and affordably realizing functionally integrated transit villages – as e-Villages.

- Time – Because nothing need be built, the e-Village can become operational in less than a year.

- Cost – Because nothing need be built, an e-Village is relatively inexpensive to develop. In addition, recent research funded by the Mineta Transportation Institute found that a family of digital network services were perceived by TOD developers as catalysts for their bricks and mortar projects. (See Siembab, Graham, and Roldan, 2001).

- Function – Because the number and type of functions that appear in the village core can be established through the cyber planning process, functional integration can be approached. Specifically, the right functions for an economic development strategy can be guaranteed.

- Risk – Because cyber development creates a framework for functional integration at a target distance, infill projects can be designed to add the <u>right</u> functions. Individual bricks and mortar projects can add appropriate amounts of housing, retail, and office for achieving functional integration, thereby reducing the risk of transportation assumptions failing. This might be called *making sprawl smart*, and *making smart growth smarter*.

- Existing built environment – Because cyber development retrofits the existing built environment, the 85% of the buildings in 2020 that are here now can be quickly and affordably made to function differently.

Cyber Development Types

Cyber development produces new types of facilities and centers – Network Stations, e-Villages and Cyber Regions. Because the Network Station is the engine that drives both the transportation and economic outcomes of cyber development, it will be described first.

Network Station

A Network Station is a non-profit, shared-use, mixed-function facility for digital communications. Its functions are *programmable* rather than fixed like in a school, bank or post office.

Mixed function means that the facility will provide access to a variety of digital technologies and the virtual presence of a variety of functions, such as education, health care, business meetings, small business counseling, vocational training, government services, etc. The mix of functions leads to transportation benefits. Shared-use leads to economic benefits.

Shared-use means that the facility will accommodate different communities of users. They include:

- Organizations which are service providers located outside the Village and capable of creating a virtual presence inside the Village. Hospitals, schools, and federal agencies can use the same space on different days. Institutions of the same type can also share. For example, no single college will need a proprietary distance education classroom because every participating college can share the same ones.

- Local consumers of the services which are imported into the Network Station from organizations elsewhere in the region.

- Local producers of services and other types of content which are consumed locally or exported to other villages or regions.

Shared-use accommodates certain functions that are inherently best experienced as a group activity such as forms of education, culture and entertainment.

And it improves the utilization of digital technologies by individuals and small businesses. It is widely believed that a public shared facility is not needed because every business and household is capable of effectively using its own technology. But there are several kinds of barriers to the effective use of technology, which a shared, public facility can help overcome. Those barriers include:

- Fear: Some people in every community are technophobic, actually afraid of digital technology. Encountering these devices in a friendly neighborhood environment can help many people overcome these fears and use the tools to become more productive.

- Awareness: Another group is simply unaware of their own needs, what digital technology can do for their home or business.

- Knowledge: Some people and small businesses have adequate technology budgets, but innovation moves so quickly that it is hard for them to stay current. They need an introduction to new technologies as they come available. They can benefit from a hands-on encounter with the new devices in order to find out which technologies satisfy which needs, and which brands are the most cost-effective.

- Skill: Many users don't master the machines they already own and a substantial portion of the capabilities goes unused due to this lack of mastery. This idea was captured by a joke popular in the 1980s that most people had VCRs with 12:00 blinking because they could not set the timer and therefore could not have the machine record automatically.

- Demand: Many consumers require only occasional use for many technologies, where purchase would be uneconomic due to significant idle periods. For example, some consumers will, no matter the circumstances, only occasionally surf the Web. For these people, high speed data service at home would result in extremely high per-hour costs. A slide scanner (and related software) or computer projector are examples of devices for which demand would be no greater than sporadic for many people.

- Cost: those who can't afford to purchase new or high quality technologies and services.

In order to accommodate the mix of uses and the range of users, the Network Station provides non-commercial access to digital technologies, furnishings, and support staff in an array of *settings*. Settings can include private office, meeting room, training center, public service counter, classroom, audio/video production studio, medical examination room, retail shop, etc.

There is, in addition, the possibility of equipping a Network Station with back-up electric generating capacity so that the facility can function for post-disaster recovery and safety.

A Network Station is flexible in terms of scale and as well as functionality.

Network Stations can be developed at scales that include the neighborhood, village/town, city, and region. Dense urban areas will have a few large facilities, while suburban areas will have many small facilities. The total number and location of each should be determined by the economic geography and transportation infrastructure of the region.

Possible sites include a typical village center, retail mall, or office park. Each facility should initially be established in existing vacant space, allowing it to be deployed in a relatively short period of time.

Bricks and mortar buildings change functionality by the time-consuming process of changing tenants, often accompanied by costly building renovations. In contrast, the functions of a Network Station are programmable. They can be changed as the demands of the public change, for example, from shifts in demographics over time. While an aging population requires social interaction and telemedicine, a population of young families requires access to distance education and workforce

training. Entrepreneurs need small business assistance and technology resources. And so forth. *Virtual functionality is programmable*.

A Network Station is also a center for innovation and innovation diffusion. The tools allow local users to create innovations, and they also provide a platform for the diffusion of the innovations of others. The diffusion possibilities range from new government programs to new technologies.

E-Village

The e-Village is a hyper-compact, functionally-rich, face-to-face community known for its culture of innovation. Its functions are a combination of face-to-face and virtual. Its occupants use a variety of digital technologies as part of routine business practice. An e-Village is compact and functionally integrated. Various low impact private vehicles as well as traditional and innovative forms of public transit provide alternatives to high performance vehicles. An e-Village is developed primarily by a technology retrofit, accompanied by some bricks and mortar construction. It is an enhancement to a transit village or a traditional neighborhood.

Five characteristics are discussed – activity center, communications center, unique place, mix of vehicles, and center of innovation.

Activity Center

An e-Village is a hyper-compact activity center in that there will be more functions per square foot than in a purely bricks and mortar center. Because of the economics of virtual presence, big city functions will appear in the small e-Village center. Like other activity centers, the e-Village will attract visitors, primarily from the village itself, adjacent villages up to a couple of miles away, and from the public transit system. Its hyper-compact mix of functions will allow a high degree of trip chaining.

Communications Center

The Network Station connects the community to other e-Villages in the region and metropolitan area, and to communities elsewhere in the world. But the e-Village will also be the center of community life, dense with face-to-face communications.

Mix of Vehicles

Diverse means are used for circulation within the e-Village and its surrounding one to two mile market area. These means include walking, cycles, skate boards, Segways, mopeds, motor scooters, neighborhood vehicles, public shuttles and short hop buses. It may include a rail or

traditional bus transit service, but it is not necessary. If there is a rail transit stop, then it is near the center of the commercial core. There are electric charging stations and a car sharing program that offers neighborhood vehicles. The streets accommodate a mix of vehicles simultaneously.

Unique Place

One of the complaints about suburban malls is the sameness of the architecture and the tenants. An e-Village is based in the original unique design of the place, enhanced with landscaping, lighting, awnings, sitting opportunities, wider sidewalks, and so forth. An e-Village will have extended hours of service, but most likely not approaching 24 hours except in the larger villages. Local retailers will be able to compete with large chains in the local face-to-face marketplace by becoming bricks and bits retailers, and by using digital supply chains, automated inventory management systems, and so forth. The activities present are geared to the needs and interests of local residents, employees, shoppers, businesses, community-based organizations, and institutions.

Culture of Innovation

An e-Village has an aura of the modern, even if it is physically set in traditional or retro architecture. Visitors will know they need not have cash to conduct transactions as businesses will have digital point of sale capabilities, and there will be ATMs for those who prefer cash. There might be self-scanning check-out, or a *pocket* department store in 10,000 square feet. New residents and new businesses are there because they are attracted by innovation. The restaurants cater to a diverse set of families, students, artists, policy makers, government employees, and entrepreneurs.

Cyber Region

A Cyber Region has adopted a cyber strategy for regional transportation and economic development. This region would be organized around a comprehensive system of digital centers – network neighborhoods, e-Villages, and large cyber districts. Functional integration would occur within a two-mile radius of every neighborhood.

Public institutions and private enterprises in a Cyber Region are sophisticated users of digital technologies. They provide content to the digital centers in the region, as well as to institutions, enterprises and digital centers elsewhere in the world.

A Cyber Region has few single function buildings (e.g., city halls have become multi-government centers, elementary schools are community learning centers) and few single function centers (e.g., suburban malls

have been re-developed into mixed-use centers with functionally integrated shopping-housing-employment).

The various economic facilities in the region, such as bridges, ports, airports, freeways, and industrial complexes, have a high rate of throughput.

The constituency is capable of self-production of many services, such as using the city Web page to access city services, reserving a recreation field for example.

Public sector decisions at all levels in the region are made quickly. There are few bureaucratic barriers.

Innovations, whether new technology or new government programs, quickly diffuse throughout the business, government, and non-profit communities as well as through the general population.

Social equity has been improved narrowing the gap between rich and poor and reducing the spatial concentration of wealth and poverty.

Regional mobility is not dependent on high performance automobiles. Alternatives including walking, an array of low impact vehicles, and new forms of public transit have been developed to complement traditional rail and bus services.

Land has been reclaimed from automobile use – parking lots and street medians have been re-used in ways that contribute to functional integration of each village.

A Cyber Region has the institutional infrastructure to plan and implement the various initiatives that guide and maintain the transition.

3
Setting
The Village of Riverdale and the South Suburban Region

This section examines the compatibility of cyber development of an e-Village with key conditions in the Village of Riverdale and the greater South Suburban Region.

Village of Riverdale

Riverdale has the physical structure of a transit village. It has a traditional *main street* (144th Street) which runs through the village's commercial core and civic center. The Ivanhoe Station on the Metra Electric Line sits above 144th Street near the center of the commercial district.

Functional Content

While the Farr Team report recommends additional density along with some physical design improvements, the <u>central</u> problem in the Riverdale commercial core is the lack of functionality. While many people pass through (1,100 per day catch the train there, and 11,000 pass through on the train) and over 15,000 people live in Riverdale, the commercial core serves as a market place for relatively few of them. This situation becomes self-reinforcing. There can be no commercial growth until some portion of the visitors stop and shop; no one will stop and shop until there are more functions available.

An inventory of bricks and mortar functions was conducted in order to establish a baseline and determine what's missing. According to the field survey of the commercial district on 144th Street, which runs between Normal Ave. on the west to Clark St. on the east, there were 38 businesses (in addition to government) occupying about 50,000 square feet. They are all sole proprietors with a small market base.

Functions can be described in two dimensions:

- Mix – the number of different functions.

- Variety – the number of options within each function.

The functional mix with the variety within each function is as follows:

- Personal Services   10

- Professional Services   7

- Retail   6

- Child Care   3
- Business Services   3
- Food/Beverage   3
- Convenience Grocery   2
- Laundry/Cleaners   2
- Medical Services   1
- Business Services   1

In addition, the following government facilities were in the commercial core:

- Village Hall
- Public Library
- School District 148 Administration

Although residential neighborhoods are directly adjacent to the commercial core, there are no dwelling units mixed in with the commercial buildings. The area contains about 125 jobs, mostly in administration of the Village and School District 148.

Important functions missing entirely include education; other levels of government such as township, county, state and federal levels; medical (except for a single dentist); cultural, and social services. Functions present but lacking in variety include food/beverage, business services, and retail.

Farr and Associates and its subcontractors (Farr Team) developed a traditional TOD plan that will add buildings, and therefore functions, to the village core. That TOD plan has five phases.

Phase 1   Rehabilitate 15,000 square feet of vacant "boxes." Village adds minor road work, landscaping, crosswalks, amenities.

Phase 2   Add 15,000 square feet of commercial and 50 dwelling units.

Phase 3   Add 15,000 square feet of commercial and 43 dwelling units.

Phase 4   Replace the "boxes" with a new 11,000 square feet of commercial for a net loss of 4,000 square feet.

Phase 5   Add 20 dwelling units.

Phase 1, currently underway, will provide the preferred location for the Network Station. Phases 2 and 3 are dependent on market conditions and could take 10 years to realize. Phase 2 is likely to be built within 3 years due to a projected housing shortage in Riverdale by 2006. Phases 4 and 5 are quite speculative and they are not expected before 2013.

In other words, the TOD plan is to bring 15,000 square feet of vacant commercial space onto the market immediately, then build 15,000 square feet and 50 dwelling units within 3 years, and a final 15,000 square feet and 43 dwelling units 3 to 7 years after that.

These are reasonably conservative plans compared to the Farr Team market study which estimated that the commercial core could support over 100,000 additional square feet of commercial space. The next three years have been planned for only 30,000 square feet and 50 dwelling units. This is equivalent to less than 15 new businesses and 100 new residents.

The Farr Team report identifies the following types of business which could be supported on 144th Street."

- Grocery store – 10,000 to 20,000 square feet

- Variety store – 5,000 square feet

- Women's clothing store – 3,600 square feet

- Hardware store – 11,000 square feet

- Specialty stores such as bakery, ice cream shop, children's clothing, shoe store – 2,500 square feet each

Based on the TOD plan, only a few of these businesses will find space available in the village core. It is fair to conclude that only minor additions to the functional mix and variety will be available in bricks and mortar in the Riverdale transit village over the next ten years.

The Network Station and e-Village development could substantially change this picture. The Network Station is projected to introduce a number of education, training, government, and business functions to the area within nine months of receiving initial funding. The wi-fi *hot zone* should cause some commuters to linger in the district after alighting from the Metra train.

The Network Station could also become a catalyst for the needed private investment. With aggressive marketing, it may be possible to cut the development time for Phases 2 and 3 in half, with 30,000 square feet and 93 units being built before 2008. See "Using Fiber Networks to Stimulate Transit Oriented Development: Prospects, Barriers and Best Practice," by Siembab, Graham, and Roldan published by Mineta Transportation Institute, San Jose State University, December, 2001.

The *culture of innovation* associated with the e-Village should attract different types of business into commercial vacancies as they occur. Technology sales and repair, business services such as photocopy, and a variety of food services are good candidates. Added to the existing demand for traditional businesses identified by the Farr Team, they could have the effect of increasing the potential for bricks and mortar building in the Village core.

The Public Library, School District 148 administration, and the Village administration are the strongest candidates upon which to build the culture of innovation.

Transit Access

While one of Riverdale's assets is the Metra Electric, the system provides <u>commuter</u> rail service, its chief purpose is to collect people in the south and take them to central Chicago and back. Service is not oriented to circulation between stops in the south. Nevertheless, the Metra Electric line will provide some access from adjacent stops to the Riverdale e-Village.

The Metra Electric main line connects the Randolph Street Station in Chicago with University Park in the Southern Suburbs. Ivanhoe is the 21st of the 33 stops on the main line. However, probably due to parallel service by the Chicago Transit Authority, most southbound trains from Chicago are express to Kensington (the 19th stop) until the #143 which leaves Randolph Street at 7:20 PM – and then the interim stops between 59th Street and Kensington are "flag" stops. This means that in practice, the Ivanhoe Stop can draw southbound Metra riders from no further than two stops north at Kensington (115th Street), including Riverdale, except after 7:30 in the evening. The ride-time from Kensington to Ivanhoe is 7 minutes and the distance is 3.7 miles.

The northbound schedule provides better service to Ivanhoe with a number of local trains from University Park throughout the day. The ride-time is 25 minutes from University Park, and 14 minutes from Flossmoor (6.7 mile distance), six stops south of Ivanhoe. The southbound schedule out of Ivanhoe provides adequate return service throughout the day and evening.

It is reasonable to assume that the Riverdale e-Village and Network Station will be able to draw visitors via Metra from Flossmoor on the south to Kensington on the north – a span of 8 stops over 10 miles in distance.

According to the Metra 1999 On-Board survey, about 11,500 people per day pass through the Riverdale core while riding the train. This is in addition to the approximately 1,100 who get on and off at the Ivanhoe Stop. These Metra riders provide a second group that might stop in Riverdale on either the inbound or outbound leg.

Market Area

Riverdale sits in a cluster of independent cities and villages as well as the southern tip of Chicago. The following table provides the approximate distances from the Ivanhoe Stop in the village core to some of the adjacent jurisdictions

Jurisdiction	Miles from Riverdale
Dolton	1.8
Harvey (Metra stop 23)	2.2
Phoenix	2.2
Dixmoor	2.3
Calumet Park	3.6
Robbins	4.9
Blue Island	5.1
Calumet City	6.1

These distances suggest that the Riverdale e-Village and Network Station will be able to draw visitors from the 4 nearest cities, and particularly Dolton. This prospect is consistent with the Metra 1997 License Plate Survey which found that 33% of the cars in the Ivanhoe lots originated in Dolton. Surprisingly, 12% of the cars originated in Calumet City, about 6 miles away. This suggests the Network Station may be able to attract visitors from an even greater distance than just the immediately adjacent communities within a radius of two miles or so.

Residents of Dolton, Phoenix, Dixmoor and parts of Harvey are likely candidates along with residents of Riverdale for access to neighborhood vehicles, once that element of the e-Village is implemented.

Remote Destinations

The following table provides the distances from the Riverdale village core to various destinations elsewhere in the Southern Suburbs. These destinations are where some services originate, jobs are located, or meetings occur. Each is a candidate to appear "virtually" in the Network Station.

Retail Centers	City	Number of Stores	Distance
River Oaks	Calumet City	119	6.4
Flossmoor Community Shopping Center	Flossmoor	25	9.3
Orland Square	Orland Park	146	18.8

A number of retail malls are located on Torrence Avenue, near the River Oaks Mall. It is fair to say that the primary retail center for Riverdale residents is about 6 to 8 miles away.

Service/Meeting Centers	Function	City	Distance
South Suburban College	Education	South Holland	2.5
South Sub. Mayors & Managers Assoc.	Services & Meetings	East Hazel Crest	4.8
Chicago Southland Chamber	Services & Meetings	Homewood	5.9
Matteson Hall	Meetings	Matteson	11.8
Governors State Univ.	Education & Bus Services	University Park	16.9

These distance tables suggest that arranging for the virtual presence in Riverdale of functions located throughout the Southland has the potential for significant savings of vehicle trips and vehicle miles traveled.

South Suburban Region

Riverdale is in the northeast corner of a region within the Chicago Metropolitan Area known as the Southern Suburbs. The whole of the south metropolitan area has a population of almost 1.2 million people.

In general terms the eastern portion of the region consists of a set of comparatively older, manufacturing-oriented compact villages, several with Metra service. The western portion is generally newer, lacks the same level of commuter rail service as the east, has more high end suburban housing developments, and has a more diversified economy.

The Southland is highly fragmented with 93 municipalities, 111 school districts, and dozens of specialized local governments. It is also diverse in that the region has small economically depressed industrial cities, a number of small low income minority communities, and the full range of urban, suburban and rural towns. Most of the communities are under 15,000 in population with only three in excess of 50,000.

This region is not a "typical" suburban environment outside a central city. Rather it is a region that grew up alongside Chicago, with many areas as old as Chicago. Its rich variety of communities grew up around productive agricultural areas, transportation lines, market towns and industrial districts. A critical element was its development around a booming industrial steel-producing complex in the bi-state Calumet region, the recent decline of which has caused economic distress over the past twenty-

five years. Four industrial satellite cities had their own industrial and commercial base, much of which also disappeared in the 1970s and 80s.

Regional Deficits

The part of Cook County immediately south of Chicago includes six out of the eight predominantly low-income minority municipalities in the metropolitan area. These and other communities in south Cook County have the highest property tax rates in the state, limited alternatives for other taxing resources, crumbling commercial centers including a huge empty regional mall (Dixie Square Mall), areas of rapid economic and racial change, and, until recently, relatively little contact between groups working for economic and environmental progress.

The booming economy that has had a dramatic impact on the suburban regions north, northwest, and west of Chicago has had little impact on the southern region. Among the communities with the most limited resources, Ford Heights had the unfortunate distinction of being labeled several years ago by *The Chicago Tribune* as the "poorest suburb in America."

Along with the economic struggles for the region, for over 70 years the Southern Suburbs have also served as the primary affordable housing choice for many low and moderate income families. A large percentage of minority households have moved south from the City as communities in other suburban regions have resolutely stood against the integration of their housing, both in terms of race and in providing affordable housing options.

Thus there have been powerful demographic and economic shifts, major areas of disinvestment, and a lack of interest and understanding across the metro region in regard to the dynamics and deficits of the Southern Suburbs.

Although organizations and institutions throughout the Southland have attempted various forms of collaboration to address the issues raised by these conditions, the multiplicity of local governments, small scale responses and the lack of strong regional resources historically have led, until recently, to a series of divided efforts. In the competition for funding, particularly in support of public infrastructure, the Southern Suburbs have historically been on the short end.

The region has pockets of unemployment. For example, Riverdale had a 20% unemployment rate when it lost its largest employer, Acme Steel, early in 2002. (Recent efforts to replace Acme Steel at the same location have been partially successful). The unemployment rate also indicates that there are too many people with industrial skills in an information economy.

The industrial past has also left a legacy that must be overcome. There are over 200 brownfields in Riverdale alone, and many more scattered

throughout the Southland. The primary rail corridor for moving freight in and out of metropolitan Chicago runs through the Southern Suburbs. In an industrial economy, location along that corridor was an asset. Without heavy industry, what remains are many grade crossings, two-lane underpasses, and narrow bridges which constrain automobility and truck freight. In other words, the existing street infrastructure is a liability in many areas of the Southland, particularly on the east side.

At least some of these deficits can become assets in a regional cyber development initiative.

- The political fragmentation into many villages also implies a geography of multiple small centers – perfect for retrofitting with Network Stations and neighborhood vehicles.

- Malls in decline can provide opportunities for cyber-driven renewal, including adding housing and jobs in bricks and mortar.

- The relatively low income of many of the communities, combined with the historical lack of regional investment will support a strong social equity argument in most grant applications.

Regional Assets

The Southern Suburbs is spatially organized into 93 relatively small places. Effective pursuit of significant initiatives and substantial resources to implement those initiatives depends on collaboration and leadership. One of the assets to build upon is the well- established South Suburban Mayors and Managers Association. New approaches to workforce preparation, environmental preservation, and other regional issues are emerging through local partnerships and cross-boundary collaborations involving educational, municipal, business and not-for-profit groups .

The region's history of active efforts at establishing consciously-managed integrated communities is a successful initiative to build upon, in part because it is consistent with the housing component of transit oriented development. Park Forest provided the early leadership by developing a national model in the late 1950s for creating a racially integrated suburb. Throughout the 1970s and 1980s, Park Forest, University Park, Matteson and others gave municipal leadership to various strategies for supporting open housing and maintaining integrated communities.

The South Suburban Open Housing Center emerged out of this work. Today, Diversity, Inc. operates as the municipal expression for addressing open housing and integration concerns across the broad south/southwest region. Diversity, Inc. is also the home of an innovative effort, "The Community Vitality Program." This seeks to "reposition" the South Suburbs in the metropolitan market place in the manner one might more traditionally "reposition" an under-performing product. This is consistent

with the *innovation branding* being proposed as part of the e-Village development.

In addition to and because of such efforts, some Southland villages are experiencing demographic shifts at a slower rate than occurred a generation ago. Assisting with this are a plethora of organizations and municipal efforts active in the region, tackling specific pieces of the puzzle, often in collaboration with other groups.

Some Southland communities are economically distressed. Brownfields, disinvestment, and racial concentration tend to drive new development (and population) away from already established mass transit corridors. This trend should make the Riverdale e-Village pilot project especially significant to the regional transportation and planning institutions including NIPC, RTA, CATS, and Metra. Investment of transportation funds in e-Villages could support these communities as they seek to overcome their distressed conditions.

The reality of an economic renaissance in the Southern Suburbs could also contribute to the value of existing Metra investments. If the Southland *brand* which has come to be synonymous with *industrial wasteland* could be changed to *culture of innovation*, then the brownfields in the southeast could more effectively compete for some of the development currently headed for the greenfields in the southwest.

The strong institutional infrastructure is perhaps the most significant asset in relation to cyber development in the Southern Suburbs. The South Suburban Regional Higher Education Consortium, School District 148, the various social service umbrella organizations, the Southland Mayors and Managers Association, and the Chicago Southland Chamber of Commerce are just some of the organizations whose effectiveness will help the Riverdale Network Station and any subsequent Network Stations succeed.

4
Development, Funding, and Ownership Plans

Development Plan

The development sequence and the characteristics of the completed project are described in the Riverdale e-Village Vision Report. This section will present the mechanics of the Development Plan.

The Development Plan has three phases:

- Establish the Network Station

- Expand the Network Station and Modernize the Village Core

- Expand the Zone of Influence to Adjacent Commercial Centers

Phase 1—Establish the Network Station (15 months duration)

The first phase of the Network Station will be located in 5,000 square feet of vacant retail space within walking distance to the west of the Ivanhoe Metra Station. The functions that will be offered during this initial period include the following:

- Classroom education originating in any and all of the 26 campuses in the Southland Interactive Video Network.

- Service delivery via interactive video conferencing such as Social Security Administration benefits counseling originating in the Chicago Heights SSA office.

- Online education and training

- Assistance for small businesses that includes classes, lectures and other resources originating in resource centers such as the SBDC at Governor's State University, the Small Business Administration in Chicago, and General Services Administration in Chicago. One example of a function valued by many businesses in the Southland is assistance registering online as a government small business contractor, supplemented by individual counseling from the GSA unit.

- Meeting center for business, government and non-profits with state-of-the-art presentation capabilities including computer projectors, talking white boards, and other "roomware." Meetings may be face-to-face or utilize video or audio conferencing.

- A variety of kiosks that will provide Internet access, electronic banking, and other functions. One specialized option includes ATMS for people without a bank account.

- Wide-Fidelity Hot Zone to provide wireless high speed Internet access within 100 yards of Network Station.

This first phase of the e-Village plan coincides with phase 1 of the TOD plan which calls for rehabilitation of 15,000 square feet of commercial space and some streetscape investments to improve the pedestrian environment. While there are many choices, landscaping to create an attractive public space in the wi-fi Hot Zone should be high priority.

A Steering Committee will be formed during the first few months in order to make design decisions about the facility and adopt its operating policies. Staff will be recruited and trained also during the first six months of the project. At some point during the pilot project, a non-profit corporation will be formed out of the project's Steering Committee to own and operate the Riverdale Network Station.

Phase 1 begins when implementation funding is realized. It will last approximately 15 months with the first six months dedicated to developing the facility, followed by the first nine months of operations. Nine months is the minimum length of time needed for the facility to establish itself in the community. There are 4 tracks in Phase 1.

Track 1–Finalize Plan to Operate the Network Station
(Months 1-6)

- Establish Steering Committee

- Deploy Web Page for Planning and Implementation

- Finalize Schedule of Services: Meetings, Virtual Services, Technology Access

- Acquire Technology and Furniture

- Prepare Facility

- Retain Staff

- Establish Operating Procedures and Policies

- Develop Evaluation Plan and Project Documentation Procedures

Track 2–Plan and Conduct Opening Event
(Hold event 3 months after opening; about 9 months after contract signing)

- Plan Content

- Plan Logistics

- Conduct Opening Event

Track 3–Operate Network Station and Continue Program Development
(Months 7-15 with first three months designated for Beta test of facility)

- Pay operating expenses

- Continue Program Development

- Manage Project

Track 4–Finalize Plan for Phase 2
(Months 10 –15)

- Plan for Distributed Work Suite and support programs (starts in month 10)

- Track vacant properties in and adjacent to Village core (includes Church)

- Recruit target employers for telecommuting candidates

- Recruit small business/entrepreneurs from Southland

- Develop list of distributed-work experts (in Metropolitan Chicago and nationally)

- Identify digital needs of Library and Village administration

- Identify digital needs of businesses in commercial core

- Plan transportation pilot program

- Contribute to RFQ for Developers, if needed

Phase 2—Expand Network Station and Modernize the Village Core

12 months (beginning in month 16)

Track 1–Expand the Network Station and Engage Village Businesses

Depending on the experience with the first phase of the Network Station, the facility should be physically expanded sometime after its been operating for nine months to a year. The expansion should include an additional 10,000 to 15,000 square feet of space elsewhere in or around the Village core. New functions will include:

- Shared work center for entreprenuers, home-based and micro businesses, and for employees telecommuting from jobs elsewhere in the Chicago Metropolitan Area.

- Technology demonstration center.

The mix of services established in Phase 1 will be re-evaluated. For example, depending on available capacity of the meeting room suite and the availability of the Interactive Video Network, telemedicine functions could be introduced to the Network Station during Phase 2.

Vacancies in the Village core should disappear as new businesses move-in. There will be some turnover as a few existing businesses move-on. The first new entrants should include food and beverage services. Other candidates include business support services such as photocopy or stationery supplies, technology repair, and technology sales such as cellular phones.

All tenants, old and new, should at least begin to integrate digital networks strategically into business practice. Proximity to the Network Station will be the catalyst for these changes, which include:

- Quality Web presence

- Multi-media marketing tools

- e-business practices

The Village will begin to actively recruit businesses that have adopted some form of cyber strategy. Firms with innovative cyber capabilities should be attracted through a national solicitation.

Conferences and seminars on a variety of cyber technologies should be solicited by the Tourist and Visitors Bureau for the Convention Center and/or nearby hotels. Examples of modest-sized technology conferences held elsewhere in 2002 include:

- National Wireless Engineering Conference (in San Diego)

- CDMA America Conference (in San Diego)

- Making Mobile Pay (free seminar by Telestrategies in Seattle)

Track 2–e-Village Zero Emission Vehicle/Car-Sharing Program

Implement neighborhood vehicle transportation demonstration (the planning for this initiative will have been carried out during Phase 1). The initiative will introduce zero emission vehicles into the e-Village circulation system. The car-sharing model is the most likely mechanism for making this introduction. Manufacturers of zero-emission and neighborhood vehicles will be contacted for participation in this phase of the project.

The network station operations will be carefully documented, specifically focusing on the travel behavior of the visitors to the network station. A rich array of primary data will be collected through three mechanisms:

- Membership data base that will establish typical trip purposes, travel modes, and trip distances for those people who become members of the network stations.

- Daily visitor logs that will collect data in a number of categories, specifically on patterns of use during the morning smog window. These data will permit analysis of the activities that draw visitors to the facility, their mode of travel, impact on cold starts, and how the trip purpose would have been accomplished before the network station was developed.

- Special surveys that will collect more detailed transportation data from randomly selected visitors to the facility, and data on economic outcomes from Network Station use.

Phase 3–Expand Zone of Influence to Adjacent Commercial Centers

While this phase is not part of the Riverdale e-Village pilot project, Phase 3 anticipates the evolution of the pilot.

Add small Network Stations to each of the surrounding commercial centers in order to replicate on a small scale the short range spread effects of the Riverdale Network Station. This should stimulate demand for inter-village transportation, which can be satisfied by a public electric tram or by expansion of the neighborhood vehicle program.

Funding Plan

The plan is to obtain start-up funds from a combination of sources. The initial funding will be sought from federal and state economic and transportation programs. The second source will be philanthropic foundations with grant programs for the Metropolitan Chicago area, or topic areas like technology, transit oriented development, or community development.

A target core amount from government and foundations would be at least 50% to 75% of the total cost of the pilot project's two phases, or an initial grant amount of between $500,000 and $1 million.

The third source will be private corporations. Once core funding has been secured, private entities including those in the various digital industries, zero-emission vehicle manufacturers, and those with a significant Chicago or Southland presence will be approached. In-kind investments including expertise and equipment will be sought as well as capital. Donation, under-writing, and sponsorship are all options, although the community should ensure that it retains control of technology decisions.

These private corporations will need to see the e-Village as a technology market development initiative. The telecommunications industry typically competes over market <u>share</u> and has virtually no experience collaborating to increase market <u>size</u>. Successful e-Villages and Cyber Regions will be very good for every kind of digital technology market and should attract the support of enlightened corporations.

The start-up period has been planned for two to three years, during which time the operations should be subsidized. User fees should be kept to a token amount so that cost does not become a barrier to use. At least two years are required for the Network Station to establish its value to the region and the local community. A couple of years will also generate data on usage patterns that can be analyzed as part of the process of developing a business plan. A business plan for self-support will be developed during the third year.

An application for start-up funding was submitted to the Chicago Area Transportation Study (CATS) in the spring of 2003. The application requested funds from the Congestion Management and Air Quality (CMAQ) program of the TEA21 sequel that has yet to be approved by Congress. Start-up funds are also currently being sought from a variety of foundations and state and federal economic development programs.

The following are nine options that will be evaluated as sources of long term funding for the Network Station.

1. Charge user fees – like Kinkos which charges fee per use

2. Collect membership fees – like an athletic club, no fee per use

3. Charge commercial fees for specific services
   Return goods purchased online for a fee
   Recycle laser printer cartridges and other tech equipment such as monitors
   Conduct Web research for a fee

4. Operate various commercial services and use profits to run the non-profit
   Photocopy
   Mail box

5. Charge content providers to use the Network Station (i.e., colleges delivering distance education)

6. Rent the facility or some part of it –
   To corporations looking for a training site
   Entrepreneurs with classes to teach but needing a facility to teach in.

7. Sell on-site advertising

8. Offer levels of corporate sponsorship – particularly where technology innovation can lead to some sort of market research.

9. Operate as a value added retailer – make the facility a new kind of community retailer

Ownership and Management Plan

The Village of Riverdale is expected to be the initial owner and operator of the Network Station. The Village and the Siembab Corporation will be co-applicants on funding applications, with the Village acting as fiscal agent for the start-up funds and the Siembab Corporation heading the development team.

The Village will appoint the project's Steering Committee based on structural recommendations from the development team. As the project progresses, this group will take one of the following actions regarding the assets and the responsibilities for continuing the Network Station's operation:

- Recommend an existing non-profit corporation.

- Act as corporate convenors and nominate a board of directors.

- Become the board of directors, possibly with a few additions and deletions.

Until an independent non-profit corporation assumes the assets and responsibilities for the Network Station, the Steering Committee will make the following executive decisions as presented by the development team:

- Approve budget

- Approve the recommendations for hiring staff.

- Act as conduit for translating community needs and interests into equipment and programs.

- Approve vendors.

- Approve operating policies, including hours of operation

- Approve the furniture and equipment package.

5
Toward a Cyber Southland

A Cyber Southland would, before 2020, consist of a system of over 100 functionally integrated e-Villages developed from traditional village centers, retail malls, commercial strips, and brownfields. Larger villages would also have smaller Network Stations in their residential neighborhoods, possibly co-located with schools.

The Cyber Southland also would become an excellent market for a variety of digital technologies, and the leading market in the nation for alternative fuel neighborhood vehicles. Some of which would be manufactured or assembled within the region.

While this Initiative has complex linkages to many desirable outcomes, four are of particular interest. As discussed in Section 3 above, some of the Southland's most pressing economic challenges are the industrial brownfields, the industrial era street system, the quality of the labor force and the image of the Southland from the perspective of the more affluent regions in the Chicago Metropolis.

The Cyber Southland Initiative will improve the region's image by reinventing the Southland *brand*, which will help *reposition* the Southland in the Chicago Metropolitan economy. Making the Southland synonymous with *innovation,* when combined with ongoing government efforts, should increase demand for recycling and restoring some of the brownfields.

The Initiative will also help modernize the region's economy and its labor force. Ubiquitous deployment of digital technology with usage embedded in everyday transactions will lead to universal techno-literacy. The Southland will attract from elsewhere small businesses and families who value access to education and economic opportunity. Southland businesses can be expected to become more streamlined, more agile, and more numerous.

The limitations of the existing industrial era street system will be accommodated by deploying smaller, slower vehicles appropriate to short trip lengths, combined with selective system expansion. In this, the Southland has little alternative since the comprehensive expansion of its streets and arterials to a standard associated with *new economy* regions would be unaffordable in any reasonable period of time.

The assets to build the Initiative upon include the organizations which foster collaboration such as the Southland Mayors and Managers Association, the Chicago Southland Chamber of Commerce, the South Metropolitan Regional Higher Education Consortium, and others. Assets

also include specific institutions such as Governors State University and the South Suburban Community College. Physical assets include the region's decentralized urban form characterized by many traditional downtowns which lend themselves to cyber retrofit, and the Metra Electric commuter rail system.

The transition to the Cyber Southland requires three steps.

1. The leading institutions and consortia in the Southland come to understand the Cyber Southland Initiative, discuss it, ultimately endorse it and make a commitment to participate in the pilot projects.

   The Southland Mayors and Managers Association is the best candidate to initiate this step, beginning most likely with its Transportation Committee. A similar process followed by the Chicago Southland Chamber of Commerce, the South Metropolitan Regional Higher Education Consortium, and other key organizations will provide the political support which builds the credibility needed to secure funding for the Riverdale e-Village, the second and third projects, and all subsequent e-Village developments.

   Step 1 will also impact the existing regional telecommunications "demand aggregation" initiative, referred to as the Getting Wired Southland Initiative (GWSI). The Riverdale Network Station should generate demand for high bandwidth services which could re-energize the original initiative. Riverdale's community-based non-profit corporation could also become the seed of a regional non-profit that was envisioned as part of GWSI.

   The regional commitment to digital applications will also increase demand for network services. That commitment by itself could stimulate a market solution to the network infrastructure problem, as it would likely attract either the competitive network vendors or SBC investment in network upgrades.

2. Southland leaders identify and develop a political consensus around the locations for two additional e-Village developments. They should be selected and positioned for funding by no later than spring, 2005 and should be considered as partners with Riverdale in the initial pilot project. In other words, the regional pilot should consist of three e-Villages. Then three additional sites (for a total of 5 beyond Riverdale) should also be selected for development beginning by 2007.

   The Southern Suburbs contain villages that have a traditional downtown (commercial core) as well as new suburbs that lack a mixed-use center. Some villages have Metra rail service and others don't. These observations suggest a 2x2 table that defines four village categories to aid policy makers in selecting sites for additional e-Village development. The table below identifies Southland villages that fit each category.

The rate of racial transition may also be a consideration in choosing subsequent e-Village sites. The decade from 1990 to 2000 reflected a number of significant shifts in racial and economic demographics. In this, a number of communities became overwhelmingly African American.

	Trad Village Center	**No Village Center**
With Metra	Riverdale	Calumet (E. Hazel Crest)
	Homewood	Richton Park
	Flossmoor	University Park (at Metra)
	-Tinley Park	- Robbins
No Commuter Rail Station	Frankfort	Markham
	South Holland*	Country Club Hills
	Glenwood*	Phoenix
	Crete*	-Homer Glen
	Beecher*	

- = not on Metra Electric line

*= on old rail line, had commuter service 100 years ago, current effort to re-establish this (one of the corridor plans)

The following U.S. Census data indicate those communities undergoing a transition in racial composition between 1990 and 2000. These are communities of varying economic status with varying efforts at affirming and sustaining racial diversity.

- Riverdale – 41 to 86 % African American

- Dolton – 38 to 82 %

- Calumet Park – 72 to 83 %

- South Holland – 12 to 51 %

- Country Club Hills – 62 to 86 % African American

- Hazel Crest – 55 to 81 %

- Homewood – 6 to 18 %

- Flossmoor – 11 to 27 %

- Olympia Fields – 16 to 52 %

- Matteson – 44 to 62 %

- Park Forest – 25 to 39 %

- Richton Park – 22 to 59 %

- University Park – 79 to 84 %

In addition, the south region continued to have a cluster of low income African American villages:

- Ford Heights – 99 to 96 % African American

- Phoenix – 95 to 94 %

- Robbins – 98 to 95 %

There are also lower and moderate income African Americans whose numbers have changed during the decade:

- Harvey – 80 to 90 % of the total community

- Dixmoor – 58 to 57 %

- Markham – 76 to 79 %

These tables focus on percentages in terms of white and African American populations. Obviously, other cultural and ethnic groups, especially Hispanics, are becoming significant parts of the population mix and present unique opportunities for Network Station development.

1. Southland leaders should obtain funding to create a *digital centers plan* that comprehensively identifies the locations for Network Stations throughout the Southland so that by 2008 many e-Villages can be developed simultaneously. An achievable goal would be to have 45 e-Villages operating within 10 years (by 2013) and 100 by 2020.

   The success of the Cyber Southland Initiative does not require development of new technology. Everything needed exists on-the-shelf. Nor is affordability an issue since the cost of a Network Station is about the cost of mid-priced road intersection improvement.

   Success in obtaining funding and in developing a successful pilot project depends on political leadership. Funding is fundamentally a political decision. Year after year the State of Illinois and CATS allocate large sums to support automobility. The "reconstruction" of just 8 miles on the Dan Ryan Expressway will cost over $500 million. Adding lanes to just 3 miles of North Ave. will cost $32 million. Improving a single intersection at 22nd Street and Butterfield Road is budgeted for almost $1.5 million.

   Yet it is clear that the high performance automobile is not a long run answer to regional mobility. Nor is the continuing expansion of highways and streets likely to be effective because capacity generates demand. There will never be enough money for capacity expansion to keep pace with demand. Demonstrations and pilots of alternative systems of mobility need to be funded and evaluated as soon as possible.

South Suburban leaders need to pressure Chicagoland leaders to try something different, and to try it in the Southland. Three e-Village pilot projects could be fully funded out of the planned lane expansion of North Avenue by reducing the project from 3 miles to 2.4 miles. Or the improvements to just three intersections could be delayed for two years. These compromises would not appear to be serious hardships for the Chicago Metropolitan Area, particularly in light of the potential for demonstrating a non-polluting, sustainable, oil-independent system of mobility.

Once funding for the Riverdale pilot has been obtained, South Suburban leaders including elected officials and institutional executives need to ensure that the key public and private enterprises in the region take on the challenge of adopting new policies and practices. People and organizations tend to resist change. But in the end, behavioral change will be cheaper, easier, and much more effective than just bricks and mortar and concrete and asphalt changes to the built environment.